



COMPLEX PROJECTS
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**TUSCARAWAS COUNTY COMMISSIONERS
TUSCARAWAS COUNTY, OHIO**

CONTRACT 2 – WILKSHIRE HILLS WATER SYSTEM IMPROVEMENTS

ADDENDUM #5

March 8, 2023

THRASHER PROJECT #101-010-01120

TO WHOM IT MAY CONCERN:

The following are clarifications and responses to questions posed by contractors for the above-referenced project.

A. GENERAL

1. **THE BID FORM HAS BEEN REVISED. YOU MUST USE THE REVISED BID FORM WHEN PREPARING YOUR BID PACKAGE FOR THIS PROJECT. REPLACE PAGES BID 1-5 WITH C-410.**
2. **REPLACE INDEX** with attached.
3. **ADD C-451.** Bidder Qualifications Statement is now part of the Bid Opening Requirements. Please find the enclosed form. This must accompany your bid.
4. **ADD USDA FORM RD 400-6.** Compliance Statement is now part of the Bid Opening Requirements. Please find the enclosed form. This must accompany your bid.
5. **ADD USDA FORM AD-1048.** Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion Lower Tier Covered Transactions is now part of the Bid Opening Requirements. Please find the enclosed form. This must accompany your bid.
6. **ADD RD INSTRUCTION 1940-Q.** Part 1940 - General, Subpart Q is now part of the Bid Opening Requirements. Please find the enclosed form. This must accompany your bid.
7. **ADD RUS BULLETIN 1780-35 EXHIBIT C.** General (prime) contractor's certification of compliance with provisions of the American Iron and Steel

requirements of section 746 of title vii of the consolidated appropriations act of 2017 (division a - agriculture, rural development, food and drug administration, and related agencies appropriations act, 2017) and subsequent statutes mandating domestic preference is now part of the Bid Opening Requirements. Please find the enclosed form. This must accompany your bid.

8. **ADD RUS BULLETIN 1780-35 EXHIBIT D.** An example of a manufacturer's certification letter of compliance with provisions of the American iron and steel (AIS) requirements of section 746 of title vii of the consolidated appropriations act of 2017 (division a - agriculture, rural development, food and drug administration, and related agencies appropriations act, 2017) and subsequent statutes mandating domestic preference. This is to be provided by the successful bidder before any equipment is installed as part of this contract.
9. **REPLACE DAVIS-BACON WAGE RATES IN EXHIBIT D.** Current rates attached.
10. **ADD EXHIBIT I – SAMPLE PILOT STUDY** per edit to spec 466121 below.

B. SPECIFICATIONS

1. **ADD Specification 099001 Building Painting** attached.
2. **REPLACE Specification 433269 Chemical Feed Systems pages 3-4** with the attached 433269 pages 3-4. Edit made on page 3:
 - Part 2.1 - Dosing Pump
 - A - Manufacturer
 - 1 - Stenner Pumps, Model 85MHP40; **Or Approval Equal**
3. **REPLACE Specification 466121 Pressure Filters** with the attached Specification 466121. Edit made on page 3:
 - Part 2.1 – Pressure Filters
 - A – Manufacturers
 - 2 – Or Approved Equal
 - A – Manufacturers that request a substitute from Layne Christensen Company shall perform a pilot study as required by the Ohio EPA for approval prior to acceptance of substitute. Pilot study shall be performed at the design loading rate. **A copy of a sample pilot study is attached as Exhibit I.**

C. DRAWINGS

1. **REPLACE drawing E1 General Notes, Legend, and Schedule** with attached E1 General Notes, Legend, and Schedule.
2. **REPLACE drawing M1 Gen Notes/Schedules/Details/Mech** with attached M1 Gen Notes/Schedules/Details/Mech.
3. **REPLACE drawing D1.01 Demolition Floor Plan** with attached D1.01 Demolition Floor Plan.
4. **REPLACE drawing A1.03 Roof Plan** with attached A1.03 Roof Plan.
5. **REPLACE drawing A2.01 Building Elevations** with attached A2.01 Building Elevations.
6. **REPLACE drawing A2.02 Building Elevations** with attached A2.02 Building Elevations.
7. **REPLACE drawing A3.01 Building Sections** with attached A3.01 Building Sections.
8. **REPLACE drawing A3.02 Wall Sections** with attached A3.02 Wall Sections.
9. **REPLACE drawing A5.02 Proposed Filter Building Details** with attached A5.02 Proposed Filter Building Details.

D. QUESTIONS AND RESPONSES**QUESTION 1**

I didn't see any specs or plans regarding insulation on the walls of the proposed filter building. Could you provide some clarity on that?

RESPONSE

Please refer to drawing A3.0 and A5.02 for the proposed wall sections.

QUESTION 2

Could you provide clarity as to what the interior walls of the proposed filter building will be finished with?

RESPONSE

Please refer to specification 099001 Building Painting.

QUESTION 3

On page 10A and 10B, PRV and flow meters, are these sections of pipe dual feed or can they be isolated to install the vaults, piping etc., or will a bypass need to be installed while new construction, hydro test, and bacteria test take place?

RESPONSE

The contractor must determine his/her own means and methods of construction. While installing the meters, pits and PRV's, yes, the new section will require hydro testing and bacteria testing before it is placed in service.

QUESTION 4

Filter building: Details shown on A5.01 show 2" rigid insulation and gyp board on interior walls. Wall sections on A3.02 and structural drawings do not show insulation & gyp. Please clarify what is required.

RESPONSE

The contractor is to follow the wall section details on the architectural drawings. Please refer to drawing A3.0 and A5.02 for the proposed wall sections.

QUESTION 5

What is rebar spacing for grouted masonry walls?

RESPONSE

See sheet S3.01 Typ. Masonry Wall Reinforcement Layout Details.

QUESTION 6

Please clarify modification to existing bldg. roof Dwg. A2.02 section 1 Existing bldg. roof tie-in to new. This shows the existing truss remaining and extending roof to new building. Sheet A3.02 wall section 3 shows something different.

RESPONSE

See Sheets A5.02, A3.01, A3.02

QUESTION 7

Bollards: Note 4 on 2B lists 8" diam bollards but detail D-3 referred to in this note calls out for 4" diam.

RESPONSE

Please follow the Detail on sheet DET-3.

QUESTION 8

Will the county provide water for HDD?

RESPONSE

The County will allow the contractor to connect to a hydrant for their water supply, within reason, at no cost to the contractor. However, the contractor is required to coordinate with the owner.

QUESTION 9

What stainless steel grade is scum baffle shown on sht. 7? 316, 304?

RESPONSE

The contractor is to use 316 Stainless Steel.

QUESTION 10

Is there a spec for meters 1 & 2? I see Omni meter on the drawings but need a model or spec.

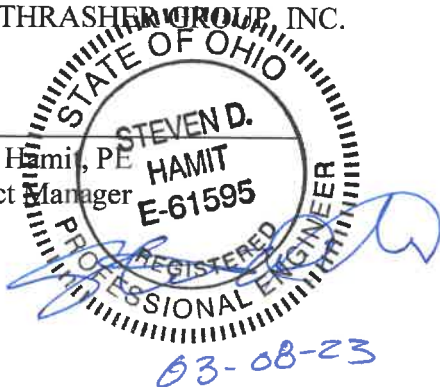
RESPONSE

Sheet 10 indicates a 6" OMNI meter. Based upon that information, I would look at the 6" Sensus, OMNI+Turbo water meter or an approved equal.

If you have any questions or comments, please feel free to contact me at your earliest convenience at shamit@thethrashergroup.com. As a reminder, **bids will be received until 9:45 a.m. on Wednesday, March 15, 2023, at the Office of the Clerk of the Board of the Tuscarawas County Commissioners located at 125 E High Ave, New Philadelphia, OH 44663.** Good luck to everyone, and thank you for your interest in the project.

Sincerely,
THE THRASHER GROUP, INC.

Steve Hamit, PE
Project Manager



BID FORM FOR CONSTRUCTION CONTRACT

The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

ARTICLE 1—OWNER AND BIDDER

1.01 This Bid is submitted to:

*Tuscarawas County Commissioners
125 E High Ave
New Philadelphia, OH 44663*

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2—ATTACHMENTS TO THIS BID

2.01 The following documents are submitted with and made a condition of this Bid:

A. Bid Opening Requirements

Note: Bid Opening Requirements (BOR-12) includes the American Iron and Steel Certification which needs to be filled out and signed by the Contractor. This certification also references two (2) Exhibits located in the Supplemental General Conditions (C-800) which were issued as part of RUS Bulletin 1780-35.

ARTICLE 3—BASIS OF BID—LUMP SUM BID AND UNIT PRICES

GENERAL

The Bidder shall take notice of and shall be responsible for any local or state taxes levied and applicable, and the cost for the same shall be included as part of the submitted Bid.

The total Bid cost stated includes a complete operating installation including furnishing and installation of any and all changes or additions in plans, piping, mechanical work, additional electrical work, accessories, controls, etc. necessary to accommodate alternative equipment systems or materials used in construction.

BID PROPOSAL

The Bidder agrees to perform all required Work described in the detailed Specifications and as shown on the Plans for the complete construction and placing in satisfactory operation for **Contract 2 – Wilkshire Hills Water System Improvements**. The Project "Sequence of Construction" has been detailed in the Drawings and Specification Division 1, Project Summary, Section 011000. The Bidder agrees to perform all the Work proposed for the total of the following Bid prices.

3.01 *Lump Sum Bids*

- A. Bidder will complete the Work in accordance with the Contract Documents for the lump sum (stipulated) price(s), together with any Unit Prices indicated in Paragraph 3.02 and shown in the bid schedule.
- B. Lump Sum Bids may be one of the following:
 - 1. Lump Sum Price (Single Lump Sum)
 - 2. Lump Sum Price (Base Bid and Alternates)
 - 3. Lump Sum Price (Sectional Lump Sum Bids)
- C. All specified cash allowance(s) are included in the price(s) set forth in the bid schedule, and have been computed in accordance with Paragraph 13.02 of the General Conditions.
- D. All specified contingency allowances are included in the price(s) set forth in the bid schedule, and have been computed in accordance with Paragraph 13.02 of the General Conditions.

3.02 *Unit Price Bids*

- A. Bidder will perform the following Work at the indicated unit prices as shown in the Bid Schedule.
- B. Bidder acknowledges that:
 - 1. each Bid Unit Price includes an amount considered by Bidder to be adequate to cover Contractor's overhead and profit for each separately identified item, and
 - 2. estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Work will be based on actual quantities, determined as provided in the Contract Documents.

3.03 *Total Bid Price (Lump Sum and Unit Prices)*

**PROPOSED
 CONTRACT 2 – WILKSHIRE HILLS WATER SYSTEM IMPROVEMENTS
 FOR THE**

**TUSCARAWAS COUNTY COMMISSIONERS
 TUSCARAWAS COUNTY, OHIO
 THRASHER PROJECT #101-010-01120**

BID SCHEDULE

NOTE: Bid Unit Price amounts are to be shown in both words and figures. In case of discrepancy, the Bid Unit Price shown in words will govern. ~~Bids shall include sales tax and all other applicable taxes and fees.~~

Bid Item	Quantity	Description with Unit Price Written In Words	Unit Price (In Figures)	Total Price (In Figures)
1	1 LS	MOBILIZATION / DEMOBILIZATION		
		Dollars		
		Cents	\$	\$
2	1 LS	DEMOLISH EXISTING PIPE		
		Dollars		
		Cents	\$	\$
3	2 LS	FLOW METER VAULT WITH APPURTENANCES		
		Dollars		
		Cents	\$	\$
4	3 LS	8" PRESSURE REDUCING VALVE		
		Dollars		
		Cents	\$	\$
5	4 EA	CONNECT TO EX. WATER LINE		
		Dollars		
		Cents	\$	\$
6	69 LF	6" PVC, C-900 WATER LINE		
		Dollars		
		Cents	\$	\$

Bid Item	Quantity	Description with Unit Price Written In Words	Unit Price (In Figures)	Total Price (In Figures)
7	86 LF	8" PVC, C-900 WATER LINE		
		Dollars		
		Cents	\$	\$
8	4 EA	6" GATE VALVE AND VALVE BOX		
		Dollars		
		Cents	\$	\$
9	7 EA	8" GATE VALVE AND VALVE BOX		
		Dollars		
		Cents	\$	\$
10	1 LS	WTP IMPROVEMENTS		
		Dollars		
		Cents	\$	\$

TOTAL BID: _____
 (Words) (\$ _____)
 (Words) (Figures)

(Bid Unit Price amounts are to be shown in both words and figures. In case of discrepancy, the Bid Unit Price shown in words will govern.)

3.04 Method of Award

Method of Award = Lowest Qualified Bidder (Regular)

If at the time this contract is to be awarded, the lowest total bid submitted by a qualified, responsive, responsible Bidder does not exceed the amount of funds then estimated by the Owner, as available to finance the contract, the construction contract will be awarded. If such bids exceeds such amount, the owner may reject all bids.

- A. Unit prices have been computed in accordance with paragraph 13.03.A of the General Conditions.
- B. Bidder acknowledges that estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Bid items will be based on actual quantities, determined as provided in the Contract Documents.

{OR}

~~{Method of Award = Lowest Qualified Bidder (Deductive Alternate)}~~

~~—— If at the time this Contract is to be awarded, the lowest total bid submitted by a qualified, responsive, responsible bidder, as listed in contract does not exceed the amount of funds estimated by the Owner, as available to finance the contract, the construction contract will be awarded. If such bids exceeds such amount, the Owner may reject all bids. The Owner may award the contract on the total bid submitted by a qualified, responsive, responsible bidder, less the amount(s) of the deductive alternate(s) subtracted in numerical order to produce the lowest bid within the funds available for financing.~~

~~A. Unit prices have been computed in accordance with paragraph 13.03.A of the General Conditions.~~

~~B. Bidder acknowledges that estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Bid items will be based on actual quantities, determined as provided in the Contract Documents.~~

{OR}

~~{Method of Award = Lowest Qualified Bidder (Additive Alternates)}~~

~~{Apply in numerical order as in deductive}~~

~~—— If at the time this contract is to be awarded, the lowest total bid submitted by a qualified, responsive, responsible Bidder does not exceed the amount of funds then estimated by the Owner, as available to finance the contract, the construction contract will be awarded. Awarding of Additive Alternate(s) will not affect the lowest Bidder. If such bids exceed such amount, the Owner may reject all bids.~~

~~The Owner will award the contract on the total base bid amount inclusive or exclusive of alternates as determined by the Owner and submitted by a qualified, responsive, responsible Bidder. The Owner may elect to award any or all of the additive alternates in no particular order.~~

~~A. Unit prices have been computed in accordance with paragraph 13.03.A of the General Conditions.~~

~~B. Bidder acknowledges that estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Bid items will be based on actual quantities, determined as provided in the Contract Documents.~~

{OR}

~~{Method of Award = Lowest Qualified Bidder (Multiple Contracts)}~~

~~{Only if Necessary, If one company bids all contracts, they can add a % deduction to their total bid}~~

~~—— If at the time this contract is to be awarded, the lowest total bid submitted by a qualified, responsive, responsible Bidder does not exceed the amount of funds then estimated by the Owner, as available to finance the contract, the construction contract will be awarded. If such bids exceeds such amount, the owner may reject all bids. The Owner may award the contract on the total bid submitted by a qualified, responsive, responsible bidder after apply the % deduct, if offered, as listed in contract to produce the lowest bid within the funds available for financing.~~

~~A. Unit prices have been computed in accordance with paragraph 13.03.A of the General Conditions.~~

~~B. Bidder acknowledges that estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Bid items will be based on actual quantities, determined as provided in the Contract Documents.~~

{OR}

{Method of Award = Lowest Qualified Bidder (Alternate Bids)}

~~—— If at the time this contract is to be awarded, the lowest total bid or either alternate total bid submitted by a qualified, responsive, responsible Bidder does not exceed the amount of funds then estimated by the Owner, as available to finance the contract, the construction contract will be awarded. If such bids exceeds such amount, the owner may reject all bids. The Owner may award the contract on the total bid or either alternate total bid submitted by a qualified, responsive, responsible bidder less the amount of the deductive alternate as listed in contract to produce the lowest bid within the funds available for financing.~~

~~A. Unit prices have been computed in accordance with paragraph 13.03.A of the General Conditions.~~

~~B. Bidder acknowledges that estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Bid items will be based on actual quantities, determined as provided in the Contract Documents.~~

ARTICLE 4 — BASIS OF BID — COST PLUS FEE

~~4.01 The Contract Price will be the Cost of the Work, determined as provided in Paragraph 13.01 of the General Conditions, together with the following fee, and subject to the Guaranteed Maximum Price.~~

~~4.02 Contractor's Fee~~

~~A. Contractor's fee will be [number] percent of the Cost of the Work. No fee will be payable on the basis of costs itemized as excluded in Paragraph 13.01.C of the General Conditions.~~

~~1. The maximum amount payable by Owner as a percentage fee (Guaranteed Maximum Fee) will not exceed \$[insert cap amount], subject to increases or decreases for changes in the Work.~~

~~B. Contractor's fee will be determined by applying the following percentages to the various portions of the Cost of the Work as defined in Article 13 of the General Conditions. No fee will be payable on the basis of costs itemized as excluded in Paragraph 13.01.C of the General Conditions:~~

Costs	Percent
Payroll costs (See Paragraph 13.01.B.1, General Conditions)	
Materials and Installed Equipment cost (GC 13.01.B.2)	
Amounts to be paid to Subcontractors (GC 13.01.B.3)	
Amount to be paid to special consultants (GC 13.01.B.4)	
Other costs (GC 13.01.B.5)	

1. The maximum amount payable by Owner as a percentage fee (Guaranteed Maximum Fee) will not exceed \$[insert cap amount], subject to increases or decreases for changes in the Work.

C. Contractor's fee will be the fixed sum of \$[number].

4.03 *Guaranteed Maximum Price*

- A. The Guaranteed Maximum Price to Owner of the Cost of the Work including Contractor's Fee will not exceed \$[Bidder fill in GMP].

Deleted

ARTICLE 5 — PRICE PLUS TIME BID

5.01 *Price Plus Time Contract Award (Stipulated Price Contract)*

- A. The Bidder to which an award of the Contract will be made will be determined in part on the basis of the Total Bid Price and the total number of calendar days to substantially complete the Work, in accordance with the following:

	Description		Amount
A	1. Total Bid Price		\$(number)
	2. Total number of calendar days to substantially complete the Work	{number} days	
	3. Liquidated Damages Rate (from Agreement)	\$(number)/day	
B	4. Adjustment Amount (2 x 3)		\$(number)
A+B	5. Amount for Comparison of Bids		\$(number)

- B. The purpose of the process in the table above is only to calculate the lowest price plus time (A+B) bid amount for bid comparison purposes. The price for completion of the Work (the Contract Price) is the Total Bid Price.

C. Bonds required under Paragraph 6.01 of the General Conditions will be based on the Contract Price.

5.02 *Price Plus Time Contract Award (Cost Plus Fee with Guaranteed Maximum Price Contract)*

- A. The Bidder to which an award of Contract will be made will be determined in part on the basis of the Guaranteed Maximum Price and the total number of calendar days to substantially complete the Work, in accordance with the following:

	Description		Amount
A	1. Guaranteed Maximum Price		\$(number)
	2. Total number of calendar days to substantially complete the Work	{number} days	
	3. Liquidated Damages Rate (from Agreement)	\$(number)/day	
B	4. Adjustment Amount (2 x 3)		\$(number)
A+B	5. Amount for Comparison of Bids		\$(number)

- B. The purpose of the process in the table above is only to calculate the lowest price plus time (A+B) bid amount for bid comparison purposes. The price for completion of the Work (the Contract Price) is based on the cost of the Work, plus a fee, subject to a guaranteed maximum price, as set forth in the Agreement.

~~C. Bonds required under Paragraph 6.01 of the General Conditions will be based on the Contract Price.~~

Deleted

ARTICLE 6—TIME OF COMPLETION

6.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.

6.02 ~~Bidder agrees that the Work will be substantially complete on or before [Bidder inserts date], and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before [Bidder inserts date].~~

Deleted

6.03 ~~Bidder agrees that the Work will be substantially complete within [Bidder inserts number] calendar days after the date when the Contract Times commence to run as provided in Paragraph 4.01 of the General Conditions, and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions within [Bidder inserts number] calendar days after the date when the Contract Times commence to run.~~

Deleted

6.04 Bidder accepts the provisions of the Agreement as to liquidated damages.

ARTICLE 7—BIDDER'S ACKNOWLEDGEMENTS: ACCEPTANCE PERIOD, INSTRUCTIONS, AND RECEIPT OF ADDENDA

7.01 Bid Acceptance Period

A. This Bid will remain subject to acceptance for 90 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

7.02 Instructions to Bidders

A. Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security.

7.03 Receipt of Addenda

A. Bidder hereby acknowledges receipt of the following Addenda:

Addendum Number	Addendum Date

ARTICLE 8—BIDDER'S REPRESENTATIONS AND CERTIFICATIONS

8.01 Bidder's Representations

A. In submitting this Bid, Bidder represents the following:

1. Bidder has examined and carefully studied the Bidding Documents, including Addenda.
2. Bidder has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, and become familiar with the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
3. Bidder is familiar with all Laws and Regulations that may affect cost, progress, and performance of the Work.

4. Bidder has carefully studied the reports of explorations and tests of subsurface conditions at or adjacent to the Site and the drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, with respect to the Technical Data in such reports and drawings.
5. Bidder has carefully studied the reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, with respect to Technical Data in such reports and drawings.
6. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Technical Data identified in the Supplementary Conditions or by definition, with respect to the effect of such information, observations, and Technical Data on (a) the cost, progress, and performance of the Work; (b) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, if selected as Contractor; and (c) Bidder's (Contractor's) safety precautions and programs.
7. Based on the information and observations referred to in the preceding paragraph, Bidder agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
8. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.
9. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and of discrepancies between Site conditions and the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
10. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
11. The submission of this Bid constitutes an incontrovertible representation by Bidder that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

8.02 *Bidder's Certifications*

A. The Bidder certifies the following:

1. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation.
2. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid.
3. Bidder has not solicited or induced any individual or entity to refrain from bidding.
4. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 8.02.A:
 - a. Corrupt practice means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process.
 - b. Fraudulent practice means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition.

- c. Collusive practice means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels.
- d. Coercive practice means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

BIDDER hereby submits this Bid as set forth above:

Bidder:

(typed or printed name of organization)

By:

(individual's signature)

Name:

(typed or printed)

Title:

(typed or printed)

Date:

(typed or printed)

If Bidder is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.

Attest:

(individual's signature)

Name:

(typed or printed)

Title:

(typed or printed)

Date:

(typed or printed)

Address for giving notices:

Bidder's Contact:

Name:

(typed or printed)

Title:

(typed or printed)

Phone:

Email:

Address:

Bidder's Contractor License No.: (if
applicable)

**CONTRACT 2 - WILKSHIRE HILLS WATER SYSTEM IMPROVEMENTS
FOR THE
TUSCARWAS COUNTY COMMISSIONERS
TUSCARWAS COUNTY, OHIO
THRASHER PROJECT #101-010-01120**

- I N D E X -

BIDDING DOCUMENTS

Advertisement for Bids	C-111
Engineer's Estimate	EST-1
Instructions to Bidders	C-200
Bid Opening Requirements	BOR 1-19
Qualifications Statement	C-451
Compliance Statement	RD 400-6
Certification Regarding Debarment, etc.	AD-1048
RD Instruction	1940-Q
RUS Bulletin	1780-35-C
RUS Bulletin	1780-35-D
Bid Form	C-410

CONDITIONS OF WORK

Notice of Award	C-510
Agreement	C-520
Certificate of Owner's Attorney and Agency Concurrence	GC-A
Certificate of Funds	COF-1
Performance Bond	C-610
Payment Bond	C-615
Notice to Proceed	C-550
Contractors Application for Payment	C-620

Change Order	C-941
Memorandum of Negotiation	M-1
Field Order	C-942
Work Change Directive	C-940
Certificate of Substantial Completion	C-625
Notice of Acceptability	C-626
General Conditions	C-700
Supplementary Conditions	C-800
Additional Supplemental General Conditions	ASGC
American Iron and Steel	AISR

EXHIBITS

Exhibit A - Abnormal Weather Conditions
Exhibit B - Geotechnical Wavier
Exhibit C - Responsibilities of Resident Project Representative
Exhibit D – Davis-Bacon Act Prevailing Wage
Exhibit E - Temporary Construction Sign
Exhibit F - Affidavit for Payment
Exhibit G - Prime Contractors Compliance
Exhibit H - Example of a Manufacturer’s Certification Letter of Compliance

Exhibit I – Sample Pilot Study Report

TECHNICAL SPECIFICATIONS

Summary	011000
Price and Payment Procedures	012000
Substitution Procedures	012500
Contract Modification Procedures	012600

Administrative Requirements	013000
Construction Progress Schedule	013216
Submittal Procedures	013300
Quality Requirements	014000
Temporary Facilities and Controls	015000
Product Requirements	016000
Execution and Closeout Requirements	017000
Operation and Maintenance Data	017823
Project Record Documents	017839
Commissioning	019100
Selective Demolition	024119
Concrete Forming and Accessories	031000
Concrete Reinforcing	032000
Cast-In-Place Concrete	033000
Concrete Curing	033900
Grouting	036000
Concrete Unit Masonry	042200
Steel Decking	053100
Metal Fabrications	055000
Metal Gratings	055300
Plastic Paneling	066400
Bituminous Dampproofing	071113
Thermal Insulation	072100
Standing-Seam Metal Roof Panels	074113.16
Soffit Panels	074293

Plastic Siding	074633
Roof Specialties	077100
Snow Guards	077253
Joint Sealants	079200
Hollow Metal Door Frames	081113
Overhead Coiling Doors	083323
Gypsum Board	092900
Resilient Base and Accessories	096513
Painting and Coating	099000
Building Painting	099001
Signage	101400
Fire Extinguishers	104416
Common Motor Requirements for HVAC Equipment	230513
Identification for HVAC Piping and Equipment	230553
Testing, Adjusting, and Balancing for HVAC	230593
Duct Insulation	230713
Insulated Double Wall Duct	233112
Metal Ducts	233113
Air Ducts Accessories	233300
Air Diffusers	233713.13
Electric Heating Units	236239
Outdoor, Mechanical Dehumidification Units	238416.13
Basic Electrical Materials and Methods	260500
Conductors and Cables	260523
Grounding and Bonding	260526

Raceways and Boxes	260533
Dry Type Transformers	262200
Panelboards	262416
Motor Control Center	262419
Wiring Devices	262726
Fuses	262813
Enclosed Switches and Circuit Breakers	262816
Transfer Switches	263200
Packaged Engine Generators	263213
LED Interior Lighting	265101
LED Exterior Lighting	265619
Soils for Earthwork	310513
Excavation	312316
Trenching	312316.13
Erosion and Sedimentation Controls	312500
Chain Link Fences and Gates	323113
Disinfection of Water Utility Piping Systems	330110.58
Disinfection of Water Utility Storage Tanks	330110.59
Hydrostatic Testing	330505.31
Utility Horizontal Directional Drilling	330523.13
Concrete Vaults and Chambers	330563
Glass Lined Steel Bolted Tanks	331613
Hangers and Supports for Process Piping	400507
Ductile Iron Process Pipe	400519
Thermoplastic Process Pipe	400531

Identification for Process Piping	400551
Process Valves and Appurtenances	400553
Magnetic Flow Meters	407113
Ultrasonic Level Transmitter	407169
Process Liquid Measurement Analyzers	407500
Process Control Descriptions	409300
Submersible Centrifugal Pumps	432513
Chemical Feed Systems	433269
Pressure Filters	466121

PLANS

QUALIFICATIONS STATEMENT

ARTICLE 1—GENERAL INFORMATION

1.01 Provide contact information for the Business:

Legal Name of Business:			
Corporate Office			
Name:		Phone number:	
Title:		Email address:	
Business address of corporate office:			
Local Office			
Name:		Phone number:	
Title:		Email address:	
Business address of local office:			

1.02 Provide information on the Business's organizational structure:

Form of Business:	<input type="checkbox"/> Sole Proprietorship <input type="checkbox"/> Partnership <input type="checkbox"/> Corporation		
<input type="checkbox"/> Limited Liability Company <input type="checkbox"/> Joint Venture comprised of the following companies:			
1.			
2.			
3.			
Provide a separate Qualification Statement for each Joint Venturer.			
Date Business was formed:		State in which Business was formed:	
Is this Business authorized to operate in the Project location?		<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Pending	

1.03 Identify all businesses that own Business in whole or in part (25% or greater), or that are wholly or partly (25% or greater) owned by Business:

Name of business:		Affiliation:	
Address:			
Name of business:		Affiliation:	
Address:			
Name of business:		Affiliation:	

Address:	
----------	--

1.04 Provide information regarding the Business's officers, partners, and limits of authority.

Name:		Title:	
Authorized to sign contracts: <input type="checkbox"/> Yes <input type="checkbox"/> No		Limit of Authority:	\$
Name:		Title:	
Authorized to sign contracts: <input type="checkbox"/> Yes <input type="checkbox"/> No		Limit of Authority:	\$
Name:		Title:	
Authorized to sign contracts: <input type="checkbox"/> Yes <input type="checkbox"/> No		Limit of Authority:	\$
Name:		Title:	

ARTICLE 2—LICENSING

2.01 Provide information regarding licensure for Business:

Name of License:			
Licensing			
License No:		Expiration Date:	
Name of License:			
Licensing			
License No:		Expiration Date:	

ARTICLE 3—DIVERSE BUSINESS CERTIFICATIONS

3.01 Provide information regarding Business's Diverse Business Certification, if any. Provide evidence of current certification.

Certification	Certifying Agency	Certification Date
<input type="checkbox"/> Disadvantaged Business Enterprise		
<input type="checkbox"/> Minority Business Enterprise		
<input type="checkbox"/> Woman-Owned Business Enterprise		
<input type="checkbox"/> Small Business Enterprise		
<input type="checkbox"/> Disabled Business Enterprise		
<input type="checkbox"/> Veteran-Owned Business Enterprise		
<input type="checkbox"/> Service-Disabled Veteran-Owned Business		
<input type="checkbox"/> HUBZone Business (Historically Underutilized) Business		
<input type="checkbox"/> Other		
<input type="checkbox"/> None		

ARTICLE 4—SAFETY

- 4.01 Provide information regarding Business's safety organization and safety performance.

Name of Business's Safety		
Safety Certifications		
Certification Name	Issuing Agency	Expiration

- 4.02 Provide Worker's Compensation Insurance Experience Modification Rate (EMR), Total Recordable Frequency Rate (TRFR) for incidents, and Total Number of Recorded Manhours (MH) for the last 3 years and the EMR, TRFR, and MH history for the last 3 years of any proposed Subcontractor(s) that will provide Work valued at 10% or more of the Contract Price. Provide documentation of the EMR history for Business and Subcontractor(s).

Year									
Company	EMR	TRF R	MH	EMR	TRF R	MH	EMR	TRF R	MH

ARTICLE 5—FINANCIAL

- 5.01 Provide information regarding the Business's financial stability. Provide the most recent audited financial statement, and if such audited financial statement is not current, also provide the most current financial statement.

Financial Institution:		
Business address:		
Date of Business's most recent financial statement:		<input type="checkbox"/> Attached
Date of Business's most recent audited financial statement:		<input type="checkbox"/> Attached
Financial indicators from the most recent financial statement		
Contractor's Current Ratio (Current Assets ÷ Current Liabilities)		
Contractor's Quick Ratio ((Cash and Cash Equivalents + Accounts Receivable + Short Term Investments) ÷ Current Liabilities)		

ARTICLE 6—SURETY INFORMATION

- 6.01 Provide information regarding the surety company that will issue required bonds on behalf of the Business, including but not limited to performance and payment bonds.

Surety Name:			
Surety is a corporation organized and existing under the laws of the state of:			
Is surety authorized to provide surety bonds in the Project location?	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Is surety listed in “Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies” published in Department Circular 570 (as amended) by the Bureau of the Fiscal Service, U.S. Department of the Treasury? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Mailing Address (principal place of business):			
Physical Address (principal place of business):			
Phone (main):		Phone (claims):	

ARTICLE 7—INSURANCE

- 7.01 Provide information regarding Business’s insurance company(s), including but not limited to its Commercial General Liability carrier. Provide information for each provider.

Name of insurance provider, and type of policy (CLE, auto, etc.):			
Insurance Provider		Type of Policy (Coverage Provided)	
Are providers licensed or authorized to issue policies in the Project location?		<input type="checkbox"/> Yes <input type="checkbox"/> No	
Does provider have an A.M. Best Rating of A-VII or better?		<input type="checkbox"/> Yes <input type="checkbox"/> No	
Mailing Address (principal place of business):			
Physical Address (principal place of business):			
Phone (main):		Phone (claims):	

ARTICLE 8—CONSTRUCTION EXPERIENCE

8.01 Provide information that will identify the overall size and capacity of the Business.

Average number of current full-time employees:	
Estimate of revenue for the current year:	
Estimate of revenue for the previous year:	

8.02 Provide information regarding the Business's previous contracting experience.

Years of experience with projects like the proposed project:		
As a general contractor:		As a joint venturer:
Has Business, or a predecessor in interest, or an affiliate identified in Paragraph 1.03:		
Been disqualified as a bidder by any local, state, or federal agency within the last 5 years? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Been barred from contracting by any local, state, or federal agency within the last 5 years? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Been released from a bid in the past 5 years? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Defaulted on a project or failed to complete any contract awarded to it? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Refused to construct or refused to provide materials defined in the contract documents or in a change order? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Been a party to any currently pending litigation or arbitration? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Provide full details in a separate attachment if the response to any of these questions is Yes.		

8.03 List all projects currently under contract in Schedule A and provide indicated information.

8.04 List a minimum of three and a maximum of six projects completed in the last 5 years in Schedule B and provide indicated information to demonstrate the Business's experience with projects similar in type and cost of construction.

8.05 In Schedule C, provide information on key individuals whom Business intends to assign to the Project. Provide resumes for those individuals included in Schedule C. Key individuals include the Project Manager, Project Superintendent, Quality Manager, and Safety Manager. Resumes may be provided for Business's key leaders as well.

ARTICLE 9—REQUIRED ATTACHMENTS

9.01 Provide the following information with the Statement of Qualifications:

- A. If Business is a Joint Venture, separate Qualifications Statements for each Joint Venturer, as required in Paragraph 1.02.
- B. Diverse Business Certifications if required by Paragraph 3.01.
- C. Certification of Business's safety performance if required by Paragraph 4.02.
- D. Financial statements as required by Paragraph 5.01.
- E. Attachments providing additional information as required by Paragraph 8.02.

- F. Schedule A (Current Projects) as required by Paragraph 8.03.
- G. Schedule B (Previous Experience with Similar Projects) as required by Paragraph 8.04.
- H. Schedule C (Key Individuals) and resumes for the key individuals listed, as required by Paragraph 8.05.
- I. Additional items as pertinent.

This Statement of Qualifications is offered by:

Business:

(typed or printed name of organization)

By:

(individual's signature)

Name:

(typed or printed)

Title:

(typed or printed)

Date:

(date signed)

(If Business is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest:

(individual's signature)

Name:

(typed or printed)

Title:

(typed or printed)

Address for giving notices:

Designated Representative:

Name:

(typed or printed)

Title:

(typed or printed)

Address:

Phone:

Email:

Schedule A—Current Projects

Name of Organization					
Project Owner			Project Name		
General Description of Project					
Project Cost			Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager	
Name					
Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Project Owner			Project Name		
General Description of Project					
Project Cost			Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager	
Name					
Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Project Owner			Project Name		
General Description of Project					
Project Cost			Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager	
Name					
Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Schedule B—Previous Experience with Similar Projects

Name of Organization					
Project Owner			Project Name		
General Description of Project					
Project Cost			Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager	
Name					
Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Project Owner			Project Name		
General Description of Project					
Project Cost			Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager	
Name					
Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Project Owner			Project Name		
General Description of Project					
Project Cost			Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager	
Name					
Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Schedule B—Previous Experience with Similar Projects

Name of Organization					
Project Owner			Project Name		
General Description of Project					
Project Cost			Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager	
Name					
Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Project Owner			Project Name		
General Description of Project					
Project Cost			Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager	
Name					
Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Project Owner			Project Name		
General Description of Project					
Project Cost			Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager	
Name					
Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Schedule C—Key Individuals

Project Manager			
Name of individual			
Years of experience as project manager			
Years of experience with this organization			
Number of similar projects as project manager			
Number of similar projects in other positions			
Current Project Assignments			
Name of assignment		Percent of time used for this project	Estimated project completion date
Reference Contact Information (listing names indicates approval to contact named individuals as a reference)			
Name		Name	
Title/Position		Title/Position	
Organization		Organization	
Telephone		Telephone	
Email		Email	
Project		Project	
Candidate's role on project		Candidate's role on project	
Project Superintendent			
Name of individual			
Years of experience as project superintendent			
Years of experience with this organization			
Number of similar projects as project superintendent			
Number of similar projects in other positions			
Current Project Assignments			
Name of assignment		Percent of time used for this project	Estimated project completion date
Reference Contact Information (listing names indicates approval to contact named individuals as a reference)			
Name		Name	
Title/Position		Title/Position	
Organization		Organization	
Telephone		Telephone	
Email		Email	
Project		Project	
Candidate's role on project		Candidate's role on project	

Safety Manager			
Name of individual			
Years of experience as project manager			
Years of experience with this organization			
Number of similar projects as project manager			
Number of similar projects in other positions			
Current Project Assignments			
Name of assignment		Percent of time used for this project	Estimated project completion date
Reference Contact Information (listing names indicates approval to contact named individuals as a reference)			
Name		Name	
Title/Position		Title/Position	
Organization		Organization	
Telephone		Telephone	
Email		Email	
Project		Project	
Candidate's role on project		Candidate's role on project	
Quality Control Manager			
Name of individual			
Years of experience as project superintendent			
Years of experience with this organization			
Number of similar projects as project superintendent			
Number of similar projects in other positions			
Current Project Assignments			
Name of assignment		Percent of time used for this project	Estimated project completion date
Reference Contact Information (listing names indicates approval to contact named individuals as a reference)			
Name		Name	
Title/Position		Title/Position	
Organization		Organization	
Telephone		Telephone	
Email		Email	
Project		Project	
Candidate's role on project		Candidate's role on project	

USDA
Form RD 400-6
(Rev.12-09)

Form Approved
OMB No. 0575-0018

COMPLIANCE STATEMENT

This statement relates to a proposed contract with _____

(Name of borrower or grantee)

who expects to finance the contract with assistance from either the Rural Housing Service (RHS), Rural Business-Cooperative Service (RBS), or the Rural Utilities Service (RUS) or their successor agencies, United States Department of Agriculture (whether by a loan, grant, loan insurance, guarantee, or other form of financial assistance). I am the undersigned bidder or prospective contractor, I represent that:

1. I ☐ have, ☐ have not, participated in a previous contract or subcontract subject to Executive Order 11246 (regarding equal employment opportunity) or a preceding similar Executive Order.
2. If I have participated in such a contract or subcontract, I ☐ have, ☐ have not, filed all compliance reports that have been required to file in connection with the contract or subcontract.

☐ If the proposed contract is for \$50,000 or more: or ☐ If the proposed nonconstruction contract is for \$50,000 or more and I have 50 or more employees, I also represent that:
3. I ☐ have, ☐ have not previously had contracts subject to the written affirmative action programs requirements of the Secretary of Labor.
4. If I have participated in such a contract or subcontract, ☐ I have, ☐ have not developed and placed on file at each establishment affirmative action programs as required by the rules and regulations of the Secretary of Labor.

I understand that if I have failed to file any compliance reports that have been required of me, I am not eligible and will not be eligible to have my bid considered or to enter into the proposed contract unless and until I make an arrangement regarding such reports that is satisfactory to either the RHS, RBS or RUS, or to the office where the reports are required to be filed.

I also certify that I do not maintain or provide for my employees any segregated facilities at any of my establishments, and that I do not permit my employees to perform their services at any location, under my control, where segregated facilities are maintained. I certify further that I will not maintain or provide for my employees any segregated facilities at any of my establishments, and that I will not permit my employees to perform their services at any location, under my control, where segregated facilities are maintained. I agree that a breach of this certification is a violation of the Equal Opportunity clause in my contract. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms and wash rooms, restaurants and other eating areas time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, creed, color, or national origin, because of habit, local custom, or otherwise. I further agree that (except where I have obtained identical certifications for proposed subcontractors for specific time periods) I will obtain identical certifications from proposed subcontractors prior to the award of subcontracts exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity clause; that I will retain such certifications in my files; and that I will forward the following notice to such proposed subcontractors (except where the proposed subcontractors have submitted identical certifications for specific time periods):

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays the valid OMB control number. The valid OMB control number for this information collection is 0575-0018. The time required to complete this information collection is estimated to average 10 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

**NOTICE TO PROSPECTIVE SUBCONTRACTORS OF REQUIREMENTS FOR
CERTIFICATIONS OF NON-SEGREGATED FACILITIES**

A certification of Nonsegregated Facilities, as required by the May 9, 1967, order (32F.R. 7439, may 19, 1967) on Elimination of Segregated Facilities, by the Secretary of Labor, must be submitted prior to the award of a subcontract exceeding \$ 10,000 which is not exempt from the provisions of the Equal Opportunity clause. The certification may be submitted either for each subcontract or for all subcontracts during a period (i.e., quarterly, semiannually, or annually).

NOTE: The penalty for making false statements in offers is prescribed in 18 U.S.C. 1001.

DATE _____

(Signature of Bidder or Prospective Contractor)

Address (including Zip Code)

AD-1048



Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion Lower Tier Covered Transactions

The following statement is made in accordance with the Privacy Act of 1974 (5 U.S.C. § 552a, as amended). This certification is required by the regulations implementing Executive Order 12549, Debarment and Suspension, and 2 CFR §§ 180.300, 180.335, Participants' responsibilities. The regulations were amended and published on August 31, 2005, in 70 Fed. Reg. 51865-51880. Copies of the regulations may be obtained by contacting the Department of Agriculture agency offering the proposed covered transaction.

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0505-0027. The time required to complete this information collection is estimated to average 15 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. The provisions of appropriate criminal or civil fraud, privacy, and other statutes may be applicable to the information provided.

(Read instructions on page two before completing certification.)

- A. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency;
- B. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

ORGANIZATION NAME

PR/AWARD NUMBER OR PROJECT NAME

NAME(S) AND TITLE(S) OF AUTHORIZED REPRESENTATIVE(S)

SIGNATURE

DATE

In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident.

Persons with disabilities who require alternative means of communication for program information (e.g., Braille, large print, audiotope, American Sign Language, etc.) should contact the responsible Agency or USDA's TARGET Center at (202) 720-2600 (voice and TTY) or contact USDA through the Federal Relay Service at (800) 877-8339. Additionally, program information may be made available in languages other than English.

To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, found online at [How to File a Program Discrimination Complaint](#) and at any USDA office or write a letter addressed to USDA and provide in the letter all of the information requested in the form. To request a copy of the complaint form, call (866) 632-9992. Submit your completed form or letter to USDA by: (1) mail: U.S. Department of Agriculture, Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue, SW, Washington, D.C. 20250-9410; (2) fax: (202) 690-7442; or (3) email: program.intake@usda.gov.

USDA is an equal opportunity provider, employer, and lender.

Instructions for Certification

- (1) By signing and submitting this form, the prospective lower tier participant is providing the certification set out on page 1 in accordance with these instructions.
- (2) The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the Department or agency with which this transaction originated may pursue available remedies, including suspension or debarment.
- (3) The prospective lower tier participant must provide immediate written notice to the person(s) to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
- (4) The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of the rules implementing Executive Order 12549, at 2 CFR Parts 180 and 417. You may contact the Department or agency to which this proposal is being submitted for assistance in obtaining a copy of those regulations.
- (5) The prospective lower tier participant agrees by submitting this form that, should the proposed covered transaction be entered into, it may not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the Department or agency with which this transaction originated.
- (6) The prospective lower tier participant further agrees by submitting this form that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
- (7) A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the General Services Administration's System for Award Management Exclusions database.
- (8) Nothing contained in the foregoing shall be construed to require establishment of a system of records to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
- (9) Except for transactions authorized under paragraph (5) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the Department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

RD Instruction 1940-Q

PART 1940 - GENERAL

Subpart Q - Restrictions on Lobbying

§1940.801 Purpose.

This subpart implements section 319 of Public Law 101-121, which prohibits applicants and recipients of Federal contracts, grants and loans from using appropriated funds for lobbying the Federal Government in connection with a specific award. Section 319 also requires that each person who requests or receives a Federal contract, grant, loan, or a Federal commitment to guarantee a loan, must disclose the expenditure of any funds, other than appropriated funds, for lobbying activities. This subpart provides administrative guidance regarding the information contained in U.S. Department of Agriculture's (USDA) 7 CFR part 3018 and Departmental Regulation (DR) 2400-5, which are attached as Exhibits A and B of this subpart. This subpart is inapplicable to Farm Service Agency, Farm Loan Programs. (Revised 01-09-08, PN 417.)

§1940.802 [Reserved] (Revised 07-31-96, PN 264.)

§1940.803 Definitions.

In addition to the following, refer to the definitions in §3018.105 of Exhibit A of this subpart.

Appropriated funds. Federal funds received from any Federal agency for a purpose or purposes authorized by such agency.

Communication. Includes written, oral, electronic or other means of communications.

Receiving office. The State, District, or County Office that is the primary office responsible for processing an application.

§§1940.804 - 1940.809 [Reserved]

DISTRIBUTION: WSAL

Loan and Grant Making
General

1
(Revision 2)

(08-21-91) PN 171

RD Instruction 1940-Q

§1940.810 Certification for contracts, grants and loans.

- (a) The Certification for Contracts, Grants and Loans, contained in Exhibit A-1 of this subpart, must be completed at the time an application or bid proposal is submitted by a person requesting a contract or grant exceeding \$100,000, or a loan exceeding \$150,000.
- (b) Any person who requests or receives a contract, subcontract or subgrant exceeding \$100,000 at any tier under a covered contract, grant or loan, must complete and submit a certification to the next higher tier.
- (c) The certification completed by a person referred to in paragraph (a) of this section will be collected by the receiving office and filed in the case folder.
- (d) Recipients of contracts, grants or loans, or their subs, who receive certifications from lower tier applicants or recipients shall file the certifications with documents related to the subaward, and shall make them available for Agency examination upon request.
- (e) Refer to §3018.110 of Exhibit A of this subpart for additional information.

§1940.811 Statement for loan guarantees.

- (a) The Statement for Loan Guarantees, contained in Exhibit A-2 of this subpart, must be completed by the lender at the time an application is filed for each loan exceeding \$150,000.
- (b) The statement will be collected by the receiving office and filed in the case folder.
- (c) Refer to §3018.110 of Exhibit A of this subpart for additional information.

§1940.812 Disclosure of lobbying activities.

- (a) Standard Form (SF) LLL, "Disclosure of Lobbying Activities," which is part of Exhibit A of this subpart, must be completed by a person requesting or receiving a Agency contract, grant, loan, or a Agency commitment to guarantee a loan, and who meets the following conditions:
 - (1) the award amount exceeds the threshold stated in §1940.810(a) or §1940.811(a) of this subpart; and

§1940.812 (a) (Con.)

RD Instruction 1940-Q

(2) the person has made or has agreed to make any payment, using funds other than appropriated funds, to influence or attempt to influence a decision in connection with that specific award.

(b) SF-LLL must also be completed by any person who requests or receives a contract, subcontract or subgrant at any tier under a covered contract, grant or loan, and who meets the following conditions:

(1) the award amount exceeds \$100,000; and

(2) the person has made or has agreed to make any payment, using funds other than appropriated funds, to influence or attempt to influence a decision in connection with that specific award.

(c) Each person who meets all conditions of paragraph (a) or (b) of this section will submit a disclosure form at the time of the application or bid proposal, and, at the end of each calendar quarter in which there occurs an event as specified in §3018.110 (c) of Exhibit A of this subpart.

(d) All disclosure forms, including quarterly updates, will be collected in the receiving office. The forms completed by persons under paragraph (a) of this section will be submitted directly to the receiving office. Forms completed by persons under paragraph (b) of this section will be submitted to the next higher tier. They will then be forwarded from tier to tier until they reach the receiving office. The original completed form will be retained in the case folder. One copy will be forwarded to the State Director, and a second copy will be sent immediately to the following address:

USDA, Office of Operations
Procurement Division
Policy and Review Team
14th and Independence Ave., S.W.
Room 1575-S
Washington, D.C. 20250

(e) The information provided on this form cannot be used by Rural Development as a basis for denying Federal assistance.

(f) Refer to Exhibit B of this subpart for additional information.

§§1940.813 - 1940.819 [Reserved]

RD Instruction 1940-Q

§1940.820 Exceptions.

(a) The prohibition on the use of appropriated funds and disclosure requirements governing the use of funds, other than appropriated funds, do not apply to certain activities. These activities are described in Subparts B and C of Exhibit A of this subpart.

(b) Section 319 of P.L. 101-121 imposes no restrictions on the use of any funds for general lobbying; i.e., attempts to influence Congress or the Executive Branch with respect to a program, rather than a specific award. Such general lobbying need not be disclosed on SF LLL. However, Section 319 does not authorize lobbying otherwise restricted or prohibited by law.

§1940.821 Examples.

Several examples of activities addressed by this Instruction are contained in Exhibit C of this subpart. They are to be used for guidance purposes only.

§§1940.822 - 1940.839 [Reserved]

§1940.840 Penalties and enforcement.

(a) Failure to comply with the provisions of this subpart may result in civil penalties, as described in §3018.400 of Exhibit A of this subpart.

(b) The Under Secretary, Rural Development, shall take such actions as are necessary to ensure that the provisions in Section 319 of P.L. 101-121 are vigorously implemented and enforced.

§§1940.841 - 1940.850 [Reserved]

Attachments: Exhibits A, A-1, A-2, B, and C

oOo

1940-Q Exhibit A not automated please see manual

RD Instruction 1940-Q
Exhibit A-1

CERTIFICATION FOR CONTRACTS, GRANTS AND LOANS

The undersigned certifies, to the best of his or her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant or Federal loan, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant or loan.

2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant or loan, the undersigned shall complete and submit Standard Form - LLL, "Disclosure of Lobbying Activities," in accordance with its instructions.

3. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including contracts, subcontracts, and subgrants under grants and loans) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

(name)

(date)

(title)

oOo

(08-21-91) PN 171

RD Instruction 1940-Q

Exhibit A-2

STATEMENT FOR LOAN GUARANTEES

The undersigned states, to the best of his or her knowledge and belief, that:

If any funds have been or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this commitment providing for the United States to guarantee a loan, the undersigned shall complete and submit Standard Form - LLL, "Disclosure of Lobbying Activities," in accordance with its instructions.

Submission of this statement is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required statement shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

(name)

(organization)

(title)

(date)

oOo

(08-21-91) PN 171

1940-Q Exhibit B not automated see manual

RD Instruction 1940-Q

Exhibit C

EXAMPLES OF ACTIVITIES ADDRESSED BY RD INSTRUCTION 1940-Q

1. [A] is an applicant for a \$1,000,000 Rural Development Rural Rental Housing Loan. [B] is an architectural firm retained by [A] for preliminary design studies. [A] has requested [B] to visit the Rural Development State Office to discuss design options for use in developing an application.

This technical activity is specifically authorized for use of appropriated funds and does not need to be reported by [A] as a lobbying activity. However, if the visit includes any communication with Rural Development officials on application issues that are not architecturally related, the activity is not exempt from the law.

2. [C] will be submitting a loan application in the amount of \$149,000 for a community facility. [C] has paid, with its own funds, [D], a consultant, to visit the National Office to help expedite the application when it is received.

[C] will not be required to submit a certification nor a disclosure form because the loan amount is less than \$150,000.

3. [E] is borrowing \$2,000,000 from Rural Development to construct a hospital. The construction contract with [F] is in the amount of \$1,700,000. [F] has a mechanical subcontract with [G] in the amount of \$150,000.

[E] must submit a certification to Rural Development at the time of the application. [F] must submit its certificate with the proposed bid to [E]. [G], having a subcontract of more than \$100,000, must submit a certificate to [F]. [E] and [F] will retain the certifications they received from the lower tier awardees.

4. [H] is a lender who has requested an 80 percent guarantee on a \$175,000 guaranteed loan for applicant [I]. [I] submitted the loan application without a signed statement from [H] because the guaranteed portion of the loan (80% of \$175,000) was less than \$150,000.

The amount that determines whether or not a statement is required from the lender is the total guaranteed loan (amount obligated = \$175,000); therefore, the application should have included a statement from [H]. [I] is not required to sign a certification.

(08-21-91) PN 171

RD Instruction 1940-Q

Exhibit C

Page 2

5. [J] is a long time Rural Development borrower who submitted a Form SF LLL because she paid [K], a lobbyist, with her own funds, to visit Washington in an attempt to persuade a Member of Congress to increase the Farmer Programs budget for the next fiscal year.

The disclosure form is not required when the lobbying activity involves a program and not a specific application or award.

oOo

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Exhibit C
Page 1

GENERAL (PRIME) CONTRACTOR'S CERTIFICATION OF COMPLIANCE WITH
PROVISIONS OF THE AMERICAN IRON AND STEEL REQUIREMENTS OF SECTION
746 OF TITLE VII OF THE CONSOLIDATED APPROPRIATIONS ACT OF 2017
(DIVISION A - AGRICULTURE, RURAL DEVELOPMENT, FOOD AND DRUG
ADMINISTRATION, AND RELATED AGENCIES APPROPRIATIONS ACT, 2017) AND
SUBSEQUENT STATUTES MANDATING DOMESTIC PREFERENCE

DATE:

RE: PROJECT NAME
APPLICANT
CONTRACT NUMBER

I hereby certify that to the best of my knowledge and belief all iron and steel products installed for this project by my company and by any and all subcontractors and manufacturers my company has contracted with for this project comply with Section 746 of Title VII of the Consolidated Appropriations Act of 2017 (Division A - Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, 2017) and subsequent statutes mandating domestic preference or are the subject of a waiver approved by the Secretary of Agriculture or designee.

This certification is to be submitted upon completion of the project to the project engineer.

Name of Construction Company (PRINT)

By Authorized Representative (SIGNATURE)

Title

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Exhibit D
Page 1

EXAMPLE OF A MANUFACTURER'S CERTIFICATION LETTER OF COMPLIANCE
WITH PROVISIONS OF THE AMERICAN IRON AND STEEL (AIS) REQUIREMENTS OF
SECTION 746 OF TITLE VII OF THE CONSOLIDATED APPROPRIATIONS ACT OF 2017
(DIVISION A - AGRICULTURE, RURAL DEVELOPMENT, FOOD AND DRUG
ADMINISTRATION, AND RELATED AGENCIES APPROPRIATIONS ACT, 2017) AND
SUBSEQUENT STATUTES MANDATING DOMESTIC PREFERENCE

Date:

Company Name:

Company Address:

Subject: AIS Step Certification for Project (X), Owner's Name, and Contract Number

I, (company representative), certify that the (melting, bending, galvanizing, cutting, etc.) processes for (manufacturing or fabricating) the following products and/or material shipped or provided for the subject project is in full compliance with the AIS requirement as mandated by Section 746 of Title VII of the Consolidated Appropriations Act of 2017 (Division A - Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, 2017) and subsequent statutes mandating domestic preference.

Item, Products and/or Materials, and location of delivery (City, State):

- 1.
- 2.

Such processes for AIS took place at the following location:

(City, State)

This certification is to be submitted upon request to interested parties (e.g. municipalities, consulting engineers, general contractors, etc.)

If any of the above compliance statements change while providing materials to this project, please immediately notify the person(s) who is requesting to use your product(s).

Authorized Company Representative Signature

(Note: *Authorized signature shall be manufacturer's representative not the material distributor or supplier*)

"General Decision Number: OH20230001 03/03/2023

Superseded General Decision Number: OH20220001

State: Ohio

Construction Types: Heavy and Highway

Counties: Ohio Statewide.

Heavy and Highway Construction Projects

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	<ul style="list-style-type: none">Executive Order 14026 generally applies to the contract.The contractor must pay all covered workers at least \$16.20 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2023.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	<ul style="list-style-type: none">Executive Order 13658 generally applies to the contract.The contractor must pay all covered workers at least \$12.15 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2023.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <http://www.dol.gov/whd/govcontracts>.

Modification Number	Publication Date
0	01/06/2023
1	02/03/2023
2	03/03/2023

BROH0001-001 06/01/2021

DEFIANCE, FULTON (Excluding Fulton, Amboy & Swan Creek Townships), HENRY (Excluding Monroe, Bartlow, Liberty, Washington, Richfield, Marion, Damascus & Townships & that part of Harrison Township outside corporate limits of city of Napoleon), PAULDING, PUTNAM and WILLIAMS COUNTIES

	Rates	Fringes
Bricklayer, Stonemason.....	\$ 30.40	17.55

BROH0001-004 06/01/2021

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 30.40	17.55

BROH0003-002 06/01/2021

FULTON (Townships of Amboy, Swan Creek & Fulton), HENRY (Townships of Washington, Damascus, Richfield, Bartlow, Liberty, Harrison, Monroe, & Marion), LUCAS and WOOD (Townships of Perrysburg, Ross, Lake, Troy, Freedom, Montgomery, Webster, Center, Portage, Middleton, Plain, Liberty, Henry, Washington, Weston, Milton, Jackson & Grand Rapids) COUNTIES

	Rates	Fringes
Bricklayer, Stonemason.....	\$ 30.40	17.55

BROH0005-003 06/01/2020

CUYAHOGA, LORAIN & MEDINA (Hinckley, Granger, Brunswick, Liverpool, Montville, York, Homer, Harrisville, Chatham, Litchfield & Spencer Townships and the city of Medina)

	Rates	Fringes
BRICKLAYER		
BRICKLAYERS; CAULKERS;		
CLEANERS; POINTERS; &		
STONEMASONS.....	\$ 36.64	17.13
SANDBLASTERS.....	\$ 36.39	17.13
SEWER BRICKLAYERS & STACK		
BUILDERS.....	\$ 36.64	17.13
SWING SCAFFOLDS.....	\$ 37.14	17.13

BROH0006-005 05/01/2022

CARROLL, COLUMBIANA (Knox, Butler, West & Hanover Townships), STARK & TUSCARAWAS

	Rates	Fringes
Bricklayer, Stonemason.....	\$ 30.76	19.07

BROH0007-002 06/01/2021

LAWRENCE

	Rates	Fringes
Bricklayer, Stonemason.....	\$ 30.40	17.55

BROH0007-005 06/01/2021		

PORTAGE & SUMMIT

	Rates	Fringes
BRICKLAYER.....	\$ 30.40	17.55

BROH0007-010 06/01/2017		

PORTAGE & SUMMIT

	Rates	Fringes
MASON - STONE.....	\$ 28.65	14.55

BROH0008-001 06/01/2021		

COLUMBIANA (Salem, Perry, Fairfield, Center, Elk Run,
Middleton, & Unity Townships and the city of New Waterford),
MAHONING & TRUMBULL

	Rates	Fringes
BRICKLAYER.....	\$ 30.40	17.55

BROH0009-002 06/01/2021		

BELMONT & MONROE COUNTIES and the Townships of Warren & Mt.
Pleasant and the Village of Dillonvale in JEFFERSON COUNTY

	Rates	Fringes
Bricklayer, Stonemason.....	\$ 30.40	17.55
Refractory.....	\$ 31.45	19.01

BROH0010-002 06/01/2021		

COLUMBIANA (St. Clair, Madison, Wayne, Franklin, Washington,
Yellow Creek & Liverpool Townships) & JEFFERSON (Brush Creek &
Saline Townships)

	Rates	Fringes
Bricklayer, Stonemason.....	\$ 30.40	17.55

BROH0014-002 06/01/2021		

HARRISON & JEFFERSON (Except Mt. Pleasant, Warren, Brush Creek,
Saline & Salineville Townships & the Village of Dillonvale)

	Rates	Fringes
Bricklayer, Stonemason.....	\$ 30.40	17.55

BROH0016-002 06/01/2021		

ASHTABULA, GEAUGA, and LAKE COUNTIES

	Rates	Fringes
Bricklayer, Stonemason.....	\$ 30.40	17.55

BROH0018-002 06/01/2021

BROWN, BUTLER, CLERMONT, HAMILTON, PREBLE (Gasper, Dixon,
Israel, Lanier, Somers & Gratis Townships) & WARREN COUNTIES:

	Rates	Fringes
Bricklayer, Stonemason.....	\$ 30.40	17.55

BROH0022-004 06/01/2021

CHAMPAIGN, CLARK, CLINTON, DARKE, GREENE, HIGHLAND, LOGAN,
MIAMI, MONTGOMERY, PREBLE (Jackson, Monroe, Harrison, Twin,
Jefferson & Washington Townships) and SHELBY COUNTIES

	Rates	Fringes
Bricklayer, Stonemason.....	\$ 30.40	17.55

BROH0032-001 06/01/2021

GALLIA & MEIGS

	Rates	Fringes
Bricklayer, Stonemason.....	\$ 30.40	17.55

BROH0035-002 06/01/2021

ALLEN, AUGLAIZE, MERCER and VAN WERT COUNTIES

	Rates	Fringes
Bricklayer, Stonemason.....	\$ 30.40	17.55

BROH0039-002 06/01/2021

ADAMS & SCIOTO

	Rates	Fringes
Bricklayer, Stonemason.....	\$ 30.40	17.55

BROH0040-003 06/01/2021

ASHLAND, CRAWFORD, HARDIN, HOLMES, MARION, MORROW, RICHLAND,
WAYNE and WYANDOT (Except Crawford, Ridge, Richland & Tymochtee
Townships) COUNTIES

	Rates	Fringes
Bricklayer, Stonemason.....	\$ 31.93	22.54

FOOTNOTE: Layout Man and Sawman rate: \$1.00 per hour above
journeyman rate.

Free standing stack work ground level to top of stack;
 Sandblasting and laying of carbon masonry material in swing
 stage and/or scaffold; Ramming and spading of plastics and
 gunniting: \$1.50 per hour above journeyman rate.
 ""Hot"" work: \$2.50 above journeyman rate.

 BROH0044-002 06/01/2021

	Rates	Fringes
Bricklayer, Stonemason COSHOCTON, FAIRFIELD, GUERNSEY, HOCKING, KNOX, KICKING, MORGAN, MUSKINGUM, NOBLE (Beaver, Buffalo, Seneca & Wayne Townships) & PERRY COUNTIES:.....	\$ 30.40	17.55

 BROH0045-002 06/01/2021

FAYETTE, JACKSON, PIKE, ROSS and VINTON COUNTIES

	Rates	Fringes
Bricklayer, Stonemason.....	\$ 30.40	17.66

 BROH0046-002 06/01/2021

ERIE, HANCOCK, HURON, OTTAWA, SANDUSKY, SENECA, WOOD (Perry &
 Bloom Townships) and WYANDOT (Tymochtee, Crawford, Ridge &
 Richland Townships) COUNTIES & the Islands of Lake Erie north
 of Sandusky

	Rates	Fringes
Bricklayer, Stonemason.....	\$ 30.40	17.55

FOOTNOTE: Layout Man and Sawman rate: \$1.00 per hour above
 journeyman rate.
 Free standing stack work ground level to top of stack;
 Sandblasting and laying of carbon masonry material in swing
 stage and/or scaffold; Ramming and spading of plastics and
 gunniting: \$1.50 per hour above journeyman rate.
 ""Hot"" work: \$2.50 above journeyman rate.

 BROH0052-001 06/01/2021

ATHENS COUNTY

	Rates	Fringes
Bricklayer, Stonemason.....	\$ 30.40	17.55

 BROH0052-003 06/01/2021

NOBLE (Brookfield, Noble, Center, Sharon, Olive, Enoch, Stock,
 Jackson, Jefferson & Elk Townships) and WASHINGTON COUNTIES

	Rates	Fringes
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Bricklayer, Stonemason.....\$ 30.40	17.55
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 BROH0055-003 06/01/2021

DELAWARE, FRANKLIN, MADISON, PICKAWAY and UNION COUNTIES

	Rates	Fringes
Bricklayer, Stonemason.....\$ 30.40		17.55

 CARP0003-004 05/01/2017

MAHONING & TRUMBULL

	Rates	Fringes
CARPENTER.....\$ 26.20		17.42

 CARP0069-003 05/01/2017

CARROLL, STARK, TUSCARAWAS & WAYNE

	Rates	Fringes
CARPENTER.....\$ 25.98		15.98

 CARP0069-006 05/01/2017

COSHOCTON, HOLMES, KNOX & MORROW

	Rates	Fringes
CARPENTER.....\$ 24.04		15.29

 CARP0171-002 05/01/2019

BELMONT, COLUMBIANA, HARRISON, JEFFERSON & MONROE

	Rates	Fringes
CARPENTER.....\$ 27.37		20.02

 CARP0200-002 05/01/2021

ADAMS, ATHENS, DELAWARE, FAIRFIELD, FAYETTE, FRANKLIN, GALLIA,
 GUERNSEY, HIGHLAND, HOCKING, JACKSON, LAWRENCE, LICKING,
 MADISON, MARION, MEIGS, MORGAN, MUSKINGUM, NOBLE, PERRY,
 PICKAWAY, PIKE, ROSS, SCIOTO, UNION, VINTON and WASHINGTON
 COUNTIES

	Rates	Fringes
CARPENTER.....\$ 30.28		20.08
Diver.....\$ 39.41		10.40
PILEDRIVERMAN.....\$ 30.28		20.08

 CARP0248-005 07/01/2008

LUCAS & WOOD

	Rates	Fringes
CARPENTER.....\$ 27.27		14.58

CARP0248-008 07/01/2008

	Rates	Fringes
CARPENTER		
DEFIANCE, FULTON, HANCOCK, HENRY, PAULDING & WILLIAMS COUNTIES.....	\$ 23.71	13.28

 CARP0254-002 05/01/2017

ASHTABULA, CUYAHOGA, GEAUGA & LAKE

	Rates	Fringes
CARPENTER.....	\$ 32.40	16.97

 CARP0372-002 05/01/2016

ALLEN, AUGLAIZE, HARDIN, MERCER, PUTNAM & VAN WERT

	Rates	Fringes
CARPENTER.....	\$ 24.54	18.21

 CARP0639-003 05/01/2017

MEDINA, PORTAGE & SUMMIT

	Rates	Fringes
CARPENTER.....	\$ 30.42	16.99

 CARP0735-002 05/01/2019

ASHLAND, ERIE, HURON, LORAIN & RICHLAND

	Rates	Fringes
CARPENTER.....	\$ 26.30	17.91

 CARP1311-001 05/01/2017

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

	Rates	Fringes
Carpenter & Piledrivermen.....	\$ 29.34	15.95
Diver.....	\$ 40.58	9.69

 CARP1393-002 07/01/2008

CRAWFORD, DEFIANCE, FULTON, HANCOCK, HENRY, LUCAS, OTTAWA,
 PAULDING, SANDUSKY, SENECA, WILLIAMS & WOOD

	Rates	Fringes
Piledrivermen & Diver's Tender...	\$ 27.30	16.05

 DIVERS - \$250.00 per day

CARP1393-003 07/01/2008

ALLEN, AUGLAIZE, HARDIN, MERCER, PUTNAM, VAN WERT & WYANDOT

	Rates	Fringes
Piledrivermen & Diver's Tender...	\$ 25.15	15.92

DIVERS - \$250.00 per day

CARP1871-006 05/01/2017

BELMONT, HARRISON, & MONROE

	Rates	Fringes
Diver, Wet.....	\$ 48.11	17.33
Piledrivermen; Diver, Dry.....	\$ 32.07	17.33

CARP1871-008 05/01/2017

ASHLAND, ASHTABULA, CUYAHOGA, ERIE, GEAUGA, HURON, LAKE,
LORAIN, MEDINA, PORTAGE, RICHLAND & SUMMIT

	Rates	Fringes
Diver, Wet.....	\$ 45.80	18.84
Piledrivermen; Diver, Dry.....	\$ 30.53	18.84

CARP1871-014 05/01/2017

CARROLL, STARK, TUSCARAWAS & WAYNE

	Rates	Fringes
Diver, Wet.....	\$ 38.34	16.95
Piledrivermen; Diver, Dry.....	\$ 25.56	16.95

CARP1871-015 05/01/2017

COSHOCTON, HOLMES, KNOX & MORROW

	Rates	Fringes
Diver, Wet.....	\$ 37.34	16.07
Piledrivermen; Diver, Dry.....	\$ 24.89	16.07

CARP1871-017 05/01/2017

MAHONING & TRUMBULL

	Rates	Fringes
Diver, Wet.....	\$ 40.65	17.62
Piledrivermen; Diver, Dry.....	\$ 27.10	17.62

CARP2235-012 01/01/2014

COLUMBIANA & JEFFERSON

	Rates	Fringes
PILEDRIVERMAN.....	\$ 31.74	16.41

CARP2239-001 07/01/2008

CRAWFORD, OTTAWA, SANDUSKY, SENECA & WYANDOT

	Rates	Fringes
CARPENTER.....	\$ 23.71	13.28

ELEC0008-002 05/23/2022

DEFIANCE, FULTON, HANCOCK, HENRY, LUCAS, OTTAWA, PAULDING,
PUTNAM, SANDUSKY, SENECA, WILLIAMS & WOOD

	Rates	Fringes
CABLE SPLICER.....	\$ 38.98	18.96
ELECTRICIAN.....	\$ 44.79	4.5%+21.61

ELEC0032-003 12/05/2022

ALLEN, AUGLAIZE, HARDIN, LOGAN, MERCER, SHELBY, VAN WERT &
WYANDOT (Crawford, Jackson, Marseilles, Mifflin, Ridgeland,
Ridge & Salem Townships)

	Rates	Fringes
ELECTRICIAN.....	\$ 34.67	21.48

ELEC0038-002 04/25/2022

CUYAHOGA, GEAUGA (Bainbridge, Chester & Russell Townships) &
LORAIN (Columbia Township)

	Rates	Fringes
ELECTRICIAN Excluding Sound & Communications Work.....	\$ 40.88	22.75

FOOTNOTES;

- a. 6 Paid Holidays: New Year's Day; Memorial Day; July 4th;
Labor Day; Thanksgiving Day; & Christmas Day
- b. 1 week's paid vacation for 1 year's service; 2 weeks' paid
vacation for 2 or more years' service

ELEC0038-008 04/25/2022

CUYAHOGA, GEAUGA (Bainbridge, Chester & Russell Townships) &
LORAIN (Columbia Township)

	Rates	Fringes
Sound & Communication Technician		
Communications Technician...	\$ 29.30	13.29
Installer Technician.....	\$ 28.05	13.25

FOOTNOTES;

- a. 6 Paid Holidays: New Year's Day; Memorial Day; July 4th;
Labor Day; Thanksgiving Day; & Christmas Day

b. 1 week's paid vacation for 1 year's service; 2 weeks' paid vacation for 2 or more years' service

ELEC0064-003 11/28/2022

COLUMBIANA (Butler, Fairfield, Perry, Salem & Unity Townships)
MAHONING (Austintown, Beaver, Berlin, Boardman, Canfield,
Ellsworth, Coitsville, Goshen, Jackson, Poland,
Springfield & Youngstown Townships), & TRUMBULL (Hubbard &
Liberty Townships)

	Rates	Fringes
ELECTRICIAN.....	\$ 36.10	18.91

ELEC0071-001 01/01/2019

ASHLAND, CHAMPAIGN, CLARK, COSHOCTON, CRAWFORD, DELAWARE,
FAIRFIELD, FAYETTE, FRANKLIN, GUERNSEY, HIGHLAND, HOCKING,
JACKSON (Coal, Jackson, Liberty, Milton, Washington & Wellston
Townships), KNOX, LICKING, MADISON, MARION, MONROE, MORGAN,
MORROW, MUSKINGUM, NOBLE, PERRY, PICKAWAY, PIKE (Beaver,
Benton, Jackson, Mifflin, Pebble, Peepee, Perry & Seal
Townships), RICHLAND, ROSS, TUSCARAWAS (Auburn, Bucks, Clay,
Jefferson, Oxford, Perry, Salem, Rush, Washington & York
Townships), UNION, VINTON (Clinton, Eagle, Elk, Harrison,
Jackson, Richland & Swan Townships), and WASHINGTON COUNTIES

	Rates	Fringes
Line Construction		
Equipment Operators.....	\$ 33.62	13.40
Groundmen.....	\$ 24.17	11.32
Linemen & Cable Splicers....	\$ 38.27	14.42

ELEC0071-004 01/01/2019

AUGLAIZE, CLINTON, DARKE, GREENE, LOGAN, MERCER, MIAMI,
MONTGOMERY, PREBLE, and SHELBY COUNTIES

	Rates	Fringes
Line Construction		
Equipment Operator.....	\$ 33.62	13.40
Groundman.....	\$ 24.17	11.32
Lineman & Cable Splicers....	\$ 38.27	14.42

ELEC0071-005 12/31/2018

ASHTABULA, CUYAHOGA, GEAUGA, LAKE & LORAIN

	Rates	Fringes
LINE CONSTRUCTION: Equipment Operator		
DOT/Traffic Signal & Highway Lighting Projects...	\$ 32.44	14.10
Municipal Power/Transit Projects.....	\$ 40.10	16.42
LINE CONSTRUCTION: Groundman DOT/Traffic Signal &		

Highway Lighting Projects...	\$ 25.06	12.26
Municipal Power/Transit Projects.....	\$ 31.19	14.11
LINE CONSTRUCTION:		
Linemen/Cable Splicer DOT/Traffic Signal & Highway Lighting Projects...	\$ 36.13	15.03
Municipal Power/Transit Projects.....	\$ 44.56	17.58

ELEC0071-008 01/01/2019

COLUMBIANA, MAHONING, and TRUMBULL COUNTIES

	Rates	Fringes
Line Construction		
Equipment Operator.....	\$ 33.62	13.40
Groundman.....	\$ 24.17	11.32
Lineman & Cable Splicers....	\$ 38.27	14.42

ELEC0071-010 01/01/2019

BELMONT, CARROLL, HARRISON, HOLMES, JEFFERSON, MEDINA, PORTAGE,
STARK, SUMMIT, and WAYNE COUNTIES

	Rates	Fringes
Line Construction		
Equipment Operator.....	\$ 33.62	13.40
Groundman.....	\$ 24.17	11.32
Lineman & Cable Splicers....	\$ 38.27	14.42

ELEC0071-013 01/01/2019

BROWN, BUTLER, CLERMONT, HAMILTON, and WARREN COUNTIES

	Rates	Fringes
Line Construction		
Equipment Operator.....	\$ 33.62	13.40
Groundman.....	\$ 24.17	11.32
Lineman & Cable Splicers....	\$ 38.27	14.42

ELEC0071-014 01/01/2019

ADAMS, ATHENS, GALLIA, JACKSON (Bloomfield, Franklin, Hamilton,
Lick, Jefferson, Scioto & Madison Townships), LAWRENCE, MEIGS,
PIKE (Camp Creek, Marion, Newton, Scioto, Sunfish & Union
Townships), SCIOTO & VINTON (Brown, Knox, Madison, Vinton &
Wilkesville Townships)

	Rates	Fringes
Line Construction		
Equipment Operator.....	\$ 33.62	13.40
Groundman.....	\$ 24.17	11.32
Lineman & Cable Splicers....	\$ 38.27	14.42

ELEC0082-002 12/05/2022

CLINTON, DARKE, GREENE, MIAMI, MONTGOMERY, PREBLE & WARREN
(Wayne, Clear Creek & Franklin Townships)

	Rates	Fringes
ELECTRICIAN.....	\$ 34.25	21.26

* ELEC0082-006 11/29/2021		

CLINTON, DARKE, GREENE, MIAMI, MONTGOMERY, PREBLE & WARREN
 (Wayne, Clear Creek & Franklin Townships)

	Rates	Fringes
Sound & Communication Technician		
Cable Puller.....	\$ 12.98 **	3.89
Installer/Technician.....	\$ 25.95	12.27

* ELEC0129-003 02/27/2023		

LORAIN (Except Columbia Township) & MEDINA (Litchfield &
 Liverpool Townships)

	Rates	Fringes
ELECTRICIAN.....	\$ 39.30	18.30

* ELEC0129-004 02/27/2023		

ERIE & HURON (Lyme, Ridgefield, Norwalk, Townsend, Wakeman,
 Sherman, Peru, Bronson, Hartland, Clarksfield, Norwich,
 Greenfield, Fairfield, Fitchville & New London Townships)

	Rates	Fringes
ELECTRICIAN.....	\$ 39.30	18.30

ELEC0141-003 09/01/2019		

BELMONT COUNTY

	Rates	Fringes
CABLE SPLICER.....	\$ 30.63	25.87
ELECTRICIAN.....	\$ 30.38	25.87

ELEC0212-003 11/26/2018		

BROWN, CLERMONT & HAMILTON

	Rates	Fringes
Sound & Communication Technician.....	\$ 24.35	10.99

ELEC0212-005 06/06/2022		

BROWN, CLERMONT, and HAMILTON COUNTIES

	Rates	Fringes
ELECTRICIAN.....	\$ 33.29	21.15

ELEC0245-001 08/29/2022

ALLEN, HARDIN, VAN WERT & WYANDOT (Crawford, Jackson,
Marseilles, Mifflin, Richland, Ridge & Salem Townships)

	Rates	Fringes
Line Construction		
Equipment Operator.....	\$ 32.37	26.5%+7.25
Groundman Truck Driver.....	\$ 19.35	7.00+27.25%
Lineman.....	\$ 44.22	7.00+27.25%

FOOTNOTE: a. Half day's Paid Holiday: The last 4 hours of
the workday prior to Christmas or New Year's Day

ELEC0245-003 08/29/2022

DEFIANCE, FULTON, HANCOCK, HENRY, HURON, LUCAS, OTTAWA,
PAULDING, PUTNAM, SANDUSKY, SENECA, WILLIAMS, and WOOD COUNTIES

	Rates	Fringes
Line Construction		
Cable Splicer.....	\$ 50.85	7.00+27.25%
Groundman/Truck Driver.....	\$ 19.35	7.00+27.25%
Heli-arc Welding.....	\$ 40.76	7.00+27.25%
Lineman.....	\$ 44.22	7.00+27.25%
Operator - Class 1.....	\$ 35.38	7.00+27.25%
Operator - Class 2.....	\$ 28.32	7.00+27.25%
Traffic Signal & Lighting Technician.....	\$ 39.80	7.00+27.25%

FOOTNOTE: a. 6 Observed Holidays: New Year's Day; Memorial
Day; Independence Day; Labor Day; Thanksgiving Day; &
Christmas Day. Employees who work on a holiday shall be
paid at a rate of double their applicable classified
straight-time rates for the work performed on such holiday.

ELEC0245-004 08/29/2022

ERIE COUNTY

	Rates	Fringes
Line Construction		
Cable Splicer.....	\$ 49.14	26.75%+6.75
Cablesplicer.....	\$ 50.85	7.00+27.25%
Groundman/Truck Driver.....	\$ 19.35	7.00+27.25%
Lineman.....	\$ 44.22	7.00+27.25%
Operator - Class 1.....	\$ 35.38	7.00+27.25%
Operator - Class 2.....	\$ 28.32	7.00+27.25%

FOOTNOTE: a. 6 Observed Holidays: New Year's Day; Memorial
Day; Independence Day; Labor Day; Thanksgiving Day; &
Christmas Day. Employees who work on a holiday shall be
paid at a rate of double their applicable classified
straight-time rates for the work performed on such holiday.

* ELEC0246-001 10/31/2022

	Rates	Fringes
ELECTRICIAN.....	\$ 40.50	84%+36.47

FOOTNOTE: a. 1 1/2 Paid Holidays: The last scheduled workday prior to Christmas & 4 hours on Good Friday.

ELEC0306-005 05/28/2018

MEDINA (Brunswick, Chatham, Granger, Guilford, Harrisville, Hinckley, Homer, Lafayette, Medina, Montville, Sharon, Spencer, Wadsworth, Westfield & York Townships), PORTAGE (Atwater, Aurora, Brimfield, Deerfield, Franklin, Mantua, Randolph, Ravenna, Rootstown, Shalersville, Streetsboro & Suffield Townships), SUMMIT & WAYNE (Baughman, Canaan, Chester, Chippewa, Congress, Green, Milton, & Wayne Townships)

	Rates	Fringes
CABLE SPLICER.....	\$ 36.87	16.56
ELECTRICIAN.....	\$ 34.54	5%+18.06

ELEC0317-002 05/30/2022

GALLIA & LAWRENCE

	Rates	Fringes
CABLE SPLICER.....	\$ 32.68	18.13
ELECTRICIAN.....	\$ 35.85	28.25

ELEC0540-005 12/27/2021

CARROLL (Northern half, including Fox, Harrison, Rose & Washington Townships), COLUMBIANA (Knox Township), HOLMES, MAHONING (Smith Township), STARK, TUSCARAWAS (North of Auburn, Clay, Rush & York Townships), and WAYNE (South of Baughman, Chester, Green & Wayne Townships) COUNTIES

	Rates	Fringes
ELECTRICIAN.....	\$ 35.28	22.63

ELEC0573-003 11/28/2022

ASHTABULA (Colebrook, Wayne, Williamsfield, Orwell & Windsor Townships), GEAUGA (Auburn, Middlefield, Parkman & Troy Townships), MAHONING (Milton Township), PORTAGE (Charlestown, Edinburg, Freedom, Hiram, Nelson, Palmyra, Paris & Windham Townships), and TRUMBULL (Except Liberty & Hubbard Townships)

	Rates	Fringes
ELECTRICIAN.....	\$ 38.70	20.94

* ELEC0575-001 11/21/2022

ADAMS, FAYETTE, HIGHLAND, HOCKING, JACKSON (Bloomfield, Franklin, Hamilton, Jefferson, Lick, Madison, Scioto, Coal, Jackson, Liberty, Milton & Washington Townships), PICKAWAY

(Deer Creek, Perry, Pickaway, Salt Creek & Wayne Townships),
 PIKE (Beaver, Benton, Jackson, Mifflin, Pebble, PeePee, Perry,
 Seal, Camp Creek, Newton, Scioto, Sunfish, Union & Marion
 Townships), ROSS, SCIOTO & VINTON (Clinton, Eagle, Elk,
 Harrison, Jackson, Richland & Swan Townships)

	Rates	Fringes
ELECTRICIAN.....	\$ 36.00	21.14

 ELEC0648-001 08/29/2022

BUTLER and WARREN COUNTIES (Deerfield, Hamilton, Harlan,
 Massie, Salem, Turtle Creek, Union & Washington Townships)

	Rates	Fringes
CABLE SPLICER.....	\$ 30.50	18.23
ELECTRICIAN.....	\$ 33.00	21.44

 * ELEC0673-004 01/01/2023

ASHTABULA (Excluding Orwell, Colebrook, Williamsfield, Wayne &
 Windsor Townships), GEAUGA (Burton, Chardon, Claridon, Hambden,
 Huntsburg, Montville, Munson, Newbury & Thompson Townships) and
 LAKE COUNTIES

	Rates	Fringes
CABLE SPLICER.....	\$ 33.81	21.47
ELECTRICIAN.....	\$ 35.15	23.41

 ELEC0683-002 05/30/2022

CHAMPAIGN, CLARK, DELAWARE, FAIRFIELD, FRANKLIN, MADISON,
 PICKAWAY (Circleville, Darby, Harrison, Jackson, Madison,
 Monroe, Muhlenberg, Scioto, Walnut & Washington Townships), and
 UNION COUNTIES

	Rates	Fringes
CABLE SPLICER.....	\$ 37.50	23.15
ELECTRICIAN.....	\$ 36.50	23.15

 ELEC0688-003 05/30/2022

ASHLAND, CRAWFORD, HURON (Richmond, New Haven, Ripley &
 Greenwich Townships), KNOX (Liberty, Clinton, Union, Howard,
 Monroe, Middleberry, Morris, Wayne, Berlin, Pike, Brown &
 Jefferson Townships), MARION, MORROW, RICHLAND and WYANDOT
 (Sycamore, Crane, Eden, Pitt, Antrim & Tymochtee Townships)
 COUNTIES

	Rates	Fringes
ELECTRICIAN.....	\$ 32.30	21.83

 ELEC0972-002 06/01/2021

ATHENS, MEIGS, MONROE, MORGAN, NOBLE, VINTON (Brown, Knox,

Madison, Vinton & Wilkesville Townships), and WASHINGTON
COUNTIES

	Rates	Fringes
CABLE SPLICER.....	\$ 37.35	27.81
ELECTRICIAN.....	\$ 34.30	27.62

ELEC1105-001 05/30/2022

COSHOCTON, GUERNSEY, KNOX (Jackson, Clay, Morgan, Miller,
Milford, Hilliar, Butler, Harrison, Pleasant & College
Townships), LICKING, MUSKINGUM, PERRY, and TUSCARAWAS (Auburn,
York, Clay, Jefferson, Rush, Oxford, Washington, Salem, Perry &
Bucks Townships) COUNTIES

	Rates	Fringes
ELECTRICIAN.....	\$ 35.25	22.18

ENGI0018-003 05/01/2019

ASHTABULA, CUYAHOGA, ERIE, GEAUGA, LAKE, LORAIN, MEDINA,
PORTAGE, and SUMMIT COUNTIES

	Rates	Fringes
POWER EQUIPMENT OPERATOR		
GROUP 1.....	\$ 38.63	15.20
GROUP 2.....	\$ 38.53	15.20
GROUP 3.....	\$ 37.49	15.20
GROUP 4.....	\$ 36.27	15.20
GROUP 5.....	\$ 30.98	15.20
GROUP 6.....	\$ 38.88	15.20
GROUP 7.....	\$ 39.13	15.20

OPERATING ENGINEER CLASSIFICATIONS

GROUP 1 - Air Compressor on Steel Erection; Barrier Moving
Machine; Boiler Operator on Compressor or Generator when
mounted on a Rig; Cableway; Combination Concrete Mixer &
Tower; Concrete Plant (over 4 yd. Capacity); Concrete Pump;
Crane (All Types, Including Boom Truck, Cherry Picker);
Crane-Compact, Track or Rubber over 4,000 lbs. capacity;
Cranes-Self Erecting, Stationary, Track or Truck (All
Configurations); Derrick; Dragline; Dredge (Dipper, Clam or
Suction); Elevating Grader or Euclid Loader; Floating
Equipment (All Types); Gradall; Helicopter Crew
(Operator-Hoist or Winch); Hoe (all types); Hoisting Engine
on Shaft or Tunnel Work; Hydraulic Gantry (Lifting System);
Industrial-Type Tractor; Jet Engine Dryer (D8 or D9) Diesel
Tractor; Locomotive (Standard Gauge); Maintenance Operator
Class A; Mixer, Paving (Single or Double Drum); Mucking
Machine; Multiple Scraper; Piledriving Machine (All Types);
Power Shovel; Prentice Loader; Quad 9 (Double Pusher); Rail
Tamper (with auto lifting & aligning device); Refrigerating
Machine (Freezer Operation); Rotary Drill, on Caisson work;
Rough Terrain Fork Lift with Winch/Hoist; Side-Boom;
Slip-Form Paver; Tower Derrick; Tree Shredder; Trench
Machine (Over 24" wide); Truck Mounted Concrete Pump; Tug
Boat; Tunnel Machine and/or Mining Machine; Wheel
Excavator; and Asphalt Plant Engineer (Cleveland District

Only).

GROUP 2 - Asphalt Paver; Automatic Subgrader Machine, Self-Propelled (CMI Type); Bobcat Type and/or Skid Steer Loader with Hoe Attachment Greater than 7,000 lbs.; Boring Machine More than 48"; Bulldozer; Endloader; Horizontal Directional Drill (Over 50,000 ft lbs thrust); Hydro Milling Machine; Kolman-type Loader (production type-Dirt); Lead Greaseman; Lighting & Traffic Signal Installation Equipment (includes all groups or classifications); Material Transfer Equipment (Shuttle Buggy) Asphalt; Pettibone-Rail Equipment; Power Grader; Power Scraper; Push Cat; Rotomill (all), Grinders & Planers of All types; Trench Machine (24" wide & under); Vermeer type Concrete Saw; and Maintenance Operators (Portage and Summit Counties Only).

GROUP 3 - A-Frame; Air Compressor on Tunnel Work (low pressure); Asphalt Plant Engineer (Portage and Summit Counties Only); Bobcat-type and/or Skid Steer Loader with or without Attachments; Highway Drills (all types); Locomotive (narrow gauge); Material Hoist/Elevator; Mixer, Concrete (more than one bag capacity); Mixer, one bag capacity (Side Loader); Power Boiler (Over 15 lbs. Pressure) Pump Operator installing & operating Well Points; Pump (4" & over discharge); Roller, Asphalt; Rotovator (lime soil stabilizer); Switch & Tie Tampers (without lifting & aligning device); Utility Operator (Small equipment); Welding Machines; and Railroad Tie Insert/Remover; Articulating/straight bed end dumps if assigned (minus \$4.00 per hour).

GROUP 4 - Backfiller; Ballast Re-locator; Bars, Joint & Mesh Installing Machine; Batch Plant; Boring Machine Operator (48" or less); Bull Floats; Burlap & Curing Machine; Concrete Plant (capacity 4 yd. & under); Concrete Saw (Multiple); Conveyor (Highway); Crusher; Deckhand; Farm-type Tractor with attachments (highway); Finishing Machine; Fireperson, Floating Equipment (all types); Forklift; Form Trencher; Hydro Hammer expect masonry; Hydro Seeder; Pavement Breaker; Plant Mixer; Post Driver; Post Hole Digger (Power Auger); Power Brush Burner; Power Form Handling Equipment; Road Widening Trencher; Roller (Brick, Grade & Macadam); Self-Propelled Power Spreader; Self-Propelled Power Subgrader; Steam Fireperson; Tractor (Pulling Sheepfoot, Roller or Grader); and Vibratory Compactor with Integral Power.

GROUP 5 - Compressor (Portable, Sewer, Heavy & Highway); Drum Fireperson (Asphalt Plant); Generator; Masonry Fork Lift; Inboard-Outboard Motor Boat Launch; Oil Heater (asphalt plant); Oiler/Helper; Power Driven Heater; Power Sweeper & Scrubber; Pump (under 4" discharge); Signaller; Tire Repairperson; VAC/ALLS; Cranes - Compact, track or rubber under 4,000 pound capacity; fueling and greasing; and Chainmen.

GROUP 6 - Master Mechanic & Boom from 150 to 180.

GROUP 7 - Boom from 180 and over.

ENGI0018-004 05/01/2019

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, 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, and YANDOT COUNTIES

	Rates	Fringes
POWER EQUIPMENT OPERATOR		
GROUP 1.....	\$ 37.14	15.20
GROUP 2.....	\$ 37.02	15.20
GROUP 3.....	\$ 35.98	15.20
GROUP 4.....	\$ 34.80	15.20
GROUP 5.....	\$ 29.34	15.20
GROUP 6.....	\$ 37.39	15.20
GROUP 7.....	\$ 37.64	15.20

OPERATING ENGINEER CLASSIFICATIONS

GROUP 1 - Air Compressor on Steel Erection; Barrier Moving Machine; Boiler Operator on Compressor or Generator when mounted on a Rig; Cableway; Combination Concrete Mixer & Tower; Concrete Plant (over 4 yd. Capacity); Concrete Pump; Crane (All Types, Including Boom Truck, Cherry Picker); Crane-Compact, Track or Rubber over 4,000 lbs. capacity; Cranes-Self Erecting, Stationary, Track or Truck (All Configurations); Derrick; Dragline; Dredge (Dipper, Clam or Suction); Elevating Grader or Euclid Loader; Floating Equipment (All Types); Gradall; Helicopter Crew (Operator-Hoist or Winch); Hoe (all types); Hoisting Engine on Shaft or Tunnel Work; Hydraulic Gantry (Lifting System); Industrial-Type Tractor; Jet Engine Dryer (D8 or D9) Diesel Tractor; Locomotive (Standard Gauge); Maintenance Operator Class A; Mixer, Paving (Single or Double Drum); Mucking Machine; Multiple Scraper; Piledriving Machine (All Types); Power Shovel; Prentice Loader; Quad 9 (Double Pusher); Rail Tamper (with auto lifting & aligning device); Refrigerating Machine (Freezer Operation); Rotary Drill, on Caisson work; Rough Terrain Fork Lift with Winch/Hoist; Side-Boom; Slip-Form Paver; Tower Derrick; Tree Shredder; Trench Machine (Over 24" wide); Truck Mounted Concrete Pump; Tug Boat; Tunnel Machine and/or Mining Machine; and Wheel Excavator.

GROUP 2 - Asphalt Paver; Automatic Subgrader Machine, Self-Propelled (CMI Type); Bobcat Type and/or Skid Steer Loader with Hoe Attachment Greater than 7,000 lbs.; Boring Machine More than 48"; Bulldozer; Endloader; Hydro Milling Machine; Horizontal Directional Drill (over 50,000 ft. lbs. thrust); Kolman-type Loader (production type-Dirt); Lead Greaseman; Lighting & Traffic Signal Installation Equipment (includes all groups or classifications); Material Transfer Equipment (Shuttle Buggy) Asphalt; Pettibone-Rail Equipment; Power Grader; Power Scraper; Push Cat; Rotomill (all), Grinders & Planers of All types; Trench Machine (24" wide & under); and Vermeer type Concrete Saw.

GROUP 3 - A-Frame; Air Compressor on Tunnel Work (low

pressure); Asphalt Plant Engineer; Bobcat-type and/or Skid Steer Loader with or without Attachments; Highway Drills (all types); Locomotive (narrow gauge); Material Hoist/Elevator; Mixer, Concrete (more than one bag capacity); Mixer, one bag capacity (Side Loader); Power Boiler (Over 15 lbs. Pressure) Pump Operator installing & operating Well Points; Pump (4" & over discharge); Railroad Tie Inserter/Remover; Roller, Asphalt; Rotovator (lime soil stabilizer); Switch & Tie Tampers (without lifting & aligning device); Utility Operator (Small equipment); and Welding Machines; Articulating/straight bed end dumps if assigned (minus \$4.00 per hour).

GROUP 4 - Backfiller; Ballast Re-locator; Bars, Joint & Mesh Installing Machine; Batch Plant; Boring Machine Operator (48" or less); Bull Floats; Burlap & Curing Machine; Concrete Plant (capacity 4 yd. & under); Concrete Saw (Multiple); Conveyor (Highway); Crusher; Deckhand; Farm-type Tractor with attachments (highway); Finishing Machine; Fireperson, Floating Equipment (all types); Fork Lift; Form Trencher; Hydro Hammer expect masonry; Hydro Seeder; Pavement Breaker; Plant Mixer; Post Driver; Post Hole Digger (Power Auger); Power Brush Burner; Power Form Handling Equipment; Road Widening Trencher; Roller (Brick, Grade & Macadam); Self-Propelled Power Spreader; Self-Propelled Power Subgrader; Steam Fireperson; Tractor (Pulling Sheepfoot, Roller or Grader); and Vibratory Compactor with Integral Power.

GROUP 5 - Compressor (Portable, Sewer, Heavy & Highway); Drum Fireperson (Asphalt Plant); Generator; Masonary Forklift; Inboard-Outboard Motor Boat Launch; Oil Heater (asphalt plant); Oiler/Helper; Power Driven Heater; Power Sweeper & Scrubber; Pump (under 4" discharge); Signaller; Tire Repairperson; VAC/ALLS; Cranes - Compact, track or rubber under 4,000 pound capacity; fueling and greasing; and Chainmen.

GROUP 6 - Master Mechanic & Boom from 150 to 180.

GROUP 7 - Boom from 180 and over.

ENGI0066-023 06/01/2017

COLUMBIANA, MAHONING & TRUMBULL COUNTIES

	Rates	Fringes
POWER EQUIPMENT OPERATOR		
ASBESTOS; HAZARDOUS/TOXIC		
WASTE PROJECTS		
GROUP 1 - A & B.....	\$ 39.23	19.66
ASBESTOS; HAZARDOUS/TOXIC		
WASTE PROJECTS		
GROUP 2 - A & B.....	\$ 38.90	19.66
ASBESTOS; HAZARDOUS/TOXIC		
WASTE PROJECTS		
GROUP 3 - A & B.....	\$ 34.64	19.66
ASBESTOS; HAZARDOUS/TOXIC		
WASTE PROJECTS		
GROUP 4 - A & B.....	\$ 30.70	19.66
ASBESTOS; HAZARDOUS/TOXIC		
WASTE PROJECTS		
GROUP 5 - A & B.....	\$ 27.30	19.66

HAZARDOUS/TOXIC WASTE PROJECTS		
GROUP 1 - C & D.....\$ 35.96		19.66
HAZARDOUS/TOXIC WASTE PROJECTS		
GROUP 2 - C & D.....\$ 35.66		19.66
HAZARDOUS/TOXIC WASTE PROJECTS		
GROUP 3 - C & D.....\$ 31.76		19.66
HAZARDOUS/TOXIC WASTE PROJECTS		
GROUP 4 - C & D.....\$ 28.14		19.66
HAZARDOUS/TOXIC WASTE PROJECTS		
GROUP 5 - C & D.....\$ 25.03		19.66
ALL OTHER WORK		
GROUP 1.....\$ 32.69		19.66
ALL OTHER WORK		
GROUP 2.....\$ 32.42		19.66
ALL OTHER WORK		
GROUP 3.....\$ 28.87		19.66
ALL OTHER WORK		
GROUP 4.....\$ 25.58		19.66
ALL OTHER WORK		
GROUP 5.....\$ 22.75		19.66

GROUP 1 - Rig, Pile Driver or Caisson Type; & Rig, Pile Hydraulic Unit Attached

GROUP 2 - Asphalt Heater Planer; Backfiller with Drag Attachment; Backhoe; Backhoe with Shear attached; Backhoe-Rear Pivotal Swing; Batch Plant-Central Mix Concrete; Batch Plant, Portable concrete; Berm Builder-Automatic; Boat Derrick; Boat-Tug; Boring Machine Attached to Tractor; Bullclam; Bulldozer; C.M.I. Road Builder & Similar Type; Cable Placer & Layer; Carrier-Straddle; Carryall-Scraper or Scoop; Chicago Boom; Compactor with Blade Attached; Concrete Saw (Vermeer or similar type); Concrete Spreader Finisher; Combination, Bidwell Machine; Crane; Crane-Electric Overhead; Crane-Rough Terrain; Crane-Side Boom; Crane-Truck; Crane-Tower; Derrick-Boom; Derrick-Car; Digger-Wheel (Not trencher or road widener); Double Nine; Drag Line; Dredge; Drill-Kenny or Similar Type; Easy Pour Median Barrier Machine (or similar type); Electromatic; Frankie Pile; Gradall; Grader; Gurry; Self-Propelled; Heavy Equipment Robotics Operator/Mechanic; Hoist-Monorail; Hoist-Stationary & Mobile Tractor; Hoist, 2 or 3 drum; Horizontal Directional Drill Operator; Jackall; Jumbo Machine; Kocal & Kuhlman; Land-Seagoing Vehicle; Loader, Elevating; Loader, Front End; Loader, Skid Steer; Locomotive; Mechanic/Welder; Metro Chip Harvester with Boom; Mucking Machine; Paver-Asphalt Finishing Machine; Paver-Road Concrete; Paver-Slip Form (C.M.I. or similar); Place Crete Machine with Boom; Post Driver (Carrier mounted); Power Driven Hydraulic Pump & Jack (When used in Slip Form or Lift Slab Construction); Pump Crete Machine; Regulator-Ballast; Hydraulic Power Unit not attached to Rig for Pile Drillings; Rigs-Drilling; Roto Mill or similar Full Lane (8' Wide & Over); Roto Mill or similar type (Under 8'); Shovel; Slip Form Curb Machine; Speedwing; Spikemaster; Stonecrusher; Tie Puller & Loader; Tie Tamper; Tractor-Double Boom; Tractor with Attachments; Truck-Boom; Truck-Tire; Trench Machine; Tunnel Machine (Mark 21 Java or similar); & Whirley (or similar type)

GROUP 3 - Asphalt Plant; Bending Machine (Pipeline or similar type); Boring machine, Motor Driven; Chip Harvester without Boom; Cleaning Machine, Pipeline Type; Coating Machine, Pipeline Type; Compactor; Concrete Belt Placer; Concrete Finisher; Concrete Planer or Asphalt; Concrete Spreader; Elevator; Fork Lift (Home building only); Fork lift & Lulls; Fork Lift Walk Behind (Hoisting over 1 buck high); Form Line Machine; Grease Truck operator; Grout Pump; Gunnite Machine; Horizontal Directional Drill Locator; Single Drum Hoist with or without Tower; Huck Bolting Machine; Hydraulic Scaffold (Hoisting building materials); Paving Breaker (Self-propelled or Ridden); Pipe Dream; Pot Fireperson (Power Agitated); Refrigeration Plant; Road Widener; Roller; Sasgen Derrick; Seeding Machine; Soil Stabilizer (Pump type); Spray Cure Machine, Self-Propelled; Straw Blower Machine; Sub-Grader; Tube Finisher or Broom C.M.I. or similar type; & Tugger Hoist

GROUP 4 - Air Curtain Destructor & Similar Type; Batch Plant-Job Related; Boiler Operator; Compressor; Conveyor; Curb Builder, self-propelled; Drill Wagon; Generator Set; Generator-Steam; Heater-Portable Power; Hydraulic Manipulator Crane; Jack-Hydraulic Power driven; Jack-Hydraulic (Railroad); Ladavator; Minor Machine Operator; Mixer-Concrete; Mulching Machine; Pin Puller; Power Broom; Pulverizer; Pump; Road Finishing Machine (Pull Type); Saw-Concrete-Self-Propelled (Highway Work); Signal Person; Spray Cure Machine-Motor Powered; Stump Cutter; Tractor; Trencher Form; Water Blaster; Steam Jenny; Syphon; Vibrator-Gasoline; & Welding Machine

GROUP 5 - Brakeperson; Fireperson; & Oiler

 IRON0017-002 05/01/2022

ASHTABULA (North of Route 6, starting at the Geauga County Line, proceeding east to State Route 45), CUYAHOGA, ERIE (Eastern 2/3), GEAUGA, HURON (East of a line drawn from the north border through Monroeville & Willard), LAKE, LORAIN, MEDINA (North of Old Rte. #224), PORTAGE (West of a line from Middlefield to Shalersville to Deerfield), and SUMMIT (North of Old Rte. #224, including city limits of Barberton) COUNTIES

	Rates	Fringes
IRONWORKER		
Ornamental, Reinforcing, & Structural.....	\$ 34.33	27.51

IRON0017-010 05/01/2022

ASHTABULA (Eastern part from Lake Erie on the north to route #322 on the south to include Conneaut, Kingsville, Sheffield, Denmark, Dorset, Cherry Valley, Wayne, Monroe, Pierpont, Richmond, Andover & Williamsfield Townships)

	Rates	Fringes
IRONWORKER		
Structural, including metal building erection &		

Reinforcing.....\$ 34.33 27.51

IRON0044-001 06/01/2022

ADAMS (Western Part), BROWN, BUTLER (Southern Part), CLERMONT, CLINTON (South of a line drawn from Blanchester to Lynchburg), HAMILTON, HIGHLAND (Excluding eastern one-fifth & portion of county inside lines drawn from Marshall to Lynchburg from the northern county line through E. Monroe to Marshall) and WARREN (South of a line drawn from Blanchester through Morrow to the west county line) COUNTIES

	Rates	Fringes
IRONWORKER, REINFORCING.....\$ 32.37		22.30
Beyond 30-mile radius of		
Hamilton County Courthouse..\$ 28.67		21.20
Up to & including 30-mile		
radius of Hamilton County		
Courthouse.....\$ 27.60		20.70

IRON0044-002 06/01/2022

CLINTON (South of a line drawn from Blanchester to Lynchburg), HAMILTON, HIGHLAND (Excluding eastern one-fifth & portion of county inside lines drawn from Marshall to Lynchburg from the northern county line through E. Monroe to Marshall) & WARREN (South of a line drawn from Blanchester through Morrow to the west county line)

	Rates	Fringes
IRONWORKER		
Fence Erector.....\$ 30.28		22.30
Ornamental; Structural.....\$ 31.87		22.30

IRON0055-003 07/01/2021

CRAWFORD (Area Between lines drawn from where Hwy #598 & #30 meet through N. Liberty to the northern border & from said Hwy junction point due west to the border), DEFIANCE (S. of a line drawn from where Rte. #66 meets the northern line through Independence to the eastern county border), ERIE (Western 1/3), FULTON, HANCOCK, HARDIN (North of a line drawn from Maysville to a point 4 miles south of the northern line on the eastern line), HENRY, HURON (West of a line drawn from the northern border through Monroeville & Willard), LUCAS, OTTAWA, PUTNAM (East of a line drawn from the northern border down through Miller City to where #696 meets the southern border), SANDUSKY, SENECA, WILLIAMS (East of a line drawn from Pioneer through Stryker to the southern border), WOOD & WYANDOT (North of Rte. #30)

	Rates	Fringes
IRONWORKER		
Fence Erector.....\$ 21.30		20.92
Flat Road Mesh.....\$ 29.77		21.30
Tunnels & Caissons Under		
Pressure.....\$ 29.77		21.30
All Other Work.....\$ 31.25		26.90

IRON0147-002 06/01/2022

ALLEN (Northern half), DEFIANCE (Northern part, excluding south of a line drawn from where Rte. #66 meets the northern line through Independence to the eastern county border), MERCER (Northern half), PAULDING, PUTNAM (Western part, excluding east of a line drawn from the northern border down through Miller City to where #696 meets the southern border), VAN WERT, and WILLIAMS (Western part, excluding east of a line drawn from Pioneer through Stryker to the southern border) COUNTIES

	Rates	Fringes
IRONWORKER.....	\$ 31.20	28.47

IRON0172-002 06/01/2022		

CHAMPAIGN (Eastern one-third), CLARK (Eastern one-fourth), COSHOCTON (West of a line beginning at the northwestern county line going through Walhonding & Tunnel Hill to the southern county line), CRAWFORD (South of Rte. #30), DELAWARE, FAIRFIELD, FAYETTE, FRANKLIN, HARDIN (Excluding a line drawn from Roundhead to Maysville), HIGHLAND (Eastern one-fifth), HOCKING, JACKSON (Northern half), KNOX, LICKING, LOGAN (Eastern one-third), MADISON, MARION, MORROW, MUSKINGUM (West of a line starting at Adams Mill going to Adamsville & going from Adamsville through Blue Rock to the southern border), PERRY, PICKAWAY, PIKE (Northern half), ROSS, UNION, VINTON and WYANDOT (South of Rte. #30) COUNTIES

	Rates	Fringes
IRONWORKER.....	\$ 33.27	21.20

IRON0207-004 06/01/2022		

ASHTABULA (Southern part starting at the Geauga County line), COLUMBIANA (E. of a line from Damascus to Highlandtown), MAHONING (N. of Old Route #224), PORTAGE (E. of a line from Middlefield to Shalersville to Deerfield) & TRUMBULL

	Rates	Fringes
IRONWORKER		
Layout; Sheeter.....	\$ 32.92	26.26
Ornamental; Reinforcing;		
Structural.....	\$ 31.92	26.26
Ornamental; Reinforcing.....	\$ 28.92	25.61

IRON0290-002 06/01/2022		

ALLEN (Southern half), AUGLAIZE, BUTLER (North of a line drawn from east to the west county line going through Oxford, Darrtown & Woodsdale), CHAMPAIGN (Excluding east of a line drawn from Catawla to the point where #68 intersects the northern county line), CLARK (Western two-thirds), CLINTON (Excluding south of a line drawn from Blanchester to Lynchburg), DARKE, GREENE, HIGHLAND (Inside lines drawn from Marshall to Lynchburg & from the northern county line through East Monroe to Marshall), LOGAN (West of a line drawn from West Liberty to where the northern county line meets the western county line of Hardin), MERCER (Southern half), MIAMI,

MONTGOMERY, PREBLE, SHELBY & WARREN (Excluding south of a line drawn from Blanchester through Morrow to the western county line) COUNTIES

	Rates	Fringes
IRONWORKER.....	\$ 31.59	23.85

IRON0549-003 12/01/2022

BELMONT, GUERNSEY, HARRISON, JEFFERSON, MONROE & MUSKINGUM (Excluding portion west of a line starting at Adams Mill going to Adamsville and going from Adamsville through Blue Rock to the south border)

	Rates	Fringes
IRONWORKER.....	\$ 35.19	25.66

IRON0550-004 05/01/2022

ASHLAND, CARROLL, COLUMBIANA (W. of a line from Damascus to Highlandtown), COSHOCTON (E. of a line beginning at NW Co. line going through Walhonding & Tunnel Hill to the South Co. line), HOLMES, HURON (S. of Old Rte. #224), MAHONING (S. of Old Rte. #224), MEDINA (S. of Old Rte. #224), PORTAGE (S. of Old Rte. #224), RICHLAND, STARK, SUMMIT (S. of Old Rte. #224, Excluding city limits of Barberton), TUSCARAWAS, & WAYNE

	Rates	Fringes
Ironworkers:Structural, Ornamental and Reinforcing.....	\$ 30.97	21.69

IRON0769-004 06/01/2022

ADAMS (Eastern Half), GALLIA, JACKSON (Southern Half), LAWRENCE & SCIOTO

	Rates	Fringes
IRONWORKER.....	\$ 33.71	27.69

IRON0787-003 06/01/2022

ATHENS, MEIGS, MORGAN, NOBLE, and WASHINGTON COUNTIES

	Rates	Fringes
IRONWORKER.....	\$ 31.50	23.75

LABO0265-008 05/01/2022

	Rates	Fringes
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LABORER

ASHTABULA, ERIE, HURON,
LORAIN, LUCAS, MAHONING,
MEDINA, OTTAWA, PORTAGE,
SANDUSKY, STARK, SUMMIT,
TRUMBULL & WOOD COUNTIES

GROUP 1.....	\$ 34.95	12.10
GROUP 2.....	\$ 35.12	12.10
GROUP 3.....	\$ 35.45	12.10
GROUP 4.....	\$ 35.90	12.10
CUYAHOGA AND GEAUGA COUNTIES ONLY: SEWAGE PLANTS, WASTE PLANTS, WATER TREATMENT FACILITIES, PUMPING STATIONS, & ETHANOL PLANTS CONSTRUCTION.....		
	\$ 37.56	12.10
CUYAHOGA, GEAUGA & LAKE COUNTIES		
GROUP 1.....	\$ 36.18	12.10
GROUP 2.....	\$ 36.35	12.10
GROUP 3.....	\$ 36.68	12.10
GROUP 4.....	\$ 37.13	12.10
REMAINING COUNTIES OF OHIO		
GROUP 1.....	\$ 34.52	12.10
GROUP 2.....	\$ 34.69	12.10
GROUP 3.....	\$ 35.02	12.10
GROUP 4.....	\$ 35.47	12.10

LABORER CLASSIFICATIONS

GROUP 1 - Asphalt Laborer; Carpenter Tender; Concrete Curing Applicator; Dump Man (Batch Truck); Guardrail and Fence Installer; Joint Setter; Laborer (Construction); Landscape Laborer; Mesh Handlers & Placer; Right-of-way Laborer; Riprap Laborer & Grouter; Scaffold Erector; Seal Coating; Surface Treatment or Road Mix Laborer; Sign Installer; Slurry Seal; Utility Man; Bridge Man; Handyman; Waterproofing Laborer; Flagperson; Hazardous Waste (level D); Diver Tender; Zone Person & Traffic Control

GROUP 2 - Asphalt Raker; Concrete Puddler; Kettle Man (Pipeline); Machine Driven Tools (Gas, Electric, Air); Mason Tender; Brick Paver; Mortar Mixer; Power Buggy or Power Wheelbarrow; Paint Striper; Sheeting & Shoring Man; Surface Grinder Man; Plastic Fusing Machine Operator; Pug Mill Operator; & Vacuum Devices (wet or dry); Rodding Machine Operator; Diver; Screwman or Paver; Screed Person; Water Blast, Hand Held Wand; Pumps 4" & Under (Gas, Air or Electric) & Hazardous Waste (level C); Air Track and Wagon Drill; Bottom Person; Cofferdam (below 25 ft. deep); Concrete Saw Person; Cutting with Burning Torch; Form Setter; Hand Spiker (Railroad); Pipelayer; Tunnel Laborer (without air) & Caisson; Underground Person (working in Sewer and Waterline, Cleaning, Repairing & Reconditioning); Sandblaster Nozzle Person; & Hazardous Waste (level B)

GROUP 3 - Blaster; Mucker; Powder Person; Top Lander; Wrencher (Mechanical Joints & Utility Pipeline); Yarnier; Hazardous Waste (level A); Concrete Specialist; Concrete Crew in Tunnels (With Air-pressurized - \$1.00 premium); Curb Setter & Cutter; Grade Checker; Utility Pipeline Tapper; Waterline; and Caulker

GROUP 4 - Miner (With Air-pressurized - \$1.00 premium); & Gunite Nozzle Person

TUNNEL LABORER WITH AIR-PRESSURIZED ADD \$1.00 TO BASE RATE

SIGNAL PERSON WILL RECEIVE THE RATE EQUAL TO THE RATE PAID THE LABORER CLASSIFICATION FOR WHICH HE OR SHE IS SIGNALING.

PAIN0006-002 05/01/2018

ASHTABULA, CUYAHOGA, GEAUGA, LAKE, LORAIN, PORTAGE (N. of the
East-West Turnpike) & SUMMIT (N. of the East-West Turnpike)

	Rates	Fringes
PAINTER		
COMMERCIAL NEW WORK; REMODELING; & RENOVATIONS		
GROUP 1.....	\$ 27.90	16.16
GROUP 2.....	\$ 28.30	16.16
GROUP 3.....	\$ 28.60	16.16
GROUP 4.....	\$ 34.16	16.16
COMMERCIAL REPAINT		
GROUP 1.....	\$ 26.40	16.16
GROUP 2.....	\$ 26.80	16.16
GROUP 3.....	\$ 27.10	16.16

PAINTER CLASSIFICATIONS - COMMERCIAL NEW WORK; REMODELING; &
RENOVATIONS

GROUP 1 - Brush; & Roller

GROUP 2 - Sandblasting & Buffing

GROUP 3 - Spray Painting; Closed Steel Above 55 feet; Bridges
& Open Structural Steel; Tanks - Water Towers; Bridge
Painters; Bridge Riggers; Containment Builders

GROUP 4 - Bridge Blaster

PAINTER CLASSIFICATIONS - COMMERCIAL REPAINT

GROUP 1 - Brush; & Roller

GROUP 2 - Sandblasting & Buffing

GROUP 3 - Spray Painting

PAIN0007-002 07/01/2021

FULTON, HENRY, LUCAS, OTTAWA (Excluding Allen, Bay, Bono,
Catawba Island, Clay Center, Curtice, Danbury, Eagle Beach,
Elliston, Elmore, Erie, Fishback, Gem Beach & Genova) & WOOD

	Rates	Fringes
PAINTER		
NEW COMMERCIAL WORK		
GROUP 1.....	\$ 28.74	18.77
GROUP 2.....	\$ 28.74	18.77
GROUP 3.....	\$ 28.74	18.77
GROUP 4.....	\$ 28.74	18.77
GROUP 5.....	\$ 28.74	18.77
GROUP 6.....	\$ 28.74	18.77
GROUP 7.....	\$ 28.74	18.77
GROUP 8.....	\$ 28.74	18.77
GROUP 9.....	\$ 28.74	18.77

REPAINT IS 90% OF JR

PAINTER CLASSIFICATIONS

GROUP 1 - Brush; Spray & Sandblasting Pot Tender

GROUP 2 - Refineries & Refinery Tanks; Surfaces 30 ft. or over where material is applied to or labor performed on above ground level (exterior), floor level (interior)

GROUP 3 - Swing Stage & Chair

GROUP 4 - Lead Abatement

GROUP 5 - All Methods of Spray

GROUP 6 - Solvent-Based Catalized Epoxy Materials of 2 or More Component Materials, to include Solvent-Based Conversion Varnish (excluding water based)

GROUP 7 - Spray Solvent Based Material; Sand & Abrasive Blasting

GROUP 8 - Towers; Tanks; Bridges; Stacks Over 30 Feet

GROUP 9 - Epoxy Spray (excluding water based)

PAIN0012-008 05/01/2019

BUTLER COUNTY

	Rates	Fringes
PAINTER		
GROUP 1.....	\$ 21.95	10.20
GROUP 2.....	\$ 25.30	10.20
GROUP 3.....	\$ 25.80	10.20
GROUP 4.....	\$ 26.05	10.20
GROUP 5.....	\$ 26.30	10.20

PAINTER CLASSIFICATIONS

GROUP 1: Bridge Equipment Tender; Bridge/Containment Builder

GROUP 2: Brush & Roller

GROUP 3: Spray

GROUP 4: Sandblasting; & Waterblasting

GROUP 5: Elevated Tanks; Steeplejack Work; Bridge; & Lead Abatement

PAIN0012-010 05/01/2019

BROWN, CLERMONT, CLINTON, HAMILTON & WARREN

	Rates	Fringes
PAINTER		
HEAVY & HIGHWAY BRIDGES-		
GUARDRAILS-LIGHTPOLES-		

STRIPING

Bridge Equipment Tender and Containment Builder....	\$ 21.95	10.20
Bridges when highest point of clearance is 60 feet or more; & Lead Abatement Projects.....	\$ 26.30	10.20
Brush & Roller.....	\$ 25.30	10.20
Sandblasting & Hopper Tender; Water Blasting.....	\$ 26.05	10.20
Spray.....	\$ 25.80	10.20

* PAIN0093-001 12/01/2022

ATHENS, GUERNSEY, HOCKING, MONROE, MORGAN, NOBLE and
WASHINGTON COUNTIES

	Rates	Fringes
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PAINTER

Bridges; Locks; Dams; Tension Towers; & Energized Substations.....	\$ 34.81	22.47
Power Generating Facilities..	\$ 31.66	22.47

PAIN0249-002 06/01/2020

CLARK, DARKE, GREENE, MIAMI, MONTGOMERY & PREBLE

	Rates	Fringes
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PAINTER

GROUP 1 - Brush & Roller....	\$ 24.17	11.22
GROUP 2 - Swing, Scaffold Bridges; Structural Steel; Open Acid Tank; High Tension Electrical Equipment; & Hot Pipes.....	\$ 24.17	11.22
GROUP 3 - Spray; Sandblast; Steamclean; Lead Abatement.....	\$ 24.92	11.22
GROUP 4 - Steeplejack Work..	\$ 25.12	11.22
GROUP 5 - Coal Tar.....	\$ 25.67	11.22
GROUP 6 - Bridge Equipment Tender & or Containment Builder.....	\$ 32.88	11.22
GROUP 7 - Tanks, Stacks & Towers.....	\$ 27.81	11.22
GROUP 8 - Bridge Blaster, Rigger.....	\$ 35.88	11.22

PAIN0356-002 09/01/2009

KNOX, LICKING, MUSKINGUM, and PERRY

	Rates	Fringes
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PAINTER

Bridge Equipment Tenders and Containment Builders....	\$ 27.93	7.25
Bridges; Blasters; and Riggers.....	\$ 34.60	7.25
Brush and Roller.....	\$ 20.93	7.25
Sandblasting; Steam		

Cleaning; Waterblasting; and Hazardous Work.....	\$ 25.82	7.25
Spray.....	\$ 21.40	7.25
Structural Steel and Swing Stage.....	\$ 25.42	7.25
Tanks; Stacks; and Towers...	\$ 28.63	7.25

* PAIN0438-002 12/01/2021

BELMONT, HARRISON and JEFFERSON COUNTIES

	Rates	Fringes
PAINTER		
Bridges, Locks, Dams, Tension Towers & Energized Substations.....	\$ 34.44	18.19
Power Generating Facilities.	\$ 32.29	18.19

PAIN0476-001 06/01/2021

COLUMBIANA, MAHONING, and TRUMBULL COUNTIES

	Rates	Fringes
PAINTER		
GROUP 1.....	\$ 25.79	15.81
GROUP 2.....	\$ 33.10	15.81
GROUP 3.....	\$ 26.00	15.81
GROUP 4.....	\$ 27.12	15.81
GROUP 5.....	\$ 27.79	15.81
GROUP 6.....	\$ 26.69	15.81
GROUP 7.....	\$ 27.79	15.81

PAINTER CLASSIFICATIONS:

GROUP 1: Painters, Brush & Roller

GROUP 2: Bridges

GROUP 3: Structural Steel

GROUP 4: Spray, Except Bar Joist/Deck

GROUP 5: Epoxy/Mastic; Spray- Bar Joist/Deck; Working Above
50 Feet; and Swingstages

GROUP 6: Tanks; Sandblasting

GROUP 7: Towers; Stacks

PAIN0555-002 06/01/2021

ADAMS, HIGHLAND, JACKSON, PIKE & SCIOTO

	Rates	Fringes
PAINTER		
GROUP 1.....	\$ 31.95	17.05
GROUP 2.....	\$ 33.47	17.05
GROUP 3.....	\$ 34.99	17.05
GROUP 4.....	\$ 37.97	17.05

PAINTER CLASSIFICATIONS

GROUP 1 - Containment Builder

GROUP 2 - Brush; Roller; Power Tools, Under 40 feet

GROUP 3 - Sand Blasting; Spray; Steam Cleaning; Pressure Washing; Epoxy & Two Component Materials; Lead Abatement; Hazardous Waste; Toxic Materials; Bulk & Storage Tanks of 25,000 Gallon Capacity or More; Elevated Tanks

GROUP 4 - Stacks; Bridges

PAIN0639-001 05/01/2011

	Rates	Fringes
Sign Painter & Erector.....	\$ 20.61	3.50+a+b+c

FOOTNOTES: a. 7 Paid Holidays: New Year's Day; Memorial Day; July 4th; Labor Day; Thanksgiving Day; Christmas Day & 1 Floating Day

b. Vacation Pay: After 1 year's service - 5 days' paid vacation; After 2, but less than 10 years' service - 10 days' paid vacation; After 10, but less than 20 years' service - 15 days' paid vacation; After 20 years' service - 20 days' paid vacation

c. Funeral leave up to 3 days maximum paid leave for death of mother, father, brother, sister, spouse, child, mother-in-law, father-in-law, grandparent and inlaw provided employee attends funeral

PAIN0788-002 06/01/2022

ASHLAND, CRAWFORD, ERIE, HANCOCK, HURON, MARION, MORROW, OTTAWA (Allen, Bay, Bono, Catawba Island, Clay Center, Curtice, Danbury, Eagle Beach, Elliston, Elmore, Erie, Fishback, Gem Beach & Genoa), RICHLAND, SANDUSKY, SENECA & WYANDOT

	Rates	Fringes
PAINTER		
Brush & Roller.....	\$ 25.08	16.72
Structural Steel.....	\$ 26.68	16.72

WINTER REPAINT: Between December 1 to March 31 - 90%JR

\$.50 PER HOUR SHALL BE ADDED TO THE RATE OF PAY FOR THE CLASSIFICATION OF WORK:

While working swingstage, boatswain chair, needle beam and horizontal cable. While operating sprayguns, sandblasting, cobblasting and high pressure waterblasting (4000psi).

\$1.00 PER HOUR SHALL BE ADDED TO THE RATE OF PAY FOR THE CLASSIFICATION OF WORK:

For the application of catalized epoxy, including latex epoxy that is deemed hazardous, lead abatement, or for work or material where special precautions beyond normal work duties must be taken. For working on stacks, tanks, and towers over 40 feet in height.

PAIN0813-005 12/01/2008

GALLIA, LAWRENCE, MEIGS & VINTON

	Rates	Fringes
PAINTER		
Base Rate.....	\$ 24.83	10.00
Bridges, Locks, Dams & Tension Towers.....	\$ 27.83	10.00

PAIN0841-001 06/01/2018

MEDINA, PORTAGE (South of and including Ohio Turnpike), and
SUMMIT (South of and including Ohio Turnpike) COUNTIES

	Rates	Fringes
Painters:		
GROUP 1.....	\$ 25.75	14.35
GROUP 2.....	\$ 26.40	14.35
GROUP 3.....	\$ 26.50	14.35
GROUP 4.....	\$ 26.60	14.35
GROUP 5.....	\$ 27.00	14.35
GROUP 6.....	\$ 39.20	11.75
GROUP 7.....	\$ 27.00	14.35

PAINTER CLASSIFICATIONS:

GROUP 1 - Brush, Roller & Paperhanger

GROUP 2 - Epoxy Application

GROUP 3 - Swing Scaffold, Bosum Chair, & Window Jack

GROUP 4 - Spray Gun Operator of Any & All Coatings

GROUP 5 - Sandblast, Painting of Standpipes, etc. from
Scaffolds, Bridge Work and/or Open Structural Steel,
Standpipes and/or Water Towers

GROUP 6 - Public & Commerce Transportation, Steel or
Galvanized, Bridges, Tunnels & Related Support Items
(concrete)

GROUP 7 - Synthetic Exterior, Drywall Finisher and/or Taper,
Drywall Finisher and Follow-up Man Using Automatic Tools

PAIN0841-002 06/01/2022

CARROLL, COSHOCTON, HOLMES, STARK, TUSCARAWAS & WAYNE

	Rates	Fringes
PAINTER		
Bridges; Towers, Poles & Stacks; Sandblasting Steel; Structural Steel & Metalizing.....	\$ 23.50	15.45
Brush & Roller.....	\$ 28.18	15.45
Spray; Tank Interior & Exterior.....	\$ 23.50	15.45

PAIN1020-002 06/01/2022

ALLEN, AUGLAIZE, CHAMPAIGN, DEFIANCE, HARDIN, LOGAN, MERCER,
PAULDING, PUTNAM, SHELBY, VAN WERT, and WILLIAMS COUNTIES

	Rates	Fringes
PAINTER		
Brush & Roller.....	\$ 26.20	15.00
Drywall Finishing & Taping..	\$ 24.90	15.00
Lead Abatement.....	\$ 27.95	15.00
Spray, Sandblasting Pressure Cleaning, & Refinery.....	\$ 26.95	15.00
Swing Stage, Chair, Spiders, & Cherry Pickers...	\$ 25.47	15.00
Wallcoverings.....	\$ 23.80	15.00

All surfaces 40 ft. or over where material is applied to or
labor performed on, above ground level (exterior), floor
level (interior) - \$.50 premium

Applying Coal Tar Products - \$1.00 premium

PAIN1275-002 06/01/2020

DELAWARE, FAIRFIELD, FAYETTE, FRANKLIN, MADISON, PICKAWAY, ROSS
& UNION

	Rates	Fringes
PAINTER		
Bridges.....	\$ 34.64	14.40
Brush; Roller.....	\$ 25.16	14.40
Sandblasting; Steamcleaning; Waterblasting (3500 PSI or Over)& Hazardous Work.....	\$ 25.86	14.40
Spray.....	\$ 25.66	14.40
Stacks; Tanks; & Towers.....	\$ 28.67	14.40
Structural Steel & Swing Stage.....	\$ 25.46	14.40

PLAS0109-001 05/01/2018

MEDINA, PORTAGE, STARK, and SUMMIT COUNTIES

	Rates	Fringes
PLASTERER.....	\$ 28.86	17.11

PLAS0109-003 05/01/2018

CARROLL, HOLMES, TUSCARAWAS, and WAYNE COUNTIES

	Rates	Fringes
PLASTERER.....	\$ 28.21	17.11

PLAS0132-002 06/01/2022

BROWN, BUTLER, CLERMONT, HAMILTON, HIGHLAND, WARREN COUNTIES

	Rates	Fringes
PLASTERER.....	\$ 29.25	14.69

PLAS0404-002 05/01/2018		

ASHTABULA, CUYAHOGA, GEAUGA, AND LAKE COUNTIES

	Rates	Fringes
PLASTERER.....	\$ 29.63	17.11

PLAS0404-003 05/01/2018		

LORAIN COUNTY

	Rates	Fringes
PLASTERER.....	\$ 28.86	17.11

PLAS0526-022 05/01/2018		

COLUMBIANA, MAHONING, and TRUMBULL COUNTIES

	Rates	Fringes
PLASTERER.....	\$ 28.86	17.11

PLAS0526-023 05/01/2018		

BELMONT, HARRISON, and JEFFERSON COUNTIES

	Rates	Fringes
PLASTERER.....	\$ 28.21	17.11

PLAS0886-001 05/01/2018		

FULTON, HANCOCK, HENRY, LUCAS, PUTNAM, and WOOD COUNTIES

	Rates	Fringes
PLASTERER.....	\$ 29.63	17.11

PLAS0886-003 05/01/2018		

DEFIANCE, ERIE, HURON, OTTAWA, PAULDING, SANDUSKY, and SENECA COUNTIES

	Rates	Fringes
PLASTERER.....	\$ 28.86	17.11

PLAS0886-004 05/01/2018		

ALLEN, AUGLAIZE, HARDIN, LOGAN, MERCER, and VAN WERT COUNTIES

	Rates	Fringes
PLASTERER.....	\$ 28.21	17.11

PLUM0042-002 07/01/2022		

ASHLAND, CRAWFORD, ERIE, HURON, KNOX, LORAIN, MORROW, RICHLAND
& WYANDOT

	Rates	Fringes
Plumber, Pipefitter, Steamfitter.....	\$ 34.42	25.47

PLUM0050-002 07/04/2022		

DEFIANCE, FULTON, HANCOCK, HENRY, LUCAS, OTTAWA, PAULDING,
PUTNAM, SANDUSKY, SENECA, WILLIAMS & WOOD

	Rates	Fringes
Plumber, Pipefitter, Steamfitter.....	\$ 44.60	28.51

PLUM0055-003 05/01/2022		

ASHTABULA, CUYAHOGA, GEAUGA, LAKE, MEDINA (N. of Rte. #18 &
Smith Road) & SUMMIT (N. of Rte. #303, including the corporate
limits of the city of Hudson)

	Rates	Fringes
PLUMBER.....	\$ 40.00	28.43

PLUM0083-001 07/01/2017		

BELMONT & MONROE (North of Rte. #78)

	Rates	Fringes
Plumber and Steamfitter.....	\$ 32.16	31.51

PLUM0094-002 05/01/2022		

CARROLL (Northern Half), STARK, and WAYNE COUNTIES

	Rates	Fringes
PLUMBER/PIPEFITTER.....	\$ 36.83	22.99

PLUM0120-002 05/02/2022		

ASHTABULA, CUYAHOGA, GEAUGA, LAKE, LORAIN (the C.E.I. Power
House in Avon Lake), MEDINA (N. of Rte. #18) & SUMMIT (N. of
#303)

	Rates	Fringes
PIPEFITTER.....	\$ 44.07	28.34

PLUM0162-002 06/01/2022		

CHAMPAIGN, CLARK, CLINTON, DARKE, FAYETTE, GREENE, MIAMI,
MONTGOMERY & PREBLE

	Rates	Fringes
Plumber, Pipefitter, Steamfitter.....	\$ 36.47	26.80

PLUM0168-002 06/01/2022		

MEIGS, MONROE (South of Rte. #78), MORGAN (South of Rte. #78)
 & WASHINGTON

	Rates	Fringes
PLUMBER/PIPEFITTER.....	\$ 38.02	34.09

* PLUM0189-002 06/01/2022		

DELAWARE, FAIRFIELD, FRANKLIN, HOCKING, LICKING, MADISON,
 MARION, PERRY, PICKAWAY, ROSS & UNION

	Rates	Fringes
Plumber, Pipefitter, Steamfitter.....	\$ 43.25	26.94

PLUM0219-002 06/01/2022		

MEDINA (Rte. #18 from eastern edge of Medina Co., west to
 eastern corporate limits of the city of Medina, & on the county
 road from the west corporate limits of Medina running due west
 to and through community of Risley to the western edge of
 Medina County - All territory south of this line), PORTAGE, and
 SUMMIT (S. of Rte. #303) COUNTIES

	Rates	Fringes
Plumber and Steamfitter.....	\$ 41.22	26.64

PLUM0392-002 06/01/2022		

BROWN, BUTLER, CLERMONT, HAMILTON & WARREN

	Rates	Fringes
PLUMBER/PIPEFITTER.....	\$ 36.71	24.89

PLUM0396-001 06/01/2022		

COLUMBIANA (Excluding Washington & Yellow Creek Townships &
 Liverpool Twp. - Secs. 35 & 36 - West of County Road #427),
 MAHONING and TRUMBULL COUNTIES

	Rates	Fringes
PLUMBER/PIPEFITTER.....	\$ 36.00	27.91

PLUM0495-002 06/01/2022		

CARROLL (Rose, Monroe, Union, Lee, Orange, Perry & Loudon
 Townships), COLUMBIANA (Washington & Yellow Creek Townships &
 Liverpool Township, Secs. 35 & 36, West of County Rd. #427),
 COSHOCTON, GUERNSEY, HARRISON, HOLMES, JEFFERSON, MORGAN (South

to State Rte. #78 & from McConnelsville west on State Rte. #37
to the Perry County line), MUSKINGUM, NOBLE, and TUSCARAWAS
COUNTIES

	Rates	Fringes
Plumber, Pipefitter, Steamfitter.....	\$ 31.24	34.34

PLUM0577-002 06/01/2022

ADAMS, ATHENS, GALLIA, HIGHLAND, JACKSON, LAWRENCE, PIKE,
SCIOTO & VINTON

	Rates	Fringes
Plumber, Pipefitter, Steamfitter.....	\$ 37.56	25.73

PLUM0776-002 07/01/2022

ALLEN, AUGLAIZE, HARDIN, LOGAN, MERCER, SHELBY and VAN WERT
COUNTIES

	Rates	Fringes
Plumber, Pipefitter, Steamfitter.....	\$ 39.33	27.68

TEAM0377-003 05/01/2021

STATEWIDE, EXCEPT CUYAHOGA, GEAUGA & LAKE

	Rates	Fringes
TRUCK DRIVER		
GROUP 1.....	\$ 29.74	15.70
GROUP 2.....	\$ 30.16	15.70

TRUCK DRIVER CLASSIFICATIONS

GROUP 1 - Asphalt Distributor; Batch; 4- Wheel Service;
4-Wheel Dump; Oil Distributor & Tandem

GROUP 2 - Tractor-Trailer Combination: Fuel; Pole Trailer;
Ready Mix; Semi-Tractor; & Asphalt Oil Spraybar Man When
Operated From Cab; 5 Axles & Over; Belly Dump; End Dump;
Articulated Dump; Heavy Duty Equipment; Low Boy; & Truck
Mechanic

TEAM0436-002 05/01/2021

CUYAHOGA, GEAUGA & LAKE

	Rates	Fringes
TRUCK DRIVER		
GROUP 1.....	\$ 30.65	16.95
GROUP 2.....	\$ 31.15	16.95

GROUP 1: Straight & Dump, Straight Fuel

GROUP 2: Semi Fuel, Semi Tractor, Euclids, Darts, Tank, Asphalt Spreaders, Low Boys, Carry-All, Tourna-Rockers, Hi-Lifts, Extra Long Trailers, Semi-Pole Trailers, Double Hook-Up Tractor Trailers including Team Track & Railroad Siding, Semi-Tractor & Tri-Axle Trailer, Tandem Tractor & Tandem Trailer, Tag Along Trailer, Expandable Trailer or Towing Requiring Road Permits, Ready-Mix (Agitator or Non-Agitator), Bulk Concrete Driver, Dry Batch Truck, Articulated End Dump

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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** Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 (\$16.20) or 13658 (\$12.15). Please see the Note at the top of the wage determination for more information.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were

prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter

- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

- 2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

- 3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

- 4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISIO"



Pilot Study Report
for
LayneOx™
Iron & Manganese Removal Process

Tuscarawas County, Ohio

August 24 to August 28, 2020

REVISIONS

Rev	Date	By	Description
0	9/8/20	SL	Preliminary



Water Resources – Water Treatment
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Mesa, Arizona 85201

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APPENDICES

Appendix A: LayneOx™ Brochure
Appendix B: Field Data
Appendix C: Consolidated Lab Data

Disclosure Statement

This pilot study report is prepared for the purpose of presenting a Technology Verification Report on the Layne Christensen Company (Layne) LayneOx™ Iron and Manganese removal process for Tuscarawas County, OH. The contents of this report, drawings, and attachments thereto contain proprietary and confidential information that are being presented to the recipients for their sole benefit as a means to further allow the recipients to independently evaluate the information contained herein and arrive at an objective decision related to the technical performance and feasibility of removal of the iron and manganese from the water with the LayneOx™ system. Disclosure of the confidential information to recipients shall not be construed in any way as granting the recipients any rights to the confidential information.

Contents of this report are not to be used in any manner that would be detrimental to Layne's interests, and it is not to be reproduced in whole or part other than for the purpose intended and the contents are not to be knowingly transmitted to any party that is not directly involved with evaluating merits of this proposal.

The recipients will take all reasonable precautions and steps to ensure that the contents of this report are maintained in confidence. This report and all copies thereof are to be returned to Layne upon request.

Executive Summary

The goal of this project is to verify the effectiveness of a LayneOx™ Iron & Manganese treatment system for Tuscarawas County, OH. The LayneOx™ process employs a high purity pyrolusite filtration media for the filtration of iron and manganese. The pilot test equipment was set up on the Well #1, located at the wellsite. Layne's testing protocol is described in the body of this report.

Layne conducted a pilot study for five (5) days, August 24th to August 28th, 2020. The pilot test system was equipped with four (4) pilot columns that treated the influent water in parallel. Throughout the study surface loading rates between 6 and 10.5 GPM/ft² were maintained to verify the proposed design of a full-scale treatment system.

Raw water from the well was processed through the pilot trailer throughout the testing, with the addition of sodium hypochlorite. During the pilot runs, all four columns ran successfully for 24 hours without breakthrough occurring. Differential pressure (DP) did not exceed conventional operating levels for pressure, 10 PSI, during the testing. The manganese removal was below secondary maximum contaminant limit (SMCL) for manganese with a maximum reading of .024 mg/l at 24 hours. The iron was removed down to a maximum of .01 mg/l and most readings were non detect.

All four (4) test columns ran at the prescribed loading rate, yielding acceptable results for removal of iron and manganese below the SMCL and demonstrated that the full-scale treatment system could operate without exceeding the SMCLs for iron and manganese, while staying below the threshold differential pressure (indicating the need for a backwash per the Layne standard system operation plan for LayneOx™ system).

Introduction

Drinking water standards, over the years, have become increasingly stringent with research findings showing the health risks associated with the presence of certain constituents in potable water. The presence of some constituents, however, does not necessarily pose a health risk, but still may be undesirable.

Iron and manganese do not have a Maximum Contaminant Limit (MCL) according to the EPA, but many municipalities have standardized on the secondary MCL (SMCL) of 0.30 mg/L for iron and 0.050 mg/L for manganese. Iron and manganese can result in discolored water, stained plumbing fixtures, and unfavorable taste to the water, however, no known health risks are posed by high levels of iron and manganese. The SMCLs are set primarily for aesthetic reasons. The goal of this pilot test was to achieve and maintain removal of iron and manganese below their respective SMCLs.

Coagulation/Filtration

There are numerous processes capable of removing iron and manganese. Some of the more complex processes include aeration, clarification-filtration, and ozonation-microfiltration. The simplest process is direct filtration on a suitable media. Historically, direct filtration of iron and manganese was done using manganese greensand. Typically, chlorine in combination with potassium permanganate is used as the oxidant. Recent trends indicate a shift towards selecting media that eliminate the need for permanganate, which is more expensive to use than chlorine and also has the attendant issues related to process control to avoid the production of “pink water”. LayneOx™ exhibits superior catalytic properties to manganese greensand and has the added benefit of enabling the use of chlorine as the primary and only pre-treatment oxidant. These properties provide the potential to operate at high surface loading rates, resulting in high removal efficiency and a small equipment footprint.

Treatment

LayneOx™ takes advantage of the fact that iron and manganese are readily oxidized in the presence of oxidized manganese found in the media, in the form of manganese dioxide, MnO₂. LayneOx™ has very high manganese dioxide content, ranging from 75% to 80%. This is significant because manganese dioxide is already present in the media and provides sites for the adsorption and oxidation of the iron – Fe (II) to Fe (III), and manganese – Mn (III) to Mn (IV), as well as accelerates the reaction rates. The newly deposited manganese provides additional sites for adsorption and oxidation.

Deposition of ferric hydroxide and manganese dioxide continues until the interstices between the media grains accumulate as much ferric hydroxide and manganese dioxide as they can hold. This point is determined either by iron and/or manganese breaking through the filter bed or by high differential pressure across the bed. Backwashing is then required to abrade the excess ferric hydroxide and manganese dioxide from the media grains and carry it out of the media bed to waste.

Backwash

As with any filtration media, LayneOx™ media requires backwashing after a certain period of time. The purpose of a backwash is to remove the collected particulate waste from the media bed which prevents differential pressure build up and prepares it for another cycle. Effective backwashing is essential with these types of media or else the filter bed will “grow” with deposited ferric hydroxide and manganese dioxide and the length of running time between backwashes will decline.

In a full-size Layne-designed treatment plant, the system takes one vessel or cell off-line at the time of backwash. Raw water is treated in the on-line vessels or cells, and then sent in reverse flow through the off-line vessel or cell. This process continues sequentially through all of the pressure vessels until each of the vessels has been backwashed, at which time the system resumes normal operation. This process is completely automated, allowing the system to run autonomously without manual interference. A backwash rate of 25 GPM/ft² for 5 minutes is typical for LayneOx™ systems.

Media Selection

Media selection is based on several factors including site footprint, flow rate, water chemistry and cost. Although this pilot study tested LayneOx™ media, Layne designs and builds treatment systems with a variety of filter media that are selected to best meet the customer’s site-specific needs.

LayneOx™ filter media possesses a strong negative electrostatic charge, or zeta potential, that can be maintained by the addition of a single oxidant such as sodium hypochlorite (bleach). A free chlorine residual of 0.5 to 1.0 ppm after the LayneOx™ media is usually sufficient to oxidize the influent iron and manganese for efficient removal by the media bed. LayneOx™ can be operated at loading rates from 5 to 15 GPM/ft², depending on the influent contaminant concentrations and the desired backwash frequency.

Some advantages of LayneOx™ media include:

- Proven process (over 150 plants have been installed using LayneOx™ media).
- Highly efficient removal of iron and manganese to well below the secondary MCL.
- Highly catalytic media allows high surface loading rates within a relatively small footprint when compared to other media, resulting in capital cost savings.
- Media is resistant to degradation because of high particle hardness.
- Potassium permanganate is not required, eliminating the “pink water” concerns.
- Single oxidant, typically sodium hypochlorite, up-stream of the water treatment system provides chlorine residual for the system.
- Automated system operation with minimal operator attention required.
- Minimal reaction time required for oxidation using sodium hypochlorite.

- Minimal pressure drop of 3 to 5 PSIG across the clean LayneOx™ bed at the high surface loading rate of 15 GPM/ft².

More information about LayneOx™ can be found in the Product Bulletin and the NSF Certification in the appendices of this document.

Pilot Test

Testing Objectives

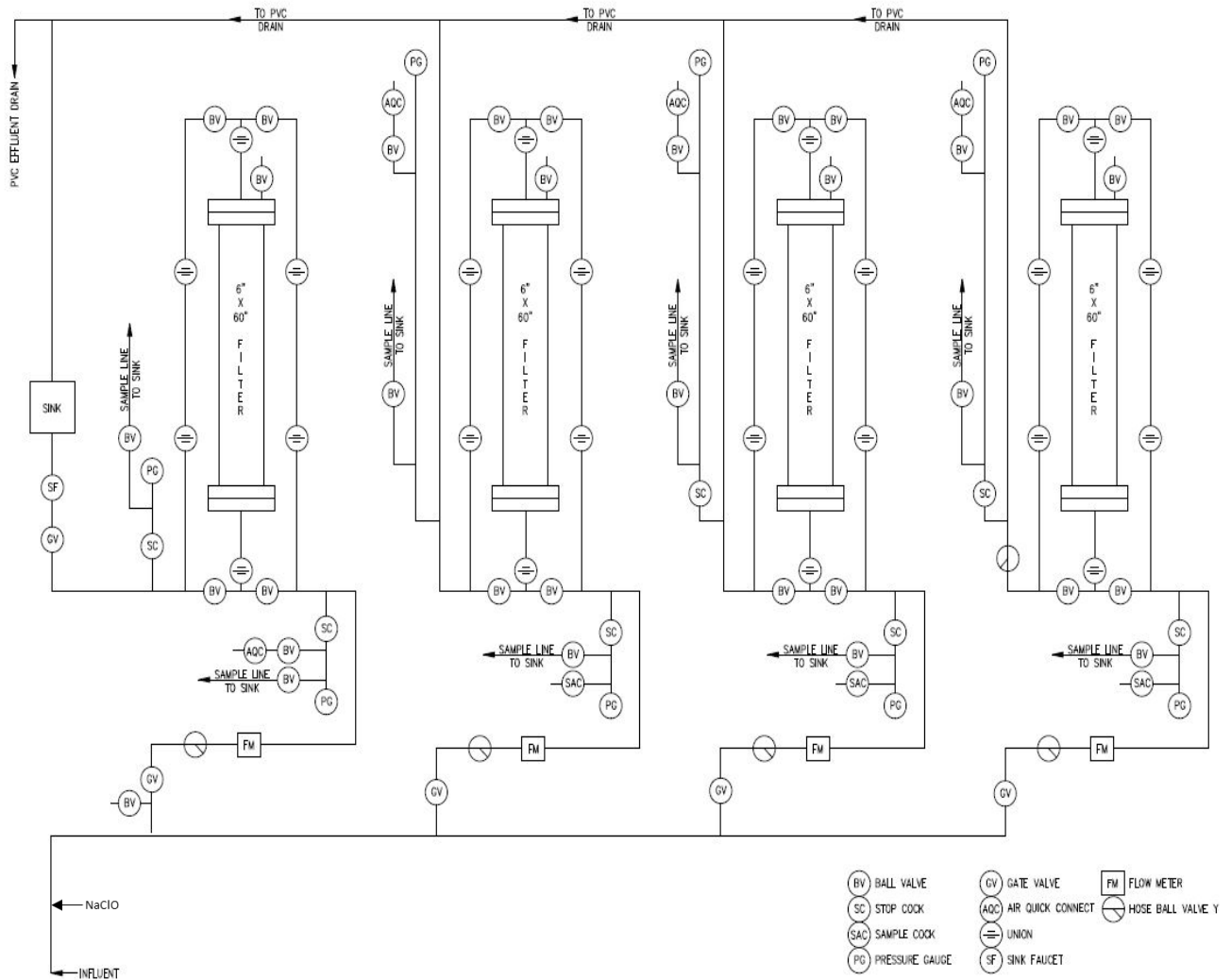
The pilot system is a simplified version of a typical full-scale Layne coagulation/filtration treatment system. Pilot testing is used to develop and quantify the following objectives:

- To determine the best chlorine and/or chemical dosing rates.
- To observe the effects of surface loading rate change on effluent water quality.
- To ensure effective removal of iron and manganese to meet or exceed their respective SMCLs.

Site Setup

Layne set up the pilot test columns fed from the detention tank to confirm the effectiveness of LayneOx™ in removing iron and manganese from the raw water. The feed water to the pilot columns was drawn from a garden hose, connected at the detention tank boosted with a pump to the pilot trailer. The waste was dumped to ground surface holding area.

Figure 1. Column Setup





Equipment Operation Description – Treatment

Feed water to the pilot columns was supplied through a $\frac{3}{4}$ " hose connection. Untreated water from the well entered the trailer, where sodium hypochlorite was introduced, and then routed to the LayneOx™ filter columns.

Rotameters and gate valves were used to meter and control the flow, respectively. A pressure relief valve was installed to prevent damage to the system. A chemical injection port permitted the chemical injection pump to provide metered amounts of chemical.

PVC piping carried the water to a 60" high vertical column filled with a vertical 36" bed of LayneOx™ media. The water flows into the top of the column, downward through the media bed and out through the bottom of the column, to the site discharge point. A second column was setup in identical fashion to allow parallel operation of the pilot for a second loading rate.

Equipment Operation Description – Backwash

Backwashing was accomplished by manipulating the pilot system manual valves to reverse the process flow through the filter columns. Feed water was directed into piping connected to the bottom of the filter column, where it flowed upward through the bed and out the top of the filter column. Backwashing was performed at a rate of 25 GPM/ft² (4.9 GPM) This high rate of flux lifted the media 30 – 40% above its settled bed depth of 36" to allow the accumulated particulates sufficient space to flow out of the bed. This process was maintained over a period of 5 minutes.

From the top of the column, backwash water passed through a dedicated throttling valve to ensure the proper media backwash rate, after which it flowed out through a hose to an approved waste drain.

Chemical Injection

Chemical injection was accomplished by utilizing a Stenner Peristaltic pump capable of delivering 1 to 15 mL/min of metered flow. The chemical injection pump operated within a range that requires diluted chemical solutions. Household grade 5% to 6% sodium hypochlorite was diluted 5:1 with distilled or treated water to make a 1.2 % chlorine feed for the pilot. Chlorine dilution ratios are altered depending on chlorine demand and flow rates to allow the chemical pump to deliver a consistent dose.

Analytical Procedures

The Hach DR/890 Colorimeter was used for all field tests. Reagents were added to the sample, and the resulting color change indicated the amount of reactant in the sample. The instrument analyzed the color of the sample and returned a value in mg/L.



Figure 3. Hach DR/890 Colorimeter

Reagents/Test methods used:

- Iron, Total (0 to 1.4 mg/L), FerroVer Method – Hach Method 8008
- Manganese, Low Range (0.0 to 0.7 mg/L) - Hach PAN Method 8149
- Chlorine, Free (0 to 2.00 mg/L), DPD Method – Hach Method 8021 (USEPA Method 330.5)
- Chlorine, Total (0 to 2.00 mg/L) DPD Method – Hach Method 8167 (USEPA Method 330.5)
- pH (6.5 to 8.5 pH), Clamshell pH Meter, handheld probe – calibrated with 4.0, 7.0 & 10 pH buffers

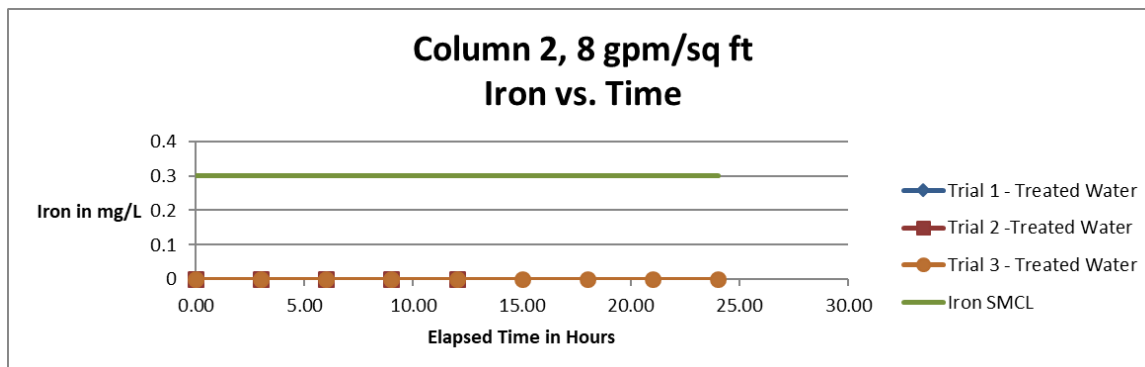
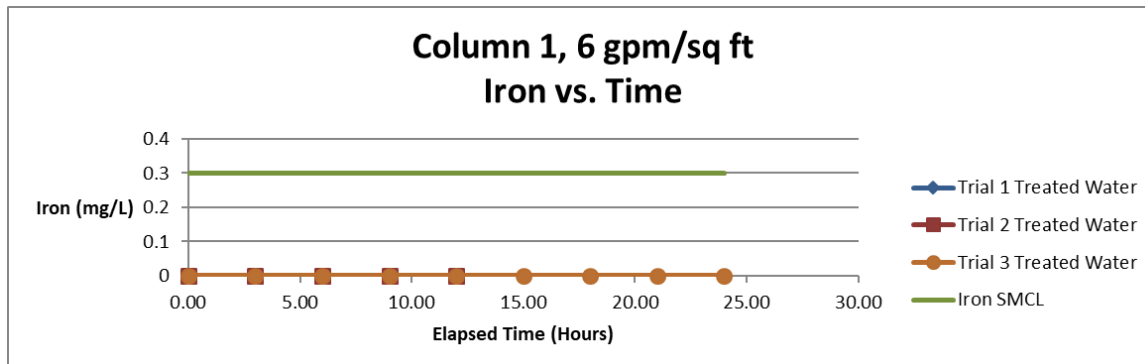
Pilot Test Results

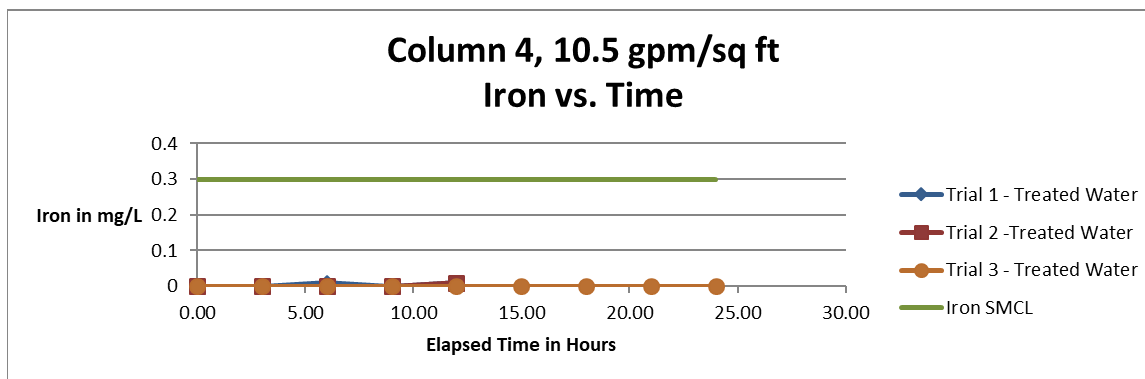
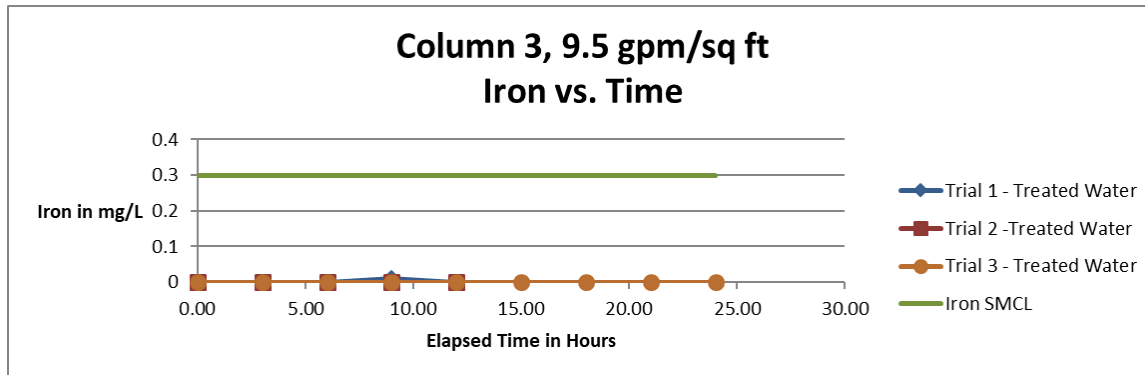
The data displayed in Figures 4 through 8 are results from the LayneOx™ demonstration conducted August 24 to 28, 2020. A slip stream of raw water from the Well #2 main was processed through the pilot trailer for the runs. Treated levels of iron, manganese, free chlorine consumption, and differential pressure are reported. The results of all four (4) runs are presented on each graph showing repeatable trends for each run.

Table 1. Averaged pilot results

Tuscarawas County, OH - Pilot Averaged Results							
	Mn In	Mn Out	Fe in	Fe out	Flow Rate (gpm)	Loading Rate	Filter Run
Column 1	0.223	0.015	0.04	0.0	1.17	6.0-gpm/ft ²	24 hrs.
Column 2	0.223	0.017	0.04	0.0	1.57	8-gpm/ft ²	24 hrs.
Column 3	0.223	0.018	0.04	0.0	1.86	9.5-gpm/ft ²	24 hrs.
Column 4	0.223	0.019	0.04	0.0	2.06	10.5-gpm/ft ²	24 hrs.

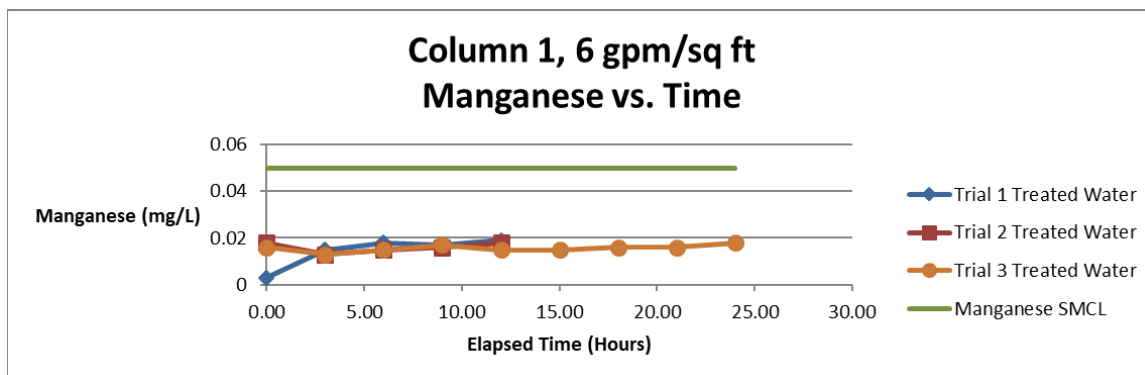
Figure 4. Field iron levels for all columns.

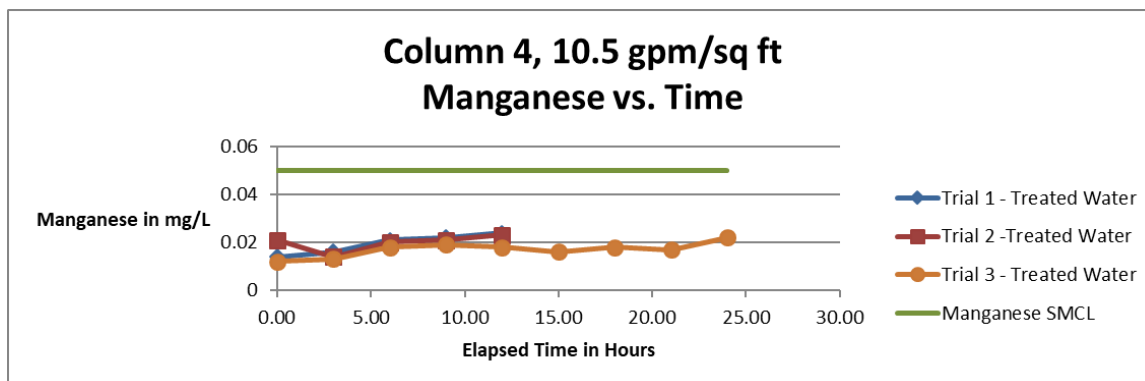
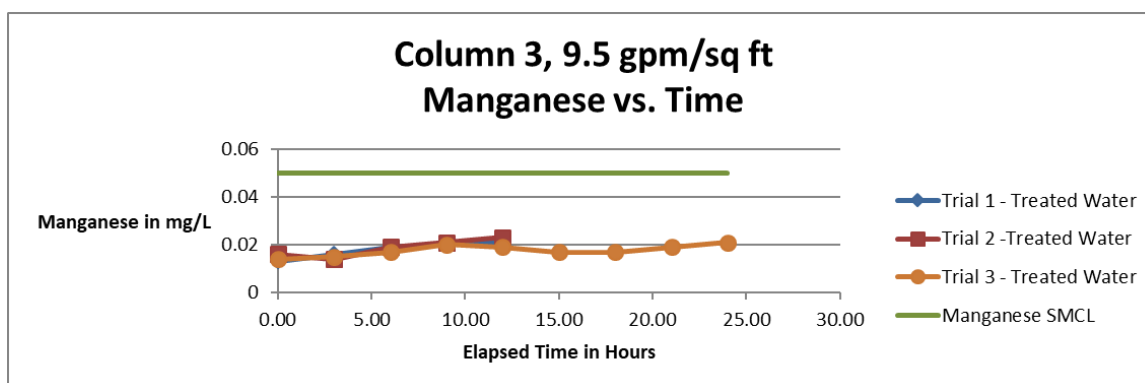
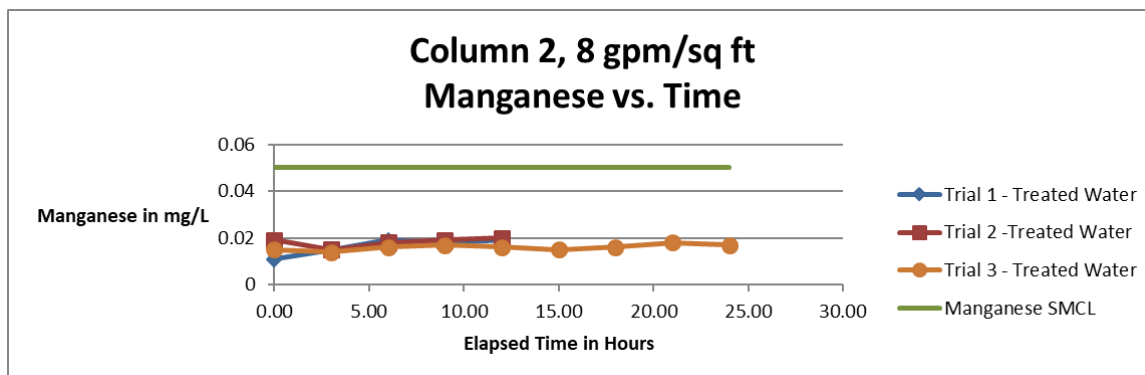




The above figures outline the field data collected for iron removal in all four columns for all three (3) filter trial runs. The iron levels were consistently removed to concentrations well below the SMCL for the duration of the testing.

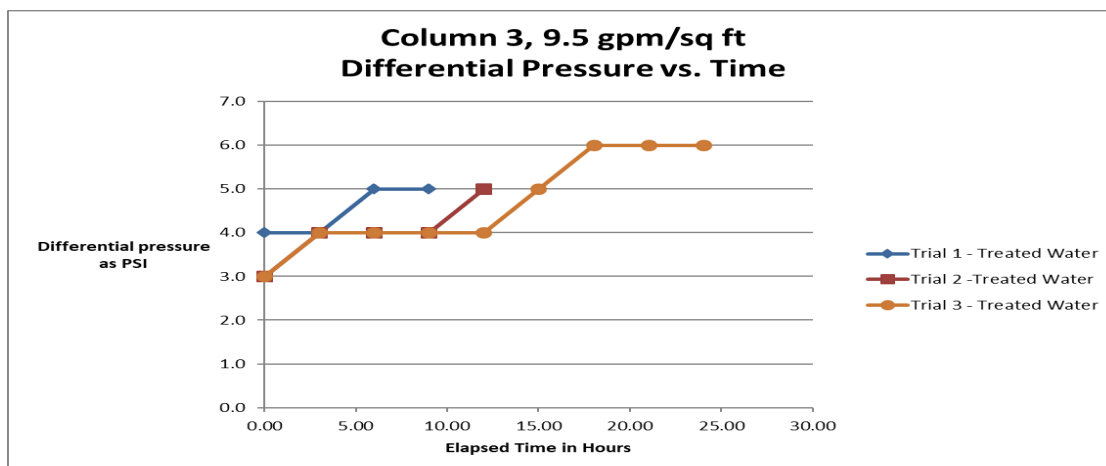
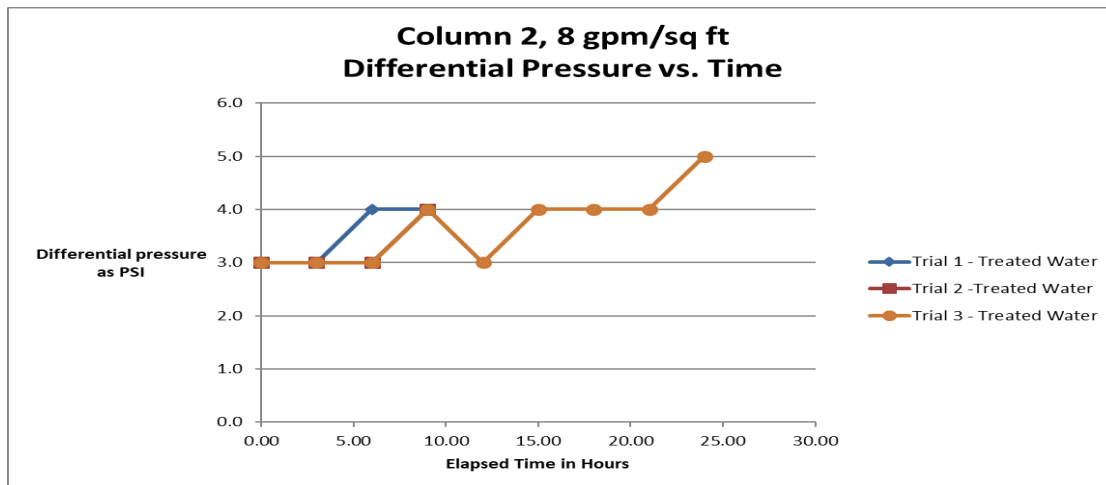
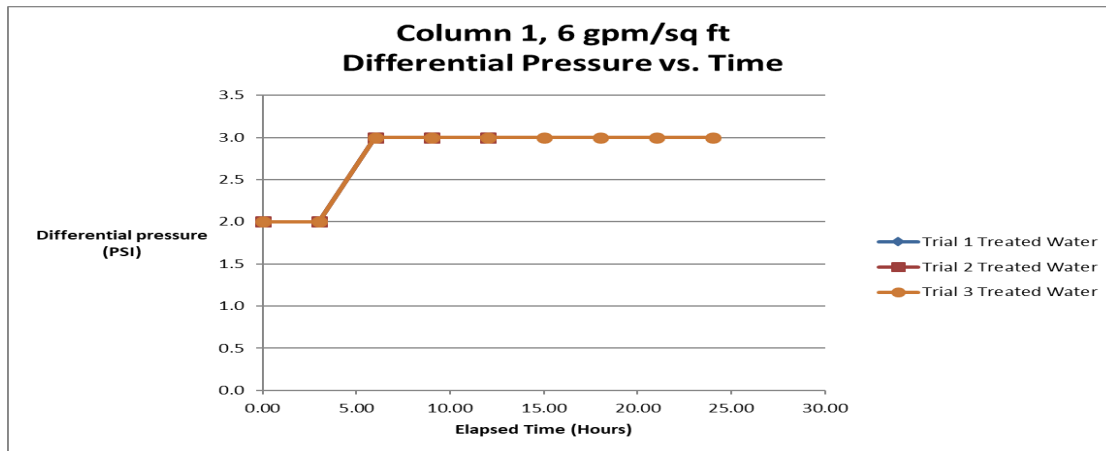
Figure 5. Field manganese levels for all columns

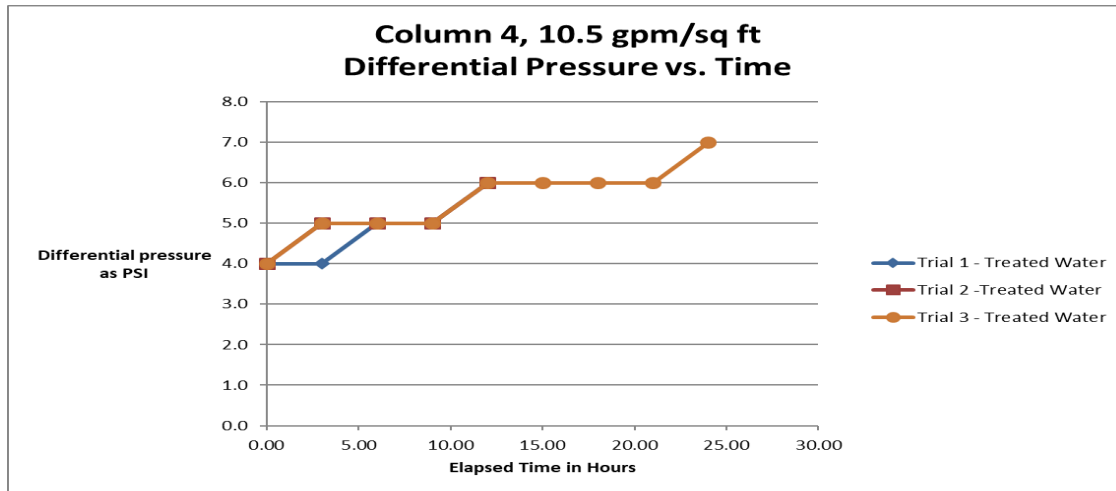




The above figures outline the field data collected for manganese removal in all four columns for all three (3) filter runs. The manganese levels were removed to levels well below the SMCL for the duration of the testing runs.

Figure 6. Differential Pressures for all columns.





The above figures outline the field data collected for differential pressure in all four columns for all three (3) filter runs. The differential pressure rise was consistent and did not reach the terminal DP of 10-psid during the testing.

Table 1. Pilot plant process parameters.

Parameter	Value
Flow Rates	5.6 GPM total (1.18 to 2.06 GPM/column)
Process Loading Rate	6, 8, 9.5 and 10.5 GPM/ft ²
Media Bed Dimensions	36-inch bed depth, 6-inch diameter
Media Type	LayneOx™ 20x40 mesh
Oxidant Chemical	Sodium Hypochlorite (NaOCl)
Backwash Freeboard	16 inches
Backwash Flow Rate	5 GPM
Backwash Bed Expansion	12.5 inches
Backwash Duration	5 minutes
Backwash Source	Treated Water collected during run
Backwash Destination	Approved Drainage Location

Conclusions

The preliminary field data shows conclusive results. The influent iron concentrations of raw water measured 0.01 to 0.08 mg/L, and the influent manganese concentration measured between 0.249 to 0.217 mg/L. Therefore, with the field data showing excellent performance, we are confident in our conclusions.

Using raw water as the supply from Well #2, the LayneOx pilot treatment was successful in removing the influent iron concentration to below 0.01 mg/L and the manganese concentration was reduced to 0.023 mg/L or lower for the duration of the 24-hour pilot in all cases. These values are below the SMCL of iron and manganese. These results occurred at loading rates between 6.0 and 10.5 GPM/ft² for a filter run length of 24 hours.

Lab testing results showed removal of manganese to below 0.01 mg/L on all columns at various points in the run cycle. Iron was removed to below 0.01 mg/L on all columns at all times during testing.

As demonstrated in the above figures and results, the LayneOx™ iron and manganese removal system ran very steadily through both the base design filter column (1) and the higher loading rate design filter columns (2, 3 and 4) for the filter run cycles. Layne has the data necessary to size the full scale plant and has proven that loading rates above 7.5 GPM/ft² are achievable to optimize the pressure vessel size.

Appendix A



LayneOx™ PRODUCT SPECIFICATION

Trade name	LayneOx™
Color	Black
Form	Particulate
Bound Moisture Content	2% MAX as shipped
Bulk Density-Loose Packed	110-115 pounds/cu foot
Hardness- Ball Pan	80 Minimum
Abrasion Number	70 Minimum
Manganese Dioxide	70-80% Average throughout media matrix
Mean Particle Diameter	0.4-0.6MM
Effective Size	0.3-0.5MM
Uniformity Coefficient	Less than 1.65
Particle Size Range	20x40 mesh
ANSI/NSF 61	Certified without limitations for use in potable water
Preconditioning	Washed and Screened to size
Percent finer than 40 mesh	5% max
Percent coarser than 20 mesh	5% max
Packaging	2,625 pound Supersacks or 60 pound bags



Column 1: 6 GPM/ft2

Field Testing Schedule and Log																										
Description, Location and Flow: Column 1			Date:	Time (24 hr clock)		Start, Y	Stop, Y	Time (hrs)	Flow (gpm)	Total flow	NaOCl Flow (mL/min)	Temp. (C)	pH	Inlet Pressure	Outlet Pressure	D.P.	Inlet Cl2 (mg/L)	Outlet Cl2 (mg/L)	Chlorine consumption (mg/L)	Raw Fe (mg/L)	Fe (mg/L)	Raw Mn (mg/L)	Mn	Turbidity (NTU)		
				hr	min																					
Run 1				8/25/20	6	30	Y			0.00	1.18	0	3.6	19.7	6.98	42	40	2.0	1.85	0.76	1.09	0.09	0	0.203	0.003	0.03
					9	30			3.00	1.17	211.8	3.6	20.4	6.96	41	39	2.0	1.89	0.81	1.08	0.08	0	0.234	0.015	0.02	
					12	30			6.00	1.16	417.8	3.6	20.9	6.97	41	38	3.0	1.79	0.82	0.97	0.09	0	0.216	0.018	0.03	
					15	30			9.00	1.18	635.8	3.6	21.3	6.96	40	37	3.0	1.86	0.85	1.01	0.09	0	0.208	0.017	0.04	
					18	30		y	12.00	1.17	851.7	3.6	22.4	6.96	40	37	3.0	1.78	0.78	1.00	0.07	0	0.213	0.019	0.05	
Average																			1.00	0.08	0.00	0.22	0.02	0.04		
Field Testing Schedule and Log																										
Description, Location and Flow: Column 1			Date:	Time (24 hr clock)		Start, Y	Stop, Y	Time (hrs)	Flow (gpm)	Total flow	NaOCl Flow (mL/min)	Temp. (C)	pH	Inlet Pressure	Outlet Pressure	D.P.	Inlet Cl2 (mg/L)	Outlet Cl2 (mg/L)	Chlorine consumption (mg/L)	Raw Fe (mg/L)	Fe (mg/L)	Raw Mn (mg/L)	Mn	Turbidity (NTU)		
				hr	min																					
Run 2				8/26/20	6	30	Y		0.00	1.18	0	3.6	14.9	6.96	36	34	2.0	1.87	0.78	1.09	0.03	0	0.206	0.018	0.05	
					9	30			3.00	1.2	214.6	3.6	15.2	6.95	36	34	2.0	1.89	0.69	1.20	0.02	0	0.232	0.013	0.04	
					12	30			6.00	1.17	402.9	3.6	15.4	6.96	35	32	3.0	1.84	0.71	1.13	0.02	0	0.219	0.015	0.05	
					15	30			9.00	1.19	636.4	3.6	20.9	6.96	36	33	3.0	1.91	0.85	1.06	0.03	0	0.249	0.016	0.06	
					18	30		y	12.00	1.2	853.7	3.6	21.8	6.95	36	33	3.0	1.88	0.76	1.1	0.02	0	0.237	0.018	0.05	
Average																			1.00	0.02	0.00	0.22	0.02	0.04		
Field Testing Schedule and Log																										
Description, Location and Flow: Column 1			Date:	Time (24 hr clock)		Start, Y	Stop, Y	Time (hrs)	Flow (gpm)	Total flow	NaOCl Flow (mL/min)	Temp. (C)	pH	Inlet Pressure	Outlet Pressure	D.P.	Inlet Cl2 (mg/L)	Outlet Cl2 (mg/L)	Chlorine consumption (mg/L)	Raw Fe (mg/L)	Fe (mg/L)	Raw Mn (mg/L)	Mn	Turbidity (NTU)		
				hr	min																					
Run 3				8/27/20	6	0	Y		0.00	1.18	0	3.6	16.5	6.96	37	35	2.0	1.89	0.75	1.14	0.02	0	0.236	0.016	0.06	
					9	0			3.00	1.18	211.2	3.6	16.9	6.95	38	36	2.0	1.93	0.88	1.05	0.01	0	0.229	0.013	0.03	
Stopped at 6 PM					12	0			6.00	1.19	426.1	3.6	19.3	6.96	37	34	3.0	1.95	0.84	1.11	0.02	0	0.232	0.015	0.04	
restarted at 6 AM					15	0			9.00	1.18	638.7	3.6	20.8	6.96	39	36	3.0	1.91	0.78	1.13	0.01	0	0.219	0.017	0.04	
				8/28/20	6	0			12.00	1.18	854.2	3.6	16.4	6.95	38	35	3.0	1.98	0.64	1.3	0.02	0	0.187	0.015	0.03	
					9	0			15.00	1.15	1008.9	3.6	18.3	6.96	39	36	3.0	1.83	0.79	1.0	0.01	0	0.239	0.015	0.04	
					12	0			18.00	1.16	1244.6	3.6	19.6	6.96	38	35	3.0	1.87	0.78	1.0	0	0	0.221	0.016	0.03	
					15	0			21.00	1.14	1452.3	3.6	19.2	6.95	39	36	3.0	1.82	0.85	1.0	0.01	0	0.225	0.016	0.05	
					18	0		y	24.00	1.15	1658.9	3.6	18.6	6.96	39	36	3.0	1.85	0.87	1.0	0.01	0	0.231	0.018	0.02	
Average																			1.00	0.01	0.01	0.22	0.02	0.05		

Column 2: 8 GPM/ft2

Field Testing Schedule and Log																							
Description, Location and Flow:		Date:	Time (24 hr clock)		Start, Y	Stop, Y	Time (hrs)	Flow (gpm)	Total flow	NaOCl Flow (ml/min)	Temp. (C)	pH	Inlet Pressure	Outlet Pressure	D.P.	Inlet Cl2 (mg/L)	Outlet Cl2 (mg/L)	Chlorine consumption (mg/L)	Raw Fe (mg/L)	Fe (mg/L)	Raw Mn (mg/L)	Mn	Turbidity (NTU)
			hr	min																			
Run 1		8/25/20	6	30	Y		0.00	1.57	0	3.6	19.6	6.97	42	39	3.0	1.85	0.82	1.03	0.09	0	0.203	0.011	0.03
			9	30			3.00	1.59	284.2	3.6	20.2	6.96	41	38	3.0	1.89	0.86	1.03	0.08	0	0.234	0.015	0.03
			12	30			6.00	1.57	562.8	3.6	21.1	6.97	41	37	4.0	1.79	0.82	0.97	0.09	0	0.218	0.019	0.02
			15	30			9.00	1.57	848.9	3.6	21.8	6.96	40	36	4.0	1.86	0.88	0.98	0.09	0	0.208	0.018	0.03
			18	30		y	12.00	1.56	1129.1	3.6	22.2	6.96	40	36	4.0	1.78	0.84	0.9	0.07	0	0.213	0.019	0.04
Average																		1.00	0.08	0.00	0.22	0.02	0.03
Field Testing Schedule and Log																							
Description, Location and Flow:		Date:	Time (24 hr clock)		Start, Y	Stop, Y	Time (hrs)	Flow (gpm)	Total flow	NaOCl Flow (ml/min)	Temp. (C)	pH	Inlet Pressure	Outlet Pressure	D.P.	Inlet Cl2 (mg/L)	Outlet Cl2 (mg/L)	Chlorine consumption (mg/L)	Raw Fe (mg/L)	Fe (mg/L)	Raw Mn (mg/L)	Mn	Turbidity (NTU)
			hr	min																			
Run 2		8/26/20	6	30	Y		0.00	1.57	0	3.6	14.8	6.97	36	33	3.0	1.87	0.83	1.0	0.03	0	0.206	0.019	0.04
			9	30			3.00	1.58	283.4	3.6	14.9	6.95	36	33	3.0	1.89	0.88	1.0	0.02	0	0.232	0.015	0.05
			12	30			6.00	1.56	557.4	3.6	15.4	6.96	36	33	3.0	1.84	0.86	0.9	0.02	0	0.219	0.018	0.07
			15	30			9.00	1.56	845.2	3.6	20.6	6.97	36	32	4.0	1.91	0.87	1.0	0.03	0	0.249	0.019	0.06
			18	30		y	12.00	1.58	1132.8	3.6	21.4	6.96	36	32	4.0	1.88	0.84	1.0	0.02	0	0.237	0.020	0.07
Average																		1.00	0.02	0.00	0.23	0.02	0.06
Field Testing Schedule and Log																							
Description, Location and Flow:		Date:	Time (24 hr clock)		Start, Y	Stop, Y	Time (hrs)	Flow (gpm)	Total flow	NaOCl Flow (ml/min)	Temp. (C)	pH	Inlet Pressure	Outlet Pressure	D.P.	Inlet Cl2 (mg/L)	Outlet Cl2 (mg/L)	Chlorine consumption (mg/L)	Raw Fe (mg/L)	Fe (mg/L)	Raw Mn (mg/L)	Mn	Turbidity (NTU)
			hr	min																			
Run 3		8/27/20	6	0	Y		0.00	1.57	0	3.6	16.3	6.97	37	34	3.0	1.89	0.83	1.1	0.02	0	0.236	0.015	0.07
			9	0			3.00	1.58	284.3	3.6	16.9	6.95	38	35	3.0	1.93	0.88	1.1	0.01	0	0.229	0.014	0.04
Stopped at 6 PM			12	0			6.00	1.56	567.4	3.6	19.2	6.96	37	34	3.0	1.95	0.87	1.1	0.02	0	0.232	0.016	0.12
restarted at 6 AM			15	0			9.00	1.57	848.9	3.6	20.6	6.95	39	35	4.0	1.91	0.88	1.0	0.01	0	0.219	0.017	0.07
		8/28/20	6	0			12.00	1.57	1131.8	3.6	16.3	6.96	38	35	3.0	1.98	0.78	1.2	0.02	0	0.187	0.016	0.05
			9	0			15.00	1.55	1341.5	3.6	18.2	6.96	39	35	4.0	1.83	0.81	1.0	0.01	0	0.239	0.015	0.03
			12	0			18.00	1.56	1694.5	3.6	18.8	6.95	38	34	4.0	1.87	0.86	1.0	0	0	0.225	0.016	0.04
			15	0			21.00	1.54	1976.7	3.6	19.2	6.96	39	35	4.0	1.82	0.88	1.0	0.01	0	0.221	0.018	0.04
			18	0		y	24.00	1.57	2257.8	3.6	18.6	6.97	39	34	5.0	1.85	0.84	1.0	0.01	0	0.231	0.017	0.06
Average																		1.00	0.03	0.00	0.23	0.02	0.05

Column 3: 9.5 GPM/ft2

1.86																							
Description, Location and Flow:		Date:	Time (24 hr clock)		Start, Y	Stop, Y	Time (hrs)	Flow (gpm)	Total flow	NaOCl Flow (ml/min)	Temp. (C)	pH	Inlet Pressure	Outlet Pressure	D.P.	Inlet Cl2 (mg/L)	Outlet Cl2 (mg/L)	Chlorine consumption (mg/L)	Raw Fe (mg/L)	Fe (mg/L)	Raw Mn (mg/L)	Mn	Turbidity (NTU)
Run 1		8/25/20	hr	min																			
			6	30	Y		0.00	1.86	0	3.6	19.7	6.98	42	38	4.0	1.85	0.87	0.98	0.09	0	0.203	0.013	0.01
			9	30			3.00	1.88	335.7	3.6	20.3	6.97	41	37	4.0	1.89	0.87	1.02	0.08	0	0.234	0.016	0.02
			12	30			6.00	1.85	667.9	3.6	21.2	6.96	41	36	5.0	1.79	0.85	0.94	0.09	0	0.218	0.019	0.03
			15	30			9.00	1.85	1006.3	3.6	21.8	6.97	40	35	5.0	1.86	0.86	1.00	0.09	0.01	0.208	0.02	0.02
			18	30		Y	12.00	1.86	1342.1	3.6	22.1	6.96	40	35	5.0	1.78	0.82	0.93	0.07	0	0.213	0.021	0.03
Average																		0.85	0.08	0.00	0.22	0.02	0.02
Field Testing Schedule and Log																							
Description, Location and Flow:		Date:	Time (24 hr clock)		Start, Y	Stop, Y	Time (hrs)	Flow (gpm)	Total flow	NaOCl Flow (ml/min)	Temp. (C)	pH	Inlet Pressure	Outlet Pressure	D.P.	Inlet Cl2 (mg/L)	Outlet Cl2 (mg/L)	Chlorine consumption (mg/L)	Raw Fe (mg/L)	Fe (mg/L)	Raw Mn (mg/L)	Mn	Turbidity (NTU)
Run 2		8/26/20	hr	min																			
			6	30	Y		0.00	1.86	0	3.6	14.9	6.98	36	33	3.0	1.87	0.86	1.0	0.03	0	0.206	0.016	0.05
			9	30			3.00	1.85	333.6	3.6	15.1	6.95	36	32	4.0	1.89	0.85	1.0	0.02	0	0.232	0.014	0.04
			12	30			6.00	1.85	668.2	3.6	15.3	6.95	36	32	4.0	1.84	0.81	1.0	0.02	0	0.219	0.019	0.08
			15	30			9.00	1.87	1008.6	3.6	20.9	6.96	36	32	4.0	1.91	0.85	1.1	0.03	0	0.249	0.021	0.09
			18	30		Y	12.00	1.88	1341.3	3.6	21.3	6.96	35	30	5.0	1.88	0.88	1.0	0.02	0	0.237	0.023	0.11
Average																		1.00	0.02	0.00	0.23	0.02	0.07
Field Testing Schedule and Log																							
Description, Location and Flow:		Date:	Time (24 hr clock)		Start, Y	Stop, Y	Time (hrs)	Flow (gpm)	Total flow	NaOCl Flow (ml/min)	Temp. (C)	pH	Inlet Pressure	Outlet Pressure	D.P.	Inlet Cl2 (mg/L)	Outlet Cl2 (mg/L)	Chlorine consumption (mg/L)	Raw Fe (mg/L)	Fe (mg/L)	Raw Mn (mg/L)	Mn	Turbidity (NTU)
Run 3		8/27/20	hr	min																			
			6	0	Y		0.00	1.86	0	3.6	16.3	6.96	37	34	3.0	1.89	0.87	1.0	0.02	0	0.236	0.014	0.04
			9	0			3.00	1.84	333.1	3.6	16.7	6.96	38	34	4.0	1.93	0.92	1.0	0.01	0	0.229	0.015	0.02
Stopped at 6 PM			12	0			6.00	1.86	668.2	3.6	19.2	6.95	37	33	4.0	1.95	0.94	1.0	0.02	0	0.232	0.017	0.05
restarted at 6 AM			15	0			9.00	1.85	1007.4	3.6	20.7	6.96	39	35	4.0	1.91	0.93	1.0	0.01	0	0.219	0.02	0.07
		8/28/20	6	0			12.00	1.86	1342.9	3.6	16.2	6.95	38	34	4.0	1.98	0.82	1.1	0.02	0	0.187	0.019	0.05
			9	0			15.00	1.83	1591.5	3.6	18.1	6.96	39	34	5.0	1.83	0.84	1.0	0.01	0	0.239	0.017	0.04
			12	0			18.00	1.87	2010.7	3.6	18.9	6.96	38	32	6.0	1.87	0.89	1.0	0	0	0.225	0.017	0.05
			15	0			21.00	1.85	2345.8	3.6	19.2	6.95	39	33	6.0	1.82	0.92	1.0	0.01	0	0.221	0.019	0.03
			18	0		Y	24.00	1.86	2681.2	3.6	18.3	6.96	38	32	6.0	1.85	0.88	1.0	0.01	0	0.231	0.021	0.05
Average																		1.00	0.01	0.00	0.23	0.02	0.07

Column 4: 10.5 GPM/ft²

Field Testing Schedule and Log																								
Description, Location and Flow:		Date:	Time (24 hr clock)		Start, Y	Stop, Y	Time (hrs)	Flow (gpm)	Total flow	NaOCl Flow (ml/min)	Temp. (C)	pH	Inlet Pressure	Outlet Pressure	D.P.	Inlet Cl2 (mg/L)	Outlet Cl2 (mg/L)	Chlorine consumption (mg/L)	Raw Fe (mg/L)	Fe (mg/L)	Raw Mn (mg/L)	Mn	Turbidity (NTU)	
Run 1		8/25/20	hr	min																				
			6	30	Y		0.00	2.06	0	3.6	19.6	6.96	42	38	4.0	1.85	0.88	0.97	0.09	0	0.203	0.014	0.03	
			9	30			3.00	2.08	371.7	3.6	20.2	6.95	41	37	4.0	1.89	0.91	0.98	0.08	0	0.234	0.016	0.04	
			12	30			6.00	2.07	742.6	3.6	21	6.96	40	35	5.0	1.79	0.92	0.87	0.09	0.01	0.218	0.021	0.03	
			15	30			9.00	2.07	1113.9	3.6	21.7	6.95	39	34	5.0	1.86	0.93	0.93	0.09	0	0.208	0.022	0.01	
		18	30		Y	12.00	2.06	1485.8	3.6	22.3	6.96	40	34	6.0	1.78	0.91	0.82	0.07	0.01	0.213	0.024	0.03		
Average																	0.91	0.08	0.00	0.22	0.02	0.03		
Field Testing Schedule and Log																								
Description, Location and Flow:		Date:	Time (24 hr clock)		Start, Y	Stop, Y	Time (hrs)	Flow (gpm)	Total flow	NaOCl Flow (ml/min)	Temp. (C)	pH	Inlet Pressure	Outlet Pressure	D.P.	Inlet Cl2 (mg/L)	Outlet Cl2 (mg/L)	Chlorine consumption (mg/L)	Raw Fe (mg/L)	Fe (mg/L)	Raw Mn (mg/L)	Mn	Turbidity (NTU)	
Run 2		8/26/20	hr	min																				
			6	30	Y		0.00	2.06	0	3.6	14.8	6.96	36	32	4.0	1.87	0.85	1.0	0.03	0	0.206	0.021	0.09	
			9	30			3.00	2.04	369.8	3.6	14.9	6.94	36	31	5.0	1.89	0.92	1.0	0.02	0	0.232	0.014	0.03	
			12	30			6.00	2.06	739.3	3.6	15.4	6.95	36	31	5.0	1.84	0.94	0.9	0.02	0	0.219	0.02	0.09	
			15	30			9.00	2.08	1115.8	3.6	20.8	6.96	36	31	5.0	1.91	0.96	1.0	0.03	0	0.249	0.021	0.07	
		18	30		Y	12.00	2.07	1486.7	3.6	21.3	6.96	36	30	6.0	1.88	0.91	0.9	0.02	0.01	0.237	0.023	0.09		
Average																	1.00	0.02	0.00	0.23	0.02	0.07		
Field Testing Schedule and Log																								
Description, Location and Flow:		Date:	Time (24 hr clock)		Start, Y	Stop, Y	Time (hrs)	Flow (gpm)	Total flow	NaOCl Flow (ml/min)	Temp. (C)	pH	Inlet Pressure	Outlet Pressure	D.P.	Inlet Cl2 (mg/L)	Outlet Cl2 (mg/L)	Chlorine consumption (mg/L)	Raw Fe (mg/L)	Fe (mg/L)	Raw Mn (mg/L)	Mn	Turbidity (NTU)	
Run 3		8/27/20	hr	min																				
			6	0	Y		0.00	2.06	0	3.6	16.2	6.96	37	33	4.0	1.89	0.88	1.0	0.02	0	0.236	0.012	0.02	
			9	0			3.00	2.08	372.2	3.6	16.6	6.95	38	33	5.0	1.93	0.95	1.0	0.01	0	0.229	0.013	0.02	
Stopped at 6 PM			12	0			6.00	2.07	742.8	3.6	19.2	6.96	37	32	5.0	1.95	0.88	1.1	0.02	0	0.232	0.018	0.04	
restarted at 6 AM			15	0			9.00	2.06	1114.8	3.6	20.7	6.95	39	34	5.0	1.91	0.92	1.0	0.01	0	0.219	0.019	0.05	
			8/28/20	6	0			12.00	2.06	1484.9	3.6	16.1	6.96	38	32	6.0	1.98	0.88	1.1	0.02	0	0.187	0.018	0.04
				9	0			15.00	2.02	1762.4	3.6	18.2	6.95	39	33	6.0	1.83	0.86	0.9	0.01	0	0.239	0.016	0.05
				12	0			18.00	2.05	2226.1	3.6	18.8	6.98	38	32	6.0	1.87	0.92	0.9	0	0	0.225	0.018	0.07
			15	0			21.00	2.07	2597.7	3.6	19.3	6.95	39	33	6.0	1.82	0.91	0.9	0.01	0	0.221	0.017	0.04	
			18	0			24.00	2.06	2969.3	3.6	18.5	6.96	39	32	7.0	1.82	0.89	0.9	0.01	0	0.231	0.022	0.04	
Average																	1.00	0.01	0.02	0.22	0.02	0.04		



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Appendix C – Lab Data



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Ohio Laboratory Certification # 893

- Certificate of Analysis -
for

TUSCARAWAS COUNTY WATER DEPARTMENT
9962 WILKSHIRE BLVD
BOLIVAR, OH 44612

Final Report

Report Date: 9/1/2020

Report Number: 116501-0

Chain of Custody #: 213511

Project Name: WILK PH 57 PILOT STUDY

Lab ID: 20083089

Sample Type: Drinking Water

Your Sample ID: RAW

Date Sampled: 8/26/2020 8:00:00AM

Date Received: 8/26/2020

Collection: GRAB

Method	Analyte	Result	Units	MDL/PQL	Analysis Date	Analyst
EPA_180.1/Paper	Acidified Turbidity Check	0.05	ntu	0.02	08/28/20	WG
	pH < 2.0	Yes	-		08/28/20	WG
EPA_200.7	Calcium	91.3	MG/L	0.01	08/31/20	WG
	Iron	<0.010	MG/L	0.01	08/31/20	WG
	Magnesium	17.3	MG/L	0.01	08/31/20	WG
	Manganese	0.210	MG/L	0.01	08/31/20	WG
	Potassium	2.83	MG/L	0.01	08/31/20	WG
	Sodium	19.1	MG/L	0.01	08/31/20	WG
	Zinc	<0.010	MG/L	0.01	08/31/20	WG
EPA_200.8	Arsenic	<1.00	UG/L	1	08/31/20	WG

Lab ID: 20083090

Sample Type: Drinking Water

Your Sample ID: COLUMN 1 EFF

Date Sampled: 8/26/2020 8:00:00AM

Date Received: 8/26/2020

Collection: GRAB

Method	Analyte	Result	Units	MDL/PQL	Analysis Date	Analyst
EPA_180.1/Paper	Acidified Turbidity Check	0.05	ntu	0.02	08/28/20	WG
	pH < 2.0	Yes	-		08/28/20	WG
EPA_200.7	Iron	<0.010	MG/L	0.01	08/31/20	WG
	Manganese	<0.010	MG/L	0.01	08/31/20	WG

Lab ID: 20083091

Sample Type: Drinking Water

Your Sample ID: COLUMN 2 EFF

Date Sampled: 8/26/2020 8:00:00AM

Date Received: 8/26/2020

Collection: GRAB

Report Date: 9/1/2020

Report Number: 116501-0

Lab ID: 20083091

Date Sampled: 8/26/2020 8:00:00AM

Sample Type: Drinking Water

Date Received: 8/26/2020

Your Sample ID: COLUMN 2 EFF

Collection: GRAB

Method	Analyte	Result	Units	MDL/PQL	Analysis Date	Analyst
EPA_180.1/Paper	Acidified Turbidity Check	0.05	ntu	0.02	08/28/20	WG
	pH < 2.0	Yes	-		08/28/20	WG
EPA_200.7	Iron	<0.010	MG/L	0.01	08/31/20	WG
	Manganese	<0.010	MG/L	0.01	08/31/20	WG

Lab ID: 20083092

Date Sampled: 8/26/2020 8:00:00AM

Sample Type: Drinking Water

Date Received: 8/26/2020

Your Sample ID: COLUMN 3 EFF

Collection: GRAB

Method	Analyte	Result	Units	MDL/PQL	Analysis Date	Analyst
EPA_180.1/Paper	Acidified Turbidity Check	0.05	ntu	0.02	08/28/20	WG
	pH < 2.0	Yes	-		08/28/20	WG
EPA_200.7	Iron	<0.010	MG/L	0.01	08/31/20	WG
	Manganese	<0.010	MG/L	0.01	08/31/20	WG

Lab ID: 20083093

Date Sampled: 8/26/2020 8:00:00AM

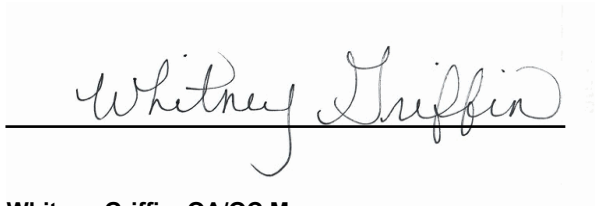
Sample Type: Drinking Water

Date Received: 8/26/2020

Your Sample ID: COLUMN 4 EFF

Collection: GRAB

Method	Analyte	Result	Units	MDL/PQL	Analysis Date	Analyst
EPA_180.1/Paper	Acidified Turbidity Check	0.05	ntu	0.02	08/28/20	WG
	pH < 2.0	Yes	-		08/28/20	WG
EPA_200.7	Iron	<0.010	MG/L	0.01	08/31/20	WG
	Manganese	<0.010	MG/L	0.01	08/31/20	WG

A handwritten signature in cursive script, reading "Whitney Griffin", is written over a horizontal line. The signature is in black ink on a light gray background.

Whitney Griffin, QA/QC Manager

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Ohio Laboratory Certification # 893

- Certificate of Analysis -
for

TUSCARAWAS COUNTY WATER DEPARTMENT
9962 WILKSHIRE BLVD
BOLIVAR, OH 44612

Final Report

Report Date: 9/4/2020

Report Number: 116818-0

Chain of Custody #: 213512

Project Name: WILKSHIRE PH57 PILOT S1

Lab ID: 20083495

Sample Type: Drinking Water

Your Sample ID: COLUMN 1 EFF

Date Sampled: 8/27/2020 6:00:00PM

Date Received: 8/31/2020

Collection: GRAB

Method	Analyte	Result	Units	MDL/PQL	Analysis Date	Analyst
EPA_180.1/Paper	Acidified Turbidity Check	0.05	ntu	0.02	09/03/20	WG
	pH < 2.0	Yes	-		09/03/20	WG
EPA_200.7	Iron	<0.010	MG/L	0.01	09/03/20	WG
	Manganese	<0.010	MG/L	0.01	09/03/20	WG

Lab ID: 20083496

Sample Type: Drinking Water

Your Sample ID: COLUMN 2 EFF

Date Sampled: 8/27/2020 6:00:00PM

Date Received: 8/31/2020

Collection: GRAB

Method	Analyte	Result	Units	MDL/PQL	Analysis Date	Analyst
EPA_180.1/Paper	Acidified Turbidity Check	0.06	ntu	0.02	09/03/20	WG
	pH < 2.0	Yes	-		09/03/20	WG
EPA_200.7	Iron	<0.010	MG/L	0.01	09/03/20	WG
	Manganese	<0.010	MG/L	0.01	09/03/20	WG

Lab ID: 20083497

Sample Type: Drinking Water

Your Sample ID: COLUMN 3 EFF

Date Sampled: 8/27/2020 6:00:00PM

Date Received: 8/31/2020

Collection: GRAB

Method	Analyte	Result	Units	MDL/PQL	Analysis Date	Analyst
EPA_180.1/Paper	Acidified Turbidity Check	0.05	ntu	0.02	09/03/20	WG
	pH < 2.0	Yes	-		09/03/20	WG
EPA_200.7	Iron	<0.010	MG/L	0.01	09/03/20	WG
	Manganese	<0.010	MG/L	0.01	09/03/20	WG

Report Date: 9/4/2020

Report Number: 116818-0

Lab ID: 20083498

Date Sampled: 8/27/2020 6:00:00PM

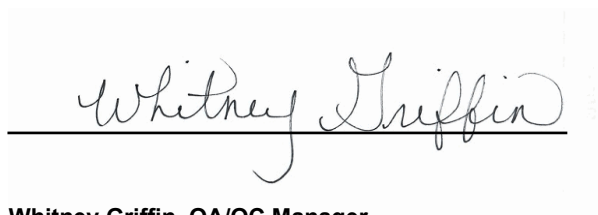
Sample Type: Drinking Water

Date Received: 8/31/2020

Your Sample ID: COLUMN 4 EFF

Collection: GRAB

Method	Analyte	Result	Units	MDL/PQL	Analysis Date	Analyst
EPA_180.1/Paper	Acidified Turbidity Check	0.05	ntu	0.02	09/03/20	WG
	pH < 2.0	Yes	-		09/03/20	WG
EPA_200.7	Iron	<0.010	MG/L	0.01	09/03/20	WG
	Manganese	<0.010	MG/L	0.01	09/03/20	WG



Whitney Griffin, QA/QC Manager

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for

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9962 WILKSHIRE BLVD
BOLIVAR, OH 44612

Final Report

Report Date: 9/4/2020

Report Number: 116819-0

Chain of Custody #: 213513

Project Name: WILKSHIRE PH57 PILOT S1

Lab ID: 20083491

Sample Type: Drinking Water

Your Sample ID: COLUMN 1 EFF

Date Sampled: 8/28/2020 5:00:00PM

Date Received: 8/31/2020

Collection: GRAB

Method	Analyte	Result	Units	MDL/PQL	Analysis Date	Analyst
EPA_180.1/Paper	Acidified Turbidity Check	0.05	ntu	0.02	09/03/20	WG
	pH < 2.0	Yes	-		09/03/20	WG
EPA_200.7	Iron	<0.010	MG/L	0.01	09/03/20	WG
	Manganese	<0.010	MG/L	0.01	09/03/20	WG

Lab ID: 20083492

Sample Type: Drinking Water

Your Sample ID: COLUMN 2 EFF

Date Sampled: 8/28/2020 5:00:00PM

Date Received: 8/31/2020

Collection: GRAB

Method	Analyte	Result	Units	MDL/PQL	Analysis Date	Analyst
EPA_180.1/Paper	Acidified Turbidity Check	0.05	ntu	0.02	09/03/20	WG
	pH < 2.0	Yes	-		09/03/20	WG
EPA_200.7	Iron	<0.010	MG/L	0.01	09/03/20	WG
	Manganese	<0.010	MG/L	0.01	09/03/20	WG

Lab ID: 20083493

Sample Type: Drinking Water

Your Sample ID: COLUMN 3 EFF

Date Sampled: 8/28/2020 5:00:00PM

Date Received: 8/31/2020

Collection: GRAB

Method	Analyte	Result	Units	MDL/PQL	Analysis Date	Analyst
EPA_180.1/Paper	Acidified Turbidity Check	0.05	ntu	0.02	09/03/20	WG
	pH < 2.0	Yes	-		09/03/20	WG
EPA_200.7	Iron	<0.010	MG/L	0.01	09/03/20	WG
	Manganese	<0.010	MG/L	0.01	09/03/20	WG

Report Date: 9/4/2020

Report Number: 116819-0

Lab ID: 20083494

Date Sampled: 8/28/2020 5:00:00PM

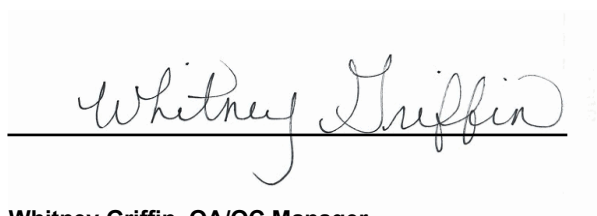
Sample Type: Drinking Water

Date Received: 8/31/2020

Your Sample ID: COLUMN 4 EFF

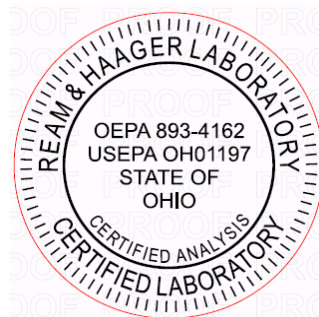
Collection: GRAB

Method	Analyte	Result	Units	MDL/PQL	Analysis Date	Analyst
EPA_180.1/Paper	Acidified Turbidity Check	0.06	ntu	0.02	09/03/20	WG
	pH < 2.0	Yes	-		09/03/20	WG
EPA_200.7	Iron	<0.010	MG/L	0.01	09/03/20	WG
	Manganese	<0.010	MG/L	0.01	09/03/20	WG



Whitney Griffin, QA/QC Manager

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TUSCARAWAS COUNTY WATER DEPARTMENT
9962 WILKSHIRE BLVD
BOLIVAR, OH 44612

Final Report

Report Date: 9/4/2020

Report Number: 116818-0

Chain of Custody #: 213512

Project Name: WILKSHIRE PH57 PILOT S1

Lab ID: 20083495

Sample Type: Drinking Water

Your Sample ID: COLUMN 1 EFF

Date Sampled: 8/27/2020 6:00:00PM

Date Received: 8/31/2020

Collection: GRAB

Method	Analyte	Result	Units	MDL/PQL	Analysis Date	Analyst
EPA_180.1/Paper	Acidified Turbidity Check	0.05	ntu	0.02	09/03/20	WG
	pH < 2.0	Yes	-		09/03/20	WG
EPA_200.7	Iron	<0.010	MG/L	0.01	09/03/20	WG
	Manganese	<0.010	MG/L	0.01	09/03/20	WG

Lab ID: 20083496

Sample Type: Drinking Water

Your Sample ID: COLUMN 2 EFF

Date Sampled: 8/27/2020 6:00:00PM

Date Received: 8/31/2020

Collection: GRAB

Method	Analyte	Result	Units	MDL/PQL	Analysis Date	Analyst
EPA_180.1/Paper	Acidified Turbidity Check	0.06	ntu	0.02	09/03/20	WG
	pH < 2.0	Yes	-		09/03/20	WG
EPA_200.7	Iron	<0.010	MG/L	0.01	09/03/20	WG
	Manganese	<0.010	MG/L	0.01	09/03/20	WG

Lab ID: 20083497

Sample Type: Drinking Water

Your Sample ID: COLUMN 3 EFF

Date Sampled: 8/27/2020 6:00:00PM

Date Received: 8/31/2020

Collection: GRAB

Method	Analyte	Result	Units	MDL/PQL	Analysis Date	Analyst
EPA_180.1/Paper	Acidified Turbidity Check	0.05	ntu	0.02	09/03/20	WG
	pH < 2.0	Yes	-		09/03/20	WG
EPA_200.7	Iron	<0.010	MG/L	0.01	09/03/20	WG
	Manganese	<0.010	MG/L	0.01	09/03/20	WG

Report Date: 9/4/2020

Report Number: 116818-0

Lab ID: 20083498

Date Sampled: 8/27/2020 6:00:00PM

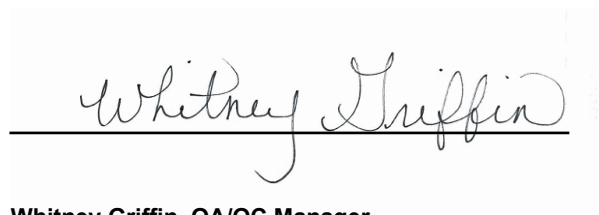
Sample Type: Drinking Water

Date Received: 8/31/2020

Your Sample ID: COLUMN 4 EFF

Collection: GRAB

Method	Analyte	Result	Units	MDL/PQL	Analysis Date	Analyst
EPA_180.1/Paper	Acidified Turbidity Check	0.05	ntu	0.02	09/03/20	WG
	pH < 2.0	Yes	-		09/03/20	WG
EPA_200.7	Iron	<0.010	MG/L	0.01	09/03/20	WG
	Manganese	<0.010	MG/L	0.01	09/03/20	WG



Whitney Griffin, QA/QC Manager

Whitney Griffin, QA/QC Manager

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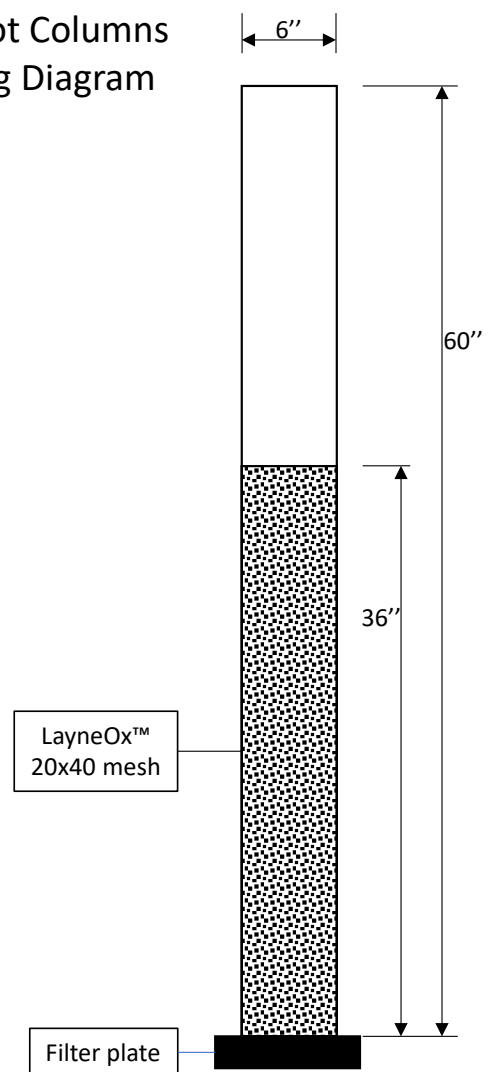


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Appendix D – Media Loading Diagram

LayneOx™ Pilot Columns
Media Loading Diagram



SECTION 099001 – BUILDING PAINTING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Interior paint and coating commercial systems including surface preparation.
- B. Interior high-performance paint and coatings systems including surface preparation.
- C. Exterior high-performance paint and coatings systems including surface preparation.
- D. Exterior paint and coating systems including surface preparation.

1.2 RELATED SECTIONS

- A. Section 03 30 00 - Cast-in-Place Concrete.
- B. Section 04 20 00 - Unit Masonry: Concrete Masonry Units (CMU) and brick.
- C. Section 05 50 00 - Metal Fabrications.

1.3 REFERENCES

- A. Steel Structures Painting Council (SSPC):
 - 1. SSPC-SP 1 - Solvent Cleaning.
 - 2. SSPC-SP 2 - Hand Tool Cleaning.
 - 3. SSPC-SP 3 - Power Tool Cleaning.
 - 4. SSPC-SP 13 / NACE No. 6 Surface Preparation for Concrete.
- B. Material Safety Data Sheets / Environmental Data Sheets: Per manufacturer's MSDS/EDS for specific VOCs (calculated per 40 CFR 59.406). VOCs may vary by base and sheen.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
- B. Product Data: For each paint system indicated, including.
 - 1. Product characteristics.
 - 2. Surface preparation instructions and recommendations.
 - 3. Primer requirements and finish specification.
 - 4. Storage and handling requirements and recommendations.
 - 5. Application methods.
 - 6. Cautions for storage, handling and installation.
- C. Selection Samples: Submit a complete set of color chips that represent the full range of manufacturer's products, colors and sheens available.
- D. Verification Samples: For each finish product specified, submit samples that represent actual product, color, and sheen.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: A firm or individual experienced in applying paints and coatings similar in material, design, and extent to those indicated for this Project, whose work has resulted in applications with a record of successful in-service performance.
- B. Paint exposed surfaces. If a color of finish, or a surface is not specifically mentioned, Architect will select from standard products, colors and sheens available.
- C. Do not paint prefinished items, concealed surfaces, finished metal surfaces, operating parts, and labels unless indicated.
- D. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
 - 1. Finish surfaces for verification of products, colors and sheens.
 - 2. Finish area designated by Owner and Engineer.
 - 3. Provide samples that designate primer and finish coats.
 - 4. Do not proceed with remaining work until the Owner and Engineer approves the mock-up.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver manufacturer's unopened containers to the work site. Packaging shall bear the manufacturer's name, label, and the following list of information.
 - 1. Product name, and type (description).
 - 2. Application and use instructions.
 - 3. Surface preparation.
 - 4. VOC content.
 - 5. Environmental handling.
 - 6. Batch date.
 - 7. Color number.
- B. Storage: Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.
- C. Store materials in an area that is within the acceptable temperature range, per manufacturer's instructions. Protect from freezing.
- D. Handling: Maintain a clean, dry storage area, to prevent contamination or damage to the coatings.

1.7 PROJECT CONDITIONS

- A. 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 recommended limits.

1.8 EXTRA MATERIALS

- A. Furnish extra paint materials from the same production run as the materials applied and in the quantities described below. Package with protective covering for storage and identify with labels describing contents. Deliver extra materials to Owner.

- B. Furnish Owner with an additional one percent of each material and color, but not less than 1 gal (3.8 l) or 1 case, as appropriate.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Sherwin-Williams, which is located at: 101 Prospect Ave.; Cleveland, OH 44115; ASD Toll Free Tel: 800-524-5979; Tel: 216-566-2000; Or approved equal.
- B. Requests for substitutions will be considered in accordance with provisions of Section 016000 - Product Requirements.

2.2 APPLICATIONS/SCOPE

- A. Interior Paint and Coating Commercial Systems:
 - 1. Masonry: Concrete masonry units
 - 2. Metal: Hollow Metal Doors, Jambs, and miscellaneous ferrous metals.
 - 3. Drywall: Gypsum wallboard.
- B. High Performance Interior Paint and Coating Systems:
 - Masonry: Concrete masonry units – immersion service in showers
- C. Exterior Paint and Coating Systems:
 - 1. Masonry: Concrete masonry units.
 - 2. Metal: Hollow Metal Doors, Jambs, and miscellaneous ferrous metals

2.3 PAINT MATERIALS - GENERAL

- A. Paints and Coatings:
 - 1. 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 procedure is specifically described in manufacturer's product instructions.
 - 2. For opaque finishes, tint each coat including primer coat and intermediate coats, one-half shade lighter than succeeding coat, with final finish coat as base color. Or follow manufactures product instructions for optimal color conformance.
- B. Primers: Where the manufacturer offers options on primers for a particular substrate, use primer categorized as "best" by the manufacturer.
- C. Coating Application Accessories: Provide all primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials required, per manufacturer's specifications.
- D. Color: Refer to Finish Schedule for paint colors, and as selected by Architect.

2.4 INTERIOR PAINT AND COATING COMMERCIAL SYSTEMS

- A. Masonry CMU:
 - 1. Epoxy Systems; Waterbased: Single Component
 - a. Eg-Shel/Low Luster Finish:
 - 1) 1st Coat: S-W Loxon Block Surfacer, LX01W200 (50-100 sq ft/gal).

Tuscarawas County Commissioners
Contract 2 - Wilkshire Hills Water System Improvements

101-010-01120

- 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K45-Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K45-Series (4.0 mils wet, 1.5 mils dry per coat).
 - B. Masonry CMU:
 1. Epoxy System; Waterbased: Two Component
 - a. Eg-Shel/Low Luster Finish:
 - 1) 1st Coat: S-W Heavy Duty Block Filler, B42W46 (18.0-13.0 mils wet, 10.0-18.0 mils wet).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Eg-Shel, B73-360 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Eg-Shel, B73-360 Series (5.0-10.0 mils wet, 2.0-4.0 mils dry per coat).
 - C. Metal: Hollow Metal Doors, Frames, and Miscellaneous Ferrous Metals.
 1. Alkyd Systems; Waterbased:
 - a. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Semi-Gloss, B53-1150 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Semi-Gloss, B53-1150 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).

2.5 HIGH PERFORMANCE INTERIOR PAINT AND COATING SYSTEMS

- A. Masonry CMU: Shower Walls - Immersion
 1. Epoxy Systems; Solvent Base Finish: Two Component
 - a. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Kem Cati-Coat HS Epoxy Filler/Sealer, B42-400 Series (14.0-28.0 mils wet, 10.0-20.0 mils dry).
 - 2) 2nd Coat: S-W Macropoxy 646 Fast Cure Epoxy, B58-600 Series.
 - 3) 3rd Coat: S-W Macropoxy 646 Fast Cure Epoxy, B58-600 Series (7.0-13.5 mils wet, 5.0-10.0 mils dry per coat).

2.6 EXTERIOR PAINT AND COATING SYSTEMS

- A. Masonry: Concrete Masonry Units (CMU);
 1. High Build Acrylic System:
 - a. Flat Finish:
 - 1) 1st Coat: S-W Loxon Block Surfacer, A24W00200 (16.0 mils wet, 8.8 mils dry).
 - 2) 2nd Coat: S-W Loxon XP Waterproofing Coating, LX11-50 Series.
 - 3) 3rd Coat: S-W Loxon XP Waterproofing Coating, LX11-50 Series (14.0-18.0 mils wet, 6.5-8.5 mils dry per coat).
- B. Metal – Hollow Metal Doors, Frames, and Miscellaneous Ferrous Metals.
 1. Urethane System; Waterbased:
 - a. Gloss Finish Single Component:

- 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series. (5.0-10.0 mils wet, 1.8-3.6 mils dry).
- 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Urethane Gloss, B65-120 Series.
- 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Urethane Gloss, B65-120 Series. (6.0-12.0 mils wet, 1.9-3.8 mils dry per coat).

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared; notify Architect of unsatisfactory conditions before proceeding. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- B. 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.
- C. Previously Painted Surfaces: Verify that existing painted surfaces do not contain lead based paints, notify Architect immediately if lead based paints are encountered.

3.2 SURFACE PREPARATION

- A. General: Surfaces shall be dry and in sound condition. Remove oil, dust, dirt, loose rust, peeling paint or other contamination to ensure good adhesion.
 1. Prior to attempting to remove mildew, it is recommended to test any cleaner on a small, inconspicuous area prior to use. Bleach and bleaching type cleaners may damage or discolor existing paint films. Bleach alternative cleaning solutions are advised.
 2. Remove mildew before painting by washing with a solution of 1 part liquid household bleach and 3 parts of warm water. Apply solution and scrub the mildewed area. Allow solution to remain on the surface for 10 minutes. Rinse thoroughly with clean water and allow surface to dry before painting. Wear protective glasses or goggles, waterproof gloves, and protective clothing. Quickly wash off any of the mixture that comes in contact with your skin. Do not add detergents or ammonia to the bleach/water solution.
 3. Remove items including but not limited to thermostats, electrical outlets, switch covers and similar items prior to painting. After completing painting operations in each space or area, reinstall items removed using workers skilled in the trades involved.
 4. No exterior painting should be done immediately after a rain, during foggy weather, when rain is predicted, or when the temperature is below 50 degrees F (10 degrees C), unless products are designed specifically for these conditions. On large expanses of metal siding, the air, surface and material temperatures must be 50 degrees F (10 degrees F) or higher to use low temperature products.
- B. Block (Cinder and Concrete): Remove all loose mortar and foreign material. Surface must be free of laitance, concrete dust, dirt, form release agents, moisture curing membranes, loose cement, and hardeners. Concrete and mortar must be cured at least 30 days at 75 degrees F (24 degrees C). The pH of the surface should be between 6 and 9 unless the products are designed to be used in high pH environments. On tilt-up and poured-in-place concrete,

commercial detergents and abrasive blasting may be necessary to prepare the surface. Fill bug holes, air pockets, and other voids with a cement patching compound.

- C. Concrete, SSPC-SP13 or NACE 6: This standard gives requirements for surface preparation of concrete by mechanical, chemical, or thermal methods prior to the application of bonded protective coating or lining systems. The requirements of this standard are applicable to all types of cementitious surfaces including cast-in-place concrete floors and walls, precast slabs, masonry walls, and shotcrete surfaces. An acceptable prepared concrete surface should be free of contaminants, laitance, loosely adhering concrete, and dust, and should provide a sound, uniform substrate suitable for the application of protective coating or lining systems.
- D. Drywall - Interior: Must be clean and dry. All nail heads must be set and spackled. Joints must be taped and covered with a joint compound. Spackled nail heads and tape joints must be sanded smooth and all dust removed prior to painting.
- E. Steel: Structural, Plate, And Similar Items: Should be cleaned by one or more of the surface preparations described below. These methods are used throughout the world for describing methods for cleaning structural steel. Visual standards are available through the Society of Protective Coatings. A brief description of these standards together with numbers by which they can be specified follow.
 - 1. Solvent Cleaning, SSPC-SP1: Solvent cleaning is a method for removing all visible oil, grease, soil, drawing and cutting compounds, and other soluble contaminants. Solvent cleaning does not remove rust or mill scale. Change rags and cleaning solution frequently so that deposits of oil and grease are not spread over additional areas in the cleaning process. Be sure to allow adequate ventilation.
 - 2. Hand Tool Cleaning, SSPC-SP2: Hand Tool Cleaning removes all loose mill scale, loose rust, and other detrimental foreign matter. It is not intended that adherent mill scale, rust, and paint be removed by this process. Before hand tool cleaning, remove visible oil, grease, soluble welding residues, and salts by the methods outlined in SSPC-SP1.
 - 3. Power Tool Cleaning, SSPC-SP3: Power Tool Cleaning removes all loose mill scale, loose rust, and other detrimental foreign matter. It is not intended that adherent mill scale, rust, and paint be removed by this process. Before power tool cleaning, remove visible oil, grease, soluble welding residues, and salts by the methods outlined in SSPC-SP1.

3.3 INSTALLATION

- A. Apply all coatings and materials with the manufacturer's specifications in mind. Mix and thin coatings according to manufacturer's recommendations.
- B. Do not apply to wet or damp surfaces. 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. Test new concrete for moisture content. Wait until wood is fully dry after rain or morning fog or dew.
- C. Apply coatings using methods recommended by manufacturer.
- D. Uniformly apply coatings without runs, drips, or sags, without brush marks, and with consistent sheen.
- E. Apply coatings at spreading rate required to achieve the manufacturers recommended dry

film thickness.

- F. Regardless of number of coats specified, apply as many coats as necessary for complete hide, and uniform appearance.
- G. Inspection: The coated surface must be inspected and approved by the Architect just prior to the application of each coat.

3.4 PROTECTION

- A. Protect finished coatings from damage until completion of project.
- B. Touch-up damaged coatings after substantial completion, following manufacturer's recommendation for touch up or repair of damaged coatings. Repair any defects that will hinder the performance of the coatings.

END OF SECTION

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SECTION 433269 – CHEMICAL FEED SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

- A. Chemical Metering Pumps shall be positive displacement, hose pumps.

1.2 REFERENCE STANDARDS

- A. The latest published edition of a reference shall be applicable to this Project unless identified by a specific edition date.
- B. All reference amendments adopted prior to the effective date of this Contract shall be applicable to this Project.
- C. All materials, installation and workmanship shall comply with the applicable requirements and standards addressed within the following references:
1. American National Standard Institute (ANSI)
 2. Occupational Safety and Health Administration (OSHA)
 3. National Electrical Manufacturers Association (NEMA)
 4. National Electrical Code (NEC)
- D. Where reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply.

1.3 SUBMITTALS

- A. Section 013300 - Submittal Procedures: Requirements for submittals.
- B. Product Data:
1. Component data and shop drawings of the system will be supplied, including dimensions, weight, and parts list.
 2. Submit manufacturer information describing materials of construction, fabrication, and protective coatings.
- C. Shop Drawings: Indicate materials and equipment, performance charts and curves, installation and anchoring requirements, fasteners, and other details.
- D. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- E. Manufacturer Instructions: Submit detailed instructions on installation requirements, including storage and handling procedures.

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1.4 CLOSEOUT SUBMITTALS

- A. Section 017700 - Closeout Procedures: Requirements for submittals.
- B. Project Record Documents: Record actual locations and final orientation of equipment.

1.5 QUALITY ASSURANCE

- A. The named equipment, in addition to detail specifications, establishes the minimum acceptable standards of materials and workmanship.
- B. All equipment provided under this section shall be obtained from a single supplier or manufacturer who shall assume full responsibility for the completeness and proper installation of the Chemical Feed System.
- C. To insure quality and unit responsibility, the Chemical Feed System must be assembled and tested by the manufacturer at its facility and be a standard regularly marketed product of that manufacturer. The manufacturer must have a physical plant, technical and design staff and fabricating personnel to complete the work specified. Skids assembled by a second party fabricator, integrator or contractor shall not be acceptable.

1.6 QUALIFICATIONS

- A. Manufacturer shall have minimum ten (10) years' experience in manufacturing Chemical Feed Systems.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Section 016666 – Material and Equipment Storage and Handling Requirements: Requirements for transporting, handling, storing, and protecting products.
- B. Deliver materials in manufacturer's packaging; include application instructions.
- C. Inspection: Accept pumps on Site in manufacturer's original packaging and inspect for damage.
- D. Store pumps according to manufacturer instructions.
- E. Protection:
 - 1. Protect materials from moisture and dust by storing in clean, dry location remote from construction operations areas.
 - 2. Provide additional protection according to manufacturer instructions.

1.8 WARRANTY

- A. Section 017836 - Warranties: Requirements for warranties.
- B. Furnish one-year manufacturer's warranty for dosing pumps.

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PART 2 - PRODUCTS

2.1 DOSING PUMP

A. Manufacturer

1. Stenner Pumps, Model 85MHP40; **Or Approved Equal**

B. Spare Parts

1. 1 complete pump unit

C. Design

1. 3-point roller design assists in anti-siphon protection
2. Pump head requires no valves, allows for easy maintenance
3. Self-priming against maximum working pressure, foot valve not required
4. Pump shall not lose prime or vapor lock
5. Pumps off-gassing solutions and can run dry
6. Output volume is not affected by back pressure
7. Injection check valve included with models rated 100 psi (6.9 bar) maximum
8. Easy to change pump tube; lubrication is not required
9. Shall conform to ANSI/NSF STD 61
10. Single head adjustable 100 psi
11. Flow Rate: Adjustable from 2 to 40 gpd.

D. Material

1. Pump Housing: Polycarbonate
2. Pump Head: Polyethylene
3. Roller Bushings: Oil impregnated bronze
4. Connecting Nuts: PVC
5. Suction Line Strainer and Cap: PVC
6. Fasteners: Stainless steel
7. Pump Head Latches: Polypropylene

2.2 CHEMICAL HOSE

A. Material: PTFE

1. Tubing is a fluoropolymer component with applications in a variety of demanding environments.
2. Chemically inert, has low extractables and is chemically resistant to acids, bases and all common solvents.
3. Resistant in the temperature range of 500°F to -454°F.
4. Tensile strength is between 2,500-4,000 psi and the specific gravity is between 2.13-2.24.

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PART 3 - EXECUTION

3.1 INSTALLATION

- A. Installation shall meet or exceed all applicable federal, state and local requirements, referenced standards and conform to codes and ordinances of authorities having jurisdiction.
- B. The equipment shall be installed per the contract documents and manufacturer's recommendations.
 - 1. Provide a manufacturer's certificate showing the equipment has been satisfactorily calibrated and tested.
 - 2. An authorized manufacturer's representative shall inspect the installation of all work furnished under this section and shall provide a certificate of proper installation.
- C. The Contractor shall remove the existing phosphate feed pump for Wellhouse #3 and replace with new chemical dosing pump.
- D. The Contractor shall provide one complete pump as a spare part, in addition to the new chemical dosing pump for Wellhouse #3, to be turned over to the Owner for storage.

3.2 FIELD QUALITY CONTROL

- A. Equipment Acceptance:
 - 1. Adjust, repair, modify, or replace components failing to perform as specified and rerun tests.
 - 2. Make final adjustments to equipment under direction of manufacturer's representative.
- B. Furnish installation certificate from equipment manufacturer's representative attesting that equipment has been properly installed and is ready for startup and testing.

END OF SECTION 433269

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SECTION 466121 - PRESSURE FILTERS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Pressure filters and accessories.

1.2 REFERENCE STANDARDS

A. American Society of Mechanical Engineers:

1. ASME - Boiler and Pressure Vessel Code (BPVC).

B. American Water Works Association:

1. AWWA B100 - Granular Filter Material.
2. AWWA B604 - Granular Activated Carbon.

C. National Electrical Manufacturers Association:

1. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum).

D. National Sanitation Foundation:

1. NSF 61 - Drinking Water System Components - Health Effects.
2. NSF 372 - Drinking Water System Components - Lead Content.

1.3 SUBMITTALS

A. Section 013300 - Submittal Procedures: Requirements for submittals.

B. Product Data:

1. Current copy of the manufacturer's ASME Certification of Authorization.
2. List of ten (10) similar installations in conformance with section 2.1.d.
3. ASME Section VIII, Division 1, Code calculations for pressure vessel(s).
4. Catalog cut sheets for all filter internals including media.
5. Elevation drawing for filter internals including media loading schedule.
6. Catalog cut sheets for all control valves and actuators.
7. Catalog cut sheets for all specified instrumentation and control components.
8. Materials of construction for all major components.

C. Shop Drawings:

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1. Elevation and plan views of the filter system including the location and orientation of all nozzles, manways, and connections.
 2. Submit installation and anchoring requirements, fasteners, and other details.
- D. Manufacturer's Certificate: Certify that filters meet or exceed specified requirements.
- E. Manufacturer's Instructions: Submit detailed instructions on installation requirements, including storage and handling procedures.
- F. Source Quality-Control Submittals: Indicate results of factory tests and inspections.
- G. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.
- H. Manufacturer Reports: Indicate that equipment has been installed according to manufacturer's instructions.
- 1.4 CLOSEOUT SUBMITTALS
- A. Section 017000 - Execution and Closeout Requirements: Requirements for closeout procedures.
- B. Project Record Documents: Record actual locations of installed pressure filters.
- C. Operation and Maintenance Data: Submit maintenance instructions for equipment and accessories.
- 1.5 MAINTENANCE MATERIAL SUBMITTALS
- A. Section 017000 - Execution and Closeout Requirements: Requirements for maintenance materials.
- 1.6 QUALITY ASSURANCE
- A. Materials in Contact with Potable Water: Comply with NSF Standard 61 and NSF Standard 372.
- B. Perform Work according to ASME standards.
- 1.7 QUALIFICATIONS
- A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum ten years' experience.
- 1.8 DELIVERY, STORAGE, AND HANDLING
- A. Section 016000 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.

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- B. Deliver materials in manufacturer's packaging including application instructions.
- C. Inspection: Accept materials on Site in original packaging and inspect for damage.
- D. Store materials according to manufacturer's instructions.

1.9 EXISTING CONDITIONS

- A. Field Measurements:
 - 1. Verify field measurements prior to fabrication.
 - 2. Indicate field measurements on Shop Drawings.

1.10 WARRANTY

- A. Section 017000 - Execution and Closeout Requirements: Requirements for warranties.
- B. Furnish five-year manufacturer's warranty for pressure filters and accessories.

PART 2 - PRODUCTS

2.1 PRESSURE FILTERS

- A. Manufacturers:
 - 1. Layne Christensen Company
 - 2. Or Approved Equal.
 - a. Manufacturer's that request a substitute from Layne Christensen Company shall perform a pilot study as required by the Ohio EPA for approval prior to acceptance of substitute. Pilot study shall be performed at the design loading rate. **A copy of a sample pilot study is attached as Exhibit I.**
- B. Tank:
 - 1. Diameter: 6.5 feet.
 - 2. Straight Shell Height: 60"
 - 3. Orientation: Vertical.
 - 4. Construction:
 - a. Welded steel.
 - b. Maximum Hydrostatic Pressure: 100 psig.
 - c. Comply with ASME BPVC and stamp as certified.
 - d. Provide supports, connections, and the like, as indicated on Drawings.
 - 5. Coating: As specified in Section 09 90 00 - Painting and Coating.
- C. Operating Requirements

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- The filter battery shall consist of five (5) 78" diameter vertical pressure filters. The filters shall successfully achieve the following performance at a filter rate of 6 gpm/ft² when operated at the design water flow rate of 850 gpm.

	Production (MGD)	Flouride (mg/L)	Phosphorus (mg/L)	Iron (mg/L)	Manganese (mg/L)
Mean	0.5	1.12	0.86	0.04	0.09
High	1.04	1.42	3.67	0.1	0.526
Low	0.1395	0.05	0.05	0.0	0.01

- Filters shall be designed to be capable of treating manganese levels up to 1.2 mg/L

D. Backwash

- Available flow rate is 850 gpm.

E. Pressure Vessels

- The General Contractor shall provide and install five (5) complete vertical pressure filters that are skid mounted as shown on the plans. Each filter shall be 78" diameter by 60" straight shell. The filter vessels shall be designed for a maximum allowable working pressure of 100 psig. Vessel design and manufacturing shall be in accordance with the latest Edition and Addenda of the ASME Boiler and Pressure Vessel Code, Section VIII, Division 1. All pressure retaining parts will be constructed of Pressure Vessel Quality materials.
- The vessel heads shall be ASME Torispherical flanged and dished.
- The vessels shall each be provided with all necessary piping connections:

Nozzle	Size	Type	Function
N1	4"	S.O. Flange	Influent
N2	8"	PAD	Effluent
N3	14X18	-	Top Head Manway
N4	14X18	-	Side Shell Manway
N5	2"	Coupling	Air Release
N6	1/2"	Coupling	Influent Pressure
N7	1/2"	Coupling	Effluent Pressure
N8	4"	S.O. Flange	Media Removal

- Two (2) 14" x 18" man ways shall be provided per vessel. Locations shall be as shown on the drawings. Seals shall be water tight up to the pressure rating of the vessel. Manways shall be equipped with hinges. Location shall be as shown on the drawings.
- The vessels shall be provided with lifting lugs, and structural steel legs with baseplates suitably sized and designed for bolting to the skid assembly.
- One (1) standard nameplate containing vessel identification and one (1) ASME nameplate containing the ASME Code Stamp shall be located on the vessel shell.

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F. Filter Underdrain System

1. Each filter bottom shall be equipped with a hub-radial underdrain system consisting of cylindrical hub of proper radius with pipe laterals located radially and extending over the entire bottom of the filter area. The underdrain shall be designed to withstand the loads imposed by filter operation and backwash. All components shall be constructed of 304 stainless steel with a minimum schedule 10S thickness. The hub shall be provided with threaded openings to accept the lateral pipes. Lateral pipes shall be perforated with openings located proportionally to serve equal areas of the filter bottom. The openings shall be protected with stainless steel wedge-wire tubular screens concentric with the distribution pipe. The quantity and spacing of the lateral openings shall be such as to limit the pressure drop across the lateral assembly to a maximum of 1.5 psi. The underdrain shall be so designed to reduce the water velocity, discharging the water horizontally without impeding its flow, thereby preventing channeling in the filter bed. The screen openings shall be wedge shaped with a knife edge at the outer face and opening wider away from the edge toward the center of the screen such that any particle passing the knife edge cannot become lodged in the opening. The underdrain hub and laterals shall be shop installed prior to shipment.

G. Influent Distribution and Wash Water Collection

1. Raw water shall enter the pressure filter through the raw water influent distributor. The distributor shall be designed to distribute the raw water uniformly over the entire filter bed and to uniformly collect the reverse flow of backwash water effluent while retaining media during the backwash process in a uniform process. The influent distributor shall be manufactured out of ductile iron pipe and shall be of the header-lateral type with upturned elbows at the end of each lateral. The upper distributor shall be supported within the vessel using steel support clips with stainless steel hardware.
2. The distribution and collection system of the filter shall be arranged to accommodate backwashing at a maximum rate of 25 gpm/ft² of filter surface area.
3. The arrangement of the collection systems shall provide for the proper backwashing of the filter beds without loss of filtering material. The distance from the surface of the bed to the wash water collector (freeboard) shall be not less than 40% of the depth of the filter bed.

H. Supporting Beds

1. Each filter shall be provided with a gravel supporting bed consisting of a 6" layer of ¼" x 1/8" gravel.
2. The gravel shall be free from clay, loam, dirt, calcareous or other foreign material and shall consist of round or angular particles being relatively free of flat or elongated particles.
3. The gravel shall be shipped in bags for field installation, with manufacturer personnel onsite during placement of gravel in filter. The support gravel shall be placed by hand to avoid damage to the underdrain and strainers. The gravel layer shall be placed and leveled before the installation of the filter media is started. A gravel less underdrain will not be acceptable.

I. Filter Media

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1. The filter bed shall consist of a 36" depth of filter media. The manganese dioxide content of the media shall be not less than 80%. The media shall have an effective size of 0.3 to 0.5 mm and a uniformity coefficient of not more than 1.65 and be graded 20x40 mesh. The backwashed density of the media shall not be less than 110 lbs/cf. The media shall be certified to meet NSF 61 Standards.
2. The filter media shall be shipped in bags for field installation, with manufacturer personnel onsite during placement of the media in the filter.

J. Piping and Fittings

1. Ductile Iron Pipe, Class 53, flanged.
 - a. The system face and skid piping shall be furnished by the equipment manufacturer. The face piping shall be arranged and adequately sized to carry out all the required operations.
 - b. All piping and pipe fittings shall be Ductile Iron Pipe, Class 53, flanged.
 - c. Provide flange adapters flanged joints on all piping to allow disassembly as needed to service valves and equipment located in the piping. Flange adapters are to be ductile iron with actuated gripping wedges.

K. Valves and Actuators

1. Electric operating butterfly valves and actuators, per specifications:

a.	Quantity	Size	Location	Description
	Four (4)	4"	Filter Inlet	Open/Close
	Four (4)	8"	Filter Outlet	Modulating
	Four (4)	8"	Backwash Waste	Open/Close
	Four (4)	8"	Rinse to Waste	Open/Close
2. One (1) 2" drain valve; stainless steel ball valve with manual operator, per vessel.
3. One (1) 1" air release valve, with manual isolation ball valve, per vessel.
4. All Valves shall be tagged with an identifying number using plastic tags with stainless steel bead chain.

L. Filter Operation

1. The filter main control panel shall be provided by the filter skid manufacturer.
 - a. The control panel shall be a wall mounted enclosure rated NEMA 4, and installed remotely at the location specified on the drawings.
 - b. The control panel shall be assembled and wired by a UL508A approved panel shop.
 - c. The control panel shall be shipped with a UL508A label affixed to the finished enclosure.
2. The filter system shall be PLC controlled with a 10" color touch screen Operator Interface Unit (OIU).
3. The filtering system is to be fully automated in its operation, with manual override capability and alarm annunciation. All necessary logic and time sequences to backwash the filter system automatically without operator intervention shall be included.
4. The filter system main control panel OIU shall be provided with a Backwash Control Screen from which the operator may select the Backwash Mode.

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- a. By selecting the Manual Mode, the operator shall initiate the backwash manually, the backwash sequence shall run to completion automatically.
5. The filter system shall be supplied with a differential pressure switch across the filters which shall alert the operator upon a high differential pressure condition.
 - a. The operator may then initiate a Manual Mode backwash.
 - b. Should the differential pressure be allowed to increase to the Hi-Hi set point, the PLC shall alarm and open a Well Pump Run Permissive relay contact which shall be used by the Well Pump motor controls to stop the Well Pump operation. In the case of a closed loop backwash, the Well Pump must be turned back on.
6. Once initiated, backwash sequence will backwash all vessels in the treatment train.
7. When one filter is backwashing, the other filters will be locked out of the backwash sequence.
8. When backwash water is produced from on-line filters, the filter backwash sequence shall be interlocked to the well pump so that backwash is only permitted on the availability of the backwash supply source.
9. OIU shall be a 10" color TFT Touch Screen. No exceptions.
10. The control panel shall be configured, de-bugged and Factory Tested by the Filter Manufacturer's Control System Engineers. Engineer shall retain the right to be present for factory testing. A test report showing results of the factory testing shall be provided to the Engineer prior to shipment.
11. Operator Interface shall provide the following minimum graphic screens:
 - a. Main Menu – provides navigation pushbuttons to allow the Operator to navigate to specific process graphics and controls.
 - b. System Overview – provides complete filter system status including filter modes, process measurements, flow totalizer actual and target values, and valve and motor status.
 - c. Vessel Detail Screen – provides all details associated with a single filter and allow further navigation to filter valve control screen.
 - d. Vessel Valve Control Screen – provides vessel auto/manual selector and individual open/close selector switches for all vessel associated valves.
 - e. System Status Screen – provides a summary of process measurements in digital indicator format.
 - f. Backwash Control Screen – provides mode selector, backwash permissive indicator and backwash sequence status including filter in backwash, current backwash step description, step time remaining and step start, step stop and step advance pushbuttons.
 - g. Backwash Permissive Screen – provides a listing of all process conditions and equipment required to perform a filter backwash and their current status. From this screen the Operator will be able to observe which permissive condition is not met so corrective action can be taken to allow filter backwashing to proceed.
 - h. Alarm Screen – provides a summary of all acknowledged and unacknowledged alarm conditions.
12. The Owner shall provide 120 VAC 1-Phase 60 Hz. power source to the filter system main control panel. The filter system main control panel shall be provided with a power-line filter with surge protection for the PLC and OIU power source. The owner shall also provide (2) 20 amp circuits for the filter system control panel.
13. All wiring and connections inside panels shall be properly marked with labeling and identification. All wiring shall be uniquely numbered to match the wiring designations shown on the Electrical Schematic drawing.

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14. The filter system main control panel shall be assembled, wired, programmed, de-bugged and tested in the filter system suppliers panel shop prior to shipping loose for field installation by the electrical contractor.
15. All local disconnects and motor starters shall be supplied and installed by the electrical contractor. All inter-connecting wiring between the filter system main control panel and field junction boxes and equipment will be supplied and installed by the electrical contractor.
16. A float switch, located in the backwash storage tank and as shown on the drawings, shall be connected to the panel, providing an alarm and prohibiting a backwash cycle from initiating when the float switch is closed.

M. Differential Pressure Indicating Switch

1. The filter system shall be equipped with a differential pressure indicating switch to measure head-loss across the filter system. The switch shall provide two (2) contact closures, one to provide a high differential pressure warning to alert the operator to initiate a manual backwash and the second to provide a high-high differential pressure for system shutdown. The differential pressure switch shall be provided with a 3-valve instrument manifold to allow instrument isolation and calibration. The switch shall be mounted on the filter skid at approximate average eye level above the operating floor.

N. Pressure Indicators

1. Each filter shall be provided with two (2) Wika 4-1/2" dial pressure gauges with copper alloy bourdon tube to measure filter influent and effluent pressure. The influent and effluent pressure gauges shall be mounted to a bracket welded to the vessel shell. An additional gauge shall be provided on the common inlet header. Each of the gauges shall be provided with a miniature Male x Barb PVC ball valve.

O. Sampling Cocks

1. Sampling cocks shall be provided so that representative water samples may be secured at the following points: raw water, filter influent and effluent (each filter), plant effluent, and backwash outlet. Sampling cocks shall be miniature Male x Barb PVC ball valves.

P. Painting

1. Refer to Section 09 90 00 – Painting and Coating

Q. Skid Assembly

1. The filters, valves, piping, and controls shall be skid mounted and assembled in the manufacturer's shop to the maximum extent possible within shipping regulations. The structural steel skid shall be capable of supporting the weight of the entire assembly, less media, when lifted by the lift points provided. The skid shall be hot-dip galvanized after fabrication and prior to assembly of the components.
2. The assembly shall be tested in the shop prior to shipment to ensure that the control system is correctly installed, assembled and functioning.

Tuscarawas County Commissioners
Contract 2 - Wilkshire Hills Water System Improvements

2.2 SOURCE QUALITY CONTROL

- A. Section 014000 - Quality Requirements: Requirements for testing, inspection, and analysis.
- B. Certificate of Compliance: When fabricator is approved by authorities having jurisdiction, submit certificate of compliance indicating Work performed at fabricator's facility conforms to Contract Documents.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Section 017000 - Execution and Closeout Requirements: Requirements for installation examination.
- B. Before installing filter media, inspect piping connections and ensure that filter components are in acceptable condition and proper positions.
- C. Verify that piping connections are ready to receive pressure filters.

3.2 PREPARATION

- A. Section 017000 - Execution and Closeout Requirements: Requirements for installation preparation.
- B. Clean filter tank prior to installation of underdrain.

3.3 INSTALLATION

- A. Install pressure filters according to manufacturer's instructions.
- B. Filter Media:
 - 1. Installed media under supervision of the filter manufacturer's representative.
 - 2. Complete each media layer before succeeding layer is placed.
 - 3. Backwash and clean filter media according to AWWA B100 after placement of each layer.

3.4 FIELD QUALITY CONTROL

- A. Section 017000 - Execution and Closeout Requirements: Requirements for testing, adjusting, and balancing.
- B. After installation, inspect and test for proper operation.
- C. Manufacturer Services: Furnish services of manufacturer's representative experienced in installation of products furnished under this Section for not less than four days on Site for

Tuscarawas County Commissioners
Contract 2 - Wilkshire Hills Water System Improvements

installation, inspection, field testing, and instructing Owner's personnel in maintenance of equipment.

D. Equipment Acceptance:

1. Adjust, repair, modify, or replace components failing to perform as specified, and rerun tests.
2. Make final adjustments to equipment under direction of manufacturer's representative.

E. Furnish installation certificate from equipment manufacturer's representative attesting equipment has been properly installed and is ready for startup and testing.

3.5 CLEANING

- A. Section 017000 - Execution and Closeout Requirements: Requirements for cleaning.
- B. Following installation, clean and wash underdrain system of loose materials and debris.

3.6 DEMONSTRATION


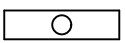













- A. Section 017000 - Execution and Closeout Requirements: Requirements for demonstration and training.
- B. Demonstrate equipment startup, shutdown, routine maintenance, and emergency repair procedures to Owner's personnel.

END OF SECTION 466121

GENERAL ELECTRICAL NOTES

- COORDINATE LOCATIONS OF CEILING-MOUNTED LIGHTING FIXTURES, SPEAKERS AND OTHER ITEMS WITH THE CEILING PATTERN AND MECHANICAL EQUIPMENT.
- LOCATE SNAP SWITCHES APPROXIMATELY 4 TO 6 INCHES FROM THE LATCH SIDE OF THE RELATED DOOR FRAME WHERE POSSIBLE, EXCEPT AS NOTED OTHERWISE.
- LOCATE SNAP SWITCHES DIRECTLY UNDER THERMOSTATS WHERE THEY ARE SHOWN IN CLOSE PROXIMITY (SEE MECHANICAL DRAWINGS).
- LOCATE WALL BOXES APPROXIMATELY AS INDICATED, EXACTLY AS DIRECTED OR AS NECESSARY TO ACHIEVE SYMMETRY AND COORDINATED WITH THE BUILDING, FINISHES AND EQUIPMENT.
- LOCATE ALL BOXES TO BE ACCESSIBLE.
- MOUNT FLUSH BOXES WITH THEIR FRONT EDGES EVEN WITH THE FINISHED SURFACE OF COMBUSTIBLE MATERIALS, WITHIN 1/4 INCH OF NON-COMBUSTIBLE MATERIALS.
- MOUNT SINGLE-GANG BOXES WITH THE LONGER DIMENSION VERTICAL EXCEPT AS NOTED OTHERWISE. MOUNT ALL BOXES AND PLATES PLUM.
- DO NOT INSTALL BOXES BACK TO BACK ON BOTH SIDES OF A PARTITION. OFFSET BOXES A MINIMUM OF 6 INCHES EXCEPT AS NOTED OTHERWISE.
- LOCATE ALL RACEWAYS TO AVOID INTERFERENCE WITH DUCTS, PIPES, MECHANICAL EQUIPMENT, WITH THE REMOVAL OF CEILING TILE, OR WITH ACCESS TO EQUIPMENT THAT REQUIRES PERIODIC ADJUSTMENT OR MAINTENANCE.
- DO NOT SUPPORT RACEWAYS OR EQUIPMENT FROM PIPES, DUCTS, OR A CEILING SUSPENSION SYSTEM.
- BRACH CIRCUIT AND FEEDERS ARE DESIGNATED BY A NUMBER AND LETTER.
- INSTALL FEEDER RACEWAYS WITH NO MORE THAN 3 CURRENT-CARRYING CONDUCTORS PLUS A NEUTRAL CONDUCTOR, PLUS A GROUND CONDUCTOR.
- INDICATED BRANCH CIRCUIT CONDUCTOR SIZES ARE BASED ON NO MORE THAN 3 CURRENT-CARRYING CONDUCTORS AND A NON-CURRENT-CARRYING NEUTRAL CONDUCTOR IN EACH RACEWAY. WHERE THE NUMBER OF CONDUCTORS EXCEEDS THIS AMOUNT, ADJUST THE CONDUCTOR SIZES IF AND AS NECESSARY TO ACCOUNT FOR DERATING THEIR AMPACITY IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE.
- FOR EACH INDICATED CONNECTION TO EQUIPMENT PROVIDE AN OUTLET BOX AND FLEXIBLE CONDUIT AS APPROPRIATE FOR THE ASSOCIATED EQUIPMENT. WHERE THE EQUIPMENT INCLUDES A CORD AND PLUG, PROVIDE A COMPATIBLE RECEPTACLE. WHERE REQUIRED BE CODE PROVIDE AN ADJACENT DISCONNECT SWITCH.
- FROM EACH FLUSH MOUNTED PANELBOARD EXTEND A MINIMUM OF THREE EMPTY 3/4" CONDUITS TO ABOVE AN ACCESSIBLE CEILING AND CAP.
- PROVIDE AN ADJACENT DISCONNECT SWITCH FOR EACH ELECTRIC UNIT HEATER.
- IN MECHANICAL ROOMS ADJUST LIGHTING FIXTURE LOCATIONS AS NECESSARY TO COORDINATE WITH EQUIPMENT AND TO PROVIDE OPTIMUM ILLUMINATION.
- PROVIDE WEATHERPROOF ADJUSTABLE PHOTOCCELL CONTROL UNIT IN ACCESSIBLE ROOF LOCATIONS TO PROVIDE AUTOMATIC LIGHT CONTROLS AS INDICATED. PROVIDE ASSOCIATED RELAYS AND/OR CONTACTORS AS NECESSARY. LOCATE CONTACTORS OR RELAYS ABOVE ACCESSIBLE CEILINGS OR ON WALLS IN MECHANICAL ROOMS.
- COORDINATE OUTLET LOCATIONS AND CIRCUIT RATINGS WITH THE EQUIPMENT SHOWN ON THE MECHANICAL AND PLUMBING DRAWINGS AND WITH ALL EQUIPMENT AND FURNISHINGS SHOWN ON THE ARCHITECTURAL DRAWINGS.
- EQUIPMENT SHALL BE GROUNDED IN ACCORDANCE WITH SPECIFICATIONS AND AS REQUIRED BY THE NATIONAL ELECTRIC CODE.
- ALL WORK SHALL COMPLY WITH NFPA 70.
- ELECTRICAL BRANCH CIRCUITS SHALL NOT SHARE A COMMON NEUTRAL.
- SIZE ALL FUSES FOR FUSED SAFETY SWITCHES WITH EQUIPMENT MANUFACTURER.

ELECTRICAL SYMBOLS LEGEND

SYMBOL	DESCRIPTION
	WALL MOUNTED LED LIGHTING FIXTURE
	LED LIGHTING FIXTURE
	LED EXIT SIGN WITH BATTERY PACK
	LED REMOTE HEAD
	SINGLE POLE SNAP SWITCH
	THREE-WAY SNAP SWITCH
	FOUR-WAY SNAP SWITCH
	DUPLEX CONVENIENCE RECEPTACLE
	PLAN NOTE
	MECHANICAL EQUIPMENT NOTATION
	MOTOR CONNECTION
	FUSED SAFETY SWITCH
	GROUND FAULT INTERRUPTER
	WEATHERPROOF
	DIRECT CONNECTION

WIRE AND CONDUIT SIZE SCHEDULE

BREAKER	WIRE	GROUND	CONDUIT SIZE WITH GROUND		
AMP SIZE	SIZE	SIZE	1-POLE	2-POLE	3-POLE
20	#12	#12	3/4"	3/4"	3/4"
30	#10	#10	3/4"	3/4"	3/4"
40	#8	#10	3/4"	3/4"	3/4"
50	#8	#10	3/4"	3/4"	3/4"
60	#6	#8	3/4"	3/4"	3/4"
70	#4	#8	1"	1"	1"
80	#4	#8	-	1"	1"
90	#3	#8	-	1 1/4"	1 1/4"
100	#2	#8	-	1 1/4"	1 1/4"
110	#2	#6	-	1 1/4"	1 1/4"
125	#1	#6	-	1 1/4"	1 1/4"
150	#1/0	#6	-	1 1/2"	1 1/2"
175	#2/0	#6	-	1 1/2"	2"
200	#3/0	#6	-	1 1/2"	2"
225	#4/0	#4	-	-	2-1/2"
250	250MCM	#3	-	-	2 1/2"
300	350MCM	#3	-	-	3"
350	500MCM	#3	-	-	3 1/2"
400	500MCM	#3	-	-	3 1/2"

CONTRACTOR IS RESPONSIBLE FOR INCREASING WIRE SIZE AS REQUIRED FOR MAXIMUM VOLTAGE DROP OF 3%.

LIGHTING FIXTURE SCHEDULE

MARK	LAMPS/TYPE	MOUNTING	MANUFACTURER	SERIES	DESCRIPTION	NOTES
L1	LED	SURF/PEND	COOPER *		4' LED ENCLOSED AND GASKETED LENS	120 VOLT
			LITHONIA *	FEML486000LM		
			HUBBELL *		1 - ELECTRONIC DRIVER	
L2	LED	WALL	COOPER *		OUTDOOR GLASS LENS/ALUM HOUSING WET LOCATION, DARK BRONZE FINISH LUMEN OUTPUT SET AT #7	120 VOLT
			LITHONIA *	TWR1LEDAL050K		
L3	LED	POLE	COOPER *		POLE MOUNT SINGLE HEAD 25" SQUARE POLE WITH HINGED BASE WET LOCATION RATED	120 VOLT
			LITHONIA *	KAX1LEDP350KR4		
			HUBBELL *			
R1	LED	UNIVERSAL	COOPER *	LEMR1	EXIT LIGHT REMOTE EGRESS LIGHT THERMOPLASTIC HOUSING WET LOCATION RATED	
			LITHONIA *	ELAQ		
X1	LED	UNIVERSAL	COOPER *	LPX70RW	EXIT LIGHT WITH SEALED NICAD BATTERY RED LETTER WITH WHITE HOUSING POLYCARBONATE HOUSING SINGLE OR DUAL FACED	120 VOLT
			LITHONIA *	LHQM LED R HORO		
			MCPHILBEN *	CXXL-3-R-W		

GENERAL NOTES PERTAINING TO ALL FIXTURES:

- LIGHTING FIXTURES SHALL COME COMPLETE WITH NECESSARY MOUNTING HARDWARE.

5

* NOTE:

ALL MANUFACTURERES NAMED ON THIS SHEET
ARE SUBJECT TO AN APPROVED EQUAL.

NO.	BY	DATE	DESCRIPTION	

SCALE: 1/4" = 1'-0"	
DRAWN: R. STANDISH	DATE: MAY 2020
CHECKED: R. STANDISH	DATE: MAY 2020
APPROVED: JCC	DATE: MAY 2020
SURVEY DATE:	
SURVEY BY:	
FIELD BOOK No.:	

THRASHER		
400 3rd STREET SE, SUITE 309 CANTON, OHIO 44702 www.thrashereng.com		
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PHASE No.
CONTRACT No.
PROJECT No.
010-01120

TUSCARAWAS COUNTY METROPOLITAN SEWER DISTRICT WILKSHIRE HILLS WATER SYSTEM IMPROVEMENTS PROPOSED FILTER BUILDING GENERAL NOTES, LEGEND AND SCHEDULE

SHEET No.

E1





GENERAL MECHANICAL NOTES:

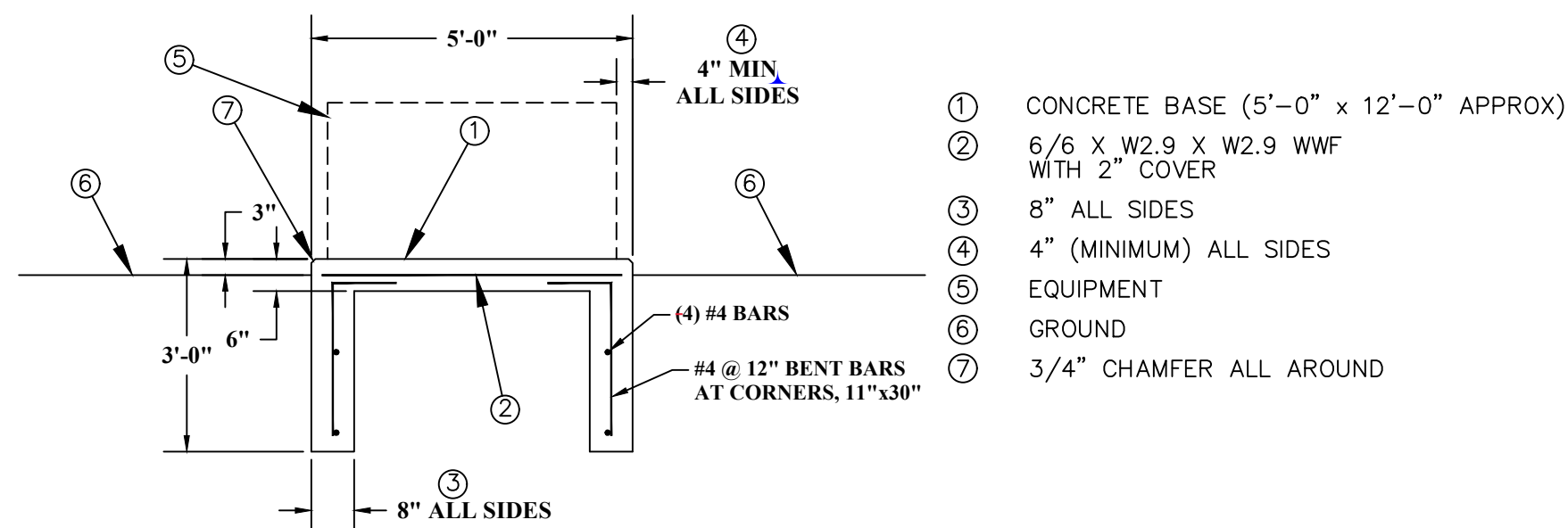
1. PROVIDE ALL MATERIALS AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERABLE HVAC SYSTEM AS INDICATED ON THE DRAWINGS, AS SPECIFIED AND AS REQUIRED BY CODE.
2. CERTAIN ITEMS SUCH AS RISES AND DROPS IN DUCTWORK, ACCESS DOORS, VOLUME DAMPERS, ETC., ARE INDICATED FOR CLARITY IN CERTAIN AREAS. THIS DOES NOT RELIEVE THE CONTRACTOR OF PROVIDED THESE ITEMS NOT SHOWN IN OTHER AREAS AS REQUIRED FOR A COMPLETE INSTALLATION.
3. UNLESS NOTED OTHERWISE, LOCATE ALL ROOM THERMOSTATS 5'-0" ABOVE FINISH FLOOR.
4. ALL DUCTWORK SHALL CLEAR DOORS AND WINDOWS.
5. ALL DUCTWORK DIMENSIONS, AS SHOWN ON DRAWINGS, ARE INTERNAL CLEAR DIMENSIONS. DUCT SIZE SHALL BE INCREASED IN SIZE TO COMPENSATE FOR INTERNAL LININGS.
6. COORDINATE DIFFUSER, REGISTER, AND GRILLE LOCATIONS WITH ARCHITECTURAL PLANS, LIGHTING, AND OTHER ITEMS LOCATED IN CEILING.
7. LOCATE ALL MECHANICAL EQUIPMENT FOR UNOBSTRUCTED ACCESS TO UNIT ACCESS PANELS, CONTROLS, AND VALVING.
8. PROVIDE FLEXIBLE CONNECTIONS IN ALL DUCTWORK SYSTEMS CONNECTED TO AIR HANDLING UNITS, FANS, AND OTHER EQUIPMENT THAT REQUIRE VIBRATION ISOLATION. FLEXIBLE CONNECTIONS SHALL BE PROVIDED AT THE POINT OF CONNECTION UNLESS NOTED OTHERWISE.
9. RUNS OF FLEXIBLE DUCTWORK SHALL NOT EXCEED 5 FEET.
10. ALL DUCTS SHALL BE GROUNDED ACROSS FLEXIBLE CONNECTIONS WITH FLEXIBLE COPPER GROUNDING STRAPS.
11. TURNING VANES SHALL BE INSTALLED IN ALL RECTANGULAR DUCT ELBOWS THAT EXCEED 45° CHANGE IN DIRECTION.
12. INSTALL 1" DUCTLINER IN FIRST 15' OF ALL RETURN AIR DUCTS.

ABBREVIATIONS

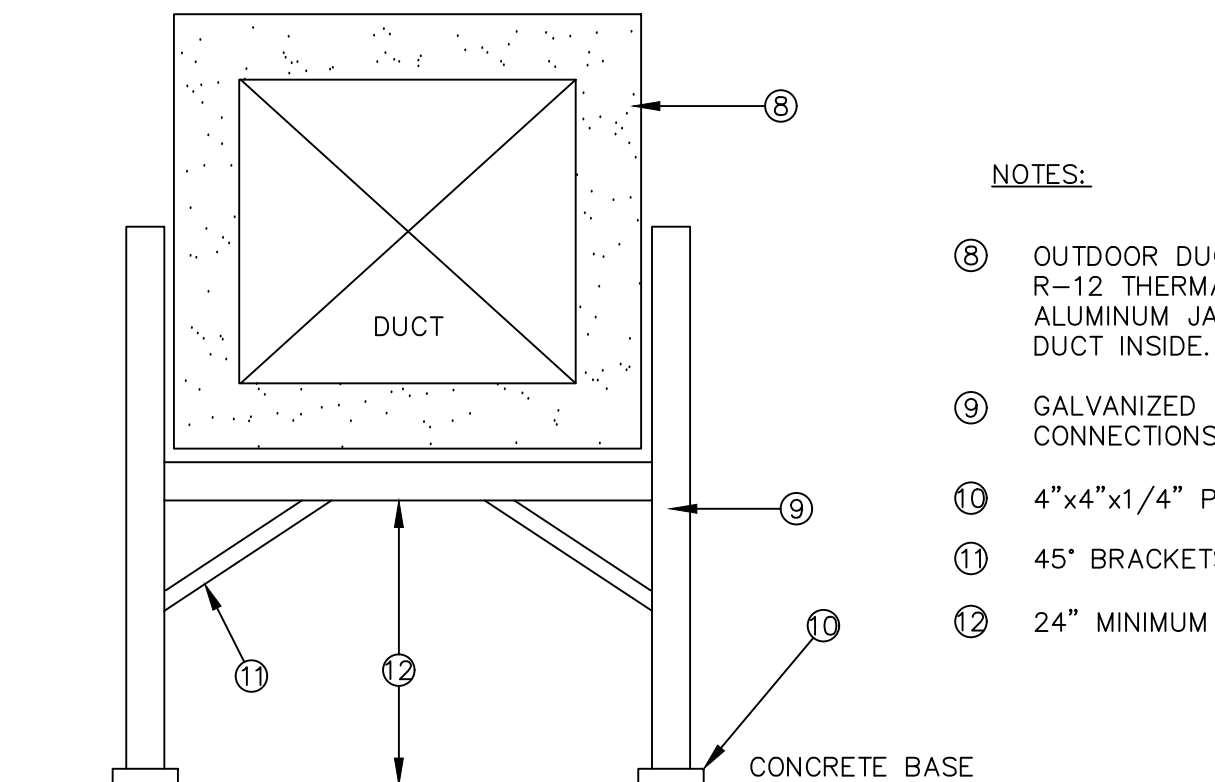
AFF	ABOVE FINISHED FLOOR	MAU	MAKE-UP AIR UNIT
BF	BELOW FLOOR	MH	MOUNTING HEIGHT
BCU	BLOWER COIL UNIT	MBH	THOUSAND BTU/HR
CFM	CUBIC FEET PER MINUTE	MOD	MOTORIZED DAMPER
COP	COEFFICIENT OF PERFORMANCE	NIC	NOT INCLUDED IN CONTRACT
CU	CONDENSING UNIT	NTS	NOT TO SCALE
DN	DOWN	O.A.	OUTSIDE AIR
DB	DRY BULB	PC	PLUMBING CONTRACTOR
DU	DUCTLESS UNIT	PD	PRESSURE DROP
EA	EXHAUST AIR	RA	RETURN AIR
EAT	ENTER AIR TEMPERATURE	RH	RELATIVE HUMIDITY
EC	ELECTRICAL CONTRACTOR	RPM	REVOLUTIONS PER MINUTE
ECH	ELECTRIC CEILING HEATER	RTU	ROOFTOP UNIT
EER	ENERGY EFFICIENCY RATIO	SA	SUPPLY AIR
EF	EXHAUST FAN	SD	SMOKE DAMPER
ESP	EXTERIOR STATIC PRESSURE	SF	SUPPLY FAN
EUH	ELECTRIC UNIT HEATER	STR	STARTER (MOTOR)
EWB	ELECTRIC WALL HEATER	TS	TIP SPEED
FD	FIRE DAMPER	TSP	TOTAL STATIC PRESSURE
FPD	FLUID PRESSURE DROP	(TYP)	TYPICAL
FPM	FEET PER MINUTE	TZ	TRANSFORMER
GC	GENERAL CONTRACTOR	UNO	UNLESS NOTED OTHERWISE
HP	HORSEPOWER	WH	WATER HEATER
KW	KILOWATTS	W/	WITH
L	LOUVER	WB	WET BULB
LAT	LEAVING AIR TEMPERATURE	W/O	WITHOUT
		WP	WEATHER PROOF

MECHANICAL SYMBOLS

SYMBOL	DESCRIPTION
	EQUIPMENT SYMBOL – SEE LIST ON DWGS.
	TEMPERATURE / HUMIDITY SENSOR
	REMOTE DISPLAY TERMINAL
	PLAN NOTE



DETAIL OF EXTERIOR CONCRETE BASE



DUCT SUPPORT DETAIL

DEHUMIDIFIER UNIT SCHEDULE

OUTDOOR DEHUMIDIFIER UNIT																				
MARK	MANUFACTURER	MODEL NO.	WEIGHT (LBS)	CFM			ESP (IN)	FAN HP	COOLING CAPACITY MBH		TOTAL MOIST. REMOVAL (LB/HR)	TOTAL HEAT OF REJECTION MBH	INDOOR AIR DESIGN (WINTER CONDITION)			ELECTRICAL DATA				NOTES NO.
				SA	RA	OA			TOTAL	SENSIBLE			EAT F _{db}	EAT F _{wb}	GRAINS (Gr/Lb)	VOLTS/ PHASE	FLA	MCA	MOCP	
DHU-1	DESERT AIRE*	LW12BN4HNEUNNDL	1680	6,900	6,675	225	0.5	5	142.4	94.1	45.8	172.4	64.0	55.7	--	460/3	--	36	50	1

NOTES:

1) VERTICAL FLOW DEHUMIDIFIER FOR LOW TEMPERATURE APPLICATION WITH FILTERS, WALL MOUNTED REMOTE DISPLAY TERMINAL WITH WALL MOUNTED TEMPERATURE / HUMIDITY SENSOR; UNIT MOUNTED SMOKE DETECTOR AND 14" HIGH CURB.

GRILLE, REGISTER AND DIFFUSER SCHEDULE

MARK	MANUFACTURER	MODEL NO.	USE	DESCRIPTION	NOTES
D1	TITUS *	DL	SUPPLY	ADJUSTABLE DRUM LOUVER REGISTER WITH FRAME TYPE 1 FOR SURFACE MOUNT.	1,2
NOTES: 1. ALUMINUM 2. WHITE FINISH				GENERAL NOTES: A. SIZE OF NECK FOR ABOVE ARE SHOWN ON PLAN. B. SIZE OF GRILLE FOR ABOVE ARE SHOWN ON PLAN.	

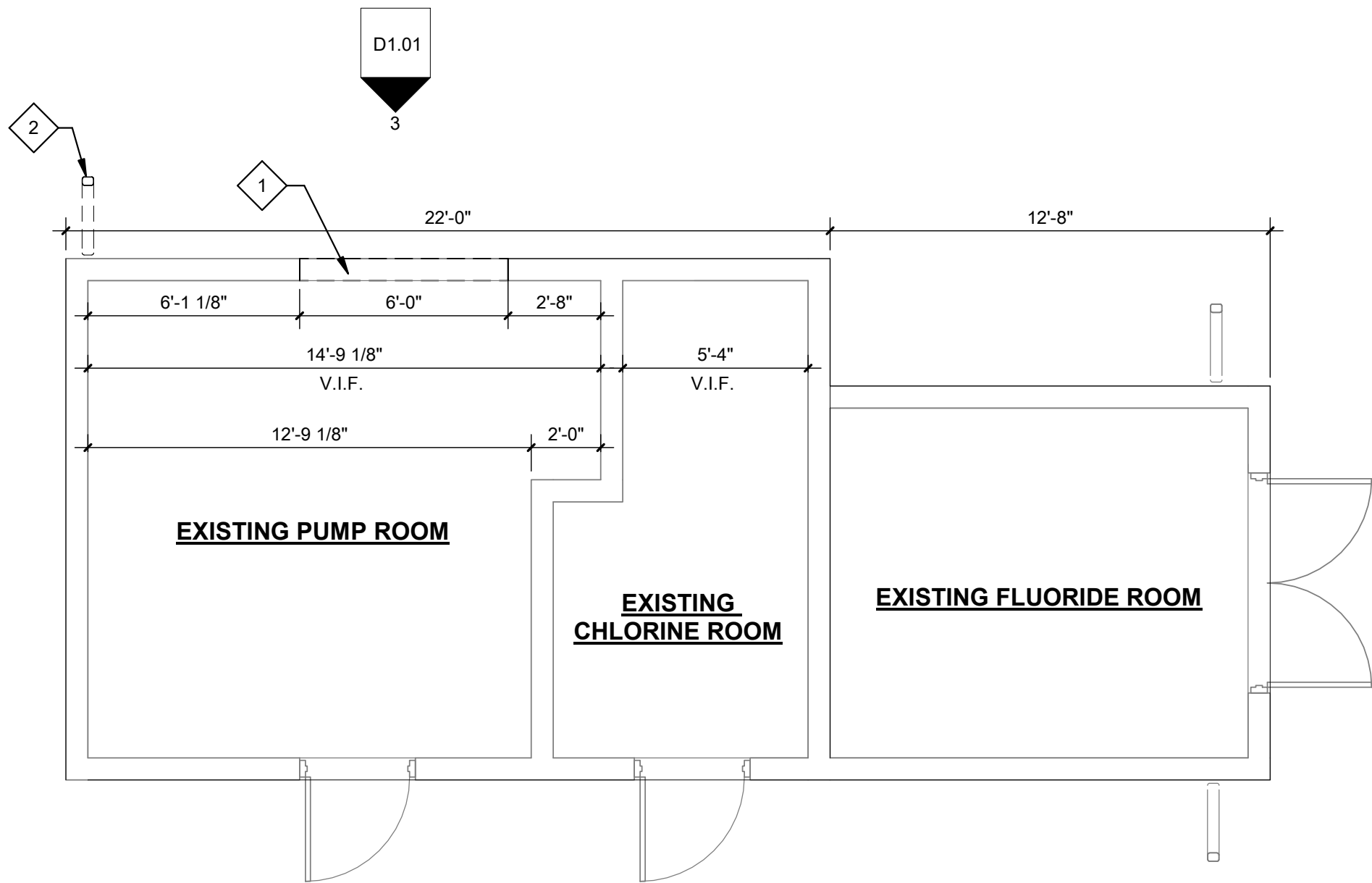
ELECTRIC UNIT HEATER SCHEDULE

MARK	MANUFACTURER	MODEL NO.	WEIGHT (LBS)	CFM	KW	MBH	EAT (F)	LAT (F)	VOLTS/PHASE	FLA	MCA	MOP	NOTES
EUH-1-4	QMARK*	MUH05-81	27	350	5.0	17.0	40	85	208/3	24.0	-	-	1

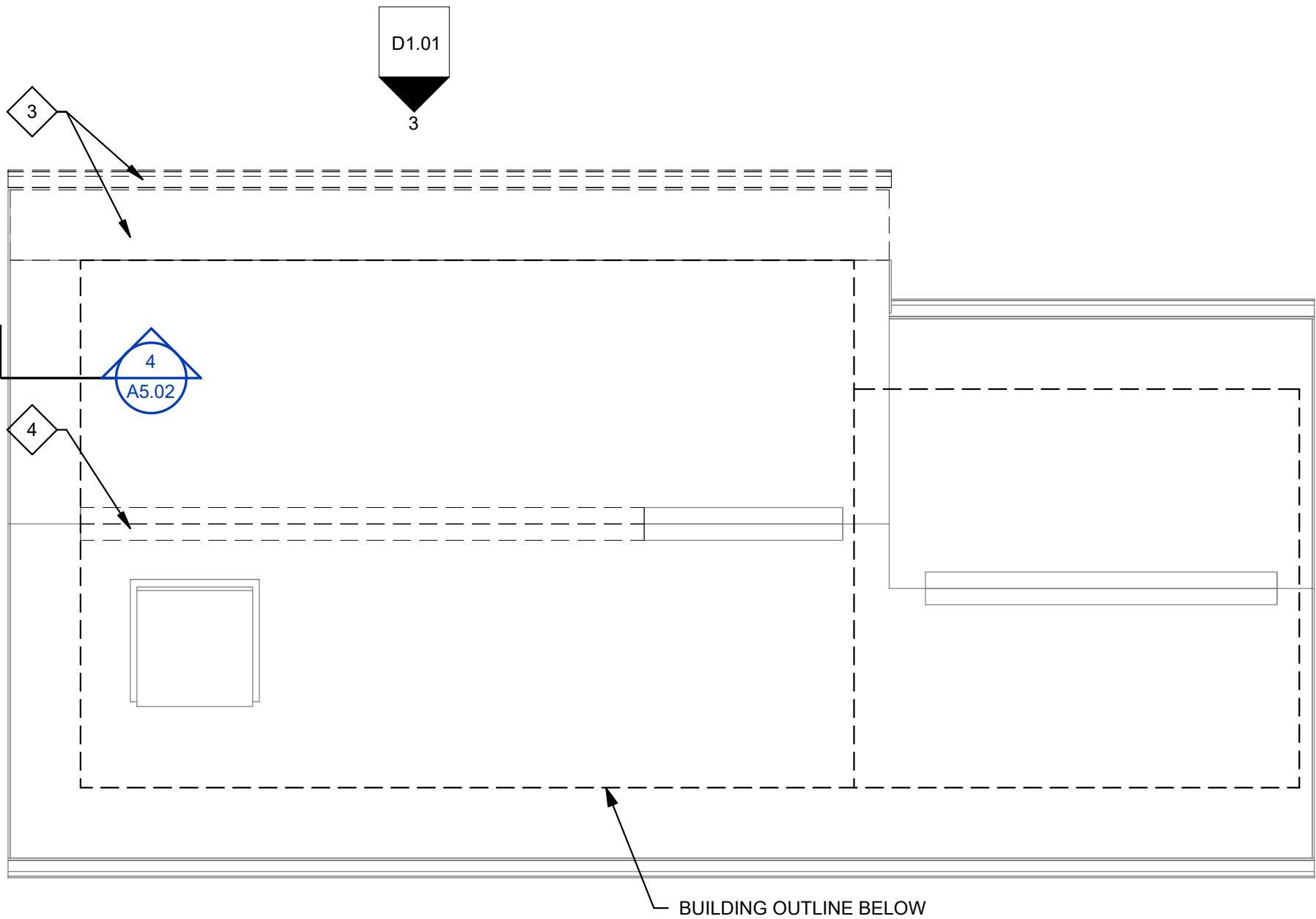
NOTES:
 1) ELECTRIC UNIT HEATER WITH POWER DISCONNECT; UNIT MOUNT THERMOSTAT; WALL MOUNTING BRACKET.

* NOTE:

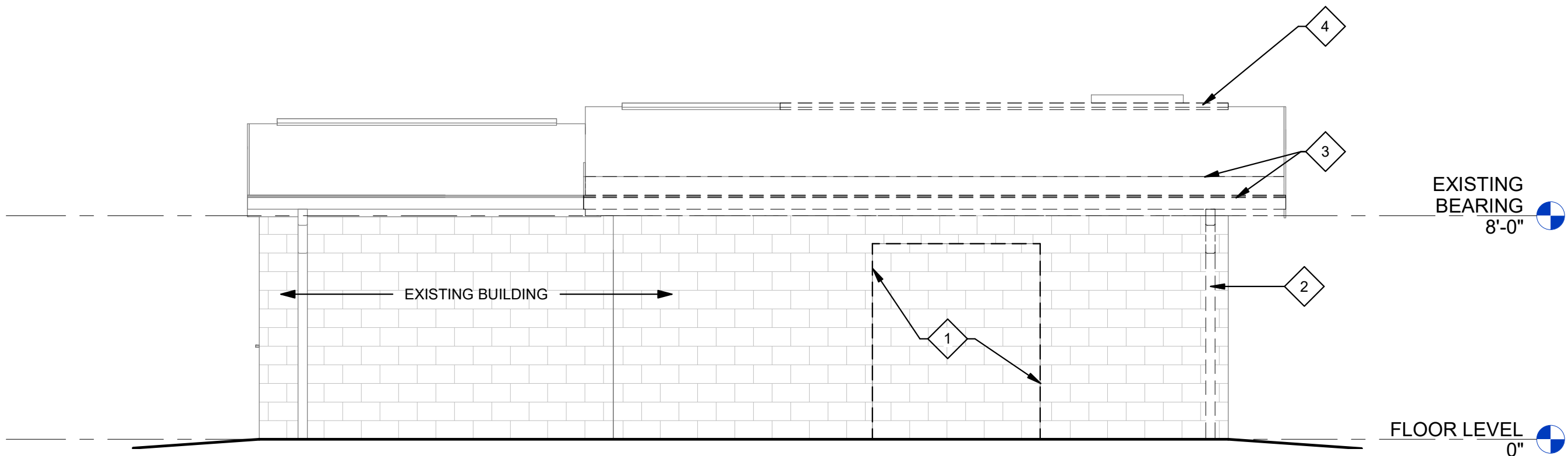
ALL MANUFACTURERES NAMED ON THIS SHEET
ARE SUBJECT TO AN APPROVED EQUAL.



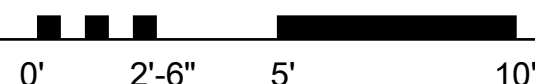
1 DEMOLITION FLOOR PLAN
D1.01 1/4" = 1'-0"



2 DEMOLITION ROOF PLAN
D1.01 1/4" = 1'-0"



3 DEMOLITION ELEVATION
D1.01 1/4" = 1'-0"



EXISTING PHOTO
NTS

#	DEMOLITION NOTES
NOTE #	DESCRIPTION
1	REMOVE EXISTING UTILITY BRICK FOR 6'-0" W. x 7'-0" TALL OPENING INTO NEW SPACE
2	REMOVE EXISTING DOWNSPOUT AND DISPOSE OF LEGALLY.
3	REMOVE EXISTING ROOFING, SHEATHING, FASCIA AS REQ'D TO CUT BACK WOOD TRUSS TO ALLOW FOR NEW BUILDING ADDITION.
4	REMOVE PORTION OF EXISTING RIDGE VENT

GENERAL DEMOLITION NOTES

- THE INTENT OF THE DEMOLITION PLANS IS TO SHOW THE GENERAL NATURE OF THE DEMOLITION SCOPE. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR VISITING THE JOB SITE AND VERIFYING THE EXISTING CONDITIONS. THE GENERAL CONTRACTOR SHOULD NOTIFY THE ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES. THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF DEMOLITION.
- REMOVE ALL EXISTING CONSTRUCTION AND FINISHES NECESSARY FOR THE COMPLETION OF THE NEW RENOVATION WORK AS DEPICTED ON THE DRAWINGS. INCLUDING BUT NOT LIMITED TO, ITEMS SHOWN ON THE PLANS WITH DASHED LINES. NECESSARY DISCONNECTS AND ALTERATIONS TO EXISTING MECHANICAL, ELECTRICAL, FIRE PROTECTION AND ALARM SYSTEMS SHALL BE INCLUDED. PATCH AS REQUIRED ALL CONSTRUCTIONS TO REMAIN IN ACCORDANCE WITH THE CONTRACT DRAWINGS. WHERE CONTRACTOR IS DESIGNATED TO MAKE REMOVALS, DISPOSAL OF MATERIALS IS THE RESPONSIBILITY OF THE CONTRACTOR. VERIFY WITH OWNER, THE DISPOSAL AND REMOVAL OF ANY COMPONENTS OF SALVAGEABLE VALUE.
- ALL REMOVALS AND SALVAGE: SALVAGEABLE ITEMS SHALL FIRST BE OFFERED TO THE OWNER. SALVAGEABLE ITEMS THAT ARE NOT RETAINED BY THE OWNER SHALL BECOME PROPERTY OF THE CONTRACTOR & SHALL BE LEGALLY DISPOSED OF OFF SITE.
- REMOVE ONLY NON-LOAD BEARING CONSTRUCTION AND PARTITIONS. CONTRACTOR TO VERIFY AND CONTACT ARCHITECT IF REQUIRED FOR VERIFICATION, PRIOR TO REMOVAL, THAT NO STRUCTURAL COMPONENTS, I.E. BEARING WALLS, BEAMS, HEADERS, ETC., SUPPORTING FLOOR, ROOF OR CEILING JOISTS ARE DESIGNATED FOR REMOVAL. CONTACT THE ARCHITECT PRIOR TO REMOVAL OF ANY CONSTRUCTION IN QUESTION OR DEVIATING FROM THE DESIGN INTENT. CONTRACTOR'S NON-CONTACT OF ARCHITECT PRIOR TO REMOVAL OF ANY WORK INDICATES HIS COMPLETE UNDERSTANDING THAT NO LOAD BEARING OR STRUCTURAL WORK IS BEING ALTERED UNDER THIS CONTRACT.

DEMOLITION PLAN LEGEND

---	PROJECT BOUNDARY
----	EXISTING TO BE DEMOLISHED
----	EXISTING TO REMAIN
-----	EXTENTS TO BE DEMOLISHED
-----	ITEMS TO BE RELOCATED

NO.	BY	DATE	DESCRIPTION

SCALE: As Indicated	DATE: 08/12/2020
DRAWN: Author	DATE: 08/12/2020
CHECKED: Checker	DATE: 08/12/2020
APPROVED: Approver	DATE: 08/12/2020
SURVEY DATE:	
SURVEY BY:	
FIELD BOOK No.:	

THRASHER

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400 3rd St. SE, SUITE 308
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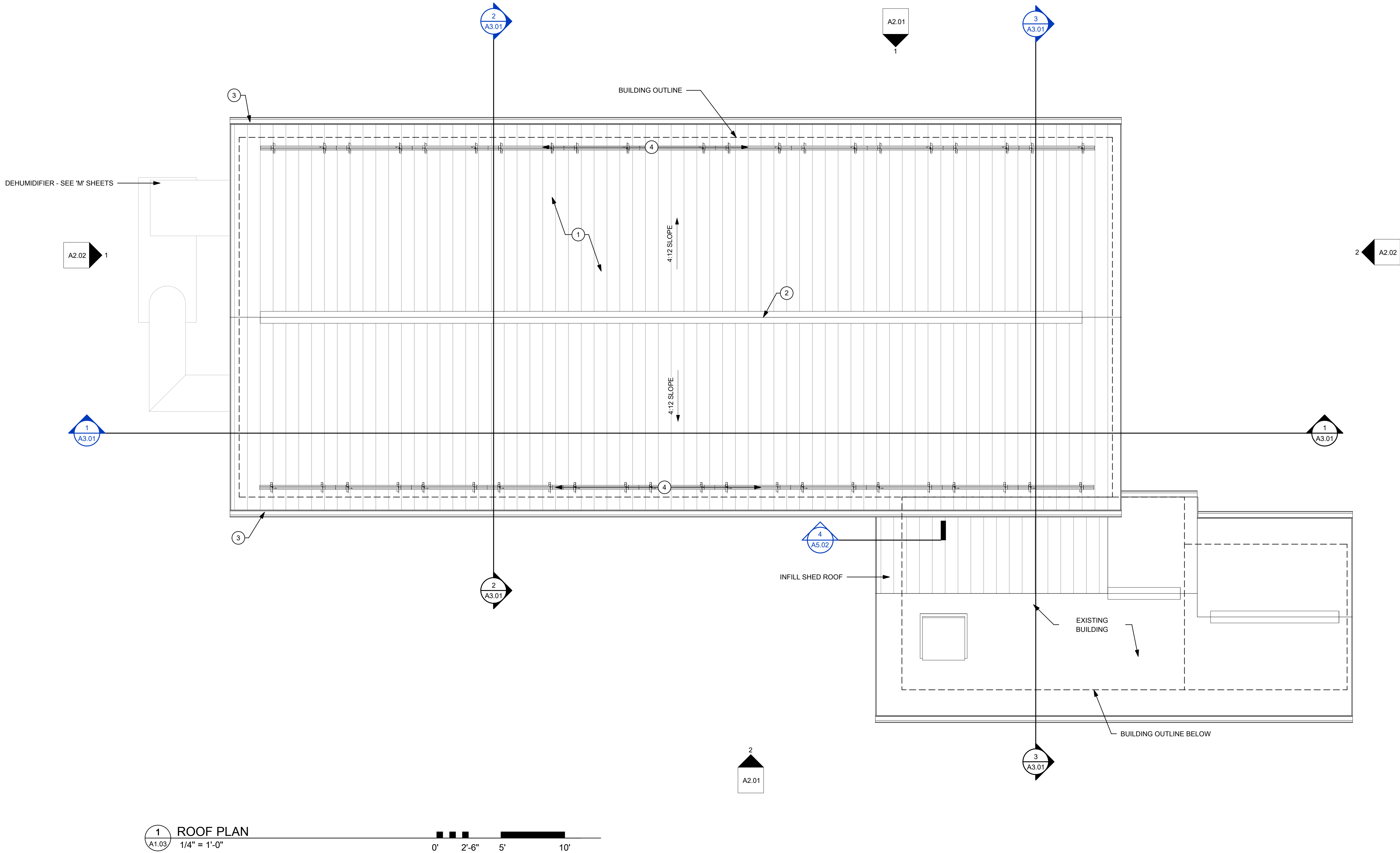
PHASE No.
CONTRACT No.
PROJECT No.
010-01120

TUSCARAWAS COUNTY
METROPOLITAN SEWER DISTRICT
WILKSHIRE HILLS WATER SYSTEM IMPROVEMENTS
PROPOSED FILTER BUILDING
DEMOLITION FLOOR PLAN

SHEET No.
D1.01

#	ROOF PLAN CONSTRUCTION NOTES	
NOTE #	DESCRIPTION	
1	STANDING SEAM METAL ROOF	
2	RIDGE VENT	
3	COMMERCIAL METAL GUTTER AND DOWNSPOUT SYSTEM	
4	SNOW GUARDS FULL LENGHT OF BUILDING. FINAL LOCATION AND ARRANGEMENT DETERMINED BY MANUFACTURER	

GENERAL NOTES:
- SEE M. SHEETS FOR ROOF PENETRATIONS AND PENETRATION DETAILS



1 ROOF PLAN
1/4" = 1'-0"

0' 2'-6" 5' 10'

SCALE: 1/4" = 1'-0"
DRAWN: Author DATE: 08/12/2020
CHECKED: Checker DATE: 08/12/2020
APPROVED: Approver DATE: 08/12/2020
SURVEY DATE:
SURVEY BY:
FIELD BOOK No.:

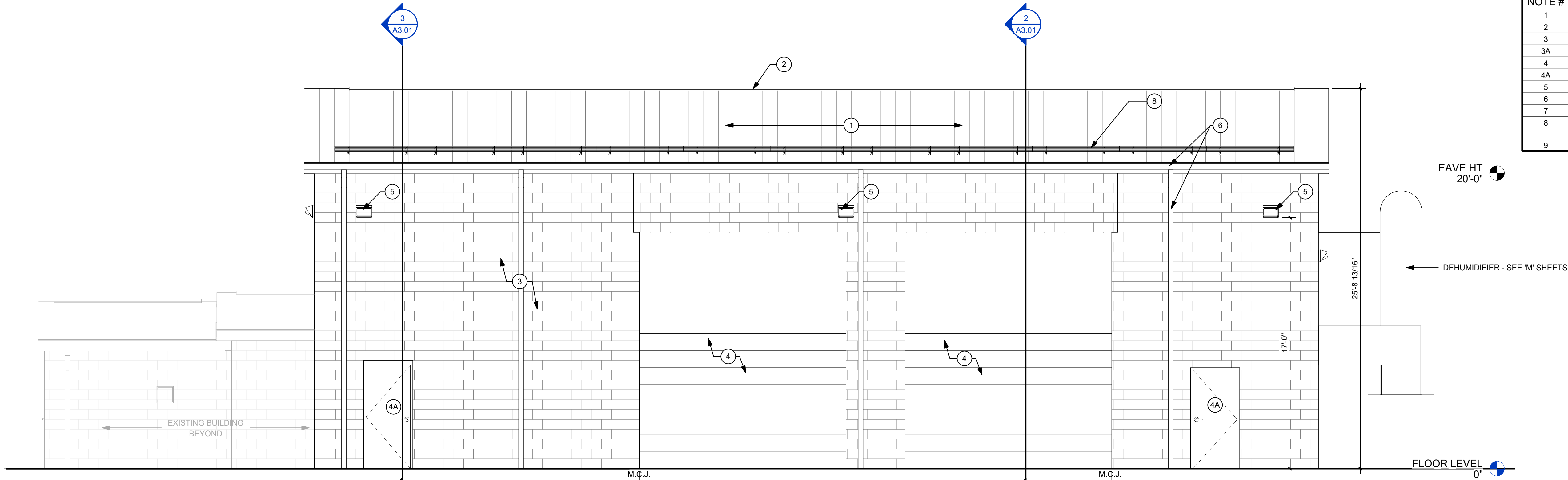
PHONE (330) 451-2042
THE THRASHER GROUP, INC.
400 3rd St. SE, SUITE 308
CANTON, OH 44702
www.thrashergroup.com
(FAX) (330) 451-2043

PHASE No.
CONTRACT No.
PROJECT No.
010-01120

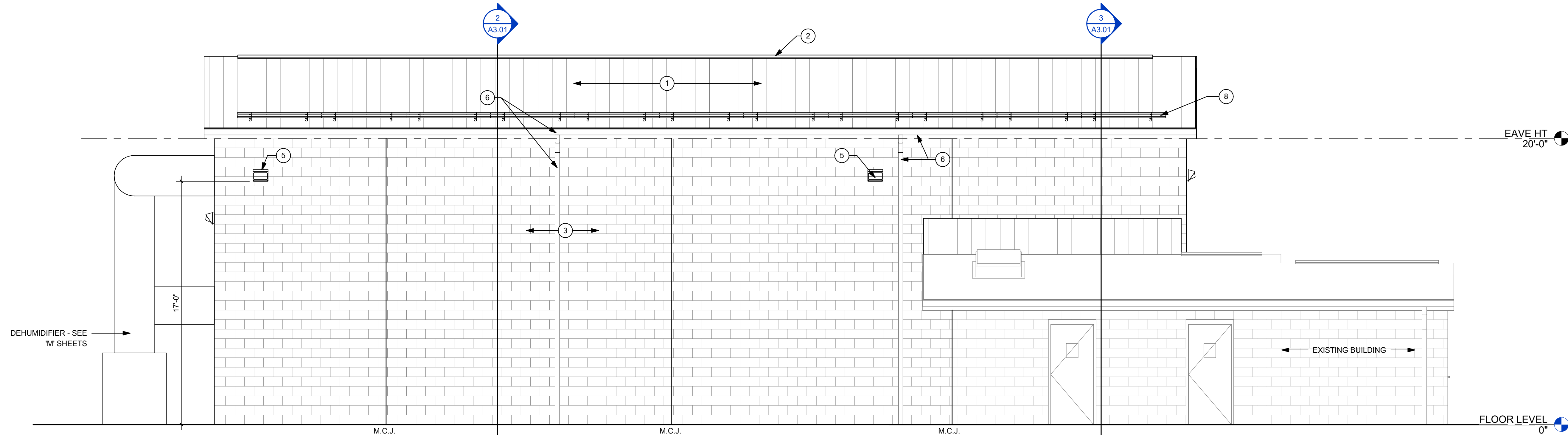
TUSCARAWAS COUNTY
METROPOLITAN SEWER DISTRICT
WILKSHIRE HILLS WATER SYSTEM IMPROVEMENTS
PROPOSED FILTER BUILDING
ROOF PLAN

SHEET No.
A1.03

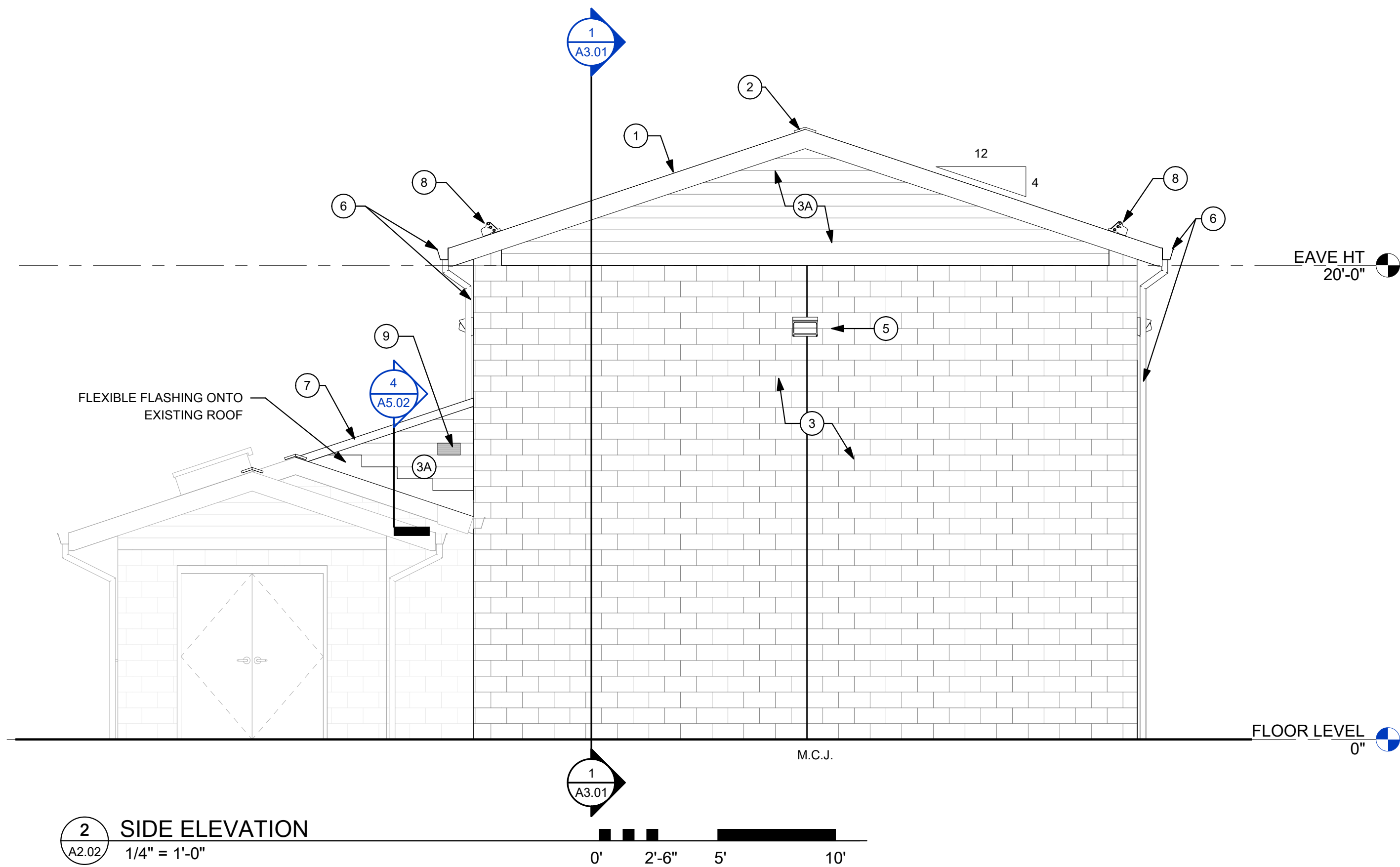
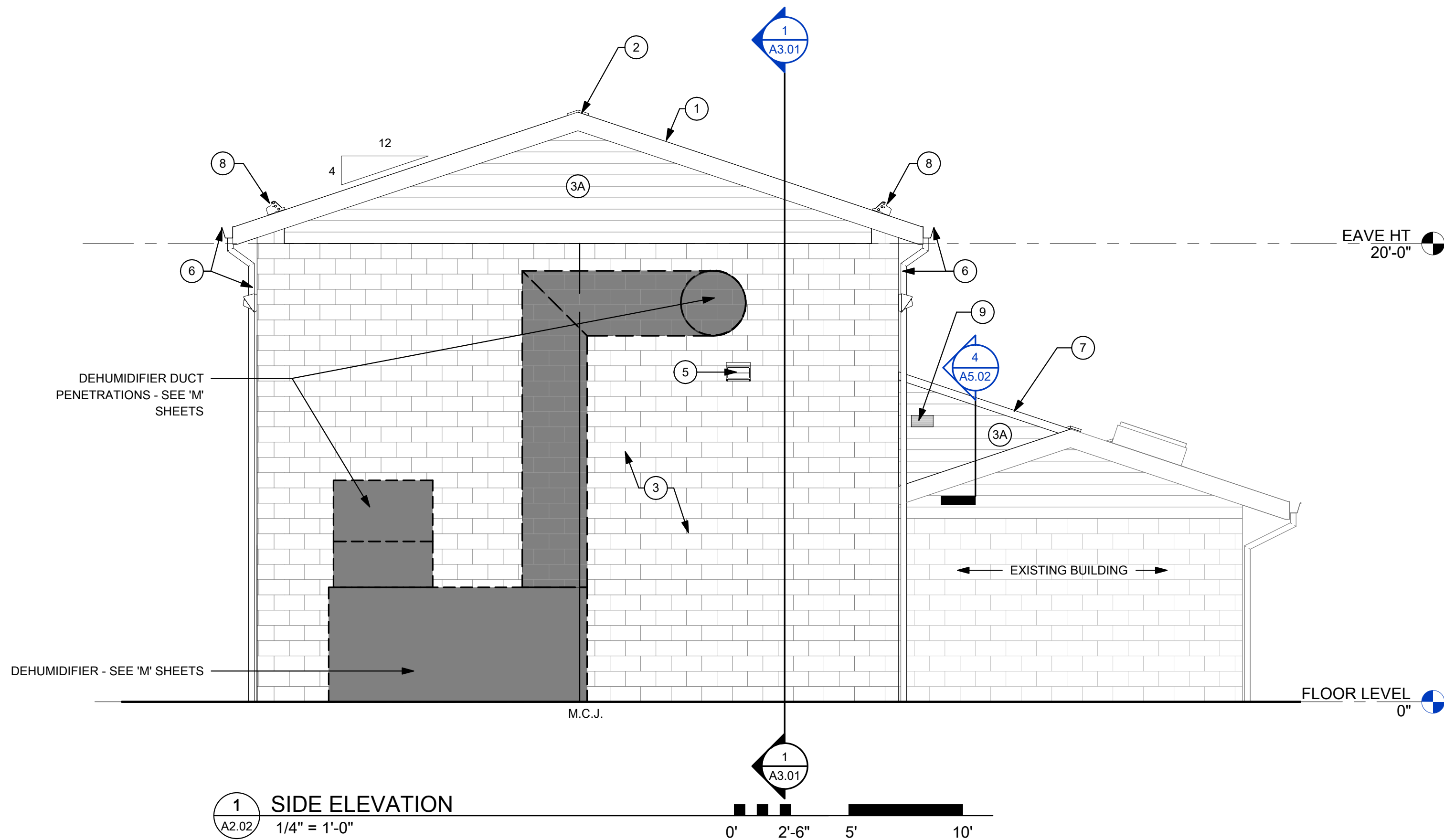
#	ELEVATION CONSTRUCTION NOTES
NOTE #	DESCRIPTION
1	STANDING SEAM METAL ROOF
2	RIDGE VENT
3	SPLIT FACE BLOCK TO MATCH EXISTING
3A	VINYL SIDING FINISH
4	OVERHEAD COILING DOOR
4A	MANDOOR
5	WALL PACK LIGHT - SEE E. SHEETS
6	GUTTER AND DOWNSPOUT SYSTEM. SLOPE GUTTER AT 1/4" PER FOOT
7	NEW BUILDING CONNECTION - SEE DETAILS
8	SNOW GUARDS FULL LENGHT OF BUILDING. FINAL LOCATION AND ARRANGEMENT DETERMINED BY MANUFACTURER
9	ATTIC VENT



1 FRONT ELEVATION
A2.01 1/4" = 1'-0"



2 BACK ELEVATION
A2.01 1/4" = 1'-0"



#	ELEVATION CONSTRUCTION NOTES
NOTE #	DESCRIPTION
1	STANDING SEAM METAL ROOF
2	RIDGE VENT
3	SPLIT FACE BLOCK TO MATCH EXISTING
3A	VINYL SIDING FINISH
4	OVERHEAD COILING DOOR
4A	MANDOOR
5	WALL PACK LIGHT - SEE E. SHEETS
6	GUTTER AND DOWNSPOUT SYSTEM. SLOPE GUTTER AT 1/4" PER FOOT
7	NEW BUILDING CONNECTION - SEE DETAILS
8	SNOW GUARDS FULL LENGHT OF BUILDING. FINAL LOCATION AND ARRANGEMENT DETERMINED BY MANUFACTURER
9	ATTIC VENT

NO.	BY	DATE	DESCRIPTION

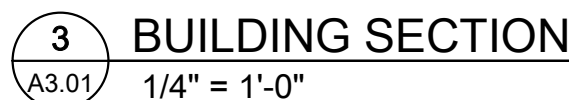
SCALE: 1/4" = 1'-0"	DATE: 08/12/2020
DRAWN: Author	DATE: 08/12/2020
CHECKED: Checker	DATE: 08/12/2020
APPROVED: Approver	DATE: 08/12/2020
SURVEY DATE:	
SURVEY BY:	
FIELD BOOK No.:	

THRASHER	THE THRASHER GROUP, INC.	PHONE	(330) 451-2042
	400 3rd St. SE, SUITE 308		
	CANTON, OH 44702		
	www.thrashergroup.com	(FAX)	(330) 451-2043

PHASE No.	
CONTRACT No.	
PROJECT No.	010-01120

TUSCARAWAS COUNTY METROPOLITAN SEWER DISTRICT WILKSHIRE HILLS WATER SYSTEM IMPROVEMENTS PROPOSED FILTER BUILDING BUILDING ELEVATIONS
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SHEET No.	A2.02
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[illegible]

SCALE: 1/4" = 1'-0"	
DRAWN: Author	DATE: 08/12/2020
CHECKED: Checker	DATE: 08/12/2020
APPROVED: Approver	DATE: 08/12/2020
SURVEY DATE:	
SURVEY BY:	
FIELD BOOK No.:	

THE THRASHER GROUP, INC.
400 3rd St. SE, SUITE 309
CANTON, OH 44702
www.thethrashergroup.com

PHONE
(330) 451-2042

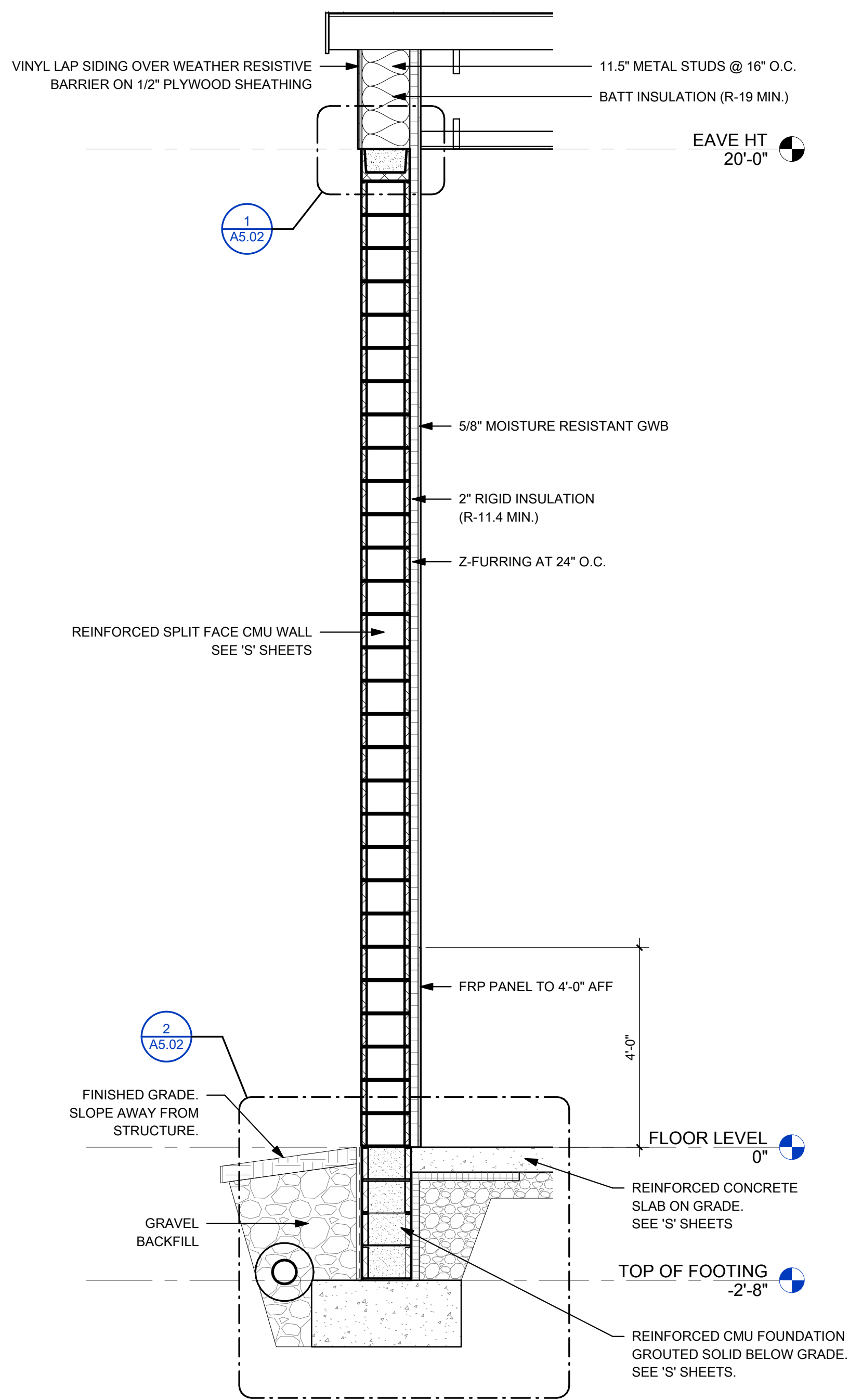
(FAX)
(330) 451-2043

PHASE No.
CONTRACT No.
PROJECT No.
010-01120

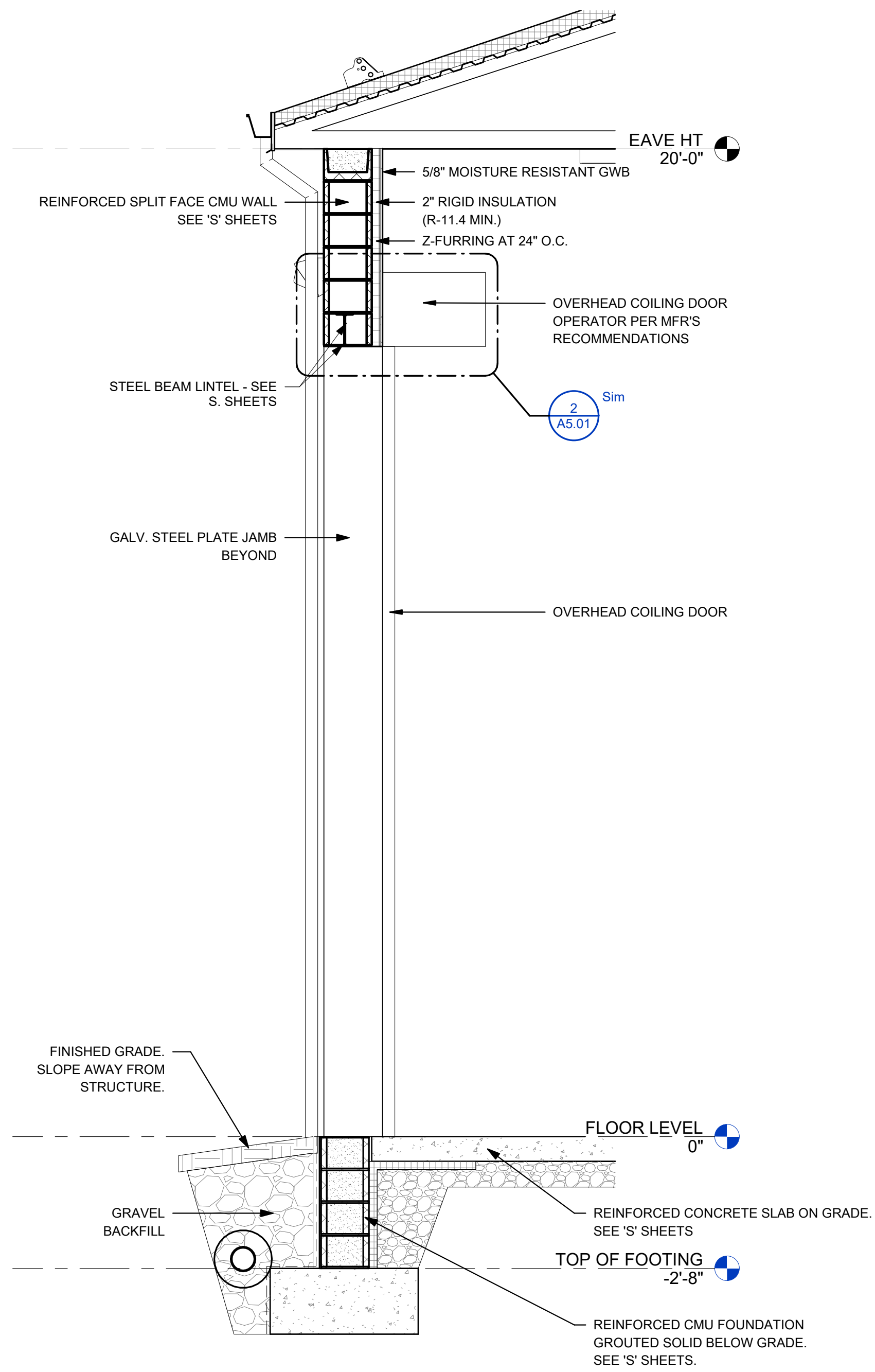
TUSCARAWAS COUNTY
METROPOLITAN SEWER DISTRICT
WILKSHIRE HILLS WATER SYSTEM IMPROVEMENTS
PROPOSED FILTER BUILDING
BUILDING SECTIONS

SHEET No.

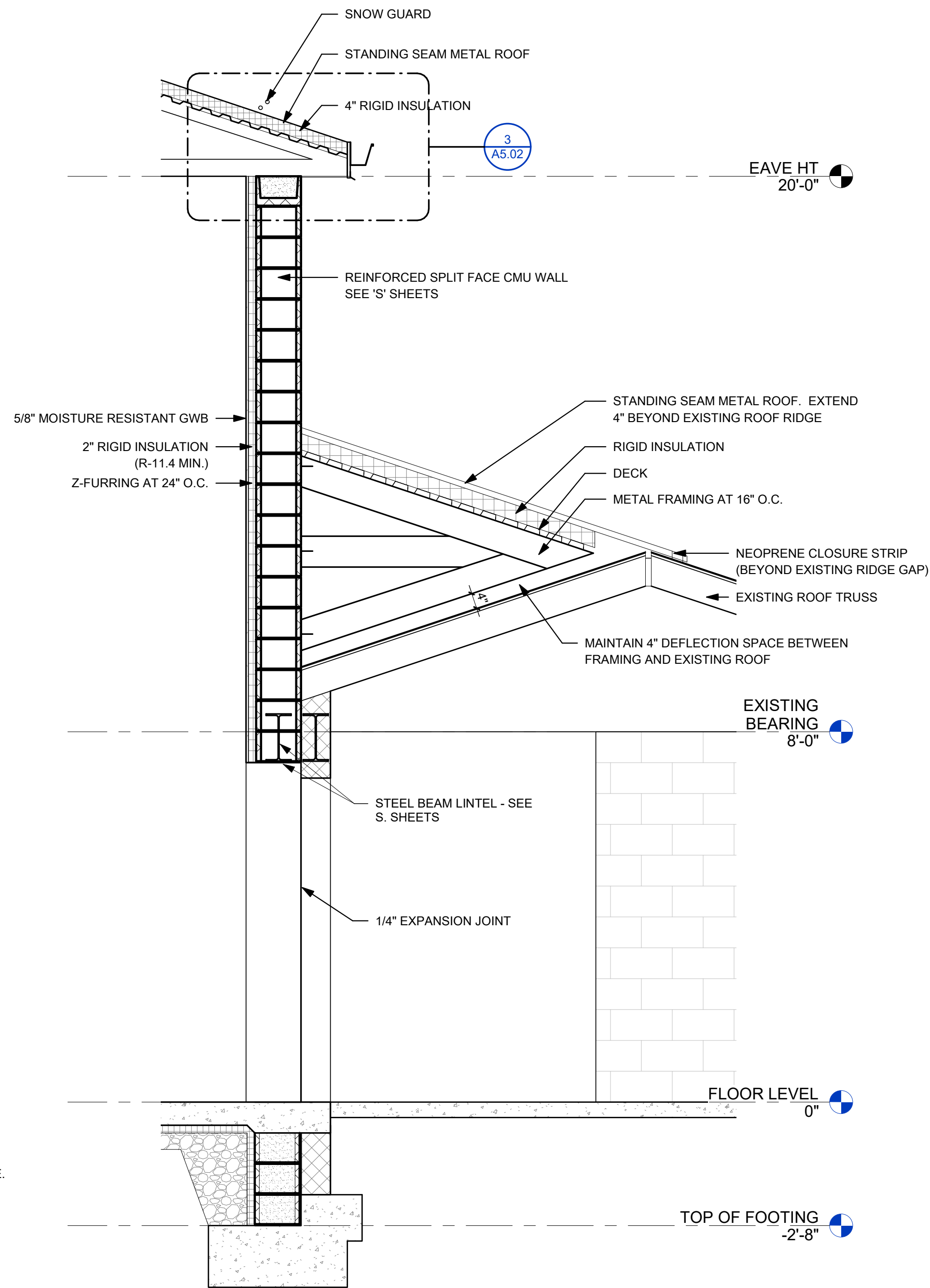
A3.01



1 WALL SECTION
1/2" = 1'-0"



2 WALL SECTION
1/2" = 1'-0"



3 WALL SECTION
1/2" = 1'-0"

NO.	BY	DATE	DESCRIPTION

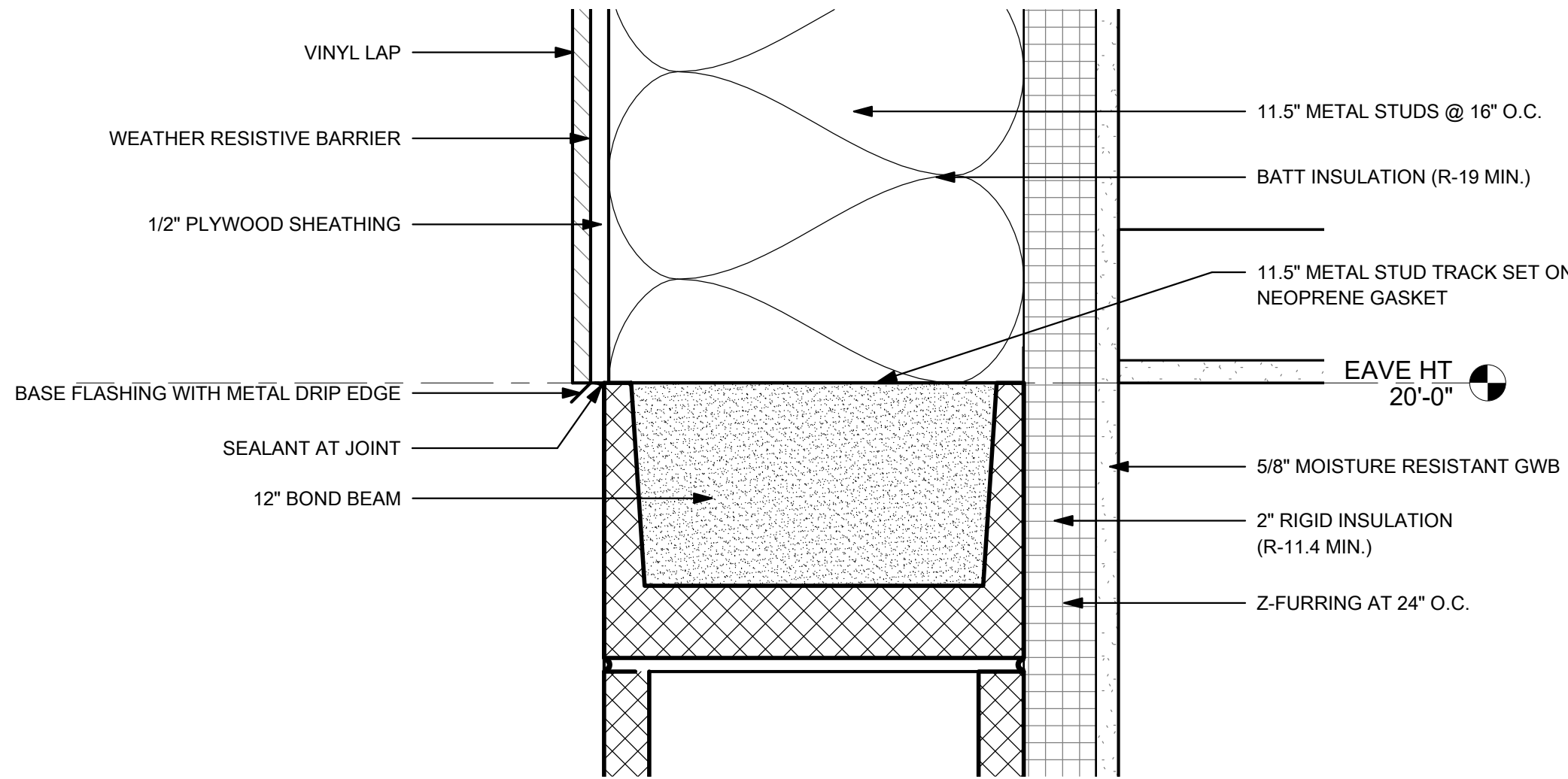
SCALE: 1/2" = 1'-0"	DATE: 08/12/2020
DRAWN: Author	CHECKED: Checker
APPROVED: Approver	SURVEY DATE:
SURVEY BY:	FIELD BOOK No.:

PHONE (330) 451-2042	THE THRASHER GROUP, INC. 400 3rd St. SE, SUITE 308 CANTON, OH 44702 www.thrashergroup.com	(FAX) (330) 451-2043
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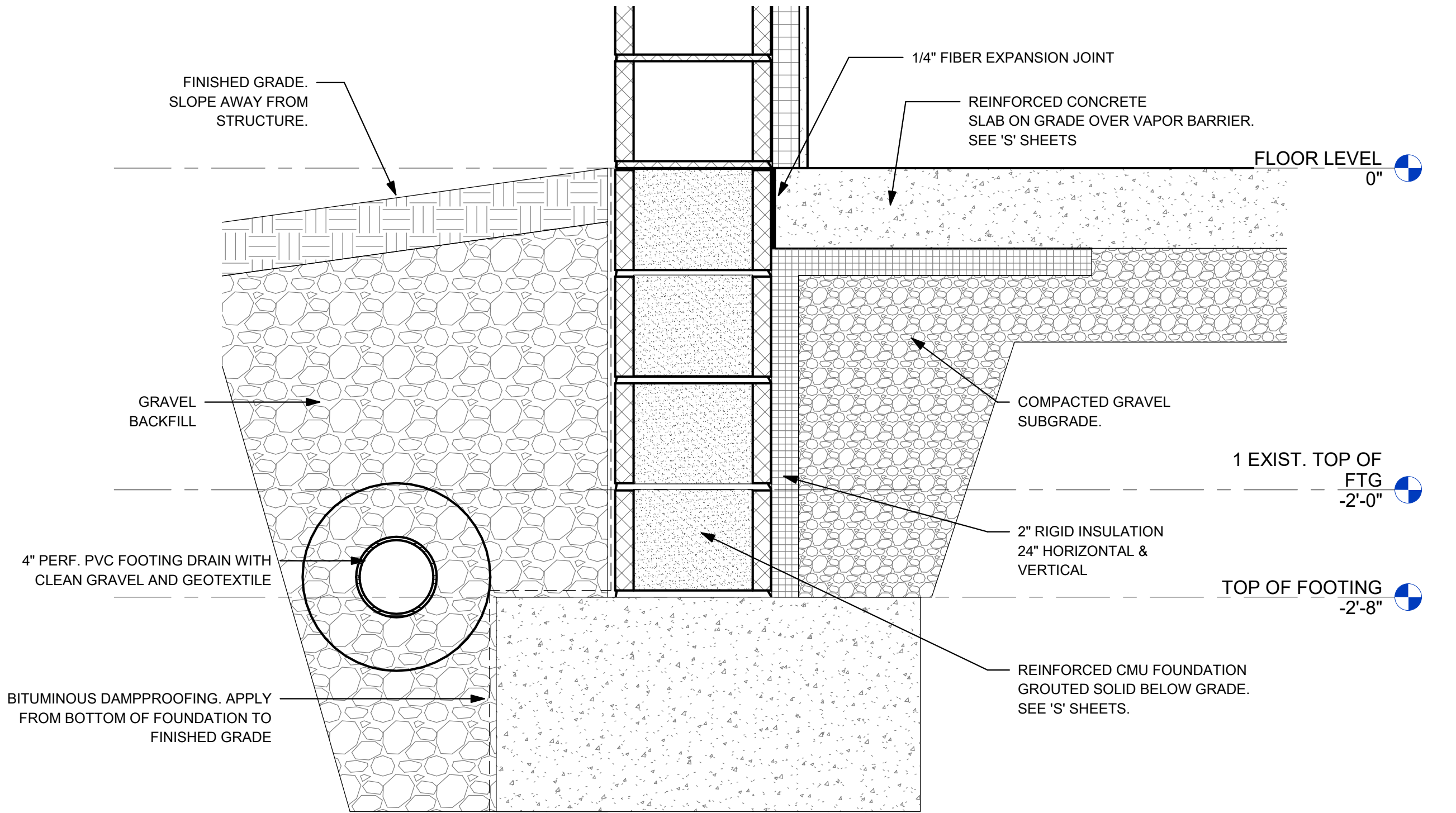
PHASE No.	CONTRACT No.	PROJECT No.
		010-01120

TUSCARAWAS COUNTY METROPOLITAN SEWER DISTRICT WILKSHIRE HILLS WATER SYSTEM IMPROVEMENTS PROPOSED FILTER BUILDING WALL SECTIONS
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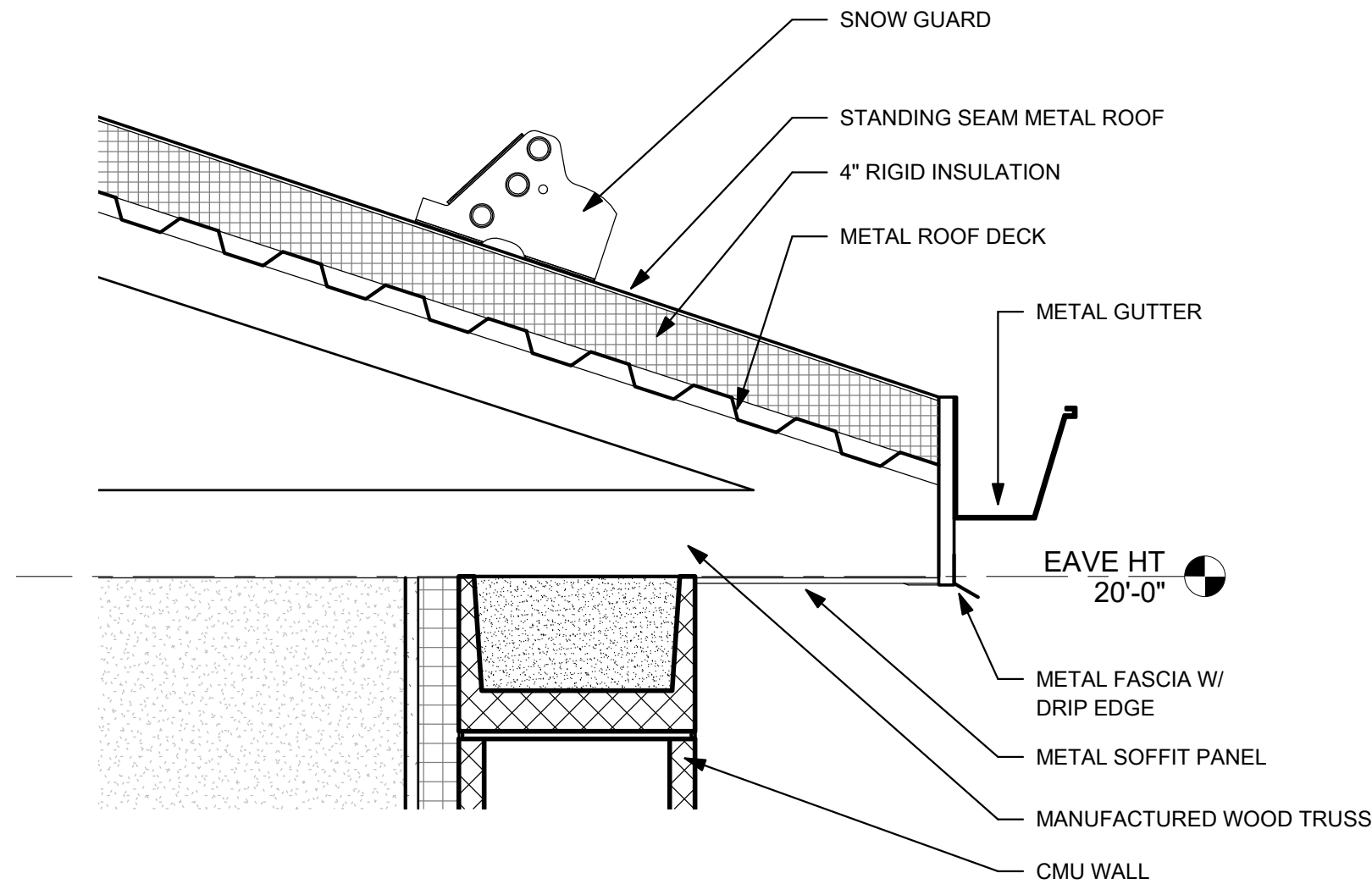
SHEET No. A3.02



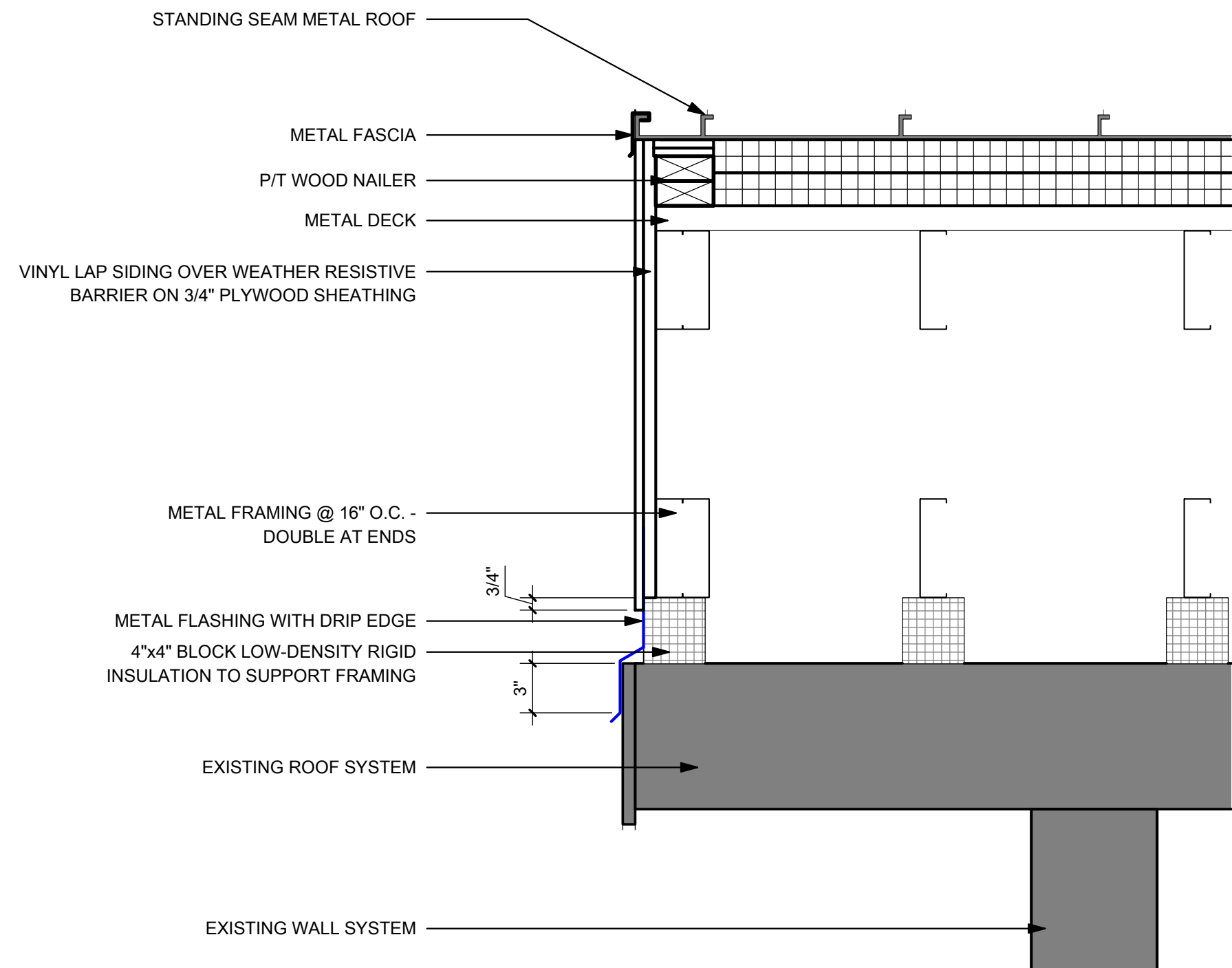
1 WALL TRANSITION DETAIL
3" = 1'-0"



2 FOUNDATION DETAIL
1 1/2" = 1'-0"



3 ROOF DETAIL
1 1/2" = 1'-0"



4 INFILL SHED ROOF RAKE DETAIL
1 1/2" = 1'-0"

**PRELIMINARY:
NOT FOR CONSTRUCTION**

SCALE: As Indicated
DRAWN: Author DATE: 08/12/2020
CHECKED: Checker DATE: 08/12/2020
APPROVED: Approver DATE: 08/12/2020
SURVEY DATE:
SURVEY BY:
FIELD BOOK No.:

THRASHER

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PHASE No.

CONTRACT No.

PROJECT No.

010-01120

TUSCARAWAS COUNTY
METROPOLITAN SEWER DISTRICT
WILKSHIRE HILLS WATER SYSTEM IMPROVEMENTS
PROPOSED FILTER BUILDING
DETAILS

SHEET No.

A5.02