The City of Canton

Invitation to Bid

City of Canton, Ohio

Purchasing Department
218 Cleveland Ave. SW, 4th floor
Canton, Ohio 44702

Crenshaw Park Outdoor Shelter

Item/Project

Park Department

Responsible Department

2:00:00 PM, 10/3/2023

Bids Due

Bid Proposal Submitted By:

Company Name

Street Address

City **State** **Zip**

Contact Person **Phone No.** **Email Address**

The City of Canton

Table of Contents and Bidder's Checklist - Crenshaw Park Outdoor Shelter

Legal Notice

INSTRUCTIONS TO BIDDERS

OWNER-CONTRACTOR AGREEMENT

BID GUARANTY AND CONTRACT BOND

BID FORM

CONTRACTOR'S QUALIFICATION STATEMENT

Modified General Conditions (EJCDC)

ODOT MANUAL SUPPLEMENT

City of Canton Codified Ordinances

STATEMENT OF CLAIM FORM

CONTRACTOR'S PERSONAL PROPERTY TAX AFFIDAVIT

CONTRACTOR'S FINAL WAIVER & RELEASE AFFIDAVIT

PRE-BID SUBSTITUTION FORM

Appendix A: Project Labor Agreement
Appendix B: Prevailing Wage Rates and Information
Appendix C: Specifications and Drawings
Appendix D: Title VI Requirements

Bidder's Checklist: The completed Bid Form shall be accompanied by the following completed documents:

_____ **Pre-Bid Substitution, if any proposed substitutes have been pre-approved.**
_____ **Bid Guaranty and, if applicable Contract Bond**
_____ **Contractor's Qualification Statement**
_____ **Contractor's List of Subcontracted Work Categories**
_____ **A list identifying its DBE subcontractors and participation rates as a percentage of the Contract Price, and if the DBE participation goal has not been met, certification of good faith efforts to meet the DBE participation goal.**
_____ **The Project Labor Agreement (PLA) Letter of Assent (See Appendix A).**
_____ **If this project is funded in whole or part by the Ohio Public Works Commission, then certification of agreement and compliance with certain statements and covenants regarding Bidder's subscription to the State's Equal Employment Opportunity Requirements for State-assisted Construction Contracts.**

Legal Notice

Sealed bids will be received by the City of Canton (the "City"), as provided in this notice for the Crenshaw Park Outdoor Shelter Project (the "Project"), Ordinances 170/2020 & 5/2022. Contract documents, which include additional details of the Project, are on file and available from the City of Canton's web site (https://cantonohio.gov/448/Purchasing-Procurement).

Bids shall be enclosed in a sealed envelope addressed to the City of Canton, 218 Cleveland Ave. SW, Purchasing Dept/Fourth Floor, Canton, Ohio 44702 and plainly marked on the outside "Crenshaw Park Outdoor Shelter PROJECT BID." Bids will be received on or before 2:00 PM, local time, 10/3/2023 and opened shortly thereafter.

Questions regarding plans and specifications should be addressed in writing to Purchasing Department, at purchasing@cantonohio.gov.

All bids must include a Bid Guaranty, as described in the Instructions to Bidders. Prevailing wage rates apply. All bidders will be required to comply with the City Contract Compliance Program regarding equal employment opportunity. After submission and opening, no bidder may withdraw its bid within 60 days after the opening; the City reserves the right to waive irregularities, reject any or all bids, and conduct necessary investigations to determine bidder responsibility.

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INSTRUCTIONS TO BIDDERS

TABLE OF CONTENTS

A. BIDDER'S PLEDGE AND AGREEMENT 2

B. EXAMINATION OF CONTRACT DOCUMENTS AND SITE CONDITIONS AND RELIANCE UPON TECHNICAL DATA 2

C. OWNER & ENGINEER 3

D. PROJECT 3

E. WORK 3

F. ESTIMATE OF COST 4

G. CONTRACT DOCUMENTS 4

H. PREPARATION OF BIDS 4

I. METHOD OF AWARD 7

J. EXECUTION OF CONTRACT 12

K. SUBSTITUTIONS/NON-SPECIFIED PRODUCTS 12

L. ALTERNATES 13

M. UNIT PRICES 13

N. ADDENDA 14

O. INTERPRETATION 14

P. STATE SALES AND USE TAXES 15

Q. DATE FOR SUBSTANTIAL COMPLETION/DATE FOR FINAL COMPLETION/LIQUIDATED DAMAGES 15

R. OWNER'S RIGHT TO WAIVE DEFECTS AND IRREGULARITIES 16

S. MODIFICATION/WITHDRAWAL OF BIDS 16

T. COMPLIANCE WITH APPLICABLE LAWS 17

U. FINDINGS FOR RECOVERY 17

V. PREVAILING WAGES 17

W. DBE PARTICIPATION GOALS 17

X. OTHER LOCAL ORDINANCE REQUIREMENTS 18

Y. OHIO PUBLIC WORKS COMMISSION FUNDING 21

A. BIDDER'S PLEDGE AND AGREEMENT

1. Each Bidder acknowledges that this is a public project involving public funds and that the Owner expects and requires that each successful Bidder adhere to the highest ethical and performance standards. Each Bidder by submitting a bid pledges and agrees that (a) it will act at all times with absolute integrity and truthfulness in its dealings with the Owner and the Engineer, (b) it will use its best efforts to cooperate with the Owner and the Engineer and all other Contractors on the Project and at all times will act with professionalism and dignity in its dealings with the Owner, Engineer, and other Contractors, (c) it will assign only competent supervisors and workers to the Project, each of whom is fully qualified to perform the tasks that are assigned to him/her, and (d) it has read, understands and will comply with the terms of the Contract Documents.

B. EXAMINATION OF CONTRACT DOCUMENTS AND SITE CONDITIONS AND RELIANCE UPON TECHNICAL DATA

1. Each Bidder shall have a competent person carefully and diligently review each part of the Contract Documents, including the Divisions of the Specifications and parts of the Drawings that are not directly applicable to the Work on which the Bidder is submitting its bid. By submitting its bid, each Bidder represents and agrees, based upon its careful and diligent review of the Contract Documents, that it is not aware of any conflicts, inconsistencies, errors, or omissions in the Contract Documents for which it has not notified the Owner in writing at least ten (10) days prior to the bid opening. If there are any such conflicts, inconsistencies, errors, or omissions in the Contract Documents, the Bidder (i) will provide the labor, equipment, or materials of the better quality or greater quantity of Work and/or (ii) will comply with the more stringent requirements. The Bidder will not be entitled to any Change Order, additional compensation, or additional time on account of such conditions for any conflicts, inconsistencies, errors, or omissions that would have been discovered by such careful and diligent review, unless it has given prior written notice to the Owner.

2. Each Bidder shall have a competent person carefully and diligently inspect and examine the entire site and the surrounding area, including all parts of the site applicable to the Work for which it is submitting its bid, including location, condition, and layout of the site and the location of utilities, and carefully correlate the results of the inspection with the requirements of the Contract Documents. The Bidder's bid shall include all costs attributable to site and surrounding area conditions that would have been discovered by such careful and diligent inspection and examination of the site and the surrounding area, and the Bidder shall not be entitled to any Change Order, additional compensation, or additional time on account of such conditions.

3. The Bidder may rely upon the general accuracy of any technical data identified in the Owner-Contractor Agreement (e.g., any soils exploration reports, soil boring logs, site survey, or abatement reports) in preparing its bid, but such technical data are not part of the Contract Documents. Except for the limited reliance described in the preceding sentence, Bidder may not, if awarded a contract for the Work, rely upon or make any Claim against the Owner or Engineer, or any of their agents or employees, with respect to any of the following:

    a. the completeness of such reports and drawings for Bidder's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by the successful Bidder and safety precautions and programs incident thereto; or

b. any interpretation by the successful Bidder of or conclusion drawn from any technical data or any such other data, interpretations, opinions, or information. For example, all interpolations and extrapolations of data performed by the Bidder to estimate locations or quantities of subsurface strata are independent factual assumptions, which Owner does not warrant.

4. Each Bidder will be deemed to have actual knowledge of all information provided or discussed at the pre-bid meeting.

C. OWNER & ENGINEER

1. The Owner is:

The City of Canton
218 Cleveland Avenue SW
Canton, OH 44702
Telephone: 330.489.3245
Fax: 330.489.3499

The Owner's Representative is:

Doug Foltz

2. The Design Engineer for the Project is:

Motter & Meadows Architects
600 Market Avenue North
Canton, Ohio 44702

D. PROJECT

1. The Project and Work for the Project consists of all labor, materials, equipment, and services necessary for construction of the project identified as **Crenshaw Park Outdoor Shelter Project** ("the Project"), all in accordance with the Drawings and Specifications prepared by the Engineer and/or Owner. The Project must be substantially complete by the Date for Substantial Completion set forth in Section Q below.

2. The Mayor **Yes** determined that a Project Labor Agreement ("PLA") will advance the City's procurement interest in cost, efficiency, and quality while promoting labor-management stability as well as compliance with applicable legal requirements governing safety and health, equal employment opportunity, labor and employment standards, and other related matters. Any such PLA shall be negotiated by the Mayor of the Owner with the East Central Ohio Building and Construction Trades Council and its affiliated local unions, or said Council's successor. The successful Bidder shall comply with and adhere to all of the provisions of any PLA for the Project.

3. A pre-bid conference will be held at **NA on NA** at **NA**.

E. WORK

1. This Project includes **Masonry, concrete, carpentry, casework, millwork, insulation, metal roof, siding, painting, earth moving, grading, turf, etc.**, and the like as set forth in the Contract Documents.

2. Alternate No. 1 for this Project is **NA**.

3. Alternate No. 2 for this Project is **NA**.

4. Only one contract will be issued by the Owner for constructing the Project, the General Contract, which will cover all scopes of work necessary to construct the Project.

5. The Contractor awarded the General Contract (General Contractor) will be responsible for the performance and coordination of any and all subcontractors and suppliers either directly or indirectly contracted with the General Contractor.

6. Owner will provide Bidders access to the Project site to conduct such examinations, investigations, explorations, tests, and studies as Bidder deems necessary for submission of a Bid. Bidder shall fill all holes, clean up, and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies. Bidder shall comply with all applicable laws, regulations and Owner's policies relative to excavation and utility locates. Bidders may contact **Doug Foltz,** The City of Canton, at **doug.foltz@cantonohio.gov** or **330-438-4690** if they have any interest in accessing the Project site, independent of any pre-bid meeting.

F. ESTIMATE OF COST

1. The total estimated construction cost for the Base Bid Work for the Project for which bids are being solicited at this time is **$360,000.00.**

   The estimated cost for Alternate 1 - **NA** is: **NA**.

   The estimated cost for Alternate 2 - **NA** is: **NA**.

G. CONTRACT DOCUMENTS

The Contract Documents consist of the documents listed in Section 1 of the Owner-Contractor Agreement.

Bidders may view and download copies of the Contract Documents from The City of Canton Purchasing web site at https://cantonohio.gov/448/Purchasing-Procurement, which is the only authorized source of the Contract Documents. The City of Canton's sourcing tool, Vendor Registry, will maintain the Bidder's list and will provide notice and copies of Addenda as issued. It is the responsibility of any person or organization interested in a hard copy of the Contract Documents to pay all costs associated with printing.

Bidders shall use complete sets of Contract Documents in preparing bids. Neither the Owner nor the Design Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Contract Documents.

The Owner, in making the Contract Documents available on the above terms, does so only for the purpose of obtaining bids on the Work and does not confer a license or grant for any other use.

H. PREPARATION OF BIDS

1. All bids must be submitted on the "Bid Form" furnished with the Contract Documents.

2. All blank spaces shall be filled in, in ink or typewritten, in words and figures, and in figures only where no space is provided for words, and signed by the Bidder. The wording on the Bid Form shall be used without change, alteration, or addition. Any change in the wording or omission of specified accompanying documents may cause the bid to be rejected. If there is an inconsistency or conflict in the Bid, the lowest amount shall control, whether expressed in numbers or words.

3. Bidders shall note receipt of Addenda on the Bid Form. If the Bidder fails to acknowledge receipt of each Addendum, the Bid shall be deemed non-responsive, unless the Bid amount clearly and unambiguously reflects receipt of the Addendum or the Addendum involves only a matter of form and does not materially affect the price, quantity or quality of the Work to be performed.

4. Each Bidder shall submit **an original** of its bid to the Owner. The Bid Form shall be signed with the name typed or printed below the signature. A Bid shall not be submitted by facsimile transmission or any other electronic means. A Bidder that is a corporation shall sign its bid with the legal name of the corporation followed by the name of the state of incorporation and the legal signature of an officer authorized to bind the corporation to a contract.

5. Each Bid shall be enclosed in a sealed opaque envelope with the Bidder's name and the title of the Project printed in the upper left hand corner and addressed as follows:

   The City of Canton
   ATTN: Purchasing/Bids
   218 Cleveland Avenue SW
   Canton, OH 44702

   Bids must be received at the designated location for the bid opening before 2:00:00 PM, local time, on 10/3/2023.

6. The completed Bid Form shall be accompanied by the following completed documents:

   a. Pre-Bid Substitution, if any proposed substitutes have been pre-approved. (See Section K, below.)

   b. Bid Guaranty and, if applicable Contract Bond (See Paragraph H.8, below.)

   c. Contractor's Qualification Statement (See Paragraph I.4, below.)

   d. Contractor's List of Subcontracted Work Categories (See Paragraph I.5, below.)

   e. A list identifying its DBE subcontractors and participation rates as a percentage of the Contract Price, and if the DBE participation goal has not been met, certification of good faith efforts to meet the DBE participation goal. (See Section W, below.)

   f. The Project Labor Agreement (PLA) Letter of Assent (See Appendix A).

   g. If this project is funded in whole or part by the Ohio Public Works Commission, then certification of agreement and compliance with certain statements and covenants regarding Bidder's subscription to the State's Equal Employment Opportunity Requirements for State-assisted Construction Contracts (See Section Y, below.)

7. The Bidder shall take the following precautions in preparing its bid:

   a. Sign the bid and check to ensure all blank spaces have been filled in with requested information and that the specified accompanying documents (listed in Paragraph H.6 above) have been included in a sealed opaque envelope addressed as described in Paragraph H.5 above.

b. When the Bid Form provides for quoting either an addition or deduction for an Alternate item, indicate whether the sum named is an addition or deduction. If it is not indicated, it will be conclusively presumed that the amount is a deduction.

c. When the Bid Form provides for quoting a unit price, the Bidder should quote the unit price as set forth in the Contract Documents as described in Paragraph M.1 below.

d. When applicable, make sure that the Bid Guaranty is properly executed and signed by:

1) The Bidder
2) The Surety or Sureties

e. Make sure that the amount of the Bid Guaranty (if the Bid Guaranty is in the form of a certified check, letter of credit, or cashier's check) is for a specific sum in an amount as instructed in Paragraph H.8.a below. If the Bid Guaranty is in the form of the Bid Guaranty and Contract Bond, the amount may be left blank; if an amount is inserted, it must equal the total of the base bid and all add alternates included. If inserted, then the failure to state an amount equal to the total of the base bid and all add alternates shall make the bid non-responsive if the Owner selects alternates not included in the amount.

f. Make sure that the appropriate bid package and scope of work is inserted in the correct space on the Bid Guaranty and Contract Bond Form. Failure to include work covered by the bid submitted may make the bid non-responsive.

8. Bonds and Guarantees

a. Bid Guaranty: Bidder shall furnish a Bid Guaranty, as prescribed in Sections 153.54, 153.57, and 153.571 of the Ohio Revised Code, in the form of either: (1) a bond for the full amount of the bid in the form of the Bid Guaranty and Contract Bond included in the Contract Documents; or (2) a certified check, cashier's check, or irrevocable letter of credit in a form satisfactory to the Owner in an amount equal to 10% of the bid. Bid amount shall be the total of all sums bid, including all add alternatives, but excluding all deduct alternatives. **NOTE: AIA or EJCDC Bid Bond forms are not acceptable.**

b. Contract Bond: The successful Bidder, who, as a Bid Guaranty, submits a certified check, cashier's check, or irrevocable letter of credit in an amount equal to 10% of the bid, shall furnish a Contract Bond in the form included in the Contract Documents in an amount equal to 100% of the Contract Sum. **NOTE: AIA or EJCDC Bond forms are not acceptable.**

c. The bond must be issued by a surety company authorized by the Ohio Department of Insurance to transact business in the State of Ohio and acceptable to the Owner. The bond must be issued by a surety capable of demonstrating a record of competent underwriting, efficient management, adequate reserves, and sound investments. These criteria will be deemed to be met if the surety currently has an A.M. Best Company Policyholders Rating of "A-" or better and has or exceeds the

Best Financial Size Category of Class VI. Other sureties may be acceptable to the Owner, in its sole discretion.

d. All bonds shall be signed by an authorized agent of an acceptable surety and by the Bidder.

e. Surety bonds shall be supported by credentials showing the Power of Attorney of the agent, a certificate showing the legal right of the Surety Company to do business in the State of Ohio, and a financial statement of the Surety.

f. The Bid Guaranty, as applicable, shall be in the name of or payable to the order of the Owner.

g. The name and address of the Surety and the name and address of the Surety's Agent must be typed or printed on each bond.

9. Permits

a. Owner has obtained, or will obtain the following permits for the Project, as applicable:

NA

b. Contractor shall secure and pay for all other permits necessary to complete the Project. Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

c. If Contractor intends to work with any pesticides or herbicides to perform the contracted work, the City of Canton requires that Contractor be in possession of an up-to-date and valid Commercial Pesticide Applicator's License from the Ohio Department of Agriculture.

I. METHOD OF AWARD

1. All bids shall remain open for acceptance for sixty (60) days following the day of the bid opening, but the Owner may, in its sole discretion, release any bid and return the Bid Guaranty prior to that date. The Bid Guaranty shall be subject to forfeiture, as provided in the Ohio Revised Code, if a bid is withdrawn during the period when bids are being held.

2. The Owner reserves the right to reject any, part of any, or all bids and to waive any informalities and irregularities. The Bidder expressly acknowledges this right of the Owner to reject any or all bids or to reject any incomplete or irregular bid. Bidders must furnish all information requested on the Bid Form. Failure to do so may result in disqualification of the bid.

3. Determination of the Lowest and Best Bid. Subject to the right of the Owner to reject any or all bids, pursuant to the Codified Ordinances of Canton Chapters 105, 182, and 507, the Owner will award the Contract for the Work to the bidder submitting the lowest and best bid, taking into consideration accepted alternates. In evaluating bids, the Owner will consider the qualifications of the Bidders, whether or not the bids comply with the prescribed requirements, and alternates and unit prices, if requested, on the Bid Form. The Owner may also consider the qualifications and experience of subcontractors and suppliers. The Owner may conduct such investigations as are deemed necessary to establish the qualifications and financial ability of the Bidder and its subcontractors and suppliers. The factors the Owner may consider in determining which bid is the lowest

and best include the factors set forth below, including the Additional Criteria. Depending upon the type of work, the Owner, in its discretion, may also consider other essential factors, as the Owner may determine and as are included in the Specifications. The Owner, in its discretion, may consider and give such weight to these criteria as it deems appropriate. The Owner, in its discretion, reserves the right to request additional information and documentation relating to these criteria from Bidders after the bid opening.

a. Work to be subcontracted. The Bidder must identify all work to be subcontracted. See paragraph I.5 below. All subcontractors are subject to the approval of the Owner based on the criteria set forth in this Section I.

b. The Bidder's work history. The Bidder should have a record of consistent customer satisfaction and of consistent completion of projects, including projects that are comparable to or larger and more complex than the Owner's Project, on time and in accordance with the applicable Contract Documents, and based upon the Bidder's claims history. If the Bidder's management operates or has operated another construction company, the Owner may consider the work history of that company in determining whether the Bidder submitted the lowest and best bid.

The Owner will consider the Bidder's prior experience on other projects of similar scope and/or complexity including prior projects with the Owner and/or Design Professional, including the Bidder's demonstrated ability to complete its work on these projects in accordance with the Contract Documents and on time, and will also consider its ability and capacity to perform a substantial portion of the project with its own forces and its ability to work with the Owner and Engineer as a willing, cooperative, and successful team member. Bringing overstated claims, an excessive number of claims, acting uncooperatively, and filing lawsuits against project owners and/or their design professionals on prior projects of similar scope and/or complexity will be deemed evidence of a Bidder's inability to work with the Owner and Engineer as a willing, cooperative, and successful team member.

The Bidder authorizes the Owner and its representatives to contact the owners and design professionals (and construction managers, if applicable) on projects on which the Bidder has worked and authorizes and requests such owners and design professionals (and construction managers) to provide the Owner with a candid evaluation of the Bidder's performance. By submitting its bid, the Bidder agrees that if it or any person, directly or indirectly, on its behalf or for its benefit brings an action against any of such owners or design professionals (or construction managers) or the employees of any of them as a result of or related to such candid evaluation, the Bidder will indemnify and hold harmless such owners, design professionals (and construction managers) and the employees of any of them from any claims, whether or not proven, that are part of or are related to such action and from all legal fees and expenses incurred by any of them arising out of or related to such legal action. This obligation is expressly intended for the benefit of such owners, design professionals (and construction managers), and the employees of each of them.

c. The Bidder's prior history regarding timeliness of performance, quality of work, the Bidder's history of filing claims and having claims filed against it, extension requests, fines and penalties imposed and payments thereof, and contract defaults, with explanations.

d. The Bidder's compliance with federal, state, and local laws, rules, and regulations, including but not limited to the Occupational Safety and Health Act, Ohio Prevailing Wage laws, Davis Bacon, and Ohio ethics laws.

e. The Bidder's prior experience with similar work on comparable or more complex projects.

f. The number of years the Bidder has been actively engaged as a contractor in the construction industry.

g. The Bidder's recent experience record in the construction industry, including the original contract price for each construction job undertaken by the bidder, the amount of any change orders or cost overruns on each job, the reasons for the change orders or cost overruns, and the bidder's record for complying with and meeting completion deadlines on construction projects.

h. A public entities' determination, within the previous five years, that the Bidder was not a responsible bidder, the reasons given by the public entity, and the Bidder's explanation thereof.

i. The Bidder's financial ability to complete the Contract successfully and on time without resort to its Surety.

j. Financial responsibility demonstrated by the Bidder and whether Bidder possesses adequate resources and availability of credit, the means and ability to procure insurance and acceptable performance bonds required for the Project and whether any claims have been made against performance bonds secured by the bidder on other construction projects.

k. Any suspension or revocations of any professional license of any director, officer, owner, or managerial employees of the Bidder, to the extent that any work to be performed on this Project is within the field of such licensed profession.

l. The Bidder's equipment and facilities.

m. The size and experience of the Bidder's work force and the Bidder's ability to complete the Contract successfully and on time.

n. The experience and the continuity of the Bidder's work force including the project manager and project superintendent's tenure with the Bidder.

o. The Bidder's participation in a drug-free workplace program acceptable to the Owner, and the Bidder's record for both resolved and unresolved findings of the Auditor of State for recovery as defined in Section 9.24 of the Ohio Revised Code.

p. The Owner's prior experience with the Bidder's surety.

q. The Bidder's interest in the Project as evidenced by its attendance at any pre-bid meetings or conferences for bidders.

r. The adequacy, in numbers and experience, of the Bidders' work force to complete the Contract successfully and on time.

s. The foregoing information with respect to each of the Subcontractors and Suppliers that the Bidder intends to use on the Project.

4. Qualifications Statement. Each Bidder will submit with its bid a completed Contractor Qualifications Statement, which is included with the Contract Documents, and thereafter provide the Owner promptly with such additional information as the Owner may request regarding the Bidder's qualifications. A Bidder shall submit any requested additional information within three (3) business days of the date on the request.

5. List of Subcontracted Work Categories. Each Bidder will submit with its bid a completed list of Subcontracted Work Categories, which is included with the Contract Documents, and thereafter provide the Owner promptly with such additional information as the Owner may request regarding the Bidder's qualifications. A Bidder shall submit any requested information within three (3) business days of the date on the request.

6. Additional Criteria for Determining Lowest and Best Bid. Pursuant to the Codified Ordinances of the City of Canton, Chapter 105, the Owner, in its discretion, may consider any or all of the Additional Criteria below in determining which bid is lowest and best.

   a. Any OSHA violations within the previous three years, as well as all notices of OSHA citations filed against the Bidder in the same three year period, together with a description and explanation of remediation or other steps taken regarding such violations and notices of violation.

   b. Any violations within the previous five years pertaining to unlawful intimidation or discrimination against any employee by reason of race, creed, color, disability, gender, or national origin, and/or violation of any employee's civil or labor rights or equal employment opportunities.

   c. Any litigation in which the Bidder has been named as a defendant or third party defendant in an action involving a claim for personal injury or wrongful death arising from performance of work related to any project in which it has been engaged within the previous five years. Bidders shall provide copies of pleadings.

   d. Allegations of violations of the prevailing wage law and any other state or federal labor law, including, but not limited to, child labor violations, failure to pay wages, or unemployment insurance tax delinquencies or unfair labor practices within the past five years.

   e. Violations of the workers compensation law.

   f. Any criminal convictions or criminal indictments, involving the Bidder, its officers, directors, owners, and/or managers within the past five years.

   g. Any violation within the past five years or pending charges concerning federal, state, or municipal environmental and/or health laws, codes, rules, and/or regulations.

   h. Documentation that the Bidder provides health insurance and pension benefits to its employees.

   i. Whether the Bidder participates in a bona fide apprenticeship program that is approved by the Ohio State Apprenticeship Council and the United States Department of Labor.

   j. Whether the Bidder has adopted and implemented a comprehensive drug and alcohol testing program for its employees.

   k. Whether the Bidder's employees are OSHA-10 and/or OSHA-30 certified.

l. The Bidder's commitment to comply with the Owner's Contract Compliance Program regarding equal employment opportunity. Each Bidder shall file contract employment reports with the Owner's contracting agency or as may be directed by the Owner or its representative. Such contract employment reports shall include such information as to the employment practices, policies, programs, and statistics of the Bidder and shall be in such form as the Owner may prescribe.

m. The foregoing information with respect to each of the Subcontractors and Suppliers that the Bidder intends to use on the Project.

7. The failure to submit information that Owner has the right to receive under these Instructions to Bidders on a timely basis may result in the determination that the Bidder has not submitted the lowest and best bid.

8. By submitting its bid, the Bidder agrees that the Owner's determination of which bidder is the lowest and best bidder shall be final and conclusive, and that if the Bidder or any person on its behalf challenges such determination in any legal proceeding, the Bidder will indemnify and hold the Owner and its employees and agents harmless from any claims included or related to such legal proceeding, and from legal fees and expenses incurred by the Owner, its employees, or agents that arise out of or are related to such challenge.

9. After bid opening, within three (3) business days of a request made by the Owner, the apparent low Bidder and any other Bidder so requested by the Owner must submit the following:

For all subcontracts with an estimated value of at least $50,000, a list of all Subcontractors that the Bidder will use to construct the Project, as well as an indication of whether or not the Bidder has ever worked with a proposed Subcontractor before, including the following information for the <u>three</u> most recent projects on which the Bidder and each Subcontractor have worked together:

i. Project Owner

ii. Project Name

iii. Subcontract Scope

iv. Subcontract Value

v. Owner's contact name and phone number.

If Bidder and a proposed Subcontractor have not worked together on at least three projects in the past five years, Bidder must submit the information set forth above for the three most recent similar projects to the Project that a proposed Subcontractor has worked on.

The above Subcontractor information, as well as the criteria set forth in Paragraph I.3 herein, as it pertains to each Subcontractor may be used in the Owner's determination of the lowest and best bid.

Once a Bidder identifies its proposed Subcontractors as set forth in this Paragraph I.9, the list shall not be changed unless written approval or direction for the change is made by Owner.

10. <u>Additional Post-Bid Submittals</u>

a) Affidavit as to Personal Property Taxes. The successful Bidder shall submit, prior to the time of the entry into the Contract, an affidavit in the form required by Section 5719.042, Ohio Revised Code, regarding the status of the Bidder's personal property taxes. A copy of the affidavit form is included with the Contract Documents.

11. The Owner reserves the right to disqualify bids, before or after opening, upon evidence of collusion with intent to defraud or other illegal practices on the part of the Bidder.

12. Award of Contract. The award of the Contract will only be made pursuant to approval of the City's Board of Control.

J. EXECUTION OF CONTRACT

1. Within the time designated by the Owner after award of the Contract, the successful Bidder shall execute and deliver to the Owner the required number of copies of the Owner-Contractor Agreement, in the form included in the Contract Documents, and all accompanying documents requested, including, but not limited to, a Contract Bond (if applicable), insurance certificates, and a valid Workers' Compensation Certificate. The successful Bidder shall have no property interest or rights under the Owner-Contractor Agreement until the Agreement is executed by the Owner.

K. SUBSTITUTIONS/NON-SPECIFIED PRODUCTS

1. Certain brands of material or apparatus may be specified. Should this be the case, each bid will be based on these brands, which may be referred to in the Contract Documents as Standards. The use of another brand (referred to as a substitution or proposed equal in the Contract Documents, when a bidder or the contractor seeks to have a different brand of material or apparatus than that specified approved by the Owner of use in the Project) may be requested as provided herein. Substitutions, however, will not be considered in determining the lowest and best bid.

2. The products specified in the Contract Documents establish a standard of required function, dimension, appearance, and quality.

3. Bidders wishing to obtain approval to bid non-specified products shall submit written requests to the Owner a minimum of seven (7) working days before the bid date and hour. To facilitate the submission of requests, a Substitution Form is included in the Contract Documents. The Bidder shall include the name of the material or equipment for which it is to be substituted and a complete description of the proposed substitution, including the name of the proposed manufacturer and/or product and a complete description of the product including the manufacturer's name and model number or system proposed, drawings, product literature, performance and test data, color selections or limitations, and any other information necessary for evaluation. Include a statement including any changes in other materials, equipment, or other work that would be required if the proposed product is incorporated in the work. The burden of proof of the merit of the proposed product is on the proposer. The Owner's decision on approval of a proposed product will be final.

The following will be cause for rejection of a proposed substitution:

a. Requests submitted by subcontractors, material suppliers, and individuals other than Bidders;

b. Requests submitted without adequate documentation;

c. Requests received after the specified cut-off date;

d. Requests, which in the sole discretion of the Owner, do not offer a sufficient benefit to the Project.

4. When the Owner approves a product submission before receipt of bids, the approval will be included in an Addendum, and Bidders may include the pricing of this product in their bid. Bidders shall not rely on approvals made in any other manner.

5. In proposing a non-specified product or a substitution, the Bidder represents and warrants that each proposed product will not result in any changes to the Project, including changes to the Work or other contractors, or any decrease in the performance of any equipment or systems to be installed in the Project and agrees to pay any additional costs incurred by the Owner and the Owner's consultants as a result of a non-specified or substitute product that is accepted.

6. If an addendum is issued approving a substitution for a specified Standard, any Bidder proposed to use said substitution must indicate so with its Bid, using the form provided.

7. Following the award of the Contract, there shall be no substitution for specified products, except pursuant to a Change Order. The Owner in its sole discretion may decline to consider a substitution for a Change Order.

8. The Owner reserves the right to value engineer any item within the specifications if it is deemed to be in the best interest of the Owner.

L. ALTERNATES

1. The Owner may request bids on alternates. At the time of awarding the Contract, the Owner will select or reject alternates as it determines is in its best interest. A Bidder's failure to include on its Bid Form the cost of an alternate selected by the Owner and applicable to the Bidder's work shall render the bid non-responsive and be grounds for the rejection of the bid. Otherwise, the failure to include the cost of an alternate will not be deemed material.

2. The Bidder acknowledges that although there is an estimate for the cost of the Project, the market conditions may and frequently do result in the estimate being different from the sum of the bids received, either higher or lower. The Bidder understands that the Owner may include alternates, which may include deduct alternates as well as add alternates, to give it flexibility to build the Project with the funds available. The Bidder further understands and acknowledges that use of add and deduct alternates is a long held customary practice in the construction industry in the State of Ohio. The Bidder also acknowledges that the Owner will not make a decision about the alternates on which to base the award of contracts until the bids are received, and the Owner can compare its available funds with the base bids and the cost or savings from selecting different alternates. The Bidder understands that the award to the Bidder submitting the lowest and best bid will be based on the base bid plus selected alternates, and may result in an award to a Bidder other than the Bidder that submitted the lowest base bid.

M. UNIT PRICES

1. Where unit prices are requested in the Bid Form the Bidder should quote a unit price. Unless otherwise expressly provided in the Contract Documents, such unit prices shall include all labor, materials, and services necessary for the timely and proper installation of the item for which the unit prices are requested. The unit prices quoted in the bid shall be the basis for any Change Orders entered into under the Owner-Contractor Agreement, unless the Owner determines that the use of such unit prices will cause substantial inequity to either the Contractor or the Owner.

N. ADDENDA

1. All questions should be submitted in writing at least five (5) business days prior to the bid opening. **This is 9/26/2023, 2:00:00 PM.** The Owner reserves the right to issue Addenda changing, altering, or supplementing the Contract Documents prior to the time set for receiving bids. The Owner will issue the Addenda to clarify bidders' questions and/or to change, alter, or supplement the Contract Documents.

2. Any explanation, interpretation, correction, or modification of the Contract Documents will be issued in writing in the form of an Addendum, which shall be the only means considered binding; explanations, interpretations, etc., made by any other means shall NOT be legally binding. All Addenda shall become a part of the Contract Documents.

3. All Addenda will be issued, except as hereafter provided, via the current City bid tool at least seventy-two (72) hours prior to the published time for the opening of bids, excluding Saturdays, Sundays, and legal holidays. If any Addendum is issued within such seventy-two (72) hour period, then the time for opening of bids shall be extended one (1) week with no further advertising of bids required.

4. Copies of each Addendum will be posted via the Owner's current bid tool and it is the responsibility of the bidder or any other interested party to check the bid tool for any updates or addenda. Receipt of Addenda shall be indicated by Bidders in the space provided on the Bid Form. Bidders are responsible for acquiring issued Addenda in time to incorporate them into their bid. Bidders should check the Owner's bid tool prior to the bid opening to verify the number of Addenda issued.

5. Each Bidder shall carefully read and review the Contract Documents and immediately bring to the attention of the Owner any error, omission, inconsistency, or ambiguity therein.

6. If a Bidder fails to indicate receipt of all Addenda through the last Addendum issued by the Owner on its Bid Form, the bid of such Bidder will be deemed to be responsive only if:

   a. The bid received clearly indicates that the Bidder received the Addendum, such as where the Addendum added another item to be bid upon and the Bidder submitted a bid on that item; or

   b. The Addendum involves only a matter of form or is one which has either no effect or has merely a trivial or negligible effect on price, quantity, quality, or delivery of the item bid upon.

O. INTERPRETATION

1. If a Bidder contemplating submitting a bid for the proposed Project is in doubt as to the true meaning of any part of the Contract Documents, it may submit a written request for an interpretation thereof to the Owner at purchasing@cantonohio.gov. Requests received fewer than 5 days prior to bid opening may not be answered. Any interpretation of the proposed documents will be made by Addendum only and will be made available by the City's web tool. The Owner will not be responsible for any other explanation or interpretation of the proposed documents.

2. In interpreting the Contract Documents, words describing materials that have a well-known technical or trade meaning, unless otherwise specifically defined in the Contract Documents, shall be construed in accordance with the well-known meaning recognized by the trade.

3. Bidders are responsible for notifying the Owner in a timely manner of any ambiguities, inconsistencies, errors, or omissions in the Contract Documents. The Bidder shall not, at any time after the execution of the Contract, be compensated for a claim alleging insufficient data, incomplete Contract Documents, or incorrectly assumed conditions regarding the nature or character of the Work, if no request was made by the Bidder prior to the bid opening.

P. STATE SALES AND USE TAXES

1. The Owner is a political subdivision of the State of Ohio and is exempt from taxation under the Ohio Sales Tax and Use Tax Laws. Building materials that the successful Bidder purchases for incorporation into the Project will be exempt from state sales and use taxes if the successful Bidder provides a properly completed Ohio Department of Taxation Construction Contract Exemption Certificate to the vendors or suppliers when the materials are acquired. The Owner will execute properly completed certificates on request.

Q. DATE FOR SUBSTANTIAL COMPLETION/DATE FOR FINAL COMPLETION/LIQUIDATED DAMAGES

1. Dates for Substantial Completion. The Contract Time shall run from the date of the Notice to Proceed or if there is no Notice to Proceed from the Effective Date of the Owner-Contractor Agreement. The Date for Substantial Completion and the Contract Time may be extended only by Change Order. **By submitting its Bid, each Bidder agrees that the period for performing its Work is reasonable.**

   a. Date for Overall Project Substantial Completion. The successful Bidder shall have all of its Work on the Project Substantially Complete (as Substantial Completion is defined in the Contract Documents) by the following date as applicable to the Bidder's scope of work.

      Date for Substantial Completion (aka Contract Time) expressed as calendar days from Notice to Proceed:

      75 calendar days

2. Liquidated Damages.

   a. Overall Project Substantial Completion. If the successful Bidder does not have its Work Substantially Complete by its Date for Substantial Completion or Finally Complete within thirty (30) calendar days of achieving Substantial Completion, whichever may be applicable, the successful Bidder shall pay the Owner and the Owner may set off from amounts otherwise due the successful Bidder Liquidated Damages. The daily amounts of Liquidated Damages for Overall Project Substantial Completion are set forth in the tables included in the Owner-Contractor Agreement. The total amount of Liquidated Damages will be calculated based on the total number of calendar days beyond the Date for Substantial Completion that the Bidder's Work is not Substantially Complete or to the extent that its Work is not Finally Complete more than thirty (30) calendar days after the Substantial Completion of its Work, i.e., number of late days times the per diem rate(s) for Liquidated Damages in the tables.

3. The Bidder acknowledges and agrees, by submitting its bid for the Work and entering into a Contract with the Owner, that such amounts of Liquidated Damages represent a reasonable estimate of the actual damages for loss of or interference with the intended use of the Project that the Owner would incur if the Bidder's Work is not Substantially Complete by its Date for Substantial Completion and/or not Finally Complete by thirty

(30) days of the Date of Substantial Completion. The Bidder further acknowledges, agrees and understands that it may seek an extension of the Contract Time (and its Date for Substantial Completion) to avoid or reduce Liquidated Damages by properly following the Claim procedures in the Contract Documents.

R. OWNER'S RIGHT TO WAIVE DEFECTS AND IRREGULARITIES

1. The Owner reserves the right to waive any and all irregularities provided that the defects and irregularities do not affect the amount of the bid in any material respect or otherwise give the Bidder a competitive advantage.

S. MODIFICATION/WITHDRAWAL OF BIDS

1. Modification. A Bidder may modify its bid by written communication to the Owner at any time prior to the scheduled closing time for receipt of bids, provided such written communication is received by Owner prior to the bid deadline. The written communication shall not reveal the bid price, but should provide the addition or subtraction or other modification so that the final prices or terms will not be known until the sealed bid is opened. If the Bidder's written instructions with the change in bid reveal the bid amount in any way prior to the bid opening, the bid may be rejected as non-responsive.

2. Withdrawal Prior to Bid Deadline. A Bidder may withdraw its bid at any time for any reason prior to the bid deadline for the opening of bids established in the Legal Notice. The request to withdraw shall be made in writing to and received by the Owner prior to the time of the bid opening.

3. Withdrawal after Bid Deadline.

   a. All bids shall remain valid and open for acceptance for a period of at least 60 days after the bid opening; provided, however, that a Bidder may withdraw its bid from consideration after the bid deadline when all of the following apply:

      (1) the price bid was substantially lower than the other bids;

      (2) the reason for the bid being substantially lower was a clerical mistake, rather than a mistake in judgment, and was due to an unintentional and substantial error in arithmetic or an unintentional omission of a substantial quantity of work, labor, or material;

      (3) the bid was submitted in good faith; and

      (4) the Bidder provides written notice to the Owner within two (2) business days after the bid opening for which the right to withdraw is claimed.

   b. No bid may be withdrawn under this provision if the result would be the awarding of the contract on another bid for the bid package from which the Bidder is withdrawing its bid to the same Bidder.

   c. If a bid is withdrawn under this provision, the Owner may award the Contract to another Bidder determined by the Owner to be the lowest and best bidder or the Owner may reject all bids and advertise for other bids. In the event the Owner advertises for other bids, the withdrawing Bidder shall pay the costs incurred in connection with the rebidding by the Owner, including the cost of printing new Contract Documents, required advertising, and printing and mailing notices to prospective bidders, if the Owner finds that such costs would not have been incurred but for such withdrawal.

T. COMPLIANCE WITH APPLICABLE LAWS

1. By submitting a bid for Work on the Project, the Bidder acknowledges that it is in compliance with applicable federal, state, and local laws and regulations, including, but not limited to, the following:

   a. Equal Employment Opportunity/Nondiscrimination. The Bidder agrees that if it is awarded a contract that in the hiring of employees for performance of work under the contract or any subcontract, neither it nor any subcontractor, or any person acting on its behalf or its subcontractor's behalf, by reason of race, creed, sex, disability as defined in Section 4112.01 of the Ohio Revised Code, or color, shall discriminate against any citizen of the state in the employment of labor or workers who are qualified and available to perform work to which the employment relates. The Bidder further agrees that neither it nor any subcontractor or any person on its behalf or on behalf of any subcontractor, in any manner, shall discriminate against or intimidate any employees hired for the performance of the work under the contract on account of race, creed, sex, disability as defined in Section 4112.01 of the Ohio Revised Code, or color.

   b. Ethics Laws. The Bidder represents that it is familiar with all applicable ethics law requirements, including without limitation Sections 102.04 and 3517.13 of the Ohio Revised Code, and certifies that it is in compliance with such requirements.

U. FINDINGS FOR RECOVERY

1. By submitting its bid, each Bidder certifies for reliance of the Owner that it has no unresolved finding for recovery against it issued by the Auditor of the State of Ohio on or after January 1, 2001, except as permitted by Section 9.24 (F) of the Ohio Revised Code.

V. PREVAILING WAGES

1. The Project is a "Construction" project as defined in Section 4115.03 of the Ohio Revised Code. If the Project is defined as such as "Construction" project, the successful Bidder and all of its subcontractors, regardless of tier, will strictly comply with its obligation to pay a rate of wages on the Project not less than the rate of wages fixed for this Project under Section 4115.04 of the Ohio Revised Code. Additionally, the successful Bidder will comply with all other provisions of Chapter 4115 of the Ohio Revised Code.

W. DBE PARTICIPATION GOALS

1. Owner has established the following Disadvantaged Business Enterprise ("DBE") participation goal for the Project as a percentage of the Contract Price:

   5%

2. Any Minority Business Enterprise ("MBE") or Woman-Owned Business Enterprise ("WBE") proposed to count towards the DBE participation goal must first be certified at bid time as an MBE or WBE under the Ohio Department of Administrative Services MBE Cross Certification Program (which includes MBEs and WBEs certified by the City of Canton), or certified as a DBE under Ohio's Unified Certification Program administered by the Ohio Department of Transportation.

3. **Documentation of DBE Participation. Each Bidder must submit with its bid a list identifying its DBE subcontractors and participation rates as a percentage of the Contract Price.**

4. **Certification of Good Faith Efforts. If a Bidder has not met the DBE participation goal, it must attach to its bid, a narrative (which may include exhibits) demonstrating the good faith efforts made by the Bidder to secure DBE participation in the Project. Good faith efforts include:**

   - **Conducting outreach and recruiting activities;**
   - **Informing DBEs of the opportunity to participate in the Project at least 30 calendar days before the bid closes;**
   - **Considering subcontracting with a consortium of DBEs; and**
   - **Using the services and assistance of the Small Business Administration and Minority Development Agency of the U.S. Department of Commerce.**

   Owner, in its sole discretion, will be the sole evaluator of whether any particular Bidders' efforts sufficiently demonstrate good faith efforts for securing DBE participation.

5. Challenges to Owner's Discretion. If any Bidder directly challenges, or indirectly challenges through contribution of money or other resources to a third party, Owner's discretion in determining any Bidder's compliance with the DBE goal stated in these Instructions to Bidders, or good faith efforts pertaining to same, that Bidder agrees to indemnify Owner for all claims, costs, losses and damages, including attorney and consultant fees, arising out of such challenge, should there be an adjudication by a court of competent jurisdiction that the Owner did not abuse its discretion in making its determination.

6. Failure to Comply. If a Bidder is awarded a contract for the Project, and later fails to fulfill its stated DBE participation goals, that Bidder agrees to indemnify Owner for all claims, costs, losses and damages, including attorney and consultant fees, arising out of such failure. That Bidder also agrees to cooperate with all reasonable requests to determine actual DBE participation, including but not limited to certifying actual participation and providing documentation in support of same.

X. OTHER LOCAL ORDINANCE REQUIREMENTS

1. Each Bidder, by the act of submitting its bid agrees to withhold all City income taxes due or payable under Chapter 182 of the Codified Ordinances of the City of Canton for wages, salaries, fees, and commissions paid to its employees and further agrees that any of its subcontractors shall be required to agree to withhold any such City income taxes due for services performed under this Agreement. Bidder agrees with the Owner regarding the manner of withholding of City income taxes as provided in Section 718.011(F) of the Ohio Revised Code. Municipal income tax withholding provisions of Section 718.011(B)(1) and 718.011(D) of the Ohio Revised Code shall not apply to qualifying wages paid to employees for work done or services performed or rendered inside the City or on City property. Each Bidder agrees to withhold income tax for the City from employees' qualifying wages earned inside the City or on City property, beginning with the first day of work done or services performed or rendered inside the City.

2. Each Bidder, by the act of submitting its bid agrees that all steel necessary in the construction of the Work performed under the Agreement shall be steel that is produced in the United States unless a specific product which is required is not produced by manufacturers in the United States in which event this prohibition does not apply.

3. Each Bidder, by the act of submitting its bid agrees that all materials used in the construction covered by the Agreement shall be purchased in the Canton area except such materials which are unavailable in the Canton area.

4. Chapter 105.12 – Local Bidder Preference.

a. The Board of Control, in determining the lowest and best bidder in the award of contracts to which this section is applicable, is authorized to award contracts to local bidders as hereinafter defined, whose bid is not more than five percent (5%) higher, subject to a maximum amount of twenty thousand dollars ($20,000.00), than the lowest dollar bid submitted by non-local bidders. The Board of Control's decision in making such an award shall be final.

b. For purposes of this section, "local bidder" means an individual or business entity which at the time of the award of the contract has a headquarters, division, sales office, sales outlet, manufacturing facility, or similar significant business-related location in Stark County, Ohio.

c. All contract specifications and/or bid documents that are distributed by Canton for the purpose of soliciting bids for goods and/or services shall contain the following notice:

Prospective bidders will take notice that the City of Canton, in determining the lowest and best bidder in the award of this contract, may award a local bidder preference to any qualified bidder pursuant to Section 105.12 of the Codified Ordinances of the City of Canton. The determination of whether a bidder qualifies for the local preference shall be made by Board of Control. The Board's decision shall be final. A copy of Section 105.12 is attached.

d. This section shall be applicable to all contracts for equipment, goods, machinery, materials, supplies, vehicles and/or services, which are purchased, leased and/or constructed at a cost in excess of fifty thousand dollars ($50,000.00) and which require bidding pursuant to Ohio R.C. 735.05 through 735.09 and Ohio R.C. 737.03. (Ord. 115-2018. Passed 5-14-18.)

5. Each Bidder, by the act of submitting its bid agrees as follows during the performance of the Agreement:

a. The Contractor shall not discriminate against any employee or applicant for employment because of race, age, handicap, religion, color, sex, national origin, sexual orientation, or gender identity. The Contractor shall take affirmative action to insure that applicants are employed and that employees are treated during employment without regard to race, religion, color, sex, national origin, military status, sexual orientation, or gender identity. As used herein, the word "treated" shall mean and include without limitation the following: recruited, whether by advertising or other means; compensation, whether in the form of rates or pay or other forms of compensation; selected for training, including apprenticeship; promoted; demoted; upgraded; downgraded; transferred; laid off; and terminated. The Contractor agrees to and shall post in conspicuous places available to employees and applicants for employment notices to be provided by the contracting officers setting forth the provisions of this nondiscrimination clause.

b. The Contractor shall, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, age, handicap, religion, color, sex, national origin, military status, sexual orientation, or gender identity.

c. The Contractor shall send to each labor union or representative of workers, with which he has a collective bargaining agreement or other contract or understanding, a notice advising the labor union or workers' representative of the Contractor's commitments under the equal opportunity clause of the Owner; and it shall post copies of the notice in conspicuous places available to employees and applicants for employment.

d. The Contractor shall submit in writing to the Owner its affirmative action plan, and each subcontractor and supplier of equipment or supplies shall submit to the Contractor its affirmative action plan. The responsibility for securing these affirmative action plans falls upon the Contractor and shall be on file at the office of the Contractor. The Contractor shall furnish all information and reports required by the Owner or its representative pursuant to the Contract Documents, and shall permit access to its books, records, and accounts by the contracting agency of the Owner and by the Executive Secretary of the Owner for purposes of investigation to ascertain compliance with the program.

e. The Contractor shall take such action with respect to any subcontractor as the Owner may direct as a means of enforcing the provisions of this equal opportunity clause, including penalties and sanctions for noncompliance; provided, however, that in the event the Contractor becomes involved in or is threatened with litigation as is necessary to protect the interests of the Owner and to effectuate the Owner's equal opportunity program and, in the case of contracts receiving Federal assistance, the Contractor or the Owner may request the United States to enter into such litigation to protect the interests of the United States.

f. The Contractor shall file and shall cause its subcontractors, if any, to file compliance reports with the Owner in the form and to the extent prescribed by the Owner or its representative. Compliance reports filed at such times as directed shall contain information as to the employment practices, policies, programs, and statistics of the Contractor and its subcontractors.

g. The Contractor shall include the provisions of this equal employment opportunity clause in every subcontract or purchase order, so that such provisions will be binding upon each subcontractor or vendor.

h. Refusal by the Contractor or subcontractor to comply with any portion of this program as herein stated and described will subject the offending party to any or all of the following penalties:

(1) Withholding of all future payments under the involved public contract to the Contractor in violation, until it is determined that the Contractor or subcontractor is in compliance with the provisions of the Agreement.

(2) Refusal of all future bids for any public contract with the Owner or any of its departments or divisions, until such time as the Contractor or subcontractor demonstrates that it has established and shall carry out the policies of the program as herein outlined.

(3) Cancellation of the public contract and declaration of forfeiture of the performance bond.

(4) In cases is which there is substantial or material violation or the threat of substantial or material violation of the compliance procedure or as may be provided by contract, appropriate proceedings may be brought to enforce these provisions, including enjoining within applicable laws of contractors, subcontractors, or other organizations, individuals, or groups who prevent, directly or indirectly, or seek to prevent, directly or indirectly, compliance with the policy as herein outlined.

2. A Project Labor Agreement (PLA) Yes been required for this project (See Appendix A if applicable). Prevailing Wages are required for this Project (See Appendix B).

Y. OHIO PUBLIC WORKS COMMISSION FUNDING

1. **No** When this line is checked by the Owner, e.g. with an "X" or other mark, the Project is being funded in whole or part by the Ohio Public Works Commission ("OPWC"), and the requirements of the OPWC, attached to these Instructions to Bidders, apply.

2. The OPWC requirements include that the Bidder include with its bid certification of agreement and compliance with certain statements and covenants regarding its subscription to the State's Equal Employment Opportunity Requirements for State-assisted Construction Contracts.

END OF INSTRUCTIONS TO BIDDERS

OWNER-CONTRACTOR AGREEMENT

[Where Engineer is a Third Party Hired by Owner and Engineer Has Construction Administration Duties]

Owner:
The City of Canton
218 Cleveland Avenue SW
Canton, OH 44702
Telephone: 330.489.3283

Contract:
Ordinance: 170/2020 & 5/2022
Alternates:

Contractor:
Telephone:
Fax:

Project: Crenshaw Park Outdoor Shelter

This document is an agreement between the Owner and the Contractor for the Work described in the Contract Documents related to the Contract identified above for the Project defined above and is effective as of the date the Agreement is signed by the Owner (the "Effective Date").

The Owner and the Contractor agree as set forth in the following sections:

1. CONTRACT DOCUMENTS. The Contract Documents consist of the following documents:

A. Legal Notice;
B. Instructions to Bidders;
C. Bid Form;
D. Owner-Contractor Agreement;
E. General Conditions of the Contract for Construction (EJCDC C-700), as modified;
F. Supplementary Conditions (when applicable);
G. Drawings;
H. Specifications;
I. Project Labor Agreement (if applicable)
J. Addenda issued;
K. Contractor's Personal Property Tax Affidavit (O.R.C. 5719.042);
L. Statement of Claim Form; and
M. Modifications issued after the execution of the contract, including:
   i. A Change Order;
   ii. A Work Change Directive; or,
   iii. A written order for a minor change of the Work issued by the Owner or Engineer in accordance with the General Conditions.

N. **Yes**__ When this line is checked by the Owner, e.g. with an "X" or other mark, the State of Ohio Department of Transportation, Construction and Material Specifications, effective as of January 1, 2019, will be a Contract Document, but only as modified by the document titled *ODOT Manual Supplement*, prepared by Owner.
O. Project Labor Agreement (if applicable)

1.1 Notwithstanding anything in the Contract Documents to the contrary, in the event of any inconsistency, the provisions of this Agreement shall control over any other Contract Document, proposal, document, or other attachment. In the event inconsistencies, conflicts, or ambiguities between or among the Contract Documents

are discovered after execution of the Agreement, Contractor shall provide the better quality or greater quantity of Work or comply with the more stringent requirements.

Note: **Non-Contract Documents**. The following are the reports and tests of subsurface conditions at or contiguous to the Site, if any, that the Engineer has used in preparing the Contract Documents. These are not Contract Documents. Geotechnical data is not a warranty of subsurface conditions and is not to be relied upon as a complete representation of all possible soil conditions. It is possible that there may be other reports, and/or tests of subsurface conditions at or contiguous to the Site not prepared by or on behalf of Owner. The Owner makes no representation about such reports and/or tests, assuming they exist. Additional information, if needed by Contractor for geotechnical data or site survey, shall be obtained by the Contractor at no additional cost to Owner. The General Conditions, as modified, contain additional terms related to these reports and tests.

Contractor may rely upon the general accuracy of the “technical data” contained in such reports and drawings listed below, and except for such reliance on “technical data,” Contractor shall not rely upon or make any claim against Owner or Engineer with respect to: (1) the completeness of such reports and drawings for Contractor’s purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or (2) other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or (3) any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions, or information. For example, all interpolations and extrapolations of data performed by Contractor to estimate locations or quantities of subsurface strata are independent factual assumptions which Owner does not warrant. (Not applicable, if none are listed).

Note: **Non-Contract Documents**. The following are those reports and drawings related to any Hazardous Conditions at the Site, if any. These are not Contract Documents. The General Conditions, as modified, contain additional terms related to these reports and drawings. (None if none are listed).

2. ENGINEER RELATIONSHIP. The Contract Documents shall not be construed to create a contractual relationship of any kind between the Engineer and the Contractor or any Subcontractor or Material Supplier to the Project. The Engineer, however, shall be entitled to performance of the obligations of the Contractor intended for its benefit and to enforcement of such obligations, but nothing contained herein shall be deemed to give the Contractor or any third party any claim or right of action against the Engineer that does not otherwise exist without regard to this Contract. The Contractor and its Subcontractors shall not be deemed to be beneficiaries of any of the acts or services of the Engineer that are performed for the sole benefit of the Owner. The Contractor shall forward all communications to the Owner through the Engineer and hereby acknowledges and agrees that any instructions, reviews, advice, approvals, orders, or directives that are rendered to it by the Engineer are specifically authorized and directed by the Owner to the Contractor through the Engineer acting on behalf of the Owner.

Engineer will be performing construction administration duties as identified in the General Conditions, including, but not limited to: reviewing Applications for Payment, Change Proposals, Claims, and Shop Drawings; measuring Work quantities; and issuing Work Change Directives.

2.1 The Engineer is:
Motter & Meadows ArchitectsNA
600 Market Avenue North
Canton, OH 44702

3. TIME FOR COMPLETION AND PROJECT COORDINATION.

3.1 DATE OF COMMENCEMENT. The date of commencement of the Work shall be the date identified in the Notice to Proceed issued by the Owner, or by the Owner through the Engineer, to the Contractor, or if there is no Notice to Proceed, the Effective Date of this Agreement.

3.2 DATE OF SUBSTANTIAL COMPLETION. The Project and Work for the Project consists of all labor, materials, equipment, and services necessary for construction of the Project, all in accordance with the Drawings and Specifications prepared by the Owner or Engineer. The Contractor shall achieve Substantial Completion of its Work on the Project, as defined in the General Conditions, within **75 calendar days** of the Date of Commencement ("Date of Substantial Completion"). Substantial Completion is the time at which the Work has progressed to the point where the Work is sufficiently complete, in accordance with the Contract Documents, so that the Work can be utilized for the purposes for which it is intended.

*****Commencement of the Crenshaw Park Outdoor Shelter Project is expected to beging Late Winter to Early Spring, 2024. Commencement will be weather dependent.*****

3.2.1 DATE OF FINAL COMPLETION. The Contractor shall achieve Final Completion of its Work on the Project, as defined in the General Conditions, within **30 calendar days** of the Date of Substantial Completion ("Date of Final Completion"). Final Completion shall mean that the Work is complete in accordance with the Contract Documents and the Contractor has submitted to the Owner or Engineer all documents required to be submitted to the Owner or Engineer for final payment.

3.2.2 UTILITIES AND OPERATIONS. Contractor shall not interrupt utilities to facilities or existing operations without prior written notice and approval by Owner.

3.2.3 SHUTDOWN DATES. Due to events scheduled by the Owner and/or other Owner considerations, Contractor will not be able to perform Work on the Project on the following dates (there are no shutdown dates if none are listed):

Contractor's Construction Schedule for performing the Work shall account for Contractor not being able to perform Work on these dates and the contractual dates for Substantial Completion and Final Completion will not be changed due to Contractor not being able to perform Work on these dates.

3.3 CONSTRUCTION SCHEDULE. The Construction Schedule shall be developed by the Contractor as provided in the Contract Documents.

3.4 LIQUIDATED DAMAGES. If the Contractor does not have its Work on the Project Substantially Complete by the specified Date for Substantial Completion or Finally Complete by the Date of Final Completion, the Contractor shall pay the Owner (and the Owner may set off from sums coming due the Contractor) Liquidated Damages in the per diem amounts as set forth in the following tables, whichever may be applicable. "Contract Amount" of the Work will be determined by totaling the cost of all line items of Work.

LIQUIDATED DAMAGES – DATE FOR SUBSTANTIAL COMPLETION OF OVERALL PROJECT

Original Contract Amount	Dollars Per Day
$1.00 to $500,000.00	$ 750.00
$500,000.01 to $2,000,000.00	$ 1,000.00
$2,000,000.01 to $10,000,000.00	$ 1,300.00
$10,000,000.01 to $50,000,000.00	$ 2,000.00
$50,000,000.01 and greater	$ 2,500.00

LIQUIDATED DAMAGES – FINAL COMPLETION

Original Contract Amount	Dollars Per Day
$1.00 to $500,000.00	$ 200.00
$500,000.01 to $2,000,000.00	$ 250.00
$2,000,000.01 to $10,000,000.00	$ 325.00
$10,000,000.01 to $50,000,000.00	$ 500.00
$50,000,000.01 and greater	$ 625.00

LIQUIDATED DAMAGES FOR SUBSTANTIAL COMPLETION FOR ANY INTERIM MILESTONE SCOPE WILL BE $1,000 PER DAY FOR EACH DAY OF UNEXCUSED DELAY BEYOND THE MILESTONE.

The Contractor acknowledges that such amounts of Liquidated Damages represent a reasonable estimate of the actual damages for loss of or interference with the intended use of the Project that the Owner would incur if the Contractor's Work is not Substantially Complete by its Date for Substantial Completion or Finally Complete by the required date for Final Completion.

4. **CONTRACT SUM (also called Contract Price).** The Contract Sum to be paid by the Owner to the Contractor, as provided herein, for the satisfactory performance and completion of the Work and all of the duties, obligations, and responsibilities of the Contractor under this Agreement and the other Contract Documents is , subject to adjustment as set forth in the Contract Documents. The Contract Sum includes Allowances, Accepted Alternates, and all federal, state, county, municipal, and other taxes imposed by law, including but not limited to any sales, use, commercial activity, and personal property taxes payable by or levied against the Contractor on account of the Work or the materials incorporated into the Work. The Contractor will pay any such taxes. The Contract Sum includes the following:

4.1 Base Bid Amount: (Lump Sum Bid); and

4.2 Accepted Alternates, included in the Contract Sum:

Alternate No.	Description	Amount
1	NA	
2	NA	

4.3 Allowances included in the Contract Sum:

Allowance Description	Amount
Allowance #1: General Contractor to include General Purpose Construction Allowance	$10,000.00
Allowance #2: NA	

4.4 If after Substantial Completion of its Work, the Contractor fails to submit its final payment application with all the documents required to be submitted with such application within ninety (90) days after written notice to do so from the Owner and without prejudice to any other rights and remedies the Owner may have available to it, the balance of the Contract Sum shall become the Owner's sole and exclusive property, and the Contractor shall have no further interest in or right to such balance.

5. **RETAINAGE.** Retainage applicable to the Contract by Ohio Revised Code Sections 153.12, .13, and .14 will be withheld as defined in the Modified General Conditions. The Contractor agrees that the financial institution selected by the Owner for deposit of retained funds is acceptable to the Contractor and will sign any documents requested related to said account.

6. GENERAL.

6.1 MODIFICATION. No modification or waiver of any of the terms of this Agreement or of any other Contract Documents will be effective against a party unless set forth in writing and signed by or on behalf of a party. In the case of the Owner, the person executing the modification or waiver must have express authority to execute the Modification on behalf of the Owner pursuant to a resolution that is duly adopted by the Owner. Under no circumstances will forbearance, including the failure or repeated failure to insist upon compliance with the terms of the Contract Documents, constitute the waiver or modification of any such terms. The parties acknowledge that no person has authority to modify this Agreement or the other Contract Documents or to waive any of its or their terms, except as expressly provided in this section.

6.2 ASSIGNMENT. The Contractor may not assign this Agreement without the written consent of the Owner, which the Owner may withhold in its sole discretion.

6.3 LAW AND JURISDICTION. All questions regarding the validity, intention, or meaning of this Agreement or any modifications of it relating to the rights and obligation of the parties will be construed and resolved under the laws of the State of Ohio. Any suit, which may be brought to enforce any provision of this Agreement or any remedy with respect hereto, shall be brought in the Common Pleas Court of the county in which the Project is located and each party hereby expressly consents to the exclusive jurisdiction of such court to the exclusion of any other court, including any U.S. District Court or any other federal court.

6.4 CONSTRUCTION. The parties acknowledge that each party has reviewed this Agreement and the other Contract Documents and entered into this Agreement as a free and voluntary act. Accordingly, the normal rule of construction to the effect that any ambiguities are to be resolved against the drafting party will not be employed in the interpretation of this Agreement, the other Contract Documents, or any amendments or exhibits to it or them.

6.5 APPROVALS. Except as expressly provided herein, the approvals and determinations of the Owner and Engineer will be subject to the sole discretion of the respective party and be valid and binding on the Contractor, provided only that they be made in good faith, i.e., honestly. If the Contractor challenges any such approval or determination, the Contractor has the burden of proving that it was not made in good faith by clear and convincing evidence.

6.6 PARTIAL INVALIDITY. If any term or provision of this Agreement is found to be illegal, unenforceable, or in violation of any laws, statutes, ordinances, or regulations of any public authority having jurisdiction, then, notwithstanding such term or provision, this Agreement will remain in full force and effect and such term will be deemed stricken; provided this Agreement will be interpreted, when possible, so as to reflect the intentions of the parties as indicated by any such stricken term or provision.

6.7 COMPLIANCE WITH LAWS AND REGULATIONS. The Contractor, at its expense, will comply with all applicable federal, state, and local laws, rules, and regulations applicable to the Work, including but not limited to Chapter 4115 of the Ohio Revised Code and Sections 153.59 and 153.60 of the Ohio Revised Code, which prohibit discrimination in the hiring and treatment of employees, with respect to which the Contractor agrees to comply and to require its subcontractors to comply.

6.7.1 NON-DISCRIMINATION. Contractor agrees:

.1 That in the hiring of employees for the performance of Work under this Agreement or in any subcontract, neither the Contractor, subcontractor, or any person acting on behalf of either of them, shall by reason of race, creed, sex, disability as defined in Section 4112.01 of the Ohio Revised Code, or color discriminate against any citizen of the state in the employment of labor or workers who are qualified and available to perform the Work to which the employment relates.

.2 That neither the Contractor, subcontractor, nor any person acting on behalf of either of them shall, in any manner, discriminate against or intimidate any employee hired

for the performance of Work under this Agreement on account of race, creed, sex, disability as defined in Section 4112.01 of the Ohio Revised Code, or color.

.3 That there shall be deducted from the amount payable to the Contractor by the Owner under this Agreement a forfeiture of twenty-five dollars ($25.00) as required by Ohio Revised Code Section 153.60 for each person who is discriminated against or intimidated in violation of this Agreement.

.4 That this Agreement may be canceled or terminated by the Owner and all money to become due hereunder may be forfeited for a second or subsequent violation of the terms of this section of this Agreement.

6.7.2 **PREVAILING WAGE RATES.** The Contractor and its subcontractors, regardless of tier, shall strictly comply with their obligation, if any, to pay their employees working on the Project site at the applicable prevailing wage rates for the type of work, including any changes thereto, pursuant to Ohio Revised Code Chapter 4115 or Davis Bacon rates and requirements.

6.7.3 **ETHICS.** By signing and entering into this agreement with the Owner, the Contractor represents that it is familiar with all applicable ethics law requirements, including without limitation Sections 102.04 and 3517.13 of the Ohio Revised Code, and certifies that it is in compliance with such requirements. The Contractor understands that failure to comply with the ethics laws is, in itself, grounds for termination of this contract and may result in the loss of other contracts with the Owner.

6.8 **JOB MEETINGS.** The Contractor or one of its representatives with authority to bind the Contractor will attend all job meetings. The Owner anticipates that job meetings will be scheduled on a weekly basis during construction or as needed. The Contractor will ensure that its Subcontractors also hold regular job meetings at which safety issues and job matters are discussed as these relate to the Work being performed. Job meetings include, but are not limited to, pre-construction meetings, weekly job meetings, weekly safety tool box meetings, and monthly safety meetings.

6.9 **PROPERTY TAX AFFIDAVIT.** The Contractor's affidavit given under Section 5719.024, Ohio Revised Code, is incorporated herein.

6.10 **WARRANTIES.** Notwithstanding anything to the contrary in the Contract Documents, including the Project Manual and Specifications, no warranties by Contractor shall be limited to any time shorter than the statute of limitations for written contracts in Ohio.

6.11 **CONTRACTOR ATTESTATIONS.**

.1 Contractor attests that it has not scaled these contract documents to determine quantities for bids, as Contractor has field verified and taken its own dimensions to determine the quantities for its bid.

.2 Contractor agrees that all the scales noted on the drawings are correct; so as to give it an "intent" of what is to be bid. Contractor has not relied on any other dimensions than what are noted in text and dimension lines.

.3 Contractor has thoroughly read the Contract Documents and has asked any and all questions it has on the intent of the scope of work, or supposed errors and omissions contained in these drawings, during the bid process and prior to signing this Agreement.

.4 Contractor will not be asserting a claim for additional time or money associated with the three issues listed above.

.5 Contractor believes it has accurately interpreted the Contract Documents and has asked for clarification and received satisfactory response for all items not thoroughly addressed or appeared to be conflicting in the Contract Documents and has found all stipulations and requirements contained in this Agreement are as stated in the bid specifications and are enforceable according to Ohio Law, including but not limited to the Owner's right of offset,

and the Owner's right to assess liquidated damages for work not completed according to the milestones listed on the project schedule contained in the Contract Documents.

6.12 ENTIRE AGREEMENT. This Agreement and the other Contract Documents constitute the entire agreement among the parties with respect to their subject matter and will supersede all prior and contemporaneous, oral or written, agreements, negotiations, communications, representations, and understandings with respect to such subject matter, and no person is justified in relying on such agreements, negotiations, communications, representations, or understandings.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their properly authorized representatives and agree that this Agreement is effective as of the date first set forth above.

Owner:
The City of Canton

By: _____

Name: _____

Title: _____

Date: _____

Contractor:

By: _____

Name: _____

Title: _____

Date: _____

CERTIFICATE
(Section 5705.41, R.C.)

The undersigned, fiscal officer of the Owner, certifies that the moneys required to pay that part of the Contract Sum coming due during the current fiscal year, under the Agreement to which this Certificate is attached have been lawfully appropriated for such purpose and are in the appropriate account of the Owner, or in the process of collection to the credit of the appropriate account or fund, free from any previous encumbrances. Moneys due in excess of the Contract Sum shall require an additional and separate Fiscal Officer's Certificate.

DATED: _____

_____
Fiscal Officer

BID GUARANTY AND CONTRACT BOND

(O.R.C. § 153.571)

KNOW ALL PERSONS BY THESE PRESENTS, that we, the undersigned _____ _____ ("Contractor") as principal and _____ _____ as surety are hereby held and firmly bound unto the **City of Canton** as obligee in the penal sum of the dollar amount of the bid submitted by the principal to the obligee on _____ _____, 20__, to undertake the construction of the **Crenshaw Park Outdoor Shelter Project** ("Project"). The penal sum referred to herein shall be the dollar amount of the principal's bid to the obligee, incorporating any additive or deductive Alternates 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 the foregoing blank is not filled in, the penal sum will be the full amount of the principal's bid, including add Alternates. Alternatively, if the blank is filled in the amount stated must not be less than the full amount of the bid including add Alternates, in dollars and cents. A percentage is not acceptable.) For the payment of the penal sum well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors, and assigns.

Signed this _____ day of _____, 20__.

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH that whereas the above named principal has submitted a bid for work on the 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 (10%) of the penalty hereof between the amount specified in the bid and such larger amount for which the obligee may in good faith contract with the next lowest bidder to perform the work covered by the bid; or in the event the obligee does not award the contract to the next lowest bidder and resubmits the project for bidding, the principal pays to the obligee the difference not-to-exceed ten percent (10%) of the penalty hereof between the amount specified in the bid, or the costs, in connection with the resubmission, of printing new contract documents, required advertising, and printing and mailing notices to prospective bidders, whichever is less, then this obligation shall be 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 (10) 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.

Now also, if the said principal shall well and faithfully do and perform the things agreed by said principal to be done and performed according to the terms of said contract; and shall pay all lawful claims of subcontractors, materialmen, and laborers, for labor performed and materials furnished in the carrying forward, performing, or completing of said contract; we agreeing and assenting that this undertaking shall be for the benefit of any materialman or laborer having a just claim, as well as for the obligee herein; then this obligation shall be void; otherwise the same shall remain in full force and effect; and surety shall indemnify the obligee against all damage suffered by failure of the principal to perform the contract according to its provisions and in accordance with the plans, details, specifications, and bills of material therefor and to pay all lawful claims of subcontractors, materialmen, and laborers for labor performed or material furnished in carrying forward, performing, or completing the contract and surety further agrees and assents that this undertaking is for the benefit of any subcontractor, materialman, or laborer having a just claim, as well as for the obligee; 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 the said contract or in or to the plans or specifications therefore shall in any wise affect the

obligations of said surety on its bond, and 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: _____

Printed Name & Title: _____

_____
SURETY

By: _____

Printed Name & Title: _____

_____

Surety's Address: _____

_____

Surety's Telephone Number: _____

Surety's Fax Number: _____

_____
SURETY'S AGENT

Surety's Agent's Address: _____

_____

Surety's Agent's Telephone Number: _____

Surety's Agent's Fax Number: _____

NOTE: The Contract Bond form that follows is to be used ONLY by a bidder that is awarded a contract <u>and</u> submits a form of bid guaranty other than the combined Bid Guaranty and Contract Bond with its bid. If a bidder submits a combined Bid Guaranty and Contract Bond, then the bid guaranty becomes the contract bond when the contract is awarded.

AIA and EJCDC Bid Bond or Payment and Performance Bond forms are not acceptable for this Project.

CONTRACT BOND
(O.R.C. § 153.57)

KNOW ALL PERSONS BY THESE PRESENTS, that we, the undersigned ("Contractor"), as principal, and _____, as surety, are hereby held and firmly bound unto the **City of Canton** ("Owner") as oblige, in the penal sum of _____ _____ Dollars ($_____ _____), for the payment of which 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 did on the _____ day of _____, 20__, enter into a contract with the Owner for construction of the **Crenshaw Park Outdoor Shelter Project** ("Project"), which said contract is made a part of this bond the same as though set forth herein:

Now, if the said Contractor shall well and faithfully do and perform the things agreed by the Contractor to be done and performed according to the terms of said contract; and shall pay all lawful claims of subcontractors, materialmen, and laborers, for labor performed and materials furnished in the carrying forward, performing, or completing of said contract; we agreeing and assenting that this undertaking shall be for the benefit of any materialman or laborer having a just claim, as well as for the obligee herein; then this obligation shall be void; otherwise the same shall remain in full force and effect; it being expressly understood and agreed that the liability of the surety for any and all claims hereunder shall in no event exceed the penal amount of this obligation as herein stated.

The said surety hereby stipulates and agrees that no modifications, omissions, or additions in or to the terms of the said contract or in or to the plans or specifications therefore shall in any wise affect the obligations of said surety on its bond, and 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: _____

Printed Name & Title:_____

_____

_____
(SURETY)

By: _____

Printed Name & Title:_____

_____

Surety's Address: _____

_____

Surety's Telephone Number:_____

Surety's Fax Number:_____

_____
NAME OF SURETY'S AGENT

Surety's Agent's Address: _____

_____

Surety's Agent's Telephone Number:_____

Surety's Agent's Fax Number:_____

BID FORM

1.01 BID SUBMITTED BY:

_____
(Contractor)

Date bid submitted: _____

1.02 DELIVER TO:

The City of Canton
ATTN: **Purchasing/Bids**
218 Cleveland Avenue SW
Canton, OH 44702

1.03 Having carefully reviewed the Instructions to Bidders, Drawings, Specifications and other Contract Documents for the Project titled **Crenshaw Park Outdoor Shelter Project** including having also received, read, and taken into account the following Addenda:

Addendum No.	Dated
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

and likewise having inspected the site and the conditions affecting and governing the Project, the undersigned hereby proposes to furnish all materials and to perform all labor, as specified and described in the said Specifications and/or as shown on the said Drawings for all Work necessary to complete the Project on a timely basis and in accordance with the Contract Documents regardless of whether expressly provided for in such Specifications and Drawings.

1.04 Before completing the Bid Form, the undersigned represents that it has carefully reviewed the Legal Notice to Bidders, Instructions to Bidders, this Bid Form, Form of Bid Guaranty and Contract Bond, Contractor's Affidavit (O.R.C. 5719.042), Owner-Contractor Agreement, General Conditions of the Contract (EJCDC C-700) (as modified for the Project), Drawings, Project Specifications, and other Contract Documents. Failure to comply with provisions of the Contract Documents may be cause for disqualification of the bid.

1.05 BONDS AND CONTRACT: If the undersigned is notified of bid acceptance, it agrees to furnish required bonds as indicated in the Instructions to Bidders.

1.06 COMPLETION OF WORK: In submitting a bid, the undersigned agrees to execute the Owner-Contractor Agreement in the form included in the Contract Documents and to complete its Work as required by the Contract Documents.

NOTE A: The wording of the Bid Form shall be used throughout, without change, alteration, or addition. Any change may cause it to be rejected.

NOTE B: Bidder is cautioned to bid only on the Brands or Standards specified.

NOTE C: If there is an inconsistency or conflict in the Bid amount, the lowest amount shall control, whether expressed in numbers or words.

2.01 BID:

Include the cost of all labor and material for the contract listed below. Bidder is to fill in all blanks related to the Bid Package for which a bid is being submitted. If no bid is submitted for an item, leave the item blank or insert "NO BID" in the blank. For alternate items, indicate whether the amount stated is in addition to or a deduction from the base bid amount (if there is no indication whether the amount for an alternate is an addition or a deduction, the amount shall be a deduction).

2.02 Bidder will complete the Work in accordance with the Contract Documents for the prices set forth in the attached Bid Schedule.

3.01 INSTRUCTIONS FOR SIGNING

A. The person signing for a sole proprietorship must be the sole proprietor or his authorized representative. The name of the sole proprietor must be shown below.

B. The person signing for a partnership must be a partner or his authorized representative.

C. The person signing for a corporation must be the president, vice president or other authorized representative; or he must show authority, by affidavit, to bind the corporation.

D. The person signing for some other legal entity must show his authority, by affidavit, to bind the legal entity.

4.01 BIDDER CERTIFICATIONS. The Bidder hereby acknowledges that the following representations in this bid are material and not mere recitals:

1. **The Bidder acknowledges that this is a public project involving public funds, and that the Owner expects and requires that each successful Bidder adhere to the highest ethical and performance standards. The Bidder by submitting its bid pledges and agrees that (a) it will act at all times with absolute integrity and truthfulness in its dealings with the Owner and the Design Professional, (b) it will use its best efforts to cooperate with the Owner and the Design Professional and all other Contractors on the Project and at all times will act with professionalism and dignity in its dealings with the Owner, Design Professional and other Contractors, (c) it will assign only competent supervisors and workers to the Project, each of whom is fully qualified to perform the tasks that are assigned to him/her, and (d) it has read, understands and will comply with the terms of the Contract Documents.**

2. The Bidder represents that it has had a competent person carefully and diligently review each part of the Contract Documents, including any Divisions of the Specifications and parts of the Drawings that are not directly applicable to the Work on which the Bidder is submitting its bid. By submitting its bid, each Bidder represents and agrees, based upon its careful and diligent review of the Contract Documents, that it is not aware of any conflicts, inconsistencies, errors or omissions in the Contract Documents for which it has not notified the Owner in writing at least ten (10) days prior to the bid opening. If there are any such conflicts, inconsistencies, errors or omissions in the Contract Documents, the Bidder (i) will provide the labor, equipment or materials of the better quality or greater quantity of Work; and/or (ii) will comply with the more stringent requirements. The Bidder will not be entitled to any additional compensation for any conflicts, inconsistencies, errors or omissions that would have been discovered by such careful and diligent review, unless it has given such prior written notice to Owner.

3. The Bidder represents that it has had a competent person carefully and diligently inspect and examine the entire site for the Project and the surrounding area, including all parts of the site applicable to the Work for which it is submitting its bid, and carefully correlate the results of the inspection with the requirements of the Contract Documents. The Bidder agrees that its bid shall include all costs attributable to site and surrounding area conditions that would have been

discovered by such careful and diligent inspection and examination of the site and the surrounding area, and the Bidder shall not be entitled to any Change Order, additional compensation, or additional time on account of conditions that could have been discovered by such an investigation.

4. The Bidder represents, understands and agrees that a) the Claim procedures in the General Conditions as modified for the Project are material terms of the Contract Documents, b) if it has a Claim, it will have its personnel provide complete and accurate information to complete and submit the Statement of Claim form on a timely basis, c) the proper completion and timely submission of a Statement of Claim form is a condition precedent to any change in the Contract Sum or the Contract Time(s), and d) the proper and timely submission of the Statement of Claim form provides the Owner with necessary information so that the Owner may investigate the Claim and mitigate its damages.

5. The Bidder represents that the bid contains the name of every person interested therein and is based upon the Standards specified by the Contract Documents.

6. The Bidder and each person signing on behalf of the Bidder certifies, and in the case of a bid by joint venture, each member thereof certifies as to such member's entity, under penalty of perjury, that to the best of the undersigned's knowledge and belief: (a) the Base Bid, any Unit Prices and any Alternate bid in the bid have been arrived at independently without collusion, consultation, communication or agreement, or for the purpose of restricting competition as to any matter relating to such Base Bid, Unit Prices or Alternate bid with any other Bidder; (b) unless otherwise required by law, the Base Bid, any Unit Prices and any Alternate bid in the bid have not been knowingly disclosed by the Bidder and will not knowingly be disclosed by the Bidder prior to the bid opening, directly or indirectly, to any other Bidder who would have any interest in the Base Bid, Unit Prices or Alternate bid; (c) no attempt has been made or will be made by the Bidder to induce any other Person to submit or not to submit a bid for the purpose of restricting competition; and (d) the statements made in this Bid Form are true and correct.

7. The Bidder will execute the form of Owner/Contractor Agreement in the form included with the Contract Documents, if a Contract is awarded on the basis of this bid, and if the Bidder does not execute the Contract Form for any reason, other than as authorized by law, the Bidder and the Bidder's Surety are liable to the Owner.

8. The Bidder certifies that the upon the award of a Contract, the Contractor will ensure that all of the Contractor's employees, while working on the Project site, will not purchase, transfer, use or possess illegal drugs or alcohol or abuse prescription drugs in any way.

9. The Bidder agrees to furnish any information requested by the Owner's authorized representative to evaluate that the Bidder has submitted the lowest and best bid and that the bid is responsive to the specifications.

10. The Bidder certifies that it has no unresolved findings for recovery issued by the Auditor of State.

11. The Bidder certifies that it is aware of and in compliance with the requirements of Ohio Revised Code Section 3517.13 regarding campaign contributions.

LEGAL NAME OF BIDDER: _____

BIDDER IS (check one): __ sole proprietor __ partnership __ corporation __ other legal entity

NAME & TITLE OF PERSON LEGALLY AUTHORIZED TO BIND BIDDER TO A CONTRACT:

_____
Name Title

DATE SIGNED: _____

SIGNATURE: _____

ADDRESS: _____

_____

TELEPHONE: _____

FAX: _____

FEDERAL TAX I.D. # _____

When the Bidder is a partnership or a joint venture, state name and address of each partner in the partnership or participant in the joint venture below:

_____ _____

_____ _____
Name

_____
Address

_____ _____

_____ _____
Name

_____
Address

_____ _____

_____ _____
Name

_____
Address

_____ _____

_____ _____
Name

_____
Address

_____ _____

_____ _____
Name

_____
Address

END OF SECTION

The City of Canton

CONTRACTOR'S QUALIFICATION STATEMENT

Crenshaw Park Outdoor Shelter Project

SUBMITTED TO: The City of Canton
ATTN: **Purchasing/Bids**
218 Cleveland Avenue SW
Canton, OH 44702

SUBMITTED BY: _____

NAME: _____

ADDRESS: _____
_____
_____

PRINCIPAL OFFICE: _____
_____

☐ Corporation

☐ Partnership

☐ Individual

☐ Joint Venture

☐ Other

NAME OF PROJECT: Crenshaw Park Outdoor Shelter Project

1. ORGANIZATION

1.1 How many years has your organization been in business as a Contractor in the construction industry?

1.2 How many years has your organization been in business under its present business name?

1.2.1 Under what other or former names has your organization operated?

1.3 If your organization is a corporation, answer the following:

1.3.1 Date of incorporation:

1.3.2 State of incorporation:

1.3.3 President's name:

1.3.4 Vice President's name(s):

1.3.5 Secretary's name:

1.3.6 Treasurer's name:

1.4 If your organization is a partnership, answer the following:

1.4.1 Date of organization:

1.4.2 Type of partnership (if applicable):

1.4.3 Name(s) of general partner(s):

1.5 If your organization is individually owned, answer the following:

1.5.1 Date of organization:

1.5.2 Name of owner:

1.6 If the form of your organization is other than those listed above, describe it and name the principals:

2. LICENSING

2.1. List jurisdictions and trade categories in which your organization is legally qualified to do business, and indicate registration or license numbers, if applicable.

2.2. List jurisdictions in which your organization's partnership or trade name is filed.

2.3. List any suspension or revocations of any professional license of any director, officer, owner, or managerial employees of the Contractor, to the extent that any work to be performed on this Project is within the field of such licensed profession.

3. EXPERIENCE

3.1. List the categories of work that your organization normally performs with its own forces.

3.2. Claims and Lawsuits (If the answer to any of the questions below is yes, please attach details.)

3.2.1. Has your organization ever failed to complete any work?

3.2.2. Has your organization ever failed to complete any work by the substantial completion date, final completion date, or in a timely manner?

3.2.3. Within the last five (5) years has your organization or any of its officers prosecuted any Claims, had any Claims prosecuted against it or them, or been involved in or is currently involved in any mediation or arbitration proceedings or lawsuits related to any construction project, or has any judgments or awards outstanding against it or them? Has your organization had any extension requests, fines and penalties imposed, or contract defaults? If the answer is yes, please attach the details for each Claim, including the names and telephone numbers of the persons who are parties, the amount of the Claim, the type of Claim and the basis for the Claim, and the outcome.

Note: As used in this document "Claim" means a Claim initiated under the Contract Documents for a project or relating to the Work for a project, including Claims made against performance bonds secured by the Contractor on other construction projects.

3.3. Has your organization ever failed to comply with federal, state, and local laws, rules, and regulations, including but not limited to the Occupational Safety and Health Act, the Ohio Prevailing Wage laws, and Ohio ethics laws? If the answer is yes, please attach details and reason(s) for each instance and the outcome including any fines or penalties imposed.

3.4. Within the last five years, has any officer or principal of your organization ever been an officer or principal of another organization when it failed to complete a construction contract? If the answer is yes, please attach details for each instance, including the names and telephone numbers of the persons who are parties to the contract, and the reason(s) the contract was not completed.

3.5. On a separate sheet, list construction projects your organization has in progress with an original Contract Sum of more than $10,000,000, giving the name of project, owner and its telephone number, design professional and its telephone number, contract amount, percent complete and scheduled completion date.

3.5.1. State total amount of work in progress and under contract:

3.6. Provide the following information for each contract your organization has had during the last five (5) years, including current contracts, where the Contract Sum is fifty percent (50%) or more of the bid amount for this Project, including add alternates. Include details regarding timeliness of performance and quality of work. List the original contract price for each project, the amount of any change orders or cost overruns on each, the reasons for the change orders or cost overruns, and your organization's record for complying with and meeting completion deadlines on construction projects. If there are more than ten (10) of these contracts, only provide information on the most recent ten (10) contracts, including current contracts.

Project And Work	Contract Sum	Owner's Representative & Telephone Number	Engineer's Or Architect's Representative Name & Telephone Number	Additional Comments

3.7. Provide the following information for each project your organization has had during the last five (5) years, which your organization believes is of comparable or greater size and complexity than the Owner's project. Include details regarding how such projects demonstrate your organization's ability and capacity to perform a substantial portion of the Project with its own work force. If there are more than five (5) of these projects, only provide information on the most recent five (5) projects, including current projects.

Project And Work	Contract Sum	Owner's Representative & Telephone Number	Engineer's Or Architect's Representative Name & Telephone Number	Additional Comments

3.7.1. State average annual amount of construction work your organization has performed during the last five years.

3.7.2. If any of the following members of your organization's management -- president, chairman of the board, or any director -- operates or has operated another construction company during the last five (5) years, identify the member of management and the name of the construction company.

3.7.3. If your organization is operating under a trade name registration with the Secretary of State for the State of Ohio, identify the entity for which the trade name is registered. If none, state "none."

3.7.4. If your organization is a division or wholly-owned subsidiary of another entity or has another relationship with another entity, identify the entity of which it is a division or wholly-owned subsidiary or with which it has another relationship and also identify the nature of the relationship. If none, state "not applicable."

3.8. On a separate sheet, list the construction education, training, construction experience, and tenure with your organization for each person who will fill a management role on the Project, including without limitation the Project Executive, Project Engineer, Project Manager, and Project Superintendent. For each person listed, include with the other information the last three projects on which the person worked and the name and telephone number of the Design Professional and the Owner.

3.9. Describe the size and experience of your organization's work force and your equipment and facilities, in relation to your organization's ability to complete the Project successfully and on time.

4. REFERENCES

4.1. Trade References:

4.2. Bank References:

4.3. Surety:

4.3.1. Name of bonding company:

4.3.2. Name and address of agent:

5. FINANCING

5.1 Financial Statement **(May be required, but only post-bid. Not a requirement to provide with bid.)**

5.1.1 Attach a financial statement, preferably audited, including your organization's latest balance sheet and income statement showing the following items:

Current Assets (e.g., cash, joint venture accounts, accounts receivable, notes receivable, accrued income, deposits, materials inventory and prepaid expenses);

Net Fixed Assets;

Other Assets;

Current Liabilities (e.g., accounts payable, notes payable, accrued expenses, provision for income taxes, advances, accrued salaries and accrued payroll taxes); and

Other Liabilities (e.g., capital, capital stock, authorized and outstanding shares par values, earned surplus and retained earnings).

5.1.2 Name and address of firm preparing attached financial statement, and date thereof.

5.1.3 Is the attached financial statement for the identical organization named on page one?

5.1.4 If not, explain the relationship and financial responsibility of the organization whose financial statement is provided (e.g., parent-subsidiary).

5.2 Will the organization whose financial statement is attached act as guarantor of the contract for construction?

5.3 Attach additional documentation or explanations demonstrating your organization's financial responsibility, adequate resources and availability of credit, its means and ability to procure insurance and acceptable performance bonds required for the Project.

6. Does your organization participate in a drug-free workplace program? Provide your organization's record for both resolved and unresolved findings of the Auditor of the State of Ohio for recovery as defined in Section 9.24 of the Ohio Revised Code.

7. List any projects within the previous five years where a public entity determined that your organization was not a responsible bidder, including the name of the public entity, the reasons given by the public entity, and an explanation thereof.

8. Additional Criteria. Pursuant to the Codified Ordinance of the City of Canton, Chapter 105, the Owner, in its discretion, reserves the right to request additional information and documentation relating to the foregoing and related to any of the criteria listed in Paragraph I.6 of the Instructions to Bidders from Bidders after the bid opening. The Owner may consider such information and documentation in determining which bid is lowest and best. The Owner, in its discretion, may consider and give such weight to any and all criteria as it deems appropriate.

[left intentionally blank]

Certification. The undersigned certifies for the reliance of the Owner that after diligent investigation, to the best of the undersigned's belief, the information provided with this Contractor's Qualification Statement is true, accurate and not misleading.

SIGNATURE:

Dated this _____ day of _____ 20____.

Name of Organization: _____

By: _____
[print name]

Signature: _____

Title: _____

State of _____

County of _____

_____, being duly sworn, deposes and says that the information provided herein is true and sufficiently complete so as not to be misleading.

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

_____
Notary Public

My Commission Expires:_____

SEAL

Modified General Conditions (EJCDC)

Please go to this link for the document or enter the following link information into a web browser:

https://cantonohio.gov/DocumentCenter/View/596/Modified-Standard-General-Conditions-of-the-Construction-Contract---3rd-Party-Engineer

ODOT MANUAL SUPPLEMENT

This Supplement shall apply where and to the extent that the State of Ohio Department of Transportation Construction and Material Specifications, in the current version as of January 1, 2019, is expressly incorporated into the Contract Documents via the Owner-Contractor Agreement, or when designated as a Contract Document in the list of Contract Documents in the Owner-Contractor Agreement, or is referenced anywhere else in the Contract Documents as one of the Contract Documents.

1. **Regardless of any terms to the contrary in Division 100 or elsewhere, any directions or orders of the Engineer that will result in an adjustment of the Contract Price or the Contract Time shall require the prior written approval of the Owner. It is expressly understood and agreed that the Engineer does not have authority to authorize changes or modifications in the Contract Price or Contract Time.**

2. The Contractor's obligations under this ODOT Supplement are in addition to and not in limitation of its other obligations under the Contract Documents.

3. Delays. Regardless of the terms in this ODOT Supplement, including Item 109.05, all time adjustments shall be subject to a) filing a Change Proposal and / or Claim in accordance with Articles 11 and 12 of the Modified Standard General Conditions **of the Contract for Construction (EJCDC C-700, 2013 edition) ("Modified Standard General Conditions"), b)** substantiating the Contractor's entitlement to a time adjustment in accordance with the Modified Standard General Conditions and c) Item 109.05. The Contractor will be entitled to additional compensation for delays but only for those delays described in the Modified Standard General Conditions. As part of the Claims process and as a condition precedent to receiving any additional compensation, the Contractor shall prepare a cost analysis as allowed by Item 109.05.D substantiating its entitlement to additional compensation.

4. Division 100, General Provisions. The following Division 100 General Provisions of the State of Ohio Department of Transportation, Construction Specifications Manual in the current version as of January 31, 2019, are incorporated in this ODOT Supplement, subject to any changes or limitations herein.

a. **Item 101.01**, General.

b. Item 101.02, Abbreviations, provided that references to DCA, DDD, DET, DGE shall mean the Owner.

c. Item 101.03, Definitions, provided where terms that are defined in the other Contract Documents, the definition in the other Contract Documents shall control, and further provided that the following definitions are deleted, modified and/or added:

i. Claims is deleted

ii. Contract Bond is deleted.

iii. Contract Documents is deleted.

iv. Contract Price is deleted.

v. Contract Time is deleted.

vi. Contractor is deleted.

vii. Department shall mean the Owner.

viii. Director shall mean the Owner's representative.

ix. Disputes is deleted.

x. Engineer is deleted.

xi. Extra Work Contract is deleted.

xii. Final Acceptance shall mean Final Completion as defined in the Owner Contractor Agreement.

xiii. Final Inspector shall mean the Owner.

xiv. Laboratory is deleted.

xv. Prebid Question is deleted.

xvi. Proposal Guaranty is deleted.

xvii. Questionnaire is deleted.

xviii. Shop Drawings is deleted.

xix. Signatures on Contract Documents is deleted.

xx. State or state shall mean the Owner.

xxi. Subcontractor is deleted.

xxii. Work is deleted.

d. **Item 101.04, Interpretations.**

e. Item 103.03, Cancellation of Award.

f. Item 104.02.D.2, Significant Changes in the Character of the Work (including Tables 104.02-1 and 104.02-2 following this Item), provided that all references to Item 108 and 109.12 are deleted and that all time adjustments shall be subject to filing a Change Proposal and / or Claim in accordance with the Modified Standard General Conditions and substantiating the entitlement to an extension of time as provided in the Modified Standard General Conditions (EJCDC Document C-700, 2013 edition) ("Modified Standard General Conditions").

g. Item 104.03, Rights in and Use of Materials Found on the Work.

h. Item 104.04, Cleaning Up.

i. Item 105.02, Plans and Working Drawings, provided that the review of submittals may be by the Owner or the Engineer in the Owner's discretion.

j. Item 105.06, Superintendent.

k. Item 105.10, Inspection of Work.

l. Item 105.11, Removal of Defective and Unauthorized Work.

m. Item 105.12, Load Restrictions.

n. Item 105.13, Haul Roads, provided that the second paragraph in this Item is deleted. The Contractor shall be responsible for any damage to the roads referred to in the second paragraph.

o. Item 105.14, Maintenance During Construction, except substitute "Final Completion" for "Final Inspector accepts the work under 109.12" and delete the remainder of the first sentence. Additionally, delete the second to last sentence in this Item.

p. Item 105.15, Failure to Maintain Roadway or Structure.

q. Item 105.16, Borrow and Waste Areas.

r. Item 105.17, Construction and Demolition Debris.

s. Item 106.01, Source of Supply and Quality Requirements.

t. Item 106.02, Samples, Tests and Cited Specifications, provided that this Item will be optional at the discretion of the Owner. If the Owner elects to proceed under this Item, a) the Contractor

without additional cost will provide material samples as required by the Owner, and b) the Owner may conduct such tests as it determines proper.

u. **Item 106.03, Small Quantities and Materials for Temporary Application.**

v. Item **106.04, Plant Sampling and Testing Plan.**

w. **Item 106.05, Storage of Materials.**

x. **Item 106.06, Handling Materials.**

y. **Item 106.07, Unacceptable Materials, except substitute the word "unacceptance" in the third sentence with the word "unacceptable."**

z. Item 106.08, **Department-Furnished Material.**

aa. **Item 106.09, Steel and Iron Products Made in the United States.**

bb. **Item 107.01, Laws to be Observed.**

cc. **Item 107.02, Permits, Licenses, and Taxes.**

dd. **Item 107.03, Patented Devices, Materials, and Processes.**

ee. **Item 107.05, Federal-Aid Provisions.**

ff. **Item 107.06, Sanitary Provisions.**

gg. **Item 107.07, Public Convenience and Safety.**

hh. **Item 107.08, Bridges Over Navigable Waters.**

ii. Item **107.09, Use of Explosives, provided that both bringing explosives onto the site and any use of explosives shall require the prior written approval of the Owner.**

jj. Item **107.10, Protection and Restoration of Property, provided that the Contractor shall remain responsible for** all damage and injury to property until the Project is Finally Complete, and all references to Items 109.11 and 109.12 are deleted.

kk. Item **107.11, Contractor's Use of the Project Right-of-Way or Other Department-Owned Property, provided the reference to Item 109.12 is deleted.**

ll. Item **107.12, Responsibility for Damage Claims and Liability Insurance, provided that all notices and certificates shall be delivered to the Owner's representative and, if there is no Owner's representative, to the Engineer. Reference to the "**State of Ohio, Department of Transportation" shall mean the Owner.

mm. Item **107.13, Reporting, Investigating, and Resolving Motorist Damage Claims, provided that this item is modified to read, "**When a motorist reports damage to its vehicle either verbally or in writing to the Contractor, the Contractor shall within 3 days make and file a written report to the Owner and the Engineer and also file a report with its insurance carrier".

nn. Item **107.14** Opening **Sections of Project to Traffic, provided that the reference to Item 108.06 is deleted.**

oo. Item **107.15, Contractor's Responsibility for Work, provided that reference to "**Final Inspection according to 109.12.A" shall mean "Final Completion." and all references to Item 108 are deleted.

pp. Item **107.17, Furnishing Right-of-Way.**

qq. Item **107.19, Environmental Protection, provided that the Owner makes no representation as to having acquired any permits unless expressly provided in the Contract Documents. The Contractor will comply with any permits obtained by the Owner.**

rr. Item **107.20, Civil Rights.**

ss. Item **107.21, Prompt Payment.**

tt. **with information or reports on DBE participation unless the Contract Documents otherwise require such reports or information. Additionally, unless otherwise provided in the Contract Documents, the 50% self-contracting requirement in the first sentence is waived.**

uu. Item **108.04, Limitation of Operations.**

vv. Item **108.05, Character of Workers, Methods, and Equipment.**

ww. Item **108.10, Payroll Records.**

xx. Item 109.01, Measurement of Quantities, provided that this item will apply only where payment is to be based on the measurement of quantities.

yy. Item 109.02, Measurement Units.

zz. Item 109.03, Scope of Payment.

aaa. Item **108.01, Subletting of the Contract, provided that the Contractor need not provide the Owner** (Reserved.)

bbb. Item 109.05, Extra Work as modified in this Supplement, provided that a) the references to Items 105.07, 105.10 and 108 are deleted, b) all negotiated prices shall require the Owner's written approval, c) the Owner must approve in writing any directions or orders by the Engineer to proceed with force account work, d) in Item 109.05.B.2 the reference to Department shall mean the Ohio Department of Transportation, e) the compensation provided in 109.05.B through 109.05.D constitutes payment in full for all the items referred to in Items 109.05.C.1-10, except for any additional compensation for delays, f) the mark-ups provided in Items 109.05.D.2.b and 109.05.D.2.d are deleted, and g) Item 109.05.D.2.f regarding home office overhead is deleted. The Contractor's entitlement to home office overhead, if any, shall be subject to current Ohio law.

ccc. **109.06, Directed Acceleration.**

ddd. **(Reserved.)**

eee. **109.08, Unrecoverable Costs.**

5. Divisions 200 through 700. Divisions 200 through 700 of the State of Ohio Department of Transportation, Construction Specifications Manual in the current version as of January 31, 2019 are incorporated in this ODOT Supplement.

a. All references to Division 100 Items in Divisions 200 through 700 shall be to the Division 100 Items as modified in this Supplement.

b. Where Division 100 Items are referred to in Divisions 200 through 700 but are not included in this Supplement, the deleted references will be governed by this Paragraph 5.

c. In Item 203.04, the reference to Item 108.06 shall be governed by Paragraph 3, Delays, in this Supplement.

d. In Item 514.24, the reference to Item 109.10 shall be governed by the payment provisions in the Modified Standard General Conditions.

e. In Item 624.04, the reference to item 109.09 shall be governed by the payment provisions in the Modified Standard General Conditions, i.e., the Owner will process and make payments in accordance with the provisions in the Modified Standard General Conditions. In this regard, the basis for payment of mobilization costs will be as provided in Item 624.04.

f. General to Divisions 200 through 700. The basis for payment provided in the Basis for Payment items in these Divisions shall be the basis for payment to the Contractor when applicable.

END OF ODOT SUPPLEMENT

City of Canton Codified Ordinances

Bidders shall take notice that they are to comply with the Codified Ordinances of the City of Canton, including but not limited to, the following:

1. **Chapter 105.02 – Public Paving Time Restrictions.**
   All City public paving contracts shall include a provision for liquidated damages in order to provide the City reasonable compensation for actual damages due to a failure to ensure that asphalt paving take place on the City's road surfaces from May 1st to October 1st; and/or during optimal climatic conditions that are conducive to the best mix compacting and long term durability of the pavement, according to the highest and best practices of the asphalt paving industry.
   (Ord. 270-2014. Passed 12-29-14.)

2. **Chapter 105.03 – U.S. Steel Usage Required; Exception.**
   All City contracts shall stipulate or provide that all steel necessary in the construction of any work performed under such contracts shall be steel that is produced in the United States unless a specific product which is required is not produced by manufacturers in the United States in which event this prohibition does not apply. This section shall apply to only contracts awarded by the Board of Control of the City.
   (Ord. 224-77. Passed 6-27-77.)

3. **Chapter 105.05 – Materials to be Purchased Locally.**
   In all future contracts for the construction of buildings, structures, or other improvements under the Capital Improvement Budget, the following clause shall be printed or typewritten on each contract:
   It is the desire of the City of Canton that all materials used in the construction covered by this contract shall be purchased in the Canton area except such materials which are unavailable in the Canton area.
   (Res. 49-77. Passed 2-7-77.)

4. **Chapter 105.06 – Minority Contract Provision.**
   a. All contracts with the City shall include the following clause:
   The bidder agrees to expend at least $_____of the Contract in the event the contract is awarded to such bidder for minority/women's business enterprises. For purposes of this pledge, the term "minority/women's business enterprise" means a bona fide business established as a sole proprietorship, partnership or corporation owned, operated and controlled by one or more minority persons or women who have at least fifty-one percent (51%) ownership. "Minority" includes African Americans, Asian/Pacific Islanders, Hispanic/Latino Americans and Native American Indians. The minority or woman must have operational and managerial control, interest in capital, and earnings commensurate with the percentage of ownership. Minority/women's business enterprises may be employed as construction contractors, subcontractors, vendors or suppliers.
   (Ord.185-2011. Passed 10-31-11.)

5. **Chapter 105.12 – Local Bidder Preference.**
   a. The Board of Control, in determining the lowest and best bidder in the award of contracts to which this section is applicable, is authorized to award contracts to local bidders as hereinafter defined, whose bid is not more than five percent (5%) higher, subject to a maximum amount of twenty thousand dollars ($20,000.00), than the lowest dollar bid submitted by non-local bidders. The Board of Control's decision in making such an award shall be final.

b. For purposes of this section, "local bidder" means an individual or business entity which at the time of the award of the contract has a headquarters, division, sales office, sales outlet, manufacturing facility, or similar significant business-related location in Stark County, Ohio.

c. All contract specifications and/or bid documents that are distributed by Canton for the purpose of soliciting bids for goods and/or services shall contain the following notice:

Prospective bidders will take notice that the City of Canton, in determining the lowest and best bidder in the award of this contract, may award a local bidder preference to any qualified bidder pursuant to Section 105.12 of the Codified Ordinances of the City of Canton. The determination of whether a bidder qualifies for the local preference shall be made by Board of Control. The Board's decision shall be final. A copy of Section 105.12 is attached.

d. This section shall be applicable to all contracts for equipment, goods, machinery, materials, supplies, vehicles and/or services, which are purchased, leased and/or constructed at a cost in excess of fifty thousand dollars ($50,000.00) and which require bidding pursuant to Ohio R.C. 735.05 through 735.09 and Ohio R.C. 737.03.

(Ord. 115-2018. Passed 5-14-18.)

6. Chapter 105.15 – City Income Tax

a. No person, partnership, corporation or unincorporated association may be awarded a contract with the City under Sections 105.09 or 105.10, unless the bidder is paid in full or is current and not otherwise delinquent in the payment of City income taxes, including any obligation to pay taxes withheld from employees under Section 182.05 and any payment on net profits under Section 182.06.

b. Falsification of any information related to or any post-contractual violation of the requirement to pay City income taxes set forth in subsection (a) shall constitute cause for the rescission of the balance of the contract at the City's discretion.

c. No partnership, corporation or unincorporated association which has as one of its partners, shareholders or owners a person who is a twenty percent (20%) or greater equity owner in such partnership, corporation or unincorporated association and who is delinquent in the payment of City income taxes as set forth in subsection (a), may be awarded a contract with the City under Sections 105.09 or 105.10.

d. A person who is a twenty percent (20%) or greater equity owner in any partnership, corporation or unincorporated association which is delinquent in the payment of City income taxes as set forth in subsection (a) may not be awarded a contract with the City under Sections 105.09 or 105.10.

e. A contract awarded under Sections 105.09 or 105.10 for a public improvement project, services other than personal or professional services, and personal or professional services shall not be binding or valid unless such contract contains the following provisions:

Said _____ hereby further agrees to withhold all City income taxes due or payable under Chapter 182 of the Codified Ordinances for wages, salaries, fees and commissions paid to its employees and further agrees that any of its subcontractors shall be required to agree to withhold any such City income taxes due for services performed under this contract. Furthermore, any person, firm or agency that has

a contract or agreement with the City shall be subject to City income tax whether a resident or nonresident in the City, and whether the work being done is in the City or out of the City. In addition to the tax withheld for employees, the net profits on the contract shall be subject to City income tax.
(Ord. 238-2015. Passed 11-30-15.)

7. Chapter 182.30 – Contract Provisions

a. No contract on behalf of the City under Sections 105.09 or 105.10 of the Codified Ordinances of Canton for a public improvement project, services other than personal or professional services, and personal or professional services shall be binding or valid unless such contract contains the following provisions:

Said _____ hereby further agrees to withhold all City income taxes due or payable under Chapter 182 of the Codified Ordinances for wages, salaries, fees and commissions paid to its employees and further agrees that any of its subcontractors shall be required to agree to withhold any such City income taxes due for services performed under this contract. Furthermore, any person, firm or agency that has a contract or agreement with the City shall be subject to City income tax whether a resident or nonresident in the City, and whether the work being done is in the City or out of the City. In addition to the tax withheld for employees, the net profits on the contract shall be subject to City income tax.

b. By entering into contract with the City of Canton _____ agrees with the City regarding the manner of withholding of City income taxes as provided in Section 718.011(F) of the Ohio Revised Code.
   i. Municipal income tax withholding provisions of Sections 718.011(B)(1) and 718.011(D) ORC shall not apply to qualifying wages paid to employees for work done or services performed or rendered inside the City or on City property.
   ii. _____ agrees to withhold income tax for the City from employees' qualifying wages earned inside the City or on City property, beginning with the first day of work done or services performed or rendered inside the City.

(Ord. 238-2015. Passed 11-30-15.)

8. Chapter 507.03 – Equal Employment Opportunity Clause.

b. During the performance of this contract, the contractor agrees as follows:
   1. The contractor shall not discriminate against any employee or applicant for employment because of race, age, handicap, religion, color, sex, national origin, sexual orientation or gender identity. The contractor shall take affirmative action to insure that applicants are employed and that employees are treated during employment without regard to race, religion, color, sex, national origin, military status, sexual orientation or gender identity. As used herein, the word "treated" shall mean and include without limitation the following: recruited, whether by advertising or other means; compensation, whether in the form of rates or pay or other forms of compensation; selected for training, including apprenticeship; promoted; demoted; upgraded; downgraded; transferred; laid off; and terminated. The contractor agrees to and shall post in conspicuous places available to employees and applicants for employment notices to be provided by the contracting officers setting forth the provisions of this nondiscrimination clause.
   2. The contractor shall, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, age, handicap, religion, color, sex, national origin, military status, sexual orientation or gender identity.

(Ord. 153-2012. Passed 9-24-12.)

3. The contractor shall send to each labor union or representative of workers, with which he has a collective bargaining agreement or other contract or understanding, a notice advising the labor union or workers' representative of the contractor's commitments under the equal opportunity clause of the City; and he shall post copies of the notice in conspicuous places available to employees and applicants for employment.
4. The contractor shall submit in writing to the City his affirmative action plan, and each subcontractor and supplier of equipment or supplies shall submit to the general contractor his affirmative action plan. The responsibility for securing these affirmative action plans falls upon the general contractor and shall be on file at the office of the general contractor. The contractor shall furnish all information and reports required by the City or its representative pursuant to this chapter, and shall permit access to his books, records, and accounts by the contracting agency and by the Executive Secretary for purposes of investigation to ascertain compliance with the program.
5. The contractor shall take such action with respect to any subcontractor as the City may direct as a means of enforcing the provisions of this equal opportunity clause, including penalties and sanctions for noncompliance; provided, however, that in the event the contractor becomes involved in or is threatened with litigation as the result of such direction by the City, the City will enter into such litigation as is necessary to protect the interests of the City and to effectuate the City's equal opportunity program and, in the case of contracts receiving Federal assistance, the contractor or the City may request the United States to enter into such litigation to protect the interests of the United States.
6. The contractor shall file and shall cause his subcontractors, if any, to file compliance reports with the City in the form and to the extent prescribed by the City or its representative. Compliance reports filed at such times as directed shall contain information as to the employment practices, policies, programs and statistics of the contractor and his subcontractors.
7. The contractor shall include the provisions of this equal employment opportunity clause in every subcontract or purchase order, so that such provisions will be binding upon each subcontractor or vendor.
8. Refusal by the contractor or subcontractor to comply with any portion of this program as herein stated and described will subject the offending party to any or all of the following penalties:
   A. Withholding of all future payments under the involved public contract to the contractor in violation, until it is determined that the contractor or subcontractor is in compliance with the provisions of this contract.
   B. Refusal of all future bids for any public contract with the City or any of its departments or divisions, until such time as the contractor of subcontractor demonstrates that he has established and shall carry out the policies of the program as herein outlined.
   C. Cancellation of the public contract and declaration of forfeiture of the performance bond.
   D. In cases in which there is substantial or material violation or the threat of substantial or material violation of the compliance procedure or as may be provided by contract, appropriate proceedings may be brought to enforce these provisions, including the enjoining within applicable laws of contractors, subcontractors or other organizations, individuals or groups who prevent, directly or indirectly, or seek to prevent, directly or indirectly, compliance with the policy as herein outlined.

(Ord. 179-74. Passed 6-17-74.)

The City of Canton

STATEMENT OF CLAIM FORM

Claim No. ___ for Contractor

1. Name of Contractor: _____

2. Date written claim given:_____.

3. Contractor's representative to contact regarding the claim:

   Name:_____ Title: _____
   Telephone No. _____ (office) FAX No. _____

   E-mail: _____

4. General description of claim:

_____

5. Contract Documents. If the claim is based upon any part or provision in the Contract Documents, including but not limited to pages in the Drawings and/or paragraphs in the Specifications, Owner-Contractor Agreement, General Conditions or Supplementary General Conditions, state upon which parts or provisions the claim is based:

_____

6. Delay claims:

   6.1 Date delay commenced: _____
   6.2 Duration of the delay: _____
   6.3 Apparent cause of the delay and part of critical path affected:

_____

   6.4 Impact of the delay and recommendations for minimizing such impact:

_____

7. Additional compensation. Set forth in detail all additional compensation to which the Contractor believes it is entitled with respect to this claim:

_____

8. Instructions for Completing the Statement of Claim Form ("Instructions"). The Instructions are incorporated in this Form.

9. Truth of Claim. By submitting this claim, the Contractor and its representative certify that after conscientious and thorough review and to the best of his or her knowledge and belief a) the Contractor has complied fully with the Instructions, b) the information in this State of Claim is accurate, c) the Contractor is entitled to recover the compensation in paragraph 7, and d) the Contractor has not knowingly presented a false or fraudulent claim. The Contractor by its authorized representative must acknowledge this Statement of Claim before a notary public.

CONTRACTOR: _____

By: _____

Name and Title:_____

Date: _____

CONTRACTOR'S ACKNOWLEDGMENT

State of _____,

County of _____, ss:

_____ first being sworn, states that after conscientious and thorough review, the statements made in attached Statement of Claim Form are complete and true to the best of his or her knowledge and belief.

_____

Sworn to before me a notary public by _____ on _____ __, 20__.

_____

Notary Public

WHEN COMPLETED, FORWARD A COPY OF THIS NOTICE AND STATEMENT OF CLAIM FORM TO THE OWNER AND ENGINEER.

INSTRUCTIONS FOR COMPLETING THE STATEMENT OF CLAIM FORM

1. Completing the Statement of Claim Form ("Claim Form") is a material term of the Contract. The Claim Form tells the Owner and Design Professional that the Contractor is making a Claim and that they need to act promptly to mitigate the effects of the occurrence giving rise to the Claim. The Claim Form also provides them with information so that they can mitigate such effects. The Contractor acknowledges that constructive knowledge of the conditions giving rise to the Claim through job meetings, correspondence, site observations, etc. is inadequate notice, because knowledge of these conditions does not tell the Owner and Engineer that the Contractor will be making a Claim and most often is incomplete.

2. If the space provided in the Claim Form is insufficient, the Contractor, as necessary to provide complete and detailed information, must attach pages to the Claim Form with the required information.

3. Paragraph 4. The Contractor must state what it wants, *i.e.*, time and/or compensation, and the reason why it is entitled to time and/or compensation.

4. Paragraph 5. The Contractor must identify the exact provisions of the Contract Documents it is relying on in making its Claim. For example, if the Claim is for a change in the scope of the Contractor's Work, the Contractor must identify the specific provisions of the Specifications, and the Plan sheets and details that provide the basis for the scope change.

5. Paragraph 6. This paragraph applies to delay claims, including delays that the Contractor believes result in constructive acceleration. The Contractor must identify the cause of the delay, party or parties responsible, and what the party did or did not do that caused the delay, *i.e.*, specific work activities. The Contractor acknowledges that general statements are not sufficient, and do not provide the Owner with sufficient information to exercise the remedies available to the Owner or to mitigate the effects of the delay.

   For example, if the Contractor claims a slow response time on submittals caused a delay, the Contractor must identify the specific submittals, all relevant dates, and then show on the applicable schedule, by circling or highlighting, the activities immediately affected by the delays. Also for example, if the Contractor claims it was delayed by another Contractor, the Contractor must identify the delaying Contractor, specifically what the delaying Contractor did or did not do that caused the delay, and then show the applicable schedule, by circling or highlighting, the activities immediately affected by the delays. Further by example, if the Contractor seeks an extension of time for unusually severe weather, the Contractor must submit comparative weather data along with a record of the actual weather at the job site and job site conditions.

6. Paragraph 6.4. Time is of the essence under the Contract Documents. If there is a delay, it is important to know what can be done to minimize the impact of the delay. It therefore is important that the Contractor provide specific recommendations on how to do so.

7. Paragraph 7. The Contractor must provide a specific and detailed breakdown of the additional compensation it seeks to recover. For future compensation, the Contractor shall provide its best estimate of such compensation.

8. Paragraph 8 and Acknowledgment. By submitting this Claim, the Contractor and its representative certify that after conscientious and thorough review and to the best of his or her knowledge and belief a) the Contractor has complied fully with the Instructions, b) the information in this Claim Form is accurate, c) the Contractor is entitled to recover the compensation in paragraph 7, and d) the Contractor has not knowingly presented a false or fraudulent claim. The Contractor by its authorized representative must acknowledge this Statement of Claim before a notary public.

End of Instructions

CONTRACTOR'S PERSONAL PROPERTY TAX AFFIDAVIT

(O.R.C. § 5719.042)

State of Ohio
County of _____, ss:

_____, being first duly sworn, deposes and says that he is the
(Name)

_____ of _____ with offices located at
(Title) (Contractor)

_____, and as its duly
(Address of Contractor)

authorized representative, states that effective this _____ day of _____, 20___,

_____
(Name of Contractor)

( ) is charged with delinquent personal property taxes on the general list of personal property as set forth below:

County	Amount (includes total amount due, plus penalties and interest thereon)
Stark	$_____

( ) is not charged with delinquent personal property taxes on the general list of personal property in Stark County.

_____

_____
(Affiant)

Sworn to and subscribed before me by the above-named affiant this _____ day of _____, 20__.

_____
(Notary Public)

My commission expires

_____, 20__

CONTRACTOR'S FINAL WAIVER & RELEASE AFFIDAVIT
("AFFIDAVIT")

Project: **Crenshaw Park Outdoor Shelter**

In consideration for payment received from the City of Canton (the "City") in the amount requested in Contractor's Final Application for Payment to the City, the receipt of which is hereby acknowledged, the undersigned Contractor hereby waives and releases any rights it has or may have to any and all types of claims relating to the Project, including without limitation claims of payment, Mechanic's Lien, stop notice, equitable lien, labor and material bond, breach of contract or unjust enrichment, or any other claim against the City, for any labor, materials, or equipment the undersigned may have delivered or provided to the Project, except for any Claims the undersigned has made by properly and timely submitting a Statement of Claim form. The undersigned further certifies that this Affidavit covers claims by all contractors, subcontractors, and suppliers who may have provided any labor, material, or equipment to the Project through the undersigned or at the undersigned's request. The undersigned acknowledges that all such contractors, subcontractors, sub-subcontractors and suppliers have signed an affidavit in the form of this Affidavit releasing any and all claims against the City, except for any Claims the undersigned has made by properly and timely submitting a written statement of its Claim. The undersigned hereby represents and warrants that it has paid any and all welfare, pension, vacation or other contributions required to be paid on account of the employment by the undersigned of any laborers on the Project.

This Affidavit is for the benefit of, and may be relied upon by the City. The undersigned hereby agrees to indemnify, defend and hold harmless each of the foregoing, the Project, work of improvement, and real property from any and all claims, or liens that are or should have been released in accordance with this Affidavit.

_____
Company Name

_____
Authorized Signature (Company Officer)

_____
Title

_____
Date

State of: _____ County of _____

Subscribed and sworn to before me this _____

day of _____

Notary Public: _____

My Commission Expires: _____

CITY OF CANTON

Crenshaw Park Outdoor Shelter Project

PRE-BID SUBSTITUTION FORM

1. Note. Certain brands of material or apparatus are specified. Each bid will be based on these brands, which may be referred to in the Contract Documents as Standards. The use of another brand (referred to as a substitution or proposed equal in the Contract Documents, when a bidder or the contractor seeks to have a different brand of material or apparatus than that specified approved by the Owner for use in the Project) may be requested as provided in the Instructions to Bidders. Substitutions, however, unless approved and issued in an Addendum, will not be considered in determining which bidder to award the contract to.

2. The detailed procedures for submitting substitutions are set forth in Paragraph K of the Instructions to Bidders.

Specification Section	Brand or Name Specified	Proposed Substitution

Appendix A

PROJECT LABOR AGREEMENT

FOR THE

CRENSHAW PARK OUTDOOR SHELTER

BETWEEN

CITY OF CANTON

AND

EAST CENTRAL OHIO BUILDING AND CONSTRUCTION TRADES COUNCIL AFL-CIO

AND

SIGNATORY LOCAL UNIONS

Effective _____

CONTENTS

ARTICLE I	Intent and Duration	3
ARTICLE II	Purpose	4
ARTICLE III	Benefits of this Agreement	5
ARTICLE IV	Scope of Agreement	6
ARTICLE V	Labor/Management Cooperation Joint Administrative Committee	10
ARTICLE VI	Union Recognition and Employment	11
ARTICLE VII	Grievance Arbitration Procedure	13
ARTICLE VIII	Jurisdictional Disputes	15
ARTICLE IX	Management's Rights	16
ARTICLE X	Work Stoppages	17
ARTICLE XI	Wages and Benefits	18
ARTICLE XII	Local Union Negotiations During the Pendency Of the Agreement	19
ARTICLE XIII	Hours of Work, Overtime, Shifts and Holiday	20
ARTICLE XIV	Apprentices	24
ARTICLE XV	Drug and Alcohol Policy	24
ARTICLE XVI	Non-Discrimination	25
ARTICLE XVII	Sole and Complete Agreement	25
ARTICLE XVIII	Separability and Savings Clause	25
APPENDIX 1	Letter of Assent	32
APPENDIX 2	Pre-Job Conference Verification Form	33
APPENDIX 3	Employee Drug and Alcohol Testing Policy	34

ARTICLE I

INTENT AND DURATION

Section 1. Intent And Duration. This Project Labor Agreement (the "Agreement" or "PLA") is entered into between the City of Canton (the "Owner"); the East Central Ohio Building and Construction Trades Council, AFL-CIO ("ECOB & CTC" or "Council"); and the Signatory Unions (the "Unions") and applies exclusively to the construction work within the scope of this Agreement to be performed on the Crenshaw Park Outdoor Shelter (hereinafter "the Project"). The purpose of this Agreement is to promote efficiency and cost-savings in the construction and refurbishment that is a part of the Project and to provide for the peaceful settlement of any and all labor disputes and grievances without strikes or lockouts, thereby promoting the public interest in assuring the timely and economical completion of the Project. This Agreement shall expire and be of no further force or effect upon the completion of the Project.

Upon execution of this Agreement by all parties, all construction, reconstruction, repair, and renovation work covered by this Agreement on the Project shall be contracted exclusively to Contractors, of whatever tier, who agree to execute and be bound by the terms of this Agreement. Prior to performing any work on the Project, all Contractors of whatever tier shall execute the Letter of Assent (attached as Appendix 1) *and* participate in a Pre-Job Conference as required by Article VIII, Section 4 of this Agreement. The Owner (or its permitted designee) shall monitor compliance with this Agreement by all contractors and subcontractors. For purposes of the Agreement, the term "Contractor" shall be deemed to include all construction contractors and subcontractors of whatever tier engaged in any on-site construction, reconstruction, repair, and renovation work required to complete the Project, unless such work is specifically excluded by Article IV, Section 2 of this Agreement. The Owner, the Unions and all signatory Contractors agree to abide by the terms and conditions contained in the Agreement. This Agreement represents the complete understanding of all parties, and no Contractor is or will be required to sign any other agreement with a signatory union as a condition of performing work coming within the scope of this Agreement. No

practice, understanding or agreement between a Contractor and a Union, which conflicts with any provisions in this Agreement, will be binding on any other party unless endorsed in writing by the Owner.

Section 2. Limitation Of Agreement To Project. The Unions agree that this Agreement will be made available to, and will fully apply to, any successful bidder for work on the Project, without regard to whether that successful bidder performs work at other sites on either a union or a non-union basis, and without regard to whether employees of such bidder are or are not members of any union. The Unions further agree that this Agreement applies only to this Project. Nothing in this agreement is intended to, or shall, interfere with, or negate, any existing contractual relationship or collective bargaining agreement between the Union and any contractor or subcontractor that may execute this Agreement.

ARTICLE II
PURPOSE

Section 1. Purpose. The City of Canton's Crenshaw Park, located at 1500 Sherrick Road SE, Canton, OH 44707, is one of the City's many public parks providing recreation space and amenities for City residents and visitors.

This Project directs the construction of a new freestanding outdoor shelter on the grounds of Crenshaw Park to be utilized for public recreation as well as organized events. This new shelter will include, in addition to the structure itself, electric lines, picnic tables and grill as attached amenities. Skilled plumbing, HVAC, electrical, carpentry, and other general trades will be required to complete the Project safely and timely.

The parties to this Agreement understand and acknowledge that this Project is important to the safety and welfare of City residents, employees, and other users as well as to the economic development of the City of Canton.

The Project Cost is estimated to be $300,000.00 and is planned to be let out for bid on or around July 20, 2023.

Section 2. Time Is Of The Essence. The parties to this Agreement understand and agree that time is of the essence for this Project. The parties understand and agree that timely completion of the Project will require the use of substantial numbers of employees from construction and supporting crafts possessing skills and qualifications that are essential to the Project. The Unions pledge that they have members who are competent, skilled, and qualified to perform the required construction work. The parties also understand that on-budget completion of the Project is most critical; it is therefore essential that construction work on the Project be done in an efficient, economical manner with optimum productivity and with no delays. In recognition of those special needs of the Project, the Unions signatory hereto and their members agree not to initiate, authorize, sanction, participate in or condone, or permit their members to engage in any strike, sympathy strike, jurisdictional strike, recognitional strike, slowdown, sabotage, work to rule, sickout, sit down, picketing of any type (including informational picketing), handbilling, boycott, interruption of work or any disruptive activity that interferes with or interrupts in any way work on the Project or other operations of the City of Canton. Contractors agree not to engage in any lockouts.

ARTICLE III
BENEFITS OF THE AGREEMENT

Section 1. Benefits Of The Agreement. This Agreement is intended to foster the achievement of a timely and on-budget completion of the Project by, among other things:

(a) reducing and/or eliminating the tension and potential disagreements that might otherwise exist between Union and non-union workers on the Project;

(b) avoiding the costly delays of strikes, sympathy strikes, jurisdictional strikes, slowdowns, walkouts, picketing, handbilling and any other disruptions or interference with work, and promoting labor harmony and peace for the duration of the Project;

(c) standardizing terms and conditions governing the employment of labor on the Project;

(d) permitting flexibility in work scheduling and shift hours and times;

(e) achieving negotiated adjustments as to work rules and staffing requirements from those which otherwise might obtain;

(f) providing comprehensive and standardized mechanisms for the settlement of work disputes;

(g) ensuring a reliable source of skilled and experienced labor; and

(h) furthering public policy objectives, to the extent lawful, as to improved employment opportunities for minorities, women and the economically disadvantaged in the construction industry. Mindful of the economic condition and unemployment rate in Stark County, the Owner anticipates and expects that all construction workers and employees on this Project will be residents of Stark County. In view of the very technical and specialized work that is inherent in the construction industry, all parties acknowledge that this expectation by the Owner is a goal, not a mandate. To this end, all Contractors working under this Agreement pledge that they will make a good-faith effort to reach this goal expressed by the Owner.

ARTICLE IV
SCOPE OF AGREEMENT

Section 1. The Work. This Agreement is specifically defined and limited to onsite construction, reconstruction, repair, and renovation work required to complete the Project.

Section 2. Exclusions From Scope. Items specifically excluded from the scope of this Agreement, even if performed in connection with the Project, include the following:

(a) Work of non-manual employees, including but not limited to, superintendents, supervisors, staff engineers, inspectors, quality control

and quality assurance personnel, timekeepers, mail carriers, clerks, office workers, including messengers, guards, safety personnel, emergency medical and first aid technicians, and other professional, engineering, administrative, supervisory and management employees.

(b) Equipment and machinery owned or controlled and operated by the Owner.

(c) All off-site manufacture, fabrication or handling of materials, equipment or machinery (except at dedicated lay-down or storage areas and except as provided in Article IV, Section 9), and all deliveries of any type to and from the Project site (except on-site pouring of concrete).

(d) All employees of the Owner, the Construction Supervisor, design team or any environmental, engineering or other consultant when such employees do not perform labor coming within the scope of this Agreement.

(e) Any work performed on or near or leading to or onto the site of work on the Project and undertaken by state, county, city or other governmental bodies, or their contractors; or by public utilities or their contractors.

(f) Off-site maintenance of leased equipment and on-site supervision of all such maintenance work.

(g) Work by employees of a manufacturer or vendor necessary to maintain such manufacturer's or vendor's warranty or guarantee, or work performed by supervisors or technicians employed by the manufacturer or vendor to oversee the testing of equipment once installed to insure that the equipment is fully operational.

(h) Laboratory work for specialty testing or inspections not ordinarily done by the signatory local unions.

(i) All work done by employees of any State agency, authority or entity or employees of any municipality or other public employer.

(j) This Agreement does not apply to work covered under a collective bargaining agreement between a contractor and a local union in the outside line branch of the International Brotherhood of Electrical

Workers, including, but not limited to, construction of electrical transmission and distribution lines (including above-ground and below-ground lines), catenary and trolley facilities, switch yards, and substations.

The Unions agree that there shall be no interference with or disruption of work, of those contractors, employers, and employees exempted from coverage of this Agreement by subparagraph (a) through (j) above.

Section 3. Contract Award and Consent to Agreement.

(a) The Owner, and/or Contractors, as appropriate, have the absolute right to award contracts or subcontracts on the Project notwithstanding the existence or nonexistence of any agreements between such Contractor and any Union party, *provided that* any and all Contractors are willing, ready and able to execute and comply with this Agreement should such Contractor be awarded work covered by this Agreement.

(b) All Contractors, as a condition to awarding any contract or subcontract for any work covered by this Agreement, shall obtain and deliver to the Council a Letter of Assent (in the form provided by Appendix 1) executed by the awarded Contractor.

(c) Where any Contractor violates the above Section 3(b), such Contractor and subcontractor shall be jointly and severally liable for damages incurred by any affected Union(s) from such failure of the Contractor to properly bind a subcontractor to the Agreement by Letter of Assent, determined pursuant to the Grievance Procedure set forth in Article VII of this Agreement.

(d) Notwithstanding the foregoing Section 3(c), compliance with this Agreement is an absolute condition, as determined by the Owner, to performing any work on the Project unless such work is specifically excluded by Article IV, Section 2. Any Contractor performing work on the Project shall be deemed to have accepted this Agreement by such performance and agreed to be bound by all of its terms, without

exception.

Section 4. Stand-Alone Agreement. This Agreement is a stand-alone Agreement. While this Agreement expressly does not incorporate any local area collective bargaining agreements, such local area collective bargaining agreements may be referenced for the limited purposes as hereinafter set forth in this Agreement. However, to the extent, if any, that any provisions of this Agreement conflict with any provision of a local area collective bargaining agreement, the provisions of this Agreement shall control, except for all work performed under the NTL Articles of Agreement, the National Stack/Chimney Agreement, the National Cooling Tower Agreement, all instrument calibration work and loop checking shall be performed under the terms of the UA/IBEW Joint National Agreement for Instrument and Control Systems Technicians, and the National Agreement of the International Union of Elevator Constructors, with the exception of Articles VII, VIII and X of this Agreement, which shall apply to such work.

Section 5. Craft Jurisdiction. This Agreement shall recognize the traditional craft jurisdictions of the signatory unions. Any and all jurisdictional disputes shall be settled in accordance with Article VIII below. While this Agreement is a stand-alone Agreement, the Agreement will utilize the local area collective bargaining agreements of signatory locals, not state-wide agreements or other special project agreements, as a reference to define the signatory local unions' craft jurisdiction.

Section 6. Subcontracting. The Owner agrees that neither it nor any of its contractors or subcontractors will subcontract any work covered by this Agreement to be done on the Project except to a person, firm or corporation who is or agrees to become party to this Agreement by the procedure set forth in Article IV, Section 3. Contractors who are signatory to local are collective bargaining agreements shall be bound by the terms of their respective local collective bargaining agreements on subcontracting to the extent such terms are consistent with Article IV, Section 2 of this Agreement. Disputes concerning compliance with such local subcontracting provisions

for this Project shall be subject to all of the dispute resolution provisions of this Agreement.

Section 7. Liability. It is understood that the liability of the Contractor and the liability of the separate Unions under this Agreement shall be several and not joint. The Unions agree that this Agreement does not have the effect of creating any joint employer status between or among the Owner, Construction Supervisor and/or any Contractor, and neither the Owner nor Construction Supervisor shall assume any liabilities of the Contractors.

Section 8. Abatement of Agreement. As areas of covered work on the Project are accepted by the Owner, this Agreement shall have no further force or effect on such areas except where the Contractor is directed by the Owner to engage in repairs or punch list modifications.

Section 9. Miscellaneous. Notwithstanding any other provision of this Agreement, this Agreement applies and is limited to the recognized and accepted historical definition of demolition and new construction work under the direction of and performed by the contractor(s), of whatever tier, who have contracts awarded for such work on the project. Such work shall include site preparation work and dedicated off-site work except for the contractors and subcontractors specifically excluded in this Article II. Any off-site prefabrication of any building materials, systems and/or components traditionally performed on site shall be performed by the appropriate craft signatory to this Agreement and approved by the owner.

ARTICLE V
LABOR/MANAGEMENT COOPERATION
JOINT ADMINISTRATIVE COMMITTEE

Section 1. The parties to this Agreement shall establish a Project Joint Administrative Committee ("Committee"). This Committee will be a two-person committee

comprised of one member each appointed by the Owner (or its designee) and the Unions, with an alternate appointee Union member available to replace the regular appointee when a problem or grievance concerns the regular appointee's Union. Each member of the Committee shall designate an alternate who shall serve in the absence of the member for any purpose contemplated by this Agreement.

Section 2. The Committee shall meet at least quarterly, or more often if special circumstances warrant, to discuss the administration of the Agreement, the progress of the Project, labor/management problems that may arise, and any other relevant matters. Any need for interpretation which might arise from the application of the terms and conditions of the Agreement shall be referred directly to the Committee for resolution.

ARTICLE VI
UNION RECOGNITION AND EMPLOYMENT

Section 1. Pre-Hire Recognition. Each Contractor and subcontractor recognizes the Unions as the sole and exclusive bargaining representatives of all craft and trade employees within their respective jurisdictions working on the Project under the Agreement.

Section 2. Contractor's Right of Selection. Each Contractor shall have the right to determine the competency of all employees, the number of employees required and shall have the sole responsibility for selecting employees to be laid off. To the extent any training or vendor education is required to fill any position, said training shall be undertaken at no cost or expense to Owner.

Section 3. Union Referral. For local Unions having a job referral system, each Contractor agrees to comply with such system, and the referral system shall be used exclusively by such Contractor, except as modified by this Article. Such job referral system will be operated in a non-discriminatory manner and in full compliance with

Federal, state, and local laws and regulations requiring equal employment opportunities and nondiscrimination, and referrals shall not be affected in any way by the rules, regulations, bylaws, constitutional provisions or any other aspects or obligations of union membership, policies or requirements. The Union shall indemnify and hold each Contractor harmless with respect to any claim arising out of how the Union operates and administers its referral system. All hiring procedures, including related practices affecting apprenticeship and training, will be operated so as to facilitate the ability of the contractors to meet any and all equal employment opportunity/affirmative action obligations. The Contractor may reject any referral and request another, different referral; provided, however, the Contractor shall furnish, upon request from the Union, a written explanation for the rejection.

Section 4. Lack of Job Referral System. In the event that a signatory Local Union does not have a job referral system as set forth in Section 3 above, the Contractor shall give the Union a forty-eight (48) hour opportunity to refer applicants. The Contractor shall notify the Union of employees hired from any source other than referral by the Union.

Section 5. Unavailability of Union Referrals. In the event that local Unions are unable to fill any requisitions for qualified employees within forty-eight hours (48) after such requisition is made by the Contractor (Saturdays, Sundays, and Holidays excepted), the Contractor may employ applicants from any other available source. The Contractor shall inform the Union of the name, address and telephone number of any applicants hired from other sources and refer the applicant for the Local Union for dispatch to the Project.

Section 6. Union Best Efforts. The Local Unions will exert their utmost efforts to recruit sufficient numbers of skilled craft workers to fulfill the manpower requirements of each Contractor, including calls to local unions in other geographic areas when its referral lists have been exhausted. The parties to this Agreement support the development of increased numbers of skilled construction workers from the residents

of the area of the Project. Toward that end, the Unions agree to encourage the referral and utilization, to the extent permitted by law and the hiring hall procedures, of qualified residents as journeymen, apprentices and trainees on the Project.

ARTICLE VII
GRIEVANCE ARBITRATION PROCEDURE

Section 1. This Agreement is intended to provide close cooperation between management and labor. Each of the Unions will assign a representative to this Project for the purpose of completing the construction of the Project economically, efficiently, continuously, and without interruptions, delays, or work stoppages.

Section 2. The Contractors, Unions, and the employees, collectively and individually, realize the importance to all parties to maintain continuous and uninterrupted performance of the work of the Project, and agree to resolve disputes in accordance with the grievance-arbitration provisions set forth in this Article.

Section 3. Any question or dispute arising out of and during the term of this Agreement (other than trade jurisdictional disputes) shall be considered a grievance and subject to resolution under the following procedures:

> **Step 1.** (a) When any employee subject to the provisions of this Agreement feels he or she is aggrieved by a violation of this Agreement, he or she, through his or her local union business representative or job steward, shall, within five (5) working days after the occurrence of the violation, give notice to the work-site representative of the involved Contractor stating the provision(s) alleged to have been violated. The business representative of the local union or the job steward and the work-site representative of the involved Contractor shall meet and endeavor to adjust the matter within three (3)

working days after timely notice has been given. The representative of the Contractor shall keep the meeting minutes and shall respond to the Union representative in writing at the conclusion of the meeting but not later than twenty-four (24) hours thereafter. If they fail to resolve the matter within the prescribed period, the Local Union may, within forty-eight (48) hours thereafter, pursue Step 2 of the Grievance Procedure, provided the grievance is reduced to writing, setting forth the relevant information concerning the alleged grievance, including a short description hereof, the date on which the grievance occurred, and the provisions of the Agreement alleged to have been violated.

(b) Should the Local Union(s) or the Project Contractor or any Contractor have a dispute with the other party and if, after conferring, a settlement is not reached within three (3) working days, the dispute may be reduced to writing and proceed to Step 2 in the same manner as outlined herein for the adjustment of an employee complaint.

Step 2. The International Union Representative and the involved Contractor shall meet within seven (7) working days of the referral of a dispute to this second step to arrive at a satisfactory settlement thereof. Meeting minutes shall be kept by the Contractor. If the parties fail to reach an agreement, the dispute may be appealed by the Union, in writing, in accordance with the provisions of Step 3.

Step 3. (a) If the grievance has been submitted but not adjusted under Step 2, either party may request in writing, within seven (7) calendar days thereafter, that the grievance be submitted to an Arbitrator mutually agreed upon by them. The Contractor and the involved Union shall attempt mutually

to select an arbitrator, but if they are unable to do so, they shall request the Federal Mediation and Conciliation Services (FMCS) to provide them with a list of arbitrators from which the Arbitrator shall be selected. The rules of FMCS shall govern the conduct of the arbitration hearing. The decision of the Arbitrator shall be final and binding on all parties. The fee and expenses of such Arbitration shall be borne equally be the Contractor and the involved Local Union(s).

Section 4. Failure of the grieving party to adhere to the time limits established herein shall render the grievance null and void. Failure of the Contractor to adhere to the time limits established herein shall result in the grievance being sustained. The time limits established herein may be extended only by written consent of the parties involved at the particular step where the extension is agreed upon. The Arbitrator shall have the authority to make decisions only on issues presented to him or her, and he or she shall not have authority to change, amend, add to or detract from any of the provisions of this Agreement.

Section 5. The Owner shall be notified of all actions at Steps 2 and 3 and shall, upon their request, be permitted to participate in all proceedings at these steps.

ARTICLE VIII
JURISDICTIONAL DISPUTES

Section 1. The assignment of work will be the responsibility of the Contractor performing the work involved and such work assignments will be in accordance with decisions issued under the Plan for the Settlement of Jurisdictional Disputes in the Construction Industry (the "Plan"), or any successor Plan, adopted by the National Building and Construction Trades Department.

Section 2. All jurisdictional disputes on this Project, between or among Building

and Construction Trades Unions and employers, parties to this Agreement, shall be settled and adjusted according to the present Plan established by the Building and Construction Trades Department or any other plan or method of procedure that may be adopted in the future by the Building and Construction Trades Department. Decisions rendered shall be final, binding and conclusive on the Contractors and Unions parties to this Agreement.

Section 3. All jurisdictional disputes shall be resolved without the occurrence of any strike, work stoppage, or slow-down of any nature, and the Contractor's assignment shall be adhered to until the dispute is resolved. Individuals violating this section shall be subject to immediate discharge.

Section 4. Each Contractor will conduct a Pre-Job Conference with the Council prior to commencing work which shall require completion of a Pre-Job Conference Verification Form (attached as Appendix 2). This Pre-Job Conference requirement may be waived only by the Council, in writing, upon request of a Contractor. The Owner will be advised in advance of all such conferences and may participate if they wish.

ARTICLE IX
MANAGEMENT'S RIGHTS

Section 1. Exclusive Owner - Workforce. Except as otherwise provided in this Agreement, the Owner (or its designee) and the Contractors retain the authority to manage their operations and workforces.

Section 2. Materials, Design, Machinery, Equipment. There shall be no limitation or restriction by a signatory Union upon a Contractor's choice of materials or design, nor, regardless of source or location, upon the full use and utilization of equipment, machinery packaging, pre-cast, pre-fabricated, pre-finish, or pre-assembled materials, tools or other labor saving devices. The on-site installation or application of all items shall be performed by the craft having jurisdiction of such work;

provided, however, that installation of specialty items may be performed by employees employed under this Agreement who may be directed by other personnel in a supervisory role, in circumstances requiring special knowledge of the particular items.

Section 3. New Technology, Equipment. The use of new technology, equipment, machinery, tools and/or labor saving devices and methods of performing work may be initiated by any Contractor from time to time during the Project. The Union agrees that it will not in any way restrict the implementation of such new devices or work methods.

Section 4. Disputes. If there is any disagreement between any Contractor and the Union concerning the manner or implementation of such device or method of work, the implementation shall proceed as directed by the Contractor, and the Union shall have the right to grieve and/or arbitrate the dispute as set forth in Article VII of this Agreement.

ARTICLE X
WORK STOPPAGES

Section 1. No Strikes or Work Disruptions. There shall be no strike, sympathy strike, jurisdictional strike, recognitional strike, slowdown, sabotage, work to rule, sickout, sit down, picketing of any type (including informational picketing), handbilling, boycott, interruption of work or any disruptive activity that interferes with or interrupts in any way work on the Project. The applicable local union shall not sanction, aid or abet, encourage or continue any work stoppage, strike, picketing or other disruptive activity which violates this Article and shall undertake all reasonable means to prevent or to terminate any such activity. No employee shall engage in activity which violates this Article. Any employee who participates in or encourages any activity which violates this Article shall be subject to disciplinary action, including discharge, and if justifiably discharged for the above reasons, shall not be eligible for

rehire on the same project for a period of not less than ninety (90) days. Further, if the Local Union is unable to provide qualified replacements for those employees who are in violation of this Article by the beginning of the next shift, the Employer is free to hire from any source.

Section 2. Union Responsibilities. The Local Union shall not be liable for acts of employees for which it has no responsibility. The principal officers of the Local Union will immediately instruct, order and use their best efforts to cause the members of the Local Union they represent to cease any violations of this Article. If it complies with this obligation, the Local Union shall not be responsible for unauthorized acts of employees it represents.

ARTICLE XI
WAGES AND BENEFITS

Section 1. Wages. All employees covered by this Agreement shall be classified in accordance with work performed and paid 100% of the wages and 100% of the fringe benefits as established in the respective Union's Local Area Collective Bargaining Agreement and any subsequent modifications thereto. The Contractor, upon request, shall provide the Unions and Owner with substantiation that wages and benefits are being paid on the Project. The Unions shall provide the Owner, and any Contractor or subcontractor that is party to this Agreement, with wage, fringe benefit and dues reporting forms.

Section 2. Payment of Benefits/Contributions. Each Contractor will also pay all required contributions in the amounts required by Section 1 of this Article to the established employee benefit funds that accrue to the direct benefit of the employees (such as pension and annuity, health and welfare, vacation, apprenticeship, training funds). With respect to contributions required in this Section to Employer-Union jointly trusted funds, the Contractor adopts and agrees to be bound by the written terms of the legally established trust agreement specifying the detailed basis on which

payments are to be made into, and benefits paid out of, such Trust Funds. The Contractor authorizes the parties to such Trust Funds to appoint Trustees and successor Trustees to administer the Trust Funds and hereby ratifies and accepts the Trustees so appointed as if made by Contractor.

Section 3. Non-Affiliated Labor Organizations. The Contractor shall deduct from each employee's wages all uniform dues and working assessments the employee has voluntarily authorized in writing as set forth in the Employee's Local Collective Bargaining Agreement. If a labor organization is not affiliated with the Council, and supplies its members or referrals for work on the Project, such labor organization shall pay to the Council the dues and assessments it would owe the Council if affiliated, for all periods during which the labor organization has members or referrals working on the Project. Any disputes under this paragraph shall be resolved exclusively between the labor organization and the Council by using the grievance procedure appearing in Article VII, as provided herein. All grievances shall be reduced to writing within thirty (30) days of the date on which the aggrieved party discovered the dispute. The grievance shall be initiated at Article VII, Section 3, Step 3.

ARTICLE XII
LOCAL UNION NEGOTIATIONS DURING THE PENDENCY OF THE AGREEMENT

Section 1. All parties to this Agreement understand and acknowledge that some crafts who will be working on the Project are covered by local collective bargaining agreements that will expire prior to the projected completion of the Project. All parties understand and agree that irrespective of whether such local collective bargaining agreement negotiations are successful or unsuccessful, there shall be no strike, sympathy strike, jurisdictional strike, recognitional strike, slowdown, sabotage, work to rule, sickout, sit down, picketing of any type (including informational picketing), handbilling, boycott, interruption of work or any disruptive activity that interferes with or interrupts in any way work on the Project by any Union involved in such local

negotiations, or by any of its members, nor shall there be any lockout by a Contractor on the Project affecting such union or its members during the course of such negotiations. Irrespective of the status of any such local collective bargaining agreement negotiations, the affected Union and all of its members will observe and fully comply with the provisions of this Agreement. Should any Local Union fail or refuse to provide and/or refer qualified employees for work on the Project during an economic strike, any affected Contractor shall be permitted to utilize the procedures appearing in Article VI, Section 5 of this Agreement.

Section 2. Wage/Benefit Increases. Should a craft covered by this Agreement negotiate an increase in wages or an increase in benefits with any Contractor to become effective during the term of the Project, those wage and/or benefit increases shall be paid by the affected Contractor, as of the effective date of those increases, to those employees in that craft performing work covered by this Agreement.

ARTICLE XIII
HOURS OF WORK, OVERTIME, SHIFTS AND HOLIDAY

Section 1. Work Day and Work Week. Except as provided in Section 4, the first shift shall consist of eight (8) or ten (10) hours per day between the hours of 6:00 a.m. and 5:30 p.m., plus one-half (1/2) hour unpaid for lunch, approximately mid-way through the shift. Forty (40) hours per week shall constitute a regular week's work, whether consisting of five (5) eight (8) eight hours days, or four (4) ten (10) hour days. The work week will start on Monday and conclude on Sunday. A uniform starting time will be established for all crafts on each project or segment of the work. Nothing herein shall be construed as guaranteeing any employee eight (8) or ten (10) hours per day or forty (40) hours per week. The Union(s) shall be informed of the work starting time set by the contractor at the pre job conference which may be changed thereafter upon three (3) days' notice to the Union(s) and the employees. A second shift, if used, shall consist of eight hours between 3:00 p.m. and 1:00 a.m.; a third shift, if used, shall begin between 10:00 p.m. and 1:00 a.m. For purposes of Section 3, the third shift shall be

considered as part of the prior day's work.

Section 2. Starting Times. Employees shall be at their place of work at the starting time and shall remain at their place of work (as designated by the Contractor) performing their assigned functions until quitting time, which is defined as the scheduled end of the shift. The parties reaffirm their policy of a fair day's work for a fair day's wage. There shall be no pay for time not worked unless the employee is otherwise engaged at the direction of the Contractor.

Section 3. Overtime. Overtime shall be defined as all hours worked in excess of forty (40) hours in a work week or, for 8 hour shifts, in excess of eight (8) hours per day; or for 10 (ten) hour shifts for work in excess of 10 hours per day; such work and work performed on Saturdays shall be paid at one and one-half times the straight time rate of pay. However, in scheduled four (4) day/ten hour shift work weeks, Friday may be scheduled as a "makeup" day at straight time to make up for a day lost (Monday through Thursday) due to inclement weather. In addition, if a "make-up" day is scheduled, all employees directed to work on such day will be guaranteed a minimum of four (4) hours work or pay. In any week in which employees on the Project are scheduled on four/ten hour shifts, an employee whose first day of work on the Project begins on Wednesday or later day of the schedule shall be paid, during the first week of his employment only, time-and-one-half for all hours worked in excess of eight in a day or each day he works during said week. Work on Sundays and holidays shall be at double time. There shall be no restriction on any contractor's scheduling of overtime or the non-discriminatory designation of employees who will work. The contractor shall have the right to schedule work so as to minimize overtime. There shall be no pyramiding of overtime pay under any circumstances.

Section 4. Shifts.

(a) Shift work may be performed at the option of the Contractor(s) upon three (3) days' prior notice to the Union and shall continue for a period of not less than five (5) working days. Saturdays and Sundays, if worked, may be used

for establishing the five (5) day minimum work shift. If two shifts are worked, each shall consist of eight (8) hours of continuous work exclusive of a one--half (½) hour non-paid lunch period. Any third shift shall consist of seven (7) hours of continuous work exclusive of one-half (½) hour non-paid lunch period for eight (8) hours pay. A premium of $.25 per hour shall be paid for work on the second shift and $.50 per hour for work on the third shift.

(b) The Contractor may establish a work week of four (4) consecutive ten (10) hour work days (exclusive of one-half (½) hour unpaid lunch, approximately midway through the shift) between Monday through Thursday.

Section 5. Minimum Pay. An employee who reports for work at the regular starting time and for whom no work is provided shall receive pay equivalent to two (2) hours at the applicable hourly rate, provided the employee at the employer's discretion remains available for work. Any employee who reports for work and for whom work is provided shall be paid for actual time worked but not less than two (2) hours. It will not be a violation of this agreement when the employer considers it necessary to shut down to avoid the possible loss of human life, because of an emergency situation that could endanger the life and safety of an employee. In such cases, employees will be compensated only for the actual time worked. In the case of a situation described above where the employer requests employees to remain available for work, the employees will be compensation for such time. If a project is shut down because of weather, employees, who report for work, shall be paid actual time worked but not less than two (2) hours. Procedures for prior notification of work cancellation shall be determined at the pre-job conference. The provisions of this section are not applicable where the employee voluntarily quits or lays off.

Section 6. Holidays. Holidays shall be New Year's Day, Good Friday, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, the Day after Thanksgiving Day, and Christmas Day. A holiday falling on Saturday shall be observed on the preceding Friday. A holiday falling on Sunday shall be observed on the following Monday.

Section 7. Meal Period. The Contractor will schedule a meal period of not more than one-half hour duration at the work location at approximately the mid-point of the scheduled work shift (4 hours in a five day work week, 5 hours in a four-day work week), consistent with Section 1; provided, however, that the Contractor may, for efficiency of the operation, establish a schedule which coordinates the meal periods of two or more crafts. If an employee is required to work through his meal period, he shall be compensated for the time worked at the applicable overtime rate and the employee shall, when work permits, eat his lunch "on the fly".

Section 8. No Organized Work Breaks. There will be one (1) break during the first four (4) hours of a shift which shall be taken at the employee's work station. Individual nonalcoholic beverage containers will be permitted at the employee's work station.

Section 9. Helmets to Hardhats.

(a) The Employers and the Unions recognize a desire to facilitate the entry into the building and construction trades of veterans who are interested in careers in the building and construction industry. The Employers and Unions agree to utilize the services of the Center for Military Recruitment, Assessment and Veterans Employment (hereinafter "Center") and the Center's "Helmets to Hardhats" program to serve as a resource for preliminary orientation, assessment of construction aptitude, referral to apprenticeship programs or hiring halls, counseling and mentoring, support network, employment opportunities and other needs as identified by the parties.

(b) The Unions and Employers agree to coordinate with the Center to create and maintain an integrated database of veterans interested in working on this Project and of apprenticeship and employment opportunities for this Project. To the extent permitted by law, the Unions will give credit to such veterans for bona fide, provable past experience.

ARTICLE XIV
APPRENTICES

Section 1. Need For. The parties recognize the need to maintain continuing support of programs designed to develop adequate numbers of competent workers in the construction industry. The Contractor(s) will, accordingly, employ apprentices in their respective crafts to perform work on the Project in accordance with Section 2 below.

Section 2. Ratios. The Union agrees to cooperate with the Contractor in furnishing qualified apprentices as requested and if available. Apprentices shall perform the work of their craft in accordance with the ratios and terms in their local area collective bargaining agreements. To the extent requested by Owner, the Contractor(s) may use the maximum number of apprentices permitted by local collective bargaining agreements.

ARTICLE XV
DRUG AND ALCOHOL POLICY

Section 1. Drug and Alcohol Policy. All parties understand and agree that a drug and alcohol policy, approved by the Council, will be in force for all work performed under the Agreement. The drug and alcohol policy will prohibit the use, sale, transfer, purchase and/or possession of a controlled substance, alcohol and/or firearms while on the Project's premises and will require testing of employees. The drug and alcohol policy, attached hereto as Appendix 3, is incorporated into and made part of this Agreement and is implemented for all Contractors and employees working on the Project.

ARTICLE XVI
NON-DISCRIMINATION

Section 1. Policy. It is the continuing policy of the Owner, the Contractors and the Unions that the provisions of this Agreement shall be applied without discrimination because of age, race, sex, color, religion, creed, national origin, sexual orientation or any other basis prohibited by applicable law.

ARTICLE XVII
SOLE AND COMPLETE AGREEMENT

Section 1. The parties agree that this Agreement constitutes the sole and complete agreement between them governing the rates of pay and working conditions of the construction employees working on the Project. This Agreement settles all demands and issues on the matters subject to collective bargaining and shall not be modified or supplemented in any way except by written agreement executed by the Owner and all parties.

ARTICLE XVIII
SEPARABILITY AND SAVINGS CLAUSE

Section 1. Intent of Parties. If any article or section of this Agreement shall be held invalid by law or by a tribunal of competent jurisdiction, or if compliance with or enforcement of any article should be restrained pending a final determination as to its validity, the remainder of this Agreement shall not be affected and shall remain in full force and effect. In the event that any article or section is held invalid, the parties hereto shall, upon the request of the Unions, enter into collective bargaining negotiations for the purpose of arriving at a mutually satisfactory replacement for such article during the period of invalidity or restraint. If the Owner and the Council cannot agree on a mutually satisfactory replacement, either party shall be permitted to submit its demand to formal interest arbitration under the Rules of Federal Mediation and Conciliation Service.

Section 2. Force of Agreement. The parties recognize the right of the Owner to withdraw, at its absolute discretion, the utilization of this Agreement as part of any bid specification should a court of competent jurisdiction issue any order which could result, temporarily or permanently, in a delay of the bidding, awarding, and/or construction work on the Project. Notwithstanding such an action by the Owner, or such court order, the parties agree that the Agreement shall remain in full force and effect on the Project, to the maximum extent legally possible. It is hereby agreed that this Agreement covers all of the signatory local unions listed below.

Section 3. Delegation. The Owner, in its sole and absolute discretion has the right to delegate its duties hereunder to a representative and/or designee who may be either an employee of Owner or a third party with whom Owner has contracted for contractor services.

OWNER
CITY OF CANTON

Director of Public Service

EAST CENTRAL OHIO BUILDING & CONSTRUCTION TRADES COUNCIL, AFL-CIO

PRESIDENT

APPROVED AS TO FORM

CITY OF CANTON
DIRECTOR OF LAW

BOILERMAKERS LOCAL NO. 744

By:

Name: MARTIN D. MAHON

Title: BUSINESS MANAGER

Date: 7·19·2023

BRICKLAYERS LOCAL 6

By:

Name: Justin M. Gartrell

Title: Field Rep.

Date: 7-20-23

ELECTRICIANS LOCAL NO. 540

By:

Name: ERIK HANN

Title: BUS. MGR. / F.S.

Date: 7/19/23

ELEVATOR CONSTRUCTORS LOCAL NO. 45

By: _____

Name: Ron Johnston

Title: BM

Date: 7/19/2023

GENERAL TRUCK DRIVERS & HELPERS UNION LOCAL NO. 92

By: _____

Name: MARK Miller

Title: Rec Sec.

Date: 7/19/23

GLAZIERS LOCAL NO. 1162

By: _____

Name: Scott Harter

Title: B.A.

Date: 7-19-23

HEAT & FROST INSULATORS AND ALLIED WORKERS LOCAL NO. 84

By: _____

Name: Kevin Streby

Title: Business Manager

Date: 8 - 2 - 23

IRONWORKERS LOCAL NO. 550

By: _____

Name: Theron Hodge

Title: Business Agent

Date: 7-20-23

LABORERS LOCAL NO. 1015

By: _____

Name: Jake Croston Jr

Title: Business Manager

Date: 7/24/23

OPERATIVE PLASTERERS AND CEMENT MASONS LOCAL NO. 109

By: WC Taggart

Name: William Taggart

Title: BM & Fin Sec.

Date: 07/13/2023

PAINTERS LOCAL NO. 841

By: Scott Harter

Name: Scott Harter

Title: B.A.

Date: 8-2-23

PLUMBERS, PIPEFITTERS AND REFRIGERATION LOCAL NO. 94

By: BM

Name: Brett McElfresh

Title: Business Manager

Date: 7/21/2023

ROOFERS LOCAL UNION NO. 88

By: James R. Mayers

Name: James R. Mayers

Title: Business Manager

Date: 7-13-2023

SHEET METAL WORKERS LOCAL NO. 33

By: [signature]

Name: Jerry Durieux

Title: Business Agent

Date: 7/19/23

SPRINKLER FITTERS LOCAL NO. 669

By: _____

Name: _____

Title: _____

Date: _____

INDIANA/KENTUCKY/OHIO REGIONAL COUNCIL OF CARPENTERS

By: [signature]

Name: Kevin M. Ennis II

Title: Senior Representative

Date: 7/19/23

APPENDIX 1

LETTER OF ASSENT TO THE PROJECT LABOR AGREEMENT
FOR THE
CRENSHAW PARK OUTDOOR SHELTER

Pursuant to Article I, Section 1 and Article IV, Section 3 of the Project Labor Agreement (the "Agreement") for the above-referenced Project, the undersigned party hereby agrees that it will comply with and be bound by all of the terms and conditions of the Agreement and agrees to all approved amendments or revisions thereto.

By executing this Letter of Assent, the undersigned also reaffirms, acknowledges, and agrees that it must participate in a Pre-Job Conference with the East Central Ohio Building & Construction Trades Council prior to performing any work on the Project. A Pre-Job Conference shall be valid only where the undersigned Contractor completes the Pre-Job Conference Verification Form provided in Appendix 2.

This Letter of Assent shall ONLY apply to the above-referenced Project and shall remain in effect for the duration of the above-referenced Project, after which this Letter of Assent will automatically terminate without further notice.

For the Contractor (or Subcontractor of whatever tier)

Name of Contractor/Subcontractor: _____

By its Authorized Representative: _____

Print Name: _____

Title: _____

Signature: _____

Date: _____

Phone: _____

Email: _____

APPENDIX 2

Pre-Job Conference Verification Form

Date of Conference _____

Location of Conference _____

Project Name _____

Contractor Name _____

Address of Contractor _____

_____

Point of Contact _____

Phone _____

Email _____

Scope of Work _____

_____

_____

Contractor has provided Council with a list of all proposed trade assignments by craft including scope of work for each assignment.

Y___ N___

Contractor has provided Council with a list of all subcontractors that will perform work on the Project.

Y___ N___

Contractor affirms that it is responsible for subcontracting any work on the Project in strict compliance with Article IV, Section 3 of the Project Labor Agreement.

Y___ N___

The Council has in its possession a Letter of Assent signed by Contractor.

Y___ N___

ACKNOWLEDGED:

BY COUNCIL: (signature)_____(title)_____

BY CONTRACTOR: (signature)_____(title)_____

APPENDIX 3

EMPLOYEE DRUG AND ALCOHOL TESTING POLICY

SPECIFICATIONS

The Owner is committed to providing a safe workplace for the workers assigned the Project, promoting high standards of employment health, and fostering productivity that satisfies its quality expectations. Consistent with the intent and spirit of this commitment, the Owner and ECOB & CTC have established a substance abuse testing specification for the Project with the goal of maintaining a work environment that is free from the effects of the use of illegal drugs and alcohol. The Owner will implement the terms of this policy.

This specification is not intended as a substitute for the Contractors' complete written substance abuse policy. Normally, such policies include other important features, including, but not limited to, an employee education and awareness Program, a supervisor training program and an employee assistance program.

The policy for this Project requires that any construction employee entering the project site will comply with the substance abuse testing requirements as outlined in this section. The Owner reserves the right to amend this specification upon written notice to the Contractor and the Unions on the Project. The parties to this agreement shall recognize the Drug Free Work Site Program as implemented through participating Unions and/or Contractors as administered by the contractor, or for contractors who are not signatory to agreements with signatory unions belonging to ECOB & CTC, and their core employees, an equivalent program that meets the specifications, contractual requirements, and testing requirements as set forth in Appendix 3.

CONTRACTUAL REQUIREMENTS

All Contractors must have and enforce a written Substance Abuse Program incorporating the testing requirements, term, and conditions set forth in this specification. This specification is applicable to all employees, current and prospective, in order to be eligible to perform work at the Project. The Contractors must comply with the specification. Supplies, vendors, and visitors are subject to confirmation of their abstinence from the possession or use of substances indicated in this specification. A copy of each contractor's substance abuse program must be

submitted to the Owner for approval prior to commencement of any work on the Project site.

The substance abuse program must apply to all employees working on the Project and subcontractors' of any of tier working on the Project site. This includes workers, new hires, replacement workers, and supervisory personnel. No employee or prospective employee of a Contractor shall be permitted to work on the Project site unless such employee has submitted to testing by this specification and unless the results of such testing are negative as hereinafter defined. The Contractor must provide the Owner with a Monthly Summary Report of the Substance Abuse Program compliance.

All Contractors must train their respective employees in methods that will allow them to recognize substance abusers. Supervisory Employees of the Owner or its subcontractor shall be trained to take action, and to confront a substance abuser in a manner consistent with generally accepted safety-training procedures.

The cost of implementing the Substance Abuse program shall be borne by each respective Contractor affected by this specification.

Suppliers, vendors, and visitors must become signatory to the terms of this specification and their abstinence from substance abuse, and their continued avoidance of violations of the specification at the project site. Furthermore, in the event of an incident and/or accident occurrences involving suppliers, vendors, and/or visitors, the same agrees to submit to the substance abuse testing when requested. Refusal to comply would be grounds to have the supplier, vendor, or visitor permanently barred from the Project site by regulators.

TESTING REQUIREMENTS

The Project requires:

- Post-offer/Pre-engagement drug and alcohol testing.
- Testing for reasonable suspicion of illegal drug use or alcohol use.
- Post accident and post incident drug and alcohol testing upon reasonable suspicion.
- Drug testing following discovery of illegal or unauthorized drugs or paraphernalia as creating reasonable suspicion.

All Prime Contractors must perform post-offer/pre-engagement, and post accident/incident testing upon reasonable suspicion, as follows:

a. All drug testing must be conducted by a National Institute of Drug Abuse (NIDA) certified laboratory with test results interpreted by a licensed medical review officer (MRO).
b. The initial screen tests for alcohol shall be performed by using either a saliva test or breathalyzer test comparable to the type used by state or local law enforcement officials. Furthermore, alcohol confirmatory tests shall be performed by using either blood alcohol test or a Breathalyzer test comparable to the type used by state or local law enforcement officials.
c. Evidence of the negative test results of individual employees required by this specification shall be furnished to the Owner prior to the commencement of work by the individual employee and promptly after performance of any subsequent testing required by this specification. Acceptable negative test result format.
    - A certificate signed by the testing laboratory, setting forth the nature and results of performed; or
    - An identification card signed by the respective Prime Contractor and issued to the individual employee, setting forth as reported on a certificate issued by the testing laboratory. The name of the testing laboratory shall also appear on the identification card; provided the affected employee authorizes the issuance of such identification card.

COMPLIANCE PROCEDURE

The Owner reserves the right to audit any substance abuse program required by this specification to verify compliance results within twenty-four (24) hours of notification of the intent to audit. The Owner shall have free right of access to all relevant records of the Prime Contractor and their subcontractors and supplies for this purpose, provided such record disclosures are within the scope of the States guidelines pertaining to confidentiality of employee records.

The Contractor's pre-engagement employees who receive a positive test result shall immediately leave the Project Site. Transportation of employees receiving the

positive test result is the direct responsibility of the employing Prime Contractor, including employees of its subcontractors. Furthermore, pre-engagement employees receiving a positive test shall not be permitted to return to the Project Site earlier than 90 days from the date of the positive test. At this time the employee may begin the process outlined by this specification again.

DEFINITIONS/ CONFIDENTIALITY/RULES- DISCIPLINARY ACTIONS- GRIEVANCE PROCEDURES

1. DEFINITIONS:

   (a) Company Premises - the term "Company Premises" as used in this policy includes all property, facilities, land, building, structures, automobiles, trucks and other vehicles owned, leased or used by the Contractor on the Project. Construction job sites for which the Contractor has responsibility are included.

   (b) Prohibited Items & Substances - Prohibited substances include illegal drugs (including controlled substances, look alike drugs and designer drugs, alcoholic beverages, and drug paraphernalia in the possession of or being used by an employee on the job.

   (c) Employee - Individuals, who perform work for the Contractor, including, but not limited to management, supervision, engineering, craft workers and clerical personnel.

   (d) Accident - Any event resulting in injury to a person or property to which an employee, or contractor/contractor's employee, contributed as a direct or indirect cause.

   (e) Incident - An event which has all the attributes of an accident, except that no harm was caused to person or property.

   (f) Reasonable Cause - Reasonable cause shall be defined as tardiness, excessive absenteeism, and erratic behavior such as noticeable imbalance, incoherence, and disorientation.

2. CONFIDENTIALITY

   (a) All parties to this policy and program have only the interests of employees in mind; therefore, encourage any employee with a substance abuse problem

to come forward and voluntarily accept our assistance in dealing with the illness. An employee assistance program will provide guidance and direction for you during your recovery period. If you volunteer for help, the Contractor will make every reasonable effort to return you to work upon your recovery. The Contractor will also take action to assure that your illness is handled in a confidential manner.

(b) All actions taken under this policy and program will be confidential and disclosed only to those with a "need to know."

(c) When a test is required, the specimen will be identified with a code number, not by name, to insure confidentiality of the donor. Each specimen container will be properly label and made tamper proof. The donor must witness this procedure.

(d) Unless an initial positive result is confirmed as positive, it shall be deemed negative and reported by the laboratory as such.

(e) The handling and transportation of each specimen will be properly documented through the strict chain of custody procedures.

3. RULES - all employees must report to work in a physical condition that will enable them to perform their jobs in a safe and efficient manner. Employees shall not:

(a) Use, possess, dispense or receive prohibited substances on or at the Project job site; or

(b) Report to work at or on the Project with any measurable amount of prohibited substances in their system.

4. DISCIPLINE - When the Contractor has reasonable cause to believe an employee is under the influence of a prohibited substance, for reasons of safety, the employee may be suspended until test results are available. If no test results are received after three (3) working days, the employee, if available, shall return to work with back pay. If the test results prove negative, the employee shall be reinstated with back pay. In all other cases:

(a) Applicants testing positive for drug use will not be hired.

(b) Employees who have not voluntarily come forward, and who test positive for a drug use, will be terminated.

(c) Employees who refuse to cooperate with testing procedures will be terminated.

(d) Employees found in possession of drugs or drug paraphernalia will be terminated.

(e) Employees found under the influence of alcohol while on duty, or while operating a company vehicle, will be subject to termination.

5. PRESCRIPTION DRUGS - Employees using a prescribed medication which, in their physician's opinion, may impair the performance of their duties, either mental or motor functions, must immediately inform the supervisor of such prescription drug use if instructed by their physician to do so. For the safety of all employees, the Contractor will consult with you and your physician to determine if a reassignment of duties is necessary. The Contractor will attempt to accommodate your needs by making an appropriate reassignment. However, if a reassignment is not possible, you will be placed on temporary medical leave until released as fit for duty by the prescribing physician.

Appendix B

Prevailing Wage Requirements and Rates

Overview
This project will utilize Ohio Prevailing Wage Rates. All contractors and subcontractors are required to comply with all Prevailing Wage Requirements in the Ohio Revised Code. These requirements are outlined below and sample documents are contained in the following pages and will be utilized to comply with these requirements. **Please note that the City of Canton will withhold payroll and/or retainage for a pay application or for the project in total until all prevailing wage issues are resolved.**

Payroll Dates Form
Must be submitted to the Prevailing Wage Coordinator (PWC) on or before the date your company starts work under the contract. It is to be completed with the **actual payroll dates** and not a day of the week. This requirement applies to all contractors/subcontractors.

Letter of Authorization for Payroll Signature
The person signing the certified payrolls must be an Owner or Corporate Officer of the company, or an Authorization letter must be completed and sent to the Prevailing Wage Coordinator. The document sent **must be** the **original signed notarized document**. If the person signing the payroll changes during the course of the project then a new Letter of Authorization for payroll signature must be submitted.

Fringe Benefits Form
Please complete and return along with the payroll dates form and letter of authorization for payroll signature form.

Notification to Employee Form
If your company is a **non-union company** you **must provide a completed Notification form to each employee working on this site and provide the PWC a copy** (wage and fringe benefit amounts on Notification must match amounts listed on payrolls), the form must have the Prevailing Wage Coordinator information, if you are a **union company** you need to send the PWC **a copy of the contract/agreement your company has with the local Trade Union(s)**.

Certified Payroll
The **first certified payroll** must be sent to the Prevailing Wage Coordinator **within two weeks of 1st pay period on the job**, payrolls must be sent **weekly** to the Prevailing Wage Coordinator if your company is working **four months or less** on site, payrolls must be sent **at least monthly** if working **more than four months** on site. Certified payroll forms used by contractors **must include all the information that is on payroll form included** with this package, if the payroll form you use does not have sections for all the information, it must be included as an attachment to the certified payroll. (During the project you may send copies of the certified payroll but **by the end of the project you must provide the original signed documents to the Prevailing Wage Coordinator** before you will receive your final payment). Fringe benefit break down needs to be attached to **each** payroll. For any **work classifications** requiring a group number (1-5) such as laborer or operating engineer if the group number or identifying equipment employee is operating is not entered a revised payroll will be required.

Affidavit of Compliance
When each contractor/subcontractor has completed their work on the job site they're required to submit a Final Affidavit of Compliance before the primary contractor receives their final payment and any retainer. Must send Prevailing Wage Coordinator original signed document.

Apprentices
Any/all apprentices working on this project must be registered with the State of Ohio Apprenticeship Council, apprentices on site cannot exceed ratios in the wage decision rate schedule, contractors/subs must provide the Prevailing Wage Coordinator a copy of the Apprenticeship Agreement from the program for each apprentice on the project with the first payroll on which they appear. You must provide the apprentice level/year, i.e. 1, 2, 3, etc. and/or percent of Journeyman's pay rate, i.e. 50%, 55%, etc. on the certified payrolls.

Subcontractors
If any subcontractors will be used during this project then a list of subcontractors including their name, address, and phone number must be provided to the Prevailing Wage Coordinator. The Prime contractor is responsible for all forms to be furnished to subcontractors, **along with wage rates** or any other modification vital to the project.

Prevailing Wage Rates
Attached are the State of Ohio Prevailing Wage Rates as of the posting date of this bid. Actual rates due to workers will be those in affect at the time of work. Please note that the wages of the County where the work is be completed will be in effect. Due to the location of the water treatment plants, this could be either Stark or Tuscarawas counties. Both are attached. All applicable prevailing wage rates must be posted on the job site for the duration of the project.

WEEKLY PAYROLLS

Each week as work progresses the Contractor must submit to the Prevailing Wage Coordinator original, certified, signed weekly payrolls containing the following information:

A) Name of each employee.

B) Employees' social security numbers

C) Special classification of employees (same as shown on wage determination or provisional approval.)

D) Rate of pay not less than that shown on the wage determination.

E) Allowable fringe benefits paid to the employee.

F) Hours worked each day and total hours worked for each week for each employee.

G) Gross amount paid to each employee.

H) Itemized deductions for each employee.

I) Net amount paid to each employee.

J) The following certification:

"I certify that the payroll is correct and complete, that the wage rates contained therein are not less than the applicable rates contained in the Wage Determination decision of the Department of Industrial Relations, Prevailing Wage Rate Division, State of Ohio, and that the classifications set forth for each laborer or mechanic conform with the work he performs".

_____ _____

(SIGNATURE) (TITLE)

PREVAILING WAGE COORDINATOR

The City of Canton has designated Cheryl Southwell as Prevailing Wage Coordinator, in accordance with Section 4115.071 of the Ohio Revised Code.

Her office is located at City of Canton, 218 Cleveland Ave SW, Canton, Ohio 47702
Cheryl Southwell: 330-438-4183

CONTRACTORS SUBMISSIONS TO THE WAGE COORDINATOR:

1) Contractors are required to supply to the Wage Coordinator, **a schedule of the dates during the life of the contract with City of Canton on which they are required to pay wages to the employees**. See Section 4115.03 (A) (2)

2) Contractors shall also deliver to the Wage Coordinator **a certified copy of the payroll within two weeks after the initial pay date and supplemental reports for each month thereafter, which shall exhibit for each employee, their name, current address, social security number, job classification, number of hours worked for project, rate of pay, project gross pay, fringe payments, total hours all jobs, total gross all jobs, and deductions from their wages.** See Section 4115.03 (A) (3)

3) If the life of the contract is expected to be no more than four months from the beginning of performance by the contractor or subcontractor, such supplemental reports shall be filed each week after the initial report. See Section 4115.03 (A) (6) (C)

4) The certification of each payroll shall be executed by the contractor, subcontractor, or duly appointed agent thereof and **include a State of Compliance** stating that the payroll is correct and complete and that during the payroll period, all persons employed on said project have been paid the full weekly wages earned, that no rebates have or will be made either directly or indirectly to, or on behalf of said contractor or subcontractor for the full weekly wages earned by any person and that no deductions have been made either directly or indirectly from the full wages earned by any person, other than permissible deductions. See Section 4115.03 (A) (6) (C)

5) Contractors will also provide **each month a copy of any Labor Union Fringe Benefit Fund reports that they submitted to the unions**. See Section 4115.03

PREVAILING WAGE COORDINATOR MONITORING PROCEDURES

The wage Coordinator's duties are those specified in Section 4115.071 and shall include:

1 Attend Pre-Construction Meetings to advise contractor of Prevailing Wage responsibilities

2 Wage Coordinator has the authority to spot check employees pay checks in the field on the scheduled pay days for full compliance, with regard to the prevailing wage rates, including benefits.

3 Wage Coordinator shall visit the project site to get names of employees performing work on the project site, to cross check with payroll reports submitted.

4 Wage Coordinator shall verify the subcontractors performing work on the project site with regard to whether they have been approved by the contracting authority.

5 Wage Coordinator shall check to see that the prevailing wages are posted on the project site in a place accessible to employees.

6 Ascertain that the statement of compliance accompanying the certified payroll is the correct one for the project

7 Wage Coordinator has the right to request any addition information they feel is required for proper wage verification.

8 Contact Contractors of delinquent payrolls

9 Notify contractors when necessary to request payroll corrections

10 Investigate wage complaints ,by self or with Ohio Department of Commerce Division of Labor & Worker Safety

PAYROLL DATES
PREVAILING WAGE LAW

Instructions to the Contractor: Please read the following and provide the required information noted on this form. This document must be submitted to the Prevailing Wage Coordinator for the public authority on or before your company begins any work under a contract for a public improvement. This requirement is also applicable to your subcontractors. Please make a copy of this document available to them. The prevailing wage laws state that contractors are responsible for their subcontractors.

_____ will begin performance under contract on the
(Name of Contractor)

_____ project on _____
(Name and Location of Project) (Start Date)

and will conclude work on said project on _____.
(End Date, if known)

In accordance with Section 4115.071 (C) of the Ohio Revised Code, listing of payroll dates, I hereby submit the following schedule of dates that my company is required to pay wages to its workers while on this project.
NOTE: If the life of the project is expected to be over three (3) months in length, provide only the days of the week your pay period starts and ends, plus the day you pay your workers.

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Day Pay Period Starts:_____ Day Pay Period Ends:_____

Pay Day:_____

I acknowledge that I am required by section 4115.071 (C) of the Ohio Revised Code that I must submit a copy of my company's certified payroll records for this project to the Prevailing Wage Coordinator of the public authority within two weeks of the initial pay date listed above. I further acknowledge that I am responsible to collect and submit my subcontractor's prevailing wage documents, including their certified payroll records in accordance with the law.

_____ _____
(Contractor's Signature and Title) (Company Name)

_____
(Date)

LETTER OF AUTHORIZATION FOR PAYROLL SIGNATURE:

DATE: _____

COMPANY NAME: _____

ADDRESS: _____

_____

FEDERAL I.D.# _____

RE: _____

(Project Name) (Project Number)

_____

(Address)

_____ hereby authorizes

(Company Officer/Owner-Title)

_____ as the person to

complete and sign all certified payroll forms for the above project.

BY:_____

(Print Name)

_____

(Signature)

_____

(Title)

Sworn and subscribed in my presence this _____ day of _____ 20___

_____

Notary Public

FRINGE BENEFITS

PLEASE COMPLETE THIS FORM AND RETURN IT TO THE ADDRESS BELOW.

_____ FRINGE BENEFITS ARE ALL PAID IN CASH TO THE EMPLOYEE.

_____ FRINGE BENEFITS ARE PAID IN CASH AND TO THE BENEFIT PROGRAMS LISTED BELOW.

_____ FRINGE BENEFITS ARE ALL PAID TO THE FOLLOWING BENEFIT PROGRAMS:

HEALTH & WELFARE PLAN: _____

ADDRESS: _____

_____

PENSION PLAN: _____

ADDRESS: _____

_____

APPRENTICESHIP PROGRAM: _____

YOUR COMPANY IS: _____ UNION _____ NON-UNION

YOUR COMPANY PAYS ALL EMPLOYEES: _____ WEEKLY _____ BI-WEEKLY

FORWARD A BLANK FORM TO EACH SUBCONTRACTOR ON THE PROJECT FOR COMPLETION.
RETURN ALL FORMS TO:

CITY OF CANTON
218 CLEVELAND AVE SW
CANTON, OHIO 44702
ATTN: PREVAILING WAGE COORDINATOR

CONTRACTOR'S NAME: _____

ADDRESS: _____

PROJECT NAME: _____

PREVAILING WAGE NOTIFICATION TO EMPLOYEE

4115.05...the contractor or subcontractor shall furnish each employee **NOT covered by a collective bargaining agreement** 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.

Project Name:	Job Number:
Contractor:	
Project Location:	

Prevailing Wage Coordinator	Employee
Public Authority:	Name:
Name of PWC:	Street:
Street:	City:
City:	State/Zip:
State/Zip:	Phone: Email:
Phone:	Last 4 Digits of SS #:

You will be performing work on this project that falls under these classifications. You will be paid the appropriate rate for the type of work you are performing.

Classification:	Prevailing Wage Rate Total Package:	Minus your fringe benefits *:	Your hourly base rate and overtime:
			/
			/
			/
			/
			/
			/

Hourly fringe benefits paid on your behalf by this company (Yearly amount the **company pays** divided by 2080):

Fringe	Amount	Fringe	Amount
Health Insurance		Vacation	
Life Insurance		Holiday	
Pension		Sick Pay	
Other (Specify)		Training	
Other (Specify)		**Total Hourly Fringes ***	

Contractor's Signature:	Date:
Employee's Signature:	Date:

INSTRUCTIONS FOR PREPARING CERTIFIED PAYROLL REPORTS

General:

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

Ohio Department of Commerce
Division of Industrial Compliance
Bureau of Wage and Hour Administration
6606 Tussing Road, P.O. Box 4009
Reynoldsburg, Ohio 43068-9009
614-644-2239
www.com.ohio.gov

Certified Payroll Heading:

Employer name and address: Company's full name and address...Indicate if the company is a subcontractor.
Subcontractor: Check and list the name of the General Contractor or Prime.
Project: Name and location of the project, including county.
Contracting Public Authority: Name and address of the contracting public authority... (Owner of the project).
Week Ending: Month, day, and year for last day of reporting period.
Payroll #: Indicates first, second, third, etc. payroll filed by the company for the project.
Page indicator: number of pages included in the report.
Project Number: Determined by the public authority...If there is no number leave blank.

Payroll Information by column:

1. Employee Name, Address and Social Security number: This information must be provided for all employees that perform physical labor on the project. The Social Security number is required; the last four digits may be permitted by the public authority. 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 performed by employee. If unsure of work classification, consult the Ohio Department of Commerce-Division of Industrial Compliance & Labor-Bureau of Wage and Hour Administration. 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 or by "Group".

3. Hours Worked, Day & Date: In the first row of column 3, enter days of the company's pay period for example; M T W TH F S S. The second row is for the date that corresponds with each day for the pay period. In the employee information section, enter the number of hours worked on the prevailing wage project and which day the hours were worked. Separate rows are labeled for (ST) straight time hours and (OT) overtime hours. All hours worked after 40, must be paid at the appropriate overtime rate.

4. Project Total Hours: Total the hours entered for pay period.

5. Base Rate: Enter actual rate per hour paid to the employee. The overtime hourly rate is time and one-half the base rate listed in the prevailing wage schedule plus fringe benefits at straight time rate. The prevailing wage schedule lists the base rate plus fringe benefit amounts. These amounts added together equal the total prevailing wage rate. Employers must pay this total amount in one of three ways.
   1) Total rate may be paid in entirety in the base rate to the employee; in which case, the cash designation will be checked for fringe benefits.
   2) Total rate may be paid as listed in prevailing wage rate schedule with total fringe amounts paid approved plans.
   3) Total rate may be paid with a combination of base rate and fringe payments to approved plans in amounts other than those listed in schedule.

6. Project Gross: Enter total gross wages earned on the project for straight time and overtime. Project hours "X" base rate should equal project gross.

7. Fringes: If fringe benefits are paid in the hourly base rate, indicate this by marking the **Cash** space. If fringe benefits are paid to approved plans as listed in the prevailing wage rate schedule, mark the space **Approved Plans**. If fringe benefits are paid partially in the base rate and partially to approved plans, mark the space **Cash & Approved Plans**. List the hourly amount paid to approved plans for each fringe. If payments are not made on a per hour basis, ***calculate the hourly fringe credit by dividing the yearly employer contribution by*** the lesser of: hours actually worked in the year (these must be documented) or ***2080***. Fringe benefits include: **Employer's share** of health insurance, life insurance, retirement plan, bonus/profit sharing, sick pay, holiday pay, personal leave, vacation, and education/training programs. If unsure of a possible fringe benefit, contact the Ohio Department of Commerce-Division of Industrial Compliance & Labor-Bureau of Wage and Hour Administration.

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.

Certified Payroll Report

Report for:

Company:[1] _____

Address: _____

City, State, Zip _____

Phone No: _____

☐ Check if Subcontractor[1]

If Sub, GC/Prime Contractor Name: _____

Public Authority (Owner): _____

Contract No: _____

Project Name & Location: _____

Payroll No: _____

Week Ending: _____

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: ☐ Cash ☐ Approved Plans ☐ 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																				
		OT																				
		ST																				
		OT																				
		ST																				
		OT																				
		ST																				
		OT																				
		ST																				

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 permissable 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 _____

[2]Attach additional sheets as necessary. [3]Type in continuous line, text will wrap.

DO NOT REDO FORM AND CHANGE RATES IF AN ERROR HAS BEEN MADE! SUBMIT A CORRECTED REPORT:

CORRECTED

CORRECTED FORMS CAN BE HANDWRITTEN

CERTIFIED PAYROLL REPORT

Total Hours being corrected for this indiv.

Difference in base rate & corrected base rate if applicable.

Employer Name & Address Fill out all other areas of the form as usual.	Name of General / Prime Contractor	Project Name & Location	Contracting Public Authority
Check if subcontractor ☐	Week Ending	Payroll # Correcting from xx to xx Page ____ Of ____	Project Number

1. Employee Name, Address and Social Security Number	2. Work Class	3. Hours Worked - Day & Date	4. Project Total Hrs	5. Base Rate	6. Project Gross	7. Fringes: Cash ☐ Approved Plans ☐ Cash & Approved Plans ☐					8. Total Hours All Jobs	9. Total Gross All Jobs	10. Taxes Withheld	11. Other Deducts	12. NET Paid
						H&W	Pens	Vac	App	Other					
Name/Address/SSN	Class	OT													
		ST													
Name/Address/SSN	Class														
		ST													
		OT													
		ST													
		OT													
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		ST													

Put the period that is being corrected, i.e.: Oct 26 to Dec 19, not individual weekly dates.

Difference in fringes & corrected fringes if applicable.

The net paid will be the total of difference paid and the total hours being corrected. Provide Check # in margin.

Date Fill in My signature on this form signifies that I pay, or supervise the payment of the employees shown above. I am certifying: 1) That 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. 2) That the fringe benefits have been paid as indicated above. 3) That no rebates or deductions have been or will be made, directly or indirectly from the total wages earned, other than permissable deductions as defined in the Ohio Revised Code Chapter 4115. 4) That apprentices are registered with the U.S. Department of Labor, Bureau of Apprenticeship and Training. The willful falsification of any of the above statements may subject the contractor or subcontractor to civil or criminal prosecution.

Name and Title Complete

Signature Sign

Send cover letter stating what happened, with a signed letter from the employee acknowledging that they were underpaid, received payment, check or transaction number.

FINAL AFFIDAVIT OF COMPLIANCE
PREVAILING WAGES

I, _____, _____ do hereby certify
(Name of person signing affidavit) (Title)

that the wages paid to all employees of: _____
(Company name)

for all hours worked on project: _____
(Project name)

_____
(Project location)

During the period from _____to_____ are in compliance with
(Project Dates)

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) (Print Name 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 Determination Cover Letter

County: STARK
Determination Date: 09/13/2023
Expiration Date: 12/13/2023

Appendix B

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 Rate
Skilled Crafts

Name of Union: Asbestos Local 207 OH

Change # : LCN01-2018fbLoc207OH

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

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

Special Calculation Note :

Ratio :

3 Journeymen to 1 Trainee

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

Special Jurisdictional Note : Butler County:(townships of Fairfield,Hanover,Liberty,Milford,Morgan,Oxford,Ripley,Ross,StClair,Union & Wayne.) (Lemon & Madison) Warren County: (townships of: Deerfield, Hamilton, Harlan, Salem, Union & Washington). (Clear Creek, Franklin, Mossie, Turtle Creek & Wayney). Ashtabula County: (post offices & townships

of Ashtabula, Austinburg, Geneva, Harperfield, Jefferson, Plymouth & Saybrook) (townships of Andover, Cherry Valley, Colbrook, Canneaut, Denmark, Dorset, East Orwell, Hartsgrove, Kingville, Lenox, Monroe,Morgan,New Lyme,North Kingsville, Orwell, Pierpoint, Richmond Rock Creek, Rome, Shefield, Trumbull, Wayne, Williamsfield & Windsor) Erie County:(post offices & townships of Berlin, Berlin Heights,Birmingham,Florence ,Huron, Milan, Shinrock & Vermilion)

Details :

Asbestos & lead paint abatement including,but not limited to the removal or encapsulation of asbestos & lead paint,all work in conjunction with the preparation of the removal of same & all work in conjunction with the clean up after said removal.The removal of all insulation materials, whether they contain asbestos or not, from mechanical systems (pipes, boilers, ducts, flues, breaching, etc.) is recognized as being the exclusive work of the Asbestos Abatement Workers.

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

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

Prevailing Wage Rate
Skilled Crafts

Name of Union: Asbestos Local 3 Heat & Frost Insulators

Change # : LCN01-2022sksLoc3

Craft : Asbestos Worker 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												
Asbestos Insulation Worker	$41.23		$14.40	$10.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$65.63	$86.25
Fire Stop Specialist	$41.23		$14.40	$10.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$65.63	$86.25
Fire Stop Technician	$34.10		$14.40	$4.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$52.50	$69.55
Apprentice	**Percent**											
1st year	50.20	$20.70	$14.40	$1.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$36.10	$46.45
2nd year	63.68	$26.26	$14.40	$2.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$42.66	$55.78
3rd year	69.25	$28.55	$14.40	$3.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$45.95	$60.23
4th year	82.70	$34.10	$14.40	$4.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$52.50	$69.55

Special Calculation Note : There are no special calculations for this classification.

Ratio :

3 Journeymen to 1 Apprentice per shop

Jurisdiction (* denotes special jurisdictional note) :

ASHLAND, ASHTABULA*, CARROLL, COLUMBIANA, COSHOCTON, CUYAHOGA, ERIE*, GEAUGA, HARRISON, HOLMES, HURON, LAKE, LORAIN, MAHONING, MEDINA, PORTAGE, RICHLAND, STARK, SUMMIT, TRUMBULL, TUSCARAWAS, WAYNE

Special Jurisdictional Note : Ashtabula (the townships of Ashtabula, Austinburg, Geneva, Jefferson, Plymouth & Saybrook), The remainder of Ashtabula County will be considered open counties on a 90 day basis autormatically renewable unless revoked by the Union upon 15 day written notice by the employers. Erie (to Sandusky limits)

Details :

Mechanics & apprentices engaged in the manufacture,fabrication,assembling,molding,handling,erection,spraying,pouring,mixing,hanging,clean-up, preparation,application,adjusting,alteration,repairing,dismantling,reconditioning,testing&maintenance of Heat & Frost Insulation such as Magnesia,Asbestos,Hair Felt,Wool Felt,Cork,Mineral Wool, Infusorial Earth,Mercerized Silk,Flax,Fiber,Fire Felt,Asbestos Paper,Asbestos Curtain,Asbestos Millboard,Fiberglass,

Foam glass, Styrofoam, Polyurethane, fire stopping,smoke stopping,all recyclable material,soundproofing,all penetrations,any flexible or rigid fireproofing,all jacketing systems including metal,lead,and PVC or other material.

Prevailing Wage Rate
Skilled Crafts

Name of Union: Asbestos Local 84 Heat & Frost Insulators

Change # : LCN01-2023ibLoc84

Craft : Asbestos Worker Effective Date : 02/15/2023 Last Posted : 02/15/2023

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Asbestos Insulation Worker	$34.57		$7.90	$9.50	$0.36	$0.00	$6.39	$0.24	$0.00	$0.00	$58.96	$76.24
Apprentice	Percent											
1st Year	50.02	$17.29	$7.90	$9.50	$0.36	$0.00	$6.39	$0.24	$0.00	$0.00	$41.68	$50.33
2nd Year	60.00	$20.74	$7.90	$9.50	$0.36	$0.00	$6.39	$0.24	$0.00	$0.00	$45.13	$55.50
3rd Year	70.00	$24.20	$7.90	$9.50	$0.36	$0.00	$6.39	$0.24	$0.00	$0.00	$48.59	$60.69
4th Year	80.00	$27.66	$7.90	$9.50	$0.36	$0.00	$6.39	$0.24	$0.00	$0.00	$52.05	$65.87

Special Calculation Note : Other is Industry and Labor Management Fund

Ratio :

3 Journeymen to 1 Apprentice per shop

Jurisdiction (* denotes special jurisdictional note) :

ASHLAND, ASHTABULA*, CARROLL, COLUMBIANA, COSHOCTON, HARRISON, HOLMES, MAHONING, MEDINA, PORTAGE, RICHLAND, STARK, SUMMIT, TRUMBULL, TUSCARAWAS, WAYNE

Special Jurisdictional Note : Ashtabula County: except for the townships of Ashtabula, Austinburg, Geneva, Harpersfield, Jefferson, Plymouth and Saybrook.

Details :

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

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

Prevailing Wage Rate
Skilled Crafts

Name of Union: Boilermaker Local 744

Change # : LCNO1-2019fbLoc744

Craft : Boilermaker Effective Date : 04/03/2019 Last Posted : 04/03/2019

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Boilermaker	$38.05		$7.07	$16.07	$0.74	$0.00	$5.08	$0.75	$0.00	$0.00	$67.76	$86.78
Apprentice	Percent											
1st 6 months	70.02	$26.64	$7.07	$16.07	$0.74	$0.00	$5.08	$0.75	$0.00	$0.00	$56.35	$69.67
2nd 6 months	72.52	$27.59	$7.07	$16.07	$0.74	$0.00	$5.08	$0.75	$0.00	$0.00	$57.30	$71.10
3rd 6 months	75.00	$28.54	$7.07	$16.07	$0.74	$0.00	$5.08	$0.75	$0.00	$0.00	$58.25	$72.52
4th 6 months	77.51	$29.49	$7.07	$16.07	$0.74	$0.00	$5.08	$0.75	$0.00	$0.00	$59.20	$73.95
5th 6 months	80.00	$30.44	$7.07	$16.07	$0.74	$0.00	$5.08	$0.75	$0.00	$0.00	$60.15	$75.37
6th 6 months	85.03	$32.35	$7.07	$16.07	$0.74	$0.00	$5.08	$0.75	$0.00	$0.00	$62.06	$78.24
7th 6 months	90.00	$34.25	$7.07	$16.07	$0.74	$0.00	$5.08	$0.75	$0.00	$0.00	$63.96	$81.08
8th 6 months	95.00	$36.15	$7.07	$16.07	$0.74	$0.00	$5.08	$0.75	$0.00	$0.00	$65.86	$83.93
Helper	60.00	$22.83	$7.07	$16.07	$0.74	$0.00	$5.08	$0.75	$0.00	$0.00	$52.54	$63.96

Special Calculation Note : Other is Supplemental Health

Ratio :

5 Journeymen to 1 Apprentice to 1 Helper

Jurisdiction (* denotes special jurisdictional note) :

ASHTABULA, CARROLL, COSHOCTON, CUYAHOGA, GEAUGA, HARRISON, HOLMES, LAKE, LORAIN, MAHONING, MEDINA, PORTAGE, STARK, SUMMIT, TRUMBULL, TUSCARAWAS, WAYNE

Special Jurisdictional Note :

Details :

Prevailing Wage Rate
Skilled Crafts

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

Change # : LCN01-2023ibLoc23HevHwyA

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

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

Special Calculation Note : NOT FOR BUILDING CONSTRUCTION.

Ratio :

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

Jurisdiction (* denotes special jurisdictional note) :

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

WERT, VINTON, WARREN, WASHINGTON, WAYNE

Special Jurisdictional Note :

Details :

(A) Highway Construction, Sewer, Waterworks And Utility Construction, Industrial & Building Site Heavy Construction, Airport Construction Or Railroad Construction Work.
(B) Power Plant, Tunnels, Amusement Park, Athletic Stadium Site Work ,Pollution Control,Sewer Plant, Waste Plant, & Water Treatment Facilities, Construction.

Prevailing Wage Rate
Skilled Crafts

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

Change # : LCN01-2023ibLoc23HevHwyB

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

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

Special Calculation Note : NOT FOR BUILDING CONSTRUCTION.

Ratio :

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

Jurisdiction (* denotes special jurisdictional note) :

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

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

Special Jurisdictional Note :

Details :

(A) Highway Construction, Sewer, Waterworks And Utility Construction, Industrial & Building Site Heavy Construction, Airport Construction Or Railroad Construction Work.
(B) Power Plant, Tunnels, Amusement Park, Athletic Stadium Site Work ,Pollution Control,Sewer Plant, Waste Plant, & Water Treatment Facilities, Construction.

Prevailing Wage Rate
Skilled Crafts

Name of Union: Bricklayer Local 23 (Canton)

Change # : LCN01-2023ibLoc23Canton

Craft : Bricklayer **Effective Date :** 05/10/2023 **Last Posted :** 05/10/2023

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Bricklayer	$33.46		$10.24	$9.88	$1.25	$0.00	$0.00	$0.05	$0.00	$0.00	$54.88	$71.61
Pointer Caulker Cleaner	$33.46		$10.24	$9.88	$1.25	$0.00	$0.00	$0.05	$0.00	$0.00	$54.88	$71.61
Stone Mason	$33.46		$10.24	$9.88	$1.25	$0.00	$0.00	$0.05	$0.00	$0.00	$54.88	$71.61
Cement Mason	$33.46		$10.24	$9.88	$1.25	$0.00	$0.00	$0.05	$0.00	$0.00	$54.88	$71.61
Plaster	$33.46		$10.24	$9.88	$1.25	$0.00	$0.00	$0.05	$0.00	$0.00	$54.88	$71.61
Masonry Maintenance	$18.40		$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$18.40	$27.60
Apprentice	Percent											
1st 6 months	65.00	$21.75	$10.24	$9.88	$1.25	$0.00	$0.00	$0.05	$0.00	$0.00	$43.17	$54.04
2nd 6 months	70.00	$23.42	$10.24	$9.88	$1.25	$0.00	$0.00	$0.05	$0.00	$0.00	$44.84	$56.55
3rd 6 months	75.02	$25.10	$10.24	$9.88	$1.25	$0.00	$0.00	$0.05	$0.00	$0.00	$46.52	$59.07
4th 6 months	80.00	$26.77	$10.24	$9.88	$1.25	$0.00	$0.00	$0.05	$0.00	$0.00	$48.19	$61.57
5th 6 months	85.00	$28.44	$10.24	$9.88	$1.25	$0.00	$0.00	$0.05	$0.00	$0.00	$49.86	$64.08
6th 6 months	90.00	$30.11	$10.24	$9.88	$1.25	$0.00	$0.00	$0.05	$0.00	$0.00	$51.53	$66.59
7th 6 months	95.00	$31.79	$10.24	$9.88	$1.25	$0.00	$0.00	$0.05	$0.00	$0.00	$53.21	$69.10
8th 6 months	95.00	$31.79	$10.24	$9.88	$1.25	$0.00	$0.00	$0.05	$0.00	$0.00	$53.21	$69.10

Special Calculation Note : OTHER IS DRUG TESTING

Ratio :

1 Journeymen to 1 Apprentice
5 Journeymen to 2 Apprentice
9 Journeymen to 3 Apprentice
13 Journeymen to 4 Apprentice

Jurisdiction (* denotes special jurisdictional note) :
CARROLL, STARK, TUSCARAWAS

Special Jurisdictional Note :

Details :

Prevailing Wage Rate
Skilled Crafts

Name of Union: Bricklayer Local 23 (Youngstown Zone 2 Tile Setters & Finishers)

Change # : LCN1-2023ibLoc23YtownZone2TF

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

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Bricklayer Tile Setter	$27.48		$8.89	$6.90	$0.64	$0.00	$0.00	$0.00	$0.00	$0.00	$43.91	$57.65
Marble Mason	$27.48		$8.89	$6.90	$0.64	$0.00	$0.00	$0.00	$0.00	$0.00	$43.91	$57.65
Terrazzo worker	$27.48		$8.89	$6.90	$0.64	$0.00	$0.00	$0.00	$0.00	$0.00	$43.91	$57.65
Finisher Support	$24.89		$8.89	$6.90	$0.60	$0.00	$0.00	$0.00	$0.00	$0.00	$41.28	$53.73
Apprentice Finisher Support Only												
1st 30 days	$14.93		$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$14.93	$22.39
30 days-6 months	$14.93		$8.89	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$23.82	$31.28
2ND 6 months	$17.42		$8.89	$6.90	$0.60	$0.00	$0.00	$0.00	$0.00	$0.00	$33.81	$42.52
3RD 6 months	$18.67		$8.89	$6.90	$0.60	$0.00	$0.00	$0.00	$0.00	$0.00	$35.06	$44.40
4TH 6 months	$19.91		$8.89	$6.90	$0.60	$0.00	$0.00	$0.00	$0.00	$0.00	$36.30	$46.26
5TH 6 months	$21.16		$8.89	$6.90	$0.60	$0.00	$0.00	$0.00	$0.00	$0.00	$37.55	$48.13
6TH 6 months	$22.40		$8.89	$6.90	$0.60	$0.00	$0.00	$0.00	$0.00	$0.00	$38.79	$49.99
Apprentice	Percent											
1st 30 Days	60.00	$16.49	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$16.49	$24.73
30 days- 6 months	60.00	$16.49	$8.89	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$25.38	$33.62
2nd 6 months	70.00	$19.24	$8.89	$6.90	$0.64	$0.00	$0.00	$0.00	$0.00	$0.00	$35.67	$45.28
3rd 6 months	75.00	$20.61	$8.89	$6.90	$0.64	$0.00	$0.00	$0.00	$0.00	$0.00	$37.04	$47.35
4th 6 months	80.00	$21.98	$8.89	$6.90	$0.64	$0.00	$0.00	$0.00	$0.00	$0.00	$38.41	$49.41

5th 6 months	85.00	$23.36	$8.89	$6.90	$0.64	$0.00	$0.00	$0.00	$0.00	$0.00	$39.79	$51.47
6th 6 months	90.00	$24.73	$8.89	$6.90	$0.64	$0.00	$0.00	$0.00	$0.00	$0.00	$41.16	$53.53
7th 6 months	95.00	$26.11	$8.89	$6.90	$0.64	$0.00	$0.00	$0.00	$0.00	$0.00	$42.54	$55.59
8th 6 months	95.00	$26.11	$8.89	$6.90	$0.64	$0.00	$0.00	$0.00	$0.00	$0.00	$42.54	$55.59

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 :

4 Journeymen to 1 Apprentice
6 Journeymen to 1 Apprentice (Thereafter)

Jurisdiction (* denotes special jurisdictional note) :

BELMONT, CARROLL, HARRISON, JEFFERSON, MONROE, STARK, TUSCARAWAS

Special Jurisdictional Note :

Details :

Prevailing Wage Rate
Skilled Crafts

Name of Union: Carpenter Commercial Zone NEO 1D

Change # : LCN01-2023ibLocNEZone1D

Craft : Carpenter Effective Date : 08/30/2023 Last Posted : 08/30/2023

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Carpenter	$31.36		$8.00	$11.77	$0.60	$0.00	$1.81	$0.13	$0.00	$0.00	$53.67	$69.35
Apprentice	Percent											
1st 3 Months	60.00	$18.82	$8.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$26.82	$36.22
2nd 3 Months	60.00	$18.82	$8.00	$0.00	$0.60	$0.00	$1.81	$0.13	$0.00	$0.00	$29.36	$38.76
2nd 6 Months is 1st year	65.00	$20.38	$8.00	$0.00	$0.60	$0.00	$1.81	$0.13	$0.00	$0.00	$30.92	$41.12
3rd 6 Months	70.00	$21.95	$8.00	$0.00	$0.60	$0.00	$1.81	$0.13	$0.00	$0.00	$32.49	$43.47
4th 6 Months is 2nd year	75.00	$23.52	$8.00	$0.00	$0.60	$0.00	$1.81	$0.13	$0.00	$0.00	$34.06	$45.82
5th 6 Months	80.00	$25.09	$8.00	$9.42	$0.60	$0.00	$1.81	$0.13	$0.00	$0.00	$45.05	$57.59
6th 6 Months is 3rd year	85.00	$26.66	$8.00	$10.00	$0.60	$0.00	$1.81	$0.13	$0.00	$0.00	$47.20	$60.52
7th 6 Months	90.00	$28.22	$8.00	$10.59	$0.60	$0.00	$1.81	$0.13	$0.00	$0.00	$49.35	$63.47
8th 6 Months is 4th year	95.00	$29.79	$8.00	$11.18	$0.60	$0.00	$1.81	$0.13	$0.00	$0.00	$51.51	$66.41

Special Calculation Note : *Other is International Training

Ratio :

1 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

CARROLL, STARK, TUSCARAWAS, WAYNE

Special Jurisdictional Note :

Details :

Prevailing Wage Rate
Skilled Crafts

Name of Union: Carpenter Floorlayer Zone NEO 1D

Change # : LCN01-2023ibLocNEZone1D

Craft : Carpenter **Effective Date :** 08/30/2023 **Last Posted :** 08/30/2023

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Carpenter Floorlayer	$31.36		$8.00	$11.77	$0.60	$0.00	$1.81	$0.15	$0.00	$0.00	$53.69	$69.37
Apprentice	Percent											
1st 3 Months	60.00	$18.82	$8.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$26.82	$36.22
2nd 3 Months	60.00	$18.82	$8.00	$0.00	$0.60	$0.00	$1.81	$0.15	$0.00	$0.00	$29.38	$38.78
2nd 6 Months is 1st year	65.00	$20.38	$8.00	$0.00	$0.60	$0.00	$1.81	$0.15	$0.00	$0.00	$30.94	$41.14
3rd 6 Months	70.00	$21.95	$8.00	$0.00	$0.60	$0.00	$1.81	$0.15	$0.00	$0.00	$32.51	$43.49
4th 6 Months is 2nd year	75.00	$23.52	$8.00	$0.00	$0.60	$0.00	$1.81	$0.15	$0.00	$0.00	$34.08	$45.84
5th 6 Months	80.00	$25.09	$8.00	$9.42	$0.60	$0.00	$1.81	$0.15	$0.00	$0.00	$45.07	$57.61
6th 6 Months is 3rd year	85.00	$26.66	$8.00	$10.00	$0.60	$0.00	$1.81	$0.15	$0.00	$0.00	$47.22	$60.54
7th 6 Months	90.00	$28.22	$8.00	$10.59	$0.60	$0.00	$1.81	$0.15	$0.00	$0.00	$49.37	$63.49
8th 6 Months is 4th year	95.00	$29.79	$8.00	$11.18	$0.60	$0.00	$1.81	$0.15	$0.00	$0.00	$51.53	$66.43

Special Calculation Note : *Other is International Training

Ratio :

1 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

CARROLL, STARK, TUSCARAWAS, WAYNE

Special Jurisdictional Note :

Details :

Prevailing Wage Rate
Skilled Crafts

Name of Union: Carpenter Insulation Zone NEO 1D

Change # : LCN01-2023ibLocNEZone1D

Craft : Carpenter **Effective Date :** 09/13/2023 **Last Posted :** 09/13/2023

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Carpenter Insulation	$25.09		$8.00	$11.77	$0.60	$0.00	$1.81	$0.13	$0.00	$0.00	$47.40	$59.95
Apprentice	Percent											
1st 3 months	60.00	$15.05	$8.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$23.05	$30.58
2nd 3 months	60.00	$15.05	$8.00	$0.00	$0.60	$0.00	$1.81	$0.13	$0.00	$0.00	$25.59	$33.12
2nd 6 months	65.00	$16.31	$8.00	$0.00	$0.60	$0.00	$1.81	$0.13	$0.00	$0.00	$26.85	$35.00
3rd 6 months	70.00	$17.56	$8.00	$0.00	$0.60	$0.00	$1.81	$0.13	$0.00	$0.00	$28.10	$36.88
4th 6 months	75.00	$18.82	$8.00	$0.00	$0.60	$0.00	$1.81	$0.13	$0.00	$0.00	$29.36	$38.77
5th 6 months	80.00	$20.07	$8.00	$9.42	$0.60	$0.00	$1.81	$0.13	$0.00	$0.00	$40.03	$50.07
6th 6 months	85.00	$21.33	$8.00	$10.00	$0.60	$0.00	$1.81	$0.13	$0.00	$0.00	$41.87	$52.53
7th 6 months	90.00	$22.58	$8.00	$10.59	$0.60	$0.00	$1.81	$0.13	$0.00	$0.00	$43.71	$55.00
8th 6 months	95.00	$23.84	$8.00	$11.18	$0.60	$0.00	$1.81	$0.13	$0.00	$0.00	$45.56	$57.47

Special Calculation Note : *Other is Training

Ratio :

1 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

CARROLL, STARK, TUSCARAWAS, WAYNE

Special Jurisdictional Note :

Details :

Prevailing Wage Rate
Skilled Crafts

Name of Union: Carpenter Millwright NE Zone M1-C

Change # : LCN01-2023ibLocNEZoneM1-C

Craft : Carpenter **Effective Date :** 08/30/2023 **Last Posted :** 08/30/2023

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Carpenter Millwright	$36.70		$8.15	$11.50	$0.60	$0.00	$2.81	$0.18	$0.00	$0.00	$59.94	$78.29
Certified Welder	$37.70		$8.15	$11.50	$0.60	$0.00	$2.81	$0.18	$0.00	$0.00	$60.94	$79.79
Lay-Out Man on Monorail	$39.45		$8.15	$11.50	$0.60	$0.00	$2.81	$0.18	$0.00	$0.00	$62.69	$82.42
Apprentice	Percent											
1st 6 months	60.00	$22.02	$8.15	$11.50	$0.60	$0.00	$2.81	$0.18	$0.00	$0.00	$45.26	$56.27
2nd 6 months	65.00	$23.86	$8.15	$11.50	$0.60	$0.00	$2.81	$0.18	$0.00	$0.00	$47.10	$59.02
3rd 6 months	70.00	$25.69	$8.15	$11.50	$0.60	$0.00	$2.81	$0.18	$0.00	$0.00	$48.93	$61.78
4th 6 months	75.00	$27.53	$8.15	$11.50	$0.60	$0.00	$2.81	$0.18	$0.00	$0.00	$50.77	$64.53
5th 6 months	80.00	$29.36	$8.15	$11.50	$0.60	$0.00	$2.81	$0.18	$0.00	$0.00	$52.60	$67.28
6th 6 months	85.00	$31.19	$8.15	$11.50	$0.60	$0.00	$2.81	$0.18	$0.00	$0.00	$54.44	$70.03
7th 6 months	90.00	$33.03	$8.15	$11.50	$0.60	$0.00	$2.81	$0.18	$0.00	$0.00	$56.27	$72.78
8th 6 months	95.00	$34.87	$8.15	$11.50	$0.60	$0.00	$2.81	$0.18	$0.00	$0.00	$58.11	$75.54

Special Calculation Note : Other is Training

Ratio :

1 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

CARROLL, STARK, TUSCARAWAS, WAYNE

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 fringe 6.20

	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 Hev Hwy Zone NHH P3-C

Change # : LCN01-2023ibLocNEZoneP3-C

Craft : Carpenter **Effective Date :** 08/30/2023 **Last Posted :** 08/30/2023

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Carpenter Pile Driver	$30.86		$8.24	$11.50	$0.60	$0.00	$2.70	$0.18	$0.00	$0.00	$54.08	$69.51
Diver	$46.29		$8.24	$11.50	$0.60	$0.00	$2.70	$0.18	$0.00	$0.00	$69.51	$92.65
Certified Welder	$31.91		$8.24	$11.50	$0.60	$0.00	$2.70	$0.18	$0.00	$0.00	$55.13	$71.09
Apprentice	Percent											
1st 6 months	60.00	$18.52	$8.24	$11.50	$0.60	$0.00	$2.70	$0.18	$0.00	$0.00	$41.74	$50.99
2nd 6 months	65.00	$20.06	$8.24	$11.50	$0.60	$0.00	$2.70	$0.18	$0.00	$0.00	$43.28	$53.31
3rd 6 months	70.00	$21.60	$8.24	$11.50	$0.60	$0.00	$2.70	$0.18	$0.00	$0.00	$44.82	$55.62
4th 6 months	75.00	$23.14	$8.24	$11.50	$0.60	$0.00	$2.70	$0.18	$0.00	$0.00	$46.37	$57.94
5th 6 months	80.00	$24.69	$8.24	$11.50	$0.60	$0.00	$2.70	$0.18	$0.00	$0.00	$47.91	$60.25
6th 6 months	85.00	$26.23	$8.24	$11.50	$0.60	$0.00	$2.70	$0.18	$0.00	$0.00	$49.45	$62.57
7th 6 months	90.00	$27.77	$8.24	$11.50	$0.60	$0.00	$2.70	$0.18	$0.00	$0.00	$50.99	$64.88
8th 6 months	95.00	$29.32	$8.24	$11.50	$0.60	$0.00	$2.70	$0.18	$0.00	$0.00	$52.54	$67.20

Special Calculation Note : *Other is Training

Ratio :

1 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

CARROLL, STARK, TUSCARAWAS, WAYNE

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 pule 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 jetted, 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: Carpenter Hev Hwy Zone NHH C2-A

Change # : LCN01-2023ibLocNEZoneNHH-C2-A

Craft : Carpenter Effective Date : 08/30/2023 Last Posted : 08/30/2023

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Carpenter	$31.30		$8.00	$11.77	$0.60	$0.00	$1.81	$0.13	$0.00	$0.00	$53.61	$69.26
Apprentice	**Percent**											
1st 3 Months	60.00	$18.78	$8.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$26.78	$36.17
2nd 3 Months	60.00	$18.78	$8.00	$0.00	$0.60	$0.00	$1.81	$0.13	$0.00	$0.00	$29.32	$38.71
2nd 6 Months	65.00	$20.35	$8.00	$0.00	$0.60	$0.00	$1.81	$0.13	$0.00	$0.00	$30.89	$41.06
3rd 6 Months	70.00	$21.91	$8.00	$0.00	$0.60	$0.00	$1.81	$0.13	$0.00	$0.00	$32.45	$43.41
4th 6 Months	75.00	$23.48	$8.00	$0.00	$0.60	$0.00	$1.81	$0.13	$0.00	$0.00	$34.02	$45.75
5th 6 Months	80.00	$25.04	$8.00	$9.42	$0.60	$0.00	$1.81	$0.13	$0.00	$0.00	$45.00	$57.52
6th 6 Months	85.00	$26.60	$8.00	$10.00	$0.60	$0.00	$1.81	$0.13	$0.00	$0.00	$47.15	$60.45
7th 6 Months	90.00	$28.17	$8.00	$10.59	$0.60	$0.00	$1.81	$0.13	$0.00	$0.00	$49.30	$63.39
8th 6 Months	95.00	$29.73	$8.00	$11.18	$0.60	$0.00	$1.81	$0.13	$0.00	$0.00	$51.46	$66.32

Special Calculation Note : Other: Training

Ratio :

1 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

CARROLL, STARK, TUSCARAWAS, WAYNE

Special Jurisdictional Note :

Details :

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 540 Inside

Change # : LCN01-2023ibLoc540in

Craft : Electrical **Effective Date :** 01/11/2023 **Last Posted :** 01/11/2023

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Electrician	$36.28		$6.60	$10.50	$1.12	$3.63	$3.99	$1.20	$0.00	$0.00	$63.32	$81.46
Apprentice	Percent											
1st 1000 hrs	45.00	$16.33	$6.60	$0.00	$0.46	$0.00	$0.49	$0.49	$0.00	$0.00	$24.37	$32.53
2nd 1000 hrs	47.00	$17.05	$6.60	$0.00	$0.48	$0.00	$0.51	$0.51	$0.00	$0.00	$25.15	$33.68
3rd 1500 hrs	50.00	$18.14	$6.60	$2.63	$0.55	$1.45	$0.59	$0.59	$0.00	$0.00	$30.55	$39.62
4th 1500 hrs	60.00	$21.77	$6.60	$5.25	$0.66	$1.74	$0.71	$0.71	$0.00	$0.00	$37.44	$48.32
5th 1500 hrs	70.00	$25.40	$6.60	$7.88	$0.77	$2.03	$0.82	$0.82	$0.00	$0.00	$44.32	$57.01
6th 1500 hrs	80.00	$29.02	$6.60	$10.50	$0.88	$2.32	$0.94	$0.94	$0.00	$0.00	$51.20	$65.72

Special Calculation Note : OTHER = (NEBF) National Electrical Benefit Fund. Vacation contribution is equal to 8% of the gross weekly wages.

Ratio :

The first person assigned to any job site shall be a Journeyman Wireman. Ratio thereafter:

1-3 Journeymen to 2 Apprentices
4 to 6 Journeymen up to 4 Apprentices
7 to 9 Journeymen up to 6 Apprentices

Jurisdiction (* denotes special jurisdictional note) :
CARROLL*, COLUMBIANA*, HOLMES, MAHONING*, STARK, TUSCARAWAS*, WAYNE*

Special Jurisdictional Note : Carroll County: North half including; Fox, Harrison, Rose and Washington Townships.
Columbiana County: Knox Township only.
Mahoning County: Smith Township only.
Tuscarawas County: That portion North of Auburn, Clay, Rush and York Townships.
Wayne County: That portion south of Baughman, Chester, Green and WayneTownships.

Details :

Prevailing Wage Rate
Skilled Crafts

Name of Union: Electrical Local 540 Inside Lt Commercial Northern

Change # : LCN01-2023ibLoc540in

Craft : Electrical **Effective Date :** 01/11/2023 **Last Posted :** 01/11/2023

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Electrician	$36.28		$6.60	$10.50	$1.12	$3.63	$3.99	$1.20	$0.00	$0.00	$63.32	$81.46
CE-3 12,001-14,000 Hrs	$27.59		$6.51	$0.00	$0.82	$0.00	$0.83	$0.83	$0.00	$0.10	$36.68	$50.47
CE-2 10,001-12,000 Hrs	$21.68		$6.51	$0.00	$0.82	$0.00	$0.65	$0.65	$0.00	$0.10	$30.41	$41.25
CE-1 8,001-10,000 Hrs	$19.71		$6.51	$0.00	$0.82	$0.00	$0.59	$0.59	$0.00	$0.10	$28.32	$38.18
CW-4 6,001-8,000 Hrs	$17.74		$6.51	$0.00	$0.82	$0.00	$0.53	$0.53	$0.00	$0.10	$26.23	$35.10
CW-3 4,001-6,000 Hrs	$15.77		$6.51	$0.00	$0.82	$0.00	$0.47	$0.47	$0.00	$0.10	$24.14	$32.03
CW-2 2,001-4,000 Hrs	$14.78		$6.51	$0.00	$0.82	$0.00	$0.44	$0.44	$0.00	$0.10	$23.09	$30.48
CW-1 0-2,000 Hrs	$13.80		$6.51	$0.00	$0.82	$0.00	$0.41	$0.41	$0.00	$0.10	$22.05	$28.95
Apprentice	Percent											
1st 1000 hrs	45.00	$16.33	$6.60	$0.00	$0.46	$0.00	$0.49	$0.49	$0.00	$0.00	$24.37	$32.53
2nd 1000 hrs	47.00	$17.05	$6.60	$0.00	$0.48	$0.00	$0.51	$0.51	$0.00	$0.00	$25.15	$33.68
3rd 1500 hrs	50.00	$18.14	$6.60	$2.63	$0.55	$1.45	$0.59	$0.59	$0.00	$0.00	$30.55	$39.62
4th 1500 hrs	60.00	$21.77	$6.60	$5.25	$0.66	$1.74	$0.71	$0.71	$0.00	$0.00	$37.44	$48.32
5th 1500 hrs	70.00	$25.40	$6.60	$7.88	$0.77	$2.03	$0.82	$0.82	$0.00	$0.00	$44.32	$57.01
6th 1500 hrs	80.00	$29.02	$6.60	$10.50	$0.88	$2.32	$0.94	$0.94	$0.00	$0.00	$51.20	$65.72

Special Calculation Note : OTHER = (NEBF) National Electrical Benefit Fund

Ratio :

1 to 3 Journeymen to 2 Apprentices
4 to 6 Journeymen up to 4 Apprentices
7 to 9 Journeymen up to 6 Apprentices

Jurisdiction (* denotes special jurisdictional note) :

CARROLL*, COLUMBIANA*, HOLMES, MAHONING*, STARK, TUSCARAWAS*, WAYNE*

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

Special Jurisdictional Note : Carroll County: North half including; Fox, Harrison, Rose and Washington Townships.
Columbiana County: Knox Township only.
Mahoning County: Smith Township only.
Tuscarawas County: That portion North of Auburn, Clay, Rush and York Townships.
Wayne County: That portion south of Baughman, Chester, Green, Wayne and Wooster Townships.

The scope of work for the light commercial agreement shall apply to the following small medical clinics, stand-alone doctor and dentist offices with up to 600 amp service (not attached to a hospital), gas stations/convenience stores, fast food restaurants and 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 restaurants 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 other wise covered under this agreement, lighting retrofits (when not associated with remodels involving branch re-circuiting) Lighting retrofits shall be defined as the changing of lamps and ballasts in existing light fixtures and shall also include the one for one replacement of existing fixtures.

Details :

Prevailing Wage Rate
Skilled Crafts

Name of Union: Electrical Local 540 Voice Data Video

Change # : LCN01-2023ibLoc540VDV

Craft : Voice Data Video **Effective Date :** 09/06/2023 **Last Posted :** 09/06/2023

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Electrical Installer Technician	$25.15		$6.60	$4.79	$0.62	$2.52	$2.08	$0.83	$0.00	$0.00	$42.59	$55.16
Cable Puller	$13.80		$6.51	$0.00	$0.31	$0.00	$0.41	$0.41	$0.00	$0.00	$21.44	$28.34
Apprentice Starting Prior to 08/01/2020												
6th Step 90%	$22.64		$6.60	$4.79	$0.55	$1.81	$2.08	$0.73	$0.00	$0.00	$39.20	$50.52
Apprentice Starting After 08/01/2020	**Percent**											
1st Step	70.02	$17.61	$6.60	$0.00	$0.43	$1.41	$0.57	$0.57	$0.00	$0.00	$27.19	$36.00
2nd Step	75.00	$18.86	$6.60	$0.00	$0.46	$1.51	$0.61	$0.61	$0.00	$0.00	$28.65	$38.08
3rd Step	80.00	$20.12	$6.60	$4.79	$0.49	$1.60	$0.65	$0.65	$0.00	$0.00	$34.90	$44.96
4th Step	85.00	$21.38	$6.60	$4.79	$0.52	$1.71	$0.69	$0.69	$0.00	$0.00	$36.38	$47.07

Special Calculation Note : OTHER = (NEBF) National Electrical Benefit Fund.

VACATION PAY - For Journeymen is 10% of wages and 8% for Apprentices.

Ratio :

1-3 Journeyman to 2 Apprentice
4-6 Journeyman to 4 Apprentice

Jurisdiction (* denotes special jurisdictional note) :
CARROLL*, COLUMBIANA*, HOLMES, MAHONING*, STARK, TUSCARAWAS*, WAYNE*

** Exception - When fire alarm falls within the scope of this addendum, Cable Pullers can be used to aid in test and be the 2nd Teledata employee on the job

Special Jurisdictional Note : Carroll County includes the following townships: North half including Fox, Harrison, Rose and Washington. Tuscarawas County includes the following townships: The

portion North of Auburn, Clay, Rush and York. Wayne County includes the following townships: The portion South of Baughman, Chester, Green, and Wayne. Columbiana County includes Knox township. Mahoning County includes Smith township.

Details :

CABLE PULLERS - are for the installation of cable from one termination point to another.

The following work is EXCLUDED from the Teledata Technician work scope:

* - Installation of computer systems in industrial applications such as assembly lines, robotics, computer controller manufacturing systems.
* - Installation of conduit and/ or raceways shall be installed by Inside Wireman . On sites where there is no Inside Wireman employed, the Teledata Technician may install raceway, or conduit not greater than 10 feet.
* - Fire Alarm work on all new construction sites or wherever the fire alarm system is installed in conduit.
* - All HVAC control work.

Prevailing Wage Rate
Skilled Crafts

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

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	$48.59	$7.00	$1.46	$0.49	$0.00	$11.66	$0.75	$0.00	$0.00	$69.95	$94.24
Certified Lineman Welder	$48.59	$7.00	$1.46	$0.49	$0.00	$11.66	$0.75	$0.00	$0.00	$69.95	$94.24
Certified Cable Splicer	$48.59	$7.00	$1.46	$0.49	$0.00	$11.66	$0.75	$0.00	$0.00	$69.95	$94.24
Operator A	$43.54	$7.00	$1.31	$0.44	$0.00	$10.45	$0.75	$0.00	$0.00	$63.49	$85.26
Operator B	$38.54	$7.00	$1.16	$0.39	$0.00	$9.25	$0.75	$0.00	$0.00	$57.09	$76.36
Operator C	$30.97	$7.00	$0.93	$0.31	$0.00	$7.43	$0.75	$0.00	$0.00	$47.39	$62.88
Groundman 0-12 months Exp	$24.30	$7.00	$0.73	$0.24	$0.00	$5.83	$0.75	$0.00	$0.00	$38.85	$51.00
Groundman 0-12 months Exp w/CDL	$26.72	$7.00	$0.80	$0.27	$0.00	$6.41	$0.75	$0.00	$0.00	$41.95	$55.31
Groundman 1 yr or more	$26.72	$7.00	$0.80	$0.27	$0.00	$6.41	$0.75	$0.00	$0.00	$41.95	$55.31
Groundman 1 yr or more w/CDL	$31.58	$7.00	$0.95	$0.32	$0.00	$7.58	$0.75	$0.00	$0.00	$48.18	$63.97
Equipment Mechanic A	$38.54	$7.00	$1.16	$0.39	$0.00	$9.25	$0.75	$0.00	$0.00	$57.09	$76.36
Equipment Mechanic B	$34.75	$7.00	$1.04	$0.35	$0.00	$8.34	$0.75	$0.00	$0.00	$52.23	$69.60
Equipment Mechanic C	$30.97	$7.00	$0.93	$0.31	$0.00	$7.43	$0.75	$0.00	$0.00	$47.39	$62.88
X-Ray Technician	$48.59	$7.00	$1.46	$0.49	$0.00	$11.66	$0.75	$0.00	$0.00	$69.95	$94.24

Apprentice	Percent											
1st 1000 hrs	60.00	$29.15	$7.00	$0.87	$0.29	$0.00	$7.00	$0.75	$0.00	$0.00	$45.06	$59.64
2nd 1000 hrs	65.00	$31.58	$7.00	$0.95	$0.32	$0.00	$7.58	$0.75	$0.00	$0.00	$48.18	$63.98
3rd 1000 hrs	70.00	$34.01	$7.00	$1.02	$0.34	$0.00	$8.16	$0.75	$0.00	$0.00	$51.28	$68.29
4th 1000 hrs	75.00	$36.44	$7.00	$1.09	$0.36	$0.00	$8.75	$0.75	$0.00	$0.00	$54.39	$72.61
5th 1000 hrs	80.00	$38.87	$7.00	$1.17	$0.39	$0.00	$9.33	$0.75	$0.00	$0.00	$57.51	$76.95
6th 1000 hrs	85.00	$41.30	$7.00	$1.24	$0.41	$0.00	$9.91	$0.75	$0.00	$0.00	$60.61	$81.26
7th 1000 hrs	90.00	$43.73	$7.00	$1.31	$0.44	$0.00	$10.50	$0.75	$0.00	$0.00	$63.73	$85.60

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.

*All Operators of cranes 45 ton or larger shall be paid the journeyman rate of pay. $0.30 is for Health Retirement Account.

Ratio :

1 Journeyman to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

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

WARREN, WASHINGTON, WAYNE

Special Jurisdictional Note :

Details :

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

Prevailing Wage Rate
Skilled Crafts

Name of Union: Electrical Local 71 Outside Utility Power

Change # : LCN01-2023ibLoc7

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 that 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: Electrical Local 71 Voice Data Video Outside

Change # : LCR01-2017fbLoc71VDV

Craft : Voice Data Video Effective Date : 10/18/2017 Last Posted : 10/18/2017

	BHR	Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification											
Electrical Installer Technician I	$23.46	$5.50	$0.70	$0.00	$0.00	$0.30	$0.00	$0.00	$0.00	$29.96	$41.69
Installer Technician II	$22.37	$5.50	$0.67	$0.00	$0.00	$0.30	$0.00	$0.00	$0.00	$28.84	$40.03
Equipment Operator I	$22.37	$5.50	$0.67	$0.00	$0.00	$0.30	$0.00	$0.00	$0.00	$28.84	$40.03
Equipment Operator II	$18.43	$5.50	$0.55	$0.00	$0.00	$0.30	$0.00	$0.00	$0.00	$24.78	$33.99
Installer /Repair Outside	$22.37	$5.50	$0.67	$0.00	$0.00	$0.30	$0.00	$0.00	$0.00	$28.84	$40.03
Ground Driver V/CDL	$15.83	$5.50	$0.47	$0.00	$0.00	$0.30	$0.00	$0.00	$0.00	$22.10	$30.01
Groundman	$13.24	$5.50	$0.40	$0.00	$0.00	$0.30	$0.00	$0.00	$0.00	$19.44	$26.06
Cable Splicer	$23.46	$5.50	$0.70	$0.00	$0.00	$0.30	$0.00	$0.00	$0.00	$29.96	$41.69

Special Calculation Note :

Ratio :

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

Special Jurisdictional Note :

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

fiber.

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

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

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

Equipment Operator I: Able to operate a digger derrick or bucket truck. Have at least 5 years of experience and must have a valid CDL license.

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

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

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

Prevailing Wage Rate
Skilled Crafts

Name of Union: Elevator Local 45

Change # : LCN01-2023ibLoc45

Craft : Elevator Effective Date : 02/01/2023 Last Posted : 02/01/2023

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Elevator Mechanic	$55.63		$16.07	$10.76	$0.70	$4.45	$9.80	$2.09	$0.00	$0.00	$99.50	$127.32
Assistant. Mechanic	$44.50		$16.07	$10.76	$0.70	$3.56	$9.80	$1.66	$0.00	$0.00	$87.05	$109.30
Helper	$38.94		$16.07	$10.76	$0.70	$3.12	$9.80	$1.47	$0.00	$0.00	$80.86	$100.33
Apprentice	Percent											
Apprentice												
0-6 months Probation	50.00	$27.82	$0.00	$0.00	$0.00	$1.67	$0.00	$0.00	$0.00	$0.00	$29.48	$43.39
1st year	55.00	$30.60	$16.07	$10.76	$0.70	$1.84	$9.80	$1.15	$0.00	$0.00	$70.92	$86.21
2nd year	65.00	$36.16	$16.07	$10.76	$0.70	$2.17	$9.80	$1.36	$0.00	$0.00	$77.02	$95.10
3rd year	70.00	$38.94	$16.07	$10.76	$0.70	$2.34	$9.80	$1.47	$0.00	$0.00	$80.08	$99.55
4th year	80.00	$44.50	$16.07	$10.76	$0.70	$2.67	$9.80	$1.66	$0.00	$0.00	$86.16	$108.42

Special Calculation Note : *Other is Holiday Pay

Ratio :

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

Jurisdiction (* denotes special jurisdictional note) :

ASHLAND, CARROLL, COLUMBIANA, COSHOCTON, HARRISON, HOLMES, MAHONING, MEDINA, PORTAGE, RICHLAND, STARK, SUMMIT, TRUMBULL, TUSCARAWAS, WAYNE

Special Jurisdictional Note :

Details :

Vacation 6%/under 5 years based on regular hourly rate for all hours worked. 8%/over 5 years based on regular hourly rate for all hours worked.

Prevailing Wage Rate
Skilled Crafts

Name of Union: Glazier Local 1162

Change # : LCN01-2023ibLoc1162

Craft : Glazier 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												
Glazier	$29.37		$7.50	$6.79	$0.38	$0.00	$0.00	$0.00	$0.00	$0.00	$44.04	$58.73
Apprentice	Percent											
1st 6 months	55.00	$16.15	$7.50	$6.79	$0.38	$0.00	$0.00	$0.00	$0.00	$0.00	$30.82	$38.90
2nd 6 months	60.00	$17.62	$7.50	$6.79	$0.38	$0.00	$0.00	$0.00	$0.00	$0.00	$32.29	$41.10
3rd 6 months	65.00	$19.09	$7.50	$6.79	$0.38	$0.00	$0.00	$0.00	$0.00	$0.00	$33.76	$43.31
4th 6 months	70.00	$20.56	$7.50	$6.79	$0.38	$0.00	$0.00	$0.00	$0.00	$0.00	$35.23	$45.51
5th 6 months	75.02	$22.03	$7.50	$6.79	$0.38	$0.00	$0.00	$0.00	$0.00	$0.00	$36.70	$47.72
6th 6 months	80.00	$23.50	$7.50	$6.79	$0.38	$0.00	$0.00	$0.00	$0.00	$0.00	$38.17	$49.91
7th 6 months	85.00	$24.96	$7.50	$6.79	$0.38	$0.00	$0.00	$0.00	$0.00	$0.00	$39.63	$52.12
8th 6 months	90.00	$26.43	$7.50	$6.79	$0.38	$0.00	$0.00	$0.00	$0.00	$0.00	$41.10	$54.32

Special Calculation Note :

Ratio :

1 Journeyman to 1 Apprentice
2 Journeyman to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

ASHLAND, CARROLL, COSHOCTON, HOLMES, MEDINA, PORTAGE, RICHLAND, STARK, SUMMIT, TUSCARAWAS, WAYNE

Special Jurisdictional Note :

Details :

Add $1.25 per hour for High Pay which is all work that requires the employee be supported by equipment which hangs or suspends from the roof of a building or structure including all repelling .

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: Ironworker Local 550 Glass & Curtain Wall

Change # : LCN01-2017fbLoc550

Craft : Ironworker Effective Date : 07/01/2017 Last Posted : 06/28/2017

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Ironworker Glass & Curtain Wall	$22.00		$7.00	$7.47	$0.09	$0.00	$0.33	$0.00	$0.00	$0.00	$36.89	$47.89
Apprentice	Percent											
1st 6 months	60.00	$13.20	$7.00	$7.47	$0.09	$0.00	$0.33	$0.00	$0.00	$0.00	$28.09	$34.69
2nd 6 months	65.00	$14.30	$7.00	$7.47	$0.09	$0.00	$0.33	$0.00	$0.00	$0.00	$29.19	$36.34
3rd 6 months	70.00	$15.40	$7.00	$7.47	$0.09	$0.00	$0.33	$0.00	$0.00	$0.00	$30.29	$37.99
4th 6 months	75.00	$16.50	$7.00	$7.47	$0.09	$0.00	$0.33	$0.00	$0.00	$0.00	$31.39	$39.64
5th 6 months	80.00	$17.60	$7.00	$7.47	$0.09	$0.00	$0.33	$0.00	$0.00	$0.00	$32.49	$41.29
6th 6 months	85.00	$18.70	$7.00	$7.47	$0.09	$0.00	$0.33	$0.00	$0.00	$0.00	$33.59	$42.94
7th 6 months	90.00	$19.80	$7.00	$7.47	$0.09	$0.00	$0.33	$0.00	$0.00	$0.00	$34.69	$44.59
8th 6 months	95.00	$20.90	$7.00	$7.47	$0.09	$0.00	$0.33	$0.00	$0.00	$0.00	$35.79	$46.24

Special Calculation Note :

Ratio :

. Apprentice to 1 Journeymen

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 Locals 17 and 550 is determined as follows: All territory North of Old Route 224 line is 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: 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 perfomr work as per the October 31, 1949, memorandum on concrete forms, byand between the United Brotherhood of Caprpenters and Joiners of Americ 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 memebers of the Laborers' International Union of North America."

Group 2
Asphalt Raker, Screwman or Paver, Concrete Puddler, Kettle Man (pipeline), All Machine-Driven Tools (Gas, Electric, Air), Mason Tender, Brick Paver, Mortar Mixer, Skid Steer, Sheeting & Shoring Person, Surface Grinder Person, Screedperson, Water Blast, Hand Held Wand, Power Buggy or Power Wheelbarrow, Paint Striper, Plastic fusing Machine Operator, Rodding Machine Operator, Pug Mill Operator, Operator of All Vacuum Devices Wet or Dry, Handling of all Pumps 4 inches and under (gas, air or electric), Diver, Form Setter, Bottom Person, Welder Helper (pipeline), Concrete Saw Person, Cutting with Burning Torch, Pipe Layer, Hand Spiker (railroad), Underground Person (working in sewer and waterline, cleaning, repairing and reconditioning). Tunnel Laborer (without air),Caisson, Cofferdam (below 25 feet deep), Air Track and Wagon Drill, Sandblaster Nozzle Person, Hazardous Waste (level B), ***Lead Abatement, Hazardous Waste (level C)

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

Group 3
Blast and Powder Person, Muckers will be defined as shovel men working directly with the miners, Wrencher (mechanical joints & utility pipeline), Yarner, Top Lander, Hazardous Waste (level A), Concrete Specialist, Curb Setter and Cutter, Grade Checker, Concrete Crew in Tunnels. Utility pipeline Tappers, Waterline, Caulker, Signal Person will receive the rate equal to the rate paid the Laborer classification for which the Laborer is signaling.

Group 4
Miner,Welder, Gunite 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 1015 Building

Change # : LCN01-2023ibLoc1015

Craft : Laborer **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												
Laborer Group 1	$31.52		$8.20	$4.05	$0.40	$0.00	$0.00	$0.00	$0.10	$0.00	$44.27	$60.03
Group 2	$32.52		$8.20	$4.05	$0.40	$0.00	$0.00	$0.00	$0.10	$0.00	$45.27	$61.53
Group 3	$33.52		$8.20	$4.05	$0.40	$0.00	$0.00	$0.00	$0.10	$0.00	$46.27	$63.03
Group 4	$33.47		$8.20	$4.05	$0.40	$0.00	$0.00	$0.00	$0.10	$0.00	$46.22	$62.96
Group 5	$24.56		$8.20	$4.05	$0.40	$0.00	$0.00	$0.00	$0.10	$0.00	$37.31	$49.59
Apprentice	Percent											
0-1000 hrs	60.00	$18.91	$8.20	$4.05	$0.40	$0.00	$0.00	$0.00	$0.10	$0.00	$31.66	$41.12
1001-2000 hrs	70.00	$22.06	$8.20	$4.05	$0.40	$0.00	$0.00	$0.00	$0.10	$0.00	$34.81	$45.85
2001-3000 hrs	80.00	$25.22	$8.20	$4.05	$0.40	$0.00	$0.00	$0.00	$0.10	$0.00	$37.97	$50.57
3001-4000 hrs	90.00	$28.37	$8.20	$4.05	$0.40	$0.00	$0.00	$0.00	$0.10	$0.00	$41.12	$55.30
More than 4000 hrs	100.00	$31.52	$8.20	$4.05	$0.40	$0.00	$0.00	$0.00	$0.10	$0.00	$44.27	$60.03

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

Ratio :

1 Journeyman to 1 Apprentice
4 Journeyman to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :
CARROLL, STARK, WAYNE

Special Jurisdictional Note :

Details :
Group 1
Building & Construction Laborer, Signalman, Flagman, Tool Cribman, Carpenter Tender, Finisher Tender, Concrete Handler, Utility Construction Laborer, Guard Rail Erectors, Hazardous Waste (Level D)

Group 2
Bottom Man, Scaffold Builder, Tunnel laborer, Pipe Layer, Air and Power Driven Tools, Burner on Demolition Work, Swinging Scaffold, Mucker, Caisson Worker, Cofferdam Worker, Powder Men and

Dynamite Blaster, Creosote Worker, Form Setter, Plasterer Tender, Hod Carrier Laser Beam Set-up Man, All confined space work, furnaces, pickel tubs, acid-pits, and Hazardous Waste Level (C)

Group 3
Mason Tender, Mortar Mixer, Stonemason Tender,skid-loader, Hazardous Waste Level (B)

Group 4
Gunnite Operator, Hazardous Waste Level (A)

Group 5
Watchman

Prevailing Wage Rate
Skilled Crafts

Name of Union: Operating Engineers - Building Local 18 - Zone III

Change # : LCN01-2023ibLoc18zone3

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	$41.49		$9.01	$6.25	$0.85	$0.00	$0.00	$0.09	$0.00	$0.05	$57.74	$78.48
Operator Group B	$41.37		$9.01	$6.25	$0.85	$0.00	$0.00	$0.09	$0.00	$0.05	$57.62	$78.30
Operator Group C	$40.33		$9.01	$6.25	$0.85	$0.00	$0.00	$0.09	$0.00	$0.05	$56.58	$76.74
Operator Group D	$39.15		$9.01	$6.25	$0.85	$0.00	$0.00	$0.09	$0.00	$0.05	$55.40	$74.97
Operator Group E	$33.69		$9.01	$6.25	$0.85	$0.00	$0.00	$0.09	$0.00	$0.05	$49.94	$66.78
Master Mechanic	$41.74		$9.01	$6.25	$0.85	$0.00	$0.00	$0.09	$0.00	$0.05	$57.99	$78.86
Cranes & Mobile Concrete Pumps 150'-180'	$41.99		$9.01	$6.25	$0.85	$0.00	$0.00	$0.09	$0.00	$0.05	$58.24	$79.23
Cranes & Mobile Concrete Pumps 180'-249'	$42.49		$9.01	$6.25	$0.85	$0.00	$0.00	$0.09	$0.00	$0.05	$58.74	$79.98
Cranes & Mobile Concrete Pumps 249' and over	$42.74		$9.01	$6.25	$0.85	$0.00	$0.00	$0.09	$0.00	$0.05	$58.99	$80.36
Apprentice	Percent											
1st Year	50.00	$20.75	$9.01	$6.25	$0.85	$0.00	$0.00	$0.09	$0.00	$0.05	$37.00	$47.37
2nd Year	60.00	$24.89	$9.01	$6.25	$0.85	$0.00	$0.00	$0.09	$0.00	$0.05	$41.14	$53.59
3rd Year	70.00	$29.04	$9.01	$6.25	$0.85	$0.00	$0.00	$0.09	$0.00	$0.05	$45.29	$59.81
4th Year	80.00	$33.19	$9.01	$6.25	$0.85	$0.00	$0.00	$0.09	$0.00	$0.05	$49.44	$66.04
Field Mechanic Trainee												
1st Year	50.00	$20.75	$9.01	$6.25	$0.85	$0.00	$0.00	$0.09	$0.00	$0.05	$37.00	$47.37
2nd Year	60.00	$24.89	$9.01	$6.25	$0.85	$0.00	$0.00	$0.09	$0.00	$0.05	$41.14	$53.59

3rd Year	70.00	$29.04	$9.01	$6.25	$0.85	$0.00	$0.00	$0.09	$0.00	$0.05	$45.29	$59.81
4th Year	80.00	$33.19	$9.01	$6.25	$0.85	$0.00	$0.00	$0.09	$0.00	$0.05	$49.44	$66.04

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

Ratio :

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

Jurisdiction (* denotes special jurisdictional note) :

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

Special Jurisdictional Note :

Details :

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

Group A- Barrier Moving Machines; Boiler Operators or Compressor Operators, when compressor or boiler is mounted on crane (Piggyback Operation); Boom Trucks (all types); Cableways Cherry Pickers; Combination - Concrete Mixers & Towers; All Concrete Pumps with Booms; Cranes (all types); Compact Cranes, track or rubber over 4,000 pounds capacity; Cranes self-erecting, stationary, track or truck (all configurations); Derricks (all types); Draglines; Dredges (dipper, clam or suction) 3-man crew; Elevating Graders or Euclid Loaders; Floating Equipment; Forklift (rough terrain with winch/hoist); Gradalls; Helicopter Operators, hoisting building materials; Helicopter Winch Operators, Hoisting building materials; Hoes (All types); Hoists (with two or more drums in use); Horizonal 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 II

Change # : LCN01-2023ibLoc18hevhwyII

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

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

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

Ratio :

For every (3) Operating Engineer Journeymen employed by the company, there may be employed (1) Registered Apprentice or Trainee Engineer through the referral when they are available. An Apprentice, while employed as part of a crew per Article VIII,

Jurisdiction (* denotes special jurisdictional note) :

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

paragraph 65 will not be subject to the apprenticeship ratios in this collective bargaining agreement	FRANKLIN, FULTON, GALLIA, GREENE, GUERNSEY, HAMILTON, HANCOCK, HARDIN, HARRISON, HENRY, HIGHLAND, HOCKING, HOLMES, HURON, JACKSON, JEFFERSON, KNOX, LAWRENCE, LICKING, LOGAN, LUCAS, MADISON, MARION, MEIGS, MERCER, MIAMI, MONROE, MONTGOMERY, MORGAN, MORROW, MUSKINGUM, NOBLE, OTTAWA, PAULDING, PERRY, PICKAWAY, PIKE, PREBLE, PUTNAM, RICHLAND, ROSS, SANDUSKY, SCIOTO, SENECA, SHELBY, STARK, TUSCARAWAS, UNION, VAN WERT, VINTON, WARREN, WASHINGTON, WAYNE, WILLIAMS, WOOD, WYANDOT

Special Jurisdictional Note :

Details :

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

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

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

Class C - A-Frames; Air Compressors, on tunnel work (low Pressure); Articulating/straight bed end dumps if assigned (minus $4.00 per hour); Asphalt Plant Engineers (Portage and Summit Counties only); Bobcat-type and/or skid steer loader with or without attachments; Drones; Highway Drills (all types); HydroVac/Excavator (when a second person is needed, the rate of pay will be "Class E"); Locomotives (narrow gauge); Material Hoist/Elevators; Mixers, concrete (more than one bag capacity); Mixers, one bag

capacity (side loader); Power Boilers (over 15 lbs. pressure); Pump Operators (installing or operating well Points); Pumps (4 inch and over discharge); Railroad Tie Inserter/Remover; Rollers, Asphalt; Rotovator (lime-soil Stabilizer); Switch & Tie Tampers (without lifting and aligning device); Utilities Operators, (small equipment); Welding Machines and Generators.

Class D – Backfillers and Tampers; Ballast Re-locator; Bar and Joint Installing Machines; Batch Plant Operators; Boring Machine Operators (48 inch or less); Bull Floats; Burlap and Curing Machines; Concrete Plants (capacity 4 yds. and under); Concrete Saws (multiple); Conveyors (highway); Crushers; Deckhands; Farm type tractors, with attachments (highway); Finishing Machines; Firemen, Floating Equipment (all types); Fork Lifts (highway), except masonry; Form Trenchers; Hydro Hammers; Hydro Seeders; Pavement Breakers (hydraulic or cable); Plant Mixers; Post Drivers; Post Hole Diggers; Power Brush Burners; Power Form Handling Equipment; Road Widening Trenchers; Rollers (brick, grade, macadam); Self-Propelled Power Spreaders; Self-Propelled Sub-Graders; Steam Firemen; Survey Instrument men; Tractors, pulling sheepsfoot rollers or graders; Vibratory Compactors, with integral power.

Class E - Compressors (portable, Sewer, Heavy and Highway); Cranes-Compact, track or rubber under 4,000 pound capacity; Drum Firemen (asphalt plant); Fueling and greasing (Primary Operator with Specialized CDL Endorsement Add $3.00/hr); Generators; Inboard-Outboard Motor Boat Launches; Masonry Fork Lifts; Oil Heaters (asphalt plant); Oilers/Helpers; Power Driven Heaters (oil fired); Power Scrubbers; Power Sweepers; Pumps (under 4 inch discharge); Signalperson; Survey Rodmen or Chairmen; Tire Repairmen; VAC/ALLS.
Master Mechanic - Master Mechanic

Prevailing Wage Rate
Skilled Crafts

Name of Union: Painter Local 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.	Annuity	Other	LECET (*)	MISC (*)		
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 Al 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, Asbestos Removal	$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	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	LECET (*)	MISC (*)		
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 :

Prevailing Wage Rate
Skilled Crafts

Name of Union: Painter Local 841 Bridge Painter

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.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Painter Bridge Blaster Class 1	$37.85		$6.85	$7.50	$0.35	$0.00	$0.65	$0.00	$0.00	$0.00	$53.20	$72.12
Class 2 Bridge Painter, Rigger, Containment Builder, Spot Blaster	$34.85		$6.85	$7.50	$0.35	$0.00	$0.65	$0.00	$0.00	$0.00	$50.20	$67.62
Class 3 Equipment Operator/Field Mechanic, Grit Reclamation, Paint Mixer, Traffic Control, Boat Person, Dive (0-5 Years Exp)	$27.85		$6.85	$7.50	$0.35	$0.00	$0.65	$0.00	$0.00	$0.00	$43.20	$57.13
Class 3 Equipment Operator/Field Mechanic, Grit Reclamation, Paint Mixer, Traffic Control, Boat Person, Dive (5 plusYears Exp).	$30.85		$6.85	$7.50	$0.35	$0.00	$0.65	$0.00	$0.00	$0.00	$46.20	$61.63
Class 4 Concrete Sealing, Concrete Blasting/Power Washing/Etc.	$30.85		$6.85	$7.50	$0.35	$0.00	$0.65	$0.00	$0.00	$0.00	$46.20	$61.63
Class 5 Quality Control/QualityAssurance Traffic Safety, Competent Person.	$30.85		$6.85	$7.50	$0.35	$0.00	$0.65	$0.00	$0.00	$0.00	$46.20	$61.63
Apprentice	**Percent**											
1st Year	50.01	$18.93	$6.85	$2.72	$0.35	$0.00	$0.65	$0.00	$0.00	$0.00	$29.50	$38.96
2nd Year	60.00	$22.71	$6.85	$3.14	$0.35	$0.00	$0.65	$0.00	$0.00	$0.00	$33.70	$45.06
3rd year	70.00	$26.50	$6.85	$3.57	$0.35	$0.00	$0.65	$0.00	$0.00	$0.00	$37.92	$51.16
4th Year	80.00	$30.28	$6.85	$4.34	$0.35	$0.00	$0.65	$0.00	$0.00	$0.00	$42.47	$57.61

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 County: South of and including the Ohio Turnpike, Portage County: North to and including the Ohio Turnpike

Details :

Class 1 – Abrasive blasting of any kind
Class 2 – Bridge painting, coating applications of any kind. All steel surface preparation other than abrasive blasting. All necessary rigging and containment building and all remedial/ spot blasting.
Class 3 – Tend to all equipment including but not limited to abrasive blasting, power washing, spray painting, forklifts, hoists, truck, etc. Load and unloading trucks, handle materials, man safety boats, handle traffic control, clean up/ vacuum abrasive blast materials and related tasks.
Class 4 – All aspects of concrete coating/ sealing including but not limited to preparation, containment, etc.
Class 5 – Verify and record that all work is completed according to job specifications. Assure that all health and safety standards are adhered to. Assure all traffic is safely handled.

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 Polisher											
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 mirrow 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 2 Sign

Change # : LCN01-2023ibLoc639

Craft : Painter **Effective Date :** 03/22/2023 **Last Posted :** 03/22/2023

	BHR	Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification											
Painter Sign Journeyman Tech/Team Leader Class A	$25.28	$1.70	$0.21	$0.00	$0.00	$0.00	$0.68	$0.00	$0.00	$27.87	$40.51
Painter Sign Journeyman Tech/Team Leader Class B	$25.28	$1.70	$0.21	$0.00	$0.49	$0.00	$0.68	$0.00	$0.00	$28.36	$41.00
Painter Sign Journeyman Tech/Team Leader Class C	$25.28	$1.70	$0.21	$0.00	$0.97	$0.00	$0.68	$0.00	$0.00	$28.84	$41.48
Painter Sign Journeyman Tech/Team Leader Class D	$25.28	$1.70	$0.21	$0.00	$1.46	$0.00	$0.68	$0.00	$0.00	$29.33	$41.97
Sign Journeyman Class A	$25.00	$1.70	$0.21	$0.00	$0.00	$0.00	$0.67	$0.00	$0.00	$27.58	$40.08
Sign Journeyman Class B	$25.00	$1.70	$0.21	$0.00	$0.48	$0.00	$0.67	$0.00	$0.00	$28.06	$40.56
Sign Journeyman Class C	$25.00	$1.70	$0.21	$0.00	$0.96	$0.00	$0.67	$0.00	$0.00	$28.54	$41.04
Sign Journeyman Class D	$25.00	$1.70	$0.21	$0.00	$1.44	$0.00	$0.67	$0.00	$0.00	$29.02	$41.52
Tech Sign Fabrication/ Erector Class A	$19.67	$1.70	$0.21	$0.00	$0.00	$0.00	$0.53	$0.00	$0.00	$22.11	$31.95
Tech Sign Fabrication/ Erector Class B	$19.67	$1.70	$0.21	$0.00	$0.38	$0.00	$0.53	$0.00	$0.00	$22.49	$32.33

Tech Sign Fabrication/ Erector Class C	$19.67	$1.70	$0.21	$0.00	$0.76	$0.00	$0.53	$0.00	$0.00	$22.87	$32.71
Tech Sign Fabrication/ Erector Class D	$19.67	$1.70	$0.21	$0.00	$1.13	$0.00	$0.53	$0.00	$0.00	$23.24	$33.08

Special Calculation Note : Other is for paid holidays.

Ratio :

Jurisdiction (* denotes special jurisdictional note) :
ADAMS, ALLEN, AUGLAIZE, BROWN, BUTLER, CARROLL, CHAMPAIGN, CLARK, CLERMONT, CLINTON, COLUMBIANA, COSHOCTON, CRAWFORD, DARKE, DEFIANCE, DELAWARE, ERIE, FAIRFIELD, FAYETTE, FRANKLIN, FULTON, GREENE, HAMILTON, HANCOCK, HARDIN, HENRY, HIGHLAND, HOLMES, HURON, JACKSON, KNOX, LICKING, LOGAN, LORAIN, LUCAS, MADISON, MAHONING, MARION, MERCER, MIAMI, MONTGOMERY, MORROW, MUSKINGUM, OTTAWA, PAULDING, PERRY, PICKAWAY, PIKE, PREBLE, PUTNAM, ROSS, SANDUSKY, SCIOTO, SENECA, SHELBY, STARK, TRUMBULL, TUSCARAWAS, UNION, VAN WERT, WARREN, WAYNE, WILLIAMS, WOOD, WYANDOT

Special Jurisdictional Note :

Details :
Class A: less that 1 year.
Class B: 1-3 years.
Class C; 3-10 years.
Class D: More than 10 years.

Prevailing Wage Rate
Skilled Crafts

Name of Union: Plumber Pipefitter Local 94

Change # : LCN01-2021sksLoc94

Craft : Plumber/Pipefitter **Effective Date :** 11/24/2021 **Last Posted :** 11/24/2021

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Plumber Pipefitter	$36.33		$8.83	$6.19	$0.77	$0.00	$6.30	$0.10	$0.00	$0.00	$58.52	$76.68
Apprentice Hired After 05-01-2017												
1st Year	$14.53		$8.83	$0.00	$0.77	$0.00	$3.15	$0.10	$0.00	$0.00	$27.38	$34.65
2nd Year	$18.17		$8.83	$0.50	$0.77	$0.00	$3.15	$0.10	$0.00	$0.00	$31.52	$40.61
3rd Year	$21.80		$8.83	$0.50	$0.77	$0.00	$3.15	$0.10	$0.00	$0.00	$35.15	$46.05
4th Year	$25.43		$8.83	$0.50	$0.77	$0.00	$4.73	$0.10	$0.00	$0.00	$40.36	$53.07
5th Year	$29.06		$8.83	$0.50	$0.77	$0.00	$4.55	$0.10	$0.00	$0.00	$43.81	$58.34
Apprentice If Hired Before 5-01-2017	**Percent**											
5th yr 1st 6mos	85.00	$30.88	$8.83	$0.50	$0.77	$0.00	$1.82	$0.10	$0.00	$0.00	$42.90	$58.34
5th yr 2nd 6 months	90.00	$32.70	$8.83	$0.50	$0.77	$0.00	$1.82	$0.10	$0.00	$0.00	$44.72	$61.07

Special Calculation Note : Other is International Training Fund.

Ratio :

1 Journeymen to 2 Apprentice
4 Journeymen to 3 Apprentice
6 Journeymen to 4 Apprentice
9 Journeymen to 5 Apprentice
11 Journeyman to 6 Apprentice

3 Journeyman to 1 Apprentice Thereafter

Jurisdiction (* denotes special jurisdictional note) :
CARROLL*, STARK, WAYNE

Special Jurisdictional Note : In Carroll County the following townships are included: Ross, Monroe, Union, Lee, Orange, Perry and London.

Details :

Prevailing Wage Rate
Skilled Crafts

Name of Union: Roofer Local 88

Change # : LCN01-2023ibLoc88

Craft : Roofer **Effective Date :** 06/07/2023 **Last Posted :** 06/07/2023

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Roofer	$30.07		$9.50	$9.80	$0.40	$0.00	$1.50	$0.18	$0.00	$0.00	$51.45	$66.49
HELPERS												
Helper -500 Hrs. 1st 6 months	$16.84		$2.25	$0.00	$0.40	$0.00	$1.50	$0.18	$0.00	$0.00	$21.17	$29.59
Helper - 500 Hrs. 2nd 6 months	$18.65		$9.50	$9.80	$0.40	$0.00	$1.50	$0.18	$0.00	$0.00	$40.03	$49.35
2nd year Helper	$20.45		$9.50	$9.80	$0.40	$0.00	$1.50	$0.18	$0.00	$0.00	$41.83	$52.05
3rd year Helper	$22.26		$9.50	$9.80	$0.40	$0.00	$1.50	$0.18	$0.00	$0.00	$43.64	$54.77
4th year Helper	$24.06		$9.50	$9.80	$0.40	$0.00	$1.50	$0.18	$0.00	$0.00	$45.44	$57.47
5th year Helper	$25.86		$9.50	$9.80	$0.40	$0.00	$1.50	$0.18	$0.00	$0.00	$47.24	$60.17
Apprentice	**Percent**											
1st 6 months w/500 hrs	56.00	$16.84	$9.50	$9.80	$0.40	$0.00	$1.50	$0.18	$0.00	$0.00	$38.22	$46.64
2nd 6 months w/500 hrs	62.02	$18.65	$9.50	$9.80	$0.40	$0.00	$1.50	$0.18	$0.00	$0.00	$40.03	$49.35
3rd 6 months w/500 hrs	68.00	$20.45	$9.50	$9.80	$0.40	$0.00	$1.50	$0.18	$0.00	$0.00	$41.83	$52.05
4th 6 months w/500 hrs	74.02	$22.26	$9.50	$9.80	$0.40	$0.00	$1.50	$0.18	$0.00	$0.00	$43.64	$54.77
5th 6 months w/500 hrs	80.00	$24.06	$9.50	$9.80	$0.40	$0.00	$1.50	$0.18	$0.00	$0.00	$45.44	$57.46
6th 6 months w/500 hrs	86.00	$25.86	$9.50	$9.80	$0.40	$0.00	$1.50	$0.18	$0.00	$0.00	$47.24	$60.17

7th 6 months w/500 hrs	92.02	$27.67	$9.50	$9.80	$0.40	$0.00	$1.50	$0.18	$0.00	$0.00	$49.05	$62.89

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 $0.18 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)

Details :

Prevailing Wage Rate
Skilled Crafts

Name of Union: Sheet Metal Local 33 (Akron)

Change # : LCN01-2023ibLoc33Akron

Craft : Sheet Metal Worker **Effective Date :** 06/01/2023 **Last Posted :** 05/31/2023

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Sheet Metal Worker	$34.90		$9.65	$13.20	$0.93	$0.00	$7.64	$0.00	$0.00	$0.00	$66.32	$83.77
1st year	60.00	$20.94	$9.65	$4.81	$0.17	$0.00	$0.00	$0.00	$0.00	$0.00	$35.57	$46.04
2nd year	65.02	$22.69	$9.65	$5.97	$0.93	$0.00	$3.82	$0.00	$0.00	$0.00	$43.06	$54.41
3rd year	70.00	$24.43	$9.65	$6.37	$0.93	$0.00	$3.82	$0.00	$0.00	$0.00	$45.20	$57.41
4th year	80.00	$27.92	$9.65	$7.18	$0.93	$0.00	$3.82	$0.00	$0.00	$0.00	$49.50	$63.46

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
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.

Jurisdiction (* denotes special jurisdictional note) :
ASHLAND, CARROLL, COSHOCTON, CRAWFORD, HOLMES, MEDINA, PORTAGE, RICHLAND, STARK, SUMMIT, TUSCARAWAS, WAYNE

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: Sheet Metal Local 33 Industrial Door

Change # : LCN01-2023ibLoc33IndustrialDoor

Craft : Sheet Metal Worker **Effective Date :** 08/02/2023 **Last Posted :** 08/02/2023

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Sheet Metal Worker	$25.42		$8.66	$5.55	$0.17	$0.00	$2.15	$0.00	$0.00	$0.00	$41.95	$54.66
Trainees	Percent											
1st 60 days Probationary Perios	52.00	$13.22	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$13.22	$19.83
61st day-12 months	58.00	$14.74	$8.66	$1.92	$0.17	$0.00	$1.41	$0.00	$0.00	$0.00	$26.90	$34.28
2nd yr	68.00	$17.29	$8.66	$1.92	$0.17	$0.00	$1.59	$0.00	$0.00	$0.00	$29.63	$38.27
3rd yr	73.00	$18.56	$8.66	$1.92	$0.17	$0.00	$1.69	$0.00	$0.00	$0.00	$31.00	$40.27
4th yr	80.00	$20.34	$8.66	$1.92	$0.17	$0.00	$1.80	$0.00	$0.00	$0.00	$32.89	$43.05
5th yr	86.00	$21.86	$8.66	$1.92	$0.17	$0.00	$1.91	$0.00	$0.00	$0.00	$34.52	$45.45

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: Sprinkler Fitter Local 669

Change # : LCN01-2022sksLoc669

Craft : Sprinkler Fitter **Effective Date :** 04/06/2022 **Last Posted :** 04/06/2022

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Sprinkler Fitter	$43.75		$10.99	$7.10	$0.52	$0.00	$5.12	$0.00	$0.00	$0.00	$67.48	$89.35
Apprentice Indentured after April 1, 2013	Percent											
ClLASS 1	45.00	$19.69	$7.85	$0.00	$0.52	$0.00	$0.00	$0.00	$0.00	$0.00	$28.06	$37.90
CLASS 2	50.02	$21.88	$7.85	$0.00	$0.52	$0.00	$0.00	$0.00	$0.00	$0.00	$30.25	$41.20
CLASS 3	54.43	$23.81	$10.99	$7.10	$0.52	$0.00	$1.15	$0.00	$0.00	$0.00	$43.57	$55.48
CLASS 4	59.43	$26.00	$10.99	$7.10	$0.52	$0.00	$1.15	$0.00	$0.00	$0.00	$45.76	$58.76
CLASS 5	64.43	$28.19	$10.99	$7.10	$0.52	$0.00	$1.40	$0.00	$0.00	$0.00	$48.20	$62.29
CLASS 6	69.43	$30.38	$10.99	$7.10	$0.52	$0.00	$1.40	$0.00	$0.00	$0.00	$50.39	$65.57
CLASS 7	74.43	$32.56	$10.99	$7.10	$0.52	$0.00	$1.40	$0.00	$0.00	$0.00	$52.57	$68.85
CLASS 8	79.42	$34.75	$10.99	$7.10	$0.52	$0.00	$1.40	$0.00	$0.00	$0.00	$54.76	$72.13
CLASS 9	84.43	$36.94	$10.99	$7.10	$0.52	$0.00	$1.40	$0.00	$0.00	$0.00	$56.95	$75.42
CLASS 10	89.44	$39.13	$10.99	$7.10	$0.52	$0.00	$1.40	$0.00	$0.00	$0.00	$59.14	$78.70

Special Calculation Note :

Ratio :

1 Journeyman to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

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

MUSKINGUM, NOBLE, OTTAWA, PAULDING, PERRY, PICKAWAY, PIKE, PORTAGE, PREBLE, PUTNAM, RICHLAND, ROSS, SANDUSKY, SCIOTO, SENECA, SHELBY, STARK, SUMMIT, TRUMBULL, TUSCARAWAS, UNION, VAN WERT, VINTON, WARREN, WASHINGTON, WAYNE, WILLIAMS, WOOD, WYANDOT

Special Jurisdictional Note :

Details :

Sprinkler Fitter work shall consist of the installation,dismantling,maintenance,repairs,adjustments,and corrections of all fire protection and fire control systems including the unloading,handling by hand,power equipment and installation of all piping or tubing,appurtenances and equipment pertaining thereto,including both overhead and underground water mains,fire hydrants and hydrant mains,standpipes and hose connections to sprinkler systems used in connection with sprinkler and alarm systems. Also all tanks and pumps connected thereto,also included shall be CO-2 and Cardox Systems, Dry Chemical Systems,Foam Systems and all other fire protection systems.

Prevailing Wage Rate
Skilled Crafts

Name of Union: Truck Driver Bldg & HevHwy Class 1
Locals 20,40,92,92b,100,175,284,438,377,637,908,957

Change # : LCN01-2023ibBldgHevHwy

Craft : Truck Driver Effective Date : 05/01/2023 Last Posted : 04/26/2023

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Truck Driver CLASS 1 4 wheel service, dump, and batch trucks; drivers on tandems; truck sweepers (not to include power sweepers & scrubbers)	$31.24		$7.75	$9.20	$0.20	$0.00	$0.00	$0.00	$0.00	$0.00	$48.39	$64.01
Apprentice	**Percent**											
First 6 months	80.00	$24.99	$7.75	$9.20	$0.20	$0.00	$0.00	$0.00	$0.00	$0.00	$42.14	$54.64
7-12 months	85.00	$26.55	$7.75	$9.20	$0.20	$0.00	$0.00	$0.00	$0.00	$0.00	$43.70	$56.98
13-18 months	90.00	$28.12	$7.75	$9.20	$0.20	$0.00	$0.00	$0.00	$0.00	$0.00	$45.27	$59.32
19-24 months	95.00	$29.68	$7.75	$9.20	$0.20	$0.00	$0.00	$0.00	$0.00	$0.00	$46.83	$61.67
25-30 months	100.00	$31.24	$7.75	$9.20	$0.20	$0.00	$0.00	$0.00	$0.00	$0.00	$48.39	$64.01

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

Ratio :

3 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, ALLEN, ASHLAND, ASHTABULA, ATHENS, AUGLAIZE, BELMONT, BROWN, BUTLER, CARROLL, CHAMPAIGN, CLARK, CLERMONT, CLINTON, COLUMBIANA,

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

Special Jurisdictional Note :

Details :

Prevailing Wage Rate
Skilled Crafts

Name of Union: Truck Driver Bldg & HevHwy Class 2
Locals 20,40,92,92b,100,175,284,438,377,637,908,957

Change # : LCN01-2023ibBldgHevHwy

Craft : Truck Driver **Effective Date :** 05/01/2023 **Last Posted :** 04/26/2023

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Truck Driver CLASS 2 Tractor Trailer-Semi Tractor Trucks; Pole Trailers; Ready Mix Trucks; Fuel Trucks; 5 Axle & Over; Belly Dumps; Low boys - Heavy duty Equipment(irrespective of load carried) when used exclusively for transportation; Truck Mechanics (when needed)	$31.66		$7.75	$9.20	$0.20	$0.00	$0.00	$0.00	$0.00	$0.00	$48.81	$64.64
Apprentice	**Percent**											
First 6 months	80.00	$25.33	$7.75	$9.20	$0.20	$0.00	$0.00	$0.00	$0.00	$0.00	$42.48	$55.14
7-12 months	85.00	$26.91	$7.75	$9.20	$0.20	$0.00	$0.00	$0.00	$0.00	$0.00	$44.06	$57.52
13-18 months	90.00	$28.49	$7.75	$9.20	$0.20	$0.00	$0.00	$0.00	$0.00	$0.00	$45.64	$59.89
19-24 months	95.00	$30.08	$7.75	$9.20	$0.20	$0.00	$0.00	$0.00	$0.00	$0.00	$47.23	$62.27
25-30 months	100.00	$31.66	$7.75	$9.20	$0.20	$0.00	$0.00	$0.00	$0.00	$0.00	$48.81	$64.64

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

Ratio :

3 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, ALLEN, ASHLAND, ASHTABULA, ATHENS, AUGLAIZE, BELMONT, BROWN, BUTLER, CARROLL, CHAMPAIGN, CLARK, CLERMONT, CLINTON, COLUMBIANA, COSHOCTON, CRAWFORD, DARKE, DEFIANCE, DELAWARE, ERIE, FAIRFIELD, FAYETTE, FRANKLIN, FULTON, GALLIA, GREENE, GUERNSEY, HAMILTON, HANCOCK, HARDIN, HARRISON, HENRY, HIGHLAND, HOCKING, HOLMES, HURON, JACKSON, JEFFERSON,

KNOX, LAWRENCE, LICKING, LOGAN, LORAIN, LUCAS, MADISON, MAHONING, MARION, MEDINA, MEIGS, MERCER, MIAMI, MONROE, MONTGOMERY, MORGAN, MORROW, MUSKINGUM, NOBLE, OTTAWA, PAULDING, PERRY, PICKAWAY, PIKE, PORTAGE, PREBLE, PUTNAM, RICHLAND, ROSS, SANDUSKY, SCIOTO, SENECA, SHELBY, STARK, SUMMIT, TRUMBULL, TUSCARAWAS, UNION, VAN WERT, VINTON, WARREN, WASHINGTON, WAYNE, WILLIAMS, WOOD, WYANDOT

Special Jurisdictional Note :

Details :

Prevailing Wage Rate
Skilled Crafts

Name of Union: Truck Driver Bldg & HevHwy Class 3
Locals 20,40,92,92b,100,175,284,438,377,637,908,957

Change # : LCN01-2023ibBldgHevHwy3

Craft : Truck Driver **Effective Date :** 05/01/2023 **Last Posted :** 04/26/2023

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Truck Driver CLASS 3 Articulated Dump Trucks; Ridge-Frame Rock Trucks; Distributor Trucks)	$32.66		$7.75	$9.20	$0.20	$0.00	$0.00	$0.00	$0.00	$0.00	$49.81	$66.14
Apprentice	Percent											
First 6 months	80.00	$26.13	$7.75	$9.20	$0.20	$0.00	$0.00	$0.00	$0.00	$0.00	$43.28	$56.34
7-12 months	85.00	$27.76	$7.75	$9.20	$0.20	$0.00	$0.00	$0.00	$0.00	$0.00	$44.91	$58.79
13-18 months	90.00	$29.39	$7.75	$9.20	$0.20	$0.00	$0.00	$0.00	$0.00	$0.00	$46.54	$61.24
19-24 months	95.00	$31.03	$7.75	$9.20	$0.20	$0.00	$0.00	$0.00	$0.00	$0.00	$48.18	$63.69
25-30 months	100.00	$32.66	$7.75	$9.20	$0.20	$0.00	$0.00	$0.00	$0.00	$0.00	$49.81	$66.14

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

Ratio :

3 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, ALLEN, ASHLAND, ASHTABULA, ATHENS, AUGLAIZE, BELMONT, BROWN, BUTLER, CARROLL, CHAMPAIGN, CLARK, CLERMONT, CLINTON, COLUMBIANA, COSHOCTON, CRAWFORD, DARKE, DEFIANCE, DELAWARE, ERIE, FAIRFIELD, FAYETTE, FRANKLIN, FULTON, GALLIA, GREENE, GUERNSEY, HAMILTON, HANCOCK, HARDIN,

HARRISON, HENRY, HIGHLAND, HOCKING, HOLMES, HURON, JACKSON, JEFFERSON, KNOX, LAWRENCE, LICKING, LOGAN, LORAIN, LUCAS, MADISON, MAHONING, MARION, MEDINA, MEIGS, MERCER, MIAMI, MONROE, MONTGOMERY, MORGAN, MORROW, MUSKINGUM, NOBLE, OTTAWA, PAULDING, PERRY, PICKAWAY, PIKE, PORTAGE, PREBLE, PUTNAM, RICHLAND, ROSS, SANDUSKY, SCIOTO, SENECA, SHELBY, STARK, SUMMIT, TRUMBULL, TUSCARAWAS, UNION, VAN WERT, VINTON, WARREN, WASHINGTON, WAYNE, WILLIAMS, WOOD, WYANDOT

Special Jurisdictional Note :

Details :

Appendix C

CITY OF CANTON

CRENSHAW PARK NEW PAVILION

EDWARD L. "PEEL" COLEMAN COMMUNITY CENTER

1400 SHERRICK ROAD SE
CANTON, OHIO 44707

TECHNICAL SPECIFICATIONS

AUGUST 18, 2023

MOTTER & MEADOWS
ARCHITECTS

SPECIFICATION MANUAL INDEX

STRUCTURAL DIVISIONS 3 THRU 6 – SEE DRAWINGS

ARCHITECTURAL DIVISIONS 4 THRU 12

04 20 00	UNIT MASONRY
04 72 00	CAST CONCRETE ARCHITECTURAL STONE
04 73 00	MANUFACTURED LIGHTWEIGHT STONE VENEER
06 10 00	ROUGH CARPENTRY
06 41 16	ARCHITECTURAL CASEWORK
06 66 00	SIMULATED WOOD ARCHITECTURAL MILLWORK
07 21 00	BUILDING INSULATION
07 27 19	AIR BARRIERS
07 41 13	METAL ROOF PANELS
07 46 33	VINYL SIDING
07 60 00	FLASHING & SHEET METAL
07 92 13	JOINT SEALERS
08 12 13	STEEL DOORS AND FRAMES
08 33 13	ROLLING COUNTER SHUTTER
08 62 00	UNIT SKYLIGHTS
08 70 00	DOOR HARDWARE
09 65 13	RUBBER WALL BASE
09 91 23	PAINTING
10 28 13	TOILET ROOM ACCESSORIES
10 44 16	PORTABLE FIRE EXTINGUISHERS
12 36 16	STAINLESS STEEL COUNTERS

PLUMBING DIVISION 22 – SEE DRAWINGS

HVAC DIVISION 23 – SEE DRAWINGS

ELECTRICAL DIVISION 26 – SEE DRAWINGS

CIVIL DIVISION 31

31 10 00	SITE CLEARING
31 20 00	EARTH MOVING
31 22 00	GRADING
31 23 33	TRENCHING AND BACKFILL
31 32 19	GEOTEXTILE FABRIC
32 13 13	CONCRETE PAVING
32 92 00	TURFS AND LAWNS
33 30 00	SANITARY SEWERAGE UTILITIES
33 40 00	STORM WATER DRAINAGE PIPING

SECTION 04 20 00 - UNIT MASONRY

A. WORK INCLUDED

1. The work included under this section consists of furnishing all labor, materials, tools and equipment necessary to complete all unit masonry and related work as shown on the Drawings and specified herein.
2. The extent of each type of unit masonry is shown on the Drawings.

B. JOB CONDITIONS

1. Protect partially complete masonry against weather when work is not in progress by covering top of walls with strong, waterproof, nonstaining membrane. Extend membrane at least 2' down both sides of walls and anchor securely in place.

C. SUBMITTALS

1. Test report from independent laboratory indicating results for each of the following:
   a. Concrete Masonry Units: Resultant weight, compressive strength, and water absorption properties, as well as adherence to the following standards:
      1. Test reports shall conform to ASTM C140, and shall include:
         a. Name of Manufacturer.
         b. Date of manufacturer of test specimen.
         c. Dimension measurements.
         d. Calculated gross and net areas.
         e. Total load and net unit load.
         f. Sample weight.
         g. Dry, wet, and immersed weights.
         h. Density.
         i. Moisture content.
         j. Absorption.
         k. Linear shrinkage coefficient.
   b. Submit compression test results from an independent testing laboratory showing the compressive strength of each type and size of concrete masonry units delivered to the construction site, for each 10,000 S.F. of concrete masonry wall construction. Units to be tested shall be selected at random from materials stockpiled at the project site.
   c. Submit a test report from an independent testing laboratory showing compressive strength of concrete masonry prisms constructed from the concrete masonry units and mortar to be used in the masonry work as follows:
      1. Each proposed type and size of concrete masonry unit required.
      2. Each proposed type and size of grouted wall.
2. Letter from each approved manufacturer certifying that provided units will meet or exceed qualities of tested units for each type of masonry unit.
3. Masonry reinforcing steel shop drawings.
4. Written plan for masonry cleaning procedures.

D. QUALITY ASSURANCE

1. Codes and Standards: Comply with the provisions of the following codes, specifications and standards:
   a. Comply with recommendations of National Concrete Masonry Association (NCMA).
   b. ACI 530-99/ASCE 5-99 Building Code Requirements for Masonry Structures.
   c. ACI 530.1-99/ASCE 6-99 Specifications for Masonry Structures.
   d. National Concrete Masonry Association
      1. NCMA TEK Bulletin 3-1 "Cold Weather Concrete Masonry Construction".
      2. NCMA TEK Bulletin 3-2 "Grouting for Concrete Masonry Walls".
      3. NCMA TEK Bulletin 7-1 "Fire Resistance Ratings for Concrete Masonry Assemblies".

5. NCMA TEK Bulletin 7-3 "Fire Safety for Concrete Masonry".
6. NCMA TEK Bulletin 10-1A "Crack Control in Concrete Masonry Walls".
7. NCMA TEK Bulletin 10-2A "Control Joints in Concrete Masonry Walls".
8. NCMA TEK Bulletin 14-2 "Reinforced Concrete Masonry".
9. NCMA TEK Bulletin 19-4 "Flashing Concrete Masonry".
10. NCMA TEK Bulletin 19-5 "Use of Flashing in Concrete Masonry".
11. Standard Practice for Bracing Masonry Walls Under Construction, July 1999.

e. American Society for Testing and Materials (ASTM)
1. ASTM C33-97 "Concrete Aggregates".
2. ASTM C90-97a "Loadbearing Concrete Masonry Units".
3. ASTM C140-75 (R-1988) "Standard Methods of Sampling and Testing Concrete Masonry Units".
4. ASTM C426-06a "Testing for Drying Shrinkage of Concrete Block".

f. International Masonry Industry All-Weather Council (IMIAWC)
1. "Recommended Practices and Guide Specifications for Cold Weather Masonry Construction-1993".

2. Field Constructed Sample Panels:
a. Sample Panel for Verification of Materials:
1. Prior to installation of masonry work, erect sample wall panel using materials, bond, and joint tooling shown or specified for final work. Panel shall be approximately 4 feet by 4 feet, indicating the proposed range of color and texture expected in the completed work. Panel shall be used for verification of masonry material units and color selection, for review and acceptance by Architect and Owner.

b. Field Constructed Mock-Up Panels
1. The first 100 square feet of each masonry wall type or pattern type installed shall serve as a mock-up panel for Architect/Owner approval of workmanship, including installation of masonry, exposed and concealed, anchors, flashing, and control joints, including sealant. The sample area when accepted, shall become the project standard for quality of work, methods of installation and appearance. Protect accepted mock-up area of work throughout duration of project, to become part of completed work.

E. MATERIALS

1. Concrete Masonry Units (CMU):
a. Manufacturer: Shall be a member of the National Concrete Masonry Association.
b. Size: Manufacturer's standard units with nominal face dimensions of 16" long x 8" high, (15-5/8" x 7-5/8" actual), unless otherwise shown. See drawings for required wythe dimensions.
c. Special Shapes: Provide, where shown and where required, lintels, corners, jambs, sash, control joints, headers, bond beams, bullnose, and other special conditions. Provide (2) two core type units where required to receive vertical reinforcing.
1. Provide one inch radius bullnose at external corners and edges unless otherwise noted.
d. Fire Resistance: Furnish units with specified fire resistance classification, where indicated on the Drawings.
e. Integral Water Repellent: Provide Integral Water Repellent at all exterior CMU, complying with ASTM E 514 wind driven rain permanence Class E rating.
f. Linear shrinkage: Not to exceed 0.065 percent, in accordance with ASTM C 426.
g. Hollow Load-Bearing Concrete Masonry Units:
1. Provide units complying with ASTM C 90, Grade N.
2. Compressive Strength: 1,900 psi average, 1,700 psi minimum.
3. Weight Classification: Normal Weight.
h. Solid Load-Bearing Concrete Masonry Units:
1. Provide units complying with ASTM C 90, Grade N.
2. Compressive Strength: 1,800 psi average, 1,500 psi minimum.
3. Weight Classification: Normal Weight.

i. Exposed Face:
   1. Manufacturer's standard color and texture, unless otherwise noted.
   2. Provide units with special finishes and textures where indicated.
      a. Provide scored units where indicated.
      b. Provide integral pigmented colors where indicated.

j. Below grade units, (except interior partitions), and above grade load bearing units shall comply with ASTM C 90, Grade N.

k. Curing: Cure units in a moisture - controlled atmosphere or in an autoclave at normal pressure and temperature to comply with ASTM C 90, Type 1.

3. Mortar & Grout Materials:
   a. Portland Cement: ASTM C 150, Type I, except Type III may be used for cold weather protection.
   b. Hydrated lime: ASTM C 207. Type S.
   c. Sand: ASTM C 144, except for joints less than 1/4" use aggregate graded with 100% passing the #16 seive.
   d. Color: Colored mortar to be selected for brick veneer, to match existing adjacent brickwork.
4. Mortar Mixes:
   a. Do not lower the freezing point of mortar by use of admixtures or anti-freeze agents.
   b. Mortar for unit masonry: Comply with ASTM C 270, Proportion Specifications, except limit materials to those specified herein, and limit cement/lime ratio by volume as follows: Type S: (All Masonry work) - not more than 1/2 part lime per part of Portland Cement.
5. Grout Materials:
   a. Grout for Unit Masonry
      1. Comply with ASTM C 476. Use grout of consistency (fine or course) at time of placement that will completely fill spaces intended to receive grout.
         a. Use fine grout in spaces less than 2" in horizontal dimension.
         b. Use course grout in spaces 2" or more in least horizontal dimension.
      2. Aggregate: ASTM C 404.
      3. Do not use calcium chloride.
      4. Placement:
         a. Do not place grout until entire height of masonry to be grouted has attained sufficient strength to resist grout pressure.
         b. Do not exceed the following pour heights for fine grout:
            1. For minimum widths of grout spaces of ¾" or for minimum grout space of hollow unit cells of 1-1/2" by 2", pour height of 12".
            2. For minimum widths of grout spaces of 2" or for minimum grout space of hollow unit cells of 2" by 3", pour height of 60".
            3. For minimum widths of grout spaces of 2-1/2" or for minimum grout space of hollow unit cells of 2-1/2" by 3", pour height of 12 feet.
            4. For minimum widths of grout spaces of 3" or for minimum grout space of hollow unit cells of 3" by 3", pour height of 24 feet.
         c. Do not exceed the following pour heights for course grout:
            1. For minimum widths of grout spaces of 1-1/2" or for minimum grout space of hollow unit cells of 1-1/2" by 3", pour height of 12".
            2. For minimum widths of grout spaces of 2" or for minimum grout space of hollow unit cells of 2-1/2" by 3", pour height of 60".
            3. For minimum widths of grout spaces of 2-1/2" or for minimum grout space of hollow unit cells of 3" by 3", pour height of 12 feet.
            4. For minimum widths of grout spaces of 3" or for minimum grout space of hollow unit cells of 3" by 4", pour height of 24 feet.
         d. Provide cleanout holes at least 3" in least dimension for grout pours over 60" in height.
            1. Provide cleanout holes at each vertical reinforcing bar.

2. At solid grouted masonry, provide cleanout holes at not more than 32" o.c.
e. Grout will be sampled and tested for compressive strength per ASTM C 1019.

b. Non-Shrink Grout
1. Pre-mixed metallic aggregate, complying with ASTM C 476.
2. Acceptable manufacturer's and products:
a. Master Builders, Inc. – "Embeco".
b. Sonneborn Building Products – "Ferrolith G".
c. Chem Master – "Metox RM".
d. Euclid Chemical – "Firmes".
3. Comply with applicable requirements of ANSI/NBS "Building Code Requirements for Reinforced Masonry"; and ACI 531 "Building Code Requirements for Concrete Masonry Structures".

6. Masonry Accessories:
a. Individual wire ties for masonry: Fabricate from 3/16" cold-drawn steel wire, ASTM A 82, unless otherwise indicated of the length required for proper embedment in wythes of masonry shown and crimped if used in cavity wall construction.

7. Flashings for masonry:
a. Thru-wall flashing: Provide concealed flashings shown to be built into masonry as follows: Vinyl Masonry Flashing: PVC with plasterizers and modifiers, formed into a 20-mil flexible sheet.

F. INSTALLATION AND WORKMANSHIP

1. Inspection: Masonry installer must examine the areas and conditions under which masonry is to be installed and notify the Contractor in writing of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to masonry installer.
2. Chipped, cracked or otherwise damaged or imperfect CMU units shall not be installed. Exposed faces of CMU in exposed wall construction shall not exhibit chips, cracks or imperfections when viewed at a distance of not less than 10 feet under diffused lighting. Note: This requirement supersedes the tolerances listed in ASTM C90 Section 7.2. Installed CMU not meeting this criteria shall be rejected, and shall be replaced at no cost to the Owner.
3. Installation - General
a. Build masonry construction to the full thickness shown, except build single wythe walls, if any, to the actual thickness of the masonry units using units of nominal thickness shown or specified.
b. Cut masonry units with motor-driven saw designed to cut masonry with clean, sharp, unchipped edges. Cut units as required to provide pattern shown and to fit adjoining work neatly. Use full units without cutting wherever possible. All cut units shall be placed at inside corners wherever possible.
c. Wet brick having ASTM C 67 absorption rate greater than 0.025 oz. per square inch per minute. Determine absorption by drawing a circle the size of a quarter on typical units and place 20 drops of water inside the circle. Wet brick units only if water absorbed within 1-1/2 minutes.
d. Do not wet concrete masonry units.
e. Frozen materials and work: Do not use frozen materials or material mixed or coated with ice or frost. For masonry which is specified to be wetted, comply with the BIA Recommendations. Do not build on frozen work. Remove and replace masonry work damaged by frost or freezing.
f. Do not lower the freezing point of mortar by use of admixtures, anti-freeze agents, or accelerating agents.
g. Do not use calcium chloride in mortar for any exposed brick.
h. Pattern Bond: Lay exposed masonry in the bond pattern shown, or if not shown, lay in ½ running bond. Lay concealed masonry with all units in a wythe bonded by lapping not less than 2". Bond and interlock each course of each wythe at corners, unless otherwise shown.
i. Layout walls in advance for accurate spacing of surface bond patterns with uniform joint widths and to properly locate openings, movement-type joints, returns, and offsets. Avoid the use of less-than-half-size units at corners, jambs, and wherever possible at other locations.

j. Lay up walls plumb and true, and with courses level, accurately spaced and coordinated with other work.
k. Stopping and resuming work: Rake back 1/2 masonry unit length in each course, do not tooth. Clean exposed surfaces of set masonry, wet units lightly, if specified to be wetted, and remove loose masonry units and mortar prior to laying fresh masonry.
l. Built-in work: As the work progresses, build-in items specified under this and other sections of these Specifications. Fill space between hollow metal frames and masonry solidly with mortar. Where built-in items are to be embedded in cores of hollow masonry units, place a layer of metal lath in the joint below and rod mortar or grout into core.

4. Mortar Bedding and Jointing
   a. Mortar mixes: ASTM C 270, Proportion Specification, and of the types herein before specified.
   b. Mix mortar ingredients for a minimum of 5 minutes in a mechanical batch mixer. Use water clear and free of deleterious materials which would impair the work. Do not use mortar which has begun to set or if more than 2-1/2 hours has elapsed since initial mixing. Retemper mortar during 2-1/2 hour period as required to restore workability.
   c. Lay brick and other solid masonry units with completely filled bed and head joints. Butter ends with sufficient mortar to fill head joint and shove into place. Do not slush head joints.
   d. Lay hollow concrete masonry units with full mortar coverage on horizontal and vertical face shells, also bed webs in mortar in starting course on footings and foundation walls and in all courses of piers, columns, and pilasters, and where adjacent to cells or cavities to be reinforced or to be filled with concrete or grout.
   e. Joints:
      1. All exposed CMU and brick shall have 3/8" tooled joints. Variations of all joints shall not exceed 1/16". Note: This requirement supersedes the tolerances listed in ACI 530.1-99/ASCE 6-99.
      2. Cut joints flush for masonry walls which are to be concealed or to be covered by other materials.
      3. Rake out mortar in preparation for application of caulking or sealants where shown.
   f. Remove masonry units disturbed after laying. Clean and re-lay in fresh mortar. Do not pound corners at jambs to fit stretcher units which have been set in position. If adjustments are required remove units, clean off mortar, and reset in fresh mortar.
   g. Fill joints between wythes solidly with mortar by parging either the back of the facing or the face of the backing and shove units solidly into parging.
5. Anchoring Masonry Work
   a. Provide anchoring devices of the type shown and as specified, if not shown, or specified, provide standard type for facing and back-up involved.
6. Control and Expansion Joints
   a. Provide vertical expansion, control and isolation joints in masonry where shown. Build in related masonry accessory items as the masonry work progresses. Rake out mortar in preparation for application of caulking and sealants. See Section 07 92 00 for Sealants and Caulking.
   b. Control Joint locations in CMU: Provide vertical control joints in CMU where indicated, or if not indicated, in accordance with NCMA TEK Bulletins 10-1A and 10-2A, and at all offsets, returns, openings, and intersections with dissimilar materials, and as follows to prevent cracking:
      1. At change from wall bearing on foundation wall to wall bearing on floor slab.
      2. At change from exterior wall to interior wall.
      3. At walls setting on floors that cross floor construction.
      4. At columns within masonry walls.
      5. At changes in wall thickness.
      6. Stop joint reinforcement bars on either side of control joints. Extend reinforcing bars in bond beams continuously through control joints and sleeves for bond break 18 inches each side of joint.
      7. Install control joints in concrete masonry units with pre-fabricated shear key.
      8. At end of lintel bearing on one end of openings less than or equal to 6'-4", and at both ends of openings greater than 6'-4".
      9. Straight runs: Maximum 24 feet.

7. Flashing of Masonry Work
   a. Provide concealed flashings in masonry work as shown. Prepare masonry surfaces smooth and free from projections which might puncture flashing. Place through-wall flashing on bed of mortar and cover with mortar. Seal flashing penetrations with mastic before covering with mortar. Terminate flashing 1/2" from face of wall, unless otherwise shown. Extend flashing beyond edge of lintels and sills at least 4" and turn up edge on sides to form pan to direct moisture to exterior. Provide weep holes in the head joints of the first course of masonry immediately above concealed flashings spaced 24" o.c..
   b. Install flashings in accordance with manufacturer's instructions.
8. Repair, Pointing, and Cleaning
   a. Remove and replace masonry units which are loose, broken, stained, or otherwise damaged, or if units do not match adjoining units as intended. Provide new units to match adjoining units and install in fresh mortar or grout pointed to eliminate evidence of replacement.
   b. During the tooling of joints, enlarge any voids, except weep holes and completely fill with mortar. Point-up all joints at corners, openings, and adjacent work to provide a neat uniform appearance, properly prepared for application of caulking or sealant compounds.
   c. After all holes have been pointed, all new masonry walls shall be cleaned with bristle brushes and clear water to remove stains and foreign materials. Cleaning compounds, acids, and other injurious cleaners are not permitted.
   d. Clean exposed CMU masonry by dry brushing at the end of each day's work and after final pointing to remove mortar spots and droppings.

END OF SECTION 04 20 00

SECTION 04 72 00 – CAST CONCRETE ARCHITECTURAL STONE

A. SUMMARY

1. All labor, materials and equipment to provide the cast stone shown on architectural drawings and as specified herein.
   a. Manufacturer shall furnish cast stone as indicated on the drawings and specified herein.
   b. Installing contractor shall unload, store, furnish all anchors, set, patch, clean and seal the cast stone shown on the drawings and specified herein.

B. RELATED SECTIONS

1. Section 01 30 00 - Submittal Procedures.
2. Section 04 20 00 – Unit Masonry.
3. Section 07 92 00 – Joint Sealers.

C. REFERENCES

1. ACI 318 – Building Code Requirements for Reinforced Concrete.
2. ASTM A 185 – Standard Specification for Steel Welded Wire Reinforcement, Plain, for Concrete.
3. ASTM A 615/A 615M – Standard Specification for Deformed and Plain Billet-Steel Bars for Reinforced Concrete.
4. ASTM C 33 – Standard Specification for Concrete Aggregates.
5. ASTM C 150 – Standard Specification for Portland Cement.
6. ASTM C 173 – Standard Test Method for Air Content of Freshly Mixed Concrete by Volume Method.
7. ASTM C 231 – Standard Test Method for Air Content of Freshly Mixed Concrete by Pressure Method.
8. ASTM C 260 – Standard Specification for Air Entrained Admixtures for Concrete.
9. ASTM C 270 – Standard Specification for Mortar for Unit Masonry.
10. ASTM C 426 – Standard Test Method for Linear Shrinkage of Concrete Masonry Units.
11. ASTM C 494/C 494M – Standard Specification for Chemical Admixtures for Concrete.
12. ASTM C 618 – Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for use as a Mineral Admixture in Concrete.
13. ASTM C 666 – Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing.
14. ASTM C 979 – Standard Specification for Coloring Pigments for Integrally Pigmented Concrete.
15. ASTM C 989 – Standard Specification for Ground Granulated Blast-Furnace Slag for Use in Concrete.
16. ASTM C 1194 – Standard Test Method for Compressive Strength of Architectural Cast Stone.
17. ASTM C 1195 – Standard Test Method for Absorption of Architectural Cast Stone.
18. ASTM C 1364 – Standard Specification for Architectural Cast Stone.
19. ASTM D 2244 – Standard Test Method for Calculation of Color Differences from Instrumentally Measured Color Coordinates.
20. Cast Stone Institute® Technical Manual (Current Edition).

D. DEFINITIONS

1. Cast Stone – a refined architectural concrete building unit manufactured to simulate natural cut stone, used in unit masonry applications.
   a. Dry Cast Concrete Products – manufactured from zero slump concrete.
      1. Vibrant Dry Tamp (VDT) casting method: Vibratory ramming of earth moist, zero-slump concrete against a rigid mold until it is densely compacted.
      2. Machine casting method: manufactured from earth moist, zero-slump concrete compacted by machinery using vibration and pressure against a mold until it becomes densely consolidated.
   b. Wet Cast Concrete Products – manufactured from measurable slump concrete.
      1. Wet casting method: manufactured from measurable slump concrete and vibrated into a mold until it becomes densely consolidated.

E. SUBMITTAL PROCEDURES

1. Comply with Section 01300 - Submittal Procedures.
2. Samples: Submit pieces of the Cast Stone that are representative of the general range of finish and color proposed to be furnished for the project.
3. Test results: Submit manufacturers test results of Cast Stone previously made by the manufacturer.
4. Shop Drawings: Submit manufacturers shop drawings including profiles, cross-sections, reinforcement, exposed faces, arrangement of joints, anchoring methods, anchors, annotation of stone types and their location.

F. QUALITY ASSURANCE

1. Manufacturer Qualifications:
   a. Manufacturer shall have sufficient plant facilities to produce the shapes, quantities and size of Cast Stone required in accordance with the project schedule.
   b. Manufacturer shall submit a written list of projects similar in scope and at least three (3) years of age, along with owner, architect and contractor references.
2. Standards: Comply with the requirements of the Cast Stone Institute® Technical Manual and the project specifications. Where a conflict may occur, the contract documents shall prevail.
3. Mock-up: Provide full size unit(s) for use in construction of sample wall. The approved mock-up shall become the standard for appearance and workmanship for the project.

G. PRODUCTS

1. Architectural Cast Stone – Indiana Limestone – See drawings for sizes, thickness and installation locations.
   a. Comply with ASTM C 1364
   b. Physical Properties: Provide the following:
      1. Compressive Strength – ASTM C 1194: 6,500 psi minimum for products at 28 days.
      2. Absorption – ASTM C 1195: 6% maximum by the cold water method, or 10% maximum by the boiling method for products at 28 days.
      3. Air Content – ASTM C173 or C 231, for wet cast product shall be 4-8% for units exposed to freeze-thaw environments. Air entrainment is not required for VDT products.
      4. Freeze-Thaw – ASTM C 1364: The CPWL shall be less than 5% after 300 cycles of freezing and thawing.
      5. Linear Shrinkage – ASTM C 426: Shrinkage shall not exceed 0.065%.
   c. Job Site Testing – One (1) sample from production units may be selected at random from the field for each 500 cubic feet delivered to the job site.
      1. Three (3) field cut cube specimens from each of these samples shall have an average minimum compressive strength of not less than 85% with no single specimen testing less than 75% of design strength as allowed by ACI 318.
      2. Three (3) field cut cube specimens from each of these samples shall have an average maximum cold-water absorption of 6%.
      3. Field specimens shall be tested in accordance with ASTM C 1194 and C 1195.
2. Raw Materials
   a. Portland cement – Type I or Type III, white and/or grey, ASTM C 150.
   b. Coarse aggregates – Granite, quartz or limestone, ASTM C 33, except for gradation, and are optional for the VDT casting method.
   c. Fine aggregates – Manufactured or natural sands, ASTM C 33, except for gradation.
   d. Colors – Inorganic iron oxide pigments, ASTM C 979 except that carbon black pigments shall not be used.
   e. Admixtures – Comply with the following:

1. ASTM C 260 for air-entraining admixtures.
2. ASTM C 494/C 495M Types A - G for water reducing, retarding, accelerating and high range admixtures.
3. Other admixtures: integral water repellents and other chemicals, for which no ASTM Standard exists, shall be previously established as suitable for use in concrete by proven field performance or through laboratory testing.
4. ASTM C 618 mineral admixtures of dark and variable colors shall not be used in surfaces intended to be exposed to view.
5. ASTM C 989 granulated blast furnace slag may be used to improve physical properties. Tests are required to verify these features.

f. Water – Potable
g. Reinforcing bars:
   1. ASTM A 615/A 615M. Grade 40 or 60 steel galvanized or epoxy coated when cover is less than 1.5 in.
   2. Welded Wire Fabric: ASTM A 185 where applicable for wet cast units.
h. All anchors, dowels and other anchoring devices and shims shall be standard building stone anchors commercially available in a non-corrosive material such as zinc plated, galvanized steel, brass, or stainless steel Type 302 or 304.

3. Color and Finish
   a. Match sample on file in architect's office.
   b. All surfaces intended to be exposed to view shall have a fine-grained texture similar to natural stone, with no air voids in excess of 1/32 in. and the density of such voids shall be less than 3 occurrences per any 1 in. and not obvious under direct daylight illumination at a 5 ft distance.
   c. Units shall exhibit a texture approximately equal to the approved sample when viewed under direct daylight illumination at a 10 ft distance.
      1. ASTM D 2244 permissible variation in color between units of comparable age subjected to similar weathering exposure.
         a. Total color difference – not greater than 6 units.
         b. Total hue difference – not greater than 2 units.
   d. Minor chipping resulting from shipment and delivery shall not be grounds for rejection. Minor chips shall not be obvious under direct daylight illumination from a 20-ft distance.
   e. The occurrence of crazing or efflorescence shall not constitute a cause for rejection.
   f. Remove cement film, if required, from exposed surfaces prior to packaging for shipment.
4. Reinforcing
   a. Reinforce the units as required by the drawings and for safe handling and structural stress.
   b. Minimum reinforcing shall be 0.25 percent of the cross section area.
   c. Reinforcement shall be non-corrosive where faces exposed to weather are covered with less than 1.5 in. of concrete material. All reinforcement shall have minimum coverage of twice the diameter of the bars.
   d. Panels, soffits and similar stones greater than 24 in. in one direction shall be reinforced in that direction. Units less than 24 in. in both their length and width dimension shall be non-reinforced unless otherwise specified.
   e. Welded wire fabric reinforcing shall not be used in dry cast products.
5. Curing
   a. Cure units in a warm curing chamber approximately 100ºF at 95 percent relative humidity for approximately 12 hours, or cure in a 95 percent moist environment at a minimum 70ºF for 16 hours after casting. Additional yard curing at 95 percent relative humidity shall be 350 degree-days (i.e. 7 days @ 50°F or 5 days @ 70°F) prior to shipping. Form cured units shall be protected from moisture evaporation with curing blankets or curing compounds after casting.
6. Manufacturing Tolerances

a. Cross section dimensions shall not deviate by more than ±1/8 in. from approved dimensions.
b. Length of units shall not deviate by more than length/ 360 or ±1/8 in., whichever is greater, not to exceed ±1/4 in.
   1. Maximum length of any unit shall not exceed 15 times the average thickness of such unit unless otherwise agreed by the manufacturer.
c. Warp, bow or twist of units shall not exceed length/ 360 or ±1/8 in., whichever is greater.
d. Location of dowel holes, anchor slots, flashing grooves, false joints and similar features – On formed sides of unit, 1/8 in., on unformed sides of unit, 3/8 in. maximum deviation.

7. Production Quality Control
   a. Testing:
      1. Test compressive strength and absorption from specimens selected at random from plant production.
      2. Samples shall be taken and tested from every 500 cubic feet of product produced.
      3. Perform tests in accordance ASTM C 1194 and C 1195.
      4. New and existing mix designs shall be tested for strength and absorption compliance prior to producing units.

H. DELIVERY, STORAGE AND HANDLING

1. Mark production units with the identification marks as shown on the shop drawings.
2. Package units and protect them from staining or damage during shipping and storage.
3. Provide an itemized list of product to support the bill of lading.

I. EXAMINATION

1. Installing contractor shall check Cast Stone materials for fit and finish prior to installation. Do not set unacceptable units.

J. INSTALLATION

1. Setting Tolerances
   a. Comply with Cast Stone Institute® Technical Manual.
   b. Set stones 1/8 in. or less, within the plane of adjacent units.
   c. Joints, plus or minus 1/16 in.
2. Jointing
   a. Joint size: All Joints 3/8 in.
   b. Joint materials:
      1. Mortar, Type N, ASTM C 270.
      2. Use a full bed of mortar at all bed joints.
      3. Flush vertical joints full with mortar.
      4. Leave all joints with exposed tops or under relieving angles open for sealant.
      5. Leave head joints in coping and projecting components open for sealant.
3. Setting
   a. Drench units with clean water prior to setting.
   b. Fill dowel holes and anchor slots completely with mortar or non-shrink grout.
   c. Set units in full bed of mortar, unless otherwise detailed.
   d. Rake mortar joints 3/4 in. for pointing.
   e. Remove excess mortar from unit faces immediately after setting.
   f. Tuck point unit joints to a slight concave profile.
4. Joint Protection
   a. Comply with requirements of Section 07 92 00.
   b. Prime ends of units, insert properly sized backing rod and install required sealant.

K. REPAIR AND CLEANING
1. Repair chips with touchup materials furnished by manufacturer.
2. Saturate units to be cleaned prior to applying an approved masonry cleaner.
3. Consult with manufacturer for appropriate cleaners.

L. INSPECTION AND ACCEPTANCE
1. Inspect finished installation according to Bulletin #36.
2. Do not field apply water repellent until repair, cleaning, inspection and acceptance is completed.

END OF SECTION 04 72 00

SECTION 04 73 00 - MANUFACTURED LIGHTWEIGHT MASONRY VENEER

A. SUMMARY

1. Section Includes: Portland cement based manufactured stone veneer and trim.
2. Related Sections:
   1. 04 20 00 – Unit Masonry
   2. 06 00 00 – Rough Carpentry
   3. 07 60 00 – Flashing and Sheet Metal.
   4. 07 92 00 – Joint Sealants.

B. REFERENCES

1. American National Standards Institute (ANSI):
   a. ANSI A118.4 or ANSI A118.15 Specifications for Latex-Portland Cement Mortar.
2. American Society for Testing and Materials (ASTM):
   a. ASTM C 39 – Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.
   b. ASTM C 67 – Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile.
   c. ASTM C 144 – Standard Specification for Aggregate for Masonry Mortar.
   d. ASTM C 177 – Standard Test Method for Steady-State Head Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus.
   e. ASTM C 207 – Standard Specification for Hydrated Lime for Masonry Purposes.
   f. ASTM C 270 – Standard Specification for Mortar for Unit Masonry.
   g. ASTM C 482 – Standard Test Method for Bond Strength of Ceramic Tile to Portland Cement.
   h. ASTM C 567 – Standard Test Method for Determining Density of Structural Lightweight Concrete.
   i. ASTM C 847 – Standard Specification for Metal Lath.
   j. ASTM C 979 – Standard Specification for Pigments for Integrally Colored Concrete.
   k. ASTM C 1032 – Standard Specification for Woven Wire Plaster Base.
   l. ASTM D 226 – Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.
   m. ASTM C1063 – Standard Specification for Installation of Lathing and Furring to Receive Interior and Exterior Portland Cement-Based Plaster
   n. ASTM C1329 – Standard Specification for Portland cement.
   o. ASTM C578 – Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation
   p. ASTM C1289 – Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board
   q. ASTM E 25556/E2556M – Standard Specification for Vapor Permeable Flexible Sheet Water-Resistive Barriers for Mechanical Attachment

C. SUBMITTALS

1. Product Data.
2. Samples:
   a. Standard sample board consisting of small-scale pieces of veneer units showing full range of textures and colors.
   b. Full range of mortar colors.
3. Quality Assurance/Control Submittals:
   a. Qualifications:
   b. Regulatory Requirements: Evaluation reports.
   c. Veneer manufacturer's installation instructions.
   d. Installation instructions for other materials.

4. Closeout Submittals:
   a. Maintenance Instructions.
   b. Special Warranties.

D. QUALITY ASSURANCE
1. Qualifications:
   a. Manufacturer Qualifications: Company with minimum 10 years experience in manufacture of masonry veneer.
   b. Installer Qualifications: Experienced mason familiar with installation procedures and related local, state and federal codes masonry.

E. DELIVERY, STORAGE AND HANDLING
1. Follow manufacturer's instructions.

F. PROJECT / SITE CONDITIONS
1. Environmental Requirements: When air temperature is 40 degrees F (4.5 degrees C) or below, consult local building code for Cold-Weather Construction requirements.

G. WARRANTY
1. Manufacturer's standard warranty coverage against defects in materials when installed in accordance with manufacturer's installation instructions.

H. PRODUCTS / MATERIALS
1. Standard Specified: "Limestone", as manufactured by Dutch Quality Stone, or approved equal.
2. Veneer Unit properties: Precast veneer units consisting of portland cement, lightweight aggregates, and mineral oxide pigments.
   a. Compressive Strength: ASTM C1670, 5 sample average: greater than 2,100 psi (12.4MPa).
   b. Shear Bond: ASTM C1670: 50 psi (345kPa). Minimum
   c. Freeze-Thaw Test: ASTM C1670: Less than 3 percent weight loss and no disintegration.
   d. Thermal Resistance: ASTM C177: 0.473 at 1.387 inches thick
   e. Weight per square foot: 2015, 2018 IBC and 2015, 2018 IRC, ASTM C1670, 15 pounds, saturated.
2. Weather Barrier: ASTM D226, Type 1, No. 15, non-perforated asphalt-saturated felt paper.
3. Reinforcing: ASTM C847, 2.5lb/yd^2 (1.4kg/m^2) galvanized expanded metal lath complying with code agency requirements for the type of substrate over which stone veneer is installed.
4. Mortar:
   a. Cement: Portland cement complying with ASTM C1329.
   b. Lime: ASTM C 207.
   c. Sand: ASTM C 144, natural or manufactured sand.
   d. Color Pigment: ASTM C979, mineral oxide pigments.
   e. Water: Potable.
   f. Pre-Packaged Latex-Portland Cement Mortar: ANSI A118.4 or ANSI A118.15.
5. Water Repellent : Water based silane or siloxane masonry repellent.
6. Mortar Mixes:
   a. Grouted Installation (Grout Joints, either standard or over-grout):
      1. Mix cement, lime and sand in accordance with ASTM C270, Type S.
      2. Pre-Bagged, pre-mixed Type S mortar complying with ASTM C270.
      3. Polymer modified mortar complying with ANSI A118.4 or ANSI A118.15.
      4. Add color pigment in grout joint mortar in accordance with pigment manufacturer's instructions not to exceed 10% by weight of cement.

I. EXAMINATION
1. Examine substrates upon which work will be installed.
2. Coordinate with responsible entity to perform corrective work on unsatisfactory substrates.
3. Commencement of work by installer is acceptance of substrate.

J. PREPARATION
1. Protection: Protect adjacent work from contact with mortar.
2. Surface Preparation: Prepare substrate in accordance with manufacturer's installation instructions for the type of substrate being covered.

K. INSTALLATION
1. Install and clean stone in accordance with manufacturer's installation instructions for Standard Installation Grouted Joint installation as specified above.
2. Apply sealer in accordance with sealer manufacturer's installation instructions.

L. CLEANING
1. Remove protective coverings from adjacent work.
2. Cleaning Veneer Units:
   a. Wash with soft bristle brush and water/granulated detergent solution.
   b. Rinse immediately with clean water.

END OF SECTION 04 73 00

SECTION 06 10 00 - ROUGH CARPENTRY

A. SUMMARY

1. This Section includes the following:
   a. Framing with dimension lumber.
   b. Wood furring, grounds, nailers, and blocking.
   c. Sheathing.
   d. Fasteners and metal framing anchors.

B. REFERENCES

1. American Forest and Paper Association (AFPA) - Manual for Wood Frame Construction
2. American National Standards Institute (ANSI) - A208.1 Mat-Formed Manufactured Panels
3. Engineered Wood Association - Form E30 Engineered Wood Design/Construction Guide
4. American Society of Mechanical Engineers (ASME)
   a. B18.2.1 Square and Hex Bolts and Screws - Inch Series
   b. B18.6.1 Wood Screws (Inch Series)
5. American Society for Testing and Materials (ASTM)
   a. A153 Specification for Zinc -Coating (Hot-Dip of Iron and Steel Hardware)
   b. A307 Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength
   c. A563 Specification for Carbon and Alloy Steel Nuts
   d. A653 Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
   e. D245 Practice for Establishing Structural Grades and Related Allowable Properties for Visually Graded Lumber
   f. D2555 Test Method for Establishing Clear Wood Strength Values
6. American Wood Preservers Association (AWPA)
   a. C2 Lumber, Pressure Treatment
   b. C9 Plywood, Pressure Treatment
   c. C20 Structural Lumber, Fire-Retardant Pressure Treatment
   d. C27 Plywood, Fire-Retardant Pressure Treatment
   e. M4 Standard for the Care of Preservative-Treated Wood Products
7. Ohio Building Code - Chapter 23 Wood
8. U.S. Department of Commerce, National Institute of Standards and Technology
   a. PS 1 US Product Standard for Construction and Industrial Plywood
   b. PS 2 Performance Standard for Wood-Based Structural-Use Panels
   c. PS 20 American Softwood Lumber Standard (ASLS)

C. SUBMITTALS

1. General: Submit the following in accordance with the conditions of Contract and Section 01330, "Submittal Procedures."
2. Product Data: Submit manufacturer's product data for each distinct product specified.
3. 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 American Lumber Standards Committee's (ALSC) Board of Review.
4. Wood treatment data as follows, including chemical treatment manufacturer's warranty and instructions for handling, storing, installing, and finishing treated materials:
   a. For each type of preservative-treated wood product, include certification by treating plant stating type of preservative solution and pressure process used, net amount of preservative retained, and compliance with applicable standards.
   b. For waterborne-treated products, include statement that moisture content of treated materials was reduced to levels indicated before shipment to Project site.

c. For fire-retardant-treated wood products, include certification by treating plant that treated materials comply with specified standard and other requirements as well as data relative to bending strength, stiffness, and fastener-holding capacities of treated materials.

D. QUALITY ASSURANCE

1. Single-Source Responsibility for Fire-Retardant-Treated Wood: Obtain each type of fire-retardant-treated wood product from one source and by single producer.

E. DELIVERY, STORAGE, AND HANDLING

1. Deliver wood products bundled or crated to provide adequate protection during transit and job storage, with required grade marks clearly identifiable. Inspect wood products for damage upon delivery. Remove and replace damaged materials.
2. Keep materials under cover and dry. Protect from weather and contact with damp or wet surfaces. Stack lumber, plywood, and other panels. Provide for air circulation within and around stacks, and under temporary coverings. For lumber and plywood pressure treated with waterborne chemicals, place spacers between each bundle to provide air circulation.
3. Protect sheet materials during handling to prevent breaking of corners and damage to surfaces.

F. LUMBER, GENERAL

1. Lumber Standards: Comply with PS 20-99, "American Softwood Lumber Standard," and with applicable grading rules of inspection agencies certified by ALSC's Board of Review. Lumber design values are to comply with ASTM D245 and ASTM D2555.
2. Inspection Agencies: Inspection agencies, and their grading rules include the following:
   a. Northeastern Lumber Manufactures Association (NELMA) - Standard Grading Rules
   b. National Lumber Grades Authority (NLGA)(Canadian) - Standard Grading Rules
   c. Redwood Inspection Service (RIS) - Standard Specifications for Grades of California Redwood Lumber
   d. Southern Pine Inspection Bureau (SPIB) - Standard Grading Rules for Southern Pine Lumber
   e. West Coast Lumber Inspection Bureau (WCLIB) - No. 17 Standard Grading Rules for West Coast Lumber
   f. Western Wood Products Association (WWPA) - Western Lumber Grading Rules
3. Grade Stamps: Provide lumber with each piece factory marked with grade stamp of inspection agency evidencing compliance with grading rule requirements and identifying grading agency, grade, species, moisture content at time of surfacing, and mill.
   a. For exposed lumber, furnish pieces with grade stamps applied to ends or back of each piece, or omit grade stamps and provide grade-compliance certificates issued by inspection agency.
4. Where nominal sizes are indicated, provide actual sizes required by PS 20-99 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber.
   a. Provide dressed lumber, surfaced four sides (S4S), unless otherwise indicated.
   b. Provide dry lumber with 19 percent maximum moisture content at time of dressing for 2-inch nominal (38 mm actual) thickness or less, unless otherwise indicated.

G. WOOD-PRESERVATIVE-TREATED MATERIALS

1. General: Where lumber or plywood is indicated as preservative treated or is specified to be treated, comply with applicable requirements of AWPA C2 (lumber) and AWPA C9 (plywood). Mark each treated item with Quality Mark Requirements of inspection agency approved by ALSC's Board of Review. For exposed items indicated to receive stained finish, use chemical formulations that do not bleed through, contain colorants, or otherwise adversely affect finishes.
2. Pressure treat above ground items with waterborne preservatives to minimum retention of 0.25 lb/cu. ft. (4.0 kg/cu. m.). After treatment, kiln-dry lumber and plywood to maximum moisture content of 19 and 15 percent, respectively. Treat indicated items and the following:

a. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
b. Wood sills, sleepers, blocking, furring, stripping, and similar concealed members in contact with masonry or concrete.
c. Wood framing members less than 18 inches (460 mm) above grade.

3. Pressure treat wood members in contact with ground or freshwater with waterborne preservatives to minimum retention of 0.40 lb/cu. ft. (6.4 kg/cu. m.).
4. Complete fabrication of treated items before treatment, where possible. If cut after treatment, apply field treatment complying with AWPA M4 to cut surfaces. Inspect each piece of lumber or plywood after drying and discard damaged or defective pieces.

H. DIMENSION LUMBER

1. General: If not indicated on Contract Documents, provide dimension lumber of any species and grades indicated for applicable use category listed in table below. Lumber shall comply with ALSC National Grading Rule (NGR) provisions of inspection agency applicable to species.

PRODUCT (Nominal Dimension)	GRADE	USE
Structural Light Framing 2 to 4 inches thick 2 to 4 inches wide	Select Structural No. 1 No. 2 No. 3	Structural applications where highest design values are needed in light framing sizes.
Light Framing 2 to 4 inches thick 2 to 4 inches wide	Construction Standard Utility	Where high-strength values are not required, such as wall framing, plates, sills, cripples, and blocking.

2. Species and grades must meet or exceed the following values, unless indicated otherwise on Contract documents.
   a. F_b (extreme fiber stress in bending): Minimum 850 psi (5.9 MPa).
   b. E (modulus of elasticity): Minimum 1,300,000 psi (8950 MPa).

I. MISCELLANEOUS LUMBER

1. General: Provide lumber for support or attachment of other construction, including rooftop equipment curbs and support bases, cant strips, bucks, nailers, blocking, furring, grounds, stripping, and similar members.
2. Fabricate miscellaneous lumber from dimension lumber of sizes indicated, and into shapes shown on Contract documents.
3. Moisture Content: 19 percent maximum for lumber items not specified to receive wood preservative treatment.
4. Grade and Species: For dimension lumber sizes, provide No. 3 or Standard grade lumber per ALSC's NGRs of any species. For board-size lumber, provide No. 3 Common or Standard grade per WWPA of any species.

J. WOOD-BASED STRUCTURAL-USE PANELS, GENERAL

1. Structural-Use Panel Standards: Panel thickness, grade, veneer qualities and group number or span rating, shall be as shown on Drawings, and in accordance with recommendations of APA. Comply with PS 1 for plywood panels, and PS 2 for products not manufactured under PS 1 provisions.
   a. Panels which have any edge or surface permanently exposed to weather shall be classed Exterior Grade.

b. Panel thickness, grade, and group number or span rating shall be at least equal to that shown on Drawings.
c. Application shall be in accordance with recommendations of APA.

2. Trademark: Factory-mark each structural-use panel with APA trademark evidencing compliance with grade requirements.

K. CONCEALED, PERFORMANCE-RATED STRUCTURAL-USE PANELS

1. General: Where structural-use panels are indicated for concealed types of applications, provide APA performance rated panels complying with requirements indicated for grade designation, span rating, exposure durability classification, and edge detail (where applicable).
   a. Provide panel clips for edge support as recommended by panel manufacturer, or where required by IBC.
   b. Provide panels of thickness meeting requirements specified, but not less than thickness indicated.
2. Roof Sheathing: APA-rated sheathing.
   a. Exposure Durability Classification: Exposure 1.
   b. Span Rating: As required to suit joist or truss spacing indicated.

L. STRUCTURAL-USE PANELS FOR BACKING

1. Plywood Backing Panels: For mounting electrical or telephone equipment, provide fire-retardant-treated plywood panels with grade C-D plugged Exposure 1, in thickness indicated on Contract documents or, if not otherwise indicated, not less than 15/32 inch (11.9 mm) thick.

M. FASTENERS

1. General: Provide fasteners of size and type indicated, that comply with requirements specified.
   Where rough carpentry work is exposed to weather, in ground contact, or in areas of high relative humidity, provide fasteners with hot-dip, zinc-coating per ASTM A153
2. Nails, Wire, Brads, and Staples: ASTM F1667
3. Wood Screws: ASME B18.6.1.
4. Lag Bolts: ASME B18.2.1.
5. Bolts: Steel bolts complying with ASTM A307, Grade A with ASTM A563 hex nuts and, where indicated, flat washers.

N. INSTALLATION

1. General:
   a. Discard units of material with defects that impair quality of rough carpentry and that are too small to use with minimum number of joints or optimum joint arrangement.
   b. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted.
   c. Fit rough carpentry to other construction; scribe and cope as required for accurate fit. Correlate location of furring, nailers, blocking, grounds, and similar supports to allow attachment of other construction.
   d. Apply field treatment complying with AWPA M4 to cut surfaces of preservative-treated lumber and plywood.
   e. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with IBC Table 2304.9.1 Fastening Schedule.
2. Wood Grounds, Nailers, Blocking and Sleepers
   a. Install wood grounds, nailers, blocking, and sleepers where shown, and where required for screeding or attaching other work. Form to shapes shown and cut as required for true line and level of attached work. Coordinate locations with other work involved.
   b. Attach to substrates to support applied loading. Recess bolts and nuts flush with surfaces, unless otherwise indicated. Build into masonry during installation of masonry work. Where possible, anchor to formwork before concrete placement.

c. Install permanent grounds of dressed, preservative-treated, key-beveled lumber not less than 1-1/2 inches (38.1 mm) wide, and of thickness required to bring face of ground to exact thickness of finish material. Remove temporary grounds when no longer required.

3. Wood Furring
   a. Install plumb and level with closure strips at edges and openings. Shim with wood as required for tolerance of finish work.
   b. Firestop furred spaces of walls at each floor level, and at ceiling with wood blocking or noncombustible materials, accurately fitted to close furred spaces.
4. Wood Framing, General
   a. Framing Standard: Comply with AFPA's "Manual for Wood Frame Construction," unless otherwise indicated.
   b. Install framing members of size and at spacing indicated.
   c. Do not splice structural members between supports.
8. Installation of Structural-Use Panels
   a. General: Comply with applicable recommendations contained in APA Form No. E30, for types of structural-use panels and applications indicated.
   b. Fastening Methods: Fasten panels as indicated below:
      1. Sheathing: Screw to framing. Space panels 1/8 inch (3.18 mm) at edges and ends.
      2. Plywood Backing Panels: Nail or screw to supports.

END OF SECTION 06 10 00

SECTION 06 41 16 – ARCHITECTURAL CASEWORK

A. WORK INCLUDED:
1. Provide and install Architectural casework as shown and specified. Architectural casework herein shall mean all casework exposed to view, including all exposed wood, plywood, and hard plastics.

B. RELATED WORK:
1. Section 06 10 00 - Rough Carpentry
2. Section 07 90 00 – Joint Sealants
3. Section 09 65 13 – Rubber Wall Base
5. Section 09 91 23 – Painting

C. REFERENCES
1. American Laminator's Association (ALA)
2. American National Standards Institute (ANSI)
   a. A208.1 Wood Particleboard
   b. A208.2 Medium Density Fiberboard for Interior Use
3. American Society of Mechanical Engineers (ASME)
   a. B18.6.1 Wood Screws (Inch Series)
4. American Society of Testing and Materials (ASTM)
   a. D 523 Test Method for Specular Gloss
5. Architectural Woodwork Institute (AWI)
   a. AWI Quality Standards 6th Edition Version 1.1
6. Builders Hardware Manufacturers Association (BMHA)
   a. A156.9 Cabinet Hardware
   b. A156.18 Materials and Finishes
7. Federal Specification (FS)
   a. FF-N-105 Nails, Brads, Staples, and Spikes: Wire, Cut and Wrought
8. Hardwood Plywood and Veneer Association (HPVA)
   a. HP 1 Interim Voluntary Standard for Hardwood and Decorative Plywood
9. National Electrical Manufacturers Association (NEMA)
   a. LD 3 High-Pressure Decorative Laminates
10. National Particleboard Association (NPA)
   a. 9 Voluntary Standard for Formaldehyde Emission from Medium Density Fiberboard (MDF)

D. SUBMITTALS
1. Submit in accordance with General, Supplementary and Special Conditions.
2. Submit electronic pdf file of Shop Drawings for approval. Show materials, dimensions, cabinet-cut details, and sink locations. Shop Drawings shall be furnished for all casework, and shall be drawn in related and/or dimensional position with sections shown either full size or 3" scale.
3. Submit color samples upon award of contract for selection and coordination with other suppliers. Architect may request and retain samples and catalog cuts as required for accessory and special items.
4. Product certificates signed by woodwork manufacturer certifying that products comply with specified requirements.

E. QUALITY ASSURANCE

1. Fabricator Qualifications: Firm experienced in producing architectural woodwork similar to that indicated for this Project, and with record of successful in-service performance, as well as sufficient production capacity to produce required units without delaying Work.
2. Single-Source Responsibility for Fabrication and Installation: Engage qualified woodworking firm to assume undivided responsibility for fabricating, finishing, and installing woodwork specified in this Section.
3. Quality Standard: Except as otherwise indicated, comply with AWI Quality Standard "Architectural Woodwork Quality Standards" for grades of interior architectural woodwork, construction, finishes, and other requirements.
4. Source of Cabinet Accessories: Provide accessories obtained from one single source for each type of hardware and accessories so that finishes match.
5. The casework manufacturer is responsible for details and dimensions not controlled by job conditions, and shall show on his Shop Drawings all required field measurements beyond his control.
6. The Contractor, when installing items not shop assembled shall distribute to the best over-all advantage the defects allowed in the quality grade specified.
7. The Contractor shall be responsible to deliver casework when the building and/or storage area is sufficiently dry, to prevent damaged caused by excessive changes in moisture content.
8. All Counters, Tops and Desk surfaces shall be fabricated as self-edge type, with 2" radius on all exposed corners when viewed in plan.

F. DELIVERY, STORAGE, AND HANDLING

1. Protect woodwork during transit, delivery, storage, and handling to prevent damage, soilage, and deterioration.
2. Do not deliver woodwork until painting and similar operations that could damage, soil, or deteriorate woodwork have been completed in installation areas. If woodwork must be stored in other than installation areas, store only in areas whose environmental conditions meet requirements specified in "Project Conditions."

G. PROJECT CONDITIONS

1. Environmental Limitations: Do not deliver or install woodwork until building is enclosed, wet-work is completed, and HVAC system is operating and will maintain temperature and relative humidity at occupancy levels during the remainder of the construction period.
2. Field Measurements: Where woodwork is indicated to be fitted to other construction, check actual dimensions of other construction by accurate field measurements before fabrication, and show recorded measurements on final shop drawings. Coordinate fabrication schedule with construction progress to avoid delaying Work.
   a. Verify locations of concealed framing, blocking, reinforcements, and furring that support woodwork by accurate field measurements before being enclosed. Record measurements on final shop drawings.
   b. Where field measurements cannot be made without delaying Work, guarantee dimensions for accurate fit and proceed with fabricating woodwork without field measurements. Provide allowance for trimming at site and coordinate construction to ensure that actual dimensions correspond to guaranteed dimensions.

H. QUALITY, GRADE AND MATERIALS SELECTION

1. Quality, Grade: Material and workmanship of all cabinetry work shall conform to the "Custom Grade" requirements of the AWI Quality Standards.
2. Materials:

a. Laminated Plastics/Finishes:
   1. High-pressure plastic laminate, V32 grade, for exterior cabinet surfaces shall exceed NEMA standards for vertical grade.
   2. Color Selection Available: Textured finish vertical surface grade from casework manufacturer's stock colors consisting of complete range of colors and patterns.
   3. Plastic Laminate Balancing Sheet: Heavy gauge plastic laminate backing sheet shall be textured surface, and meet NEMA standards, and be of a type and thickness to properly balance face-finish.
   4. Counter top High Pressure Plastic Laminate: High-pressure plastic laminate, textured finish .050 thickness. Color as selected from manufacturer's stock standard patterns and solid colors.
   5. Heavy gauge neutral colored backing sheet for balanced construction.
b. Pressure Fused Laminate:
   1. Thermosetting acid resistant Pressure Fused laminate, permanently bonded to substrate.
   2. Pressure Fused laminate color to be selected by Architect.
   3. The following agency requirements, standards and tests shall apply:

U.S. Federal	F.S.L.P.-508
ASTM	D-1300-53T
U.S. Food & Drug	Section 175.300
NEMA	LD3-1985

   4. Neutral colored Pressure Fused for semi-exposed cabinet interiors behind doors and drawers, interiors of all open cabinets, and underside of wall cabinets.
c. High Performance Particle Board Core:
   1. Particle Board to be of 47 lb. density, and balanced construction with moisture content not to exceed 8%. 3-Ply Particleboard shall exceed the requirements for its type and classification under Commercial Standard CS-236-66. Federal Specifications LLL-8-800A, and ASTM D 1037-78.
   2. ParticleBoard shall meet the following Performance Requirements. Submit compliance data from the manufactured prior to fabrication:

Screw Holding, Face	371 lbs.
Modulus of Rupture	2,400 psi
Modoulus of Elasticity	450,000 psi
Internal Bond	90 psi
Surface Hardness	900 lbs

d. Hardboard: Hardboard shall meet or exceed Commercial Standards CS-251 and Federal Specifications LLL-B-00810. Tempered hardboard ¼ inch thick – smooth both sides.
e. Hardware:
   1. Acceptable Manufacturers:
      a. Accuride
      b. Amerock
      c. Grass
      d. Ives
      e. Knape & Vogt
   2. Hinges:
      a. Heavy duty, 120-degree concealed cabinet hinge, 3-3/8". Provide Grass 3803 Hinge, or approved equal.
      b. One pair per door to 48 inch height. One and one-half pair over 48 inch in height. Hinge to accommodate 13/16 inch thick laminated door, and allow 270 degree swing.
   3. Pulls: 4" centers, brushed Aluminum (26D).
   4. Drawer Slides:

a. Standard Drawers: 20" Full Extension Drawer Glides, with positive in-stop, out-stop and out-keeper to maintain drawer in 80% open position. Captive nylon rollers, both front and rear. Minimum 100 lb. dynamic load rating. Provide adjuster cam to regulate body side sway.
   1. Standard Specified: Accuride - Model 7432.
b. File Drawers: Full extension, 3 part progressive opening slide, minimum 150 lb., zinc plated or epoxy coated at manufacturer's option.
   1. Standard Specified: Accuride - Model 9301.
c. Pencil Drawers: Minimum 45 lb.
   1. Standard Specified: Accuride - Model 2006.

5. Catches: 6 lb. magnetic catch for base and wall cabinets. Provide two 6 lb. pulls at each tall cabinet door.
6. Locks (all cabinet doors and drawers):
   1. Standard Specified: National Cabinet Lock NL-C8055-14A disc tumbler cam lock.

I. <u>CABINET CONSTRUCTION</u>

1. Sub-Base:
   a. Cabinet Subbase: To be separate and continuous (no cabinet body sides-to floor), water resistant exterior grade plywood with concealed fastening to cabinet bottom. Ladder-type construction, of front, back and intermediates, to form a secure and level platform to which cabinets attach.
2. Cabinet Top and Bottom:
   a. Base and tall cabinet bottoms to be Pressure Fused laminated particle board interior side, ¾ inch thick with phenolic neutral colored backer sheet on concealed side.
   b. Solid sub-top to be ¾ inch, and furnished for all base and tall cabinets.
   c. Wall cabinet and library stack bottoms and tops are 1 inch thick.
   d. Exterior exposed wall cabinet bottoms to be Pressure Fused laminate both sides. Assembly devices to be concealed on bottom side of wall cabinets.
3. Cabinet Ends:
   a. Pressure Fused laminated particle board interior side; ¾ inch thick with phenolic neutral colored back sheet on concealed side.
   b. Exposed exterior cabinet ends to be laminated with plastic laminate.
   c. Exposed edges to be 1 mm edging.
4. Fixed and Adjustable Shelves:
   a. Pressure Fused laminated particle board – all sides.
   b. Thickness: ¾ inch standard shelving to 36 inches wide. One inch shelving 36 inches wide and over.
   c. Shelf edges shall have 1 mm edging.
5. Cabinet Backs:
   a. Standard cabinet back to be 3/4 inch thick, Pressure Fused laminated particle board interior side for use on all cabinets with or without doors. Rear, unexposed, side of back to receive continuous bead of hot melt adhesive at joint between back and sides/top/bottom for sealing against moisture and vermin, and further contribute to case rigidity.
   b. ¾ inch thick hang rails shall be glued to rear of cabinet back and screwed to cabinet sides. Provide minimum of 2 at base, 2 at wall, and 3 at tall cabinets.
   c. Exposed exterior backs to be ¾ inch particle board faced with high pressure plastic laminate.
6. Door and Drawer Fronts:
   a. Plastic laminated doors and drawer fronts to be 13/16 inch thick for all hinged and sliding doors. Core material to be ¾ inch thick, 47 lb. density particle board bonded on exterior with high pressure plastic laminate and with colored heavy gauge balancing sheet on interior face. Drawer fronts and

hinged doors are to overlay the cabinet body. Maintain a maximum χ" reveal between pairs of doors, between door and drawer front, or between multiple drawer fronts within the cabinet.

b. Doors and drawer fronts shall have 3 mm edging.

7. Drawers:
   a. Drawer fronts shall be applied to separate drawer body component sub-front.
   b. Sides and back of drawers to be ½ inch thick Pressure Fused laminated fiberboard; sub-front same, to be 5/8 inch thick.
   c. Fiberboard to be of uniform density and meet the following minimum standards:

Screw Holding, Face	355 lbs.
Screw Holding, Edge	300 lbs.
Modulus of Rupture	4,500 psi.
Modulus of Elasticity	500,000 psi.
Internal Bond	100 psi.

   d. Drawer sides shall be dadoed to receive front and back, machine squared and held under pressure while hot melt glued and pinned together.
   e. Drawer bottom to be Pressure Fused laminate surface, ¼ inch thick, housed into front, sides and back. Underside of drawer to receive continuous hot melt adhesive at joint between bottom and back/sides/front for sealing and rigidity. Reinforce drawer bottoms as required with intermediate spreaders.
8. Countertops:
   a. Plastic Laminate:
      1. High pressure plastic laminate bonded to particle board core. Thickness as shown on plans and specifications. Underside to be properly balanced with heavy gauge backing sheet. Edges to be high pressure plastic laminate to match horizontal surface color. Furnish countertops in design as shown on drawings. Provide continuous tops for counter type cabinets fixed in a line.
   b. Solid Surface Material
      1. Grade: Custom
      2. Solid-Surface Material Thickness: 3/4 inch
      3. Colors, Patterns, and Finishes: As selected from manufacturer's full range.
      4. Fabricate tops in one piece, unless otherwise indicated. Comply with solid surface material manufacturer's written recommendations for adhesives, sealers, fabrication and finishing.
         a. Fabricate tops with shop-applied edges of materials and configuration indicated on the contract documents.
         b. Fabricate tops with backsplashes for field application.
      5. Install integral sink bowls in countertops in shop.
      6. Drill holes in countertops for plumbing fittings and soap dispensers in shop.
9. Workmanship:
   a. All exposed exterior cabinet surfaces to be V32 decorative high pressure plastic laminate, color as selected from manufacturer's stock colors consisting of complete range of colors and patterns. Laminate surface/backer to core under controlled conditions, by approved and regulated laminating methods to assure a premium lamination. Natural-setting adhesives that cure thru chemical reaction are required. Methods requiring heat are not allowed; "contact" methods of laminating are not allowed.
   b. Cabinet parts shall be accurately machined and bored for premium grade quality joinery construction utilizing automatic machinery to insure consistent sizing of modular components.
   c. End panels shall be doweled to receive bottom and top. Back panel shall be fully housed into, and recessed 1/2 inch from the back of cabinet sides, top and bottom to insure rigidity and a fully closed cabinet.

d. Drawer bottom shall be fully housed into, and recessed up ½ inch from the bottom of sides, back and subfront. Sides of drawer shall be fully dadoed to receive drawer back, locked in fully to subfront, fastened with glue and mechanical fasteners.
e. ¾ inch thick hang rails shall be glued to backside and screwed to end panels of all wall, base and tall cabinets for extra rigidity and to facilitate installation.
f. Rear of cabinet back, and underside of drawer bottom joints to receive a continuous bead of hot melt adhesive to add to unit body strength and develop moisture and vermin seal.
g. All cases shall be square, plumb and true.

J. COORDINATION

1. Coordinate work of this section with related work of other Sections as necessary to obtain proper installation of all items.
2. Verify site dimensions of cabinet locations in building prior to fabrication.
3. Prior to installation of Architectural woodwork, examine shipped fabricated work for completion and work as required, including back priming and removal of packing.
4. Coordinate installation with Owner supplied appliances and/or devices.

K. INSTALLATION

1. Quality Standard: Install woodwork to comply with AWI Section 1700.
2. Storage and Protection: Casework shall be protected in transit. Store under cover in a ventilated building not exposed to extreme temperature and humidity changes. Do not store or install casework in building until concrete, masonry, and plaster work is dry.
3. Condition woodwork to average prevailing humidity conditions prior to installing.
4. Install the work plumb, level, true and straight with no distortions. Shim as required using concealed shims. Install to a tolerance of 1/8" in 8'-0" for plumb and level, including countertops, and with 1/16" maximum offsets in flush adjoining surfaces, 1/8" maximum offsets in revealed adjoining surfaces.
5. Scribe and cut work to fit adjoining work and refinish cut surfaces or repair damaged finish at cuts.
6. Anchor woodwork to anchors or blocking built in or directly attached to substrates. Secure to grounds, stripping and blocking with countersunk, concealed fasteners as required for complete installation.
7. Cabinets: Install without distortion so that doors and drawers fit openings properly, and are accurately aligned. Adjust hardware to center doors and drawers in openings, and to provide unencumbered operation. Complete installation of hardware and accessory items as indicated. Install cabinets with no more than 1/8-inch in 96-inch sag, bow, or other variation from a straight line.
8. Tops: Anchor securely to base units and other support systems as indicated. Caulk space between backsplash and wall with specified sealant.
   a. Install countertops with no more than 1/8 inch in 96-inch sag, bow, or other variation from a straight line.
   b. Secure backsplashes to tops with concealed metal brackets at 16-inches o. c.
   c. Align adjacent solid-surfacing-material countertops and form seams to comply with manufacturer's written recommendations using adhesive in color to match countertop. Carefully dress joints smooth, remove surface scratches, and clean entire surface.
9. Install all items complete and adjust all moving parts to operate properly.
10. Install with minimum number of joints, using full-length pieces where possible. Stagger joints in adjacent and related members. Cope at returns, miter at corners, and comply with Quality Standards of Joinery.
11. Leave surface clean and free from defects at time of final acceptance.
12. Guarantee: All materials shall be guaranteed for a period of 1 year from manufacturer's defects and workmanship.

13. Clean Up: Remove all cartons, debris, sawdust, scraps, etc., and leave spaces clean and all casework ready for owner's use.

L. ADJUSTING AND CLEANING

1. Repair damaged and defective woodwork where possible to eliminate functional and visual defects; where not possible to repair, replace woodwork. Adjust joinery for uniform appearance.
2. Clean, lubricate, and adjust hardware.
3. Clean woodwork on exposed and semi-exposed surfaces. Touch up shop-applied finishes to restore damaged or soiled areas.

M. PROTECTION

1. Provide final protection and maintain conditions, in a manner acceptable to Architect that ensures that casework is without damage or deterioration at time of Substantial Completion.

END OF SECTION 06 41 16

SECTION 06 45 13 - SIMULATED WOOD ARCHITECTURAL MILLWORK

A. SUMMARY
1. Simulated Wood Trimboards.

B. RELATED SECTIONS
1. Section 07910 - Joint Sealants.
2. Section 09900 - Paints and Coatings.

C. REFERENCES
1. ASTM D 792 – Density and Specific Gravity of Plastics by Displacement.
2. ASTM D 570 – Water Absorption of Plastics.
3. ASTM D 638 – Tensile Property of Plastics.
4. ASTM D 790 – Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.
5. ASTM D 1761- Mechanical Fasteners in Wood.
6. ASTM D 5420 – Standard Test Method for Impact Resistance of Flat, Rigid Plastic Specimen by means of a Striker Impacted by Falling Weight.
7. ASTM D 256 – Determining the Pendulum Impact Resistance of Plastics.
8. ASTM D 696 – Coefficient of Linear Thermal Expansion of Plastics
9. ASTM D 635 - Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position.
10. ASTM E 84 – Surface Burning Characteristics of Building Materials.
11. ASTM D 648 – Deflection Temperature of Plastics Under Flexural Load in Edgewise Position.

D. SUBMITTALS
1. Submit under provisions of Section 01 30 00.
2. Product Data: Manufacturer's data sheets on each product to be used, including:
   a. Preparation instructions and recommendations.
   b. Storage and handling requirements and recommendations.
   c. Installation methods, including fastening patterns.
3. Verification Samples: For each finish profile specified, two samples, minimum size 6 inches (150 mm) long, representing actual product and patterns finish.

E. QUALITY ASSURANCE
1. Manufacturer Qualifications: A minimum of 10 years in the manufacture of PVC products.
2. Installer Qualifications: A minimum of 3 years in the installation of PVC products.

F. DELIVERY, STORAGE, AND HANDLING
1. Deliver and store products in manufacturer's unopened packaging until ready for installation.
2. Comply with manufacturer's recommendations. Protect materials from exposure to moisture and handle materials to avoid damage per manufacturer's recommendations.

G. PROJECT CONDITIONS
1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

H. WARRANTY
1. Warranted to the original Owner under normal and proper use to be free of manufacturing defects for a period of 25 years.

I. COORDINATION
1. Coordinate Work with other operations and installation of trim to avoid damage to installed materials.

J. PRODUCTS / MANUFACTURERS
1. Standard Specified: CertainTeed Corp., CertainTeed Restoration Millwork
2. Material
   a. General: CertainTeed Restoration Millwork is a Freefoam Cellular PVC that is homogenous and free of voids, holes, cracks, and foreign inclusions and other defects. Edges must be square and top and bottom surfaces shall be flat with no convex or concave deviation.
   b. Physical Properties:
      1. Thermal:
         a. Fire Performance: Products must comply with the following:
            1. Burning Rate: No burn when flame removed when tested in accordance with ASTM D 635.
            2. Flame Spread Index: Less than 25 when tested in accordance with ASTM E 84.
   c. Workmanship, Finish, and Appearance:
      1. Products are provided with a natural white color and a smooth finish on both sides.
      2. Products do not require paint for protection but may be painted to achieve a custom color.
      3. Follow manufacturer's Installation Guidelines for proper painting and finishing procedures.
   d. Simulated Wood Trim
      1. General: Provide simulated wood trim to the following profiles and to the configurations indicated on the Drawings.
      2. Trim Boards:
         a. Nominal Thickness: 1 inch (25.5 mm).
         b. Nominal Width: See Drawing Detail(s) for required widths.
         c. Nominal Length: 18 feet (5.48 m).
         d. Finish: Smooth Natural White.

K. ACCESSORIES
1. Fasteners:
   a. Use fasteners designed for wood trim and siding (thinner shank, blunt point, full round head).
   b. Use a highly durable fastener such as stainless steel or hot dipped galvanized steel.
   c. Staples, small brads and wire nails must not be used as fastening members.
   d. Fasteners should be long enough to penetrate a solid wood substrate a minimum of 1-1/2 inch.
   e. The use of standard nail guns is acceptable.
   f. Use two fasteners per every framing member for trimboard applications. Use additional fasteners for trimboards 12 inches (305 mm) or wider, as well as sheets.
   g. Install fasteners no more than 2 inches (51 mm) from the end of the board.
   h. Fasten trim into a flat, solid substrate. Fastening trim into hollow or uneven areas must be avoided.
2. Adhesives:
   a. Glue all trim joints (scarf or miter) with a cellular PVC cement/adhesive such as Extreme PVC TrimWelder, Partite 7315 and 7333 or Gorilla PVC Cement.

b. Glue joints should be secured with a fastener and/or fastened on each side of the joint to allow adequate bonding time.
c. Surfaces to be glued should be smooth, clean and in complete contact with each other.

3. Sealants: Use urethane, polyurethane or acrylic based sealants without silicone as specified in Section 07 91 00.

L. EXAMINATION

1. Do not begin installation until substrates have been properly prepared.
2. Prior to installation, verify governing dimensions of and condition of substrate.
3. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

M. PREPARATION

1. Clean surfaces thoroughly prior to installation.
2. Examine, clean, and repair as necessary any substrate conditions that would be detrimental to proper installation.
3. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

N. INSTALLATION

1. Install in accordance with manufacturer's instructions.
   a. Comply with all terms necessary to maintain warranty coverage.
   b. Use trim details indicated on Drawings.
   c. Touch up all field cut edges before installing.
2. Cutting:
   a. Use carbide tipped blades designed to cut wood.
   b. Do not use fine-tooth metal-cutting blades or plywood blades.
   c. Avoid rough edges from cutting caused by: excessive friction, poor board support, worn saw blades or badly aligned tools.
3. Drilling:
   a. Drill with standard woodworking drill bits.
   b. Do not use bits made for rigid PVC.
   c. Avoid frictional heat build-up and remove shavings from the drill hole frequently.
4. Milling:
   a. Mill using standard milling machines used to mill lumber.
   b. Relief angle 20 to 30 degrees.
   c. Cutting speed to be optimized with the number of knives and feed rate.
5. Routing: Use sharp carbide tipped router bits.
6. Edge Finishing: Use machine edging, sanding, grinding, or filling to finish edges.
7. Nail Location:
   a. Refer to fastening schedule and diagrams in the most current version of the manufacturer's installation manual for recommended fastener spacing.
   b. Install fasteners no more than 3/4 inches (19 mm) from the end of each board.
8. Thermal Expansion and Contraction:
   a. Expansion and contraction will occur with changes in temperature.
   b. When properly fastened, allow 1/4 inch (6 mm) per 18 foot (5.49 m) for expansion and contraction.

c. Joints between pieces should be glued to eliminate joint separation. When gaps are glued on a long run, allow for expansion and contraction at the end of the runs.

9. Finishing.
   a. Correct dents and gouges before applying final coating.
   b. Mild dents can be corrected with delicate use of a heat gun.
   c. Prepare surfaces and paint materials as recommended by the molding manufacturer. Paint as specified in Section 09 90 00.
   d. If moldings get dirty during installation, clean with a soft bristle brush and a bucket of soapy water. For stubborn stains, mold or mildew, use a cleaner suitable for PVC products.

O. PROTECTION

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

END OF SECTION 06 45 13

SECTION 07 21 00 - BUILDING INSULATION

A. SUMMARY

1. The work included in this section consists of furnishing all labor, materials, tools, and equipment necessary to furnish and install the following types of thermal insulation:
   a. Rigid Perimeter Insulation – Below Grade.
   b. Batt-type Fiberglass Thermal Insulation.
   c. Perlite Loose Fill Masonry Insulation
2. Related Sections:
   a. Division 4 - Unit Masonry: Masonry cell insulation.
   b. Division 6 – Pre-Engineered Roof Trusses and Carpentry
   e. Division 7 - Joint Sealants.

B. REFERENCES

1. ASTM International:
   a. ASTM C165 Standard Test Method for Measuring Compressive Properties of Thermal Insulations.
   b. ASTM C356 Standard Test Method for Linear Shrinkage of Preformed High-Temperature Thermal Insulation Subjected to Soaking Heat.
   c. ASTM C411 Standard Test Method for Hot-Surface Performance of High-Temperature Thermal Insulation.
   d. ASTM C518 Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.
   e. ASTM C612 Standard Specification for Mineral Fiber Block and Board Thermal Insulation.
   f. ASTM C1304 Standard Test Method for Assessing the Odor Emission of Thermal Insulation Materials.
   g. ASTM C1320 Standard Practice for Installation of Mineral Fiber Batt and Blanket Thermal Insulation for Light Frame Construction.
   h. ASTM C1338 Standard Test Method for Determining Fungi Resistance of Insulation Materials and Facings.
   i. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials.
   j. ASTM E96 Standard Test Methods for Water Vapor Transmission of Materials.
   k. ASTM E119 Standard Test Methods for Fire Tests of Building Construction and Materials.
2. Federal Specification HH-I-521F: Insulation Blankets, Thermal (Mineral Fiber, For Ambient Temperatures).

C. SUBMITTALS

1. General: Submit listed submittals in accordance with provisions of Section 01 30 00 Administrative Requirements.
2. Product Data: Manufacturer's data sheets on each product to be used, including:
   a. Preparation instructions and recommendations.
   b. Storage and handling requirements and recommendations.
   c. Installation methods.
3. Samples: Submit manufacturer's standard selection and verification samples.
4. Quality Assurance/Control Submittals: Submit the following:
   a. Test Reports: Upon request, submit test reports from recognized test laboratories.
   b. Certificates: Submit manufacturer's certificate that products meet or exceed specified requirements.

D. QUALITY ASSURANCE
1. Obtain each type of building insulation through a single source.
2. Manufacturer Qualifications: Manufacturer with a minimum of ten years experience manufacturing products in this section shall provide all products listed.
3. Installer Qualifications: Installer Qualifications: Products listed in this section shall be installed by a single organization with at least five years experience successfully installing insulation on projects of similar type and scope as specified in this section.

E. DELIVERY, STORAGE & HANDLING
1. General: Comply with Division 1 Product Requirement Section.
2. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
3. Storage and Protection: Store materials protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer.

F. PROJECT CONDITIONS
1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

G. PRODUCTS
1. Insulating Materials - General:
   a. General: Provide insulating materials that comply with requirements and referenced standards.
      1. Preformed Units: Sizes to fit applications indicated; selected from manufacturer's standard thicknesses, widths and lengths.
2. Rigid Perimeter Wall Insulation – Below Grade.
   a. Rigid Insulation, 1-1/2" thick, 24" wide with a minimum R-Value of 7.50, closed-cell, extruded polystyrene foam.
   b. Acceptable Products and Manufacturers:
      1. "Styrofoam SM" – Dow Chemical Co.
      2. "Foamular 150" – UC Industries
      3. "Thermax" – Celotex Corporation
3. Fiberglass Batt Thermal Insulation
   a. Kraft-faced Batts: Fiber glass building insulation for walls, ceilings, attics and floors.
      1. Acceptable Manufacturer's:
         a. Celotex Corporation
         b. Certainteed Corporation
         c. Owens - Corning Fiberglass
   b. Thermal Resistance (R-Value) (ASTM C518): See Drawings for specified thickness and corresponding R-value.
   c. Thickness: See Drawings.
   d. Material Standard: ASTM C665, Type II, Class C, Category 1, faced on one side with Kraft paper providing a vapor barrier of 1.0 or less.
   e. Noncombustibility: ASTM E 136, passes.
4 Perlite Loose-Fill Masonry Cell Insulation
   a. Conform to ASTM C549.
5. Miscellaneous Materials:
   a. Adhesive for bonding insulation: The type recommended by the insulation manufacturer and complying with fire-resistance requirements and insurance requirements.
   b. Mastic sealer: Type recommended by insulation manufacturer for bonding edge joints between units

and filling voids in the work.

H. EXAMINATION
1. Site Verification of Conditions:
   a. Verify that site conditions are acceptable for installation of building insulation.
   b. Do not proceed with installation of building insulation until unacceptable conditions are corrected.
2. Do not proceed with the installation of insulation until subsequent work which conceals the insulation is ready to be performed, unless directed otherwise.

I. PREPARATION
1. Protection: Protect adjacent work areas and finish surfaces from damage during product installation.

J. INSTALLATION
1. General: Comply with insulation manufacturer's written instructions applicable to products and application indicated.
   a. Install insulation that is undamaged, dry and unsoiled and that has not been left exposed at any time to ice and snow.
   b. Extend insulation in thickness indicated to envelop entire area to be insulated. Cut and fit tightly around obstructions and fill voids with insulation.
   c. Apply single layer of insulation to produce thickness indicated, unless multiple layers are otherwise shown or required to make up total thickness.
2. Installation of General Building Insulation:
   a. Seal joints between closed-cell (non-breathing) insulation units by applying adhesive, mastic or sealant to edges of each unit to form a tight seal as units are shoved into place. Fill voids in completed installation with adhesive, mastic or sealant as recommended by insulation manufacturer.
   b. Set vapor-retarder-faced units with vapor retarder to warm side of construction, unless otherwise indicated. Do not obstruct ventilation spaces, except for firestopping.
   c. Install glass-fiber blankets in cavities formed by framing members according to the following requirements:
      1. Use blanket widths and lengths that fill the cavities formed by framing members. If more than one length is required to fill cavity, provide lengths that will produce a snug fit between ends.
      2. Place blankets in cavities formed by framing members to produce a friction fit between edges of insulation and adjoining framing members.
      3. For metal-framed wall cavities where cavity heights exceed 96 inches, support unfaced blankets mechanically and support faced blankets by taping stapling flanges to flanges of metal studs.
   d. Board Insulation Installation: Install insulation where indicated:
      1. Fasten board insulation to masonry in cavity as recommended by manufacturer.
   e. Perlite Loose-Fill Masonry Cell Insulation:
      1. Loose-fill masonry cell insulation shall be installed full depth in the cores of all exterior hollow masonry walls.
      2. Wall sections under doors, windows and similar openings shall be filled prior to placement of sills.
      3. All holes in masonry walls that loose-fill insulation may escape shall be permanently filled. Provide screening at weep holes.
      4. The loose fill must remain dry. Suitable means shall be used as the work progresses to ensure that the insulation is protected from inclement weather.
   f. Installation of Vapor Retarders:
      a. General: Extend vapor retarder to extremities of areas to be protected from vapor transmission. Secure in place with adhesives or other anchorage system as indicated. Extend vapor retarder to cover miscellaneous voids in insulated substrates, including those filled with loose-fiber insulation.

b. Firmly attach vapor retarders to substrates with mechanical fasteners or adhesives as recommended by vapor retarder manufacturer.
c. Seal joints caused by pipes, conduits, electrical boxes and similar items penetrating vapor retarders with vapor retarder tape to create an airtight seal between penetrating objects and vapor retarder.
d. Repair any tears or punctures in vapor retarders immediately before concealment by other work.

J. PROTECTION

1. Protect installed work from damage due to subsequent construction activity on the site, until completion of the project. Repair damage to installed products prior to installation of finish materials.

END OF SECTION 07 21 00

SECTION 07 27 19 – AIR BARRIERS

A. SUMMARY:
1. Includes but not limited to:
   a. Furnish and install air barrier/weather resistant barrier over exterior of wall sheathing at all locations regardless of whether or not indicated on drawings to protect exterior sheathing and interior walls.

B. RELATED SECTIONS
1. Section 06 10 00 – Carpentry
2. Section 06 16 43 - Gypsum Sheathing
3. Section 07 60 00 – Flashing and Sheet Metal

C. REFERENCES
1. American Society for Testing and Materials
2. Technical Association of the Pulp and Paper Industry
3. American Association of Textile Chemists and Colorists

D. SUBMITTALS:
1. General: Submit each item in this Article according to the conditions of the Contract and Division I Specifications Sections.
2. Product Data: Submit product specifications, technical data and installation instructions of manufacturer equaling or exceeding those specified.

E. QUALITY ASSURANCE
1. Qualifications: Installer with successful experience in the installation of air barrier/secondary weather resistant barriers.

F. MANUFACTURERS
1. Acceptable manufacturer and product:
   a. DuPont Weatherization Systems, DuPont Tyvek HomeWrap, or Equal.

G. MATERIALS
1. A flash spunbonded olefin, non-woven, non-perforated secondary weather resistant barrier.
2. Performance Characteristics
   a. AATCC–127, Water Penetration Resistance, exceeded at 210
   b. TAPPI T–460, Gurley Hill (sec/100cc) Air infiltration at 300 seconds
   c. ASTM E 96 Method B(g/m2–24hr.)Water vapor transmission of 400
   d. TAPPI T-41D, Basis weight of 1.8oz/yd
   e. ASTM E96 Method B, Water Vapor Transmission, 58 perms
   f. ASTM E1677, Air Retarder Material Standard Specification, Type I air barrier
3. Sealing Tape/Fasteners
   a. Use manufacturers recommended products for type of construction intended.

H. INSTALLATION
1. Install Air Barrier over exterior side of exteriror wall sheathing.
   a. Install Air Barrier after sheathing is installed and before windows and doors are installed. Install lower level barrier prior to upper layers to ensure proper shingling of layers.
   b. Overlap Air Barrier at corners of building by a minimum of 12 inches.
   c. Overlap Air Barrier vertical seams by a minimum of 6 inches.

d. Ensure barrier is plum and level with foundation, and unroll extending Air Barrier over window and door openings.
e. Attach Air Barrier to wood, insulated sheathing board or exterior gypsum with plastic cap nails every 12" to 18" on vertical stud line with wood stud framing, and screws with washers to metal stud framing. When attaching to wood sheathing, a minimum 1.0 inch crown staple may be used. When attaching to masonry, use adhesive recommended by manufacturer.
f. Prepare window and door rough openings as follows:
    1. Prepare each window rough opening by cutting a modified "I" pattern in the Air Barrier.
        a. Horizontally cut Air Barrier along bottom of header.
        b. Vertically cut Air Barrier down the center of window openings from the top of the window opening down to 2/3 of the way to the bottom of the window openings.
        c. Diagonally cut Air Barrier from the bottom of the vertical cut to the left and right corners of opening.
        d. Fold side and bottom flaps into window opening and fasten every 6 inches. Trim off excess.
    2. Prepare each rough door opening by cutting a standard "I" pattern in the Air Barrier.
        a. Horizontally cut Air Barrier along bottom of door frame header and along top of sill.
        b. Vertically cut Air Barrier down the center of door openings from the top of the door opening (header) down to the bottom of the door opening (sill).
        c. Fold side flaps inside around door openings and fasten every 6 inches. Trim off excess.
    3. Tape all horizontal and vertical seam of Air Barrier.
    4. Seal all tears and cuts in Air Barrier.

END OF SECTION 07 27 19

SECTION 07 41 13 - METAL ROOF PANELS

A. SUMMARY

1. Section Includes: Architectural metal roof panels, including trim accessories.
2. Related Sections: Section(s) related to this section include:
   a. Section 06 10 00 - Rough Carpentry
   b. Section 06 66 00 – Simulated Wood Architectural Millwork
   c. Section 07 21 00 - Building Insulation
   d. Section 07 46 33 – Vinyl Siding, Soffits and Trim
   e. Section 07 60 00 – Flashing and Sheet Metal
   f. Section 08 62 00 - Unit Skylights

B. REFERENCES

1. General: Standards listed by reference form a part of this specification section. Standards listed are identified by issuing authority, abbreviation, designation number, title or other designation. Standards subsequently referenced in this Section are referred to by issuing authority abbreviation and standard designation.
2. ASTM International:
   a. ASTM A 792 - Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.
   b. ASTM D 2244 - Standard Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates.
   c. ASTM D 4214 - Standard Test Methods for Evaluating the Degree of Chalking of Exterior Paint Films.
3. Underwriters Laboratories (UL):
   a. UL 263 - Fire Tests of Building Construction and Materials.
   b. UL 580 - Tests For Uplift Resistance of Roof Assemblies.
   c. UL 790 - Standard Test Methods for Fire Tests of Roof Coverings.
   d. UL 2218 - Impact Resistance of Prepared Roof Covering Materials.
4. Sheet Metal and Air Conditioning Contractors' National Association (SMACNA): "Architectural Sheet Metal Manual."

C. SUBMITTALS

1. Product Technical Data: For each type of product required, including manufacturer's preparation recommendations, storage and handling requirements, and recommended installation methods.
2. Shop Drawings: Showing methods of installation, plans, sections, elevations and details of roof and wall panels, specified loads, flashings, roof curbs, vents, sealants, interfaces with all materials not supplied by the metal panel system manufacturer, and identification of proposed component parts and their finishes. Do not proceed with fabrication prior to approval of shop drawings.
3. Samples: Selection and verification samples for finishes, colors and textures. Submit two complete sample sets of each type of panel, trim, clip and fastener required.
4. Certificates: Product certificates signed by manufacturer certifying materials comply with specified performance characteristics, criteria and physical requirements.
5. Test and Evaluation Reports: Showing compliance with specified performance characteristics and physical properties.
6. Qualifications Statements: For manufacturer and installer.
7. Closeout Submittals:
   a. Operation and Maintenance Data: For installed products including maintenance methods and precautions against cleaning materials and methods detrimental to finishes and performance.
   b. Warranty documents required in this section.

c. Extra Materials: Deliver to Owner extra materials from same production run as products installed. Package products with protective covering and identify with descriptive labels.

D. QUALITY ASSURANCE

1. Manufacturer Qualifications:
   a. Minimum of ten years experience in manufacturing metal roof systems.
   b. Provider of products produced in a permanent factory environment with fixed roll-forming equipment.
2. Installer Qualifications:
   a. At least five years experience in the installation of architectural metal roof panels.
   b. Experience on at least five projects of similar size, type and complexity as this Project that have been in service for a minimum of two years with satisfactory performance of the roof system.
   c. Employer of workers for this Project who are competent in techniques required by manufacturer for installation indicated and who shall be supervised at all times when material is being installed.
3. Fire Resistance Ratings: Determined by testing identical products and assemblies according to UL 263 and UL 790 by a testing agency acceptable to authorities having jurisdiction.
   a. Flame-Spread Index: 25 (Class A) or less.
   b. Smoke-Developed Index: 450 or less.

E. DELIVERY, STORAGE AND HANDLING

1. General: Comply with manufacturer's current printed product storage recommendations.
2. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
3. Storage: Store materials above ground, under waterproof covering, protected from exposure to harmful weather conditions and at temperature and humidity conditions recommended by manufacturer. Provide proper ventilation of metal panel system to prevent condensation build-up between each panel and trim or flashing component. Tilt stack to drain in wet conditions. Remove strippable plastic film before storage under high-heat conditions. Store products in manufacturer's unopened packaging until just prior to installation.
4. Handling: Exercise caution in unloading and handling metal panel system to prevent bending, warping, twisting and surface damage.

F. WARRANTY

1. Manufacturer's standard form PVDF (Fluorocarbon) System Warranty for film integrity, chalk rating and fade rating in which manufacturer agrees to repair or replace panels that show evidence of deterioration within specified warranty period.
   a. Deterioration shall include but is not limited to:
      1. Color fading of more than 5 Hunter units when tested according to ASTM D 2244.
      2. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
      3. Cracking, checking, peeling or failure of paint to adhere to bare metal.
   b. Warranty Period: Film integrity for 45 years and chalk and fade rating for 35 years from date of Substantial Completion.
2. Installer's standard form in which installer agrees to repair or replace standing seam panels that fail due to poor workmanship or faulty installation within the specified warranty period.
   a. Warranty Period: 5 years from date of Substantial Completion.

G. METAL ROOF PANELS

1. Standard Specified: PBR-Panel as manufactured by Metal Sales Manufacturing Corporation
2. Product Description:
   a. Panel coverage: 36 inches (914.4 mm).
   b. Rib Height: 1-1/4 inches (31.8 mm).
   c. Material: Aluminum-zinc alloy-coated steel sheet, ASTM A 792, AZ50 coating designation, structural quality, Grade 50, 0.0236-inch (0.60-mm) minimum thickness.
   d. Attachment: Exposed direct fastened panel.
   e. Application: Designed for application over solid substrate.
   f. Rib Configuration: Trapezoidal.
   g. Surface Finish: PVDF (Kynar 500). Color as selected by Architect from manufacturer's standard colors.
   h. Fire Resistance Rating: Comply with UL 263 and UL 790 Class A Fire Resistance Ratings.
   i. Wind Uplift Resistance: Comply with UL 580, Class 90 Wind Uplift, Construction #161.
   j. Impact Resistance: Comply with UL 2218, Class 4.
   k. Comply with Ohio Building Code
3. Related Materials and Accessories:
   1. Underlayment: 15 LB felt
   2. Substrate: Plywood Sheathing
   3. Accessories: As required by manufacturer for complete, weather-tight installation. Colors to match roofing panels.
4. Source Quality Control
   a. Obtain architectural metal roof panels, trim and other accessories from a single manufacturer.
   b. Obtain architectural metal roof panels, trim and other accessories from a manufacturer capable of providing on-site technical support and installation assistance.

H. PREPARATION

1. Install roof sheathing over entire roof surface using recommended fasteners.
2. Miscellaneous Framing: Install furring, eave angles, subpurlins, and other miscellaneous roof panel support members and anchorage according to metal roof panel manufacturer's recommendations.
3. Install Felt Underlayment in accordance with manufacturer's recommendations.
4. Install flashing in compliance with requirements in Division 07 requirements.

I. INSTALLATION

a. General: Comply with panel manufacturer's installation instructions including but not limited to special techniques, interface with other work, and integration of systems.
b. Fasten metal roof panels to supports with concealed clips at each standing-seam joint at location, spacing, and using proper fasteners as recommended by panel manufacturer.
c. Accessories:
   1. General: Install accessories using techniques recommended by manufacturer and which will assure positive anchorage to building and weather tight mounting. Provide for thermal movement. Coordinate installation with flashings and other components.
   2. Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions, and the SMACNA "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, and install units to true level. Install work with laps, joints, and seams that will be permanently watertight.

J. CLEANING
1. Remove temporary coverings and protection of adjacent work areas.
2. Repair or replace any installed products that have been damaged.
3. Clean installed panels in accordance with manufacturer's instructions prior to Owner's acceptance.
4. Remove and lawfully dispose of construction debris from Project site.

K. PROTECTION
1. Protect installed product and finish surfaces from damage during construction.

END OF SECTION 07 41 13

SECTION 07 46 33 – VINYL SIDING, SOFFITS AND TRIM

A. SUMMARY

1. Section includes vinyl siding, vinyl soffits, vinyl ceilings, accessories and trim.
2. Related Sections:
   a. Section 06 10 00 – Rough Carpentry
   b. Section 06 66 00 – Simulated Wood Architectural Millwork
   c. Section 07 21 00 – Building Insulation
   d. Section 07 27 19 - Air Barriers
   e. Section 07 41 13 - Metal Roof Panels
   f. Section 07 60 00 – Flashing & Sheet Metal
   g. Section 07 92 13 - Joint Sealers
   h. Section 08 12 13 - Steel Doors and Frames
   i. Section 08 33 13 - Rolling Counter Shutter
   j. section 08 62 00 – Unit Skylights

B. REFERENCES

1. ASTM D 3679 - Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Siding.
2. ASTM D 4477 - Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Soffit.
3. ASTM D 5206 - Standard Windload Resistance Test.
4. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
5. ASTM E 119 - Standard Test Methods for Fire Tests of Building Construction and Materials.

C. DESIGN/PERFORMANCE REQUIREMENTS

1. Regulatory Requirements: Code compliance in accordance with the Ohio Building Code.
2. PVC Fire Resistance: Provide vinyl siding products that meet or exceed the following ratings:
   a. Flame Spread Index < 25, per ASTM E 84.

D. SUBMITTALS

1. Product Data: Manufacturer's data sheets on each product to be used, including:
   a. Preparation instructions and recommendations.
   b. Storage and handling requirements and recommendations.
   c. Installation methods.
2. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
3. Verification Samples: For each finish product specified, two samples, minimum size 12 inches (300 mm) long, representing actual product, color, and patterns.

E. QUALITY ASSURANCE

1. Installer Qualifications: Provide installer with not less than three years of experience with products specified.

F. DELIVERY, STORAGE, AND HANDLING

1. Store products in manufacturer's unopened packaging until ready for installation. Refer to manufacturer's installation instructions for specific storage and handling requirements.

G. PROJECT CONDITIONS

1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

H. WARRANTY

1. Provide manufacturer's standard lifetime limited warranty on siding products, transferable to new owners.

I. PRODUCTS/MATERIALS

1. General: Vinyl Siding, Soffit and Components: Provide products made of extruded polyvinyl chloride as specified in this section and manufactured to comply with requirements of ASTM D 3679. Provide elongated nailing slots on nailing flanges to allow for movement. Factory-notch ends of horizontal panels to form overlapping joints. Provide products that meet weathering requirements of ASTM D 3679.
2. Vinyl Siding:
   a. Standard Specified: Single 8" Vertical Board & Batten as manufactured by CertainTeed LLC.
   b. Design: Single 8 inch (203 mm) vertical; rough cedar finish
   c. Width: 8 inch (203 mm).
   d. Length: As required to provide seamless installation.
   e. Average Thickness: 0.048 inch (1.2 mm).
   f. Panel Projection: 1/2 inch (12.7 mm).
   g. Panel Exposure: 8 inch (203 mm) plus or minus .025 inch (6 mm).
   h. Maximum Warp (per 2 panels): 0.250 inch (6 mm).
   i. Color: As selected by Architect from manufacturer's standards.
   k. Provide standard accessories and trim for a complete installation, including, but not limited to Corner Post, J-Channel, Undersill Trim, and Metal Starter Strip. Color to match siding.
3. Vinyl Soffits and Ceilings:
   a. Standard Specified: Ironmax D5 soffit, woodgrain finish as manufactured by CertainTeed LLC.
   b. Design: Double 5 inches (127 mm), wood grain finish
      a. Solid for ceilings
      b. Fully vented for soffits.
   c. Width: 10 inches (254 mm) plus or minus .062 inch (1.57 mm).
   d. Length: 12 feet (3.66 m) plus or minus) .025 inch (6 mm)
   e. Average Thickness: 0.046 inch (1.2 mm).
   f. Exposure: 5 inches (127 mm) single nailing hem.
   g. Maximum Warp (per 2 panels): 0.250 inch (6 mm).
   h. Color: As selected by Architect from manufacturer's standards.
   i. Provide standard soffit accessories and trim for complete installation, including, but not limited to J-Channel, F-Channel, and H-Bar. Color shall match soffit.

J. FASTENERS

1. A. Provide galvanized or other corrosion-resistant nails as recommended by manufacturer of siding products.

K. EXAMINATION

1. Do not begin installation until substrates have been properly prepared.
2. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

L. PREPARATION
1. Examine, clean, and repair as necessary any substrate conditions which would be detrimental to proper installation.
2. Do not begin installation until unacceptable conditions have been corrected.

M. INSTALLATION
1. Install products in accordance with the latest printed instructions of the manufacturer.
2. Install products with all components true and plumb.
3. Vinyl Siding: Nail vertical panels by placing first nail at top of top slot and remaining nails in center of slots. Drive nails straight, leaving 1/16 inch (1.6 mm) space between nail head and flange of panel.
4. Install J-channel and flashing to accommodate successive courses of vertical siding. Install wood shims at building corners to bring cut edges of vertical siding out to correct plane.

N. PROTECTION
1. Protect installed products until completion of project.
2. Touch-up, repair or replace damaged products before Substantial Completion.

O. CLEANING
1. At completion of work, remove debris caused by siding installation from project site.

END OF SECTION 07 46 33

SECTION 07 60 00 – FLASHING & SHEET METAL

A. SUMMARY OF WORK

1. The work included in this section consists of furnishing all labor, material, tools and equipment necessary to furnish and install all sheet metal flashing and trim, including, but not limited to the following:
   a. Metal Fascias.
   b. Metal Roof Edges.
   c. Roof Vents/Ridge Vents.
   d. Trim and Break Metal.
   h. Sealants and bonding agents between components of this Section and between the roof and other materials.

B. STANDARDS

1. American Society for Testing Materials (ASTM)
2. Ohio Building Code (OBC)
3. Architectural Aluminum Manufacturer's Assoc. (AAMA)
4. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA)

C. PERFORMANCE REQUIREMENTS

1. General: Install sheet metal flashing and trim to withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failing, ratting, leaking, and fastener disengagement.
2. Thermal Movements: Provide sheet metal flashing and trim that allows for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, hole elongation, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Provide clips that resist rotation and avoid shear stress as a result of sheet metal and trim thermal movements. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
   a. Temperature Change (Range): 120 degrees F., ambient; 180 degrees F., material surfaces.
3. Water Infiltration: Provide sheet metal flashing and trim that do not allow water infiltration to building interior.

D. SUBMITTALS

1. Product Data: Manufacturer's technical product data, installation instructions and general recommendations for each specified sheet material and fabricated product.
2. Shop Drawings: Show layouts of sheet metal flashing and trim, including plans and elevations. Distinguish between shop and field assembled work. Include the following:
   a. Identify material, thickness, weight, and finish for each item and location in project.
   b. Details for forming sheet metal flashing and trim, including profiles, shapes, seams, and dimensions.
   c. Details for fastening, joining, supporting, and anchoring sheet metal flashing and trim, including fasteners, clips, cleats, and attachments to adjoining work.
3. Samples of Verification: For each type of exposed finish required, prepared on samples of size indicated below:
   a. 8 inch square samples of specified sheet materials to be exposed as finished surfaces.
   b. 12 inch long samples of factory fabricated products exposed as finish work. Provide complete with specified factory finish.
4. Shop drawings showing layout, profiles, methods of joining, and anchorage details, including major counterflashing, trim/fascia units, gutters, downspouts, and expansion joint systems.

E. QUALITY ASSURANCE

1. Except as otherwise indicated, the workmanship of sheet metal work, method for forming joints, anchoring,

cleating and provisions for expansion shall conform to the standard details and recommendations of the "Architectural Sheet Metal Manual" published by SMACNA; and workmanship shall be of the best quality, in accordance with best trade practice and the recommendations and specifications of the Sheet Metal and Air Conditioning Contractors National Association, Inc.

2. Installer/Fabricator Qualifications: Not less than five (5) years documented successful experience with work comparable to Work of this Project, approved and acceptable to roofing manufacturer.

F. DELIVERY, STORAGE AND HANDLING

1. Deliver materials in manufacturer's unopened, labeled containers. Store materials to avoid damage, and store rolled goods on end. Comply with manufacturer's recommendations for job-site storage and protection.

G. MANUFACTURERS

1. Standard Specified shall be Alcoa Building Products.
2. Acceptable Manufacturers:
   a. Alcoa Building Products.
   b. General Aluminum Corp.
   c. Lynch Aluminum.
   d. Southern Aluminum

H. MATERIALS

1. The type and locations of the various kinds, gauges, thickness, and finish of sheet metal to be used is specified hereinafter under the individual items. Where sheet metal is indicated on Drawings and kind or type of metal is not definitely specified, aluminum shall be provided.
2. Aluminum Extrusions: Alloy and temper recommended by manufacturer for use intended and as required for proper application of finish indicated, but not less than the strength and durability properties specified in ASTM B221 for 6063-T5.
3. Aluminum Sheet: Alloy and temper recommended by manufacturer for use intended and as required for proper application of finish indicated, but with not less than the strength and durability properties specified in ASTM B209 for 5005-H15.

I. MISCELLANEOUS MATERIALS AND ACCESSORIES

1. General: Provide materials and types of fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required for complete sheet metal flashings and trim installation.
2. Fasteners: Same metal as flashing/sheet metal or other noncorrosive metal as recommended by sheet manufacturer. Match finish of exposed heads with material being fastened. Provide wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads.
   a. Fasteners for Flashing and Trim: Blind fasteners or self-drilling screws, gasketed, with hex washer head.
      1. Blind Fasteners: High-strength aluminum or stainless steel rivets.
3. Bituminous Coating: SSPC-Paint 12, solvent type bituminous mastic, nominally free of sulfur, compounded for 15 mil dry film thickness per coat.
4. Mastic Sealant: Polyisobutylene; non-hardening, non-skinning, non-drying, non-migrating sealant.
5. Elastomeric Sealant: Provide per recommendations of metal manufacturer.
6. Epoxy Seam Sealer: Two-Part non-corrosive metal seam cementing compound, recommended by metal manufacturer for exterior non moving joints.
7. Roofing Cement: ASTM D4586, asbestos free, of consistency required for application.
8. Metal Accessories: Provide sheet metal clips, straps, anchoring devices, and similar accessory units as required for installation of work, matching or compatible with material being installed, noncorrosive, size and gauge required for performance.

J. PRODUCTS

1. Roof Flashings
   a. Miscellaneous flashing as shown on the drawings or referenced in standard details recommended in SMACNA "Architectural Sheet Metal Manual".
2. Pre-finished Metal Flashing
   a. Flashing: .050 minimum thickness.
3. Metal Roof Edge
   a. Minimum .024" pre-finished, baked enamel, aluminum sheet, brake- formed to provide 3" roof deck flange, and 1-1/2" fascia flange with 3/8" drip at lower edge. Furnish in 8' or 10' lengths.
   b. Color shall be selected by Architect.
4. Ridge Vents: Manufactured for installation of roof shingles directly on top.
5. Aluminum Fascia and Trim Brake-Metal Sheet Material
   a. Minimum .050 extruded aluminum with Kynar 500 coating. Color as selected by Architect.
   b. Maximum two-part construction.
   c. Concealed aluminum joint covers.
   d. Anchor with stainless steel fasteners.
   e. Corners shall be factory mitered and welded.

K. FINISHES

1. General: Apply coatings either before or after forming and fabricating panels, as required by coating process and as required for maximum coating performance capability. Protect coating either by application of strippable film or by packing plastic film or other suitable material between panels in a manner to properly protect the finish. Furnish air drying spray finish in matching color for touch-up.
2. High Performance Coating: AA-C12C42R1x. Apply in strict compliance with coating and resin manufacturer's instructions using a licensed applicator.
   a. Fluoropolymer Coating: Manufacturer's standard two-coat, thermocured, full strength 70 percent "Kynar 500" coating consisting of a primer and a minimum of 0.75 mil dry film thickness with a total minimum dry film thickness of 0.9 mil and 30 percent reflective gloss when tested in accordance with ASTM D523.

L. FABRICATION

1. General: Shop fabricate work to greatest extent possible. Comply with details shown and with applicable requirements of SMACNA "Architectural Sheet Metal Manual" and other recognized industry practices. Fabricate for waterproof and weather resistant performance, with expansion provisions for running work, sufficient to permanently prevent leakage, damage, or deterioration of the work. Form work to fit substrates. Comply with material manufacturer instructions and recommendations for forming material. Form exposed sheet metal work without excessive oil-canning, buckling, and tool marks, true to line and levels indicated, with exposed edges folded back to form hems.
2. Seams: Fabricate nonmoving seams in sheet metal with flat-lock seams. For metal other than aluminum, fin edges to be seamed, form seams and solder. Form aluminum seams with epoxy seam sealer; rivet joints for additional strength where required.
3. Expansion Provisions: Where lapped or bayonet-type expansion provisions in work cannot be used or would not be sufficiently water/weatherproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with mastic sealant (concealed within joints).
4. Sealant Joints: Where movable, non-expansion type joints are indicated or required for proper performance of work, form metal to provide for proper installation of elastomeric sealant, in compliance with SMACNA standards.
5. Separations: Provide for separation of metal from non-compatible metal or corrosive substrates by coating or other permanent separation as recommended by manufacturer/fabricator.

M. WARRANTY
1. Special Warranty on Painted Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace manufactured roof specialties that show evidence of deterioration of factory applied finishes within specified warranty period.
   a. Fluoropolymer Finish: Deterioration includes, but is not limited to toe following:
      1. Color fading more than 5 Hunter units when tested according to ASTM D 2244.
      2. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
      3. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
2. Finish Warranty Period: 10 year from date of Substantial Completion.

N. EXAMINATION
1. General: The installer must examine substrates and conditions under which metal flashings will be installed, and notify Contractor in writing of unsatisfactory conditions. Do not proceed with installation until unsatisfactory conditions have been corrected in a manner acceptable to Installer.

O. PREPARATION
1. Separate dissimilar metals from each other by painting each metal surface in area of contact with a heavy application of bituminous coating.

P. INSTALLATION:
1. General: Comply with published recommendations of sheet metal manufacturer details and recommendations of SMACNA "Architectural Sheet Metal Manual". Anchor units of work securely in place by methods indicated, providing for thermal expansion of metal units; conceal fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints and seams that will be permanently watertight and weatherproof.
2. Bed flanges of work in a thick coat of bituminous roofing cement where required for waterproof performance.
3. Bituminous Coating: SSPC – Paint 12, solvent type bituminous mastic, nominally free of sulfur. Compounded for 15-mil dry film thickness per coat.
4. Prefabricated Fascia
   a. Install as recommended by manufacturer and as indicated.
   b. Fasten with non-corrosive, non-rusting fasteners.
   c. Cover joints with strips of same material, screwed and caulked in place with appropriate sealant of matching color.
6. Flashing at Roof Penetrations (Miscellaneous)
   a. Work under this Section shall include the flashing of roof penetrations not otherwise specified under other Sections.
   b. Flashing of roof penetrations not detailed shall be performed according to the recommendations and specifications of the Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA), subject to approval by the Architect.

Q. CLEANING AND PROTECTION
1. Clean exposed metal surfaces in accordance with manufacturer's instructions. Touch-up damaged metal coatings.
2. Protection: Provide protective measures as required to ensure that work of this Section will be without damage or deterioration at time of Substantial Completion.

END OF SECTION 07 60 00

SECTION 07 92 13 - JOINT SEALERS

A. SCOPE OF WORK

1. Include all materials, labor and equipment necessary for the complete caulking and sealant work as specified, indicated on the drawings, or as otherwise necessary. Include, but not limited to all joints both interior and exterior, as follows:
   a. Joints in masonry walls.
   b. Perimeter door frames, door sills, windows and other openings.
   c. Building control joints.
   d. All locations where casework and counters adjoins walls.
   e. Necessary locations of joints requiring weathertight sealant.
2. Drawings and general conditions and other Division 1 Specification Sections apply to this Section.

B. STANDARDS

1. American Society of Testing and Materials (ASTM).

C. PRODUCT HANDLING

1. Deliver, store and handle material in a manner to prevent the entrance of foreign materials and damage of materials by water or breakage. Damaged materials shall not be installed. The name of manufacturer and trade name of each caulking shall be on each container.

D. SUBMITTALS

1. Submit samples per the requirements outlined in Division 1.

E. QUALITY ASSURANCE

1. Applicator shall have a minimum of two (2) years experience and must be approved by the manufacturer.
2. Obtain elastomeric materials only from single manufacturer.

F. PROJECT CONDITIONS

1. Preparation of joint surfaces, backing, and the conditions under which the sealant and caulking is to be installed shall conform to manufacturer's recommendations.
2. Environmental Conditions: Do not proceed with installation of joint sealants under the following conditions:
   a. When ambient and substrate temperature conditions are outside the limits permitted by sealant manufacturer.
   b. When joint substrates are wet.
   c. Where joint widths are less than those allowed by joint sealant manufacturer for applications indicated.
   d. Contaminants capable of interfering with adhesion have not yet been removed from joint substrate.

F. WARRANTY

1. Provide manufacturer's two (2) year guarantee on materials.
2. Workmanship must be guaranteed against leakage for minimum of two (2) years from date of Owner's acceptance of the building.

G. MANUFACTURERS

1. Subject to the compliance with the requirements, provide products by one of the following:
   a. DAP, Inc.
   b. Dow Corning Corp.
   c. Hilti Construction Chemicals

d. General Electric Co., GE Silicones
e. Pecora Corp.
f. Sonneborn Building Products
g. Tremco, Inc.

H. MATERIALS

1. General
   a. Provide type, grade, class, hardness and similar characteristics of material as indicated or, where not indicated, to comply with manufacturer's recommendations relative to exposures, traffic, weather conditions and other factors of the joint system for best possible overall performance. Except as otherwise indicated, joint sealers are required to permanently maintain airtight and waterproof seals, without failures in joint movement accommodation, cohesion, adhesion (where applicable), migration, staining, and other performances as specified.
   b. Color shall be selected by Architect from manufacturer's full range of samples.
2. Caulking Compounds (Acrylic Latex Sealant)
   a. Latex rubber modified, acrylic emulsion polymer sealant compound; manufacturer's standard one-part, non-sag, mildew resistant, acrylic emulsion sealant complying with ASTM C 834, formulated to be paintable, and recommended for exposed applications on interior locations involving joint movement of not more than +/- 5%.
      1. Acceptable Products:
         a. Acrylic Latex Caulk with Silicone – DAP, Inc.
         b. AC-20 – Pecora Corp.
         c. Sonolac – Sonneborn Building Products.
         d. Acrylic Latex Caulk 834 – Sonneborn Building Products.
3. One-Part Elastomeric Sealant (Silicone)
   a. One component elastomeric sealant, complying with ASTM C 920, Class 25, Type NS (non-sag), unless Type S (self leveling) recommended by manufacturer for the application shown. Provide additional movement capability where indicated.
      1. Acceptable Products:
         a. Dow Corning 790 – Dow Corning Corp.
         b. Silpruf – GE
         c. Pecora 864 Architectural Silicone Sealant – Pecora Corp.
         d. Omniseal - Sonneborn Building Products.
         e. Spectrum 1 - Sonneborn Building Products.
   b. One component mildew resistant silicone sealant: (Around countertops, and backsplashes, and other locations subject to moisture and wet conditions.)
      1. Acceptable Products:
         a. Dow Corning 786 – Dow Corning Corp.
         b. Sanitary 1700 – GE
         c. Tremsil 600 – Tremco, Inc.
         d. 898 Silicone Sanitary Sealant – Pecora Corp.
4. Elastomeric Sealant (Polyurethane)
   a. One component polyurethane sealant complying with ASTM C 920, Type S, Grade NS, Class 25 (non-sag).
      1. Acceptable Products:
         a. Dynatrol I - Pecora Corp.
         b. Sonolastic NP 1 - Sonneborn Building Products.
         c. Dymonic or Vulkem 921 - Tremco, Inc.
   b. Two component polyurethane sealant complying with ASTM C 920, Type M, Grade NS, Class 25 (non-sag).
      1. Acceptable Products:

a. Dynatrol II - Pecora Corp.
b. Sonolastic NP 2 - Sonneborn Building Products.
c. Dymeric 511 or Vulkem 922 - Tremco, Inc.

5. One-Part Self-Leveling Polyurethane Sealant (for traffic areas)
   a. One component polyurethane self-leveling sealant, complying with ASTM C 920, Type S, Grade P, Class 25.
      1. Acceptable Products:
         a. NR-201 Urexpan - Pecora Corp.
         b. Sonolastic SL 1 - Sonneborn Building Products.
         c. Vulkem 45 - Tremco, Inc.
   b. Two component polyurethane self-leveling sealant, complying with ASTM C 920, Type M, Grade P, Class 25.
      1. Acceptable Products:
         a. NR-200 Urexpan - Pecora Corp.
         b. Sonolastic SL 2 - Sonneborn Building Products.
         c. Vulkem 245 or THC900/THC901 - Tremco, Inc.
6. Miscellaneous Materials:
   a. Provide joint cleaner and joint primer sealer as recommended by sealant or caulking compound manufacturer.
   b. Sealant backer rod shall be compressible rod stock polyethylene foam, polyethylene jacketed polyurethane foam, butyl rubber foam, neoprene foam, or other similar material as recommended by the manufacturer.
      1. Cylindrical Sealant Backings: ASTM C 1330, of type indicated below and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.
         a. Type C: Closed cell material with a surface skin.
      2. Where a 2 inch building expansion joint is indicated, provide an expanding foam secondary sealant, behind sealant, in lieu of backer rod.
   c. Primer: Provide type recommended by joint sealer manufacturer where required for adhesion of sealant to joint substrates.
   d. Cleaners for Non-Porous Surfaces: Provide non-staining, chemical cleaners of type which are acceptable to manufacturers of sealant and sealant backing materials, and do not harm or affect substrates or adjacent materials.

I. EXAMINATION, PREPARATION AND INSTALLATION

1. Examine joints indicated and/or required to receive sealants, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint sealant performance. If unsuitable conditions are present, notify Architect of items requiring correction. Do not proceed with installation of joint sealants until unsatisfactory conditions have been corrected.
2. All surfaces must be clean, dry, and free from loose aggregate, paint, corrosion, oil, grease, wax, tar, or other impurities. Joints must not be contaminated with bituminous materials.
3. Prime joints, if required, apply back-up material and sealants in strict accordance with manufacturer's directions.
4. Joints with wrinkles, sags, poor adhesion, or improperly cured, shall be cut out and replaced without additional cost to the owner.

J. SELECTION OF MATERIAL

1. Caulking compounds shall be used for interior non-moving joints and at locations indicated, including, but not limited to:
   a. Perimeter joints of exterior openings, unless otherwise noted.
   b. Perimeter joints between interior wall surfaces and frames of interior doors and windows.

   c. Interior control joints, unless otherwise indicated.
2. One component elastomeric silicone sealants shall be used at exterior and interior joints where thermal or dynamic movement is anticipated, including, but not limited to:
   a. Metal to metal joints.
   b. Sheet metal flashing, coping, pre-formed metal caps, fascia and trim.
   c. Glass to metal joints.
   d. Exterior insulation and finish system. Provide at joints within system, and at joints where system abuts other materials.
3. One component mildew resistant silicone sealant at locations indicated, including, but not limited to:
   a. Joints between plumbing fixtures and adjoining walls, floors and counters.
   b. Joints between countertops and backsplashes and walls.
4. One or two part elastomeric polyurethane sealants shall be used at exterior and interior joints where weatherproofing or waterproofing is required, and at exterior and interior joints between dissimilar materials including, but not limited to:
   a. Exterior and interior sides of building expansion joints.
   b. Exterior side of frame of doors, windows, and louvers to adjacent dissimilar materials.
   c. Lintels and shelf angles to masonry construction.
   d. Exterior building control joints and masonry expansion joints.
   e. Joints in concrete sitework (sidewalks, ramps, retaining walls, etc.), and the joint between concrete slabs and dissimilar materials.
   f. Sealant in pipe sleeves where materials perforate floor slab (non-rated).
   g. Perimeter of floor slabs and concrete curbs which abut vertical surfaces.
   h. Tile control and expansion interior joints in vertical and horizontal non-traffic surfaces.
   i. Exterior joints between dissimilar materials where the joining of two surfaces require a watertight seal.
5. One or two part self-leveling polyurethane sealant shall be used for exterior and interior horizontal joints subject to pedestrian and moderate vehicular traffic.

K. CLEANING
1. Clean off excess sealants or smears adjacent to joints as the work progresses, with materials recommended by joint sealer manufacturer.

L. PROTECTION
1. Protect joint sealants during and after curing period from contact with contaminating substrates and from damage resulting from construction operations, or other causes, for acceptance at time of substantial completion. If damage occurs, cut out and remove damaged or deteriorated joint sealants, immediately so installations with repaired areas are indistinguishable from original work.

END OF SECTION 07 92 13

SECTION 08 12 13 - STEEL DOORS AND FRAMES

A. SUMMARY

1. Section Includes hollow metal steel doors and frames.

B. RELATED SECTIONS

1. Section 08 70 00 - Door Hardware
2. Section 09 90 00 – Painting

C. REFERENCES

1. ASTM - American Society for Testing and Materials
   a. ASTM A 653/A 653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
   b. ASTM A 924 - Specification for General Requirements for Steel Sheet, Metallic Coated by the Hot Dip Process.
   c. ASTM A 1008/A 1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, High Strength Low-Alloy, High Strength Low Alloy with Improved Formability, Solution Hardened, and Bake Hardenable.
   d. ASTM E 90 - Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions.
   e. ASTM E 413 - Classification for Rating Sound Insulation.
2. ANSI - American National Standards Institute
   a. ANSI/DHI A115 - Specifications for Hardware Preparations in Standard Steel Doors and Frames.
   b. ANSI/DHI A115.IG - Installation Guide for Doors and Hardware.
   c. ANSI A156.7 - Hinge Template Dimensions.
   d. ANSI A 250.3 - Test Procedure and Acceptance Criteria for Factory Applied Finish Painted Steel Surfaces for Steel Doors and Frames.
   e. ANSI A250.4 – Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors and Hardware Reinforcing.
   f. ANSI A 250.8 - SDI-100 Recommended Specifications for Standard Steel Doors and Frames.
   g. ANSI A 250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames.
   h. ANSI/SDI 250.11 - Recommended Erection Instructions for Steel Frames
3. SDI - Steel Door Institute
   a. SDI 105 - Recommended Erection Instructions for Steel frames.
   b. SDI 111 - Recommended Details and Guidelines for Standard Steel Doors and Frames and Accessories.
   c. SDI 112 - Zinc-Coated (Galvanized/Galvannealed) Standard Steel Doors and Frames.
   d. SDI 117 - Manufacturing Tolerances for Standard Steel Doors and Frames.
   e. SDI 118 - Basic Fire Door Requirements.
   f. SDI 122 - Installation and Troubleshooting Guide for Standard Steel Doors and Frames.
   g. SDI 124 - Maintenance of Standard Steel Doors and Frames.
4. NAAMM/HMMA - Hollow Metal Manufacturers Association
   a. HMMA 840 - Guide Specification for Installation and Storage of Hollow Metal Doors and Frames
   b. HMMA 820 TN01- Grouting Hollow Metal Frames

D. SUBMITTALS

1. Submit for review PDF files of the hollow metal shop drawings covering complete identification of items required for the project. Include manufacturer's names and identification of product. Included PDF files of catalog cuts and/or technical data sheets and other pertinent data as required to indicate compliance with these specifications.

2. Shop Drawings: submit complete and detailed with respect to quantities, dimensions, specified performance, and design criteria, materials and similar data to enable the Architect to review the information as required.
3. Indicate frames configuration, anchor types and spacing, location of cutouts for hardware, reinforcement, to ensure doors and frames are properly prepared and coordinated to receive hardware.
4. Indicate door elevations, internal reinforcement, closure method, and cutouts for glass lights and louvers.
5. Submit manufacturer's installation instructions, including a current copy of ANSI A250.11 as part of the shop drawing submittal.
6. Shop drawings, product data, and samples: stamp with Contractor's stamp verifying they have been coordinated and reviewed for completeness and compliance with the contract documents.
7. Shop drawings submitted without the above requirements will be considered incomplete, will NOT be reviewed, and will be returned directly to the Contractor.
8. Follow the same procedures for re-submittal as the initial submittal with the appropriate dates revised.
9. Provide evidence of manufacturer's membership in the Steel Door Institute.

E. QUALITY ASSURANCE

1. Select a qualified hollow metal distributor who is a direct account of the manufacturer of the products furnished. In addition, that distributor must have in their regular employment an Architectural Hardware Consultant (AHC), a Certified Door Consultant (CDC) or an Architectural Openings Consultant (AOC), who will be available to consult with the Architect and Contractor regarding matters affecting the door and frame opening.
2. Conform to requirements of the above reference standards. Submit test reports upon request by the Owner or Architect.
3. Manufacturer Qualifications: Member of the Steel Door Institute.
4. Installer: Minimum five years documented experience installing products specified in this Section.

F. DELIVERY, STORAGE AND HANDLING

1. Storage of Doors
   a. Store doors vertically in a dry area, under proper cover. Place the units on at least 4" high wood sills on floors in a manner that will prevent rust and damage. Avoid storage in non-vented plastic or canvas shelters, which create a humidity chamber and promote rusting. If the door becomes wet, or moisture appears, remove protective wrapping immediately. Provide a 4" space between the doors to permit air circulation. Proper storage is required to meet the requirements of ANSI/SDI A250.11 and HMMA 840.
2. Storage of Frames
   a. Store frames in an upright position with heads uppermost under cover on 4" wood sills on floors in a manner that will prevent rust and damage. Do not use non-vented plastic or canvas shelters, which create a humidity chamber and promote rusting. Store assembled frames in a vertical position, five units maximum in a stack. Provide a 2" space between frames to permit air circulation.
   b. Provide proper storage for doors and frames, to maintain the quality and integrity of the factory applied paint, and maintain the requirements of ANSI/SDI A250.10 and HMMA 840.
   c. Sand, touch up and clean prime painted surfaces prior to finish painting in accordance with the manufacturer's instructions.

G. COORDINATION

1. Coordinate Work with other directly affected sections involving manufacture or fabrication of internal cutouts and reinforcement for door hardware, electric devices and recessed items.
2. Coordinate work with frame opening construction, door and hardware installation.
3. Sequence installation to accommodate required door hardware.
4. Verify field dimensions for factory assembled frames prior to fabrication.

H. STANDARDS AND MANUFACTURERS

1. Standards: Comply with the requirements of Steel Door Institute, "Recommended Specifications for Standard Steel Doors and Frames," (SDI-100), and as herein specified.
2. Manufacturers: A recognized producer of hollow metal work complying with the requirements, including any one of the following:
   American Welding and Manufacturing Co.
   Ceco Corp.
   Fenestra
   Mesker Brothers Industries, Inc.
   Republic Steel Corp.
   Steelcraft Manufacturing Co.
   Virginia Metal Products

I. MATERIALS

1. DOORS:
   a. Construct exterior/interior doors to these designs and gages:
      1. Exterior Doors: Zinc-Iron Alloy-Coated galvannealed steel, ASTM A 653, Class A60, 18 gage Zinc-Iron Alloy-Coated galvannealed steel, with closed tops.
         a. Include galvannealed components and internal reinforcements with galvannealed doors.
         b. Close tops of exterior swing-out doors to eliminate moisture penetration. Galvannealed steel top caps are permitted.
      2. Factory prime painted doors indicated on door schedule as HM.
      3. Hardware Reinforcements:
         a. Hinge reinforcements for full mortise hinges: minimum 7 gage.
         b. Lock reinforcements: minimum 16 gage.
         c. Closer reinforcements: minimum 14 gage, 20" long.
         d. Galvannealed doors: include galvannealed hardware reinforcements.
         e. Projection welded hinge and lock reinforcements to the edge of the door.
         f. Provided adequate reinforcements for other hardware as required.
   b. Full Flush Type Doors Construction
      1. ANSI-A250.4 criteria and tested to 5,000,000 operating cycles.
      2. Approved door core constructions:
         a. Honeycomb: Reinforced, stiffened, sound deadened and insulated with impregnated Kraft honeycomb core completely filling the inside of the doors and laminated to inside faces of both panels using contact adhesive applied to both panels and honeycomb core.
         b. Polystyrene: Reinforced, stiffened, sound deadened and insulated with a rigid polystyrene core bonded to the inside faces of both panels with contact adhesive. Fill voids around the perimeter of the door with honeycomb.
         c. Steel Stiffened: Vertically stiffened with steel stiffeners and sound deadened with fiberglass batt insulation. Fabricate hat shaped stiffeners from 20 gage. Locate vertical interior webs 6" apart, welded to the inside of the face sheets 5" on center. Weld the hat shape stiffeners together at the top and bottom of the door. Fill areas between stiffeners with fiberglass.
      3. Vertical edge seams: Provide doors with continuous vertical mechanical inter-locking joints at lock and hinge edges with visible edge seams, or a one piece full height 14 gage channel. Apply a continuous bead of structural epoxy in the internal vertical connection.
         a. Filled Vertical Edges (F): Continuous vertical mechanical interlocking joint with internal epoxy seal; edge seams epoxy filled and ground smooth.
      4. Bevel hinge and lock door edges 1/8 inch (3 mm) in 2 inches (50 mm). Square edges on hinge and/or lock stiles are not acceptable.

5. Reinforce top and bottom of doors with galvannealed 14 gage, welded to both panels.

2. DOOR FRAMES:
   a. Construct exterior and metal door frames to these profiles, designs and gages;
      1. Exterior Frames: Zinc-Iron Alloy-Coated galvannealed steel, ASTM A 653, Class A60, 16 gage Zinc-Iron Alloy-Coated galvannealed steel.
      2. Include galvannealed components and internal reinforcements with galvannealed frames.
   b. Flush Frames: knocked down for field assembly or set-up and welded with temporary shipping bars. Factory die-mitered corner connections reinforced with four integral tabs to secure and interlock at jambs to head. Unless otherwise indicated, frame will have 2" faces and 5/8" stops. Frame depths per the architectural door schedule.
      1. Provide frames with a minimum of six wall anchors and two adjustable base anchors of manufacturer's standard design.
      2. Provide welded 3 sided frames as follows:
         a. Face welded: Weld miter joints between head and jamb faces completely along their length either internally or externally. The remaining elements of the frame profile (soffit, stop and rabbets) are not welded. Grind and finish face joints smooth.
   c. Prepare frames to receive inserted type door silencers (3) per strike jamb on single doors, and (2) per head for pair of doors. Stick-on silencers are not permitted.
   d. Frame Hardware Reinforcements:
      1. Mortise hinge reinforcement: minimum 7 gage.
         a. Provide high frequency hinge reinforcement for top hinge on all exterior, cross corridor, and stairwell frames, in accordance with SDI 111-H, Example "A" Application, where full mortise hinges are specified.
      2. Strike reinforcements: minimum 16 gage and prepared for an ANSI-A115.1-2 strike.
      3. Closer reinforcement: minimum 14 gage steel.
      4. Projection weld hinge and strike reinforcements to the door frame.
      5. Provide metal plaster guards for all mortised cutouts.
      6. Provide adequate reinforcements for other hardware as required.
      7. Include galvanized hardware reinforcements in all galvannealed frames.

J. <u>FABRICATION</u>:

1. Face Welded Frames:
   a. Continuous face weld the joint between the head and jamb faces along their length either internally or externally. Grind, prime paint, and finish smooth face joints with no visible face seams.
   b. Externally weld, grind, prime paint, and finish smooth face joints at meeting mullions or between mullions and other frame members per a current copy of ANSI/SDI A250.8.
   c. Provide two temporary steel spreaders (welded to the jambs at each rabbet of door openings) on welded frames during shipment. Remove temporary steel spreaders prior to installation of the frame.

K. <u>FINISH</u>:

1. Doors, frames and frame components are required to be cleaned, phosphatized, and finished with one coat of baked-on rust inhibiting prime paint in accordance with the ANSI/SDI A250.10 "Test Procedures and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames."
2. Back prime all hollow metal door frames that are to be installed in masonry walls with suitable product as recommended by manufacturer.

L. <u>INSTALLATION</u>:

1. Install doors and frames in accordance with Steel Door Institute's recommended erection instructions for steel frames ANSI A250.11.
2. Remove temporary steel spreaders prior to installation of frames.

3. Set frames accurately in position; plumb, align and brace until permanent anchors are set. After wall construction is complete, remove temporary wood spreaders.
   a. Field splice only at approved locations indicated on the shop drawings. Weld, grind, and finish as required to conceal evidence of splicing on exposed faces.
4. Provide full height 3/8" to 1-1/2" thick strip of polystyrene foam blocking at non-labeled frames requiring grouting where continuous hinges are specified. Apply the strip to the back of the frame, where the hinge is to be installed, to facilitate field drilling or tapping.
5. Where grouting is required in masonry, provide and install temporary bottom and intermediate wood spreaders to maintain proper width and avoid bowing or deforming of frame members. Refer to ANSI A250.11-2001, Standard.
   a. Hollow Metal Frames to receive grouting: comply with a current copy of ANSI/SDI Standard A250.8, paragraph 4.2.2, whereby grout will be mixed to provide a 4" maximum slump consistency and hand troweled into place. Do not use grout mixed to a thinner, pumpable consistency. Refer to HMMA 820 TN01 Grouting Hollow Metal Frames.
6. Provide a vertical wood brace during grouting of frame at openings over 4'0" wide, to prevent sagging of frame header.
7. Glaze and seal exterior transom, sidelight and window frames in accordance with HMMA-820 TN03.
8. Apply hardware in accordance with hardware manufacturers' instructions and Section 08 70 00 FINISH HARDWARE of these Specifications. Install hardware with only factory-provided fasteners. Adjust door installation to provide uniform clearance at head and jambs, to achieve maximum operational effectiveness and appearance.

M. ADJUSTING
1. Final Adjustments: Adjust operating doors and hardware items just prior to final inspection and acceptance by the Owner and Architect. Leave work in complete and proper operating condition. Remove and replace defective work, including doors or frames that are damaged, bowed or otherwise unacceptable.
2. Prime Coat Touch-Up: Immediately after erection, sand smooth rusted or damaged areas of prime coat, and apply touch-up of compatible air-drying primer.

N. PROTECTION
1. Provide protective measures required throughout the construction period to ensure that door and frame units will be without damage or deterioration, other than normal weathering, at time of acceptance.

END OF SECTION 08 12 13

SECTION 08 33 13 - ROLLING COUNTER SHUTTERS

A. SUMMARY

1. Section Includes: Manual rolling counter doors.

B. SUBMITTALS

1. Reference Section 01 33 00 Submittal Procedures; submit the following items:
   a. Product Data
   b. Shop Drawings: Include special conditions not detailed in Product Data. Show interface with adjacent work.
   c. Quality Assurance/Control Submittals:
      1. Provide proof of manufacturer ISO 9001:2008 registration
      2. Provide proof of manufacturer and installer qualifications
      3. Provide manufacturer's installation instructions
   d. Closeout Submittals:
      1. Operation and Maintenance Manual

C. QUALITY ASSURANCE

1. Qualifications:
   a. Manufacturer Qualifications: ISO 9001:2008 registered and a minimum of five years experience in producing counter fire doors and smoke control units of the type specified.
   b. Installer Qualifications: Manufacturer's approval.

D. DELIVERY STORAGE AND HANDLING

1. In accordance with manufacturer's printed instructions.

E. WARRANTY

1. Standard Warranty: Two years from date of substantial completion against defects in material and workmanship.

F. MANUFACTURER

1. Standard specified: Cornell Iron Works, Model ESC 10.
2. Acceptable Manufacturers:
   a. Cornell Iron Works
   b. Clopay Building Products
   c. Cookson

G. MATERIALS

1. Curtain:
   a. Slat Configuration: Stainless Steel, No. 1F, interlocked flat-faced slats, 1-1/2 inches high by 1/2 inch deep, minimum 22 gauge AISI type 304 #4 finish stainless steel with stainless steel bottom bar and vinyl astragal.
      1. Finish: Stainless Steel - type 304 #4 finish
2. Endlocks: Fabricate continuous interlocking slat sections with high strength molded nylon endlocks riveted to ends of alternate slats.
3. Guides: Stainless Steel, minimum 12 gauge formed shapes, type 304 #4 finish.
4. Counterbalance Shaft Assembly:
   a. Barrel: Steel pipe capable of supporting curtain load with maximum deflection of 0.03 inches per foot of width.

b. Spring Balance: Oil-tempered, heat-treated steel helical torsion spring assembly designed for proper balance of door to ensure that maximum effort to operate will not exceed 25 lbs. Provide wheel for applying and adjusting spring torque.

5. Brackets: Fabricate from reinforced steel plate with permanently lubricated ball or roller bearings at rotating support points to support counterbalance shaft assembly and form end closures.
   a. Finish: Zirconium treatment followed by a gray baked-on polyester powder coat; minimum 2.5 mils cured film thickness.
6. Hood and Mechanism Covers: 24 gauge stainless steel with reinforced top and bottom edges. Provide minimum 1/4 inch steel intermediate support brackets as required to prevent excessive sag.
   a. Finish: Stainless steel - type 304 #4 finish.

H. OPERATION
1. Manual Operation:
   a. Crank Hoist: Crank hoist operator including crank gear box, steel crank drive shaft and geared reduction unit. Fabricate gear box to completely enclose operating mechanism and be oil-tight.

I. ACCESSORIES
1. Locking: Padlockable slide bolt on coil side of bottom bar at each jamb extending into slots in guides.

J. EXAMINATION
1. Examine substrates upon which work will be installed and verify conditions are in accordance with approved shop drawings.
2. Coordinate with responsible entity to perform corrective work on unsatisfactory substrates.
3. Commencement of work by installer is acceptance of substrate.

K. INSTALLATION
1. Install door and operating equipment with necessary hardware, anchors, inserts, hangers and supports.
2. Comply with NFPA 80 and follow manufacturer's installation instructions.

L. ADJUSTING
1. Following completion of installation, including related work by others, lubricate, test, and adjust doors for ease of operation, free from warp, twist, or distortion.

M. CLEANING
1. Clean surfaces soiled by work as recommended by manufacturer.
2. Remove surplus materials and debris from the site.

N. DEMONSTRATION
1. Demonstrate proper operation to Owner's Representative(s).
2. Instruct Owner's Representative(s) in maintenance procedures.

END OF SECTION 08 33 13

SECTION 08 62 00 – UNIT SKYLIGHTS

A. SUMMARY

1. Fixed deck mount unit skylight with formed counter flashing for mounting on the roof deck, for low-slope and steep-slope roofing applications.

B. REFERENCE STANDARDS

1. General: Applicable edition of references cited in this Section is current edition published on date of issue of Project specifications, unless otherwise required by building code in force.
2. American Architectural Manufacturers Association (www.aama.net), Window & Door Manufacturers Association (www.wdma.com).
   a. AAMA/WDMA/CSA 101/I.S.2/A440 - North American Fenestration Standard/ Specification for Windows, Doors, and Skylights (NAFS)
   b. AAMA 2603 – Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum and Panels
3. ASTM International: www.astm.org:
   a. ASTM B 209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate
   b. ASTM E 108 - Standard Test Methods for Fire Tests of Roof Coverings
   c. ASTM E 283 - Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen
   d. ASTM E 331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference
   e. ASTM E 408 - Standard Test Methods for Total Normal Emittance of Surfaces Using Inspection-Meter Techniques
   f. ASTM E 1886 - Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials
   g. ASTM E 1996 - Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Windborne Debris in Hurricanes
4. Code of Federal Regulations:
   a. 29 CFR 1910.29 (e) (1) - Occupational Safety and Health Standards for Fall Protection Systems and Falling Object Protection – Criteria and Practices.

C. COORDINATION

1. Coordinate unit skylight interior termination locations with roof structure layout.

D. SUBMITTALS

1. Product Data: For unit skylights. Include standard construction details, product performance characteristics, and material descriptions, dimensions of individual components and profiles, and finishes.
2. Shop Drawings: For unit skylight work. Include plans, elevations, sections, details, and connections to supporting structure and other adjoining work.
3. Warranty: Sample of special warranty.
4. Closeout Submittals: Operation and Maintenance Data.

E. QUALITY ASSURANCE

1. Manufacturer Qualifications: A qualified manufacturer listed in this Section with minimum 20 years experience in the US manufacturing similar products in successful use on similar projects and able to provide unit skylights meeting requirements.

F. WARRANTY

1. Manufacturer's Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of unit skylights that fail in materials or workmanship under normal use within specified warranty period.
   a. Failures include, but are not limited to, the following:
      1. Deterioration of metals, metal finishes, dome, and other materials beyond normal weathering.
      2. Breakage of glazing.
   b. Warranty Period:
      1. Unit Skylight and Flashing Product Warranty: 10 years from date of substantial completion.
      2. Unit Skylight and Flashing Installation "No Leak" Warranty: 10 years from date of substantial completion.
      3. Hail Breakage Warranty for Skylight Glass: 10 years from the date of substantial completion on all insulated glass units using laminated glass.
      4. Insulating Glass Seal Failure Warranty: 20 years from date of substantial completion.

G. PRODUCTS

1. Standard Specified: Fixed Deck Mounted (FS) Unit Skylights, as manufactured by VELUX America LLC.
2. Source Limitations: Obtain unit skylights through single source from single manufacturer.
3. System Description: Fixed deck mounted unit skylight consisting of the following main integrated components – an interior condensation drainage gasket, pre-finished white wooden frame, exterior maintenance-free aluminum cladding/counter flashing, ASA corner keys, and an insulating thermal pane glass unit with two seals, warm edge spacer system, three coats of LoE^3 silver to increase visible light transmittance while reducing solar heat, and a continuous deck seal mounting system with durable foam seal. FS skylights shall be suitable for installation on roof decks ranging from 14 degrees up to 85 degrees from horizontal.
4. Wood: Kiln-dried, laminated Ponderosa Pine and Eastern White Pine pre-finished white.
5. Maintenance free exterior cladding: Roll formed 0.57 mm aluminum frame coverings with neutral gray Kynar® polyvinylidene fluoride resin finish, production engineered, and fabricated to fit exterior exposed surfaces.
6. Unit Size: as indicated on Drawings.
7. Weather stripping: Factory applied neoprene and thermoplastic elastomeric weather stripping throughout entire frame, profiled to effect weather seal.
8. Insulated Glass Unit: Factory assembled with low emissivity exterior pane and clear interior pane separated by a stainless steel spacer sealing the space between panes with 90% argon gas.
   a. Exterior Pane: 0.125 inch (3mm) thick tempered glass with Neat® exterior coating and interior surface coated with three layers of low emissivity silver (LoE^3) coating LoE^3 366.
   b. Interior Pane: Standard Laminated, Two clear 0.090 inch (2.3 mm) heat-strengthened panes with a 0.030 inch (0.76 mm) clear polyvinyl butyral interlayer sandwiched together.
9. Structural Sealant: Factory applied Instant glaze sealant, clear color, bonding the glass pane to the aluminum frame and suitable for external exposure.
10. Mounting System: Continuous corrosion resistant mounting system with a durable foam seal and rough opening alignment notches.
11. Mounting Fasteners: 10 gauge 1.25 inch (32 mm), ring shank nails provided with skylight. Ring shank nails are double hot dipped zinc coated.
12. Flashings
    a. Manufacturer's standard Step Flashing: Roll formed aluminum, neutral grey finish, factory engineered and fabricated seams, consisting of head flashing, sill flashing, step flashing pieces and adhesive underlayment suitable for use on roof pitches 14 to 85 degrees from horizontal.
       1. Material:

a. Head flashing 23 gauge (0.57 mm) thick aluminum with polyester lacquer finish.
b. Sill flashing 22 gauge (0.65 mm) thick aluminum with Kynar 500 finish.
c. Step pieces 27 gauge (0.42 mm) thick aluminum with polyester lacquer finish.
d. Adhesive underlayment: 9 inches (229 mm) wide x 21 feet (6.4 m) length x 0.03 inch (0.8 mm) thick, SBS modified bitumen with white polyethylene backing sheet.

13. Performance Requirements
    a. Units shall be independently tested in accordance with AAMA/WDMA/CSA 101/I.S.2/A440 (NAFS-17) for compliance with Ohio Building Code, as follows:
        1. Water Test Pressure: No water penetration noted as measured in accordance with ASTM E 331 with a test pressure differential of 720 Pa (15.0 psf).
        2. Air Leakage Rate: Maximum of 0.11 CFM/ft² of total unit area, measured at a pressure of 75 Pa (1.57 psf) in accordance with ASTM E 283.
        3. Windborne-Debris Resistance: Wind Zone 3 or Less: Provide unit skylights capable of resisting impact from windborne debris, based on the pass/fail criteria as determined from testing glazed representative of those specified, according to ASTM E 1886 and ASTM E 1996.
    b. Fall Protection Standard Compliance: 29 CFR 1910.29: Testing for all laminated venting deck mount unit skylights.
14. Materials:
    a. Aluminum Sheet: Flat sheet complying with ASTM B 209/B 209M.
    b. Joint Sealants: As specified in Section 079200 "Joint Sealants."
    c. Mastic Sealants: Polyisobutylene; nonhardening, nonskinning, nondrying, nonmigrating sealant.
15. Finishes:
    a. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
    b. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

H. EXAMINATION

1. Examine openings, substrates, structural support, anchorage, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
2. Proceed with unit skylight installation only after unsatisfactory conditions have been corrected.

I. INSTALLATION

1. Install unit skylights in accordance with manufacturer's written instructions and approved shop drawings. Coordinate installation of units with installation of substrates, air and vapor retarders, roof insulation, roofing membrane, and flashing as required to ensure that each element of the Work performs properly and that finished installation is weather tight.
    a. Anchor unit skylights securely to supporting substrates.
    b. Install unit skylights on curbs specified in another section with tops of curbs parallel to finished roof slope.
2. Where metal surfaces of unit skylights will contact incompatible metal or corrosive substrates, including preservative-treated wood, apply bituminous coating on concealed metal surfaces, or provide other permanent separation recommended in writing by unit skylight manufacturer.

J. CLEANING AND PROTECTION

1. Clean exposed unit skylight surfaces according to manufacturer's written instructions. Touch up damaged metal coatings and finishes. Remove excess sealants, glazing materials, dirt, and other substances.

2. Replace glazing that has been damaged during construction period.
3. Protect unit skylight surfaces from contact with contaminating substances resulting from construction operations.

END OF SECTION 08 62 00

SECTION 08 70 00 - FINISH HARDWARE

A. WORK INCLUDED

1. This work shall include the furnishing and delivery to the Contractor of all the finish hardware, including all screws, bolts and other devices required to complete the work.
2. Templates of all hardware shall be promptly furnished to the metal door frame manufacturer.

B. DELIVERY OF HARDWARE

1. All finish hardware will be installed under the Carpentry Division. The Contractor will issue instructions for the time and place of delivery.

C. SUBMITTALS

1. Submit electronic hardware schedule to Architect together with catalog-cuts of each item of hardware listed for approval. Submit prior to ordering material, in accordance with General conditions.

D. INSTALLATION

1. Install all hardware per manufacturer's directions, a mounting heights recommended by the Door and Hardware Institute, and in compliance with the 2010 ADA Standards for Accessible Design.

E. FINISH HARDWARE SCHEDULE

1. All hardware shall be of the makes and models listed in the attached Hardware Schedule, or approved equals.
2. Furnish and deliver all finish hardware, complete with all necessary fasteners. Provide templates for all hardware to metal door manufacturer.

PRODUCT	SPECIFIED MANUFACTURER	APPROVED EQUAL
Hinges	Hager	Stanley, McKinney
Locksets, Cylinders	Sargent	Schlage
Closers	Sargent	LCN, Corbin/Russwin
Stops	Hager	Burns, Ives, Rockwood
Kickplates	Hager	Burns, Ives, Rockwood
Thresholds	National Guard	Pemko, Zero
Weatherstrip	National Guard	Pemko, Zero

HARDWARE SET 1 - Door: 100

3	Ea.	Hinges	BB1168 4.5 x 4.5 x US26D x NRP	HA
1	Ea.	Lever Lockset	10G05 LL x 26D	SA
1	Ea.	Closer	351CPS x EN	SA
1	Ea.	Kick Plate	190S 8" x 34" x US32D	HA
1	Ea.	Threshold	424 x 36" x AL	NA
1	Ea.	Door Sweep	102 VA x 36"	NA
1	Ea.	Weatherstrip	700 NA 1 x 36" + 2 x 84"	NA

HARDWARE SET 2 – Door: 101, 102

6	Ea.	Hinges	BB1168 4.5 x 4.5 x US26D x NRP	HA
2	Ea.	Locksets	10G44 LL x 26D	SA
2	Ea.	Closer	351CPS x EN	SA
2	Ea.	Wall Stop	232W x US32D	HA
2	Ea.	Kick Plate	190S 8" x 34" x US32D	HA
2	Ea.	Threshold	424 x 36" x AL	NA
2	Ea.	Door Sweep	102 VA x 36"	NA
2	Ea.	Weatherstrip	700 NA 1 x 36" + 2 x 84"	NA

HARDWARE SET 3 - Door: 103

3	Ea.	Hinges	BB1168 4.5 x 4.5 x US26D x NRP	HA
1	Ea.	Lever Lockset	10G04 LL x 26D	SA
1	Ea.	Threshold	424 x 36" x AL	NA
1	Ea.	Door Sweep	102 VA x 36"	NA
1	Ea.	Weatherstrip	700 NA 1 x 36" + 2 x 84"	NA

END OF SECTION 08 70 00

SECTION 09 65 13 - RUBBER WALL BASE

A. SUMMARY

1. Section Includes: Resilient Rubber Wall Base.

B. RELATED DOCUMENTS

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

C. SUBMITTALS

1. Product Data: For each type of product indicated.
2. Samples for Initial Selection: For each type of product indicated.
3. Samples for Verification: For each type of product indicated, in manufacturer's standard-size samples of each resilient product color, texture, and pattern required.

D. DELIVERY, STORAGE, AND HANDLING

1. Store resilient products and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by Johnsonite, but not less than 55 deg F or more than 85 deg F.

E. PROJECT CONDITIONS

1. Install resilient products after other finishing operations, including painting, have been completed.
2. Maintain ambient temperatures within range recommended by Johnsonite, but not less than 65 deg F or more than 85 deg F in spaces to receive resilient products during the following time periods:
   a. 48 hours before installation.
   b. During installation.
   c. 48 hours after installation.
3. Maintain the ambient relative humidity between 40% and 60% during installation.
4. Until Substantial Completion, maintain ambient temperatures within range recommended by manufacturer, but not less than 55 deg F or more than 85 deg F.

F. RESILIENT WALL BASE

1. Traditional Rubber Wall Base, 1/8” thick, as manufactured by Johnsonite.
   a. Style DC – (with toe).
   b. Height – See Drawings.
   c. Length – Coils for seamless installation.
   d. Color as selected by Architect.
2. Manufactured from a proprietary thermoplastic rubber formulation.
3. Meets performance requirements for ASTM F 1861 Standard Specification for Resilient Wall Base, Type TP, Group 1.
4. ASTM E 648, Standard Test Method for Critical Radiant Flux of 0.45 watts/cm^2 or greater, Class I.
5. ASTM E 84, Standard Test Method for Surface Burning Characteristics of Building Materials, Class A, Smoke <450.
6. Flexibility: Does not crack, break, or show any signs of fatigue when bent around a 1 1/4" diameter cylinder when tested according to ASTM F 137 Standard Test Method for Flexibility of Resilient Flooring Materials protocols.
7. Color Stability: Meets or exceeds ASTM F 1861 requirements for color stability when tested to ASTM F 1515 Standard Test Method for Measuring Light Stability of Resilient Flooring protocols.

G. INSTALLATION MATERIALS

1. Trowelable Leveling and Patching Compounds: Latex-modified, portland cement based formulation manufactured and warranted by a reputable manufacturer.
2. Adhesives: as recommended by manufacturer to meet site and substrate conditions.

H. EXAMINATION
1. Examine substrates, with Installer present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the work.
2. Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of resilient products.
3. Proceed with installation only after unsatisfactory conditions have been corrected.

I. PREPARATION
1. Prepare substrates according to manufacturer's written instructions to ensure adhesion of resilient wall base.
2. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound and remove bumps and ridges to produce a uniform and smooth substrate.
3. Move resilient products and installation materials into spaces where they will be installed at least 48 hours in advance of installation.
4. Vacuum clean substrates to be covered by resilient products immediately before installation.

I. INSTALLATION
1. Comply with manufacturer's written instructions for installing resilient base.
2. Apply resilient base to walls, columns, pilasters, casework and cabinets in toe spaces, and other permanent fixtures in rooms and areas where base is required.
3. Install resilient base in lengths as long as practicable without gaps at seams and with tops of adjacent pieces aligned.
4. Tightly adhere resilient base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates.
5. Do not stretch resilient base during installation.
6. Job-formed corners:
   a. Outside corners: Form by bending without producing discoloration (whitening) at bends.
   b. Inside corners: Butt one piece to corner then scribe next piece to fit.

J. CLEANING AND PROTECTION
1. Comply with manufacturer's written instructions for cleaning and protection of resilient products.
2. Perform the following operations immediately after completing resilient product installation:
   a. Remove adhesive and other blemishes from exposed surfaces.
   b. Damp-mop surfaces to remove marks and soil.
3. Protect resilient products from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.

M. MAINTENANCE
1. Do not perform manufacturer's recommended maintenance procedures until adhesive has fully cured, no sooner than 72 hours after installation.
2. Use only cleaning products recommended by the manufacturer.
3. Protect installed product from damage and construction operations and inspect immediately before final acceptance of project.

END OF SECTION 09 65 13

SECTION 09 91 23 – PAINTING

A WORK INCLUDED

1. The work under this section includes the furnishing of all labor, material, equipment, appliances, and tools to perform the work indicated on the Drawings or specified herein including, but not limited to the following:
   a. Painting
   b. Preparation of surfaces for painting.

B. WORK EXCLUDED

1. The following listed work is included under other sections:
   a. Shop coat on miscellaneous iron and steel.
   b. Factory finish on exterior metal.
   c. Prime coat on new hollow metal work shall be furnished under the Hollow Metal Section.

C. REFERENCES

1. Society for Protective Coatings (SSPC)
   a. SSPC-SP 1 - Solvent Cleaning
   b. SSPC-SP 2 - Hand Tool Cleaning
   c. SSPC-SP 3 - Power Tool Cleaning
   d. SSPC-SP 7 – Brush-off Blast Cleaning
2. Environmental Protective Agency (EPA)
   a. EPA-Method 24
3. American Society of Testing and Materials (ASTM)
   a. ASTM D3960-04 Standard Practice for Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings
   b. ASTM D6886 - Test Method for Speciation of the Volatile Organic Compounds (VOCs) in Low VOC Content Waterborne Air-Dry Coatings by Gas Chromatography.

D. SUBMITTALS

1. Submit under provisions of General Conditions and Division 1.
2. Product Data: Manufacturer's data sheets on each paint and coating product to be used, including:
   a. Product characteristics.
   b. Preparation instructions and recommendations.
   c. Primer requirements and recommendations.
   d. Storage and handling requirements and recommendations.
   e. Application methods.
   f. Cautions, VOC's.
3. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and sheens.

E. QUALTIY ASSURANCE

1. VOC Content: Determine VOC (Volatile Organic Compound) content of solvent borne and waterborne paints and related coatings in accordance with EPA Method 24 or ASTM D3960.

F. DELIVERY, STORAGE AND HANDLING

1. Delivery: Deliver manufacturer's unopened containers to the work site. Packaging shall bear the manufacturer's name, label, and the following list of information:
   a. Product name, and type (description)
   b. Application & use instructions

c. Surface preparation
d. VOC content
e. Environmental issues
f. Batch date
g. Color number/name

2. Storage: Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction. Store materials in an area that is within the acceptable temperature range, per manufacturer's instructions. Protect from freezing.
3. Handling: Maintain a clean, dry storage area, to prevent contamination or damage to the coatings.

G. MATERIALS

1. All finished materials, thinners, etc., shall be the best quality, first line materials as manufactured by:
   a. Benjamin Moore
   b. The Glidden Company
   c. Harrison Paint Co.
   d. ICI Dulux
   e. Pittsburgh Paints - PPG
   f. Pratt and Lambert, Inc.
   g. The Sherwin-Williams Company
2. All paint materials shall be delivered to the job in the manufacturer's original unopened labeled containers, and they shall be used strictly in accordance with the manufacturer's directions.
3. Unless otherwise indicated, provide factory-mixed coatings. When required, mix coatings to correct consistency in accordance with manufacturer's instructions before application. Do not reduce, thin, or dilute coatings or add materials to coatings unless such a procedure is specifically described in manufacturer's product instructions. VOC numbers used in this document need to be confirmed by using the products MSDS sheets.

H. APPLICATIONS/SCOPE

1. Scope: Use products specified in this section to finish ALL interior and exterior surfaces exposed to view, unless otherwise indicated; DO NOT PAINT THE FOLLOWING:
   a. Items specified or provided with factory finish; materials and products having factory-applied primer are not considered factory finished.
   b. Items indicated to receive other finishes.
   c. Items indicated to remain unfinished.
   d. Marble, granite, slate, and other natural stones.
   e. Brick, concrete, cast stone.
   f. Glass.
   g. Stainless steel, anodized aluminum, bronze.
   h. Equipment nameplates, fire rating labels, and operating parts of equipment.
   i. Concealed pipes, ducts, and conduits.
2. Surfaces to be Painted:
   a. Concrete masonry walls.
   b. Hollow metal doors and frames.
   c. Plywood ceilings and trim.
   d. Pipes, ducts, conduits, hangers and supports, equipment, and equipment enclosures exposed to view in all rooms and spaces.
   e. Access panels and equipment cabinets.

I. EXTERIOR AND INTERIOR PAINT SPECIFICATIONS

1. If these Specifications conflict with the recommendations of the manufacturer, this discrepancy shall be brought to the attention of the Architect, to decide which method shall be followed.
2. Raw linseed oil, turpentine, benzine, gloss oil, or coal oil shall not be used in any of the materials for interior work. Any thinner used shall be subject to the provisions stated above.
3. All Surfaces To Be Painted, Unless Otherwise Specified:

   a. Concrete Masonry Surfaces (Semi-Gloss): (Lower Odor/Low VOC Epoxy System)
      1. Primer: Waterborne Epoxy Block Filler - (16 mils wet, 8 mils dry)
      2. Two (2) Finish Coats: Waterborne Semi-Gloss Catalyzed Epoxy - (2.5 - 3 mils dry per coat)

   b. Metal – Ferrous (Semi-Gloss): (Lower Odor/Low VOC Waterborne Acrylic Latex System)
      1. Primer: Waterborne Acrylic Metal Primer - (5-10 mils wet, 2-4 mils dry)
      2. Two (2) Finish Coats: Waterborne Acrylic Latex, Semi-Gloss - (4 mils wet, 1.4 mils dry per coat)
      3. Surfaces: Structural Steel Columns, Joists, Trusses, Beams, Miscellaneous & Ornamental Iron, Structural Iron, Ferrous Metal.

   c. Exposed Architectural Steel – Galvanized (Satin): (Lower Odor/Low VOC Acrylic Waterborne System)
      1. Prepare and clean per SSPC-SP1 using detergent and water or a degreasing cleaner to remove greases and oils. Apply a test area, priming as required. Allow the coating to dry at least one week before testing. If adhesion is poor, Brush Blast per SSPC-SP7 is necessary to remove these treatments.
      2. Primer: Waterborne Acrylic Metal Primer - (5-10 mils wet, 2-4 mils dry)
      3. Finish Coats: Satin: 2 coats Acrylic Waterborne Dry-Fall System - (11 mils wet, 4.5 mils dry)
      4. Surfaces: Interior Overhead Galvanized Steel - Including deck, panels, ducts.

   d. Plywood & Trim (Semi-Gloss): (Lower Odor/Low VOC Epoxy System)
      1. Primer: Waterborne Epoxy Primer - (4 mils wet, 1.5 mils dry per coat)
      2. Two (2) Finish Coats: Waterborne Catalyzed Epoxy Semi-Gloss - (2.5 - 3 mils dry per coat)

J. COLOR SAMPLES

1. Colors will be selected by the Architect from the manufacturer's standard colors. Final colors must match exactly with the approved sample.

K. STORAGE

1. Store materials where directed by the Architect. Oily rags, waste and empty cans shall be removed from the building each night. They shall not be kept in unventilated rooms, and they shall not be permitted to accumulate.
2. Proper fire extinguishers shall be placed near storage area.

L. PROJECT CONDITIONS

1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not apply coatings under environmental conditions outside manufacturer's absolute limits. This specification does not take into consideration wet areas or areas needing high performance coatings.

M. EXAMINATION

1. Do not begin application of coatings until substrates have been properly prepared. Notify Architect of unsatisfactory conditions before proceeding.
2. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3. Proceed with work only after conditions have been corrected and approved by all parties, otherwise application of coatings will be considered as an acceptance of surface conditions.

N. PROTECTIONS
1. Before applying any paint, cover and protect all finished surfaces and equipment with clean drop cloths or with heavy gauge visqueen as directed. All surfaces or equipment discolored or otherwise damaged under this section, shall be repaired or replaced at no expense to the Owner.
2. Place "fresh paint" signs in conspicuous places at all unguarded points where fresh or undried paint occurs.
3. Use no plumbing fixture or pipe whatsoever for disposing of waste or mixed materials.

O. PREPARATION
1. Painting Contractor shall provide adequate light in all areas of painting.
2. All coats to be applied at proper temperature, in accordance with coating manufacturer's printed recommendations.
3. All surfaces to receive finish coatings shall be prepared in accordance with coating manufacturer's printed recommendations, including methods of cleaning and acceptable surface conditions.
4. Do not apply to wet or damp surfaces.
   a. Wait at least 30 days before applying to new concrete or masonry. Or follow manufacturer's procedures to apply appropriate coatings prior to 30 days.
5. Unpainted and shop coated steel and iron shall be washed clean with Pratt and Lambert Duosol Reducer. Remove any rust which may have formed and spot prime.
6. Galvanized metal shall be cleaned thoroughly with Pratt and Lambert Duosol.
7. Drywall imperfections shall be spackled and sanded smooth. Nail holes, splits or scratches shall be puttied or spackled smooth after the prime coat.
8. The Painting Contractor is completely responsible for the satisfactory condition of his finished work. He shall notify the Architect if he considers any surface unsuitable for a proper finish. The starting of work by this Contractor will be considered as evidence that all surfaces are acceptable to him.

P. INSTALLATION/WORKMANSHIP
1. No exterior painting shall be done in rainy or freezing weather and no painting shall be done in dirty or dusty surrounding.
2. Mix and thin coatings according to manufacturer's printed recommendations.
3. All work shall be done by skilled mechanics. Paint shall be brushed, rolled or sprayed, then immediately rolled on walls.
4. All materials shall be applied and cut in neatly so as to dry uniformly to the color and sheen specified, free from runs, sags, wrinkles, shiners, streaks, and brush marks.
5. All materials shall be applied in accordance with the manufacturer's printed directions. Minimum drying time between coats shall be as specified by the manufacturer.
6. Paint top and bottom edges of all doors the same as the vertical surfaces after hardware and doors are fitted.
7. Dark Colors: Regardless of number of coats specified, apply as many coats as necessary for complete hide.
8. Protect finished coatings from damage until completion of project.
9. Touch-up damaged coatings after substantial completion, following manufacture's recommendation for touch up or repair of damaged coatings. Repair any defects that will hinder the performance of the coatings.
10. This Contractor shall remove all paint spots, rags, and discarded material from the areas in which he has been conducting his work and shall leave these spaces clean and orderly.

END OF SECTION 09 91 23

SECTION 10 28 13 – TOILET ROOM ACCESSORIES

A. SUMMARY

1. Section Includes the following Toilet Room Accessories:
   a. Grab bars. (Provided and installed by Contractor)
   b. Mirrors. (Provided and installed by Contractor)
   c. Soap dispensers (Provided by Owner, Installed by Contractor).
   d. Sanitary napkin disposal units. (Provided and installed by Contractor)
   e. Toilet tissue dispensers. (Provided by Owner; Installed by Contractor)
   f. Paper Towel Dispensers. (Provided by Owner; Installed by Contractor)
   g. Baby Changing Station (Provided and installed by Contractor).
2. See Drawings for locations.

B. RELATED REQUIREMENTS

1. Section 04 20 00 – Unit Masonry.

C. REFERENCES

1. ASTM International:
   a. ASTM A123/A123M – Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
   b. ASTM A153/A153M – Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Hardware.
   c. ASTM A269 – Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for general Service.
   d. ASTM A653/A653M – Standard Specification Steel Sheet, Zinc Coated (Galvanized) or Zinc-Iron-Alloy-Coated (Galvannealed) by the Hot-Dip Process.
   e. ASTM A666 – Standard Specification for Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar.
   f. ASTM B456 – Standard Specification for Electrodeposited Coatings of Copper Plus Nickel Plus Chromium and Nickel Plus Chromium.
   g. ASTM C1036 – Standard Specification for Flat Glass.
2. Federal Specification Unit: FS A-A-3002 – Mirrors, Glass.
3. ANSI A117- 1986 Specifications for Making Buildings and Facilities Accessible to and Usable by Physically Handicapped People.
4. OBC – Chapter11, *Accessibility*.
5. ADA, *Accessibility Guidelines for Buildings and Facilities*

D. SUBMITTALS

1. Product Data: Submit manufacturer's data sheets for each product specified.
2. Sample Warranty: Submit for each product specified.

E. QUALITY ASSURANCE

1. Manufacturer: Provide products manufactured by a company with a minimum of 10 years successful experience manufacturing similar products.
2. Single Source Requirements: To the greatest extent possible provide products from a single manufacturer.
3. Accessibility Requirements: Comply with requirements applicable in the jurisdiction of the project, including but not limited to ADA and ICC/ANSI A117.1 requirements as applicable.

F. DELIVERY, STORAGE, AND HANDLING

1. Deliver, store and handle materials and products in strict compliance with manufacturer's instructions and recommendations. Protect from damage.

G. WARRANTY

1. Manufacturer's Warranty for Washroom Accessories: Manufacturer's standard warranty for materials and workmanship.
2. Mirrors: Manufacturer's 15-Year warranty against silver spoilage of mirrors.

H. MANUFACTURER

1. Standard Specified: Bobrick Washroom Equipment, Inc.
2. Acceptable Manufacturers:
   a. Bobrick Washroom Equipment, Inc.
   b. American Specialties, Inc.
   c. Bradley Corp.

I. PRODUCTS

1. Toilet Room Stainless Steel Grab Bars: With snap flange covers.
   a. Bobrick Model B-6806 (x36; x 42; x 18)
   b. Compliance: Universal/accessibility design, including ADA-ABA and ICC/ANSI. for structural strength.
      1. Capacity: Designed to support 900 lbs in compliant installations.
   c. Description: Grab bar with 90 degree return to flange. Clearance between grab bar and finished wall is 1-1/2 inches (38mm).
   d. Grab Bar Materials: 18-8, Type 304, 18 gauge stainless steel tubing with satin finish, ends of grab bar pass through flanges and are heliarc welded to flanges to form one structural unit, outside diameter 1-1/2 inches.
   e. Mounting Flanges: Concealed, 18-8, Type 304, 1/8 inch thick, stainless steel plate.
      1. End Flanges: 2 inches x 3-1/8 inches with two holes for attachment to wall.
      2. Intermediate Flanges: 2-5/8 inches x 3-1/8 inches wide x 3-1/8 inch diameter.
   f. Snap Flange Covers: 18-8, Type 304, 22 gauge drawn stainless steel with satin finish, 3-1/4 inch diameter x 1/2 inches deep; snap over mounting flange to conceal mounting screws.
   g. Mounting Accessories: Provide mounting accessories as required for complete installation.

2. Stainless Steel, Welded, Angle Frame Mirrors:
   a. Bobrick Model B-290; 2436.
   b. Angle Frame:
      1. Materials: Type 304 stainless steel angle 3/4 inch x 3/4 inch (19 x19mm), with satin finish with vertical grain on exposed surfaces.
      2. Construction: One-piece, roll-formed construction with continuous integral stiffener.
      3. Design: Beveled design on front of angle to hold mirror tightly against frame; prevents exposure to sharp edges.
      4. Corners: Heliarc welded, ground, and polished smooth.
   c. Mirror:
      1. No. 1 quality, 1/4 inch float/plate glass.
      2. Edges: Protected with plastic filler strips.
      3. Back of Mirror: Protected by full-size, shock-absorbing, water-resistant, non-abrasive 3/16 inch thick polyethylene padding.

d. Mounting: Removable, galvanized steel back with integral horizontal hanging brackets located at top and bottom for mounting on Concealed one-piece rectangular wall hanger(s); galvanized steel back fastened to frame with Concealed screws to permit glass replacement; attachment by rivets or tabs is not acceptable; Concealed Phillips head locking setscrews secure mirror to wall hanger in bottom of frame.

3. Surface-Mounted Sanitary Napkin Disposal Units:

a. Bobrick ConturaSeries Model B-270.
b. Container: All-welded, 18-8, Type 304, 22 gauge stainless steel with satin finish on exposed surfaces.
c. Cover: Drawn, one-piece, seamless, 18-8, Type 304, 22 gauge stainless steel with satin finish.
d. Hinge: Full-length stainless steel piano-hinge.

4. Baby Changing Station: Koala Kare Products Model KB110-SSWM

a. Horizontal Mounted Design.
b. Sanitary Liner Refills: Case of 500 absorbent paper liners with soil-resistant plastic backing (KB150-99).
c. Materials:
   1. Materials/Finishes: 18 gauge, type 304 satin stainless steel exterior finish with grey polyethylene interior.
   2. Hinges: Reinforced, full length steel-on-steel.
   3. Mounting Supports: Multiple, 11-gauge steel.
   4. Operation: Hidden pneumatic gas spring mechanism for safe open/close motions.
d. Accessories:
   1. Integral, built-in liner dispenser for use with 3-ply chemical-free biodegradable 13" x 19" sanitary liners.
   2. Replaceable snap-lock protective holding straps.
   3. Molded graphic instructions and safety messages in 6 languages and Braille. Identifying door plaque.
   4. Provide FDA approved blow-molded high-density grey polyethylene antimicrobial interior.

J. INSTALLATION

1. Install products in strict compliance with manufacturer's written instructions and recommendations, including the following:
   a. Verify location does not interfere with door swings or use of fixtures.
   b. Comply with manufacturer's recommendations for backing and proper support.
   c. Use fasteners and anchors suitable for substrate and project conditions.
   d. Install units rigid, straight, plumb, and level, in accordance with manufacturer's installation instructions and approved shop drawings.
   e. Conceal evidence of drilling, cutting, and fitting to room finish.
   f. Test for proper operation.

K. CLEANING AND PROTECTION

1. Clean exposed surfaces of compartments, hardware, and fittings using methods acceptable to the manufacturer.
2. Touch-up, repair or replace damaged products until Substantial Completion.

END OF SECTION 10 28 13

SECTION 10 44 16 - PORTABLE FIRE EXTINGUISHERS

A. DESCRIPTION OF WORK

1. Furnish and install portable fire extinguishers and cabinets at locations shown on plans.

B. QUALITY ASSURANCE

1. Unless otherwise acceptable to the Architect, furnish portable fire extinguishers and accessories by only one manufacturer.
2. Provide portable fire extinguishers manufactured by one of the following:
   a. W. D. Allen Mfg. Company
   b. General Fire Extinguisher Corp.
   c. Walter Kidde and Company
   d. Larsen's Mfg. Company

C. SUBMITTALS

1. For information only, submit two copies of manufacturer's technical data and installation instructions for all portable fire extinguishers and cabinets required. Transmit copy of each instruction to the installer.

D. MATERIALS

1. Fire Extinguishers:
   a. Provide fire extinguishers for each extinguisher cabinet and other locations as shown on the Drawings. Furnish only new fire extinguishers which are approved and labeled by Underwriter's Laboratories.
   b. Provide colors and finishes of materials for portable fire extinguishers as selected by the Architect from manufacturer's standard.
   c. Multipurpose dry chemical: 10 lbs. capacity, enameled steel container with pressure- indicating gauge, for Classes A, B, and C fires.
2. Fire Extinguisher Cabinets:
   a. Provide fire extinguisher cabinets suitable for housing one of the size fire extinguishers specified above, unless otherwise indicated as follows:
      1. Surface Mounted: 2-1/2" rolled edge trim for shallow wall installation.
      2. Box: 20 gauge.
      3. Trim frame: 18 gauge.
      4. Tubular door perimeter frame: 20 gauge.
      5. Door Panel: Bubble type, one piece molded clear plastic with catch.
      6. Construction: One piece tubular door frames, mitered and welded. One piece metal trim frame, to suit cabinet style required. Weld all joints and grind smooth. Provide manufacturer's standard steel box with white baked enamel interior finish and primed exterior finish.
      7. Steel door frame and trim: Manufacturer's standard, prime coat finished, steel door frame and trim style as specified.
      8. Door hardware: Continuous type hinge permitting door to open 180 degrees. Provide either lever handle with cam action latch, or door pull and friction latch.

E. EXECUTION

1. Installer must examine the substrate and conditions under which the fire-fighting devices are to be installed and notify the Contractor in writing of conditions detrimental to the proper and timely completion of work. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to the installer.
2. Install in locations and at mounting height to comply with governing authorities. Securely fasten to structure, square and plumb, in accordance with manufacturer's instructions.

END OF SECTION 10 44 16

SECTION 11400 - STAINLESS STEEL COUNTERS

A. RELATED DOCUMENTS

1. The provisions of the General Conditions, Supplementary conditions, and the Sections included under Division 1, General Requirements are included as a part of this Section as though bound herein.

B. SUMMARY OF WORK

1. The work included in this section consists of furnishing all labor, material, tools and equipment necessary to furnish and install complete stainless steel counters as indicated on the drawings and specified herein.
2. Stainless Steel Fabricator shall have at least five years successful experience furnishing and installing equipment on projects similar in size and scope to that required for this project and be a recognized distributor for the items of equipment specified herein.

C. CODES AND STANDARDS

1. All material and workmanship shall comply with all applicable codes, specifications, local ordinances and industry standards. In case of differences between codes, specifications, state laws, federal laws, local ordinances, industry standards, utility company regulations and the contract documents, the most stringent shall govern.

D. WARRANTY

1. Stainless Steel Fabricator shall furnish a warranty covering all labor and materials for a period of one year from date of acceptance of work, and shall agree to repair or replace, as determined by the Architect, at its own expense, any and all defects which may appear in its work during that time when, in the judgment of Architect, such defects arise from defective workmanship and/or imperfect or inferior material.

E. SUBMITTALS

1. Stainless Steel Fabricator shall prepare and submit shop drawings in a timely manner, showing dimensions location, size, height and necessary cross sections of complete detail of each item of fabricated equipment. Drawings to include accurately dimensioned layouts and locations for all support items necessary or called for hereinafter and furthermore to include accurately dimensioned details and locations of any special wall openings that are required where items of equipment extend through walls.

F. MATERIALS

1. The materials used throughout shall be those of reputable manufacturers and shall be new and best of their respective kinds. All work shall be installed a neat and workmanlike manner in accordance with the best trade practices and by workmen skilled in the work assigned to them.
2. Stainless steel sheets or shapes: When specified to be 18-8, Type 304, polished to No.4 finish.
3. Galvanized Iron Sheets: When specified to be zinc G-90 coating.
4. Tubing: When specified to be seamless stainless steel Type 304, 1 5/8" diameter x 16 gauge, polished to a No. 4 finish.
5. Sealant: ASTM C 920; Type S, Grade NS, Class 25, Use NT. Provide elastomeric sealant NSF certified for end-use application indicated. Provide sealant that, when cured and washed, meets requirements of Food and Drug Administration's 21 CFR, Section 177.2600 for use in areas that come in contact with food.
6. Sound Deadening: NSF certified, nonabsorbent, hard-drying, sound-deadening coating. Provide coating compound for permanent adhesion to metal in 1/8-inch (3-mm) thickness that does not chip, flake or blister.

7. Paint and Coatings: Provide the types of painting and coating material which after drying and curing, are suitable for use in conjunction with foodservice and which are durable, non-toxic, non-flaking, mildew-resistant and comply with foodservice regulations.
8. Gaskets; NSF certified for end-use application indicated; of rubber, neoprene, or PVC that is nontoxic, stable, odorless, nonabsorbent and unaffected by exposure to foods and cleaning compounds.

G. CUSTOM FABRICATION

1. Custom fabricated components shall be constructed in strict accordance with NSF 2 requirements, contract drawings and be new prime quality and full gauge thickness.
2. Fabricate field-assembled equipment prepared for field joining methods indicated. For metal butt joints, comply with reference SMACNA standard, unless otherwise indicated.
3. Where stainless steel is joined to a dissimilar metal, use stainless steel welding material or fastening devices.
4. Form metal with break bends that are not flaky, scaly or cracked in appearance; where breaks mar uniform surface appearance of material, remove marks by grinding, polishing and finishing.
5. Sheared Metal Edges: Finish free of burrs, fins and irregular projections.
6. Provide surfaces as defined in NSF 2, free from exposed fasteners. Bolts, screws and revits are not acceptable on exposed surfaces of equipment.
7. Cap exposed fastener threads, including those inside cabinets, with stainless steel lock washers and stainless steel cap (acorn) nuts.

H. COUNTERS AND TOPS

1. Metal tops shall be 14 gauge stainless steel. Shop seams and corners welded, ground and polished smooth. Tops shall be reinforced with 12 gauge channel, one channel provided on tops up to 36" wide and two channels on tops over 36" wide. Exposed channels shall be stainless steel. Attach top to channel reinforcements with studs welded to the underside of top and cadmium plated lock nuts.
2. Field joints provided in top where necessary and located for practical constructions and consistent with sizes convenient for shipping and accessibility into building. See section entitled "Field Joints" for description of these joints.
3. Metal top open edges shall be turned down 1 3/4" at 90 degrees with a ½" return at 15 degrees on the horizontal. Burrs, projections and fins are not acceptable on sheared edges. Neatly grind miters and bullnosed corners to a uniform condition.
4. Tops abutting high fixtures or walls shall be furnished with a backsplash. Backsplash shall be coved up 6" or a specified height and sloped back 2 1/2" on a 45 degree angle and down at least 1" to receive 14 gauge stainless steel zee clip for anchoring to wall or high fixture, as it would apply on 36" o.c. Close ends of splash to bottom of top.
5. Sound deaden underside of tops with NSF approved sound-deadened mastic.
6. Provide a 3/16" high raised die-formed edge around punch or drilled openings.
7. Sinks, when required, shall be 14 gauge stainless steel, size as indicated on the drawings and made as an integral part of the top. Sink back, bottom and front shall be formed of one continuous sheet with ends welded into place. Horizontal and vertical corners to have a ¾" radius. Sink bottoms to be creased, and sloped toward drain. Sink shall be fitted with a basket drain assembly with removable crumb cup or twist handle waste assembly or as specified.

I. OPEN BASE UNITS

1. All pipe stands for open base tables or dishtables constructed of 1 5/8" dia. x 16 gauge stainless steel tubing uprights; cross braces of 1-1/4" O.D. x 16 gauge stainless steel tubing. All joints between legs and cross braces fully welded, ground and polished smooth.
2. Crossrails supplied to reinforce each leg. Legs anchored to closed stainless steel gussets at top only and without crossrails are not acceptable except in the case of sinks. Uprights fitted at top with stainless steel

fully enclosed gussets fully welded to reinforcing channel on underside of table top or to the reinforced stainless steel corner pads under the sink corner.

3. All pipe legs fitted with sanitary stainless steel bullet shaped feet, fully enclosed with slightly rounded bottom to protect floor. To have a total adjustment of 1" with thread unexposed.
4. Maximum leg spacing to be 6'-0" o.c.

J. UNDERSHELVES

1. 16 gauge stainless steel turned down 1 1/2" at 90 degrees with a ½" return at 15 degrees below the horizontal. Turn up 2" at walls or adjoining high fixtures with ¼" horizontal coved corners.
2. Welded to stainless steel legs or body of enclosed base table, as it may apply, with all welds ground and polished to blend with the adjacent surfaces.
3. When welded to legs, notch all corners for tight welded .

K. SHOP/FIELD JOINTS

1. Keep field joints to a minimum. Provide field joints only when equipment size must be limited for access into building or shipping. Field joint is to be a hairline butt joint mechanically fastened offset "draw" design and located on shop drawings.
2. After bolt installation, all field joints, including edges and splash must be fully welded, ground, and polished to match adjacent surface to achieve a seamless appearance.
3. Stainless steel welds, welded using stainless steel electrodes, shall be free of pits, flaws, discolorations, and peened to remove flux and impurities. Grind welds smooth, polish to original finish of metal, with grain uniform to grain of original sheet. Where grinding, polishing has destroyed grain, restore, blend to omit all traces of welding.
4. Acetylene welding or silver solder is not acceptable.
5. All concealed or exposed welds on unpolished surfaces to be background to surface of original metal to remove all impurities from welds. Solder is not permissible unless specifically specified and approved. Make all welds smooth, with neither dip or bulge.
6. All visible seams to be continuously Tig or Meg welded and polished to match adjacent surfaces.
7. All visible seams to be free of pits, flaw and ground smooth and polished to a #4 finish.
8. The "grain" direction of horizontal stainless steel surface is longitudinal, including splash. The polishing procedures at right angle corners of units shall provide for a mitered appearance.

L. COORDINATION OF WORK

1. Stainless Steel Fabricator shall field inspect conditions at site and verify that the wall dimensions and rough ins were properly installed. Notify the Architect in writing of discrepancies between the contract documents and the actual conditions on the jobsite prior to equipment fabrication.

M. INSTALLATION REQUIREMENTS AND CLEARANCES

1. Installation of the stainless steel fabrications shall be level and plumb.
2. Layout the work and establish all measurements required for installation.
3. Deliver stainless steel fabrications as shop-assembled units with protective crating and covering.

N. CLEANING

1. Thoroughly clean stainless steel fabrications, remove any temporary protection and leave clean and free of imperfections, polished and ready for use.
2. Crating, boxes, coverings and trash pertaining to the stainless steel fabrications shall be removed immediately upon installation.

END OF SECTION 11400

SECTION 311000 - SITE CLEARING

PART 1 - GENERAL

1.1 WORD INCLUDES

A. Contact the Ohio Utility Protection Services (811) and utility companies at least 48 hours prior to any site clearing / excavating operations.

B. Locate, identify, verify, and protect existing trees and vegetation to remain based on owners direction.

C. Protect benchmarks, survey control points, and ex. site improvements to remain from damage or displacement. All damaged or disturbed benchmarks, survey control points or property pins shall be replaced by a Professional Surveyor registered in the State of Ohio.

D. Contractors shall remain within property lines, lease lines, easement areas, designated perimeter limits, or limits of work areas shown on drawing.

E. Clearing and grubbing. Include complete removal of any remaining stumps & vegetation. Protect plants, trees, vegetation noted to remain.

F. Topsoil stripping. Apply herbicide to areas to be paved after stripping topsoil.

G. Removal of above-grade site improvements and removal of any below grade improvements (ex. utilities, building foundations, etc. as applicable in order to install improvements shown on Contract Drawings.

H. Locate, identify, and mark utilities within site boundaries to remain or be removed. Protect utilities to remain. Disconnect, cap, or seal and abandon site utilities in place per utility co. requirements. If noted on plans backfill pipes to be abandoned in place with grout or LSM. Notify engineer immediately if unknown utilities or utility connections are encountered.

I. Identify and accurately locate capped utilities and other subsurface structural, electrical, technological, and mechanical conditions, as applicable. Note utility locations on contractor's as-built mark-up plans and submit copy to engineer. Coordinate clearing work and comply with all utility company requirements before starting work.

J. Backfill any excavated areas with compacted fill suitable for the area. Refer to the backfill specifications and geotechnical report (if applicable) for additional information.

K. Provide and maintain temporary soil erosion and sedimentation control measures per the project's SWPPP & specifications.

L. Remove debris from site. Leave site in clean condition ready for earthwork.

M. Make new openings in curbs and gutters neat, as close as possible to profiles indicated and only to extent necessary for new work.

N. At concrete, paving, and other materials where edges of cuts remain exposed in the complete work, make cuts using power-saving equipment. Do not overcut at corners of cut openings.

O. Contractor shall delineate limits of pavement removal in the field, neatly saw cut pavement at limits, remove and dispose off-site the existing pavement. Pavement removal shall include all base and subbase aggregate material.

1.2 DEFINITIONS

A. "Topsoil": natural or cultivated surface-soil layer containing organic matter and sand, silt, and clay particles; friable, pervious, and black or a darker shades of brown, gray, or red than underlying subsoil; reasonably free of subsoil, clay lumps, and other objects more than 1-1/2 inches in diameter; and free of weeds, roots, and other deleterious materials.

B. Caliper: Instrument used to measure tree diameter.

C. Clearing: Removal and disposal of above-ground featured items defined herein.

D. Grubbing: Removal and disposal of below-ground items defined herein.

E. Salvage: Shall include, but not limited to such as items as castings, piping, brick, steel, iron, copper, brass, aluminum and other metals, wiring, conduits, lighting, signs, etc.

1.3 MATERIALS OWNERSHIP

A. Except for materials indicated to be stockpiled, salvaged, or to remain on OWNER'S property, cleared materials shall become CONTRACTOR'S property and shall be removed from the site.

B. The ARCHITECT / ENGINEER will direct the CONTRACTOR whether and/or where to store excess stripped topsoil on the property.

C. If materials are determined to be salvageable and are not shown on the plans to be salvaged, the contractor shall notify the ARCHITECT / ENGINEER in writing via email and temporarily store items for them to make a claim. If after one week of notification the contractor is responsible for dispose of them.

1.4 SUBMITTALS

A. Photographs or videotape, sufficiently detailed, of existing conditions of trees and plantings, adjoining construction, and site improvements that might be misconstrued as damage caused by site clearing.

B. Record drawings/log of site clearing items.

C. Site Clearing Plan; Submit schedule and methods for accomplishment of temporary and permanent erosion control work as applicable for clearing and grubbing, grading operations, borrow pits and haul roads; a plan for disposal of waste materials; and a schedule of operation at locations of high siltation potential in sufficient detail to clearly indicate how siltation of streams, lakes and reservoirs and the interruption of normal stream flows will be held to a practical minimum.

1.5 QUALITY ASSURANCE

A. Pre-installation conference: conduct conference at project site

1.6 PROJECT CONDITIONS

A. "Traffic": minimize interference with adjoining roads, streets, parking lots, walks, and other adjacent occupied or used facilities during site-clearing operations.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from OWNER and authorities having jurisdiction (AHJ).
2. Provide alternate routes around closed or obstructed traffic ways if required by authorities having jurisdiction (AHJ)

B. "Improvements on adjoining property": authority for performing indicated removal and alteration work on property adjoining OWNER'S property will be obtained by OWNER before award of contract.

C. "Salvageable improvements": carefully remove items indicated to be salvaged and store on OWNER'S premises where indicated, or alternate location where applicable.

D. Existing facilities, structures, and utilities are shown in accordance with available field survey data and record drawings. The indicated locations of trees, underground utilities and structures are approximate. Other trees and utilities may exist which are not indicated. CONTRACTOR shall notify utility locater service before site clearing in accordance with State Revised Code "Protecting underground utility facilities during construction of public improvement".

E. The Contractor shall employ a qualified utility locating service for all underground utilities outside the public R/W.

PART 2 – NOT USED

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect and maintain benchmarks and survey control points from disturbance during

construction. Replace if damaged to satisfaction of the OWNER and ENGINEER.

B. Provide erosion-control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties, walkways, roadways, and drives. Install items per the Storm Water Pollution Prevention Plan.

C. Locate and clearly flag trees and vegetation to remain or to be relocated. Refer to SWPPP plans for additional information.

D. Protect existing site improvements to remain from damage during construction.

1. Restore damaged improvements to their original condition, as acceptable to OWNER.

E. Comply with seasonal and permitting restrictions on when the Contractor may perform the clearing and grubbing operations.

3.2 TREE PROTECTION & REMOVAL

A. Tree removal is prohibited between April 1st and September 30th due to federally endangered Indiana Bat and Northern Long-Eared Bat which may have roosting habitats in the project area. All tree cutting work must be completed before the April 1st deadline and may not begin until after October 1st.

B. Remove all trees indicated on the Contract Documents to be removed, and their major roots existing within the area of new pavements and structures.

C. Areas designated to receive pavement or structures shall be grubbed a depth of 18-inches. Measure cut from existing ground surface or proposed ground surface.

D. Apply herbicide to remaining roots and vegetation to inhibit growth.

E. Depressions made by grubbing shall be filled with suitable material and compacted to conform to the original adjacent grades.

F. Erect and maintain a temporary fence around drip line of individual trees or around perimeter drip line of groups of trees to remain. Remove fence when construction is complete.

1. Do not store construction materials, debris, excavated material, or material stockpiling within drip line of remaining trees.
2. Do not permit vehicles, equipment, stored materials, temporary facilities, or foot traffic within drip line of remaining trees.

G. Except in areas to be excavated, stump holes and other holes from which obstructions are removed shall be backfilled with suitable material and compacted in accordance with the following:

1. All embankments, except rock embankments, shall be constructed using moisture and density control. All subgrade, except rock and shale in cut sections, shall be constructed using moisture control and density control.

H. Do not excavate within drip line of trees, unless otherwise indicated.

I. Where excavation for new construction is required within drip line of trees, hand clear and excavate to minimize damage to root systems. Use narrow-tine spading forks, comb soil to expose roots, and cleanly cut roots as close to excavation as possible.

1. Cover exposed roots with burlap and water regularly to prevent roots from dying out. Backfill with soil promptly.
2. Temporarily support and protect roots from damage until they are permanently relocated and covered with soil.
3. Coat cut faces of roots more than 1-1/2 inches in diameter with emulsified asphalt or other approved coating formulated for use on damaged plant tissues.
4. Cut minor roots and branches of trees indicated to remain in a clean and careful manner where such roots and branches obstruct installation of new construction in a manner approved by the Landscape Architect.
5. Use only hand methods for grubbing within drip line of remaining trees.

J. Repair or replace trees and vegetation indicated to remain that are damaged by construction operations, in a manner approved by the ARCHITECT, ENGINEER or OWNER.

1. Employ a qualified Arborist, licensed in jurisdiction where project is located, to submit details of proposed repairs and to repair damage to trees and shrubs.
2. Replace trees that cannot be repaired and restored to full-growth status, as determined by the qualified Arborist.

K. Protection of trees and shrubs scheduled to remain shall be assigned to the general CONTRACTOR and shall include tops, trunks and roots. Temporary tree protection fences are required because of proximity to the work. Tree protective fencing should be 6' high chain link (2" mesh) or safety orange mesh fencing. Any pruning required shall be with the approval and direction of the Landscape Architect. The general CONTRACTOR shall be responsible for the survival of protected trees for one (1) year after the construction project is substantially completed.

L. Low hanging branches and unsound or unsightly branches on trees or shrubs within the project area which are designated to remain shall be removed as directed. Branches of trees extending over the roadbed shall be trimmed to give a clear height of 20 feet above the pavement surface or as directed by the ARCHITECT and ENGINEER.

3.3 UTILITIES

A. Locate, identify, disconnect, and seal or cap off utilities indicated to be removed.

1. Verify that utilities have been disconnected and capped before proceeding with site clearing.
2. Arrange to shut off affected utilities with utility companies.

B. Existing utilities: do not interrupt utilities serving facilities occupied by OWNER or others unless permitted under the following conditions and then only after arranging to provide

temporary utility services according to requirements indicated:

1. Notify ARCHITECT, City and utility owner and ENGINEER in writing not less than two days in advance of proposed utility interruptions.
2. Do not proceed with utility interruptions without ARCHITECT, utility owner or City's and ENGINEER'S written permission.
3. The CONTRACTOR is to indicate in construction schedule any known utility interruption.

C. Excavate for and remove underground utilities indicated to be removed. Include capping/plugging abandon ends of pipes and backfilling pipes/conduits that are to be abandoned in place with low strength mortar or grout.

3.4 CLEARING, GRUBBING AND TOPSOIL REMOVAL

A. Remove obstructions, trees, shrubs, grass, and other vegetation to permit installation of new construction. Removal includes digging out stumps and obstructions, and grubbing roots. Strip all objectionable growth. Remove from the site all debris resulting from the stripping operations at frequent intervals to prevent accumulation of material. On-site disposal of material is not permitted.

1. Do not remove trees, shrubs, and other vegetation indicated to remain or relocated.
2. Completely remove stumps, roots, obstructions, and debris extending to a depth of 24 inches below exposed & final subgrade. Do not dispose of on-site.

B. In a time defined prior to the start of construction, fill depressions caused by clearing and grubbing operations with satisfactory soil material, unless further excavation or earthwork is indicated.

C. Place fill material in horizontal layers not exceeding 8-inch loose depth and compact each layer in accordance with requirements for engineered fill.

3.5 TOPSOIL STRIPPING

A. Strip topsoil to its full depth from entire area to be graded. Stockpile where directed by OWNER and where it will not interfere with construction activities. Install silt fence and/or silt sock round stockpile area. Topsoil to be reused shall be free from roots, brush and debris. Excess topsoil shall be deposited and/or spread on property as directed by the ARCHITECT/ENGINEER. Refer to Geotechnical report if available, and landscape drawings if available, and specifications for additional information.

B. If stockpiling on-site, remove sod and grass before stripping topsoil.

C. Strip topsoil to whatever depths are encountered in a manner to prevent intermingling with underlying subsoil or other waste materials.

1. Strip surface soil of unsuitable topsoil, including trash, debris, weeds, roots, and other waste materials.

D. Stockpile topsoil materials away from edge of excavations without intermixing with subsoil. Grade and shape stockpiles to drain surface water away. Cover stockpiles to prevent windblown dust.

1. Limit height of topsoil stockpiles to 72 inches.
2. Do not stockpile topsoil within drip line of remaining trees.
3. Dispose of excess topsoil as specified for waste material disposal.
4. Install and maintain silt fence around any topsoil stockpiles.

3.6 EXISTING SITE IMPROVEMENTS

A. Remove existing above-and below-grade improvements as indicated and as necessary to facilitate new construction.

B. Remove slabs, paving, curbs, gutters, buildings, foundations, utilities, and aggregate base as applicable.

1. Unless existing full-depth joints coincide with line of demolition, neatly saw-cut length of existing pavement to remain before removing existing pavement. Neatly saw-cut faces vertically.
2. If noted on the drawings address existing wells and septic systems abandonment and/or removal per local Health Department Requirements and Standards.
3. Wet down during the demolition operations to prevent dust from arising. Minimize spread of dust and airborne particles.
4. Raze, remove and dispose of all buildings and foundations, structures, fences, guardrails, old pavement, abandoned pipe lines, storage tanks, septic tanks, vaults and other obstructions any portions of which are within the limits of the project, except utilities and those items for which other provisions have been made for removal. All designated salvageable material shall be removed, without unnecessary damage in sections or pieces which may readily be transported and shall be stored and protected by the CONTRACTOR at specified places within the project limits.
5. Building demolition shall be performed per the Architect plans and specifications for building removal.

C. Underground Storage Tanks

1. Existing underground storage tanks encountered shall be removed by a certified UST removal contractor and reported to the state. If encountered on the project, contact an Environmental Engineer for further direction.

3.7 DISPOSAL

A. "Disposal": remove surplus soil material, unsuitable topsoil, obstructions, demolished materials, and waste materials, including trash and debris, and legally dispose of them off-site at a State certified construction debris or hazardous waste landfill.

1. Do not burn or bury removed materials on project site.

2. If hazardous materials are encountered during clearing operations, notify the ENGINEER for additional instructions. Comply with laws and ordinances concerning removal, handling and protection against exposure or environmental pollution.
3. In order to retard and prevent the spread of destructive insects limit the movement of regulated articles according to state Law.
4. Observe requirements for handling and transporting of regulated articles in quarantined areas as defined by state requirements.
5. Follow all federal and state requirements for quarantines and regulated articles.

END OF SECTION 31 10 00

SECTION 31 20 00 - EARTH MOVING

PART 1 - GENERAL

A. A Geotechnical Study and Report was not provided as part of the bid package.

1.1 WORK INCLUDES

A. Preparing sub grades for slabs-on-grade, walks, pavements, lawns, and plantings.

B. Aggregate base course for asphalt paving.

C. Subsurface drainage backfill for walls and trenches.

D. Engineered fill.

E. Base bids on excavating and filling with materials encountered at site except where special fill or backfill materials are specified herein or indicated on Drawings. No allowance or extra payments will be made by reason of variations in types of soil encountered or variations in their moisture contents. Furnish additional fill material required and included as a part of the work. Include removal of excess or objectionable materials as part of the work.

1.2 DEFINITIONS

A. Backfill: soil materials used to fill an excavation.

1. Initial Backfill: backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.

2. Final Backfill: backfill placed over initial backfill to fill an excavated area to final grade.

B. Base Course: layer placed between the sub-base course and asphalt paving.

C. Sub-base course: layer placed over the excavated sub-grade in a trench before laying pipe. Layer placed between the sub-grade and base course for asphalt paving, or layer placed between the sub-grade and a concrete pavement or walk.

D. Sub-grade: surface or elevation remaining after completing excavation, or top surface of a fill or backfill immediately below sub-base, drainage fill, or topsoil materials.

E. Borrow Soils: satisfactory soil imported from off-site for use as fill or backfill as approved by the Geotechnical Engineer.

F. Drainage Course: layer supporting slab-on-grade used to minimize capillary flow of pore water.

G. Excavation: removal of material encountered above sub-grade elevations.

1. Additional Excavation: excavation below subgrade elevations as recommended by the testing agency and approved by the OWNER/ENGINEER to reach specified compaction level. Additional excavation, replacement, and proof-roll unit costs are to be included in the base contract amount.

2. Bulk Excavation: excavations more than 10 feet in width and pits more than 30 feet in either length or width.

3. Unauthorized Excavation: excavation below sub-grade elevations or beyond indicated dimensions without direction by the testing agency and approved and directed by the OWNER/ENGINEER. Unauthorized excavation, as well as remedial work recommended by the testing agency and approved and directed by the OWNER/ENGINEER, shall be without additional compensation.

H. Fill Soils: suitable soil materials, as determined by the testing agency geotechnical engineer and the OWNER/ENGINEER, used to raise existing grades.

I. Shale: Laminated material, formed by the consolidation in nature of soil, having a finely stratified structure. For the purpose of these Specifications, the following bedrock types shall also be considered as shale: mudstone, claystone, siltstone and clay bedrock.

J. Rock: rock material in beds, ledges, unstratified masses, and conglomerate deposits and boulders of rock material exceeding 1 C.Y. for bulk excavation or 3/4 C.Y. for footing, trench, and pit excavation that cannot be removed by rock excavating equipment, without systematic drilling, ram hammering, ripping, or blasting, when permitted.

K. Structures: buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.

L. Utilities: Include on-site underground pipes, conduits, ducts, and cables, as well as underground services within buildings, as applicable.

M. Optimum Moisture: The water content at which the maximum density is produced in a soil as determined ASTM D698 (Standard Proctor), or field test strip.

N. Field Testing: Testing of fill and subgrade compaction shall be as directed by the OWNER/ENGINEER and performed by the testing agency.

O. Laboratory Dry Weight: The maximum laboratory dry weight shall be the weight provided by the Laboratory when the sample is tested in accordance with ASTM

D698.

1.3 SUBMITTALS

A. Product data for the following:

1. Notify and provide data to regulatory authorities and OWNER/ENGINEER prior to commencement of work.

2. Provide notice of: encounter with unknown utilities; subgrades before filling; areas requiring testing or inspection.

3. Materials Sources: Name of fill material source, location, date of sample, sieve analysis, and laboratory compaction characteristics.

4. Disposal Locations: Name and location of final destination for all materials hauled off site.

B. Material Test Reports: From a qualified testing agency indicating and interpreting test results for compliance of the following with requirements indicated:

1. Classification according to ASTM D2487 of each on site and borrow soil material proposed for fill and backfill.

2. Current laboratory compaction curve according to ASTM D698 for each on site and borrow soil material proposed for fill and backfill.

3. Field reports; in-place soil density tests.

4. One optimum moisture – maximum density curve for each type of soil encountered.

5. Report of actual unconfined compressive strength and/or results of bearing tests of each strata tested.

6. Test reports must be submitted daily to the Architect and Owner.

7. Water Content

C. Samples: for the following (if indicated by X below):

1. _X_30-lb samples sealed in airtight containers, of each proposed soil material from on-site or borrow sources and engineered fill materials delivered to geotechnical testing agency for running proctor tests. Document borrow material source(s) for each sample submitted. Documentation shall include name of source, location, date of sample, sieve & grain size analysis, soil characteristics, unit weight, and Std. Proctor laboratory compaction results at designated optimum moisture content.

1.4 QUALITY ASSURANCE & REPORTS

A. Reference Standards:

1. American Association of State Highway and Transportation Officials (AASHTO).

2. American Society for Testing and Materials (ASTM).

3. Ohio State Department of Transportation "Construction Materials Specifications", 2019 or current edition.

B. "Codes and Standards" - perform earthwork complying with requirements of authorities having jurisdiction.

C. Tolerances: As indicated herein.

D. "Geotechnical Testing Agency Qualifications" - an independent testing agency qualified according to ASTM E 329 to conduct soil materials and rock-definition testing, as documented according to ASTM D 3740 and ASTM E 548.

E. Soil testing service: The OWNER will engage a qualified independent testing agency to perform material evaluation tests for all geotechnical work specified herein. The testing agency shall provide the OWNER/ENGINEER a letter certifying soil material used and compaction results. All requested extra work and/or change orders based on existing soil conditions or tests of soils that do not meet the project specifications shall be approved and directed by the OWNER/ENGINEER.

F. Testing: Requirements as specified herein.

G. The testing agency shall provide results from field density testing during construction to OWNER/ENGINEER. Note material sampled and characteristics of soil. CONTRACTOR is to be advised immediately of tests failing to meet specifications. CONTRACTOR is solely responsible to correct deficiencies and to supply test and proof rolling results to Engineer in order to confirm suitability.

1.5 PROJECT CONDITIONS

A. Subsurface Conditions: Subsurface soils investigations have been made at the site.

B. Existing Utilities: do not interrupt utilities serving facilities occupied by OWNER others unless permitted in writing by OWNER/ENGINEER, and then only after arranging to provide temporary utility services according to requirements indicated:

1. Notify OWNER/ENGINEER not less than two days in advance of proposed utility interruptions.

2. Do not proceed with utility interruptions without OWNER/ENGINEER written permission.

3. The utilities protection service does not locate utilities outside public R/W's. The CONTRACTOR shall employ a qualified utility locating service for all underground utilities on the project.

4. Cut and cap, demolish, and completely remove from site existing underground utilities indicated to be removed in accordance with both City and utility provider requirements. Coordinate with utility companies to shut off services if lines are active. The Engineer may, with written approval, allow abandoned utilities greater or equal to 6" diameter, located under parking or buildings, to be completely filled with non-shrink grout or LSM.

5. Should uncharted, or incorrectly charted, piping or other utilities be encountered during excavation, consult Utility OWNER/ENGINEER immediately for directions. Cooperate with OWNER/ENGINEER and utility companies in keeping respective services and facilities in operation. Repair damaged utilities to the satisfaction of the Utility OWNER/ENGINEER and the utility owner representative.

1.6 PROTECTION

A. Safety: Provide protective measures necessary for the safety of workmen, to the public and adjacent property. Prevent cave-ins, collapse of walls, structures, and slopes, both on and adjacent to the site.

B. Standards: Comply with regulations of local authorities having jurisdiction, including all applicable O.S.H.A. requirements.

C. Repair: Includes the removal and replacement with new materials affected by settlement.

1.7 ENVIRONMENTAL CONDITIONS:

A. Do not apply soil treatment when temperature is at or below freezing or when ground is frozen or frost is expected.

B. Do not apply soil treatment when surface water is present.

1.8 EXISTING CONDITIONS:

A. Accept the site in the condition which it exists at the time of the award of the contract and perform all work to the grades indicated.

B. Protect plant material, lawns and other features not designated for removal.

C. Protect bench marks, existing structures, fences, sidewalks, paving and curbs from excavating equipment and vehicular traffic.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. General: provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.

B. Satisfactory Soil Materials:

1. Complying with American Association of State Highway and Transportation Officials (AASHTO) M145, soil classification Groups A-1, A-2-4, A-2-5, and A-3. Soil classification Group A-6 may be satisfactory if approved by the testing laboratory.

2. Complying with ASTM D 2487 soil classification groups GW, GP, GM, SW, SP, AND SM, or a combination of these group symbols; free of rock or gravel larger than 3 inches in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter. CL can be used if approved by the geotechnical testing agency engineer and approved by the OWNER.

3. Compacted fill and backfill shall be free of deleterious matter such as frozen materials, organics, wood, debris, or rock larger than 4 inches.

4. All material shall have a liquid limit and plasticity index not exceeding 40 and 15 respectively when tested in accordance with ASTM D-4318.

5. The minimum dry unit weight shall not be less than 110 PCF maximum dry density as determined by ASTM D-1557 (Modified Proctor).

6. All fill and backfill materials shall be obtained from on site or from off-site sources and shall be approved by the Geotechnical Engineer prior to placement.

7. Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.

C. Unsatisfactory Soils:

1. ASTM D 2487 soil classification groups GC, SC, MH, CH, OL, OH, and PT, or a combination of these group symbols.

2. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.

3. Unsatisfactory soil materials are those defined in AASHTO M145 soil classification Groups A-2-6, A-2-7. A-4, A-5, and A-7; also, peat and other highly organic soils. Material that fails to meet requirements for suitable materials; or contains any of the

following:

a. Organic clay, organic silt, or peat; as defined in ASTM D2487.

b. Vegetation, wood, roots, leaves, or organic, degradable material.

c. Stones or rock fragments over six inches in any dimension.

d. Porous biodegradable matter, excavated pavement, construction debris, rubbish, or refuse.

e. Ice, snow, frost, or frozen soil particles.

f. Slag.

D. General Fill: Suitable, unclassified soils.

E. Structural Fill: Suitable material that is classified by the Unified Soil Classification System (USCS) in accordance with ASTM D2487 as GW, GP, GM, SW, SP, SM, or if approved CL. Verify that the largest particles in the fill are no greater in dimension than one-half the thickness of the compacted lift thickness.

1. Representative samples of the proposed fill materials should be collected at least one week prior to the start of the filling operations. The samples should be tested to determine the maximum dry density, optimum moisture content, particle size distribution and plasticity characteristics. These tests are needed to determine if the material is acceptable as structural fill and for quality control during the compaction process.

2. All on site material that is stockpiled and designated to be used as Structural Fill shall be field tested and evaluated by the testing agency Geotechnical Engineer to determine if it meets the requirements ODOT and the additional requirements as set forth in this section. Written acceptance from the testing agency and owner shall be obtained prior to be accepted as Structural Fill.

3. The fill should be placed in layers of not more than 8 inches in thickness, with each layer being compacted to a minimum density of 100 percent of the maximum dry density and within ± 2% of the optimum moisture content, as determined by the Standard Proctor Method ASTM D-698. Moisture control (increasing or decreasing the natural moisture content) of the engineered fill materials may be necessary for compaction.

4. Rock, shale and boulders is prohibited from being used as structural fill and shall be hauled and disposed of offsite.

5. Silt shall not be used as fill in new pavement or building areas.

6. The Structural Fill shall not be in a frozen condition during placement and should not

be placed on a frozen subgrade.

F. Granular Engineered Fill: naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 90 percent passing a 1-1/2-inch sieve and not more than 12 percent passing a no. 200 sieve.

1. Engineered fill materials should consist of non-expansive materials. Pyritic and/or potentially expansive materials, such as mine tailings and slag should not be used as engineered fill material. Materials selected for use as engineered fill shall be properly moisture conditioned, inorganic and free of organic matter, cobbles, boulders, waste construction debris, or other deleterious materials.

2. Fill materials shall have a Standard Proctor maximum dry density greater than 110 pounds per cubic foot (pcf), an Atterberg Liquid Limit less than 40, a Plasticity Index of less than 15, organic content less than 1% and a maximum particle size of 2 inches or less.

G. Drainage fill:

1. Washed, narrowly graded mixture of crushed stone, or crushed or uncrushed gravel, (ASTM D 448 Coarse - aggregate grading size 57), with 100% passing of 1-1/2" sieve and not more than 5% passing a No. 8 sieve. Aggregate shall meet MSHA specification for No. 6 aggregate. Provide by CONTRACTOR from off- site source.

2. Aggregates used for subsurface storm water storage, underdrains, or storm sewer backfill shall be washed limestone, washed gravel, or river rock. The aggregates shall be 100 percent crushed in all cases.

H. Backflow at Below Grade Walls

1. Provide a 24" wide zone of free draining gravel behind all below grade.

I. Pavement Backfill:

1. Base: material shall comply with the requirements of ODOT Section 304 Aggregate Base Course.

2. Sub Grade Preparation: material shall comply with the requirements of ODOT Section 203 and Section 204, Aggregate Base.

J. Backfill for Utilities:

1. See Section 31 23 33 Trenching and Backfill

K. Filter Material: narrowly graded mixture of natural or crushed gravel, or crushed stone and natural sand; ASTM D 448; coarse-aggregate grading size 67; with 100 percent passing a 1- inch sieve and 0 to 5 percent passing a no. 4 sieve.

L. Impervious Fill:

1. Where noted on plans): clayey gravel and sand mixture capable of compacting to a dense state at optimum moisture content. In special instances the Engineer may recommend the use of bentonite clay or an impervious (EDPM or approved equal) material. Special instances are not included in base bid.

M. Top Soil:

1. Clean natural topsoil free of vegetation, debris and other deleterious matter, and approved by OWNER/ARCHITECT or ENGINEER Representative. Upper 6 inches of topsoil stripped may be used, if suitable, otherwise use imported, screened, loose, fertile, friable, free of grass, brush, roots and rocks > 1-1/2" diameter, loamy soil possessing characteristics representative of productive growing soils in the area.

N. Drainage Fabric, Separation Fabric, Erosion Control Blankets and Erosion Control Fiber Mesh

1. See Section 31 32 19 Geotextile Fabric PART 3

PART 3 - EXECUTION

3.1 PREPARATION

A. Verify existing ground surfaces have been stripped of topsoil, root mat and existing pavement, unsatisfactory soils, concrete spoil, obstructions and deleterious material.

B. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.

C. Protect sub-grades and foundation soils against freezing temperatures or frost. Provide protective insulating materials as necessary.

D. Provide erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties, walkways, and roadways.

E. Protect trees, shrubs, lawns, rock out-croppings, and other features remaining as a portion of final landscaping.

F. Protect benchmarks/project control, existing structures, fences, sidewalks, paving, and curbs from equipment and vehicular traffic.

G. Protect above and below grade utilities which are to remain.

H. Protect excavations by shoring, bracing, sheet piling, underpinning, or other methods required to prevent cave-in or loose soil from falling into excavation. Monitor shoring system and surrounding ground surface during construction to detect movement. If movement becomes significant, take contingency steps to brace excavation and adjacent utility lines.

I. Notify OWNER/ARCHITECT or ENGINEER Representative of unexpected subsurface conditions and discontinue work in affected area until notified to resume work.

J. Grade excavation top perimeter to prevent surface water run-off into excavation.

K. Material cut or excavated from building areas which is suitable for backfilling may be stored on site to be distributed later.

L. Remove unsuitable and/ or excess material from site immediately.

M. Establish extent of excavation by area and elevation; designate and identify datum elevation.

N. Set required lines and levels.

O. Maintain bench marks, project control monuments, and other reference points. Relocate if necessary and reference all benchmarks to remain so that it can be reestablished if disturbed.

P. Before starting excavation, establish location and extent of underground utilities occurring in work area.

Q. Notify utility companies to remove and relocate lines which are in way of excavation. Maintain, reroute or extend as required, existing utility lines to remain which pass through work area.

R. Protect utility services uncovered by excavation.

S. Upon discovery of unknown utility or concealed condition, discontinue affected work and notify OWNER/ ENGINEER representative immediately.

3.2 DEWATERING

A. Prevent surface water and ground water from entering excavations, from ponding on prepared sub-grades, and from flooding project site and surrounding area. Unsuitable soils as a result of improper dewatering are to be removed and replaced at the General CONTRACTOR's expense.

B. Protect sub-grades from softening, undermining, washout, and damage by rain or water accumulation. Unsuitable soils as a result of improper sub-grade protection are to be

removed and replaced at the CONTRACTOR's expense.

1. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches.

2. Install a dewatering system or drainage trench, when necessary to keep sub- grades dry and convey ground water away from excavations in accordance with the recommendations of the geotechnical report. Maintain system until dewatering is no longer required.

3. Prevent surface water and subsurface or ground water from flowing into excavations and from flooding Project site and surrounding area.

4. Do not allow water to accumulate in excavations.

5. If presence of subsurface water is encountered during excavation, provide interior drainage.

6. Remove water to prevent softening of foundation bottoms, undercutting footings, and soil changes detrimental to stability of subgrades and foundations.

7. Establish and maintain temporary drainage ditches and other diversions outside excavation limits to convey rain water and water removed from excavations to collecting or run-off areas.

3.3 EXPLOSIVES

A. The use of explosives is prohibited.

3.4 EXCAVATION, GENERAL

A. Unclassified excavation: excavation to, and beyond, sub-grade elevations as necessary to reach specified compaction level, regardless of the character of surface and subsurface conditions encountered, including rock, soil materials, and obstructions. Unclassified excavated material may include rock, soil materials, and obstructions. Changes in the contract sum or the contract time will be authorized in writing by the OWNER/ENGINEER for excavation or removal of unclassified material.

B. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials as directed and approved by testing agency geotechnical engineer and the OWNER/ENGINEER.

C. Replacement of soils shall be included in both the contract time and contract sum. No adjustments shall be authorized to either component for such occurrences.

D. Verify areas to be backfilled are free of debris, snow, ice or water, and ground surfaces are not frozen.

A. Proof roll exposed subgrade in building and paving areas with 20 cu. yd. (min.) fully loaded dump truck or similar acceptable construction equipment, to detect unsuitable soil conditions. Commence proof rolling operations after a suitable period of dry weather to avoid degrading acceptable subgrade surfaces. Make 8 passes over each section with proof rolling equipment, with the last 4 passes perpendicular to the first 4 passes. Testing agency geotechnical engineer and the representative must be present for proof roll.

E. Cut out soft areas of subgrade not readily capable of in-situ compaction. Backfill and compact to density equal to requirements for suitable backfill material. Refer to Section 2.0.

F. Site backfill systematically, as early as possible, to allow maximum time for natural settlement. Do not backfill over porous, wet or spongy subgrade surfaces.

G. Stability of Excavations: Slope sides of excavations to comply with local codes and ordinances having jurisdiction. Shore and brace where sloping is not possible because of space restrictions or stability of materials excavated.

1. Maintain sides and slopes of excavations in safe conditions until completion of backfilling.

H. Shoring and Bracing: Provide materials for shoring and bracing, such as sheet piling, uprights, stringers, and cross-braces, in good serviceable condition.

1. Establish requirements for trench shoring and bracing to comply with local codes and authorities having jurisdiction.

2. Maintain shoring and bracing in excavations regardless of time period excavations will be open. Carry down shoring and bracing as excavation progresses.

3.5 EXCAVATION FOR STRUCTURES

A. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1 inch.

B. Extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, and for inspections.

1. Excavations for footings and foundations: do not disturb bottom of excavation. Excavate by hand to final grade just before placing concrete reinforcement. Trim bottoms to required lines and grades to leave solid base to receive other

work.

2. Excavation for underground tanks, basins, and mechanical or electrical utility structures: excavate to elevations and dimensions indicated within a tolerance of plus or minus 1 inch. Do not disturb bottom of excavations intended for bearing surface. Extend excavation sufficient distance from footings and foundations to permit placing and removal of concrete formwork, installation of services, other construction, and for inspection.

3. Refer to geotechnical report for additional recommendations.

4. Locate and mark existing underground utilities and services before beginning structural excavation.

5. Provide excavation for structures and footings, as required for construction, bracing and removal of forms, applying waterproofing, and to permit inspection.

6. Machine slope banks to angle of repose or less until shored. Do not allow excavation to interfere with normal 45 degrees angle bearing splay of any foundation.

7. Ensure bottom of excavation is reasonably level.

8. Maintain excavations in as near their natural moisture conditions as possible.

9. Fill over-excavated areas under structure bearing surfaces in accordance with testing agency geotechnical engineer direction.

10. Do not allow construction equipment to create "pumping" of soils.

11. Remove boulders or cobbles.

3.6 EXCAVATION FOR WALKS AND PAVEMENTS

A. Excavate surfaces under walks and pavements to indicated cross sections, elevations, and grades.

B. Where rock or concrete spoil is encountered, carry excavation 18" below subgrade and backfill with suitable material approved by the testing agency geotechnical engineer and the OWNER/ENGINEER.

3.7 EXCAVATION FOR UTILITY TRENCHES

A. See Section 31 23 23 Trenching and Backfill.

3.8 APPROVAL OF SUB-GRADE

B. Notify testing agency when excavations have reached required sub-grade.

C. If testing agency determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed with written approval of testing agency geotechnical engineer and the OWNER.

1. Additional excavation and replacement material included in the CONTRACTOR's sum will be addressed either by unit price or allowance.

D. Proof roll sub-grade with fully loaded, 20 yd (min.) tandem dump truck to identify soft pockets and areas of excess yielding. Do not proof roll wet or saturated sub-grades. The testing agency geotechnical engineer must be present for proof roll.

E. Reconstruct sub-grades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as recommend by the testing agency geotechnical engineer and and directed by OWNER/ENGINEER.

3.9 UNAUTHORIZED EXCAVATION

A. Unauthorized excavation consists of removal of materials beyond indicated subgrade elevations or dimensions without specific direction of the testing agency geotechnical engineer and the OWNER/ENGINEER.

B. Unauthorized excavation, as well as remedial work directed by the testing agency geotechnical engineer and the OWNER/ENGINEER shall be at CONTRACTOR's expense.

C. Fill unauthorized excavation under foundations or wall footings by extending bottom elevation of concrete foundation or footing to excavation bottom, without altering top elevation. Lean concrete or LSM fill may be used when approved by the testing agency geotechnical engineer and the OWNER/ENGINEER.

1. Fill unauthorized excavations under other construction or utility pipe as directed by the testing agency geotechnical engineer and the OWNER/ENGINEER.

2. Consists of material removal beyond indicated subgrade elevations or dimensions without specific direction of the testing agency geotechnical engineer and the OWNER/ENGINEER.

3. Correct unauthorized excavation, as well as remedial work as directed by the testing agency geotechnical engineer and the OWNER/ENGINEER, at no additional cost to OWNER.

4. Backfill and compact other unauthorized excavations as specified for authorized excavations of same classification, unless otherwise directed by the testing agency geotechnical engineer and the OWNER/ENGINEER.

3.10 ADDITIONAL EXCAVATION:

A. When excavation has reached required subgrade elevations, notify soils testing laboratory for examination of conditions.

B. If unsuitable bearing materials are encountered at required subgrade elevations, excavate deeper and replace excavated material as directed by soils testing laboratory.

C. Removal of unsuitable material and its replacement as directed will be paid on basis of Contract conditions relative to changes in Work. Proof rolling is to be included.

3.11 COLD WEATHER PROTECTION

A. Protect excavation bottoms against freezing when atmospheric temperature is less than 35 degrees F. (1-degree C.).

3.12 STORAGE OF SOIL MATERIALS

A. Stockpile borrow materials and satisfactory excavated soil materials when and where directed by the testing agency geotechnical engineer and the OWNER/ENGINEER. Stockpile soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water away. Cover stockpiles to prevent windblown dust.

1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

2. Prevent saturation of soil above the optimum moisture content.

3. Install silt fence/ silt sock around periphery of any topsoil stockpiles

3.13 BACKFILL

A. Place and compact backfill in excavations promptly, or within time as specified by the Contract Documents, but not before completingthe following:

1. Construction below finish grade including, where applicable, damp proofing, waterproofing, and perimeter insulation.

2. Surveying locations of underground utilities for record documents.

3. Inspecting and testing underground utilities.

4. Concrete and masonry have cured 28 days and is adequately braced.

5. Removing concrete formwork.

6. Removing trash and debris.

7. Removing temporary shoring and bracing, and sheeting.

8. Installing permanent or temporary horizontal bracing on horizontally supported walls.

3.14 FILL

A. Preparation: remove vegetation, topsoil, debris, unsatisfactory soil materials, obstructions, and deleterious materials from ground surface before placing fills.

B. Plow, scarify, bench, or break up sloped surfaces steeper than 8 H to 1 V so fill material will bond with existing material. Bench into the existing slope per ODOT Document GB2 Special Benching and Side fill Embankment Fills and in addition as follows:

a. Scalp the existing slope according to ODOT Item 201.
b. Cut horizontal benches in the existing slope to a sufficient width to blend the new embankment with the existing embankment and to accommodate placement, and compaction operations and equipment.
c. Bench the slope as the embankment is placed and compact in layers.
d. Begin each bench at the intersection of the existing slope and the vertical cut of the previous bench. Recompact the cut materials along with the new embankment.

C. Place and compact fill material in layers to required elevations at locations as follows:

1. Under grass and planted areas, use satisfactory screened topsoil.

2. Under walks and pavements, ODOT 304 Aggregate Base and if subgrade is deficient provide engineered fill. Extend five (5) beyond the pavement edge and shall include the support slopes to their full width.

3. Under steps and ramps, use structural fill.

4. Under building slabs, use structural fill unless noted otherwise on structural drawings. Extend five (5) beyond the building edge and shall include the support slopes to their full width.

5. Under footings and foundations, use structural fill unless noted otherwise on structural drawings.

6. Drainage fill material shall be proof rolled to a uniform stable condition prior to placement of vapor retarder.

7. Do not place fill on frozen ground

3.15 MOISTURE CONTROL

A. Uniformly moisten or aerate sub-grade and each subsequent fill or backfill layer before compaction to within 2 percent of optimum moisture content.

1. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.

2. Remove & replace, or scarify & air-dry, otherwise satisfactory soil material that exceeds optimum moisture content by 2 % and is too wet to compact to specified dry unit weight

3.16 COMPACTION OF BACKFILLS AND FILLS

A. Place backfill and fill materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.

B. Place backfill and fill materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure. Take care to prevent wedging action of backfill against structures by carrying material uniformly around structure to approximately same elevation in each lift.

C. Compact soil to not less than the following percentages of maximum dry unit weight according to Std. Proctor test ASTM D 698.

1. Unless specified elsewhere in the Geotechnical Report, under structures, building slabs and steps the compaction should be a minimum of 100 percent of the optimum density.

2. Under walkways, scarify and re-compact top 6 inches below subgrade and compact each layer of backfill or fill material at 98 percent (Standard Proctor).

3. Under lawn or unpaved areas, scarify and re-compact top 6 inches below sub- grade and compact each layer of backfill or fill material at 95 percent.

4. Top 12" of sub-grade under roadways, drives, parking areas, foundations, backfill, footings, pads, paved pedestrian walks and courts, loading docks and paving primarily for vehicle traffic, the compaction shall be a minimum of 100 percent.

3.17 SUB-BASE AND BASE COURSES

A. Under pavements and walks, place sub-base course on prepared sub-grade and as follows:

1. Place base course material over sub-base.

2. Compact sub-base and base courses at optimum moisture content to required grades, lines, cross sections, and thickness to not less than 100 percent of maximum dry unit weight according to ASTM D 698 (standard proctor).

3. Shape sub-base and base to required crown elevations and cross-slope grades.

4. When thickness of compacted sub-base or base course is 6 inches or less, place materials in a single layer.

5. When thickness of compacted sub-base or base course exceeds 6 inches, place materials in equal layers, with no layer more than 6 inches thick or less than 3 inches thick when compacted.

B. Pavement shoulders: place shoulders along edges of sub-base and base course to prevent lateral movement. Construct shoulders, at least 60 inches wide, of satisfactory soil materials and compact simultaneously with each sub-base and base layer to not less than 100 percent of maximum dry unit weight according to ASTM D 698.

3.18 GRADING

A. See Section 31 22 00 Grading

3.19 PROTECTION

A. Protecting graded areas: protect newly graded areas from traffic, freezing, and erosion. Keep all areas graded to drain, free of ruts, ponding water, trash, and debris. CONTRACTOR is to pump off all ponding water immediately. Keep free of trash and debris.

B. Repair and reestablish grades to specify tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.

1. Scarify or remove and replace soil material to depth as directed by Engineer; reshape and re-compact.

C. Where settling occurs before project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.

1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to the greatest extent possible, as satisfactory to the OWNER/ENGINEER.

D. Protect areas with slopes exceeding 3 H to 1 V with erosion-control fiber mesh and with erosion-control blankets installed and stapled according to

manufacturer's written instructions.

E. Unless noted otherwise, protect areas with slopes not exceeding 3 H to 1 V by spreading straw mulch. Spread uniformly at a minimum rate of 2 tons/acre to form a continuous blanket 1-1/2 inches in loose depth over seeded areas. Spread by hand, blower, or other suitable equipment.

Anchor straw mulch by crimping into topsoil with suitable mechanical equipment, use tackifier, or erosion control netting. Maintain during construction

3.20 FIELD QUALITY CONTROL

A. Testing agency: The OWNER will engage a qualified independent Geotechnical Engineering testing agency to perform field quality-control testing/compliance.

B. Allow testing agency to inspect and test sub-grades and each fill/backfill layer. Proceed with subsequent earthwork only after field test results for previously completed work comply with requirements.

C. Footing Sub-grade: at footing sub-grades, at least one test of each soil stratum will be performed to verify design bearing capacities. Subsequent verification and approval of other footing sub-grades may be based on a visual comparison of sub-grade with tested sub-grade when approved by the Geotechnical Engineer.

D. Testing agency will test compaction of soils in place according to ASTM D 698, ASTM D 1556, ASTM D 2167, ASTM D 2922, and ASTM D 2937, as applicable. Tests will be performed at the following locations and frequencies:

1. Paved and building slab areas: at sub-grade and at each compacted fill and backfill layer, at least one test for every 2,000 S.F. or less of paved area or building slab, but in no case fewer than three tests. In each compacted fill layer, make one field density test for every 2,000 sq. feet of overlaying building slab or paved area, but in no case less than 2 tests. Field density tests shall be made at all walkway entrances and ramps into the proposed building.

2. Foundation wall backfill: at each compacted backfill layer, at least one test for each 100 feet or less of wall length, but no fewer than two tests.

3. Trench backfill: at each compacted initial and final backfill layer, at least one test for each 150 feet or less of trench length, but no fewer than two tests.

4. Footing Subgrade: For each strata of soil on which footings will be placed, conduct at least one test to verify required design bearing capacities. Subsequent evaluation and approval of each footing subgrade should be performed by Geotechnical Testing Agency.

5. Lawns, athletic fields and areas receiving topsoil: Perform field density tests on a spot-check basis to assist the CONTRACTOR in determining if compaction is in accordance with the specifications.

E. When testing agency reports that sub-grades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten, aerate, or remove and replace soil to depth required; re-compact and retest until specified compaction is obtained.

3.21 TESTING AND INSPECTION

A. INSPECTION AGENCY: Inspect and test construction of embankments, fills, backfills, trenches, and subgrades and report to the OWNER/ENGINEER conformance in all particulars to specification requirements.

B. Scheduling:

1. Assign qualified personnel to be on site at all times when operations are scheduled.

2. The CONTRACTOR should note that no earthwork operation shall be permitted in their absence.

C. Responsibilities:

1. Evaluation of subgrade preparation and suitability.

2. Moisture content and field density tests on all layers of fill and backfill material placed.

3. Evaluation of degree of compaction attained for all fill and backfill material placed.

4. Testing and evaluation of borrow material.

5. Sources of borrow and of select fill.

6. Footing subgrade suitability.

7. Inspection of installation of subdrainage system.

D. Results of Tests:

1. Make results available to the OWNER/ENGINEER immediately upon completion of areas of layers.

E. Final Report: The Geotechnical Testing Agency shall prepare a written report

that summarizes the work inspected during the course of the project. A discussion of all deviations from the contract documents and specifications, with their related impact on the final construction, shall be described in detail. The engineer of record shall review this final report and recommend corrective measures (as deemed necessary) that must be made prior to final acceptance of the work. Prior to final payment, a written report certifying that the work meets the requirements of the contract documents, specifications, and all governing agencies shall be prepared, submitted, and approved by the ENGINEER.

3.22 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Disposal: remove surplus satisfactory soil and waste material, including unsatisfactory soil, trash, and debris, and legally dispose of it off-site.

1. Do not burn or bury removed materials on project site.

2. If hazardous materials are encountered during clearing operations, notify the Engineer for additional instructions. Comply with laws and ordinances concerning removal, handling and protection against exposure or environmental pollution.

END OF SECTION 31 20 00

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SECTION 31 22 00 - GRADING

PART 1 – GENERAL

1.1 WORK INCLUDED

A. This section includes the following.

1. Rough Grading
2. Finish Grading
3. Stockpiling of topsoil and subsoil
4. Disposal of unsuitable and excess materials

1.2 DEFINITIONS

A. "Topsoil": natural or cultivated surface-soil layer containing organic matter and sand, silt, and clay particles; friable, pervious, and black or a darker shades of brown, gray, or red than underlying subsoil; reasonably free of subsoil, clay lumps, and other objects more than 1-1/2 inches in diameter; and free of weeds, roots, and other deleterious materials.

1.3 SUBMITTALS

A. For projects with storm water management systems provide final As Built survey and letter certifying storm water detention, retention, bio-retention cells have been constructed to the plan dimensions shown on the plans.

1.4 QUALITY ASSURANCE

A. Pre-installation conference: Conduct conference at project site PART 2

PART 2 – PRODUCTS

2.1 NA

PART 3 – EXECUTION

3.1 EXAMINATION

A. Verify survey benchmarks and intended elevations of work.

B. Verify all Storm Water Pollution Prevention Plans erosion control measures have been installed correctly prior to commencing work.

C. Immediately notify the if suspected hazardous materials are encountered and cease operations in that area.

D. Identify areas loosened by frost action, softened by flowing or weather, or containing unsuitable materials.

3.2 PREPARATION

A. Remove material loosened by frost action, softened by flooding or weather, or containing unsuitable material. Replace and compact to same requirements as for specified fill in Section 31 20 00 EARTH MOVING.

B. Stake and flag all known utility locations.

C. Identify required lines, levels, grades and benchmarks/datum's.

D. Locate and protect all above ground and below ground utilities, structures, signage, landscaping, light poles, poles and other item.to remain.

E. Notify all private utility owners of work near their facilities.

3.3 GENERAL

A. Uniformly grade areas to a smooth surface, free from irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.

1. Provide a smooth transition between adjacent existing grades and new grades.

2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.

3.4 EROSION CONTROL

A. All erosion control must comply with:

1. Ohio Rainwater and Land Development Manual and the projects Storm Water Pollution Prevention Plans.

2. Protect areas with slopes exceeding 3H to 1V with erosion-control fiber mesh and with erosion-control blankets installed and stapled according to manufacturer's written instructions.

3. Unless noted otherwise, protect areas with slopes not exceeding 3H to 1V by spreading straw mulch. Spread uniformly at a minimum rate of 2 tons/ acre to from a continuous blanket 1-1/2" in loose depth over a seeded area. Spread by hand, blower, or other suitable equipment.

3.5 ROUGH GRADING

A. During all grading work the CONTRACTOR shall provide positive drainage across the site to the temporary storm water facilities.

B. Topsoil remove and stockpile

1. Strip all topsoil from areas that are to be excavated, landscaped, graded, or to have a structure built on it.

2. Do not strip topsoil when wet or during inclement weather such as rain or snow.

3. Separate all organic matter such as root zones, trash debris etc. from topsoil. Dispose of organic material off-site.

4. Provide an area on site to stockpile the topsoil for future use on site or to be hauled away. Provide silt fence around the stockpile area. Keep topsoil away from other site soils.

C. Subsoil removal and stockpiling

1. Remove subsoil from areas that are to be excavated, landscaped, graded, or to have a structure built on it. See project Geotechnical Report for topsoil depth.

2. Do not strip subsoil when wet or during inclement weather such as rain or snow.

3. Provide an area on site to stockpile the topsoil for future use on site or to be hauled away. Provide silt fence around the subsoil area. Keep subsoil away from other site soils.

D. Rough grade lawn area to a maximum of 4 H to 1 V. Steeper grades will require ground cover planting. Provide roundings at top and bottom of banks and at breaks in grade.

E. Benching Slopes: All slopes that are steeper than 4H to 1V shall be benched horizontally to key the fill material into the slope for firm bearing and stability.

F. Stability: Any damaged or displaced subsoil shall be replaced to the same requirements as called for in Section 31 20 00 Earth Moving.

G. Disc level surfaces.

H. Rough grade the site to achieve lines and grades indicated with allowances for imported fill thickness.

I. Provide positive drainage from all buildings per the slope and grades show on the Site Grading Plan.

3.6 FINISH GRADING

A. Prior to commencing with finish grading perform the following:

1. Verify the subgrade prior to the placement of soil is properly contoured to the

elevations shown on the plans and compacted per the requirements of Section 31 20 00 Earth Moving

2. Verify that all backfill has been accepted and approved.

B. Fine grade the site to the final plan elevations shown on the Grading Plan. All uneven areas and depressions shall be corrected to allow for positive drainage. Follow the profile of the subgrade and bring to the final elevations as shown on the plans.

C. Scarify sub-grade to a minimum depth of 5 inches before placement of topsoil. Remove all waste material.

D. Minimum depth for compacted screened topsoil shall be 6 inches for grass and adequate depth for other planting materials.

E. Protect newly graded areas from the elements. Repair all settlement and erosion and re-establish grades to the required elevations prior to acceptance.

F. If unstable soil or subgrade is encountered during construction the CONTRACTOR shall notify the OWNER/ARCHITECT or ENGINEER to approve corrective actions.

1. If approved, the CONTRACTOR shall remove some or all of the unstable soil, place synthetic fabric and over material, or place aggregate refill, the finish graded section using approved material and compacted per Section 31 20 00 Rough Grading.

2. The CONTRACTOR shall coordinate this work with the OWNER/ARCHITECT or ENGINEER in way that final measurements of the corrective measures taken can be measured and quantified.

3.7 STOCKPILING

A. As part of the Site Clearing Plan called for in Section 31 20 00 Site Clearing provide an area on site to stockpile topsoil and excavated subsoil. Do not place the stockpiles over existing or new utilities unless approval is granted by the OWNER/ARCHITECT or ENGINEER.

B. Provide positive drainage away from stockpile to prevent ponding or flooding of project area. Direct all drainage to temporary storm water facilities.

C. The topsoil and subsoil stockpile shall be sloped no steeper than 2H:!V and at a maximum height of eight (8) feet,

D. Provide silt fence around stockpile and immediately stabilize dormant stockpiles within seven (7) days per the specifications as shown on the projects Storm Water Pollution Prevention Plans. Dormant is considered any stockpile not actively used for more than thirty (30) days.

3.8 EXCESS MATERIAL

A. Dispose of extra or unsuitable topsoil or subsoil material off-site.

3.9 TOLERANCES

A. Excavations and Embankment work shall be performed and conform to the projects Grading Plan and if available cross sections and profiles. All work shall conform to the tolerances within this section. The CONTRACTOR shall understand and satisfy themselves as to the nature and distribution of the materials that they excavate.

B. The CONTRACTOR shall verify their work with templates, slope boards or other approved devices accepted by the industry and to the satisfaction of the OWNER/ARCHITECT or ENGINEER.

C. The following are the accepted tolerances that work shall conform to:

1. For cut and fill slopes deviations of ½ inch measured in a horizontal plane will not be permitted and will need corrective actions.

2. Shoulders and ditches, the horizontal measurements from the centerline shall not be less than the plan dimensions, and the elevations thereof shall not be higher than specified, but may vary not more than ½ inch below the established grades.

3. Subgrades surface shall in no location vary more than ½-inch from a ten foot straight edge applied to the surface parallel to the centerline of pavement, nor more than ½-inch form subgrade elevation established by construction layout stakes.

4. Finished Grade shall be installed within ½-inch from plan elevation shown on the Grading Plans.

3.10 CLEANING

1. Once finish grading has occurred leave all areas clean and raked, ready to receive grass seed or landscaping.

END OF SECTION 31 22 00

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SECTION 31 23 33 - TRENCHING AND BACKFILL

PART 1 – GENERAL

1.1 WORK INCLUDED

A. This section includes the following.

1. Underground utility trench excavation and safety

2. Backfill materials and placement for underground utilities

3. Utility identification marking tape and trace wire

1.2 DEFINITIONS

A. Percent Compaction or Compaction Density: The field density of compacted material, expressed as a percentage of maximum dry density.

B. Field Dry Density of Field Density: In-place density as determined by ASTM D1556 (Sand Cone Method), ASTM D 2167 (Rubber Balloon Method), or ASTM D 6938 (Nuclear Method).

C. Maximum Dry Density: Laboratory density as determined by ASTM D698 (Standard Proctor) and occurring at the optimum moisture content of the soil being tested.

D. Pipe Embedment: Comprised of the following or combination of:

1. Foundation: Required only when the native trench bottom does not provide a firm working platform or the necessary uniform and stable support for the installed pipe.

2. Bedding: The zone between the bottom of trench and the bottom of pipe. Provides a firm, stable and uniform support of the pipe.

3. Haunching: Zone from the bottom of the pipe to the springline of the pipe.

4. Initial Backfill: From the top of the bedding or foundation layer to six (6) inches above the top of pipe, unless otherwise noted on the Construction Document trench details. Also, known as pipe cover.

5. Final Backfill: After the initial backfill or pipe cover to the final surface or the pavement subgrade.

6. Backfill: Both initial and final backfill.

1.3 SUBMITTALS

A. Provide material for pipe bedding, initial and final backfill including the following:

1. Name of Source
2. Location
3. Date of Sample
4. Sieve Analysis
5. Laboratory Compaction Characteristics

B. Where submittals review format, whether hard copy or software based, includes pre-determined language that includes the word "approved", the following shall apply:

1. "Approved" shall be defined as "Reviewed, No Exceptions Taken".
2. "Approved as Noted" shall be defined as "Reviewed, Exceptions as Noted".

1.4 QUALITY ASSURANCE

A. The CONTRACTOR shall compact all backfill material in accordance with the specifications of the pipe manufacturer.

B. The OWNER shall provide quality control acceptance field testing services of compacted backfill material, unless otherwise noted. The testing agency shall provide the OWNER/ARCHITECT and ENGINEER a letter certifying compaction results.

1.5 DELIVERY SOTRAGE AND HANDLING

A. If the trench detail calls for geotextile fabric it shall be protected from sunlight's ultraviolet rays during transportation and storage. Do not leave geotextile fabric exposed to sunlight's ultraviolet rays for more than five (5) days during installation.

B. Do not leave PVC piping exposed to sunlight's ultraviolet rays for more than five (5) days during installation, transportation, or storage.

PART 2 – PRODUCTS

2.1 BACKFILL MATERIALS

A. Trench bedding and Initial Backfill for the following pipes and fittings shall follow the pipe manufactures recommendations, the Trench detail shown on the Construction Documents. Where discrepancies occur Trench details on plan govern for material.

B. The following are pipe bedding and cover requirements:

1. Reinforced Concrete Pipe and Fittings

   a. Bedding shall consist of coarse interlocking aggregate No. 57, 6, 67, 68, 7, 78, or 8 stone for 60-inch or smaller pipe. For 66-inch or larger diameter pipe No. 4 aggregate may be used.

   b. Pipe Cover shall consist of compacted ASTM D Class I stone course interlocking aggregate No. 57, 6, 67, 7, 78, or 8 stone.

2. High Density Polyethylene (HDPE) Pipe and Fittings

   a. Bedding shall consist of coarse interlocking ASTM D2321 Class I aggregate No. 57 stone.

   b. Pipe Cover shall consist of compacted course interlocking ASTM D2321 Class I aggregate No. 57 stone.

3. Ductile Iron Pipe and Fittings

   a. Bedding shall be Select Granular Backfill (Spent core sand or foundry sand is strictly prohibited).

   b. Pipe Cover shall consist of compacted Select Granular Backfill (Spent core sand or foundry sand is strictly prohibited)

4. Polyvinyl Chloride (PVC) Pipe and Fittings

   a. Pipe bedding shall be No. 57, 6, 67, 68, 7, 78, or 8 stone.

   b. Pipe cover shall be No. 57, 6, 67, 68, 7, 78, or 8 stone.

5. Pavement Underdrain / Curb Drains

   a. ASTM No 57 Stone

C. Final Backfill (above pipe cover) shall consist of the following:

1. Premium Backfill where trenches fall underneath or within the zone of influence at a 1:1 slope of all pavement, concrete curbs and sidewalks or structures and shall consist of ODOT 304 Aggregate Base. The materials shall be well graded with no particles larger than two (2) inches and having a maximum gradation meeting the limits described in the ODOT specifications. The backfill shall be compacted in 6-inch lifts with equipment acceptable to the pipe manufacturer.

2. Regular backfill from trench may be used for all areas not under pavement. Suitable material may be Class I, II, III or excavated materials installed in maximum 8" lifts, 93% compacted. No rocks over 1-1/2" are acceptable in upper 8" of backfill.

2.2 EQUIPMENT

A. Compaction equipment shall be capable of consistently achieving the specified compaction requirements without damaging pipes.

2.3 UTILITY IDENTIFICATION

A. Tracer Wire: Continuous, single-stranded copper wire, insulated, maximum 10 AWG. Clear plastic covering, imprinted with inscription describing specific utility in large letters.

B. Detectable Warning Tape: acid-and alkali-resistant polyethylene film warning tape manufactured for marking and identifying underground utilities, minimum 6 inches wide and 5 mils thick, continuously inscribed with a description of utility, with metallic core encased in a protective jacket for corrosion protection. Tape shall be manufactured using a 0.8 mil clear virgin polypropylene film, reverse printed and laminated to a 0.35 mil solid aluminum foil core, and then laminated to a 3.75 mil clear virgin polyethylene film. Tape shall be printed using a diagonally striped design for maximum visibility, and meet the APWA Color-Code standard for identification of buried utilities. Detectable marking tape shall be Pro-Line Safety Products (or approved equal) and made in the USA., detectable by metal detector when tape is buried a maximum of 12" to 18" below grade; colored as follows:

1. APWA Uniform Color Codes

   a. RED – Electric Power Lines, Cables, Conduit, and Lighting Cables.

   b. YELLOW – Gas, Oil, Steam, Petroleum, or Gaseous Material.

   c. ORANGE - Communication, Alarm or Signal Lines, Cables, or Conduit.

   d. BLUE – Potable Water

   e. GREEN – Sewers and Drain Lines (Tape shall indicate storm or sanitary)

   f. WHITE - Proposed Excavation Limits or Route

   g. PINK – Temporary Survey Markings, Unknown / Unidentified Facilities

   h. PURPLE – Reclaimed Water, Irrigation, and Slurry Lines PART 3

PART 3 – EXECUTION

3.1 EXAMINATION

A. When the CONTRACTOR trenching operations encounter existing or abandoned underground storage tanks (UST's), the operations shall be temporarily discontinued and notify the OWNER/ARCHITECT/ENGINEER. The OWNER/ARCHITECT/ENGINEER will contact an Environmental Engineer to

determine the disposition thereof and further direction provided.

B. When the CONTRACTOR trenching operations encounter remains of prehistoric people's site or artifacts of historical or archaeological significance, the operations shall be temporarily discontinued and notify the OWNER/ARCHITECT/ENGINEER . The OWNER/ARCHITECT/ENGINEER will contact archeological authorities to determine the disposition thereof and further direction provided.

3.2 PREPARATION

A. As per Section 31 20 00, Earth Moving

3.3 SAFETY

A. Trench boxes or sheeting and shoring shall be used for trenches per OSHA specifications.

3.4 PROTECTION OF IN-PLACE CONDITION

A. As per Section 31 20 00, Earth Moving

3.5 RESTORATION

A. As per Section 31 20 00, Earth Moving

3.6 TRENCH EXCAVATION

A. Excavate trenches to indicated gradients, lines, depths, and elevations.

B. Beyond building perimeter, excavate trenches to allow installation of top of pipe below frostline, 48" unless noted otherwise by the Contract Documents.

C. Excavate trenches to uniform widths, in accordance with OSHA guidelines, to provide a working clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches higher than top of pipe or conduit, unless otherwise indicated.

D. Trench bottoms: excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit. Shape sub-grade to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits. Remove projecting stones and sharp objects along trench sub-grade.

1. For pipes and conduit less than 6 inches in nominal diameter and flat-bottomed, multiple-duct conduit units, hand-excavate trench bottoms and support pipe and conduit on an undisturbed sub-grade.

2. For pipes and conduit 6 inches or larger in nominal diameter, shape bottom of

trench to support bottom 90 degrees of pipe circumference.

3. Excavate trenches 6 inches deeper than elevation required in rock or other unyielding bearing material to allow for bedding course.

E. Preserve material below and beyond the line of excavation.

A. Locate all stockpile excavated trench material at least four (4) feet from edge of excavations and prevent cave-is or bank slides.

B. Remove rocks larger than six (6) inches or as required by plan notes, seal if required, and backfill with bedding material.

C. See Section 31 20 00, Earth Moving for additional requirements.

3.7 UNAUTHORIZED EXCAVATION

A. CONTRACTOR is responsible for backfilling unauthorized excavations.

B. Unauthorized excavations which extend to and expose rock will be sealed with at least six (6) inches of LSM, concrete, or sprayed with bitumen within eight (8) hours of exposure. If sealing is delayed more than eight 8 hours, over excavate at least six (6) inches below the bottom to expose the fresh rock and seal within six (6) hours.

3.8 BACKFILL

A. CONTRACTOR is responsible to obtain all inspections and approvals for trench and pipe installation.

B. All trenches and excavations shall be backfilled as soon as practical after the pipe has been installed unless other protection of the pipe is directed or shown on the plans.

C. Coordinate backfilling with utilities testing.

D. Place and compact bedding course on trench bottoms and where indicated. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.

E. The backfill around the pipe up to the top of pipe shall be placed in loose layers not exceeding six (6) inches per layer and thoroughly compacted by hand or power tampers approved by the ARCHITECT or ENGINEER. Great care shall be sued to obtain thorough compaction under the haunches and along the side of pipes. Over the top of pipe, backfill layers of approximately eight (8) inch depth shall be added with each layer compacted separately and thoroughly until the trench is completely a uniformly filed to a depth of two feet above the top of the pipe.

F. Backfilling against pipe structures, whose joints involve the use of cement mortar or other concrete, or where buttresses are constructed, shall not be done until mortar has set at least 12 hours.

G. Compaction over one foot above the pipe shall be done with approved mechanical tampers. Compaction density be per the pipe manufacture specifications.

H. Backfill materials shall be brought up evenly by depositing the material in layers approximately eight (8) inches in loose depth and without damaging the pipe by shock, jar or excessive free fall. Each layer shall be thoroughly compacted by power tampers operated with care so as to not to damage the underlying pipe or appurtenances. Hand tampers may be sued in corners or narrow places inaccessible to power tampers. If compaction is done using hydraulically-operated backhoe mounted compactors with minimum rated impulse force of 6,400 pounds with a minimum 2,0000 cycles per minute, the backfill material may be deposited in layers not more than two (2) feet in loose depth. Layers in excess of two feet may be deposited only if tests, conducted at the CONTRACTOR'S expense, show, to the satisfaction of the ARCHITECT and ENGINEER that the specified degree of compaction is being achieved. There shall be at least three feet of compacted backfill over the pipe before this method of compaction may be employed.

I. For all areas not under pavement, sidewalks and curbs the backfill shall be compacted to 90% of the maximum dry density at +/-2% of optimum moisture content as determined by tests approved by or conducted by the ARCHITECT/ENGINEER. Backfill shall be compacted to not less than 98% of the maximum dry density at +/-2% of optimum moisture content for areas under pavement, sidewalks and curbs.

J. Backfill shall be kept completed up to a point within 100 feet of the end of the newly installed pipe unless directed by the ARCHITECT or ENGINEER. During backfill operations, no sheeting or shoring shall be removed without permission from the ARCHITECT or ENGINEER.

K. Backfill trench to the pavement subgrade or the finished grade less topsoil.

L. Provide 4 inch thick, concrete-base slab support for piping or conduit less than thirty (30) inches below surface of roadways. After installing and testing, completely encase piping or conduit in a minimum of 4 inches of concrete before backfilling or placing roadway sub-base.

M. Backfill trenches excavated under footings and within 18 inches of bottom of footings; fill with concrete to elevation of bottom offootings with approval of ENGINEER.

N. Place backfill as to not disturb or damage nearby work or facilities.

O. Maintain all fill materials within two (2) percent of optimum moisture, to attain required compaction density.

P. Place and compact material in equal continuous layers.

Q. Maximum compacted depth is six (6) inches for aggregate material and eight (8) inches for soil materials, unless shown differently in the plans.

R. Fill voids with approved backfill materials while shoring and bracing, and as sheeting is removed.

3.9 COMPACTION

A. As per Section 31 20 00, Earth Moving.

3.10 UTILITY IDENTIFICATION

A. Install marking tape over all site utilities, twelve (12) inches below finish grade or as shown on the Trench Details in the plans. Install six (6) inches below subgrade under pavements and slabs.

B. Install tracer wire at top center of parking tape; pull wire taut to remove slack.

C. Extend tracer wire to utility boxes, manholes, hand holes, and junctions etc. to allow for connection to subsurface location equipment.

3.11 FIELD QUALITY CONTROL AND ASSURANCE

A. General

1. The CONTRACTOR shall perform field quality control tests separate from acceptance testing. CONTRACTOR test results will not be used by the OWNER/ARCHITECT or ENGINEER for acceptance.

2. Field density testing for quality assurance shall be done in accordance with ASTM D1556, STM D2167, or ASTM D6938.

3. Compaction tests shall be deemed to comply with specifications when no more than one (1) test of any three (3) consecutive tests performed falls below the specified relative compaction. The one test shall be no more than three (3) percentage points below the specified compaction. The CONTRACTOR shall pay for the costs for any retesting or additional work not conforming to these specifications.

4. Where compaction tests indicate a failure to meet he specified compaction, the ARCHITECT/ENGINEER/CONTRACTOR take addition tests in each direction until the extent of the failing area is identified. Rework the failed area until the specified compaction has been achieved.

B. COMPACTION

1. Material shall be placed and compacted in layers until the dry density is not less than the percentage of maximum dry density indicated in the tale below determined by ASTM D698

Max Lab Dry Wt. (lbs/ft3)	Min. Compaction Requirements (% Lab Max.)
90 to 104.9	100
105 to 119.9	98
120 or more	95

2. The OWNER/ARCHITECT or ENGINEER will evaluate field density test results in relation to maximum dry density as determined by testing the material in accordance with ASTM D698 (Standard Proctor).

3. Location of field density tests shall be determined by the OWNER/ARCHITECT and ENGINEER.

4. Minimum frequency of the field density tests shall be as follows:

   A. Under pavement, sidewalks, curbs, other structures: 1 per lift for every 150 lineal feet of trench.

   B. Not under pavement, sidewalks, curbs, other structures: 1 per alternate lift for every 250 lineal feet of trench.

   C. If requested by the OWNER/ARCHITECT or ENGINEER, the contractor shall take more frequent tests.

3.12 SHRINKAGE

A. Backfill trench to a height to allow for the shrinkage or consolidation of the backfill material over time.

B. If backfill settles over trenches prior to subgrade work install additional backfill to level off areas.

END OF SECTION 31 23 33

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SECTION 31 32 19 – GEOTEXTILE FABRIC

PART 1 - GENERAL

1.1 WORK INCLUDES

A. Work included in this section relates to all geotextile fabric materials, and appurtenances related to installation.

1.2 SUBMITTALS

A. Submit shop drawings prior to ordering materials for approval.

Shop drawings: include product material information for the following:

Geotextile Fabric

Test results of physical properties.

a. Affidavit certifying that the raw and roll material tests results are submitted are accurate and meet the specification requirements.
b. Manufacturer's installation instructions.
c. Subgrade Stabilization design recommendations by the manufacturer.

1.3 DELIVERY, STORAGE, AND HANDLING

A. During shipment and storage, wrap the fabric in a heavy-duty protective covering to protect it from UV deterioration, temperature over 140 degrees Fahrenheit, direct sunlight, mud, dirt, dust, and other debris.

Geotextile labeling, shipment and storage shall follow ASTM D 4873.

B. Handle and store geotextile fabric according to manufacturer's moving and storage instructions.

C. Handle and unload by hand, or with load carrying straps, a fork lift with stringer bar or axial bar. Fabric shall not be lifted by chains, cables or dropped on ground.

1.4 QUALITY ASSURANCE

A. Comply with the requirements of authorities having jurisdiction and manufacturer's requirements.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. All manufacturers are subject to compliance with requirements, specifications, and construction details, and must demonstrate compliance through appropriate test and documentation.

2.2 GEOTEXTILE FABRIC

A. Furnish fabric composed of strong rot-proof polymeric fibers formed into a woven or non-woven fabric. Products must be tested by the National Transportation Product Evaluation Program (NTPEP). The Department will determine acceptance of Type A, B, C and D fabric according to data obtained in the most current NTPEP report - Laboratory Results of Evaluations on Geotextiles and Geosynthetics. The NTPEP testing results must meet or exceed the requirements listed in Table 712.09-1. For all tests except Ultraviolet Exposure, the products Minimum Average Roll Values (MARV), as published in the NTPEP report, must also meet or exceed the requirements listed in the table. If no MARV value is published in the NTPEP report, the manufacturer must submit to the Department certified test data showing the MARV values for the product will meet or exceed the requirements listed in Table 1 below. All minimum strengths shown are in the weakest principal direction.

For Type E material, supply fabric conforming to the requirements of AASHTO M288, Section 10, Table 8. The Owner or Engineer will accept Type E material based on certified test data.

B. Ensure that the fabric is free of any treatment that might significantly alter its physical properties.

TABLE 1

PROPERTY	TEXT METHOD	REQUIRED VALUES	
Type A: Underdrains and Slope Drains			
Minimum tensile strength	ASTM D 4632	80 lb	355 N
Minimum puncture strength [1]	ASTM D 6241	140 lb	625 N
	or ASTM D 4833	25 lb	110 N
Minimum tear strength	ASTM D 4533	25 lb	110 N
Apparent opening size	ASTM D 4751		
Soil Type-1: Soils with </= 50% passing No. 200 (75 m) sieve		AOS ≤ 0.6 mm	
Soil Type-2: Soils with 50-85% passing No. 200 (75 m) sieve		AOS ≤0.3 mm	
Minimum permittivity	ASTM D 4491	0.5 sec-1	
Type B: Filter Blankets for Rock Channel Protection			
Minimum tensile strength	ASTM D 4632	200 lb	890 N
Minimum elongation	ASTM D 4632	15%	
Minimum puncture strength [1]	ASTM D 6241	440 lb	1955 N

	or ASTM D 4833	80 lb	355 N
Minimum tear strength	ASTM D 4533	50 lb	220 N
Apparent opening size	ASTM D 4751	AOS ≤ 0.6 mm	
Minimum permittivity	ASTM D 4491	0.2 sec-1	

Type C: Sediment Fences

Minimum tensile strength	ASTM D 4632	120 lb	535 N
Maximum elongation	ASTM D 4632	50%	
Minimum puncture strength [1]	ASTM D 6241	275 lb	1225 N
	or ASTM D 4833	50 lb	220 N
Minimum tear strength	ASTM D 4533	40 lb	180 N
Apparent opening size	ASTM D 4751	AOS ≤ 0.84 mm	
Minimum permittivity	ASTM D 4491	0.01 sec-1	
Ultraviolet exposure strength retention [2]	ASTM D 4355	70%	

Type D: Subgrade-Base Separation or Stabilization

Minimum tensile strength	ASTM D 4632	180 lb	800 N
Maximum elongation	ASTM D 4632	50%	
Minimum puncture strength [1]	ASTM D 6241	385 lb	1715 N
	or ASTM D 4833	70 lb	310 N
Minimum tear strength	ASTM D 4533	70 lb	310 N
Apparent opening size	ASTM D 4751	Same as Type A	
Permittivity	ASTM D 4491	0.05 sec-1	

Type E: Pavement Reinforcement Fabric
AASHTO M 288, Section 9, Table 7

Underground Storm Water Chambers
(Non Woven)

Minimum tensile strength	ASTM D 4632	160 lb
Maximum elongation	ASTM D 4632	50%
Minimum puncture strength [1]	ASTM D 6241	410 lb
Minimum trapezoidal tear strength	ASTM D 4533	60 lb
Apparent opening size	ASTM D 4751	70 mm
Permittivity	ASTM D 4491	1.5 sec-1
Water Flow	ASTM D 4491	110 gpm/ft2

Notes:

ASTM D6241 is now the standard puncture resistance test required by AASHTO and NTPEP. NTPEP will continue to publish product data, tested under ASTM D4833, until the product is retested under ASTM D6241.

1. Provide certified test data to the Department. Include strength retention data at 0, 150, 300, and 500 hours

2.3 ENGINEERING GEOGRID MATERIAL

A. Biaxial polymer grids will be manufactured from 100% polypropylene; such as Tensar BX1200 and/or BX1300 as manufactured by the Tensar Corporation, 1210 Citizens Parkway, Morrow, Georgia 30260 (Phone 1-800-843-8417) or an approved equal

2.4 EROSION CONTROL BLANKETS

A. Biodegradable wood excelsior, straw, or coconut-fiber mat enclosed in a photodegradable plastic mesh. Include manufacturer's recommended steel wire staples, 6 inches long. Install in detention basin per manufactures recommendations.

2.5 EROSION-CONTROL FIBER MESH:

A. Biodegradable twisted jute or spun-coir mesh, a minimum of 0.92 lb. /sq. Yd., with 50 to 65 percent open area. Include manufacturer's recommended steel wire staples, 6 inches long. Install on slopes greater that 1 Vertical to 3 Horizontal or areas subject to erosion in order to stabilize site.

PART 3 - EXECUTION

3.1 GEOTEXTILE FABRIC CONSTRUCTION METHOD

A. When specified, place the geotextile fabric at the bottom of the cut or at locations designated in the construction plans and as directed by the Owner or Engineer.

B. Place the geotextile fabric smooth and free of tension or wrinkles.

C. Fold or cut the geotextile fabric to conform to curves.

D. Overlap a minimum of 18 inches at the ends and sides.

E. Hold the fabric in place with pins or staples.

F. Place the suitable material on the fabric and do not operate the equipment directly on the fabric.

G. Unless stated otherwise, spread the suitable material and maintain a minimum lift thickness of 12 inches.

3.2 ENGINEERING GEOGRID CONSTRUCTION

A. Geogrid shall be laid at the proper elevation and alignment as shown on the plans and shall be oriented such that the roll length runs parallel to the trench.

B. Geogrid sections shall be overlapped as shown in the plans or as directed by the CMT. Minimum overlap in horizontal plane shall be three feet. In vertical plane the minimum overlap shall be nine inches. Care shall be taken to ensure that geogrid sections do not separate at overlaps during construction. Placement of geogrid around curves or corners will require cutting of geogrid product and diagonal overlapping of same to ensure that excessive buckling of grid material does not occur.

C. Specified granular fill material shall be placed in lift thicknesses and compacted as indicated on the plans and in accordance with Item 203 Aggregate Refill for subbase application and Section 312300, Excavation and Fill, for slag or limestone for trenches. Care shall be taken to assure that the geogrid is held in desired position during and after placement of granular fill.

D. No construction equipment shall operate directly upon the geogrid. A minimum fill thickness of six inches is required prior to operation of any vehicles over the geogrid. Sudden braking or sharp turning shall be avoided while operating any equipment on reinforced fill.

END OF SECTION 31 32 19

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SECTION 321313 - CONCRETE PAVING

PART 1 - GENERAL

1.01 WORK INCLUDES

A. Work included in this section pertains to all materials, equipment, finishing methods, installation etc. that relate to rigid paving.

B. This section includes exterior cement concrete pavement for the following:

1. Driveways and Roadways
2. Curbs and Gutters
3. Walkways
4. Curb Ramps
5. Dumpster Area(s)

1.02 DEFINITIONS

A. Cementitious materials: Portland cement alone or in combination with one or more of the following blended hydraulic cement, expansive hydraulic cement, fly ash and other pozzolans, ground granulated blast-furnace slag, silica fume, and air cooled blast furnace slag.

1.03 SUBMITTALS

A. Product data for each type of manufactured material and product indicated:

B. Design mixes: for each concrete pavement mix. Include alternate mix designs when characteristics of materials, project conditions, weather, test results, or other circumstances warrant adjustments.

C. Material test reports: from a qualified testing agency indicating and interpreting test results for compliance of the following with requirements indicated, based on comprehensive testing of current materials:

1. ODOT Section 499 Concrete General
2. ASTM C 33 – Standard Specification for Fine and Concrete Aggregate
3. ASTM C 39 – Compressive Strength of Cylindrical Concrete Specimens
4. ASTM C 94 – Ready Mix Concrete
5. ASTM C 873 – Compressive Strength of Concrete Cylinders Cast In Place in Cylindrical Molds

D. Material certificates: signed by manufacturers certifying that each of the following materials complies with requirements:

1. Cementitious materials and aggregates.
2. Steel reinforcement and reinforcement accessories.

3. Admixtures.
4. Curing compounds.
5. Joint fillers.

1.04 QUALITY ASSURANCE

A. Installer qualifications: an experienced installer who has completed pavement work similar in material, design, and extent to that indicated for this project and whose work has resulted in construction with a record of successful in-service performance.

B. Manufacturer qualifications: manufacturer of ready-mixed concrete products complying with ASTM C 94 requirements for production facilities and equipment.

1. Manufacturer must be certified according to the national ready mix concrete association's plant certification program.

C. Testing agency qualifications: an independent testing agency, acceptable to the [OWNER] [CM], qualified according to ASTM C 1077 and ASTM E 329 to conduct the testing indicated, as documented according to ASTM E 548.

D. Source limitations: obtain each type or class of cementitious material of the same brand from the same manufacturer's plant and each aggregate from one source.

E. ACI publications: comply with ACI 301, "Specification for Structural Concrete," unless modified by the requirements of the Contract Documents.

F. Concrete testing service: The OWNER will engage a qualified independent testing agency to perform material evaluation tests and to design concrete mixes.

1.05 PROJECT CONDITIONS

A. Traffic control: maintain access for vehicular and pedestrian traffic as required by Owner and Engineer for other construction activities.

B. Don't not place pavement when base surface or ambient temperature is less than 40 deg F, or base is wet or frozen.

PART 2 - PRODUCTS

2.01 FORMS

A. Form materials: plywood, metal, metal-framed plywood, or other approved panel-type materials to provide full-depth, continuous, straight, smooth exposed surfaces.

1. Use flexible or curved forms for curves of a radius 100 feet or less.

B. Form-release agent: commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.

2.02 STEEL REINFORCEMENT

A. Plain-steel welded wire fabric: ASTM A 185, fabricated from as-drawn steel wire into flat sheets.

B. Deformed-steel welded wire fabric: ASTM A 497, flat sheet.

C. Epoxy-coated welded wire fabric: ASTM A 884/A 884M, class A coated, plain steel.

D. Reinforcement bars: ASTM A615/A 615M, grade 60, deformed (carbon steel bars).

E. Epoxy-coated reinforcement bars: ASTM A 775/A 775M; with ASTM A 615/a 615M, grade 60, deformed bars.

F. Steel bar mats: ASTM A 184/A 184M; with ASTM A 615/A 615M, grade 60, deformed bars; assembled with clips.

G. Plain steel wire: ASTM A 1064/A 1064M-16b, as drawn.

H. Joint dowel bars: plain steel bars, ASTM A 615/A 615M, grade 60. Cut bars true to length with ends square and free of burrs.

I. Epoxy-coated joint dowel bars: ASTM A 775/A 775M; with ASTM A 615/A 615M, grade 60, plain steel bars.

J. Tie bars: ASTM A 615/a 615M, grade 60, deformed.

K. Bar supports: bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcement bars, welded wire fabric, and dowels in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from steel wire, plastic, or precast concrete or fiber-reinforced concrete of greater compressive strength than concrete, and as follows:

1. Equip wire bar supports with sand plates or horizontal runners where base material will not support chair legs.
2. For epoxy-coated reinforcement, use epoxy-coated or other dielectric-polymer coated wire bar supports and chairs adequate to support weight of concrete, installers, and prevent displacement or misalignment.

L. Epoxy repair coating: liquid two-part epoxy repair coating, compatible with epoxy coating on reinforcement.

2.03 CONCRETE MATERIALS

A. General: use the same brand and type of cementitious material from the same manufacturer and supplier throughout the project.

B. Portland cement: ASTM C 150, type I OR II.

1. Type I is restricted to fresh water and low sulfate soil areas
2. Type II is to be used in high sulfate areas and areas subject to high salt concentrations, typically associated with salt water areas and pavement subject to use of deicing salts.
3. Fly ash: ASTM C 618, class F or C.

C. Aggregate: ASTM C 33, uniformly graded, from a single source, with coarse aggregate as follows:

1. Class Designation: 4S, 4M, or 1N (pavement, walks etc., severe weathering regions).
2. Maximum aggregate size: 3/4 inch nominal.
3. Do not use fine or coarse aggregates containing substances that cause spalling.

D. Water: ASTM C 94.

2.04 ADMIXTURES

A. General: admixtures certified by manufacturer to contain not more than 0.1 percent water- soluble chloride ions by mass of cement and to be compatible with other admixtures.

B. Air-entraining admixture: ASTM C 260.

C. Chemical Admixtures for concrete (with Engineer approval):

1. Water-reducing admixture: ASTM C 494, type A.
2. Water-reducing and retarding admixture: ASTM C 494, type D
3. Water-reducing and accelerating admixture: ASTM C 494, type E.
4. Water-reducing High-range, admixture: ASTM C 494, type F.

2.05 CURING MATERIALS

A. Absorptive cover: AASHTO M 182, class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sy. Dry.

B. Moisture-retaining cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.

C. Water: potable.

D. Evaporation retarder: waterborne, monomolecular film forming, manufactured for application to fresh concrete.

E. Clear solvent-borne liquid-membrane-forming curing compound: ASTM C 309, type 1, class b.

F. Clear waterborne membrane-forming curing compound: ASTM C 309, type 1, class b.

G. White waterborne membrane-forming curing compound: ASTM C 309, type 2, class b.

H. Products: subject to compliance with requirements, provide one of the following (or approved equal):

1. Evaporation Retarder (or approved equal):

a. Finishing Aid Concentrate; Burke Group, LLC.
b. Sure Film; Dayton Superior Corporation.
c. Eucobar; Euclid Chemical Co.
d. Confilm; Master Builders, Inc.

2. Clear Solvent-Borne Liquid-Membrane-Forming Curing Compound (or approved equal):

   a. Res-X Cure All Resin; Burke Group, LLC.
   b. Day-Chem Rez Cure; Dayton Superior Corporation.
   c. Kurez DR; Euclid Chemical Co.
   d. 3100-Clear; W. R. Meadows, Inc.

3. Clear Waterborne Membrane-Forming Curing Compound (or approved equal):

   a. Aqua Resin Cure; Burke Group, LLC.
   b. Day Chem Rez Cure (J-11-W); Dayton Superior Corporation.
   c. 1100 Clear; W. R. Meadows, Inc.

4. White Waterborne Membrane-Forming Curing Compound (or approved equal):

   a. Aqua Resin Cure; Burke Group, LLC.
   b. 1200-White; W. R. Meadows, Inc.

2.06 RELATED MATERIALS

A. Expansion-and isolation-joint-filler strips: ASTM D 1751, asphalt-saturated cellulosic fiber.

B. Closed cell foam specifically manufactured for expansion joints.

C. Wheel stops: precast, air-entrained concrete; 4,000-psi minimum compressive strength. Provide chamfered corners and drainage slots on underside, and provide holes for dowel-anchoring to substrate.

   1. Dowels: galvanized steel, epoxy coated, diameter of 3/4 inch, minimum length.

D. Slip-resistive aggregate finish: factory-graded, packaged, rustproof, non-glazing, abrasive aggregate of fused aluminum-oxide granules or crushed emery with emery aggregate containing not less than 50 percent aluminum oxide and not less than 25 percent ferric oxide; unaffected by freezing, moisture, and cleaning materials.

E. Bonding agent: ASTM C 1059, type ii, non-redispersible, acrylic emulsion or styrene butadiene.

F. Epoxy bonding adhesive: ASTM C 881, two-component epoxy resin, capable of humid curing and bonding to damp surfaces, of class and grade to suit requirements, and as follows:

   1. Types I and II, non-load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.
   2. Types IV and V, load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.

2.07 CONCRETE MIXES

A. Prepare design mixes, proportioned according to ACI 211.1 and ACI 301, for each type and strength of normal-weight concrete determined by either laboratory trial mixes or field experience.

B. Use a qualified independent testing agency for preparing and reporting proposed mix designs for the trial batch method.

1. Do not use Owner's field quality-control testing agency as the independent testing agency.

C. Proportion mixes to provide concrete with the following properties:

1. Compressive strength (28 days): 4000 psi, unless noted otherwise.
2. Flexural strength (28 days); 650 psi.
3. Maximum water-cementitious materials ratio: 0.45.
4. Slump limit: 4 inches.

a. Slump limit for concrete containing high-range water-reducing admixture: not more than 8 inches after adding admixture to plant, or site-verified, 3-inch slump.

D. Cementitious materials: limit percentage, by weight, of cementitious materials other than Portland cement according to ACI 301 requirements for concrete exposed to deicing chemicals.

E. Cementitious materials: Limit percentage, by weight, of cementitious materials other than Portland cement in concrete as follows:

1. Fly Ash: 0%
2. Ground Granulated Blast-Furnace Slag (GGBFS): 0%
3. Micro-Silica: 0%
4. When using multiple pozzolans materials, do not exceed the individual maximum contents above for each material. A combination of pozzolans materials may not exceed 50% of the total cementitious content by weight.

F. Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having an air content as follows, within a tolerance of plus or minus 1.5 percent:

1. Air content: 5.5 percent for 3/4-inch maximum aggregate.

G. Coloring agent: add coloring agent to mix according to manufacturer's written instructions.

2.08 CONCRETE MIXING

A. Ready-mixed concrete: comply with manufacturers' requirements and with ASTM C 94.

B. Ready-mixed concrete: comply with manufacturers' requirements and with ASTM C 94 and ASTM C 1116.

1. When air temperature is between 85 deg f 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.

C. Project-site mixing: comply with requirements and measure, batch, and mix concrete materials and concrete according to ASTM C 94. Mix concrete materials in appropriate drum-type batch machine mixer.

1. For mixers of 1 C.Y. or smaller capacity, continue mixing at least one and one-half minutes, but not more than five minutes after ingredients are in mixer, before any part of batch is released.
2. For mixers of capacity larger than 1 C.Y., increase mixing time by 15 seconds for each additional 1 C.Y.
3. Provide batch ticket for each batch discharged and used in the work, indicating Project identification name and number, date, mix type, mix time, quantity, and amount of water added.

PART 3 - EXECUTION

3.01 PREPARATION

A. Proof-roll prepared sub-base surface with tandem 20 C.Y. dump truck with rock, to check for unstable areas and verify need for additional compaction. Proceed with pavement only after nonconforming conditions have been corrected and sub-grade is ready to receive pavement.

B. Owners' representative(s) must be present at time of proof-rolling for proof-roll to be acceptable to Owner/Engineer.

C. Remove loose material from compacted sub-base surface immediately before placing any concrete.

3.02 EDGE FORMS AND SCREED CONSTRUCTION

A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides for pavement to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.

B. Clean forms after each use and coat with form release agent to ensure separation from concrete without damage or discoloration.

3.03 STEEL REINFORCEMENT

A. General: comply with CRSIs "Manual of Standard Practice" for fabricating reinforcement and with recommendations in CRSIs "Placing Reinforcing Bars" for placing and supporting reinforcement.

1. Apply epoxy repair coating to uncoated or damaged surfaces of epoxy-coated reinforcement.

B. Clean reinforcement of loose rust and mill scale, earth, ice, or other bond-reducing materials.

C. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement. Maintain minimum cover to reinforcement at all times.

D. Install welded wire fabric. Lap adjoining pieces at least one full mesh, and lace splices with wire. Offset laps of adjoining widths to prevent continuous laps in either direction.

E. Install fabricated bar mats in lengths as long as practicable. Handle units to keep them flat and free of distortions. Straighten bends, kinks, and other irregularities, or replace units as required before placement. Set mats for a minimum 2-inch overlap to adjacent mats.

3.04 JOINTS

A. General: construct construction, isolation, and contraction joints and tool edgings true to line with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline, unless otherwise indicated.

1. When joining existing pavement, place transverse joints to align with previously placed joints, unless otherwise indicated.

B. Construction joints: set construction joints at side and end terminations of pavement, and at locations where pavement operations are stopped for more than one-half hour, unless pavement terminates at isolation joints.

1. Provide preformed galvanized steel or plastic keyway-section forms or bulkhead forms with keys, unless otherwise indicated. Embed keys at least 1-1/2 inches into concrete.
2. Continue reinforcement across construction joints, unless otherwise indicated. Do not continue reinforcement through sides of pavement strips, unless otherwise indicated.
3. Provide tie bars at sides of pavement strips where indicated.
4. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
5. Use epoxy bonding adhesive at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.

C. Isolation / Expansion joints: form joints of preformed joint-filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, walks, other fixed objects, and where indicated.

1. Locate isolation and expansion joints adjacent to structures and fixed anchorage points.
2. Extend joint fillers full width and depth of joint.
3. Terminate joint filler less than 1/2 inch or more than 1 inch below finished surface if joint sealant is indicated.
4. Place top of joint filler flush with finished concrete surface if joint sealant is not indicated.
5. Furnish joint fillers in one-piece lengths. Where more than one length is required, lace or clip joint-filler sections together.
6. Protect top edge of joint filler during concrete placement with metal, plastic, or other temporary preformed cap. Remove protective cap after concrete has been placed on both sides of joint.

D. Contraction joints: form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of the concrete thickness, as follows:

1. Grooved joints: Form contraction joints after initial floating by grooving and finishing each edge of joint with groover tool to the following radius. Repeat grooving of contraction joints after applying surface finishes. Eliminate groover marks on concrete surfaces.

a. Radius: 1/4 inch.

2. 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 developing random contraction cracks.

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

F. Edging: tool edges of slabs, gutters, and curbs in concrete after initial floating with an edging tool to the following radius. Repeat tooling of edges after applying surface finishes. Eliminate tool marks on concrete surfaces.

1. Radius: 1/4 inch.

G. Saws: Use diamond blade saws equipped with cutting guides, blade guards, water cooling systems, dust control, and cut depth control. Early entry saws require approval of Engineer.

3.05 CONCRETE PLACEMENT

A. Inspection: before placing concrete, inspect and complete formwork installation, reinforcement steel, and items to be embedded or cast in. Notify other trades to permit installation of their work.

B. Remove snow, ice, or frost from sub-base surface and reinforcement before placing concrete. Do not place concrete on frozen surfaces.

C. Moisten sub-base to provide a uniform dampened condition at the time concrete is placed. Do not place concrete around manholes or other structures until they are at the required finish elevation and alignment. Box out around MH frame and grates. Install expansion joints.

D. Comply with requirements and with recommendations in ACI 304R for Measuring, Mixing, Transporting, and Placing Concrete.

E. Do not add water to concrete during delivery, at project site, or during placement.

F. Deposit and spread concrete in a continuous operation between pre-determined transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place. Cold Joints are not acceptable.

G. Consolidate concrete by mechanical vibrating equipment supplemented by hand-spading, rodding, or tamping. Use equipment and procedures to consolidate concrete according to recommendations in ACI 309R, "Guide for Consolidation of Concrete".

1. Consolidate concrete along face of forms and adjacent to transverse joints with an internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Use only square-faced shovels for hand-spreading and consolidation. Consolidate with care to prevent dislocating reinforcement, dowels, and joint devices.

H. In lieu of properly supporting wwf on chairs (300# man) CONTRACTOR may place concrete in two operations; strike off initial pour for entire width of placement and to the required depth below finish surface. Lay welded wire fabric or fabricated bar mats immediately in final position. Place top layer of concrete, strike off, and screed.

1. Remove and replace portions of bottom layer of concrete that have been placed more than 15 minutes without being covered by top layer, or use bonding agent if approved by Engineer.

I. Screed pavement surfaces with a straightedge and strike off. Commence initial floating using bull floats or darbies to form an open textured and uniform surface plane before excess moisture or bleed water appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading dry-shake surface treatments.

J. Curbs and gutters:

1. When automatic machine placement is used for curb and gutter placement, submit revised mix design and laboratory test results that meet or exceed requirements to the Engineer. Produce curbs and gutters to required cross section, lines, grades, finish, and jointing as specified for formed concrete. If results are not approved, remove and replace with formed concrete.
2. Curbs: all curbs shall match called out curbing on Contract Documents. Cast-in-place concrete shall be used unless other design is required to match existing conditions. Concrete shall be Class C. Slump shall be a maximum of 4 inches and minimum 28-day strength shall be 4000 psi with 6 to 8 percent entrained air. Max w/c ratio 0.45

   a. Expansion joints shall be specified and shall be shown on the drawings. Color of the joint sealer shall match that of the concrete.
   b. Four inch under drains in porous backfill shall be installed under all combination curbs and gutters. Under drains shall extend to the nearest feasible drainage basins. Combination curb and gutter may be used only to match or repair existing work.

K. Walks: For commercial projects thickness shall be 8 inches over 4 inches of compacted no. 304 limestone gravel base unless directed otherwise by the Engineer. The concrete shall have tooled edges which are then disguised by a light/medium broom finish. Except where required for structural purposes, reinforcing bars or welded wire fabric should be omitted unless otherwise specified by the Contract Documents. For conventional concrete walks, use Class C concrete with clean natural sand, limestone aggregate, and 6 to 7 percent entrained air.

1. Curing compounds: specify only non-staining type. It has been found that clear chlorinated rubber compounds cause staining which cannot be removed.

L. Curb ramps for persons with disabilities: see the ADAAG 4.7.

1. Companion ramps: state laws require that when a curb ramp is built on one side of a street, a companion ramp is required on the opposite side of the street. When project limits would normally end within a street intersection, the limits must be extended to allow construction of a companion ramp on the far side of the intersection. For projects in which federal funding is involved, this requirement must carefully be coordinated with federal requirements regarding limits of federal participation.

M. Slip-form pavers: when automatic machine placement is used for pavement, submit revised mix design and laboratory test results that meet or exceed requirements to the Engineer. Produce pavement to required thickness, lines, grades, finish, and jointing as required for formed pavement.

1. Compact sub-base and prepare sub-grade of sufficient width to prevent displacement of paver machine during operations.

N. When adjoining pavement lanes are placed in separate pours, do not operate equipment on concrete until pavement has attained 75 percent of its 28-day compressive strength.

O. Cold-weather placement: comply with ACI 306R-16 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.

1. When air temperature has fallen to or is expected to fall below 40 deg F, uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg F and not more than 80 deg F at point of placement.
2. Do not use frozen materials or materials containing ice or snow.
3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators, unless otherwise specified and approved in mix designs.

P. Hot-weather placement: place concrete according to recommendations in ACI 305R-10 and as follows when hot-weather conditions exist:

1. Cool ingredients before mixing to maintain concrete temperature at time of placement below 90 deg F. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water.
2. Cover reinforcement steel with water-soaked burlap so steel temperature will not exceed ambient air temperature remove before embedding in concrete.
3. Fog-spray forms, reinforcement steel, and sub-grade just before placing concrete. Keep sub-grade moisture uniform without standing water, soft spots, or dry areas.

Q. Concrete paving:

1. Metal nosings on exterior stairs are prohibited.
2. Stairs, rails and cheek walls, slopes to drain. Any stairs should be kept to a minimum. Ramps are to be used whenever possible within ADAAG Guidelines.
3. All sidewalks, stairs and ramps must withstand vehicular loading.
4. Where not noted on drawings, curbs to match adjacent 6 inch x 18 inch curb or verify with Engineer.
5. Use concrete for walkways, drives, service courts, parking areas, dumpster pads, compactor pads, loading dock ramps, aprons, and bus pull offs. All items shall be designed for particular items and be verified by the Engineer.
6. Radiused intersections shall be poured monolithic and should extend to the outer limits of the curves. Segmented curves are prohibited.
7. Cross slope of all walks shall be 1/4 inch per foot (max.) and 1/8 inch per foot.
8. Walks abutting buildings shall bear on the foundation or be dowelled.
9. The full width of sidewalks adjacent to curbs shall be 1/4 inch above the curb.
10. Temperature steel in stair nosings must have a minimum of 1-1/2" of concrete cover.
11. [CONTRACTORS] are required to wet sub-base prior to placing the concrete.
12. Curbs shall be poured concrete with #5 top and bottom reinforcing and without gutters. Provide contraction joints at 15 ft. max intervals. Filler strips must be specified.

    a. Dropped curbs for drive and handicapped access shall be formed for all new work.

b. Remove existing curb back to nearest existing joint when new curbs extend into existing curb lines.

c. Paving base should extend a minimum of 6 inches beyond the edge of the surface if curbs are not provided.

13. Combined fire service/sidewalks shall be designed to accommodate Fire Department's largest vehicles' (minimum 12 ft. wide) turning radius and provisions for outrigger support.

3.06 CONCRETE FINISHING

A. General: wetting of concrete surfaces during screeding, initial floating, or finishing operations is prohibited.

B. Float finish: begin the second floating operation when bleed-water sheen has disappeared and the concrete surface has stiffened sufficiently to permit operations. Float surface with power- driven floats, or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots, and fill low spots. Re-float surface immediately to uniform granular texture.

C. Medium-to-Coarse-Textured Broom Finish: Provide a coarse finish by striating float- finished concrete surface 1/16 to 1/8 inch deep with a stiff-bristled broom, perpendicular to line of traffic.

D. Finishes:

1. Vehicle Paving: Heavy broom.
2. Sidewalk: Light broom.
3. Gutters and Curbs: Light broom.
4. Pedestrian Ramps: Medium broom perpendicular to slope.

3.07 CONCRETE PROTECTION AND CURING

A. General: protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1-90 for cold-weather protection and follow recommendations in ACI 305.1-6 for hot-weather protection during curing.

B. Evaporation retarder: apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb. /S.F. 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. Begin curing after finishing concrete, but not before free water has disappeared from concrete surface.

D. Curing methods: cure concrete by moisture curing, moisture-retaining-cover curing, curing compound, or a combination of these as follows:

1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:

a. Water.

b. Continuous water-fog spray.
c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.

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. 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 requirements. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.

3.08 PAVEMENT TOLERANCES

A. Comply with tolerances of ACI 117 and as follows:

1. Elevation: 1/4 inch.
2. Thickness: Plus 3/8 inch, minus 1/4 inch.
3. Surface: Gap below 10-foot long, unleveled straightedge not to exceed 1/4 inch.
4. Lateral Alignment and Spacing of Tie Bars and Dowels: 1 inch.
5. Vertical Alignment of Tie Bars and Dowels: 1/4 inch.
6. Alignment of Tie-Bar End Relative to Line Perpendicular to Pavement Edge: 1/2 inch.
7. Alignment of Dowel-Bar End Relative to Line Perpendicular to Pavement Edge: Length of dowel 1/4 inch per 12 inches.
8. Joint Spacing: 3 inches.
9. Contraction Joint Depth: Plus 1/4 inch, no minus.
10. Joint Width: Plus 1/8 inch, no minus.

3.09 WHEEL STOPS

A. If shown on plans, securely attach wheel stops into pavement with not less than two galvanized steel, epoxy coated dowels embedded in holes cast into wheel stops. Firmly bond each dowel to wheel stop and to pavement. Extend upper portion of dowel 5 inches into wheel stop and lower portion a minimum of 18 inches into pavement.

3.10 FIELD QUALITY CONTROL

A. Testing agency: Inspect and test concrete materials, perform tests, and submit test reports during concrete placement. Sampling and testing for quality control may include those specified in this section.

B. Testing Services: Testing shall be performed according to the following requirements:

1. Sampling Fresh Concrete: Representative samples of fresh concrete shall be obtained according to ASTM C 172, except modified for slump to comply with ASTM C 94.
2. Slump: ASTM C 143; one test at point of placement for each compressive-strength test, but not less than one test for each day's pour of each type of concrete and every 50 yds. Additional test will be required when concrete consistency changes.

3. Air Content: ASTM C 231, pressure method; one test for each compressive-strength test, but not less than one test for each day's pour of each type of air-entrained concrete.
4. Concrete Temperature: ASTM C 1064; one test hourly when air temperature is 40 deg F and below and when 80 deg F and above, and one test for each set of compressive- strength specimens.
5. Compression Test Specimens: ASTM C 31/C 31M; one set of four standard cylinders for each compressive-strength test, unless otherwise indicated. Cylinders shall be molded and stored for laboratory-cured test specimens unless field-cured test specimens are required.
6. Compressive-Strength Tests: ASTM C 39; one set for each day's pour of each concrete class exceeding 5 C.Y., but less than 25 C.Y., plus one set for each additional 50 C.Y. One specimen shall be tested at 7 days and two specimens at 28 days; one specimen shall be retained in reserve for later testing if required.
7. When frequency of testing will provide fewer than five compressive-strength tests for a given class of concrete, testing shall be conducted from at least five randomly selected batches, or from each batch if fewer than five are used.
8. When total quantity of a given class of concrete is less than 50 C.Y., Engineer may waive compressive-strength testing if adequate evidence of satisfactory strength is provided.

    a. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, current operations shall be evaluated and corrective procedures shall be provided for protecting and curing in-place concrete.
    b. Strength level of concrete will be considered satisfactory if averages of sets of three consecutive compressive-strength test results equal or exceed specified compressive strength and no individual compressive-strength test result falls below specified compressive strength by more than 500 psi.

C. Test results shall be reported in writing to Owner/Engineer, concrete manufacturer, and contractor within 24 hours of testing. Reports of compressive-strength tests shall contain project identification name and number, date of concrete placement, name of concrete testing agency, concrete type and class, location of concrete batch in pavement, design compressive strength at 28 days, concrete mix proportions and materials, compressive breaking strength, and type of break for both 7-and 28-day tests.

D. Nondestructive testing: impact hammer, sonoscope, or other nondestructive device may be permitted by Engineer and Owner but will not be used as the sole basis for approval or rejection.

E. Additional tests: testing agency shall make additional tests of the concrete when test results indicate slump, air entrainment, concrete strengths, or other requirements have not been met, as directed by Engineer. Testing agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42, or by other methods as directed.

3.11 REPAIRS AND PROTECTION

A. Remove and replace concrete pavement that is broken, damaged, or defective, or does not meet requirements in this section with characteristics exceeding those specified in this specification.

B. Drill test cores where directed by Owner/Engineer when necessary to determine magnitude of cracks or defective areas. Fill drilled core holes in satisfactory pavement areas with Portland cement concrete bonded to pavement with epoxy adhesive.

C. Protect concrete from damage. Exclude traffic from pavement for at least 14 days after placement. When construction traffic is permitted, maintain pavement as clean as possible by removing surface stains and spillage of materials as they occur.

D. Maintain concrete pavement free of stains, discoloration, dirt, and other foreign material. Sweep concrete pavement not more than two days before date scheduled for substantial completion inspections.

E. Refer to Storm Water Pollution Prevention Plan (SWPPP) for additional information re washout area(s).

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SECTION 329200 – TURFS AND LAWNS

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Provide seeded lawns as shown on the construction documents and specified.

1. Soil preparation
2. Seeding lawns
3. Mulching
4. Maintenance

1.2 SUBMITTALS

A. Submit seed vendor's certification for required grass seed mixture, indicating percentage by weight, and percentages of purity, germination, and weed seed for each grass species.

B. Submit the following materials certification:

1. Fertilizer(s) analysis
2. Tackifier
3. Asphaltic emulsion
4. Seed

C. Submit materials test report

1.3 QUALITY ASSURANCE

A. Pre-installation conference: Conduct conference at project site

B. Provide and pay for materials testing. Testing agency shall be acceptable to the Engineer. Provide the following data:

1. Test representative material samples proposed for use.
2. Topsoil
   a. pH factor
   b. Mechanical analysis

c. Percentage of organic content

d. Recommendations on type and quantity of additives required to establish satisfactory pH factor and supply of nutrients to bring nutrients to satisfactory level for planting.

1.4 PROJECT CONDITIONS

A. Work Notification: Notify Owner at least 14 days prior to start of seeding operations.

B. Protect existing utilities, paving, and other facilities from damage caused by seeding operations.

C. Perform seeding work only after planting and other work affecting ground surface has been completed.

D. Restrict traffic from lawn areas until grass is established. Erect signs and barriers as required.

E. Provide hose and lawn watering equipment as required.

F. When watering spigots are not available, the Contractor shall supply water from a water tank truck which he shall furnish. Permits shall be taken out in each municipality for use of the fire hydrants as required.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver seed and fertilizer materials in original unopened containers, showing weight, analysis, and name of manufacturer. Store in a manner to prevent wetting and deterioration.

1.6 WARRANTY

A. The contractor is responsible to provide a full uniform lawn as approved by the owner. The contractor shall provide a warranty of one full growing season after the first full year of grass establishment. The contractor shall reseed areas with specified materials which fail to provide a uniform stand of grass until all affected areas are accepted by the Owner and Engineer of Record.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Lawn Seed: Fresh, clean, and new crop seed mixture.

1. Mixed by an approved method.

2. Seed with the following mixture:

Temporary Seeding:

Seeding Dates

	Species	lb/1,000sf	lb/ Per Acre
March 1 to August 15	Oats	3	128(4 bushel)
	Tall Fescue	1	40 lbs
	Annual Ryegrass	1	40lbs
	Perennial Ryegrass	1	40 lbs
	Tall Fescue	1	40 lbs
	Annual Ryegrass	1	40 lbs
	Annual Ryegrass	1.25	55 lbs
	Perennial Ryegrass	3.25	142 lbs
	Creeping Red Fescue	0.4	17 lbs
	Kentucky Bluegrass	0.4	17 lbs
August 16 to November 1			
	Rye	3	112 (2 bushel)
	Tall Fescue	1	40 lbs
	Annual Ryegrass	1	40 lbs
	Wheat	3	120 (2 bushel)
	Tall Fescue	1	40 lbs
	Annual Ryegrass	1	40 lbs
	Perennial Ryegrass	1	40 lbs
	Tall fescue	1	40 lbs
	Annual Ryegrass	1	40 lbs
	Annual Ryegrass	1.25	40 lbs
	Perennial Ryegrass	3.25	40 lbs
	Creeping Red Fescue	0.4	40 lbs
	Kentucky Bluegrass	0.4	0 lbs
November 1 to February 29	Use Mulch or Dormant Seeding Only		

Permanent Seeding:

Normal seeding times are as follows:

March 15 to June 10
August 15 to October 1

Common Name	Percentage by Weight	Percentage by Purity	Percentage Germination	Percentage Weed Seed

	(Minimum)	(Minimum)	(Maximum)	
Kentucky Bluegrass	80%-90%	90%	85%	0.5%
Perennial Ryegrass	10%-20%	90%	88%	0.5%

B. Fertilizer

1. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:

   a. Type A composition: Starter fertilizer containing 18% nitrogen, 24% phosphoric acid, and 6% potash by weight (18-24-6), or similar approved composition.

   b. Type B composition: Top dressing fertilizer containing 31% nitrogen, 3% phosphoric acid, and 10% potash by weight (31-3-10), or similar approved composition.

C. Mulches

1. Straw Mulch: Provide air-dry, clean, mildew- and seed-free, salt hay or threshed straw of wheat, rye, oats, or barley.

2. Fiber Mulch: Biodegradable, dyed-wood, cellulose-fiber mulch; nontoxic and free of plantgrowth or germination inhibitors; with a maximum moisture content of 15 percent and a pH range of 4.5 to 6.5.

3. Nonasphaltic Tackifier: Colloidal tackifier recommended by fiber-mulch manufacturer for slurry application; nontoxic and free of plant-growth or germination inhibitors.

4. Asphalt Emulsion: ASTM D 977, Grade SS-1; nontoxic and free of plant-growth or germination inhibitors.

D. Tackifier: Liquid concentrate diluted with water forming a transparent 3-dimensional film-like crust permeable to water and air and containing no agents toxic to seed germination.

E. Asphaltic Emulsion Binder: Refined petroleum asphalt emulsified in alkaline water without use of clay, starch, or emulsified in alkaline water without use of clay, starch, or like deleterious substances, and not more than 0.75% of saponifiable acids, of a fluid consistency with no petroleum solvents or other diluting agents toxic to seed germination.

F. Water: Potable. Hoses or other methods of transportation furnished by Contractor. Contractor to pay for and supply all water.

G. Ground Limestone: Containing not less than 85% of total carbonates and ground to such fineness that 50% will pass through a 100-mesh sieve and 90% will pass through a 20-mesh sieve.

H. Inoculating Bacteria

a. The inoculant for treating leguminous seeds shall be a pure culture of nitrogen-fixing bacterial selected for maximum vitality, not more than one-year old. All cultures shall be subjected to the approval of the Engineer.

PART 3 – EXECUTION

3.1 INSPECTION

A. Examine finish surfaces, grades, topsoil quality, and depth. Do not start seeding work until unsatisfactory conditions are corrected.

3.2 PREPARATION

A. Limit preparation to areas which will be immediately seeded.

B. Loosen topsoil of lawn areas to minimum depth of 4". Remove stones over 1" in any dimension and sticks, roots, rubbish, and extraneous matter.

C. Grade lawn areas to a smooth, free-draining even surface with a loose, moderately coarse texture. Roll and rake. remove ridges, and fill depressions as required to drain.

D. Apply Type A fertilizer to indicated turf areas at a rate equal to 1.0 lb. of actual nitrogen per 1,000 sq. ft. (220 lbs./acre).

E. Restore prepared areas to specified condition if eroded, settled, or otherwise disturbed after fine grading and prior to seeding.

3.3 INSTALLATION

A. Lawn Seeding

2. Seed immediately after preparation of bed. Seed only between April 1 and June 1 and between August 15 and October 15, or at such other times acceptable to the Engineer.

3. Seed indicated areas within contract limits and areas adjoining contract limits disturbed as a result of construction operations.

4. Sow grass seed at a rate of 8.0 lbs. per 1,000 sq. ft.

5. After seeding, rake or drag surface of soil lightly to incorporate seed into top 1/8" of soil. Roll with light lawn roller.

a. Type A Fertilizer: 1 lb. per 1,000 square feet or 220 lbs./acre.

b. Tackifier: 60 gals./acre.

c. Limestone: Rate determined by soil test.

B. Mulching

1. Place straw mulch on seeded areas within 24 hours after seeding.

2. Place straw mulch uniformly in a continuous blanket at the rate of 2 1/2 tons per acre, or 50-90 lb. per 1,000 sq. ft. of area (2-3 bales). A mechanical blower may be used for straw mulch application when acceptable to the Owner.

C. Provide straw bale checking in ditches or problem swales at intervals required to adequately slow water velocity and impede soil loss.

3.4 HYDROSEEDING

A. Hydroseeding: Mix specified seed and fiber mulch in water, using equipment specifically designed for hydroseed application. Continue mixing until uniformly blended into homogeneous slurry suitable for hydraulic application.

1. Mix slurry with tackifier.

2. Spray-apply slurry uniformly to all areas to be seeded in a one-step process. Apply slurry at a rate so that mulch component is deposited at not less than 1500-lb/acre dry weight, and seed component is deposited at not less than the specified seed-sowing rate shown in the previous paragraphs above.

3. Spray-apply slurry uniformly to all areas to be seeded in a two-step process. Apply first slurry coat at a rate so that mulch component is deposited at not less than the rates, dry weight, and seed component is deposited at not less than the specified seed-sowing rate shown in the previous paragraphs above. Apply slurry cover coat of fiber mulch (hydromulching) at not less than the 2,000 lb/acre dry weight, and seed component is deposited at not less than the specified seed-sowing rate shown in the previous paragraphs above.

3.5 MAINTENANCE

A. The Contractor shall be responsible for continued proper care of the lawn areas one full growing season after final acceptance of the site. The period of maintenance for seeding and sodding shall extend for as long as necessary to establish over the entire lawn areas a uniformly close stand of grasses, free of weeds and undesirable grasses or 12 months after final completion, whichever comes first. A uniformly close stand of grass is defined as bare spots no larger than 6" diameter that constitute less than 2% of the entire lawn. Upon written acceptance of lawn area by the Engineer, the Owner will assume maintenance responsibility.

B. Maintain seeded lawn areas, including watering, spot weeding, mowing, applications of herbicides, fungicides, insecticides, and re-seeding until a full, uniform stand of grass free of weeds, undesirable grass species, disease, and insects is achieved and accepted by the Owner in behalf of the Engineer.

1. Water daily to maintain adequate surface soil moisture for proper seed germination. Continue daily watering for not less than 30 days. Thereafter, apply 1/2" of water twice weekly until acceptance.

2. Repair, rework, and re-seed all areas that have washed out, are eroded, or do not catch.

3. Mow lawn areas as soon as lawn top growth reaches a 3-3/4" height. Cut back to 2 1/2" in height. Repeat mowing as required to maintain specified height. A minimum of three months of mowings will be required for acceptance.

C. Maintain seeded banks, ditches, medians, and fields to the extent of establishment only. Re-grade and re-seed washed out or eroded areas as required until a suitable cover is established.

3.6 ACCEPTANCE

A. Seeded areas will be inspected at completion of installation and accepted subject to compliance with specified materials and installation requirements.

1. Seeded areas will be acceptable provided all requirements, including maintenance, have been complied with, and a healthy, uniform, close stand of the specified grass is established free of weeds, undesirable grass species, disease, and insects.

2. No individual lawn areas shall have bare spots or unacceptable cover totaling more than 2% of the individual areas, in areas requested to be inspected. Bare spots does not exceed an area of 5-inch x 5-inch.

B. Upon final acceptance, the Owner will assume lawn maintenance.

3.7 CLEANING

A. Perform cleaning during installation of the work and upon completion of the work. Remove from site all excess materials, debris, and equipment. Repair damage resulting from seeding operations.

B. During work, keep premises neat and orderly including organization of storage areas. Remove trash, including debris resulting from removing weeds or rocks from planting areas, preparing beds, or planting plants, from site daily as work progresses. Keep walkway and driveway areas clean by sweeping or hosing.

END OF SECTION 32 92 00

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SECTION 333000 - SANITARY SEWERAGE UTILITIES

PART 1 - GENERAL

1.01 WORK INCLUDED

A. This Section specifies the requirements for furnishing and placing sanitary sewer pipe, laterals, stubs, and appurtenances. The pipe shall be of the size, type and location, and to the lines, grades and elevations shown on the Construction Documents and constructed in accordance with these specifications.

B. Record location of pipes runs, connections, catch basins, cleanouts, and invert elevations.

C. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

D. Conform to CITY and Authorities having Jurisdiction (AHJ) requirements.

1.02 APPLICABLE PUBLICATIONS

A. The following publications of the latest issues listed below, but referred to thereafter by basic designation only, form a part of this specification to the extent indicated by the references thereto.

1. American Society for Testing and Materials Standards (ASTM).

   a. A 48 Specification for Gray Iron Castings
   b. A 615 Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement.
   c. A 746 Standard Specification for Ductile Iron Gravity Sewer Pipe.
   d. C 33 Standard Specification for Concrete Aggregates.
   e. C 76 Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe.
   f. C 150 Standard Specification for Portland Cement.
   g. C 443 Specification for Joints for Concrete Pipe and Manholes Using Rubber Gaskets.
   h. C 476 Specification for Grout for Masonry.
   i. C 478 Specification for Circular Precast Reinforced Concrete Manhole Sections.
   j. C 969 Standard Practice for Infiltration and Exfiltration Acceptance Testing of Installed Precast Concrete Pipe Sewer Lines.
   k. D 2241 PVC Pressure-Rated Pipe (SDR Series).
   l. D 2321 Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications.

m. D 3034 Specification for Polyvinyl Chloride (PVC) Pipe and Fittings (4" to 15"). PVC pipe shall be made from class 12454-B materials or better in accordance with ANSI/ASTM D 1784. PVC fittings and couplings shall conform to requirements of the PVC pipe for classifications and size.
n. D 3212 Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals.
o. F 477 Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe. Lubricants for joints shall be furnished by the pipe manufacturer. The rubber gaskets shall be factory installed in the bell of the pipe, fittings and couplings. The plain end of the pipe shall be clearly marked by the manufacturer to show depth of penetration into the bell or coupling.
p. F 679 Specification for Poly (Vinyl Chloride) (PVC) Large-Diameter Plastic Gravity Sewer Pipe and Fittings (18"-27").
q. F 1417 Standard Test Method for Installation Acceptance of Plastic Non-Pressure Sewer Lines Using Low-Pressure Air.

2. American Water Works Association (AWWA)

a. C 105 Polyethylene Encasement for Ductile-Iron Pipe Systems.
b. C 110 Standard for Ductile-Iron and Gray-Iron Fittings.
c. C 111Standard for Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.
d. C 600 Installation of Ductile Iron Water Mains and Their Appurtenances.

3. American Concrete Institute (ACI)

a. ACI 318 Building Code Requirements.

1.03 SUBMITTALS

A. Product Data:

1. Pipe material and fittings
2. (N/A) Corrosion proof liner selected for protecting concrete pipe from sewer gases. Contractor shall submit data on the selected liner for approval prior to construction .
3. Any Special pipe fittings as detailed in the Contract Documents.

B. Shop Drawings:

1. Cast in Place Manholes: Include plans, elevations, sections, details, design calculations, concrete design-mix report, frames, and covers.
2. Field Quality Control Test Reports

1.04 DEFINITIONS

A. ABS: Acrylonitrile-Butadiene-Styrene Plastic.

B. FRP: Fiberglass-Reinforced Plastic.

C. LLDPE: Linear Low-Density, Polyethylene Plastic.

D. PE: Polyethylene Plastic.

E. PP: Polypropylene Plastic.

F. PVC: Polyvinyl chloride Plastic.

G. TPE: Thermoplastic Elastomer.

H. DI: Ductile-Iron Pipe.

1.05 PROJECT CONDITIONS

A. When working with sanitary manholes new or existing, Contractor must keep requirements for confined space entries. In all activities, Contractor shall work in a safe manner as required by OSHA and other governing criteria.

1. If work requires interference with any public sewer systems within or outside of Public Rights of Way or Easements, Contractor must obtain prior approval and coordinate with local municipality before commencing work.

1.06 DELIVERY STORAGE AND HANDLING

A. Contractor is responsible for protecting materials per manufacture's recommendations

1. Do not store plastic, pipe and fittings in direct sunlight.
2. Protect pipe, pipe fittings and seals from dirt and damage. Handle and store pipe, and fittings in accordance with manufacturer's recommendations.
3. Handle cast in place manholes according to manufacturer's written rigging instruction.

PART 2 - PRODUCTS

2.01 PIPE MATERIALS (Refer to Contract Drawings)

A. Polyvinyl Chloride (PVC) Pipe and Fittings

1. 4 to 15 inch pipe shall conform to ASTM D 3034,
2. Pipe and fittings shall conform to ASTM F 679 for 18-imch to 48-inch pipe.
3. All mainline sewer shall be SDR 26 while service connections under 13 feet deep shall be SDR 35. If service connection is greater than 13 feet pipe shall be SDR 26.
4. All diameters shall use bell and spigot ends for gasketed joints with ASTM F 477 elastomeric seal. The joint design shall meet the requirements of ASTM D 3212.
5. All pipe and fittings shall be suitably marked to provide manufacture's name or trademark, lot or production number, ASTM designation, PVC cell classification, SDR number and nominal diameter.

6. Pipe color shall be green to identify it as a sewer.
7. All pipe shall be made from a PVC resin, compound to provide physical and mechanical properties that equal or exceed cell class 12454 or 1264 as defined in ASTM D 1784.
8. Pipe lubrication products are to be provided by pipe manufacturer or from supplier approved by manufacturer.

B. High Density Polyethylene (HDPE) Pipe and Fittings

1. Pipe shall be dual wall, smooth interior and annular exterior corrugations HP Santite or Equal.
2. to 30-inch pipe shall meet ASTM F2764 with minimum pipe stiffness of 46 psi when tested in accordance with ASTM D2412
3. Pipe shall be joined using a bell and spigot joint meeting the requirements of ASTM F2764. The joint shall be watertight per the requirements of ASTM D3212, with the addition for a 15 psi pressure requirement. Gaskets shall meet the requirements of ASTM F477. Gaskets shall be installed by the pipe manufacturer and covered with a removable protective wrap to ensure the gaskets are free from debris.
4. A joint lubricant shall be used on the gasket and bell during assembly.
5. For pipes 12 through 60" diameters shall have reinforced bell with a polymer composite band installed by the manufacturer.
6. Fittings shall conform to ASTM 2764. Bell and spigot connections shall utilize a welded bell and valley or saddle gasket meeting the water tight joint performance requirements of ASTM D3212.
7. Pipe shall be tested for water tightness per ASTM F1417 or ASTM F2487.

2.02 CONCRETE

A. General: Cast-in-place concrete according to ACI 318, and the following:

1. Cement: ASTM C 150, Type II.
2. Fine Aggregate: ASTM C 33, sand.
3. Coarse Aggregate: ASTM C 33, crushed gravel.
4. Water

   a. Water used for mixing or curing shall be reasonably clean and free of oil, salt, acid, alkali, sugar, vegetable matter or other substances injurious to the finished product.
   b. Water sources other than the local municipal domestic water supply must be approved by the Owner/Engineer.
   c. If on-site reclaimed water sources are used, tanks and other appurtenances must be clearly marked with the words "non-potable" water.

B. Portland Cement Design Mix: 4000 psi minimum, with 0.45 maximum water/cementitious materials ratio. Use air-entrained concrete for any exposed concrete.

C. Reinforcement Bars: ASTM A 615, Grade 60 deformed steel.

D. Manhole Channels and Benches: Portland cement design mix, 4000 psi minimum, with 0.45 maximum water/cementitious materials ratio.

1. Channels: Factory or field formed from concrete. Concrete invert, formed to same width as connected piping, with height of vertical sides to three-fourths of pipe diameter. Form curved channels with smooth, uniform radius and slope.

a. Invert Slope: 1 percent through manhole.

2. Benches: Concrete, sloped to drain into channel.

a. Slope: 8 percent.

E. Ballast and Pipe Supports: Portland cement design mix, 4000 psi minimum, with 0.45 maximum water/cementitious materials ratio.

2.03 MANHOLES

A. Precast concrete manholes shall conform to ASTM C 478.

B. Ballast: Increase thickness of concrete as required to prevent flotation.

C. Resilient Pipe Connectors: ASTM C 923 cast or fitted into manhole walls, for each pipe connection. Link Seals or Kor-n-Seal type boots for weathertightness, mortar joints are prohibited.

D. Adjusting Rings: Interlocking rings with level or sloped edge in thickness and diameter matching manhole frame and cover. Include sealant recommended by ring manufacturer.

E. Grade Rings: Include two or three reinforced-concrete rings, of maximum 12-inch total thickness, that match 24-inch diameter frame and cover. Rings shall be set in a full bed of mortar.

F. Steps: Shall be Neenah R-1980-1 cast iron, complying with ASTM A 615/A 615M, ASTM C 478, or ½" reinforcing bar encased in polypropylene complying with ASTM D 4101. Include pattern designed to prevent lateral slippage off step. Cast or anchor into base, riser, top section, and sidewalls with steps at 16 inch intervals on center. No pipes shall enter a manhole in the thru the step area.

G. Manhole frames and covers: Neenah R-1540 with self-sealing cover. Include indented top design with lettering "Sanitary Sewer" cast into cover. All fames and grates within R/W shall comply with AHJ's requirements.

H. Manholes shall be installed: at the end of each line; at all changes in grade, size, or alignment; at all intersections; and at distances not greater than 400 feet for sewers 15 inches or less, and 500 feet for sewers 18 inches to 30 inches, except that distances up to 600 feet may be approved in cases where modern cleaning equipment for such spacing is provided.

I. A drop pipe shall be provided for a sewer entering a manhole at an elevation of 24 inches or more above the manhole invert. Where the differences in elevation between the incoming sewer and the manhole invert is less than 24 inches, the invert should be filleted to prevent solids deposition.

1. Drop manholes should be constructed with an outside drop connection. Inside drop connections when necessary shall be secured to the interior wall of the manhole and provide access for cleaning.
2. Due to the unequal earth pressures that would result from the backfilling operation in the vicinity of the manhole, the entire outside drop connection shall be encased in concrete (12" min.).

J. The minimum diameter of manholes shall be 48 inches; larger diameters are preferable for large diameter sewers. A minimum access diameter of 24 inches shall be provided.

K. The flow channels through manholes should be made to conform in shape and slope to that of the sewers.

L. Structure channels and benches: factory or field formed from concrete. Portland cement design mix, 4000 psi minimum, with 0.45 maximum water-cementitious ratio. Include channels and benches in manholes.

1. Channels: Concrete invert, formed to same width as connected piping, with height of vertical sides to three-fourths of pipe diameter. Form curved channels with smooth, uniform radius and slope.
2. Benches: Concrete, sloped to drain into channel, Slope: 8 percent (max.).

M. Pre-cast manholes shall be coated in the plant, the interior barrel, joint and slab top surface areas of the precast manhole shall be prepared per the manufacture's recommendations. Concrete must be etched with 15% to 20% muriatic acid solution or sandblasted, the surface so prepared shall then be lined with a high build polyamide-cured, 2-component coal tar epoxy coating "Bitumastic No. 300-m as manufactured by Koppers Company, Inc, Pittsburgh, Pennsylvania, 15219, or an approved equal, each meeting military specifications DOD-P-2326A (SH), Type 1, Class 2. The lining compound shall be sprayed two or more coats with a minimum of ten to twelve dry mils (twelve to fourteen wet mils) per coat to obtain a continuous and relatively smooth lining. The total dry film thickness should not be less than 20 mils (0.02 inches). Additional coatings may be necessary within industrial areas, as shown on the plans. All coated surface of manhole shall be free of surface irregularities such as air bubbles, blistering, pinholes porosity in the coating film.

N. Manholes shall be pre-cast concrete or poured in place concrete type. Manholes shall be water proof on the exterior.

O. Inlet and outlet pipes shall be joined to the manhole with a gasketed flexible watertight connection or any connection arrangement that allows differential settlement of the pipe and manhole wall to take place. Non-shrink grout is not to be substituted without Engineer approval.

P. Watertight, bolted manhole covers are to be used wherever the manhole tops may be flooded by street runoff or high water.

2.04 MORTAR

A. Mortar for flow line directioning in all manholes shall conform to ASTM C 476.

2.05 CLEANOUTS

A. Gray-iron cleanouts: ASME A112.36.2m, round, gray-iron housing with clamping device and round, secured, scoriated, gray-iron cover. Include gray-iron ferrule with inside calk or spigot connection and countersunk, tapered-thread, brass closure plug. Use units with top-loading classifications according to the following applications:

1. Light Duty: In earth or grass foot-traffic area with metallic locating lid.
2. Medium Duty: In paved foot-traffic areas.
3. Heavy Duty: In vehicle-traffic parking lots, drives, service areas. Recess slightly below pavement surface.
4. Extra-Heavy Duty: In public roads. Recess slightly below pavement surface.
5. Sewer Pipe Fitting and Riser to Cleanout: ASTM A 74, Service class, cast-iron soil pipe and fittings in roads and parking areas.
6. Sewer Pipe Fitting and Riser to Cleanout: In other areas material matching sewer pipe may be utilized

B. PVC Cleanouts (when approved by Engineer): PVC body with PVC threaded plug. Include PVC sewer pipe fitting and riser.

C. Available Manufacturers

1. Canplas Inc.
2. IPS Corporation.
3. NOS Inc.
4. Zurn Commercial Specialty Plumbing Products; Zurn Plumbing Products Group.

D. Lid and Frame: Cast iron construction, hinged lid.

E. Conform to standard details of Authorities Having Jurisdiction (AHJ).

PART 3 - EXECUTION

3.01 PIPE SEWERS

A. No pipe shall be installed in the trench until excavation has been properly constructed per the Contract Documents to at least two (2) pipe lengths beyond the section of pipe being installed and the bottom of the trench has been properly shaped.

B. Batter boards, where used, shall be placed into position properly. Boards shall be nominal 1 x 4 inch lumber, planed on all four sides to parallel faces. The boards and all location stakes must be protected from injury or change of location.

C. Install piping beginning at low point, true to grades and alignment indicated with unbroken continuity of invert. Place bell ends of piping facing upstream. Install gaskets, seals, sleeves, and couplings according to manufacturer's written instructions for use of lubricants, cements, and other installation requirements. Maintain swab or drag in line and pull past each joint as it is completed.

D. Pipe shall be laid so that after the sewer is completed, the interior surface shall conform accurately to the grades and alignments fixed and given in the Contract Documents.

E. All sewers must be laid accurately to line and grade, with tongue or spigot end downstream.

F. Install gravity flow, non-pressure pipe for site storm sewer pipes according to the following:

1. Install piping pitched down in the direction of flow.
2. Install PVC sewer pipe according to ASTM D 2321, ASTM D 2774 and ASTM F 1688.

G. Pipes shall be fitted together and matched so that when laid, they form a sewer with a smooth and uniform invert.

H. Before laying pipes, a sufficient bed shall be prepared at the grade indicated on the Contract Documents. Backfill shall be placed in accordance with backfill requirements.

I. A minimum clearance of 6 inches must be maintained between the sewer and all other lines. Sanitary sewers shall not be routed over water lines without approval from the Engineer.

J. Sanitary sewers shall not be constructed within 10 ft. (outside to outside) parallel to a water line. Where sanitary sewers cross under water lines, the pipe material for the sewer shall be an 18 ft. length of ductile iron pipe or PVC schedule 80 pressure pipe, centered on the water line.

K. When trenches exceed OSHA requirements, the Contractor shall utilize appropriate trench safety measures.

L. Pipe deflection shall be checked by passing a deflection gage or mandrel through all completed pipelines. Maximum deflection allowed is 5%.

3.02 MANHOLES

A. Manholes shall be constructed at locations and depths indicated on the Contract Documents.

B. Manholes may be constructed of concrete or precast concrete sections and in all types shall be constructed to the dimensions shown on the Contract Documents. Where concrete or precast concrete sections are used, the interior wall shall be thoroughly coated with coal tar epoxy or approved equal.

C. Joints between precast concrete sections shall be made by uniformly placing gaskets equal on all faces of the lower part of the joint and lowering the upper ring evenly into place to produce uniform bearing and compression on the sealer.

D. The construction of manholes shall be done as soon as practical after sewer lines into or through the manhole are completed.

E. All sewers shall be cut neatly at the inside face of the walls of the manhole pointed up with mortar.

F. After the masonry work has been completed to the proper elevation, the cast iron manhole cover/frame shall be set in a full mortar bed and adjusted to the elevation established on the Contract Documents.

G. The inverts of the sewer line or several sewer lines entering the manhole at or near the flow line elevation of the manhole shall be shaped and routed across the floor of the manhole using mortar to obtain the proper contour.

H. When sanitary sewer pipes enter a manhole 2 ft. or greater above the bottom of the manhole, a drop pipe of equal diameter shall be constructed outside the manhole to the bottom of the manhole per the details on the Contract Documents.

I. All manholes are to be backfilled properly.

3.03 FRAMES, GRATES, RINGS AND COVERS

A. HD castings shall conform to the types shown on the Contract Documents and shall be clean castings, free from sand or blow holes or other defects. Materials shall be not less than Class 30B gray iron conforming to ASTM A 48.

B. Surfaces of the castings shall be free from burnt-on sand and shall be reasonably smooth.

C. Bearing surfaces between manhole rings and covers/frames shall be cast or machined with such precision that uniform bearings shall be provided throughout the perimeter area of contact.

3.04 FIELD

A. Inspect interior of piping to determine whether line displacement or other damage has occurred. Inspect after approximately 24 inches of backfill is in place, and again at completion of project.

1. Submit separate report for each system inspection.
2. Defects requiring correction include the following:

    a. Alignment: Less than full diameter of inside of pipe is visible between structures.

b. Deflection: Flexible piping with deflection that prevents passage of ball or cylinder of size not less than 92.5 percent of piping diameter or mandrel test per ASTM D 522.
c. Crushed, broken, cracked, or otherwise damaged piping.
d. Infiltration: Water leakage into piping.
e. Exfiltration: Water leakage from or around piping.

3. Replace defective piping using new materials and repeat inspections until defects are within allowances specified. Re-inspect and repeat procedure until results are satisfactory.
4. Test new piping systems, and parts of existing systems that have been altered, extended, or repaired, for leaks and defects.
5. Do not enclose, cover, or put into service before inspection and approval have taken place.
6. Test completed piping systems according to requirements of authorities having jurisdiction (AHJ).
7. Schedule tests and inspections by authorities having jurisdiction with at least 24 hours' notice.
8. Submit separate report for each test.

B. Hydrostatic Tests: Test sanitary sewerage according to requirements of authorities having jurisdiction and the following:

1. Allowable leakage is maximum of 50 gal. /inch of nominal pipe size per mile of pipe, during 24-hour period.
2. Close openings in system and fill with water.
3. Purge air and refill with water.
4. Disconnect water supply
5. Test and inspect joints for leaks.
6. Option: Test Ductile-Iron piping according to AWWA C 600, "Hydrostatic Testing" Section. Use test pressure of at least 10 psig.

C. Leakage Test: Leakage tests shall be performed to verify that leakage outward or inward (exfiltration or infiltration) shall not exceed 200 gallons per inch of pipe diameter per mile per day for any section of the system. This may include appropriate water or low pressure air testing. An exfiltration or infiltration test shall be performed with a minimum positive head of 2 feet. The air test, if used, shall, as a minimum, conform to the test procedure described by ASTM C-828-76T.

D. Air Tests: Test sanitary sewerage according to requirements of authorities having jurisdiction (AHJ), and the following:

1. Option: Test plastic gravity sewer piping according to ASTM F 1417.
2. Leaks and loss in test pressure constitute defects that must be repaired.
3. Replace leaking piping using new materials and repeat testing until leakage is within allowances specified.

E. Manhole tests: Test sanitary manholes according to requirements of authorities having jurisdiction (AHJ), and the following:

1. Option: Vacuum testing:

a. Install vacuum tester head assembly at top access point of manhole and adjust for proper seal on straight top section of manhole structure. Following manufacturer's instructions and safety precautions, inflate sealing element to recommended maximum inflation pressure; do not over-inflate.

b. Evacuate manhole with vacuum pump to 10 inches mercury, disconnect pump, and monitor vacuum for time period specified in, Vacuum Test Time Table. Test times for larger manholes are to be in conformance with authority having jurisdiction (AHJ).

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Minimum Test Times in seconds

	Diameter, in.								
	30	33	36	42	48	54	60	66	72
Depth (ft.)	Time, in seconds								
<4	6	7	7	9	10	12	13	15	16
6	9	10	11	13	15	18	20	22	25
8	11	12	14	17	20	23	26	29	33
10	14	15	18	21	25	29	33	36	41
12	17	18	21	25	30	35	39	43	49
14	20	21	25	30	35	41	46	51	57
16	22	24	29	34	40	46	52	58	67
18	25	27	32	38	45	52	59	65	73
20	28	30	35	42	50	53	65	72	81
22	31	33	39	46	55	64	72	79	89
24	33	36	42	51	59	64	78	87	97
26	36	39	46	55	64	75	85	94	105
28	39	42	49	59	69	81	91	101	113
30	42	45	53	63	74	87	98	108	121

c. A manhole passes the test if after 2 minutes and with all valves closed, the vacuum is at least 9 inches of mercury.

2. Option: Perform hydraulic test according to ASTM C 969
3. Leaks and loss in test pressure constitute defects that must be repaired.
4. Replace leaking piping using new materials and repeat testing until leakage is within allowances specified.

END OF SECTION

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SECTION 33 40 00 - STORM WATER DRAINAGE PIPING

PART 1 - GENERAL

1.1 WORK INCLUDES

A. This section includes storm drainage system installation for facilities located outside of the building including the following:

1. Pipe and Fittings
2. Manholes
3. Catch Basins/Curb Inlets
4. Cleanouts

B. Contractor shall field measure all existing storm sewer tie in points and report discrepancies from the plans to the engineer of record.

C. Contractor shall record final constructed locations of pipe runs, connections, manholes, catch basins, cleanouts, and invert elevations.

D. Where applicable, discharge piping from an RPZ connected to a storm sewer shall be equipped with backwater check valve.

1.2 DEFINITIONS

A. RCP: Reinforced Concrete Pipe

B. PVC: Polyvinyl Chloride Plastic.

C. HDPE: High Density Polyethylene.

D. ASTM: American Society of Testing and Materials.

E. AASHTO: American Association of State Highway and Transportation Officials.

F. ODOT: Ohio Department of Transportation Construction and Material Specifications (latest edition)

1.3 SUBMITTALS

A. Submit shop drawings prior to ordering materials for approval.

B. Shop drawings: include plans, elevations, inverts, details, and attachments for the following:

1. Storm sewer pipe, fittings and joint material.

2. Pre-cast concrete manholes, catch basins, curb inlets and other structures, including frames, covers and grates; inverts, rims, concrete strength and reinforcement.
3. Cast-in-place concrete manholes, catch basins, curb inlets and other structures, including frames, covers and grates; inverts, rims, concrete strength and reinforcement.

C. Design mix reports and calculations: for each class of cast-in-place concrete.

D. Field test reports: indicate and interpret test results for compliance with performance requirements.

1.4 PERFORMANCE REQUIREMENTS

A. Gravity-flow, non-pressure-piping pressure ratings: at least equal to system test pressure.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Do not store plastic structures, pipe, and fittings in direct sunlight. Store in accordance with manufactures requirements.

B. Protect pipe, pipe fittings, and seals from dirt and damage.

C. Care shall be taken not to injure the coating or lining of pipe or other materials during the handling of transportation of the materials.

D. Non-rigid pipe shall be stored to prevent bowing. Pipes with deviations from straight greater than 1/16 inch per foot shall not be used.

E. Handle and store pipe, precast concrete manholes and other structures according to manufacturer's written rigging, unloading & storage instructions.

1.6 QUALITY ASSURANCE

A. Comply with the requirements of authorities having jurisdiction and manufacturer's requirements

1.7 PROJECT CONDITIONS

A. Site information: perform site survey, research public utility records, and verify existing utility locations as required by State Revised Code.

B. Locate and field measure existing structures and piping to be tied into or closed and abandoned. Report any discrepancies to the engineer for further direction.

C. Existing utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions, and then only after arranging to provide temporary utility services according to requirements indicated:

1. Notify Owner not less than two days in advance of proposed utility interruptions.
2. No utility interruptions are allowed without the Owner's written permission.

3. Contractor is to include known utility interruptions in project schedule.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. All manufacturers are subject to compliance with requirements, specifications, and construction details, and must demonstrate compliance through appropriate test and documentation.

2.2 PIPING MATERIALS

A. If a specific type of pipe is specified on the drawings, the specified type must be used. All pipes, unless noted, are to use soil tight joints. All pipe and fittings used shall be suitably marked with the manufacture's name or trademark, lot or production number and ASTM designation and also include all requirements from ASTM A746.

B. If a type of pipe is not specified, one of the following shall be provided:

1. Reinforced Concrete Pipe and Fittings

   a. Reinforced Concrete Pipe and Fittings per ASTM C-76.
   b. Bell and spigot or tongue and groove ends and resilient and gasketed joints per ASTM C 443, rubber gaskets sealant joints with ASTM C-990, bitumen or butyl-rubber sealant.

2. High Density Polyethylene (HDPE) Pipe and Fittings

   a. Pipe shall be dual wall, smooth interior and annular exterior corrugations per ASTM F2648.
   b. to 10-inch pipe shall meet AASHTO M252, Type S or SP
   c. to 60-inch pipe shall meet AASHTO M294, Type S or SP, or ASTM F2306.
   d. Fittings shall conform to AASHTO M252, AASHTO M294, or ASTM F2306. Bell and spigot connections shall utilize a welded bell and valley or saddle gasket meeting the soil tight joint performance requirements of AASHTO M252, AASHTO M294, or ASTM F2306.
   e. Soil tight joints shall be joined using a bell and spigot joint meeting the requirements of AASHTO M252, AASHTO M294, or ASTM F2306. The joint shall be soil-tight and gaskets for pipes 12 through 60-inch, shall meet the requirements of ASTM F477. For pipes 4-10-inch, the joint shall be soil tight using and engaging dimple connection.
   f. Perforated pipe shall consist of AASHTO Class II perforations.

3. Ductile Iron Pipe and Fittings:

   a. Pipe shall conform with AWWA C151/ANSI 21.11, Class 52 with push-on joints
   b. Gaskets per AWWA C111, rubber.

4. Polyvinyl Chloride (PVC) Pipe and Fittings

a. All pipe and fittings shall conform to ASTM 3034 for 4 to15-inch pipe with mainline sewer pipe being SDR 26 and service connections under 10 feet in depth (SDR 35) over 10 feet (SDR 26).
b. All pipe and fittings shall conform to ASTM F-679 for 18-inch and over SDR 26 pipe.
c. All joints shall be elastomeric gasket type and shall be assembled per manufactures recommendations and ASTM D 3212.

5. MANHOLES

C. Pre-Cast Concrete Manholes

1. Manholes shall conform to ASTM C 478, AASHTO M 199, with reinforced concrete (min. Fc' = 4,000 psi, air-entrained), of depth indicated, with joint seal between pre cast manhole sections shall be resilient and flexible gasket conforming to ASTM C-443.
2. Diameter: 48 inches inner diameter minimum, unless otherwise indicated on the Contract Drawings.
3. Ballast: Increase thickness of precast concrete sections or add concrete extension to base section, as required to prevent flotation.
4. Base Section: 6-inch minimum thickness for floor slab and 5-inch minimum thickness for walls and base riser section, and having separate base slab or base section with integral floor.
5. Structure channels and benches: factory or field formed from concrete. Portland cement design mix, 4000 psi minimum, with 0.45 maximum water-cementitious ratio. Include channels and benches in manholes.

   a. Channels: Concrete invert, formed to same width as connected piping, with height of vertical sides to three-fourths of pipe diameter. Form curved channels with smooth, uniform radius and slope.
   b. Benches: Concrete, sloped to drain into channel, Slope: 8 percent (max.).

6. Riser Sections: 5-inch minimum thickness, and lengths to provide depth indicated.
7. Top Section: Eccentric-cone type, unless either concentric-cone or flat-slab-top type is indicated. Top of cone of size that matches grade rings.
8. Gaskets: Resilient and flexible gasket conforming to ASTM C 443.
9. Pipe Connectors: ASTM C 923, resilient, of size required, for each pipe connecting to base section.
10. Joint Sealant: ASTM C-442, bitumen or butyl rubber. In addition, to O-Ring joint between manhole sections, a flexible butyl rubber seal, Con Seal, or equal shall be used with a minimum temperature workability of 10 to 130 degrees Fahrenheit.
11. Flexible Sleeve: A watertight flexible sleeve Kor-n-Seal", Press Wedge or equal to be provided at all connections between manholes and pipes.
12. Grade Rings: Include two or three reinforced-concrete rings, of maximum 12-inch total thickness, that match 24-inch diameter frame and cover. Rings shall be set in a full bed of mortar.
13. Steps: Manufactured from deformed, 1/2-inch steel reinforcement rod (grade 60) complying with ASTM A 615/A 615M, ASTM C 478, and encased in polypropylene complying with ASTM D 4101. Include pattern designed to prevent lateral slippage off step. Cast or anchor into base, riser, top section, and sidewalls with steps at 16 inch intervals on center. No pipes shall enter a manhole in the thru the step area.

14. Manhole frames and covers: ASTM A 536, grade 60-40-18, Ductile-Iron castings designed for heavy-duty service. Include 24-inch inside diameter by 7-to 9-inch riser with 4-inch minimum width flange, and 24-inch diameter cover. Include indented top design with lettering "Storm Sewer" cast into cover. All fames and grates within R/W shall comply with AHJ's requirements.
15. Lift holes shall be provided in each section for handling. Seal all lift holes with approved concrete plugs.

D. Cast-in Place Manholes

1. Cast-in-place concrete manholes: constructed of reinforced-concrete bottom, walls, and top; designed according to ASTM C 890 for A-16, heavy-traffic, and structural loading; of depth, shape, dimensions, and appurtenances indicated.
2. Ballast: Increase thickness of precast concrete sections or add concrete extension to base section, as required to prevent flotation.
3. Concrete:

    a. Cement: ASTM C 150, Type II.
    b. Fine Aggregate: ASTM C 33, sand.
    c. Coarse Aggregate: ASTM C 33, crushed gravel.
    d. Water: Potable.

4. Portland cement design mix: 4000 psi minimum, with 0.45 maximum water-cementitious ratio.
5. Reinforcement Fabric: ASTM A 185, steel, welded wire fabric, plain.
6. Reinforcement Bars: ASTM A 615/A 615M, Grade 60, deformed steel.
7. Structure channels and benches:

    a. Channels: Concrete invert, formed to same width as connected piping, with height of vertical sides to three-fourths of pipe diameter. Form curved channels with smooth, uniform radius and slope.
    b. Benches: Concrete, sloped to drain into channel, Slope: 8 percent (max.).

8. Grade Rings: Include two or three reinforced-concrete rings, of maximum 12-inch total thickness, that match 24-inch diameter frame and cover. Rings shall be set in a full bed of mortar.
9. Steps: Manufactured from deformed, 1/2-inch steel reinforcement rod (grade 60) complying with ASTM A 615/A 615M, ASTM C 478, and encased in polypropylene complying with ASTM D 4101. Include pattern designed to prevent lateral slippage off step. Cast or anchor into base, riser, top section, and sidewalls with steps at 16 inch intervals on center. No pipes shall enter a manhole in the thru the step area.
10. Manhole frames and covers: ASTM A 536, grade 60-40-18, Ductile-Iron castings designed for heavy-duty service. Include 24-inch inside diameter by 7-to 9-inch riser with 4-inch minimum width flange, and 24-inch diameter cover. Include indented top design with lettering "Storm Sewer" cast into cover. All fames and grates within R/W shall comply with AHJ's requirements. Manhole frames hall be set in a full bed or mortar.

2.3 CATCH BASINS

A. Pre-Cast Concrete Catch Basin / Curb Inlets

1. Catch Basin/Curb Inlets shall conform to ASTM C 478, AASHTO M 199, with reinforced concrete (min. Fc' = 4,000 psi, air-entrained), of depth indicated, with joint seal between pre cast manhole sections shall be resilient and flexible gasket conforming to ASTM C-443.
2. Dimensions as indicated on the Contract Drawings.
3. Ballast: Increase thickness of precast concrete sections or add concrete extension to base section, as required to prevent flotation.
4. Base Section: 6-inch minimum thickness for floor slab and 6-inch minimum thickness for walls for structures not under pavement and 8-inch for structures under pavement.
5. Channels: Concrete invert, formed to same width as connected piping, with height of vertical sides to three-fourths of pipe diameter. Form curved channels with smooth, uniform radius and slope.
6. Gaskets: Resilient and flexible gasket conforming to ASTM C 443.
7. Pipe Connectors: ASTM C 923, resilient, of size required, for each pipe connecting to catch basin.
8. Joint Sealant: ASTM C-442, bitumen or butyl rubber. In addition, to O-Ring joint between catch basin sections, a flexible butyl rubber seal, Con Seal, or equal shall be used with a minimum temperature workability of 10 to 130 degrees Fahrenheit.
9. Flexible Sleeve: A watertight flexible sleeve Kor-n-Seal", Press Wedge or equal to be provided at all connections between manholes and pipes.
10. Steps: Manufactured from deformed, 1/2-inch steel reinforcement rod (grade 60) complying with ASTM A 615/A 615M, ASTM C 478, and encased in polypropylene complying with ASTM D 4101. Include pattern designed to prevent lateral slippage off step. Cast or anchor into sidewalls with steps at 16 inch intervals on center. No pipes shall enter a catch basin in the thru the step area.
11. Catch Basin/Curb Inlet Frames and Grates: ASTM A 536, grade 60-40-18, ductile iron designed for heavy-duty service. Size: 24 by 24 inches minimum, unless otherwise indicated on construction detail. Frames shall be set in a full bed of mortar.

    a. Grate Free Area approximately 50 percent, unless otherwise indicated.
    b. Catch basin, area and yard drain covers in accessible ways shall be ADA compliant and bicycle wheel proof. Covers shall also be safe for shoes with narrow heels (1/4" gap maximum).

2.4 IMPACT MODIFIED COPOLYMER POLYPROPYLENE MANHOLES / CATCH BASINS

A. Impact modified copolymer polypropylene manhole/inlets meeting the material requirements of ASTM F2764. Eccentric cones shall be manufactured from polyethylene material meeting ASTM D3360 cell class 213320C.

B. The joint shall conform to ASTM D3212 using flexible elastomeric seals.

C. Elastomeric seals used for polyethylene cone and pipe connectors to the structure shall conform to ASTM F477.

D. Provide a watertight connection for pipes entering the manhole/catch basin and provide adapters as specified by the manufacturer.

E. Frame and Grate shall be 30-inch in diameter and conform to ASTM A536 grade 70-50-05 and painted black.

F. No brick or concrete block shall be used to set frame and grate to grade.

G. All grates shall be set in a 3'x3'x8" concrete pad

2.5 CLEANOUTS

A. Gray-iron cleanouts:

1. ASME A112.36.2m, round, gray-iron housing with clamping device and round, secured, scoriated, gray-iron cover. Include gray-iron ferrule with inside calk or spigot connection and countersunk, tapered-thread, brass closure plug. Use units with top-loading classifications according to the following applications:

   a. Light Duty: In earth or grass foot-traffic areas.
   b. Medium Duty: In paved foot-traffic areas.
   c. Heavy Duty: In vehicle-traffic parking lots, drives, service areas. Recess slightly below pavement surface.
   d. Extra-Heavy Duty: In public roads. Recess slightly below pavement surface.
   e. Sewer Pipe Fitting and Riser to Cleanout: ASTM A 74, Service class, cast-iron soil pipe and fittings.

B. PVC Cleanouts (when approved by Engineer):

1. PVC body with PVC threaded plug. Include PVC sewer pipe fitting and riser to clean out of same material as sewer piping.

   a. Light Duty: In earth or grass foot-traffic areas.
   b. Medium Duty: In paved foot-traffic areas.
   c. Heavy Duty: In vehicle-traffic parking lots, drives, service areas. Last section of pipe at surface shall be cast iron cut to field measurement ANSI Class 25. Set Cleanout casting in 3'-0" square, 8-inch thick 4,000 psi concrete. Casting shall be a cast iron disc or cap with magnetic element imbedded and mastic sealed.

C. Lid and Frame: Cast iron construction, hinged lid.

2.6 PIPE SUPPORTS

A. Ballast and pipe supports: Portland cement design mix, 3,000 psi minimum, with 0.58 maximum water-cementitious ratio.

1. Reinforcement Fabric: ASTM A 185, steel, welded wire fabric, plain.
2. Reinforcement Bars: ASTM A 615/A 615M, Grade 60, deformed steel

PART 3 - EXECUTION

3.1 EARTHWORK

A. Excavating, trenching, and backfilling are specified in Division 31.

3.2 INSTALLATION, GENERAL

A. General locations and arrangements: drawing plans and details indicate general location and arrangement of underground storm drainage piping. Location and arrangement of piping layout take design considerations into account. Install piping as indicated, and per the requirements.

B. Install piping beginning at low point, true to grades and alignment indicated with unbroken continuity of invert. Place bell ends of piping facing upstream. Install gaskets, seals, sleeves, and couplings according to manufacturer's written instructions for use of lubricants, cements, and other installation requirements. Maintain swab or drag in line, and pull past each joint as it is completed.

C. Use manholes for changes in direction, unless fittings are indicated. Use fittings for branch connections, unless direct tap into existing sewer is indicated on the Contract Drawings.

D. Use proper size increasers, reducers, and couplings where different sizes or materials of pipes and fittings are connected. Reducing size of piping in direction of flow is prohibited.

E. Install gravity flow, non-pressure pipe for site storm sewer pipes according to the following:

1. Install piping pitched down in the direction of flow.
2. Install RCP sewer pipe in accordance with ASTM C 1479.
3. Install HDPE sewer pipe in accordance with ASTM D2321.
4. Install PVC sewer pipe according to ASTM D 232, ASTM D 2774 and ASTM F 1688.
5. Install ductile iron pipe per AWWA C6000.

F. Install gravity-flow piping service connection to buildings storm drains or downspouts, of sizes and in locations as indicated. Terminate piping as indicated Contract Drawings.

G. Install piping pitched down in direction of flow, at minimum slope of 1 percent, unless otherwise indicated.

H. Comply with manufacturer's requirements for installation, handling, and storage.

I. Utilize magnetic marking tape for storm sewers - Install [24"] below finished grade.

3.3 PIPE JOINT CONSTRUCTION AND INSTALLATION

A. General: Join and install pipe and fittings according to installations indicated and pipe manufacturer's specifications.

1. Before joining pipe with a coupling or bell end, all surfaces of the portions of the pipe to be joined and all surfaces of factory made joining material shall be clean and dry. Lubricants, primers, adhesives, solvents bolts, etc. shall have been manufactured specifically for their intended use and shall be used as recommended by the pipe and/or pipe joint manufacturer. The jointing materials shall be fitted and adjusted or applied in such a manner to obtain a close fitting joint and to obtain and the degree of water tightness required.
2. Where joining pipes of different materials is required or approved, this works shall be done utilizing special adapters and couplers manufactured specifically for this purpose. The adapters and couplers shall be installed and securely attached to both pipe barrels according to manufactures recommendations.
3. As soon as possible after a joint is made, sufficient backfill materials shall be placed along each side of the pipe to support the pipe in its final position.
4. Where a pipe stub or run of pipe is to be temporality terminated for future expansion, the end of the pipe shall be sealed using and approved removable stopper.
5. Install PE film, pipe encasement over hubless cast-iron soil pipe and fittings according to ASTM A 674 or AWWA C105.
6. Handle, store, install and backfill all pipe in strict accordance with manufacturer's recommendations.

B. Install with top surfaces of components, except piping, flush with finished surface.

C. PVC sewer pipe and fittings as follows:

1. Join pipe and gasketed fittings with gaskets according to ASTM F 477.

2. Install according to ASTM D 2321.

D. Concrete pipe and fittings: install according to ACPA'S "Concrete Pipe Installation Manual."

3.4 MANHOLE INSTALLATION

A. General: install manholes, complete with appurtenances and as required by the City of Streetsboro and ODOT.

B. Form continuous concrete channels and benches between inlets and outlet.

C. Set tops of frames and covers flush with finished surface of manholes that occur in pavements. Set tops 3 inches above finished surface elsewhere, unless otherwise indicated.

D. Install precast concrete manhole sections with gaskets according to ASTM C 891.

3.5 CATCH-BASIN INSTALLATION

A. Construct catch basins to sizes and shapes indicated as shown on the plans.

B. Set frames and grates to elevations indicated.

C. Engineered PVC Manholes shall be installed per ASTM D2321.

3.6 STORM DRAINAGE INLET AND OUTLET INSTALLATION

A. Construct inlet head walls, aprons, and sides of reinforced concrete, as required by City of Streetsboro and ODOT requirements.

B. Construct riprap of stone, as indicated. Install with geotextile fabric, per City of Streetsboro and ODOT.

C. Install outlets that spill onto grade, anchored with concrete, where indicated.

D. Install outlets that spill onto grade, with flared end sections that match pipe, where indicated.

E. Construct energy dissipaters at outlets, as indicated.

F. Engineered PVC catch basins shall be installed per ASTM D2321.

3.7 TAP CONNECTIONS

A. Make connections to existing piping and underground structures so finished work complies as nearly as practical with requirements specified for new work.

B. Use commercially manufactured wye fittings for piping branch connections. Remove section of existing pipe; install wye fitting into existing piping; and encase entire wye fitting, plus 6-inch overlap, with not less than 6 inches of concrete with 28-day compressive strength of 4000 psi.

C. Make branch connections from side into existing piping. Remove section of existing pipe; install wye fitting into existing piping; and encase entire wye with not less than 6 inches of concrete with 28-day compressive strength of 4000 psi.

D. Make branch connections from side into existing piping, or to underground structures by cutting opening into existing unit large enough to allow 3 inches of non-shrink grout to be packed around entering connection. Cut end of connection pipe passing through pipe or structure wall to conform to shape of and be flush with inside wall, unless otherwise indicated. On outside of pipe or structure wall, encase entering connection in 6 inches of concrete for minimum length of 12 inches to provide additional support of collar from connection to undisturbed ground.

1. Use concrete that will attain minimum 28-day compressive strength of 4,000 psi, unless otherwise indicated.
2. Use epoxy-bonding compound as interface between new and existing concrete and piping materials.

E. Protect existing piping and structures to prevent concrete or debris from entering while making tap connections. Remove debris or other extraneous material that may accumulate.

3.8 CLOSING ABANDONED STORM DRAINAGE SYSTEMS

A. Abandoned piping: close open ends of abandoned underground piping indicated to remain in place. Include closures strong enough to withstand hydrostatic and earth pressures that may result after ends of abandoned piping have been closed. Use either procedure below:

1. Close open ends of piping with at least 8-inch thick, brick masonry or concrete bulkheads.
2. Close open ends of piping with threaded metal caps, plastic plugs, concrete, or other acceptable methods suitable for size and type of material being closed. Usage of wood plugs is prohibited.
3. All storm pipes to be abandoned are to be to be filled with low strength mortar, concrete, or non-shrink grout unless noted otherwise.

B. Abandoned structures: excavate around structure as required and use one procedure below:

1. Remove structure and close open ends of remaining piping

2. Remove top of structure down to at least 36 inches below final grade.
3. Fill to within 12 inches of top with stone, rubble, gravel, or compacted dirt.
4. Fill to top with concrete, or Low Strength Mortar (LSM).
5. Backfill to grade according to Section 312333.
6. Existing catch basins that are to be abandoned in place shall be filled with low strength mortar (LSM).

3.9 FIELD QUALITY CONTROL

C. Clear interior of piping and structures of dirt and superfluous material as work progresses. Maintain swab or drag in piping, and pull past each joint as it is completed.

1. In large, accessible piping, brushes and brooms may be used for cleaning.
2. Place plug in end of incomplete piping at end of day and when work stops.
3. Flush piping between manholes and other structures to remove collected debris, if required by authorities having jurisdiction.

D. Inspect interior of piping to determine whether line displacement or other damage has occurred. Inspect after approximately 24 inches of backfill is in place, and again at completion of project.

1. Submit separate reports for each system inspection.
2. Defects requiring correction include the following:

   a. Alignment: Less than full diameter of inside of pipe is visible between structures.
   b. Deflection: Flexible piping with deflection that prevents passage of ball or cylinder of size not less than 92.5 percent of piping diameter.
   c. Crushed, broken, cracked, or otherwise damaged piping.
   d. Infiltration: Water leakage into piping.
   e. Exfiltration: Water leakage from, or around piping.

3. Replace defective piping using new materials and repeat inspections until defects are within allowances specified.
4. Re-inspect and repeat procedure until results are satisfactory. Provide owner and/or construction manager that the storm sewer piping system has been installed with no defects (as mentioned above).

END OF SECTION 33 40 00

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Appendix C

CRENSHAW PARK - NEW PAVILION
EDWARD L. "PEEL" COLEMAN COMMUNITY CENTER

1400 SHERRICK ROAD SE CANTON, OH

ISSUED FOR PERMITS: AUGUST 14, 2023

MOTTER & MEADOWS
ARCHITECTS
600 MARKET AVENUE NORTH
CANTON, OHIO 44702
PHONE: (330) 454-6165

CIVIL ENGINEER: KARPINSKI ENGINEERING
STRUCTURAL ENGINEER: TTR ENGINEERS
MECHANICAL ENGINEER: HEI ENGINEERING GROUP, INC.
ELECTRICAL ENGINEER: MJK ELECTRICAL ENGINEERING, LLC

VICINITY MAP / PROJECT LOCATION

MATERIALS

- EARTH
- GRAVEL
- CONCRETE
- CONCRETE BLOCK MASONRY
- BRICK MASONRY
- CUT STONE
- STRUCTURAL STEEL / METAL
- ROUGH WOOD / LUMBER
- PLYWOOD
- FINISH WOOD
- GYPSUM BOARD
- BATT INSULATION
- RIGID INSULATION
- GLAZING
- ACOUSTIC TILE

ABBREVIATIONS

ACOUS.	ACOUSTICAL	INSUL.	INSULATION
A.F.F.	ABOVE FINISH FLOOR	JT.	JOINT
ALUM.	ALUMINUM	MANFR.	MANUFACTURER (ALSO 'MFR.')
@	AT	M.C.	MECHANICAL CONTRACTOR
BD.	BOARD	M.H.	MANHOLE
BRG.	BEARING	M.O.	MASONRY OPENING
BLK.	BLOCK	MFG.	MANUFACTURING
BLKG.	BLOCKING	MAX.	MAXIMUM
CLG.	CEILING	MECH.	MECHANICAL
℄	CENTERLINE	MTL.	METAL
COL.	COLUMN	MIN.	MINIMUM
CONC.	CONCRETE	NOM.	NOMINAL
CONT.	CONTINUOUS	N.I.C.	NOT IN CONTRACT
C.J.	CONTROL JOINT	N.T.S.	NOT TO SCALE
DET.	DETAIL	O/	ON OR OVER
DIA.	DIAMETER	O.C.	ON CENTER
D.S.	DOWNSPOUT	P.C.	PLUMBING CONTRACTOR
DWG'S.	DRAWINGS	PL. LAM.	PLASTIC LAMINATE (ALSO 'P.L.')
EA.	EACH	PLUMB.	PLUMBING
E.C.	ELECTRICAL CONTRACTOR	±	PLUS OR MINUS
ELEC.	ELECTRICAL	⅊	PROPERTY LINE
E.T.R.	EXISTING TO REMAIN	REINF.	REINFORCING
E.W.	EACH WAY	R	RISER
E.W.C.	ELECTRIC WATER COOLER	R.D.	ROOF DRAIN
ELEV.	ELEVATION (ALSO 'EL.')	R.O.	ROUGH OPENING
EXIST.	EXISTING (ALSO 'EXG.')	SIM.	SIMILAR
EXP.	EXPANSION	SPECS.	SPECIFICATIONS
E.J.	EXPANSION JOINT	S.S.	STAINLESS STEEL
F.F.	FINISH FLOOR	STL.	STEEL
F.E.	FIRE EXTINGUISHER ON BRACKET	STRUCT.	STRUCTURAL
F.E.C.	FIRE EXTINGUISHER IN CABINET	S.O.G.	SLAB ON GRADE
F.D.	FLOOR DRAIN	SUSP.	SUSPENDED
F.P.C.	FIRE PROTECTION CONTRACTOR	T	TREAD
FTG.	FOOTING	T.O.F.	TOP OF FOOTING
F.V.	FIELD VERIFY	T.O.S.	TOP OF STEEL
GALV.	GALVANIZED	TYP.	TYPICAL
G.C.	GENERAL CONTRACTOR	VERT.	VERTICAL
GYP.	GYPSUM	V.T.R.	VENT THRU ROOF
H.M.	HOLLOW METAL	W/	WITH
HORIZ.	HORIZONTAL	WD.	WOOD

GENERAL NOTES

1. ALL WORK SHALL BE IN FULL COMPLIANCE WITH NATIONAL, STATE AND LOCAL CODES.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND FURNISHING ALL REQUIRED PERMITS AND INSPECTIONS.
3. CONTRACTOR SHALL VERIFY EXISTING CONSTRUCTION AND DIMENSIONS, AND NOTIFY ARCHITECT OF ANY DISCREPANCIES PRIOR TO PROCEEDING WITH WORK.
4. CONTRACTOR SHALL PERFORM ALL PATCH AND REPAIR WORK, FINISHED TO MATCH ADJACENT LIKE SURFACES, AT ALL LOCATIONS AFFECTED BY DEMOLITION OPERATIONS, OR OTHERWISE GENERALLY IMPLIED, AS NECESSARY FOR CONTINUOUS FINISHES THROUGHOUT THE WORK AREAS.
5. ALIGN FINISH SURFACES OF NEW CONSTRUCTION WITH FINISH SURFACES OF EXISTING.
6. CONTRACTOR SHALL MAINTAIN ALL REQUIRED EGRESS ROUTES FREE OF CONSTRUCTION EQUIPMENT, MATERIAL AND DEBRIS.

PROJECT DATA

INTENT OF THIS SUBMITTAL DRAWING IS TO DEMONSTRATE COMPLIANCE WITH OHIO BUILDING CODE FOR NEW PAVILION FOR THE EDWARD L. "PEEL" COLEMAN COMMUNITY CENTER.

TYPE OF CONSTRUCTION:	V-B
USE GROUP CLASSIFICATION:	A-3 ASSEMBLY
ALLOWABLE BUILDING AREA PER TABLE 506.2:	6,000 SF
ACTUAL BUILDING AREA:	2,778 SF
CALCULATED OCCUPANT LOAD: PAVILION: 1,934 SF / 15 NET	128 PERSONS

TOILET FACILITIES REQUIRED & PROVIDED:
MALE: (1) W.C. ; (1) LAV
FEMALE: (1) W.C. ; (1) LAV
ADDITIONAL EXISTING RESTROOM FACILITIES ARE LOCATED WITHIN 500' OF PAVILION
(1) DRINKING FOUNTAIN
(1) SERVICE SINK

BUILDING SHALL BE OCCUPIED FOR SEASONAL USE. PLUMBING SYSTEMS SHALL BE DRAINED DOWN DURING COLD WEATHER MONTHS.

DRAWING INDEX

CIVIL
C-0.1 GENERAL NOTES
C-1.0 DEMOLITION PLAN; SITE PLAN
C-1.1 UTILITY AND GRADING PLAN
C-1.2 SWP PLAN
C-2.1 DETAILS
C-2.2 DETAILS
C-2.3 DETAILS
C-3.1 SWPPP NOTES
C-3.2 SWPPP DETAILS
C-3.3 SWPPP DETAILS
C-3.4 SWPPP DETAILS

ARCHITECTURAL
A-1.1 SITE PLAN
A-2.1 FLOOR PLAN; DOOR SCHEDULE
A-2.2 ROOF FRAMING PLAN
A-3.1 ELEVATIONS; SECTION DETAIL; CASEWORK ELEVATIONS; RESTROOM ELEVATIONS
A-4.1 BUILDING SECTION; WALL SECTION
A-4.2 BUILDING SECTION; WALL SECTION
A-4.3 GENERAL NOTES; DETAIL
A-4.4 SPECIAL INSPECTIONS

PLUMBING
P-1.1 FLOOR PLAN - PLUMBING SANITARY
P-1.2 FLOOR PLAN - PLUMBING WATER PIPING
P-2.1 PLUMBING SCHEDULES, NOTES, LEGENDS, AND SANITARY ISOMETRIC
P-3.1 PLUMBING SPECIFICATIONS

MECHANICAL
H-1.1 FLOOR PLAN - HVAC
H-2.1 HVAC SCHEDULES AND NOTES
H-3.1 HVAC SPECIFICATIONS

ELECTRICAL
E-1.1 SITE PLAN - ELECTRICAL
E-2.1 LIGHTING PLAN
E-3.1 POWER PLAN
E-4.1 DETAILS
E-5.1 SPECIFICATIONS

DAVID I. PATTERSON
LICENSE #11150
EXPIRATION DATE
12-31-2023

1. SCOPE OF WORK
THE FOLLOWING IS INTENDED TO CONVEY A GENERAL DESCRIPTION OF THE WORK TO BE PERFORMED FOR THIS PROJECT:

THE CONTRACTOR'S RESPONSIBILITIES INCLUDE, BUT ARE NOT LIMITED TO, CONSTRUCTION PROCEDURES, MATERIALS, INSTALLATION SEQUENCE, AND COORDINATION WITH THE OWNER.

THE CONTRACTOR SHALL SECURE AND PAY FOR ANY AND ALL LICENSES, GOVERNMENT FEES, AND PERMITS THAT MAY BE REQUIRED TO PROPERLY EXECUTE AND COMPLETE THE WORK. COMPLY WITH ALL APPLICABLE CODES, RULES, ORDINANCES AND OTHER LEGAL REQUIREMENTS.

CONTRACTOR SHALL IMMEDIATELY LOCATE ALL REFERENCE POINTS, LAYOUT WORK, AND BE RESPONSIBLE FOR ALL MEASUREMENTS AND OTHER WORK TO BE EXECUTED UNDER THE CONTRACT. VERIFY ALL FIGURES SHOWN ON THE PLANS, VERIFY ALL DIMENSIONS OF ANY EXISTING AND NEW WORK, BE RESPONSIBLE FOR THEIR ACCURACY AND SUBMIT ANY DIFFERENCES FOUND TO THE OWNER BEFORE PROCEEDING WITH THE WORK, NO EXTRA COMPENSATION WILL BE PERMITTED BECAUSE OF DIFFERENCE BETWEEN ACTUAL DIMENSIONS AND MEASUREMENTS INDICATED ON THE DRAWINGS.

2. STANDARDS & SPECIFICATIONS
CONTRACTOR IS RESPONSIBLE FOR DAMAGE TO ANY EXISTING ITEM AND / OR MATERIAL INSIDE OR OUTSIDE CONTRACT LIMIT / PROPERTY LINE DUE TO CONSTRUCTION. ALL WORK MUST BE IN ACCORDANCE WITH LOCAL AND / OR STATE CODES AND REGULATIONS. CONTRACTOR IS TO COMPLY WITH ODOT ITEM 107.10. WORK IS TO BE SATISFACTORY TO THE PROPERTY OWNER.

ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH SPECIFICATIONS OF THE CITY, AND THE LATEST EDITION OF THE OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS. IN THE CASE OF A CONFLICT BETWEEN CITY AND ODOT REQUIREMENTS, THE CITY REQUIREMENTS WILL TAKE PRECEDENCE, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

3. PLAN DISCREPANCIES
ANY DISCREPANCIES FROM THE PLAN INFORMATION SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY SO THAT APPROPRIATE ADJUSTMENTS IN ALIGNMENT AND / OR GRADE MAY BE MADE PRIOR TO THE START OF CONSTRUCTION.

FAILURE BY THE CONTRACTOR TO VERIFY AND / OR DETERMINE EXISTING INFORMATION AS INDICATED WILL RESULT IN THE CONTRACTOR BEING RESPONSIBLE FOR ANY CHANGES NECESSARY TO COMPLETE THE WORK SPECIFIED WITHOUT ADDITIONAL COMPENSATION.

4. PLAN MODIFICATION
ANY MODIFICATIONS TO THE NOTES, OR CHANGES TO THE WORK AS SHOWN ON THESE PLANS MUST HAVE PRIOR WRITTEN APPROVAL OF THE ENGINEER.

5. SAFETY
IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO COMPLY WITH ALL FEDERAL, STATE AND LOCAL SAFETY REQUIREMENTS, TOGETHER WITH EXERCISING PRECAUTIONS AT ALL TIMES FOR THE PROTECTION OF THE RESIDENTS (INCLUDING EMPLOYEES), WORKERS, GENERAL PUBLIC AND PROPERTY. IT IS ALSO THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO INITIATE, MAINTAIN AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK.

THE CONTRACTOR SHALL PROPERLY SUPPORT AND / OR MAINTAIN ALL EXCAVATIONS PER. APPLICABLE SAFETY REQUIREMENTS AND COMPLY WITH ALL OSHA REGULATIONS. PRIOR TO COMMENCING CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER OF THE PROJECT'S ASSIGNED "COMPETENT PERSON" IN OSHA EXCAVATION STANDARDS.

PUBLIC STREETS SHALL BE KEPT CLEAN AND FREE OF DEBRIS (MUD, STONE, ETC.) AT ALL TIMES.

THE CONSTRUCTION MANAGER SHALL ALERT ALL LOCAL EMERGENCY AGENCIES (FIRE, POLICE, AMBULANCE, ETC.) OF THE NATURE OF THE PROPOSED PROJECT PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITY. ACCESS FOR EMERGENCY VEHICLES SHALL BE MAINTAINED AT ALL TIMES.

6. BASE MAPPING
EXISTING CONDITIONS PROVIDED BY MOTTER AND MEADOWS FROM RECORD DRAWINGS. SURVEY WAS NOT CONDUCTED.

7. EXISTING UTILITIES
VIEW THE SITE AND COORDINATE WITH THE OWNER REGARDING LOCATION OF EXISTING FACILITIES AND ANY POSSIBLE UTILITY SERVICE INTERRUPTION OR RELOCATION. THE CONTRACTOR'S RESPONSIBILITIES INCLUDE, BUT ARE NOT LIMITED TO, THE INVESTIGATION, VERIFICATION OF EXISTING UTILITY DIMENSIONS AND LOCATION, SUPPORT, PROTECTION AND RESTORATION OF ALL EXISTING UTILITIES AND APPURTENANCES WHETHER SHOWN ON THESE PLANS OR NOT.

THE CONTRACTOR SHALL NOTIFY THE OHIO UTILITY PROTECTION SERVICE (OUPS) AT 1-800-362-2764, THE CITY ENGINEER, AND ALL PRIVATE UTILITY OWNERS A MINIMUM OF 48 HOURS PRIOR TO ANY EARTH DISTURBING ACTIVITY.

ALL UTILITY INFORMATION SHOWN ON THESE PLANS IS BASED UPON RECORD DRAWINGS AND FIELD OBSERVATIONS, AND IS PROVIDED AS A REFERENCE ONLY. IT IS BELIEVED THAT THESE LOCATIONS ARE ESSENTIALLY CORRECT. HOWEVER, THE OWNER AND ENGINEER DO NOT GUARANTEE THE ACCURACY OR COMPLETENESS OF THESE EXISTING UTILITIES. CONTRACTOR MAY DIG TEST PITS AT THEIR OWN EXPENSE.

ALL STORM AND SANITARY LINES THAT ARE TO BE REUSED, ARE TO BE THOROUGHLY CLEANED, FLUSHED, AND TELEVISED. SUBMIT VIDEO TO ENGINEER FOR APPROVAL OF EXISTING PIPING CONDITIONS.

8. EXISTING MONUMENTATION
THE CONTRACTOR SHALL PRESERVE ALL CORNERSTONES, IRON PINS, CONCRETE MONUMENTS AND / OR ANY TYPE OF LAND MONUMENT. ALL MONUMENTS IN THE PROXIMITY OF THE WORK SHALL BE REFERENCED. THE CONTRACTOR SHALL REPLACE / RESET ANY DISTURBED OR DAMAGED MONUMENTS, AND SHALL FURNISH A CERTIFICATION BY A REGISTERED SURVEYOR THAT THE MONUMENTS HAVE BEEN RESTORED TO THEIR ORIGINAL STATE.

9. DEWATERING OPERATIONS
WHEN DEEMED NECESSARY, THE CONTRACTOR MAY PLAN AND INSTALL DEWATERING EQUIPMENT PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PERMITS AND PLANS FOR THE INSTALLATION AND SUBSEQUENT REMOVAL OF DEWATERING EQUIPMENT AS MAY BE NECESSARY PER STATE AND LOCAL GOVERNING AGENCIES.

10. INSPECTION
ALL WORK REQUIRED FOR THIS IMPROVEMENT PLAN SHALL BE SUBJECT TO INSPECTION BY THE CITY OR THEIR DESIGNATED REPRESENTATIVE. THE CONTRACTOR SHALL GIVE A 48 HOUR NOTICE BEFORE STARTING ANY WORK ON THIS PROJECT AND SHALL KEEP THE CITY AND THE CONSTRUCTION MANAGER INFORMED OF HIS / HER CONSTRUCTION SCHEDULE. NO WORK SHALL BE PERFORMED AND / OR BURIED UNLESS AN AUTHORIZED INSPECTOR IS PRESENT.

11. CONSTRUCTION NOISE
CONSTRUCTION NOISE ASSOCIATED WITH ANY IMPROVEMENT PROJECT, SHALL BE LIMITED TO LEVELS COMMENSURABLE WITH ADJOINING LAND AND THEIR ASSOCIATED USAGE AS DETERMINED BY THE CITY ENGINEER, IN ORDER TO MINIMIZE ANY ADVERSE CONSTRUCTION NOISE IMPACTS, ANY POWER-OPERATED CONSTRUCTION-TYPE DEVICE SHALL NOT BE OPERATED BETWEEN THE HOURS OF 7:00 P.M. AND 8:00 A.M, UNLESS AUTHORIZED BY THE CONSTRUCTION MANAGER AND CITY ENGINEER.

CONSTRUCTION HOURS AND ACCEPTABLE NOISE LEVELS ARE TO BE APPROVED BY THE OWNER.

12. DUST CONTROL
THE CONTRACTOR SHALL FURNISH AND APPLY WATER AND CALCIUM CHLORIDE FOR DUST CONTROL AS DIRECTED BY THE CONSTRUCTION MANAGER AND / OR CITY ENGINEER. SUFFICIENT QUANTITIES OF CALCIUM CHLORIDE SHALL BE STORED ON THE JOB SITE AT ALL TIMES TO BE USED FOR DUST CONTROL.

13. MAINTENANCE OF TRAFFIC
THE CONTRACTOR IS TO MAINTAIN ACCESS TO THE FACILITY AT ALL TIMES. THE CONTRACTOR MUST SUBMIT A MAINTENANCE OF TRAFFIC PLAN TO THE OWNER AND CITY (IF APPLICABLE) FOR APPROVAL PRIOR TO THE START OF CONSTRUCTION.

USE SIGNS, BARRICADES, FLAGMEN OR GUARDS AS REQUIRED DURING CONSTRUCTION ACTIVITIES TO ENSURE THE SAFETY FOR ALL VEHICULAR AND PEDESTRIAN TRAFFIC. NO UNMANNED EXCAVATION SHALL BE LEFT UNPROTECTED. ALL TEMPORARY TRAFFIC CONTROL / FLAGGING ARE TO BE IN ACCORDANCE WITH ODOT ITEM 614, AS WELL AS OHIO REVISED CODE SECTION 4571.09.

14. DIMENSION
ALL DIMENSIONS ARE TO EDGE OF PAVEMENT, FACE OF CURB, AND FACE OF BUILDING, UNLESS OTHERWISE NOTED.

CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND REGULATIONS AND RELATIONS TO OTHER WORK BEFORE FABRICATION AND / OR INSTALLATION. CONTRACTOR IS RESPONSIBLE FOR ALL LAYOUT OF WORK.

15. CONSTRUCTION AREA
CONFINE OPERATIONS TO AREAS BEING CONSTRUCTED OR REPAIRED. DO NOT UNREASONABLY ENCUMBER THE SITE WITH MATERIALS OR EQUIPMENT. COORDINATE ALL CONSTRUCTION ACTIVITIES WITH THE CONSTRUCTION MANAGER AND OWNER.

TAKE ALL PRECAUTIONS TO PREVENT INTERFERENCE WITH NORMAL OPERATIONS OF THE OWNER. DO NOT BLOCK OR INTERFERE WITH REQUIRED LEGAL EXITING.

THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS IN SUCH A MANNER THAT LOCAL TRAFFIC SHALL HAVE ACCESS THROUGHOUT THE PROJECT IN A MANNER APPROVED BY THE CITY ENGINEER.

NO TRENCH OR EXCAVATION SHALL BE LEFT OPEN OVERNIGHT. OPEN AREAS ARE TO BE BACKFILLED OR STEEL PLATED. IN CASE OF INCLEMENT WEATHER OR OTHER REASONS, THE TRENCH SHALL BE BACKFILLED OR STEEL PLATED AT THE DIRECTION OF THE ENGINEER OR THE AUTHORITY HAVING JURISDICTION.NO TRENCH MAY BE BACKFILLED WITHOUT INSTALLED UTILITIES BEING REVIEWED BY ASSOCIATED INSPECTOR(S).

THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING THE SITE CLEAN AT ALL TIMES, TAKE RESPONSIBILITY FOR FINAL CLEANING, AND REMOVAL OF ALL TOOLS, EQUIPMENT AND SURPLUS MATERIALS FROM THE SITE AT COMPLETION OF THE WORK. DO NOT STOCKPILE ANY EXCESS CUT MATERIAL THAT IS NOT TO BE USED FOR ON-SITE FILL. HAUL AWAY AND PROPERLY DISPOSE OF ALL EXCESS CUT MATERIAL AT NO ADDITIONAL EXPENSE TO THE OWNER.

16. GENERAL
THE CONTRACTOR SHALL FURNISH A CERTIFICATE FROM A REGISTERED PROFESSIONAL SURVEYOR STATING THAT ALL HORIZONTAL AND VERTICAL CONTROL MONUMENTS AFFECTED BY THE PROJECT WERE REMOVED AND REPLACED TO THEIR ORIGINAL REFERENCE LOCATIONS AND ELEVATIONS.

ALL ROAD SURFACES, UTILITIES, BUILDINGS, STRUCTURES, SITE CONDITIONS, OR RIGHT-OF-WAYS DISTURBED BY CONSTRUCTION OF ANY PART OF THIS IMPROVEMENT ARE TO BE RESTORED COMPLETELY TO THE BEFORE CONSTRUCTION CONDITION. ALL ITEMS ARE INCLUDED IN THE PAY ITEMS.

ALL EXISTING SITE PAVEMENT MATERIAL REMOVED AS PART OF THIS IMPROVEMENT SHALL BE DISPOSED OF OFF SITE BY THE CONTRACTOR.

ALL DISTURBED SIGNS, GUARDRAIL, MAIL AND / OR PAPER BOXES, DRIVES AND DRIVE CULVERTS SHALL BE REPAIRED AND / OR REPLACED AS DIRECTED BY THE ENGINEER.

ALL DISTURBED AND / OR DAMAGED STORM SEWER PIPES, STORM SEWER APPURTENANCES, PAVEMENTS, BERMS AND DITCHES SHALL BE REPAIRED AND / OR REPLACED AS DIRECTED BY THE ENGINEER.

ANY DEFECTS IN CONSTRUCTION INCLUDING MATERIALS OR WORKMANSHIP SHALL BE REPLACED OR CORRECTED BY REMOVAL AND REPLACEMENT OR OTHER APPROVED METHOD PRIOR TO ACCEPTANCE BY THE ENGINEER AT NO ADDITIONAL COST TO THE OWNER.

THE CONTRACTOR SHALL REVIEW THE GEOTECHNICAL REPORT AND PERFORM SUB-GRADE PREPARATION WORK ACCORDING TO THE GEOTECHNICAL ENGINEER'S REQUIREMENTS AND FIELD DIRECTION. ACTUAL FIELD CONDITIONS MAY REQUIRE DECISIONS ON MATERIAL HANDLING AND USAGE. THE CONTRACTOR SHALL CONTINUALLY MONITOR AND MAINTAIN OVERALL SITE BALANCE AND COORDINATE ANY REVISIONS WITH THE OWNER AND ENGINEER. ANY EXCESS TOPSOIL OR ORGANIC MATERIAL MAY BE SPOILED ON-SITE IF APPROVED BY THE OWNER.

BEFORE ACCEPTANCE OF THE SUB-GRADE BY THE ENGINEER, PROOF-ROLLING SHALL BE REQUIRED ON ALL AREAS TO BE PAVED PER ODOT ITEM 204.06 CMS (LATEST EDITION). IN ADDITION, FOR ANY FILL IN EXCESS OF TWO (2) FEET, NUCLEAR COMPACTION TESTS SHALL BE PERFORMED BY AN APPROVED ODOT COMPANY AS PER ODOT ITEM 203. THESE TESTS SHALL BE APPROVED BY THE ENGINEER BEFORE ANY PAVEMENT CONSTRUCTION.

THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS TO PERFORM THE WORK SPECIFIED IN THE CONTRACT DOCUMENTS.

EXISTING CONDITIONS NOTE

UNDERGROUND FACILITIES, UTILITIES AND STRUCTURES HAVE BEEN PLOTTED FROM RECORD DRAWINGS AND FIELD OBSERVATION AND THEIR LOCATION MUST BE CONSIDERED APPROXIMATE ONLY. NEITHER KARPINSKI ENGINEERING OR MOTTER AND MEADOWS NOR ANY OF THEIR EMPLOYEES TAKE RESPONSIBILITY FOR THE LOCATION OF ANY UNDERGROUND STRUCTURES AND/OR UTILITIES NOT SHOWN THAT MAY EXIST. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE ALL UNDERGROUND STRUCTURES AND/OR UTILITIES LOCATED PRIOR TO EXCAVATION BY CALLING 811.

SHOP DRAWING NOTE

ANY PRODUCTS THAT DIFFER FROM THE PLANS OR SPECIFICATIONS SHALL BE SUBMITTED FORMALLY AS A PRODUCT SUBSTITUTION PRIOR TO ISSUING A SHOP DRAWING FOR THE MATERIAL. REVIEW OF SHOP DRAWING DOES INDICATE THE SUBSTITUTE PRODUCT HAS BEEN ACCEPETED WITHOUT FORMAL PRODUCT SUBSTITUTION PROCESS BEING IMPLEMENTED.

FULL SIZE SHEET (24"x36")

REVISIONS:

Karpinski ENGINEERING
13714 Cleveland Ave. NW
Uniontown, OH 44685
330-699-4077
karpinskieng.com

MOTTER & MEADOWS ARCHITECTS
600 MARKET AVENUE NORTH CANTON OHIO 44702

CRENSHAW PARK - NEW PAVILION
EDWARD L. "PEEL" COLEMAN COMMUNITY CENTER
1400 SHERRICK ROAD SE
CANTON, OHIO

STATE OF OHIO
CHRISTOPHER J. BEDNAR
E-68297
REGISTERED
PROFESSIONAL ENGINEER
08-21-2023

CONSTRUCTION DOCUMENTS

THIS DWG :
GENERAL NOTES

COMM 23105
DATE 07-17-23

DWG
C-0.1

DEMOLITION NOTES

A. THIS PLAN IS INTENDED TO PROVIDE MINIMUM GUIDELINES FOR SITE DEMOLITION. IT SHOULD BE NOTED THAT ALL MANMADE FEATURES, PAVEMENT, SIGNS, POLES, CURBING, CONCRETE WALKS, UTILITIES, ETC. SHALL BE REMOVED AS NECESSARY TO CONSTRUCT WORK, UNLESS OTHERWISE NOTED TO REMAIN. THROUGHOUT THE CONSTRUCTION PROCESS, THE CONTRACTOR SHALL INFORM THE ENGINEER IMMEDIATELY OF ANY FIELD DISCREPANCIES FROM DATA AS SHOWN ON DESIGN PLANS. THIS INCLUDES ANY UNFORESEEN CONDITIONS, SUBSURFACE OR OTHERWISE FOR EVALUATION AND RECOMMENDATIONS. ANY CONTRADICTION BETWEEN ITEMS OF THIS PLAN/PLAN SET, OR BETWEEN THE PLANS AND ON-SITE CONDITIONS MUST BE RESOLVED BEFORE RELATED CONSTRUCTION HAS BEEN INITIATED.

B. ALL EXISTING STRUCTURES INCLUDING PAVEMENT AS CALLED FOR TO BE REMOVED SHALL BE DISPOSED OF OFF-SITE IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL GUIDELINES. ANY BURNING ON-SITE IS PROHIBITED.

C. EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO CONSTRUCTION/ EARTH MOVING OPERATIONS. SILT FENCE/FILTER SOCK SHALL BE INSTALLED AT THE LIMITS OF IMPACT AREAS ACCORDING TO THE DETAILS SHOWN ON SHEET C3.1-C3.4.

D. CONTRACTOR RESPONSIBLE FOR REPAIRS AND RESTORATION OF AREAS DISTURBED BY UTILITY SERVICE INSTALLATION.

GENERAL NOTES

A. DAMAGES TO THE ADJACENT PROPERTY OR STRUCTURES MUST BE CAREFULLY GUARDED AGAINST,ESPECIALLY IN MAKING EXCAVATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGES TO THE FULL EXTENT, IF THE SAME ARE OCCASIONED THROUGH NEGLECT OR FAILURE ON HIS PART, OR THAT OF ANYONE IN HIS EMPLOY, TO TAKE ALL NECESSARY OR PROPER PRECAUTIONS TO PREVENT THE SAME, AND HE SHALL ASSUME ALL RISK OF DAMAGE TO ANY PORTION OF HIS WORK.

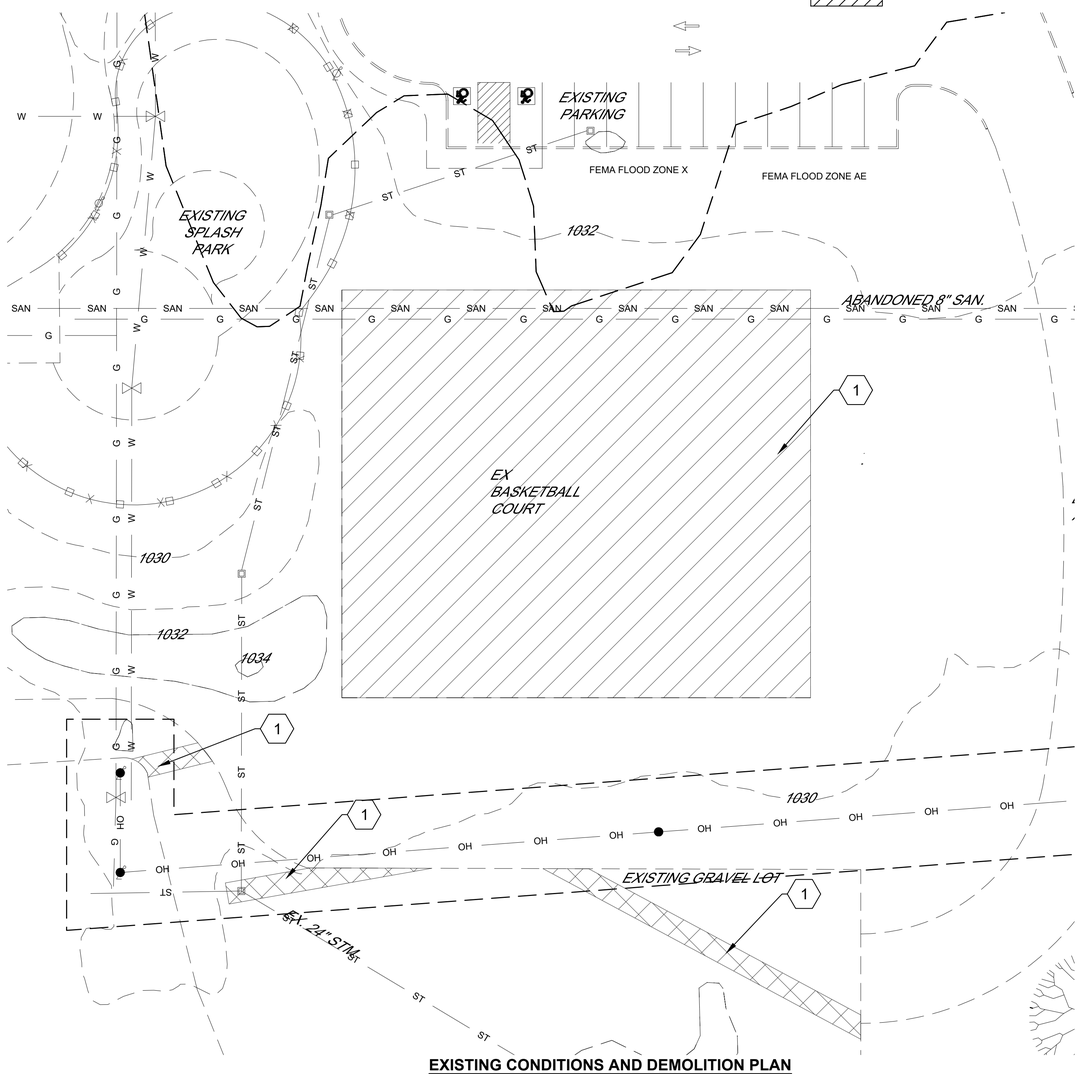
EXISTING CONDITIONS NOTES

A. UNDERGROUND FACILITIES, UTILITIES AND STRUCTURES HAVE BEEN PLOTTED FROM FIELD OBSERVATION AND THEIR LOCATION MUST BE CONSIDERED APPROXIMATE ONLY. NEITHER KARPINSKI ENGINEERING OR MOTTER & MEADOWS ARCHITECTS NOR ANY OF THEIR EMPLOYEES TAKE RESPONSIBILITY FOR THE LOCATION OF ANY UNDERGROUND STRUCTURES AND/OR UTILITIES NOT SHOWN THAT MAY EXIST. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE ALL UNDERGROUND STRUCTURES AND/OR UTILITIES LOCATED PRIOR TO EXCAVATION BY CALLING 811.

DEMOLITION PLAN LEGEND

REMOVE GRAVEL PARKING LOT REMOVAL FOR UTILITY EXTENSION

REMOVE ASPHALT PAVEMENT



EXISTING CONDITIONS AND DEMOLITION PLAN

PLAN NOTES

1. REMOVE EXISTING GRAVEL FOR UTILITY CONNECTION.
2. REMOVE EXISTING BASKETBALL COURT HOOPS AND BLEACHERS.
3. PROPOSED GRAVEL REPLACEMENT FOR UTILITY CONNECTION. SEE DETAIL C-2.1.
4. PROPOSED SIDEWALK PER DETAIL C-2.1.
5. CONCRETE BUILDING PAD. SEE STRUCTURAL AND ARCHITECTURAL DESIGN.
6. EXPANSION JOINT BETWEEN CONCRETE SIDEWALK, BUILDING PAD AND EXISTING SIDEWALK.

SCALE: 1" = 20'-0"

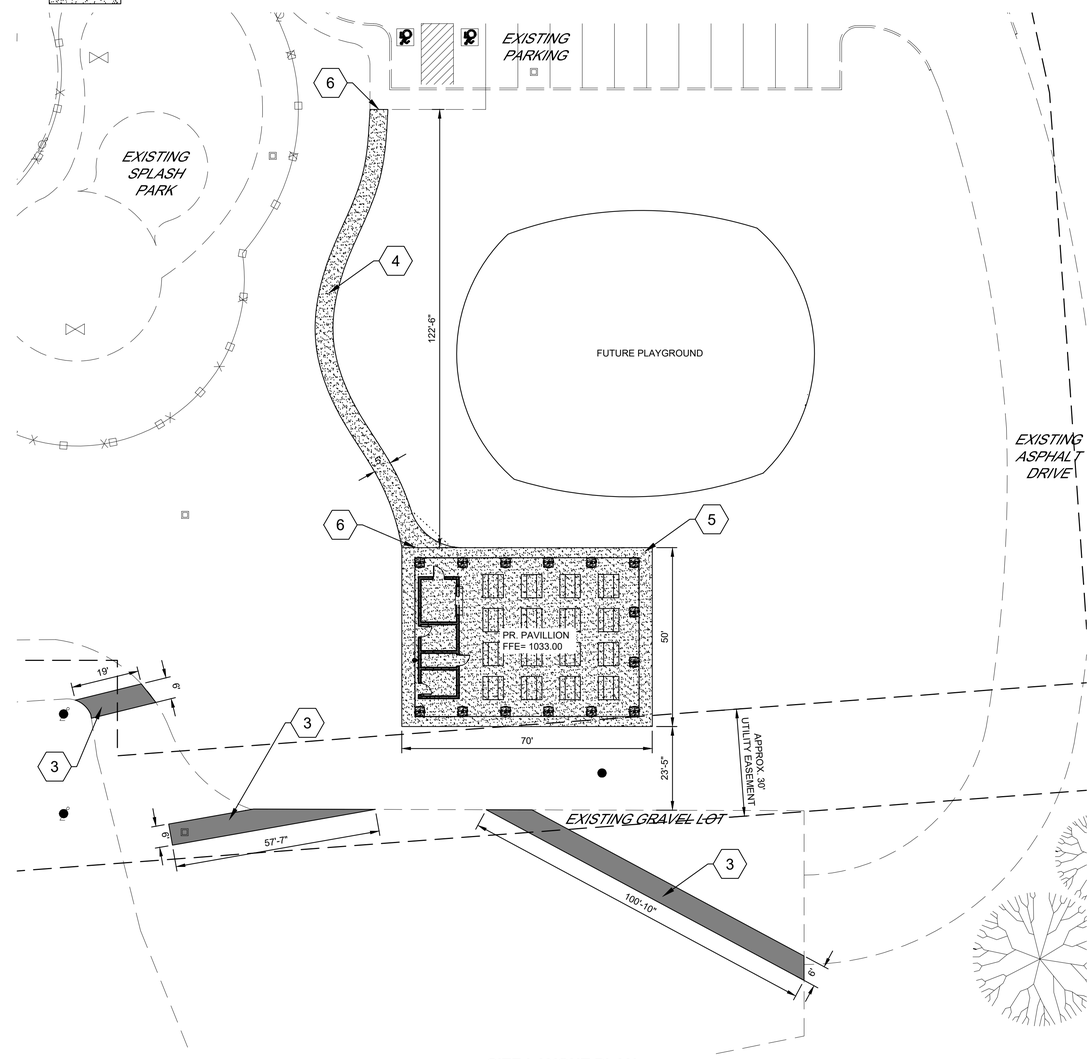
0 10' 20' 40'

FULL SIZE SHEET (24"x36")

SITE LAYOUT PLAN LEGEND

GRAVEL PARKING LOT REPLACEMENT FOR UTILITY EXTENSION

PROPOSED 6" CONCRETE WALK



SITE LAYOUT PLAN

REVISIONS:

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13714 Cleveland Ave. NW
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600 MARKET AVENUE NORTH CANTON OHIO 44702

MOTTER & MEADOWS ARCHITECTS

CRENSHAW PARK - NEW PAVILION
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1400 SHERRICK ROAD SE
CANTON, OHIO

STATE OF OHIO
CHRISTOPHER J. BEDNAR
E-68297
REGISTERED PROFESSIONAL ENGINEER
08-21-2023

CONSTRUCTION DOCUMENTS

THIS DWG : DEMO & SITE PLAN

COMM 23105
DATE 07-17-23

DWG C-1.0

UTILITY NOTES

1. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER, ARCHITECT AND/OR OWNER, IN ORDER TO OBTAIN AND/OR PAY ALL THE NECESSARY LOCAL PERMITS, FEES AND BONDS. REQUIRED PERMITS FOR ALL APPROVED WORK IN THE PUBLIC RIGHT-OF-WAY SHALL BE OBTAINED, BEFORE WORK BEGINS, FROM THE CITY OF CANTON. NOTIFY THE CITY PRIOR TO BEGINNING ANY WORK IN THE PUBLIC RIGHT OF WAY.
2. THE CONTRACTOR SHALL PROVIDE A MINIMUM NOTICE OF FOURTEEN (14) DAYS TO ALL CORPORATIONS, COMPANIES AND/OR LOCAL AUTHORITIES OWNING OR HAVING JURISDICTION OVER UTILITIES RUNNING TO, THROUGH OR ACROSS PROJECT AREAS PRIOR TO DEMOLITION AND/OR CONSTRUCTION ACTIVITIES.
3. THE LOCATION, SIZE, DEPTH AND SPECIFICATIONS FOR CONSTRUCTION OF PROPOSED PRIVATE UTILITY SERVICES SHALL BE TO THE STANDARDS AND REQUIREMENTS OF THE RESPECTIVE UTILITY COMPANY (ELECTRIC, GAS, AND SEWER).
4. A PRECONSTRUCTION MEETING SHALL BE HELD WITH THE OWNER, ENGINEER, ARCHITECT, CONTRACTOR, LOCAL OFFICIALS, AND ALL PROJECT-RELATED UTILITY COMPANIES (PUBLIC AND PRIVATE) PRIOR TO START OF CONSTRUCTION.
5. ALL CONSTRUCTION SHALL CONFORM TO THE CITY STANDARDS AND REGULATIONS, UNLESS OTHERWISE SPECIFIED. ALL CONSTRUCTION ACTIVITIES SHALL CONFORM TO LABOR OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) RULES AND REGULATIONS.
6. THE CONTRACTOR IS TO VERIFY LOCATION AND DEPTH OF ALL EXISTING UTILITY STUBS PRIOR TO CONSTRUCTION AND DISCONNECT ALL EXISTING SERVICE CONNECTIONS AT THEIR RESPECTIVE MAINS IN ACCORDANCE WITH THE RESPECTIVE UTILITY COMPANY'S STANDARDS AND SPECIFICATIONS.
7. AS-BUILT PLANS SHALL BE SUBMITTED TO THE DEPARTMENT OF PUBLIC WORKS.
8. THE CONTRACTOR IS RESPONSIBLE FOR PAYMENT OF ALL UTILITY CONNECTION AND ABANDONMENT FEES.
9. FRAMES AND COVERS: MANHOLE FRAMES AND COVERS SHALL BE OF HEAVY DUTY DESIGN AND PROVIDE A 24 INCH DIA., CLEAR OPENING. THE WORD "SEWER" OR "STORM" SHALL BE CAST INTO THE CENTER OF THE UPPER FACE OF EACH COVER WITH RAISED, 3" LETTERS.
10. CONTRACTOR SHALL PLACE 4" WIDE METAL WIRE IMPREGNATED RED PLASTIC WARNING TAPE OVER ENTIRE LENGTH OF ALL GRAVITY SEWERS AND SERVICES.
11. THE CONTRACTOR SHALL PROVIDE 18" VERTICAL CLEARANCE BETWEEN PROPOSED WATERLINES AND ANY SANITARY OR STORM SEWERS. WHEN 18" CLEARANCE CANNOT BE OBTAINED:
    - FOR STORM SEWERS, CONCRETE ENCASE THE STORM SEWER PIPE, 6 FT. ON EACH SIDE OF WATER MAIN.
    - FOR SANITARY SEWERS, REPLACE THE SANITARY SEWER PIPE WITH PVC C900 PIPE, 10FT. ON EACH SIDE OF THE WATER MAIN. APPROVED COUPLINGS SHALL BE USED TO TIE ONTO THE EXISTING SEWER.

    THE CONTRACTOR SHALL MAINTAIN TEN (10) FOOT HORIZONTAL CLEARANCE BETWEEN WATERLINES/SERVICES AND SANITARY OR STORM SEWERS.
12. PROPOSED RIM ELEVATIONS OF STORM AND SANITARY MANHOLES ARE APPROXIMATE. FINAL ELEVATIONS AREA TO BE SET FLUSH WITH FINISHED GRADE. ADJUST ALL OTHER RIM ELEVATIONS OF MANHOLES, WATER GATES, GAS GATES AND OTHER UTILITIES TO FINISHED GRADE AS SHOWN ON THE GRADING AND THE UTILITY PLAN.
13. SEWER LINES AND ALL APPURTENANCES SHALL BE CONSTRUCTED AND TESTED IN ACCORDANCE WITH THE STATE AND CITY OF CANTON SANITARY SPECIFICATIONS AND DETAILS. SANITARY SEWER SERVICE FOR THIS DEVELOPMENT IS AVAILABLE SUBJECT TO THE RULES AND REGULATIONS OF THE DEPARTMENT OF PUBLIC UTILITIES. A SINGLE SANITARY SEWER TAP FROM THIS SITE SHALL BE ALLOWED INTO THE PUBLIC SANITARY SEWER SYSTEM. DEVELOPER SHALL USE EXISTING SANITARY TAP, WHEN AVAILABLE.
14. THE CONTRACTOR SHALL HAVE THE APPROVAL OF ALL GOVERNING AGENCIES HAVING JURISDICTION OVER FIRE PROTECTION SYSTEM PRIOR TO INSTALLATION. FIRE PREVENTION NOTES APPROVED PREMISES IDENTIFICATION IS REQUIRED.
15. THE CONTRACTOR IS TO VERIFY WITH THE ARCHITECT'S PLAN THE LOCATIONS OF ALL UTILITIES STUB LOCATION WITHIN THE BUILDING PRIOR TO CONSTRUCTION.

CITY OF CANTON ACCEPTABLE WATER SERVICE MATERIALS

1", 1-1/2" AND 2"
TYPE "K" COPPER
OR
POLYETHYLENE SERVICE TUBING - POLYETHYLENE WATER MAIN AND
SERVICE TUBING 2" AND UNDER SHALL BE COPPER TUBE SIZE, SDR 9, WITH A
MINIMUM PRESSURE CLASS OF 200 PSI AND MEET STANDARDS ASTMD2737 PE4710 AND AWWA C901.
THE ACCEPTABLE TUBING IS:
O CP CHEM PERFORMANCE PIPE DRISCOPLEX 5100-ULTRA-LINE
O CHARTER PLASTICS INC. BLUE ICE
O ENDOT ENDOPURE
O ADS POLYFLEX.

GREATER THAN 2"
4" TO 8"
DUCTILE IRON PIPE CLASS 52
OR
C909 (PVCO) 235 PSI
12"
DUCTILE IRON PIPE CLASS 53
GREATER THAN 12"
DUCTILE IRON PIPE CLASS 54

PERMIT NOTE

CONTRACTOR SHALL OBTAIN SEWER LATERAL PERMIT FROM CITY OF CANTON SANITARY ENGINEERING DEPARTMENT

PIPE MATERIAL NOTES

1. STORM SEWER: HDPE, N-12 PIPE (ALL SITE STORM)
2. SANITARY - 6" PVC SDR 35
3. ELECTRIC - SEE ELECTRICAL DESIGN
4. DOMESTIC WATER-SEE CITY OF CANTON ALLOWABLE MATERIALS. BASE BID OF TYPE K COPPER

(X) PLAN NOTES

1. PROPOSED 6" SANITARY.
2. PROPOSED SANITARY CLEANOUT
3. PROPOSED SANITARY 45° BEND
4. CONNECT 6" SANITARY TO EX. MANHOLE WITH INSIDE DROP SHOWN ON C-2.1. CITY OF CANTON GIS WAS USED TO LOCATE MANHOLE. CONTRACTOR TO VERIFY LOCATION PRIOR TO ORDERING MATERIALS.
5. PROPOSED UNDERGROUND ELECTRIC. SEE ELECTRICAL DRAWINGS.
6. EX. UTILITY POLE (TYP.)
7. PROPOSED 1.5" DOMESTIC WATER SERVICE. SEE DETAIL C2.3.
8. PROPOSED WATER METER. SEE MEP DESIGN.
9. EX. WATERLINE SIZE UNKNOWN. CONTRACTOR TO CONFIRM SIZE BEFORE ORDERING SERVICE TAP.
10. PROPOSED 2-2B CATCH BASIN WITH RECESSED GRATE.
11. EX. ADA RAMP
12. ADA ACCESSIBLE SPACES PROVIDED IN EXISTING PARKING LOT. ACCESSIBLE ROUTE PROVIDED VIA PROPOSED SIDEWALK.
13. PROVIDE 4" TOPSOIL, SEED, FERTILIZER, PRAIRIE SEED MIX, STRAW MAT TO ALL DISTURBED AREAS.

GRADING NOTES

1. ELEVATIONS SHOWN ARE BASED ON PROVIDED RECORD DRAWINGS.
2. ALL BENCHMARKS AND TOPOGRAPHY SHOULD BE FIELD VERIFIED BY THE CONTRACTOR.
3. SITE GRADING SHALL NOT PROCEED UNTIL EROSION CONTROL MEASURES HAVE BEEN INSTALLED.

SCALE: 1" = 20'-0"
0 10' 20' 40'
FULL SIZE SHEET (24"x36")

LEGEND

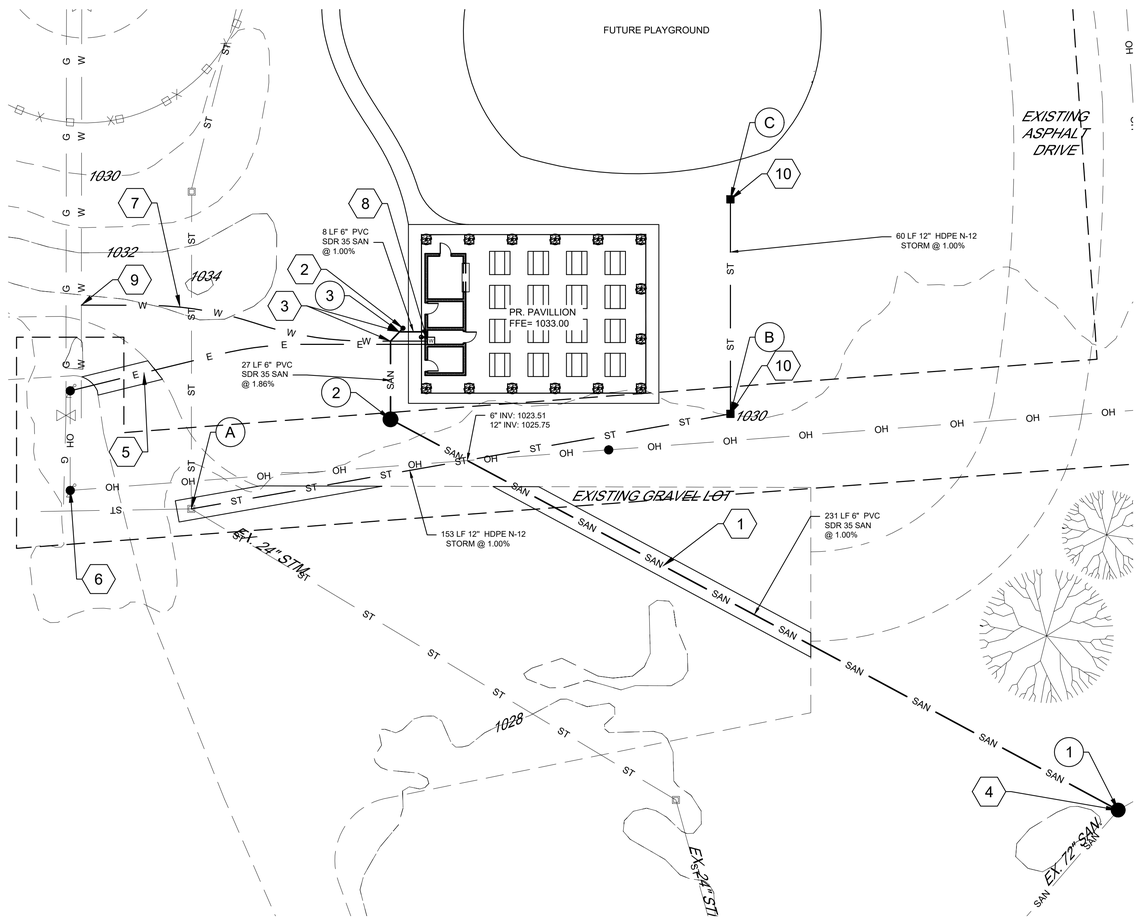
(628.50) / (628.00)	PROPOSED TOP OF CURB ELEVATION / PROPOSED BOTTOM OF CURB ELEVATION
(628.00)	PROPOSED SPOT ELEVATION
627.50 / 627.00	EXISTING TOP OF CURB ELEVATION / EXISTING BOTTOM OF CURB ELEVATION
627.50	EXISTING ELEVATION
(A)	STORM STRUCTURE I.D.
(1)	SANITARY STRUCTURE I.D.

PROPOSED SANITARY SEWER TABLE

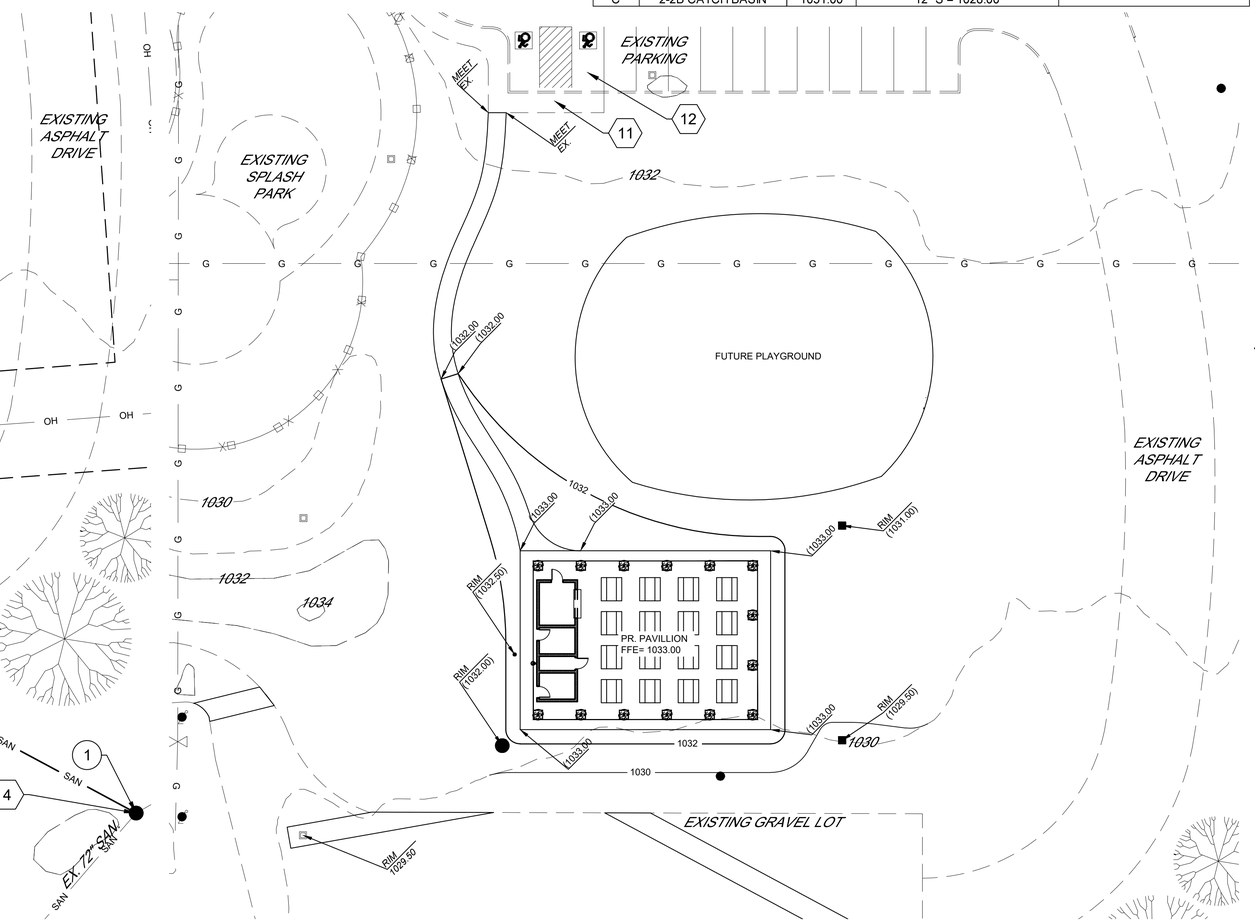
ID	TYPE	RIM	INVERT
1	EX. MANHOLE	1030.81	6" NE = 1021.44; EX. 72" NE&SW= 1006.21
2	MANHOLE	1032.00	6" N = 1027.50; 6" SE = 1023.75
3	CLEANOUT	1032.50	6" E & SW = 1028.00

PROPOSED STORM SEWER TABLE

ID	TYPE	RIM	INVERT OUT	INVERT IN
A	EX. 2-2B CATCH BASIN	1029.50	EX. 24" SE = 1024.37	EX. 24" W = 1024.37; EX. 18" N = 1024.87; 12" NE = 1024.97
B	2-2B CATCH BASIN	1029.50	12" SW = 1026.50	12" S = 1026.50
C	2-2B CATCH BASIN	1031.00	12" S = 1028.00	



UTILITY PLAN



GRADING PLAN

REVISIONS:

FULL SIZE SHEET (24"x36")

Karpinski ENGINEERING
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330-699-4077
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600 MARKET AVENUE NORTH CANTON OHIO 44702

MOTTER & MEADOWS ARCHITECTS

CRENSHAW PARK - NEW PAVILION
EDWARD L. "PEEL" COLEMAN COMMUNITY CENTER
1400 SHERRICK ROAD SE
CANTON, OHIO

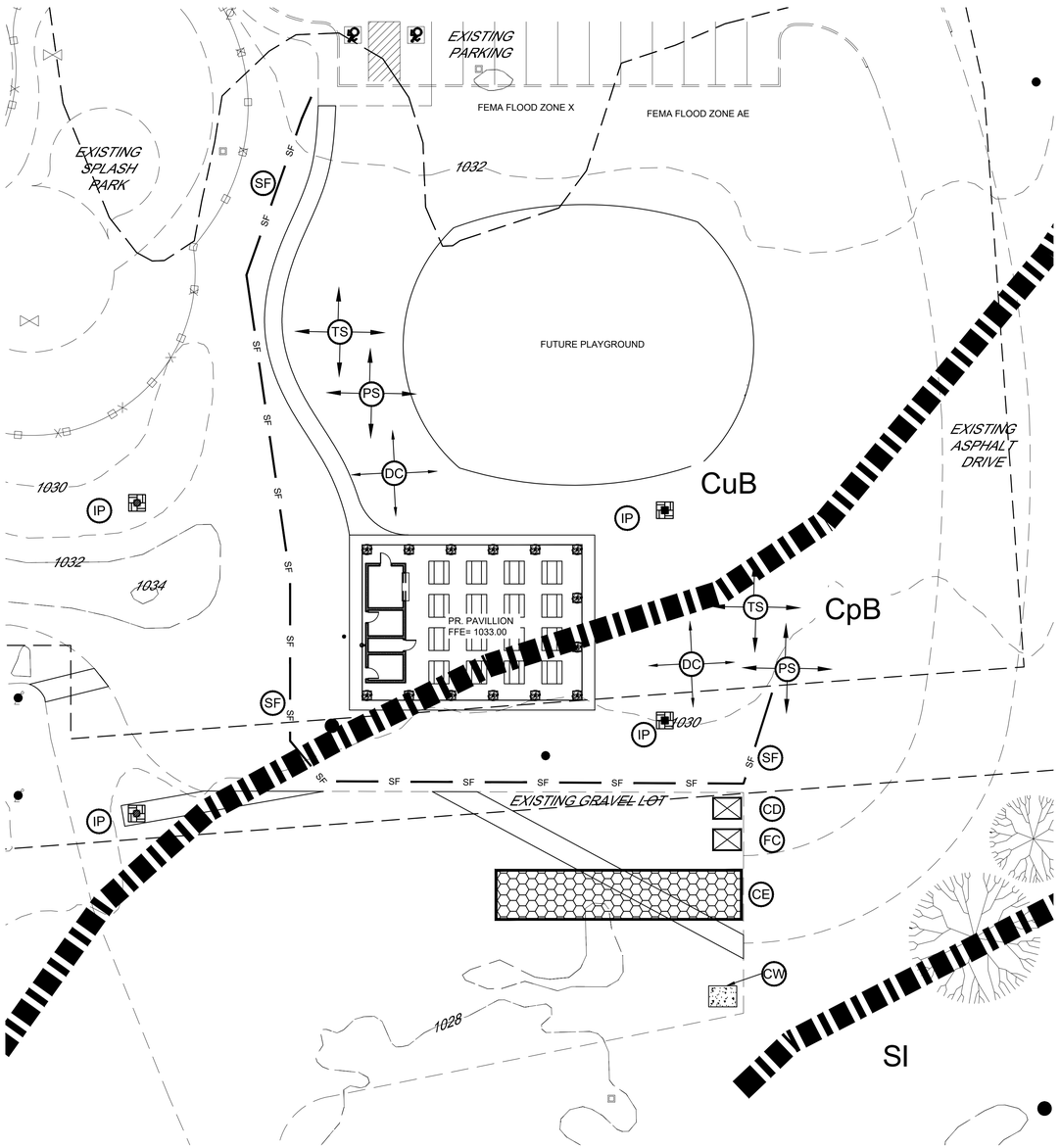
STATE OF OHIO
CHRISTOPHER J. BEDNAR
E-68297
REGISTERED PROFESSIONAL ENGINEER
08-21-2023

THIS DWG : UTILITY & GRADING PLAN

COMM 23105
DATE 07-17-23

CONSTRUCTION DOCUMENTS

DWG C-1.1



SWPP PLAN

SCALE: 1" = 20'-0"

0 10' 20' 40'

CONSTRUCTION SEQUENCE

1. CONTACT STARK SOIL & WATER CONSERVATION DISTRICT TO SCHEDULE A PRE-CONSTRUCTION MEETING AT (330) 451-7645 PRIOR TO ANY EARTH MOVING ACTIVITY.
2. ESTABLISH CONSTRUCTION OFFICE ON SITE. ESTABLISH TEMPORARY POWER, WATER, SANITARY SEWER, TELEPHONE SERVICE, WITH OWNER, GC, SITE CONTRACTOR AND CITY ENGINEER REPRESENTATIVE. ALL TEMPORARY UTILITY SERVICES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
3. STAKEOUT LIMITS OF DISTURBANCE.
4. INSTALL INLET PROTECTION OF ANY EXISTING CATCH BASINS.
5. INSTALL ALL PERIMETER SILT FENCE (OR FILTER SOCK) WHERE SHOWN ON PLANS.
6. MAINTAIN TEMPORARY CONTROLS UNTIL REMOVAL IS WARRANTED DUE TO PROGRESSION OF WORK. CONSTRUCTION BMPsSHALL BE IN PLACE PRIOR TO THE START OF CONSTRUCTION ACTIVITIES.
7. STRIP TOPSOIL AND BEGIN EARTHWORK OPERATIONS. CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE OWNER OF LOCATION AND EROSION SEDIMENTATION CONTROL MEASURES IMPLEMENTED AT BORROW OR SPOIL SITE OF IMPORT/EXPORT MATERIAL.
8. ALL SEWER AND UTILITY LINE CONSTRUCTION MAY BEGIN IMMEDIATELY FOLLOWING ESTABLISHMENT OF GRADE AND PERMISSION OF THE OWNER.
9. STABILIZE ALL UTILITY TRENCHES AT THE END OF EACH WORKDAY BY MEANS OF GRAVEL BACKFILL TO SURFACE, RE-PAVING, MULCHING.
10. STABILIZE ALL DISTURBED AREAS WITH TOPSOIL, PERMANENT SEED AND MULCHING IMMEDIATELY UPON REACHING FINAL GRADE.
11. INSTALL PAVEMENT BASE AND PAVEMENT.
12. COMPLETE SITE WORK, PAVEMENT MARKING, FINAL LANDSCAPING AND CLEANUP.
13. RESEED AND REDRESS ANY AREAS THAT MAY REQUIRE ATTENTION IMMEDIATELY. NOTE THAT LAWN AREAS WILL NOT BE DEEMED STABLE UNTIL A UNIFORM 80% COVERAGE IS ACHIEVED.
14. ALL EROSION MEASURES SHALL REMAIN IN PLACE UNTIL THE SITE IS STABILIZED. ALL AREAS OF VEGETATIVE SURFACE STABILIZATION, WHETHER TEMPORARY OR PERMANENT, SHALL BE CONSIDERED TO BE IN PLACE AND FUNCTIONAL WHEN THE REQUIRED UNIFORM RATE OF COVERAGE (80%) IS OBTAINED.
15. IF FOR ANY REASON THE PROJECT IS SUSPENDED, THE CONTRACTOR SHALL ENSURE THAT ALL INSTALLED EROSION MEASURES ARE FUNCTIONING AND PROPERLY MAINTAINED DURING THIS PERIOD, AND THAT ALL DISTURBED SOILS ARE SEEDED AND MULCHED WITH TEMPORARY SEED MIXTURE.

EROSION AND SEDIMENT CONTROL NOTES:

1. THE SMALLEST PRACTICAL AREA OF LAND SHOULD BE EXPOSED AT ANY ONE TIME DURING DEVELOPMENT.
2. WHEN LAND IS EXPOSED DURING DEVELOPMENT, THE EXPOSURE SHOULD BE KEPT TO THE SHORTEST PRACTICAL PERIOD OF TIME.
3. TEMPORARY VEGETATION SHALL BE USED TO PROTECT HIGH EROSION POTENTIAL OR OTHER CRITICAL AREAS EXPOSED DURING DEVELOPMENT. WHEREVER FEASIBLE, NATURAL VEGETATION SHOULD BE RETAINED AND PROTECTED.
4. THE CONTRACTOR IS TO REFER TO THIS PLAN AND THE E&S PLAN, NOTES. AND DETAILS.
5. TEMPORARY SEEDING IS SPECIFIED UNTIL CONSTRUCTION OF FINAL IMPROVEMENTS COMMENCES.
6. THE CONTRACTOR IS TO INSTALL AND MAINTAIN THE E&S CONTROLS THROUGHOUT THE CONSTRUCTION PERIOD AND UNTIL THE SITE IS FULLY STABILIZED.
7. THE CONTRACTOR IS RESPONSIBLE TO REMOVE THE TEMPORARY E&S CONTROLS ONCE THE SITE IS FULLY STABILIZED.
8. CONTRACTOR IS TO MAINTAIN A LOG DOCUMENTING GRADING AND STABILIZATION ACTIVITIES AS WELL AS AMENDMENTS TO THE SWPPP. PER GENERAL PERMIT REQUIREMENTS. SWP3 INSPECTION REPORTS SHALL BE KEPT ON SITE WITH THE SWP3 AND READILY ACCESSIBLE DURING NORMAL WORKING HOURS.
9. CONTRACTOR IS TO UTILIZE EXISTING PAVEMENT FOR CONSTRUCTION ENTRANCE PER THEIR MEANS AND METHODS.
10. APPLICANT SHALL MAINTAIN COMPLIANCE WITH OHIO EPA'S GENERAL STORMWATER NPDES PERMIT PROGRAMS.
11. APPLICANT SHALL MAINTAIN COMPLIANCE WITH THE CITY OF CANTON AND STATE OF OHIO'S AIR QUALITY REGULATIONS APPLICABLE IN THE CANTON MUNICIPAL CODE AND THE OHIO ADMINISTRATIVE CODE INCLUDING, BUT NOT LIMITED TO THE ASBESTOS AND THE ANTI-NOISE LAWS.
12. ALL WASTE WILL COMPLY WITH APPLICABLE STATE OR LOCAL WASTE DISPOSAL REQUIREMENTS AND PROVISIONS FOR SANITARY WASTES AND CONSTRUCTION AND DEMOLITION DEBRIS. OPEN BURNING IS PROHIBITED.

SWPPP LEGEND		BMPs UTILIZED ON THIS PROJECT "X"
IP	STORM DRAIN INLET PROTECTION	X
TS	TEMPORARY SEEDING	X
PS	PERMANENT SEEDING	X
DC	DUST CONTROL	X
CW	CONCRETE WASHOUT	X
— X — CF	8'-0" CHAIN-LINK FENCE	
— FS — FS	FILTER SOCK	
— SF — SF	SILT FENCE	X
CD	COVERED AND LEAK PROOF CONSTRUCTION DEBRIS DUMPSTER	X
FC	FUEL CONTAINMENT DYKE AND CHEMICAL STORAGE/MIXING AREA	X
CE	CONSTRUCTION ENTRANCE MAY USE EX ASPHALT IN PLACE	X

CuB SOIL TYPE - CHILI-URBAN LAND COMPLEX

CpB SOIL TYPE - CHILI SILT LOAM

SI SOIL TYPE - SLOAN SILT LOAM

SOIL BOUNDARY LINE

I, THE UNDERSIGNED, CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHERED AND EVALUATED THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGED THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

08/17/23

FULL SIZE SHEET (24"x36")

REVISIONS:

Karpinski ENGINEERING
13714 Cleveland Ave. NW
Uniontown, OH 44685
330-699-4077
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CHRISTOPHER J. BEDNAR
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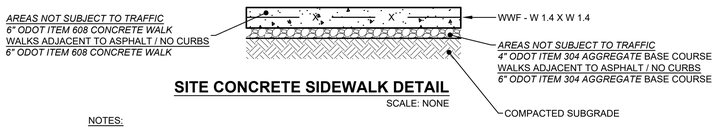
08-21-2023

CONSTRUCTION DOCUMENTS

THIS DWG : SWP PLAN

COMM 23105
DATE 07-17-23

DWG C-1.2

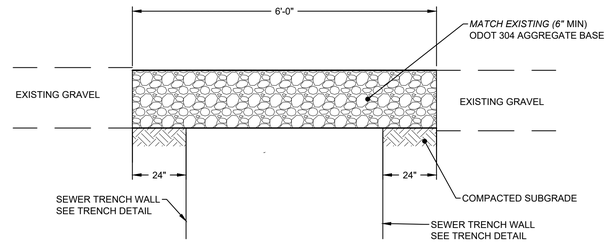


SITE CONCRETE SIDEWALK DETAIL

SCALE: NONE

NOTES:

1. ALL CONCRETE IS TO BE AIR-ENTRAINED 4000 PSI (NO FLY ASH) , UNLESS OTHERWISE DIRECTED BY ENGINEER.
2. SLOPE SURFACE TO DRAIN (MIN 1% MAX 2% CROSS-SLOPE).
3. 1/2" PREFORMED JOINT MATERIAL, CONTINUOUS STRIP SHALL BE INSTALLED EVERY 30' AND / OR BETWEEN SIDEWALK AND ANY FIXED STRUCTURE EXTENDING THE FULL DEPTH OF THE SIDEWALK.
4. SIDEWALK JOINTS SHALL BE DIVIDED INTO EQUALLY SPACED BLOCKS, BUT NOT GREATER THAN 10' O.C. (I.E. 5' INTERVALS FOR 5' WIDE SIDEWALKS). JOINTS SHALL BE HAND TOOLED OR SAW CUT TO A DEPTH OF 1/4" OF THE SLAB THICKNESS.
5. MATERIAL PLACING, FINISHING, AND JOINTING PER DETAILS AND SPECIFICATIONS
6. CONCRETE WALK IS TO HAVE MEDIUM BROOM FINISH PERPENDICULAR TO TRAFFIC FLOW, RUB OUT ALL TOOL MARKS.

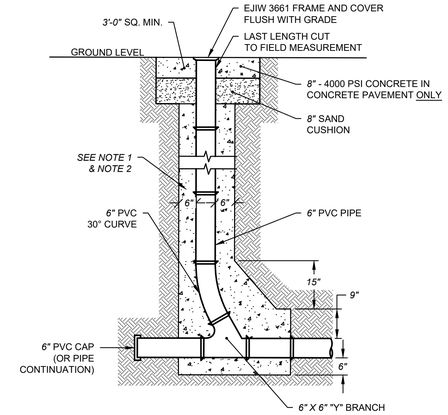


GRAVEL PAVEMENT REPAIR OVER UTILITY TRENCH
GRAVEL BASE DETAIL

SCALE: NONE

NOTES:

1. ALL THICKNESSES SHOWN ARE COMPACTED IN PLACE.
2. PRIOR TO GRAVEL PLACEMENT, SUBBASE IS TO BE PROOF ROLLED.
3. WHERE APPLICABLE, REFER TO GEOTECHNICAL REPORT FOR ADDITIONAL INFORMATION.

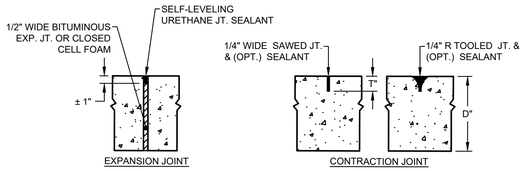


CLEANOUT DETAIL

SCALE: NONE

NOTES:

1. CONCRETE (4000 PSI) ENCASEMENT FOR CLEANOUT IS OPTIONAL WITHIN LANDSCAPE. CONSULT ENGINEER BEFORE PROCEEDING.
2. CONCRETE (4000 PSI) ENCASEMENT FOR CLEANOUT IS REQUIRED WHEN SUBJECT TO TRAFFIC.
3. 8" CLEANOUT SHALL BE USED FOR 8" SEWER AND LARGER.
4. SMALLER SIZE SEWERS AND LAMP HOLES SHALL HAVE SAME SIZE PIPE.
5. CLEANOUT TO HAVE A WATERTIGHT CAP ON RISER.
6. RISER IS TO BE TERMINATED JUST BELOW GRADE. USE C.I. LAMPHOLE FRAME AND COVER WHEN SUBJECT TO TRAFFIC.
7. INSTALL CLEANOUTS ON ALL STORM & SANITARY LINES LEAVING THE BUILDING. LOCATIONS TO BE FIELD DETERMINED.



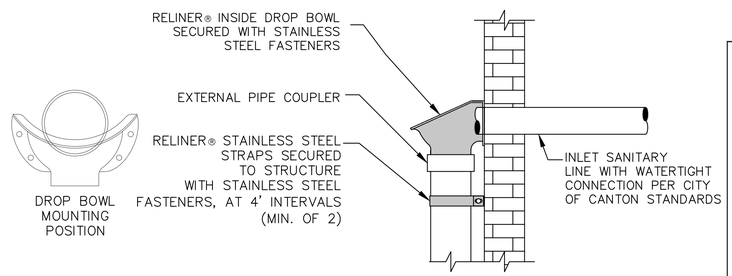
D"	T" (MIN.)
4"	1-1/3"
6"	2"
8"	2-2/3"

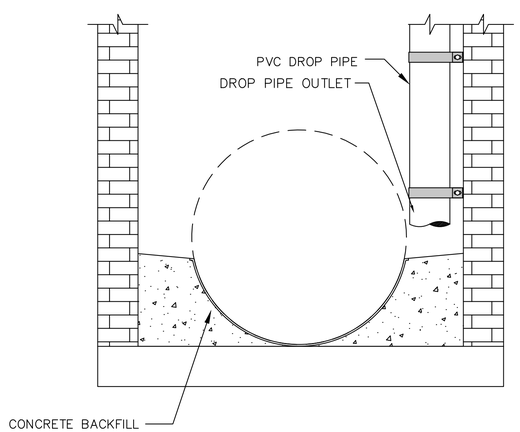
PROFILE CONCRETE JOINT DETAIL

SCALE: NONE

NOTES:

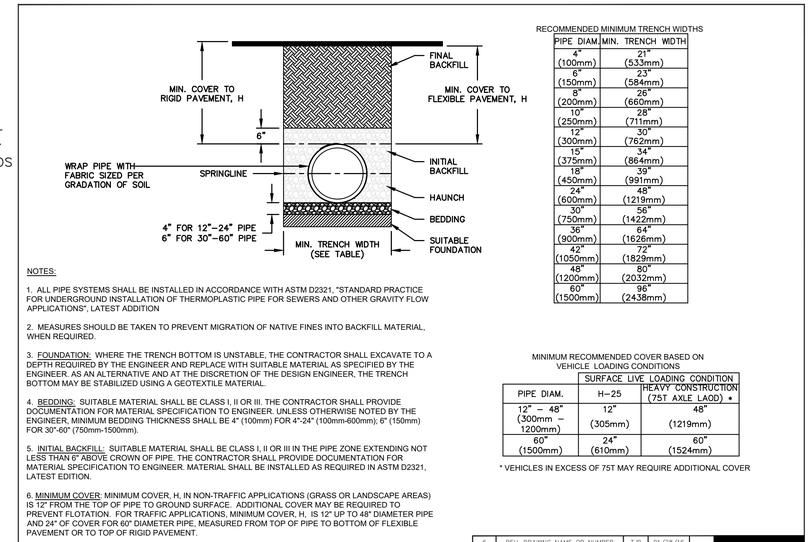
1. MAXIMUM JOINT SPACING IS AS FOLLOWS:
   1.a. CONTRACTION JOINT @ 15' O.C.
   1.b. EXPANSION JOINT @ 60' O.C., CHANGE OF DIRECTIONS AND WERE CONCRETE ABUTS BUILDING/WALLS
2. USE OF SEALANT IS OPTIONAL IN CONTRACTION JOINTS





CITY OF CANTON PREFERRED INSIDE DROP INLET

SCALE: NONE



RECOMMENDED MINIMUM TRENCH WIDTHS

PIPE DIAM.	MIN. TRENCH WIDTH
4" (100mm)	21" (533mm)
6" (150mm)	23" (584mm)
8" (200mm)	26" (660mm)
10" (250mm)	28" (711mm)
12" (300mm)	30" (762mm)
15" (375mm)	34" (864mm)
18" (450mm)	39" (991mm)
24" (600mm)	48" (1219mm)
30" (750mm)	56" (1422mm)
36" (900mm)	64" (1626mm)
42" (1050mm)	72" (1829mm)
48" (1200mm)	80" (2032mm)
60" (1500mm)	98" (2438mm)

NOTES:

1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST ADDITION

2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.

3. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.

4. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II OR III. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"-24" (100mm-600mm); 6" (150mm) FOR 30"-60" (750mm-1500mm).

5. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.

6. MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOTATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" UP TO 48" DIAMETER PIPE AND 24" OF COVER FOR 60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.

MINIMUM RECOMMENDED COVER BASED ON VEHICLE LOADING CONDITIONS

PIPE DIAM.	SURFACE LIVE LOADING CONDITION H–25	SURFACE LIVE LOADING CONDITION HEAVY CONSTRUCTION (75T AXLE LAOD) *
12" – 48" (300mm – 1200mm)	12" (305mm)	48" (1219mm)
60" (1500mm)	24" (610mm)	60" (1524mm)

* VEHICLES IN EXCESS OF 75T MAY REQUIRE ADDITIONAL COVER

REV.	DESCRIPTION	BY	MM/DD/YY	CHK'D
6	REV. DRAWING NAME OR NUMBER	TJR	01/28/16	

ADVANCED DRAINAGE SYSTEMS, INC. ("ADS") HAS PREPARED THIS DETAIL BASED ON INFORMATION PROVIDED TO ADS. THIS DRAWING IS INTENDED TO DEPICT THE COMPONENTS AS REQUESTED. ADS HAS NOT PERFORMED ANY ENGINEERING OR DESIGN SERVICES FOR THIS PROJECT, NOR HAS ADS INDEPENDENTLY VERIFIED THE INFORMATION SUPPLIED. THE INSTALLATION DETAILS PROVIDED HEREIN ARE GENERAL RECOMMENDATIONS AND ARE NOT SPECIFIC FOR THIS PROJECT. THE DESIGN ENGINEER SHALL REVIEW THESE DETAILS PRIOR TO CONSTRUCTION. IT IS THE DESIGN ENGINEERS RESPONSIBILITY TO ENSURE THE DETAILS PROVIDED HEREIN MEETS OR EXCEEDS THE APPLICABLE NATIONAL, STATE, OR LOCAL REQUIREMENTS AND TO ENSURE THAT THE DETAILS PROVIDED HEREIN ARE ACCEPTABLE FOR THIS PROJECT.

TRENCH INSTALLATION DETAIL (GEOTEXTILE WRAP)

DRAWING NUMBER: STD-101B

ADS. 4640 TRUEMAN BLVD HILLIARD, OHIO 43026 ADVANCED DRAINAGE SYSTEMS, INC.

DRAWN BY: CKS
DATE: 10/18/06
SCALE: NTS
SHEET: 1 OF 1

FINAL BACKFILL: PREMIUM BACKFILL (ODOT ITEM 304) SHALL BE USED FOR ALL TRENCHES UNDER PAVEMENT COMPACTED IN PLACE. NATIVE EARTH MAY BE USED FOR LAWN AREAS COMPACTED IN 8" MAX LIFTS.

STORM SEWER TRENCH (OR EQUIVALENT)

SCALE: NONE

FULL SIZE SHEET (24"x36")

REVISIONS:

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13714 Cleveland Ave. NW
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STATE OF OHIO
CHRISTOPHER J. BEDNAR
E-68297
REGISTERED PROFESSIONAL ENGINEER
08-21-2023

CONSTRUCTION DOCUMENTS

THIS DWG : DETAILS

COMM 23105
DATE 07-17-23

DWG C-2.1

NOTES:

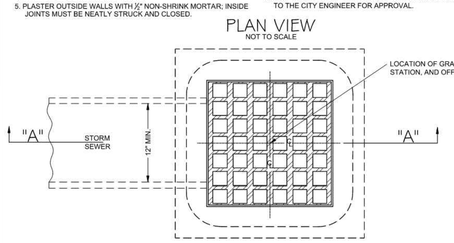
1. ALL WORK SHALL CONFORM TO ODOT ITEM 604 EXCEPT AS OTHERWISE NOTED HEREIN.
2. PRECAST CONCRETE OR BRICK CATCH BASINS ARE ALLOWED AS NOTED HEREIN.
3. IF THE CATCH BASIN WILL BE USED IN A TRAFFIC-BEARING APPLICATION, THE PRECAST CONCRETE PORTION OF AN ODOT 2-2B CATCH BASIN MAY BE USED. HOWEVER, THE INLET FRAME AND GRATE AS SPECIFIED HEREIN SHALL BE USED IN LIEU OF THE ODOT 2-2 "LAY-IN" GRATE. ALL ANNULAR SPACE REMAINING BETWEEN THE BOTTOM OF THE INLET FRAME AND THE TOP OF THE PRECAST SECTION SHALL BE FILLED WITH CEMENT GROUT OR CLASS 'C' CONCRETE. IF THE CATCH BASIN WILL BE USED IN A NON-TRAFFIC-BEARING APPLICATION, AN ODOT 2-2 CATCH BASIN MAY BE USED WITH THE STANDARD "LAY-IN" GRATE.
4. ALL CONCRETE SHALL CONFORM TO ODOT ITEM 499 CLASS C (4000 psi).
5. A CONCRETE CHANNEL SHALL BE POURED INTO THE BOTTOM OF THE CATCH BASIN USING CLASS 'C' CONCRETE. THE CHANNEL SHALL TAPER FROM 9" THICKNESS TO 2" MIN. THICKNESS AT THE LOWEST SEWER INVERT AND SHALL BE FINISHED WITH A SMOOTH SURFACE.
6. THE EXCAVATED AREA AROUND THE CATCH BASIN SHALL BE BACKFILLED WITH ODOT ITEM 703.11, TYPE 1 (304, 411, OR 617) COMPACTED IN 8" LIFTS. NO FOUNDRY SAND OR SLAG PERMITTED.
7. WHERE CATCH BASIN WILL BE LOCATED WITHIN CROSSWALK, AT ADA RAMP, OR IN DESIGNATED BIKE LANE, CASTING SHALL BE EAST JORDAN IRON WORKS (EJIW) 5250 INLET WITH V-6622080 ADA GRATE OR NEENAH R-3405-A INLET WITH TYPE "L" GRATE, OR EQUAL APPROVED BY CITY ENGINEER. AS APPLICABLE, GRATE SHALL BE ORIENTED SUCH THAT THE LONG OPENINGS ARE PERPENDICULAR TO NORMAL DIRECTION OF BICYCLE TRAFFIC FLOW. IN OTHER LOCATIONS, CASTING SHALL BE EJIW 5250 OR NEENAH R-3405 INLET AND STANDARD GRATE MAY BE USED. IN ALL LOCATIONS, GRATE MUST INCLUDE "ECO-SENSITIVE" MARKINGS SUCH AS: "DUMP NO WASTE; DRAINS TO STREAM" AND AN AQUATIC LIFE LOGO. THE LETTERING AND LOGO SHALL BE RAISED OR RECESSED AND INTEGRAL WITH THE CASTING. ALTERNATE NOTATION OR LOGO IS SUBJECT TO THE CITY ENGINEER'S APPROVAL. CASTINGS TO BE GRAY IRON IN COMPLIANCE WITH ASTM A-48 CLASS 35 AND AASHTO M306.
8. ALL OPENINGS AND KNOCKOUTS FOR INLET AND OUTLET PIPING SHALL BE FASHIONED NEATLY. ALL ANNULAR SPACE SHALL BE FILLED WITH CEMENT GROUT, BRICK AND MORTAR, OR CLASS 'C' CONCRETE.
9. ODOT REFERENCES ARE FROM THE CURRENT ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS. ANY DISCREPANCIES SHALL BE SUBJECT TO THE CITY ENGINEER'S DISCRETION.

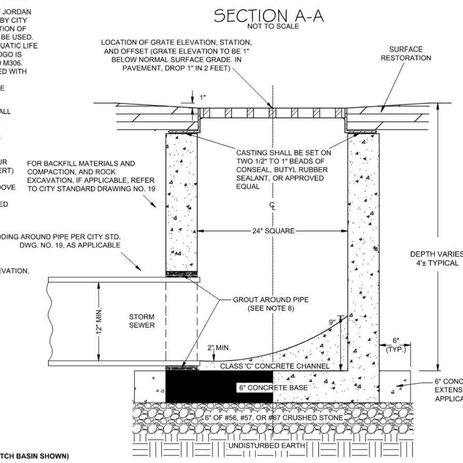
BRICK CATCH BASINS ARE ACCEPTABLE AND SHALL BE CONSTRUCTED PER THIS DRAWING AND THE FOLLOWING SPECIFICATIONS:

1. PROVIDE CLAY BRICK (ASTM C-32-93) WALLS WITH FULL MORTAR (ASTM C-91 & C-150, AIR-ENTRAINED PORTLAND CEMENT) JOINTS. CONCRETE & CEMENT BLOCKS/BRICKS ARE PROHIBITED FOR NEW OR RECONSTRUCTED BASINS.
2. THE CATCH BASIN SHALL HAVE A CONCRETE BASE (MINIMUM 6" THICKNESS) EXTENDING 6" BEYOND OUTSIDE OF FOUR WALLS OF CATCH BASIN.
3. EVERY SEVENTH COURSE MUST BE A STRETCHER COURSE.
4. WALL SHALL BE MINIMUM 8" THICK.
5. PLASTER OUTSIDE WALLS WITH ½" NON-SHRINK MORTAR; INSIDE JOINTS MUST BE NEATLY STRUCK AND CLOSED.

PRECAST CONCRETE CATCH BASINS ARE ACCEPTABLE AND SHALL BE CONSTRUCTED PER THIS DRAWING AND THE FOLLOWING SPECIFICATIONS:

1. THE PRECAST UNIT SHALL CONFORM TO ODOT ITEM 706.13.
2. PRECAST WALLS AND BOTTOM SHALL HAVE A MINIMUM THICKNESS OF 6".
3. A 6" CONCRETE BASE EXTENSION IS REQUIRED ON ALL FOUR SIDES WHEN DEPTH (TOP OF GRATE TO LOWEST PIPE INVERT) EXCEEDS 6 FEET.
4. STACKED PRECAST SECTIONS MUST HAVE A TONGUE/ GROOVE JOINT AND A BUTYL SEALANT.
5. SHOP DRAWING OF THE PRECAST UNIT SHALL BE SUBMITTED TO THE CITY ENGINEER FOR APPROVAL.



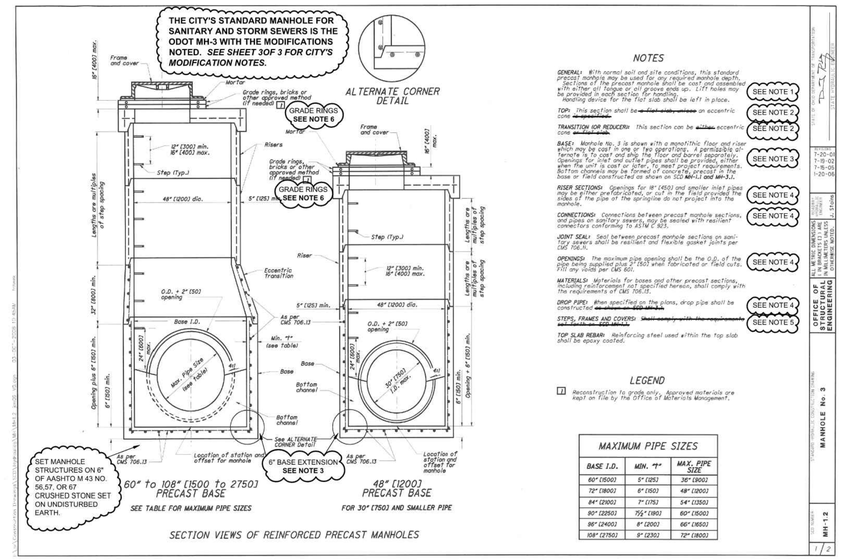


(PRECAST CONCRETE CATCH BASIN SHOWN)

OFFICE OF THE CITY ENGINEER
CANTON, OHIO
DANIEL J. MOEGLIN, P.E., CITY ENGINEER
2436 30th St. NE 44705 : 330-489-3381 : www.cantonohio.gov/engineering

DESCRIPTION	DATE	BY
CAD DRAWING	Mar 2012	RMB
TITLE BLOCK REVISION	2/24/2021	RMB

STANDARD DRAWING NO. 4
SQUARE-TOP CATCH BASIN
CE_4_20210224.DWG
1 OF 1



NOTES

GENERAL: With normal soil and site conditions, this standard provides for a maximum of 2 precast concrete barrel sections. If the precast manhole shall be cast and assembled with either oil tongue or oil groove ends up. Lift holes may be provided in each section for handling. Handling device for the flat slab shall be left in place. SEE NOTE 1

TOP: This section shall be eccentric cone or concentric cone. SEE NOTE 2

TRANSITION FOR REDUCER: This section can be either eccentric cone or flat slab. SEE NOTE 2

BASE: Manhole sp. 3 is shown with a monolithic floor and riser which may be cast in one or two operations. A permissible alternate is to cast and set the riser floor and barrel separately. Precast bases may be cast with the riser floor in place when the unit is cast or later, to meet project requirements. Bottom channels may be formed of concrete precast in the base or field constructed as shown on SCD MH-1.1 and MH-3.1. SEE NOTE 3

RISER SECTIONS: Openings for 18" [450] and smaller inlet pipes may be either pre-formed, or cut in the field provided the sides of the pipe of the springline do not project into the manhole. SEE NOTE 4

CONNECTIONS: Connections between precast manhole sections, and pipes on sanitary sewers, may be sealed with resilient connectors conforming to ASTM C 923. SEE NOTE 4

JOINT SEAL: Seal between precast manhole sections on sanitary sewers shall be resilient and flexible gasket joints per CMS 706.14. SEE NOTE 4

OPENINGS: The maximum pipe opening shall be the O.D. of the pipe being supplied plus 2" [50] when fabricated or field cuts. Fill any voids per CMS 601. SEE NOTE 4

MATERIALS: Materials for bases and other precast sections, including reinforcement not specified herein, shall comply with the requirements of CMS 706.13.

DROP PIPE: When specified on the plans, drop pipe shall be constructed in accordance with SCD MH-3.1. SEE NOTE 4

STEPS, FRAMES AND COVERS: Shall comply with the requirements of CMS 706.13. SEE NOTE 5

TOP SLAB REBAR: Reinforcing steel used within the top slab shall be epoxy coated.

LEGEND

1 Reconstruction to grade only. Approved materials are kept on file by the Office of Materials Management.

MAXIMUM PIPE SIZES

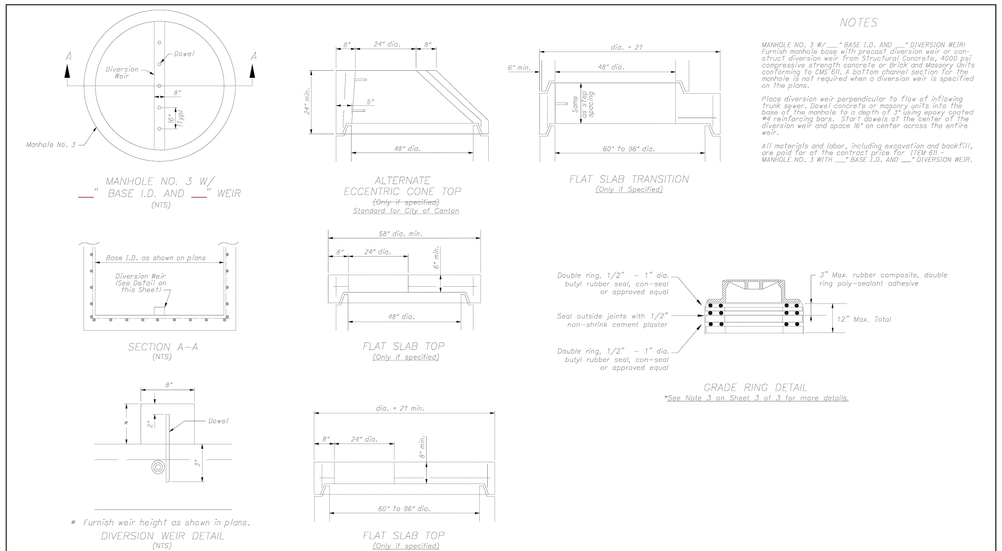
BASE I.D.	MIN. "T"	MAX. PIPE SIZE
60" [1500]	5" [125]	36" [900]
72" [1800]	6" [150]	48" [1200]
84" [2100]	7" [175]	54" [1350]
90" [2250]	7½" [190]	60" [1500]
96" [2400]	8" [200]	66" [1650]
108" [2750]	9" [230]	72" [1800]

OFFICE OF THE STRUCTURAL ENGINEERING — MANHOLE No. 3 — MH-1.2 — 1 / 2

OFFICE OF THE CITY ENGINEER
CANTON, OHIO
DANIEL J. MOEGLIN, P.E., CITY ENGINEER
2436 30th St. NE 44705 330-489-3381 www.cantonohio.gov/engineering

DESCRIPTION	DATE	BY
CAD DRAWING	JAN 2012	CDB
MODIFIED GRADE RING NOTE 6	09/23/2020	RMB
TITLE BLOCK REVISION	02/26/2021	GML

STANDARD DRAWING NO. 10
PRECAST STORM OR SANITARY MANHOLE
CE_10_20210226.DWG
1 OF 3



NOTES

MANHOLE NO. 3 W/ __" BASE I.D. AND __" DIVERSION WEIR: Furnish manhole base with precast diversion weir or construct diversion weir from Structural Concrete, 4000 psi compressive strength concrete or Brick and Masonry Units conforming to CMS 611. A bottom channel section for the manhole is not required when a diversion weir is specified on the plans.

Place diversion weir perpendicular to flow of inflowing trunk sewer. Dowel concrete or masonry units into the base of the manhole to a depth of 1" using epoxy coated #4 reinforcing bars. Start dowels at the center of the diversion wall and space 16" on center across the entire weir.

All materials and labor, including excavation and backfill, are paid for at the contract price for ITEM 611 - MANHOLE NO. 3 WITH __" BASE I.D. AND __" DIVERSION WEIR.

THE CITY'S STANDARD MANHOLE FOR SANITARY AND STORM SEWERS IS A MODIFIED ODOT MH-3. SEE SHEET 3 OF 3 FOR CITY'S MODIFICATION NOTES

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DESCRIPTION	DATE	BY
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STANDARD DRAWING NO. 10
PRECAST STORM OR SANITARY MANHOLE
CE_10_20210226.DWG
2 OF 3

CITY OF CANTON SPECIFIC MANHOLE NOTES

NOTE 1 PIPE CONNECTIONS: Pipe connections into the manholes must not extend into the manhole more than 2" o the sides of the pipe at the springline of said pipe.

SANITARY CONNECTIONS: Sanitary sewer pipe inlets, with flowlines more than 2' higher than the channel bench must be outside drop connections. Drop connections must be fabricated and cast integrally with the manhole sections or installed per City Standard Drawing No. 11, Outside Drop Connection for Sanitary Manholes. No inside drops permitted for private sewer connections. Inside drop for city-owned sewer are subject to the City Engineer's approval.

Sanitary pipe inlets must be flumed over the bench, directing flow into the channel, using concrete and/or clay sewer brick and mortar.

NOTE 2 OPENINGS:

CAST OPENINGS: Cast openings must be the outside diameter of the pipe plus 2 inches with a Butyl Rubber A-LOK, X-CEL Gasket, or approved equal.

CORED OPENINGS: Cored openings must be machine cored. The opening shall be per pipe-to-manhole connector specs. Use "Kor-N-Seal" flexible pipe-to-manhole connector with stainless wedge assembly or approved equal conforming to ASTM C-923.

STORM OPENINGS: Openings for storm pipe inlets may be cast or machine cored. Openings shall not exceed the O.D. of Pipe + 2". Make water-tight joints with non-shrink cement or Class "C" Concrete applied from inside and outside of manhole.

NOTE 3 GRADE RINGS: Grade rings for new manholes may be precast concrete, rubber composite, or *clay brick and mortar. Concrete brick is not permitted. *Clay brick and mortar is not permitted with Sanitary Manholes.

Height of grade rings collectively shall not exceed 12".

Precast concrete grade rings must be reinforced Class "C" concrete and connected using two concentric rings of 1/2" to 1" beads of butyl rubber sealant con-seal or approved equal. Seal outside joints with 1/2" non shrink cement plaster.

Brick and mortar rings must be Belden Brick, fine grind, ASTM C32-90, or approved equal with high strength, air entrained, mortar. Seal outside joints with 1/2" non shrink cement plaster. *Clay brick and mortar is not permitted with Sanitary Manholes.

Use two parallel 3/4" beads of butyl rubber sealant con-seal or approved equal, between grade rings of different material and between grade rings and manhole frame.

OPTIONAL MANHOLE BID ITEMS

ITEM	QTY.	UNIT	DESCRIPTION OPTION "A"
604		V.F.	MH WATERPROOFING, COAL TAR, A.P.P.

If requested by the City Engineer, or specified in the plan, the contractor shall provide unit price for waterproofing the exterior of designated manholes. This item is "City Optional" and the price is paid per vertical foot of each manhole waterproofed as directed by the engineer. This option is a contingency bid item unless specified otherwise.

Apply in the field a coat tar epoxy to the outside of the manhole per manufacturer's specifications and instructions from the top of the extended base to the bottom of the manhole cover casting.

ITEM	QTY.	UNIT	DESCRIPTION OPTION "B"
604		EACH	NEW MH, POLYMER LINING, A.P.P.
604		V.F.	EXISTING MH, POLYMER LINING, A.P.P.

If requested by the City Engineer, or specified in the plan, the contractor shall provide unit price for corrosion resistant polymer linings as designated. This item is "City Optional" and the price is paid per vertical foot or per each manhole lined as directed by the engineer. The unit cost for this item includes all costs for labor, materials, equipment and incidentals required for supplying and installing the linings including the cost for bypassing existing sewer flows for the duration of the installation and curing time as specified. This option is included as a contingency bid item. Unless specified otherwise.

Apply in the field a corrosion resistant polymer lining (Plasite 5371 by Carboline of approved equal) to the inside of the new or existing manhole per manufacturer's specifications and instructions. Apply from the top of the bench to the bottom of the manhole cover casting.

For existing manholes, prior to polymer lining application, restore inside walls as per lining manufacturer's recommendations or as directed by the City Engineer.

THE CITY'S STANDARD MANHOLE FOR SANITARY AND STORM SEWERS IS A MODIFIED ODOT MH-3 WITH THE MODIFICATIONS NOTED

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DESCRIPTION	DATE	BY
CAD DRAWING	JAN 2012	RMB
MODIFIED NOTE 4 & 6	09/23/2021	RMB
TITLE BLOCK REVISION	02/26/2021	GML

STANDARD DRAWING NO. 10
PRECAST STORM OR SANITARY MANHOLE
CE_10_20210226.DWG
3 OF 3

REVISIONS:

Karpinski ENGINEERING
13714 Cleveland Ave. NW
Uniontown, OH 44685
330-699-4077
karpinskieng.com

600 MARKET AVENUE NORTH CANTON OHIO 44702

CRENSHAW PARK - NEW PAVILION
EDWARD L. "PEEL" COLEMAN COMMUNITY CENTER
CANTON, OHIO

MOTTER & MEADOWS ARCHITECTS
1400 SHERRICK ROAD SE

STATE OF OHIO — CHRISTOPHER J. BEDNAR — E-68297 — REGISTERED PROFESSIONAL ENGINEER
08-21-2023

CONSTRUCTION DOCUMENTS

THIS DWG : DETAILS

COMM 23105
DATE 07-17-23

DWG C-2.2

FULL SIZE SHEET (24"x36")

NOTES:

1. **BEDDING:**

MATERIALS SHALL BE AASHTO M 43 NO. 56, 57, OR 67 CRUSHED STONE. NO ALTERNATES UNLESS APPROVED BY THE CITY ENGINEER. PRIVATE UTILITIES MAY PROVIDE ALTERNATIVE BEDDING MATERIAL AS APPROVED BY THE CITY ENGINEER.

BEDDING WIDTH TABLE

PIPE TYPE	MIN. WIDTH, TYP.	MAX. WIDTH, TYP.
NON-RIGID PIPE (PVC, HDPE, CMP, ALUMINUM)	**PIPE I.D. x 1.25 + 1'-0"**	**PIPE O.D. + 2'-0"**
RIGID PIPE (CONC., VIT. CLAY, DUCTILE IRON)	**PIPE I.D. x 1.33**	**PIPE O.D. + 2'-0"**

CENTER PIPE HORIZONTALLY WITHIN BEDDING AREA. ANY DEVIATION TO TYPICAL BEDDING REQUIREMENTS ARE SUBJECT TO THE DISCRETION OF THE CITY ENGINEER.

THE BEDDING LIMITS SHOWN APPLY IN ALL CASES *EXCEPT* FOR WHEN PIPE MANUFACTURER SPECIFIES A BEDDING WIDTH DIFFERENT FROM THAT SHOWN AND THE CITY ENGINEER PERMITS SAME.

2. **BACKFILL:**

BACKFILL WITHIN THE PUBLIC STREET R/W:

MATERIALS SHALL BE ODOT 304, 703.11, TYPE 1 GRANULAR MATERIAL OR TYPE 2 GRANULAR MATERIAL, ODOT 613, LOW STRENGTH MORTAR OR ALTERNATE GRANULAR MATERIAL ONLY IF APPROVED BY THE CITY ENGINEER (ALSO, SEE NOTE 5). DEVIATIONS FROM SPECIFIED MATERIALS ARE AS FOLLOWS:

A) NO FOUNDRY SAND OR SLAG IS PERMITTED.

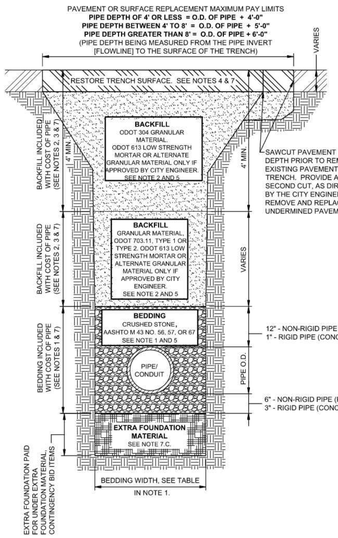
B) ALTERNATE GRANULAR MATERIAL SHALL BE PERMITTED ONLY WITH THE SUPPLEMENTAL APPROVAL OF THE CITY ENGINEER. TO PETITION FOR SUCH SUPPLEMENTAL APPROVAL, THE DEVELOPER/CONTRACTOR SHALL SUBMIT IN WRITING THE FOLLOWING:
 * SOURCE OF THE ALTERNATE BACKFILL MATERIAL.
 * GRADATION REPORT IN ACCORDANCE WITH AASHTO T II AND T 27.
 * PROCTOR CURVE ANALYSIS IN ACCORDANCE WITH ASTM D 698.
 * PROPOSED COMPACTION METHOD.

THE CITY ENGINEER RESERVES THE RIGHT TO REFUSE ANY ALTERNATE BACKFILL MATERIAL, REGARDLESS OF APPROVAL OF SIMILAR MATERIAL ON A PREVIOUS PROJECT.

THE CITY ENGINEER FURTHER RESERVES THE RIGHT TO REFUSE ANY ALTERNATE BACKFILL MATERIAL THE CITY FINDS NOT CONSISTENT WITH THE APPROVED SOURCE, GRADATION REPORT, PROCTOR REPORT, OR COMPACTION METHOD.

C) ODOT 703.11, TYPE 2, OR ALTERNATE MATERIALS ARE NOT PERMITTED WITHIN 4 FEET OF THE TRENCH SURFACE, UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.

BACKFILL OUTSIDE OF THE PUBLIC STREET R/W:
MATERIAL MAY BE NON-CONTAMINATED IN-SITU OR EXCAVATED MATERIAL; UNLESS, SPECIFIED OTHERWISE BY PROPERTY OWNER OR PIPE/CONDUIT OWNER.



NOTES: (CONTINUED)

3. **COMPACTION:**

ALL BACKFILL SHALL BE PLACED IN LAYERS NOT TO EXCEED 12-INCHES LOOSE DEPTH AND COMPACTED BY APPROVED MECHANICAL MEANS. JETTING IS NOT APPROVED WITHOUT THE CITY ENGINEER'S APPROVAL. BUCKET COMPACTION MUST BE SUPPLEMENTED WITH VIBRATION OR TAMPING EQUIPMENT AS DIRECTED. ANY MODIFICATIONS TO THESE REQUIREMENTS MUST BE APPROVED BY THE CITY ENGINEER.

4. **SURFACE:**

TRENCHES SHALL BE TOPPED WITH 4" OF ODOT 304 LIMESTONE OR ASPHALT GRINDINGS WITHIN EXISTING STREET PAVEMENTS WHEN THE STREET WILL BE OPENED TO VEHICULAR TRAFFIC PRIOR TO PAVEMENT REPLACEMENT. THE TRENCH TOPPING MATERIAL SHALL BE ROLLED OR OTHERWISE COMPLETED FLUSH WITH THE ADJOINING PAVEMENT.

STREET RESTORATION:
CONCRETE OR ASPHALT STREET PAVEMENT SHALL BE REPLACED IN ACCORDANCE WITH **CITY STD. DWG. NO. 32**. BRICK OR ASPHALT-BRICK COMPOSITE STREET PAVEMENT SHALL BE REPLACED IN ACCORDANCE WITH **CITY STD. DWG. NO. 31**.

SIDEWALK, CURB, AND DRIVEWAY RESTORATION:
DRIVEWAY SURFACES SHALL BE REPLACED IN ACCORDANCE WITH THE **CURRENT EDITION OF THE CITY OF CANTON SPECIFICATIONS FOR THE CONSTRUCTION, REPAIR, AND REPLACEMENT OF SIDEWALKS, CURBS, AND DRIVEWAYS**; AND CITY STD. DWG. NOS. 28 THRU 33.

LAWN RESTORATION:
LAWN SURFACES SHALL BE REPLACED WITH A MINIMUM OF 4" TOPSOIL, SEEDED, AND MULCHED. SEED MIX SHALL CONFORM TO ADJOINING LAWN GRASS.

5. **APPLICABILITY:** THE STANDARD DRAWING HEREIN IS APPLICABLE WHEN ODOT 611 IS NOT SPECIFIED FOR CONDUIT INSTALLATION.

6. **ODOT REFERENCES** ARE FROM THE CURRENT ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS; ANY DISCREPANCIES SHALL BE SUBJECT TO THE CITY ENGINEER'S DISCRETION.

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2436 30th St. NE 44705 330-489-3381 www.cantonohio.gov/engineering

DESCRIPTION	DATE	BY
REVISION TO NOTES 7 & 8	06/04/2012	CDB
REVISION TO NOTES 7	06/10/2013	CDB
REVISION TO NOTES 2, 3, 5	09/23/2020	RMB
TITLE BLOCK REVISION	02/26/2021	GML
REVISION TO BACKFILL NOTES	3/2/2021	RMB

STANDARD DRAWING NO. 19
UTILITY TRENCH REQUIREMENTS
CE_19_20210226.DWG
1 OF 2

TOP OF SANITARY SEWER MANHOLE COVER
(SEE NOTE 2 FOR STORM SEWER COVER)

NOTES:

1. COVER AND FRAME TO BE CAST OF GRAY IRON IN COMPLIANCE WITH ASTM SPEC. ASTM A-48 CLASS 35 AND AASHTO M 306. CASTINGS SHALL BE OF THE HEAVY DUTY RATING.

2. SANITARY MANHOLE COVER/FRAME
-EAST JORDAN 1850 B VENTED COVER (PRODUCT NO. 185026) AND 1850 FRAME.
-NEENAH R-1654 FRAME AND VENTED COVER.
-OR EQUAL APPROVED BY CITY ENGINEER.

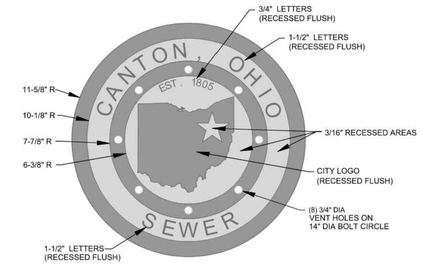
STORM MANHOLE COVER/FRAME
-EAST JORDAN 1850 M GRATED COVER AND 1850 FRAME.
-NEENAH R-1654 FRAME AND GRATED COVER.
-USE THE VENTED COVER WITH CITY LOGO WITHIN CROSSWALKS.

3. MACHINE BEARING SURFACES BETWEEN LID AND FRAME.

4. CONTACT CITY ENGINEER FOR CAD DRAWING OF CITY LOGO.

5. CASTINGS ARE NOT REQUIRED TO BE PAINTED.

6. **ALTERNATE FRAMES**, SUITABLE WITH EJ 1850 COVER, FOR USE AS DIRECTED BY THE CITY ENGINEER:
EAST JORDAN 2015 (10-1/2" FRAME HEIGHT)
EAST JORDAN 1622 (5" FRAME HEIGHT, OR FLAT IF FRAME IS INVERTED)



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DESCRIPTION	DATE	BY
CAD DRAWING	JAN 2012	CDB
MH COVER CITY LOGO	02/28/2014	RMB
NOTE 2 REVISED, ADD GRATED COVER	01/17/2015	RMB
REMOVED OLD CITY LOGO COVER	12/08/2017	RMB
TITLE BLOCK REVISION	02/26/2021	GML

STANDARD DRAWING NO. 12
MANHOLE COVER
CE_12_20210226.DWG
1 OF 1

NOTES: *(CONTINUED)*

7. ***PAY LIMITS FOR CITY PROJECTS***

A) ***BEDDING AND BACKFILL*** *IS INCLUDED WITH THE COST OF PIPE UNLESS DIRECTED TO BID OTHERWISE.*

B) ***PAVEMENT RESTORATION*** *IS INCLUDED WITH THE COST OF PIPE UNLESS A SEPARATE PAY ITEM IS PROVIDED, WHEREBY THE WIDTH MEASUREMENT OVER THE TRENCH FOR PAVEMENT RESTORATION SHALL NOT EXCEED THE OUTSIDE DIAMETER (O.D.) OF PIPE PLUS A SET MEASUREMENT DEPENDENT ON DEPTH OF PIPE. AREA MEASUREMENTS AT MANHOLE AND CATCH BASIN STRUCTURES SHALL NOT EXCEED THE AREA OF THE BASE OF THE STRUCTURE + 3'-0" OFFSET AREA AROUND THE STRUCTURE'S BASE.*

C) ***EXTRA FOUNDATION MATERIAL****: THE CONTRACTOR SHALL BE PAID FOR OVER-EXCAVATION AND BEDDING FOUNDATION MATERIAL UNDER THE CONTINGENCY BID ITEMS FOR EXTRA FOUNDATION MATERIAL.*

WHEN IN THE OPINION OF THE CITY ENGINEER, SOFT/UNSTABLE MATERIALS ARE ENCOUNTERED WHICH ARE UNSUITABLE FOR BEDDING FOUNDATION, SAID MATERIAL SHALL BE REMOVED BY THE CONTRACTOR TO THE DEPTH DIRECTED BY THE ENGINEER AND REPLACED WITH SUITABLE MATERIAL.

FOR CITY PROJECTS, THE PAYABLE WIDTH OF THE EXTRA FOUNDATION MATERIAL SHALL NOT EXCEED THE LESSER OF THE APPLICABLE MINIMUM OR MAXIMUM TYPICAL BEDDING WIDTH, AS NOTED ON SHEET 1 OF STD. DWG. NO. 19.

FOR PRIVATE WORK, ALL COSTS ARE AT THE OWNER'S EXPENSE.

EXTRA FOUNDATION MATERIAL, OPTION A, B, C, & D, MAY BE USED IN ANY COMBINATION AS DIRECTED BY THE CITY ENGINEER:

OPTION A: CRUSHED STONE, AASHTO M 43 NO. 1 AND/OR 2

OPTION B: CRUSHED STONE, AASHTO M 43 NO. 56, 57, OR 67

OPTION C: ODOT 703.11, TYPE 1 (304, 411 OR 617 GRADATION)

OPTION D: TENSAR GEOGRID T1100, OR APPROVED EQUAL

EXTRA FOUNDATION MATERIAL, CONTINGENCY BID ITEMS

ITEM	QTY.	UNIT	DESCRIPTION
SPCL		C.Y.	EXTRA FOUNDATION, OPTION A (#1,#2 STONE)
SPCL		C.Y.	EXTRA FOUNDATION, OPTION B (#56,57,67 STONE)
SPCL		C.Y.	EXTRA FOUNDATION, OPTION C (304,411,617)
SPCL		S.F.	EXTRA FOUNDATION, OPTION D (GEOGRID)

NOTES: (CONTINUED)

8. **EXCAVATION OF ROCK OR BURIED/ABANDONED CONCRETE STRUCTURE REMOVAL**

EXCAVATION FOR NEW MANHOLES AND CATCH BASINS, UNLESS OTHERWISE SPECIFIED OR SHOWN ON CONSTRUCTION PLANS, SHALL BE MEASURED BETWEEN VERTICAL PLANES ONE (1) FOOT BEYOND THE OUTSIDE EDGE OF THE FOUNDATION OF THE STRUCTURES ON ALL SIDES, AND PARALLEL THERETO, AND FROM THE SURFACE OF THE ROCK TO THE BOTTOM OF THE ROCK OR THE NEAT LINES OF THE BOTTOM OF THE STRUCTURES PLUS THE DEPTH OF THE BASE MATERIAL, USE THE MEASUREMENT WHICH IS LESSER.

EXCAVATION FOR NEW PIPES, UNLESS OTHERWISE SPECIFIED OR SHOWN ON CONSTRUCTION PLANS, SHALL BE MEASURED BETWEEN TRENCH WALLS (NOT TO EXCEED PIPE O.D. + 18", AND FROM THE SURFACE OF THE ROCK TO THE BOTTOM OF THE ROCK OR THE BOTTOM OF THE PIPE BEDDING, USE THE MEASUREMENT WHICH IS LESSER.

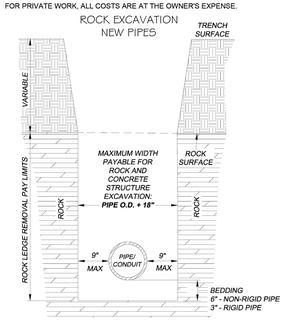
EXCAVATION OF BURIED AND ABANDONED CONCRETE STRUCTURES SHALL BE MEASURED IN THE SAME MANNER AS ROCK REMOVAL.

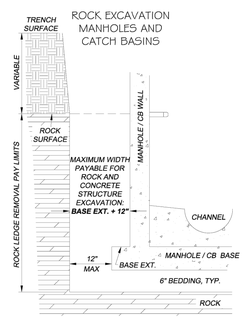
FOR CITY PROJECTS, THE CONTRACTOR SHALL BE PAID FOR ROCK REMOVAL AND CONCRETE STRUCTURE REMOVAL UNDER THE CONTINGENCY BID ITEMS FOR ROCK OR CONCRETE STRUCTURE REMOVAL. IF A CONTINGENCY BID ITEM IS NOT INCLUDED IN THE BID PROPOSAL, THE CONTACTOR MAY SUBMIT A PROPOSAL (PRIOR TO WORK BEING STARTED) TO THE CITY ENGINEER FOR REVIEW AND APPROVAL.

FOR PRIVATE WORK, ALL COSTS ARE AT THE OWNER'S EXPENSE.

ROCK AND BURIED & ABANDONED CONCRETE STRUCTURE REMOVAL, CONTINGENCY BID ITEMS

ITEM	QTY.	UNIT	DESCRIPTION
SPCL		C.Y.	ROCK REMOVAL
SPCL		C.Y.	CONCRETE STRUCTURE REMOVAL





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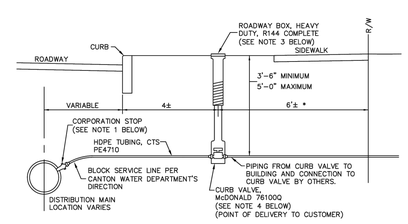
REVISION TO NOTES 2, 3, 5	09/23/2020	RMB
TITLE BLOCK REVISION	02/26/2021	GML
REVISION TO BACKFILL NOTES	3/2/2021	RMB

STANDARD DRAWING NO. 19
UTILITY TRENCH REQUIREMENTS
CE_19_20210226.DWG
2 OF 2

TYPICAL WATER SERVICE
(C94)



NOTES:

1.) CORPORATION STOP AND ASSEMBLY SHALL BE AS FOLLOWS:
1" CORP. STOP ON DIP: INSTALL AT THE 2:00 POSITION, A MUELLER B-25008 CORPORATION STOP WITH A COMPRESSION CONNECTION.
1" CORP. STOP ON PVC C909: INSTALL AT THE 2:00 POSITION, A MUELLER B-25008 CORPORATION WITH A COMPRESSION CONNECTION AND A FORD, STAINLESS STEEL, EPOXY COATED TAPPING SADDLE (FC202 STYLE).
1 ½" CORP. STOP: INSTALL AT THE 2:00 POSITION, A MUELLER B-25008 CORPORATION STOP WITH A COMPRESSION CONNECTION AND A FORD, STAINLESS STEEL, EPOXY COATED TAPPING SADDLE (FC202 STYLE).
2" CORP. STOP: INSTALL AT A 45° ANGLE, A MUELLER H-10003 CORPORATION STOP WITH 2" IRON TOP, A STANDARD NO LEAD BRASS 45° ELBOW AND A MUELLER H-15428 COMPRESSION MALE WITH INSERT COUPLING. ASSEMBLY SHALL ALSO CONSIST OF A FORD, STAINLESS STEEL, EPOXY COATED TAPPING SADDLE (FC202 STYLE).

2.) A SERVICE CLAMP MUST BE USED WHEN THE MAIN SIZE IS 2 INCH OR SMALLER.

3.) HEAVY DUTY VALVE BOXES, COMPLETE, MUST BE USED IN PLACE OF ROADWAY BOXES WHEN THE CURB VALVE IS LOCATED IN ROADWAYS OR ASPHALT DRIVES.

4.) WHEN CONNECTING A NEW 1" SERVICE TO AN EXISTING 3/4" SERVICE, THE CURB VALVE SIZE SHALL BE A 1"x3/4" REDUCING CURB VALVE.

5.) BRASS REDUCING BUSHINGS OR SWIVEL ELLS WILL NOT BE ALLOWED.

6.) APPROVED EQUALS MAY BE USED IN PLACE OF SPECIFIED ITEMS.

FULL SIZE SHEET (24"x36")

REVISIONS:

Karpinski ENGINEERING
3714 Cleveland Ave. NW
Jniontown, OH 44685
:30-699-4077
:arpinskieng.com

600 MARKET AVENUE NORTH CANTON OHIO 44702

MOTTI&MEADOWS ARCHITECTS

CRENSHAW PARK - NEW PAVILION
EDWARD L. "PEEL" COLEMAN COMMUNITY CENTER
1400 SHERRICK ROAD SE
CANTON, OHIO

STATE OF OHIO
CHRISTOPHER J. BEDNAR
E-68297
REGISTERED PROFESSIONAL ENGINEER
08-21-2023

CONSTRUCTION DOCUMENTS

THIS DWG :
DETAILS

COMM 23105
DATE 07-17-23

DWG
C-2.3

NOTES

1. CONTRACTOR SHALL MAINTAIN COMPLIANCE WITH THE STARK SOIL & WATER CONSERVATION DISTRICT REGULATIONS AS SPECIFIED IN THE STARK COUNTY CODE. SPECIAL ATTENTION MUST BE PAID TO ALL POTENTIAL STORM WATER IMPACTS FROM THE MODIFICATION OF THE SITE, INCLUDING BUT NOT LIMITED TO LONG-TERM OPERATION AND MAINTENANCE OF EXISTING STRUCTURAL AND NON-STRUCTURAL BEST MANAGEMENT PRACTICES.

   A. CONTACT STARK SOIL & WATER CONSERVATION DISTRICT TO SCHEDULE A PRE-CONSTRUCTION MEETING AT (330) 451-7645 PRIOR TO ANY EARTH MOVING ACTIVITY.

   B. CONSTRUCTION BMPS SHALL BE IN PLACE PRIOR TO THE START OF CONSTRUCTION ACTIVITIES.

   C. SWP3 INSPECTION REPORTS SHALL BE KEPT ON SITE WITH THE SWP3 AND READILY ACCESSIBLE DURING NORMAL WORKING HOURS.

2. CONTRACTOR SHALL MAINTAIN COMPLIANCE WITH OHIO EPA'S GENERAL STORMWATER NPDES PERMIT PROGRAMS.

3. CONTRACTOR SHALL MAINTAIN COMPLIANCE WITH THE CITY OF CANTON, STARK SOIL & WATER CONSERVATION DISTRICT, AND STATE OF OHIO'S AIR QUALITY REGULATIONS APPLICABLE IN THE MUNICIPAL CODE AND THE OHIO ADMINISTRATIVE CODE INCLUDING, BUT NOT LIMITED TO THE ASBESTOS AND THE ANTI-NOISE LAWS.

EROSION AND SEDIMENT CONTROL NOTES

1. THE CONTRACTOR IS TO REFER TO THIS PLAN AND THE E&S PLAN, NOTES. AND DETAILS.

2. CONTRACTOR IS RESPONSIBLE TO MAINTAIN LAWN AND AND STORM WATER CONTROLS UNTIL SUBSTANTIAL COMPLETION OF THE PROJECT. PERIODIC INSPECTIONS ARE REQUIRED PER THE EPA GENERAL PERMIT OHC000005. GENERAL PERMIT TO BE OBTAINED BY CM. CONTRACTOR IS REQUIRED TO KEEP COPY OF PERMIT ON-SITE AND CONFORM WITH PERMIT REQUIREMENTS.

3. THE CONTRACTOR IS TO INSTALL AND MAINTAIN THE E&S CONTROLS THROUGHOUT THE CONSTRUCTION PERIOD AND UNTIL THE SITE IS FULLY STABILIZED.

4. THE CONTRACTOR IS RESPONSIBLE TO REMOVE THE TEMPORARY E&S CONTROLS ONCE THE SITE IS FULLY STABILIZED.

5. CONTRACTOR IS TO MAINTAIN, ON-SITE AT ALL TIMES, LOGS DOCUMENTING GRADING AND STABILIZATION ACTIVITIES AS WELL AS AMENDMENTS TO THE SWP3. AS REQUIRED BY THE GENERAL PERMIT.

6. DUMPSTERS, WASTE DISPOSAL AREA'S AND OTHER AREAS DESIGNATED UNDER NON-SEDIMENT POLLUTANT CONTROLS WILL BE LOCATED ON-SITE DURING CONSTRUCTION BY THE CONTRACTOR.

7. INCIDENTAL WORK BEYOND APPROXIMATE CONSTRUCTION LIMIT LINE IS TO BE INCLUDED IN BASE BID.

8. CONTRACTOR IS TO PREVENT DUST AND DEBRIS FROM BEING TRACKED OR BLOWN ONTO SHERRICK RD OR SURROUNDING PROPERTIES BY USE OF REGULAR SWEEPING, TIRE WASHING, DUST CONTROL METHODS, ETC. EQUIPMENT (POWER BROOM, WATER TRUCK, ETC.) ARE TO REMAIN ON-SITE AS REQUIRED, TO ACCOMMODATE DUST AND DEBRIS. CONTRACTOR IS TO UTILIZE TIRE WASHING STATION DURING CONSTRUCTION ACTIVITIES, IF NEEDED, TO PREVENT DEBRIS FROM REACHING ADJACENT STREETS.

9. IF CONTRACTOR IS NOTIFIED BY POLICE, STARK COUNTY OFFICIALS, OR STARK SOIL & WATER CONSERVATION DISTRICT PERSONNEL OF ANY SIGNIFICANT VIOLATION OF EPA GENERAL PERMIT AND/OR SWPPP PLANS AND INFORMATION, ALL CONSTRUCTION ON-SITE IS TO CEASE UNTIL PROBLEM(S) ARE RECTIFIED & DEEMED ACCEPTABLE.

PHASING OF SITE DEVELOPMENT

- STAKE OUT LIMIT OF DISTURBANCE
- CONTRACTOR SHALL PREVENT CONSTRUCTION DEBRIS FROM BEING TRACKED ONTO PUBLIC ROADWAYS
- THE CONTRACTOR SHALL CLEAN THE ADJACENT PUBLIC ROADWAYS ON A DAILY BASIS
- INSTALL SEDIMENT CONTROL DEVICES AS NOTED ON E&S PLAN
- SITE DEMOLITION
- INSTALL UTILITES, FOUNDATIONS, CURBING, PAVEMENT, ETC.
- FINE GRADE SITE
- MAINTAIN TEMPORARY E&S CONTROLS UNTIL AFTER SUBSTANTIAL COMPLETION AND APPROVAL BY OWNER
- REMOVE TEMPORARY E&S CONTROLS ONCE SITE IS STABILIZED

MAINTENANCE/INSPECTION PROCEDURES

EROSION AND SEDIMENT CONTROL INSPECTION AND MAINTENANCE PRACTICES

ALL TEMPORARY AND PERMANENT CONTROL PRACTICES SHALL BE MAINTAINED AND REPAIRED AS NEEDED THROUGHOUT CONSTRUCTION TO ENSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION. ALL SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED IN A FUNCTIONAL CONDITION UNTIL ALL UP SLOPE AREAS THEY CONTROL ARE PERMANENTLY STABILIZED.

INSPECTIONS (MINIMUM REQUIREMENTS)

1. ALL CONTROLS ARE TO BE INSPECTED ONCE EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN ONE-HALF INCH OF RAIN PER 24 HOUR PERIOD. THE INSPECTION PERIOD MAY BE REDUCED TO AT LEAST ONCE EVERY MONTH IF THE ENTIRE SITE IS TEMPORARILY STABILIZED OR RUNOFF IS UNLIKELY. ONCE A DEFINABLE AREA HAS BEEN FINALLY STABILIZED NO FURTHER INSPECTION REQUIREMENTS APPLY TO THAT PORTION OF THE SITE.

2. A CHECKLIST MUST BE COMPLETED AND SIGNED BY A QUALIFIED INSPECTION PERSONNEL AND INCLUDE THE FOLLOWING:

- INSPECTION DATE
- NAMES, TITLES, AND QUALIFICATIONS OF PERSONNEL MAKING THE INSPECTION
- WEATHER INFORMATION FOR THE PERIOD SINCE THE LAST INSPECTION OR COMMENCEMENT OF CONSTRUCTION ACTIVITY (INCLUDE ANY STORM ACTIVITY - DURATION, INTENSITY, DISCHARGES)
- LOCATION OF ANY SEDIMENT OR OTHER POLLUTANT DISCHARGES FROM THE SITE
- LOCATION OF BMPS THAT NEED TO BE INSTALLED AND/OR MAINTAINED
- LOCATION OF BMPS THAT FAILED TO OPERATE AS DESIGNED OR PROVED INADEQUATE
- CHECK FOR ANY EVIDENCE OF POLLUTANTS FROM STORED MATERIALS ENTERING THE DRAINAGE SYSTEM
- CORRECTIVE ACTION (INSTALLATION, REPAIRS, MODIFICATIONS TO SWPPP PLAN AND IMPLEMENTATION DATES)
- A MAINTENANCE INSPECTION REPORT WILL BE MADE AFTER EACH INSPECTION. A COPY OF THE REPORT FORM TO BE COMPLETED BY THE INSPECTOR. THE SITE SUPERINTENDENT WILL SELECT INDIVIDUALS WHO WILL BE RESPONSIBLE FOR INSPECTIONS, MAINTENANCE AND REPAIR ACTIVITIES, AND FILLING OUT THE INSPECTION AND MAINTENANCE REPORT.
- COPIES OF THE REPORT ARE TO BE SENT TO THE OWNER, CITY ENGINEER & LOCAL SOIL & WATER CONSERVATION DISTRICT

REPAIR SCHEDULE OF SWPPP CONTROLS

A CONTROL PRACTICE, EXCEPT A SEDIMENT SETTLING POND, THAT IS IN NEED OF REPAIR OR MAINTENANCE MUST BE REPAIRED WITH 3 DAYS OF THE INSPECTION. IF APPLICABLE, SEDIMENT SETTLING PONDS MUST BE REPAIRED OR MAINTAINED WITHIN 10 DAYS OF THE INSPECTION. IF THE SPECIFIED CONTROL PRACTICE IS DEEMED INADEQUATE OR WAS NOT YET INSTALLED A NEW CONTROL PRACTICE MUST BE INSTALLED WITHIN 10 DAYS OF THE INSPECTION.

MAINTENANCE REQUIREMENTS DURING CONSTRUCTION (WHERE APPLICABLE)

A. BUILT UP SEDIMENT WILL BE REMOVED FROM SILT FENCE WHEN IT HAS REACHED ONE-THIRD THE HEIGHT OF THE FENCE
B. SILT FENCE WILL BE INSPECTED FOR DEPTH OF SEDIMENT, TEARS, TO SEE IF THE FABRIC IS SECURELY ATTACHED TO THE FENCE POSTS, AND TO SEE THAT THE FENCE POSTS ARE FIRMLY IN THE GROUND. REPAIRS ARE TO BE MADE PROMPTLY.
C. IF APPLICABLE, THE SEDIMENT BASIN WILL BE INSPECTED FOR DEPTH OF SEDIMENT, AND BUILT UP SEDIMENT WILL BE REMOVED WHEN IT REACHES 40 PERCENT OF THE DESIGN CAPACITY OR AT THE END OF THE JOB.
D. IF APPLICABLE, DIVERSION DIKES WILL BE INSPECTED AND ANY BREACHES PROMPTLY REPAIRED.
E. TEMPORARY AND PERMANENT SEEDING AND PLANTINGS WILL BE INSPECTED FOR BARE SPOTS, WASHOUTS, AND HEALTHY GROWTH.

DEWATERING REQUIREMENTS DURING CONSTRUCTION

THERE SHALL BE NO SEDIMENT-LADEN DISCHARGES TO SURFACE WATERS RESULTING FROM DEWATERING ACTIVITIES. SHOULD DEWATERING BE REQUIRED, E.G., FROM TRENCHES, ETC,. DURING CONSTRUCTION, ALL WATER SHALL BE PUMPED TO THE TEMPORARY SEDIMENT BASINS, IF POSSIBLE, BEFORE BEING RELEASED TO DOWNSTREAM CHANNELS, STORM SEWERS, ETC. IF A TEMPORARY SEDIMENT BASIN IS NOT SHOWN ON THE PLAN, OR NOT ACHIEVABLE FOR DEWATERING, THE WATER SHALL BE PUMPED INTO A SEDIMENT TRAP OR THROUGH SEDIMENT BAGS ONTO A RELATIVELY FLAT SURFACE AWAY FROM INLET BASINS, STREAMS, ETC.

HAZARDOUS WASTE
CONSTRUCTION PERSONNEL, INCLUDING SUBCONTRACTORS WHO MAY USE OR HANDLE HAZARDOUS OR TOXIC MATERIALS, SHALL BE MADE AWARE OF THE FOLLOWING GENERAL GUIDELINES REGARDING DISPOSAL AND HANDLING OF HAZARDOUS AND CONSTRUCTION WASTES:

1. PREVENT SPILLS
2. USE PRODUCTS UP
3. FOLLOW LABEL DIRECTIONS FOR DISPOSAL
4. REMOVE LIDS FROM EMPTY BOTTLES AND CANS WHEN DISPOSING IN TRASH
5. RECYCLE WASTES WHENEVER POSSIBLE
6. DON'T POUR INTO WATERWAYS, STORM DRAINS OR ONTO THE GROUND
7. DON'T POUR DOWN THE SINK, FLOOR DRAIN OR SEPTIC TANKS
8. DON'T BURY CHEMICALS OR CONTAINERS
9. DON'T BURN CHEMICALS OR CONTAINERS
10. DON'T MIX CHEMICALS TOGETHER

SPILL REPORTING REQUIREMENTS
SPILLS ON PAVEMENT SHALL BE ABSORBED WITH SAWDUST, KITTY LITTER OR OTHER ABSORBANT MATERIAL AND DISPOSED OF WITH THE TRASH AT A LICENSED SANITARY LANDFILL. HAZARDOUS OR INDUSTRIAL WASTES SUCH AS MOST SOLVENTS, GASOLINE, OIL-BASED PAINTS, AND CEMENT CURING COMPOUNDS REQUIRE SPECIAL HANDLING. SPILLS SHALL BE REPORTED TO OHIO EPA (1-800-282-9378). SPILLS OF 25 GALLONS OR MORE OF PETROLEUM PRODUCTS SHALL BE REPORTED TO OHIO EPA (1-800-282-9378), THE LOCAL FIRE DEPARTMENT, AND THE LOCAL EMERGENCY PLANNING COMMITTEE WITHIN 30 MIN. OF THE DISCOVERY OF THE RELEASE. ALL SPILLS, WHICH RESULT IN CONTACT WITH WATERS OF THE STATE, MUST BE REPORTED TO OHIO EPA'S HOTLINE.

HANDLING CONSTRUCTION CHEMICALS
MIXING, PUMPING, TRANSFERRING OR OTHER HANDLING OF CONSTRUCTION CHEMICALS SUCH AS FERTILIZER, LIME, ASPHALT, CONCRETE DRYING COMPOUNDS, AND ALL OTHER POTENTIALLY HAZARDOUS MATERIALS SHALL BE PERFORMED IN AN AREAAWAY FROM ANY WATERCOURSE, DITCH OR STORM DRAIN.

EQUIPMENT FUELING AND MAINTENANCE
EQUIPMENT FUELING AND MAINTENANCE, OIL CHANGING, ETC., SHALL BE PERFORMED AWAY FROM WATERCOURSES, DITCHES OR STORM DRAINS, IN AN AREA DESIGNATED FOR THAT PURPOSE. THE DESIGNATED AREA SHALL BE EQUIPPED FOR RECYCLING OIL AND CATCHING SPILLS. SECONDARY CONTAINMENT SHALL BE PROVIDED FOR ALL FUEL OIL STORAGE TANKS. THESE AREAS MUST BE INSPECTED EVERY SEVEN DAYS AND WITHIN 24 HRS. OF A 0.5 INCH OR GREATER RAIN EVENT TO ENSURE THERE ARE NO EXPOSED MATERIALS WHICH WOULD CONTAMINATE STORM WATER. SITE OPERATORS MUST BE AWARE THAT SPILL PREVENTION CONTROL AND COUNTERMEASURES (SPCC) REQUIREMENTS MAY APPLY. AN SPCC PLAN IS REQUIRED FOR SITES WITH ONE SINGLE ABOVEGROUND TANK OF 660 GALLONS OR MORE, ACCUMULATIVE ABOVEGROUND STORAGE OF 1330 GALLONS OR MORE, OR 42,000 GALLONS OF UNDERGROUND STORAGE. SOILS THAT HAVE BECOME CONTAMINATED MUST BE DISPOSED OF ACCORDANCE WITH THE "CONTAMINATED SOILS" NOTE.

CONTAMINATED SOILS
IF SUBSTANCES SUCH AS OIL, DIESEL FUEL, HYDRAULIC FLUID, ANTIFREEZE, ETC. ARE SPILLED, LEAKED, OR RELEASED ONTO THE SOIL, THE SOIL SHOULD BE DUG UP AND DISPOSED OF AT LICENSED SANITARY LANDFILL OR OTHER APPROVED PETROLEUM CONTAMINATED SOIL REMEDIATION FACILITY (NOT A CONSTRUCTION/DEMOLITION DEBRIS LANDFILL). PLEASE BE AWARE THAT STORM WATER RUN OFF ASSOCIATED WITH CONTAMINATED SOILS ARE NOT AUTHORIZED UNDER OHIO EPA'S GENERAL STORM WATER PERMIT ASSOCIATED WITH CONSTRUCTION ACTIVITIES. IN THE EVENT THERE ARE LARGE EXTENSIVE AREAS OF CONTAMINATED SOILS ADDITIONAL MEASURES ABOVE AND BEYOND THE CONDITIONS OF OHIO EPA'S GENERAL CONSTRUCTION STORM WATER PERMIT WILL BE REQUIRED.

DEPENDING ON THE EXTENT OF CONTAMINATION, ADDITIONAL TREATMENT AND/OR COLLECTION AND DISPOSAL MAY BE REQUIRED. ALL STORM WATER DISCHARGES ASSOCIATED WITH THE CONTAMINATED SOILS MUST BE AUTHORIZED UNDER AN ALTERNATE NPDES (NATIONAL POLLUTANT DISCHARGE ELIMINATION PERMIT.

CONCRETE WASH WATER/WASH OUTS
CONCRETE WASH WATER SHALL NOT BE ALLOWED TO FLOW TO STREAMS, DITCHES, STORM DRAINS, OR ANY OTHER WATER CONVEYANCE. A SUMP OR PIT WITH NO POTENTIAL FOR DISCHARGE SHALL BE CONSTRUCTED IF NEEDED TO CONTAIN CONCRETE WASH WATER. FIELD TILE OR OTHER SUBSURFACE DRAINAGE STRUCTURES WITHIN 10 FT. OF THE SUMP SHALL BE CUT AND PLUGGED.

CONSTRUCTION WASTE
CONTAINERS SHALL BE PROVIDED FOR THE PROPER COLLECTION OF ALL WASTE MATERIAL INCLUDING CONSTRUCTION DEBRIS, TRASH, PETROLEUM PRODUCTS AND ANY HAZARDOUS MATERIALS USED ON-SITE. CONTAINERS SHALL BE COVERED AND NOT LEAKING. ALL WASTE MATERIAL SHALL BE DISPOSED OF AT FACILITIES APPROVED FOR THAT MATERIAL. CONSTRUCTION DEMOLITION AND DEBRIS (CD&D) WASTE MUST BE DISPOSED OF AT AN OHIO EPA APPROVED CD&D LANDFILL.

NO CONSTRUCTION RELATED WASTE MATERIALS ARE TO BE BURIED ON-SITE. BY EXCEPTION, CLEAN FILL (BRICKS, HARDENED CONCRETE, SOIL) MAY BE UTILIZED IN A WAY WHICH DOES NOT ENCROACH UPON NATURAL WETLANDS, STREAMS OR FLOODPLAINS OR RESULT IN THE CONTAMINATION OF WATERS OF THE STATE.

CONSTRUCTION DEMOLITION AND DEBRIS (CD&D) WASTE MUST BE DISPOSED OF IN ACCORDANCE WITH ORC 3714 AT AN APPROVED OHIO EPA CD&D LANDFILL.

OPEN BURNING
NO MATERIALS MAY BE BURNED WHICH CONTAIN RUBBER, GREASE, ASPHALT, OR PETROLEUM PRODUCTS SUCH AS TIRES, CARS, AUTOPARTS, PLASTICS OR PLASTIC COATED WIRE. (SEE OAC 3745-19)

OPEN BURNING IS NOT ALLOWED IN RESTRICTED AREAS. RESTRICTED AREAS ARE DEFINED AS:

1) WITHIN CORPORATION LIMITS
2) WITHIN 1000 FEET OUTSIDE A MUNICIPAL CORPORATION HAVING A POPULATION OF 1000 TO 10,000
3) A ONE MILE ZONE OUTSIDE OF A CORPORATION OF 10, 000 OR MORE.
4) WITHIN HALF MILE OF A SCHOOL OR PLAYGROUND.

OUTSIDE A RESTRICTED AREA, NO OPEN BURNING CAN TAKE PLACE WITHIN A 1000 FEET OF AN INHABITED BUILDING LOCATED OFF THE PROPERTY WHERE THE FIRE IS SET.

OPEN BURNING IS PERMISSIBLE IN A RESTRICTED AREA FOR THE FOLLOWING ACTIVITIES:

1. HEATING TAR, WELDING AND ACETYLENE TORCHES, SMUDGE POTS AND SIMILAR OCCUPATIONAL NEEDS
2. HEATING FOR WARMTH OR OUTDOOR BARBEQUES. OUTSIDE OF RESTRICTED AREAS

DUST CONTROL/SUPPRESSANTS
DUST CONTROL IS REQUIRED TO PREVENT NUISANCE CONDITIONS. DUST CONTROLS MUST BE USED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND NOT BE APPLIED IN A MANNER, WHICH WOULD RESULT IN A DISCHARGE TO WATERS OF THE STATE. ISOLATION DISTANCES FROM BRIDGES, CATCH BASINS, AND OTHER DRAINAGEWAYS MUST BE OBSERVED. APPLICATION (EXCLUDING WATER) MAY NOT OCCUR WHEN PRECIPITATION IS IMMINENT AS NOTED IN THE SHORT TERM FORECAST. USED OIL MAY NOT BE APPLIED FOR DUST CONTROL.

FULL SIZE SHEET (24"x36")

REVISIONS:

Karpinski ENGINEERING
13714 Cleveland Ave. NW
Uniontown, OH 44685
330-699-4077
karpinskieng.com

600 MARKET AVENUE NORTH CANTON OHIO 44702

MOTTER & MEADOWS ARCHITECTS

CRENSHAW PARK - NEW PAVILION
EDWARD L. "PEEL" COLEMAN COMMUNITY CENTER
CANTON, OHIO
1400 SHERRICK ROAD SE

STATE OF OHIO
CHRISTOPHER J. BEDNAR
E-68297
REGISTERED PROFESSIONAL ENGINEER
08-21-2023

CONSTRUCTION DOCUMENTS

THIS DWG :
SWPPP NOTES

COMM 23105
DATE 07-17-23

DWG
C-3.1

DUST CONTROL (DC)

DESCRIPTION

DUST CONTROL INVOLVES PREVENTING OR REDUCING DUST FROM EXPOSED SOILS OR OTHER SOURCES DURING LAND DISTURBING, DEMOLITION AND CONSTRUCTION ACTIVITIES TO REDUCE THE PRESENCE OF AIR-BORNE SUBSTANCES WHICH MAY PRESENT HEALTH HAZARDS, TRAFFIC SAFETY PROBLEMS OR HARM ANIMAL OR PLANT LIFE.

SPECIFICATIONS FOR DUST CONTROL

1. VEGETATIVE COVER AND/MULCH - APPLY TEMPORARY OR PERMANENT SEEDING AND MULCH TO AREAS THAT WILL REMAIN IDLE FOR OVER 21 DAYS. SAVING EXISTING TREES AND LARGE SHRUBS WILL ALSO REDUCE SOIL AND AIR MOVEMENT ACROSS DISTURBED AREAS. SEE TEMPORARY SEEDING; PERMANENT SEEDING; MULCHING PRACTICES; AND TREE AND NATURAL AREA PROTECTION PRACTICES.
2. WATERING - SPRAY SITE WITH WATER UNTIL THE SURFACE IS WET BEFORE AND DURING GRADING AND REPEAT AS NEEDED, ESPECIALLY ON HAUL ROADS AND OTHER HEAVY TRAFFIC ROUTES. WATERING SHALL BE DONE AT A RATE THAT PREVENTS DUST BUT DOES NOT CAUSE SOIL EROSION. WETTING AGENTS SHALL BE UTILIZED ACCORDING TO MANUFACTURER'S INSTRUCTIONS.
3. SPRAY-ON ADHESIVES - APPLY ADHESIVE ACCORDING TO THE FOLLOWING TABLE OR MANUFACTURERS' INSTRUCTIONS.
4. STONE - GRADED ROADWAYS AND OTHER SUITABLE AREAS WILL BE STABILIZED USING CRUSHED STONE OR COARSE GRAVEL AS SOON AS PRACTICABLE AFTER REACHING AN INTERIM OR FINAL GRADE. CRUSHED STONE OR COARSE GRAVEL CAN BE USED AS A PERMANENT COVER TO PROVIDE CONTROL OF SOIL EMISSIONS.
5. BARRIERS - EXISTING WINDBREAK VEGETATION SHALL BE MARKED AND PRESERVED. SNOW FENCING OR OTHER SUITABLE BARRIER MAY BE PLACED PERPENDICULAR TO PREVAILING AIR CURRENTS AT INTERVALS OF ABOUT 15 TIMES THE BARRIER HEIGHT TO CONTROL AIR CURRENTS AND BLOWING SOIL.
6. CALCIUM CHLORIDE - THIS CHEMICAL MAY BE APPLIED BY MECHANICAL SPREADER AS LOOSE, DRY GRANULES OR FLAKES AT A RATE THAT KEEPS THE SURFACE MOIST BUT NOT SO HIGH AS TO CAUSE WATER POLLUTION OR PLANT DAMAGE. APPLICATION RATES SHOULD BE STRICTLY IN ACCORDANCE WITH SUPPLIERS' SPECIFIED RATES.
7. OPERATION AND MAINTENANCE - WHEN TEMPORARY DUST CONTROL MEASURES ARE USED; REPETITIVE TREATMENT SHOULD BE APPLIED AS NEEDED TO ACCOMPLISH CONTROL.
   STREET CLEANING - PAVED AREAS THAT HAVE ACCUMULATED SEDIMENT FROM CONSTRUCTION SHOULD BE CLEANED DAILY, OR AS NEEDED, UTILIZING A STREET SWEEPER OR BUCKET -TYPE ENDLOADER OR SCRAPER.

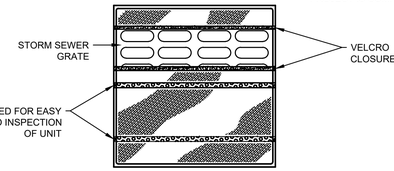
ADHESIVES FOR DUST CONTROL

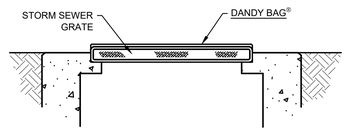
ADHESIVE	WATER DILUTION (ADHESIVE: WATER)	NOZZLE TYPE	APPLICATION RATE (GAL./AC.)
LATEX EMULSION	12.5:1	FINE	235
RESIN IN WATER ACRYLIC EMULSION (NO-TRAFFIC)	4:1	FINE	300
ACRYLIC EMULSION (NO-TRAFFIC)	7:1	COARSE	450
ACRYLIC EMULSION (TRAFFIC)	3.5:1	COARSE	350

INLET PROTECTION (IP)

DANDY BAG®

NOTE:
INSTALL AND MAINTAIN DURING MILLING OPERATIONS AND UNTIL PROJECT IS COMPLETED





NOTE: THE DANDY BAG WILL BE MANUFACTURED IN THE U.S.A. FROM A WOVEN MONOFILAMENT FABRIC THAT MEETS OR EXCEEDS THE FOLLOWING SPECIFICATIONS:

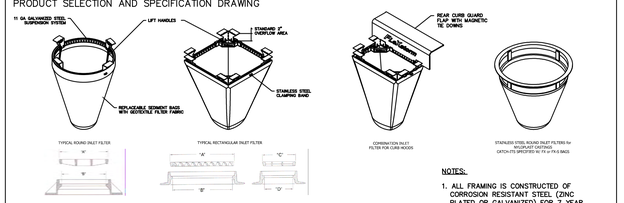
HI-FLOW DANDY BAG® (SAFETY ORANGE)

MECHANICAL PROPERTIES	TEST METHOD	UNITS	MARV
GRAB TENSILE STRENGTH	ASTM D 4632	kN (lbs)	1.62 (365) X 0.89 (200)
GRAB TENSILE ELONGATION	ASTM D 4632	%	24 X 10
PUNCTURE STRENGTH	ASTM D 4833	kN (LBS)	0.40 (90)
MULLEN BURST STRENGTH	ASTM D 3786	KPa (PSI)	3097 (450)
TRAPEZOID TEAR STRENGTH	ASTM D 4533	kN (LBS)	0.51 (115) X 0.33 (75)
UV RESISTANCE	ASTM D 4355	%	90
APPARENT OPENING SIZE	ASTM D 4751	Mm (US STD SIEVE)	0.425 (4)
FLOW RATE	ASTM D 4491	$1/MIN/M^2$ ($GAL/MIN/FT^2$)	5907 (145)
PERMITTIVITY	ASTM D 4491	SEC^{-1}	2.1000

*NOTE: ALL DANDY BAGS® CAN BE ORDERED WITH OUR OPTIONAL OIL ABSORBENT PILLOWS

INLET PROTECTION (IP)

FLEXSTORM CATCH–IT FILTERS FOR TEMPORARY INLET PROTECTION
PRODUCT SELECTION AND SPECIFICATION DRAWING



1. UNDERSTAND YOUR FRAME STYLE AND SIZE

STYLE	FRAME STYLE AND SIZE	Frame P/N
ROUND	Small Round (Up to 20x8" diameter) (A) (D=H)	62SRD
	Med Round (20.1" - 26.0" diameter) (A) up to 25" diameter high (B)	62MRD
	Large Round (26.1" - 32.0" diameter) (A) up to 30" diameter high (B)	62LRD
	XL Round (32.1" dia. - 38" diameter) (A) up to 35" diameter high (B)	62XLRD
RECT / SQUARE	Small Rect / Square (Up to 30"(B) x 30"(D)) open top or 54" perimeter	62SSQ
	Med Rect / Square (Up to 24"(B) x 28"(D)) open top or 96" perimeter	62MSQ
	Large Rect / Square (Up to 30"(B) x 24"(D)) open top or 120" perimeter	62LSQ
	XL Rect / Square (Only for curb inlet grates) (Up to 40"(B) x 30"(D)) open top)	62XLSQ
CURBS / INLETS	Small Rect / Square (+8" front lining, clipped on with Magnets) (Up to 7 caps)	62SCB
	Med Rect / Square (+8" front lining, clipped on with Magnets) (Up to 7 caps)	62MCB
	Large Rect / Square (+8" front lining, clipped on with Magnets) (Up to 7 caps)	62LCB
	XL Rect / Square (+8" front lining, clipped on with Magnets) (Up to 7 caps)	62XLCB
WYLOFLOXT	32" diameter / Wylofloxt cast rings (Bike Valve Steel - Framing standard)	62SZW
	32.1" diameter / Wylofloxt cast rings (Bike Valve Steel - Framing standard)	62LZW
	38" diameter / Wylofloxt cast rings (Bike Valve Steel - Framing standard)	62BWF
	24" diameter / Wylofloxt cast rings (Bike Valve Steel - Framing standard)	62MWF
	30" diameter / Wylofloxt cast rings (Bike Valve Steel - Framing standard)	62WWF

STRETCH FLEXTORM STANDARD BAGS BY NOMINAL SIZE

Nominal Bag Size	Solids Storage (Cu Yd)	Filtered Flow Rate at 10% Vac (CFM) Fit (Woven)	S.O. (Nonwoven)
Small	1.6	1.2	0.9
Medium	2.1	1.7	1.1
Large	3.8	2.7	1.9
XL	4.2	3.6	2.5

2. SELECT YOUR BAG PART NUMBER

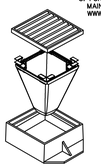
FLEXSTORM FILTER BAGS	25" deep Bag (25" Bag P/N)	17" deep Bag (Short Bag P/N)	Clean Water Flow Rate (GPM/Sq Ft)	Max A.O.S. (US Sieve)
FX: Standard Woven Bag	FX	FXS	200	40
LL: DOT Non-Woven Bag	LL	LLS	45	70

3. CREATE YOUR FLEXSTORM INLET FILTER PART NUMBER

Frame P/N From Step 1. | F | Bag P/N From Step 2.

INSTALLATION:

1. REMOVE GRATE
2. DROP FLEXSTORM INLET FILTER ONTO LOAD BEARING LIP OF CASTING OR CONCRETE STRUCTURE
3. REPLACE GRATE

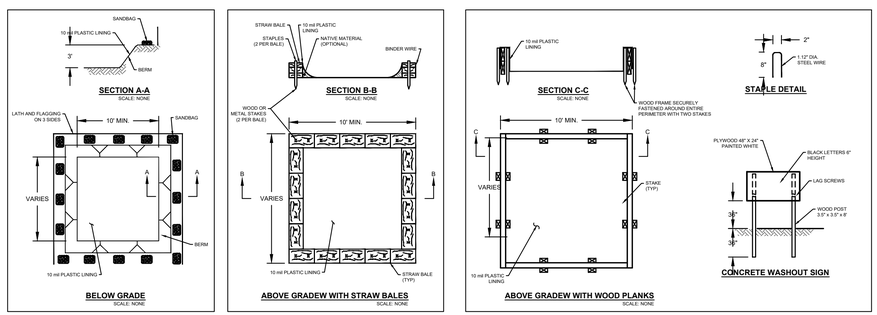


NOTES:

1. ALL FRAMING IS CONSTRUCTED OF CORROSION RESISTANT STEEL (ZINC PLATED OR GALVANIZED) FOR 7 YEAR MINIMUM SERVICE LIFE.
2. UPON ORDERING CONFIRMATION OF THE DOT CALLOUT, PRECAST OR CASTING MAKE AND MODEL, OR DETAILED DIMENSIONAL FORMS MUST BE PROVIDED TO CONFIGURE AND ASSEMBLE YOUR CUSTOMIZED FLEXSTORM INLET FILTER. PART NUMBER ALONE IS NOT SUFFICIENT.
3. FOR WRITTEN SPECIFICATIONS AND MAINTENANCE GUIDELINES VISIT WWW.INLETFILTERS.COM

ALL PRODUCTS MANUFACTURED BY INLET & PIPE PROTECTION, INC A DIVISION OF ADS, INC.
WWW.INLETFILTERS.COM
(866) 287-8655 PH
(866) 382-8659 FX
INFO@INLETFILTERS.COM

SIZE	DWG NO	REV
C	IPP Flexstorm Specifications	A
SCALE	SHEET 1 OF 1	



CONCRETE WASHOUT DETAILS

SCALE: NONE

NOTES:

1. ACTUAL LAYOUT TO BE DETERMINED IN THE FIELD.
2. A CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30'-0" OF THE TEMPORARY CONCRETE WASHOUT FACILITY.
3. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE REMOVED FROM THE SITE OF THE WORK AND DISPOSED OF OR RECYCLED.
4. HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCE CAUSED BY THE REMOVAL OF THE TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE BACKFILLED, REPAIRED, AND STABILIZED TO PREVENT EROSION.

CWA INSTALLATION NOTES

1. THE CWA SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE.
2. BERM SURROUNDING SIDES AND BACK OF CWA SHALL HAVE A MINIMUM HEIGHT OF 1'-0".
3. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE CWA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CWA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
4. USE EXCAVATED MATERIAL FOR PERIMETER BERM CONSTRUCTION.

CWA MAINTENANCE NOTES

1. INSPECT BMP'S EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMP'S SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMP'S AS SOON AS POSSIBLE (AND ALWAYS WITH 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMP'S IN EFFECTIVE OPERATING CONDITIONS. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
3. WHERE BMP'S HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
4. THE CWA SHALL BE REPAIRED, CLEANED, OR ENLARGED AS NECESSARY TO MAINTAIN CAPACITY FOR CONCRETE WASTE. CONCRETE MATERIALS, ACCUMULATED IN PIT, SHALL BE REMOVED ONCE THE MATERIALS HAVE REACHED A DEPTH OF 2'-0".
5. CONCRETE WASHOUT WATER, WASTED PIECES OF CONCRETE AND ALL OTHER DEBRIS IN THE SUBSURFACE PIT SHALL BE TRANSPORTED FROM THE JOB SITE IN A WATER-TIGHT CONTAINER AND DISPOSED OF PROPERLY.
6. THE CWA SHALL REMAIN IN PLACE UNTIL ALL CONCRETE FOR THE PROJECT IS PLACED.
7. WHEN THE CWA IS REMOVED, COVER THE DISTURBED AREA WITH TOP SOIL, SEED AND MULCH OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

FULL SIZE SHEET (24"x36")

REVISIONS:

Karpinski ENGINEERING
13714 Cleveland Ave. NW
Uniontown, OH 44685
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600 MARKET AVENUE NORTH CANTON OHIO 44702

MOTTER & MEADOWS ARCHITECTS

CRENSHAW PARK - NEW PAVILION
EDWARD L. "PEEL" COLEMAN COMMUNITY CENTER
1400 SHERRICK ROAD SE
CANTON, OHIO

STATE OF OHIO
CHRISTOPHER J BEDNAR
E-68297
REGISTERED
PROFESSIONAL ENGINEER
08-21-2023

CONSTRUCTION DOCUMENTS

THIS DWG :
SWPPP DETAILS

COMM 23105
DATE 07-17-23

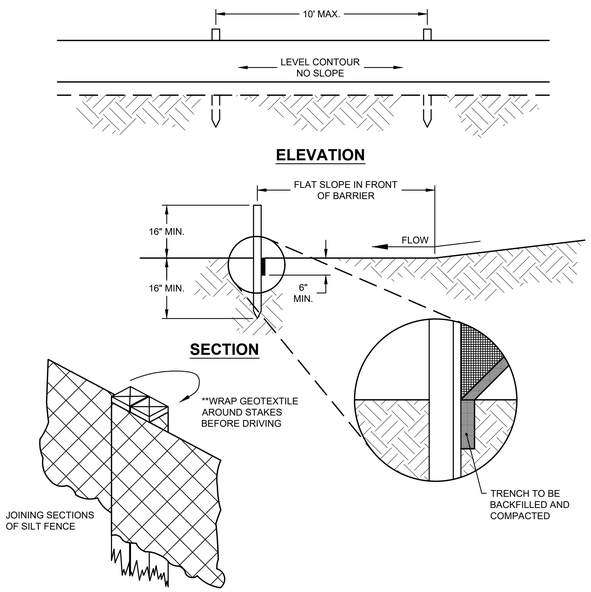
DWG
C-3.2

SILT FENCE (SF)

DESCRIPTION

SILT FENCE IS A SEDIMENT-TRAPPING PRACTICE UTILIZING A GEOTEXTILE FENCE, TOPOGRAPHY AND SOMETIMES VEGETATION TO CAUSE SEDIMENT DEPOSITION. SILT FENCE REDUCES RUNOFF'S ABILITY TO TRANSPORT SEDIMENT BY PONDING RUNOFF AND DISSIPATING SMALL RILLS OR CONCENTRATED FLOW INTO UNIFORM SHEET FLOW. SILT FENCE IS USED TO PREVENT SEDIMENT-LADEN SHEET RUNOFF FROM ENTERING INTO DOWNSTREAM CREEKS AND SEWER SYSTEMS.

SPECIFICATIONS FOR SILT FENCE



1. SILT FENCE SHALL BE CONSTRUCTED BEFORE UPSLOPE LAND DISTURBANCE BEGINS.
2. ALL SILT FENCE SHALL BE PLACED AS CLOSE TO THE CONTOUR AS POSSIBLE SO THAT WATER WILL NOT CONCENTRATE AT LOW POINTS IN THE FENCE AND SO THAT SMALL SWALES OR DEPRESSIONS THAT MAY CARRY SMALL CONCENTRATED FLOWS TO THE SILT FENCE ARE DISSIPATED ALONG ITS LENGTH.
3. ENDS OF THE SILT FENCE SHOULD BE BROUGHT UPSLOPE SLIGHTLY SO THAT WATER PONDED BY THE SILT FENCE WILL BE PREVENTED FROM FLOWING AROUND THE ENDS.
4. SILT FENCE SHOULD FOLLOW THE CONTOUR OF THE EAST AREA AVAILABLE.
5. WHERE POSSIBLE, VEGETATION SHALL BE PRESERVED FOR 5 FEET (OR AS MUCH AS POSSIBLE) UPSLOPE FROM THE SILT FENCE. IF VEGETATION IS REMOVED, IT SHALL BE REESTABLISHED WITHIN 7 DAYS FROM THE INSTALLATION OF THE SILT FENCE.
6. THE HEIGHT OF THE SILT FENCE SHALL BE A MINIMUM OF 16 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
7. THE FOOTER SECTIONS SHALL BE PLACED IN TEMPORARY CONCRETE OR DIRT BERMS AT LEAST A MINIMUM OF 8 INCHES WIDE AND 8 INCHES HIGH. THE TRENCH SHALL BE A MINIMUM OF 4 INCHES WIDE AND 4 INCHES DEEP TO ALLOW FOR THE FOOTER SECTION TO BE INSTALLED. THE TRENCH SHALL BE BACKFILLED AND COMPACTED ON BOTH SIDES OF THE FABRIC. THE FOOTER SECTION MUST BE INSTALLED PRIOR TO ANY SILT FENCE INSTALLATION. THE FOOTER SECTION MUST BE INSTALLED ALONG THE CONTOUR OF THE EARTH AS MUCH AS POSSIBLE. THE FOOTER SECTION MUST BE INSTALLED ALONG THE CONTOUR OF THE EARTH AS MUCH AS POSSIBLE. THE FOOTER SECTION MUST BE INSTALLED ALONG THE CONTOUR OF THE EARTH AS MUCH AS POSSIBLE.
8. THE FABRIC SHALL BE FASTENED TO THE STAKE ON A DIAGONAL ON THE SIDE OF THE EXCAVATION. A MINIMUM OF 8 INCHES OF EXCAVATION WILL BE BELOW THE GROUND SURFACE. FABRIC MUST BE FASTENED ONTO THE STAKE AND THE 6-INCH DEEP TRENCH. THE TRENCH SHALL BE BACKFILLED AND COMPACTED ON BOTH SIDES OF THE FABRIC.
9. SILT FENCE SECTIONS SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST WITH A MINIMUM 6-IN. OVERLAP PRIOR TO DRIVING INTO GROUND. (SEE DETAIL).
10. MAINTENANCE - SILT FENCE SHALL ALLOW RUNOFF TO PASS ONLY AS DIFFUSE FLOW THROUGH THE GEOTEXTILE. IF RUNOFF OVERTOPS THE SILT FENCE, OR FLOWS WITHIN THE FENCE, OR IN ANY OTHER WAY ALLOWS A CONCENTRATED FLOW DISCHARGE, ONE OF THE FOLLOWING SHALL BE PREFORMED, AS APPROPRIATE: 1) THE LAYOUT OF THE SILT FENCE SHALL BE CHANGED, 2) ACCUMULATED SEDIMENT SHALL BE REMOVED, OR 3) OTHER PRACTICES SHALL BE INSTALLED.
    - SEDIMENT DEPOSITS SHALL BE ROUTINELY REMOVED WHEN THE DEPOSIT REACHES APPROXIMATELY ONE-HALF THE HEIGHT OF THE SILT FENCE.
    - SILT FENCES SHALL BE INSPECTED AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. THE LOCATION OF THE EXISTING SILT FENCE SHOULD BE REVIEWED DAILY TO ENSURE ITS PROPER LOCATION AND EFFECTIVENESS. IF DAMAGED, THE SILT FENCE SHALL BE REPAIRED IMMEDIATELY.

CRITERIA FOR SILT FENCE MATERIALS:

1. FENCE POST - THE LENGTH SHALL BE A MINIMUM OF 32 INCHES. WOOD POSTS WILL BE 2-BY-2-IN. NOMINAL DIMENSIONED HARDWOOD OF SOUND QUALITY. THEY SHALL BE FREE OF KNOTS, SPLITS, AND OTHER VISIBLE IMPERFECTIONS, THAT WILL WEAKEN THE POSTS. THE MAXIMUM SPACING BETWEEN POSTS SHALL BE 10 FT. POSTS SHALL BE DRIVEN A MINIMUM 16 INCHES INTO THE GROUND, WHERE POSSIBLE. IF NOT POSSIBLE, THE POSTS SHALL BE ADEQUATELY SECURED TO PREVENT OVERTURNING OF THE FENCE DUE TO SEDIMENT/WATER LOADING.
2. SILT FENCE FABRIC - SEE CHART BELOW

FABRIC PROPERTIES	VALUES	TEST METHOD
MINIMUM TENSILE STRENGTH	120 LBS (535 N)	ASTM D 4632
MAXIMUM ELONGATION AT 50 LBS	50 %	ASTM D 4632
MINIMUM PUNCTURE STRENGTH	50 LBS (220 N)	ASTM D 4833
MINIMUM TEAR STRENGTH	40 LBS (180 N)	ASTM D 4533
APPARENT OPENING SIZE	≤ 0.84 mm	ASTM D 4751
MINIMUM PERMITTIVITY	5×10^{-2} SEC.$^{-1}$	ASTM D 4491
UV EXPOSURE STRENGTH RETENTION	70%	ASTM D 4355

TEMPORARY SEEDING (TS)

SEEDING DATES	SPECIES	LB./1,000 SF	LB./ACRE
MARCH 1 TO AUGUST 15	OATS	3	128 (4 BUSHEL)
	TALL FESCUE	1	40
	ANNUAL RYEGRASS	1	40
AUGUST 16 TO NOVEMBER 1	RYE	3	112 (2 BUSHEL)
	TALL FESCUE	1	40
	ANNUAL RYEGRASS	1	40
NOVEMBER 1 TO FEB. 29	USE MULCH ONLY OR DORMANT SEEDING		

NOTE: OTHER APPROVED SPECIES MAY BE SUBSTITUTED.

TEMPORARY PERENNIAL SPECIES SELECTION

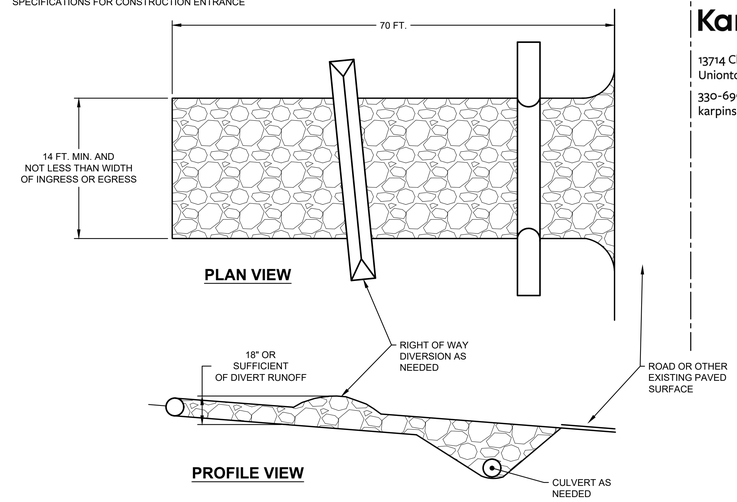
SPECIES	LB./1,000 SF	LB./ACRE
WHEAT	3	128 (4 BUSHEL)
TALL FESCUE	1	40
ANNUAL RYEGRASS	1	40
PERENNIAL RYEGRASS	1	40
CREEPING RED FESCUE	0.4	0
KENTUCKY BLUEGRASS	0.4	0

CONSTRUCTION ENTRANCE (CE)

DESCRIPTION

A CONSTRUCTION ENTRANCE IS A STABILIZED PAD OF STONE UNDERLAIN WITH A GEOTEXTILE AND IS USED TO REDUCE THE AMOUNT OF MUD TRACKED OFF-SITE WITH CONSTRUCTION TRAFFIC. LOCATED AT POINTS OF INGRESS/EGRESS, THE PRACTICE IS USED TO REDUCE THE AMOUNT OF MUD TRACKED OFF-SITE WITH CONSTRUCTION TRAFFIC.

SPECIFICATIONS FOR CONSTRUCTION ENTRANCE



1. STONE SIZE - # 2 (1.5-2.5 INCH) STONE SHALL BE USED, OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH - THE CONSTRUCTION ENTRANCE SHALL BE AS LONG AS REQUIRED TO STABILIZE HIGH TRAFFIC AREAS BUT NOT LESS THAN 70 FT. (EXCEPTION: APPLY 30 FT. MINIMUM TO SINGLE RESIDENCE LOTS).
3. THICKNESS - THE STONE LAYER SHALL BE AT LEAST 6 INCHES THICK FOR LIGHT DUTY ENTRANCES OR AT LEAST 10 INCHES FOR HEAVY DUTY USE.
4. WIDTH - THE ENTRANCE SHALL BE AT LEAST 14 FEET WIDE, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
5. GEOTEXTILE - A GEOTEXTILE SHALL BE LAID OVER THE ENTIRE AREA PRIOR TO PLACING STONE. IT SHALL BE COMPOSED OF STRONG ROT-PROOF POLYMERIC FIBERS AND MEET THE FOLLOWING SPECIFICATIONS:

GEOTEXTILE SPECIFICATIONS FOR CONSTRUCTION ENTRANCES	
MINIMUM TENSILE STRENGTH	200 LBS.
MINIMUM PUNCTURE STRENGTH	80 PSI
MINIMUM TEAR STRENGTH	50 LBS
MINIMUM BURST STRENGTH	320 PSI
MINIMUM ELONGATION	20%
EQUIVALENT OPENING SIZE	EOS < 0.6MM
PERMITTIVITY	1×10^{-3} CM/SEC

6. TIMING - THE CONSTRUCTION ENTRANCE SHALL BE INSTALLED AS SOON AS IS PRACTICABLE BEFORE MAJOR GRADING ACTIVITIES.
7. CULVERT - A PIPE OR CULVERT SHALL BE CONSTRUCTED UNDER THE ENTRANCE IF NEEDED TO PREVENT SURFACE WATER FROM FLOWING ACROSS THE ENTRANCE OR TO PREVENT RUNOFF FROM BEING DIRECTED OUT ONTO PAVED SURFACES.
8. WATER BAR - A WATER BAR SHALL BE CONSTRUCTED AS PART OF THE CONSTRUCTION ENTRANCE IF NEEDED TO PREVENT SURFACE RUNOFF FROM FLOWING THE LENGTH OF THE CONSTRUCTION ENTRANCE AND OUT ONTO PAVED SURFACES.
9. MAINTENANCE - TOP DRESSING OF ADDITIONAL STONE SHALL BE APPLIED AS CONDITIONS DEMAND. MUD SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROADS, OR ANY SURFACE WHERE RUNOFF IS NOT CHECKED BY SEDIMENT CONTROLS, SHALL BE REMOVED IMMEDIATELY. REMOVAL SHALL BE ACCOMPLISHED BY SCRAPING OR SWEEPING.
10. CONSTRUCTION ENTRANCES SHALL NOT BE RELIED UPON TO REMOVE MUD FROM VEHICLES AND PREVENT OFF-SITE TRACKING. VEHICLES THAT ENTER AND LEAVE THE CONSTRUCTION-SITE SHALL BE RESTRICTED FROM MUDDY AREAS.
11. REMOVAL - THE ENTRANCE SHALL REMAIN IN PLACE UNTIL THE DISTURBED AREA IS STABILIZED OR REPLACED WITH A PERMANENT ROADWAY OR ENTRANCE.

NOTES:

1. STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SUCH AS DIVERSIONS AND SEDIMENT TRAPS SHALL BE INSTALLED AND STABILIZED WITH TEMPORARY SEEDING PRIOR TO GRADING THE REST OF THE CONSTRUCTION SITE.
2. TEMPORARILY STABILIZE DISTURBED AREAS THAT WILL REMAIN IDLE FOR 14 DAYS OR LONGER WITHIN 7 DAYS OF LAST DISTURBANCE OR WITHIN 2 DAYS FOR AREAS WITHIN 50' OF A STREAM.
3. THE SEEDBED SHOULD BE PULVERIZED AND LOOSE TO ENSURE THE SUCCESS OF ESTABLISHING VEGETATION. TEMPORARY SEEDING SHOULD NOT BE POSTPONED IF IDEAL SEEDBED PREPARATION IS NOT POSSIBLE.
4. SOIL AMENDMENTS - TEMPORARY VEGETATION SEEDING RATES SHALL ESTABLISH ADEQUATE STANDS OF VEGETATION, WHICH MAY REQUIRE THE USE OF SOIL AMENDMENTS. BASE RATES FOR LIME AND FERTILIZER SHALL BE USED.
5. SEEDING METHOD - SEED SHALL BE APPLIED UNIFORMLY WITH A CYCLONE SPREADER, DRILL, CULTIPACKER SEEDER, OR HYDROSEEDER. WHEN FEASIBLE, SEED THAT HAS BEEN BROADCAST SHALL BE COVERED BY RAKING OR DRAGGING AND THEN LIGHTLY TAMPED INTO PLACE USING A ROLLER OR CULTIPACKER. IF HYDROSEEDING IS USED, THE SEED AND FERTILIZER WILL BE MIXED ON-SITE AND THE SEEDING SHALL BE DONE IMMEDIATELY AND WITHOUT INTERRUPTION.

MULCHING TEMPORARY SEEDING

1. APPLICATIONS OF TEMPORARY SEEDING SHALL INCLUDE MULCH, WHICH SHALL BE APPLIED DURING OR IMMEDIATELY AFTER SEEDING. SEEDINGS MADE DURING OPTIMUM SEEDING DATES ON FAVORABLE, VERY FLAT SOIL CONDITIONS MAY NOT NEED MULCH TO ACHIEVE ADEQUATE STABILIZATION.
2. MATERIALS:
    - STRAW - IF STRAW IS USED, IT SHALL BE UNROTTED SMALL-GRAIN STRAW APPLIED AT A RATE OF 2 TONS/ACRE OR 90 LBS./1,000 SQ.-FT. (2-3 BALES).
    - HYDROSEEDERS - IF WOOD CELLULOSE FIBER IS USED, IT SHALL BE USED AT 2,000 LBS./AC. OR 46 LB./1,000 SQ.-FT.
    - OTHER - OTHER ACCEPTABLE MULCHES INCLUDE MULCH MATTINGS APPLIED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS OR WOOD CHIPS APPLIED AT 6 TON/AC.
3. STRAW MULCH SHALL BE ANCHORED IMMEDIATELY TO MINIMIZE LOSS BY WIND OR WATER. ANCHORING METHODS:
    - MECHANICAL - A DISK, CRIMPER, OR SIMILAR TYPE TOOL SHALL BE SET STRAIGHT TO PUNCH OR ANCHOR THE MULCH MATERIAL INTO THE SOIL. STRAW MECHANICALLY ANCHORED SHALL NOT BE FINELY CHOPPED BUT LEFT TO A LENGTH OF APPROXIMATELY 6 INCHES.
    - MULCH NETTING - NETTING SHALL BE USED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS. NETTING MAY BE NECESSARY TO HOLD MULCH IN PLACE IN AREAS OF CONCENTRATED RUNOFF AND ON CRITICAL SLOPES.
    - SYNTHETIC BINDERS - SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRI-TAC), DCA-70, PETROSET, TERRA TRACK OR EQUIVALENT MAY BE USED AT RATES RECOMMENDED BY THE MANUFACTURER.
    - WOOD-CELLULOSE FIBER - WOOD -CELLULOSE FIBER BINDER SHALL BE APPLIED AT A NET DRY WT. OF 750 LB./AC. THE WOOD-CELLULOSE FIBER SHALL BE MIXED WITH WATER AND THE MIXTURE SHALL CONTAIN A MAXIMUM OF 50 LB./100 GAL.

FULL SIZE SHEET (24"x36")

REVISIONS:

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MOTTER & MEADOWS ARCHITECTS

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EDWARD L. "PEEL" COLEMAN COMMUNITY CENTER
1400 SHERRICK ROAD SE
CANTON, OHIO

STATE OF OHIO
CHRISTOPHER J BEDNAR
E-68297
REGISTERED
PROFESSIONAL ENGINEER
08-21-2023

CONSTRUCTION DOCUMENTS

THIS DWG :
SWPPP DETAILS

COMM 23105
DATE 07-17-23

DWG
C-3.3

SWPPP GRADING AND STABILIZATION ACTIVITIES LOG

PROJECT NAME

DATE GRADING ACTIVITY INITIATED	DESCRIPTION OF GRADING ACTIVITY	DATE GRADING ACTIVITY CEASED (INDICATE TEMPORARY OR PERMANENT)	DATE WHEN STABILIZATION MEASURES ARE INITIATED	DESCRIPTION OF STABILIZATION MEASURE AND LOCATION

SWPPP INSPECTION REPORT LOG

PROJECT NAME

INSPECTION #	INSPECTOR NAME	DATE OF INSPECTION	RAIN EVENT	TYPE OF CORRECTIVE ACTION REQUIRED

SWPPP AMENDMENT LOG

PROJECT NAME

AMENDMENT NUMBER	DESCRIPTION OF AMENDMENT	DATE OF AMENDMENT	AMENDMENT PREPARED BY

SWPPP CORRECTIVE ACTION LOG

PROJECT NAME

INSPECTION DATE	INSPECTOR NAME	DESCRIPTION OF CORRECTIVE ACTION NEEDED (FORM INSPECTION REPORT)	CORRECTIVE ACTION TAKEN	DATE ACTION TAKEN

FULL SIZE SHEET (24"x36")

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CHRISTOPHER J BEDNAR
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08-21-2023

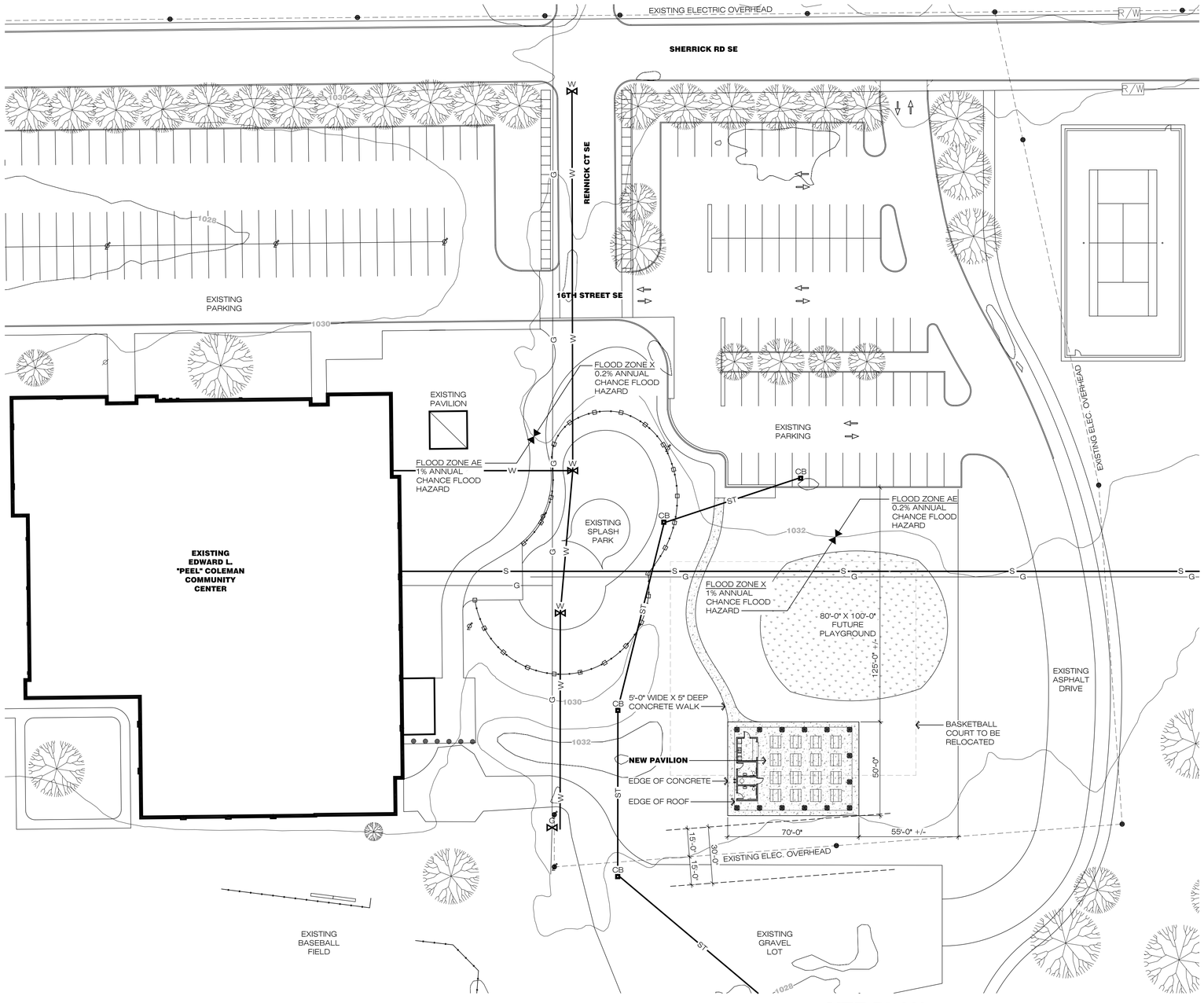
CONSTRUCTION DOCUMENTS

THIS DWG :
SWPPP DETAILS

COMM 23105
DATE 07-17-23

DWG
C-3.4

REVISIONS:



SITE PLAN

SCALE: 1" = 30'-0"

MOTTER & MEADOWS
ARCHITECTS

600 MARKET AVENUE NORTH CANTON OHIO 44702

CRENSHAW PARK - NEW PAVILION
EDWARD L. "PEEL" COLEMAN COMMUNITY CENTER
1400 SHERRICK ROAD SE
CANTON, OHIO

STATE OF OHIO
DAVID I. PATTERSON 11150
REGISTERED ARCHITECT

DAVID I. PATTERSON
LICENSE #11150
EXPIRATION DATE
12-31-2023

CONSTRUCTION DOCUMENTS

THIS DWG :
SITE PLAN

COMM 23105
DATE 08-14-23

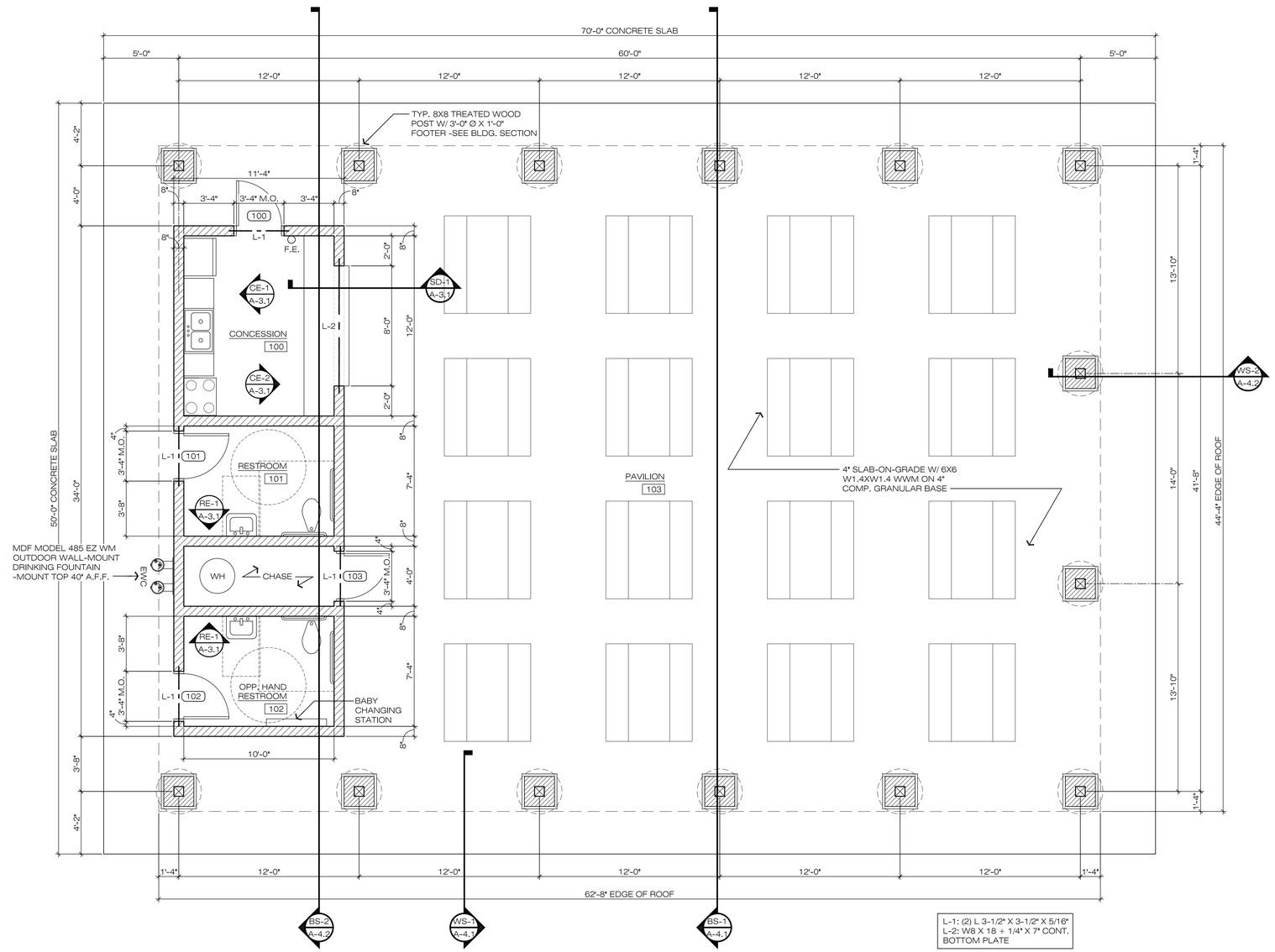
DWG
A-1.1

REVISIONS:

DOOR SCHEDULE

DOOR NO.	DOOR W	DOOR H	DOOR T	DOOR TYPE	DOOR MAT'L	DOOR CONSTR	FRAME MAT'L	FRAME JAMB	FRAME HEAD	FRAME TYPE	HARDWARE TYPE	U.L. LABEL	NOTES
100	3'-0"	7'-0"	1-3/4"	-	STEEL	INSUL.	STEEL	2"	4"	-			1,2,3,4,5
101	3'-0"	7'-0"	1-3/4"	-	STEEL	INSUL.	STEEL	2"	4"	-			1,2,3,4,5
102	3'-0"	7'-0"	1-3/4"	-	STEEL	INSUL.	STEEL	2"	4"	-			1,2,3,4,5
103	3'-0"	7'-0"	1-3/4"	-	STEEL	INSUL.	STEEL	2"	4"	-			1,2,3,4

NOTES:
1. ALL DOOR HARDWARE SHALL COMPLY WITH THE OBC CHAPTER 11 AND ICC A117.1 - 2009 EDITION.
2. DOOR HARDWARE SHALL BE STANDARD COMMERCIAL GRADE HARDWARE.
3. DOOR SHALL BE EQUIPPED WITH (3) MEDIUM DUTY HINGES UNLESS OTHERWISE NOTED
4. DOOR SHALL BE EQUIPPED WITH A LEVER-TYPE LOCKSET
   SEE SPECIFICATIONS FOR FUNCTION
5. CLOSER



FLOOR PLAN

SCALE: 1/4" = 1'-0"

600 MARKET AVENUE NORTH CANTON OHIO 44702

MOTTER & MEADOWS ARCHITECTS

CRENSHAW PARK - NEW PAVILION
EDWARD L. "PEEL" COLEMAN COMMUNITY CENTER
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1400 SHERRICK ROAD SE

STATE OF OHIO REGISTERED ARCHITECT DAVID I. PATTERSON 11150

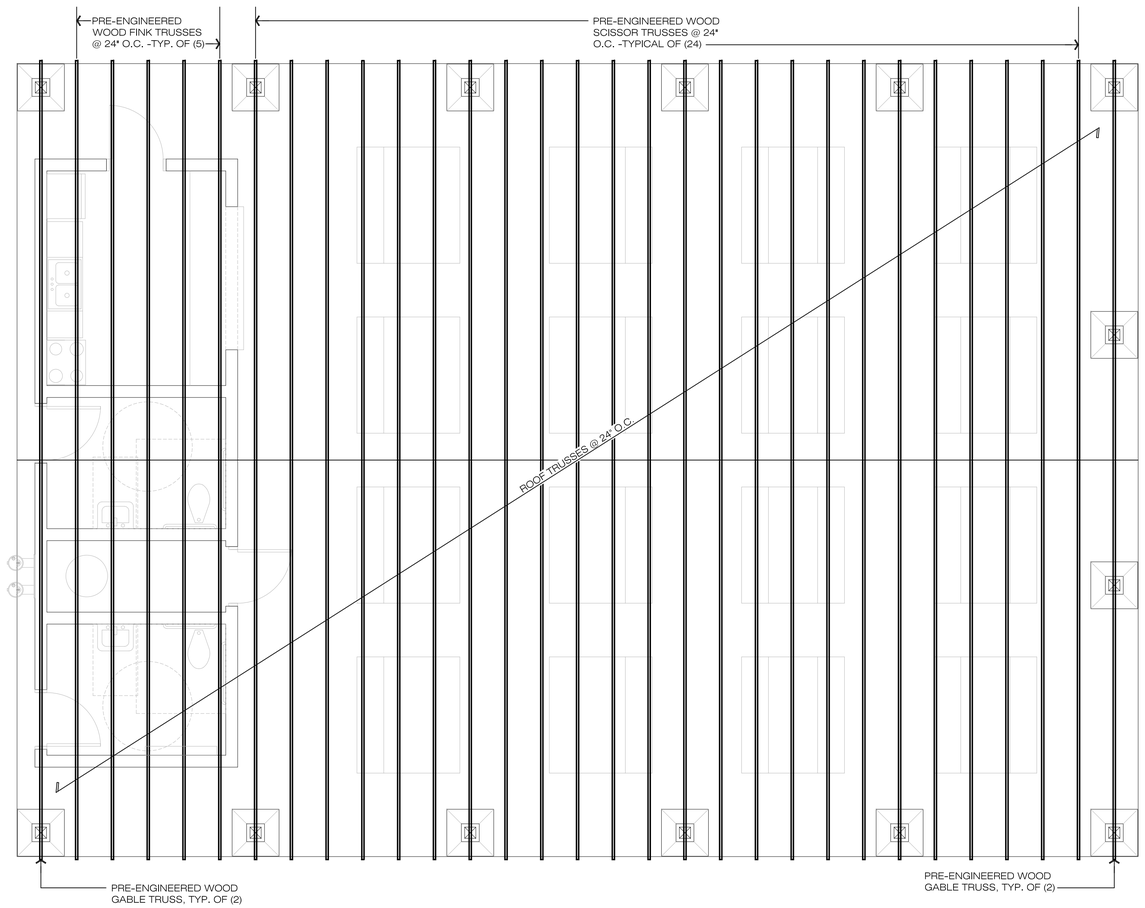
DAVID I. PATTERSON
LICENSE #11150
EXPIRATION DATE
12-31-2023

CONSTRUCTION DOCUMENTS

THIS DWG :
FLOOR PLAN; DOOR SCHEDULE

COMM 23105
DATE 08-14-23

DWG
A-2.1



ROOF FRAMING PLAN

SCALE: 1/4" = 1'-0"

REVISIONS:

600 MARKET AVENUE NORTH CANTON OHIO 44702

MOTTER & MEADOWS ARCHITECTS

CRENSHAW PARK - NEW PAVILION
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STATE OF OHIO
DAVID I. PATTERSON 11150
REGISTERED ARCHITECT

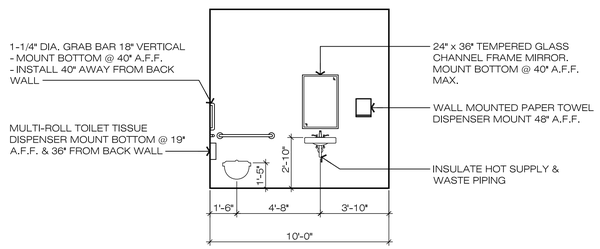
DAVID I. PATTERSON
LICENSE #11150
EXPIRATION DATE
12-31-2023

CONSTRUCTION DOCUMENTS

THIS DWG :
ROOF FRAMING PLAN

COMM 23105
DATE 08-14-23

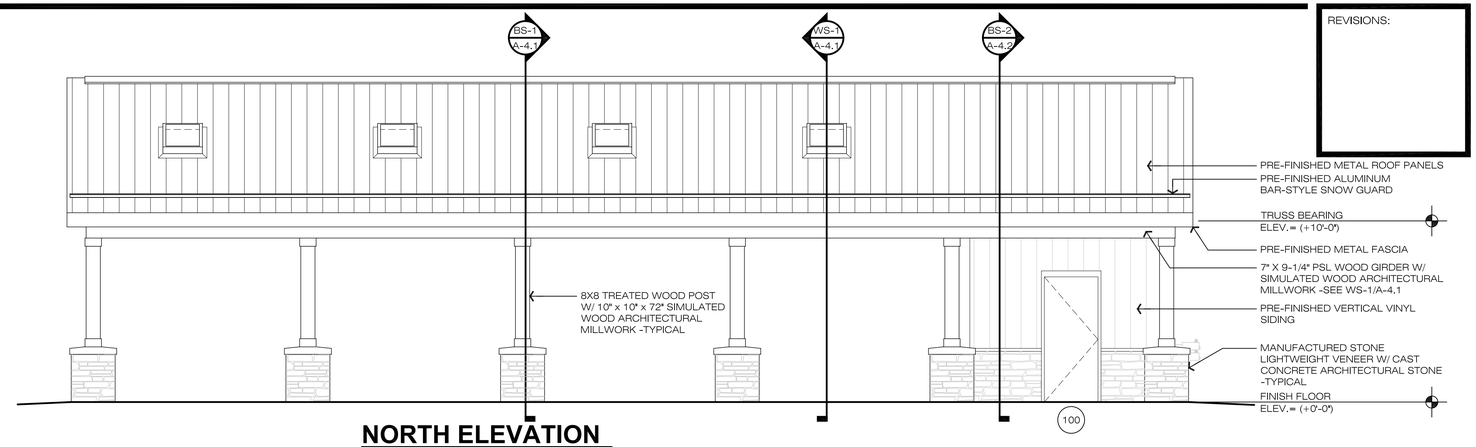
DWG
A-2.2



RESTROOM 101
RESTROOM ELEVATION

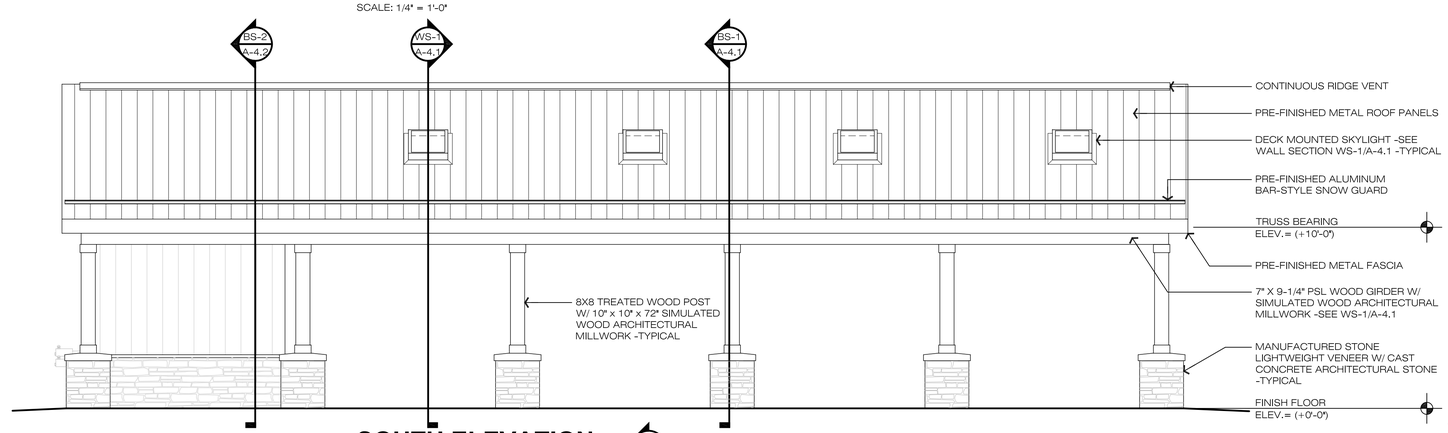
RE-1 / A-3.1

SCALE: 1/4" = 1'-0"



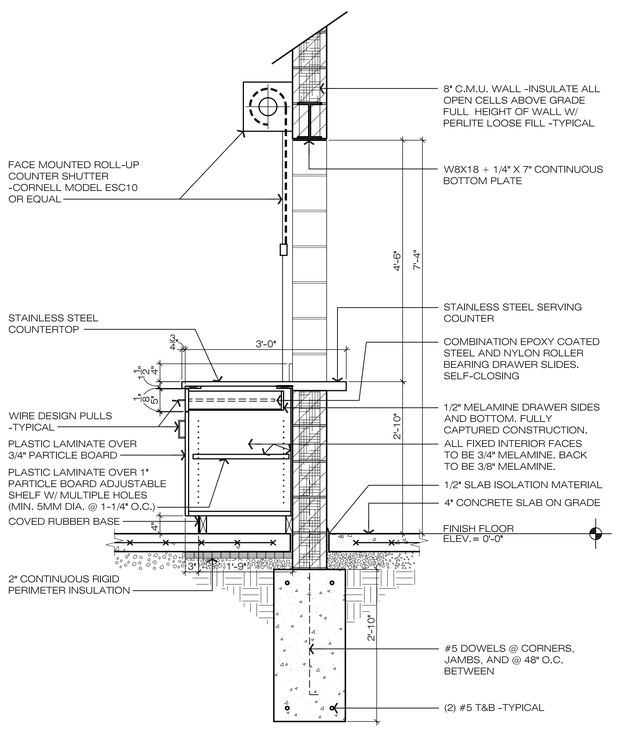
NORTH ELEVATION

SCALE: 1/4" = 1'-0"



SOUTH ELEVATION

SCALE: 1/4" = 1'-0"



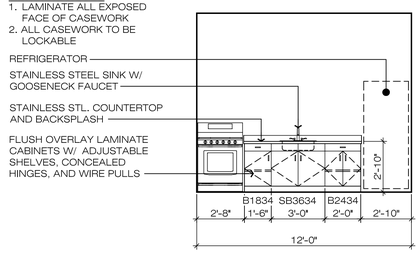
SECTION DETAIL

SD-1 / A-3.1

SCALE: 3/4" = 1'-0"

GENERAL NOTES

1. LAMINATE ALL EXPOSED FACE OF CASEWORK
2. ALL CASEWORK TO BE LOCKABLE

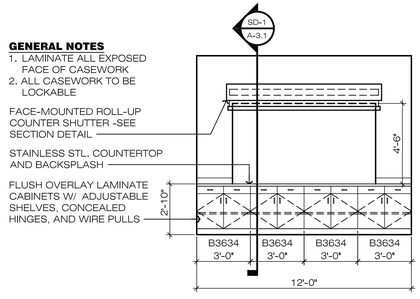


CONCESSION 100
CASEWORK ELEVATION

SCALE: 1/4" = 1'-0"

GENERAL NOTES

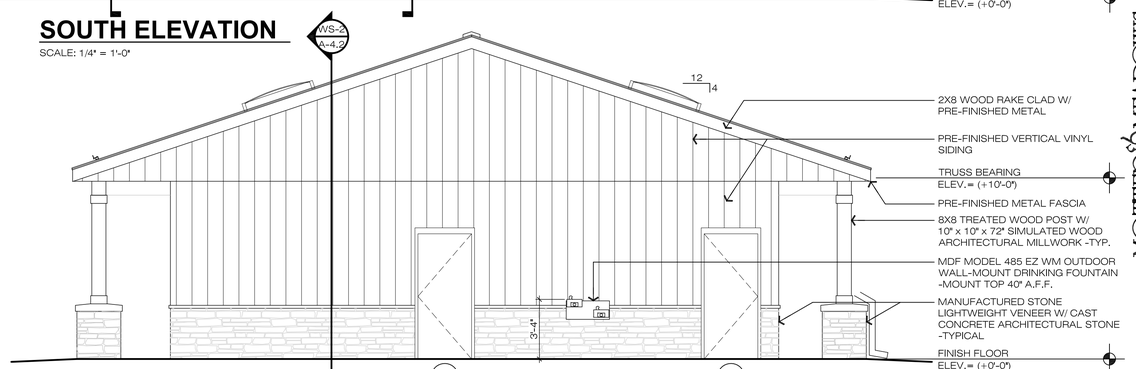
1. LAMINATE ALL EXPOSED FACE OF CASEWORK
2. ALL CASEWORK TO BE LOCKABLE



CONCESSION 100
CASEWORK ELEVATION

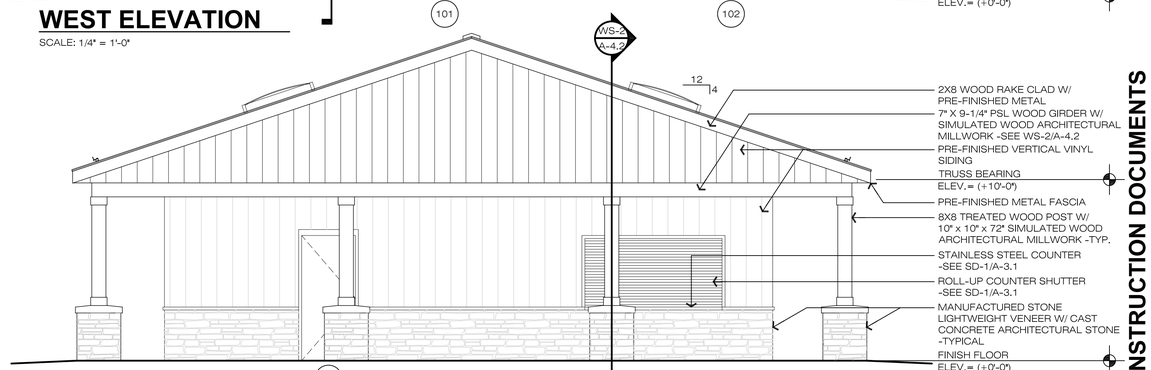
CE-2 / A-3.1

SCALE: 1/4" = 1'-0"



WEST ELEVATION

SCALE: 1/4" = 1'-0"



EAST ELEVATION

SCALE: 1/4" = 1'-0"

REVISIONS:

MOTTED MEADOWS ARCHITECTS

600 MARKET AVENUE NORTH CANTON OHIO 44702

CRENSHAW PARK - NEW PAVILION
EDWARD L. "PEEL" COLEMAN COMMUNITY CENTER
CANTON, OHIO
1400 SHERRICK ROAD SE

STATE OF OHIO
DAVID I. PATTERSON 11150
REGISTERED ARCHITECT

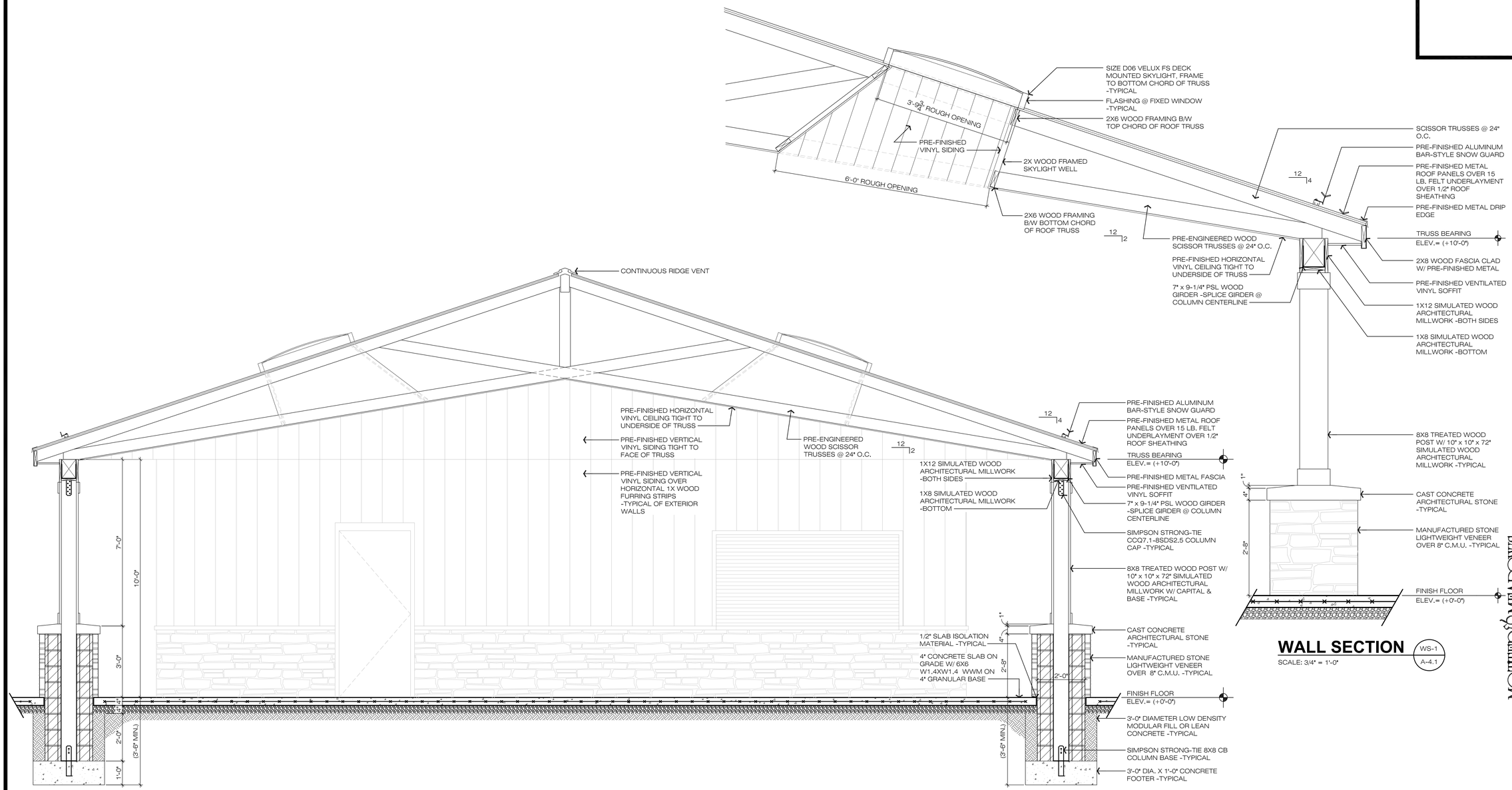
DAVID I. PATTERSON
LICENSE #11150
EXPIRATION DATE
12-31-2023

CONSTRUCTION DOCUMENTS

THIS DWG :
ELEVATIONS; SECTION DETAIL; CASEWORK ELEVATIONS; RESTROOM ELEVATIONS

COMM	23105
DATE	08-14-23

DWG
A-3.1



BUILDING SECTION

BS-1 / A-4.1

SCALE: 1/2" = 1'-0"

WALL SECTION

WS-1 / A-4.1

SCALE: 3/4" = 1'-0"

REVISIONS:

STATE OF OHIO
JOHN WILLIAM GOBIESKI
E-54957
PROFESSIONAL ENGINEER

600 MARKET AVENUE NORTH CANTON OHIO 44702

MOTTIDO MEADOWS
ARCHITECTS

CRENSHAW PARK - NEW PAVILION
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DAVID I. PATTERSON
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CONSTRUCTION DOCUMENTS

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BUILDING SECTION; WALL SECTION

COMM 23105
DATE 08-14-23

DWG
A-4.1

REVISIONS:

STATE OF OHIO
JOHN WILLIAM GOBIESKI
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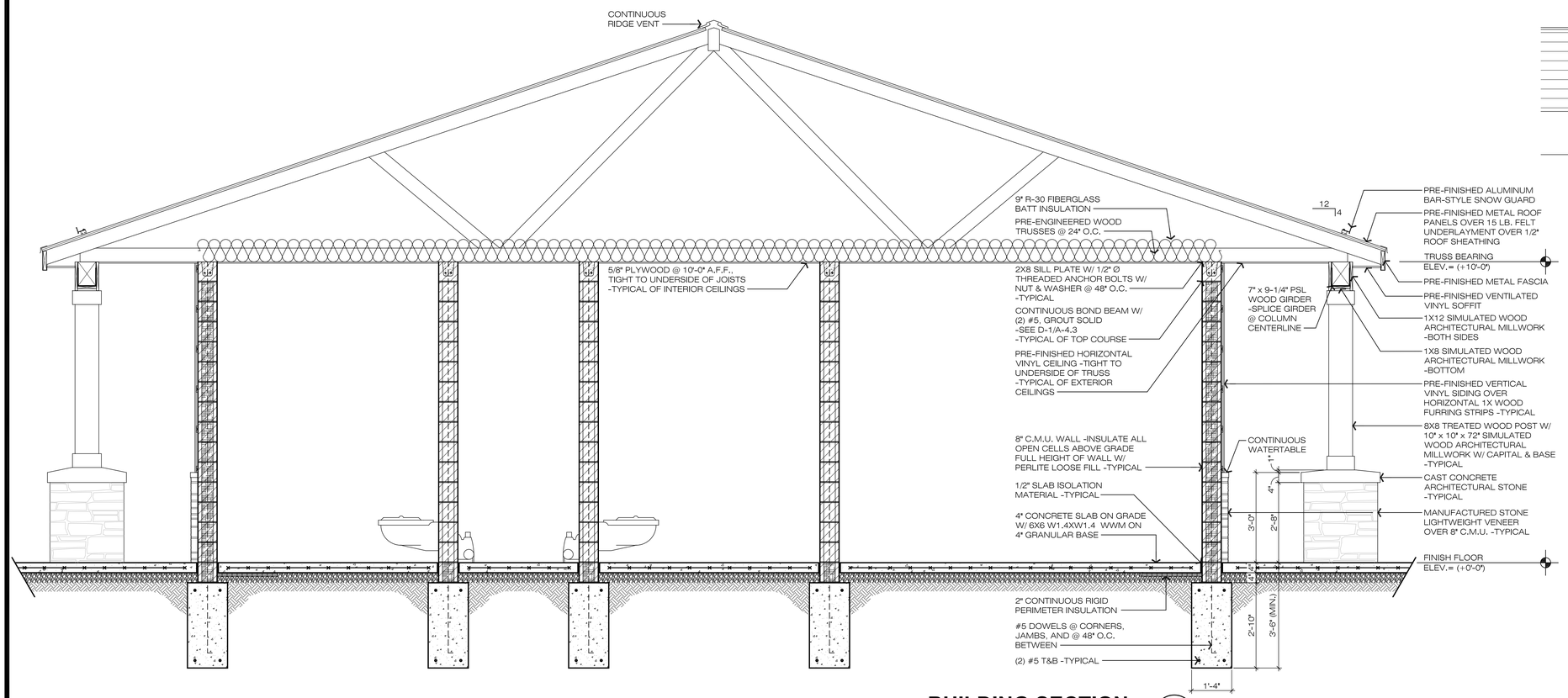
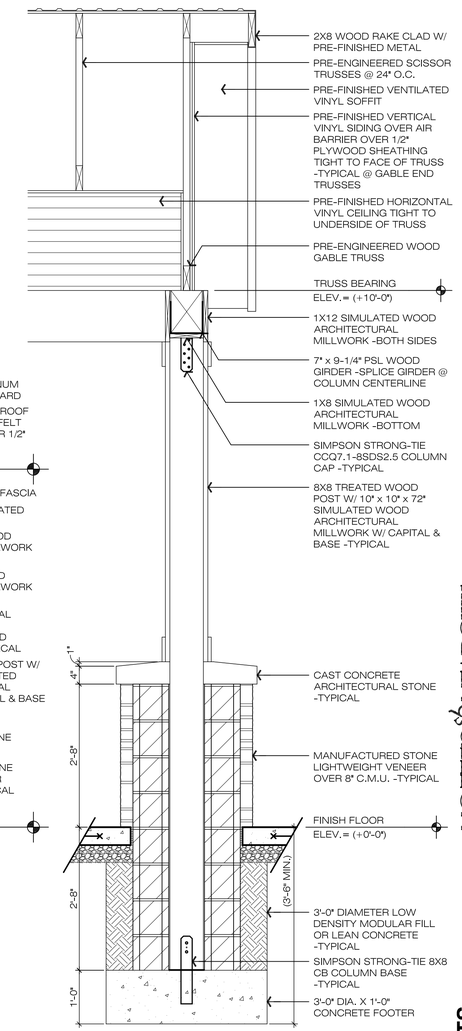


BUILDING SECTION

SCALE: 1/2" = 1'-0"

BS-2 / A-4.2



WALL SECTION

SCALE: 3/4" = 1'-0"

WS-2 / A-4.2

600 MARKET AVENUE NORTH CANTON OHIO 44702

MOTTER & MEADOWS ARCHITECTS

CRENSHAW PARK - NEW PAVILION
EDWARD L. "PEEL" COLEMAN COMMUNITY CENTER
CANTON, OHIO
1400 SHERRICK ROAD SE

STATE OF OHIO
DAVID I. PATTERSON
11150
REGISTERED ARCHITECT

DAVID I. PATTERSON
LICENSE #11150
EXPIRATION DATE
12-31-2023

CONSTRUCTION DOCUMENTS

THIS DWG :
BUILDING SECTION; WALL SECTION

COMM 23105
DATE 08-14-23

DWG
A-4.2

GENERAL NOTES

A. GENERAL

1. THIS STRUCTURE WAS DESIGNED IN ACCORDANCE WITH STATE OF OHIO BUILDING CODE (O.B.C.), 2017 EDITION.
2. ALL CONSTRUCTION SHALL CONFORM TO THE OHIO BUILDING CODE AND TO OSHA STANDARDS. WORK STRUCTURAL DRAWINGS WITH ARCHITECTURAL, MECHANICAL DRAWINGS, AND CIVIL DRAWINGS.
3. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL CONSTRUCTION METHODS AND FOR SAFETY CONDITIONS AT THE SITE.
4. TEMPORARY BRACING OF THE STRUCTURE, TRUSSES, COLUMNS, BEAMS, WALLS, ETC. DURING CONSTRUCTION ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. TEMPORARY BRACING OF THE STRUCTURE SHALL REMAIN IN PLACE UNTIL ALL LATERAL FORCE RESISTING ELEMENTS ARE INSTALLED (INCLUDING WALL AND ROOF SHEATHING). CONTRACTOR SHALL DESIGN AND COORDINATE LOCATIONS OF TEMPORARY BRACING WITH OTHER CONTRACTORS.
6. CONSTRUCTION LOADS SHALL NOT EXCEED DESIGN LIVE LOADS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DESIGN REQUIRED TO SUPPORT CONSTRUCTION EQUIPMENT USED IN CONSTRUCTING THIS PROJECT. SHORING IS THE RESPONSIBILITY OF THE CONTRACTOR.
7. FOUNDATION CONTRACTOR SHALL COORDINATE AND SCHEDULE WORK WITH MECHANICAL AND ELECTRICAL CONTRACTORS REGARDING ITEMS CONCEALED BY OR EMBEDDED IN FOUNDATIONS, WALLS OR FLOOR SLABS.
8. PRINCIPAL OPENINGS THROUGH THE FRAMING ARE SHOWN ON THESE DRAWINGS. THE CONTRACTOR SHALL COORDINATE THE STRUCTURAL AND MECHANICAL DRAWINGS FOR THE REQUIRED OPENINGS AND SHALL VERIFY SIZE AND LOCATION OF ALL OPENINGS WITH THE MECHANICAL CONTRACTOR.
9. DO NOT SCALE DRAWINGS
10. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT IF THE WEIGHTS OF MECHANICAL UNITS ETC. ARE DIFFERENT FROM THE WEIGHTS POSTED ON THE DESIGN DRAWINGS. DISCREPANCIES SHALL BE RESOLVED BEFORE PROCEEDING WITH CONSTRUCTION.
11. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER IMMEDIATELY OF ANY DISCREPANCIES BETWEEN DRAWINGS.
12. SEE ARCHITECTURAL DRAWINGS FOR THE FOLLOWING:
    - SIZE AND LOCATION OF ALL DOOR AND WINDOW OPENINGS, EXCEPT AS NOTED.
    - SIZE AND LOCATION OF ALL INTERIOR AND EXTERIOR NON-BEARING PARTITIONS.
    - SIZE AND LOCATION OF ALL CONCRETE CURBS, FLOOR DRAINS, SLOPES, DEPRESSED AREAS, CHANGES IN LEVEL, CHAMFER, GROOVES, INSERTS, ETC.
    - SIZE AND LOCATION OF FLOOR AND ROOF OPENINGS, EXCEPT AS SHOWN.
    - FLOOR AND ROOF FINISHES.
    - STAIR FRAMING AND DETAILS, EXCEPT AS SHOWN.
    - DIMENSIONS NOT SHOWN ON STRUCTURAL DRAWINGS.
    - LIMITS OF DRAFT STOPPING IN THE ATTIC SPACE

DESIGN LOAD INFORMATION:

DEAD LOAD

1. ROOF = 20 PSF

ROOF LIVE LOADS

1. LIVE LOAD = 20 PSF

ROOF SNOW LOAD

1. GROUND SNOW LOAD (Pg) = 20.00 PSF
2. FLAT ROOF SNOW LOAD (Pf) = 20.00 PSF
3. SNOW EXPOSURE FACTOR (Ce) = 1.0
4. SNOW LOAD IMPORTANCE FACTOR (I) = 1.0
5. THERMAL FACTOR, Ct = 1.1
6. RAIN ON SNOW = 5.00 PSF
7. TOTAL DESIGN SNOW LOAD = 25 PSF + DRIFTING

WIND LOAD

1. ULTIMATE DESIGN WIND SPEED, Vult (3 SECOND GUST) = 115 MPH
2. NOMINAL DESIGN WIND SPEED, Vasd = 90 MPH
3. WIND IMPORTANCE FACTOR(Iw) = 1.0, OCCUPANCY CATEGORY = II
4. WIND EXPOSURE = B
5. INTERNAL PRESSURE COEFFICIENT = ±0.18

EARTHQUAKE DESIGN DATA

1. SEISMIC USE GROUP = II
2. SEISMIC IMPORTANCE FACTOR (Ie) = 1.00
3. MAPPED SPECTRAL RESPONSE ACCELERATIONS, Ss=12.9%, S1=5.5%
4. SITE CLASS = B
5. SPECTRAL RESPONSE COEFFICIENTS, Sds=0.138, Sd1= 0.088
6. SEISMIC DESIGN CATEGORY = B
7. BASIC SEISMIC-FORCE-RESISTING SYSTEM:
   -CANTILEVER TIMBER COLUMNS
   -ORDINARY PLAIN MASONRY SHEAR WALLS
8. SEISMIC RESPONSE COEFFICIENT (Cs) = 0.0587
9. RESPONSE MODIFICATION FACTOR (R) = 1.5
10. V = (Sds)(W)(IE)/R (SIMPLIFIED ANALYSIS PROCEDURE)

B. FOUNDATIONS

1. ALL FOUNDATIONS SHALL BEAR ON UNDISTURBED SOIL OR WITH AN ASSUMED BEARING CAPACITY OF 1500 PSF. FOOTINGS SHALL BE POURED THE SAME DAY THEY ARE EXCAVATED. FOOTINGS MAY BE POURED INTO EARTH-FORMED TRENCHES IF THE SOIL CONDITIONS PERMIT.
2. COMPACT BACKFILL OVER FOOTINGS AND BENEATH SLABS ON GRADE TO AT LEAST 98% OF ITS STANDARD PROCTOR MAXIMUM DRY DENSITY PER ASTM D-698 ±2.0% MOISTURE CONTENT. STRUCTURAL FILL UNDER FOOTINGS SHALL EXTEND OUTSIDE A FOOTING A MINIMUM OF ¾ THE DEPTH OF COMPACTION. ALL FILL SHALL BE TESTED FOR IN-PLACE DENSITY TO ASSURE THAT THE COMPACTION RECOMMENDATIONS ARE ATTAINED.
3. FOOTING ELEVATIONS SHOWN ON PLANS ARE APPROXIMATE AND SHALL BE FIELD ADJUSTED IF REQUIRED.
4. A SOILS TESTING LABORATORY SHALL BE RETAINED BY THE OWNER TO VERIFY ASSUMED ALLOWABLE BEARING CAPACITY AND TO PROVIDE CONSTRUCTION REVIEW TO ENSURE CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS DURING THE EXCAVATION, BACKFILL, AND FOUNDATION PHASES OF THE PROJECT. IT SHALL BE THE RESPONSIBILITY OF THE SOILS TESTING LABORATORY TO: DETERMINE TOPSOIL AND EXCAVATION STRIPPING DEPTH; INSPECT ALL SUBSOIL EXPOSED DURING STRIPPING, SITE GRADING, AND EXCAVATION OPERATIONS; APPROVE FILL MATERIALS, PERFORM DENSITY TESTS OF FILLS TO INSURE PLACEMENT PER SPECIFICATION REQUIREMENTS; INSPECT FOUNDATION BEARING SURFACES.

C. CONCRETE AND REINFORCING STEEL

1. ALL CONCRETE SHALL CONFORM TO THE FOLLOWING REFERENCED STANDARDS:
   ACI 318-14; BUILDING CODE REQUIREMENT FOR REINFORCED CONCRETE.
   ACI 315: DETAILS AND DETAILING OF CONCRETE REINFORCEMENT.
   ACI 305: RECOMMENDED PRACTICES FOR HOT WEATHER CONCRETING.
   ACI 306: RECOMMENDED PRACTICES FOR COLD WEATHER CONCRETING.
2. ALL CAST-IN-PLACE INTERIOR SLAB CONCRETE AND ALL INTERIOR CONCRETE NOT OTHERWISE IDENTIFIED SHALL BE 3500 PSI (W/C RATIO = 0.55) AT 28 DAYS WITHOUT AIR ENTRAINMENT AND WITH THE APPROPRIATE CURE SEALER.
3. CAST-IN-PLACE CONCRETE FOR FOUNDATIONS SHALL BE 3000 PSI (W/C RATIO = 0.50) AT 28 DAYS.
4. ALL CAST-IN-PLACE EXTERIOR SLAB CONCRETE AND ALL EXTERIOR CONCRETE NOT OTHERWISE IDENTIFIED SHALL BE 4000 PSI (W/C RATIO = 0.50) AT 28 DAYS WITH AIR ENTRAINMENT (6% ±1%).
5. REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM A-615 GRADE-60.
6. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185. ONLY FLAT SHEETS SHALL BE USED.
7. ALL WELDED WIRE FABRIC SPLICES SHALL BE NOT LESS THAN (2) SPACINGS OF CROSS WIRES OR 6", WHICHEVER IS GREATER.
8. CORNER BARS SHALL BE PROVIDED TO MATCH HORIZONTAL WALL AND FOOTING REINFORCEMENT AT ALL CORNERS. LAP BARS 30 BAR DIAMETERS OR A MINIMUM OF 1'-0".
9. PROVIDE A 3/4"X45° CHAMFER ON ALL EXPOSED EDGES OF CONCRETE.
10. A CURING COMPOUND IS TO BE APPLIED TO THE CONCRETE AFTER FINISHING.
11. ALL ALUMINUM IN CONTACT WITH CONCRETE OR DISSIMILAR METALS SHALL BE COATED WITH TWO COATS COAL TAR EPOXY, APPROVED BY THE ARCHITECT, UNLESS OTHERWISE NOTED.
12. ALL CONCRETE SHALL BE PLACED WITHOUT HORIZONTAL CONSTRUCTION JOINTS, EXCEPT WHERE SPECIFICALLY NOTED, HORIZONTAL REINFORCEMENT SHALL BE CONTINUOUS THROUGH VERTICAL CONSTRUCTION JOINTS.
13. SEE ARCHITECTURAL DRAWINGS FOR CONCRETE FINISHES, MASONRY ANCHORS, AND FOR MISCELLANEOUS EMBEDDED PLATES, BOLTS, ANCHORS, ANGLES, ETC.
14. ALL HOOKS SHOWN ON DRAWINGS SHALL BE STANDARDS HOOKS PER ACI STANDARD

MINIMUM LAP SPLICE (CLASS B)
(Fy = GRADE 60, NON-COATED BARS). SPLICE REINFORCING WHERE INDICATED ON THE DRAWINGS OR ON THE SHOP DRAWINGS. ALL SPLICES SHALL BE CLASS 'B' AS DEFINED IN ACI 318. IF SPLICE LENGTH IS NOT GIVEN ON THE DRAWINGS, PROVIDE LAP SPLICE LENGTHS (IN INCHES) AS FOLLOWS.

3000 PSI CONCRETE			4000 PSI CONCRETE		
BAR SIZE	TYPICAL	TOP	BAR SIZE	TYPICAL	TOP
#3	22"	28"	#3	19"	24"
#4	29"	37"	#4	25"	32"
#5	36"	47"	#5	31"	40"
#6	43"	56"	#6	37"	48"
#7	63"	81"	#7	54"	70"
#8	72"	93"	#8	62"	80"
			#9	70"	91"

1. WHEN LAPPING TWO DIFFERENT SIZE BARS, USE THE LAP DIMENSION OF THE LARGER BAR OR THE TENSION LAP SPLICE OF SMALLER BAR. USE WHICHEVER DIMENSION IS LARGER.
2. LAP LENGTHS ASSUME CLEAR SPACING BETWEEN BARS OF 2 BAR DIAMETERS, AND A MINIMUM COVER OF 1 BAR DIAMETER. FOR DEVELOPMENT LENGTHS, DIVIDE "TYPICAL DIMENSIONS" BY 1.3.
3. TOP BARS ARE DEFINED AS HORIZONTAL BARS WITH MORE THAN 1'-0" OF FRESH CONCRETE BELOW.

TYPICAL REINFORCING BAR CLEARANCE TABLE

LOCATION	CLEARANCE
(a) CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	3"
(b) SLABS ON GRADE (WELDED WIRE FABRIC)	⅓ SLAB THICKNESS FROM TOP OF SLAB
(c) CONCRETE EXPOSED TO EARTH OR WEATHER	
-NO. 6 THRU NO. 18 BARS	2"
-NO. 5 BAR, W31 OR D31 WIRE, AND SMALLER	1½"

C. MASONRY

1. ALL DESIGN, MATERIALS, LABOR AND CONSTRUCTION OF THE MASONRY SHALL CONFORM TO THE BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES (ACI 530-13/ASCE 5-13/TMS 402-13) AND THE SPECIFICATION FOR MASONRY STRUCTURES (ACI 530-13/ASCE 6-13/TMS 602-13).
2. ALL BRICK AND CONCRETE MASONRY AND CONSTRUCTION SHALL COMPLY WITH THE RECOMMENDATIONS OF BRICK INDUSTRY ASSOCIATION AND THE NATIONAL CONCRETE MASONRY ASSOCIATION AND MINIMUM REQUIREMENTS ESTABLISHED AS REFERENCED IN THE APPLICABLE BUILDING CODE.
3. ALL HOLLOW CONCRETE BLOCK SHALL CONFORM TO ASTM C-90 WITH A NET COMPRESSIVE STRENGTH OF 2000 PSI.
4. MORTAR SHALL BE ASTM C 270, TYPE "S". SPECIFIED BY PROPORTION WITH A MINIMUM COMPRESSIVE STRENGTH OF 1800 PSI.
5. AGGREGATE FOR MORTAR SHALL BE ASTM C 144. AGGREGATE FOR GROUT ASTM C404.
6. ALL MASONRY GROUT SHALL CONFORM TO ASTM C 476. SPECIFIED BY PROPORTION, AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2,000 P.S.I. (⅜" MAX. AGGREGATE SIZE).
7. REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM A-615 GRADE-60. WELDING OF REINFORCING STEEL SHALL CONFORM TO ANSI/AWS D1.4-11.
8. ALL CORES WITH REINFORCEMENT SHALL BE FILLED SOLID WITH GROUT.
9. CONTINUOUS WIRE JOINT REINFORCING SHALL BE GALVANIZED FABRICATED UNITS WITH 9 GAGE SIDE RODS AND 9 GAGE CROSS RODS FABRICATED FROM COLD-DRAWN STEEL WIRE COMPLYING WITH ASTM A82. USE TRUSS TYPE AT NON-VERTICALLY REINFORCED WALLS AND LADDER TYPE AT VERTICALLY REINFORCED WALLS. PREFABRICATED CORNERS & TEES SHALL BE USED FOR ALL INTERSECTING WALLS.
10. ALL INTERSECTING MASONRY WALLS AND PILASTERS SHALL BE IN RUNNING BOND WITH AT LEAST 50% OF THE MASONRY UNITS INTERLOCKING AT THE INTERFACE.
11. LAY MASONRY UNITS WITH FULL MORTAR COVERAGE ON HORIZONTAL AND VERTICAL FACE SHELLS. BED WEBS IN MORTAR IN STARTING COURSE ON FOOTING AND IN ALL COURSES OF COLUMN AND PILASTERS, AND WHERE ADJACENT TO CELLS OR CAVITIES TO BE REINFORCED OR FILLED WITH CONCRETE OR GROUT.
12. MISCELLANEOUS:
    ..a. CONSOLIDATE GROUT BY MECHANICAL VIBRATION AT TIME OF PLACEMENT AND RECONSOLIDATE BY MECHANICAL VIBRATION AFTER THE INITIAL WATER LOSS AND SETTLEMENT HAS OCCURRED.
    ..b. MAX. GROUT POUR HEIGHT SHALL BE AS PER PAGE S-22 (TABLE 7) OF ACI 530-13/ASCE 5-13/TMS 402-13.
    ..c. CORRECT LOCATION OF THE VERTICAL REINFORCING STEEL MUST BE MAINTAINED BY THE USE OF VERTICAL BAR POSITIONERS PLACED AT THE TOP OF 1st COURSE AND COURSE BELOW TOP OF WALL W/ A MAXIMUM OF 6'-0" BETWEEN POSITIONERS.
    ..d. FILL CORE SOLID AROUND ANCHOR BOLTS, EMBEDDED STEEL AND REINFORCING.
    ..e. PROVIDE JOINT REINFORCING AT 16" EXCEPT AS NOTED. BOND BEAM REINFORCEMENT SHALL BE STOPPED EITHER SIDE OF VERTICAL CONTROL JOINTS.
    ..f. PROVIDE 100% SOLID BEARING, MINIMUM 3 COURSES (24") UNDER BEAMS AND WIDE FLANGE LINTELS, 1 COURSE (8") UNDER ANGLE LINTELS AND STEEL LINTELS UNLESS DETAILED OTHERWISE.
    ..g. LAP ALL SPLICES AS FOLLOWS:
        #3 - 16"
        #4 - 24"
        #5 - 28"
        #6 - 40"
        #7 - 46"

D. WOOD FRAMING

1. ALL WOOD SHALL CONFORM TO THE NATIONAL DESIGN SPECIFICATIONS FOR WOOD CONSTRUCTION, NDS (2015 EDITION).
2. TREATED BOTTOM PLATES WHERE THERE IS CONTACT WITH MASONRY.
3. JOISTS, RAFTERS, STUDS & HEADERS-(SPF, NO.1/NO.2, DOUGLAS FIR OR SOUTHERN PINE), DESIGN VALUES SHALL EQUAL OR EXCEED THE FOLLOWING:
   ..a. Fb = 875 P.S.I.
   ..b. Fv=135 P.S.I.
   ..c. E = 1,400,000 P.S.I.
4. NAILING OF ALL FRAMING MEMBERS SHALL MEET THE RECOMMENDED NAILING SCHEDULE (TABLE 2304.9.1) CONTAINED IN THE OBC, CHAPTER 23.
5. ERECTION PLANS FOR ALL TRUSSES SHALL BE SUBMITTED FOR REVIEW WITH SHOP DRAWINGS PRIOR TO FABRICATION. ERECTION PLANS SHALL INCLUDE HOW AND WHERE THE PERMANENT BRIDGING WILL BE INSTALLED. SHOP DRAWINGS SHALL BE SEALED BY A PROFESSIONAL ENGINEER OF OHIO REGISTRATION. TEMPORARY AND PERMANENT BRIDGING AND BRACING OF WOOD ROOF AND FLOOR TRUSSES SHALL BE IN ACCORDANCE WITH THE TRUSS INSTITUTE, INC. TEMPORARY BRIDGING SHALL BE FURNISHED AS REQUIRED TO MAINTAIN TRUSS STABILITY, SPACING AND TO PREVENT BUCKLING DURING ERECTION. USE 20 PSF FOR ATTIC LIVE LOAD.
5. CONNECT ROOF TRUSSES TO TOP PLATE WITH A SIMPSON "HI" TIE UNLESS NOTED OTHERWISE.
6. LAMINATED VENEERED LUMBER (LVL) OR PARALLEL STRAND LUMBER (PSL):: DESIGN VALUES SHALL EQUAL OR EXCEED THE FOLLOWING:
   ..a. Fb: 2600 P.S.I. BENDING
   ..b. Fv: 285 P.S.I. HORIZONTAL SHEAR
   ..c. Fc: 2510 P.S.I. IN. COMPRESSION PARALLEL TO GRAIN
   ..d. E: 2,000,000 P.S.I.
7. MULTIPLE MEMBER CONNECTIONS FOR LVL'S SHALL BE AS PER THE MANUFACTURER'S SPECIFICATIONS. MULTIPLE PLYS OF SAWN LUMBER SHALL BE CONNECTED WITH STRUCTURAL ADHESIVE & (2) ROWS OF 16d NAILS @ 6" o/c.
8. NO STRUCTURAL MEMBER SHALL BE CUT OR NOTCHED UNLESS SPECIFICALLY SHOWN, NOTED OR APPROVED.
9. PROVIDE A MINIMUM OF (1) JACK AND (1) KING STUD, UNLESS NOTED OTHERWISE, AT SIDES OF ALL OPENINGS, WINDOWS, AND DOORS. PROVIDE A MINIMUM OF (2) JACK STUDS BENEATH ALL WOOD BEAMS, GIRDER TRUSSES, AND HEADERS UNLESS NOTED OTHERWISE ON PLANS. DOUBLE STUDS BENEATH WOOD BEAMS, GIRDER TRUSSES, AND HEADER SHALL BE CARRIED THROUGH TO THE TOP OF FOOTINGS OR MASONRY FOUNDATION WALLS.
10. SHEATHING:
    40/20 APA RATED 19/32" (U.N.O. ON PLAN) ROOF SHEATHING EXPOSURE 1.
    48/24 APA RATED 23/32" FLOOR SHEATHING EXPOSURE 1.
    24/16 APA RATED 7/16" WALL SHEATHING EXPOSURE 1.
11. ALL SHEATHING TO BE NAILED WITH 8d COMMON NAILS AT 6" ON CENTER AT PANEL EDGES AND 12" ON CENTER AT INTERMEDIATE SUPPORTS UNLESS NOTED OTHERWISE. PROVIDE SOLID BLOCKING TO MATCH WALL STUD SIZE AT ALL FREE EDGES OF WALL SHEATHING AND NAIL w/ 8d COMMON NAILS AT 6" O.C.
12. BOLTS HOLES SHALL BE 1/16" MAXIMUM LARGER THAN THE BOLT SIZE. RE-TIGHTEN ALL NUTS PRIOR TO CLOSING IN.
13. 2x2x3/16 PLATE WASHERS SHALL BE USED UNDER BOLT HEADS AND NUTS AGAINST WOOD.
14. JOISTS AND PLATES SHALL BE PRESSURE TREATED AND MEET THE REQUIREMENTS OF OBC 2303.1.8 EXCEPT THE TREATING PROCESS SHALL NOT USE AMMONIA. JOIST HANGERS SHALL BE SIMPSON HANGERS OR AN APPROVED EQUAL. THE COATINGS SHALL BE "ZMAX". ALL FASTENERS (NAILS & BOLTS) SHALL BE GALVANIZED AS PER ASTM A153.

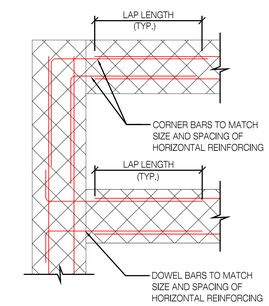
F. SUBMITTALS

1. THE GENERAL CONTRACTOR SHALL SUBMIT FOR ENGINEER REVIEW SHOP DRAWINGS FOR THE FOLLOWING ITEMS:

   REINFORCING STEEL
   CONCRETE DESIGN MIX
   MASONRY SUBMITTALS

   ITEMS MARKED (*) SHALL HAVE SHOP DRAWINGS SEALED BY A REGISTERED ENGINEER IN THE STATE WHERE THE PROJECT IS LOCATED. ITEMS MARKED (#) SHALL BE SUBMITTED TO ENGINEER FOR OWNER'S RECORD ONLY AND WILL NOT HAVE ENGINEER'S SHOP DRAWINGS STAMP. ITEMS MARKED (^) SHALL HAVE CALCULATIONS PREPARED BY A REGISTERED ENGINEER.

2. ALL SHOP DRAWINGS MUST BE REVIEWED AND SEALED BY THE GENERAL CONTRACTOR PRIOR TO SUBMITTAL.
3. CONTRACTOR SHALL SUBMIT ELECTRONIC COPIES (E.G. PDFS) OF ALL SHOP DRAWINGS SPECIFIED TO BE RETURNED BY THE ENGINEER.
4. THE OMISSION FROM THE SHOP DRAWINGS OF ANY MATERIAL REQUIRED BY THE CONTRACT DOCUMENTS TO BE FURNISHED SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF FURNISHING AND INSTALLING SUCH MATERIALS, REGARDLESS OF WHETHER THE SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED.
5. SUBMIT TWO COPIES OF MANUFACTURER'S LITERATURE FOR ALL MATERIALS AND PRODUCTS USED IN CONSTRUCTION ON THE PROJECT.
6. THE USE OF REPRODUCTIONS OF THESE CONTRACT DOCUMENTS BY ANY CONTRACTOR, SUBCONTRACTOR, ERECTOR, FABRICATOR, OR MATERIAL SUPPLIER IN LIEU OF PREPARATION OF SHOP DRAWINGS SIGNIFIES HIS ACCEPTANCE OF ALL INFORMATION SHOWN HEREIN AS CORRECT, AND OBLIGATE HIMSELF TO ANY JOB EXPENSE, REAL OR IMPLIED, ARISING DUE TO ANY ERRORS THAT MAY OCCUR HEREIN.



DOUBLE LAYER REINFORCING

TYPICAL BOND BEAM HORIZ. REINF. DETAIL

D-1
A-4.3

SCALE: 3/4" = 1'-0"

REVISIONS:

STATE OF OHIO
JOHN WILLIAM GOBIESKI
E-54957
PROFESSIONAL ENGINEER

600 MARKET AVENUE NORTH CANTON OHIO 44702

MOTTER & MEADOWS ARCHITECTS

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12-31-2023

CONSTRUCTION DOCUMENTS

THIS DWG :
GENERAL NOTES; DETAIL

COMM 23105
DATE 08-14-23

DWG
A-4.3

STRUCTURAL SPECIAL INSPECTION SCHEDULE: MASONRY CONSTRUCTION

VERIFICATION AND INSPECTION TASK	APPLICABLE TO THIS PROJECT?	FREQUENCY		IBC SECTION	TMS 402/ACI 530/ASCE 5a	TMS 602/ACI 530.1/ASCE 5a
		CONTINUOUS	PERIODIC			
1. COMPLIANCE WITH REQUIRED INSPECTION PROVISIONS OF THE CONSTRUCTION DOCUMENTS AND THE APPROVED SUBMITTALS SHALL BE VERIFIED.	X	-	X	-	-	ART. 1.5
2. VERIFICATION OF f'_m AND f'_{AAC} PRIOR TO CONSTRUCTION EXCEPT WHERE SPECIFICALLY EXEMPTED BY THIS CODE.	X	-	X	-	-	ART. 1.4B
3. VERIFICATION OF SLUMP FLOW AND VSI AS DELIVERED TO THE SITE FOR SELF-CONSOLIDATING GROUT.	X	X	-	-	-	ART. 1.5B.1.b.3
4. AS MASONRY CONSTRUCTION BEGINS, THE FOLLOWING SHALL BE VERIFIED TO ENSURE COMPLIANCE:						
A. SIZE AND LOCATION OF STRUCTURAL ELEMENTS.	-	-	-	-	-	ART. 2.6A
B. CONSTRUCTION OF MORTAR JOINTS.	X	-	X	-	-	ART. 3.3B
C. LOCATION OF REINFORCEMENT, CONNECTORS, PRESTRESSING TENDONS AND ANCHORAGES.	X	-	X	-	-	ART. 3.4,3.6A
D. PRESTRESSING TECHNIQUE.	-	-	-	-	-	ART. 3.6A
E. GRADE AND SIZE PF PRESTRESSING TENDONS AND ANCHORAGES.	-	-	-	-	-	ART. 2.4B, 2.4H
5. DURING CONSTRUCTION THE INSPECTION PROGRAM SHALL VERIFY:						
A. SIZE AND LOCATION OF STRUCTURAL ELEMENTS.	-	-	-	-	-	ART. 3.3F
B. TYPE, SIZE AND LOCATION OF ANCHORS, INCLUDING OTHER DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES OR OTHER CONSTRUCTION.	X	-	X	-	SEC. 1.2.2(e), 1.16.1	-
C. SPECIFIED SIZE, GRADE AND TYPE OF REINFORCEMENT, ANCHOR BOLTS, PRESTRESSING TENDONS AND ANCHORAGES.	X	-	X	-	SEC. 1.15	ART. 2.4, 3.4
D. WELDING OF REINFORCING BARS.	-	-	-	-	SEC. 2.1.9.7.2 3.3.3.4(b)	-
E. PREPARATION, CONSTRUCTION AND PROTECTION OF MASONRY TO STRUCTURAL MEMBERS, FRAMES OR OTHER CONSTRUCTION.	-	-	-	SEC.2104.3, 2105.3	-	ART. 1.8C, 1.58D
F. APPLICATION AND MEASUREMENT OF PRESTRESSING FORCE.	-	-	-	-	-	ART. 3.6B
6. PRIOR TO GROUTING, THE FOLLOWING SHALL BE VERIFIED TO ENSURE COMPLIANCE:				-	-	
A. GROUT SPACE IS CLEAN.	X	-	X	-	-	ART. 3.2D
B. PLACEMENT OF REINFORCEMENT AND CONNECTORS, AND PRESTRESSING TENDONS AND ANCHORAGES.	X	-	X	-	SEC.1.13	ART. 3.4
C. PROPORTIONS OF SITE-PREPARED GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS.	X	-	X	-	-	ART. 2.6B
D. CONSTRUCTION OF MORTAR JOINTS.	X	-	X	-	-	ART. 3.3B
7. GROUT PLACEMENT SHALL BE VERIFIED TO ENSURE COMPLIANCE:	X	-	X	-	-	ART. 3.5
A. GROUTING OF PRESTRESSING BONDED TENDONS.	-	-	-	-	-	ART. 3.6C
8. PREPARATION OF ANY REQUIRED GROUT SPECIMENS, MORTAR SPECIMENS AND/OR PRISMS SHALL BE OBSERVED.	-	-	-	SEC.2105.2.2,2 105.3	-	ART. 1.4

REQUIRED VERIFICATION & INSPECTION OF WOOD FRAMING

APPLICABLE TO PROJECT	VERIFICATION AND INSPECTION TASK	CONTINUOUS	PERIODIC
X	1. VERIFY LUMBER GRADE - VISUAL	--	X
X	2. SHEAR WALL NAILING PATTERNS - VISUAL	--	X
X	3. LIGHT GAGE METAL CONNECTIONS - VISUAL	--	X
X	4. SHEAR WALL HOLD DOWN ANCHORS - VISUAL	X	--

SPECIAL INSPECTIONS

1. SPECIAL INSPECTION IS TO BE PROVIDED IN ADDITION TO THE INSPECTIONS CONDUCTED BY THE DEPARTMENT OF BUILDING SAFETY AND SHALL NOT BE CONSTRUED TO RELIEVE THE OWNER OR HIS AUTHORIZED AGENT FROM REQUESTING THE PERIODIC AND CALLED INSPECTIONS REQUIRED BY THE BUILDING CODE. SPECIAL INSPECTION SHALL BE PAID BY OWNER.

REQUIRED SPECIAL INSPECTIONS

1. IN ADDITION TO THE REGULAR INSPECTIONS, THE FOLLOWING ITEMS WILL ALSO REQUIRE SPECIAL INSPECTION ACCORDANCE WITH THE BUILDING CODE.

A. CONCRETE CONSTRUCTION AS REQUIRED BY OBC SECTION 1704.4 AND TABLE 1740.4, EXCEPT AS ALLOWED IN OBC SECTION 1704.4.

B. MASONRY CONSTRUCTION AS REQUIRED BY OBC SECTION 1704.5 AND TABLE 1704.5.1, LEVEL 1 SPECIAL INSPECTION, EXCEPT ALLOWED IN OBC SECTION 1740.5.

C. SPECIAL INSPECTION FOR EXISTING SITE SOIL CONDITIONS. DURING SITE PREPARATION AND FILL PLACEMENT, TO ENSURE LOAD-BEARING REQUIREMENTS IN COMPLIANCE WITH OBC SECTION 1740.7 EXCEPT AS ALLOWED IN OBC SECTION 1740.7.

D. SPECIAL CASES AS DEEMED NECESSARY BY BUILDING OFFICIAL IN COMPLIANCE WITH OBC SECTION 1704.15.

2. SPECIAL INSPECTOR SHALL MEET THE QUALIFICATIONS AS STATED IN THE BUILDING CODE AND SHALL PERFORM THE DUTIES AND RESPONSIBILITIES AS OUTLINED UN THE BUILDING CODE.

3. SPECIAL INSPECTION SHALL MEET THE REQUIREMENTS OF OBC SECTION 1704. SPECIAL INSPECTORS(S) SHALL BE HIRED BY THE OWNER TO PERFORM THE REQUIRED SPECIAL INSPECTIONS. THE NAMES OF PERSONS OR FIRMS WHO ARE TO PERFORM THE SPECIAL INSPECTIONS SHALL BE FORWARDED TO THE BUILDING OFFICIAL FOR APPROVAL. THE SPECIAL INSPECTOR(S) SHALL COMPLETE AND SUBMIT ALL FORMS REQUIRED BY THE BUILDING DEPARTMENT HAVING JURISDICTION.

4. THE SPECIAL INSPECTOR(S) SHALL:

A. OBSERVE THE WORK ASSIGNED FOR CONFORMANCE TO THE APPROVED DRAWING AND SPECIFICATIONS.

B. FURNISH INSPECTION REPORTS TO THE ENGINEER OF RECORD AND BUILDING DEPARTMENT. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. THEN IF NOT CORRECTED, TO THE ENGINEER AND THE BUILDING DEPARTMENT.

C. SUBMIT TO THE ENGINEER OF RECORD AND THE BUILDING DEPARTMENT A SIGNED FINAL REPORT STATING THAT THE WORK WAS IN CONFORMANCE WITH THE APPROVED DRAWINGS AND SPECIFICATIONS AND THE APPLICABLE WORKMANSHIP PROVISIONS OF THE OBC.

5. SPECIAL INSPECTION NOTES:

A. CONTINUOUS SPECIAL INSPECTION IS ALWAYS REQUIRED DURING THE PERFORMANCE OF THE WORK UNLESS SPECIFICALLY NOTED BELOW.

B. WHERE FABRICATION OF STRUCTURAL LOAD-BEARING MEMBERS AND ASSEMBLIES IS BEING PERFORMED ON THE PREMISES OF A FABRICATOR'S SHOP. CONTINUOUS SPECIAL INSPECTION IS REQUIRED DURING THE PERFORMANCE OF THE WORK EXCEPT AS ALLOWED IN OBC SECTION 1740.2.2 AND UNLESS SPECIFICALLY NOTED BELOW.

C. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE THE SPECIAL INSPECTOR(S) WITH ADVANCE NOTICE, NO LESS THAN ONE WORKING DAY, OF THE INITIATION OF ANY WORK REQUIRED TO HAVE SPECIAL INSPECTIONS. ALL WORK PERFORMED WITHOUT REQUIRED SPECIAL INSPECTION WILL BE SUBJECT TO REMOVAL.

REVISIONS:

STATE OF OHIO
JOHN WILLIAM GOBIESKI
E-54957
PROFESSIONAL ENGINEER

MOTTER & MEADOWS ARCHITECTS

600 MARKET AVENUE NORTH CANTON OHIO 44702

CRENSHAW PARK - NEW PAVILION
EDWARD L. "PEEL" COLEMAN COMMUNITY CENTER
CANTON, OHIO
1400 SHERRICK ROAD SE

STATE OF OHIO
DAVID I. PATTERSON
11150
REGISTERED ARCHITECT

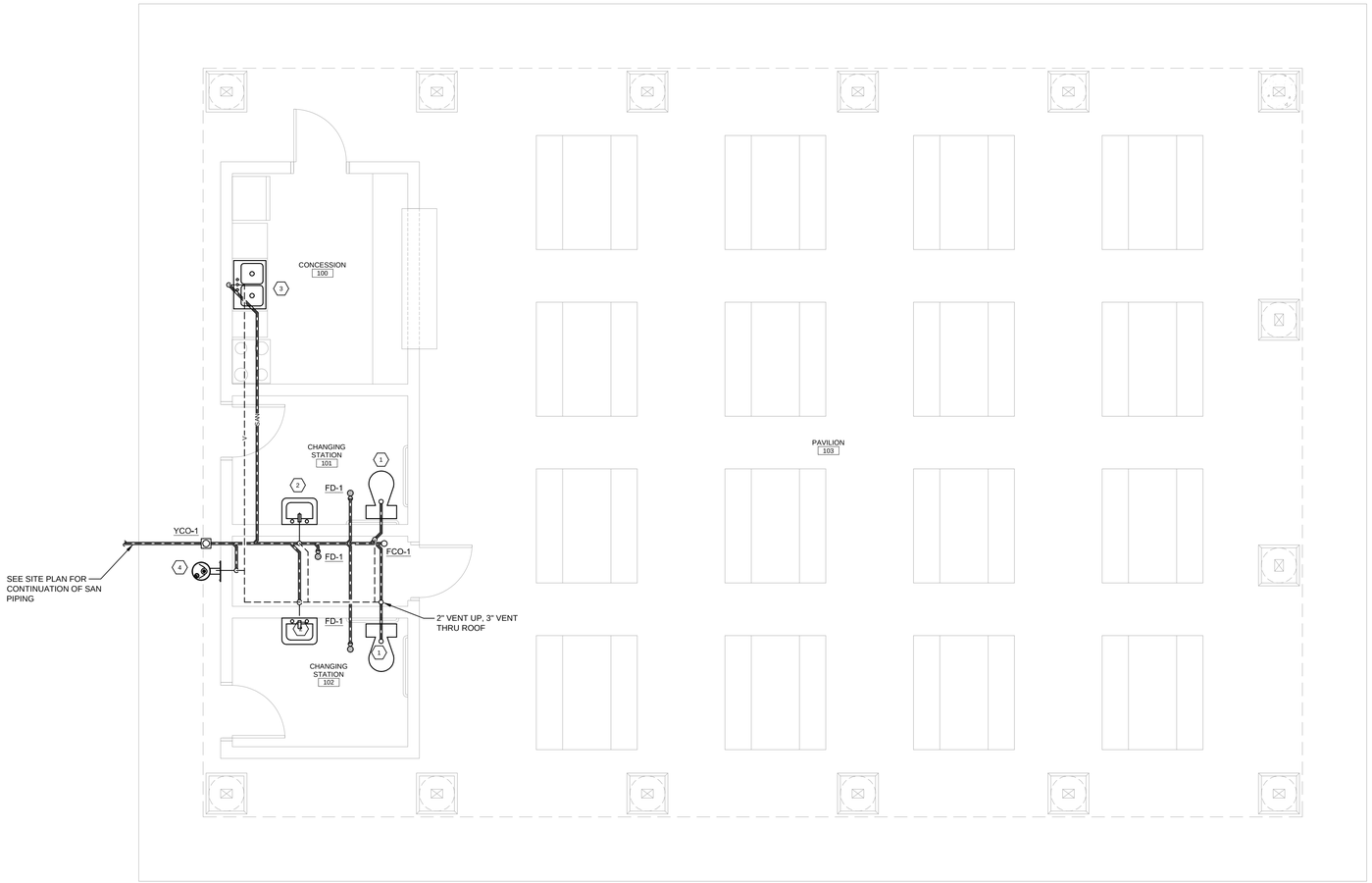
DAVID I. PATTERSON
LICENSE #11150
EXPIRATION DATE
12-31-2023

CONSTRUCTION DOCUMENTS

THIS DWG :
SPECIAL INSPECTIONS

COMM 23105
DATE 08-14-23

DWG
A-4.4



SANITARY
FLOOR PLAN - PLUMBING
SCALE: 1/4" = 1'-0"

HEI ENGINEERING GROUP, INC.
443 WEST LIBERTY STREET
WOOSTER, OHIO 44691
330-262-0042
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HEI Project No. 2023-06-07

REVISIONS:

PRELIMINARY
NOT FOR CONSTRUCTION

MOTTER & MEADOWS ARCHITECTS

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DAVID I. PATTERSON
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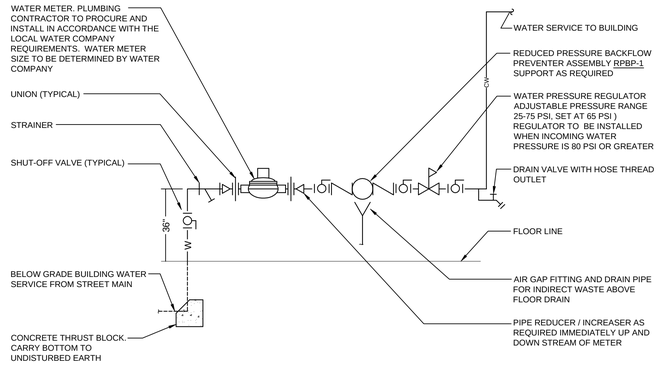
12-31-2023

CONSTRUCTION DOCUMENTS

THIS DWG :
FLOOR PLAN - PLUMBING SANITARY

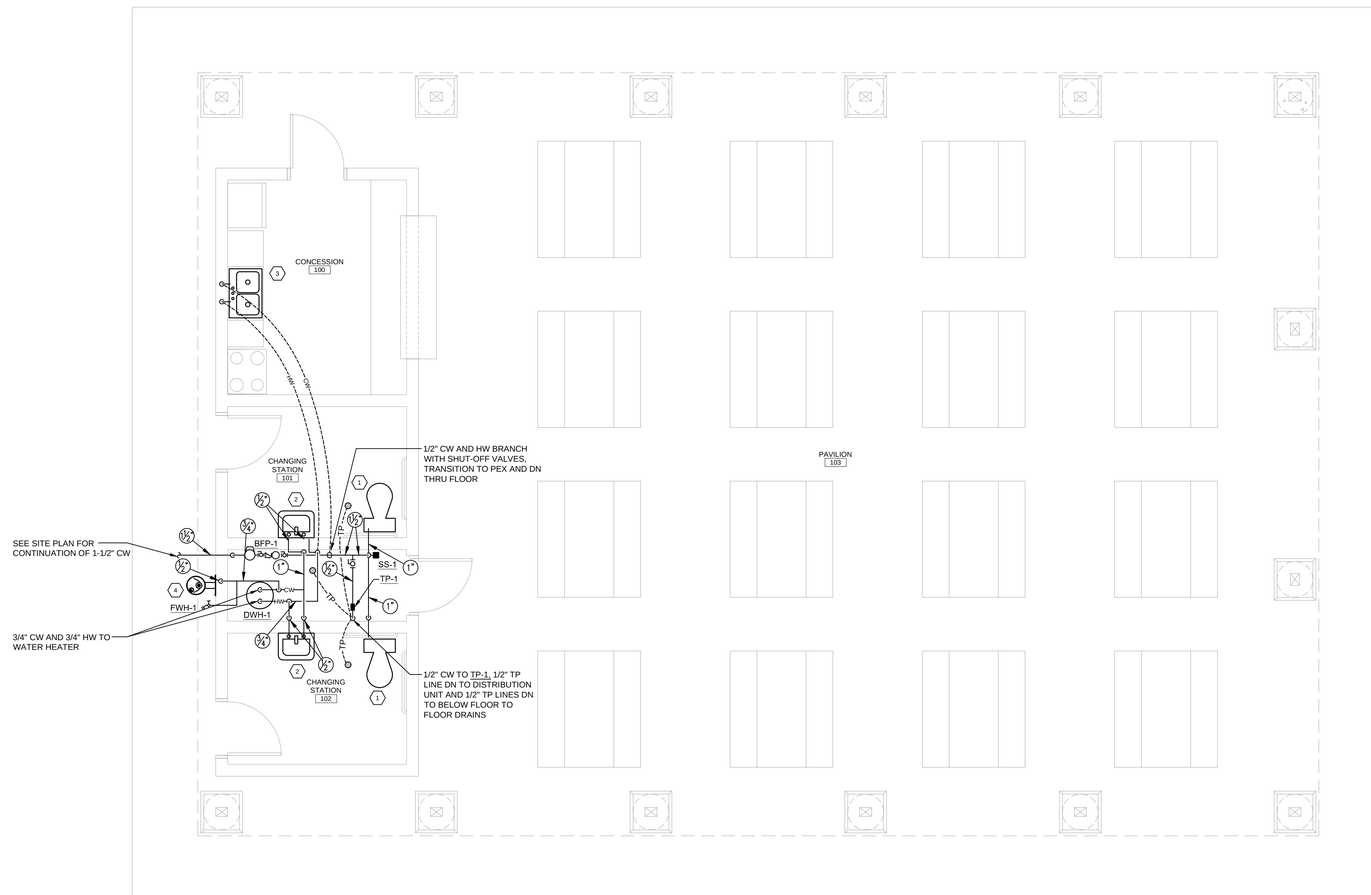
COMM 23105
DATE 05-24-23

DWG
P-1.1



DOMESTIC WATER SERVICE ENTRANCE DETAIL

NOT TO SCALE



WATER PIPING

FLOOR PLAN - PLUMBING

SCALE: 1/4" = 1'-0"

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CONSTRUCTION DOCUMENTS

THIS DWG :
FLOOR PLAN - PLUMBING WATER PIPING

COMM 23105
DATE 05-24-23

DWG
P-1.2

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PLUMBING PIPE AND INSULATION SCHEDULE

TYPE	SIZE	PIPE	FITTINGS	JOINTS	INSULATION THICKNESS*	NOTES
CW	UP TO 1-1/4"	TYPE "L" COPPER	WROUGHT COPPER	SOLDER	1/2"	
CW	1-1/2" TO 4"	TYPE "L" COPPER	WROUGHT COPPER	SOLDER	1"	
CW	6" & LARGER	SCH 40 GALV. STL.	GALV. IRON	SCREWED OR MECH.	1"	
CW	UP TO 1"	BLUE PEX	POLYMER	CRIMP	1/2"	SEE NOTE 6
HW	UP TO 1-1/4"	TYPE "L" COPPER	WROUGHT COPPER	SOLDER	1"	
HW	1-1/2" TO 4"	TYPE "L" COPPER	WROUGHT COPPER	SOLDER	1-1/2"	
HW	6" & LARGER	SCH 40 GALV. STL.	GALV. IRON	SCREWED OR MECH.	1-1/2"	
HW	UP TO 1"	RED PEX	POLYMER	CRIMP	1"	SEE NOTE 6
DWV	UP TO 1-1/2"	SCH 40 GALV. STL.	CAST IRON	SCREWED	N/A	
DWV	UP TO 1-1/2"	PVC	PVC	SOLVENT CEMENT	N/A	SEE NOTE 5
DWV	2" & LARGER	CAST IRON	CAST IRON	NO-HUB	N/A	SEE NOTE 4
DWV	2" & LARGER	PVC	PVC	SOLVENT CEMENT	N/A	SEE NOTE 5

MATERIAL STANDARDS
1. COPPER PIPE SHALL BE IN ACCORDANCE WITH ASTM B88.
2. STEEL PIPE 1-1/2" AND SMALLER SHALL BE ASTM A120 BUTT WELDED CARBON STEEL.
3. STEEL PIPE 2" AND LARGER SHALL BE ASTM A53 GRADE B SEAMLESS CARBON STEEL OR ELECTRIC RESISTANCE WELDED.
4. CAST IRON PIPE SHALL BE IN ACCORDANCE WITH ASTM A74.
5. PVC PIPE AND FITTINGS SHALL BE SOLID WALL SCHEDULE 40 IN ACCORDANCE WITH ASTM D2665.
6. POLYETHYLENE PIPE SHALL BE IN ACCORDANCE WITH ASTM D2513.
7. CTS (COPPER TUBE SIZE) CPVC PIPE SHALL BE IN ACCORDANCE WITH ASTM D2846.
8. PEX TUBING SHALL BE IN ACCORDANCE WITH ASTM F877.
9. PIPE INSULATION SHALL BE EITHER FIBERGLASS OR FLEXIBLE UNICELLULAR TYPE WITH A MAXIMUM THERMAL CONDUCTIVITY "k" FACTOR OF 0.24 AT 75°F MEAN TEMPERATURE. FIBERGLASS PIPE INSULATION SHALL HAVE AN ALL SERVICE JACKET. * INSULATION THICKNESS IS PER ASHRAE 90.1-2013.

NOTE 1. SEE PLUMBING SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
NOTE 2. WHERE MORE THAN ONE TYPE OF PIPE OR INSULATION IS INDICATED THE INSTALLING CONTRACTOR MAY SELECT FROM THE OPTIONS ACCORDING TO HIS PREFERENCE.
NOTE 3. HORIZONTAL RAIN WATER CONDUCTORS SHALL BE INSULATED WITH 1" THICK FIBERGLASS PIPE INSULATION.
NOTE 4. BURIED CAST IRON SOIL PIPE SHALL BE HUB AND SPIGOT TYPE WITH COMPRESSION GASKET JOINTS.
NOTE 5. PVC DWV PIPE SHALL NOT BE INSTALLED IN ANY CEILING SPACES WHICH ARE USED FOR AN AIR PLENUM.
NOTE 6. PEX TUBING TO BE USED FOR INTERIOR UNDERGROUND/UNDERFLOOR INSTALLATIONS ONLY AND HAVE A MAXIMUM OPERATING TEMPERATURE OF 180°F AT 100 PSI.

PLUMBING SYMBOLS LEGEND

DWH-1	EQUIPMENT IDENTITY TAG
100	ROOM NUMBER
10	PLUMBING FIXTURE
SAN	SANITARY WASTE BELOW FLOOR OR GRADE
V	SANITARY VENT
CW	COLD WATER
HW	HOT WATER (120°F)
	BALL VALVE
	REDUCED PRESSURE BACKFLOW PREVENTER
	WATER METER
	PIPE RISER SECTION
	PIPE DROP
	SHOCK STOP
	FROSTPROOF WALL HYDRANT
FD-	FLOOR DRAIN
YCO	YARD CLEANOUT: FLUSH WITH GRADE
PC	PLUMBING CONTRACTOR
TYP	TYPICAL
BFP	BACKFLOW PREVENTER ASSEMBLY

GENERAL PLUMBING NOTES

1. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF THE PLUMBING SYSTEMS. ACTUAL FIELD CONDITIONS AND WORK OF OTHER TRADES MAY REQUIRE MINOR DEVIATIONS.

2. THIS CONTRACTOR TO BE AWARE OF LIMITED SPACE ABOVE CEILING FOR NEW WORK AND SHOULD COORDINATE HIS WORK WITH ALL OTHER TRADES.

3. ALL PLUMBING SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH THE OHIO PLUMBING AND MECHANICAL CODES.

4. ALL PIPING TO BE INSTALLED GENERALLY BENEATH DUCTWORK FOR ACCESS TO VALVING. ALLOW 8" MINIMUM CLEAR TO TOP OF CEILING. NO BULLHEAD TEES WILL BE PERMITTED IN THE PIPING.

5. PLUMBING AND HVAC INSTALLATION SHALL BE COORDINATED SO AS TO MAINTAIN AT LEAST TEN FEET OF CLEARANCE FROM ALL OUTDOOR AIR INTAKES AND BUILDING OPENINGS; TO ANY PLUMBING VENTS, EXHAUST AIR OUTLETS OR OTHER NOXIOUS CONDITIONS.

6. ALL PLUMBING SYSTEM PENETRATIONS THROUGH FIRE/SMOKE RATED ASSEMBLIES SHALL BE SEALED WITH FIRE AND SMOKE STOPPING COMPOUND SO AS TO MAINTAIN THE FIRE RESISTANCE RATING OF THE WALL PENETRATED. FIRESTOPPING COMPOUND, PIPE SLEEVES, AND PIPING INSTALLATION SHALL BE INSTALLED SO AS THE COMPLETE PENETRATION ASSEMBLY IS CLASSIFIED BY UL AS LISTED IN THE UL BUILDING MATERIALS DIRECTORY.

7. UNLESS NOTED OTHERWISE, THIS CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXCAVATING AND TRENCHING AS WELL AS ALL CUTTING AND PATCHING OF EXISTING WALLS, FLOORS, CEILINGS AND ROOFS AS REQUIRED FOR THE INSTALLATION OF PLUMBING SYSTEMS. ANY EXISTING ROOF WARRANTIES SHALL BE MAINTAINED. NO STRUCTURAL OR REINFORCING MEMBERS SHALL BE CUT.

8. SEE SANITARY ISOMETRIC FOR DRAIN AND VENT PIPE SIZES. SEE PLUMBING FIXTURE SCHEDULE FOR WATER, DRAIN AND VENT SIZES TO INDIVIDUAL FIXTURES.

9. UPON COMPLETION OF THE DOMESTIC WATER PIPING INSTALLATION, THE ENTIRE SYSTEM SHALL BE FLUSHED, DISINFECTED, AND FLUSHED AGAIN IN ACCORDANCE WITH THE LATEST AWWA STANDARDS. UPON COMPLETION OF THE DISINFECTION PROCESS; BACTERIOLOGICAL TESTS SHALL BE PERFORMED IN ACCORDANCE WITH AWWA STANDARDS AND THE LOCAL HEALTH DEPARTMENT TO VERIFY SATISFACTORY POTABLE WATER QUALITY.

PLUMBING FIXTURE SCHEDULE

SYM	TYPE	MAKE, MODEL AND SIZE	DESCRIPTION	CONNECTIONS CW	HW	TRAP	DRAIN	VENT	MTG. HT.
1	WATER CLOSET ADA	AMERICAN STANDARD MADERA FLOWISE #3461.001	VITREOUS CHINA ELONGATED BOWL FLOOR MOUNT SIPHON JET WATER CLOSET WITH 1-1/2" TOP SPUD INLET FOR LOW WATER CONSUMPTION (1.60 GPF). INSTALLATION SHALL BE COMPLETE WITH CHURCH #29SSSCT WHITE OPEN FRONT SEAT WITH CHECK HINGE AND SLOAN ROYAL #111-1.6 FLUSH VALVE. INSTALLATION SHALL BE IN COMPLIANCE WITH ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES ICC A117.1-2009 AND MOUNT THE FLUSH LEVER ON THE WIDE SIDE OF THE WATER CLOSET.	1"	NONE	INT.	4"	2"	FLOOR
2	LAVATORY ADA	AMERICAN STANDARD LUCERNE #0355.012 20.50" X 18.25" OVERALL 15" X 10" X 6.5" BASIN	VITREOUS CHINA WALL HUNG LAVATORY WITH FAUCET HOLES 4" ON CENTER. INSTALLATION SHALL BE COMPLETE WITH J.R. SMITH #0700 CONCEALED ARM CARRIER WITH FLOOR MOUNTED SUPPORT, DELTA #511LF-HGMHDF CHROME FINISH FAUCET WITH SINGLE LEVER TYPE HANDLE AND AERATOR FOR 0.5 GPM MAX FLOW REGARDLESS OF PRESSURE AND POWERS HYDROGUARD #e480 ASSE 1070 TEMPERING VALVE SET FOR 100°F DISCHARGE TEMPERATURE. ADDITIONAL TRIM SHALL INCLUDE A PERFORATED GRID STRAINER WITH 1-1/4" TAIL PIECE, 1-1/4" CHROME PLATED P-TRAP WITH INTEGRAL CLEANOUT, ANGLE STOP AND 12" LONG 3/8" OD FLEXIBLE RISERS AND WALL FLANGE. INSTALLATION SHALL BE IN COMPLIANCE WITH ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES ICC A117.1-2009 AND HAVE ALL EXPOSED PIPING BENEATH THE LAVATORY SHALL BE INSULATED WITH ADA APPROVED TRAP, VALVES AND PIPING PROTECTION PRODUCTS.	1/2"	1/2"	1-1/4"	1-1/2"	1-1/2"	34" RIM TO FLOOR
3	COUNTER SINK	JUST STYLIST #DL-1933-A-GR 33" X 19" OVERALL (2) 14" X 14" X 7.5" BASINS	DOUBLE COMPARTMENT 18 GAUGE TYPE 304 STAINLESS STEEL SELF-RIMMING, UNDERCOATED COUNTERTOP SINK COMPLETE WITH (2) J-35 STAINLESS STEEL CUP STRAINERS WITH REMOVABLE BASKETS AND 1-1/2" CHROME PLATED BRASS TAILPIECES AND DELTA #100LF-HDF DECK MOUNTED SINGLE LEVER WASHERLESS MIXING FAUCET WITH 8" SPOUT AND AERATOR. ADDITIONAL TRIM SHALL INCLUDE A 1-1/2" CHROME PLATED CAST BRASS P-TRAP WITH INTEGRAL CLEANOUT, 1-1/2" CONTINUOUS WASTE, ANGLE STOPS AND 12" LONG 3/8" O.D. FLEXIBLE RISERS AND WALL FLANGES. CONTRACTOR TO VERIFY SINK FIT WITH COUNTERTOP PRIOR TO PROCUREMENT AND INSTALLATION.	1/2"	1/2"	1-1/2"	1-1/2"	1-1/2"	C'TOP
4	FROSTPROOF DRINKING FOUNTAIN	ELKAY BARRIER-FREE #EDFP210FPK	WALL MOUNTED FROSTPROOF BARRIER FREE DRINKING FOUNTAIN WITH STAINLESS STEEL BOWL AND INTERIOR COMPONENTS BOX WITH WATER CONTROLS, VALVES, AND P-TRAP. ALL WATERWAYS SHALL BE LEAD-FREE. INSTALLATION SHALL BE COMPLETE WITH A BALL SHUTOFF VALVE.	1/2"	NONE	1-1/4"	1-1/2"	1-1/2"	27" GRADE TO BUBB-LER

NOTE: FIXTURES SCHEDULED ARE BASIS OF DESIGN. OTHER MANUFACTURERS MAY BE SUBSTITUTED IN ACCORDANCE WITH THE FOLLOWING LIST:

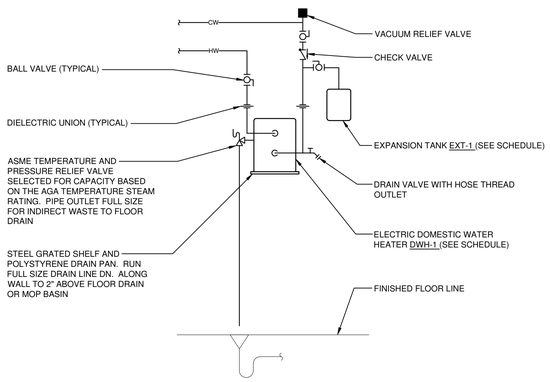
FAUCETS - AMERICAN STANDARD, CHICAGO FAUCET, DELTA, ELJER, KOHLER, MOEN, SPEAKMAN, T&S BRASS
FIXTURES - AMERICAN STANDARD, CRANE, ELJER, KOHLER
FLUSH VALVES - DELANEY, HYDROTEK, MOEN, SLOAN, ZURN
STAINLESS STEEL SINKS - ADVANCE TABCO, AMERICAN STANDARD, AMTEKCO, ELJER, ELKAY, JUST, KOHLER
TEMPERING VALVES - LAWLER, LEONARD, POWERS, SYMMONS, WATTS, WILKENS
WATER COOLERS - ELKAY, HALSEY TAYLOR, HAWS, OASIS

PLUMBING EQUIPMENT AND DRAIN SCHEDULE

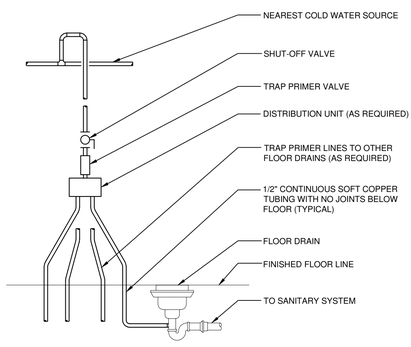
SYM	TYPE	MAKE, MODEL	DESCRIPTION
BFP-1	REDUCED PRESSURE BACKFLOW PREVENTER	WATTS REGULATOR #LF909	TWO INDEPENDENT CHECK VALVES WITH AN INTERMEDIATE RELIEF VALVE AND ISOLATING SHUT-OFF VALVES. ASSEMBLY TO BE FURNISHED COMPLETE WITH AN INTEGRAL STRAINER AND AN AIR GAP DRAINAGE FITTING. ASSEMBLY TO BE TESTED AND CERTIFIED IN ACCORDANCE WITH ASSE STD. 1013 AND AWWA STD. C511-92.
FWH-1	FROSTPROOF WALL HYDRANT	WOODFORD #65	EXPOSED NON-FREEZE CHROME PLATED WALL HYDRANT WITH ANTI-SIPHON VACUUM BREAKER, LOOSE KEY TEE HANDLE, 3/4" INLET AND A 3/4" HOSE THREAD OUTLET. HYDRANT SHALL BE SUPPLIED WITH AN ADJUSTABLE WALL CLAMP.
DWH-1	DOMESTIC WATER HEATER	A.O. SMITH DURA-POWER #DEL-6	ELECTRIC TANK TYPE WATER HEATER WITH 2.5 KW INPUT RATING FOR 10.0 GPH RECOVERY RATE AT 100 DEG F. TEMPERATURE RISE. WATER HEATER SHALL HAVE A STORAGE CAPACITY OF 6 GALLONS AND A SINGLE ELEMENT REQUIRING 120V-1PH ELECTRIC. HEATER SHALL INCLUDE A WALL MOUNT INSTALLATION KIT AND AN ASME TEMPERATURE AND PRESSURE RELIEF VALVE SELECTED FOR CAPACITY BASED ON THE AGA TEMPERATURE STEAM RATING. WATER HEATERS SHALL BE IN COMPLIANCE WITH CURRENT EDITION OF ASHRAE STD. 90.1.
EXT-1	EXPANSION TANK	AMTROL THERM-X-TROL #ST-5	NON-ASME STEEL TANK WITH A RIGID POLYPROPYLENE LINER AND A HEAVY-DUTY BUTYL DIAPHRAGM TO SEPARATE THE WATER FROM THE PRE-CHARGED (40 PSIG) AIR CHAMBER. TOTAL TANK VOLUME EQUALS 2.0 GALLONS, MAXIMUM ACCEPTANCE FACTOR OF 0.45 AND MAXIMUM ACCEPTANCE VOLUME EQUALS 0.9 GALLONS. SYSTEM CONNECTION OF 3/4".
FD-1	FLOOR DRAIN	J.R. SMITH #2005-A-P	NO HUB OUTLET CAST IRON FLOOR DRAIN WITH FLANGE, INTEGRAL REVERSIBLE CLAMPING COLLAR, SEEPAGE OPENINGS, ROUND NICKEL BRONZE STRAINER TOP WITH VANDAL PROOF SCREWS AND 1/2" TRAP PRIMER CONNECTION. GRADE APPLICATIONS TO UTILIZE A SPEEDI-SET GASKET. ALL FLOOR DRAINS TO HAVE A 4" DEEP SEAL TRAP.
TP-1	TRAP PRIMER	PRECISION PLUMBING PRODUCTS PRIME-RITE #PR-500	AUTOMATIC TRAP PRIMER VALVE WITH CORROSION RESISTANT BRASS BODY AND 1/2" PIPE THREAD CONNECTIONS. PROVIDE DISTRIBUTION UNITS SERIES DU WHEN TRAP PRIMER VALVE IS SERVING MORE THAN ONE FLOOR DRAIN.
SS-1	SHOCKSTOP	J.R. SMITH #5010	PRE-CHARGED PERMANENTLY SEALED WATER HAMMER ARRESTER WITH 1" PIPE SIZE. PDI SYMBOL "B" FOR 12-32 WATER SUPPLY FIXTURE UNITS.
FCO-1	FLOOR CLEANOUT	J.R. SMITH #4023	LIGHT TO MEDIUM DUTY CAST IRON FLOOR CLEANOUT WITH FLASHING FLANGE AND ROUND ADJUSTABLE SCORIATED SECURED NICKEL BRONZE TOP. PROVIDE RECESSED TOP FOR TILE, LINOLEUM, CARPET, TERRAZZO, ETC. AS REQUIRED BY ARCHITECT. GRADE APPLICATIONS TO UTILIZE A SPEEDI-SET GASKET.

NOTE: ITEMS SCHEDULED ARE BASIS OF DESIGN. OTHER MANUFACTURERS MAY BE SUBSTITUTED IN ACCORDANCE WITH THE FOLLOWING LIST:

BACKFLOW PREVENTORS - AMES, CONBRACO, FEBCO, HERSEY, WATTS, WILKENS
DRAINS, CLEANOUTS AND CARRIERS - JAY R. SMITH, JOSAM, MIFAB, WADE, WATTS, ZURN
EXPANSION TANKS - AMTROL, TACO, WATTS, WILKENS
HOSE BIBS AND WALL HYDRANTS - JOSAM, MIFAB, WATTS, WOODFORD, ZURN
LAUNDRY WALL BOXES - ACORN, GUY GRAY, OATEY, WHITEHALL, WILLOUGHBY
MIXING VALVES - ARMSTRONG, LAWLER, LEONARD, POWERS, SYMMONS, TACO, WATTS, ZURN
SHOCK STOPS - JAY R. SMITH, JOSAM, MIFAB, PPP, SIOUX CHIEF, WADE, WATTS, ZURN
TRAP PRIMER VALVES - JAY R. SMITH, JOSAM, MIFAB, PPP, SIOUX CHIEF, WATTS
WATER HEATERS AND STORAGE TANKS - A.O. SMITH, BRADFORD WHITE, LOCHINVAR, RHEEM, STATE



ELECTRIC DOMESTIC WATER HEATER DETAIL
NOT TO SCALE



TRAP PRIMER DETAIL
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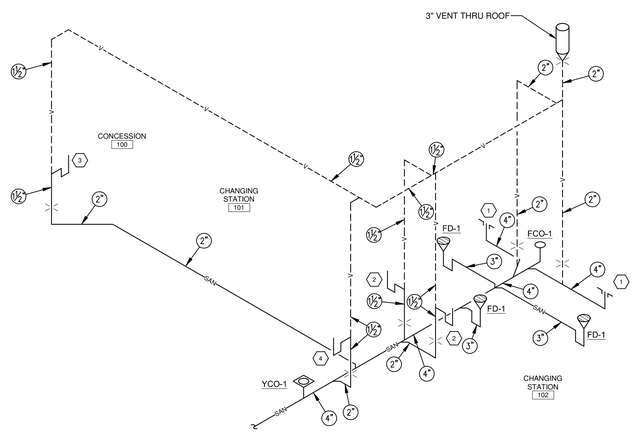

SANITARY ISOMETRIC
NOT TO SCALE

CONSTRUCTION DOCUMENTS

MOTTER & MEADOWS ARCHITECTS

600 MARKET AVENUE NORTH CANTON OHIO 44702

CRENSHAW PARK - NEW PAVILION
EDWARD L. "PEEL" COLEMAN COMMUNITY CENTER
1400 SHERRICK ROAD SE
CANTON, OHIO

STATE OF OHIO
DAVID I. PATTERSON 11150
REGISTERED ARCHITECT
DAVID I. PATTERSON
LICENSE #11150
EXPIRATION DATE
12-31-2023

THIS DWG :
PLUMBING SCHEDULES, NOTES, LEGENDS AND SANITARY ISOMETRIC

COMM 23105
DATE 05-24-23

DWG
P-2.1

PLUMBING SPECIFICATIONS

BASIC PLUMBING REQUIREMENTS

A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A COMPLETE PLUMBING SYSTEM INSTALLATION AS INDICATED ON THE DRAWINGS AND WITHIN THESE SPECIFICATIONS. THE INSTALLING CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MEANS AND METHODS OF THE PLUMBING SYSTEM DESIGN IMPLEMENTATION.

B. DRAWINGS ARE BASICALLY DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS AND COMPONENTS. INSTALLING CONTRACTOR SHALL COORDINATE THE DESIGN INTENT OF THE DRAWINGS WITH THE ACTUAL FIELD CONDITIONS MAKING MINOR DEVIATIONS AND ADJUSTMENTS AS REQUIRED FOR A COMPLETE OPERATIONAL SYSTEM. EXACT LOCATIONS OF PLUMBING SYSTEM COMPONENTS SHALL BE DETERMINED BY THE CONTRACTOR. SUCH DETERMINATION SHALL GIVE CONSIDERATION TO THE BUILDING STRUCTURAL AND SPATIAL LIMITATIONS, TO COORDINATION WITH WORK OF OTHER TRADES AND DISCIPLINES, AND TO THE NECESSARY CLEARANCE REQUIREMENTS (BOTH OF THE ITEM BEING INSTALLED AND OF ALL ADJACENT ITEMS) TO ACCOMMODATE MANUFACTURER'S INSTALLATION REQUIREMENTS, TO SATISFY CODE CLEARANCE REQUIREMENTS AND TO FACILITATE SYSTEM OPERATION AND MAINTENANCE. UNLESS NOTED OTHERWISE, PLUMBING SYSTEMS SHALL BE INSTALLED TO PROVIDE MAXIMUM CLEARANCE ABOVE THE FINISHED FLOOR.

C. THE PLUMBING SYSTEM INSTALLATION SHALL BE IN FULL COMPLIANCE WITH THE FOLLOWING CODES AND STANDARDS:
   1. THE OHIO BUILDING CODE
   2. THE OHIO PLUMBING CODE
   3. THE OHIO MECHANICAL CODE
   4. NFPA (APPLICABLE SECTIONS)
   5. NATIONAL ELECTRIC CODE
   6. MUNICIPAL AND COUNTY CODES AND ORDINANCES
   7. STATE, MUNICIPAL AND COUNTY HEALTH AGENCIES
   8. OTHERS AS INDICATED WITHIN THESE SPECIFICATIONS

D. EVERY EFFORT IS MADE ON THE PART OF THE ENGINEER TO COMPLY WITH THE LISTED CODES AND STANDARDS. WHERE THE DESIGN EXCEEDS THE REQUIREMENTS OF THE APPLICABLE CODES AND STANDARDS; THE INSTALLATION SHALL BE PER THE DESIGN REQUIREMENTS. NO WORK SHALL BE INSTALLED CONTRARY TO OR BELOW MINIMUM REQUIREMENTS OF THE CODES AND STANDARDS.

E. THE SCHEDULED MANUFACTURER FOR EACH ITEM SHALL BE CONSIDERED AS BASIS OF DESIGN. PERFORMANCE CHARACTERISTICS, ELECTRICAL CHARACTERISTICS, AND DIMENSIONAL AND SPATIAL REQUIREMENTS FOR THIS ITEM HAVE ALREADY BEEN CONSIDERED IN THE DESIGN. OTHER ACCEPTABLE MANUFACTURERS HAVE NOT BEEN CHECKED FOR SUCH DETAIL AND MUST MEET ALL THE SCHEDULED PERFORMANCE REQUIREMENTS AND POSSESS FEATURES SIMILAR TO THOSE WHICH ARE STANDARD ON THE ITEMS WHICH ARE BASIS OF DESIGN.

F. UNLESS NOTED OTHERWISE, EACH PLUMBING SYSTEM COMPONENT SHALL BE INDEPENDENTLY SUPPORTED FROM THE BUILDING STRUCTURE.

G. UNLESS NOTED OTHERWISE, CONTRACTOR(S) SHALL COORDINATE PLUMBING AND HVAC INSTALLATION SO AS TO MAINTAIN AT LEAST TEN FEET OF CLEARANCE FROM ALL OUTDOOR AIR INTAKES AND BUILDING OPENINGS TO ANY PLUMBING VENTS (EXISTING AND NEW) EXHAUST AIR OUTLETS OR OTHER NOXIOUS CONDITIONS.

H. THIS CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS AND LICENSES, BOTH TEMPORARY AND PERMANENT, REQUIRED BY LAW AS PART OF THE INSTALLATION WORK INDICATED ON THE DRAWINGS AND WITHIN THE SPECIFICATION.

I. THE CONTRACTOR SHALL SUBMIT FOR REVIEW BY THE ARCHITECT-ENGINEER; 6 COPIES OF MANUFACTURER'S DRAWINGS, CUT SHEETS, AND APPLICATION SPECIFIC PERFORMANCE DATA FOR ALL PLUMBING FIXTURES AND EQUIPMENT.

J. SHOP DRAWING SUBMITTALS SHALL INCLUDE THE PROJECT NAME, THE ARCHITECT-ENGINEER'S PROJECT NUMBER, THE APPLICABLE SPECIFICATION SECTION AND OR DRAWING NUMBER AS WELL AS THE CONTRACTOR'S APPROVAL STAMP. SHOP DRAWINGS SHALL BE SUBMITTED TO ARCHITECT-ENGINEER WITHIN THIRTY WORKING DAYS OF AWARD OF CONTRACT. CONTRACTOR SHALL NOT INSTALL ANY APPLICABLE MATERIALS AND/OR EQUIPMENT WITHOUT PRIOR REVIEW AS INDICATED ON THE ARCHITECT-ENGINEER'S REVIEW STAMP. REVIEW BY THE ENGINEER DOES NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY TO COMPLY WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

K. THE CONTRACTOR SHALL GUARANTEE THE COMPLETE PLUMBING SYSTEM INSTALLATION AS INSTALLED BY HIM OR HIS SUB-CONTRACTORS TO BE FREE FROM DEFECTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE (UNLESS A LONGER PERIOD IS SPECIFIED FOR SPECIFIC ITEMS ELSEWHERE). DEVIATIONS FROM THIS MAY OCCUR ON LARGER ITEMS OF EQUIPMENT USED DURING BENEFICIAL OCCUPANCY BEFORE THE TOTAL SYSTEM IS ACCEPTED. SUCH A MATTER MUST HAVE PRIOR APPROVAL AND BE MADE A MATTER OF WRITTEN RECORD BY THE ARCHITECT-ENGINEER'S REPRESENTATIVE.

L. THE CONTRACTOR SHALL REPAIR OR REPLACE AT HIS OWN EXPENSE ANY MATERIALS OR EQUIPMENT FOUND TO BE DEFECTIVE WITHIN THE WARRANTEE PERIOD AND SHALL BE HELD FINANCIALLY RESPONSIBLE FOR ANY PROPERTY DAMAGES ARISING FROM SUCH DEFECTS OR THE CORRECTION OF SUCH DEFECTS.

M. THE CONTRACTOR SHALL GUARANTEE THAT ALL PLUMBING EQUIPMENT SUPPLIED BY HIM OR HIS SUB-CONTRACTORS SHALL DEVELOP CAPACITIES AND HAVE CHARACTERISTICS AS SCHEDULED OR SPECIFIED.

N. THE CONTRACTOR SHALL SUBMIT WRITTEN WARRANTEE CERTIFICATES FOR HIS INSTALLATION WORK AND FROM EACH MANUFACTURER OF EQUIPMENT SUPPLIED ON THE PROJECT TO THE ENGINEER.

O. THE CONTRACTOR MAY USE PERMANENT PLUMBING EQUIPMENT FOR TEMPORARY SERVICES WHEN APPROVED BY THE ARCHITECT-ENGINEER. SUCH APPROVAL IS CONDITIONED BY THE FOLLOWING REQUIREMENTS:
   1. THE CONTRACTOR SHALL MAINTAIN THE EQUIPMENT FOR RELEASE TO OWNER AT TIME OF FINAL ACCEPTANCE IN "NEW" CONDITION.
   2. WARRANTY PERIOD FOR THE OWNER SHALL NOT BEGIN UNTIL THE DATE OF FINAL SYSTEM ACCEPTANCE.

P. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY DAMAGES INCURRED DURING THE INSTALLATION OF HIS WORK TO THE EXISTING GROUNDS, WALKS, ROADS, BUILDING, PLUMBING SYSTEMS, HVAC SYSTEMS, AND ELECTRIC SYSTEMS AS WELL AS ALL NEW CONSTRUCTION WORK BY OTHER TRADES. HE SHALL REPAIR AT HIS EXPENSE ALL SUCH DAMAGES FOR RESTORATION TO THE ORIGINAL CONDITIONS TO THE SATISFACTION OF THE ARCHITECT-ENGINEER AND OWNER.

Q. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING THE MATERIALS, EQUIPMENT AND INSTALLATION OF HIS WORK FROM DAMAGE DUE TO WEATHER AND CONSTRUCTION JOB SITE CONDITIONS.

R. THE CONTRACTOR SHALL MAINTAIN A SET OF PRINTS AT THE CONSTRUCTION SITE TO RECORD IN RED ANY DEVIATIONS IN THE ACTUAL MECHANICAL SYSTEM INSTALLATION FROM THE DESIGN DRAWINGS. IN ADDITION, ACTUAL INSTALLED INVERTS SHALL BE RECORDED FOR EACH UNDERGROUND SANITARY, STORM, WATER, AND GAS SERVICE. THESE RECORD DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT-ENGINEER UPON COMPLETION OF THE PROJECT.

S. THE CONTRACTOR SHALL PROVIDE PERSONAL INSTRUCTION TO THE OWNER'S OPERATING STAFF ON THE PROPER OPERATION AND MAINTENANCE OF THE PLUMBING SYSTEMS.

T. THE CONTRACTOR SHALL PROVIDE THREE (3) SETS OF OPERATION AND MAINTENANCE MANUALS FOR THE OWNER'S USE UPON COMPLETION OF THE PROJECT. OPERATION AND MAINTENANCE MANUALS SHALL BE SUBMITTED TO THE ARCHITECT-ENGINEER FOR APPROVAL. OPERATION AND MAINTENANCE MANUALS SHALL INCLUDE THE FOLLOWING:

   1. NAME AND SERVICE TELEPHONE NUMBER OF THE INSTALLING COMPANY.
   2. GENERAL DESCRIPTION OF HOW THE SYSTEM SHOULD OPERATE.
   3. MANUFACTURER'S OPERATION AND MAINTENANCE INSTRUCTIONS
   4. COPY OF APPROVED SHOP DRAWINGS
   5. LUBRICATION SCHEDULE
   6. VALVE CHART
   7. SPARE PARTS LIST
   8. WARRANTY CERTIFICATES

PLUMBING MATERIALS AND METHODS

A. UNLESS NOTED OTHERWISE, THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL NEW MATERIALS, EQUIPMENT, COMPONENTS, AND FIXTURES AS INDICATED. OTHER MANUFACTURERS OF PLUMBING EQUIPMENT MAY BE SUBSTITUTED FOR THOSE INDICATED AS LONG AS THE QUALITY OF CONSTRUCTION AND OPERATING CHARACTERISTICS ARE EQUIVALENT.

B. PIPE SLEEVES SHALL BE PROVIDED AND INSTALLED WHERE PIPES PASS THROUGH WALLS, FLOORS, AND CEILINGS. SLEEVES SHALL BE SUFFICIENTLY LARGE ENOUGH TO ALLOW FOR FIRE AND SOUND STOPPING BETWEEN THE INSIDE SLEEVE WALL AND THE PIPE OR INSULATION SURFACE AS WELL AS ALLOW FOR THERMAL EXPANSION AND CONTRACTION OF PIPING. (SLEEVES SHALL BE LARGE ENOUGH TO ALLOW PIPE INSULATION TO BE CONTINUOUS THROUGH THE WALL.) LENGTH OF SLEEVES SHALL BE EQUAL TO THE THICKNESS OF THE BUILDING CONSTRUCTION ELEMENT PENETRATED FOR A FLUSH FINISH ON BOTH SIDES EXCEPT FOR FLOOR SLEEVES WHICH SHALL EXTEND 2" ABOVE THE FINISH FLOOR. INSTALL IRON PIPE SLEEVES IN EXTERIOR WALL PENETRATIONS AND STEEL PIPE SLEEVES ELSEWHERE UNLESS NOTED OTHERWISE.

C. THE CONTRACTOR SHALL PROVIDE AND INSTALL SEALING MATERIALS FOR PLUMBING SYSTEM PENETRATIONS THROUGH BUILDING WALLS, FLOORS, CEILINGS, AND ROOFS. EXTERIOR PENETRATIONS SHALL BE WEATHER PROOF AND VERMIN PROOF; INTERIOR PENETRATIONS SHALL HAVE SOUND STOPPING. PENETRATIONS THROUGH FIRE AND SMOKE BARRIERS SHALL HAVE FIRESTOPPING. THE CONTRACTOR SHALL SEAL ALL FIRE/SMOKE RATED WALL AND FLOOR PENETRATIONS FOR MECHANICAL SYSTEM COMPONENTS WITH FIRE AND SMOKE STOPPING COMPOUND SO AS TO MAINTAIN THE FIRE RESISTANCE RATING OF THE WALL OR FLOOR PENETRATED. FIRESTOPPING COMPOUND, PIPE SLEEVES, AND PIPING AND INSULATION SHALL BE INSTALLED SO AS THE COMPLETE PENETRATION ASSEMBLY IS CLASSIFIED BY UL AS LISTED IN THE UL BUILDING MATERIALS DIRECTORY.

D. ESCUTCHEON PLATES SHALL BE INSTALLED ON ALL PIPE PENETRATIONS THROUGH WALLS, FLOORS, AND CEILINGS WHERE EXPOSED TO VIEW AND ON THE BUILDING EXTERIOR. ESCUTCHEON PLATE SHALL BE SECURED TO PIPE OR INSULATION AND COMPLETELY COVER THE HOLE PENETRATION.

E. ACCESS DOORS SHALL BE PROVIDED AND INSTALLED BY THIS CONTRACTOR IN NON-ACCESSIBLE WALLS AND CEILINGS WHICH CONCEAL PLUMBING ITEMS WHICH REQUIRE SERVICE OR INSPECTION SUCH AS VALVES. THE DOORS SHALL BE OF ADEQUATE SIZE TO SERVICE THE CONCEALED ITEM. DOOR SHALL BE OF PAINTED STEEL CONSTRUCTION WITH CONCEALED HINGE AND KEYED LOCK. ALL DOORS SHALL BE KEYED ALIKE WITH A MINIMUM OF TWO KEYS PROVIDED TO OWNER. ACCESS DOORS IN CEILINGS SHALL HAVE A RECESSED FACE FOR FIELD INSTALLATION OF FINISHED CEILING MATERIAL. DOORS INSTALLED IN FIRE RATED WALLS AND CEILINGS SHALL BE UL LISTED AND LABELED WITH APPLICABLE FIRE RESISTANCE RATING.

F. EXISTING BUILDING SURFACES AND AUXILIARY EQUIPMENT AND FINISHES MARRED DURING INSTALLATION OF PLUMBING WORK SHALL BE REPAINTED BY THIS CONTRACTOR.

G. THE CONTRACTOR SHALL PAINT ALL IRON PIPE FITTINGS AND VALVE BODIES, ALL SUPPORTSTEEL INSTALLED AS PART OF HIS SCOPE OF WORK AND ALL EXPOSED PIPING AND DUCTWORK ON THE EXTERIOR OF THE BUILDING. ALL PAINTING SHALL BE DONE IN ACCORDANCE WITH THE PAINT MANUFACTURER'S INSTRUCTIONS INCLUDING SURFACE PREPARATION AND CONDITIONS OF AMBIENT TEMPERATURE AND HUMIDITY. ENVIRONMENTAL CONDITIONS IN THE AREA OF PAINTING WORK SHALL COMPLY WITH THE PAINT MANUFACTURER'S RECOMMENDATIONS AND ALL GOVERNING REGULATIONS.

H. THE APPROXIMATE LOCATION OF ALL KNOWN UNDERGROUND UTILITIES WITHIN THE PROJECT AREA SHALL BE DETERMINED AND MARKED PRIOR TO PERFORMING ANY EXCAVATION. THE PROPER AUTHORITIES SHALL BE CONTACTED TO AID IN LOCATING ALL UNDERGROUND UTILITIES AND TO NOTIFY THEM OF INTENTION TO EXCAVATE.

I. EXISTING UNDERGROUND UTILITIES SHALL BE PROPERLY SUPPORTED AND PROTECTED DURING EXCAVATION. SHOULD ANY UTILITIES BE DAMAGED DURING CONSTRUCTION, THE RESPECTIVE UTILITY SHALL BE CONTACTED IMMEDIATELY.

J. EXISTING UTILITIES SHALL NOT BE INTERRUPTED WITHOUT PRIOR APPROVAL OF THE ARCHITECT-ENGINEER OR THE OWNER. INTERRUPTIONS SHALL BE COORDINATED SO AS TO MINIMIZE THE FREQUENCY OF OCCURRENCE AND THE LENGTH OF DOWNTIME.

K. ALL NEW UTILITIES AND PIPING CONTAINING WATER SHALL HAVE A 42" MINIMUM DEPTH OF BURIAL.

L. ALL TRENCH EXCAVATION AND BACKFILL FOR LAYOUT AND INSTALLATION OF INTERIOR UNDERGROUND SANITARY, STORM, VENT, GAS, AND WATER PIPING; AS WELL AS EXTERIOR WATER SERVICE, FIRE SERVICE, GAS SERVICE, SANITARY AND STORM SEWERS SHOWN OR INDICATED ON THE DRAWINGS SHALL BE THE RESPONSIBILITY OF THE THIS CONTRACTOR.

M. EXCAVATIONS SHALL HAVE SIDES SLOPED, SHORED, AND BRACED IN ACCORDANCE WITH LOCAL CODES AND ORDINANCES AND AS REQUIRED FOR SAFETY OF WORKERS.

N. CONTRACTOR SHALL PROTECT EXCAVATIONS FROM RAIN, SURFACE AND GROUND WATER AS MUCH AS POSSIBLE. ALL WATER SHALL BE REMOVED FROM THE EXCAVATIONS PRIOR TO LAYING OF THE UNDERGROUND PIPING.

O. UNLESS NOTED OTHERWISE, ALL TRENCHES FOR UNDERGROUND PIPING SHALL BE BACKFILLED SO THAT THE RUN OF PIPE SHALL BE LAID ON 4" OF SAND AND BACKFILLED TO 6" ABOVE CROWN OF PIPE WITH SAND. THEREAFTER, BACKFILL SHALL BE COMPACTED WITH MECHANICAL TAMPERS IN NO GREATER THAN 6" LAYERS OF SUITABLE EXCAVATED MATERIAL FREE OF LARGE STONES UNTIL PROPER GRADE IS ATTAINED.

P. TRENCHES PARALLEL TO FOOTERS OR OUTSIDE BEARING WALLS SHALL MAINTAIN THREE FEET OF CLEARANCE FROM THE FOOTERS OR WALLS. EXCAVATION FOR SUCH TRENCHES BELOW THE ELEVATION OF THE BOTTOM OF A FOOTER SHALL MAINTAIN A HORIZONTAL SEPARATION DISTANCE SO AS NOT TO DISTURB SOIL WITHIN A ZONE 45 DEGREES OFF OF THE BOTTOM EDGE OF THE FOOTER.

Q. ALL EXCAVATION FOR TRENCHES WITHIN PAVED AREAS, SIDEWALKS, ETC., SHALL BE BACKFILLED THE WIDTH OF THE TRENCH PLUS FIVE FEET BEYOND EACH SIDE WITH GOOD FILL SAND TO THE UNDERSIDE OF THE BASE COURSE OF THE PAVING MATERIAL.

R. ANY AND ALL EXCAVATED MATERIALS WHICH ARE NOT USED FOR BACKFILL SHALL BECOME THE PROPERTY OF THIS CONTRACTOR AND SHALL BE REMOVED FROM THE SITE AT HIS EXPENSE. (IF EXCESS EXCAVATION MATERIALS ARE SUITABLE, ARCHITECT-ENGINEER MAY ALLOW FOR THE MATERIALS TO BE DISTRIBUTED ON SITE.)

S. TRENCHES SHALL NOT BE BACKFILLED UNTIL ALL PIPING WITHIN THE TRENCH HAS BEEN TESTED AND/OR INSPECTED AND APPROVED BY THE LOCAL AUTHORITIES HAVING JURISDICTION.

T. WHERE TRENCHES CROSS STREETS, WALKS, OR PUBLIC THOROUGHFARES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR AND PROVIDE SUITABLE BARRICADES AND BRIDGES, ADEQUATELY PROTECTED BY SIGNS OR RED FLAGS DURING THE DAY AND BY LIGHTS AT NIGHT.

U. ALL STREETS, PARKING LOTS, SIDEWALKS, SOD, ETC., WHICH ARE DISTURBED BY THE EXCAVATION PROCESS SHALL BE RESTORED BY THE CONTRACTOR AT HIS EXPENSE TO THE ORIGINAL SITE CONDITION TO THE SATISFACTION OF THE ARCHITECT-ENGINEER, THE OWNER AND THE AUTHORITIES HAVING JURISDICTION.

V. IF OBSERVABLE SUBSIDENCE IS NOTED IN THE AREAS OF EXCAVATION FOR PLUMBING WORK DURING THE PROJECT WARRANTY PERIOD, THE CONTRACTOR SHALL REMOVE THE SURFACE FINISH, FILL IN THE SUBSIDENCE AND RESTORE THE SURFACE FINISH TO THE INTENDED CONDITION.

PLUMBING PIPING AND ACCESSORIES

A. REFER TO THE "PIPE AND INSULATION SCHEDULE" FOR SPECIFIC PIPING APPLICATION AND MATERIAL REQUIREMENTS.

B. PIPING INSTALLATION SHALL NOT REQUIRE SPRINGING OR FORCING. PIPING OFFSETS, LOOPS AND/OR EXPANSION JOINTS SHALL BE PROVIDED (WHETHER SHOWN OR NOT) TO LIMIT STRESS DUE TO THERMAL EXPANSION.

C. PIPING MATERIALS SHALL BE CLEAN PRIOR TO AND DURING INSTALLATION. UPON COMPLETION OF PIPING INSTALLATION; BUT PRIOR TO FINAL CONNECTIONS, THE ENTIRE SYSTEM SHALL BE FLUSHED WITH A CLEANING SOLUTION WHICH WILL NOT HARM EITHER THE PIPING, EQUIPMENT OR USERS.

D. DRAIN VALVES SHALL BE PROVIDED AT ALL LOW POINTS AND MANUAL AIR VENTS AT ALL HIGH POINTS.

E. EQUIPMENT CONNECTIONS SHALL INCLUDE UNIONS PROVIDED BETWEEN A PIPING SERVICE SHUT-OFF VALVE AND EACH EQUIPMENT CONNECTION. PIPING OFFSETS SHALL BE PROVIDED TO PERMIT REMOVAL OF ALL EQUIPMENT.

F. COPPER PIPING CONNECTIONS TO STEEL OR IRON PIPE SHALL BE MADE WITH DIELECTRIC UNIONS.

G. STANDARD INCREASER AND REDUCER PIPE FITTINGS SHALL BE USED TO JOIN PIPES OF DIFFERENT SIZES.

H. DOMESTIC WATER PIPING SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS:

   1. SOLDER JOINTS SHALL BE LEAD-FREE USING 95-5 TIN-ANTIMONY SOLDER AND APPROPRIATE FLUX.
   2. PIPE NIPPLES BETWEEN COPPER PIPING AND FIXTURE FITTINGS SHALL BE BRASS.
   3. UPON COMPLETION OF THE DOMESTIC WATER PIPING INSTALLATION, THE ENTIRE SYSTEM SHALL BE FLUSHED, DISINFECTED, AND FLUSHED AGAIN IN ACCORDANCE WITH THE LATEST AWWA STANDARDS. UPON COMPLETION OF THE DISINFECTION PROCESS; BACTERIOLOGICAL TESTS SHALL BE PERFORMED IN ACCORDANCE WITH AWWA STANDARDS AND THE LOCAL HEALTH DEPARTMENT TO VERIFY SATISFACTORY WATER QUALITY.

I. NATURAL GAS PIPING SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS:

   1. ALL GAS PIPING SHALL BE INSTALLED IN ACCORDANCE WITH THE INTERNATIONAL FUEL GAS CODE.
   2. ANY GAS PIPING IN A NON-ACCESSIBLE SPACE SHALL BE OF ALL WELDED CONSTRUCTION.
   3. THE ENTIRE EXISTING GAS PIPING SYSTEM SHALL BE PURGED PRIOR TO EXTENSION OF OR CONNECTION TO NEW WORK. UPON COMPLETION OF INSTALLATION, INSPECTIONS, AND TESTS ALL EXISTING AND NEW PILOT LIGHTS SHALL BE LIT BY THIS CONTRACTOR.
   4. COMPLY WITH THE LOCAL UTILITY COMPANY FOR ANY ADDITIONAL REQUIREMENTS.
   5. CONTRACTOR IS TO MAKE FINAL GAS CONNECTIONS TO ALL PLUMBING, HVAC, AND OWNER SUPPLIED EQUIPMENT NOTED ON THE DRAWINGS. GAS CONNECTION PIPING SHALL INCLUDE AN ACCESSIBLE AGA APPROVED SHUT-OFF VALVE, A FULL SIZE TEE WITH A 6" DIRT LEG, AND A UNION. THE UNION SHALL BE BETWEEN THE SHUT-OFF VALVE AND THE EQUIPMENT. PIPE REDUCER/INCREASER FITTINGS SHALL BE INSTALLED AT POINT OF EQUIPMENT CONNECTION AS REQUIRED.
   6. ALL EXPOSED GAS PIPING ON THE EXTERIOR OF THE BUILDING SHALL BE PAINTED BY THE INSTALLING CONTRACTOR WITH A PRIME COAT AND TWO FINISH COATS OF WEATHER RESISTANT PAINT.

PLUMBING VALVES

A. ALL VALVES OF THE SAME TYPE SHALL BE OF THE SAME MANUFACTURER WITH VALVE BODIES CLEARLY MARKED WITH THE MANUFACTURERS NAME OR TRADEMARK AND THE PRESSURE RATING. VALVES SHALL COMPLY WITH ANSI B16.10 "FACE-TO-FACE AND END TO END DIMENSIONS OF FERROUS VALVES.

B. VALVES SHALL BE SUPPLIED AS MANUFACTURED BY ONE OF THE FOLLOWING: APOLLO, CRANE, JAMESBURY, JENKINS, NIBCO, AND WATTS.

C. ISOLATION, SHUT-OFF, OR SERVICE VALVES SHALL BE BALL VALVES FOR PIPE SIZES 2" AND SMALLER AND BE GATE OR BUTTERFLY VALVES FOR PIPE SIZES 2-1/2" AND LARGER UNLESS NOTED OTHERWISE.

D. BALANCE VALVES SHALL BE OF THE FLOW MEASURING AND BALANCE TYPE FOR PIPE SIZES 2" AND SMALLER AND SHALL BE OF THE PLUG TYPE FOR PIPE SIZES 2-1/2" AND LARGER. WHERE MORE THAN ONE TYPE OF VALVE IS INDICATED THE INSTALLING CONTRACTOR SHALL SELECT FROM THE INDICATED OPTIONS ACCORDING TO HIS PREFERENCE. (UNLESS NOTED OTHERWISE ON THE CONTRACT DRAWINGS.)

E. MANUAL AIR VENTS AND DRAIN VALVES FOR WATER PIPING MAINS AND ELSEWHERE AS INDICATED ON THE CONTRACT DRAWINGS SHALL BE 3/4" BALL VALVES WITH MALE HOSE THREAD ADAPTER AND CAP UNLESS NOTED OTHERWISE.

F. VALVE SIZE SHALL BE SAME SIZE AS THE PIPE IN WHICH IT IS INSTALLED UNLESS NOTED OTHERWISE.

G. STANDARD VALVES 2" AND SMALLER:
   1. GATE VALVE: 125 WSP; BRONZE BODY WITH RISING STEM, UNION BONNET, SINGLE WEDGE DISC FOR SOLDER JOINT PIPE CONNECTIONS. VALVES SHALL CONFORM TO ASTM SPECIFICATION WW-V-54D, CLASS A, TYPE II. (NIBCO #S-134)
   2. GLOBE VALVE: 125 WSP; BRONZE BODY WITH RISING STEM, UNION BONNET, AND ANSI 420-S STAINLESS STEEL TAPERED PLUG AND SEAT FOR SOLDER JOINT PIPE CONNECTIONS. VALVES SHALL CONFORM TO ASTM SPECIFICATION B-62 AND FEDERAL SPECIFICATION WW-V-51, CLASS A, TYPE I AND II. (NIBCO S-211-Y)
   3. CHECK VALVE: 125 WSP; BRONZE, SWING CHECK FOR SOLDER JOINT PIPE CONNECTIONS. VALVES SHALL CONFORM TO ASTM SPECIFICATION B-62 AND FEDERAL SPECIFICATION WW-V-51D, TYPE IV, CLASS C. (NIBCO #S-413-Y)
   4. BALL VALVE: 150 PSI SWP AND 600 PSI NON SHOCK WOG; TWO PIECE BRONZE BODY WITH CHROME PLATED BALL, TFE SEATS, FULL PORT, STEM PACKING, ANTI-BLOW-OUT STEMS FOR SOLDER JOINT PIPE CONNECTIONS. (NIBCO #S-585-70)

H. STEEL WATER PIPING 2-1/2" AND GREATER:
   1. GATE VALVE: 125 WSP; CAST IRON BODY WITH BRONZE TRIM, OUTSIDE SCREW AND YOKE, RISING STEM, BOLTED BONNET FOR FLANGED JOINT PIPE CONNECTIONS. VALVES SHALL CONFORM TO ASTM SPECIFICATION A-126 CLASS B. (NIBCO #F-617-0)
   2. GLOBE VALVE: 125 WSP; CAST IRON BODY WITH BRONZE TRIM, OUTSIDE SCREW AND YOKE, RISING STEM, BOLTED BONNET FOR FLANGED JOINT PIPE CONNECTIONS. VALVES SHALL CONFORM TO ASTM SPECIFICATION A-126 CLASS B. (NIBCO #F-718-B)
   3. CHECK VALVE: 125 WSP; CAST IRON BODY WITH BRONZE TRIM FOR FLANGED JOINT PIPE CONNECTIONS. VALVES SHALL CONFORM TO ASTM SPECIFICATION A-126. (NIBCO #F-918-B)
   4. BUTTERFLY VALVE: 200 PSI NON SHOCK COLD WATER WORKING PRESSURE; LUG TYPE DUCTILE OR CAST IRON BODY WITH EXTENDED NECK FOR INSULATING, ALUMINUM BRONZE ALLOY DISC, EPDM RUBBER SEATS AND SEALS, A 400 SERIES STAINLESS STEEL STEM AND A TEN POSITION LEVER LOCK HANDLE. (NIBCO #LD-2000 SERIES)

I. GAS VALVES:
   1. 2" AND SMALLER: 175# WOG CAST IRON BODY FOR SCREWED JOINT PIPE CONNECTIONS. VALVES SHALL BE UL LISTED FOR GAS SERVICE. (DEZURICK SERIES 425 WITH RS-49 PLUG SEALS AND LEVER HANDLE)
   2. 2-1/2" TO 4": 175# WOG CAST IRON BODY FOR FLANGED JOINT PIPE CONNECTIONS. VALVES SHALL BE UL LISTED FOR GAS SERVICE. (DEZURICK SERIES 425 WITH RS-49 PLUG SEALS AND LEVER HANDLE)
   3. 6" AND GREATER: 175# WOG CAST IRON BODY FOR FLANGED JOINT PIPE CONNECTIONS. VALVES SHALL BE UL LISTED FOR GAS SERVICE. (DEZURICK SERIES 100 WITH RS-49 PLUG SEALS AND LEVER HANDLE).

PLUMBING HANGERS AND SUPPORTS

A. ALL PIPING SHALL BE INSTALLED WITH FACTORY FABRICATED PIPING CLAMPS, HANGERS AND SUPPORTS ATTACHED TO THE BUILDING SUBSTRATE WITH SUITABLE EXPANSION SHELLS, INSERTS, OR BEAM CLAMPS. HANGERS SHALL BE SELECTED TO EXACTLY FIT PIPE SIZE FOR BARE PIPING AND TO EXACTLY FIT AROUND PIPING INSULATION WITH SADDLE OR SHIELD FOR INSULATED PIPING. COPPER PLATED HANGERS AND SUPPORTS SHALL BE UTILIZED FOR ALL COPPER PIPING SYSTEMS. PERFORATED STRAP HANGERS AND "C" CLAMP ATTACHMENTS ARE PROHIBITED.
   1. UNLESS NOTED OTHERWISE, ALL HORIZONTAL PIPE 3" AND SMALLER SHALL BE SUPPORTED BY INDIVIDUAL ADJUSTABLE STEEL CLEVIS HANGERS.
   2. UNLESS NOTED OTHERWISE, ALL HORIZONTAL PIPE 4" AND LARGER (AND ALL HORIZONTAL PIPE 2" AND LARGER WHICH CONVEYS A FLUID ABOVE 150° F) SHALL BE SUPPORTED BY ADJUSTABLE ROLLER TYPE HANGERS.
   3. PARALLEL HORIZONTAL PIPING MAY ALSO BE SUPPORTED TOGETHER ON A TRAPEZE TYPE HANGER AS LONG AS ALL PIPING IS ADEQUATELY SUPPORTED AND INDIVIDUAL THERMAL PIPE MOVEMENT IS ACCOUNTED FOR.
   4. HORIZONTAL PIPE SUPPORT SPACING AND HANGER ROD SIZING SHALL BE AS FOLLOWS EXCEPT FOR CAST IRON PIPE WHICH SHALL BE SUPPORTED AT A MAXIMUM INTERVAL OF 5'-0" ON CENTER AND PVC PIPING WHICH SHALL BE SUPPORTED AT A MAXIMUM INTERVAL OF 4'-0" ON CENTER:

PIPE SIZE	ROD DIA	MAX SPACING ON CENTER
1/2" TO 1-1/4"	3/8"	6'-0"
1-1/2" TO 2"	3/8"	9'-0"
2-1/2" TO 3"	1/2"	11'-0"
4" TO 6"	3/4"	12'-0"

B. HANGERS FOR PLUMBING EQUIPMENT SHALL CONSIST OF STRUCTURAL STEEL SHAPES OR STEEL RODS ATTACHED TO THE BUILDING SUBSTRATE WITH SUITABLE EXPANSION SHELLS, INSERTS, OR BEAM CLAMPS. HANGERS SHALL BE SELECTED TO ADEQUATELY SUPPORT THE STATIC AND DYNAMIC LOADS OF THE EQUIPMENT AS INDICATED BY THE EQUIPMENT MANUFACTURER. ISOLATION TYPE HANGERS SHALL BE USED TO SUPPORT ALL OVERHEAD PLUMBING EQUIPMENT WITH ROTATING PARTS. ISOLATORS SHALL BE INSTALLED AS CLOSE TO THE OVERHEAD STRUCTURE AS POSSIBLE.

C. PREFABRICATED ROOF PIPE SUPPORTS SHALL BE UTILIZED TO SUPPORT ALL ROOFTOP PIPING 12" ABOVE ROOF AND BE AS MANUFACTURED BY ONE OF THE FOLLOWING: COOPER B-LINE, ERICO INTERNATIONAL, MIRO INDUSTRIES, PATE COMPANY, AND ROOF PRODUCTS AND SYSTEMS.

PLUMBING IDENTIFICATION

A. THE CONTRACTOR SHALL PROVIDE AND INSTALL PERMANENT IDENTIFICATION MARKERS FOR THE PLUMBING SYSTEM COMPONENTS; EQUIPMENT, PIPING, AND VALVES.

B. IDENTIFICATION MARKERS SHALL COMPLY WITH ANSI A13.1 REQUIREMENTS FOR LETTERING SIZE, LENGTH OF COLOR FIELD, COLORS AND VIEWING ANGLES.

C. INSTALL PIPE MARKERS WHEREVER PIPING IS EXPOSED TO VIEW IN ACCESSIBLE SPACES. LOCATE MARKERS APPROXIMATELY 25 FEET ON CENTER AND NEAR EACH WALL, FLOOR, AND CEILING PENETRATION. IN ADDITION, LOCATE MARKERS NEAR POINTS OF PIPING ORIGIN, POINTS OF PIPING TERMINATION AND POINTS OF PIPING CONNECTION TO MAJOR EQUIPMENT.

D. UNDERGROUND PIPING SHALL BE IDENTIFIED WITH BRIGHT COLORED CONTINUOUSLY PRINTED PLASTIC RIBBON TAPE MANUFACTURED FOR DIRECT BURIAL SERVICE AND LOCATED 6" TO 8" BELOW GRADE, DIRECTLY ABOVE BURIED PIPE.

E. A TYPE WRITTEN VALVE CHART SHALL BE INSTALLED IN AN EQUIPMENT ROOM IN A WOOD OR ALUMINUM FRAME WITH A PLEXIGLASS COVER.

PLUMBING INSULATION

A. THE MATERIALS AND METHODS FOR THE COMPLETE INSULATION SYSTEM INSTALLATION SHALL BE TESTED, RATED, AND INSTALLED IN ACCORDANCE WITH THE FOLLOWING CODES AND STANDARDS:

   1. OBC
   2. NFPA 90A
   3. ASTM E-84 (NFPA 255)

B. THE COMPOSITE INSULATION SYSTEM INSTALLATION INCLUDING ALL INSULATION MATERIALS, ADHESIVES, SEALERS, COVERINGS, ETC. SHALL HAVE FLAME-SPREAD AND SMOKE-DEVELOPED INDEXES AS INDICATED BELOW:

   1. INDOOR INSTALLATIONS SHALL HAVE FLAME-SPREAD INDEX OF 25 OR LESS, AND A SMOKE-DEVELOPED INDEX OF 50 OR LESS.
   2. OUTDOOR INSTALLATIONS SHALL HAVE FLAME-SPREAD INDEX OF 75 OR LESS, AND A SMOKE-DEVELOPED INDEX OF 150 OR LESS.

C. INSULATION WORK SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING TYPES OF SYSTEMS: PIPING AND EQUIPMENT.

D. PIPING SHALL BE INSULATED PER THE "PIPE AND INSULATION SCHEDULE" ON THE DRAWING AND IN ACCORDANCE WITH THE FOLLOWING MATERIAL STANDARDS:

   1. FIBER GLASS PIPE INSULATION WITH AN ALL SERVICE JACKET. INSULATION SHALL BE OF THICKNESS INDICATED WITH A THERMAL CONDUCTIVITY "K" FACTOR OF 0.24 AT 75 DEGREE F MEAN TEMPERATURE SUITABLE FOR APPLICATIONS UP TO 350 DEGREES F. INSULATION SHALL BE OWENS-CORNING TYPE ASJ/SSL-II OR EQUIVALENT.
   2. FLEXIBLE UNICELLULAR ELASTOMERIC PIPE AND EQUIPMENT INSULATION. INSULATION SHALL BE OF THICKNESS AS INDICATED WITH A THERMAL CONDUCTIVITY "K" FACTOR OF 0.28 AT 75 DEGREE F MEAN TEMPERATURE SUITABLE FOR APPLICATIONS BETWEEN -40 DEGREE F AND 200 DEGREE F. INSULATION SHALL BE ARMSTRONG ARMAFLEX SS/SA OR EQUIVALENT.
   3. SEMI-RIGID FIBERGLASS BATTS OR ROLLS WITH A FIELD APPLIED GLASS CLOTH LAGGING. INSULATION SHALL BE THICKNESS AS INDICATED ON THE DRAWINGS, WITH A THERMAL CONDUCTIVITY "K" FACTOR OF 0.27 AT 75 DEGREE F MEAN TEMPERATURE SUITABLE FOR APPLICATIONS UP TO 1000 DEGREES F. INSULATION SHALL BE OWENS-CORNING TYPE TIW (THERMAL INSULATING WOOL) OR EQUIVALENT.

E. ALL INSULATION SYSTEMS SHALL BE CONTINUOUS THROUGH WALL OPENINGS, CEILING OPENINGS, FLOOR OPENINGS, AND PIPE HANGERS.

F. INSULATION MATERIALS SHALL BE INSTALLED IN COMPLETE ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

G. INSTALLATION PERSONNEL SHALL TAKE ALL SAFETY PRECAUTIONS TO PROPERLY PROTECT THEMSELVES DURING INSTALLATION OF INSULATION SYSTEMS.

DOMESTIC WATER HEATING

A. TYPE, QUANTITY, PERFORMANCE AND OPERATING CHARACTERISTICS OF WATER HEATERS AND ASSOCIATED EQUIPMENT SHALL BE AS INDICATED ON THE CONTRACT DRAWINGS.

B. ALL SIMILAR TYPES OF WATER HEATERS SHALL BE SUPPLIED BY THE SAME MANUFACTURER.

C. WATER HEATERS SHALL BE IN COMPLIANCE WITH THE FOLLOWING APPLICABLE CODES AND STANDARDS:

   1. ELECTRIC WATER HEATERS SHALL BE UL LISTED AND LABELED
   2. GAS FIRED WATER HEATERS SHALL BE AGA APPROVED
   3. WATER HEATERS WITH A HEAT INPUT IN EXCESS 200 MBH OR A STORAGE CAPACITY GREATER THAN 120 GALLONS SHALL BE IN COMPLIANCE WITH THE ASME BOILER AND PRESSURE VESSEL CODE
   4. WATER HEATERS SHALL MEET OR EXCEED THE MINIMUM EFFICIENCY REQUIREMENTS OF ASHRAE 90.1 B-1992
   5. TEMPERATURE AND PRESSURE RELIEF VALVES SHALL BE IN COMPLIANCE WITH THE ASME BOILER AND PRESSURE VESSEL CODE AND SELECTED FOR CAPACITY BASED ON THE AGA TEMPERATURE STEAM RATING

D. ELECTRIC WATER HEATERS
   1. WATER HEATER SHALL CONSIST OF AN ELECTRIC IMMERSION TYPE HEATER AND AN INTEGRAL HEAVY GAUGE STEEL GLASS LINED STORAGE TANK WITH FIBER GLASS OR POLYURETHANE FOAM INSULATION AND A OUTER STEEL JACKET WITH A BAKED ENAMEL FINISH.
   2. THE WATER HEATER ELEMENTS SHALL BE OF THE LOW WATT DENSITY (75 WATT PER SQUARE INCH) COPPER SHEATH, TIN COATED IMMERSION TYPE. THE ELEMENTS SHALL BE FUSED IN ACCORDANCE WITH UL.
   3. THE STORAGE TANK SHALL BE RATED FOR A WORKING PRESSURE OF 150 PSIG AND BE COMPLETE WITH MAGNESIUM ANODES FOR PROTECTION AGAINST ELECTROLYTIC CORROSION.
   4. THE CONTROL CIRCUIT SHALL BE POWERED BY A FUSED INTEGRAL CONTROL TRANSFORMER. THE CONTROL CIRCUIT SHALL INCLUDE A MAGNETIC CONTACTOR FOR EACH 18 KW INCREMENT OF HEATER CAPACITY, AN ADJUSTABLE IMMERSION THERMOSTAT, AND A FACTORY SET HIGH LIMIT TEMPERATURE CUTOUT SWITCH.
   5. THE FOLLOWING ACCESSORIES SHALL BE INCLUDED WITH THE WATER HEATER: TEMPERATURE & PRESSURE RELIEF VALVE AND MANUAL DRAIN VALVE.

E. DOMESTIC HOT WATER EXPANSION TANKS
   1. DOMESTIC HOT WATER EXPANSION TANKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASME AND BE RATED FOR A WORKING PRESSURE OF 125 PSI. THE TANK SHALL BE OF STEEL CONSTRUCTION WITH A PRE-CHARGED AIR CHAMBER. THE EXTERIOR OF THE TANK SHALL HAVE A BAKED ENAMEL FINISH.
   2. THE TANK SHALL BE CONSTRUCTED TO ACCEPT AND STORE EXPANDED WATER SEPARATE FROM AIR WITH EITHER A HEAVY DUTY BUTYL DIAPHRAGM AND A RIGID POLYPROPYLENE TANK LINER OR WITH A HEAVY DUTY BUTYL WATER HOLDING BLADDER.
   3. THE EXPANSION TANK SHALL BE SIZED TO ACCOMMODATE FOR THERMAL EXPANSION OF THE STORED WATER AND THUS MAINTAIN HEATED WATER PRESSURE BELOW THE RELIEF VALVE SETTING.

F. DOMESTIC HOT WATER CIRCULATING PUMPS SHALL BE OF THE IN-LINE TYPE WITH FLANGED PIPING CONNECTIONS OF ALL BRONZE CONSTRUCTION.

G. CONTRACTOR SHALL INSTALL THE DOMESTIC WATER HEATERS AND ACCESSORY COMPONENTS PLUMB AND LEVEL IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. MANUFACTURER'S RECOMMENDED OPERATING AND SERVICE CLEARANCES SHALL BE MAINTAINED.

H. CONTRACTOR SHALL INSTALL WATER PIPING FOR THE DOMESTIC WATER HEATER CONNECTIONS TO INCLUDE THE FOLLOWING DEVICES AS WELL AS ANY ADDITIONAL REQUIREMENTS AS INDICATED ON THE CONTRACT DRAWINGS.

   1. INLET AND OUTLET ISOLATION VALVES
   2. DIELECTRIC PIPE UNIONS AT POINT OF HEATER CONNECTION
   3. THERMOMETERS IN THE INLET AND OUTLET PIPING CONNECTIONS

I. DOMESTIC HOT WATER CIRCULATING PUMPS SHALL BE INSTALLED WITH ISOLATION VALVES UP AND DOWNSTREAM AND WITH A SWING CHECK VALVE AT THE PUMP DISCHARGE.

PLUMBING FIXTURES, DRAINS AND CLEANOUTS

A. CONTRACTOR SHALL PROVIDE AND INSTALL ALL PLUMBING FIXTURES AND EQUIPMENT AS SHOWN ON THE CONTRACT DRAWINGS AND LISTED IN THE FIXTURE SCHEDULE.

B. CONTRACTOR SHALL PROVIDE AND INSTALL FLOOR DRAINS, SHOWER DRAINS, FIXTURE CARRIERS, CLEANOUTS AND ROOF DRAINS AS INDICATED ON THE CONTRACT DRAWINGS AND IN THESE SPECIFICATIONS.

C. ALL SIMILAR TYPES OF PLUMBING FIXTURES AND DRAINS SHALL BE SUPPLIED BY THE SAME MANUFACTURER.

D. FLOOR CLEANOUTS SHALL BE INSTALLED FLUSH WITH THE FINISH FLOOR.

E. CLEANOUTS ON VERTICAL DOWNSPOUTS AND SANITARY STACKS CONCEALED WITHIN WALLS SHALL BE MADE ACCESSIBLE WITH A WALL CLEANOUT COVER PLATE.

F. EXTERIOR CLEANOUTS TO BE ROUND HEAVY DUTY CAST IRON FLANGED HOUSING WITH HEAVY DUTY SECURED SCORIATED CAST IRON.

G. ALL EXPOSED PIPING AND STOP VALVES FOR PLUMBING FIXTURES SHALL BE CHROME PLATED. WATER STOP VALVES AND SANITARY DRAIN PIPING SHALL BE CHROME PLATED BRASS OR BRONZE. SANITARY TRAPS SHALL HAVE INTEGRAL CLEANOUT PLUGS.

H. CONTRACTOR SHALL INSTALL PLUMBING FIXTURES TO HEIGHT AND LOCATION AS SHOWN ON THE ARCHITECTURAL DETAIL DRAWINGS. INSTALLED FIXTURES SHALL BE LEVEL AND PLUMB. THIS CONTRACTOR SHALL SEAL ALL FIXTURES TO THE WALLS WITH WHITE WATERPROOF AND MILDEW RESISTANT CAULK. A STOP VALVE SHALL BE INSTALLED IN AN ACCESSIBLE LOCATION IN EACH WATER SUPPLY FOR EACH INDIVIDUAL FIXTURE. IMMEDIATELY AFTER THE SETTING OF ANY FIXTURE, FITTING, OR PIPING, THIS CONTRACTOR SHALL TAKE APPROPRIATE ACTION AND BE RESPONSIBLE FOR THE PROTECTION OF THESE ITEMS THROUGHOUT CONSTRUCTION UNTIL ACCEPTANCE BY THE OWNER.

I. ALL PLUMBING FIXTURES DESIGNATED AS "ADA" OR HANDI-CAP ACCESSIBLE SHALL BE SUPPLIED AND INSTALLED IN COMPLIANCE WITH THE AMERICAN WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES FOR BUILDINGS AND FACILITIES (ADAAG) AND WITH ANSI STANDARD A117.1-1992.

J. CLEANOUTS SHALL BE PROVIDED AT THE BASE OF EACH INTERIOR DOWNSPOUT, SANITARY STACK, AND MAIN VENT STACK. IN ADDITION, UNLESS NOTED OTHERWISE, CLEANOUTS SHALL BE INSTALLED IN THE BUILDING DRAINS AT ONE HUNDRED FOOT MAXIMUM INTERVALS AND AT ALL CHANGES IN DIRECTION GREATER THAN FORTY FIVE DEGREES.

K. ALL FLOOR DRAINS WHICH ARE NOT LOCATED ON GRADE SHALL HAVE A SHEET LEAD OR PVC WATERPROOF MEMBRANE 24" IN DIAMETER SECURED TO THE DRAIN FLASHING RING.

L PLUMBING FIXTURES AND DRAINS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, ADAPTED TO THE APPLICABLE CONSTRUCTION AND MADE WATERTIGHT.

PLUMBING SPECIALTIES

A. CONTRACTOR SHALL PROVIDE AND INSTALL ALL PLUMBING SPECIALTIES AS SHOWN ON THE CONTRACT DRAWINGS AND LISTED IN THE EQUIPMENT SCHEDULE.

B. ALL SIMILAR TYPES OF PLUMBING SPECIALTIES SHALL BE SUPPLIED BY THE SAME MANUFACTURER.

C. ATMOSPHERIC VACUUM BREAKER SHALL HAVE BRASS BODY, STAINLESS STEEL WORKING PARTS, INTEGRAL STRAINER, RUBBER DISCS, UNIONS.

D. REDUCED PRESSURE BACKFLOW PREVENTER ASSEMBLIES:
   1. ASSEMBLY SHALL CONSIST OF AN INLET STRAINER, TWO ISOLATION VALVES, TWO POSITIVE SEATING CHECK VALVES WITH AN INTERMEDIATE PRESSURE DIFFERENTIAL RELIEF AND TEST COCKS. SEE CONTRACT DRAWINGS AND PLUMBING SCHEDULES FOR ADDITIONAL REQUIREMENTS.
   2. ASSEMBLY SHALL BE RATED FOR 33 DEGREE F TO 110 DEGREE F CONTINUOUS TEMPERATURE AND 140 DEGREE F INTERMITTENT TEMPERATURE.
   3. ASSEMBLY SHALL BE RATED FOR A MAXIMUM WORKING PRESSURE OF 175 PSI.
   4. 3/4" THRU 2" ASSEMBLIES SHALL HAVE A BRONZE BODY WITH BRONZE BALL VALVE SHUTOFFS AND BRONZE TEST COCKS. ASSEMBLY SHALL HAVE THREADED PIPE CONNECTIONS.

E. DUAL CHECK VALVES SHALL HAVE A STRAIGHT LINE POPPET TYPE CHECK MODULES, REPLACEABLE SEATS, AND BRASS CONSTRUCTION.

F. SHOCK STOPS SHALL BE OF THE COPPER TUBE WITH PISTON TYPE OR THE STAINLESS STEEL BELLOW TYPE.

G. DOMESTIC HOT WATER ANTI-SCALD THERMOSTATIC MIXING CONTROL VALVE SHALL BE OF BRONZE BODY CONSTRUCTION WITH CORROSION RESISTANT INTERIOR COMPONENTS, CHECK STOPS, FAIL TO THE COLD WATER SIDE, AND RATED FOR 125 PSIG WORKING.

H. STRAINERS SHALL BE OF 125 WSP ALL BRONZE BODY Y-PATTERN WITH 20 MESH STAINLESS STEEL SCREENS. STRAINERS SHALL CONFORM TO FEDERAL SPECIFICATION WW-V-51D CLASS A, TYPE IV AND BE SUPPLIED AS MANUFACTURED BY ONE OF THE FOLLOWING: APPOLLO VALVES, ARMSTRONG LIMITED, CRANE COMPANY, MUESSCO, AND SPIRAX/SARCO.

I. INTERIOR HOSE BIBBS SHALL BE OF COPPER/BRONZE CONSTRUCTION WITH ANTI-SIPHON VACUUM BREAKER, 3/4" HOSE THREAD AND WHEEL HANDLE

J. TRAP PRIMER VALVES SHALL BE OF BRONZE BODY CONSTRUCTION WITH THREADED OR SOLDER JOINT CONNECTIONS, AND RATED FOR 125 PSIG WORKING PRESSURE

K. THERMOMETERS SHALL CONSIST OF A 9" LONG DIE CAST ALUMINUM CASE WITH A BAKED EPOXY ENAMEL FINISH, A MERCURY FILLED TUBE AND CAPILLARY WITH 1% SCALE RANGE ACCURACY, A SATIN FACED NON-REFLECTIVE PERMANENTLY ETCHED ALUMINUM SCALE, A CLEAR ACRYLIC PLASTIC LENS, A SWIVEL JOINT (180 DEGREE ADJUSTMENT IN VERTICAL PLAN AND 360 DEGREE ROTATION IN THE HORIZONTAL PLANE) AND A COPPER-PLATED STEEL OR BRASS STEM FOR SEPARABLE SOCKET OF LENGTH TO SUIT INSTALLATION. SCALE SHALL HAVE DIVISIONS OF 2 DEGREE F WITH A RANGE OF 30 DEGREES TO 240 DEGREES F. THERMOMETERS SHALL BE AS MANUFACTURED BY ONE OF THE FOLLOWING: ASHCROFT, MARSHALLTOWN INSTRUMENTS, TAYLOR, 3M, TRERICE, AND WEISS INSTRUMENTS.

L. CONTRACTOR SHALL INSTALL PLUMBING SPECIALTIES TO HEIGHT AND LOCATION AS SHOWN ON THE CONTRACT DRAWINGS. INSTALL PLUMBING SPECIALTIES LEVEL AND PLUMB WHERE APPLICABLE AND PER MANUFACTURERS RECOMMENDATIONS. IMMEDIATELY AFTER THE SETTING OF ANY PLUMBING SPECIALTY, THIS CONTRACTOR SHALL TAKE APPROPRIATE ACTION AND BE RESPONSIBLE FOR THE PROTECTION OF THESE ITEMS THROUGHOUT CONSTRUCTION UNTIL ACCEPTANCE BY THE OWNER.

M. PROVIDE VACUUM BREAKERS ON ALL THREADED HOSE BIBB CONNECTIONS.

N. INSTALL REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER IN INCOMING DOMESTIC WATER SERVICE.

O. BACKFLOW PREVENTERS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS AND IN COMPLIANCE WITH THE REQUIREMENTS OF THE AUTHORITIES HAVING JURISDICTION.

P. TEST EACH BACKFLOW DEVICE AND SUBMIT TEST DATA.

Q. PROVIDE THERMOSTATIC MIXING VALVES TO REGULATE THE HOT WATER TEMPERATURE TO A TEMPERED WATER SYSTEM.

R. PROVIDE A STRAINER UPSTREAM OF BACKFLOW PREVENTERS.

S. WALL HYDRANTS WITH HOSE CONNECTIONS SHALL BE PROVIDED IN THE WATER ROOM.

T. PROVIDE A WATER HAMMER ARRESTOR AT EACH SOLENOID VALVE OR PIECE OF EQUIPMENT THAT HAS A QUICK CLOSING TYPE VALVE. WATER HAMMER ARRESTOR FOR DOWN-FEED RISERS TO BE AT TOP OF RISER. SIZE SHOCK ABSORBER ACCORDING TO FIXTURE UNIT COUNT. PROVIDE SHOCK ABSORBERS AT EACH GROUP OF WATER CLOSETS AND URINALS. SHOCK ABSORBER SHALL BE EASILY ACCESSIBLE FOR REPAIR OR REPLACEMENT.

U. PROVIDE TRAP SEAL PRIMERS ON ALL FLOOR DRAINS TO PREVENT TRAP SEALS FROM DRYING UP.

V. PROVIDE THERMOMETERS AT DOMESTIC WATER HEATER INLETS AND OUTLETS, HOT WATER OUTLET AT THE MAIN THERMOSTATIC MIXING VALVE, AND THE DOMESTIC CIRCULATION PUMP OUTLET.

W. WASTE DISPOSER SHALL BE COUNTER SINK DRAIN OUTLET MOUNTING TYPE OF GALVANIZED STEEL CONSTRUCTION WITH MINIMUM 1/2 HORSEPOWER 120 VOLT ELECTRIC MOTOR FOR ON/OFF CONTROL THRU A WALL SWITCH BY OTHERS. THE MOTOR SHALL HAVE MANUAL RESET OVERLOAD PROTECTION. THE DISPOSER SHALL HAVE PERMANENTLY LUBRICATED BEARINGS AND THE DRAIN CONNECTION SHALL BE 1-1/2" SLIP JOINT. THE DISPOSER SHALL HAVE A TWO YEAR WARRANTY.

HEI
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443 WEST LIBERTY STREET
WOOSTER, OHIO 44691
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HEI Project No. 2023-06-07

REVISIONS:

PRELIMINARY
NOT FOR CONSTRUCTION

600 MARKET AVENUE NORTH CANTON OHIO 44702

MOTTER & MEADOWS
ARCHITECTS

CRENSHAW PARK - NEW PAVILION
EDWARD L. "PEEL" COLEMAN COMMUNITY CENTER
CANTON, OHIO
1400 SHERRICK ROAD SE

DAVID I. PATTERSON 11150

DAVID I. PATTERSON
LICENSE #11150
EXPIRATION DATE
12-31-2023

CONSTRUCTION DOCUMENTS

THIS DWG :
PLUMBING SPECIFICATIONS

COMM 23105
DATE 05-24-23

DWG
P-3.1

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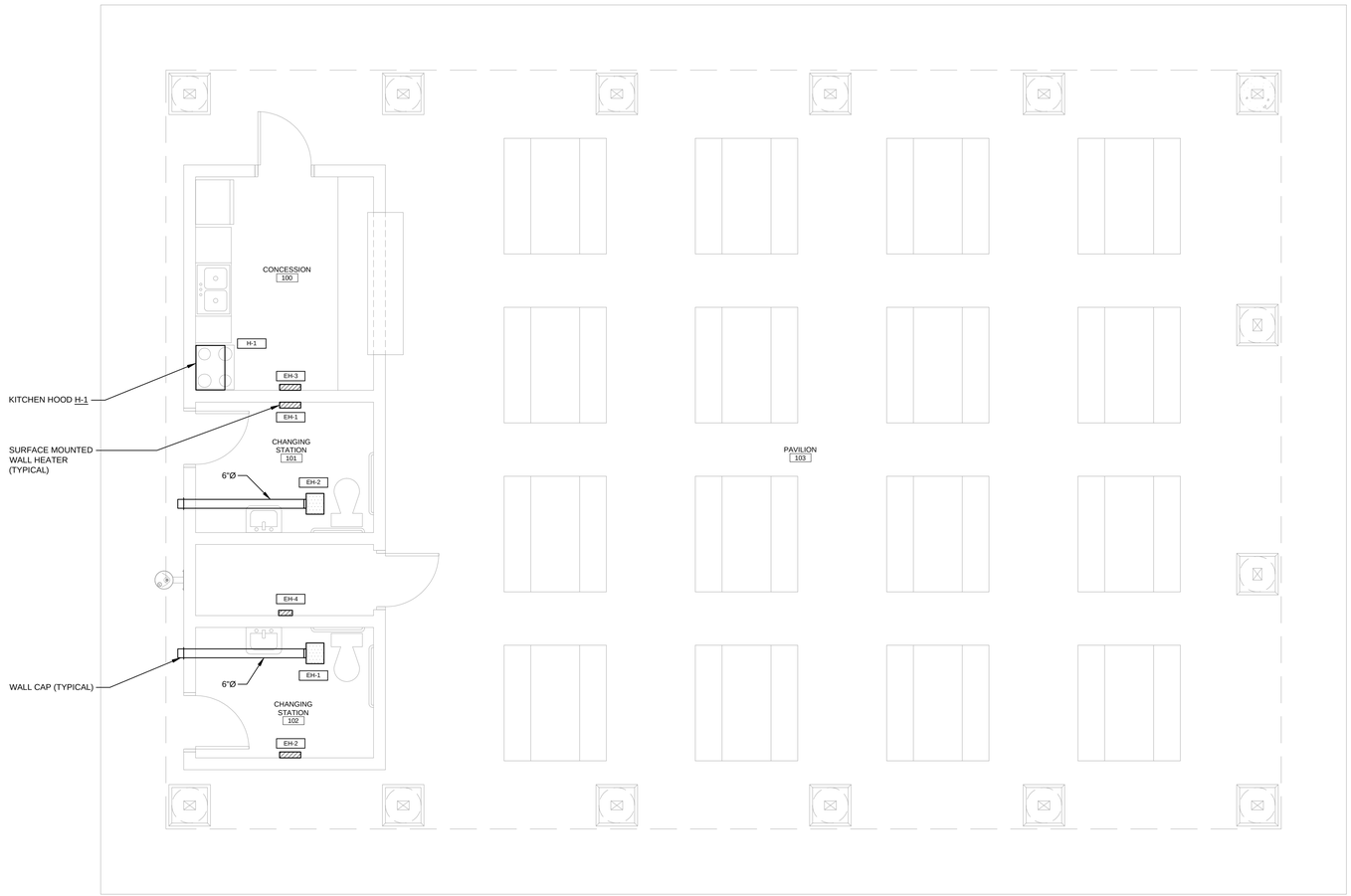

FLOOR PLAN - HVAC
SCALE: 1/4" = 1'-0"

MOTTER & MEADOWS
ARCHITECTS

600 MARKET AVENUE NORTH CANTON OHIO 44702

CRENSHAW PARK - NEW PAVILION
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CANTON, OHIO

STATE OF OHIO
DAVID
I.
PATTERSON
11150
REGISTERED ARCHITECT

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GENERAL HVAC NOTES

1. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF THE MECHANICAL SYSTEMS. ACTUAL FIELD CONDITIONS AND WORK OF OTHER TRADES MAY REQUIRE MINOR DEVIATIONS.

2. ALL MECHANICAL SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH THE OHIO PLUMBING AND MECHANICAL CODES.

3. ALL MECHANICAL EQUIPMENT AND APPLIANCES SHALL BEAR THE LABEL OF AN APPROVED AGENCY IN ACCORDANCE WITH THE OHIO MECHANICAL CODE. ALL MECHANICAL EQUIPMENT AND APPLIANCES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

4. UNLESS NOTED OTHERWISE, EACH MECHANICAL SYSTEM COMPONENT SHALL BE INDEPENDENTLY SUPPORTED FROM THE BUILDING STRUCTURE.

5. PLUMBING AND HVAC INSTALLATION SHALL BE COORDINATED SO AS TO MAINTAIN AT LEAST TEN FEET OF CLEARANCE FROM ALL OUTDOOR AIR INTAKES AND BUILDING OPENINGS, TO ANY PLUMBING VENTS, EXHAUST AIR OUTLETS OR OTHER NOXIOUS CONDITIONS.

6. ALL MECHANICAL SYSTEM PENETRATIONS THROUGH FIRE / SMOKE RATED ASSEMBLIES SHALL BE SEALED WITH FIRE AND SMOKE STOPPING COMPOUND SO AS TO MAINTAIN THE FIRE RESISTANCE RATING OF THE WALL PENETRATED. FIRESTOPPING COMPOUND, PIPE SLEEVES, AND PIPING INSTALLATION SHALL BE INSTALLED SO AS THE COMPLETE PENETRATION ASSEMBLY IS CLASSIFIED BY UL AS LISTED IN THE UL BUILDING MATERIALS DIRECTORY.

7. UNLESS NOTED OTHERWISE, THIS CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING OF EXISTING WALLS, FLOORS, CEILINGS AND ROOFS AS REQUIRED FOR THE INSTALLATION OF HVAC SYSTEMS. ANY EXISTING ROOF WARRANTIES SHALL BE MAINTAINED. NO STRUCTURAL OR REINFORCING MEMBERS SHALL BE CUT.

8. MECHANICAL CONTRACTOR SHALL VERIFY/COORDINATE EQUIPMENT ELECTRICAL REQUIREMENTS PRIOR TO UNIT PROCUREMENT.

9. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROVISION AND INSTALLATION OF ALL CONTROL WIRING, TUBING AND ASSOCIATED CONDUIT AFFILIATED WITH THE HVAC SYSTEMS. CONTROL WIRING AND TUBING SHALL BE CONCEALED WITHIN THE BUILDING WHEREVER POSSIBLE. EXPOSED CONTROL WIRING AND TUBING IS ACCEPTABLE ONLY IN EQUIPMENT ROOMS, STORAGE ROOMS, LOADING DOCKS AND MANUFACTURING AREAS. EXPOSED CONTROL WIRING AND TUBING SHALL BE CONCEALED IN CONDUIT. CONTROL WIRING AND TUBING IN CEILING PLENUMS SHALL BE EITHER UL PLENUM RATED TYPE OR INSTALLED WITHIN CONDUIT. CONTROL TUBING AND CONTROL WIRING 230 VOLT OR LESS MAY BE INSTALLED IN ELECTRICAL METALLIC TUBING (EMT). ALL CONDUCTOR WIRES SHALL BE CODED AND LABELED FOR FUTURE REFERENCE.

10. UNLESS NOTED OTHERWISE, THERMOSTAT SHALL BE INSTALLED @ 48" AFF.

KITCHEN HOOD SCHEDULE

NO	MAKE	MODEL	DIMENSIONS	EXHAUST AIR			STYLE	ELECTRICAL	MCA AMPS	MOCP AMPS	WEIGHT
			LENGTH X WIDTH X HEIGHT	CFM	SP	CONNECTION					
H-1	DENLAR	D1030-F-NFPA	30"x19.5"x10.5"	500	--	FRONT	RECIRCULATING	120-1-60	3.7	4.0	80 LBS

1. UNIT SHALL BE WALL MOUNTED SO THAT THE BOTTOM OF THE MOUNTING BRACKET SITS 24"-30" ABOVE THE STOVETOP
2. UNIT SHALL BE OF STAINLESS STEEL CONSTRUCTION (#18 & #20 GA. POLISHED 304) WITH NO SHARP EDGES AND A BRUSHED FINISH
3. UNIT SHALL HAVE FIRE SUPPRESSION SYSTEM PRE-INSTALLED BY FACTORY INTO THE HOOD
4. AUTOMATIC SUPPRESSION ACTIVATION SHALL BE BY 212 DEG F RATED FUSIBLE LINK
5. EXTINGUISHING AGENT: WET CHEMICAL POTASSIUM CITRATE / POTASSIUM ACETATE SOLUTION IN A PRESSURIZED CYLINDER
6. UNIT SHALL HOUSE A CENTRIFUGAL FAN CONTROLLED BY A HOOD MOUNTED MANUAL VARIABLE SPEED SWITCH
7. UNIT SHALL BE ETL LISTED TO UL300A STANDARDS
8. FAN MOTOR SHALL BE PERMANENTLY LUBRICATED TO MEET UL07 STANDARDS
9. UNIT SHALL BE COMPLETE WITH A POWER DISCONNECT AND GAS SOLENOID VALVE TO SHUT-OFF KITCHEN APPLIANCE FUEL SOURCE - ACTIVATED UPON SUPPRESSION SYSTEM DISCHARGE
10. UNIT SHALL HAVE MULTIPLE ALARM CONNECTION TERMINALS PRE-INSTALLED (LOCAL AND REMOTE ALARMS) AND AN INTERNAL AUDIBLE BUZZER (90-DBA)
11. INTEGRAL LIGHTING SHALL BE COMPLETE SHATTER-PROOF BULB
12. NFPA OPTION REQUIREMENTS: MANUAL PULL STATION AND CLOCKBOX

FAN SCHEDULE

NO	MAKE	MODEL	DESCRIPTION	DRIVE	CFM	SP	BHP	RPM	MHP	SONES	ELECTRIC	WEIGHT (LBS)	CONTROL	OPTIONS / NOTES
EF-1,2	GREENHECK	SP-A190	CEILING CABINET	DIRECT	140	0.30"	"	1271	33 W	1.1	120-1-60	20	WITH LIGHTS	B,D & G

OPTIONS (SEE SCHEDULE ABOVE FOR APPLICABLE OPTIONS FROM LIST BELOW)

A. BIRD SCREEN
B. DISCONNECT SWITCH
C. MOTOR OPERATED DAMPER
D. GRAVITY BACKDRAFT DAMPER
E. 12" HIGH GALVANIZED STEEL ROOF CURB
F. BRICK VENT
G. WALL CAP
H. ROOF CURB WITH CAP
I. ROOF JACK
J. FAN SPEED CONTROLLER
K. ISOLATION KIT
L. VARIGREEN MOTOR W/ SPEED ADJUSTMENT ON MOTOR
M. VFD RATED MOTOR WITH CLASS "F" INSULATION
N. NEMA 3R DISCONNECT SWITCH
O. HINGED BASE WITH DRIN PIPE AND GREASE TERMINATOR
P. EXPLOSION PROOF MOTOR
Q. SPARK RESISTANT CONSTRUCTION; AMCA "__"
R. OPTIONAL WIRE GUARD
S. OUTLET SAFETY SCREEN
T. OSHA APPROVED BELT GUARD
U. CEILING RADIATION DAMPER
V. TWO SPEED MOTOR
W. INLET VANES

ELECTRIC HEATER SCHEDULE

NO	MAKE	MODEL	TYPE	HEAT CAPACITY		BLOWER		ELECTRICAL		WT	OPTIONS
				WATTS	BTUH	CFM	HP	VOLT/PH/HZ	AMPS	LBS	NOTES
EH-1,2	MARKEL	F3422T	WALL HEATER	2000	6826	245	"	208-1-60	9.6	41	A, D, H
EH-3	MARKEL	F3423T	WALL HEATER	3000	10,239	245	"	208-1-60	14.4	41	A, D, H
EH-4	MARKEL	HF4410T2RP	WALL HEATER	1000	3413	70	"	208-1-60	3.6	9	A, D, H

GENERAL NOTES FOR ALL HEATERS

1. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS

OPTIONS (SEE SCHEDULE ABOVE FOR APPLICABLE OPTIONS FROM LIST BELOW)

A. INTEGRAL THERMOSTAT (TAMPERPROOF)
B. INTEGRAL THERMOSTAT (KNOB-OPERATED)
C. REMOTE WALL MOUNTED LINE VOLTAGE THERMOSTAT
D. POWER DISCONNECT SWITCH
E. HANGING BRACKET
F. AIR FLOW SWITCH
G. RECESS MOUNTING FRAME
H. SURFACE MOUNTING FRAME
I. T-BAR MOUNTING FRAME
J. 24V THERMOSTAT
K. LINE VOLTAGE THERMOSTAT
L. SUMMER FAN SWITCH
M. DISPOSABLE FILTERS

MOTTER & MEADOWS ARCHITECTS
600 MARKET AVENUE NORTH CANTON OHIO 44702

CRENSHAW PARK - NEW PAVILION
EDWARD L. "PEEL" COLEMAN COMMUNITY CENTER
1400 SHERRICK ROAD SE
CANTON, OHIO

STATE OF OHIO
DAVID I. PATTERSON 11150
REGISTERED ARCHITECT
DAVID I. PATTERSON
LICENSE #11150
EXPIRATION DATE
12-31-2023

CONSTRUCTION DOCUMENTS

THIS DWG :
HVAC SCHEDULES AND NOTES

COMM 23105
DATE 05-24-23

DWG
H-2.1

HVAC SPECIFICATIONS

BASIC HVAC REQUIREMENTS

A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A COMPLETE HVAC SYSTEM INSTALLATION AS INDICATED ON THE DRAWINGS AND WITHIN THESE SPECIFICATIONS. THE ENGINEERS RESPONSIBILITY IS LIMITED TO DESIGN SERVICES ONLY (NO CONSTRUCTION PHASE ADMINISTRATION SERVICES OR INSTALLATION SUPERVISION). THE INSTALLING CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MEANS AND METHODS OF THE MECHANICAL SYSTEM DESIGN IMPLEMENTATION.

B. DRAWINGS ARE BASICALLY DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS AND COMPONENTS. INSTALLING CONTRACTOR SHALL COORDINATE THE DESIGN INTENT OF THE DRAWINGS WITH THE ACTUAL FIELD CONDITIONS MAKING MINOR DEVIATIONS AND ADJUSTMENTS AS REQUIRED FOR A COMPLETE OPERATIONAL SYSTEM. EXACT LOCATIONS OF MECHANICAL SYSTEM COMPONENTS SHALL BE DETERMINED BY THE CONTRACTOR. SUCH DETERMINATION SHALL GIVE CONSIDERATION TO THE BUILDING STRUCTURAL AND SPATIAL LIMITATIONS, TO COORDINATION WITH WORK OF OTHER TRADES AND DISCIPLINES, AND TO THE NECESSARY CLEARANCE REQUIREMENTS (BOTH OF THE ITEM BEING INSTALLED AND OF ALL ADJACENT ITEMS) TO ACCOMMODATE MANUFACTURER'S INSTALLATION REQUIREMENTS, TO SATISFY CODE CLEARANCE REQUIREMENTS AND TO FACILITATE SYSTEM OPERATION AND MAINTENANCE. UNLESS NOTED OTHERWISE, MECHANICAL SYSTEMS SHALL BE INSTALLED TO PROVIDE MAXIMUM CLEARANCE ABOVE THE FINISHED FLOOR.

C. THE MECHANICAL SYSTEM INSTALLATION SHALL BE IN FULL COMPLIANCE WITH THE FOLLOWING CODES AND STANDARDS:

THE OHIO BUILDING CODE
THE OHIO PLUMBING CODE
THE OHIO MECHANICAL CODE
NFPA (APPLICABLE SECTIONS)
NATIONAL ELECTRIC CODE
MUNICIPAL AND COUNTY CODES AND ORDINANCES
STATE, MUNICIPAL AND COUNTY HEALTH AGENCIES
OTHERS AS INDICATED WITHIN THESE SPECIFICATIONS

D. DRAWINGS AND SPECIFICATIONS SHALL BE CONSIDERED COOPERATIVE. ANYTHING APPEARING IN THIS SPECIFICATION BUT NOT ON THE DRAWINGS, OR VICE VERSA, SHALL BE CONSIDERED PART OF THE CONTRACT.

E. EVERY EFFORT IS MADE ON THE PART OF THE ENGINEER TO COMPLY WITH THE LISTED CODES AND STANDARDS. WHERE THE DESIGN EXCEEDS THE REQUIREMENTS OF THE APPLICABLE CODES AND STANDARDS; THE INSTALLATION SHALL BE PER THE DESIGN REQUIREMENTS. NO WORK SHALL BE INSTALLED CONTRARY TO OR BELOW MINIMUM REQUIREMENTS OF THE CODES AND STANDARDS.

F. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS AND LICENSES, BOTH TEMPORARY AND PERMANENT, REQUIRED BY LAW AS PART OF THE INSTALLATION WORK INDICATED ON THE DRAWINGS AND WITHIN THIS SPECIFICATION.

G. THE CONTRACTOR SHALL SUBMIT FOR REVIEW BY THE ARCHITECT-ENGINEER, 6 COPIES OF MANUFACTURER'S DRAWINGS, CUT SHEETS, AND APPLICATION SPECIFIC PERFORMANCE DATA.

1. HVAC SYSTEM EQUIPMENT AND SYSTEM COMPONENTS
2. HVAC DUCTWORK LAYOUTS
3. HVAC CONTROLS AND SEQUENCES OF OPERATIONS
4. HVAC TEST AND BALANCE REPORTS

H. SHOP DRAWING SUBMITTALS SHALL INCLUDE THE PROJECT NAME, THE ARCHITECT-ENGINEER'S PROJECT NUMBER, THE APPLICABLE SPECIFICATION SECTION AND OR DRAWING NUMBER AS WELL THE CONTRACTOR'S APPROVAL STAMP. SHOP DRAWINGS SHALL BE SUBMITTED TO ARCHITECT-ENGINEER WITHIN THIRTY WORKING DAYS OF AWARD OF CONTRACT. CONTRACTOR SHALL NOT INSTALL ANY APPLICABLE MATERIALS AND/OR EQUIPMENT WITHOUT PRIOR REVIEW AS INDICATED ON THE ARCHITECT-ENGINEER'S REVIEW STAMP. REVIEW BY THE ENGINEER DOES NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY TO COMPLY WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

I. THE CONTRACTOR SHALL GUARANTEE THE COMPLETE MECHANICAL SYSTEM INSTALLATION AS INSTALLED BY HIM OR HIS SUB-CONTRACTORS TO BE FREE FROM DEFECTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE (UNLESS A LONGER PERIOD IS SPECIFIED FOR SPECIFIC ITEMS ELSEWHERE). DEVIATIONS FROM THIS MAY OCCUR ON LARGER ITEMS OF EQUIPMENT USED DURING BENEFICIAL OCCUPANCY BEFORE THE TOTAL SYSTEM IS ACCEPTED. SUCH A MATTER MUST HAVE PRIOR APPROVAL AND BE MADE A MATTER OF WRITTEN RECORD BY THE ARCHITECT-ENGINEER'S REPRESENTATIVE.

J. THE CONTRACTOR SHALL REPAIR OR REPLACE AT HIS OWN EXPENSE ANY MATERIALS OR EQUIPMENT FOUND TO BE DEFECTIVE WITHIN THE WARRANTEE PERIOD AND SHALL BE HELD FINANCIALLY RESPONSIBLE FOR ANY PROPERTY DAMAGES ARISING FROM SUCH DEFECTS OR THE CORRECTION OF SUCH DEFECTS.

K. THE CONTRACTOR SHALL GUARANTEE THAT ALL MECHANICAL EQUIPMENT SUPPLIED BY HIM OR HIS SUB-CONTRACTORS SHALL DEVELOP CAPACITIES AND HAVE CHARACTERISTICS AS SCHEDULED OR SPECIFIED.

L. THE CONTRACTOR SHALL SUBMIT WRITTEN WARRANTEE CERTIFICATES FOR HIS INSTALLATION WORK AND FROM EACH MANUFACTURER OF EQUIPMENT SUPPLIED ON THE PROJECT TO THE ENGINEER.

M. CONTRACTOR MAY USE PERMANENT MECHANICAL EQUIPMENT FOR TEMPORARY SERVICES WHEN APPROVED BY THE ARCHITECT-ENGINEER. SUCH APPROVAL IS CONDITIONED BY THE FOLLOWING REQUIREMENTS:

1. THE CONTRACTOR SHALL MAINTAIN THE EQUIPMENT FOR RELEASE TO OWNER AT TIME OF FINAL ACCEPTANCE IN "NEW" CONDITION.

2. WARRANTY PERIOD FOR THE OWNER SHALL NOT BEGIN UNTIL THE DATE OF FINAL SYSTEM ACCEPTANCE.

N. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY DAMAGES INCURRED DURING THE INSTALLATION OF HIS WORK TO THE EXISTING GROUNDS, WALKS, ROADS, BUILDING, PLUMBING SYSTEMS, HVAC SYSTEMS, AND ELECTRIC SYSTEMS AS WELL AS ALL NEW CONSTRUCTION WORK BY OTHER TRADES. HE SHALL REPAIR AT HIS EXPENSE ALL SUCH DAMAGES FOR RESTORATION TO THE ORIGINAL CONDITIONS TO THE SATISFACTION OF THE ARCHITECT-ENGINEER AND OWNER.

O. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING THE MATERIALS, EQUIPMENT AND INSTALLATION OF HIS WORK FROM DAMAGE DUE TO WEATHER AND CONSTRUCTION JOB SITE CONDITIONS.

P. THE CONTRACTOR SHALL MAINTAIN A SET OF PRINTS AT THE CONSTRUCTION SITE TO RECORD IN RED ANY DEVIATIONS IN THE ACTUAL MECHANICAL SYSTEM INSTALLATION FROM THE DESIGN DRAWINGS. THESE RECORD DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT-ENGINEER UPON COMPLETION OF THE PROJECT.

Q. THE CONTRACTOR SHALL PROVIDE THREE (3) SETS OF OPERATION AND MAINTENANCE MANUALS FOR THE OWNER'S USE UPON COMPLETION OF THE PROJECT. OPERATION AND MAINTENANCE MANUALS SHALL BE SUBMITTED TO THE ARCHITECT-ENGINEER FOR APPROVAL. OPERATION AND MAINTENANCE MANUALS SHALL INCLUDE THE FOLLOWING:

1. NAME AND SERVICE TELEPHONE NUMBER OF THE INSTALLING COMPANY
2. GENERAL DESCRIPTION OF HOW THE SYSTEM SHOULD OPERATE
3. MANUFACTURER'S OPERATION AND MAINTENANCE INSTRUCTIONS
4. COPY OF APPROVED SHOP DRAWINGS
5. COPY OF FINAL BALANCE REPORT
6. LUBRICATION SCHEDULE
7. VALVE CHART
8. SPARE PARTS LIST
9. WARRANTY CERTIFICATES

R. THE CONTRACTOR SHALL INSTRUCT THE OWNER'S MAINTENANCE PERSONNEL IN THE PROPER OPERATION AND MAINTENANCE OF THE ENTIRE MECHANICAL SYSTEM INSTALLATION INCLUDING ALL ASSOCIATED EQUIPMENT ITEMS.

S. THE SCHEDULED MANUFACTURER FOR EACH ITEM SHALL BE CONSIDERED AS BASIS OF DESIGN. PERFORMANCE CHARACTERISTICS, ELECTRICAL CHARACTERISTICS, AND DIMENSIONAL AND SPATIAL REQUIREMENTS FOR THIS ITEM HAVE ALREADY BEEN CONSIDERED IN THE DESIGN. OTHER ACCEPTABLE MANUFACTURERS HAVE NOT BEEN CHECKED FOR SUCH DETAIL AND MUST MEET ALL THE SCHEDULED PERFORMANCE REQUIREMENTS AND POSSESS FEATURES SIMILAR TO THOSE WHICH ARE STANDARD ON THE ITEMS WHICH ARE BASIS OF DESIGN.

T. UNLESS NOTED OTHERWISE, EACH MECHANICAL SYSTEM COMPONENT SHALL BE INDEPENDENTLY SUPPORTED FROM THE BUILDING STRUCTURE.

U. UNLESS NOTED OTHERWISE, CONTRACTOR(S) SHALL COORDINATE PLUMBING AND HVAC INSTALLATION SO AS TO MAINTAIN AT LEAST TEN FEET OF CLEARANCE FROM ALL OUTDOOR AIR INTAKES AND BUILDING OPENINGS TO ANY PLUMBING VENTS (EXISTING AND NEW) EXHAUST AIR OUTLETS OR OTHER NOXIOUS CONDITIONS.

V. UNLESS NOTED OTHERWISE, ALL ROOFTOP EQUIPMENT SHALL BE LOCATED SO AS TO MAINTAIN AT LEAST TEN FEET OF CLEARANCE FROM ANY ROOF EDGE WITH A DROP OF 24" OR MORE.

BASIC HVAC MATERIALS AND METHODS

A. UNLESS NOTED OTHERWISE, THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL NEW MATERIALS, EQUIPMENT, COMPONENTS, AND FIXTURES AS INDICATED. OTHER MANUFACTURERS OF MECHANICAL EQUIPMENT MAY BE SUBSTITUTED FOR THOSE INDICATED AS LONG AS THE QUALITY OF CONSTRUCTION AND OPERATING CHARACTERISTICS ARE EQUIVALENT.

B. PIPE SLEEVES SHALL BE PROVIDED AND INSTALLED WHERE PIPES PASS THROUGH WALLS, FLOORS, AND CEILINGS. SLEEVES SHALL BEU SUFFICIENTLY LARGE ENOUGH TO ALLOW FOR FIRE AND SOUND STOPPING BETWEEN THE INSIDE SLEEVE WALL AND THE PIPE OR INSULATION SURFACE AS WELL AS ALLOW FOR THERMAL EXPANSION AND CONTRACTION OF PIPING. (SLEEVES SHALL BE LARGE ENOUGH TO ALLOW PIPE INSULATION TO BE CONTINUOUS THROUGH THE WALL.) LENGTH OF SLEEVES SHALL BE EQUAL TO THE THICKNESS OF THE BUILDING CONSTRUCTION ELEMENT PENETRATED FOR A FLUSH FINISH ON BOTH SIDES EXCEPT FOR FLOOR SLEEVES WHICH SHALL EXTEND 2" ABOVE THE FINISH FLOOR. INSTALL IRON-PIPE SLEEVES IN EXTERIOR WALL PENETRATIONS AND STEEL-PIPE SLEEVES ELSEWHERE UNLESS NOTED OTHERWISE.

C. THE CONTRACTOR SHALL PROVIDE AND INSTALL SEALING MATERIALS FOR MECHANICAL SYSTEM PENETRATIONS THROUGH BUILDING WALLS, FLOORS, CEILINGS, AND ROOFS. EXTERIOR PENETRATIONS SHALL BE WEATHER PROOF AND VERMIN PROOF; INTERIOR PENETRATIONS SHALL HAVE SOUND STOPPING. PENETRATIONS THROUGH FIRE AND SMOKE BARRIERS SHALL HAVE FIRESTOPPING.

1. THE CONTRACTOR SHALL SEAL ALL FIRE/SMOKE RATED WALL AND FLOOR PENETRATIONS FOR MECHANICAL SYSTEM COMPONENTS WITH FIRE AND SMOKE STOPPING COMPOUND SO AS TO MAINTAIN THE FIRE RESISTANCE RATING OF THE WALL OR FLOOR PENETRATED. FIRESTOPPING COMPOUND, PIPE SLEEVES, AND PIPING AND INSULATION SHALL BE INSTALLED SO AS THE COMPLETE PENETRATION ASSEMBLY IS CLASSIFIED BY UL AS LISTED IN THE UL BUILDING MATERIALS DIRECTORY.

D. ESCUTCHEON PLATES SHALL BE INSTALLED ON ALL PIPE PENETRATIONS THROUGH WALLS, FLOORS, AND CEILINGS WHERE EXPOSED TO VIEW AND ON THE BUILDING EXTERIOR. ESCUTCHEON PLATE SHALL BE SECURED TO PIPE OR INSULATION AND COMPLETELY COVER THE HOLE PENETRATION.

E. ACCESS DOORS SHALL BE PROVIDED AND INSTALLED BY THE M.C. IN NON-ACCESSIBLE WALLS, AND CEILINGS WHICH CONCEAL HVAC ITEMS WHICH REQUIRE SERVICE OR INSPECTION SUCH AS VALVES AND DAMPERS. THE DOORS SHALL BE OF ADEQUATE SIZE TO SERVICE THE CONCEALED ITEM. DOOR SHALL BE OF PAINTED STEEL CONSTRUCTION WITH CONCEALED HINGE AND KEYED LOCK. ALL DOORS SHALL BE KEYED ALIKE WITH A MINIMUM OF TWO KEYS PROVIDED TO OWNER. ACCESS DOORS IN CEILINGS SHALL HAVE A RECESSED FACE FOR FIELD INSTALLATION OF FINISHED CEILING MATERIAL. DOORS INSTALLED IN FIRE RATED WALLS AND CEILINGS SHALL BE UL LISTED AND LABELED WITH APPLICABLE FIRE RESISTANCE RATING.

F. EXISTING BUILDING SURFACES AND AUXILIARY EQUIPMENT AND FINISHES MARRED DURING INSTALLATION OF HVAC WORK SHALL BE REPAINTED BY THE M.C. FACTORY APPLIED PAINT FINISHES ON HVAC EQUIPMENT MARRED DURING INSTALLATION SHALL ALSO BE REPAINTED BY THE M.C.

G. THE CONTRACTOR SHALL PAINT ALL IRON PIPE FITTINGS AND VALVE BODIES, ALL SUPPORT STEEL INSTALLED AS PART OF HIS SCOPE OF WORK AND ALL EXPOSED PIPING AND DUCTWORK ON THE EXTERIOR OF THE BUILDING. ALL PAINTING SHALL BE DONE IN ACCORDANCE WITH THE PAINT MANUFACTURER'S INSTRUCTIONS INCLUDING SURFACE PREPARATION AND CONDITIONS OF AMBIENT TEMPERATURE AND HUMIDITY. ENVIRONMENTAL CONDITIONS IN THE AREA OF PAINTING WORK SHALL COMPLY WITH THE PAINT MANUFACTURER'S RECOMMENDATIONS AND ALL GOVERNING REGULATIONS.

HVAC PIPING AND ACCESSORIES

A. REFER TO THE "PIPE AND INSULATION SCHEDULE" FOR SPECIFIC PIPING APPLICATION AND MATERIAL REQUIREMENTS.

B. ALL PIPING SHALL BE RUN AS DIRECT AS POSSIBLE WITHIN THE ACTUAL BUILDING CONDITIONS. INSTALLATION SHALL BE PARALLEL WITH OR AT RIGHT ANGLES TO THE BUILDING STRUCTURE. COORDINATE INSTALLATION WITH ALL OTHER TRADES TO BEST UTILIZE AVAILABLE SPACE.

C. PIPING INSTALLATION SHALL BE SLOPED IN THE DIRECTION OF FLOW AT A PITCH OF AT LEAST 0.2% FOR WATER PIPING, AND 1.0% FOR CONDENSATE PIPING UNLESS NOTED OTHERWISE.

D. PIPING INSTALLATION SHALL NOT REQUIRE SPRINGING OR FORCING. PIPING OFFSETS, LOOPS AND/OR EXPANSION JOINTS SHALL BE PROVIDED (WHETHER SHOWN OR NOT) TO LIMIT STRESS DUE TO THERMAL EXPANSION.

E. PIPING MATERIALS SHALL BE CLEAN PRIOR TO AND DURING INSTALLATION. UPON COMPLETION OF PIPING INSTALLATION; BUT PRIOR TO FINAL CONNECTIONS, THE ENTIRE SYSTEM SHALL BE FLUSHED WITH A CLEANING SOLUTION WHICH WILL NOT HARM EITHER THE PIPING, EQUIPMENT OR USERS.

F. THREADED PIPE SHALL BE REAMED AFTER THREADING. PIPE THREAD COMPOUND SHALL BE APPLIED TO MALE THREADS ONLY. SOLDERED JOINTS ON COPPER PIPING SHALL BE MADE WITH 95-5 TIN-ANTIMONY SOLDER. SURFACES SHALL BE CLEANED AND FLUXED IN PREPARATION TO RECEIVE SOLDER.

G. DRAIN VALVES SHALL BE PROVIDED AT ALL LOW POINTS AND AT ALL COIL/EQUIPMENT CONNECTIONS. MANUAL AIR VENTS SHALL BE PROVIDED AT ALL HIGH POINTS.

H. EQUIPMENT CONNECTIONS SHALL INCLUDE UNIONS PROVIDED BETWEEN A PIPING SERVICE SHUT-OFF VALVE AND EACH EQUIPMENT CONNECTION. PIPING OFFSETS SHALL BE PROVIDED TO PERMIT REMOVAL OF ALL EQUIPMENT.

I. COPPER PIPING CONNECTIONS TO STEEL OR IRON PIPE SHALL BE MADE WITH DIELECTRIC UNIONS.

J. INSTALLED PIPING SHALL NOT BE IN DIRECT CONTACT WITH ANY PART OF THE BUILDING STRUCTURE SO AS TO AVOID SOUND TRANSMISSION.

K. FILLED PIPING INSTALLATION SHALL BE PROTECTED FROM FREEZING UNTIL ACCEPTANCE FROM THE OWNER OF THE ENTIRE CONSTRUCTION PROJECT.

L. STANDARD PIPE FITTINGS SUCH AS ELBOWS, TEES, COUPLINGS, AND INCREASERS OR REDUCERS SHALL BE USED TO JOIN PIPES OF DIFFERENT SIZES. HALF COUPLINGS OR TEES SHALL BE PROVIDED FOR THERMOMETERS, GAUGES, AIR VENTS, DRAINS AND TEMPERATURE CONTROL DEVICES.

M. UPON COMPLETION OF THE PIPING INSTALLATION AND PRIOR TO INSULATING OR CONCEALMENT, EACH PIPING SYSTEM SHALL BE PRESSURE TESTED WITH WATER AT 125 PSIG MINIMUM PRESSURE FOR SIX HOURS WITHOUT ANY APPRECIABLE PRESSURE LOSS.

N. HYDRONIC PIPING SYSTEMS SHALL BE CLEANED PRIOR TO START-UP BY FILLING THE ENTIRE SYSTEM WITH WATER AND THEN ADDING A CHEMICAL CLEANING COMPOUND AT A MINIMUM CONCENTRATION OF TWO POUNDS PER 100 GALLON OF WATER. CLEANING SOLUTION SHALL THEN BE CIRCULATED THROUGH THE SYSTEM BY SYSTEM PUMPS FOR SIX HOURS. CLEANING SOLUTION SHALL THEN BE FLUSHED AND DRAINED, AND ALL PIPING STRAINERS SHALL BE REMOVED, CLEANED AND REINSTALLED. UPON CLEANING, THE SYSTEM SHALL BE FILLED WITH CLEAN WATER, A WATER ANALYSIS MADE, AND CHEMICAL TREATMENT, INCLUDING GLYCOL AS INDICATED ON THE DRAWINGS, SHALL BE ADDED.

HVAC HANGERS AND SUPPORTS

A. ALL PIPING SHALL BE INSTALLED WITH FACTORY FABRICATED PIPING CLAMPS, HANGERS AND SUPPORTS ATTACHED TO THE BUILDING SUBSTRATE WITH SUITABLE EXPANSION SHELLS, INSERTS, OR BEAM CLAMPS. HANGERS SHALL BE SELECTED TO EXACTLY FIT PIPE SIZE FOR BARE PIPING AND TO EXACTLY FIT AROUND PIPING INSULATION WITH SADDLE OR SHIELD FOR INSULATED PIPING. COPPER PLATED HANGERS AND SUPPORTS SHALL BE UTILIZED FOR ALL COPPER PIPING SYSTEMS. PERFORATED STRAP HANGERS AND "C" CLAMP ATTACHMENTS ARE PROHIBITED.

1. UNLESS NOTED OTHERWISE, ALL HORIZONTAL PIPE 3" AND SMALLER SHALL BE SUPPORTED BY INDIVIDUAL ADJUSTABLE STEEL CLEVIS HANGERS.

2. UNLESS NOTED OTHERWISE, ALL HORIZONTAL PIPE 4" AND LARGER (AND ALL HORIZONTAL PIPE 2" AND LARGER WHICH CONVEYS A FLUID ABOVE 150° F) SHALL BE SUPPORTED BY ADJUSTABLE ROLLER TYPE HANGERS.

3. PARALLEL HORIZONTAL PIPING MAY ALSO BE SUPPORTED TOGETHER ON A TRAPEZE TYPE HANGER AS LONG AS ALL PIPING IS ADEQUATELY SUPPORTED AND INDIVIDUAL THERMAL PIPE MOVEMENT IS ACCOUNTED FOR.

4. HORIZONTAL PIPE SUPPORT SPACING AND HANGER ROD SIZING SHALL BE AS FOLLOWS EXCEPT FOR CAST IRON PIPE WHICH SHALL BE SUPPORTED AT A MAXIMUM INTERVAL OF 5'-0" ON CENTER AND PVC PIPING WHICH SHALL BE SUPPORTED AT A MAXIMUM INTERVAL OF 4'-0" ON CENTER:

PIPE SIZE	ROD DIA	MAX SPACING ON CENTER
1/2" TO 1-1/4"	3/8"	6'-0"
1-1/2" TO 2"	3/8"	9'-0"
2-1/2" TO 3"	1/2"	11'-0"
4" TO 6"	3/4"	12'-0"

B. HANGERS FOR MECHANICAL EQUIPMENT SHALL CONSIST OF STRUCTURAL STEEL SHAPES OR STEEL RODS ATTACHED TO THE BUILDING SUBSTRATE WITH SUITABLE EXPANSION SHELLS, INSERTS, OR BEAM CLAMPS. HANGERS SHALL BE SELECTED TO ADEQUATELY SUPPORT THE STATIC AND DYNAMIC LOADS OF THE EQUIPMENT AS INDICATED BY THE EQUIPMENT MANUFACTURER. ISOLATION TYPE HANGERS SHALL BE USED TO SUPPORT ALL OVERHEAD MECHANICAL EQUIPMENT WITH ROTATING PARTS. ISOLATORS SHALL BE INSTALLED AS CLOSE TO THE OVERHEAD STRUCTURE AS POSSIBLE.

C. ROOFTOP EQUIPMENT SUPPORTS AND CURBS SHALL BE AS AVAILABLE FROM THE HVAC EQUIPMENT MANUFACTURER OR AS MANUFACTURED BY ONE OF THE FOLLOWING MANUF.: PATE, ROOF PRODUCTS AND SYSTEMS OR THYCURB DIVISION OF THYBAR CORPORATION.

D. SUPPORT FROM STEEL JOIST PANEL POINT IS REQUIRED.

E. SUPPORTS FROM ROOF DECKING SYSTEMS ARE NOT PERMITTED.

HVAC IDENTIFICATION

A. THE CONTRACTOR SHALL PROVIDE AND INSTALL PERMANENT IDENTIFICATION MARKERS FOR THE MECHANICAL SYSTEM COMPONENTS AS INDICATED BELOW:

1. EACH SCHEDULED ITEM OF EQUIPMENT, MECHANICAL (PLUMBING AND HVAC), PIPING, AND VALVES IDENTIFICATION MARKERS SHALL BE AS MANUFACTURED BY SETON, BRADY, ALLEN OR MARKING SYSTEMS INC.

B. IDENTIFICATION MARKERS SHALL COMPLY WITH ANSI A13.1 REQUIREMENTS FOR LETTERING SIZE, LENGTH OF COLOR FIELD, COLORS AND VIEWING ANGLES.

C. INSTALL PIPE MARKERS WHEREVER PIPING IS EXPOSED TO VIEW IN ACCESSIBLE SPACES. LOCATE MARKERS APPROXIMATELY 25 FEET ON CENTER AND NEAR EACH WALL, FLOOR AND CEILING PENETRATION. IN ADDITION, LOCATE MARKERS NEAR CONNECTION TO MAJOR EQUIPMENT.

TESTING, ADJUSTING, AND BALANCING

A. TESTING ADJUSTING AND BALANCING SHALL BE THE RESPONSIBILITY OF A TEST AND BALANCE CONTRACTOR WHICH IS AABC OR NEBB CERTIFIED.

B. TESTING ADJUSTING AND BALANCING WORK SHALL BE DONE IN ACCORDANCE WITH THE LATEST REVISION OF THE FOLLOWING STANDARDS:

1. "AABC NATIONAL STANDARDS" OR "NEBB PROCEDURAL STANDARDS"

2. ASHRAE SYSTEMS VOLUME RECOMMENDATIONS FOR TESTING, ADJUSTING AND BALANCING

3. SMACNA TESTING, ADJUSTING, AND BALANCING MANUAL

C. A COMPLETE TEST AND BALANCE REPORT ON STANDARD AABC OR NEBB FORMS SHALL BE SUBMITTED TO THE ENGINEER. WHEN THE REPORT INDICATES INADEQUATE SYSTEM PERFORMANCE IN COMPARISON TO THE DESIGN REQUIREMENTS AN EXPLANATION SHALL ACCOMPANY THE REPORT INDICATING THE PROBABLE CAUSE.

D. THE TEST AND BALANCE CONTRACTOR SHALL CHECK THE MECHANICAL INSTALLATION WORK IN COMPARISON WITH THE DESIGN TO VERIFY CORRECT INSTALLATION AND OPERATING CONDITIONS.

E. THE TEST AND BALANCE CONTRACTOR SHALL EXAMINE THE AUTOMATIC TEMPERATURE CONTROL SYSTEM TO VERIFY THAT THE CONTROLLED DEVICES AND THEIR RESPECTIVE CONTROLLERS ARE FUNCTIONING PROPERLY IN ACCORDANCE WITH THE SEQUENCE OF OPERATIONS AS INDICATED.

1. VERIFY THAT CONTROL VALVES AND DAMPERS MODULATE/OPERATE FREELY BETWEEN THE SET MINIMUM AND MAXIMUM POSITIONS.

2. VERIFY THAT ACTUAL POSITION OF CONTROL VALVE AND DAMPER IS AS INDICATED BY THE CONTROLLER.

3. VERIFY THAT THREE WAY CONTROL VALVES FOR MIXING OR DIVERTING FLUIDS ARE INSTALLED PROPERLY.

4. VERIFY THAT HVAC EQUIPMENT / SYSTEM INTERLOCKS ARE FUNCTIONING PROPERLY (BOTH HARDWARE AND SOFTWARE INTERLOCKS). VERIFY PROPER HEATING AND COOLING CHANGEOVER OPERATION OF SYSTEM.

F. THE TEST AND BALANCE CONTRACTOR SHALL PERFORM TESTS AND MAKE ALL ADJUSTMENTS AS REQUIRED TO BALANCE THE HVAC SYSTEMS TO THE FOLLOWING CRITERIA:

1. ALL FANS SHALL PERFORM "EQUAL TO" OR "10% IN EXCESS OF" THE DESIGN VOLUME.

2. MINIMUM OUTDOOR AIR REQUIREMENTS SHALL BE WITHIN 5% ABOVE OR BELOW THE DESIGN VOLUME.

3. SUPPLY DIFFUSERS AND REGISTERS SHALL BE WITHIN 10% ABOVE OR 5% BELOW THE DESIGN VOLUME.

4. RETURN AND EXHAUST GRILLES SHALL BE WITHIN 5% ABOVE OR 10% BELOW THE DESIGN VOLUME.

G. THE BALANCE CONTRACTOR SHALL NOTIFY THE MECHANICAL CONTRACTOR OF ANY INCOMPLETE WORK, ANY ADDITIONAL WORK, OR ANY REWORK WHICH NEEDS TO BE COMPLETED IN ORDER TO BALANCE THE SYSTEMS TO WITHIN THE ACCEPTABLE CRITERIA. THIS WORK SHALL BE COMPLETED AND ACCOMPANYING TESTS AND ADJUSTMENTS MADE PRIOR TO THE REPORT SUBMISSION.

H. WHEN EXISTING HVAC SYSTEMS ARE BEING MODIFIED, THE TEST AND BALANCE CONTRACTOR SHALL MEASURE AND RECORD EXISTING FLOWS TO THE REMAINDER OF THE SYSTEM PRIOR TO ANY SYSTEM MODIFICATIONS. UPON COMPLETION OF NEW INSTALLATION MODIFICATIONS, THE TEST AND BALANCE CONTRACTOR SHALL RESTORE THE ORIGINAL BALANCE OF THE UNALTERED SYSTEM PORTIONS AS WELL AS BALANCE THE NEW WORK TO THE INDICATED DESIGN REQUIREMENTS.

I. THE TEST AND BALANCE CONTRACTOR SHALL PATCH ALL HOLES IN DUCTWORK AND INSULATION WHICH WERE MADE FOR THE AFOREMENTIONED TESTING AND BALANCING PROCEDURES.

J. THE BALANCE CONTRACTOR SHALL PERMANENTLY MARK ALL FINAL BALANCE SETTINGS ON EQUIPMENT AND COMPONENTS FOR FUTURE REFERENCE.

HVAC INSULATION

A. THE MATERIALS AND METHODS FOR THE COMPLETE INSULATION SYSTEM INSTALLATION SHALL BE TESTED, RATED, AND INSTALLED IN ACCORDANCE WITH THE FOLLOWING CODES AND STANDARDS.

NFPA 90A
ASTM E-84 (NFPA 255)
ASHRAE 90.1

B. THE COMPOSITE INSULATION SYSTEM INSTALLATION INCLUDING ALL INSULATION MATERIALS, ADHESIVES, SEALERS, COVERINGS, ETC... SHALL HAVE FLAME-SPREAD AND SMOKE-DEVELOPED INDICES AS INDICATED BELOW:

1. INDOOR INSTALLATIONS SHALL HAVE FLAME-SPREAD INDEX OF 25 OR LESS, AND A SMOKE-DEVELOPED INDEX OF 50 OR LESS.

2. OUTDOOR INSTALLATIONS SHALL HAVE FLAME-SPREAD INDEX OF 75 OR LESS, AND A SMOKE-DEVELOPED INDEX OF 150 OR LESS. (EXCEPT FOR INSULATION PRODUCTS IN CONTACT WITH THE AIRSTREAM WHICH MUST HAVE THE SAME RATINGS AS THE INDOOR INSTALLATIONS.)

C. INSULATION WORK SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING TYPES OF SYSTEMS.

PIPING
DUCTWORK
METAL FURNACE FLUES IN UNCONDITIONED ATTIC SPACE

D. PIPING SHALL BE INSULATED PER THE "PIPE & INSULATION SCHEDULE" ON THE DRAWING AND IN ACCORDANCE WITH THE FOLLOWING MATERIAL STANDARDS:

1. FIBER GLASS PIPE INSULATION WITH AN ALL SERVICE JACKET. INSULATION SHALL BE OF THICKNESS AS INDICATED WITH A THERMAL CONDUCTIVITY "K" FACTOR OF 0.24 AT 75 DEGREE F MEAN TEMPERATURE SUITABLE FOR APPLICATIONS UP TO 350 DEGREES F. INSULATION SHALL BE OWENS-CORNING TYPE ASJ/SSL-II OR EQUIVALENT.

2. FLEXIBLE UNICELLULAR ELASTOMERIC PIPE AND EQUIPMENT INSULATION. INSULATION SHALL BE OF THICKNESS AS INDICATED WITH A THERMAL CONDUCTIVITY "K" FACTOR OF 0.24 AT 75 DEGREE F MEAN TEMPERATURE SUITABLE FOR APPLICATIONS BETWEEN -40 DEGREE F AND 200 DEGREE F.

E. HVAC DUCTWORK SHALL BE INSULATED IN ACCORDANCE WITH THE NOTES ON THE DRAWING.

1. FLEXIBLE FIBER GLASS DUCT WRAP INSULATION WITH FOIL FACED KRAFT PAPER VAPOR SEAL FACING. INSULATION SHALL BE OF THICKNESS AS INDICATED IN THIS SPECIFICATION OR ON THE DRAWINGS, 0.75 PCF DENSITY, WITH A THERMAL CONDUCTIVITY "K" FACTOR OF 0.30 AT 75 DEGREE F MEAN TEMPERATURE SUITABLE FOR APPLICATIONS UP TO 250 DEGREES F. INSULATION SHALL BE OWENS-CORNING TYPE 75 OR EQUIVALENT.

2. RIGID FIBER GLASS DUCT BOARD WITH ALL-SERVICE JACKET FACING INSULATION SHALL BE OF THICKNESS AS INDICATED IN THIS SPECIFICATION OR ON THE DRAWINGS, 6.0 PCF DENSITY, WITH A THERMAL CONDUCTIVITY "K" FACTOR OF 0.24 AT 75 DEGREE F MEAN TEMPERATURE SUITABLE FOR APPLICATIONS UP TO 450 DEGREES F. INSULATION SHALL BE OWENS CORNING TYPE 705 OR EQUIVALENT.

3. FIBERGLASS DUCT LINER INSULATION FACED WITH BLACK FIRE-RESISTANT COATING AGAINST THE AIRSTREAM. THE COATING SHALL BE MICROBIAL GROWTH RESISTANT IN COMPLIANCE WITH ASTM C1071 AND THE LINER MATERIAL SHALL BE IN ACCORDANCE WITH ASTM C518. INSULATION SHALL HAVE A THERMAL CONDUCTIVITY "K" FACTOR OF 0.25 AT 75°F MEAN TEMPERATURE SUITABLE FOR APPLICATION UP TO 250°F. INSULATION SHALL BE OWENS-CORNING AEROFLEX OR EQUIVALENT AS LISTED BY OTHER LISTED MANUFACTURERS.

F. ALL INSULATION SYSTEMS SHALL BE CONTINUOUS THROUGH WALL OPENINGS, CEILING OPENINGS, FLOOR OPENINGS, AND PIPE HANGERS.

G. INSULATION MATERIALS SHALL BE INSTALLED IN COMPLETE ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

H. INSTALLATION PERSONNEL SHALL TAKE ALL SAFETY PRECAUTIONS TO PROPERLY PROTECT THEMSELVES DURING INSTALLATION OF INSULATION SYSTEMS.

I. INSULATION CAN BE OMITTED ON FACTORY INSULATED PLENUMS, TERMINAL BOXES, FILTER BOXES, ACCESS PANELS, TESTING LAB LABELS AND STAMPS, FACTORY INSULATED EQUIPMENT, FACTORY INSULATED EQUIPMENT, METAL DUCTS W/ DUCT LINER AND FACTORY INSULATED FLEXIBLE DUCTS.

REFRIGERANT PIPING SYSTEMS

A. THE COMPLETE REFRIGERANT PIPING SYSTEM AND ASSOCIATED EQUIPMENT SHALL BE INSTALLED IN COMPLETE ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF THE FOLLOWING CODES AND STANDARDS:

OHIO MECHANICAL CODE CHAPTER 13 (OAC 4101:2-47) "MECHANICAL REFRIGERATION OHIO PRESSURE PIPING SYSTEMS RULES (OAC 4101:8) ALL PIPE BRAZING SHALL BE DONE IN ACCORDANCE WITH ASME BOILER AND PRESSURE VESSEL CODE, SECTION IX, FOR BRAZING WORK DONE IN A SHOP ENVIRONMENT AND AT THE PROJECT SITE. ASHRAE STANDARD 15 "SAFETY CODE FOR MECHANICAL REFRIGERATION."

B. PIPING SHALL BE ASTM B280 REFRIGERANT GRADE ACR TYPE HARD DRAWN COPPER TUBE. PRE-CHARGED REFRIGERANT GRADE SOFT ANNEALED COPPER TUBE MAY BE USED WHERE MAXIMUM LENGTH DOES NOT EXCEED 40'-0".

C. REFRIGERANT PIPING LAYOUT AND ARRANGEMENT SHALL BE PER THE HVAC EQUIPMENT MANUFACTURER'S RECOMMENDATIONS TO ASSURE PROPER OIL AND REFRIGERANT FLOW THROUGH THE SYSTEM. INSTALLER SHALL COORDINATE REQUIREMENTS FOR PIPE SIZES, PIPE SLOPES, LOCATIONS OF TRAPS, INVERTED TRAPS, DOUBLE SUCTION RISERS ETC. WITH THE EQUIPMENT MANUFACTURER.

ANY PIPE SIZES INDICATED ON THE DRAWINGS ARE NOMINAL SIZES FOR REFERENCE ONLY. FINAL DETERMINATION OF PIPE SIZES SHALL BE PER THE EQUIPMENT MANUFACTURER'S RECOMMENDATIONS.

THE REFRIGERANT PIPING SYSTEM AND ASSOCIATED SPECIALTIES SHALL BE SIZED AND SELECTED TO PREVENT EXCESSIVE PRESSURE DROPS SO THAT THE COMPRESSOR AND EVAPORATOR PERFORM WITH BALANCE POINTS AT OR ABOVE THE SPECIFIED CAPACITY.

D. UNLESS NOTED OTHERWISE, REFRIGERANT LIQUID LINES SHALL BE INSTALLED WITH A FILTER DRIER, A SIGHT GLASS, A SOLENOID VALVE AND A THERMAL EXPANSION VALVE. THE FILTER-DRIER SHALL BE INSTALLED WITH A THREE VALVE BY-PASS.

E. COPPER TO COPPER PIPE JOINTS SHALL BE BRAZED WITHOUT FLUX USING A PHOSPHORUS BEARING ALLOY SUCH AS "SIL-PHOS." COPPER TO BRASS OR STEEL PIPE JOINTS SHALL BE BRAZED WITH FLUX USING A 45% SILVER ALLOY SUCH AS "EASY-FLO." INERT NITROGEN SHALL BE PASSED THROUGH THE PIPING DURING BRAZING TO PREVENT OXIDATION. CARE SHALL BE TAKEN DURING INSTALLATION TO INSURE MAXIMUM CLEANLINESS OF ALL REFRIGERANT PIPING AND ACCESSORIES.

F. UPON COMPLETION OF THE REFRIGERANT PIPING SYSTEM INSTALLATION, THE ENTIRE SYSTEM SHALL BE LEAK TESTED WITH DRY NITROGEN TO THE MAXIMUM OPERATING PRESSURE OF THE SYSTEM. TEST SHALL BE MAINTAINED FOR A PERIOD OF TWELVE HOURS WITHOUT ANY APPRECIABLE LOSS OF PRESSURE. PIPING INSULATION SHALL NOT BE INSTALLED UNTIL THE SYSTEM SATISFACTORILY PASSES THE LEAK TEST.

G. UPON SATISFACTORY COMPLETION OF THE LEAK TESTING, THE ENTIRE PIPING SYSTEM SHALL BE EVACUATED WITH A TRIPLE EVACUATION METHOD OR OTHER MEANS WHEN SPECIFICALLY RECOMMENDED BY THE EQUIPMENT MANUFACTURER. VACUUM SHALL BE DRAWN TO 1500 MICRONS, 1500 MICRONS, AND 500 MICRONS SUCCESSIVELY AND BROKEN EACH TIME WITH DRY NITROGEN.

H. UPON COMPLETION OF THE SYSTEM EVACUATION, THE ENTIRE SYSTEM SHALL BE CHARGED WITH THE PROPER AMOUNT AND TYPE OF REFRIGERANT FOR SYSTEM OPERATION.

HVAC DUCTWORK

A. REGULATORY AGENCIES: THE WORK DESCRIBED IN THIS SECTION SHALL BE IN COMPLIANCE WITH ALL CODES AND STANDARDS LISTED BELOW:

NFPA 90A & 90B
NFPA 211 (GAS VENTS AND CHIMNEYS)
SMACNA
ASHRAE

B. ALL DUCT SIZES ON DRAWINGS INDICATE FREE INTERNAL DIMENSIONS. ACTUAL SHEETMETAL SIZES SHALL INCLUDE AN ALLOWANCE FOR INTERNAL DUCTLINER.

C. UNLESS NOTED OTHERWISE, DUCTWORK SHALL BE FABRICATED OF PRIME GRADE MATERIALS FREE FROM ANY IMPERFECTIONS. GALVANIZED SHEET STEEL SHALL BE G 90 ZINC COATED AND MILL PHOSPHATIZED FOR PAINTED APPLICATIONS ON EXPOSED DUCTWORK IN CONDITIONED SPACES.

D. ALL DUCTWORK AND FITTINGS SHALL BE FABRICATED, ASSEMBLED AND INSTALLED IN ACCORDANCE WITH THE LATEST REVISION OF SMACNA HVAC DUCT CONSTRUCTIONS STANDARDS FOR THE DESIGNATED PRESSURE CLASSIFICATION. ELBOWS OR TURNS IN THE DUCTWORK SHALL BE FABRICATED WITH A CENTER LINE RADIUS OF NOT LESS THAN 1.5 TIMES THE DUCT WIDTH OR WITH ELBOWS WITH INTEGRAL TURNING VANES. TRANSITIONS AND OFFSETS SHALL BE FABRICATED WITH A MAX. ANGULAR TAPER OF 30 DEGREES UNLESS SPACE CONDITIONS PROHIBIT.

E. GENERAL SUPPLY AIR, RETURN AIR, EXHAUST AIR, RELIEF AIR AND OUTSIDE AIR DUCTWORK WITHIN THE BUILDING SHALL BE 2" SMACNA PRESSURE CLASSIFICATION GALVANIZED STEEL UNLESS NOTED OTHERWISE ON THE DRAWINGS.

F. REFER TO FLOOR PLANS FOR GAS VENT CONSTRUCTION. TOTAL VENT SYSTEM SHALL INCLUDE ELBOWS, TEES, THIMBLES, ADJUSTABLE ROOF FLASHING, STORM COLLAR, METAL CAP WITH BIRD BARRIER, FIRE STOP SPACERS, SUPPORT ASSEMBLIES AND FASTENERS AS WELL AS STRAIGHT PIPE SECTIONS. GAS VENTS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. INSTALLATION SHALL MAINTAIN MINIMUM CLEARANCES FROM COMBUSTIBLE MATERIALS IN ACCORDANCE WITH THE UL LISTING AND THE OBC.

G. SHEETMETAL ACCESSORIES SHALL INCLUDE DEFLECTORS, TURNING VANES, ELBOWS, Y-BRANCH FITTINGS, TEE FITTINGS, TAP IN FITTINGS, TRANSITIONS AND PLENUMS ETC...AS INDICATED ON THE DRAWINGS AND OF THE SAME MATERIAL AS THE DUCTWORK SYSTEM IN WHICH THEY ARE INSTALLED. ALL ACCESSORIES SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH THE LATEST REVISION OF SMACNA "HVAC DUCT CONSTRUCTION STANDARDS".

H. FIRE DAMPERS SHALL BE INSTALLED FOR DUCTWORK PENETRATIONS AND AIR OPENINGS THROUGH ALL FIRE RATED BUILDING ASSEMBLIES. FIRE DAMPERS SHALL COMPLY WITH THE REQUIREMENTS OF UL555S. DAMPERS SHALL BE UL LABELED FRAME STYLE "B" FOR RECTANGULAR DUCTWORK AND OPENINGS AND FRAME STYLE "C" FOR ROUND AND FLAT OVAL DUCTWORK. DAMPERS SHALL BE CURTAIN TYPE WITH INTERLOCKING BLADES OUTSIDE OF THE AIRSTREAM AND A 165°F FUSIBLE LINK. DAMPER RATING SHALL BE 1-1/2 HOUR FOR 1 OR 2 HOUR RATED ASSEMBLIES. DAMPERS SHALL BE AS MANUFACTURED BY RUSKIN, GREENHECK, AIR BALANCE INC. OR PREFCO.

I. ACCESS DOORS SHALL BE INSTALLED FOR FUSIBLE LINK REPAIR FOR EACH FIRE DAMPER AND AS INDICATED ON THE DRAWINGS. ACCESS DOORS SHALL HAVE EXTENDED FRAMES FOR EXTERNALLY INSULATED DUCTWORK. ACCESS DOORS SHALL BE FACTORY INSULATED FOR ALL INSULATED DUCTWORK APPLICATIONS. ACCESS DOORS SHALL BE OF THE CAM LOCK TYPE FITTED OR AIR TIGHT CLOSURE AND SHALL BE RATED FOR THE SMACNA PRESSURE CLASSIFICATION IN WHICH IT WILL BE APPLIED. ACCESS DOORS SHALL BE PERMANENTLY IDENTIFIED ON THE EXTERIOR BY A LABEL WITH LETTERS NOT LESS THAN 1/2" HIGH TITLED "FIRE DAMPER" OR "SMOKE DAMPER". ACCESS DOORS SHALL BE AS MANUFACTURED BY RUSKIN, CESCO, SEMCO OR UNITED MCGILL.

J. SMOKE DAMPERS SHALL BE OPPOSED BLADE, LEAKAGE CLASS II, AND SHALL MEET THE REQUIREMENTS OF NFPA 90A, 92A & 92B. DAMPERS SHALL BE CLASSIFIED IN ACCORDANCE WITH THE LATEST VERSION OF UL555S. MAXIMUM LEAKAGE RATE SHALL NOT EXCEED 20 CFM AT A DIFFERENTIAL PRESSURE OF 4.0" W.C. THE ENTIRE SMOKE DAMPER ASSEMBLY SHALL BE U.L. LISTED & LABELED PER UL555S. DAMPER SEALS SHALL BE STAINLESS STEEL COMPRESSION TYPE JAMB SEALS. & SILICONE RUBBER BLADE EDGE SEALS. SEALS SHALL BE SUITABLE FOR TEMPERATURE APPLICATIONS UP TO 450°F. THE SMOKE DAMPER ASSEMBLY (DAMPER & ACTUATOR) SHALL BE RATED FOR OPERATION AT ELEVATED TEMPERATURES UP TO 250°F. THE SMOKE DAMPER ACTUATOR SHALL BE TWO-POSITION AND HAVE A SPRING RETURN FOR NORMALL CLOSED (NC) APPLICATIONS.

K. MANUAL BALANCE DAMPERS SHALL BE INSTALLED OF THE SAME MATERIAL AS THE DUCTWORK SYSTEM. ALL BALANCE DAMPERS SHALL BE SUPPLIED WITH AN INDICATING LOCKING QUADRANT. BALANCE DAMPERS IN DUCTS 1SF OF CROSS SECTIONAL AREA OR LESS SHALL BE OF A SINGLE BLADE. BALANCE DAMPERS IN DUCTS 1SF OF CROSS SECTIONAL AREA OR GREATER SHALL BE MULTI OPPOSED BLADE TYPE. MANUAL BALANCE DAMPERS SHALL BE AS MANUFACTURED BY AMERICAN WARMING, RELIABLE, MAT OR YOUNG REGULATOR.

L. DUCT SYSTEMS SHALL BE INSTALLED WITH A MINIMUM NUMBER OF JOINTS AND BE AIR-TIGHT (2% MAXIMUM ALLOWABLE AIR LEAKAGE) DUCTS SHALL BE RIGIDLY SUPPORTED TO PREVENT BUCKLING WITH BRACES, TIES, AND HANGERS OF THE SAME MATERIAL AS THE DUCTWORK ITSELF.

M. ALL SUPPLY, RETURN, OUTSIDE, EXHAUST AND RELIEF AIR DUCTWORK SHALL HAVE ITS TRANSVERSE JOINTS AND LONGITUDINAL SEAMS SEALED WITH UL LISTED DUCT SEALANT.

N. DUCTWORK SHALL BE ROUTED IN THE MOST DIRECT PATH PROVIDING THE GREATEST HEADROOM POSSIBLE WHICH DOES NOT INTERFERE WITH CLEARANCE REQUIREMENTS AND BE VERTICALLY, HORIZONTALLY AND PARALLEL TO THE BUILDING CONFINES WHENEVER POSSIBLE UNLESS NOTED OTHERWISE.

O. DUCTWORK BRANCHES OFF OF MAINS SHALL GENERALLY BE ARRANGED AS FOLLOWS:

1. RECTANGULAR BRANCHES OFF OF RECTANGULAR MAINS SHALL BE WITH 45 DEGREE SHOE ENTRY TYPE TAP IN FITTINGS.

2. ROUND BRANCHES OFF OF RECTANGULAR MAINS SHALL BE MADE WITH CONICAL TYPE TAP IN FITTINGS IF THE MAIN IS 4" OR GREATER IN DEPTH THAN THE BRANCH DIAMETER. OTHERWISE, A 45 DEGREE SHOE ENTRY TYPE TAP IN FITTING WITH RECTANGULAR DIMENSIONS OF EQUIVALENT CROSS SECTIONAL AREA TO THE ROUND BRANCH DIAMETER SHALL BE USED IMMEDIATELY FOLLOWED BY A RECTANGULAR TO ROUND TRANSITION.

3. ROUND BRANCHES OFF OF ROUND MAINS SHALL BE MADE WITH Y-BRANCH, CONICAL TAP, 45 DEGREE SHOE ENTRY TAP, OR TEE FITTINGS AS INDICATED ON THE DRAWINGS.

P. FLEXIBLE DUCTWORK SHALL BE MAXIMUM 5'-0" LENGTH. THE INSULATING ENDS OF ALL DUCTWORK SHALL BE SEALED WITH DUCT TAPE. ISTALLATION SHALL BE PER SECTION III OF SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS, METAL AND FLEXIBLE.

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HEI Project No. 2023-06-07

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PRELIMINARY
NOT FOR CONSTRUCTION

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1400 SHERRICK ROAD SE

DAVID I. PATTERSON 11150

DAVID I. PATTERSON
LICENSE #11150
EXPIRATION DATE
12-31-2023

CONSTRUCTION DOCUMENTS

THIS DWG :
HVAC SPECIFICATIONS

COMM 23105
DATE 05-24-23

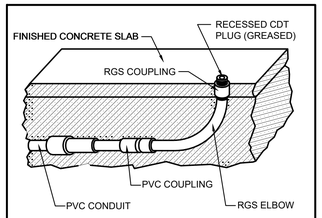
DWG
H-3.1

ELECTRICAL NOTES

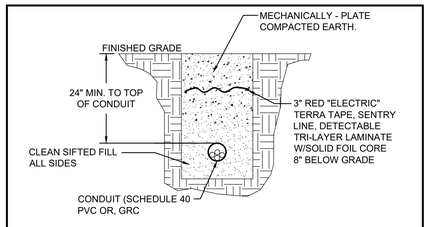
1. ALL BRANCH CIRCUIT CONDUITS, INTERIOR, SHALL BE ¾" MINIMUM.
2. MC CABLE SHALL BE ACCEPTABLE FOR FIXTURE WHIPS (6' MAXIMUM LENGTH) AND CIRCUITS UNDER 30AMP (240V MAX) CONCEALED IN WALLS OR ABOVE CEILING. MC TYPE CABLE MAY ONLY BE INSTALLED ON BRANCH CIRCUITS 30AMPS OR LESS WHERE CIRCUIT IS IN WALLS OR CONCEALED CEILING SPACES. E.C. MUST INSTALL ALL HOMERUNS IN EMT CONDUIT. MC CABLE IS UNACCEPTABLE IN ALL OPEN SPACES EXCEPT FOR FIXTURE WHIPS (6'MAXIMUM LENGTH). ENTIRE INSTALLATION SHALL BE IN COMPLIANCE WITH N.E.C. 2020 AND ALL FEDERAL, STATE, AND LOCAL CODES.
3. ALL ELECTRICAL PANELS SHALL HAVE COPPER BUSSING.
4. ALL CONDUCTORS SHALL BE DELIVERED TO THE JOB SITE IN NEW PACKAGES AND SHALL BE COPPER UNLESS INDICATED OTHERWISE THROUGHOUT THIS PLAN.
5. ALL GROUNDING SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, 2020 EDITION AND SHALL MEET ALL GROUNDING REQUIREMENTS AS INDICATED HEREIN AND PER ELECTRICAL SPECIFICATIONS AND ELECTRICAL GROUNDING DETAILS. ALL BRANCH CIRCUITS AND FEEDERS MUST INCLUDE AN EQUIPMENT GROUNDING CONDUCTOR. USING METAL CONDUIT AS THE ONLY GROUNDING PATH IS NOT ACCEPTABLE, PER THIS ENGINEER.
6. ALL BRANCH CIRCUIT BREAKERS FEEDING HVAC EQUIPMENT SHALL BE HACR RATED.
7. E.C. SHALL VERIFY ALL BREAKER AND BRANCH CIRCUIT REQUIREMENTS WITH HVAC MANUFACTURER'S SHOP DRAWINGS PRIOR TO INSTALLATION. IF A DISCREPANCY IS DISCOVERED, E.C. SHALL NOTIFY THIS DESIGN ENGINEER FOR FURTHER DIRECTION.
8. SHARING OF NEUTRAL CONDUCTORS IS UNACCEPTABLE. EACH 120V OR 277V BRANCH CIRCUIT SHALL INCLUDE A DEDICATED NEUTRAL CONDUCTOR OF THE SAME GAUGE AS THE DESIGNATED PHASE CONDUCTORS.
9. ALL WORK SHALL BE DONE IN COMPLIANCE WITH N.E.C. 2020 AND ALL FEDERAL, STATE AND LOCAL CODES.
10. E.C. SHALL PROVIDE A DETAILED, TYPED, PANEL SCHEDULE FOR EACH PANEL. PANEL SCHEDULE SHALL DETAIL BRANCH CIRCUIT LOADS BEING FED ALONG WITH A BRIEF DESCRIPTION OF THE LOAD LOCATION.
11. ALL RECEPTACLES WITHIN 8'-0" OF A SINK BASIN SHALL BE GROUND FAULT PROTECTED, WHETHER OR NOT SHOWN ON PLAN VIEW.
12. ANY NEW OR EXISTING CONSTRUCTION NEAR ELECTRICAL UTILITY COMPANY TRANSFORMERS, POLES OR SERVICE LINES SHALL BE COORDINATED WITH UTILITY CO. PRIOR TO THE START OF CONSTRUCTION. COORDINATION DOCUMENTATION & EMAILS SHALL BE FORWARDED TO THIS ENGINEER, CONSTRUCTION MANAGER, GENERAL CONTRACTOR AND ARCHITECT PRIOR TO THE COMMENCEMENT OF WORK.
13. ALL PENETRATIONS THROUGH FIRE-RATED FLOORS, WALLS OR OTHER STRUCTURAL COMPONENTS SHALL BE FIRE-STOPPED WITH FIRE RATED MATERIAL (FLAMESAFE FS-900+ OR EQUAL) PER NFPA, AND ALL FEDERAL, STATE AND LOCAL CODES.
14. EQUIPMENT SPECIFIED ON THESE PLANS AND IN THE SPECIFICATIONS IS PROVIDED AS THE "BASIS OF DESIGN" AND IS PROVIDED FOR CODE COMPLIANCE AS WELL AS BIDDING PURPOSES. THE E.C. SHALL BE RESPONSIBLE FOR VERIFYING THEIR PRODUCT AND EQUIPMENT SUPPLIED MEETS THE SPECIFICATION INTENT AS INDICATED HEREIN. THIS ENGINEER WILL TAKE NO RESPONSIBILITY FOR THE EQUIPMENT SUPPLIED BY THE E.C. OR OWNER AND WILL NOT GUARANTEE IT MEETS THE INTENT OF THE DESIGN DOCUMENTS WITHOUT BEING CONTRACTED TO PROVIDE COMPLETE CONSTRUCTION ADMINISTRATION SERVICES INCLUDING THE FOLLOWING:
    A. SITE INSPECTIONS DURING CONSTRUCTION TO VERIFY INSTALLATION PRACTICES.
    B. SHOP DRAWING REVIEW OF ALL MAJOR EQUIPMENT.
    C. FINAL INSPECTION AND "PUNCH LIST".
15. PER THE REQUIREMENTS OF N.E.C. 110-16, CONTRACTOR SHALL BE CERTAIN THAT ALL ELECTRICAL EQUIPMENT (i.e. SWITCHBORDS, PANELBOARDS, CONTROL PANELS, METER SOCKET ENCLOSURES, ETC.) SHALL BE FIELD MARKED TO WARN QUALIFIED PERSONNEL OF POTENTIAL ARC FLASH HAZARDS.

ELECTRICAL ABBREVIATIONS

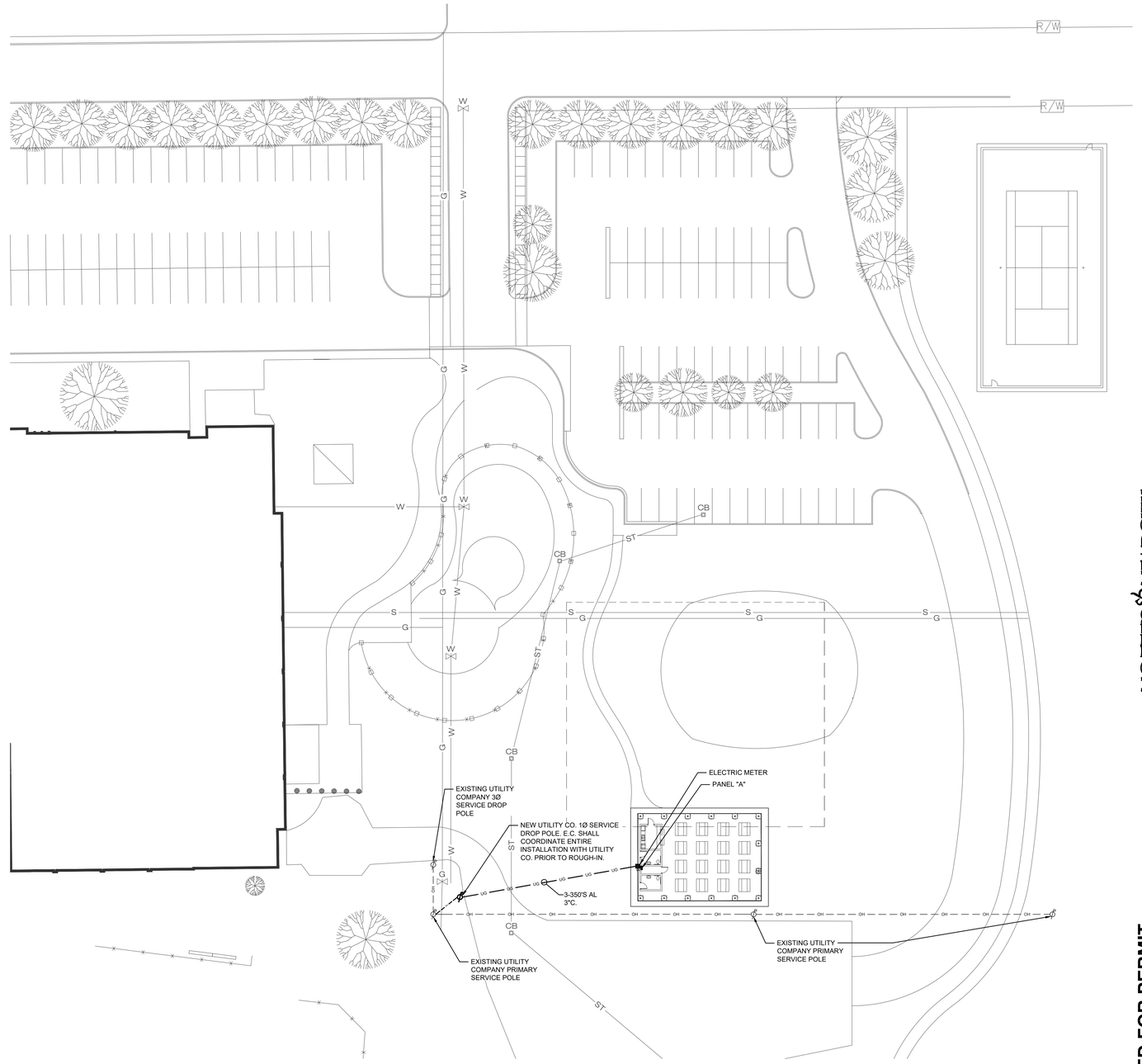
AC	ABOVE COUNTER
AFF	ABOVE FINISHED FLOOR
CB	CIRCUIT BREAKER
EM	DEVICE CONNECTED TO CIRCUIT FEED FROM EMERGENCY GENERATOR
ET	ELECTRONIC TRIP
EX	EXISTING DEVICE TO REMAIN
EXP	EXPLOSION PROOF
GF	GROUND FAULT CIRCUIT INTERRUPTER
GND	GROUND
GRC	GALVANIZED RIGID CONDUIT
HG	HOSPITAL GRADE
HP	HORSEPOWER
LSI	LONG, SHORT & INSTANTANEOUS
MCB	MAIN CIRCUIT BREAKER
NEC	NATIONAL ELECTRICAL CODE.
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOC.
NL	NIGHT LIGHT, CONNECTED AHEAD OF SWITCHING (24HR OPERATION)
OH	OVERHEAD
PC	PHOTO CELL
RL	EXISTING DEVICE TO BE RELOCATED
RM	EXISTING DEVICE TO BE REMOVED
RP	EXISTING DEVICE TO BE REPLACED WITH NEW
SPD	SURGE PROTECTIVE DEVICE
SSBJ	SUPPLY SIDE BONDING JUMPER (NEC 250.30)
STP	SHIELDED TWISTED PAIR
TM	THERMAL MAGNETIC CIRCUIT BREAKER
UC	BELOW COUNTER
UG	UNDERGROUND
WP	WEATHER PROOF



INSTALLATION OF PVC CONDUIT EMERGING FROM CONCRETE SLAB
N.T.S.



BURIED CONDUIT INSTALLATION DETAIL
N.T.S



SITE PLAN-ELECTRICAL
SCALE: 1" = 30'-0"

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MICHAEL A. MILLER
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REGISTERED
PROFESSIONAL ENGINEER

MICHAEL A. MILLER,
LICENSE #E-64962
EXPIRES 12-31-2023

ISSUED FOR PERMIT

THIS DWG : SITE PLAN-ELECTRICAL

COMM 23105
DATE 08-07-2023

DWG E-1.1

722 CANTON PAVILION.dwg
Plotted 8/7/2023 12:40 PM

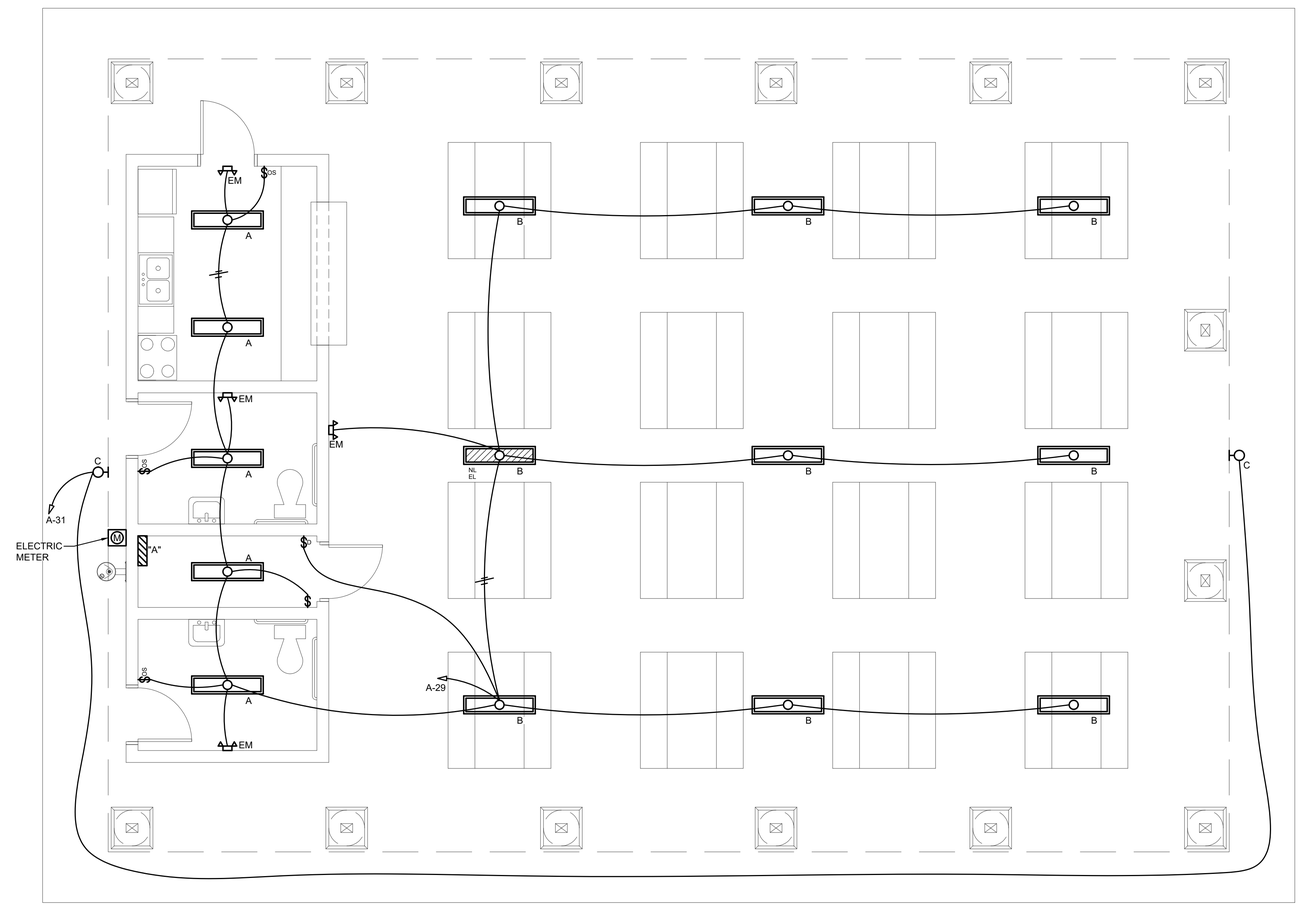
ELECTRICAL LEGEND

- EMERGENCY LIGHT WITH BATTERY BACKUP
- EXIT LIGHT WITH BATTERY BACKUP
- COMBINATION EXIT AND EMERGENCY LIGHT WITH BATTERY BACKUP
- REMOTE EMERGENCY HEAD
- PC — ITERMATIC K4121 PHOTO ELECTRONIC CELL.
- LED LIGHT FIXTURE
- EL — LED LIGHT FIXTURE WITH EMERGENCY BALLAST
- LED STRIP LIGHT
- DRY TYPE LOW VOLTAGE TRANSFORMER
- LP-1 — PANEL DESIGNATION (SEE PANEL SCHEDULE FOR DETAILS)
- CIRCUIT BREAKER PANELBOARD
- 5 — HORSEPOWER
- SINGLE PHASE MOTOR
- 5 — HORSEPOWER
- THREE PHASE MOTOR
- DISCONNECT SWITCH (PLAN VIEW) SEE DISCONNECT SCHEDULE)
- I — DISCONNECT SWITCH PROVIDED INTEGRAL TO EQUIPMENT
- 20A 125V HUBBELL HBL SERIES DUPLEX RECEPTACLE, TAMPER RESISTANT
- GF — 20A 125V HUBBELL HBL SERIES DUPLEX RECEPTACLE WITH GROUND FAULT PROTECTION, TAMPER RESISTANT.
- GF WP — 20A 125V HUBBELL HBL SERIES DUPLEX RECEPTACLE WITH GROUND FAULT PROTECTION, TAMPER RESISTANT WITH WEATHERPROOF IN-USE COVER.
- 20A 125V, HUBBELL HBL SERIES DOUBLE DUPLEX RECEPTACLE, TAMPER RESISTANT
- $ — 20A 125V OR 277V SINGLE POLE TOGGLE SWITCH HUBBELL, HBL SERIES
- $3 — 20A 125V THREE WAY TOGGLE SWITCH, HUBBELL HBL SERIES
- $4 — 20A 125V FOUR WAY TOGGLE SWITCH, HUBBELL HBL SERIES
- $M — 20A 125V MOTOR RATED TOGGLE SWITCH PAD-LOCABLE IN THE OFF POSITION.
- $P — 20A 125V OR 277V SINGLE POLE TOGGLE SWITCH HUBBELL, HBL SERIES WITH PILOT LIGHT
- $D — LUTRON "DIVA" 0-10V ON/OFF DIMMER SWITCH
- J — 2"X4" SINGLE GANG J-BOX WITH COVER PLATE
- $I — DISCONNECTING MEANS PROVIDED INTEGRAL TO EQUIPMENT. WIRED BY E.C. AS INDICATED.
- $OS — 20A 120V OR 277V SINGLE POLE PHILIPS, OCCUSWITCH CLASSIC WALL SENSOR #LRS2220
- OS — 20A 120V OR 277V, CEILING MOUNT, PHILIPS, OCCUSWITCH CLASSIC SENSOR #LRM2226 (500SQ.FT.)
- OS — 20A 120V OR 277V, CEILING MOUNT, PHILIPS, OCCUSWITCH CLASSIC SENSOR #LRM2255 (2000 SQ.FT)
- WIRING CONCEALED IN CEILING OR WALLS; SLASH MARKS INDICATE NUMBER OF CONDUCTORS EXCLUDING GROUNDS;
- UNDERGROUND CABLE OR DUCT; TYPE, SIZE, CONDUCTORS, AND ARRANGEMENT BY NOTATION OR SCHEDULE.
- OH — WIRING RUN OVERHEAD.
- UG — WIRING RUN UNDERGROUND.

LUMINAIRE SCHEDULE

SYMBOL	MANUFACTURER	CATALOG NUMBER	DESCRIPTION	LAMPS	COLOR TEMPERATURE	WATTS	LUMEN OUTPUT	REMARKS
A	CURRENT-COLUMBIA	LXEM4-40ML-RFA-EDU	4' LED ENCLOSED AND GASKETED, WITH ACRLIC LENS, WET LOCATION RATED	INTEGRAL LED	4000K	39	4,560	CEILING-SURFACE
B	CURRENT-COLUMBIA	LXEM4-40HL-RFA-EDU	4' LED ENCLOSED AND GASKETED, WITH ACRLIC LENS, WET LOCATION RATED	INTEGRAL LED	4000K	48	6,222	CEILING-SURFACE
C	CURRENT-HUBBELL	QSP2-24L-70-4K8--4-UNV-PC	QTR-SPERE LED WALL PACK WITH INTEGRAL PHOTO CELL	INTEGRAL LED	4000K	71	7709	WALL-SURFACE (VERIFY MOUNTING HEIGHT WITH ARCHITECT)
EM	CURRENT-COMPASS	CU2SO	2-HEAD,BATTERY BACK-UP DESIGNER EMERGENCY LIGHT, SEALED AND GASKETED, WET LOCATION RATED	INTEGRAL				MH @ 7'-6"AFF

NOTES: 1) EQUALS: substitutions by Lithonia, Cooper, Philips. 2) **ALL FIXTURES MUST BE APPROVED BY OWNER/ARCHITECT PRIOR TO PURCHASE.**



LIGHTING PLAN
SCALE: 1/4" = 1'-0"

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Electrical Engineering, LLC
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PORT WASHINGTON, OHIO 43837
PHONE: 330-432-0781
EMAIL: MIKE@MJKPE.COM

REVISIONS:

MOTTER & MEADOWS ARCHITECTS

600 MARKET AVENUE NORTH CANTON OHIO 44702

CRENSHAW PARK - NEW PAVILION
EDWARD L. "PEEL" COLEMAN COMMUNITY CENTER
1400 SHERRICK ROAD SE
CANTON, OHIO

STATE OF OHIO
MICHAEL A. MILLER
E-64962
REGISTERED
PROFESSIONAL ENGINEER

MICHAEL A. MILLER,
LICENSE #E-64962
EXPIRES 12-31-2023

ISSUED FOR PERMIT

THIS DWG :
LIGHTING PLAN

COMM 23105
DATE 08-07-2023

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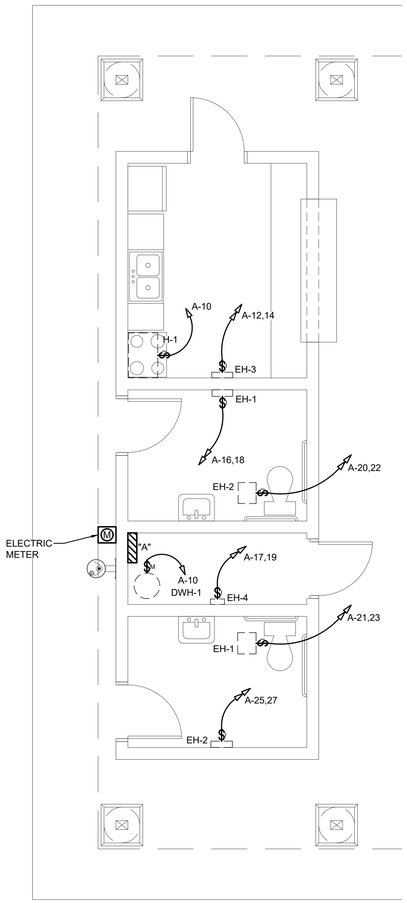
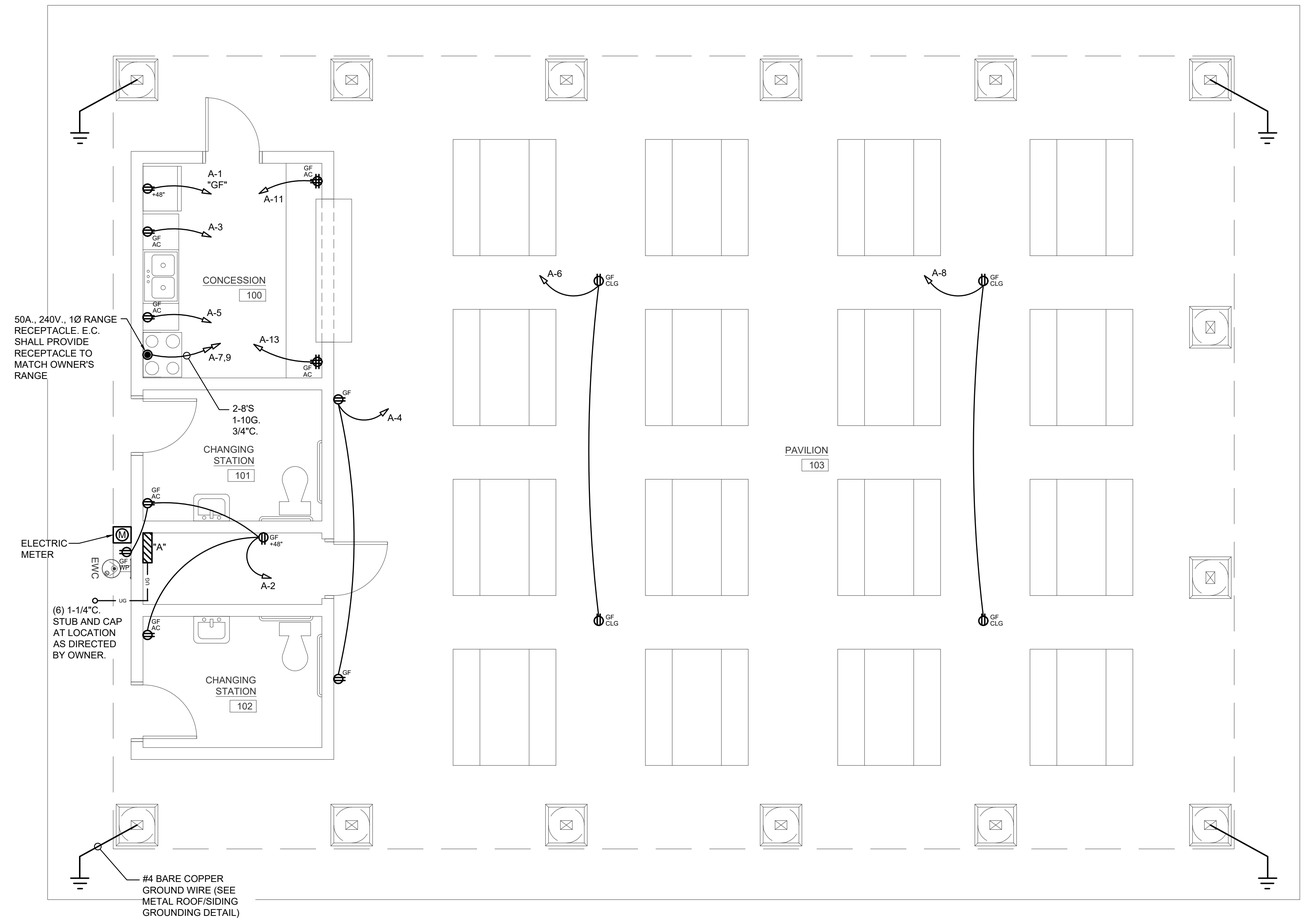


PARTIAL MECHANICAL ELECTRICAL PLAN
SCALE: 1/4" = 1'-0"



POWER PLAN
SCALE: 1/4" = 1'-0"

600 MARKET AVENUE NORTH CANTON OHIO 44702

MOTTER & MEADOWS ARCHITECTS

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POWER PLAN

COMM 23105
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E-3.1

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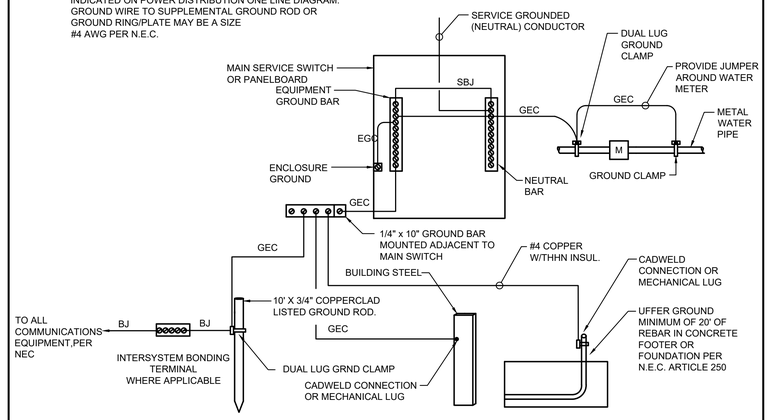
NOTE:
ALL GROUNDING ELECTRODE CONDUCTORS (GEC) TO BUILDING STEEL AND WATER LINE SHALL BE SIZED AS INDICATED ON POWER DISTRIBUTION ONE LINE DIAGRAM. GROUND WIRE TO SUPPLEMENTAL GROUND ROD OR GROUND RING/PLATE MAY BE A SIZE #4 AWG PER N.E.C.

GEC = GROUNDING ELECTRODE CONDUCTOR
EGC = EQUIPMENT GROUNDING CONDUCTOR
SBJ = SYSTEM BONDING JUMPER
BJ = BONDING JUMPER



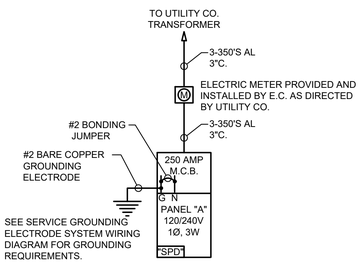
SERVICE GROUNDING ELECTRODE SYSTEM WIRING DIAGRAM
N.T.S

"SPD"
SURGE PROTECTIVE DEVICE MANUFACTURED BY: CUTLER HAMMER, SQUARE "D", LIEBERT, ADVANCE PROTECTION TECHNOLOGIES OR G.E.

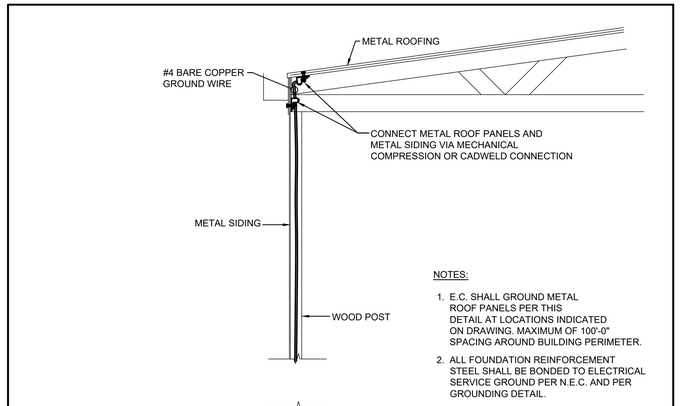
"SPD'S" SHALL BE MOUNTED INTEGRAL TO PANEL AND SHALL BE COMPLIANT WITH LATEST N.E.C. 285, UL 1283, UL 1449, ANSI C62.41 AND NEMA STANDARDS

SERVICE ENTRANCE RATED "SPD" SHALL BE RATED - 200KA
DISTRIBUTION PANEL BOARD "SPD" SHALL BE RATED - 150KA
BRANCH PANEL BOARD "SPD" SHALL BE RATED - 60KA

PER NEC 110.24 E.C. SHALL PROVIDE A LEGIBLE DURABLE LABEL WITH THE AVAILABLE FAULT CURRENT AND DATE, AS PROVIDED BY UTILITY CO.

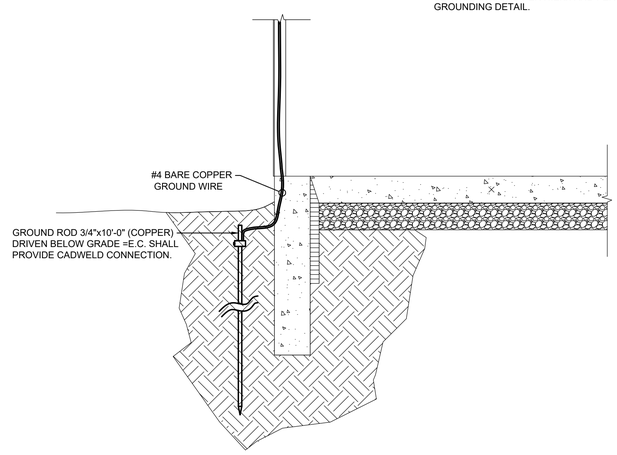


POWER DISTRIBUTION ONE LINE
N.T.S.



NOTES:

1. E.C. SHALL GROUND METAL ROOF PANELS PER THIS DETAIL AT LOCATIONS INDICATED ON DRAWING. MAXIMUM OF 100'-0" SPACING AROUND BUILDING PERIMETER.
2. ALL FOUNDATION REINFORCEMENT STEEL SHALL BE BONDED TO ELECTRICAL SERVICE GROUND PER N.E.C. AND PER GROUNDING DETAIL.



METAL SIDING & ROOF GROUNDING DETAIL
N.T.S.

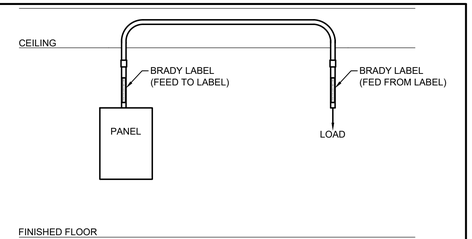
PANEL A (NEW PANEL)
"SPD"

PANEL TYPE SQ D QO
SURFACE MOUNTED
MAINS RATING 250A. M.C.B.
A.I.C. RATING 22,000 AMPS

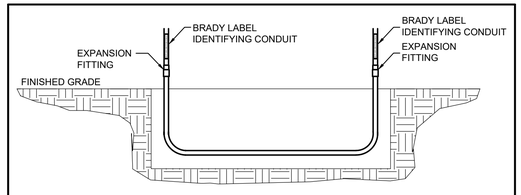
LOCATION CHASE
120/240 VOLT 1 PHASE 3 WIRE
NEMA 1

CIRCUIT	WIRE AWG	TRIP	ASSIGNMENT	CONDUIT	LOAD (VA)		PHASE	LOAD (VA)		CONDUIT	ASSIGNMENT	TRIP	WIRE AWG	CIRCUIT
1	12	20/1	REFRIG. "GF"	3/4	1000		A	360		3/4	RECEPTACLE	20/1	12	2
3	12	20/1	RECEPTACLE	3/4		500	B		360	3/4	RECEPTACLE	20/1	12	4
5	12	20/1	RECEPTACLE	3/4	500		A	360		3/4	RECEPTACLE	20/1	12	6
7	8	50/2	RANGE	3/4		750	B		540	3/4	RECEPTACLE	20/1	12	8
9					750		A	100		3/4	H-1	20/1	12	10
11	12	20/1	RECEPTACLE	3/4		500	B		1500	3/4	EH-3	20/2	12	12
13	12	20/1	RECEPTACLE	3/4	500		A	1500						14
15	10	20/1	DWH-1	3/4		2500	B		1000	3/4	EH-1	20/2	12	16
17	12	20/2	EH-4	3/4	500		A	1000						18
19						500	B		1000	3/4	EH-2	20/2	12	20
21	12	20/2	EH-1	3/4	1000		A	1000						22
23						1000	B		-		SPARE	30/2		24
25	12	20/2	EH-2	3/4	1000		A	-						26
27						1000	B		-		SPARE	30/2		28
29	12	20/1	LIGHTING	3/4	700		A	-						30
31	12	20/1	LIGHTING-WALL PACKS	3/4		100	B		-		SPARE	20/1		32
33		20/1	SPARE		-		A	-			SPARE	20/1		34
35		30/2	SPARE			-	B		-		SPARE	20/1		36
37					-		A	-			SPARE	20/1		38
39		30/2	SPARE			-	B		-		SPARE	20/1		40
41					-		A	-			SPARE	20/1		42
					A	B		A	B					
			CONNECTED LOAD PER PHASE		5950	6850		4310	4400		TOTAL CONNECTED LOAD 21,510 WATTS			

REMARKS: 1) "GF" = GROUND FAULT CIRCUIT BREAKER. 2) "HLO!" = HANDLE LOCK ON. 3) "ST" = SHUNT TRIP CIRCUIT BREAKER.



CONDUIT LABEL DETAIL
N.T.S



BURIED CONDUIT LABEL DETAIL
N.T.S

MOTTER & MEADOWS ARCHITECTS

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THIS DWG : DETAILS

COMM 23105
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DWG E-4.1

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REVISIONS:

ELECTRICAL SPECIFICATIONS

General Requirements

1.0 General
- A. The architectural, civil, structural, mechanical and any equipment and specifications are hereby incorporated into and become a part of the electrical contract documents. The contractor shall examine all such drawings and specifications and become familiar with provisions contained therein.
- B. It is the purpose of the electrical drawings to indicate the approximate locations of all equipment, outlets, fixtures, etc. Ascertain exact locations and arrange work accordingly. The final locations are subject to reasonable change by the Architect or Owner prior to rough-in at no additional cost. Dimensions given on the plans shall be verified in the field. Drawings shall not be scaled to obtain exact dimensions.
- C. The drawings show diagrammatically the locations of the various electrical devices, equipment, fixtures, and the method of connecting and controlling them; they are not intended to show every connection in detail, nor all fittings required for a complete system. Material or labor which is not shown on the drawings or included in these specifications but is necessary to complete the work, shall be provided.
- D. The drawings, as prepared, are diagrammatic in nature, but shall be followed as closely as actual operation of building and work of other trades will permit. All changes from these drawings, necessary to make the work conform to the building as constructed, and to fit the work of other trades or to conform to the rules and regulations of the state, federal and local authorities having jurisdiction, shall be made by this contractor, at his own expense.
- E. All bidders are required to visit the site of the work and become familiar with the conditions affecting installation. Submission of a proposal shall presuppose knowledge of such conditions and no additional compensation will be allowed where extra labor or materials are required because of ignorance of these conditions.

1.1 Work Included
- A. All labor, materials and equipment required for a complete and operating electrical installation.
- B. All permits and inspections required for electrical work.
- C. Concrete where required for electrical work.
- D. Trenching and backfill required for electrical work.
- E. Cutting, patching and fireproofing where required for electrical work.
- F. Distribution equipment, switchboards, panelboards dry type transformers and combination starters.
- G. Feeder and branch circuit wiring.
- H. Low-voltage lighting control systems
- I. Grounding system
- J. Lighting fixtures and lamps.
- K. All lighting fixtures, hangers, supports, lamps and control devices installed and connected in complete working order.
- L. Emergency lighting system and exit signs.
- M. Receptacle outlets, disconnect switches and equipment connections.
- N. Outlet boxes, empty conduits and plywood backboards for mounting telephone and data cabling.
- O. Complete fire alarm system.
- P. Demolition of existing electrical work affected by the new work shown and/or as indicated on the drawings.

1.2 Material not provided by this contractor, but subject to wiring and installation
- A. Motors, and motor controls where specified by others.
- B. Unless otherwise indicated on the drawings, the mechanical contractor shall provide all low-voltage temperature control components for HVAC systems including conduit and wire.

1.3 Requirements of regulatory agencies
- A. All work shall be furnished and installed in accordance with the provisions of all applicable federal, state, and local codes, rules, regulations, and standards, including the latest edition of the National Electrical code as interpreted by the Authority Having Jurisdiction.
- B. Secure and pay for all permits and inspections required for electrical work and give the proper authorities notices as required by law. Comply with regulations regarding temporary enclosures, obstructions, excavations and pay for all legal fees involved.
- C. All conditions and requirements of the occupational safety and health act (OSHA) shall be followed throughout the construction of this project.

1.4 Submittals
- A. Submit electronic PDF's of drawings, catalog sheets and/or wiring diagrams for the following equipment and systems in division #1.
  - a. Lighting fixtures
  - b. Power company installation drawings.
  - c. Panelboards and Switchgear
  - d. Disconnect switches and fuses
  - e. Wiring devices and cover plates
- B. The submittals will be reviewed by this engineer for general compliance with contract documents only, and not for dimensions, quantities, etc.
- C. The submittals returned as "reviewed" or "reviewed as noted" shall be used for procurement; however, the responsibility for correct procurements remains solely with the contractor. All submittals marked "revise and resubmit" or "rejected" shall be resubmitted for approval prior to procuring said equipment.
- D. Disposition of submittals shall not relieve the contractor from the responsibility for deviations from drawings or specifications, unless he has submitted in writing a letter itemizing or calling attention to such deviations at the time of submission and secured written approval from the Architect, nor shall such disposition of submittals relieve the contractor from the responsibility for errors in submittals.

1.5 Substitutions
- A. These specifications shall establish the quality and standard for materials and equipment to be furnished. Items specified by the manufacturer, trade name, or catalog number shall be furnished as specified.
- B. Where more than one manufacturer is specified for and item or system, the contractor may furnish any item or system specified.
- C. Where the equipment of one manufacturer is specified and other manufacturers are listed as "alternate manufacturers", the contractor may furnish the equipment of the specified manufacture or of any of the listed alternate manufacturers. However, the drawings are based on the equipment of the specified manufacturer only. If the contractor elects to furnish equipment of an alternate manufacture, any changes to the work shown on the drawings requiring accommodating variations of the alternate equipment in dimensions, characteristics, access, etc. from the specified equipment including work of other contractors shall be in the contractors bid.

1.6 As-built drawings
- A. The electrical contractor shall keep two sets of as-built drawings on site with detailed red-line mark-ups of all work varying from construction documents. Both sets of drawings shall be provided to the Architect for further implementation into the final as-built drawings.

1.7 Temporary lighting and wiring
- A. Provide temporary electrical service, convenience outlets, lighting and power as required for use of all trades during construction.

1.8 Guarantee
- A. Guarantee all workmanship and materials furnished under the contract for one year after acceptance of work by owner. Repair or replace any defect during the guarantee period, without any cost to the owner.

1.9 Materials and equipment
- A. All equipment and material shall be new, of current manufacturer and meet or exceed standards specified by UL, NEMA, ANSI, and IEEE wherever such standards have been established and shall bear the Underwriter's Laboratories label. All materials supplied of one type or of one system shall be by the same manufacture.
- B. Equipment and material shall be protected by and be the responsibility of the contractor until formally accepted by the owner and final completion of the project.

1.10 Supporting device
- A. Provide all hardware, supports, hangers, angle iron, channels, rods, clamps, etc., for installation of electrical equipment and light fixtures as required to suit conditions and application. All supporting devices shall be galvanized or cadmium plated steel or other suitably corrosion-resistant material.

1.11 Workmanship
- A. Electrical work shall be supervised by a state certified electrician. Workmanship shall be in accordance with the best practices of the electrical trade, N.E.C. (2020), and all state, federal and local codes.

1.12 Equipment Connections
- A. Serve and connect electrical equipment furnished by others as scheduled on drawings. Coordinate all outlet locations and connection requirements with the contractor furnishing the equipment and with all architectural casework. Prior to connecting equipment, check the nameplate rating against all information given herein or shown on drawings and contact this engineer if any discrepancy arises. E.C. shall carefully review all equipment manufacturer's installation diagrams and drawings prior to equipment installation.

1.13 Cutting and Patching
- A. Avoid cutting and patching of new construction by using sleeves, inserts and chases as required. Openings for the passage of ducts and conduits through walls and floors, chases, etc. in new construction will be provided by the general contractor. This contractor shall give the general contractor complete information as to the exact size and location of such openings and shall coordinate accordingly.
- B. E.C. shall provide all cutting and patching required for installation of electrical work in existing construction. Structural members shall not be cut unless approved by the Architect and structural engineer.

Basic Methods and Materials

2.0 Conduits
- A. Conduits shall be:
  - a. Rigid or intermediate grade galvanized steel conduit in wet locations, concrete, and exposed locations subject to damage.
  - b. Galvanized steel electrical metallic tubing in dry locations, interior partitions, and ceiling space.
  - c. Flexible metal conduit for final connections to transformers, motors, and equipment. Liquid tight flexible metal conduit in wet and damp locations.
  - d. Flexible metallic tubing from outlet box to recessed light fixtures in suspended ceilings – six foot maximum length.
  - e. Schedule 40 PVC rigid non-metallic conduit where buried below ground floor slab.
  - f. Schedule 80PVC where exposed outdoors if specifically indicated on drawings. Otherwise, all exposed exterior conduit shall be galvanized rigid steel type.
- B. Raceways shall be sized in accordance with the N.E.C. tables and as noted on the drawings. Minimum conduit size shall be ¾" unless specified otherwise on drawings.
- C. Conduit fittings for rigid conduit shall be threaded cast ferrous alloy with gaskets and covers where required. Conduit fittings for EMT shall be set screw or compression type. Locknuts shall be of the bonding type that bites into the metal of the terminating enclosure.
- D. Metal conduits shall be coupled and secured to all boxes in a manner that provides an electrically continuous ground path from the point of service to all outlets. However this conduit ground path shall not be relied upon for the equipment grounding conductor. A separate "green" equipment grounding conductor sized per NEC Table 250.122 shall be installed in all conduit runs. See drawings for specific sizing requirements.
- E. Nylon pull line shall be installed in all empty conduits for future use.
- F. Conduit routing indicated on drawings is diagrammatic only and is not necessarily the intended actual conduit run. Contractor shall check and be responsible for the actual installation with regard to available space and shall cooperate with other trades.
- G. All conduits shall be sized and installed so that the required number of conductors may be pulled in without injury or strain.
- H. Conduit runs shall be located to avoid equipment and access to equipment of other trades.
- I. Conduits in finished areas shall be run concealed in walls and above finished ceilings. Conduits may be run exposed only in open spaces.
- J. Exposed conduits, where permitted shall be run with all runs parallel to or at right angles to building structural members.
- K. Conduit supports shall be attached to building structural members only, and not to any building sub-systems such as suspended ceilings, mechanical ducts or pipes.
- L. Ends of each conduit shall be capped with an approved cap or disc to prevent the entrance of foreign material during construction.
- M. Conduits that pass through fire or smoke rated walls, ceilings, or decks shall be installed so as to maintain the fire or smoke rating.
- N. Expansion fittings shall be installed at all points where conduits cross building expansion joints.
- O. Conduit entries into building shall be made watertight. All underground joints shall be sealed and shall only be provided where specifically indicated on plans. Otherwise, underground splicing is strictly prohibited and will result in immediate removal of wiring for re-installation.
- P. Exterior underground conduits shall be installed 36" minimum below finished grade.

2.1 Feeder and branch circuit conductors (600volt)
- A. Feeder and branch circuit conductors shall be U.L. labeled, 98% conductivity copper stamped at 2'intervals with conductor size and insulation type.
- B. Feeder conductors shall be type THHN/THWN or XHHW-2, 600Volt, stranded copper. See power distribution one line for exact conductor requirements.
- C. Branch circuit conductors shall be type THHN/THWN, 600V, copper. Wire sizes #8AWG and larger shall be stranded type. Minimum wire size shall be #12AWG or larger as required to limit voltage drop at furthest load to 3%VD.
- D. Color code branch circuit and feeder conductors shall be as follows:

120/240V, 1-phase, 3-wire Phase A- Black Phase B- Red Neutral – White Ground – Green	

- E. Color coding shall be continuous on insulation for #8AWG or smaller conductors and continuous or marked with colored tape at all connections for conductors larger than #8 AWG.
- F. All mechanical wire and cable termination shall be tightened with torque wrench or screwdriver to manufacturer's recommended torque values.
- G. Joints in #10AWG or smaller wire shall be made with 3m "Scotch Locke" or equivalent.
- H. Joints in #8AWG and larger wire shall be made with pressure type mechanical connectors and insulated with electrical tape or heat shrink insulation to 250% of the insulating value of the conductor insulation.
- I. Electrical contractor shall be responsible to balance all 1-phase loads in the respective 3-phase panel for even loading on all phases.

2.2 Metal clad cable (MC) shall be construct in strict accordance with U.L. standard for metal clad cables. The cable shall bear the U.L. label and the manufacturer's "E" number. In addition metal clad cable installation must meet the requirements of NFPA70. MC may only be installed on branch circuits 30amps or less where circuit is being installed in walls or open ceiling spaces. E.C. must install all home runs in EMTconduit. MC cable is unacceptable in all open spaces except for fixture whips (6' maximum length).

2.3 Conduit boxes
- A. Outlet boxes shall be galvanized steel construction of proper size meeting N.E.C. requirements and suitable for the location installed.
- B. Pull and junction boxes shall be installed at all points required by code whether indicated on drawings or not. Minimum dimensions shall not be less than N.E.C. requirements or as specified on drawings. Pull and junction boxes indoors shall be constructed of code gauge galvanized steel and shall be provided with flat plain covers.
- C. All conduit boxes shall be rigidly mounted to the building structure independent of conduit system per N.E.C.
- D. Light switch boxes shall be installed on the latch side of the door. E.C. shall verify all door swing directions with architectural drawings prior to installation. Coordinate any discrepancies with this engineer prior to installation.
- E. Outlet boxes shall not be installed directly "back-to-back" in 4"walls Offset outlets shown on drawings as "back-to-back" by the width of the box (minimum).

2.4 Wiring devices
- A. Wiring devices shall be as specified in the symbol legend on the drawings. All wiring devices shall be the product of a single manufacturer except where specifically stated otherwise. Colors and finish shall be as selected by Architect.
- B. Switches and receptacles shall be manufactured by Hubbell, Pass&Seymour or Leviton.
- C. Cover plates shall be nylon with color to match device in office and commercial spaces. Stainless steel in unfinished spaces.
- D. The inside cover of all receptacle and light switch plates shall be permanently marked to indicate the panel and circuit number of the outlet or light circuit.

2.5 Grounding system
- A. This contractor shall provide, install and connect a complete system of grounding for all equipment. A good mechanical and electrical connection shall be made with approved grounding connectors by Erico or equal. Connection to building steel, water line, and ground rods shall be by exothermic, CadWeld type connections.
- B. Electrical system grounding and equipment bonding grounds shall comply with all local, state and federal codes. Bonding jumpers shall be installed at all location required by the National Electrical Code and per these documents.
- C. Main grounding electrode conductor shall be sized in accordance with table 250.66 (section 250) of the N.E.C. and as indicated on these drawings.
- D. Driven ground rods shall be copper clad type. Connection to buried ground rods shall be exothermic/CADWELD type. Tops of all buried ground rods shall be a minimum of 6" below grade. Where rock is encountered, grounding plates may be used in lieu of grounding rods. Grounding plates shall be copper type and sized as directed by this engineer. Ground enhancing material "GEM" should be used on ground plate installations and all ground rod installations.
- E. All exposed connections shall be made by means of approved grounding clamps. Exposed connections between different metals shall be sealed with grade "A" no-oxide paint. All buried and unaccessible installations shall have a CadWeld type connections.

Service and Distribution

3.0 Electrical service
- A. The new electrical service system shall be 120/240V, 1ø, 3-wire with underground cables to main service switchboard as indicated on plans.
- B. **This contractor shall make all arrangements with power company for installation of electrical service. Contractor shall verify all requirements for service with the power required for installation of service excluding power company charges**.

3.1 Distribution panelboards
- A. Distribution panelboard is dead front circuit breaker type, with voltage, amperage, and main lugs as noted on drawings.
- B. Branch circuits and fuses shall be of quantity and amperage as shown on drawings.
- C. Distribution panelboards shall be Square "D", Siemens or Eaton/Cutler Hammer.
- D. Circuit breakers shall be thermal magnetic, molded case, bolt-on type with quantity, amperage, and poles as noted on the panel schedules. Short circuit interrupting capacity shall be as indicated on panel schedules and as necessary to exceed the available fault current ad defined by the serving power utility company.
- E. Panelboard enclosures shall be general purpose, surface or flush mounted as shown on plans, with galvanized backbox and painted front with lockable "door in door" type construction.
- F. A glazed directory frame shall be provided inside door and shall be of sufficient size to give descriptive indications of each circuit load.
- G. Two keys shall be provided with each panel and all branch circuit type panels shall be as manufactured by Square "D", Siemens or Eaton/Cutler Hammer.

3.2 Disconnect Switches
- A. This contractor shall provide a properly rated and sized disconnect switch for all equipment as specified on the drawings.
- B. Disconnect switches shall all be heavy duty type and fused as indicated on disconnect schedule.
- C. All exterior switches shall be NEMA 3R type unless indicated as type 4X, stainless steel.
- D. Switches shall be provided with quick-make, quick-break operating mechanics, full cover interlock and indicator handle with provisions for padlocking in the off position.
- E. U.L. class RK1 fuse clips,
- F. Disconnect switches shall be Square D, Siemens or Eaton/Cutler Hammer.

3.3 Fuses
- A. A complete set of fuses, shall be installed for all fusible equipment in the project.
- B. All fuses shall be of the same manufacturer and shall be delivered to the job site in new sealed packaging.
- C. Fuses shall be U.L. listed, current limiting and have an interrupting rating of 200,000 RMS, Amperes symmetrical
- D. Fuses rated 601 to 6000 amperes shall be time delay, current limiting, NEMA class "L" unless indicated otherwise on drawings.
- E. Fuses rated 600amperes and less shall be dual-element, current limiting, NEMA class RK-1 (**NEMA CLASS RK5 is unacceptable).**
- F. Spare fuses amounting to 20% (minimum three) of each type and rating shall be supplied by this contractor and shall be document with owner at final completion of project.
- G. A fuse identification label shall be placed inside each switch door. The label shall indicated fuse type, ampere rating, voltage class and interrupting rating.
- H. Furnish spare fuse cabinet in main electrical room.

3.4 Equipment identification
- A. Provide new nameplates with black face and white letters (minimum height of 1/8" high) on all electrical distribution and control equipment. Lettering shall be as follows:
  - a. Line 1: equipment name
  - b. Line 2: amperage and voltage rating
  - c. Line 3: identification of upstream overcurrent protection device.

Lighting

4.0 Light fixtures
- A. Light fixtures shall be provided as specified in luminaire schedule.
- B. Light fixtures installed in wet or damp locations shall be U.L. labeled as suitable for such location.
- C. All lighting fixtures shall be securely supported from building structural members with approved hangers. Recessed grid troffers shall be fastened to ceiling t-bars with approved hurricane clips. Fixtures shall also be supported with wire hangers at four corners of fixtures to structural ceiling.

4.1 Lamps
- A. Fixtures shall typically be specified with led type lamping. All led color temperature shall be 4,000ºC unless specified otherwise on luminaire schedule.

4.2 Drivers
- A. All LED drivers shall be equipped with a 0-10V dimming capability where dimming switches are indicated on plans.

4.3 Installation
- A. Furnish and install all necessary hangers, supports, framing, fittings, etc. to support fixtures and fixture outlets. All fixture supports shall be securely anchored to ceiling and/or building construction and shall be capable of supporting the fixture in question with 100% redundancy.
- B. Where installing chain mounted fixtures, the contractor shall provide additional supporting channels as required.
- C. Provide thermal protection on recessed fixtures where required. All fixtures in insulated ceiling shall be I.C. rated.

4.4 Emergency lighting
- A. Egress emergency lighting and exit signs shall be provided with self-contained battery operated, unitary equipment. Battery units shall contain a long-life, self-charging nickel-cadmium battery. Units shall include unit mounted lighting heads where indicated, remote heads for wall or ceiling recessed mounting. Units shall be 120/277 Volt, 60HZ. All exit and egress emergency lighting shall provide a minimum of 90 minutes of operation on power failure. Locate as shown on plans. All lighting shall be circuited ahead of any switches, occupancy sensors or controllers.
- B. Egress lighting shall be circuited to the branch circuit feeding the covered area per the National Electrical Code.

End of Electrical Specifications.

600 MARKET AVENUE NORTH CANTON OHIO 44702

MOTTER & MEADOWS ARCHITECTS

CRENSHAW PARK - NEW PAVILION
EDWARD L. "PEEL" COLEMAN COMMUNITY CENTER
1400 SHERRICK ROAD SE
CANTON, OHIO

STATE OF OHIO
MICHAEL A. MILLER
E-64962
REGISTERED PROFESSIONAL ENGINEER

MICHAEL A. MILLER,
LICENSE #E-64962
EXPIRES 12-31-2023

ISSUED FOR PERMIT

THIS DWG : SPECS

COMM 23105
DATE 08-07-2023

DWG
E-5.1

722 CANTON PAVILLION.dwg
Plotted 8/7/2023 12:49 PM

(SAMPLE COPY)
Waste Disposal Agreement for Projects in the City of Canton

Items 1, 3 - 9 are optional and discretionary to the undersigned

THIS WASTE AGREEMENT, made this _____ day of _____ 20___ , by and between _____ (called "Contractor"), and _____ of _____ (called "Land Owner"), concerning a certain construction contract between the Contractor and _____ in the City of Canton, OH for the _____ (project), as follows:

1. MANNER OF WASTING: Land Owner grants to Contractor the exclusive right to place dirt, earth, rock, topsoil, subsurface, unsuitable and/or other excess material (called "waste material") upon the area described in the following paragraph without requirement, limit, or restriction as to depth, amount, manner, or time.
2. WASTE AREA: The property upon which Contractor is permitted to place material is commonly known as _____ (address).
3. TITLE TO WASTE AREA: The Land Owner warrants that it has title to and the right to contract for placement of waste material in said area and agrees to defend and indemnify Contractor against any claim, suit, or damage arising out of such title or right to contract.
4. ACCESS AND USE: Land Owner hereby grants Contractor the right of ingress and egress to the waste area in locations to be selected by Contractor for all purposes necessary to the complete fulfillment of this agreement, and the right of quiet enjoyment in the intended use of such area.
5. PAYMENT: Contractor agrees to pay and Land Owner agrees to accept as full and final compensation for all rights granted and covenants contained herein and all claims of every nature the sum of _____ payable _____ .
6. BASIS OF MEASUREMENTS: It is mutually agreed that measurement of the amount of materials wasted, where required, shall be made on the following basis: _____ and said measurement shall be binding upon the parties hereto for all purposes.
7. DAMAGES: Land Owner hereby waives any and all claims for damage to the waste area and to the area of ingress and egress except as specifically noted herein.
8. RELEASE: Upon receipt of final payment hereunder, and provided all terms of this agreement have been fulfilled, Land Owner hereby releases Contractor from further liability of any kind or nature hereunder.

WITNESSES:

_____

_____

_____

_____

CONTRACTOR:

_____
Authorized Signature & Title

LANDOWNER:

_____
Signature

9. ENTIRE AGREEMENT: It is agreed that the terms and conditions of this agreement are fully covered in the foregoing, and that any oral or written statements made by either party, or agents claiming to represent either party, not set forth herein, are not binding on the parties and are not considered as part of this Agreement.
10. DISCLAIMER: The City of Canton is not a party to the here above agreement. The Contractor and Landowner shall indemnify and save harmless the City of Canton from any claim that may arise from the here above agreement. The waste material is the property of the Contractor, not the City of Canton.

*****This project may be partially funded utilizing ARPA funds*****

Exhibit to Standard Form of Agreement Between Owner and Contractor

This Agreement is being funded through the use of American Rescue Plan Act ("ARPA") funds.

As such, there are certain required contract provisions that must be included in contracts and agreements with contractors and subcontractors that are paid using ARPA funds. The contractor, or "Subrecipient", must comply with all applicable laws listed below.

Subrecipient agrees to comply with all applicable federal, state, and local laws related to Subrecipient's performance of the obligations of this Agreement and Subrecipient's acceptance of the above mentioned subaward, including but not limited to the Single Audit Act (31 U.S.C. §§ 7501-7507) and the related provisions of the Uniform Guidance, 2 C.F.R. § 200.303 regarding internal controls, §§ 200.330 through 200.332 regarding Subrecipient monitoring and management, subpart E regarding cost principles, subpart F regarding audit requirements and § 200.317-.327 regarding procurement.

In addition, Subrecipient shall comply with the following federal laws, as applicable:

(A) Contracts for more than the simplified acquisition threshold, which is the inflation adjusted amount determined by the Civilian Agency Acquisition Council and the Defense Acquisition Regulations Council (Councils) as authorized by 41 U.S.C. 1908, must address administrative, contractual, or legal remedies in instances where contractors violate or breach contract terms, and provide for such sanctions and penalties as appropriate.

(B) All contracts in excess of $10,000 must address termination for cause and for convenience by the non-Federal entity including the manner by which it will be effected and the basis for settlement.

(C) Equal Employment Opportunity. Except as otherwise provided under 41 CFR Part 60, all contracts that meet the definition of "federally assisted construction contract" in 41 CFR Part 60-1.3 must include the equal opportunity clause provided under 41 CFR 60-1.4(b), in accordance with Executive Order 11246, "Equal Employment Opportunity" (30 FR 12319, 12935, 3 CFR Part, 1964-1965 Comp., p. 339), as amended by Executive Order 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," and implementing regulations at 41 CFR part 60, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor."

(D) Davis-Bacon Act, as amended (40 U.S.C. 3141-3148). When required by Federal program legislation, all prime construction contracts in excess of $2,000 awarded by non-Federal entities must include a provision for compliance with the Davis-Bacon Act (40 U.S.C. 3141-3144, and 3146-3148) as supplemented by Department of Labor regulations (29 CFR Part 5, "Labor Standards Provisions Applicable to Contracts Covering Federally Financed and Assisted

Construction"). In accordance with the statute, contractors must be required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor. In addition, contractors must be required to pay wages not less than once a week. The non-Federal entity must place a copy of the current prevailing wage determination issued by the Department of Labor in each solicitation. The decision to award a contract or subcontract must be conditioned upon the acceptance of the wage determination. The non-Federal entity must report all suspected or reported violations to the Federal awarding agency. The contracts must also include a provision for compliance with the Copeland "Anti-Kickback" Act (40 U.S.C. 3145), as supplemented by Department of Labor regulations (29 CFR Part 3, "Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States"). The Act provides that each contractor or Subrecipient must be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he or she is otherwise entitled. The non-Federal entity must report all suspected or reported violations to the Federal awarding agency.

(E) Contract Work Hours and Safety Standards Act (40 U.S.C. 3701-3708). Where applicable, all contracts awarded by the non-Federal entity in excess of $100,000 that involve the employment of mechanics or laborers must include a provision for compliance with 40 U.S.C. 3702 and 3704, as supplemented by Department of Labor regulations (29 CFR Part 5). Under 40 U.S.C. 3702 of the Act, each contractor must be required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week. The requirements of 40 U.S.C. 3704 are applicable to construction work and provide that no laborer or mechanic must be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.

(F) Rights to Inventions Made Under a Contract or Agreement. If the Federal award meets the definition of "funding agreement" under 37 CFR § 401.2 (a) and the recipient or Subrecipient wishes to enter into a contract with a small business firm or nonprofit organization regarding the substitution of parties, assignment or performance of experimental, developmental, or research work under that "funding agreement," the recipient or Subrecipient must comply with the requirements of 37 CFR Part 401, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements," and any implementing regulations issued by the awarding agency.

(G) Clean Air Act (42 U.S.C. 7401-7671q.) and the Federal Water Pollution Control Act (33 U.S.C. 1251-1387), as amended - Contracts and subgrants of amounts in excess of $150,000 must contain a provision that requires the non-Federal award to agree to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA).

(H) Debarment and Suspension (Executive Orders 12549 and 12689) - A contract award (see 2 CFR 180.220) must not be made to parties listed on the governmentwide exclusions in the System for Award Management (SAM), in accordance with the OMB guidelines at 2 CFR 180 that implement Executive Orders 12549 (3 CFR part 1986 Comp., p. 189) and 12689 (3 CFR part 1989 Comp., p. 235), "Debarment and Suspension." SAM Exclusions contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549.

(I) Byrd Anti-Lobbying Amendment (31 U.S.C. 1352) - Contractors that apply or bid for an award exceeding $100,000 must file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier must also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the non-Federal award.

(J) Copeland "Anti-Kickback" Act (40 U.S.C. 3145) The Contractor must comply with the Copeland "Anti-Kickback" Act (40 U.S.C. 3145), as supplemented by Department of Labor regulations (29 CFR Part 3, "Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States"). The Act provides that the Contractor must be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he or she is otherwise entitled.

(K) Procurement of recovered materials A non-Federal entity that is a state agency or agency of a political subdivision of a state and its contractors must comply with section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act. The requirements of Section 6002 include procuring only items designated in guidelines of the Environmental Protection Agency (EPA) at 40 CFR part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level

of competition, where the purchase price of the item exceeds $10,000 or the value of the quantity acquired during the preceding fiscal year exceeded $10,000; procuring solid waste management services in a manner that maximizes energy and resource recovery; and establishing an affirmative procurement program for procurement of recovered materials identified in the EPA guidelines.

(L) Prohibition on certain telecommunications and video surveillance services and equipment

(a) Recipients and Subrecipients are prohibited from obligating or expending loan or grant funds to:

(1) Procure or obtain;

(2) Extend or renew a contract to procure or obtain; or

(3) Enter into a contract (or extend or renew a contract) to procure or obtain equipment, services, or systems that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system. As described in Public Law 115-232, section 889, covered telecommunications equipment is telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities).

(i) For the purpose of public safety, security of government facilities, physical security surveillance of critical infrastructure, and other national security purposes, video surveillance and telecommunications equipment produced by Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities).

(ii) Telecommunications or video surveillance services provided by such entities or using such equipment.

(iii) Telecommunications or video surveillance equipment or services produced or provided by an entity that the Secretary of Defense, in consultation with the Director of the National Intelligence or the Director of the Federal Bureau of Investigation, reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a covered foreign country.

(b) In implementing the prohibition under Public Law 115-232, section 889, subsection (f), paragraph (1), heads of executive agencies administering loan, grant, or subsidy programs shall prioritize available funding and technical support to assist affected businesses, institutions and organizations as is reasonably necessary for those affected entities to transition from covered communications

equipment and services, to procure replacement equipment and services, and to ensure that communications service to users and customers is sustained.

(c) See Public Law 115-232, section 889 for additional information.

(d) See also § 200.471.

(M) Domestic preferences for procurements

(a) As appropriate and to the extent consistent with law, the non-Federal entity should, to the greatest extent practicable under a Federal award, provide a preference for the purchase, acquisition, or use of goods, products, or materials produced in the United States (including but not limited to iron, aluminum, steel, cement, and other manufactured products). The requirements of this section must be included in all subawards including all contracts and purchase orders for work or products under this award.

(b) For purposes of this section:

(1) "Produced in the United States" means, for iron and steel products, that all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States.

(2) "Manufactured products" means items and construction materials composed in whole or in part of non-ferrous metals such as aluminum; plastics and polymer-based products such as polyvinyl chloride pipe; aggregates such as concrete; glass, including optical fiber; and lumber.

(N) Prevailing Wage

If the performance of this contract involves construction, the Subrecipient and its contractors and subcontractors, regardless of tier, shall strictly comply with their obligation, if any, to pay their employees working on the project site at the applicable prevailing wage rates for the type of work, including any changes thereto, pursuant to Ohio Revised Code Chapter 4115.

(O) Bidding of the Project

Purchases under ARPA, including bidding of construction projects, must be procured in accordance with both state law and federal law, and the recipient is required to follow the more restrictive law. For purchases between $10,000 and $50,000, the federal law is more restrictive. For purchases over $50,000, Ohio's procurement laws are more restrictive and the Subrecipient must follow state law for those purchases.

(Q) Performance Monitoring

The City will monitor the performance of the Subrecipient against goals and performance standards as stated above. Substandard performance as determined by the City will constitute noncompliance with this Agreement. If action to correct such substandard performance is not taken by the Subrecipient within a reasonable period of time after being notified by the City, additional conditions, contract suspension or termination procedures will be initiated.

(R) Mandatory Disclosures 2 CFR 200.113

The Subrecipient must disclose, in a timely manner, in writing to the City all violations of Federal criminal law involving fraud, bribery, or gratuity violations potentially affecting this Federal award. Subrecipients that have received a Federal award are required to report certain civil, criminal, an administrative proceedings to the System for Award Management ("SAM"). Failure to make required disclosures can result in any of the remedial activities described in 2 CFR 200.338 including suspension or debarment.

(S) Record Retention and Access

The Subrecipient shall maintain all records required by the Federal regulations specified in 24 CFR 570.506 and 2 CFR 200 that are pertinent to the activities to be funded under this Agreement. Such records shall include but not be limited to:

a. Records providing a full description of each activity undertaken;

b. Records demonstrating that each activity undertaken meets one of the National Objectives of the ARPA program;

c. Records required to determine the eligibility of activities;

d. Adequate documentation to support costs charged to the ARPA Program

e. Records detailing procurement procedures followed

f. Records documenting compliance with the equal opportunity components of the ARPA program;

g. Other records necessary to document compliance

(T) Maintenance and Audit of Records

The Subrecipient shall maintain records, books, documents, and other materials relevant to its performance under this Agreement. These records shall be subject to inspection, review, and audit by the City or its designees and the US TREASURY for five (5) years following termination of this Agreement. If it is determined during the course of the audit that the Subrecipient was

reimbursed for unallowable costs under this Agreement, the Subrecipient agrees to promptly reimburse the City for such payments upon request.

Appendix D

Title VI Requirements

The City of Canton, in accordance with the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat.252, 42 U.S.C. §§ 2000d to 2000d-4) and the Regulations, hereby notifies all bidders that it will affirmatively ensure that any contract entered into pursuant to this advertisement, disadvantaged business enterprises will be afforded full and fair opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for an award.

No person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity, for which the Recipient receives Federal financial assistance from DOT, including the City of Canton.

Please also review Appendix A, Appendix C, Appendix D and Appendix E of the Standard Assurances which are included in the following pages.

APPENDIX A

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

1. **Compliance with Regulations:** The contractor (hereinafter includes consultants) will comply with the Acts and the Regulations relative to Non-discrimination in Federally-assisted programs of the U.S. Department of Transportation, ***The City of Canton*****,** as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.

2. **Non-discrimination:** The contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor will not participate directly or indirectly in the discrimination prohibited by the Acts and the Regulations, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR Part21. ***{Include City of Canton specific program requirements.]***

3. **Solicitations for Subcontracts, Including Procurements of Materials and Equipment:** In all solicitations, either by competitive bidding, or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the contractor of the contractor's obligations under this contract and the Acts and the Regulations relative to Non-discrimination on the grounds of race, color, or national origin. ***{Include City of Canton specific program requirements.]***

4. **Information and Reports:** The contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or ***The City of Canton)*** to be pertinent to ascertain compliance with such Acts, Regulations, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the contractor will so certify to the Recipient or ***The City of Canton)*****,** as appropriate, and will set forth what efforts it has made to obtain the information.

5. **Sanctions for Noncompliance:** In the event of a contractor's noncompliance with the Non• discrimination provisions of this contract, the Recipient will impose such contract sanctions as it or ***The City of Canton*** may determine to be appropriate, including, but not limited to:

   a. withholding payments to the contractor under the contract until the contractor complies; and/or
   b. cancelling, terminating, or suspending a contract, in whole or in part.

6. **Incorporation of Provisions:** The contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The contractor will take action with respect to any subcontract or procurement as the Recipient or ***The City of Canton*** may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the contractor may request the Recipient to enter into any litigation to protect the interests of the Recipient. In addition, the contractor may request the United States to enter into the litigation to protect the interests of the United States.

APPENDIX C

CLAUSES FOR TRANSFER OF REAL PROPERTY ACQUIRED OR IMPROVED UNDER THE ACTIVITY, FACILITY, OR PROGRAM

The following clauses will be included in deeds, licenses, leases, permits, or similar instruments entered into by the ***(Title of Recipient)*** pursuant to the provisions of Assurance 7(a):

A. The (grantee, lessee, permittee, etc. as appropriate) for himself/herself, his/her heirs, personal representatives , successors in interest, and assigns, as a part of the consideration hereof, does hereby covenant and agree [in the case of deeds and leases add "as a covenant running with the land"] that:

1. In the event facilities are constructed, maintained, or otherwise operated on the property described in this (deed, license, lease, permit, etc.) for a purpose for which a U.S. Department of Transportation activity, facility, or program is extended or for another purpose involving the provision of similar services or benefits, the (grantee, licensee, lessee, permittee, etc.) will maintain and operate such facilities and services in compliance with all requirements imposed by the Acts and Regulations (as may be amended) such that no person on the grounds of race, color, or national origin, will be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination in the use of said facilities.

B. With respect to licenses, leases, permits, etc., in the event of breach of any of the above Non-discrimination covenants, *(Title of Recipient)* will have the right to terminate the (lease, license, permit, etc.) and to enter, re-enter, and repossess said lands and facilities thereon, and hold the same as if the (lease, license, permit, etc.) had never been made or issued.*

C. With respect to a deed, in the event of breach of any of the above Non-discrimination covenants, the ***(Title of Recipient)*** will have the right to enter or re-enter the lands and facilities thereon, and the above described lands and facilities will there upon revert to and vest in and become the absolute property of the *(Title of Recipient)* and its assigns.*

(*Reverter clause and related language to be used only when it is determined that such a clause is necessary to make clear the purpose of Title VI.)

APPENDIX D

CLAUSES FOR CONSTRUCTION/USE/ACCESS TO REAL PROPERTY ACQUIRED UNDER THE ACTIVITY, FACILITY OR PROGRAM

The following clauses will be included in deeds, licenses, permits, or similar instruments/agreements entered into by ***(Title of Recipient)*** pursuant to the provisions of Assurance 7(b):

A. The (grantee, licensee, permittee, etc., as appropriate) for himself/herself, his/her heirs, personal representatives, successors in interest, and assigns, as a part of the consideration hereof, does hereby covenant and agree (in the case of deeds and leases add, "as a covenant running with the land") that (1) no person on the ground of race, color, or national origin, will be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination in the use of said facilities, (2) that in the construction of any improvements on, over, or under such land, and the furnishing of services thereon, no person on the ground of race, color, or national origin, will be excluded from participation in, denied the benefits of, or otherwise be subjected to discrimination, (3) that the (grantee, licensee, lessee, permittee, etc.) will use the premises in compliance with all other requirements imposed by or pursuant to the Acts and Regulations, as amended, set forth in this Assurance.

B. With respect to (licenses, leases, permits, etc.), in the event of breach of any of the above Non- discrimination covenants, ***(Title of Recipient)*** will have the right to terminate the (license, permit, etc., as appropriate) and to enter or re-enter and repossess said land and the facilities thereon, and hold the same as if said (license, permit, etc., as appropriate) had never been made or issued.*

C. With respect to deeds, in the event of breach of any of the above Non-discrimination covenants, ***(Title of Recipient)*** will there upon revert to and vest in and become the absolute property of ***(Title of Recipient)*** and its assigns.*

(*Reverter clause and related language to be used only when it is determined that such a clause is necessary to make clear the purpose of Title VI.)

APPENDIX E

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

Pertinent Non-Discrimination Authorities:

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d *et seq.*, 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin); and 49 CFR Part 21.
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Federal-Aid Highway Act of 1973, (23 U.S.C. § 324 *et seq.),* (prohibits discrimination on the basis of sex);
- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. §794 *et seq.),* as amended, (prohibits discrimination on the basis of disability); and 49 CFR Part 27;
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 *et seq.),* (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982, (49 USC § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131 - 12189) as implemented by Department of Transportation regulations at 49 C.F.R. parts 37 and38;
- The Federal Aviation Administration's Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 etseq).

CANTON TITLE VI COMPLAINT PROCEDURE

I. FILING A COMPLAINT

Complaint Procedure - Any person who believes that he or she as a member of a protected class, has been discriminated against based on race, color, national origin, gender, age, disability, religion, low income status, or Limited English Proficiency (LEP) in violation of Title VI of the Civil Rights Act of 1964, as amended and its related statutes, regulations and directives, Section 504 of the Vocational Rehabilitation Act of 1973, Americans with Disabilities Act of 1990, as amended, the Civil Rights Restoration Act of 1987, as amended, and any other Federal nondiscrimination statute may submit a complaint. A complaint may also be submitted by a representative on behalf of such a person.

It is the policy of the City to conduct a prompt and impartial investigation of all allegations of discrimination and to take prompt effective corrective action when a claim of discrimination is substantiated.

No one may intimidate, threaten, coerce or engage in other discriminatory conduct against anyone because they have taken action or participated in an action to secure rights protected by the civil rights laws. Any individual alleging such harassment or intimidation may submit a complaint by following the procedure printed below.

Any individual who feels that he or she has been discriminated against may submit a written or verbal complaint to the designated Title VI Coordinator. A complaint must include the name, address and telephone number of the individual making the complaint (complainant) and a brief description of the alleged discriminatory conduct including the date of harm. An individual submitting a complaint alleging discrimination may include any relevant evidence, including the names of witnesses and supporting documentation.

Complaints should be directed to the Title VI Coordinator:

_____
Andrea Perry
Director of Public Safety
218 Cleveland Ave S.W., 8th floor
Canton, Ohio 44702
Phone - 330-438-4303
Email – andrea.perry@cantonohio.gov

Within 60 days of the receipt of the complaint the City will conduct an investigation of the allegation based on the information provided and issue a written report of its findings to the complainant. The City will try to obtain an informal voluntary resolution to all complaints at the lowest level possible.

A complainant's identity shall be kept confidential except to the extent necessary to conduct an investigation. All complaints shall be kept confidential.

These procedures do not deny the right of any individual to file a formal complaint with any government agency or affect an individual's right to seek private counsel for any complaint alleging discrimination.

Complaints may also be filed with the following government agencies:

Ohio Department of Transportation
Office of Equal Opportunity
1980 West Broad Street
MS: 3270
Columbus, OH 43223

The U.S. Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

Ohio Civil Rights Commission
Central Office
Rhodes State Office Tower
30 East Broad Street, 5th floor
Columbus, OH 43215
614-466-2785

Ohio Civil Rights Commission
Akron Regional Office
Bradley S. S. Dunn, Regional Director
Akron Government Bldg.
161 S. High Street, Suite 205
Akron, OH 44308
(330) 643-3100

Link to filing a complaint online with the Ohio Civil Rights Commission:

https://crc.ohio.gov/FilingaCharge/ChargeFilingProcedure.aspx

II. COMPLAINT PROCESSING

The Title VI Coordinator will review the complaint upon receipt to ensure that all required information is provided, the complaint meets the filing deadline date which is 180 days from the date the alleged discriminatory act occurred, and falls within the jurisdiction of the City.

The Title VI Coordinator will then investigate the complaint. If the complaint is against the City then the Mayor's office or their designee will investigate the complaint. Additionally, a copy of the complaint will be forwarded to the City Law Director.

If the complaint warrants a full investigation, the Complainant will be notified in writing by certified mail. This notice will name the investigator and/or investigating agency.

The party alleged to have acted in a discriminatory manner will also be notified by certified mail as of the complaint. This letter will also include the investigator's name and will request that this party be available for an interview.

Any comments or recommendations from legal counsel will be reviewed by the Title VI Coordinator, Director of Public Service and Mayor's office.

Once the City has investigated the report findings, the City will adopt a final resolution.
All parties associated with the complaint will be properly notified of the outcome of the City's investigative report.

If the complainant is not satisfied with the results of the investigation of the alleged discriminatory practice(s), she/he shall be advised of their right to appeal the City's decision.

Appeals must be filed within 180 days after the City's final resolution. Unless new facts not previously considered come to light, reconsideration of the City's determination will not be available.

The foregoing complaint resolution procedure will be implemented in accordance with the Department of Justice guidance manual entitled "Investigation Procedures Manual for the Investigation and Resolution of Complaints Alleging Violations of Title VI and Other Nondiscrimination Statues," available online at:

http://www.justice.gov/crt/about/cor/Pubs/manuals/complain.pdf

Title VI Complaint Filing

Complaints filed with the City of Canton, Ohio based on violations of Title VI of the Civil Rights Act of 1964, must include the following information:

· Name of Complainant
· Date of Complaint

· Address of Complainant

· Telephone Number of Complainant

· Name of Agency / Department Accused of Discriminatory Practices

· Name of Individual Accused of Discriminatory Practices

· Address of Agency

· Date of Alleged Discrimination

· Description of Alleged Discrimination (see below)

11. Alleged Discrimination - If your complaint is in regard to discrimination in the delivery of services or discrimination that involved the treatment of you by others by the agency or department indicated above, please indicate below the basis on which you believe these discriminatory actions were taken.
· Race / Color / Religion
· National Origin
· Age · Sex, Gender
· Disability · Income Status
· Explanation of Alleged Discrimination - Please explain as clearly aspossible what happened.
Provide the name(s) of witness(s) and others involved in the alleged discrimination. (Attach additional sheets if necessary and provide a copy of written material pertaining to your case.)
· Signature of Complainant · Date of Complaint

III. ENVIRONMENTAL JUSTICE

In accordance with Title VI of the Civil Rights Act of 1964, each Federal agency shall ensure that all programs or activities receiving Federal financial assistance that affect human health or the environment do not directly, or through other arrangements, use criteria, methods, or practices that discriminate on the basis of race, color, or national origin. Part of Title VI reads, “No person in the United States shall, on the ground of race, color, or national origin beexcluded

from participation in, be denied the benefits of, or be subject to discrimination under any program or activity receiving Federal financial assistance."

The three fundamental environmental justice (EJ) principles are:
· To avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations andlow-income populations;

· To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process; and

· To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority populations and low-income populations.

The City of Canton is committed to these three environmental justice principles in all work that the City performs.

IV. ADMINISTRATION – WORK PLAN

Pursuant to 23 CFR 200, the City of Canton has designated a Title VI Coordinator who is responsible for initiating, monitoring, and ensuring the City's compliance with Title VI requirements for the following work plan:

· Administer, coordinate and Implement the Title VI Program plan and distribute internally and externally via website and update annually as required.
· Ensure that Assurances are being used in contracts for federal projects.
· Attend Title VI training.
· Collect public involvement data.
· Review written Title VI complaints and ensure every effort is made to resolve complaints informally at the local or regional level and review and update the City's Title VI plan and procedures as required.
· Implement a plan that provides training to City Staff on the basic requirements of the Title VI implementation plan.

Title VI Coordinator:

_____
Andrea Perry
Director of Public Safety
218 Cleveland Avenue, S.W., 8th floor
Canton, Ohio 44702
Phone – 330-438-4303
Email - andrea.perry@cantonohio.gov

V. LIMITED ENGLISH PROFICIENCY (LEP) POLICY

On August 11, 2000, the President signed an executive order, *Executive Order 13166: Improving Access to Service for Persons with Limited English Proficiency (LEP)*, to clarify Title VI of the Civil Rights Act of 1964. It has as its purpose, to ensure meaningful access to programs and services to otherwise eligible persons who are not proficient in the English language. In addition, The US Department of Transportation published *Policy Guidance Concerning Recipients' responsibilities to Limited English Proficient Person* in the December 14, 2005 Federal Register.

This guidance outlines the following four factors that the City uses to access the LEP populations in Canton.

1. The number and proportion of LEP persons eligible to be served or likely to be encountered by the City.
2. The frequency with which LEP individuals come into contact with the program, activity or service.
3. The nature and importance of the program, activity, or service provided by the program.
4. The resources available to the City and costs.

Summary of the four factor analysis

Factor 1- The number and proportion of LEP persons eligible to be served or likely to be encountered by the City can only be estimated until the actual number of persons who can speak English less than "very well" are documented as needing assistance by City Staff . With this Title VI Plan being in early development stages and considered a document that may need regular updates, US Census Bureau information is being used at this time. The total population is provided below to shown general distribution of race and ethnicity in the community. The estimated number of persons that may not speak English "very well" is following in the US Census Bureau 2006-2010 American Community Survey.

The U.S. Census Bureau provides statistics from 2010 for the City of Canton as follows:
Total population = 74,451
Population by Ethnicity:
Hispanic or Latino = 1,805 Non Hispanic or Latino = 72,646
Population by Race:
White = 53,150 African American = 16,854, Asian = 193, American Indiana or Alaska Native = 372,
Native Hawaiian and Pacific Islander = 0, Other = 431, Identified by two or more = 3,451.

The US Census Bureau 2006-2010 American Community Survey 5-Year Estimates under SELECTED SOCIAL CHARACTERISTICS estimates the number of people in Canton who speak a language other than English to be 2,945 with those speaking English less than "very well" estimated at 1.0% or approximately 983 individuals who may be considered limited in English proficiency.

Factor 1(continued)-
According to the census numbers above there may be up to 983 individuals who live in the City of Canton that *may* be considered as LEP. Based on actual contact between City Staff and the community there have been very few requests from anyone in the service area asking the City to provide language translation services. Therefore, the LEP population is probably even less than the estimate shown above.

Factor 2- The frequency with which LEP individuals come into contact with the program, activity or service:
Due to the infrequent requests for translation services, there appears to be a minimal need for translation services from the City. This may be attributed to the high percentage of younger people (87.6% for ages up to 17) who are available as family members for translation services.

Factor 3. The nature and importance of the program, activity, or service provided by the program:
If at any time a LEP individual requests translation services that are considered important such that denial or delay of access or services or information could have serious or even life-threatening implications, the City will provide, upon request, services to assist the LEP population including translation of vital City documents and interpretation services.

Factor 4. The resources available to the City and costs:
The City of Canton currently has several staff members who are bilingual in English and Spanish and are available to translate requests from the Hispanic population on a day to day basis. The City also provides many of their outreach services in the predominate languages of the community, English and Spanish. In addition, certified translation services are available through LanguageLine Solutions, a telephone translation service that is accessible for phone line translations services 24 hours a day. These are services the City provides upon request as discussed in factor 3 above. Page | 12

Summary of LEP Accommodation Plan
· The City of Canton strives to serve its population to the best of its ability and will provide upon request, services to assist the LEP population including translation of vital documents and interpretation services deemed necessary to provide meaningful access to City services.
· A U.S. Census Bureau ISpeak card is available as part of this document and on the City's webpage and is also available at City Hall located at 414 Main Street. This card allows LEP individuals to communicate their preferred language to City Staff whereas City Staff may then access a translation service called LanguageLine, phone number 1-800-752-6096 is available to City Staff or other translation services may be used as determined by the City.
· For language translation requests from the Hispanic or Latino community the City has several staff member who are bilingual and are available to provide translation services on a day to day basis.
· The City of Canton utilizes a voluntary public involvement survey to collect information regarding persons affected by proposed projects. The survey permits respondents to remain

anonymous, while voluntarily answering questions regarding their gender, ethnicity, race, age, sex, disability status, and household income. This voluntary public involvement survey is available at all public hearings and meetings. Once the survey data has been collected, it will be reviewed and then the survey will be placed in a file for future reference. In the case enough surveys are collected over time to show a significant increase in LEP populations, the City may consider changes to their LEP policy. Completed surveys shall be retained for a period of three years from the date of the meeting and/or completion of the related project, if applicable. See Appendix G for a sample of this Survey.

· The City reviews written Title VI complaints and ensures every effort is made to resolve complaints informally at the local or regional level and review and update the City's Title VI plan and procedures as required.

· Staff for the City will be provided training on the requirements for providing meaningful access to services for LEP persons. Considering the relatively small size of the City of Canton and limited financial resources, current training may be limited to web access to this document and it's attachments by all City Staff, a log showing the names of all Staff that have been made aware of this document (sign off that they have read the document) and require that all new employees receive the same training.

Signature and Proposal Pages

Signature Page
Crenshaw Park Outdoor Shelter

To the Director of Public Service of the City of Canton:

The undersigned, having carefully examined the complete invitation to bid, herewith proposes to furnish all the labor and materials required to complete the **Crenshaw Park Outdoor Shelter** in accordance with the specifications on file, including any and all work and materials that may be necessary to complete the project in a proper and workmanlike manner, and in accordance with the instructions in the bid packet and under the direction of and to the satisfaction of the Director of Public Service of said City.

The bidder hereby agrees that the Director of Public Service has the right to reject any and all bids and to accept the bid(s) deemed most beneficial to the City of Canton.

The bidder hereby certifies that the undersigned _____ is the only person interested in the bid and the bidder herewith certifies that no officer or employee of the City of Canton is in any manner interested therein.

The bidder herewith encloses a _____**(BID BOND, CERTIFIED/CASHIER'S CHECK)** in the sum of $ _____ dollars made payable to the CITY OF CANTON as a guaranty that if awarded the contract for the work included in the proposal, _____ will enter into contract therefore, with sureties satisfactory to the Director of Public Service, within the prescribed time of ten (10) days from the date of service of notice of award, otherwise such bond or checks shall become the property of said City, as liquidated damages of the failure on the bidder's part to do said contract within the specified time.

The bidder acknowledges receipt of Addenda Numbers: _____.

SIGNATURE OF BIDDER: _____.

NOTE: If bidder is a corporation, set forth the legal name of the corporation, together with the signature of the officer or officers authorized to sign contracts on behalf of the corporation. If bidder is a partnership, set forth the name of the firm, together with the signature of the partner or partners authorized to sign contracts on behalf of the partnership.

Proposal Page

We (I), the above signed hereby propose to furnish the following article(s) and/or service(s) at the price(s) and terms stated subject to all instructions, conditions, specifications, and all attachments hereto. We (I) have read all attachments including the specifications and fully understand what is required.

BID ITEM	SPEC ITEM	DESCRIPTION	QTY	UNIT	PRICE LABOR	PRICE MATERIAL		TOTAL
CITY OF CANTON COLEMAN COMMUNITY CENTER CRENSHAW PARK NEW PAVILION								
Base Bid	ALL	Perform all General Contract work as outlined in Project Manual and as shown on Drawings	1	Lump				
Allowance		General Contractor to include General Purpose Construction Allowance.	1	Lump				$10,000
		PROJECT TOTAL						

Bid Price in Figures _____ **FROM:** _____

_____

Bid Price in Words _____ _____

_____