

CONTRACT

THIS CONTRACT is between the CITY OF ANN ARBOR, a Michigan Municipal Corporation, 301 East Huron Street, Ann Arbor, Michigan 48104 (“City”) and Sorensen Gross Company LLC (“Contractor”) a Delaware corporation located at 111 E. Court Street, Suite 1-S Flint, Michigan 48502. Based upon the mutual promises below, the Contractor and the City agree as follows:

ARTICLE I - Scope of Work

The Contractor agrees to furnish all of the materials, equipment and labor necessary; and to abide by all the duties and responsibilities applicable to it for the project titled **2024 WTP Filter 18/20 Underdrain Improvements (ITB 4752)** in accordance with the requirements and provisions of the following documents, including all written modifications incorporated into any of the documents, all of which are incorporated as part of this Contract:

Non-discrimination and Living Wage
Declaration of Compliance Forms (if
applicable)
Vendor Conflict of Interest Form
Prevailing Wage Declaration of
Compliance Form (if applicable)
ITB 4752
Bid Forms
Contract and Exhibits
Bonds

General Conditions
Standard Specifications
Detailed Specifications
Plans
Addenda
ARPA Contract Addendum

ARTICLE II - Definitions

Administering Service Area/Unit means **Water Treatment Services Unit**

Project means **2024 WTP Filter 18/20 Underdrain Improvements (ITB 4752)**.

Supervising Professional means the person acting under the authorization of the manager of the Administering Service Area/Unit. At the time this Contract is executed, the Supervising Professional is: **Glen Wiczorek**, whose job title is **Senior Utilities Engineer**. If there is any question concerning who the Supervising Professional is, Contractor shall confirm with the manager of the Administering Service Area/Unit.

Contractor’s Representative means **Bruce Hemingway** whose job title is **V.P. Midwest**.

ARTICLE III - Time of Completion

- (A) The work to be completed under this Contract shall begin immediately on the date specified in the Notice to Proceed issued by the City.
- (B) The entire work for this Contract shall be completed within twenty four consecutive months.

- (C) Failure to complete all the work within the time specified above, including any extension granted in writing by the Supervising Professional, shall obligate the Contractor to pay the City, as liquidated damages and not as a penalty, an amount equal to \$500 for each calendar day of delay in the completion of all the work. If any liquidated damages are unpaid by the Contractor, the City shall be entitled to deduct these unpaid liquidated damages from the monies due the Contractor.

The liquidated damages are for the non-quantifiable aspects of any of the previously identified events and do not cover actual damages that can be shown or quantified nor are they intended to preclude recovery of actual damages in addition to the recovery of liquidated damages.

ARTICLE IV - The Contract Sum

- (A) The City shall pay to the Contractor for the performance of the Contract, the unit prices as given in the Bid Form for the estimated bid total of: One Million Twenty-Nine Thousand Six Hundred and Thirty-Six Dollars (\$1,029,636).
- (B) The amount paid shall be equitably adjusted to cover changes in the work ordered by the Supervising Professional but not required by the Contract Documents. Increases or decreases shall be determined only by written agreement between the City and Contractor.
- (C) For the purpose of this contract, the construction type of Building will apply.
- (D) The wage determination applicable to this contract is MI20240100, attached in the Appendix.

ARTICLE V - Assignment

This Contract may not be assigned or subcontracted any portion of any right or obligation under this contract without the written consent of the City. Notwithstanding any consent by the City to any assignment, Contractor shall at all times remain bound to all warranties, certifications, indemnifications, promises and performances, however described, as are required of it under this contract unless specifically released from the requirement, in writing, by the City.

ARTICLE VI - Choice of Law

This Contract shall be construed, governed, and enforced in accordance with the laws of the State of Michigan. By executing this Contract, the Contractor and the City agree to venue in a court of appropriate jurisdiction sitting within Washtenaw County for purposes of any action arising under this Contract. The parties stipulate that the venue referenced in this Contract is for convenience and waive any claim of non-convenience.

Whenever possible, each provision of the Contract will be interpreted in a manner as to be effective and valid under applicable law. The prohibition or invalidity, under applicable law, of any provision will not invalidate the remainder of the Contract.

ARTICLE VII - Relationship of the Parties

The parties of the Contract agree that it is not a Contract of employment but is a Contract to

accomplish a specific result. Contractor is an independent Contractor performing services for the City. Nothing contained in this Contract shall be deemed to constitute any other relationship between the City and the Contractor.

Contractor certifies that it has no personal or financial interest in the project other than the compensation it is to receive under the Contract. Contractor certifies that it is not, and shall not become, overdue or in default to the City for any Contract, debt, or any other obligation to the City including real or personal property taxes. City shall have the right to set off any such debt against compensation awarded for services under this Contract.

ARTICLE VIII - Notice

All notices given under this Contract shall be in writing and shall be by personal delivery or by certified mail with return receipt requested to the parties at their respective addresses as specified in the Contract Documents or other address the Contractor may specify in writing. Notice will be deemed given on the date when one of the following first occur: (1) the date of actual receipt; or (2) three days after mailing certified U.S. mail.

ARTICLE IX - Indemnification

To the fullest extent permitted by law, Contractor shall indemnify, defend and hold the City, its officers, employees and agents harmless from all suits, claims, judgments and expenses including attorney's fees resulting or alleged to result, in whole or in part, from any act or omission, which is in any way connected or associated with this Contract, by the Contractor or anyone acting on the Contractor's behalf under this Contract. Contractor shall not be responsible to indemnify the City for losses or damages caused by or resulting from the City's sole negligence. The provisions of this Article shall survive the expiration or earlier termination of this contract for any reason.

ARTICLE X - Entire Agreement

This Contract represents the entire understanding between the City and the Contractor and it supersedes all prior representations, negotiations, agreements, or understandings whether written or oral. Neither party has relied on any prior representations in entering into this Contract. No terms or conditions of either party's invoice, purchase order or other administrative document shall modify the terms and conditions of this Contract, regardless of the other party's failure to object to such form. This Contract shall be binding on and shall inure to the benefit of the parties to this Contract and their permitted successors and permitted assigns and nothing in this Contract, express or implied, is intended to or shall confer on any other person or entity any legal or equitable right, benefit, or remedy of any nature whatsoever under or by reason of this Contract. This Contract may be altered, amended or modified only by written amendment signed by the City and the Contractor.

ARTICLE XI – Electronic Transactions

The City and Contractor agree that signatures on this Contract may be delivered electronically in lieu of an original signature and agree to treat electronic signatures as original signatures that bind them to this Contract. This Contract may be executed and delivered by facsimile and upon such delivery, the facsimile signature will be deemed to have the same effect as if the original signature had been delivered to the other party.

FOR SORENSEN GROSS COMPANY LLC

By: _____
Bruce Hemingway, V.P. Midwest

Date: _____

FOR THE CITY OF ANN ARBOR

By: _____
Christopher Taylor, Mayor

Date: _____

By: _____
Jacqueline Beaudry, City Clerk

Date: _____

Approved as to substance

By: _____
Milton Dohoney Jr., City Administrator

Date: _____

By: _____
Sue F. McCormick, Interim Public
Services Area Administrator

Date: _____

Approved as to form and content

By: _____
Atleen Kaur, City Attorney

Date: _____

BID FORM

Section 1 – Schedule of Prices

Company: Sorensen Gross Company LLC

Project: 2024 WTP Filter 18/20 Underdrain Improvements (ITB 4752)

Base Bid –

For the entire work outlined in these documents for 2024 WTP Filter 18/20 Underdrain Improvements, complete as specified, using equipment and materials only of the type and manufacturers where specifically named.

BASE BID #1 – Water Treatment Plant – Filter 18 and 20 Improvements (Lump Sum)

Location: 919 Sunset Road, Ann Arbor, MI 48103

	Description	Units	Quantity	Unit Cost	Extended Cost
1.0	GENERAL				
1.1	General Conditions (Max 10%)	LS	1		\$ 140,000
1.2	Mobilization (Max 10%)	LS	1		\$ 12,000
1.3	Certified Payroll Compliance and Reporting	LS	1		\$ 2,750
1.4	Filter GAC Allowance	ALW	1		\$75,000
1.5	Special Inspections and Tests Allowance	ALW	1		\$10,000
2.0	GRAVITY FILTER IMPROVEMENTS				
2.1	Demolish Existing Equipment	LS	1	\$	\$ 78,164
2.2	Install New Underdrain Equipment	LS	1	\$	\$ 337,350
2.3	Install New Air Scour Piping	LS	1	\$	\$ 87,750
2.4	Install New Media Retention Baffles	LS	1	\$	\$ 86,260
2.6	Service Surface Wash Arms	LS	1	\$	\$ 38,900
3.0	FILTER EFFLUENT PIPING IMPROVEMENTS				
3.1	Paint Piping and Fittings	LS	1	\$	\$ 7,740
3.2	Install New Filter Effluent Gasket	LS	1	\$	\$ 54,580
3.2	Install New Interior Joint Seal	LS	1	\$	\$ 7,500
4.0	CONCRETE REPAIR				
4.1	Concrete Crack Repair Routing and Sealing	LF	30	\$ 48.15	\$ 1,444.50
4.2	Concrete Crack Injection	LF	30	\$ 80.25	\$ 2,407.50
4.3	Spalled Concrete Repair to Concrete Floors	SF	40	\$ 187.25	\$ 7,490.-
4.4	Spalled Concrete Repair to Existing Concrete Vertical Surfaces	SF	100	\$ 374.-	\$ 37,450.-
4.5	Spalled Concrete Repair to Overhead Surfaces	SF	100	\$ 749.-	\$ 74,900.-
BASE BID #1 TOTAL				\$	\$ 1,029,636.-
Alternate #1 – Remove Filter 18 Gravity Filter Improvements and Filter 18 Filter Effluent Piping Improvements (Deduct)				\$	\$ (180,540.-)
Alternate #2 – Remove Filter #18 and Filter #20 Air Scour Piping (Deduct)				\$	\$ (39,140.-)

The bid items identified above include the major items of work anticipated for the project.

Detailed requirements for each element of the project are presented on the contract drawings.

Total Bid (Items 1 through 4) \$ 1,029,636.-

Total Bid (Written) One million twenty nine thousand six hundred thirty six.

Proposed Work Start Date Per the Contract

Total bid amount shall be shown in both words and numbers. In case of discrepancies, the amount shown in words shall govern.

Signature of Bidder Bruce Hemingway Date August 30, 2024
Bruce Hemingway - V.P. Midwest

Notice to Bidders

1. Bids must be for all work elements and must have each blank space of the bid form completed.
2. The City reserves the right to waive any informality in any Bid, to reject any Bid, to reject all bids and to delete any part of the above items.
3. The bidder acknowledges that quantities provided are estimates and are not guaranteed and are solely for the propose of bid comparison. Final payment for all unit price items will be based on the actual quantities. No minimum or maximum quantities are guaranteed by the City.
4. The Contractor is responsible for verification of all Bid quantities and to report to the City's Representative any discrepancies found prior to ordering materials or equipment for construction.
5. The bidder hereby certifies it has carefully examined the contract documents provided by the City for bidding purposed and finds them compatible with the work requirements.
6. The bidder declares it has familiarized itself with the location of the proposed work and site conditions.
7. The foregoing unit prices shall include all applicable Federal, State and Local Taxes.

Bidder must sign below that they have read and understood all addendums related to this project. Failure to acknowledge any addendum issued may disqualify the Bidder.

Addendum No.	Addendum Date	Signature of Bidder
One	8/23/2024	<i>Bruce Hemingway</i>

CITY OF ANN ARBOR
AMERICAN RESCUE PLAN ACT (ARPA) CONTRACT ADDENDUM

Notice: The contract or purchase order to which this addendum is attached is made using federal assistance provided to the City of Ann Arbor by the U.S. Department of Treasury under the American Rescue Plan Act (“ARPA” and “ARPA Funds”), Sections 602(b) and 603(b) of the Social Security Act, Pub. L. No. 117-2 (March 11, 2021). In using such funds, the City must comply with the terms of ARPA, regulations issued by the U.S. Department of the Treasury (“Treasury”) governing the expenditure of monies distributed from the ARPA Funds (including, without limitation, the Interim Final Rule (86 Fed. Reg. 26,786 (May 17, 2021) and Final Rule (87 Fed. Reg. 4,338 (Jan. 27, 2022))), the Award Terms and Conditions applicable to the ARPA Funds, and such other guidance as Treasury has issued or may issue governing the expenditure of monies distributed from the ARPA Funds (collectively, the “Regulatory Requirements”). Additionally, pursuant to the Regulatory Requirements, the City must comply with the Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards, 2 C.F.R. Part 200 other than such provisions as Treasury has determined or may determine are inapplicable to the ARPA Funds and pursuant to 2 C.F.R. §200.327 the City must include within any contract applicable provisions described in Appendix II to 2 C.F.R. Part 200, each of which is contained in this Addendum.

The following terms and conditions apply to you, the contractor or vendor, as a contractor of the City of Ann Arbor, according to the City’s Award Terms and Conditions; by ARPA and its implementing regulations; and as established by the Treasury Department.

1. **ARPA Requirements.** Contractor agrees to comply with the requirements of Section 603 of ARPA, the Treasury’s regulations implementing that section, and guidance issued by Treasury regarding the foregoing. Contractor also agrees to comply with all other applicable federal laws, regulations, and executive orders, and Contractor shall provide for such compliance by other parties in any agreements it enters into with other parties relating to this Contract.
2. **Termination for Cause and for Convenience.** The City reserves the right to immediately terminate this Contract in the event of a breach or default of the Contract by Contractor in the event Contractor fails to: 1) meet schedules, deadlines, and/or delivery dates within the time specified in the Contract; 2) make any payments owed; or 3) otherwise perform in accordance with the Contract. The City also reserves the right to terminate this Contract immediately, with written notice to Contractor, for convenience, if the City believes, in its sole discretion that it is in the best interest of the City to do so. Contractor will be compensated for work performed and accepted and goods accepted by the City as of the termination date if the Contract is terminated for convenience of the City.
3. **Equal Employment Opportunity**
 - A. Contractor shall comply with Executive Order 11246, “Equal Employment Opportunity,” as amended by EO 11375, “Amending Executive Order 11246 Relating to Equal Employment Opportunity,” and as supplemented by regulations at 41 CFR part 60, “Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor.”

- B. If this contract is a Federally Assisted Construction Contract exceeding \$10,000, during the performance of this Contract, Contractor agrees as follows:
- i. Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. Contractor will take affirmative action to ensure that applicants are employed and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
 - ii. Contractor will, in all solicitations or advertisements for employees placed by or on behalf of Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.
 - iii. Contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with Contractor's legal duty to furnish information.
 - iv. Contractor will send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of Contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
 - v. Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
 - vi. Contractor will furnish to the Administering Agency and the Secretary of Labor all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to its books, records, and accounts by the Administering Agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
 - vii. In the event of Contractor's noncompliance with the nondiscrimination clauses of this Contract or with any of the said rules, regulations, or orders, this Contract may be canceled, terminated, or suspended, in whole or in part, and Contractor may be

declared ineligible for further Government contracts or Federally Assisted Construction Contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965. Such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

- viii. Contractor will include the provisions of paragraphs B(i) through (vii) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each Subcontractor or vendor. Contractor will take such action with respect to any Subcontract or purchase order as the Administering Agency may direct as a means of enforcing such provisions, including sanctions for noncompliance.

Provided, however, that in the event Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the Administering Agency, Contractor may request the United States to enter into such litigation to protect the interests of the United States.

The City further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally assisted construction work. Provided, that if the City so participating is a State or local government, the above equal opportunity clause is not applicable to any agency, instrumentality, or subdivision of such government which does not participate in work on or under the Contract.

- ix. The City agrees that it will assist and cooperate actively with the Administering Agency and the Secretary of Labor in obtaining the compliance of Contractor and any Subcontractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor; that it will furnish the Administering Agency and the Secretary of Labor such information as they may require for the supervision of such compliance; and that it will otherwise assist the Administering Agency in the discharge of the agency's primary responsibility for securing compliance.
- x. The City further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a contractor debarred from, or who has not demonstrated eligibility for, Government contracts and Federally Assisted Construction Contracts pursuant to the Executive Order and that it will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon Contractor and any Subcontractors by the Administering Agency or the Secretary of Labor pursuant to Part II, Subpart D of the Executive Order. In addition, the City agrees that if it fails or refuses to comply with these undertakings, the Administering Agency may take any or all of the following actions: cancel, terminate, or suspend, in whole or in part, this grant (contract, loan, insurance, guarantee); refrain from extending any further assistance to the applicant under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from such applicant; and refer the case to the Department of Justice for appropriate legal proceedings.

C. If this Contract is not a Federally Assisted Construction Contract exceeding \$10,000, the provisions of this section shall not apply.

4. **Copeland “Anti-Kickback” Act.** Contractor and any subcontractors performing work under the Contract shall comply with all applicable provisions of the Copeland “Anti-Kickback” Act (18 U.S.C. § 874; 40 U.S.C. §3145) as supplemented by Department of Labor regulations (29 C.F.R. Part 3, “Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States”). The City shall report all suspected or reported violations to Treasury.
5. **Contract Work Hours and Safety Standards Act.** If this Contract is for an amount in excess of \$100,000 and involves the employment of mechanics or laborers, Contractor must comply with 40 U.S.C. §§3702 and 3704, as supplemented by Department of Labor regulations (29 C.F.R. Part 5). Under 40 U.S.C. §3702 of the Act, Contractor must compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week. The requirements of 40 U.S.C. §3704 are applicable to construction work and provide that no laborer or mechanic must be required work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.
6. **Rights to Inventions Made Under a Contract or Agreement.** Contracts or agreements for the performance of experimental, developmental, or research work shall provide for the rights of the Federal Government and the recipient in any resulting invention in accordance with 37 C.F.R. part 401, “Rights to Inventions Made by Non-profit Organizations and Small Business Firms Under Government Grants, Contracts, and Cooperative Agreements,” and any applicable implementing regulations.
7. **Clean Air Act and Federal Water Pollution Control Act**
 - A. *Clean Air Act.* Contractor agrees to comply with all applicable standards, orders, and regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. §§7401 *et seq.* Contractor agrees to report each violation to the City and understands and agrees that the City will, in turn, report each violation as required to Treasury and the appropriate Environmental Protection Agency Regional Office. Contractor agrees to include these requirements in each subcontract exceeding \$150,000 financed, in whole or in part, with federal assistance provided by Treasury.
 - B. *Federal Water Pollution Control Act.* Contractor agrees to comply with all applicable standards, orders, and regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. §§1251 *et seq.* Contractor agrees to report each violation to the City and understands and agrees that the City will, in turn, report each violation as required to assure notification to Treasury and the appropriate Environmental Protection Agency Regional Office. Contractor agrees to include these requirements in each Subcontract exceeding \$150,000 financed, in whole or in part, with federal assistance provided by Treasury.

8. Debarment and Suspension

- A. This Contract is a covered transaction for purposes of 2 CFR §180.210 and 31 CFR §19.210. Therefore, this Contract is a lower-tier covered transaction for purposes of 2 C.F.R. Part 180 and 31 C.F.R. Part 19 if (1) the amount of this Contract is greater than or equal to \$25,000 (2 C.F.R. §180.220(b)(1); 31 C.F.R. §19.220(b)(1)); (2) the Contract requires the consent of an official of the Department of the Treasury (2 C.F.R. §180.220(b)(2); 31 C.F.R. §19.220(b)(2)); or (3) this Contract is for federally required audit services (2 C.F.R. §180.220(b)(3); 31 C.F.R. §19.220(b)(3)).
- B. As a covered transaction, Contractor is required to verify that its principals (defined at 2 CFR §180.995) or its affiliates (defined at 2 CFR §180.905) of both Contractor and its principals are not excluded (defined at 2 CFR §180.935) and are not disqualified (defined at 2 CFR §180.935). Contractor represents and warrants that, as of the execution of this Contract, neither Contractor and its principals nor any subcontractor or sub-consultant performing work under this Contract (at any tier) is included on the federally debarred bidder's list listed on the government-wide exclusions in the System for Award Management (SAM), in accordance with the OMB guidelines at 2 C.F.R. §180 that implement Executive Orders 12549 (3 C.F.R. part 1986 Comp., p. 189) and 12689 (3 C.F.R. part 1986 Comp., p. 235), "Debarment and Suspension." Additionally, Contractor's completed Certification Regarding Debarment, Suspension and Other Responsibility Matters is attached hereto (Attachment 2) and incorporated herein. This certification is a material representation of fact relied upon by the City and all liability arising from an erroneous representation shall be borne solely by Contractor.
- C. If at any point during the Contract term, Contractor or its principals or any subcontractor or sub-consultant performing work at any tier is included on the federally debarred bidder's list, Contractor shall notify the City immediately.
- D. If any of the foregoing persons are excluded or disqualified and the Secretary of the Treasury has not granted an exception pursuant to 31 C.F.R. §19.120(a) (a) this Contract shall be void; (b) City shall not make any payments of federal financial assistance to Contractor; and (c) City shall have no obligations to Contractor under this Contract.
- E. Contractor must comply with 2 CFR pt. 180, subpart C and 31 CFR pt. 19, and must include a requirement to comply with these regulations in any lower tier covered transaction it enters into.
- F. If it is later determined that Contractor did not comply with 2 CFR pt. 180, subpart C and 31 CFR pt. 19, in addition to remedies available to the City, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment.

- 9. **Byrd Anti-Lobbying Amendment.** Contractor certifies that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, officer or employee of Congress, or an employee of a Member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 U.S.C. §1352. Contractor shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining

any Federal award. Such disclosures are forwarded from tier to tier up to the recipient who in turn will forward the certification(s) to the awarding agency.

Purchases over \$100,000 - Contractors must sign the certification included as Attachment 1 and shall cause any subcontractors with a subcontract (at any tier) exceeding \$100,000 to file with the tier above it the same certification

10. Procurement of Recovered Materials

- A. This section shall apply if (1) this Contract involves the purchase of an item designated by the Environmental Protection Agency (“EPA”) in 40 C.F.R. Part 247 that exceeds \$10,000 or (2) the total value of such designated items acquired during The City’s preceding fiscal year exceeded \$10,000.
- B. In the performance of the Contract, Contractor shall make maximum use of products containing recovered materials that are EPA-designated items, unless the product cannot (1) be acquired competitively within a timeframe providing for compliance with the Contract performance schedule, (2) meet Contract performance requirements, or (3) be acquired at a reasonable price.
- C. Information about this requirement, along with the list of EPA-designated items, is available on EPA’s website. Contractor also agrees to comply with all other applicable requirements of Section 6002 of the Solid Waste Disposal Act.

11. Prohibition on Contracting for Covered Telecommunications and Video Surveillance

Services or Equipment. Contractor shall not use funds under this Contract to purchase, or enter into subcontracts to purchase, any equipment, services, or systems that use telecommunications equipment or services as a substantial or essential component of a system that is subject to 2 CFR § 200.216 (generally, video surveillance or telecommunications equipment produced by Huawei Technologies Company, ZTE Corporation, Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company, their subsidiaries or affiliates, or any entity that the Secretary of Defense reasonably believes to be an entity owned or controlled by the government of a foreign country). In the event Contractor identifies covered telecommunications equipment or services that constitute a substantial or essential component of any system, or as critical technology as part of any system that is subject to 2 CFR § 200.216, during Contract performance, Contractor shall alert the City as soon as possible and shall provide information on any measures taken to prevent recurrence.

12. Buy USA - Domestic Preferences for Certain Procurements Using Federal Funds.

Contractor should, to the greatest extent practicable under a Federal award, provide a preference for the purchase, acquisition, or use of goods, products, or materials produced in the United States (including but not limited to iron, aluminum, steel, cement, and other manufactured products). The requirements of this section must be included in all subawards including all contracts and purchase orders for work or products under this award. For purposes of this section “Produced in the United States” means, for iron and steel products, that all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States and “Manufactured products” means items and construction materials composed in whole or in part of non-ferrous metals such as aluminum;

plastics and polymer based products such as polyvinyl chloride pipe; aggregates such as concrete; glass, including optical fiber; and lumber.

13. Solicitation of Minority and Women-Owned Business Enterprises. Contractor hereby agrees to comply with the following when applicable: The requirements of Executive Orders 11625 and 12432 (concerning Minority Business Enterprise), and 12138 (concerning Women's Business Enterprise), when applicable. Accordingly, the contractor hereby agrees to take affirmative steps to assure that women and minority businesses are utilized when possible as sources of supplies, equipment, construction and services. Affirmative steps shall include the following:

- A. Including qualified women's business enterprises and small and minority businesses on solicitation lists;
- B. Assuring that women's enterprises and small and minority businesses are solicited whenever they are potential sources;
- C. When economically feasible, dividing total requirements into smaller tasks or quantities so as to permit maximum participation by small and minority business, and women's business enterprises;
- D. Where the requirement permits, establishing delivery schedules which will encourage participation by women's business enterprises and small and minority business; and
- E. Using the services and assistance of the Small Business Administration, and the U.S. Office of Minority Business Development Agency of the Department of Commerce; and the North Carolina Office for Historically Underutilized Businesses.

For the purposes of these requirements, a Minority Business Enterprise (MBE) is defined as an enterprise that is at least 51 percent owned and controlled in its daily operation by members of the following groups: Black, Hispanic, Asian or Pacific Islander, American Indian, or Alaskan Natives. A Women Business Enterprise (WBE) is defined as an enterprise that is at least 51 percent owned and controlled in its daily operation by women.

14. Access to Records; Record Retention

- A. Contractor agrees to provide the City, the Department of the Treasury, the Treasury Office of Inspector General, the Government Accountability Office, and the Comptroller General of the United States, or any authorized representatives of these entities, access to any records (electronic and otherwise) of Contractor which are directly pertinent to this Contract to conduct audits or any other investigations. Contractor agrees to permit any of the foregoing parties to reproduce such records by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.
- B. Contractor agrees to provide the Treasury Department or authorized representatives access to construction or other work sites pertaining to the work being completed under the Contract.

- C. No language in this Contract is intended to prohibit audits or internal reviews by the Treasury Department or the Comptroller General of the United States.
- D. Contractor agrees to retain all records covered by this section through December 31, 2031, or such longer period as is necessary for the resolution of any litigation, claim, negotiation, audit, or other inquiry involving the Contract.

15. Assurances of Compliance with Title VI of the Civil Rights Act of 1964. Contractor and any subcontractor, or the successor, transferee, or assignee of Contractor or any subcontractor, shall comply with Title VI of the Civil Rights Act of 1964, which prohibits recipients of federal financial assistance from excluding from a program or activity, denying benefits of, or otherwise discriminating against a person on the basis of race, color, or national origin (42 U.S.C. §§2000d *et seq.*), as implemented by the Department of the Treasury's Title VI regulations, 31 C.F.R. Part 22, which are herein incorporated by reference and made a part of this Contract. Title VI also provides protection to persons with "Limited English Proficiency" in any program or activity receiving federal financial assistance, 42 U.S.C. §§2000d *et seq.*, as implemented by Treasury's Title VI regulations, 31 C.F.R. Part 22, and herein incorporated by reference and made a part of this Contract.

16. Other Non-Discrimination Statutes. Contractor acknowledges that the City is bound by and agrees, to the extent applicable to Contractor, to abide by the provisions contained in the federal statutes enumerated below and any other federal statutes and regulations that may be applicable to the expenditure of ARPA Funds:

- A. The Fair Housing Act, Title VIII of the Civil Rights Act of 1968 (42 U.S.C. §§3601 *et seq.*), which prohibits discrimination in housing on the basis of race, color, religion, national origin, sex, familial status, or disability;
- B. Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. §794), which prohibits discrimination on the basis of disability under any program or activity receiving federal financial assistance;
- C. The Age Discrimination Act of 1975, as amended (42 U.S.C. §§6101 *et seq.*), and Treasury's implementing regulations at 31 C.F.R. Part 23, which prohibit discrimination on the basis of age in programs or activities receiving federal financial assistance; and
- D. Title II of the Americans with Disabilities Act of 1990, as amended (42 U.S.C. §§12101 *et seq.*), which prohibits discrimination on the basis of disability in programs, activities, and services provided or made available by state and local governments or instrumentalities or agencies thereto.

17. Other Applicable Statutes and Regulations

- A. Prohibition on Providing Funds to the Enemy (2 CFR 183)
- i. The Contractor must exercise due diligence to ensure that none of the funds, including supplies and services, received under this Contract are provided directly or indirectly (including through subcontracts) to a person or entity who is actively opposing the United States or coalition forces involved in a contingency operation in which members of the Armed Forces are actively engaged in hostilities. The Contractor must terminate or void in whole or part any subcontract with a person or entity listed in the System Award Management Exclusions (SAM) as a prohibited or restricted sources pursuant to subtitle E of Title VIII of the NDAA for FY 2015, unless the Federal awarding agency provides written approval to continue the subcontract.
 - ii. The Federal awarding agency has the authority to terminate or void this Contract, in whole or in part, if the Federal awarding agency becomes aware that the Contractor failed to exercise due diligence as required by paragraph (i) of this clause or if the Federal awarding agency becomes aware that any funds received under this Contract have been provided directly or indirectly to a person or entity who is actively opposing coalition forces involved in a contingency operation in which members of the Armed Forces are actively engaged in hostilities.
 - iii. In addition to any other existing examination-of-records authority, the Federal Government is authorized to examine any records of the Contractor and its Subcontracts to the extent necessary to ensure that funds, including supplies and services, available under this Contract are not provided, directly or indirectly, to a person or entity that is actively engaged in hostilities.
 - iv. The Contract must include the substance of this clause, including paragraph, in subcontracting agreements that have an estimated value over \$50,000 and will be performed outside the United States, including its outlying areas.
- B. Contractor agrees to comply with the Regulatory Requirements applicable to this Contract, which include, without limitation, the following:
- i. 2 C.F.R. Part 200 Appendix II requirements;
 - ii. Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards, 2 C.F.R. Part 200, as applicable;
 - iii. Universal Identifier and System for Award Management (SAM), 2 C.F.R. Part 25, pursuant to which the award term set forth in Appendix A to 2 C.F.R. Part 25;
 - iv. OMB (Office of Management and Budget) Guidelines to Agencies on Government-wide Debarment and Suspension (Non-procurement), 2 C.F.R. Part 180, including the requirement to include a term or condition in all lower tier covered transactions (contracts and subcontracts described in 2 C.F.R. Part 180, subpart B) that the award is subject to 2 C.F.R. Part 180 and Treasury's implementing regulation at 31 C.F.R. Part 19;

- v. Recipient Integrity and Performance Matters, pursuant to which the award term set forth in 2 C.F.R. Part 200, Appendix XII to Part;
- vi. Government-wide Requirements for Drug-Free Workplace, 31 C.F.R. Part 20; and
- vii. Hatch Act (5 U.S.C. §§ 1501-1508 and 7324-7328), which limits certain political activities of federal employees, as well as certain other employees who work in connection with federally funded programs.

18. Conflicts of Interest; Gifts and Favors

- A. Contractor understands that (1) the City will use ARPA Funds to pay for the cost of this Contract and (2) the expenditure of ARPA Funds is governed by the City's Conflict of Interest Policy and the Regulatory Requirements (including, without limitation, 2 C.F.R. §200.318(c)(1)).
- B. Contractor certifies to the City that as of the date hereof, to the best of its knowledge after reasonable inquiry, no employee, officer, or agent of the City involved in the selection, award, or administration of this Contract (each a "Covered Individual"); no member of a Covered Individual's immediate family; no partner of a Covered Individual; and no organization (including Contractor) which employs or is about to employ a Covered Individual has a financial or other interest in, or has received a tangible personal benefit from, Contractor. Should Contractor obtain knowledge of any such interest or any tangible personal benefit described in the preceding sentence after the date hereof, Contractor shall promptly disclose the same to the City in writing.
- C. Contractor certifies to the City that it has not provided, nor offered to provide, any gratuities, favors, or anything of value to an officer, employee, or agent of the City. Should Contractor obtain knowledge of the provision, or offer of any provision, of any gratuity, favor, or anything of value to an officer, employee, or agent described in the preceding sentence after the date hereof, Contractor shall promptly disclose the same to the City in writing.

19. Publications. Any publications produced with funds from this award must display the following language: "This project [is being] [was] supported, in whole or in part, by federal award number [enter project FAIN] awarded to [name of recipient] by the U.S. Department of Treasury."

20. Miscellaneous

- A. *Increasing Seat Belt Use in the United States.* Pursuant to Executive Order 13043, 62 Fed. Reg. 19,216 (Apr. 18, 1997), the City encourages Contractor to adopt and enforce on-the-job seat belt policies and programs for its employees when operating company-owned, rented, or personally owned vehicles.

B. *Reducing Text Messaging While Driving.* Pursuant to Executive Order 13513, 74 Fed. Reg. 51,225 (Oct. 6, 2009), the City encourages Contractor to adopt and enforce policies that ban text messaging while driving.

21. Conflicts and Interpretation. To the extent that any portion of this Addendum conflicts with any term or condition of this Contract expressed outside of this Addendum, the terms of this Addendum shall govern.

FOR SORENSEN GROSS COMPANY LLC

FOR THE CITY OF ANN ARBOR

By: _____
Bruce Hemingway, V.P. Midwest

By: _____
Milton Dohoney Jr., City Administrator

Date: _____

Date: _____

- (This form is required only for purchases of more than \$100,000) -

**ATTACHMENT 1
CITY OF ANN ARBOR AMERICAN RESCUE PLAN ACT (ARPA) CONTRACT ADDENDUM**

**31 C.F.R. PART 21 – New Restrictions On Lobbying
CERTIFICATION REGARDING LOBBYING**

The undersigned certifies, to the best of the undersigned's 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 an 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, the making of any Federal loan, the entering into of any cooperative agreement, or the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
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, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," 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 subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) 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 of the 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.

The Contractor, _____, certifies and affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. Chapter 38, Administrative Remedies for False Claims and Statements, apply to this certification and disclosure, if any.

By: _____
Bruce Hemingway, V.P. Midwest

Date: _____

**ATTACHMENT 2
CITY OF ANN ARBOR AMERICAN RESCUE PLAN ACT (ARPA) CONTRACT ADDENDUM
CERTIFICATION REGARDING DEBARMENT,
SUSPENSION AND OTHER RESPONSIBILITY MATTERS**

The undersigned bidder, proposer, contractor, or subcontractor, as appropriate, certifies to the best of its knowledge and belief that neither it nor any of its officers, directors, or managers who will be working under the Contract, or persons or entities holding a greater than 10% equity interest in it (collectively "Principals"):

1. Are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any federal or state department or agency in the United States;
2. Have within a three-year period preceding this proposal, bid, or agreement been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (federal, state or local) transaction or contract under a public transaction; violation of federal or state anti-trust or procurement statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
3. Are presently indicted for or otherwise criminally or civilly charged by a government entity, (federal, state or local) with commission of any of the offenses enumerated in paragraph 2 of this certification; and
4. Have within a three-year period preceding this application/proposal had one or more public transactions (federal, state or local) terminated for cause or default.

The undersigned bidder, proposer, contractor, or subcontractor, as appropriate, certifies that they are "Actively" registered with SAM (System for Award Management) and have been assigned the following Unique Entity Identifier (UEI): _____. The undersigned further certifies that it shall not knowingly enter any transaction with any subcontractor, material supplier, or vendor who is debarred, suspended, declared ineligible, or voluntarily excluded from covered transactions by any federal or state department/agency.

I understand that a false statement on this certification may be grounds for rejection of this proposal or bid, or termination of the award or, in some instances, criminal prosecution.
The Contractor, _____, certifies as stated above:

By: _____ Date: _____
Bruce Hemingway, V.P. Midwest

I am unable to certify to one or more the above statements. Attached is my explanation.

By: _____ Date: _____
Bruce Hemingway, V.P. Midwest

ATTACHMENT 3

CITY OF ANN ARBOR AMERICAN RESCUE PLAN ACT (ARPA) CONTRACT ADDENDUM

System for Award Management (SAM) record search for business name and business principal
– (*Screenshot of Results*)

ATTACHMENT 4
CITY OF ANN ARBOR C2R2 PROJECT C2A-018
FEDERALLY FUNDED PROGRAM-SPECIFIC BOILERPLATE

Funds were added under sections 602 and 603 of section 9901 of the Social Security Act of section 9901 of Public Law No. 117-2, known as American Rescue Plan Act of 2021 (“ARPA”), signed into law on March 11, 2021 <https://home.treasury.gov/policy-issues/coronavirus/assistance-for-state-local-and-tribal-governments/state-and-local-fiscal-recovery-funds> as the Coronavirus State and Local Fiscal Recovery Funds (“FRF”). The State of Michigan was awarded \$6.54 billion dollars under the Fiscal Recovery Fund, on May 13, 2021.

OMB Uniform Guidance for Non-federal Agencies Receiving These Funds The U.S. Department of Treasury has indicated in the Coronavirus State and Local Fiscal Recovery Fund Frequently Asked Questions that are accessible at U.S. Department of Treasury State and Local Fiscal Recovery Funds, located at <https://home.treasury.gov/system/files/136/SLFRF-Final-Rule-FAQ.pdf>, that the SLFRF awards are generally subject to the requirements set forth in the Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards, 2 CFR Part 200 (the “Uniform Guidance”). All reimbursements requested under this program should be accounted for with supporting documentation. Eligible applicants should maintain documentation evidencing that the funds were expended in accordance with federal, state, and local regulations. In accordance with federal Uniform Guidance, funds received under this program shall be included on the eligible applicant’s Schedule of Expenditures of Federal Awards (SEFA) and included within the scope of the eligible applicant’s Single Audit.

Programs are required to follow the Uniform Guidance provisions that are included in the document. Applicants must review the eCFR Uniform Guidance at <https://www.ecfr.gov/current/title-2/subtitle-A/chapter-II/part-200?toc=1> for complete requirements.

The SLFRF awards are generally subject to the requirements set forth in the Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards, 2 CFR Part 200 (the “Uniform Guidance”). In all instances, your organization should review the Uniform Guidance requirements applicable to your organization’s use of SLFRF funds, and SLFRF-funded projects. The following sections provide a general summary of your organization’s compliance responsibilities under applicable statutes and regulations, including the Uniform Guidance, as described in the 2022 OMB Compliance Supplement Part 3. Compliance Requirements (issued May 12, 2022).

The Award Terms and Conditions of the SLFRF financial assistance agreement sets forth the compliance obligations for recipients pursuant to the SLFRF statute, the Uniform Guidance, and Treasury’s Final Rule. Recipients should ensure they remain in compliance with all Award Terms and Conditions.

ADDENDUM No. 1

ITB No. 4752

2024 Water Treatment Plant Filter 18/20 Underdrain Improvements

Due: August 30, 2024 by 3:00 p.m. (local time)

The information contained herein shall take precedence over the original documents and all previous addenda (if any) and is appended thereto. **This Addendum includes four (4) pages.**

The Bidder is to acknowledge receipt of this Addendum No. 1, including all attachments in its Bid by so indicating in the bid that the addendum has been received. Bids submitted without acknowledgement of receipt of this addendum may be considered non-conforming.

The following forms provided within the ITB Document should be included in submitted Bid:

- **City of Ann Arbor Prevailing Wage Declaration Form**
- **City of Ann Arbor Living Wage Forms**
- **City of Ann Arbor Vendor Conflict of Interest Disclosure Form**
- **City of Ann Arbor Non-Discrimination Declaration of Compliance Form and Notice**
- **Simplified Certified Payroll Form**
- **Davis-Bacon Related Federal Prevailing Wages**
- **Federal Debarment Certification Form**

Bids that fail to provide these completed forms listed above upon bid opening may be rejected as non-responsive and may not be considered for award.

I. CORRECTIONS/ADDITIONS/DELETIONS

Changes to the ITB documents which are outlined below are referenced to a page or Section in which they appear conspicuously. Offerors are to take note in its review of the documents and include these changes as they may affect work or details in other areas not specifically referenced here.

Section/Page(s)	Change
Detailed Specifications: Section 46 61 01 – Gravity Filtration Equipment (not reissued)	<p>Replace Paragraph 1.3 H. with: “Fabrication: All joints that will be fully or partially submerged shall be factory welded.”</p> <p>Replace Paragraph 2.3 A.12.a with: “Engineered slots having a maximum gap of 0.25 millimeters (+/- 0.05 mm).”</p> <p>Replace Paragraph 3.1 C.3 with: “The floor slabs shall be ground to a flat plain and be free from protrusions and depressions.”</p>
Detailed Specifications: Section 40 05 13 – Process Piping Systems	<p>Replace Paragraph 1.5 E. with: “E. Certifications:</p> <ol style="list-style-type: none"> 1. Submit Manufacturer’s certification that products and materials conform to these Specifications. 2. Submit Manufacturer’s certification that personnel installing Interior Joint Sealer is properly trained.” <p>Add Paragraph 3.1 E. “E. Interior Joint Seal:</p> <ol style="list-style-type: none"> 1. Joint seal shall be installed either directly by the Manufacturer or installed by personnel properly trained and certified by the Manufacturer.”

II. QUESTIONS AND ANSWERS

The following Questions have been received by the City. Responses are being provided in accordance with the terms of the ITB. Respondents are directed to take note in its review of the documents of the following questions and City responses as they affect work or details in other areas not specifically referenced here.

Question 1: In reference to the concrete repair items noted on Sheet D402: Please confirm if all concrete repair items noted by Key Notes 6, 7 and 8, are included in quantities noted in Bid Items 4.1 Through 4.5.

Answer 1: The concrete repair items noted on Sheet D402, Key Notes 6, 7, and 8 do not encompass all required concrete repairs, rather these are provided as representation of the types of concrete repair required. The quantities provided in Bid Items 4.1 through 4.5 encompass all required concrete repairs, including those noted on Sheet D402, Key Notes 6, 7, and 8. Bids are to be based on the quantities provided in Bid Items 4.1 through 4.5.

Question 2: In reference to Sheet P201, Key Notes 2 & 3, and Sheet P301, Key Note 2 “REINSTALL FW/BWS PIPE, STEEL WALL PLATE, AND FLANGED COUPLING ADAPTER. TYPICAL OF FILTER 18 AND FILTER 20.”: Are new gaskets and new flange make-up hardware required at these reinstallation locations, or can these existing items be re-used?

Answer 2: New gaskets and new flange make-up hardware are required at these locations.

Question 3: **In reference to the internal seal required in 2- 20" lines per spec 40 05 13 2.4: Please confirm that the GCs do not have to be certified installers by the seal manufacturer. Please confirm the manufacturer's representative does not need to be on-site overseeing the GC's seal installation. Please confirm that the seal manufacturer's do not need to install the seals themselves for the GC.**

Answer 3: Installation shall be per manufacturer's requirements, including oversight or certification required by the manufacturer. See Specification Section 40 05 13 Paragraph 3.1 E.

Question 4: **In reference to Specification Section 03 01 33 Rehabilitation of Cast-in-Place Concrete: Are mock-ups of concrete repair required for each repair instance?**

Answer 4: The Contractor shall mockup each type of concrete repair, rather than each instance of concrete repair, and obtain Engineer's and Owner's approval prior to continuing.

Question 5: **Is negative air pressure required for temporary enclosures?**

Answer 5: Refer to Specification 02 41 19 – Selective Demolition, Part 3.3.B for temporary enclosure requirements.

Question 6: **How should Allowances be handled in Alternate #1 and Alternate #2 pricing?**

Answer 6: Allowance values listed on the bid form to remain unchanged in Alternate #1 and Alternate #2 pricing.

Question 7: **Will disposal of support gravel require special testing, or other considerations?**

Answer 7: The support gravel is not anticipated to be contaminated or contain hazardous materials. Dispose of support gravel in accordance with regulations of authorities having jurisdiction.

Question 8: **Where are surface wash arms to be stored during Work?**

Answer 8: The Contractor shall coordinate with the Owner to locate indoor storage for surface wash arms within the WTP.

Question 9: **Will Contractor be responsible for removing existing instrumentation and controls?**

Answer 9: Owner will have all existing Filter 18 and Filter 20 instrumentation power and control terminals disconnected prior to Work. Owner will reconnect existing instrumentation power and control terminals prior to start-up. If needed to complete the Work, Contractor will be responsible for all temporary protection or removal of equipment and instrumentation, and storage and reinstallation prior to start-up.

Question 10: **What does demolition of the concrete pedestals below the existing Wheeler underdrains entail?**

Answer 10: The existing Wheeler underdrain blocks are supported by 7" D x 4 ½" H cast-in-place concrete pedestals. It is expected that reinforcing for the concrete pedestals is tied into the filter floor. Demolition of the concrete pedestals will include removal of this reinforcing flush with the filter floor.

Question 11: **Will filter media be removed by the Owner or by the Contractor.**

Answer 11: Sand and GAC will be removed from Filter 18 and Filter 20 by the Owner prior to Contractor mobilization.



Meeting Sign-In Sheet

MEETING: Pre-Proposal Meeting
DATE: June 18, 2024
LOCATION: 919 Sunset Road, Ann Arbor, MI

PROJECT NAME: WTP Filter 18/20 Underdrain Improvements
C2R2 PN: C2A-018
FISHBECK PN: 231370

NAME	REPRESENTING	EMAIL
Ryan Miller	Kokosing Industrial	rpm2@kokosing.biz
BEN VITTORE	Monroe Plumbing & Heating Co.	benv@monroeplumbing.com
Dow SUTTON	WEISS CONSTRUCTION	dsutton@WeissCONSTRUCTION.com
Joe Siwek	Fishbeck	j.siwek@fishbeck.com
Glen Wiczorek	AA WTP	gwiczorek@a2gov.org
ALLIE FLEET	COMMERCIAL CONTRACTING CORPORATION (AWI Rep)	ALLIE.FLEET@CCCNETWORK.COM
Michael Wright	Peterson and Matz Inc.	micheel.wright@petersonandmatz.com
Matt Shaeffer	Midwest Power Systems	midwestpower@midwestpower.com
MARK MALONEY	SORENSEN GROSS	mmaloney@sgcompany.com
Ariana Wade	Fishbeck	awade@fishbeck.com
BRIAN PHILLIPS	FISHBECK	bdphillips@fishbeck.com

Meeting Sign-In Sheet

MEETING: Pre-Bid Meeting PROJECT NAME: WTP Filter 18/20
 DATE: August 6, 2024 C2R2 PN: C2A-018
 LOCATION: 919 Sunset Road, Ann Arbor, MI FISHBECK PN: 231370

NAME	REPRESENTING	EMAIL
Joe Siwek	FISHBECK	jsiwek@fishbeck.com
Emily Schlanderer	City of AA	eschlanderer@azgov.org
Cameron Miscovich	CCC	Cameron.miscovich@cccnetwork.com
Safwan Kaleem	WEISS.	skaleem@weissconstruction.com
DON SUTTON	Weiss	dsutton@WeissCONSTRUCTION.com
Kyle Bentley	Peterson and Matz/AWI	Kyle.Bentley@PetersonandMATZ.com
BRIAN ANTON	DAVE SERVICES	banton@bwerset.com
Eric Chenoweth	Reliance Building Co	eric@reliancebc.com
GREG O'NEAL	F.H. PASCHEN	GONEAL@FHPASCHEN.COM
Kevin McConchie	Sherwin-Williams Paint Co	Kevin.D.McConchie@Sherwin.com
DAVE KRUSE	Blue Star Demo	dkruse@cometdemo.com
Scott Kafka	Hamlett Environmental	scottk@hamletteenvironmental.com

PERFORMANCE BOND

- (1) _____ (referred to as "Principal"),
and _____, a corporation duly authorized
to do business in the State of Michigan (referred to as "Surety"), are bound to the City of Ann Arbor,
Michigan (referred to as "City"), for \$ _____, the payment of which Principal and Surety bind
themselves, their heirs, executors, administrators, successors and assigns, jointly and severally,
by this bond.
- (2) The Principal has entered a written Contract with the City entitled _____
_____, for ITB No. _____ and this bond is given for that Contract in compliance with Act No. 213
of the Michigan Public Acts of 1963, as amended, being MCL 129.201 *et seq.*
- (3) Whenever the Principal is declared by the City to be in default under the Contract, the Surety may
promptly remedy the default or shall promptly:
- (a) complete the Contract in accordance with its terms and conditions; or
- (b) obtain a bid or bids for submission to the City for completing the Contract in accordance with
its terms and conditions, and upon determination by Surety of the lowest responsible bidder,
arrange for a Contract between such bidder and the City, and make available, as work progresses,
sufficient funds to pay the cost of completion less the balance of the Contract price; but not
exceeding, including other costs and damages for which Surety may be liable hereunder, the
amount set forth in paragraph 1.
- (4) Surety shall have no obligation to the City if the Principal fully and promptly performs under the
Contract.
- (5) Surety agrees that no change, extension of time, alteration or addition to the terms of the Contract
or to the work to be performed thereunder, or the specifications accompanying it shall in any way
affect its obligations on this bond, and waives notice of any such change, extension of time,
alteration or addition to the terms of the Contract or to the work, or to the specifications.
- (6) Principal, Surety, and the City agree that signatures on this bond may be delivered electronically
in lieu of an original signature and agree to treat electronic signatures as original signatures that
bind them to this bond. This bond may be executed and delivered by facsimile and upon such
delivery, the facsimile signature will be deemed to have the same effect as if the original signature
had been delivered to the other party.

SIGNED AND SEALED this _____ day of _____, 202_.

(Name of Surety Company)
By _____
(Signature)
Its _____
(Title of Office)

(Name of Principal)
By _____
(Signature)
Its _____
(Title of Office)

Approved as to form:

Name and address of agent:

Atleen Kaur, City Attorney

LABOR AND MATERIAL BOND

- (1) _____
of _____ (referred to as
"Principal"), and _____, a corporation duly authorized
to do business in the State of Michigan, (referred to as "Surety"), are bound to the City of Ann Arbor,
Michigan (referred to as "City"), for the use and benefit of claimants as defined in Act 213 of Michigan
Public Acts of 1963, as amended, being MCL 129.201 et seq., in the amount of
\$ _____, for the payment of which Principal and Surety bind themselves, their heirs,
executors, administrators, successors and assigns, jointly and severally, by this bond.
- (2) The Principal has entered a written Contract with the City entitled _____

_____, for ITB No. _____; and this bond is
given for that Contract in compliance with Act No. 213 of the Michigan Public Acts of 1963 as amended;
- (3) If the Principal fails to promptly and fully repay claimants for labor and material reasonably required
under the Contract, the Surety shall pay those claimants.
- (4) Surety's obligations shall not exceed the amount stated in paragraph 1, and Surety shall have no
obligation if the Principal promptly and fully pays the claimants.
- (5) Principal, Surety, and the City agree that signatures on this bond may be delivered electronically in lieu
of an original signature and agree to treat electronic signatures as original signatures that bind them to
this bond. This bond may be executed and delivered by facsimile and upon such delivery, the facsimile
signature will be deemed to have the same effect as if the original signature had been delivered to the
other party.

SIGNED AND SEALED this _____ day of _____, 202_

(Name of Surety Company)
By _____
(Signature)
Its _____
(Title of Office)

Approved as to form:

Atleen Kaur, City Attorney

(Name of Principal)
By _____
(Signature)
Its _____
(Title of Office)

Name and address of agent:

GENERAL CONDITIONS

Section 1 - Execution, Correlation and Intent of Documents

The contract documents shall be signed in 2 copies by the City and the Contractor.

The contract documents are complementary and what is called for by any one shall be binding. The intention of the documents is to include all labor and materials, equipment and transportation necessary for the proper execution of the work. Materials or work described in words which so applied have a well-known technical or trade meaning have the meaning of those recognized standards.

In case of a conflict among the contract documents listed below in any requirement(s), the requirement(s) of the document listed first shall prevail over any conflicting requirement(s) of a document listed later.

(1) Addenda in reverse chronological order; (2) Detailed Specifications; (3) Standard Specifications; (4) Plans; (5) General Conditions; (6) Contract; (7) Bid Forms; (8) Bond Forms; (9) Bid.

Section 2 - Order of Completion

The Contractor shall submit with each invoice, and at other times reasonably requested by the Supervising Professional, schedules showing the order in which the Contractor proposes to carry on the work. They shall include the dates at which the Contractor will start the several parts of the work, the estimated dates of completion of the several parts, and important milestones within the several parts.

Section 3 - Familiarity with Work

The Bidder or its representative shall make personal investigations of the site of the work and of existing structures and shall determine to its own satisfaction the conditions to be encountered, the nature of the ground, the difficulties involved, and all other factors affecting the work proposed under this Contract. The Bidder to whom this Contract is awarded will not be entitled to any additional compensation unless conditions are clearly different from those which could reasonably have been anticipated by a person making diligent and thorough investigation of the site.

The Bidder shall immediately notify the City upon discovery, and in every case prior to submitting its Bid, of every error or omission in the bidding documents that would be identified by a reasonably competent, diligent Bidder. In no case will a Bidder be allowed the benefit of extra compensation or time to complete the work under this Contract for extra expenses or time spent as a result of the error or omission.

Section 4 - Wage Requirements

Under this Contract, the Contractor shall conform to Chapter 14 of Title I of the Code of the City of Ann Arbor as amended; which in part states "...that all craftsmen, mechanics and laborers employed directly on the site in connection with said improvements, including said employees of

subcontractors, shall receive the prevailing wage for the corresponding classes of craftsmen, mechanics and laborers, as determined by statistics for the Ann Arbor area compiled by the United States Department of Labor. At the request of the City, any contractor or subcontractor shall provide satisfactory proof of compliance with the contract provisions required by the Section.

Pursuant to Resolution R-16-469 all public improvement contractors are subject to prevailing wage and will be required to provide to the City payroll records sufficient to demonstrate compliance with the prevailing wage requirements. A sample Prevailing Wage Form is provided in the Appendix herein for reference as to what will be expected from contractors. Use of the Prevailing Wage Form provided in the Appendix section or a City-approved equivalent will be required along with wage rate interviews.

Where the Contract and the Ann Arbor City Ordinance are silent as to definitions of terms required in determining contract compliance with regard to prevailing wages, the definitions provided in the Davis-Bacon Act as amended (40 U.S.C. 278-a to 276-a-7) for the terms shall be used.

If the Contractor is a "covered employer" as defined in Chapter 23 of the Ann Arbor City Code, the Contractor agrees to comply with the living wage provisions of Chapter 23 of the Ann Arbor City Code. The Contractor agrees to pay those employees providing Services to the City under this Contract a "living wage," as defined in Section 1:815 of the Ann Arbor City Code, as adjusted in accordance with Section 1:815(3); to post a notice approved by the City of the applicability of Chapter 23 in every location in which regular or contract employees providing services under this Contract are working; to maintain records of compliance; if requested by the City, to provide documentation to verify compliance; to take no action that would reduce the compensation, wages, fringe benefits, or leave available to any employee or person contracted for employment in order to pay the living wage required by Section 1:815; and otherwise to comply with the requirements of Chapter 23.

Contractor agrees that all subcontracts entered into by the Contractor shall contain similar wage provision covering subcontractor's employees who perform work on this contract.

Section 5 - Non-Discrimination

The Contractor agrees to comply, and to require its subcontractor(s) to comply, with the nondiscrimination provisions of MCL 37.2209. The Contractor further agrees to comply with the provisions of Section 9:158 of Chapter 112 of Title IX of the Ann Arbor City Code, and to assure that applicants are employed and that employees are treated during employment in a manner which provides equal employment opportunity.

Section 6 - Materials, Appliances, Employees

Unless otherwise stipulated, the Contractor shall provide and pay for all materials, labor, water, tools, equipment, light, power, transportation, and other facilities necessary or used for the execution and completion of the work. Unless otherwise specified, all materials incorporated in the permanent work shall be new, and both workmanship and materials shall be of the highest quality. The Contractor shall, if required, furnish satisfactory evidence as to the kind and quality of materials.

The Contractor shall at all times enforce strict discipline and good order among its employees and shall seek to avoid employing on the work any unfit person or anyone not skilled in the work assigned.

Adequate sanitary facilities shall be provided by the Contractor.

Section 7 - Qualifications for Employment

The Contractor shall employ competent laborers and mechanics for the work under this Contract. For work performed under this Contract, employment preference shall be given to qualified local residents.

Section 8 - Royalties and Patents

The Contractor shall pay all royalties and license fees. It shall defend all suits or claims for infringements of any patent rights and shall hold the City harmless from loss on account of infringement except that the City shall be responsible for all infringement loss when a particular process or the product of a particular manufacturer or manufacturers is specified, unless the City has notified the Contractor prior to the signing of the Contract that the particular process or product is patented or is believed to be patented.

Section 9 - Permits and Regulations

The Contractor must secure and pay for all permits, permit or plan review fees and licenses necessary for the prosecution of the work. These include but are not limited to City building permits, right-of-way permits, lane closure permits, right-of-way occupancy permits, and the like. The City shall secure and pay for easements shown on the plans unless otherwise specified.

The Contractor shall give all notices and comply with all laws, ordinances, rules and regulations bearing on the conduct of the work as drawn and specified. If the Contractor observes that the contract documents are at variance with those requirements, it shall promptly notify the Supervising Professional in writing, and any necessary changes shall be adjusted as provided in the Contract for changes in the work.

Section 10 - Protection of the Public and of Work and Property

The Contractor is responsible for the means, methods, sequences, techniques and procedures of construction and safety programs associated with the work contemplated by this contract. The Contractor, its agents or sub-contractors, shall comply with the "General Rules and Regulations for the Construction Industry" as published by the Construction Safety Commission of the State of Michigan and to all other local, State and National laws, ordinances, rules and regulations pertaining to safety of persons and property.

The Contractor shall take all necessary and reasonable precautions to protect the safety of the public. It shall continuously maintain adequate protection of all work from damage, and shall take all necessary and reasonable precautions to adequately protect all public and private property from injury or loss arising in connection with this Contract. It shall make good any damage, injury or loss to its work and to public and private property resulting from lack of reasonable protective precautions, except as may be due to errors in the contract documents, or caused by agents or

employees of the City. The Contractor shall obtain and maintain sufficient insurance to cover damage to any City property at the site by any cause.

In an emergency affecting the safety of life, or the work, or of adjoining property, the Contractor is, without special instructions or authorization from the Supervising Professional, permitted to act at its discretion to prevent the threatened loss or injury. It shall also so act, without appeal, if authorized or instructed by the Supervising Professional.

Any compensation claimed by the Contractor for emergency work shall be determined by agreement or in accordance with the terms of Claims for Extra Cost - Section 15.

Section 11 - Inspection of Work

The City shall provide sufficient competent personnel for the inspection of the work.

The Supervising Professional shall at all times have access to the work whenever it is in preparation or progress, and the Contractor shall provide proper facilities for access and for inspection.

If the specifications, the Supervising Professional's instructions, laws, ordinances, or any public authority require any work to be specially tested or approved, the Contractor shall give the Supervising Professional timely notice of its readiness for inspection, and if the inspection is by an authority other than the Supervising Professional, of the date fixed for the inspection. Inspections by the Supervising Professional shall be made promptly, and where practicable at the source of supply. If any work should be covered up without approval or consent of the Supervising Professional, it must, if required by the Supervising Professional, be uncovered for examination and properly restored at the Contractor's expense.

Re-examination of any work may be ordered by the Supervising Professional, and, if so ordered, the work must be uncovered by the Contractor. If the work is found to be in accordance with the contract documents, the City shall pay the cost of re-examination and replacement. If the work is not in accordance with the contract documents, the Contractor shall pay the cost.

Section 12 - Superintendence

The Contractor shall keep on the work site, during its progress, a competent superintendent and any necessary assistants, all satisfactory to the Supervising Professional. The superintendent will be responsible to perform all on-site project management for the Contractor. The superintendent shall be experienced in the work required for this Contract. The superintendent shall represent the Contractor and all direction given to the superintendent shall be binding as if given to the Contractor. Important directions shall immediately be confirmed in writing to the Contractor. Other directions will be confirmed on written request. The Contractor shall give efficient superintendence to the work, using its best skill and attention.

Section 13 - Changes in the Work

The City may make changes to the quantities of work within the general scope of the Contract at any time by a written order and without notice to the sureties. If the changes add to or deduct from the extent of the work, the Contract Sum shall be adjusted accordingly. All the changes shall be executed under the conditions of the original Contract except that any claim for extension of time

caused by the change shall be adjusted at the time of ordering the change.

In giving instructions, the Supervising Professional shall have authority to make minor changes in the work not involving extra cost and not inconsistent with the purposes of the work, but otherwise, except in an emergency endangering life or property, no extra work or change shall be made unless in pursuance of a written order by the Supervising Professional, and no claim for an addition to the Contract Sum shall be valid unless the additional work was ordered in writing.

The Contractor shall proceed with the work as changed and the value of the work shall be determined as provided in Claims for Extra Cost - Section 15.

Section 14 - Extension of Time

Extension of time stipulated in the Contract for completion of the work will be made if and as the Supervising Professional may deem proper under any of the following circumstances:

- (1) When work under an extra work order is added to the work under this Contract;
- (2) When the work is suspended as provided in Section 20;
- (3) When the work of the Contractor is delayed on account of conditions which could not have been foreseen, or which were beyond the control of the Contractor, and which were not the result of its fault or negligence;
- (4) Delays in the progress of the work caused by any act or neglect of the City or of its employees or by other Contractors employed by the City;
- (5) Delay due to an act of Government;
- (6) Delay by the Supervising Professional in the furnishing of plans and necessary information;
- (7) Other cause which in the opinion of the Supervising Professional entitles the Contractor to an extension of time.

The Contractor shall notify the Supervising Professional within 7 days of an occurrence or conditions which, in the Contractor's opinion, entitle it to an extension of time. The notice shall be in writing and submitted in ample time to permit full investigation and evaluation of the Contractor's claim. The Supervising Professional shall acknowledge receipt of the Contractor's notice within 7 days of its receipt. Failure to timely provide the written notice shall constitute a waiver by the Contractor of any claim.

In situations where an extension of time in contract completion is appropriate under this or any other section of the contract, the Contractor understands and agrees that the only available adjustment for events that cause any delays in contract completion shall be extension of the required time for contract completion and that there shall be no adjustments in the money due the Contractor on account of the delay.

Section 15 - Claims for Extra Cost

If the Contractor claims that any instructions by drawings or other media issued after the date of the Contract involved extra cost under this Contract, it shall give the Supervising Professional written notice within 7 days after the receipt of the instructions, and in any event before proceeding to execute the work, except in emergency endangering life or property. The procedure shall then be as provided for Changes in the Work-Section 13. No claim shall be valid unless so made.

If the Supervising Professional orders, in writing, the performance of any work not covered by the contract documents, and for which no item of work is provided in the Contract, and for which no unit price or lump sum basis can be agreed upon, then the extra work shall be done on a Cost-Plus-Percentage basis of payment as follows:

- (1) The Contractor shall be reimbursed for all reasonable costs incurred in doing the work, and shall receive an additional payment of 15% of all the reasonable costs to cover both its indirect overhead costs and profit;
- (2) The term "Cost" shall cover all payroll charges for employees and supervision required under the specific order, together with all worker's compensation, Social Security, pension and retirement allowances and social insurance, or other regular payroll charges on same; the cost of all material and supplies required of either temporary or permanent character; rental of all power-driven equipment at agreed upon rates, together with cost of fuel and supply charges for the equipment; and any costs incurred by the Contractor as a direct result of executing the order, if approved by the Supervising Professional;
- (3) If the extra is performed under subcontract, the subcontractor shall be allowed to compute its charges as described above. The Contractor shall be permitted to add an additional charge of 5% percent to that of the subcontractor for the Contractor's supervision and contractual responsibility;
- (4) The quantities and items of work done each day shall be submitted to the Supervising Professional in a satisfactory form on the succeeding day, and shall be approved by the Supervising Professional and the Contractor or adjusted at once;
- (5) Payments of all charges for work under this Section in any one month shall be made along with normal progress payments. Retainage shall be in accordance with Progress Payments-Section 16.

No additional compensation will be provided for additional equipment, materials, personnel, overtime or special charges required to perform the work within the time requirements of the Contract.

When extra work is required and no suitable price for machinery and equipment can be determined in accordance with this Section, the hourly rate paid shall be 1/40 of the basic weekly rate listed in the Rental Rate Blue Book published by Dataquest Incorporated and applicable to the time period the equipment was first used for the extra work. The hourly rate will be deemed to include all costs of operation such as bucket or blade, fuel, maintenance, "regional factors", insurance, taxes, and the like, but not the costs of the operator.

Section 16 - Progress Payments

The Contractor shall submit each month, or at longer intervals, if it so desires, an invoice covering work performed for which it believes payment, under the Contract terms, is due. The submission shall be to the City's Finance Department - Accounting Division. The Supervising Professional will, within 10 days following submission of the invoice, prepare a certificate for payment for the work in an amount to be determined by the Supervising Professional as fairly representing the acceptable work performed during the period covered by the Contractor's invoice. To insure the proper performance of this Contract, the City will retain a percentage of the estimate in accordance with Act 524, Public Acts of 1980. The City will then, following the receipt of the Supervising Professional's Certificate, make payment to the Contractor as soon as feasible, which is anticipated will be within 15 days.

An allowance may be made in progress payments if substantial quantities of permanent material have been delivered to the site but not incorporated in the completed work if the Contractor, in the opinion of the Supervising Professional, is diligently pursuing the work under this Contract. Such materials shall be properly stored and adequately protected. Allowance in the estimate shall be at the invoice price value of the items. Notwithstanding any payment of any allowance, all risk of loss due to vandalism or any damages to the stored materials remains with the Contractor.

In the case of Contracts which include only the Furnishing and Delivering of Equipment, the payments shall be; 60% of the Contract Sum upon the delivery of all equipment to be furnished, or in the case of delivery of a usable portion of the equipment in advance of the total equipment delivery, 60% of the estimated value of the portion of the equipment may be paid upon its delivery in advance of the time of the remainder of the equipment to be furnished; 30% of the Contract Sum upon completion of erection of all equipment furnished, but not later than 60 days after the date of delivery of all of the equipment to be furnished; and payment of the final 10% on final completion of erection, testing and acceptance of all the equipment to be furnished; but not later than 180 days after the date of delivery of all of the equipment to be furnished, unless testing has been completed and shows the equipment to be unacceptable.

With each invoice for periodic payment, the Contractor shall enclose a Contractor's Declaration - Section 43, and an updated project schedule per Order of Completion - Section 2.

Section 17 - Deductions for Uncorrected Work

If the Supervising Professional decides it is inexpedient to correct work that has been damaged or that was not done in accordance with the Contract, an equitable deduction from the Contract price shall be made.

Section 18 - Correction of Work Before Final Payment

The Contractor shall promptly remove from the premises all materials condemned by the Supervising Professional as failing to meet Contract requirements, whether incorporated in the work or not, and the Contractor shall promptly replace and re-execute the work in accordance with the Contract and without expense to the City and shall bear the expense of making good all work of other contractors destroyed or damaged by the removal or replacement.

If the Contractor does not remove the condemned work and materials within 10 days after written notice, the City may remove them and, if the removed material has value, may store the material

at the expense of the Contractor. If the Contractor does not pay the expense of the removal within 10 days thereafter, the City may, upon 10 days written notice, sell the removed materials at auction or private sale and shall pay to the Contractor the net proceeds, after deducting all costs and expenses that should have been borne by the Contractor. If the removed material has no value, the Contractor must pay the City the expenses for disposal within 10 days of invoice for the disposal costs.

The inspection or lack of inspection of any material or work pertaining to this Contract shall not relieve the Contractor of its obligation to fulfill this Contract and defective work shall be made good. Unsuitable materials may be rejected by the Supervising Professional notwithstanding that the work and materials have been previously overlooked by the Supervising Professional and accepted or estimated for payment or paid for. If the work or any part shall be found defective at any time before the final acceptance of the whole work, the Contractor shall forthwith make good the defect in a manner satisfactory to the Supervising Professional. The judgment and the decision of the Supervising Professional as to whether the materials supplied and the work done under this Contract comply with the requirements of the Contract shall be conclusive and final.

Section 19 - Acceptance and Final Payment

Upon receipt of written notice that the work is ready for final inspection and acceptance, the Supervising Professional will promptly make the inspection. When the Supervising Professional finds the work acceptable under the Contract and the Contract fully performed, the Supervising Professional will promptly sign and issue a final certificate stating that the work required by this Contract has been completed and is accepted by the City under the terms and conditions of the Contract. The entire balance found to be due the Contractor, including the retained percentage, shall be paid to the Contractor by the City within 30 days after the date of the final certificate.

Before issuance of final certificates, the Contractor shall file with the City:

- (1) The consent of the surety to payment of the final estimate;
- (2) The Contractor's Affidavit in the form required by Section 44.

In case the Affidavit or consent is not furnished, the City may retain out of any amount due the Contractor, sums sufficient to cover all lienable claims.

The making and acceptance of the final payment shall constitute a waiver of all claims by the City except those arising from:

- (1) unsettled liens;
- (2) faulty work appearing within 12 months after final payment;
- (3) hidden defects in meeting the requirements of the plans and specifications;
- (4) manufacturer's guarantees.

It shall also constitute a waiver of all claims by the Contractor, except those previously made and still unsettled.

Section 20 - Suspension of Work

The City may at any time suspend the work, or any part by giving 5 days notice to the Contractor in writing. The work shall be resumed by the Contractor within 10 days after the date fixed in the

written notice from the City to the Contractor to do so. The City shall reimburse the Contractor for expense incurred by the Contractor in connection with the work under this Contract as a result of the suspension.

If the work, or any part, shall be stopped by the notice in writing, and if the City does not give notice in writing to the Contractor to resume work at a date within 90 days of the date fixed in the written notice to suspend, then the Contractor may abandon that portion of the work suspended and will be entitled to the estimates and payments for all work done on the portions abandoned, if any, plus 10% of the value of the work abandoned, to compensate for loss of overhead, plant expense, and anticipated profit.

Section 21 - Delays and the City's Right to Terminate Contract

If the Contractor refuses or fails to prosecute the work, or any separate part of it, with the diligence required to insure completion, ready for operation, within the allowable number of consecutive calendar days specified plus extensions, or fails to complete the work within the required time, the City may, by written notice to the Contractor, terminate its right to proceed with the work or any part of the work as to which there has been delay. After providing the notice the City may take over the work and prosecute it to completion, by contract or otherwise, and the Contractor and its sureties shall be liable to the City for any excess cost to the City. If the Contractor's right to proceed is terminated, the City may take possession of and utilize in completing the work, any materials, appliances and plant as may be on the site of the work and useful for completing the work. The right of the Contractor to proceed shall not be terminated or the Contractor charged with liquidated damages where an extension of time is granted under Extension of Time - Section 14.

If the Contractor is adjudged a bankrupt, or if it makes a general assignment for the benefit of creditors, or if a receiver is appointed on account of its insolvency, or if it persistently or repeatedly refuses or fails except in cases for which extension of time is provided, to supply enough properly skilled workers or proper materials, or if it fails to make prompt payments to subcontractors or for material or labor, or persistently disregards laws, ordinances or the instructions of the Supervising Professional, or otherwise is guilty of a substantial violation of any provision of the Contract, then the City, upon the certificate of the Supervising Professional that sufficient cause exists to justify such action, may, without prejudice to any other right or remedy and after giving the Contractor 3 days written notice, terminate this Contract. The City may then take possession of the premises and of all materials, tools and appliances thereon and without prejudice to any other remedy it may have, make good the deficiencies or finish the work by whatever method it may deem expedient, and deduct the cost from the payment due the Contractor. The Contractor shall not be entitled to receive any further payment until the work is finished. If the expense of finishing the work, including compensation for additional managerial and administrative services exceeds the unpaid balance of the Contract Sum, the Contractor and its surety are liable to the City for any excess cost incurred. The expense incurred by the City, and the damage incurred through the Contractor's default, shall be certified by the Supervising Professional.

Section 22 - Contractor's Right to Terminate Contract

If the work should be stopped under an order of any court, or other public authority, for a period of 3 months, through no act or fault of the Contractor or of anyone employed by it, then the Contractor may, upon 7 days written notice to the City, terminate this Contract and recover from the City payment for all acceptable work executed plus reasonable profit.

Section 23 - City's Right To Do Work

If the Contractor should neglect to prosecute the work properly or fail to perform any provision of this Contract, the City, 3 days after giving written notice to the Contractor and its surety may, without prejudice to any other remedy the City may have, make good the deficiencies and may deduct the cost from the payment due to the Contractor.

Section 24 - Removal of Equipment and Supplies

In case of termination of this Contract before completion, from any or no cause, the Contractor, if notified to do so by the City, shall promptly remove any part or all of its equipment and supplies from the property of the City, failing which the City shall have the right to remove the equipment and supplies at the expense of the Contractor.

The removed equipment and supplies may be stored by the City and, if all costs of removal and storage are not paid by the Contractor within 10 days of invoicing, the City upon 10 days written notice may sell the equipment and supplies at auction or private sale, and shall pay the Contractor the net proceeds after deducting all costs and expenses that should have been borne by the Contractor and after deducting all amounts claimed due by any lien holder of the equipment or supplies.

Section 25 - Responsibility for Work and Warranties

The Contractor assumes full responsibility for any and all materials and equipment used in the construction of the work and may not make claims against the City for damages to materials and equipment from any cause except negligence or willful act of the City. Until its final acceptance, the Contractor shall be responsible for damage to or destruction of the project (except for any part covered by Partial Completion and Acceptance - Section 26). The Contractor shall make good all work damaged or destroyed before acceptance. All risk of loss remains with the Contractor until final acceptance of the work (Section 19) or partial acceptance (Section 26). The Contractor is advised to investigate obtaining its own builders risk insurance.

The Contractor shall guarantee the quality of the work for a period of one year. The Contractor shall also unconditionally guarantee the quality of all equipment and materials that are furnished and installed under the contract for a period of one year. At the end of one year after the Contractor's receipt of final payment, the complete work, including equipment and materials furnished and installed under the contract, shall be inspected by the Contractor and the Supervising Professional. Any defects shall be corrected by the Contractor at its expense as soon as practicable but in all cases within 60 days. Any defects that are identified prior to the end of one year shall also be inspected by the Contractor and the Supervising Professional and shall be corrected by the Contractor at its expense as soon as practicable but in all cases within 60 days. The Contractor shall assign all manufacturer or material supplier warranties to the City prior to final payment. The assignment shall not relieve the Contractor of its obligations under this paragraph to correct defects.

Section 26 - Partial Completion and Acceptance

If at any time prior to the issuance of the final certificate referred to in Acceptance and Final Payment - Section 19, any portion of the permanent construction has been satisfactorily completed, and if the Supervising Professional determines that portion of the permanent construction is not required for the operations of the Contractor but is needed by the City, the Supervising Professional shall issue to the Contractor a certificate of partial completion, and immediately the City may take over and use the portion of the permanent construction described in the certificate, and exclude the Contractor from that portion.

The issuance of a certificate of partial completion shall not constitute an extension of the Contractor's time to complete the portion of the permanent construction to which it relates if the Contractor has failed to complete it in accordance with the terms of this Contract. The issuance of the certificate shall not release the Contractor or its sureties from any obligations under this Contract including bonds.

If prior use increases the cost of, or delays the work, the Contractor shall be entitled to extra compensation, or extension of time, or both, as the Supervising Professional may determine.

Section 27 - Payments Withheld Prior to Final Acceptance of Work

The City may withhold or, on account of subsequently discovered evidence, nullify the whole or part of any certificate to the extent reasonably appropriate to protect the City from loss on account of:

- (1) Defective work not remedied;
- (2) Claims filed or reasonable evidence indicating probable filing of claims by other parties against the Contractor;
- (3) Failure of the Contractor to make payments properly to subcontractors or for material or labor;
- (4) Damage to another Contractor.

When the above grounds are removed or the Contractor provides a Surety Bond satisfactory to the City which will protect the City in the amount withheld, payment shall be made for amounts withheld under this section.

Section 28 - Contractor's Insurance

- (1) The Contractor shall procure and maintain during the life of this Contract, including the guarantee period and during any warranty work, such insurance policies, including those set forth below, as will protect itself and the City from all claims for bodily injuries, death or property damage that may arise under this Contract; whether the act(s) or omission(s) giving rise to the claim were made by the Contractor, any subcontractor, or anyone employed by them directly or indirectly. Prior to commencement of any work under this contract, Contractor shall provide to the City documentation satisfactory to the City, through City-approved means (currently myCOI), demonstrating it has obtained the required policies and endorsements. The certificates of insurance endorsements and/or

copies of policy language shall document that the Contractor satisfies the following minimum requirements. Contractor shall add registration@mycoitracking.com to its safe sender's list so that it will receive necessary communication from myCOI. When requested, Contractor shall provide the same documentation for its subcontractor(s) (if any).

Required insurance policies include:

- (a) Worker's Compensation Insurance in accordance with all applicable state and federal statutes. Further, Employers Liability Coverage shall be obtained in the following minimum amounts:

- Bodily Injury by Accident - \$500,000 each accident
 - Bodily Injury by Disease - \$500,000 each employee
 - Bodily Injury by Disease - \$500,000 each policy limit

- (b) Commercial General Liability Insurance equivalent to, as a minimum, Insurance Services Office form CG 00 01 04 13 or current equivalent. The City of Ann Arbor shall be named as an additional insured. There shall be no added exclusions or limiting endorsements specifically for the following coverages: Products and Completed Operations, Explosion, Collapse and Underground coverage or Pollution. Further there shall be no added exclusions or limiting endorsements that diminish the City's protections as an additional insured under the policy. The following minimum limits of liability are required:

- \$1,000,000 Each occurrence as respect Bodily Injury Liability or Property Damage Liability, or both combined.
 - \$2,000,000 Per Project General Aggregate
 - \$1,000,000 Personal and Advertising Injury
 - \$2,000,000 Products and Completed Operations Aggregate, which, notwithstanding anything to the contrary herein, shall be maintained for three years from the date the Project is completed.

- (c) Motor Vehicle Liability Insurance, including Michigan No-Fault Coverages, equivalent to, as a minimum, Insurance Services Office form CA 00 01 10 13 or current equivalent. Coverage shall include all owned vehicles, all non-owned vehicles and all hired vehicles. The City of Ann Arbor shall be named as an additional insured. There shall be no added exclusions or limiting endorsements that diminish the City's protections as an additional insured under the policy. Further, the limits of liability shall be \$1,000,000 for each occurrence as respects Bodily Injury Liability or Property Damage Liability, or both combined.

- (d) Umbrella/Excess Liability Insurance shall be provided to apply excess of the Commercial General Liability, Employers Liability and the Motor Vehicle coverage enumerated above, for each occurrence and for aggregate in the amount of \$1,000,000.

- (2) Insurance required under subsection (1)(b) and (1)(c) above shall be considered primary as respects any other valid or collectible insurance that the City may possess, including any self-insured retentions the City may have; and any other insurance the City does possess shall be considered excess insurance only and shall not be required to contribute with this insurance. Further, the Contractor agrees to waive any right of recovery by its insurer against the City for any insurance listed herein.
- (3) Insurance companies and policy forms are subject to approval of the City Attorney, which approval shall not be unreasonably withheld. Documentation must provide and demonstrate an unconditional and un-qualified 30-day written notice of cancellation in favor of the City of Ann Arbor. Further, the documentation must explicitly state the following: (a) the policy number(s); name of insurance company(s); name and address of the agent(s) or authorized representative(s); name(s), email address(es), and address of insured; project name; policy expiration date; and specific coverage amounts; (b) any deductibles or self-insured retentions which may be approved by the City, in its sole discretion; (c) that the policy conforms to the requirements specified Contractor shall furnish the City with satisfactory certificates of insurance and endorsements prior to commencement of any work. Upon request, the Contractor shall provide within 30 days a copy of the policy(ies) and all required endorsements to the City. If any of the above coverages expire by their terms during the term of this Contract, the Contractor shall deliver proof of renewal and/or new policies and endorsements to the Administering Service Area/Unit at least ten days prior to the expiration date.
- (4) Any Insurance provider of Contractor shall be authorized to do business in the State of Michigan and shall carry and maintain a minimum rating assigned by A.M. Best & Company's Key Rating Guide of "A-" Overall and a minimum Financial Size Category of "V". Insurance policies and certificates issued by non-authorized insurance companies are not acceptable unless approved in writing by the City.
- (5) City reserves the right to require additional coverage and/or coverage amounts as may be included from time to time in the Detailed Specifications for the Project.
- (6) The provisions of General Condition 28 shall survive the expiration or earlier termination of this contract for any reason.

Section 29 - Surety Bonds

Bonds will be required from the successful bidder as follows:

- (1) A Performance Bond to the City of Ann Arbor for the amount of the bid(s) accepted;
- (2) A Labor and Material Bond to the City of Ann Arbor for the amount of the bid(s) accepted.

Bonds shall be executed on forms supplied by the City in a manner and by a Surety Company authorized to transact business in Michigan and satisfactory to the City Attorney.

Section 30 - Damage Claims

The Contractor shall be held responsible for all damages to property of the City or others, caused by or resulting from the negligence of the Contractor, its employees, or agents during the progress of or connected with the prosecution of the work, whether within the limits of the work or elsewhere. The Contractor must restore all property injured including sidewalks, curbing, sodding, pipes, conduit, sewers or other public or private property to not less than its original condition with new work.

Section 31 - Refusal to Obey Instructions

If the Contractor refuses to obey the instructions of the Supervising Professional, the Supervising Professional shall withdraw inspection from the work, and no payments will be made for work performed thereafter nor may work be performed thereafter until the Supervising Professional shall have again authorized the work to proceed.

Section 32 - Assignment

Neither party to the Contract shall assign the Contract without the written consent of the other. The Contractor may assign any monies due to it to a third party acceptable to the City.

Section 33 - Rights of Various Interests

Whenever work being done by the City's forces or by other contractors is contiguous to work covered by this Contract, the respective rights of the various interests involved shall be established by the Supervising Professional, to secure the completion of the various portions of the work in general harmony.

The Contractor is responsible to coordinate all aspects of the work, including coordination of, and with, utility companies and other contractors whose work impacts this project.

Section 34 - Subcontracts

The Contractor shall not award any work to any subcontractor without prior written approval of the City. The approval will not be given until the Contractor submits to the City a written statement concerning the proposed award to the subcontractor. The statement shall contain all information the City may require.

The Contractor shall be as fully responsible to the City for the acts and omissions of its subcontractors, and of persons either directly or indirectly employed by them, as it is for the acts and omissions of persons directly employed by it.

The Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the work to bind subcontractors to the Contractor by the terms of the General Conditions and all other contract documents applicable to the work of the subcontractors and to give the Contractor the same power to terminate any subcontract that the City may exercise over the Contractor under any provision of the contract documents.

Nothing contained in the contract documents shall create any contractual relation between any subcontractor and the City.

Section 35 - Supervising Professional's Status

The Supervising Professional has the right to inspect any or all work. The Supervising Professional has authority to stop the work whenever stoppage may be appropriate to insure the proper execution of the Contract. The Supervising Professional has the authority to reject all work and materials which do not conform to the Contract and to decide questions which arise in the execution of the work.

The Supervising Professional shall make all measurements and determinations of quantities. Those measurements and determinations are final and conclusive between the parties.

Section 36 - Supervising Professional's Decisions

The Supervising Professional shall, within a reasonable time after their presentation to the Supervising Professional, make decisions in writing on all claims of the City or the Contractor and on all other matters relating to the execution and progress of the work or the interpretation of the contract documents.

Section 37 - Storing Materials and Supplies

Materials and supplies may be stored at the site of the work at locations agreeable to the City unless specific exception is listed elsewhere in these documents. Ample way for foot traffic and drainage must be provided, and gutters must, at all times, be kept free from obstruction. Traffic on streets shall be interfered with as little as possible. The Contractor may not enter or occupy with agents, employees, tools, or material any private property without first obtaining written permission from its owner. A copy of the permission shall be furnished to the Supervising Professional.

Section 38 - Lands for Work

The Contractor shall provide, at its own expense and without liability to the City, any additional land and access that may be required for temporary construction facilities or for storage of materials.

Section 39 - Cleaning Up

The Contractor shall, as directed by the Supervising Professional, remove at its own expense from the City's property and from all public and private property all temporary structures, rubbish and waste materials resulting from its operations unless otherwise specifically approved, in writing, by the Supervising Professional.

Section 40 - Salvage

The Supervising Professional may designate for salvage any materials from existing structures or underground services. Materials so designated remain City property and shall be transported or stored at a location as the Supervising Professional may direct.

Section 41 - Night, Saturday or Sunday Work

No night or Sunday work (without prior written City approval) will be permitted except in the case of an emergency and then only to the extent absolutely necessary. The City may allow night work which, in the opinion of the Supervising Professional, can be satisfactorily performed at night. Night work is any work between 8:00 p.m. and 7:00 a.m. No Saturday work will be permitted unless the Contractor gives the Supervising Professional at least 48 hours but not more than 5 days notice of the Contractor's intention to work the upcoming Saturday.

Section 42 - Sales Taxes

Under State law the City is exempt from the assessment of State Sales Tax on its direct purchases. Contractors who acquire materials, equipment, supplies, etc. for incorporation in City projects are not likewise exempt. State Law shall prevail. The Bidder shall familiarize itself with the State Law and prepare its Bid accordingly. No extra payment will be allowed under this Contract for failure of the Contractor to make proper allowance in this bid for taxes it must pay.

Section 43

CONTRACTOR'S DECLARATION

I hereby declare that I have not, during the period _____, 20____, to _____, 20____, performed any work, furnished any materials, sustained any loss, damage or delay, or otherwise done anything in addition to the regular items (or executed change orders) set forth in the Contract titled _____, for which I shall ask, demand, sue for, or claim compensation or extension of time from the City, except as I hereby make claim for additional compensation or extension of time as set forth on the attached itemized statement. I further declare that I have paid all payroll obligations related to this Contract that have become due during the above period and that all invoices related to this Contract received more than 30 days prior to this declaration have been paid in full except as listed below.

There is/is not (Contractor please circle one and strike one as appropriate) an itemized statement attached regarding a request for additional compensation or extension of time.

Contractor

Date

By _____
(Signature)

Its _____
(Title of Office)

Past due invoices, if any, are listed below.

STANDARD SPECIFICATIONS

All work under this contract shall be performed in accordance with the Public Services Department Standard Specifications in effect at the date of availability of the contract documents stipulated in the Bid. All work under this Contract which is not included in these Standard Specifications, or which is performed using modifications to these Standard Specifications, shall be performed in accordance with the Detailed Specifications included in these contract documents.

Standard Specifications are available online:

<http://www.a2gov.org/departments/engineering/Pages/Engineering-and-Contractor-Resources.aspx>

DETAILED SPECIFICATIONS

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END OF TABLE OF CONTENTS

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SECTION 01 11 00 – SUMMARY OF WORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Work covered by the Contract Documents comprises of replacement of underdrains and improvements to the gravity filters located at the City of Ann Arbor Water Plant, 919 Sunset Road, Ann Arbor, MI 48103 for the City of Ann Arbor Water Treatment Services Unit, Owner.
- B. The Work includes the following major items:
 - 1. Remove existing underdrains and support gravel in Filters No. 18 and No. 20.
 - 2. Furnish and install new stainless steel underdrains and air scour piping in Filters No. 18 and No. 20.
 - 3. Furnish and install new filter media in Filters No. 18 and No. 20.
 - 4. Miscellaneous concrete, piping, and equipment repair at Filters No. 18 and No. 20.

1.3 TYPE OF CONTRACT

- A. Construct the Work of this Contract under a single lump sum Contract.

1.4 GENERAL

- A. Imperative Language: These Specifications (Divisions 01 through 49) are written in the imperative and abbreviated form. This imperative language of the technical specifications is directed at Contractor unless specifically noted otherwise. Incomplete sentences shall be completed by inserting "shall", "shall be" and similar mandatory phrases by inference in the same manner as they are applied to notes on Drawings. The words "shall", "shall be" and similar mandatory phrases shall be supplied by inference where a colon (:) is used within sentences or phrases. Except as worded to the contrary, fulfill (perform) all indicated requirements whether stated in the imperative or otherwise.
- B. Related Sections: Some Sections of these Specifications (Divisions 01 through 49) may include a paragraph titled "Related Sections". This paragraph is an aid to the Project Manual user and is not intended to include all Sections which may be related. It is Contractor's obligation to coordinate all Sections whether indicated under "Related Sections" or not.
- C. Reference to the General Conditions: In Divisions 01 through 49, a reference to the General Conditions includes by inference all amendments or supplements in the Supplementary Conditions.

1.5 WORK BY OWNER

- A. The following work will be completed by Owner:
 - 1. Removal of existing Filter Media, including GAC and sand, from Filters No. 18 and No. 20.
 - 2. Filter Media will be removed and Filters No. 18 and No. 20 will be out of service by December 2024.
- B. Coordinate the schedule of work by Owner with Owner.
- C. Cooperate with Owner.

1.6 CONTRACTOR USE OF PREMISES

- A. Limit use of premises to allow for Owner occupancy and work by other contractors.

- B. Areas for Contractor's trailers, equipment, and material storage, and Contractor's employee parking, shall be as agreed by Owner prior to the start of construction.
- C. Coordinate use of premises under direction of the Owner.
- D. Where the Contract Documents identify certain site elements within the construction limits, such as sidewalks, drives, and streets, that must be kept open for public or the Owner's use during construction, the Contractor shall be responsible for protection and maintenance of such elements as well.
- E. Except in connection with the safety or protection of persons or the Work or property at the Site or adjacent thereto, all Work at sites other than the Water Treatment Plant shall be restricted to the following hours:
 - 1. Monday Through Friday (Except Legal Holidays): 7 a.m. to 7 p.m.
 - 2. Saturday, Sundays, or legal holidays with written approval of the Owner.

1.7 OCCUPANCY REQUIREMENTS

- A. Owner Occupancy During Construction:
 - 1. The Owner will occupy or utilize premises during the entire period of construction, for conduct of the Owner's normal operations. Cooperate with the Owner to minimize conflict and to facilitate the Owner's operations.
 - 2. Access to Abutting Properties, Facilities and Loading Docks: Provide at all times.
 - 3. Access for Emergency Vehicles:
 - a. Provide at all times.
 - b. Provide at least one clear lane during nonwork periods.
 - 4. Fire Hydrants: Provide access to at all times.
 - 5. Do not block fire access routes.
 - 6. Construct Work so as to not interfere with Owner operations in accordance with this Section.
 - a. Sequence Work to avoid plant shutdowns.
 - b. Filter 18 and 20 can be taken out of service at the same time.
 - c. While the filters are under construction, they shall be fully isolated from the remaining filters with a temporary air-tight enclosure. Provide ventilation and heating for the temporary enclosure through the exterior wall adjacent to respective filter.
 - 7. Access to the site for chemical deliveries must be maintained at all times.
 - 8. Limit parking for construction vehicles to an area designated by the Owner.

1.8 WORK SEQUENCE

- A. Coordinate construction schedule and operations with Owner and Engineer. Provide 72 hours notice prior to the following:
 - 1. Contractor mobilization.
 - 2. Installing filter sand.
 - 3. Requiring Owner assistance for activities including, but not limited to:
 - a. Operating valves.
 - b. Bacteriological testing.
- B. Sequence Submittal:
 - 1. The sequence indicated below is offered as a suggestion to the Contractor.
 - 2. Submit a proposed sequence with appropriate times of starting and completion of tasks to Engineer for review.
- C. The following sequence is suggested to accommodate Owner's occupancy requirements during the construction period:
 - 1. Coordinate with the Owner to take Filter 18 offline.
 - 2. Construct an airtight temporary partition wall, isolating Filter 18 and 20 from the remaining filters.
 - 3. Demolish existing media retaining screen, supports, support gravel and underdrains.
 - 4. Remove existing surface wash distribution arms and properly store for later reinstallation.
 - 5. Perform concrete restoration within Filter 18 and 20 as necessary.

6. Remove piping within pipe gallery as shown on drawings to facilitate leak repair and installation of interior pipe joint seal.
7. Perform leak test to verify wall pipe leak has been successfully repaired.
8. Core drill gullet wall and install new stainless steel wall pipe.
9. Install new underdrain system.
10. Install new air scour piping.
11. Install media retaining baffles.
12. Reinstall surface wash distribution arms, with bearings and nozzles replaced.
13. Perform manufacturer's start-up of the filter equipment.
14. Remove temporary enclosure.

1.9 SECURITY AND ACCESS

- A. The City of Ann Arbor's Water Treatment Plant is a limited access facility. The Contractor must comply with the City's operational provisions for security including, but not limited to:
 1. Provide proper identification of employees.
 2. Provide and use photos IDs for all Contractor personnel.
 3. Maintain daily sign-in log of personnel and visitors.
 4. Provide a list of personnel and vehicles onsite.
 5. Maintain a daily log of vehicle license plate numbers onsite.
 6. Allow Owner to conduct background checks on Contractor's personnel upon request.
 7. Notify the plant in advance of material deliveries to the site, including delivery contents. Owner will NOT accept deliveries on behalf of the Contractor.

PART 2 - PRODUCTS

2.1 OTHER MATERIALS

- A. General: All other materials which are not specified herein and are not indicated on the Drawings, but are required for proper and complete performance of the Work.
- B. Procedure:
 1. Select new, first quality material.
 2. Obtain Engineer's review.
 3. Provide and install.

PART 3 - EXECUTION

3.1 CONTROL OF WATER POLLUTION

- A. General Requirements:
 1. The Contractor shall conduct their work in such manner as to prevent the entry of fuels, oils, bituminous materials, chemical, sewage, or other harmful materials into the City's water supply or on to the soil.
 2. The Contractor shall take all necessary precautions to prevent the entry of these harmful materials including the use of tarps, planks, protective trusses, or scaffolding systems, or other Owner and Engineer approved methods.
 3. Any vehicles or equipment with oil, fuel, or other fluid leaks shall not be allowed on the Site and shall be immediately removed upon detection.

END OF SECTION 01 11 00

SECTION 01 12 16 – WORK SEQUENCE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes construction sequencing.

1.3 SEQUENCING AND SCHEDULING

- A. Construction Sequence:
 - 1. Contractor is responsible for sequencing the work with the following general constraints:
 - a. Filters may not be taken out of service between July and August.
 - b. Filter GAC to be installed in Filter 18 and Filter 20 concurrently.
- B. General:
 - 1. Contractor shall be solely responsible for all construction sequencing and scheduling required by the Contract Documents.
 - 2. Coordinate timing of all work with Owner.
 - 3. This sequence is offered as a suggestion to Contractor and to emphasize critical tasks of the Work. It is not a complete list of all work to be completed.
- C. Sequence Submittal:
 - 1. The sequence indicated in this Section is offered as a suggestion to Contractor.
 - 2. Submit a proposed sequence with appropriate times of starting and completion of tasks to Engineer for review.
- D. Alternative Sequences: Contractor may propose alternative sequences to that indicated in item 1.3 of this Section in an attempt to reduce the disruption of the operation of the existing facility or to streamline the tasks of the Work.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

3.1 PROVISIONS

- A. General:
 - 1. Perform the work to provide for:
 - a. The water treatment facilities to be in effective operation at all times.
 - b. Maintaining a treatment efficiency of not less than the efficiency achieved during the corresponding month of the previous year.
- B. Notification of Owner: Notify Owner prior to beginning any of the proposed Work items. Notification requirements and work durations can be found in the project constraint summary in Division 01 Section "Summary of Work."

END OF SECTION 01 12 16

SECTION 01 21 13 – CASH ALLOWANCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section provides for cash allowances which are included in the Contract Price.
- B. Related Sections include Sections in Divisions 01 through 49, as identified below, provide additional information on what is covered by the respective allowances.

1.3 SCHEDULE OF ALLOWANCES

- A. Include in the Contract Price the following amounts:
 - 1. The amount of \$10,000 for payment of testing services by the independent testing laboratory as specified in Division 01 Section "Special Inspections and Tests," and for payment of inspection services by special inspectors as specified in Division 01 Section "Special Inspections and Tests."
 - 2. The amount of \$75,000 for Filter GAC as specified in Division 46 Section "Gravity Filtration Equipment."

1.4 CASH ALLOWANCES

- A. Costs Associated With Allowances:
 - 1. All costs, associated with allowances, which are not specifically defined in the Schedule of Allowances, paragraph 1.3 of this Section shall be included in the Base Bid.
 - 2. Associated costs not specifically defined in the Schedule of Allowances may include, but are not necessarily limited to:
 - a. Unloading.
 - b. Handling on the Site.
 - c. Labor.
 - d. Installation.
 - e. Overhead.
 - f. Profit.

1.5 ADJUSTMENT OF COSTS

- A. Change Order: To adjust Contract Price if final cost is different from allowance.
- B. Documentation:
 - 1. Submit:
 - a. Within 60 days after completion of the work under the allowance.
 - b. Documentation of actual costs.
 - 2. Failure to submit claims within the designated time will constitute a waiver of claims for additional costs.
 - 3. At Contract closeout, reflect all approved changes in Contract amounts in the final statement of accounting.

PART 2 - PRODUCTS

Not used.

City of Ann Arbor
2024 Water Treatment Plant
Filter 18/20 Underdrain Improvements
Fishbeck Project Number 231370
C2R2 Project Number C2A-018

Cash Allowances

Section 01 21 13

PART 3 - EXECUTION

Not used.

END OF SECTION 01 21 13

SECTION 01 22 00 - UNIT PRICES - MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes descriptions of the method of measurement and the basis of payment for Unit Price Work under this Contract.

B. Basis of Contract Payments:

1. Final Contract Price shall be determined by actual quantities installed at unit prices stated in Contractor's Bid.
2. Engineer shall determine actual as-built quantities.
3. All work identified on the Drawings, but not included as a Bid item shall be considered incidental to construction and not paid for directly, except Work that would be considered additional Work due to unforeseen conditions.
4. Unit price payments for individual items shall include everything necessary for such item to function as intended in the system.
5. Owner reserves the right to increase, decrease or eliminate any quantities for items listed in Contractor's Bid or which become a part of the Contract Documents.

- C. Items included as incidental to Unit Prices for systems and appurtenances. Unless there is a specific pay item identified, the unit price payment shall include, but not be limited to:

1. Clear, excavate, trench, bedding, trench backfill, compaction, disposal of items for clearing and unsuitable or excess excavated materials.
2. Drainage of excavations including by-pass pumping of sewers if necessary.
3. Temporary sheeting, bracing and shoring of excavations.
4. Support, relocation, replacement, connection or reconnection of existing pipelines and utilities.
5. Cleanup and surface restoration.
6. Water service repair.
7. Sewer lead repair.
8. Bulk head of pipes to be abandoned.
9. Removal of pipes, valves, structures and appurtenances located within the excavation limits of new utilities whether identified on the removal Drawings or not.
10. Coordination of mail delivery and refuse removal with residents, post office, and refuse collectors.
11. Dewatering for the installation of sanitary sewer, water main and storm sewer.
12. Support of utility poles and existing underground utilities during excavation and installation of sanitary sewer, water main and storm sewer.
13. Remove, salvage, and replace street signs.
14. Remove and dispense of trees less than 6-inches in diameter.
15. Temporary enclosures and sources of heat and humidity control to allow construction activity to proceed during cold weather and adverse conditions.
16. Testing of concrete repair materials.

1.3 GENERAL

- A. Item No. 1.1 – General Conditions, Max 10% of Individual Base Bid:

1. Includes:
 - a. General Overhead.
 - b. Project Management.
 - c. Provide insurance, bonds, and other costs associated with the project in general and not included in other pay items.
 - d. All required submittals.

2. Unit of Measure:
 - a. Lump sum.
 - b. 50% payment will be made after 5% of the original contract amount is earned.
 - c. Final 50% payment will be made after 25% of the contract amount is earned.

- B. Item No. 1.2 – Mobilization, Max 10% of Individual Base Bid:
 1. Includes:
 - a. Preparatory work and expenses incurred prior to beginning work onsite.
 - b. Transport materials, personnel, and equipment to the Site.
 - c. Establish temporary onsite construction facilities.
 - d. Where applicable, establish, maintain and remove all temporary and permanent soil erosion control measures as indicated on the Drawings or as required by local enforcement authorities.
 2. Unit of Measure:
 - a. Lump sum.
 - b. 50% payment will be made after 5% of the original contract amount is earned.
 - c. Final 50% payment will be made after 25% of the contract amount is earned.

- C. Item No. 1.3 – Certified Payroll Compliance and Reporting:
 1. Includes:
 - a. Documentation and submittal of compliance with City of Ann Arbor certified payroll reporting.
 2. Measurement and Payment:
 - a. Lump sum.
 - b. 50% payment will be made on first pay application for the associated base bid item.
 - c. Final 50% payment will be made on final pay application for the associated base bid item.

- D. Item No. 1.4 – Filter GAC Allowance:
 1. Includes cash allowance for purchasing, transportation, and installation of filter GAC in accordance with Division 46 Section “Gravity Filtration Equipment”.
 2. Unit of Measure: Lump sum.

- E. Item No. 1.5 – Special Inspections and Tests Allowance:
 1. Includes cash allowance for special inspections and testing in accordance with Division 01 Section “Special Inspections and Tests.”
 2. Unit of Measure:
 - a. Cost for third-party anchor testing services.
 - b. General Contractor allowable markup is 10%.
 - c. Documented by invoices, time and materials.

- F. Item No. 2.1 – Demolish Existing Equipment:
 1. Includes the demolition of the following in accordance with Division 02 Sections “Selective Demolition.”
 - a. Wheeler underdrain equipment.
 - b. Support gravel.
 - c. Retaining screen.
 - d. Hold-down straps.
 2. Unit of Measure: Lump Sum.

- G. Item No. 2.2 – Install New Underdrain Equipment:
 1. Includes the installation of filter underdrains in accordance with Division 46 Section “Gravity Filtration Equipment.”
 2. Unit of Measure: Lump Sum.

- H. Item No. 2.3 – Install New Air Scour Piping:
 1. Includes the installation of air scour piping and fittings in accordance with Division 46 Section “Gravity Filtration Equipment.” And Division 40 Section “Process Piping Systems.”
 2. Unit of Measure: Lump Sum.

- I. Item No. 2.4 – Install New Media Retention Baffles:
 - 1. Includes the installation of media retention baffles in accordance with Division 46 Section “Gravity Filtration Equipment.”
 - 2. Unit of Measure: Lump Sum.

- J. Item No. 2.5 – Service Surface Wash Arms:
 - 1. Includes the replacement of surface wash bearings and nozzles accordance with Division 46 Section “Gravity Filtration Equipment.”
 - 2. Unit of Measure: Lump Sum.

- K. Item No. 3.1 – Install New Filter Effluent Gasket:
 - 1. Includes the installation of filter effluent gasket in accordance with Division 40 Section “Process Piping Systems.”
 - 2. Unit of Measure: Lump Sum.

- L. Item No. 3.2 – Install New Interior Joint Seal:
 - 1. Includes the installation of filter effluent interior joint seal in accordance with Division 40 Section “Process Piping Systems.”
 - 2. Unit of Measure: Lump Sum.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

Not used.

END OF SECTION 01 22 00

SECTION 01 25 13 – PRODUCT SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the administration of substitutions and Product options.

1.3 SUBMITTALS

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

1.4 CONTRACTOR'S OPTIONS

- A. Products specified only by reference standards or by description:
 - 1. Select any Product meeting the standards or description by any Supplier unless otherwise required elsewhere in the Contract Documents.
 - 2. Submit for Engineer's review:
 - a. Name and address of Supplier.
 - b. Trade name.
 - c. Model or catalog designation.
 - d. Manufacturer's data including:
 - 1) Performance and test data
 - 2) Compliance with reference standards.
- B. Products specified by naming one or more suppliers without an "or equal" clause:
 - 1. Use specified Product of one of the Suppliers named.
 - 2. No substitutions.
- C. Products specified by naming one or more suppliers with an "or equal" clause:
 - 1. Indicates the option of selecting equivalent Products by stating "or equal" after the specified Suppliers.
 - 2. Engineer may waive some or all of the requirements specified for substitutions if, at Engineer's sole discretion, the proposed equivalent Product is considered an "or equal".
 - 3. If, at Engineer's sole discretion, the proposed equivalent Product does not qualify as an "or equal", it will be considered as a proposed substitute and a substitution request submittal will be required.

1.5 SUBSTITUTIONS

- A. Substitutions after the effective date of agreement:
 - 1. Within 30 days after the Effective Date of Agreement.
 - 2. Engineer will consider formal requests for substitution of Products in place of those specified unless otherwise prohibited elsewhere in the Contract Documents.
- B. Substitution Request Submittals: Submit 5 copies of the request for substitution including the following:
 - 1. Complete data substantiating compliance of the proposed substitution with the Contract Documents.
 - 2. For Products:
 - a. Names and addresses of Manufacturer and Supplier.
 - b. Product identification.

- c. Manufacturer's literature, including:
 - 1) Product description.
 - 2) Performance and test data
 - 3) Reference standards.
 - d. Samples.
 - e. Name and address of similar projects on which the Product was used and date of installation.
 3. For Construction Methods:
 - a. Detailed description of the proposed method.
 - b. Drawings illustrating methods.
 4. Itemized comparison of proposed substitution with Product or method specified.
 5. Data relating to changes in the construction schedule.
 6. Accurate cost data on the substitution and comparison with the Product or method specified.
 7. Changes to the Work which would be caused by the substitution.
- C. Contractor's Responsibilities: In making a request for a substitution, Contractor represents:
 1. Contractor has personally investigated the proposed Product or method and determined that it is equal or superior in all respects to that which is specified.
 2. Contractor will provide the same guarantee for the substitution as for the Product or method specified.
 3. Contractor will coordinate installation of the accepted substitution into the Work making such changes as may be required for the Work to be completed in all respects.
 4. Contractor waives all claims for additional cost related to the substitution which consequently become apparent.
 5. Cost data is complete and includes all related costs under Contractor's contract, but excludes costs under separate contracts and Engineer's redesign costs.
- D. Substitutions Not Considered: Substitutions will not be considered if:
 1. They are indicated or implied on Shop Drawings or Product data submittals without formal request submitted in accordance with this Section.
 2. Acceptance will require substantial revision of the Contract Documents.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

Not used.

END OF SECTION 01 25 13

SECTION 01 26 00 – CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes procedures for modifying the Contract Documents.

1.3 BULLETIN

- A. Procedures: As indicated on the form following this Section.
- B. If Bulletin is accepted, Owner may issue one or more Change Orders for some or all items listed.

1.4 FIELD ORDER

- A. Changes in Contract Price or Contract Times not permitted by use of Field Orders.
- B. Format:
 - 1. May take form of any written communication mutually acceptable to Engineer and Contractor, including, but not necessarily limited to:
 - a. Letter or memo.
 - b. Email correspondence.
 - c. Hand drawn or computer generated sketch.
- C. Procedures: Refer to the General Conditions.

1.5 WORK CHANGE DIRECTIVE

- A. Procedures: Refer to the General Conditions.

1.6 CHANGE ORDER

- A. Procedures: Refer to the General Conditions and use Owner-provided form.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION 01 26 00

SECTION 01 26 13 – REQUESTS FOR INFORMATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes procedures for Contractor to give notice of conflicts, errors, ambiguities, or discrepancies in the Contract Documents.

1.3 DEFINITIONS

- A. Abbreviation: Request for Information (RFI).

1.4 REQUESTS FOR INFORMATION

A. Format:

1. Use the enclosed RFI form or, at Contractor's option, generate form.
2. Minimum required content of Contractor's RFI form:
 - a. Project name.
 - b. Name and address of Contractor.
 - c. RFI number.
 - d. RFI date.
 - e. Name of initiator.
 - f. Complete written request, with sketches as required.
 - g. Signature of initiator.
 - h. Space for written response by Engineer, with signature and date of Engineer's representative.

B. Procedures:

1. Maintain a log of RFIs, including the RFI date and the date of the response.
2. Allow at least 15 full working days for Engineer's response following Engineer's receipt of RFI.
3. Submit written justification for shorter response time.
4. Do not submit RFIs for information already included in the Contract Documents.
5. Illegitimate RFIs may be cause for deductions in the Contract amount. See the Supplementary Conditions.
6. RFIs submitted directly by subcontractors or vendors will be rejected.
7. Changes in Contract Price or Contract Times not permitted within an RFI form.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

3.1 SCHEDULES

- A. Attached is the following form:
 1. Request for Information.

REQUEST FOR INFORMATION
PAGE 1 OF 1

CONTRACT FOR:	PROJECT NO.:
OWNER:	
CONTRACTOR:	
ENGINEER:	
THE CONTRACTOR SHALL COMPLY WITH THE PROCEDURES IN DIVISION 01 SECTION "REQUESTS FOR INFORMATION."	

RFI No.: _____

Fishbeck Project Manager: _____

REQUEST		
RFI From:	Signature:	Date:

RESPONSE		
Response From:	Signature:	Date:

END OF SECTION 01 26 13

SECTION 01 29 16 – PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes submittal to the Owner's designee of Applications for Payment and supporting documentation as specified herein.

1.3 SUBMITTALS

- A. Application for Payment: Submit 1 electronic copy on attached form.
- B. An incomplete or incorrect Application for Payment will constitute reason for refusing to recommend payment as indicated in Article 16 of the General Conditions.

1.4 FORMS

- A. Copies of the forms to be used for the above requirements are attached and include the following:
 - 1. Application for Payment.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

Not used.

APPLICATION AND RECOMMENDATION FOR PAYMENT
 PAGE 1 OF 3

TO: City of Ann Arbor
 In Care of: Fishbeck
 1515 Arboretum Drive, SE
 Grand Rapids, MI 49546

FROM (Contractor): _____

Application No: _____ Project: _____
 Period From: _____ Fishbeck Project Number: _____
 To: _____

 APPLICATION FOR PAYMENT:

Application for Payment is made, as indicated below, in connection with the Contract. Schedule of Values sheet is attached as page 3 of 3.

- 1. Original Contract Price \$ _____
- 2. Net change by Change Orders \$ _____
- 3. Current Contract Price (1 plus 2) \$ _____
- 4. Total Completed and Stored to Date (Column F) \$ _____
- 5. Retainage (Per Agreement) _____ % of Work Completed: \$ _____
 _____ % of Stored Material: \$ _____
 Total Retainage (Equal to Column H) \$ _____
- 6. Amount Eligible to Date (4 minus 5) \$ _____
- 7. Less Previous Payments \$ _____
- 8. Amount Due This Application (6 minus 7) \$ _____
- 9. Balance to Finish, Plus Retainage (Column G plus 5) \$ _____

 CHANGE ORDER SUMMARY:

Change Orders Approved by Owner	ADDITIONS	DEDUCTIONS
Change Order No. 1 Change Order No. 2 Change Order No. 3 Change Order No. 4 Change Order No. 5		
Net Change by Change Orders		

APPLICATION AND RECOMMENDATION FOR PAYMENT
PAGE 2 OF 3

CONTRACTOR'S CERTIFICATION:

The undersigned Contractor certifies that to the best of its knowledge (1) all previous progress payments received from Owner on account of Work done under the Contract have been applied on account to discharge Contractor's legitimate obligations incurred in connection with Work covered by prior Applications for Payment; (2) title of all Work, materials and equipment incorporated in said Work or otherwise listed in or covered by this Application for Payment will pass to Owner at time of payment free and clear of all Liens, security interests and encumbrances (except such as are covered by a bond acceptable to Owner indemnifying Owner against any such Liens, security interest or encumbrances); and (3) all Work covered by this Application for Payment is in accordance with the Contract Documents and is not defective.

Dated _____, 20__

Contractor

By _____
(Signature)

Name and Title of Signatory

ENGINEER'S RECOMMENDATION:

To: City of Ann Arbor

In accordance with the Contract, the undersigned recommends payment to Contractor.

AMOUNT RECOMMENDED:\$ _____
(Attach explanation if amount recommended differs from the amount applied for.)

ENGINEER: Fishbeck

Dated _____, 20__

By _____
(Signature)

Name and Title of Signatory

This Recommendation is not negotiable. The AMOUNT RECOMMENDED is payable only to Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of Owner or Contractor under this Contract.

This recommendation for payment is based on a review of the Work performed as compared to the amount of the application. This recommendation does not imply that Engineer is reviewing construction lien documents nor does it imply that Engineer is acting as a guarantor of the property. Any review of construction lien documents by Engineer is for information purposes only.

APPLICATION AND RECOMMENDATION FOR PAYMENT
 PAGE 3 OF 3

Schedule of Values

SPEC. ITEM NO.	A DESCRIPTION OF WORK	B SCHEDULED VALUE	C From Previous Applications (C + D)	D WORK COMPLETED		E This Period Presently Stored Materials (not in C or D)	F TOTAL COMPLETED AND STORED TO DATE (C+D+E)	G BALANCE TO FINISH (B-F)	H RETAINAGE
				Work in Place	%				

In tabulations above, amounts are stated to the nearest dollar. Attach additional copies of Page 3 as required. Total on the last page.

City of Ann Arbor
2024 Water Treatment Plant
Filter 18/20 Underdrain Improvements
Fishbeck Project Number 231370
C2R2 Project Number C2A-018

Payment Procedures

Section 01 29 16

END OF SECTION 01 29 16

SECTION 01 29 73 – SCHEDULE OF VALUES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes preparation and submittal of a schedule of values.

1.3 GENERAL

- A. Timing of Submittal: Submit to Engineer a schedule of values allocated to the various portions of the Work, within 10 days after the Effective Date of the Agreement.
- B. Supporting Data: Upon request of Engineer, support the values with data which will substantiate their correctness.
- C. Use of Schedule: The schedule of values, unless objected to by Engineer, shall be used only as the basis for the Contractor's Applications for Payment.

1.4 FORM AND CONTENT OF SCHEDULE OF VALUES

- A. Form and Identification:
 - 1. Type schedule on 8-1/2-inch x 11-inch white paper.
 - 2. Contractor's standard forms and automated printout may be used.
 - 3. Identify Schedule with:
 - a. Title of Project and location.
 - b. Engineer.
 - c. Project number.
 - d. Name and address of Contractor.
 - e. Contract designation.
 - f. Date of submission.
- B. Detail: Schedule shall list the installed value of the component parts of the Work in sufficient detail to serve as a basis for computing values for progress payments during construction.
- C. Format:
 - 1. Follow the Table of Contents of this Project Manual as the format for listing component items.
 - 2. Identify each line item with the number and title of the respective major Section of the Specifications.
- D. Subvalues: For each major line item list subvalues of major Products or operations under the item.
- E. Allowances:
 - 1. Include in each line item the amount of the respective allowances specified in Division 01 Section "Cash Allowances."
 - 2. For unit cost allowances, give quantities measured from Contract Documents multiplied by the unit cost equal to the total cost for the item.
- F. Change Orders: For each Application for Payment, revise schedule to list Change Orders.

- G. For the various portions of the Work:
 - 1. Each item shall include a directly proportional amount of Contractor's overhead and profit.
 - 2. For items on which progress payments will be requested for stored materials, break down the value into:
 - a. The cost of the materials, delivered and unloaded, with taxes paid.
 - b. The total installed value.

- H. The sum of all values listed in the schedule shall equal the total Contract Price.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

Not used.

END OF SECTION 01 29 73

SECTION 01 31 13 – PROJECT COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes provisions for coordination of the Work.

1.3 GENERAL COORDINATION

- A. Coordinate scheduling, submittals and work of the various Sections of the Specifications to:
 - 1. Ensure efficient and orderly sequence of installation of interdependent construction elements.
 - 2. Provide for items to be installed later.
- B. Interrelated Operating Equipment:
 - 1. Verify that characteristics of elements are compatible.
 - 2. Coordinate work of various sections having interdependent responsibilities for:
 - a. Installation.
 - b. Connection.
 - c. Placing in service.
- C. Space Coordination:
 - 1. General: Coordinate the layout and space requirements of all trades.
 - 2. Drawings:
 - a. The Drawings of the following system are diagrammatic and not to scale. Each trade shall use required offsets, bends, and special connections, which are not necessarily indicated on the Drawings, but which are required for proper installation.
 - b. Follow the routing diagrammatically indicated in the Drawings as closely as practical.
 - 3. Space Utilization and Accessibility:
 - a. Utilize space efficiently to maximize accessibility for:
 - 1) Other systems.
 - 2) Maintenance.
 - 3) Repairs.
 - 4. Layout: Layout systems parallel with lines of the building.
 - 5. Shop Drawings: Carefully review and revise the Shop Drawings from the various trades to ensure that space requirements for all systems are coordinated.
 - 6. Additional Payments: No additional payments will be made by Owner due to location adjustments of systems or installations of offsets, bends, and special connectors necessary for proper installation.
- D. In finished areas, except as otherwise indicated:
 - 1. Conceal pipes, ducts and wiring in the construction.
 - 2. Coordinate locations of fixtures and outlets with finish elements.

- E. WTP Coordination
1. Coordinate scheduling and work with other construction projects at the WTP.
 2. The following projects will be under construction simultaneously with the Work described in the various Sections of the Specifications:

Project	Schedule	Restrictions
WTP Valve and Reservoir Project	Ongoing through 2025	Coordinate with other Contractors
Barton Pump Station Project	Ongoing through 2025	Coordinate with other Contractors
Sludge Residual Removal Project	Ongoing through 2026	Coordinate with other Contractors
Carbon Change-Out	November 2024 March 2025 November 2025 March 2026 November 2026	Coordinate with other Contractors

1.4 ACCEPTANCE OF CONDITIONS

- A. Inspection:
1. Prior to performing any work under a section:
 - a. Carefully inspect the installed work.
 - b. Verify that all such work is complete to the point where the work under that Section may properly commence.
 - c. Starting of work indicates acceptance of the condition of components to which the work will be applied.
 2. Verify that all materials, equipment and Products to be installed under a Section may be installed in strict accordance with the original design and reviewed Shop Drawings.
- B. Discrepancies:
1. Resolve all discrepancies and conflicts between the trades.
 2. Do not proceed with installation in areas of discrepancy until all such discrepancies have been fully resolved.

1.5 SLEEVES AND INSERTS

- A. Function: For pipes, conduits and similar items in forms, walls, partitions and floors.
- B. Trades: Furnish required sleeves and inserts.
- C. Place sleeve and inserts in ample time so as to not delay work.
- D. Except as approved by Engineer, do not place sleeves vertically through:
1. Beams.
 2. Girders.
 3. Similar construction.
- E. Maintain in proper position during subsequent work.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

Not used.

END OF SECTION 01 31 13

SECTION 01 31 19 – PROJECT MEETINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

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

1.3 PRECONSTRUCTION MEETING

- A. Schedule: Preconstruction meeting will be scheduled by Engineer:
 - 1. Within 20 days after the Effective Date of Agreement.
 - 2. Before starting the Work at the Site.
- B. Attendance: Representatives of the following parties are to be in attendance at the meeting:
 - 1. Owner.
 - 2. Engineer.
 - 3. Contractor.
 - 4. Major Subcontractors.
 - 5. Governmental or regulatory agencies when appropriate.

1.4 PROGRESS MEETINGS

- A. Types of Progress Meetings:
 - 1. Regular.
 - 2. Called.
 - 3. Preinstallation for the following: Filter Underdrains.
- B. Schedule meetings as follows unless otherwise approved by Engineer:
 - 1. Regular: Monthly.
 - 2. Called: As the progress of the Work dictates.
 - 3. Preinstallation: At least 5 working days prior to start of installation.
- C. Location: Hold meetings at the City of Ann Arbor WTP or as indicated in the notice.

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

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

Not used.

END OF SECTION 01 31 19

SECTION 01 32 16 – CONSTRUCTION PROGRESS SCHEDULE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the preparation, furnishing, distribution and periodic revision of construction progress schedules.

PART 2 - PRODUCTS

2.1 FORM OF SCHEDULE

- A. Preparation:
 - 1. Prepare in the form of a horizontal bar chart, CPM network, or other form as previously approved by Engineer.
 - 2. Provide a separate horizontal bar column or path for each trade or operation.
 - 3. Prepare the schedule in the chronological order of the beginning of each item of work.
 - 4. Identify each column or path by:
 - a. Major Specification Section number.
 - b. Distinct graphic delineation.
 - 5. Use a horizontal time scale and identify the first work day of each week.
 - 6. Allow space for updating.
- B. Size: The schedule sheets shall be 11 inches x 17 inches unless otherwise approved by Engineer.

2.2 CONTENT OF SCHEDULES

- A. Construction Sequence:
 - 1. Provide a complete sequence of construction by activity and Milestones.
 - 2. For Shop Drawings, project data and Samples indicate the following:
 - a. Submittal dates.
 - b. Dates review copies will be required.
 - 3. Show decision dates for selection of finishes.
 - 4. Show Product procurement and delivery dates.
 - 5. Show dates for beginning and completion of each element of construction.
- B. Percentage Completion: Show the projected percentage of completion for each item of work as of the first day of each month.
- C. Subschedules:
 - 1. Provide separate subschedules showing submittals, review times, procurement schedules and delivery days.
 - 2. Provide subschedules to define critical portions of the entire schedule.

PART 3 - EXECUTION

3.1 SUBMITTALS

- A. Preliminary Schedule:
 - 1. Submit the preliminary schedule within 10 days after the Effective Date of Agreement.
 - 2. Engineer will review schedules and will return the reviewed copy within 15 days after receipt.
 - 3. If required, resubmit within 7 days after receipt of a returned review copy.
 - 4. Meet with Engineer at least 10 days prior to the submission of the first Application for Payment to review the schedule.
- B. Periodic Adjustment: Monthly, submit a revised schedule accurately depicting adjustments and progress to the first day of each month.
- C. Number of Copies: Submit the number of copies required by Contractor, plus 4 copies to be retained by Engineer.

3.2 DISTRIBUTION

- A. Reviewed Schedules: Distribute copies of the reviewed schedules to the following:
 - 1. Job Site file.
 - 2. Subcontractors.
 - 3. Other concerned parties.
- B. Instructions to Recipients: Instruct recipients to report all inability to comply with the schedule, and provide detailed explanations with suggested remedies.

3.3 ADJUSTMENT OF PROGRESS SCHEDULE

- A. Changes: Show all changes occurring since previous submission of the schedule.
- B. Progress: Indicate progress of each activity and show completion dates.
- C. Other Items:
 - 1. Include major changes in scope.
 - 2. Include activities modified since previous updating.
 - 3. Include revised projections due to changes.
 - 4. Include other identifiable changes.
- D. Narrative Report: Provide a narrative report including:
 - 1. A discussion of problem areas including current and anticipated delay factors and their impact.
 - 2. Direct action taken, or proposed, and its effect.
 - 3. A description of revisions including:
 - a. Their effect on the schedule due to change of scope.
 - b. Revisions in duration of activities.
 - c. Other changes that may affect the schedule.
 - 4. The status of completion of Milestones.

END OF SECTION 01 32 16

SECTION 01 33 00 – SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes procedures for the submittal of Shop Drawings, Product Data, Samples, Operation and Maintenance Manuals, and other information.
- B. Related Sections include pertinent Sections of these Specifications for the individual Submittals required.

1.3 DEFINITIONS

- A. Submittal: Information sent by Contractor to convey information about systems, equipment, materials, products, and administrative matters for the Work.
- B. Resubmittal: Submittal sent for review a second or further time.
- C. Product Data: Illustrations, standard schedules, diagrams, performance charts, instructions, brochures, or manufacturer's literature that describe the physical size, appearance, and other characteristics of materials or equipment for a portion of the Work.
- D. Shop Drawings: Drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work.
- E. Action Submittals: Submittals that require Engineer's response.
- F. Informational Submittals: Submittals that do not require Engineer's response.
- G. Portable Document Format (PDF): An open standard file format licensed by Adobe Systems used for representing documents in a device-independent and display resolution-independent fixed-layout document format. All PDF files shall be searchable.

1.4 SUBMITTAL PROCEDURES

- A. Submittal Schedule:
 - 1. Prepare and submit a Submittal schedule that identifies the following for each Submittal:
 - a. Submittal number
 - b. Submittal description
 - c. Projected date Submittal will be submitted.
 - 2. An electronic copy (MS Excel file) of a blank Submittal schedule, in the preferred format, will be furnished by Engineer at the preconstruction meeting.
 - 3. Submittal Numbers:
 - a. Use the applicable Specification Section number followed by a decimal point and then a sequential number (e.g., 06 10 00.1). Where a Submittal is required via a Drawing (instead of a Specification Section), use the applicable Drawing Number followed by a decimal point and then a sequential number (e.g., M501.1.1).
 - b. Resubmittals shall include a letter suffix after another decimal point (e.g., 06 10 00.1.A).
 - c. Submittals that are not numbered correctly may be rejected.

- B. Delivery Method:
1. Web-Based Collaboration and Document Sharing System:
 - a. A web-based collaboration and document sharing system may be utilized at Contractor's, Owner's, or Engineer's option.
 - b. Use of such a system will be discussed during the preconstruction meeting.
 - c. All parties must agree on use of a web-based collaboration and document sharing system.
 - d. Training and licensing will be provided for all parties by the party suggesting use of a web-based collaboration and document sharing system.
 2. Where a web-based collaboration and document sharing system is not utilized, Submittals may be delivered as paper copies or electronic files at Contractor's option; except for Operation and Maintenance Manuals, which shall be delivered as specified herein.
 3. Advise Engineer and Owner of delivery method to be used at the preconstruction meeting.
 4. Where Submittals include information that is intended to be printed on sheets larger than 11 inches x 17 inches, or where scale or drawing size are critical for proper review, submit 2 paper copies for review.
 5. Paper Copies:
 - a. Unless indicated otherwise, submit 2 copies of each Submittal.
 - b. One copy of each Action Submittal will be returned to Contractor.
 - c. Extra copies submitted by Contractor will be discarded.
 6. Electronic Files:
 - a. Unless indicated otherwise, submit 1 copy of each Submittal in PDF format.
 - b. Scanned Submittals shall be produced in such a way as to not compromise the graphic quality or accuracy of scale, where applicable; and text shall be searchable.
 - c. One copy of each Action Submittal will be returned to Contractor.
 - d. Transmit Submittals via electronic mail (e-mail) or web-based collaboration and document sharing system, where used. Submittals that are transmitted electronically will be returned electronically.
 7. Transmit Submittals to party and address identified by Engineer at preconstruction meeting.
- C. Coordination and Timing: Coordinate preparation and processing of Submittals with performance of construction activities. Contractor is responsible for cost of delays caused by lack of coordination or tardiness of Submittals. Incomplete Submittals will be rejected.
1. Coordinate each Submittal with fabrication, purchasing, testing, delivery, other Submittals, and related activities that require sequential activity.
 2. Coordinate transmittal of different types of Submittals for related parts of the Work so processing will not be delayed because of need to review Submittals concurrently for coordination.
 - a. Engineer reserves the right to withhold action on a Submittal requiring coordination with other Submittals until related Submittals are received.
- D. Processing Time: Allow 15 full working days for Engineer to review each Submittal, including Resubmittals. Time for review shall commence on Engineer's receipt of Submittal. No extension of the Contract Time will be authorized because of failure to transmit Submittals enough in advance of the Work to permit processing, including Resubmittals. Engineer will advise Contractor when a Submittal being processed must be delayed for coordination.
- E. Identification: Place a permanent label on each Submittal or generate a separate cover sheet.
1. Indicate name of firm or entity that prepared Submittal.
 2. Provide space to record Contractor's review and approval markings and action taken by Engineer.
 3. Include the following information:
 - a. Project name.
 - b. Date.
 - c. Name and address of Engineer.
 - d. Name and address of Contractor.
 - e. Name and address of Subcontractor(s).
 - f. Name and address of Supplier(s).
 - g. Name of Manufacturer.
 - h. Submittal number, including revision identifier.
 - i. Drawing number and detail references, as applicable.
 - j. Location(s) where product is to be installed, as applicable.
 - k. Other necessary identification.

- F. Deviations: Encircle or otherwise specifically identify deviations from the Contract Documents on Submittals. Submittals that include deviations that are not identified may be rejected. Engineer may or may not consider deviations. Deviations are not substitutions. Refer to Division 01 Section "Product Substitution Procedures" for procedures regarding requests for substitutions.
- G. Transmittal: Package each Submittal individually and appropriately for transmittal and handling. Transmit each Submittal using a transmittal form. Engineer will reject Submittal(s) received from sources other than Contractor.
- H. Resubmittals: Make Resubmittals in same form and number of copies as initial Submittal.
 - 1. Note date and content of previous Submittal.
 - 2. Clearly identify additions and revisions.
 - 3. Resubmit Submittals until they are marked, "Reviewed, No Exceptions Noted" or "Reviewed With Corrections Noted."
- I. Distribution: Furnish copies of Submittals with mark indicating, "Reviewed, No Exceptions Noted" or "Reviewed With Corrections Noted," to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities.
- J. Use for Construction: Unless otherwise indicated by Engineer, use only Submittals with mark indicating, "Reviewed, No Exceptions Noted" or "Reviewed With Corrections Noted."

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

- A. At Contractor's written request, copies of Engineer's electronic Drawing files may be provided to Contractor for Contractor's use in connection with Project, including Submittal preparation. Electronic files may be furnished by Engineer for the convenience of the Contractor. Conclusions or information obtained or derived from such electronic files will be at the Contractor's sole risk. Materials furnished by Engineer that may be relied upon are limited to printed Contract Documents.
- B. When Contractor uses Engineer's electronic Drawing files to facilitate Submittal preparation, prepare Submittals to be project specific. Submittals that are not project specific, including Engineer's Drawing files submitted on a new title block, will be rejected.

PART 2 - PRODUCTS

2.1 ACTION SUBMITTALS

- A. General: Prepare and submit project specific Action Submittals required by individual Specification Sections. Do not use highlighting that would not be reproducible. Include a table of contents or index with each Submittal. As part of electronic submittals, the table of contents or index shall include electronic bookmarks to the first page of the respective Section(s) identified.
- B. Product Data: Collect information into a single Submittal for each element of construction and type of product or equipment.
 - 1. If information must be specially prepared for Submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
 - 2. Mark each copy of each Submittal to indicate which products and options are applicable.
 - 3. Include the following information, as applicable:
 - a. Manufacturer's written recommendations.
 - b. Manufacturer's product specifications.
 - c. Manufacturer's installation instructions.
 - d. Color charts as required by individual Specification Sections.
 - e. Manufacturer's catalog cuts.
 - f. Wiring diagrams showing factory-installed wiring.
 - g. Printed performance curves.
 - h. Operational range diagrams.

- i. Mill reports.
 - j. Standard product operation and maintenance manuals.
 - k. Compliance with specified referenced standards.
 - l. Testing by recognized testing agency.
 - m. Application of testing agency labels and seals.
 - n. Notation of coordination requirements.
 4. Submit Product Data before or concurrent with Samples.
 5. Maintain copy of returned Submittal for Project records.
- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale where appropriate. Scale shall be sufficiently large to indicate pertinent features of the item and its method of connection to the Work.
 1. Preparation: Fully illustrate requirements of the Contract Documents. Include the following information, as applicable:
 - a. Dimensions.
 - b. Identification of products.
 - c. Fabrication and installation drawings.
 - d. Colors and materials as applicable.
 - e. Roughing-in and setting diagrams.
 - f. Wiring diagrams showing field-installed wiring, including power, signal, control, and communication wiring. Differentiate between Manufacturer-installed and field-installed wiring.
 - g. Manufacturing instructions.
 - h. Templates and patterns.
 - i. Schedules.
 - j. Calculations.
 - k. Compliance with specified standards.
 - l. Notation of coordination requirements.
 - m. Notation of dimensions established by field measurement.
 - n. Relationship to adjoining construction clearly indicated.
 2. Sheet Size: Submit Shop Drawings on sheets at least 8-1/2 inches x 11 inches but no larger than 24 inches x 36 inches.
 3. Maintain copy of returned Submittal for Project records.
- D. Operation and Maintenance Manuals:
 1. General:
 - a. Where manuals are required to be submitted covering items included in the Work, prepare such manuals in durable plastic binders approximately 8-1/2 inches x 11 inches in size and with at least the following:
 - 1) Identification on, or readable through, the front cover stating general nature of the manual.
 - 2) Include a table of contents or index with each Submittal, near the front of the manual. As part of electronic submittals, the table of contents or index shall include electronic bookmarks to the first page of the respective Section(s) identified.
 - 3) Complete instructions regarding operation and maintenance of equipment involved, including:
 - a) Equipment function, normal operating characteristics, and limiting conditions.
 - b) Assembly, installation, alignment, adjustment, and checking instructions.
 - c) Operating instructions for start-up, routine and normal operating, regulation and control, shutdown, and emergency conditions.
 - d) Maintenance instructions, including lubrication requirements where applicable.
 - e) Guide to "troubleshooting".
 - f) Parts lists and predicted life of parts subject to wear.
 - g) Project specific outline and cross sections, assembly drawings, engineering data, and wiring diagrams. Wiring diagrams shall reflect final, as-installed conditions and include wire numbers.
 - h) Test data and performance curves.
 - 4) Complete nomenclature of all replaceable parts, their part numbers, current costs, and name and address of nearest vendor of parts.
 - 5) Copies of guarantees and warranties issued.
 - 6) Copies of the reviewed Submittals.
 - 7) Copies of data concerning changes made during construction.

2. Extraneous Data: Where contents of the manuals include Manufacturer's catalog pages, clearly indicate the precise items included in this installation and delete all Manufacturers' data with which this installation is not concerned. Do not use highlighting that would not be reproducible.
3. Number of Copies Required: Unless otherwise specifically directed by Engineer, or stipulated in the pertinent Section of these Specifications:
 - a. For review, submit 1 paper and 1 electronic copy.
 - b. For record, deliver 4 paper and 1 electronic copies to Engineer.
4. Schedule delivery of record copies of operation and maintenance manuals at least 14 days prior to startup of respective equipment, unless otherwise specified.

2.2 INFORMATIONAL SUBMITTALS

- A. General: Prepare and submit Informational Submittals required by individual Specification Sections. Do not use highlighting that would not be reproducible. Include a table of contents or index with each Submittal. As part of electronic submittals, the table of contents or index shall include electronic bookmarks to the first page of the respective Section(s) identified.
- B. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
- C. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of architects/engineers and owners, and other information specified.
- D. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification (WPS) and Procedure Qualification Record (PQR) on AWS forms. Include names of firms and personnel certified.
- E. Installer Certificates: Prepare written statements on Manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by Manufacturer for this Project.
- F. Manufacturer Certificates: Prepare written statements on Manufacturer's letterhead certifying that Manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
- G. Product Certificates: Prepare written statements on Manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
- H. Material Certificates: Prepare written statements on Manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
- I. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
- J. Product Test Reports: Prepare written reports indicating current product produced by Manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by Manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- K. Research/Evaluation Reports: Prepare written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
 1. Name of evaluation organization.
 2. Date of evaluation.

3. Time period when report is in effect.
 4. Product and manufacturers' names.
 5. Description of product.
 6. Test procedures and results.
 7. Limitations of use.
- L. Preconstruction Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
- M. Compatibility Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
- N. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
- O. Manufacturer's Instructions: Prepare written or published information that documents Manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of Manufacturer. Include the following, as applicable:
1. Preparation of substrates.
 2. Required substrate tolerances.
 3. Sequence of installation or erection.
 4. Required installation tolerances.
 5. Required adjustments.
 6. Recommendations for cleaning and protection.
- P. Manufacturer's Field Reports: Prepare written information documenting tests and inspections of factory-authorized service representative. Include the following, as applicable:
1. Name, address, and telephone number of factory-authorized service representative making report.
 2. Statement of substrate condition and acceptability of substrate for installation or application of product.
 3. Statement that products at Site comply with requirements.
 4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
 5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 6. Statement whether conditions, products, and installation will affect warranty.
 7. Document settings in writing.
 8. Other required items indicated in individual Specification Sections.
- Q. Safety Data Sheets (SDSs): Submit information directly to Owner; do not submit to Engineer.
1. Engineer will not review Submittals that include SDSs and will return the entire Submittal for Resubmittal.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

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

- B. Submittals that are not approved and stamped by Contractor will be rejected.

3.2 ENGINEER'S REVIEW

- A. Action Submittals: Engineer will review Action Submittals, make marks to indicate corrections or modifications required, and return Submittal. Engineer will stamp each Submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows:
 - 1. Reviewed, No Exceptions Noted: Submittal appears to conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
 - 2. Reviewed With Corrections Noted: Upon incorporation of review comments, it appears that Submittal will conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
 - 3. Revise and Resubmit: Submittal has one or more specific segments that are incomplete, do not appear to conform to the information given in the Contract Documents, or are incompatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Contractor shall resubmit information for review to demonstrate understanding of comments and portions of Work to be provided. Except as noted, Contractor shall not proceed with Work related to Submittal.
 - 4. Rejected, Resubmit: Submittal as a whole is incomplete, does not appear to conform to the information given in the Contract Documents, or is incompatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Contractor shall resubmit information for review to demonstrate understanding of comments and portions of Work to be provided. Contractor shall not proceed with Work related to Submittal.
- B. Informational Submittals: Other Submittals required by the Contract Documents are for information only. Engineer will acknowledge receipt of Informational Submittals. Such Submittals include, but are not limited to:
 - 1. Qualifications Data.
 - 2. Certificates.
 - 3. Test Reports.
 - 4. Manufacturer's Instructions.
 - 5. Maintenance Data.
 - 6. Field Reports.
- C. Delegated-Design Submittals: Review of Delegated-Design Submittals by Engineer shall not relieve Contractor of Contractor's sole responsibility for design and achieving specified performance.
- D. Submittals not required by the Contract Documents will be returned without being reviewed.
- E. Partial Submittals are not acceptable, will be considered non-responsive, and will be rejected.

END OF SECTION 01 33 00

SECTION 01 41 00 – REGULATORY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes provisions for requirements and fees of regulatory agencies.
- B. Related Sections include permits and licenses indicated in other Sections.
- C. The General Conditions requires that Contractor obtain and pay for all construction permits. This Section includes provisions for specific permits but does not include all permits.

1.3 PERMITS

- A. Owner has applied for and will obtain the following permits:
 - 1. Water System Construction (Act 399, P.A. 1976):
 - a. Agency: EGLE.
 - b. Permit No.: TBD
 - c. Application Date: May 30, 2024.
- B. Permit Compliances:
 - 1. Ensure that permit has been issued prior to beginning the Work.
 - 2. Comply with requirements of permits.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

Not used.

END OF SECTION 01 41 00

SECTION 01 42 00 – REFERENCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes provisions for references throughout the Contract Documents.

1.3 DEFINITIONS

- A. Abbreviations:

1. ACI - American Concrete Institute, 38800 Country Club Dr., Farmington Hills, MI 48331.
2. AISC - American Institute of Steel Construction, Inc., One East Wacker Dr., Suite 700, Chicago, IL 60601-1802.
3. ANSI - American National Standards Institute, 25 West 43rd St., 4th Floor, New York, NY 10036.
4. ASTM - American Society for Testing and Materials, 100 Barr Harbor Dr., West Conshohocken, PA 19428-2959.
5. AWS - American Welding Society, Inc., 550 N.W. LeJeune Road, Miami, FL 33126.
6. AWWA - American Water Works Association, 6666 West Quincy Avenue, Denver, CO 80235.
7. CRSI - Concrete Reinforcing Steel Institute, 933 Plum Grove Road, Schaumburg, IL 60173-4758.
8. EGLE - Michigan Department of Environment, Great Lakes and Energy, 525 West Allegan Street, P.O. Box 30473, Lansing, MI 48909-7973.
9. MDCH - Michigan Department of Community Health, 201 Townsend Street, Lansing, MI 48913.
10. MIOSHA - Michigan Department of Licensing and Regulatory Affairs, Michigan Occupational and Health Administration, State Secondary Complex, 7150 Harris Drive, P.O. Box 30643, Lansing, MI 48909-8143.
11. NSF – National Sanitation Foundation International; 789 N. Dixboro Road, Ann Arbor, MI 48105.

1.4 REFERENCES

- A. The provisions of the Contract Documents shall govern over any conflicting provisions of the referenced documents.
- B. The provisions of laws and regulations shall govern over any conflicting provisions of the referenced documents.
- C. Comply with the referenced document that is in effect as of the Bid date, except when a specific date is specified.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

Not used.

END OF SECTION 01 42 00

SECTION 01 45 34 – SPECIAL INSPECTIONS AND TESTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes provisions for special inspections as follows and includes the Statement of Special Inspections.
 - 1. Special inspections of anchors for filter underdrain system.
- B. Special inspection services which will be paid from a cash allowance as specified in Division 01 Section "Cash Allowances" and performed by a special inspector or inspectors selected by Owner:
 - 1. Anchors.
 - 2. Travel expense of the special inspector.
- C. Include the following testing, special inspections, and certifications in the Contractor's Base Bid:
 - 1. Inspections and tests required by codes or ordinances or by an authority having jurisdiction and made by a legally constituted authority.
 - 2. Inspections, testing services and certifications including, but not limited to, the following:
 - a. Pipe leakage tests.
 - b. Welder certifications.
 - c. Structural steel yield strength mill tests.
 - d. Pipe material yield strength tests.
 - e. Manufacturer's certificate of compliance for high-strength bolts.
 - f. Manufacturer's certificate of compliance for weld filler metal.
 - g. Manufacturers' certification tests for cement.
 - h. Supplier's certification tests for fine and coarse aggregate.
 - i. Aggregate alkali reactivity testing.
 - j. Supplier's certification tests for bedding material.
 - k. Testing in connection with the Engineer's review of materials and equipment proposed by Contractor to be incorporated into the Work.
 - l. Testing performed for the Contractor's convenience.
- D. Owner Paid Items: Owner may elect to inspect or to employ either Engineer or a special inspector to inspect materials or systems on the Project other than those specified herein. The cost of this inspection will be paid for by Owner.
- E. Special inspection services are required to verify compliance with the Contract Documents and with the requirements of the Building Code. These services do not relieve Contractor of responsibility for verification of compliance with Contract Document requirements.

1.3 REFERENCES

- A. Except as herein specified or as indicated on the Drawings, the work of this Section shall comply with the following:
 - 1. ACI - American Concrete Institute:
 - a. 211.1 - Standard Practice for Selecting Proportions for Normal, Heavyweight and Mass Concrete.
 - b. 301 - Specification for Structural Concrete.
 - c. 318 - Building Code Requirements for Reinforced Concrete.
 - d. 530 - Building Code Requirements for Masonry Structures.
 - e. 530.1 - Specifications for Masonry Structures.
 - 2. AISI: 360 - Specification for Structural Steel Buildings.

3. ASTM Standards:
 - a. C31 - Practice for Making and Curing Concrete Test Specimens in the Field.
 - b. C33 - Specification for Concrete Aggregates Including Appendix XI.
 - c. C39 - Test Method for Compressive Strength of Cylindrical Concrete Specimens.
 - d. C42 - Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.
 - e. C138 - Test Method for Density (Unit Weight), Yield and Air Content (Gravimetric) of Concrete.
 - f. C140 - Test Methods of Sampling and Testing Concrete Masonry Units and Related Units.
 - g. C143 - Test Method for Slump of Hydraulic-Cement Concrete.
 - h. C157 - Test Method for Length Change of Hardened Hydraulic-Cement Mortar and Concrete.
 - i. C172 - Practice for Sampling Freshly Mixed Concrete.
 - j. C173 - Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method.
 - k. C192 - Practice for Making and Curing Concrete Test Specimens in the Laboratory.
 - l. C231 - Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.
 - m. C295 - Guide for Petrographic Examination of Aggregates for Concrete.
 - n. C1019 - Test Method for Sampling and Testing Grout.
 - o. D698 - Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort.
 - p. D1556 - Test Method for Density and Unit Weight of Soil In Place by Sand-Cone Method.
 - q. D1557 - Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort.
 - r. D1586 - Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils.
 - s. D2166 - Test Method for Unconfined Compressive Strength of Cohesive Soil.
 - t. D2167 - Test Method for Density and Unit Weight of Soil In Place by the Rubber Balloon Method.
 - u. D2937 - Test Method for Density of Soil in Place by Drive-Cylinder Method.
 - v. D6938 - Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth).
4. AWS:
 - a. D1.1 - Structural Welding Code - Steel.
 - b. D1.3 - Structural Welding Code - Sheet Steel.
 - c. D1.4 - Structural Welding Code - Reinforcing Steel.
 - d. D1.8 - Structural Welding Code - Seismic Supplement.
5. Michigan Building Code.
6. RCSC - Research Council on Structural Connections: Specification for Structural Joints Using High-Strength Bolts.
7. SDI - Steel Deck Institute: QA/QC – Quality Control and Quality Assurance for Installation of Steel Deck.

1.4 DEFINITIONS

A. Terms:

1. Building Code: The building code plus amendments, if any, legally adopted for the location in which the Project is located.
2. Special Inspection: Inspection and testing as herein required of materials, installation, fabrication, erection or placement of components and connections requiring special expertise of one or more approved special inspectors in order to ensure compliance with the Building Code and the Contract Documents.
3. Testing Agency; Independent Testing Agency: Special inspector.

1.5 PERFORMANCE REQUIREMENTS

A. Special Inspector Qualifications:

1. Qualified in accordance with the Building Code and by local building official.
2. Objective, competent and independent from the contractor performing the work to be inspected.
3. Familiar with Building Code requirements for special inspections.
4. Having adequate equipment, periodically calibrated as required, to perform the special inspections.
5. Employing experienced personnel educated in conducting, supervising and evaluating special inspections similar in complexity to that required for the Project.
6. Weld Inspectors: Certified in accordance with AWS D1.1, D1.3, D1.4 and D1.8, as applicable.

7. Submission of Qualifications:
 - a. Special Inspector: Provide to the building official written documentation as required to demonstrate competence, objectivity and experience or training.
 - b. Disclose possible conflicts of interest.
- B. Perform special inspections in accordance with:
 1. Laws and Regulations.
 2. Reference procedures and requirements.
 3. Building Code.
 4. Contract Documents.
 5. Manufacturer's requirements, as applicable.
 6. Reviewed submittals for the Project, as applicable.

1.6 REINSPECTION COSTS

- A. Reinspection:
 1. When initial special inspections of items except soil compaction indicate noncompliance with the Contract Documents, subsequent special inspections occasioned by the noncompliance shall be performed by the same special inspection agency, and the costs thereof will be deducted by the Owner from the Contract Sum.
 2. Soil Compaction:
 - a. The first retesting of soil compaction shall be paid for in accordance with the provisions of the Contract Documents.
 - b. The second and subsequent retesting for soil compaction due to noncompliance with the Contract Documents shall be performed by the same special inspection agency, and the costs thereof will be deducted by the Owner from the Contract Sum.
- B. Uncovering Costs: Paid for as described in the General Conditions.

1.7 REPORTS AND SUBMISSIONS

- A. Special Inspection Reports:
 1. Special Inspector: Keep records of special inspections in accordance with the Building Code.
 2. Records: Indicate that work inspected was or was not completed in conformance with the Contract Documents.
 3. Report and reinspect non-conformances until they are in conformance with the Contract Documents.
 4. Final Report:
 - a. Prepare and submit a final report at the completion of the special inspections.
 - b. Document the completion of specified special inspections and correction of discrepancies.
 - c. Submit as specified for inspection reports.
 5. Provide typed electronic copies of reports to:
 - a. Engineer.
 - b. Contractor.
 - c. Building official.
 6. Discrepancies: Bring to immediate attention of Contractor, and, if not corrected, to attention of Engineer and building official.

1.8 SCHEDULES FOR SPECIAL INSPECTIONS

- A. Establishing Schedule: By advance discussion between special inspector and Contractor, determine the time required to perform special inspection and to issue findings.
- B. Revising Schedule: When changes of construction schedule are necessary during construction, coordinate such changes of schedule with the special inspector.

- C. Adherence to Schedule: When the special inspector is ready according to the determined schedule, but is prevented from performing special inspection due to incompleteness of the Work, extra costs attributable to the delay may be charged to Contractor and shall not be borne by Owner.

1.9 CONTRACTOR'S DUTIES

- A. Cooperate with Special Inspector:
 - 1. Schedule the Work so that special inspector is allowed a reasonable schedule and amount of time to access and view the components requiring special inspection before being obscured by subsequent construction.
 - 2. Notify special inspector 24 hours minimum prior to expected time when special inspection services will be required.
 - 3. Provide the following as necessary for special inspector to properly perform its functions:
 - a. Access to the Work.
 - b. Facilities for access to the Work.
 - c. Tools.
 - d. Storage.
 - e. Assistance as requested.
- B. Submission of Written Statements:
 - 1. To be submitted by each contractor responsible for construction of a main wind or seismic force resisting system, designated seismic system or a wind or seismic resisting component listed in the Statement of Special Inspections.
 - a. Submit to building official, Owner, and Engineer, prior to commencement of construction on the respective system or component.
 - b. Acknowledging awareness of the special inspections specified herein.
 - 2. Each fabricator, at the completion of their respective fabrication, shall submit a certificate of compliance to the building official and Engineer stating that the fabrication was performed in accordance with the Contract Documents.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

3.1 STATEMENT OF SPECIAL INSPECTIONS

- A. Frequency of Special Inspections:
 - 1. The minimum frequency of the special inspections (periodic vs. continuous) shall be as indicated in the Building Code.
 - 2. Quality assurance inspections performed in accordance with standards referenced herein shall conform to the frequency requirements indicated in those standards.
- B. Steel Construction:
 - 1. Inspect and verify structural steel in accordance with the quality assurance requirements of AISC 360 and the Contract Documents.
 - 2. Steel Construction Other Than Structural Steel:
 - a. Inspect and verify in accordance with Table 1705.2.2 of the building code and the Contract Documents.
- C. Concrete Repair Materials: In accordance with Division 03 Section "Rehabilitation of Cast-in-Place Concrete."

END OF SECTION 01 45 34

SECTION 01 50 00 – TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the furnishing and installation of construction facilities as follows:
 - 1. Temporary Utilities: Water, electricity.
 - 2. Contractor's field offices.
 - 3. Sanitary facilities.
 - 4. Enclosures such as tarpaulins, barricades, and canopies.
 - 5. Storage areas.

1.3 STORAGE AREAS

- A. Locations:
 - 1. The following general areas are available for storage:
 - a. Areas indicated on Drawings around Water Treatment Plant.
 - 2. Specific storage locations within the general areas:
 - a. Carefully coordinate with Owner.
 - b. Subject to approval of Owner.
 - 3. Contractor shall not block access to the thickeners, treatment basins, or other areas designated by the Owner.
- B. Protection and Restoration:
 - 1. Replace grass and other vegetation disturbed or damaged in the storage areas.
 - 2. Take reasonable means to prevent spillage of fuel, oil, chemicals and similar materials.
 - 3. Clean up spills and, if necessary, remove soil and replace with uncontaminated soil so as to allow vegetation to be quickly reestablished.
- C. Cleaning: Keep storage areas clean in accordance with Division 01 Section "Cleaning and Waste Management."
- D. Storage: Maintain in accordance with Division 01 Section "Product Storage and Handling Requirements."

PART 2 - PRODUCTS

2.1 MATERIALS

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

2.2 UTILITIES

- A. Temporary Utilities:
 - 1. Equipment Testing:
 - a. Pay utility charges for all power, water, and other utilities.
 - b. Furnish, install, remove, and pay for associated temporary equipment, piping, pumps, fuel, power distribution, and connections.

2. Water: Provided by Owner
3. Electricity: Provided by Contractor.

2.3 FIELD OFFICES

- A. Contractor's Field Office:
1. Contractor's field office shall have at least 1 outside door.
 2. Pay for all heat, electricity and telephone charges.

2.4 SANITARY FACILITIES

- A. Furnish and install required sanitary facilities, including temporary toilet buildings with sanitary toilets and hand washing facilities or hand sanitizing stations, for use of workers; comply with minimum requirements of the Health Department or other public agency having jurisdiction; maintain in a sanitary condition at all times.

2.5 CONSTRUCTION HEATING

- A. General:
1. All heating required during the progress of the Work, prior to the installation of the permanent heating system, shall be classified "temporary heat".
 2. Prior to the installation of permanent heating equipment, furnish approved heaters and fuel as required.
 3. Keep equipment and surroundings in clean, safe condition.
 4. Pay all fuel bills for heat.
- B. Permanent Heating Equipment:
1. Notify Engineer when installed and proposed to be used to heat building interior.
 2. Prior to using, provide adequate means to keep internal duct and acoustic liner surfaces clean and in a like-new condition.
 3. Filters:
 - a. In accordance with Division 23 Section "HVAC Air Cleaning Devices."
 - b. Securely supported at each return and exhaust air open duct end and grille.
 - c. Support filter length at required intervals to prevent filter deformation.
 - d. Replaced at intervals required to keep internal duct and acoustic liner surfaces free of construction debris and dust.
 4. Ductwork used by Contractor without adequate protection shall be cleaned to Engineer's satisfaction.
- C. Temperatures:
1. Except as otherwise called for, a minimum temperature of 50 degrees F and a maximum temperature of 75 degrees F in the building shall be maintained during working hours and above freezing at all other times.
 2. See requirements of various other Sections of these Specifications for minimum temperature to be maintained for the application of work under the various trades.

2.6 OTHER TEMPORARY CONSTRUCTION FACILITIES

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

PART 3 - EXECUTION

3.1 GENERAL

- A. Comply with applicable requirements specified in: Local Building Code.
- B. Maintain and operate systems to ensure continuous service.
- C. Modify and extend systems as Work progress requires.

3.2 TEMPORARY CONTROLS

- A. Traffic Control:
 - 1. Provide adequate barricades and take all necessary precautions for the protection of the Work, and the safety of the WTP staff.
 - 2. Maintain access for all WTP operations, deliveries, and normal activity for the duration of the Work.

3.3 REMOVAL

- A. Maintain all temporary facilities and controls as long as needed for the safe and proper completion of the Work. Remove all such temporary facilities and controls as rapidly as progress of the Work will permit.

END OF SECTION 01 50 00

SECTION 01 66 00 – PRODUCT STORAGE AND HANDLING REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes provisions for the storage and protection of Products.

1.3 STORAGE AND PROTECTION

- A. Storage:
 - 1. Maintain ample way for foot traffic at all times, except as otherwise approved by Engineer.
 - 2. Repair or replace property damaged by reason of storing of material at no additional cost to Owner.
 - 3. Packaged Materials:
 - a. Delivered in original, unopened containers.
 - b. Stored until ready for use.
 - 4. Materials shall meet the requirements of these Specifications at the time that they are used in the Work.
 - 5. Store Products in accordance with Manufacturer's instructions.
- B. Protection:
 - 1. Use all means necessary to protect the:
 - a. Products of every Section before, during and after installation.
 - b. Installed work and materials of all trades.
 - 2. All materials shall be delivered, stored and handled to prevent:
 - a. The inclusion of foreign materials.
 - b. Damage by water, breakage or other causes.
 - 3. Provide weathertight storage sheds with raised floors as may be required to adequately protect those materials and Products stored on the Site which may require protection from damage by the elements.
- C. Replacements: In the event of damage, immediately make all repairs and replacements necessary to the approval of Engineer and at no additional cost to Owner.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

Not used.

END OF SECTION 01 66 00

SECTION 01 74 00 – CLEANING AND WASTE MANAGEMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes provisions for maintaining structures and the Site in a standard of cleanliness.
- B. Related Sections: In addition to standards described in this Section, comply with requirements for cleaning as described in various other Sections of these Specifications.

1.3 QUALITY ASSURANCE

- A. Inspection:
 - 1. Daily and more often if necessary.
 - 2. Conduct inspections to verify that requirements of cleanliness are being met.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Hazards Control:
 - 1. Volatile Wastes:
 - a. Store in covered metal containers.
 - b. Remove from premises daily.
 - c. Provide secondary containment for storage of hazardous materials, as required by governing authorities or agencies.
 - 2. Prevent accumulation of wastes which create hazardous conditions.
 - 3. Provide adequate ventilation during use of volatile or noxious substances.

1.5 PROJECT CONDITIONS

- A. Cleaning and Disposal:
 - 1. Conduct operations to comply with local ordinances and anti-pollution laws.
 - 2. Not Allowed:
 - a. Burning or burying of rubbish or waste materials on Site.
 - b. Disposal of volatile wastes in storm or sanitary sewers: Volatile wastes include, but are not limited to, mineral spirits, oil or paint thinner.
 - c. Disposal of wastes into streams or waterways.

PART 2 - PRODUCTS

2.1 MATERIALS AND EQUIPMENT

- A. Compatibility:
 - 1. Compatible with the surface being cleaned.
 - 2. Recommended by the Manufacturer of the material being cleaned.
 - 3. As reviewed by Engineer.

PART 3 - EXECUTION

3.1 PROGRESS CLEANING

A. General:

1. Store Materials:
 - a. In an orderly arrangement allowing maximum access.
 - b. To allow unimpeded drainage and traffic.
 - c. Provide for the required protection of materials.
2. Do not allow accumulation of scrap, debris, waste material and other items not required for construction of the Work.
 - a. Remove from Site at least each week and more often if necessary.
 - b. Provide adequate storage for materials awaiting removal.
3. Observe requirements for fire protection and protection of the environment.

B. Site:

1. Daily, and more often if necessary:
 - a. Inspect the Site.
 - b. Pick up scrap, debris and waste material; remove such items to the place designated for their storage.
2. Weekly, and more often if necessary:
 - a. Inspect arrangements of materials stored on Site.
 - b. Restack or otherwise service arrangements to meet the requirements of paragraph 3.1.A.1 above.
3. At all times maintain the Site in a neat and orderly condition which meets the approval of Engineer.
4. Paved Surfaces: Keep clean.
5. Dust Control:
 - a. Control dust on or near the Work by the application of water or other approved means.
 - b. If Contractor fails to correct unsatisfactory conditions with 24 hours after due notification:
 - 1) Owner may arrange for such work to be performed by other means.
 - 2) Pay costs.

C. Buildings, Tanks, and Other Structures:

1. Weekly, and more often if necessary:
 - a. Inspect.
 - b. Pick up scrap, debris and waste material; remove such items to the place designated for their storage.
 - c. Sweep interior spaces clean. Clean shall be defined to be free from dust and other material capable of being removed by reasonable diligence using a hand-held broom.
2. Preparation for installation of succeeding material:
 - a. Clean the building, tank or other structure or pertinent portion thereof:
 - 1) To the degree of cleanliness recommended by the Manufacturer of the succeeding material.
 - 2) Using equipment and materials required to achieve the required cleanliness.
3. After installation of finish floor material:
 - a. Clean the finish floor daily at all times while work is being performed in the space in which finish materials have been installed.
 - 1) Clean as used above shall be defined to be free from all foreign material which, in the opinion of Engineer, may be injurious to the finish floor material.
4. Schedule cleaning operations so that dust and other contaminants resulting from cleaning operations will not fall on wet, recently painted surfaces.

3.2 FINAL CLEANING

- #### A. Definitions for Clean:
- The level of cleanliness generally provided by commercial building maintenance subcontractors using commercial quality building maintenance equipment and materials.

B. Prior to Completion of the Work:

1. Remove from the Site all tools, surplus materials, equipment, scrap, debris and waste.
2. Conduct final progress cleaning as described in Article 3.1 above.

- C. Site:
 - 1. Unless otherwise specifically directed by Engineer:
 - a. Hose down paved areas on Site and public sidewalks directly adjacent to the Site.
 - b. Rake clean other surfaces of the grounds.
 - 2. Remove resultant debris.

- D. Buildings, Tanks and Other Structures:
 - 1. Exterior:
 - a. Visually inspect exterior surfaces.
 - b. Remove traces of soil, waste material, smudges and other foreign matter.
 - c. Remove traces of splashed materials from adjacent surfaces.
 - d. If necessary to achieve a uniform degree of exterior cleanliness, hose down the exterior surface.
 - e. In the event of stubborn stains not removable with water, Engineer may require light sandblasting or other cleaning at no additional cost to Owner.
 - 2. Interior:
 - a. Visually inspect interior surfaces.
 - b. Remove traces of soil, waste material, smudges and other foreign matter.
 - c. Remove traces of splashed materials from adjacent surfaces.
 - d. Remove paint droppings, spots, stains and dirt from finished surfaces using only the specified cleaning materials and equipment.
 - 3. Glass: Clean glass inside and outside.
 - 4. Polished Surfaces: To surfaces requiring the routine application of buffed polish, apply the specified polish as recommended by the Manufacturer of the material being polished.

- E. Timing: Schedule final cleaning as approved by Engineer to enable Owner to accept a completely clean Project.

3.3 OWNER OCCUPANCY PRIOR TO SUBSTANTIAL COMPLETION AND ACCEPTANCE

- A. If Owner occupies the Work, or a portion of the Work, prior to Substantial Completion and acceptance, then the responsibilities for interim and final cleaning shall be determined by Engineer in accordance with the Contract Documents.

END OF SECTION 01 74 00

SECTION 01 74 26 – DISINFECTION OF DRINKING WATER FACILITIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes disinfection of drinking water facilities.
- B. Disinfection of Other Components:
 - 1. Procedures for the disinfection of individual piping systems or of certain project components may be specified elsewhere in these specifications.
 - 2. Coordinate the work of this Section with the disinfection requirements specified elsewhere.

1.3 DELIVERY

- A. Pipes:
 - 1. Clean inside when delivered to Site.
 - 2. Stored in a manner to maintain the interior of pipe in clean condition.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

3.1 BUILDING PIPES

- A. Disinfection: In accordance with Division 40 Section "Process Piping Systems."

3.2 TREATMENT FACILITIES

- A. Cleaning:
 - 1. Remove debris from completed facilities which will be in contact with potable drinking water.
 - 2. Thoroughly clean interior walls of facilities which will contact potable drinking water of all dirt, grease, and other contaminants.
- B. Disinfection and Sampling:
 - 1. Apply chlorine at rate of 50 mg/l and allow contact for 12 hours.
 - 2. Thoroughly flush unit or facility until chlorine residual is at background level of water source used for flushing.
 - 3. Collect duplicate samples from the vessel being disinfected not less than 30 minutes apart.
 - 4. Place vessel in service if results of bacteriological analyses are satisfactory.
 - 5. If sample results are not satisfactory, before placing unit or facility in service:
 - a. Take repeat samples at least 24 hours apart until consecutive samples do not show the presence of coliform, or
 - b. Repeat the disinfection procedure.
 - 6. Place unit or facility in service upon receipt of satisfactory test results.

END OF SECTION 01 74 26

SECTION 01 77 00 – CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the instructions for and the responsibilities of each party in contract closeout.
- B. Related Section includes Certificate of Substantial Completion.

1.3 SUBSTANTIAL COMPLETION

- A. Contractor: When Contractor considers that the Work or any portion of the Work is ready for its intended use, Contractor shall submit:
 - 1. Written certification to Engineer and Owner that the Work, or designated portion of the Work, is substantially complete.
 - 2. A list of major items to be completed or corrected.
 - 3. Request that Engineer issue a certificate of Substantial Completion.
- B. Engineer's Inspection: Engineer will make an inspection:
 - 1. Within 10 days after receipt of certification.
 - 2. Together with Owner and Contractor.
- C. Engineer's Determination of Substantial Completion:
 - 1. Should Engineer consider the Work or designated portion of the Work substantially complete, the following steps shall be taken:
 - a. Contractor shall prepare and submit to Engineer, a list of items to be completed or corrected as determined by the inspection.
 - b. Engineer will prepare and deliver to Owner:
 - 1) A tentative certificate of Substantial Completion.
 - 2) A tentative list of items to be completed or corrected before final payment.
 - c. Owner shall have 7 days after receipt of the tentative certificate during which to make written objection to Engineer as to any provisions of the certificate or attached list.
 - d. Engineer will, within 14 days after delivery of tentative certificate to Owner, decide:
 - 1) Not Substantially Complete: Engineer will issue written notice to Contractor stating reasons.
 - 2) Substantially Complete: Engineer will issue definitive certificate of Substantial Completion and a revised list of items to be corrected or completed.
 - 2. Should Engineer consider that the Work or designated portion of the Work is not substantially complete, the following steps shall be taken:
 - a. Engineer shall notify Contractor in writing stating Engineer's reasons.
 - b. Contractor shall complete the Work and send a second written notice to Engineer certifying that the Project, or designated portion of the Project, is substantially complete.
 - c. Engineer and Owner will reinspect the Work.
- D. Division of Responsibilities:
 - 1. Engineer:
 - a. At the time of delivery of tentative certificate of Substantial Completion.
 - b. Deliver to Owner and Contractor a written recommendation as to division of responsibilities pending final payment with respect to:
 - 1) Security.
 - 2) Operation.

- 3) Safety.
 - 4) Protection of the Work.
 - 5) Maintenance.
 - 6) Heat.
 - 7) Utilities.
 - 8) Insurance.
 - 9) Warranties.
2. Engineer's written recommendation on division of responsibilities shall be binding on Owner and Contractor until final payment unless Owner and Contractor agree otherwise in writing and so notify Engineer prior to Engineer's issuance of a definitive certificate of Substantial Completion.

1.4 FINAL INSPECTION

- A. Contractor Certification: Prior to final inspection, Contractor shall submit written certification that:
1. The Contract Documents have been reviewed.
 2. The Project has been inspected in compliance with the Contract Documents.
 3. Work has been completed in accordance with the Contract Documents.
 4. Equipment and systems have been tested in the presence of the Owner's representative and are operational.
 5. The Project is complete and ready for final inspection.
- B. Engineer's Inspection: The Engineer will make final inspection:
1. Within 10 days after receipt of certification.
 2. Together with Owner and Contractor.
- C. Engineer's Determination of Final Completion:
1. Should Engineer consider the Work complete and ready for final payment in accordance with the requirements of the Contract Documents, Engineer shall request Contractor to make Project closeout submittals.
 2. Should Engineer consider the Work not complete and ready for final payment:
 - a. Engineer shall notify Contractor in writing stating the reasons.
 - b. Contractor:
 - 1) Take immediate steps to remedy the stated deficiencies.
 - 2) Send a second written notice to Engineer certifying that the Work is complete.
 - c. Engineer and Owner will reinspect the Work.

1.5 REINSPECTION COSTS

- A. Should Engineer be required to perform second inspections because of failure of the Work to comply with the original certifications of Contractor, Owner will compensate Engineer for additional services and deduct the amount paid from payment or payments to Contractor.

1.6 ADDITIONAL INSPECTION COSTS

- A. Substantial Completion: Owner will compensate Engineer for inspection services rendered between the scheduled date of Substantial Completion and the actual date of Substantial Completion and deduct the amounts paid from payment or payments to Contractor.
- B. Final Completion: Owner will compensate Engineer for inspection services rendered between the scheduled date of final completion and the actual date of final completion and deduct the amounts paid from payment or payments to Contractor.

1.7 CLOSEOUT SUBMITTALS

- A. Contractor:
 - 1. Provide closeout submittals as required in the Contract Documents.
 - 2. These submittals shall include, but not necessarily be limited to:
 - a. Project record documents.
 - b. Operation and maintenance manuals.
 - c. Guarantees.
 - d. Spare parts and maintenance materials.
 - e. Instruction in operation of all systems.

1.8 EVIDENCE OF PAYMENTS AND RELEASE OF LIENS

- A. Affidavits:
 - 1. Submit with final Application for Payment an affidavit of payment of debts and release of claims.
 - 2. Affidavit shall include:
 - a. Contractor's release or waiver of lien.
 - b. Consent of surety of final payment.
- B. Execution: All submittals shall be duly executed before delivery to Engineer.

1.9 FINAL ADJUSTMENT OF ACCOUNTS

- A. Final Statement: Submit a final statement of accounting, which reflects all adjustments, to Engineer. This statement shall contain the following:
 - 1. Original Contract Price.
 - 2. Additions and deductions.
 - 3. Total Contract Price as adjusted.
 - 4. Previous payments.
 - 5. Sum remaining due.
- B. Final Change Order: Engineer will prepare a final Change Order reflecting approved adjustments to the Contract Price not previously made by Change Orders.

1.10 FINAL APPLICATION FOR PAYMENT

- A. Contractor shall submit a final Application for Payment in accordance with the requirements of the Contract Documents.
- B. Disposition of Final Application for Payment:
 - 1. If the final Application for Payment and the Work are acceptable in accordance with the Contract Documents:
 - a. Engineer will, within 10 days after receipt of the Application for Payment:
 - 1) Submit to Owner a written recommendation for payment.
 - 2) Submit to Owner and Contractor a written notice that the Work is acceptable subject to the provisions of the General Conditions.
 - b. Owner will, within 30 days after receipt of the Application for Payment and Engineer's recommendation in accordance with the Contract Documents, pay to Contractor the amount recommended.
 - 2. If the Application for Payment, the Work or both are unacceptable:
 - a. Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment.
 - b. Contractor shall make the necessary corrections and resubmit the Application for Payment.

3. Final Completion Delayed:
 - a. Upon receipt of Contractor's final Application for Payment and recommendation by Engineer, Owner shall make payment of the balance due for that portion of the Work fully completed and accepted if Engineer confirms that final completion of the Work is significantly delayed through no fault of Contractor.
 - b. Payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.
 - c. Contractor shall submit with the Application for Payment written consent of surety if the remaining balance to be held by Owner for Work not fully completed or corrected is less than the retainage stipulated in the Agreement.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

Not used.

END OF SECTION 01 77 00

SECTION 01 78 39 – PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes procedures for the maintenance, recording and submittal of Project record documents.

1.3 MAINTENANCE OF DOCUMENTS AND SAMPLES

- A. Storage:
 - 1. Store documents and Samples in Contractor's field office apart from documents used for construction.
 - 2. Provide files and racks for storage of documents.
 - 3. Provide locked cabinet or secure storage space for storage of Samples.
- B. Filing: File record documents in accordance with CSI Masterformat.
- C. Maintenance:
 - 1. Maintain documents in a clean, dry, legible condition and in good order.
 - 2. Do not use record documents for construction purposes.
- D. Availability: Make documents and Samples available at all times for inspection by Engineer.

1.4 RECORDING

- A. Labeling: Label each document "PROJECT RECORD" in neat large printed letters.
- B. Recording:
 - 1. Record actual revisions to the Work.
 - 2. Record information concurrently with construction progress.
 - 3. Do not conceal any work until required information is recorded.
- C. Drawings:
 - 1. Legibly mark, with notes or graphic representations, to record actual construction.
 - a. Location of internal utilities and appurtenances concealed in the construction, referenced to visible and accessible features of the structure.
 - b. Field changes of dimension and detail.
 - c. Changes made by Field Order, Work Change Directive or Change Order.
 - d. Details not on original Contract Drawings.
 - 2. After Engineer's review of the record drawings, transfer all marks to a set of electronic documents provided by Engineer.

1.5 SUBMITTAL

- A. Delivery:
 - 1. At Contract closeout, deliver record documents to Engineer for Owner.
 - 2. Submit only Contract Documents marked up. Three dimensional models, shop drawings, or other representations of the Project created by the Contractor from the Contract Documents will not be accepted.

- B. Transmittal Letter:
1. Accompany submittal with transmittal letter in duplicate, containing:
 - a. Date.
 - b. Project title and number.
 - c. Contractor's name and address.
 - d. Title and number of each Record Document.
 - e. Signature of Contractor or their authorized representative.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

Not used.

END OF SECTION 01 78 39

SECTION 02 22 26 – PRECONSTRUCTION AUDIO-VISUAL DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the furnishing of all labor, materials and equipment necessary for a complete color audio-video record of the existing surface features for the entire project to accurately document the pre-construction conditions within the proposed construction's zone of influence.

1.3 SUBMITTALS

- A. Qualifications: Submit such information as requested by the Engineer to determine the ability to produce professional video in accordance with industry standards and these specifications.

1.4 QUALITY ASSURANCE

- A. Audio-video documentation shall be by a responsible commercial firm regularly engaged in color audio-video construction documentation.
- B. Owner reserves the right to reject any audio-video documentation not conforming to these Specifications. Such rejected documentation shall be redone at no additional cost to Owner.

1.5 PRODUCT DELIVERY

- A. Deliver to Owner through Engineer premium quality DVD's or Video CD's with recorded documentation upon completion of the project or upon completion of segments, if requested.
- B. DVD's shall be compatible with playback on any Region I American TV standard DVD Player.

1.6 SEQUENCING AND SCHEDULING

- A. Attend a meeting with Engineer to outline the coverage expected for the project, prior to the start of the video documentation.

PART 2 - PRODUCTS

2.1 Delivered product shall include all digital audio-video discs, disc storage cases, disc index labels, and runsheet logs.

- A. Video to be mastered on high quality formats only:
 - 1. CD
 - 2. DVD
 - 3. Flash Drive
 - 4. Portable hard drive
- B. High quality camcorders to be used:
 - 1. With 1/4-inch, 1/3-inch or 1/2-inch charged coupled device imaging systems.
 - 2. With optical stabilization; electronic stabilization is not acceptable.
 - 3. With 20x minimum optical magnification.

4. Capable of producing NTSC 525 lines of resolution/60 fields/30 frames per second.
 5. Capable of 3-luxillumination minimum.
- C. Disc Index Labels:
1. All discs shall be labeled with appropriate project information and be able to be cross referenced with runsheets.
 2. Label information to include:
 - a. DVD/Video CD number.
 - b. Project title.
 - c. Location of project.
 - d. Month and year of coverage.
 - e. Set information, i.e., Engineer's set, Owner's set, Contractor's set.
 - f. Quick reference list of contents of a particular DVD.
- D. Runsheet Logs:
1. Provide a runsheet log that accurately catalogs the contents of each video.
 2. Runsheet logs to include:
 - a. Street name, easement or address.
 - b. Sheet number or numbers relative to the line entry of a particular area of coverage.
 - c. DVD/Video CD numbers.
 - d. Real time code indexing for each segment of the project indicating hours minutes and seconds to cross reference with playback equipment to locate specific points of interest on the project.
 - e. Direction of travel for each specific segment.
 - f. Viewing side for each specific segment.
 - g. Starting point for each specific segment.
 - h. Ending point for each specific segment.
 - i. Project information, i.e. project title, owner, date.
- E. Vehicles used while performing documentation to be plainly marked with company name and telephone number with caution signs, flags and strobes to affect a safe and hazard free operation.

PART 3 - EXECUTION

3.1 RECORDING

- A. General:
1. Coverage:
 - a. Recordings shall include coverage of all surface features located within the zone of influence of the proposed construction.
 - b. The zone of influence is defined as the area within the road right-of-way, area within permanent and temporary easements and adjacent areas which may be affected by routine construction operations.
 - c. The surface features include, but are not limited to, all roadways, pavements, curbs, driveways, sidewalks, culverts, headwalls, retaining walls, buildings, landscaping, trees, shrubbery, and fences.
 - d. Of particular concern shall be the existence or nonexistence of any faults, fractures, or defects.
 - e. All recording shall be performed during times of good visibility.
 - f. No recording shall take place when there is snow cover on the ground unless authorized by Engineer.
 - g. The Engineer may designate areas to be omitted or added for audio-video documentation.
 - h. Areas not accessible by conventional wheeled vehicles shall be accessed by walking or special conveyance.
 2. Time of Execution: Prior to placement of equipment and materials on the jobsite.
 3. Coverage Continuity:
 - a. Accessible Areas: Coverage shall consist of a single, continuous, recording which begins at one end of a particular construction area and continues to the other end of that construction area.
 - b. Non Accessible Areas (Across Easements, Etc.): Coverage shall consist of an organized, interrelated sequence of recordings at various positions along the proposed construction area.

4. Video portion of the documentation shall reproduce bright, sharp, clear pictures with accurate colors and shall be free from distortion, tearing, rolls or any other form of picture imperfection.
5. Audio Portion of the Documentation:
 - a. Shall reproduce the commentary of the camera operator with proper volume, clarity, free from distortion and background noise.
 - b. Assist in maintenance of viewer orientation and in identification, clarification, or objective description of the structures being shown in the video portion of the recording.
6. Video shall display through electronic means information germane to the current video display.
 - a. Display continuously information as follows:
 - 1) Time and date of recording.
 - 2) Location of recording, i.e., street name, easement or address.
 - b. When conventional wheeled vehicles are utilized, include engineering stationing to coincide with project plans, direction of travel and viewing side.
 - 1) The engineering stationing must be continuous and accurate and reflect the stationing within the field of view.
 - 2) The engineering stationing must coincide with stationing on project plans and utilize standard engineering symbols, i.e., 5+00.
 - 3) Global Positioning System satellites may be used with or in place of engineering stationing.
 - a) Differential Global Positioning System is to be used where available, with updates 1/second at 5 meter or less spherical accuracy.
 - b) Standard Global Positioning System accuracy is as dictated by the United States Department of Defense mandate.
 - c) Global Positioning System display will be at 1 meter longitude and 1 meter latitude increments, i.e., 414N529 08317W302.

B. Procedural Requirements for Coverage Rates:

1. The following table sets the maximum rate of travel for the following areas:

AREA	AVE RATE MAX
Entire Project	30 ft/min

2. Camera Positioning and Techniques:
 - a. Height and Stability: Camera to be mounted securely to produce steady viewing with lens not less than 8 feet above the ground of the area being viewed, or at a level to facilitate best perspective and line of site when using conventional wheeled vehicles.
 - b. Control: All movements shall be at a rate that allows recorded objects to be viewed clearly during video playback.
 - c. Viewer Orientation for Road Areas: Utilize overall establishing views and visual displays of all visible house and building addresses.
 - 1) Easement Areas: Highly visible yellow flags shall be used to clearly define proposed centerline of construction.
3. Private Property:
 - a. Contractor shall obtain permission of property owner before entering private property.
 - b. If Contractor is refused entry to private property, Contractor shall notify Engineer and wait until permission is obtained before entering the property.

END OF SECTION 02 22 26

SECTION 02 41 19 – SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the modification, alteration, conversion, and renovation of existing structures:
 - 1. Be aware of the many incidental items which exist which must be demolished, relocated, or replaced in order to accomplish the remodeling work of trades.
 - 2. Include the price of such demolition, relocating, and replacement in the base Bid.
 - 3. These incidental items may or may not be indicated in the Contract Documents.
 - 4. Contractor and Subcontractors performing remodeling work are expected to be familiar with the unknown nature of existing utilities serving an area to be remodeled and shall calculate the base Bid to include the demolition, removal, relocation, and replacement of these utilities.

1.3 REFERENCES

- A. Except as herein specified or as indicated on the Drawings, the work of this Section shall comply with the pertinent provisions of the following:
 - 1. American National Standards Institute: ANSI A10.6 - Safety Requirements for Demolition Operations.
 - 2. ASTM: D1557 - Laboratory Compaction Characteristics of Soil Using Modified Effort.
 - 3. EPA: Rule 406(b) of the Toxic Substances Control Act of 1992.
 - 4. NFPA: NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations.

1.4 DEFINITIONS

- A. Terms:
 - 1. Abandon:
 - a. Remove an item to the extent that it is not visible and does not interfere with new construction.
 - b. Portions of the abandoned item may be left in place.
 - c. No abandoned items shall be left below new footings.
 - 2. Demolish:
 - a. Remove existing items from their present location in the Project area and haul to an area outside of the Project area.
 - b. Remove utilities serving these items.
 - 3. Relocate:
 - a. Move existing items from their present location to another location in the Project area.
 - b. Extend utilities serving the present location to the new location.
 - 4. Remove:
 - a. Except for items indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, demolished materials shall become Contractor's property.
 - b. Remove existing items from their present location in the Project area and haul to an area outside of the Project area.
 - c. Remove utilities serving these items.
 - 5. Replace:
 - a. Remove existing items from their present location in the Project area, haul them to an area outside of the Project area, and furnish and install new items in the same or another location.
 - b. Extend utilities serving the present location to the new location.
 - 6. Reuse: Move existing items from their present location to another location in the Project area. Extend utilities serving the present location to the new location.

7. Historic Items:
 - a. Historic items, relics, and similar object including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, antiques, and other items of interest or value to Owner that may be encountered during selective demolition remain Owner's property.
 - b. Carefully remove and salvage each item or object in a manner to prevent damage and deliver promptly to Owner.

1.5 DIVISION OF WORK

- A. Work: In accordance with the General Conditions, Contractor is responsible for dividing the Work among the Subcontractors and Suppliers and for delineating the work to be performed by specific trades. The following are suggestions as to how the Work may be divided. This is not a complete list of the work:
 1. Contractor:
 - a. Cut and patch walls, floors, and ceilings to allow for recessed utilities and ductwork.
 - b. Remove and reinstall existing suspended ceilings to allow for above ceiling construction.
 - c. Replace damaged units.
 - d. Install new ceilings as indicated on the Drawings.
 - e. Place sleeves in new concrete structures.
 - f. Patch roof at new penetration and curbs and where existing penetrations and curbs are removed.
 - g. Furnish and install new structural steel where required for reinforcement at floor, wall, and roof openings.
 - h. Install fire stop and smoke stop systems at penetrations for ratings indicated in accordance with local building codes.
 2. Mechanical, Electrical, and Fire Protection Subcontractors:
 - a. Furnish sleeves for use in new concrete construction.
 - b. Install fire stop and smoke stop systems at utility penetrations in accordance with local building codes.
 - c. Furnish and install sleeves in gypsum board and masonry construction.
 - d. Core drill existing concrete for new utilities and sleeves after obtaining Engineer's review of locations.
 - e. Remove and reinstall existing fire protection heads to allow for ceiling removal and installation.
 - f. Furnish new heads, piping, and connections as required for completion of the Work.
 3. Miscellaneous:
 - a. Each trade shall be financially responsible for cutting and patching for sleeves, penetrations, and installation of isolated components as necessary for its work unless herein specifically stated to the contrary.
 - b. On renovation projects, cut and patch walls, floors, and ceilings to allow for continuous runs of recessed utilities and ductwork.
 - c. Patching shall be done by the trade whose work is damaged.
 - d. Costs caused by defective or ill-timed work shall be borne by the party responsible.
 - e. Each trade shall do fitting of its own work as required to make its several components fit together or to receive the work of other trades.

1.6 SUBMITTALS

- A. Predemolition Audio-video:
 1. Submit showing existing conditions of construction to remain that could be misconstrued as damage caused by construction activities.
 2. Including building and Site, as well as interior and exterior finishes.
 3. Submit prior to commencing Work.

1.7 QUALITY ASSURANCE

- A. Qualifications: Engage an experienced firm that has specialized in demolition work similar to material and extent indicated for this Project.

- B. Regulatory Requirements:
 - 1. Comply with governing EPA notification regulations before beginning selective demolition.
 - 2. Comply with hauling and disposal regulations of authorities having jurisdiction.
 - 3. Comply with ANSI A10.6 and NFPA 241.
 - 4. Comply with 29 CFR 1926.62-(OSHA Paint Standard).

- C. Pre-Demolition Conference:
 - 1. Conduct pre-demolition conference at Site in accordance with in Division 01 Section "Project Meetings."
 - 2. Review methods and procedures related to selective demolition including, but not limited to, the following:
 - a. Inspect and discuss condition of construction to be selectively demolished.
 - b. Review structural load limitations of existing structure.
 - c. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and to avoid delays.
 - d. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.

1.8 PROJECT CONDITIONS

- A. Owner Occupancy:
 - 1. Owner will occupy portions of building immediately adjacent to selective demolition area.
 - 2. Conduct selective demolition so Owner's operations will not be disrupted.
 - 3. Provide not less than 72 hours notice to Owner of activities that will affect Owner's operations.

- B. Access:
 - 1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities.
 - 2. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from authorities having jurisdiction.

- C. Conditions:
 - 1. Owner and Engineer assume no responsibility for condition of areas to be selectively demolished.
 - 2. Conditions existing at time of inspection for bidding purposes will be maintained by Owner as far as practicable.

- D. Storage or sale of removed items or materials on Site will not be permitted.

- E. Maintenance of Utilities:
 - 1. Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
 - 2. Maintain fire-protection facilities in service during selective demolition operations.

- F. Lead Paint: Remove and remediate existing lead paint as required to comply with all codes and requirements while performing the requirements of the Work. Either remove lead paint completely or partially as required to achieve this.

1.9 WARRANTIES

- A. Existing Warranties:
 - 1. Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.
 - 2. If possible, retain original installer or fabricator to patch exposed work that is damaged during selective demolition.
 - 3. If it is not possible to engage original installer or fabricator, engage another recognized, experienced, and specialized firm.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General:
 - 1. Materials and workmanship shall conform to the requirements of other Sections of the Specifications.
 - 2. Where no materials are specified in these specifications, use materials of an equivalent type, quality, and size to match those existing in other areas of the facility.
 - 3. If none exist, use materials and workmanship recognized as of the highest quality in the industry.
 - 4. Obtain Engineer's review of such material and workmanship.
- B. Piping: Existing piping which is removed from its present location shall not be reused where new piping is required unless specifically noted on the Drawings.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped.
- B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- C. Inventory and record the condition of items to be removed and reinstalled, and of items to be removed and salvaged.
- D. Conflicts:
 - 1. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict.
 - 2. Promptly submit written report to Engineer.
- E. Survey, or engage a competent person to survey condition of the building, in accordance with requirements of OSHA, to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of the structure or adjacent structures during selective demolition operations.
- F. Perform additional surveys as the work progresses to detect hazards resulting from operations to date.

3.2 UTILITY SERVICES

- A. Maintain existing services indicated to remain and protect them against damage during selective demolition operations.
- B. Interruptions:
 - 1. Do not interrupt existing utilities serving occupied or operating facilities unless authorized in writing by Owner and other authorities having jurisdiction.
 - 2. Provide temporary services during interruptions to existing utilities, as acceptable to Owner and to authorities having jurisdiction.
 - 3. Provide at least 72 hours notice to Owner if shutdown of service is required during changeover.
- C. Utility Requirements:
 - 1. Locate, identify, disconnect, and seal or cap off indicated utilities serving areas to be selectively demolished.
 - 2. Owner will arrange to shut off indicated utilities when requested by Contractor.
 - 3. Arrange to shut off indicated utilities with utility companies.
 - 4. If utility services are required to be removed, relocated, or abandoned, before proceeding with selective demolition, provide temporary utilities that bypass areas of selective demolition and that maintain continuity of service to other parts of building.

5. Cut off pipe or conduit in walls or partitions to be removed.
6. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing.

3.3 PREPARATION

A. Site Access and Temporary Controls:

1. Conduct selective demolition and debris removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
2. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and other authorities having jurisdiction.
3. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.
4. Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by authorities having jurisdiction.
5. Protect existing Site improvements, appurtenances, and landscape features to remain.
6. Erect a plainly visible fence around drip line of individual trees or around perimeter drip line or groups of trees to remain.

B. Temporary Facilities:

1. Protection:
 - a. Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
 - b. Provide protection to ensure safe passage of people around selective demolition area, and to and from occupied portion of building.
 - c. Weather Protection:
 - 1) Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
 - 2) Where heating or cooling is needed and permanent enclosure is not complete, provide insulated temporary enclosures.
 - 3) Coordinate enclosures with ventilating and material drying or curing requirements to avoid dangerous conditions and effects.
 - d. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
 - e. Cover and protect furniture, furnishings, and equipment that have not been removed.
2. Enclosures:
 - a. Provide temporary enclosures around Filter 18 and Filter 20 as required to isolate dust, fumes and odors from areas in use, to control temperature and humidity, and to protect surface to be coated from the weather.
 - b. The enclosure shall be of such quality as to maintain optimal conditions for the work.
 - c. The enclosure shall remain until the work is sufficiently cured.
3. Heating Ventilation and Humidity Control:
 - a. Ventilation is mandatory.
 - b. Provide ventilation that exhausts fumes and odors to the exterior at a location where existing HVAC systems will not pick up these fumes and odors.
 - c. Provide negative air pressure to temporary enclosure spaces without reducing air temperatures in those spaces.
 - d. Ventilation is required during, but not limited to, demolition, concrete repair, surface preparation, application of coating systems, and the curing period for those systems.
 - e. Provide additional equipment and fuel as required to condition the space for surface preparation, application of products, and curing of those products, in accordance with Manufacturer's requirements. This equipment may include, but is not limited to, heaters, dehumidifiers and fans for intake and exhaust air.

3.4 POLLUTION CONTROLS

- A. Dust Control:
 - 1. Use water mist, temporary closures, and other suitable methods to limit spread of dust and dirt.
 - 2. Do not use water when it may damage existing construction or create hazardous or objectionable conditions, such as ice, flooding, and pollution.
 - 3. Wet mop floors to eliminate trackable dirt and wipe down walls and doors of demolition enclosure.
 - 4. Vacuum carpeted areas.
 - 5. Comply with governing environmental protection regulations.
- B. Disposal:
 - 1. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
 - 2. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.

3.5 GENERAL

- A. Demolish and remove existing construction only to the extent required by new construction and as indicated.
- B. Methods:
 - 1. Use methods required to complete the work within limitations of governing regulations.
 - 2. Level by Level:
 - a. Proceed with selective demolition systematically, from higher to lower level.
 - b. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
 - 3. Cutting Openings:
 - a. Neatly cut openings and holes plumb, square, and true to dimensions required.
 - b. Use cutting methods least likely to damage construction to remain or to adjoining construction.
 - c. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces.
 - d. Temporarily cover openings to remain.
 - 4. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
 - 5. Flame Cutting:
 - a. Do not use cutting torches until work area is cleared of flammable materials.
 - b. At concealed spaces, such as duct and pipe chases, verify condition and contents of hidden space before starting flame-cutting operations.
 - c. Maintain adequate ventilation when using cutting torches.
 - 6. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials, and promptly and legally dispose of off Site.
 - 7. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
 - 8. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
 - 9. Dispose of demolished items and materials promptly.
 - 10. Return elements of construction and surfaces that are to remain to condition existing before selective demolition operations began.
- C. Existing Facilities: Comply with Owner's requirements for using and protecting elevators, stairs, walkways, loading docks, building entries, and other building facilities during the selective demolition operations.
- D. Removed and Reinstalled Items:
 - 1. Clean and repair items to functional condition adequate for intended reuse.
 - 2. Paint equipment to match new equipment.
 - 3. Pack or crate items after cleaning and repairing, and identify contents of containers.
 - 4. Protect items from damage during transport and storage.
 - 5. Reinstall items in locations indicated.

6. Comply with requirements for new materials and equipment.
7. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

E. Existing Items to Remain:

1. Protect construction indicated to remain against damage and soiling during selective demolition.
2. When permitted by Engineer, items may be removed to a suitable, protected storage location and cleaned and reinstalled in their original locations after selective demolition operations are complete.

3.6 DEMOLITION

A. Structures:

1. Cut, repair, reuse, excavate, demolish or otherwise remove parts of the existing structures or appurtenances, as indicated on the Drawings, herein specified and necessary to permit completion of the Work.
2. Dispose of demolished materials in an approved manner.
3. Include necessary cutting, bending, and welding of reinforcing steel, structural steel, or miscellaneous metal work found embedded in the existing structures.
4. When removing materials or portions of existing structures, shore up, underpin, and protect adjacent structures.
5. Concrete:
 - a. Demolish in small sections.
 - b. Cut concrete to a depth of at least 3/4-inch at junctures with construction to remain, using a power driven saw.
 - c. Dislodge concrete from reinforcement to remain at perimeter of areas being demolished, cut reinforcement, and then remove remainder of concrete indicated.
 - d. Neatly trim openings to dimensions indicated.
6. Engineer's review of cutting: No existing structure, equipment or appurtenance shall be shifted, cut, removed or otherwise altered without obtaining review of Engineer.

B. Equipment:

1. Dismantle, remove, and relocate existing equipment, piping, and other appurtenances required for the completion of the Work.
2. Cut existing pipelines for the purpose of making connections thereto.
3. Cut off anchor bolts for equipment and structural steel indicated to be removed 1-inch below the concrete surface.
4. Patch remaining concrete surface to smooth even finish.
5. Remove air conditioning equipment without releasing refrigerants, if applicable.

C. Piping, Fire Protection, and Electrical Components:

1. When a new connection is made to an existing pipeline, install additional new piping, extending to and including the most convenient new valve.
2. Piping, conduit, and wiring indicated or required to be demolished shall be done so to the nearest reasonable connection outside of the Project area or as directed by Engineer.
3. Where necessary or required for the purpose of making connections, cut existing pipelines in a manner to provide an approved joint.
4. Weld beads, flanges, and provide Dresser couplings on existing and new piping.
5. Remove and reinstall existing fire protection heads to allow for new construction.
6. Comply with applicable fire protection codes.
7. Furnish new heads, piping, and connections as required for completion of the Work.
8. Remove junction boxes and electrical outlets which will no longer be in use.
9. At existing walls which are made thicker, extend piping and wiring to accommodate additional wall thickness.
10. Remove and reinstall fixtures and electrical outlets, switches, etc.

- D. Floor Slabs:
 - 1. Where new utilities must be installed below the existing floor slab, saw cut the slab for at least 1-inch of depth.
 - 2. Break out the remaining depth with jack hammers or hand tools to provide a rough surface.
 - 3. Leave existing steel reinforcing so that it laps at least 6 inches into the new concrete slab over the trench.
 - 4. The exact width of the concrete removed shall depend upon the required depth and diameter of the new utility.
 - 5. Allow for sufficient working space in the trench.
 - E. Conceal Utilities: Recess new piping, conduit, and other utilities into floors, wires, and ceilings in finished areas.
 - F. Ownership of Salvaged Materials:
 - 1. Materials and equipment removed shall remain the property of Owner at Owner's option.
 - 2. Items not salvageable, as determined by Engineer and Owner, and items Owner elects not to keep shall become the property of Contractor to be properly disposed of off the Site.
 - 3. Salvaged equipment shall be thoroughly cleaned, lubricated, and greased for protection during prolonged storage.
 - G. Nonshrink Grout: Use nonshrink grout for setting wall castings, sleeves, leveling pump bases, doweling anchors into existing concrete and elsewhere as indicated.
 - H. Protect Facility from Water Damage: Provide flumes, hoses, piping, suitable plugs, bulkheads, or other means to divert or hold back the flow of wastewater, water, or other liquids, as required for proper performance of the Work.
 - I. Blasting: Not permitted.
 - J. Sleeves:
 - 1. Subcontractors for mechanical, electrical, and other trades shall furnish sleeves and inserts for pipes, conduits, and similar items in forms, walls, partitions, and floors.
 - 2. Perform work in cooperation with Contractor.
 - 3. Place items in ample time so as not to delay operations.
 - 4. Do not place sleeves so they pass through beams, girders, and similar construction.
 - K. Firestopping and Smokestopping: Install firestop and smokestop systems at utility penetrations in accordance with local building codes.
- 3.7 PATCHING AND REFINISHING
- A. Promptly repair damage to adjacent construction caused by selective demolition operations.
 - B. Patching:
 - 1. Patch and repair existing surfaces from which items have been removed leaving holes, fasteners, and surface blemishes exposed to view.
 - 2. Where repairs to existing surfaces are required, patch to produce surfaces suitable for new materials.
 - 3. Completely fill holes and depressions in existing masonry walls that are to remain with an approved masonry patching material applied according to Manufacturer's written recommendations.
 - C. Refinishing:
 - 1. Prepare existing surfaces for finishes by scraping, sanding, filling, acid etching, and sand blasting to ensure bonding and a smooth finish.
 - 2. Refinish entire surfaces as necessary to provide an even finish.
 - 3. Refinish continuous surfaces to the nearest intersection and entirely finish assemblies.

4. Restore exposed finishes of patched areas and extend restoration into adjoining construction in a manner that eliminates evidence of patching and refinishing.
5. Refinish entire surfaces if necessary to remediate existing lead painted surfaces.

3.8 CLEANING

- A. Clean materials installed under this Section in accordance with Division 01 Section "Cleaning and Waste Management."
- B. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations.
- C. Return adjacent areas to conditions existing before selective demolition operations began.

END OF SECTION 02 41 19

SECTION 03 01 33 – REHABILITATION OF CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Locating and removing delaminated, spalled, and unsound concrete.
 - 2. Preparing cavities created by removals to receive patching materials.
 - 3. Replacing existing deteriorated concrete and reinforcement.
 - 4. Repairing concrete expansion joints.
 - 5. Crack repair.
- B. Concrete restoration work will be paid for on a Unit Price basis. Refer to Division 00 Section Bid – Stipulated Sum.

1.3 REFERENCES

- A. Except as herein specified or as indicated on the Drawings, the work of this Section shall comply with the following:
 - 1. ASTM:
 - a. A615 – Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement.
 - b. A1064 – Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete.
 - c. C31 – Making and Curing Concrete Test Specimens in the Field.
 - d. C33 – Concrete Aggregates.
 - e. C39 – Compressive Strength of Cylindrical Concrete Specimens.
 - f. C94 – Ready-Mixed Concrete.
 - g. C109 – Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or [50-mm] Cube Specimens).
 - h. C136 – Sieve Analysis of Fine and Coarse Aggregates.
 - i. C142 – Slump of Hydraulic Cement Concrete.
 - j. C150 – Portland Cement.
 - k. C309 – Liquid Membrane-Forming Compounds for Curing Concrete.
 - l. C494 – Chemical Admixtures for Concrete.
 - m. C1064 – Temperature of Freshly Mixed Hydraulic Cement Concrete.
 - n. D3575 – Flexible Cellular Materials Made From Olefin Polymers.
 - 2. ACI:
 - a. 301 – Specifications for Structural Concrete.
 - b. 302.1R – Guide for Concrete Floor and Slab Construction.
 - c. 309R – Guide to Consolidation of Concrete.
 - d. 347R – Guide to Formwork for Concrete.
 - 3. International Concrete Repair Institute (ICRI).
 - 4. American National Standards Institute (ANSI)/National Sanitation Foundation (NSF) – ANSI/NSF 61 - Drinking Water System Components - Health Effects.

1.4 DEFINITIONS

- A. Delaminations: Fracture planes or “internal cracks,” within concrete. Typically, these fractures are parallel to the member face and vary in depth.

- B. Spalls: Potholes, cavities or voids in floor slabs, beams, columns, or walls, usually the result of delaminations migrating to the face of the concrete member. When the delamination reaches the surface, concrete encompassed by the delamination breaks away, resulting in a spall.
- C. Unsound Concrete: Concrete exhibiting one or more of the following:
 - 1. Incipient fractures present beneath existing delaminated or spalled surfaces.
 - 2. Honeycombing.
 - 3. Friable or punky areas.
 - 4. Deterioration from freeze-thaw action.
- D. Scaling: Deterioration which attacks the mortar fraction (paste) of the concrete mix. Scaling first appears as minor flaking and disintegration of a concrete surface and eventually progresses deeper into concrete, exposing aggregate which breaks away. Concrete scaling is caused by freeze-thaw action. If concrete is frozen in a saturated state, excess water freezing in concrete causes high internal stresses.
- E. Saturated Surface Dry (SSD): The condition in which a surface is saturated with water and cannot absorb more, but no free water is present on the surface and is in accordance with the ICRI recommendations.

1.5 SUBMITTALS

- A. Product Data:
 - 1. Submit for each Product to be used on the Project.
 - 2. Include specifications and recommended application procedures showing compliance with the Project requirements.
 - 3. Provide safety data sheets for products used.
 - 4. Provide either an approved ICBO Evaluation Report number in the name of the system and system's Manufacturer, or an evaluation by independent testing facility.
 - 5. Product Suitability:
 - a. Submit signed letter from Product Manufacturer's technical representative stating that they have visited the Site, reviewed conditions and agree that the products specified are suitable for this application.
 - b. The letter shall certify that the Product Manufacturer's technical representative:
 - 1) Is familiar with the project, aware of job conditions and aware of associated products, such as sealants, concrete repair products, and others proposed for the Project.
 - 2) Agrees with the intended application of their products as specified.
 - 3) Agrees with the surface preparation specified.
 - 4) Agrees with project specifications. If necessary, submit revisions to project specifications.
 - 5) Agrees that their product is compatible with associated products, such as sealants, concrete repair materials, and other proposed for the Project.
 - 6) Agrees with the type and quantity of testing specified to ensure their product is adequately installed.
 - 7) Agrees that components of concrete repair materials furnished comply with this Specification and are compatible.
- B. Surface Preparation Methods: Submit details of preparation method to Engineer for review prior to commencing work.

1.6 QUALITY ASSURANCE

- A. Fabrication and Installation Personnel Qualifications:
 - 1. Trained and experienced in the fabrication and installation of the materials and equipment.
 - 2. Knowledgeable of the design and the reviewed Shop Drawings.
 - 3. Each component of a system or product shall be installed by Manufacturer trained personnel. Installers shall demonstrate knowledge of product and installation.
 - 4. Provide Manufacturer's certification of the applicator's training and experience with the systems to be installed.

- B. Manufacturer's Services: Provide 1 day of product Manufacturer's technical representative for start-up of application for each repair product. Review the work to be performed with the applicator and Engineer's Site representative.
- C. Formwork:
 - 1. Design of formwork is the responsibility of the Contractor.
 - 2. Submit proposed method of forming to Engineer for review prior to placement of concrete.
 - a. Include materials and means of bracing and sealing formwork.
 - 3. Provide adequate means of ensuring complete filling of forms with concrete using bird's mouths or other methods.
 - 4. Refer to ACI 347R for assistance with design of formwork.
- D. Mock-ups:
 - 1. Complete mock-ups of:
 - a. Repair cavity preparation.
 - b. Patch repair.
 - c. Rout and seal repair.
 - 2. Obtain Engineer's and Owner's review of mock-up prior to continuing.
 - 3. Mock-ups may be completed as part of Contract Work upon review by Engineer.
- E. Testing:
 - 1. Concrete and Prebagged Mixes:
 - a. A special inspector will be engaged as indicated in Division 01 Section "Special Inspections and Tests."
 - b. Cooperate fully with Engineer and the special inspector while they perform special inspections.
 - c. Provide for additional material, time, expense and repair cost to allow testing to be performed.
 - d. Special inspector shall be at the Site for sampling, inspection and testing during concrete repair placement.
 - e. Coordinate with Engineer to be on Site for visual inspections.
 - f. Concrete Repair Material Testing:
 - 1) Perform compressive strength, slump and concrete temperature tests at the point of placement for each batch of ready-mixed concrete and prebagged repair mixes used each day.
 - 2) Mold 3 x 6 compressive strength test specimens in accordance with ASTM C31 and test in accordance with ASTM C39.
 - 3) Perform slump and temperature tests in accordance with ASTM C143 and C1064, respectively.
 - 4) Test 2 cylinders minimum per set of specimens for compressive strength at 7 days and 2 cylinders minimum for compressive strength at 28 days.
 - 5) Mold 2 reserve cylinders for testing at later ages if required.
 - g. Trowel Applied Prebagged Mixes: Make 1 set of three 2-inch cubes from each prebagged mix placed each day to test in accordance with ASTM C109 and Manufacturer's requirements.

1.7 PROJECT CONDITIONS

- A. Provide temporary/mobile air temperature, humidity and ventilation control during the course of this project.
- B. Provide equipment and fuel as required to condition the space for surface preparation, application of products, and curing of those products, in accordance with Manufacturer's requirements.
 - 1. Equipment may include, but not be limited to, dehumidification, heaters, and fans for intake and exhaust air.
- C. Contractor may use Owner's electrical power for temporary/mobile air system.

1.8 WARRANTY

- A. Installed products under this section shall be fully warranted for a period of five years against defects in materials or workmanship commencing with the date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Potable Drinking Water Structures:
 - 1. Meet the standards required by the applicable approving agency for potable drinking water.
 - 2. Unless otherwise accepted by that agency, meet the requirements for ANSI/NSF Standard No. 61.
- B. VOC Compliance:
 - 1. Individual coatings and coating systems shall have VOC levels at or below the EPA recommendations identified in 40 CFR Part 59.
 - 2. Test VOC content in accordance with EPA Method 24.
- C. Vertical and Overhead (Walls and Ceilings) Trowelable Concrete Repairs:
 - 1. Prebagged products.
 - a. Sika Repair 222 with Latex R.
 - b. Sika Repair SHA.
 - c. Euclid Verticoat Supreme.
- D. Vertical and Overhead (Walls and Ceilings) Form and Pour Concrete Repairs:
 - 1. Prebagged products.
 - 2. Area where depth of repair is 3/16-inch or greater:
 - a. SikaTop 123 Plus.
 - b. Or equal.
 - 3. Resurfacing to be applied to all areas:
 - a. SikaTop 144 (cement-gray).
 - b. Or equal.
- E. Horizontal (Slabs) Trowelable Concrete Repairs:
 - 1. Prebagged Products:
 - a. SikaTop 122+.
 - b. Euclid Concrete-Top Supreme.
- F. Structural Injection Resins:
 - 1. Sikadure 52 by Sika Corp.
 - 2. Denepox I 300 by DeNeef.
 - 3. ULV140 by ThoRoc.
 - 4. Sure Inject by Dayton-Superior.
- G. Water Reactive Injection Polyurethane Sealants:
 - 1. Hydrophobic:
 - a. Webac (Seal Boss) 1570.
 - b. DeNeef Flex LV.
 - c. Or equal.
 - 2. Hydrophilic:
 - a. Sika Fix HH Hydrophilic.
 - b. Or equal.
- H. Crack Repair Rout and Seal:
 - 1. Sikaflex 2CNSEZ Mix.
 - 2. Or equal.
- I. Corrosion Inhibitor:
 - 1. For surface application on reinforcing bars:
 - a. Sika Armatec 110 Epo Cem by Sika.
 - b. Dural Prep AC by Euclid.

- J. Steel Reinforcing:
 - 1. Reinforcing Bars: ASTM A615, yield stress $F_y = 60,000$ psi.
 - 2. Welded Wire Fabric: ASTM A185 or A1064, yield stress $F_y = 65,000$ psi.
- K. Provide primers as required in accordance with Manufacturer's recommendations.

PART 3 - EXECUTION

3.1 GENERAL

- A. Installation: In accordance with Manufacturer's recommendations.
- B. Inspection: Do not install patching or reinforcing material until Engineer has inspected the repair location.
- C. Temporary Shoring:
 - 1. May be required at slab, beam, joist, or column repairs.
 - 2. Review marked removal and preparation areas and request clarification by Engineer for shoring requirements in questionable areas.
 - 3. In areas requiring shores, place shores prior to concrete removal and cavity preparation.
 - 4. Provide catch platform for removed concrete if necessary to prevent damage to portions of the Site to remain.
- D. Waste: Remove material from Site and dispose of legally.

3.2 CONCRETE REPAIRS

- A. General:
 - 1. Delaminated Areas:
 - a. Examine cavities prior to commencement of patching operations.
 - b. Sound surfaces as part of examination.
 - c. Remove delamination noted during sounding as specified in this Section.
 - d. Once located, further sound delaminations to define limits.
 - e. Mark limits with chalk or paint.
 - f. Remove concrete from within marked limits to minimum depth of 3/4-inch using 15 pound maximum electric or pneumatic chipping hammers or hand tools.
 - g. If delaminations exist beyond minimum removal depth, continue chipping until unsound and delaminated concrete has been removed from cavity.
 - h. Engineer will define and mark additional unsound concrete areas for removal, if required.
 - 2. Spalls:
 - a. Locate spalls by visual inspection.
 - b. Mark boundaries with chalk or paint after sounding surface.
 - c. Engineer will define and mark additional unsound concrete areas for removal, if required.
 - 3. Embedments:
 - a. Locate and determine depth of embedded reinforcement, electrical conduit and other embedments in repair area.
 - b. Mark these locations for reference during concrete removal.
 - c. Where embedded reinforcement or electrical conduit is exposed by concrete removal, exercise caution to avoid damaging it during removal of unsound concrete.
 - d. Repair damage to embedments due to removal operations in accordance with building code requirements at no cost to the Owner.
 - e. Embedded materials which are defective prior to construction may be repaired or replaced by Contractor or abandoned at Owner's option and cost.
 - 4. Sawcut Edges:
 - a. For vertical and overhead surfaces sawcut marked limits to depth of 1/2-inch to 5/8-inch into existing concrete, measured from original surface.
 - b. Make sawcut edges straight and patch areas square or rectangular-shaped.
 - c. Diamond blade saws or grinders with abrasive disk suitable for cutting concrete are acceptable for performing work.

- d. Dress edge cut at delamination limits perpendicular to member face and uniform depth, for length of cut.
 - e. Exercise caution during saw cutting to avoid damaging existing reinforcement, electrical conduit and other embedded items near surface of concrete.
 - f. Repair damage to existing reinforcement or other embedment caused by Contractor at no additional cost to Owner.
5. Clearance:
- a. Remove concrete to provide minimum of 3/4-inch clearance on all sides of defective or damaged exposed embedded reinforcement that is left in place.
 - b. Provide minimum of 1-1/2-inch concrete cover over new and existing reinforcement.
 - c. Concrete cover over reinforcement may be reduced to 1-inch with Engineer approval if coated with a reviewed epoxy resin.
6. Preparing Cavities:
- a. Sandblast cavities; water blasting is prohibited.
 - b. Remove deleterious materials such as damaged concrete, corrosion, laitance, dirt and grease from concrete surfaces.
 - c. Roughen surface to CSP-7 as defined by the ICRI.
 - d. Air blast as final step, to remove sand.
 - e. Apply corrosion inhibitor on full circumference of reinforcing bars.
7. Rectangular Areas:
- a. Prepare areas to be removed as straight and rectangular as practical to encompass repair and provide neat patch.
 - b. Avoid acute angles on patch.
8. Reinforcement Repair:
- a. Supplement defective or damaged embedded reinforcement by addition of reinforcement of equal diameter with Class "B" minimum splice in accordance with ACI 318 extending beyond damaged portion of reinforcement.
 - b. Secure new reinforcement to existing reinforcement with wire ties or approved anchors into concrete, or both.
 - c. Install supplemental reinforcement in accordance with ACI 318 and ACI 301.
 - d. If rust is present on embedded reinforcement where it enters sound concrete, perform additional concrete removal along and beneath reinforcement.
 - e. Continue additional removal until non-rusted reinforcement is exposed. Concrete removal may be terminated as Engineer directs.
 - 1) If bond between exposed embedded reinforcement and adjacent concrete is impaired by removal operations, perform additional removal around and beyond perimeter of reinforcement for minimum of 3/4-inch along entire length affected at no cost to Owner.
 - 2) Remove rust from the full circumference of reinforcement.
 - f. Defective Reinforcement:
 - 1) Embedded reinforcement exposed during surface preparation that has lost more than 10% of original cross-section due to corrosion.
 - 2) Exposed reinforcement that has lost section to extent specified as direct result of Contractor's removal operations.
 - g. Clean exposed rusted steel to bare metal by sandblasting; water blasting is not allowed.
 - h. Complete cleaning immediately before patch placement to ensure that base metal is not exposed to elements and further rusting for extended periods of time.
 - i. Securely anchor loose reinforcement exposed during preparation prior to patch placement.
 - j. Drilled-in anchors shall be reviewed by Engineer.
 - k. Engineer will determine adequacy of wire ties and approve other anchoring devices prior to their use.
 - l. Securing loose reinforcement is incidental to surface preparation and no additions to the Contract Sum will be allowed for this work.
9. Inspection of Repair Preparation:
- a. Inspection:
 - 1) After removals are complete, but prior to final cleaning, inspect cavity and exposed reinforcement and obtain Engineer's review for compliance with requirements of this Section.
 - 2) Where Engineer finds unsatisfactory cavity preparation, perform additional removals. Engineer will verify areas after additional removals.

- b. Defects:
 - 1) Inspect embedded reinforcement and conduits exposed within cavity for defects due to corrosion or damage resulting from removal operations.
 - 2) Notify Engineer of defective and damaged reinforcement, conduits or other embedments.
 - 3) Replace damaged or defective embedments according to this Section and as directed by Engineer.
 10. Provide other preparation as required by the Manufacturer of the patching compounds.
 11. Inform Engineer at least 2 days in advance of concrete repair placement to allow adequate time for Engineer to schedule inspection.
 12. Use form and fill method, trowel on fill method, or shotcrete fill method, as Manufacturer recommends.
 13. Pre-dampen cavity surface with clean water to a saturated surface dry (SSD) condition with no free water.
 - a. Provide 24 continuous hours of poured water on horizontal surface cavities and 24 continuous hours of sprinkler wetting on vertical surface cavities immediately prior to placement of concrete repair material.
 14. Place concrete continuously at each repair area until reinforcing steel is encapsulated, forms are full and air pockets are eliminated.
 15. Utilize vibrators to assist in consolidating concrete.
 - a. Do not over vibrate concrete.
 - b. Concrete over vibration (concrete segregation) will be cause for rejection of the work.
 - c. Refer to ACI 309R for assistance with the selection, numbers and use of vibrators.
 16. Protect freshly applied concrete from premature drying and maintain with minimal moisture loss at a relatively constant temperature for a minimum of 7 days.
 17. Use a form release agent that is compatible with specified curing compounds.
 18. Leave forms in place for a minimum of 3 days.
 19. Immediately after removing forms, either wet cure or apply at least 2 coats of curing compound in accordance with Manufacturer's recommendations.
 20. 14 days or later after installation of repairs, sound repaired concrete in presence of Engineer. Remove delaminated or otherwise unsound concrete encountered and place new repair concrete.
 - B. Floor Slabs:
 1. Sound designated floors for delaminations.
 2. Locate delaminations by sounding surface with hammer, rod, or chain drag.
 3. When delaminated area is struck, a distinct hollow sound will be heard.
 - C. Vertical and Overhead Surfaces:
 1. Locate delaminations by sounding appropriate member with hammer or rod.
 2. Cracks, usually horizontal in orientation along beam faces, and vertical in orientation near column corners are indicators of delaminated concrete.
 - D. Crack Repair:
 1. Refer to Drawings for specific criteria for crack repair.
 2. Follow sealant Manufacturer's specific guidelines where more stringent than those specified herein.
 3. Seal cracks the same day as they are prepared.
 4. Utilize a dry process to rout cracks.
 - E. Coat and Protect:
 1. After sandblasting operations and cleanup are completed, paint exposed steel with the reviewed epoxy.
 2. Protect prepared surfaces from damage prior to and during patch placement.
- ### 3.3 CRACK INJECTION
- A. Preparation:
 1. With Owner's representative, identify cracks and cold joints on the Site requiring crack injection.
 2. Ensure cracks and adjacent substrate are clean, sound and free of frost.
 3. Remove dust, laitance, grease, curing compounds, waxes, impregnations, foreign particles, efflorescence and other bond inhibiting materials from the surface by mechanical means, such as high pressure water blasting, or other methods as recommended by the Manufacturer.

- B. Injection Ports:
 - 1. Locate injection ports directly on the crack or drill them along the side of the crack at 45 degrees.
 - 2. Drill the hole to intersect the crack midway through the substrate.
 - 3. Install the injection packers (ports) in the holes.
 - 4. Install injection ports and grout ports as recommended by the product Manufacturer.
 - 5. Space injection ports as required to achieve travel of the adhesive for the pressure injection grouting between ports and to completely fill the cracks.
 - 6. Stagger ports each side of the crack.

- C. Injection:
 - 1. Mix injection products which are composed of individual components in accordance with the Manufacturer's recommendations.
 - 2. Dispense the adhesive for injection under constant pressure in accordance with procedures recommended by the equipment Manufacturer or as required to achieve maximum filling and penetration of the prepared cracks without the inclusion of air pockets or voids in the adhesive.
 - 3. Begin injection of adhesive into each crack at the entry port at the lowest elevation.
 - 4. Continue injection at the first port until the injection adhesive begins to flow out of the port at the next highest elevation or until the material is flowing out of the crack between these ports.
 - 5. Upon completion, remove injection packers, clean ports and grout holes.

3.4 PROTECTION

- A. Enclosures:
 - 1. If recommended by Manufacturer construct a weather-tight enclosure around the exterior of the surface to be repaired, to control temperature.
 - 2. The enclosure shall be of such quality as to maintain optimal conditions for the repair work.
 - 3. The enclosures shall remain until the repair work is sufficiently cured.

- B. Equipment:
 - 1. Provide as required to condition the space for repair work.
 - 2. Equipment may include, but not be limited to, heaters, dehumidification, and fans for intake and exhaust air.

3.5 FIELD QUALITY CONTROL

- A. Manufacturer's Engineer: Check work.

- B. Promptly make corrections, changes, and additions required by Manufacturer's engineer.

3.6 CLEANING

- A. Clean materials installed under this Section in accordance with Division 01 Section "Cleaning and Waste Management."

END OF SECTION 03 01 33

SECTION 09 91 00 – PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the furnishing and application of coating products, such as paints, stains and sealers, and labeling products.
1. Surfaces to be painted or finished include, but are not necessarily limited to, the following existing surfaces specifically identified herein or on the Drawings:
 - a. FW/BWS pipe and fittings as indicated on the Drawings.
 2. Surfaces not to be painted or finished include the following unless otherwise indicated on the Drawings:
 - a. Immersed cast-in-place and precast concrete.
 - b. Stainless steel (unless specifically indicated to be painted).

1.3 REFERENCES

- A. Except as herein specified or as indicated on Drawings, the work of this Section shall comply with the pertinent provisions of the following:
1. ASME/ANSI: A13.1 - Scheme for the Identification of Piping Systems.
 2. ASTM:
 - a. A780 - Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings.
 - b. D16 - Terminology for Paint, Related Coatings, Materials, and Applications.
 - c. D520 - Zinc Dust Pigment.
 - d. D523 - Test Method for Specular Gloss.
 - e. D7234 - Test Method for Pull-Off Adhesion Strength of Coatings on Concrete Using Portable Pull-Off Adhesion Testers.
 - f. F1869 - Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor using Anhydrous Calcium Chloride.
 3. Great Lakes Upper Mississippi River Board of State Public Health & Environmental Managers:
 - a. Ten States Standards 2.14 - Recommended Standards for Water Works.
 - b. Ten States Standards 54.5 - Recommended Standards for Wastewater Facilities.
 - c. International Concrete Repair Institute: Guideline No. 310.2R - Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, Polymer Overlays, and Concrete Repair.
 4. Michigan Administrative Code: R 325.51992 Part 603 - Lead Exposure in Construction.
 5. National Association of Pipe Fabricators (NAPF):
 - a. NAPF 500-03-01 - Solvent Cleaning for Ductile Iron.
 - b. NAPF 500-03-02 - Hand Tool Cleaning for Ductile Iron.
 - c. NAPF 500-03-03 - Power Tool Cleaning for Ductile Iron.
 - d. NAPF 500-03-04 - Abrasive Blast Cleaning for Ductile Iron Pipe.
 - e. NAPF 500-03-05 - Abrasive Blast Cleaning for Cast Ductile Iron Fittings.
 6. NSF/ANSI/CAN Standards:
 - a. 61 – Drinking Water System Components – Health Effects.
 - b. 600 – Health Effects Evaluation and Criteria for Chemicals in Drinking Water.
 7. Steel Structures Painting Council (SSPC):
 - a. AB-1 - Mineral and Slag Abrasives.
 - b. PA-1 - Shop, Field, and Maintenance Painting of Steel.
 - c. PA-2 - Procedure for Determining Conformance to Dry Coating Thickness Requirements.
 - d. PA-3 - A Guide to Safety in Paint Application.
 - e. SP-1 - Solvent Cleaning.
 - f. SP-2 - Hand Tool Cleaning (SSI-St2).
 - g. SP-3 - Power Tool Cleaning (SSI-St3).
 - h. SP-5 - White Metal Blasting (SSI-Sa3) (NACE #1).

- i. SP-6 - Commercial Blast Cleaning (SSI-Sa2) (NACE #3).
 - j. SP-7 - Brush-off Blast (SSI-Sa1) (NACE #4).
 - k. SP-8 - Pickling.
 - l. SP-10 - Near-White Blast Cleaning (SSI-Sa2-1/2) (NACE #2).
 - m. SP-11 - Power Tool Cleaning to Bare Metal.
 - n. SP-16 - Brush-Off Blast Cleaning of Coated and Uncoated Galvanized Steel, Stainless Steels, and Non-Ferrous Metals.
 - o. VIS-1 - Visual Standard for Abrasive Blast Cleaned Steel.
8. United States Department of Labor, Occupational Safety and Health Administration (OSHA): 29 CFR 1926.62.

1.4 DEFINITIONS

A. Terms:

- 1. Coating: Paint, stain, sealer or other product specified.
- 2. Environment:
 - a. Severe: Highly corrosive industrial atmospheres with sustained exposure to high humidity and condensation, frequent cleaning using strong chemicals, heavy concentrations of strong chemical fumes, and frequent splashing and spilling of harsh chemical products.
 - b. Moderate: Corrosive industrial atmospheres with intermittent exposure to high humidity and condensation, occasional mold and mildew development, regular cleaning with strong chemicals, and occasional splashing and spilling of chemical products.
 - c. Mild: Industrial atmospheres with normal exposure to moderate humidity and condensation, occasional mold and mildew development, infrequent cleaning with strong chemicals, low levels of mild chemical fumes, occasional splashing and spilling of chemical products, and normal outdoor weathering.
- 3. Exposure:
 - a. Environmental conditions to which different surfaces may be exposed as follows:
 - 1) Concealed: Surfaces within the confines of a building or other enclosure not constantly exposed to weather, trapped moisture, high heat or other deteriorating conditions, and normally concealed from view.
 - 2) Immersed:
 - a) Surfaces below a liquid surface or exposed to spray.
 - b) Surfaces exposed to spray include areas to 8 inches above maximum liquid surface in quiescent structures and to 18 inches above maximum liquid surface in mixed or agitated structures.
 - c) Immersed surfaces also include the interior surfaces of the floors, walls, and tops of fully or partially enclosed liquid containing structures, regardless of the liquid level.
 - 3) Interior: Surfaces within the confines of a building or other enclosure not immersed or constantly exposed to weather, trapped moisture, high heat or other deteriorating conditions, and exposed to view.
 - 4) Exterior:
 - a) Above Grade: Surfaces above finished grade and not included in 1), 2), or 3) above.
 - b) Below Grade: Surfaces below finished grade and not included in 1), 2), or 3) above.
- 4. Gloss Range (as determined by ASTM D523):
 - a. High Gloss: A high sheen finish of more than 70 when measured at a 60 degree meter.
 - b. Semi Gloss: A medium sheen finish of 35 - 70 when measured at a 60 degree meter.
 - c. Satin: A low-to-medium sheen finish of 15 - 35 when measured at a 60 degree meter.
 - d. Eggshell: A low sheen finish of 20 - 35 when measured at a 60 degree meter.
 - e. Flat: A lusterless or matte finish of less than 5 when measured at an 60 degree meter.

1.5 SUBMITTALS

- A. Manufacturer's Literature: Specification data sheets and color charts for materials proposed for use on the Work. Provide Safety Data Sheets (SDS) as requested by Engineer.

- B. Schedules:
 - 1. Submit a finish schedule indicating rooms and other structures and systems to be coated, items or areas to be coated, the proposed coating system, including surface preparation, primer, intermediate/finish coats, application methods and color charts.
 - 2. Schedule shall be submitted as a complete package.
 - 3. No coatings may be applied until Engineer has made a complete review of the entire submittal.
- C. Manufacturer's Certificates: Submit signed affidavit from coatings Manufacturer that submitted coatings are of same or better quality than those specified, and Manufacturer's approval of applicator.
- D. NSF/ANSI/CAN Certifications: Coating systems in contact with potable water, including water that is a part of a treatment process that will ultimately become potable water, require NSF/ANSI/CAN 61 and 600 certifications. Submit evidence of current product certifications with the requirements of these standards. Certification from Testing Laboratories must demonstrate acceptable credentials to allow them to certify product conformance with the NSF/ANSI/CAN 61 and 600 standards.
- E. Applicator's Experience: Submit written verification of experience required herein.
- F. Product and Maintenance Schedules:
 - 1. At or before the completion of the Work, submit complete lists, in a finish schedule, of the actual products used. Include item covered, coating Manufacturer's name, type of coating and color.
 - 2. Provide pipe coding schedules listing pipe name, coating Manufacturer's name, type of coating and color.
 - 3. Provide maintenance manuals detailing the proper procedures and materials to be used for maintenance and repainting of the various coatings.

1.6 QUALITY ASSURANCE

- A. General:
 - 1. Acceptability of materials and performance shall be determined by Engineer.
 - 2. Testing or certifications may be required to aid Engineer's determination.
 - a. Expense of testing and certifications when required and, unless noted otherwise in the Contract Documents, shall be borne by Contractor.
 - b. If destructive testing is required, Contractor shall repair damaged area. Expense of repair shall be borne by Contractor.
 - c. If initial testing results are unsatisfactory or yield failing results, additional testing will be required. Cost of additional testing shall be borne by Contractor.
 - 3. Coating Reviews:
 - a. Request, in writing, a review of each coat by Engineer of first finished surface of each type for color, texture and workmanship.
 - b. First accepted surface of each type and color shall be visibly labeled by Engineer with removable label as Project standard for that type and color of item.
 - c. Labels shall remain in place until painting is finished and accepted.
 - d. For spray application, paint a surface of 100 square feet as a Project standard.
 - 4. Work may be inspected as to proper surface preparation, pretreatment, priming, dry film thickness, curing, color, and workmanship.
 - 5. Applicable standards, test methods, and inspection equipment includes, but is not necessarily limited to the following:
 - a. SSPC-VIS-1 photographic blast cleaning standards (latest revision).
 - b. Inspector's wet film and dry film thickness gages.
 - c. Zorelco 369/PHD pin hole detector.
 - d. Mark II Tooke Gage.
- B. Coating Subcontractors:
 - 1. Applicators shall have experience with the coating systems specified.
 - 2. Experience shall be substantiated by previous project experience, certifications, seminar attendance, Manufacturer validation, or similar means.

- C. Pre-Application Meeting:
1. Convene a pre-application meeting before the start of work and prior to ordering materials.
 2. Require attendance of parties directly affecting work of this Section, including Engineer, applicator and coating Manufacturer's technical representative.
 3. Review the following as a minimum:
 - a. Access and safety requirements.
 - b. Heating, ventilation and humidity control measures to be utilized.
 - c. How application information will be monitored and recorded, including responsible personnel, monitoring equipment, forms, and timely reporting of information recorded.
 - d. Protection of surfaces not scheduled to be coated.
 - e. Schedule of work.
 - f. Surface preparation.
 - g. Coating application.
 - h. Daily log to be used.
 - i. Repairs anticipated.
 - j. Applicator's field quality control.
 - k. Cleaning procedures.
 - l. Testing procedures.
 - m. Protection of coating systems.
 - n. Coordination with Owner's activities.
- D. Manufacturer's Services:
1. Arrange for Manufacturer's technical representative to provide the services indicated below.
 2. Site Visits by the Manufacturer's Technical Representative:
 - a. The pre-application meeting.
 - b. A visit to observe surface preparation and review application techniques of components of the system.
 - c. A visit to review the completed installation.
 3. Generally provide assurance and guidance for the entire coating system installation.
 4. Written documentation required from the coating system Manufacturer:
 - a. A letter of acknowledgement that the coating system materials are specified to be used in a location and for a purpose that meets with the approval of the coating system Manufacturer and the intent of the Contract Documents. The signed letter shall certify that the Manufacturer's technical representative:
 - 1) Is familiar with the Project, has attended meetings and is aware of the Project conditions and aware of associated products (i.e. filler resurfacers, primers, coatings and other products proposed for the Project).
 - 2) Agrees with the intended application of their products as specified.
 - 3) Agrees with the surface preparation specified, as completed.
 - 4) Agrees with the specifications. If necessary, submit revisions to specifications.
 - 5) Agrees that their products are compatible with associated products (i.e. concrete repair materials, existing coating systems, and other products proposed for the Project).
 - 6) Agrees with the type and quantity of testing to be performed, to ensure their product is adequately installed.
- E. Installation Subcontractor's Supervising Site Representative:
1. On Site during work being performed.
 2. Knowledgeable of all aspects of the work.
 3. Review each day's agenda with crew, and with Contractor's and Engineer's Site representatives.
 4. If a portion of the work becomes unclear as to the most appropriate direction, work shall stop until a consensus is reached by all parties, including the Engineer's representative and the Manufacturer's technical representative, as required.
- F. Applicator's Project Record:
1. Applicator shall maintain a record for each day work is performed, and shall include a record of application process information. At a minimum, applicator's record shall include:
 - a. Material Manufacturer's batch numbers.
 - b. Surfaces to which material is applied.
 - c. Time of application.

- d. Ambient temperature.
 - e. Substrate temperature.
 - f. Substrate moisture.
 - g. Relative humidity.
 - h. Dew point temperature.
 - i. Use of heating, dehumidification and ventilation equipment.
 - j. Unusual or important conditions, features, or events that occur before, during or after work is performed that day. Such information shall be referred to on previous or subsequent daily reports, when appropriate.
2. Submit for Project record.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in original sealed containers of the Manufacturer with labels legible and intact. Include the following on labels on each container:
 1. Manufacturer's name.
 2. Type of coating.
 3. Manufacturer's stock number.
 4. Manufacturer's batch identification.
 5. Color name and number.
 6. Instructions for mixing and reducing, where applicable.
 7. Percent total solids by volume.
 8. Identification of toxic substances and special instructions.
 9. VOC content.
- B. Storage:
 1. Store materials in tightly covered containers at a minimum ambient temperature of 45 degrees F.
 2. Store materials in a well ventilated area and in such a manner as to comply with safety requirements including applicable federal, state, and local rules and requirements.
 3. Storage shall also be in accordance with instructions of the paint Manufacturer and requirements of insurance underwriters.
 4. Maintain storage containers in a clean condition, free from foreign materials and residue:
 - a. Protect from freezing.
 - b. Keep storage area neat and orderly.
 - c. Remove oily rags and waste daily and dispose of legally.
- C. Handle volatile products carefully and use caution so as not to puncture containers. Keep open flame away from areas while handling containers and be aware of material flash points.

1.8 PROJECT CONDITIONS

- A. Environmental Requirements:
 1. Waterborne Paints:
 - a. Apply only when temperature of surface to be painted and surrounding air are between 50 and 90 degrees F.
 - b. Maintain temperature range throughout the minimum cure time recommended by the Manufacturer.
 2. Solvent-Thinned Paints:
 - a. Apply only when temperature of surface to be painted and surrounding air are between 45 and 95 degrees F.
 - b. Maintain temperature range throughout the minimum cure time recommended by the Manufacturer.
 3. Inclement Weather:
 - a. Do not apply paint:
 - 1) In snow, rain, fog, or mist.
 - 2) When relative humidity exceeds 85%.
 - 3) When steel temperature is less than 5 degrees F above the dew point.
 - 4) To damp or wet surfaces.

- b. Products represented by manufacturers to have NSF/ANSI/CAN 61 and 600 have been included in the painting schedule, where the intended use requires products to meet the requirements of those standards. However the listing of a product is not a representation by the Engineer that the product has the current certifications. Submittal of current certifications is a requirement.
 - c. Proposed substitutions shall also carry NSF/ANSI/CAN certifications for specific applications.
 - d. Verify that coating systems utilized carry NSF/ANSI/CAN certifications, where such certifications are required. Provide product currently certified at no extra cost to Owner.
 2. Paint, primer and related materials are included in the painting schedule in this Section.
 3. Paint used for repair of galvanizing shall have minimum 95% zinc dust in accordance with ASTM D520.
 - B. Colors: Colors of finish coats shall be as selected by Engineer.
 - C. Blast Abrasives:
 1. Level of ionic contaminants shall be in accordance with SSPC-AB 1.
 2. Products and Manufacturers:
 - a. Magnum Blast by Dust Net, Wedron, Illinois.
 - b. Black Magnum by Dust Net, Wedron, Illinois.
 - c. Black Beauty by Reed Minerals, Highland, Indiana.
 - D. VOC Compliance:
 1. Individual coatings and coating systems shall have VOC levels at or below the EPA recommendations identified in 40 CFR Part 59.
 2. VOC content shall be tested in accordance with EPA Method 24.
- ### 2.3 MIXES
- A. Mixing:
 1. Deliver paints to the Site ready-mixed, when possible.
 2. Mix two-component paints at the Site and observe pot life as recommended by Manufacturer.
 3. Proceed with mixing until paint becomes smooth, homogeneous, and free of surface swirls or pigment lumps.
 4. When mixing multi-component paints, remix each component individually, then blend the components, as recommended by the Manufacturer, until the mixture is completely uniform in color.
 - B. Thinning:
 1. No thinning will be permitted unless absolutely necessary.
 2. Paint shall be spray-applied in as-received condition to demonstrate necessity for thinning.
 3. Use only thinners as recommended by paint Manufacturer for specific use.
 4. Amount of thinner used shall be reported to Engineer.
 5. Measure viscosity to ensure proper thinning ratios have been used.
 - C. Tinting:
 1. Onsite tinting will be permitted only when accepted in writing by Engineer.
 2. Use only tinting colors recommended by the Manufacturer for the specific type of coating.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Inspection:
 1. Prior to the commencement of surface preparation or other coating activities, thoroughly inspect the surfaces to determine if the Work is ready to be prepared and painted.
 2. Report in writing to Engineer conditions that may potentially affect proper application.
 3. Do not commence surface preparation or other coating activities until such defects have been corrected.

- B. Correction of Defects:
 - 1. Correct defects and deficiencies in surfaces which may adversely affect work of this Section.
 - 2. Apply filler resurfacers, patching materials and the like that are required to provide the surface recommended by the coating Manufacturer.
 - 3. Start of painting will be construed as the applicator's acceptance of surfaces and conditions within a particular area.

3.2 TEMPORARY HEATING, VENTILATION AND HUMIDITY CONTROL REQUIREMENTS

- A. General:
 - 1. Ventilation is mandatory.
 - 2. Provide ventilation that exhausts fumes and odors to the exterior at a location where existing HVAC systems will not pick up these fumes and odors.
 - 3. Provide negative air pressure to those spaces receiving coatings without reducing air temperatures in those spaces which may impede the curing process of those coating systems.
 - 4. Ventilation is required during surface preparation, application of coating systems, and the curing period for those systems.
 - 5. Provide additional equipment and fuel as required to condition the space for surface preparation, application of products, and curing of those products, in accordance with Manufacturer's requirements. This equipment may include, but is not limited to, heaters, dehumidifiers and fans for intake and exhaust air.
- B. Enclosures:
 - 1. Provide temporary enclosures as required to isolate dust, fumes and odors from areas in use, to control temperature and humidity, and to protect surface to be coated from the weather.
 - 2. The enclosure shall be of such quality as to maintain optimal conditions for the work of this Section.
 - 3. The enclosure shall remain until the work is sufficiently cured.

3.3 PREPARATION

- A. General:
 - 1. Prepare surfaces in accordance with this Article, the paint Manufacturer's recommendations and as specified in the painting schedule of this Section.
 - 2. Cleanliness of Abrasive Blast-Cleaned Steel:
 - a. Determined by Engineer using Steel Structures Painting Council Manual SSPC-VIS-1.
 - b. Small steel panels which have been abrasive blast-cleaned and approved for a specific cleanliness may be used for comparative purposes to facilitate inspection and approval.
 - c. Securely wrap these panels in clear plastic, seal to protect them from deterioration and mark with appropriate SSPC-SP6 cleaning specification.
 - 3. Cleanliness of Compressed Air:
 - a. Do not use contaminated air for blast cleaning.
 - b. Periodically check compressed air used for blasting to verify that it is clean, dry and oil-free by directing its flow toward a sheet of clean white paper.
 - 4. Place oil and water separators in the air line as close as possible to blast-cleaning equipment. Make measurements of surface profile of abrasive blast-cleaned steel with a Keane-Tator Surface Profile Comparator or Testex Press-O-Film and Micrometer.
 - 5. Abrasive Media:
 - a. Select abrasive media to provide the type of profile required by the Manufacturer of the coating product.
 - b. Abrasive media shall contain less than 5% free silica sand.
 - 6. Protective Covers:
 - a. Protect motors, bearings, chain drives, and other moving parts by wrapping with plastic and sealing with tape.
 - b. Maintain protective covers in dust tight condition.
 - 7. Correct steel and fabrication defects revealed by surface preparation, such as weld imperfections, delamination, scabs, and slivers, by appropriate trade before proceeding further with surface preparation.

8. Clean Up of Blast Cleaned Areas:
 - a. Remove dust and blast products from the abrasive blast-cleaned surfaces by high pressure air or vacuum cleaning.
 - b. Completely clean up residue from blasting operations within the entire space to be painted prior to applying coatings.
 9. Inspect surfaces after surface preparation is complete and prior to application of coatings.
 10. Remove hardware, accessories, plates, machined surfaces, lighting fixtures, and similar items in place that are not to be painted, or provide surface applied protection prior to surface preparation and painting, and then replace items after paint has dried.
 11. When acid etching is the approved means of preparing surfaces for coating systems, protect the surrounding areas. Neutralize dispensed solutions and dispose of properly.
- B. Ductile Iron Pipe and Fittings:
1. Do not follow preparation procedures typically used for other ferrous metals as these may result in damage to the ductile pipe surface and subsequent reduced coating effectiveness and life expectancy.
 2. Perform surface preparation in accordance with NAPF 500-03-01 through 05 and the painting schedule.
- C. Nonferrous Metals and Galvanized Steel:
1. Remove dirt, oil, grease, and other foreign matter in accordance with SSPC-SP1. For Solvent Cleaning, test surface with copper sulfate solution. If galvanizing turns black, then surface is clean and ready for paint application. Otherwise abrade surface or brush blast in accordance with SSPC-SP7.
 2. Remove white rust by hand or power brushing being careful not to damage or remove the galvanizing.
 3. Remove rust in accordance with SSPC-SP2 or SSPC-SP3.
 4. On surfaces potentially exposed to the touch, such as railings, grind runs and drips of galvanizing material smooth and repair using zinc-rich primer.
 5. On galvanized steel, touch-up exposed metal areas using zinc-rich primer.
 6. Repairs and touch up of galvanized coatings shall comply with ASTM A780. Zinc-rich primers shall be compatible with finish coats.
- D. Equipment: Open doors, hatches, and covers, and remove removable appurtenances and prepare surfaces separately in accordance with this Section.

3.4 APPLICATION

- A. General:
1. Take necessary safety precautions in accordance with this Article, SSPC-PA Guide 3, Manufacturer's recommendations, federal, state, and local rules and requirements, and insurance underwriter's guidelines.
 2. Apply coatings in accordance with this Article, SSPC-PA1, and the Manufacturer's recommendations.
 3. Moisture Content:
 - a. Do not apply initial coating until moisture content of surface is within limitations recommended by paint Manufacturer.
 - b. Determine moisture content by one of the following methods:
 - 1) As specified herein.
 - 2) By use of a moisture meter approved by Engineer.
 4. Mil Thickness:
 - a. Apply coats in a uniform manner and of the minimum dry film thickness as indicated in the painting schedule.
 - b. Maximum mil thickness shall be as recommended by coating Manufacturer.
 - c. Where the mil thickness is not indicated in the painting schedule, it shall be as recommended by coating Manufacturer.
 5. Sand and dust between each coat to remove defects visible from a distance of 5 feet.
 6. Additional Coats:
 - a. Apply within recoat recommendation of the Manufacturer based on temperature and humidity variations.
 - b. Schedule inspections so as to not interfere with recoat time.
 7. Each coat shall be smooth, free of brush marks, streaks, laps or pile-up of paint, and skipped or missed areas.

8. Make edges of paint adjoining other materials or colors clean and sharp with no overlapping.
9. Spray apply coatings on hollow metal units.
10. Finish door tops, edges, and bottoms the same as exposed surfaces.
11. Except for contact surfaces, surfaces of fabricated assemblies that are inaccessible after erection shall receive field coats of paint before erection.
12. Ensure that concrete cracks and defects have been repaired prior to applying coating, then fill remaining depressions and crevices with paint if practical.
13. Protect wet paint against damage from dust or other detrimental foreign matter as much as is practicable.
14. Remove grills, covers, and access panels of mechanical and electrical systems and tanks from location and paint separately.
15. Paint the interior surface of ducts flat black in the immediate area of supply and exhaust grilles.
16. Omit application of masonry filler on acoustical masonry.
17. Coat concrete and masonry walls prior to mounting equipment.
18. Where equipment, piping, conduit or the like are removed from an existing painted surface, patch and paint the newly exposed surface as required so the newly exposed surface matches surrounding surfaces in coating and appearance.
19. Where epoxy coatings are scheduled over existing paint:
 - a. Test existing paint and substrate for lifting or alligating.
 - b. If existing paint lifts or alligators, remove it down to bare substrate.
20. Where a portion of a surface is to be coated, carry the coating to the nearest break point in the surface plane beyond the portion specified.

B. Valves, Fittings, and Supports:

1. Paint valves and fittings the same base color as the pipe they adjoin.
2. Paint floor stands the same base color as the pipe they adjoin.
3. Wall Brackets and Pipe Hangers:
 - a. Paint the same base color as the wall or ceiling they adjoin.
 - b. Use gray color if wall or ceiling is not painted.

3.5 PIPE AND EQUIPMENT IDENTIFICATION

A. General:

1. Identify non-buried piping installed as part of the Work in accordance with ASME/ANSI A13.1, this Section, as required in the pipe identification schedule, and as indicated on the Drawings.
2. Painting or banding of concealed piping above suspended ceilings is not required, but labels as specified following are required.
3. Identify pumps, tanks, and equipment.

B. Color Bands:

1. Where color bands are indicated for piping identification, use colored vinyl tape spaced every 6 feet, before and after each valve and where pipe enters and leaves each wall.
2. Band Widths:
 - a. Pipe up to and including 2-inch diameter: 3/4-inch wide.
 - b. Pipe 2-1/2-inch to 6-inch diameter: 2 inches wide.
 - c. Pipe 8-inch to 12-inch diameter: 4 inches wide.
 - d. Pipe 14-inch diameter and over: 6 inches wide.

C. Labels and Arrows:

1. Label pipes at intervals not to exceed 20 feet and where pipe enters and leaves each wall, to identify the contents of the pipe as determined by Engineer.
2. Place an arrow adjacent to every pipe label to indicate direction(s) of flow.
3. Use preprinted labels and arrows manufactured by a company which normally manufactures pipe identification systems.
4. Supply pipe labels, arrows, and color bands by a single Manufacturer.
5. Labels and Arrow Heights:
 - a. Pipe or Covering Over 3-inch Diameter: 2-1/4 inches.
 - b. Pipe or Covering 1-inch to 3-inch Diameter: 1-1/8 inches.
 - c. Pipe or Covering Under 1-inch Diameter: 1/2-inch.

6. Materials shall be suitable for the use intended.
7. Label pumps, tanks, and equipment items, including description and tag number, with lettering size coordinated with Engineer depending on equipment size.

3.6 FIELD QUALITY CONTROL

- A. Inspection:
 1. To facilitate painting and inspection, each coat of paint shall be of a different color or tint.
 2. Finished metal surfaces shall be free of skips, voids or pinholes in each coat when tested with a low voltage detector.
 3. Do not apply additional coats until previous coat has been inspected and acknowledged in writing by Engineer.
 4. Only coats of paint acknowledged in writing will be considered in determining number of coats applied.
- B. Final Touch-Up:
 1. Surface damage shall be repaired with touch-up paint matching material used for original coating.
 2. Repaired areas shall be rubbed out and polished to match surrounding finish.
 3. Finish repair shall be of the quality typically found within the auto body industry.

3.7 CLEANING

- A. Remove spilled, splashed, or spattered paint from surfaces.
- B. Do not mar surface finish of item being cleaned.
- C. Prior to acceptance of the work of this Section, thoroughly clean painted surfaces and related areas in accordance with Division 01 Section "Cleaning and Waste Management."

3.8 PROTECTION

- A. General:
 1. Adequately protect other surfaces from paint and damage.
 2. Repair damage as a result of inadequate or unsuitable protection.
- B. Protective Materials: Furnish sufficient drop cloths, shields, and protective equipment to prevent spray or droppings from fouling surfaces not being painted and in particular, surfaces within storage and preparation area.
- C. Fire Hazards: Place cotton waste, cloths, and materials which may constitute a fire hazard in closed metal containers and remove daily from Site.
- D. Electrical Plates and Hardware:
 1. Remove electrical plates, surface hardware, fittings and fastenings prior to painting operations.
 2. These items are to be carefully stored, cleaned and replaced upon completion of work in each area.
 3. Do not use solvent to clean hardware that may remove permanent lacquer finish.
- E. Equipment with Factory-Applied Final Finishes:
 1. Certain equipment with factory-applied finishes may be accepted by Engineer at Engineer's discretion.
 2. Protect finishes of equipment with approved factory-applied final finishes from scratches and abrasions by all practical means.
 3. Repair surface damage with touch-up paint furnished by equipment Manufacturer by workmen skilled in this type of work.
 4. Rub out and polish repaired areas to match surrounding finish.
 5. Finish repair shall be of the quality typically found within the auto body industry.
 6. If damage to item is severe in the judgment of Engineer, the equipment will be rejected or a new finish coat shall be applied after proper surface preparation at the discretion of Engineer, at no additional cost to Owner.

3.9 PAINTING SCHEDULE

- A. See finish schedule on Drawings for further information.
- B. All mil thicknesses indicated are dry film thicknesses (DFT).

1. Interior Ferrous Metals – Non-Immersed: Gloss Zinc/Aliphatic Acrylic Polyurethane System:

System Manufacturer	Surface Preparation	First Coat	Second Coat	Third Coat
Tnemec	(Shop): SSPC-SP6 commercial blast cleaning	(Shop) and (Field Touch-up, Prime): 90-97 Tneme-Zinc 2.5-3.5 Mils	(Field): 69-Hi-Build Epoxoline 4.0-6.0 Mils	(Field): 1094 Endura-Shield 3.0-5.0 Mils
Carboline	(Shop): SSPC-SP6 commercial blast cleaning	(Shop) and (Field Touch-up, Prime): Carbozinc 859 2.5-3.5 Mils	(Field): Carboguard 890 4.0-6.0 Mils	(Field): Carbothane 134HG 3.0-5.0 Mils
International Paint	(Shop): SSPC-SP6 commercial blast cleaning	(Shop) and (Field Touch-up, Prime): CATHCOAT 302 H Reinforced Inorganic Zinc (78%) 2.5-3.5 Mils	(Field): BAR-RUST 235 Epoxy Mastic 4.0-6.0 Mils	(Field): DEVTHANE 379/H Aliphatic Urethane Gloss 3.0-5.0 Mils
Sherwin Williams	(Shop): SSPC-SP6 commercial blast cleaning	(Shop) and (Field Touch-up, Prime): Corothane Galvapac 1K 2.5-3.5 Mils	(Field): Macropoxy 646 FC 4.0-6.0 Mils	(Field): Acrolon 218HS/HS Polyurethane 3.0-5.0 Mils

2. Interior Non-Ferrous and Galvanized Metals – Non-Immersed: Gloss Zinc/Aliphatic Acrylic Polyurethane System:

System Manufacturer	Surface Preparation	First Coat	Second Coat
Tnemec	(Field): SSPC-SP1 solvent cleaning and SSPC-SP3 or SSPC-SP7 (abrade to create a 1.0 - 1.5 mil profile)	(Field) 69 Hi-Build Epoxoline II 4.0-6.0 Mils	(Field): 1094 Endura-Shield 2.0-3.0 Mils
Carboline	(Field): SSPC-SP1 solvent cleaning and SSPC-SP3 or SSPC-SP7 (abrade to create a 1.0 - 1.5 mil profile)	(Field): Carboguard 890 4.0-6.0 Mils	(Field): Carbothane 134HG 2.0-3.0 Mils
International Paint	(Field): SSPC-SP1 solvent cleaning and SSPC-SP3 or SSPC-SP7 (abrade to create a 1.0 - 1.5 mil profile)	(Field): DEVTRAN 201H or 203 Universal Epoxy Primer 2.0-4.0 Mils	(Field): DEVTHANE 379/H Aliphatic Urethane Gloss 2.0-3.0 Mils
Sherwin Williams	(Field): SSPC-SP1 solvent cleaning and SSPC-SP3 or SSPC-SP7 (abrade to create a 1.0 - 1.5 mil profile)	(Field): Macropoxy 646 FC 4.0-6.0 Mils	(Field): Acrolon 218HS/HS Polyurethane 2.0-3.0 Mils

3. Metals – Immersed (interior of potable water system pipe): Modified Polyamine or Satin Polyamidoamine Epoxy System
 (Note: Contractor shall verify current NSF certification; provide product currently certified at no extra cost to Owner.)

System Manufacturer	Pipe and Fitting Size Limitations	Surface Preparation	First Coat	Second Coat
Tnemec	Pipes 4" to 8" diameter	(Shop): SSPC-SP10 near-white blast cleaning	(Shop): 22 Epoxoline 16.0-18.0 Mils	
	Pipes 10" to 12" diameter	(Shop): SSPC-SP10 near-white blast cleaning	(Shop): 22 Epoxoline 16.0-18.0 Mils	
	Pipes 14" diameter and greater; valves and fittings 4" diameter and greater	(Shop): SSPC-SP10 near-white blast cleaning	(Shop): 22 Epoxoline 16.0-18.0 Mils	
Carboline	Pipes 4" to 8" diameter; fittings		No NSF/ANSI/CAN certified equivalent	
	Valves 4" diameter and greater	(Shop): SSPC-SP10 near-white blast cleaning	(Shop): Carboguard 891 VOC 4.0-10.0 Mils	(Shop): Carboguard 891 VOC4.0 – 10.0 Mils (16.0 mils min, 20.0 mils max total)
	Pipes 10" diameter and greater	(Shop): SSPC-SP10 near-white blast cleaning	(Shop): Phenoline Tankshield 16.0-20.0 Mils	
International Paint	Pipes 4" diameter and greater	(Shop): SSPC-SP10 near-white blast cleaning	(Shop): Interline 975P 16.0-18.0 Mils	
	Valves and fittings 4" diameter and greater	(Shop): SSPC-SP10 near-white blast cleaning	(Shop): Bar Rust 233 H 12.0-16.0 Mils	
Sherwin Williams	Valves and fittings	(Shop): SSPC-SP10 near-white blast cleaning	(Shop): Duraplate 6000 20.0-50.0 Mils	
	Pipes 4" diameter and greater	(Shop): SSPC-SP10 near-white blast cleaning	(Shop): Duraplate 6000 20-50 Mils >=4" 20-125 Mils >=6"	
	Pipes 6" diameter and greater	(Shop): SSPC-SP10 near-white blast cleaning	(Shop) Sherplate PW Epoxy 16.0-30.0 Mils >=6" 16.0-50.0 Mils >=12"	

4. Existing Ferrous Metals in Wet Environment:

System Manufacturer	Surface Preparation	First Coat	Second Coat	Third Coat
Tnemec	(Field): SSPC-SP6 commercial blast cleaning	(Field): Series 1 Omnithane 2.5-3.5 Mils	(Field): 69 Hi-Build Epoxoline II 3.0-5.0 Mils	(Field): 69 Hi-Build Epoxoline II 2.0-3.0 Mils
Carboline	(Field): SSPC-SP6 commercial blast cleaning	(Field): Carbomastic 615 2.5-3.5 Mils	(Field): Carbomastic 615 3.0-5.0 Mils	(Field): Carbothane 134 HG 2.0-3.0 Mils
International Paint	(Field): SSPC-SP6 commercial blast cleaning	(Field): CATHCOAT 302 H Reinforced Inorganic Zinc 2.5-3.5 Mils	(Field): BAR-RUST 233H Multi- Purpose Epoxy 5.0-6.0 Mils	(Field): BAR-RUST 233H Multi- Purpose Epoxy 5.0-6.0 Mils
Sherwin Williams	(Field): SSPC-SP6 commercial blast cleaning	(Field): Corothane Galvapak 1K 2.5-3.5 Mils	(Field): Macropoxy 646 FC 3.0-5.0 Mils	(Field): Macropoxy 646 FC 2.0-3.0 Mils

3.10 PIPE IDENTIFICATION COLOR SCHEDULE

- A. Identify exposed pipes with the following colors.
 - 1. Colors are from the Tnemec Colorbook color card.
 - 2. Equivalent colors of other Manufacturers indicated in Part 2 of this Section may be used.
- B. Where a facility has an existing identification system already in use, coordinate with the system in use.
- C. In situations where 2 colors do not have sufficient contrast to easily differentiate between them, paint a 6-inch band of contrasting color at 30-inch intervals.

Water Plant Piping	Color Description	Tnemec Colorbook ID
Non-Potable Water: Filter Effluent	Mint Green	Frosted Mint GB48

END OF SECTION 09 91 00

SECTION 40 05 13 – PROCESS PIPING SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the furnishing and installation of process piping.
- B. Work included under this Section:
 - 1. Non-buried process piping indicated on the Process Drawings.

1.3 REFERENCES

- A. Except as herein specified or as indicated on the Drawings, the work of this Section shall comply with the following:
 - 1. ANSI B 16.5 - Pipe Flanges and Flange Fittings.
 - 2. ASTM Standards:
 - a. A36 - Structural Steel.
 - b. A53 - Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless.
 - c. A193 - Alloy-Steel and Stainless Steel Bolting Materials for High-Temperature Service.
 - d. A194 - Carbon and Alloy Steel Nuts for Bolts for High-Pressure and High-Temperature Service.
 - e. A234 - Pipe Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and Elevated Temperatures.
 - f. A283 - Low and Intermediate Tensile Strength Carbon Steel Plates.
 - g. A312 - Seamless, Welded, and Heavily Cold Worked Austenitic Stainless Steel Pipes.
 - h. A403 - Wrought Austenitic Stainless Steel Piping Fittings.
 - i. D1784 - Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds.
 - j. D1785 - Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120.
 - k. D2464 - Threaded Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80.
 - l. D2467 - Socket Type Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80.
 - m. D2992 - Obtaining Hydrostatic Design Basis for Reinforced Thermosetting Resin Pipe and Fittings.
 - n. D2996 - Filament-Wound "Fiberglass" (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe.
 - o. E8 - Low and Intermediate Tensile Strength Carbon Steel Plates.
 - p. E23 - Notched Bar Impact Testing of Metallic Materials.
 - 3. AWWA Standards:
 - a. C 104 - Cement-Mortar Lining for Ductile-Iron Pipe and Fitting for Water.
 - b. C 110 - Ductile-Iron and Gray-Iron Fittings, 3 In. through 48 In., for Water and Other Liquids.
 - c. C 115 - Flanged Ductile-Iron Pipe with Threaded Flanges.
 - d. C 151 - Ductile-Iron Pipe, Centrifugally Cast in Metal Molds or Sand-Lined Molds, for Water or Other Liquids.
 - e. C 200 - Steel Water Pipe 6 In. and Larger.
 - f. C 207 - Steel Pipe Flanges for Waterworks Service - Sizes 4 In. through 144 In.
 - g. C 208 - Dimensions for Fabricated Steel Water Pipe Fittings.
 - h. C 210 - Liquid Epoxy Coating Systems for the Interior and Exterior of Steel Water Pipelines
 - i. C 219 - Bolted Sleeve-Type Couplings for Plain-End Pipe.
 - j. C 220 - Stainless Steel Pipe, 4-Inch and Larger.
 - k. C 600 - Installation of Ductile-Iron Water Mains and Their Appurtenances.
 - l. C 606 - Grooved and Shouldered Joints.
 - m. C 651 - Disinfecting Water Mains.
 - n. Design Manual M-11 - Steel Pipe – A Guide for Design and Installation.

4. NSF Standards:
 - a. 14 - Plastic Piping Components and Related Materials.
 - b. 61 - Drinking Water System Components.

1.4 DESIGN AND PERFORMANCE REQUIREMENTS

- A. Pipe:
 1. Design, fabricate and install according to the references and standards specified herein.
 2. The Drawings indicate general pipe layout only. Details of joints, couplings, tie rods, supports and make-up pieces are not necessarily indicated. Submit proposed details for these components for Engineer's review.
 3. Provide makeup pipe spools, supports and suitable couplings so that piping may be easily separated for removing valves and inline flanged device.

1.5 SUBMITTALS

- A. Itemized Listings:
 1. Equipment to be provided.
 2. Deviations from the requirements of this Section.
- B. Shop Drawings: For equipment assemblies in this Section to include:
 1. Details of construction and installation, including taps, weld-on outlets, water collars, specials, and similar features.
 2. Pipe diameter, wall thickness, length, centerline elevations, and locations and dimensions of valves fittings, taps, and in-line equipment and instruments, and similar features.
 3. Location and centerline elevation of wall sleeves and wall pipes.
 4. Type and location of pipe supports on 8-inch pipe and larger.
 5. Details for concrete pipe supports including dimensions, reinforcement, pipe straps and locations proposed for use.
 6. Type and location of pipe couplings.
 7. Schedule of wall sleeves and pipes indicating proposed sizes, lengths, and connection details.
 8. Preliminary testing schedule showing pipe sections to be tested, bulkheads, drains, and chlorine injection locations.
 9. Schedule of coatings.
- C. Product/Catalogue Data: For all products in this Section to include:
 1. Manufacturer.
 2. Manufacturer's engineering and specification data.
 3. Dimensions, thicknesses, cross-sections, materials of construction.
 4. Coatings.
- D. Installation Instructions:
 1. Submit complete Manufacturer's installation instructions for all products.
 2. Submit pipe Manufacturer's recommended span lengths between hangers or supports for each pipe size and type.

- E. Certifications: Submit Manufacturer's certification that products and materials conform to these Specifications.

1.6 QUALITY ASSURANCE

- A. Fabrication and Installation Personnel Qualifications:
 1. Trained and experienced in the fabrication and installation of the materials and equipment.
 2. Knowledgeable of the design and the reviewed Shop Drawings.

1.7 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials in original, unbroken, brand marked containers or wrapping as applicable.

- B. Handle and store materials in a manner which will prevent deterioration, damage, contamination with foreign matter, and damage by weather or elements, and in accordance with Manufacturer's directions.
- C. Reject damaged, deteriorated, or contaminated material and immediately remove from the Site. Replace rejected materials with new materials at no additional cost to Owner.

PART 2 - PRODUCTS

2.1 PIPE AND FITTINGS

- A. Stainless Steel Pipe Systems:
 - 1. Use: Air Scour.
 - 2. Materials shall be in accordance with AWWA C 220.
 - 3. Piping: Schedule 10S seamless Type 316L, bevel ends, in accordance with ASTM A312.
 - 4. Finish: 180 grit polish.
 - 5. Taps: Welded Type 316L stainless steel thredolets.
 - 6. Fittings:
 - a. Schedule 10S, butt-weld .
 - b. Factory made tees and long radius elbows in accordance with ASTM A403, mitered elbows in accordance with ANSI B16.9 dimensions where space allows.
 - c. Reinforce fabricated fittings/headers for design pressure of 150 psig.
 - 7. Wall Thicknesses: In accordance with ANSI B36.19.
 - 8. Flanges: Butt-weld, full face, rated for 150 psig working pressure.
 - 9. Flange Hardware: 315L stainless steel.
 - 10. Use EPDM gaskets suitable for 225 degree F air service on blower/air scour piping.
 - 11. Stainless steel piping for liquid service, including welds, shall be pickled and passivated by the Manufacturer. Field welds, if required, shall be pickled and passivated in the field by a Manufacturer recommended method, subject to Engineer's approval..

2.2 WALL PIPE

- A. Stainless steel wall pipe of the size and with the end connections as indicated on the Drawings:
 - 1. With an integrally cast anchor/water ring , 3/4-inch minimum ring thickness.
 - 2. With a wall thickness equal to or greater than the pipeline of which it is a part.
 - 3. Conform to stainless steel pipe specifications in this Section.
 - 4. Provide flanges tapped for studs where required.

2.3 PIPE JOINT HARNESSSES

- A. Tie Rod Bolt: Conform to ASTM A193, Grade B7.
- B. Tie Rod Lugs: Conform to ASTM A283, Grade C or ASTM A36.
- C. Tie Rod Nuts: Conform to ASTM A194, Grade 2H.

2.4 INTERIOR JOINT SEAL

- A. EPDM rubber ring with Type 316L Stainless steel attached batten.
- B. Field measure and coordinate shop drawings for exact sizes required.
- C. Friction/compression permanent fit inside pipe without need for fasteners through pipe wall.
- D. Rubber compound shall meet the requirements for ANSI/NSF Standard No. 61 – Drinking Water System Components – Health Effects.

- E. Installed with manufacture-approved hydraulic spreader tool and type 316L stainless steel shims. Provide extra shims sized to allow exact fit inside piping.
- F. Field welding, if required shall be performed by AISC Certified Welders.
- G. Manufacturers:
 - 1. HydraTech: HydraTite Standard Width.
 - 2. Miller Pipeline: Weko-Seal.
 - 3. Engineer approved equal.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. General:
 - 1. Install process piping and accessories in conformance with:
 - a. The Manufacturer's recommendations.
 - b. The Shop Drawings as reviewed by Engineer.
 - 2. Install items to be embedded before concrete is placed.
 - 3. Fasten embedded items securely to prevent movement when concrete is placed.
 - 4. Install items plumb, square, true to lines, grades, elevations, and locations as indicated on the Drawings and herein specified.
 - 5. Do not install chemical piping within finished rooms, regardless of size.
 - 6. Valves, regardless of size and contents, shall be readily accessible. Chemical feed piping valves shall be accessible from operating floor.
 - 7. Do not install chemical feed piping over equipment.
- B. Hangers and Supports:
 - 1. Install hangers and supports at less than maximum spacing as recommended by pipe Manufacturer.
 - 2. Adjust hangers and supports to bring pipe lines to proper elevations.
 - 3. Install inserts in concrete flush with the surface and capable of developing the full strength of the bolt.
 - 4. Provide 1/8-inch thick rubber wrap around stainless steel piping where contacting pipe supports.
- C. Wall Sleeves:
 - 1. Embed in concrete.
 - 2. After pipes have been placed through wall sleeves, clean the space between the pipe and the wall sleeve.
- D. Stainless Steel Piping: Tools used for cleaning welds on stainless steel pipe shall be designated for and be suitable for use with stainless steel, and shall not leave carbon residue in the welds.

3.2 PAINTING

- A. Paint pipe, fittings, supports, hangers, sleeves, and accessories in accordance with Division 09 Section "Painting." Do not paint stainless steel pipe.

3.3 TESTING

- A. General:
 - 1. Hydrostatically test the following process pressure piping lines:
 - a. Filter Effluent/Backwash Supply.
 - 2. Tests shall be witnessed by Engineer.
 - 3. Provide necessary equipment to perform tests including, but not necessarily limited to pumps, plugs, hoses and gages.

- B. Procedure:
 - 1. Pressure test procedure shall be in conformance with AWWA C 600, Section 4.
 - 2. Duration: 2 hours.
 - 3. Pressure: Maintain 150 pounds per square inch.
 - 4. No visible leaks.
- C. Repairs: In case of leakage under test, locate and repair leaks in an approved manner and test section again until a satisfactory test is secured.

3.4 DISINFECTION

- A. Disinfect new process piping and existing process piping to be removed and reinstalled in conformance with AWWA C 651.
- B. After disinfection, flush process piping until the chlorine residual in the section of piping is equal to that of the adjoining system, or less than 2 mg/l.
- C. Use adequate quantities of flushing water so that the chlorine residual of the combined flushing and disinfection water is similar to the water of the adjoining system and is suitable for disposal.

3.5 CLEANING

- A. Thoroughly clean installed materials and Products and related areas:
 - 1. Prior to acceptance of the work of this Section.
 - 2. In accordance with Division 01 Section "Cleaning and Waste Management."

END OF SECTION 40 05 13

SECTION 46 61 01 – GRAVITY FILTRATION EQUIPMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Contractor shall engage the services of a single manufacturer to provide the detailed design, furnishing and installation of gravity filtration equipment and services specified in this section and the related sections. The gravity filtration equipment shall be designed, coordinated and supplied by the manufacturer.
- B. The gravity filtration system shall be installed by the contractor in strict accordance with the gravity filtration equipment manufacturer's and surface wash supplier's requirements, instructions, oversight, and recommendations.
- C. The gravity filtration equipment manufacturer shall furnish a complete and fully functional system, including items not specifically mentioned in the specification, including but not limited to the following major items:
 - 1. Existing Filters (Filter 18, 20):
 - a. Filter underdrain and appurtenances.
 - b. Air scour header.
 - c. Media Retention Baffle Plates.
 - d. Filter Sand.
- D. The Surface Wash supplier shall furnish Surface Wash repair items for Filter 18 and Filter 20.
- E. The filter GAC supplier shall furnish and install the granular activated carbon (GAC) in each filter.
- F. Contractor shall provide the additional services and expertise as it sees fit and deems necessary to ensure that the gravity filtration system is properly designed, manufactured, installed, aligned, adjusted, tested, and started so that it is placed into full and complete satisfactory service as a functioning whole meeting the design and performance requirements specified in the Contract Documents.
- G. Contractor shall certify that the installation, alignment, startup, testing, and commissioning of the entire system was satisfactorily completed in accordance with the requirements of the Contract Documents and equipment manufacturer.

1.3 DESIGN AND PERFORMANCE REQUIREMENTS

- A. Design:
 - 1. The gravity filtration equipment shall be complete with filter underdrain system and appurtenances.
 - 2. The filter underdrain system shall effectively retain filter media, and provide uniform distribution with low head loss during backwash.
- B. Performance Criteria:
 - 1. Each filter consists of a single cell with the dimensions 17 feet x 27 feet. Each filter shall have a design capacity of 1,380 gpm (1.98 MGD) when filtering at a rate of 3.0 gpm per square foot of filter area.
 - 2. The backwash design shall be up to 20 gpm per square foot of filter area.
 - 3. The underdrain laterals shall be capable of air scour up to 4 scfm per square foot of filter area.
 - 4. The filtration equipment shall be capable of cleaning the filter media during backwash so that no more than 3.0 mg of foreign solids remain per gram of filter media as determined by an abrasion test run on a core Sample of filter media immediately following backwashing.
 - 5. The filter underdrain system anchorage must be capable of sustaining the structural imposed by a vertical upward load of 2,000 pounds per square foot applied at the filter flume.

- C. All field assembly bolts, and anchor bolts, nuts, and washers shall be 316 stainless steel.
- D. The filter underdrain system shall be designed to avoid localized areas of excessive backwash flow that may cause mounding or other deleterious disturbance of the filter media.
- E. The filter underdrain system will be designed to deliver the specified underdrain performance without leaking the specified filter media into the underdrain system. The entire filter underdrain system shall be designed for continuous 24 hour per day operation.
- F. Anchorage and assembly must be designed so that all elements of the filter underdrain system can be removed for repairs and/or cleaning and reinstalled without damaging any stainless steel filter underdrain system components, concrete, or grout.
- G. All submerged connections shall be made with 316 stainless steel bolts, washers, and nylon insert locknuts.
- H. Fabrication: All welded joints that will be fully or partially submerged shall be sealed watertight with continuous welds.
- I. Edge Grinding: Sharp projections of cut or sheared edges of ferrous metals that will be submerged in operation shall be ground to a radius as required to ensure satisfactory paint adherence.
- J. Surface Preparation:
 - 1. Stainless steel, fiberglass, and UHMW-PE shall not be painted.
 - 2. All stainless steel welds shall be brush blasted in accordance with SSPC-SP7 before shipment. Non-welded components shall be supplied with standard mill finishes.
- K. All stainless steel equipment shall be passivated to the level required such that corrosion or staining does not occur under conditions experienced in a water treatment plant.

1.4 SUBMITTALS

- A. General Submittal Requirements:
 - 1. NSF/ANSI standard 61 certification for the gravity filtration system equipment that is in direct contact with potable water.
 - 2. Shop drawings of the gravity filtration system equipment showing complete details of fabrication and installation, including but not limited to:
 - a. Complete bill of materials.
 - b. Reference standards.
 - c. Detailed general arrangement drawings showing dimensions, layout, plans, sections, details, and notes that clearly illustrate and define fabrication and installation. Submit electronic copies of provided equipment in .iges or .dwg format to be used without restriction in the development of as-built Contract Documents.
 - d. Structural calculations verifying the underdrain system anchorage.
 - e. Detailed installation instructions specific for this Project.
 - f. Field testing procedures specific for this Project.
 - 3. Shop drawings shall be accompanied by manufacturer's literature, illustrations, specifications, and engineering data, including:
 - a. Total weight of each unit.
 - b. Structural loads.
 - c. Connection details.
 - d. Performance data.
 - 4. Design Submittal Requirements:
 - a. Process design calculations that demonstrate that the gravity filtration system equipment is designed to achieve the design and performance criteria specified in the Contract Documents for the system. Design calculations shall show underdrain headloss during filtering and backwashing, water and air velocities.

- b. All calculations shall be packaged in a book with a table of contents and appendix for the references. Include a brief narrative that explains the calculations and calculation procedures. Include equations, references, diagrams and summary output from design software. Indicate on the submittal any software programs and version used to perform the calculations.
 - c. Calculations shall be signed and sealed by a licensed professional engineer.
 5. Operations and Maintenance Manuals:
 - a. Complete operation and maintenance (O&M) manuals. Manuals shall be printed in PDF format as well in a white 3-ring binder with tabbed sections to include reinforced 8.5 x 11 paper, 11 x 17, B-size drawings when practical, and individually sleeved 22-inch by 34-inch full-size scaled drawings.
 - b. The manual shall include:
 - 1) Equipment Data Pages.
 - 2) Equipment Introduction and Operation.
 - 3) Warranty.
 - 4) Long Term Storage.
 - 5) Troubleshooting.
 - 6) Maintenance and Lubrication.
 - 7) Spare Parts List.
 - 8) Equipment Listing.
 - 9) Catalog Cuts
 - 10) Drawings.
 - c. Field start-up reports, as described in paragraph 3.3 (Manufacture Services), shall be submitted after start-up for the owner's insertion into approved O&M manual.
 - d. Electronic copies of the O&M manuals shall be provided in Adobe portable document format (PDF) and Microsoft Word.
 - e. Details of procedures used to clean and passivate the equipment.
 - B. Proof of welding certification for the Manufacturers personnel who will be involved in fabrication of the equipment.
 - C. Installation instructions for equipment assemblies in this Section to include:
 1. Anchoring requirements.
 2. Start-up instructions.
 - D. Operation and maintenance manuals for all equipment in this Section to include:
 1. General:
 - a. Table of contents.
 - b. Subdivided (tabbed) into separate sections that cover separate equipment or grouping of equipment.
 - c. Provide 1 searchable electronic copy (CD-ROM) per hard copy, of the overall O&M Manual that includes information for all sites. Owner shall be permitted to make copies of CD-ROM without restriction.
 2. For all equipment provided:
 - a. Copy of reviewed Shop Drawings and product/catalog data.
 - b. Equipment function, normal operating characteristics and limiting conditions.
 - c. Assembly, installation, alignment, adjustment and checking instructions.
 - d. Operating instructions for start-up, routine and normal operating, regulation and control, and shutdown and emergency conditions.
 - e. Lubrication and maintenance instructions.
 - f. Guide to "troubleshooting."
 - g. Parts lists and predicted life of parts subject to wear.
 - h. Outline, cross-sections, assembly drawings, and engineering data.
 - i. Test data, performance data and performance curves.
 - j. Engineering data on ancillary equipment supplied by Manufacturer.
 - E. Reports: Manufacturer's representative start-up report.

1.5 QUALITY ASSURANCE

- A. Qualifications:
 - 1. Fabrication Personnel:
 - a. Trained and experienced in the fabrication and assembly of the materials and equipment.
 - b. Knowledgeable of the design and the reviewed Shop Drawings.
 - 2. Manufacturer:
 - a. Will have been in continuous business for a period of at least 10 years engaged in the manufacture of water treatment equipment.
 - b. Will provide a list of a minimum of 10 similar installations where stainless steel underdrain laterals were used in municipal applications. The Manufacturer will provide references and contact information for said equipment installations.
- B. Regulatory Requirements:
 - 1. Occupational Safety and Health Act of 1970: All equipment installations shall comply with Act and regulations.
 - 2. All equipment shall be suitable for potable water applications. Materials to be in contact with water shall be NSF compliant.
- C. Submit the following for Manufacturer's services:
 - 1. Manufacturer's sworn statement that the equipment furnished complies with this Specification.
 - 2. Manufacturer's field service.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials in original, unbroken, brand marked containers or wrapping as applicable.
- B. Transport materials to the project site in enclosed trailers which prevent deterioration, damage, contamination with foreign matter, and damage by weather or elements. Shipments not meeting these criteria will be rejected upon arrival.
- C. Handle and store materials in a manner which will prevent deterioration, damage, contamination with foreign matter, and damage by weather or elements, and according to Manufacturer's directions.
- D. Coordinate delivery and receiving of GAC Filter Media with Owners contracted Supplier, Owner and Engineer. Do not receive GAC media without Owner consent.

1.7 WARRANTY

- A. The Manufacturer of the gravity filtration equipment shall guarantee in writing the equipment furnished is appropriate for the intended service and shall be free of manufacturing and fabrication defects in material and workmanship for a period of 48 months from the date the equipment was successfully tested and put into continuous service and accepted by the Owner. In the event of a warranty claim, the gravity filter equipment supplier to be responsible for removal and reinstallation of media, any necessary demolition, removal and replacement or repair of filter underdrain laterals if needed, supply fasteners or appurtenances as needed, and startup costs associated with putting the filter back in service.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Gravity Filtration Equipment:
 - 1. AWI USA, Sandy, UT. (Basis of Design).
 - 2. Roberts Filter, Inc., Wagontown, PA.
 - 3. No equals or substitutions are allowed, nor will they be considered.

- B. Filter Sand:
 - 1. Red Flint Sand and Gravel
 - 2. Northern Gravel Co.
 - 3. Or Engineer approved equal.

- C. Granular Activated Carbon (GAC) Filter Media:
 - 1. Supplier: Carbon Activated Corporation.
 - 2. GAC media will be paid for via Filter GAC Allowance through the Owner's active Filter GAC contract with named Supplier.
 - 3. No equals or substitutions are allowed, nor will they be considered.

- D. Surface Wash Repair Items:
 - 1. F.B. Leopold, Co.
 - 2. No equals or substitutions are allowed, nor will they be considered.

- E. Any license fees, taxes and royalties shall be included in the cost of the equipment.

2.2 GENERAL

- A. The products specified herein establish the minimum requirements for the equipment to be furnished by one of the named manufacturers and installed by the Contractor according to the manufacturer's instructions and requirements. When manufacturer's requirements dictate more stringent requirements for the proper installation of the gravity filtration system, then the Contractor is responsible for these costs.

- B. Although certain materials of construction are specified in this section, it remains the sole responsibility of the specified acceptable equipment manufacturers to size and select the materials of construction to meet the specified design and performance requirements.

2.3 MATERIALS AND EQUIPMENT

- A. Underdrains:
 - 1. Furnish and install in filter tank, stainless steel filter underdrain laterals.
 - 2. Filter blocks shall be a maximum of 6 inches in depth.
 - 3. All steel components to be constructed of 316 stainless steel.
 - 4. Include the following with scope of supply:
 - a. Underdrain laterals.
 - b. Shims.
 - c. Gullet seal plates.
 - d. Anchor U rods.
 - e. Hold-down angles and hardware.
 - f. Threaded rods.
 - g. Gaskets.
 - h. Grout: 2:1 Portland cement conforming to ASTM C150, Type II for general use and clean and washed masonry sand per manufacturers specification.
 - i. Epoxy anchor system: Hilti Hit HY-200, or equal.
 - 1) Manufacturer to supply:
 - a) Anchor bolts, Diameter: 1/2-inch.
 - b) Adhesive.
 - c) Adhesive applicators.
 - d) Hole brushes and handles.
 - j. Appurtenances.
 - 5. The filtered water and backwash water is collected/distributed through the 1'-5" wide throat of the gullet. The filter underdrain system shall be designed to span the gullet with a seal plate such that no leakage of water or media between the filter box and gullet outside of the underdrain.
 - 6. Flume seal plates will include an orifice for each lateral to control the flow of backwash water to the lateral. Orifices will be designed to ensure that the water is metered in proportion to the area of the filter that the lateral services.
 - 7. Lateral design to vent any trapped air in the backwash gullet.

8. Laterals spaced evenly across the filter floor. Lateral construction to allow for slight variations in the filter floor and/or walls.
 9. Orifice sizing and spacing must be designed such that the laterals can distribute backwash water with a maximum variance of $\pm 3\%$.
 10. All attachment and connection points properly sealed to prevent media leakage. All sealed connections shall be gasketed and installed with a sealant. Sikaflex 1A; or equal.
 11. Laterals ends seal welded with an end cap.
 12. Media Retainer:
 - a. Engineered slots having a maximum gap of 0.25 millimeters.
 - b. Integrally fabricated with the underdrain laterals.
 13. Air Scour Connection:
 - a. Each lateral will include an air connection specifically for the air conduit in that lateral. The air connection will include an orifice to ensure that the air is metered in proportion to the area of the filter that the lateral services.
 - b. Each air connection shall be equipped with polyvinyl tubing to connect to stainless steel air header.
- B. Filter Sand:
1. Furnish and install filter sand in two filters, each with 459 square feet of area.
 2. Filter sand shall have a total depth of 1" above top of underdrain lateral. Provide a minimum of 5% excess for skimming.
 3. Filter sand shall be for use in the production of potable water and conform to ANSI/AWWA B100 and NSF Standard 61 requirements and the following specifications.
 4. Filter sand shall consist of hard, durable grains of at least 85% siliceous material. It shall be free from dirt, loam, clay, mica, and organic matter.
 - a. Filter sand shall have the following characteristics:
 - 1) Depth, Inches: 1-inch above underdrain lateral, after skimming.
 - 2) Effective Size, mm: 0.45 to 0.55.
 - 3) Maximum Uniformity Coefficient: 1.4.
 - 4) Minimum Dry Specific Gravity: 2.5.
 - 5) Not more than 1.0% of the sand, by weight, shall pass a U.S. Standard No. 50 (0.3 mm) sieve.
 - 6) The acid solubility of the filter sand shall not exceed 5.0% by weight.
- C. GAC Filter Media:
1. Installed by Owner's GAC Filter Media Supplier, paid for under Filter GAC Allowance.
 2. Furnish and install GAC in two filters, each with 459 square feet of area.
 3. Filter GAC shall have a total depth of 29 inches.
 4. Filter GAC shall be for use in the production of potable water and conform to ANSI/AWWA B100 and NSF Standard 61 requirements and the following specifications.
 5. Coal material shall be durable; virtually free of clay, shale, and extraneous dirt.
 6. Filter GAC shall be reactivated bituminous coal-based reagglomerated granular activated carbon manufactured in the United States.
 - a. Regenerated GAC shall be the City's spent GAC that has been reactivated in an NSF-certified reactivation facility, conforming to all requirements of AWWA Standard B605. The reactivated GAC shall have the following characteristics:
 - 1) Iodine Number, mg/g (minimum, from final blend of reactivated GAC and make-up virgin GAC):
 - a) If spent GAC was >550: 800.
 - b) If spent GAC was 500-550: >250.
 - 2) Moisture, weight % (maximum): 8.
 - 3) Effective Size, mm: 0.55 to 0.75.
 - 4) Uniformity Coefficient (maximum): 2.0.
 - 5) Apparent Density, g/cc (minimum): 0.20.
 - 6) Particle Size, US Sieve:
 - a) Larger than #12 (maximum): 5%.
 - b) Smaller than #40 (maximum): 4%.
 - 7) Abrasion Number (minimum): 70.

- b. GAC Filter Media shall contain no soluble or insoluble material, either organic or inorganic, capable of producing deleterious or injurious effects on the health of those consuming water that has been properly treated with GAC. GAC Filter Media shall not contain specific impurities in excess of the limits listed in the Water Chemicals Codex.
- D. Air Scour Header:
1. Furnish and install in each filter cell, 6-inch 316L stainless steel air scour header.
 2. All air feed piping and air conduits must be sized such that air flow velocities are kept below 100 feet per second at the design maximum air scour rate.
 3. Equip header with one nozzle for each lateral.
 4. Furnish all necessary 316 stainless steel supports and appurtenances for complete installation of air scour piping within filter.
 5. Hardware to be 316 stainless steel.
- E. Media Retention Baffle Plates:
1. Furnish and install baffle plates on backwash troughs for Filters 18 and 20.
 2. Baffle plates shall be fabricated from minimum 1/4-inch 316 stainless steel plate with stiffeners where required as shown on the drawings.
 3. Baffle plates shall be equipped with slotted holes to allow for minimum vertical adjustment of 1-inch.
- F. Surface Wash System:
1. Center Bearings:
 - a. Furnish and install replacement ball bearing type central bearing housings for each existing distributor arm. Each housing shall be stabilized for vertical and horizontal bearing pressure and contain a stainless steel ball bearing assembly which is packed in grease and sealed from the water passageway by means of a nonadjustable, self-compensating Buna N quad-ring seal.
 - b. Provide a non-metallic and dielectric surface between the existing drop pipe and distributor arm.
 2. Dispersion Nozzles:
 - a. Furnish and install replacement dispersion nozzles set at 15 degrees downward from the horizontal plane along the trailing edge of the existing distributor arms.
 - b. Molded Devlin 100, 2-inch overall length with 7/8-inch hexagonal wrench flat provided with 1/4-inch male pipe thread end and Buna-N 40 durometer caps.
 3. Manufacturer of Surface Wash repair items shall be F.B. Leopold, Co., Zelenople, PA 16063, 724.452.6300.
- G. Miscellaneous Equipment: The filtration equipment Manufacturer shall be responsible for furnishing all items required inside the concrete filter compartments including cast-in place concrete anchors, bolts, and fasteners, angle supports, brackets, etc. for a complete system.
- H. Spare Parts:
1. Provide spare anchoring hardware necessary for 1 lateral per each filter.
 2. Provide 10 feet of spare polyvinyl tubing.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install equipment in conformance with:
1. The Shop Drawings reviewed by Engineer.
 2. The Manufacturer's recommendations.
- B. Anchor Rods:
1. The locations, spacing and height of the anchor rods shall be as shown on the Drawings. The height of the anchor rods shall be measured from the highest point of the filter floor and the top of all the anchor rods shall be on the same elevation within $\pm 1/4$ -inch.
 2. Clean each drilled hole and anchor rod thoroughly prior to installation of the anchor rod.
 3. Install the anchor rod to a minimum depth of 5-inch. Install anchor rods in accordance with the epoxy manufacturer's instructions.

4. After the epoxy has cured, a non-destructive vertical pull test shall be performed on 100% of the anchors. The pull test shall be conducted by a third-party testing agency employed by the contractor, approved by the Engineer and paid for via the testing allowance. The pull test procedure shall be conducted as follows:
 - a. Load each anchor to be tested with 3,200 lbs tension in 1,600 lb increments.
 - b. After reaching 3,200 lbs, hold the load for 2 minutes. All test results shall be documented and included in the field service report.
 - c. Any anchor that fails to reach 3,200 lbs or shows signs of slippage will be considered a failure.
 - d. In the event of a failed anchor, install a replacement anchor in accordance with epoxy manufacturer's instructions and retest.
- C. Underdrains:
1. Contractor shall vacuum clean all surfaces that come into contact with filtered water or backwash water prior to installation of the underdrain system.
 2. Care shall be exercised in preparing the filter floor slab and setting the anchors to ensure proper alignment and elevation.
 3. The floor slabs shall be screened into a flat level plain and be free from protrusions and depressions.
 4. After setting, aligning, and installing the underdrains, all spaces between the rows and between the laterals and walls shall be filled with grout so that the entire bed is totally sealed and held firmly in place.
 5. Care shall be taken to prevent any grout from entering the lateral channels, openings, or from being deposited in any manner which would interfere with the flow.
 6. All grout used in installing the underdrains shall be made of one part cement and two parts sand. The grout for joining and filling the pointing keys between the block ends shall be prepared using an admixture to prevent shrinkage.
 7. Following the installation, the system shall be completely cleaned and washed free of all loose materials and debris.
 8. The underdrain shall be allowed to set for 3 days before applying external water pressure.
 9. The system shall then be checked by reversal of flow - the same procedure as followed in backwashing - and observations made of the uniformity of distribution and factors such as structural stability of the installation.
 10. Prior to installation of filter media, a field service representative employed directly by the underdrain system manufacturer shall inspect the filter underdrain system, make necessary final adjustments, and certify the equipment ready for operation.
 11. Field welding is not permitted unless permission is granted by the Engineer.
- D. Filter Sand:
1. Manufacturer shall provide the services of a qualified technical representative to direct the placement of filter sand.
 2. The filtration box and underdrain shall be thoroughly cleaned before starting media placement.
 3. Materials shall be handled to keep them clean during placement, and any particles becoming dirty shall be removed and replaced.
 4. The correct thickness of sand shall be obtained as follows:
 - a. Before the media is placed, the top of each layer shall be marked on the side of the filter.
 - b. The top of each layer shall then be leveled against a water surface held at the appropriate mark.
 5. Filter sand shall be placed and processed as may be required to receive the gradation recommended by the Manufacturer.
 6. At least one backwash shall be required to assure proper sizing prior to placement of successive layers.
 7. Following sand placement, the sand shall be thoroughly washed and cleaned in accordance with recommendations with the filter sand supplier.
- E. GAC Filter Media:
1. All procedures shall conform to AWWA Standard B604, the latest edition.
 2. Filter GAC Supplier shall provide the services of a qualified technical to install the GAC Filter Media.
 3. The filtration box and underdrain shall be thoroughly clean before starting media placement.
 4. Materials shall be handled to keep them clean during placement, and any particles becoming dirty shall be removed and replaced.
 5. Sand layer shall be completed before the GAC layer above is started.

6. At least one backwash of each media layer shall be required to assure proper sizing prior to placement of successive layers.
7. Following media placement, the media shall be thoroughly washed and cleaned in accordance with recommendations with the Filter Media Supplier.

F. Air Scour Header Supports:

1. Install supports at less than maximum spacing as recommended by pipe Manufacturer.
2. Adjust supports to bring pipe lines to proper elevations.
3. Install inserts in concrete flush with the surface and capable of developing the full strength of the bolt.

G. Media Retention Baffle Plates:

1. Baffle plates to be secured to existing pre-cast concrete throughs using 316 stainless steel hardware as shown on the drawings. Core drill through the existing troughs. Identify location of existing reinforcement prior to drilling and protect reinforcement from damage.
2. Install the media retention baffle plates level and at the elevations shown on the drawings.
3. Provide stainless steel closure angels where the baffles meet the back of the filter wall or backwash gullet.
4. Provide NSF-61 approved polyurethane sealant between concrete trough and plates.

3.2 FIELD QUALITY CONTROL

A. Manufacturer's Field Service:

1. Arrange and pay for Manufacturer's qualified representative for a minimum of 5 trips to the jobsite to train Contractor's personnel on proper installation of equipment, start-up and commission equipment and train Owner's personnel on proper maintenance and operation of filter underdrains. The total time spent onsite (not including travel time) from all 5 trips shall not be less than five 8-hour working days.
2. The installation services shall be coordinated between the Contractor and the manufacturer a minimum of 30 days in advance.
3. At the start of the filter underdrain installation process, a field service representative employed by the filter underdrain manufacturer will inspect the first filter and filter underdrain components to be installed in it to verify that the filter has been properly cleaned and the filter underdrain components are prepared for installation instructing the installing contractor's personnel in what to observe and document. The field service representative will train the personnel performing the installation of the filter underdrain system in the proper procedures for installation.
4. A qualified field service representative employed by the filter underdrain manufacturer will supervise installation of at least a portion the first filter underdrain system to ensure that proper installation procedures are being followed. Upon completion of installation of the filter underdrain systems, the field service representative will provide a full and complete test report for each test performed. Completion of the filter underdrain system installation process is signified by a signed certification indicating that the filter underdrain systems are properly installed, the filter underdrain warranty is in force, and the filter underdrain systems are ready to be put into service.
5. The Contractor shall not commence installation of the flocculator system equipment until its personnel have received the requisite pre-installation training from the manufacturer. The pre-installation training shall cover all aspects of system installation with significant focus on critical aspects of the installation. Training session agenda, written training materials, and training aides shall be provided in writing to attendees.
6. The manufacturer's qualified representative must be a direct employee of the filter underdrain manufacturer.
7. After successful installation and field-testing services are completed by the manufacturer, the Contractor shall submit a certification letter on the manufacturer's letterhead and signed by the manufacturer certifying that the equipment was installed per the manufacturer's recommendations.
8. O&M Training: Provide O&M training services to all operators at the completion of the 5-day performance testing period for the first filter.
9. In addition to the site visits specified above, manufacturer's technician shall perform a site visit 6 to 12 months after the date of substantial completion to provide follow up Owner training and system observation. Manufacturer's technical representative shall observe operation, review past treatment performance data and provide recommendations for optimization of the process. Coordinate timing of follow-up visits with Owner and Engineer. Minimum onsite time of four hours.

- B. Performance Demonstration Test:
1. After start-up and prior to final acceptance, the Contractor shall conduct an Engineer witnessed performance demonstration tests on all filter underdrains.
 2. Uniformity of backwash water distribution for one filter shall be confirmed to be within the allowed variance of $\pm 3\%$ by isolating and sealing 4 separate minimum two thirds of a square foot segments of the filter and directly measuring the rate of flow in each segment. Measurement in each segment will be accomplished by timing the rate of liquid level rise within the segment.
 3. The uniform distribution of backwash flow shall be visually confirmed and before the filter media is put into the filter. The test shall be witnessed and certified by a manufacturer's field service representative.
 4. The testing protocol to be executed by the manufacturer will be submitted for approval to the Engineer. Test procedures shall be submitted to the Engineer for approval with submittal drawings. Tests will be scheduled with the Engineer at least 2 weeks prior to the planned test date.
 5. The field service representative shall submit to the Engineer a written report stating that the filter underdrain systems have been checked and are suitable for operation.

3.3 CLEANING

- A. Prior to acceptance of the Work of this Section, thoroughly clean all installed materials, equipment, and related areas in accordance with Division 01 Section "Cleaning and Waste Management."
- B. Filter Underdrains:
1. Before installation of the underdrains, Contractor shall vacuum clean the underdrain area, all cell isolation piping, and all surfaces that come into contact with the backwash supply water.
 2. Obtain Engineer's review before placement of underdrains.
 3. Clean all loose grout and debris from top of underdrains after installation.

3.4 DISINFECTION

- A. Disinfection of filters to be in accordance with AWWA C652-19, Method 3.
1. Water and chlorine shall be added to the filter tank in amounts that the solution will initially contain 50 mg/L available chlorine. Fill filter tank approximately 5 percent of total volume.
 2. Solution shall be held for a period of not less than 6 hours.
 3. Fill filter tank to overflow level with potable water. Free chlorine residual shall not be less than 2 mg/l after filter tank is full.
 4. Filter level shall be held for a period of not less than 24 hours.
 5. Drain chlorinated water from filter.
- B. Coordinate with Owner on disposal of chlorinated water.
- C. After the filter tank is drained, all equipment within the filter tank shall be completely washed down with potable water.

END OF SECTION 46 61 01

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APPENDIX

City of Ann Arbor Prevailing Wage Declaration Form

City of Ann Arbor Living Wage Forms

City of Ann Arbor Vendor Conflict of Interest Disclosure Form

City of Ann Arbor Non-Discrimination Ordinance Declaration Form and Notice

Sample Certified Payroll Form

Davis-Bacon Related Prevailing Federal Wages

Federal Debarment Certification

**CITY OF ANN ARBOR
PREVAILING WAGE DECLARATION OF COMPLIANCE**

The "wage and employment requirements" of Section 1:320 of Chapter 14 of Title I of the Ann Arbor City Code mandates that the city not enter any contract, understanding or other arrangement for a public improvement for or on behalf of the city unless the contract provides that all craftsmen, mechanics and laborers employed directly on the site in connection with said improvements, including said employees of subcontractors, shall receive the prevailing wage for the corresponding classes of craftsmen, mechanics and laborers, as determined by statistics for the Ann Arbor area compiled by the United States Department of Labor. Where the contract and the Ann Arbor City Code are silent as to definitions of terms required in determining contract compliance with regard to prevailing wages, the definitions provided in the Davis-Bacon Act as amended (40 U.S.C. 278-a to 276-a-7) for the terms shall be used. Further, to the extent that any employees of the contractor providing services under this contract are not part of the class of craftsmen, mechanics and laborers who receive a prevailing wage in conformance with section 1:320 of Chapter 14 of Title I of the Code of the City of Ann Arbor, employees shall be paid a prescribed minimum level of compensation (i.e. Living Wage) for the time those employees perform work on the contract in conformance with section 1:815 of Chapter 23 of Title I of the Code of the City of Ann Arbor.

At the request of the city, any contractor or subcontractor shall provide satisfactory proof of compliance with this provision.

The Contractor agrees:

- (a) To pay each of its employees whose wage level is required to comply with federal, state or local prevailing wage law, for work covered or funded by this contract with the City,
- (b) To require each subcontractor performing work covered or funded by this contract with the City to pay each of its employees the applicable prescribed wage level under the conditions stated in subsection (a) or (b) above.
- (c) To provide to the City payroll records or other documentation within ten (10) business days from the receipt of a request by the City.
- (d) To permit access to work sites to City representatives for the purposes of monitoring compliance, and investigating complaints or non-compliance.

The undersigned states that he/she has the requisite authority to act on behalf of his/her employer in these matters and has offered to provide the services in accordance with the terms of the wage and employment provisions of the Chapter 14 of the Ann Arbor City Code. The undersigned certifies that he/she has read and is familiar with the terms of Section 1:320 of Chapter 14 of the Ann Arbor City Code and by executing this Declaration of Compliance obligates his/her employer and any subcontractor employed by it to perform work on the contract to the wage and employment requirements stated herein. The undersigned further acknowledges and agrees that if it is found to be in violation of the wage and employment requirements of Section 1:320 of the Chapter 14 of the Ann Arbor City Code it shall be deemed a material breach of the terms of the contract and grounds for termination of same by the City.

Sorensen Gross Company LLC

Company Name

Bruce Hemingway

8/30/2024

Signature of Authorized Representative

Date

Bruce Hemingway - V.P. Midwest

Print Name and Title

111 E. Court Street, Suite 1-S, Flint, MI 48502

Address, City, State, Zip

(810) 767-4821 - bhemingway@sgcompany.com

Phone/Email address

Questions about this form? Contact Procurement Office City of Ann Arbor Phone: 734/794-6500

**CITY OF ANN ARBOR
LIVING WAGE ORDINANCE DECLARATION OF COMPLIANCE**

The Ann Arbor Living Wage Ordinance (Section 1:811-1:821 of Chapter 23 of Title I of the Code) requires that an employer who is (a) a contractor providing services to or for the City for a value greater than \$10,000 for any twelve-month contract term, or (b) a recipient of federal, state, or local grant funding administered by the City for a value greater than \$10,000, or (c) a recipient of financial assistance awarded by the City for a value greater than \$10,000, shall pay its employees a prescribed minimum level of compensation (i.e., Living Wage) for the time those employees perform work on the contract or in connection with the grant or financial assistance. The Living Wage must be paid to these employees for the length of the contract/program.

Companies employing fewer than 5 persons and non-profits employing fewer than 10 persons are exempt from compliance with the Living Wage Ordinance. If this exemption applies to your company/non-profit agency please check here No. of employees

The Contractor or Grantee agrees:

- (a) To pay each of its employees whose wage level is not required to comply with federal, state or local prevailing wage law, for work covered or funded by a contract with or grant from the City, no less than the Living Wage. The current Living Wage is defined as \$16.43/hour for those employers that provide employee health care (as defined in the Ordinance at Section 1:815 Sec. 1 (a)), or no less than \$18.32/hour for those employers that do not provide health care. The Contractor or Grantor understands that the Living Wage is adjusted and established annually on April 30 in accordance with the Ordinance and covered employers shall be required to pay the adjusted amount thereafter to be in compliance with Section 1:815(3).

Check the applicable box below which applies to your workforce

- Employees who are assigned to any covered City contract/grant will be paid at or above the applicable living wage without health benefits
- Employees who are assigned to any covered City contract/grant will be paid at or above the applicable living wage with health benefits

- (b) To post a notice approved by the City regarding the applicability of the Living Wage Ordinance in every work place or other location in which employees or other persons contracting for employment are working.
- (c) To provide to the City payroll records or other documentation within ten (10) business days from the receipt of a request by the City.
- (d) To permit access to work sites to City representatives for the purposes of monitoring compliance, and investigating complaints or non-compliance.
- (e) To take no action that would reduce the compensation, wages, fringe benefits, or leave available to any employee covered by the Living Wage Ordinance or any person contracted for employment and covered by the Living Wage Ordinance in order to pay the living wage required by the Living Wage Ordinance.

The undersigned states that he/she has the requisite authority to act on behalf of his/her employer in these matters and has offered to provide the services or agrees to accept financial assistance in accordance with the terms of the Living Wage Ordinance. The undersigned certifies that he/she has read and is familiar with the terms of the Living Wage Ordinance, obligates the Employer/Grantee to those terms and acknowledges that if his/her employer is found to be in violation of Ordinance it may be subject to civil penalties and termination of the awarded contract or grant of financial assistance.

Sorensen Gross Company LLC
Company Name

Bruce Hemingway 8/30/2024
Signature of Authorized Representative Date

Bruce Hemingway - V.P. Midwest
Print Name and Title

111 E. Court Street, Suite 1-S
Street Address

Flint, MI 48502
City, State, Zip

(810) 767-4821 - bhemingway@sgcompany.com
Phone/Email address

**CITY OF ANN ARBOR
LIVING WAGE ORDINANCE**

RATE EFFECTIVE APRIL 30, 2024 - ENDING APRIL 29, 2025

\$16.43 per hour

If the employer provides health care benefits*

\$18.32 per hour

If the employer does NOT provide health care benefits*

Employers providing services to or for the City of Ann Arbor or recipients of grants or financial assistance from the City of Ann Arbor for a value of more than \$10,000 in a twelve-month period of time must pay those employees performing work on a City of Ann Arbor contract or grant, the above living wage.

ENFORCEMENT

The City of Ann Arbor may recover back wages either administratively or through court action for the employees that have been underpaid in violation of the law. Persons denied payment of the living wage have the right to bring a civil action for damages in addition to any action taken by the City.

Violation of this Ordinance is punishable by fines of not more than \$500/violation plus costs, with each day being considered a separate violation. Additionally, the City of Ann Arbor has the right to modify, terminate, cancel or suspend a contract in the event of a violation of the Ordinance.

* Health Care benefits include those paid for by the employer or making an employer contribution toward the purchase of health care. The employee contribution must not exceed \$.50 an hour for an average work week; and the employer cost or contribution must equal no less than \$1/hr for the average work week.

The Law Requires Employers to Display This Poster Where Employees Can Readily See It.

**For Additional Information or to File a Complaint contact
Colin Spencer at 734/794-6500 or cspencer@a2gov.org**



Vendor Conflict of Interest Disclosure Form

All vendors interested in conducting business with the City of Ann Arbor must complete and return the Vendor Conflict of Interest Disclosure Form in order to be eligible to be awarded a contract. Please note that all vendors are subject to comply with the City of Ann Arbor's conflict of interest policies as stated within the certification section below.

If a vendor has a relationship with a City of Ann Arbor official or employee, an immediate family member of a City of Ann Arbor official or employee, the vendor shall disclose the information required below.

1. No City official or employee or City employee's immediate family member has an ownership interest in vendor's company or is deriving personal financial gain from this contract.
2. No retired or separated City official or employee who has been retired or separated from the City for less than one (1) year has an ownership interest in vendor's Company.
3. No City employee is contemporaneously employed or prospectively to be employed with the vendor.
4. Vendor hereby declares it has not and will not provide gifts or hospitality of any dollar value or any other gratuities to any City employee or elected official to obtain or maintain a contract.
5. Please note any exceptions below:

Conflict of Interest Disclosure*	
Name of City of Ann Arbor employees, elected officials or immediate family members with whom there may be a potential conflict of interest.	<input type="checkbox"/> Relationship to employee <hr/> <input type="checkbox"/> Interest in vendor's company <input type="checkbox"/> Other (please describe in box below)
None	

*Disclosing a potential conflict of interest does not disqualify vendors. In the event vendors do not disclose potential conflicts of interest and they are detected by the City, vendor will be exempt from doing business with the City.

I certify that this Conflict of Interest Disclosure has been examined by me and that its contents are true and correct to my knowledge and belief and I have the authority to so certify on behalf of the Vendor by my signature below:		
Sorensen Gross Company LLC	(810) 767-4821	
Vendor Name	Vendor Phone Number	
	8/30/2024	Bruce Hemingway - V.P. Midwest
Signature of Vendor Authorized Representative	Date	Printed Name of Vendor Authorized Representative

Questions about this form? Contact Procurement Office City of Ann Arbor Phone: 734/794-6500, procurement@a2gov.org

**CITY OF ANN ARBOR
DECLARATION OF COMPLIANCE**

Non-Discrimination Ordinance

The "non discrimination by city contractors" provision of the City of Ann Arbor Non-Discrimination Ordinance (Ann Arbor City Code Chapter 112, Section 9:158) requires all contractors proposing to do business with the City to treat employees in a manner which provides equal employment opportunity and does not discriminate against any of their employees, any City employee working with them, or any applicant for employment on the basis of actual or perceived age, arrest record, color, disability, educational association, familial status, family responsibilities, gender expression, gender identity, genetic information, height, HIV status, marital status, national origin, political beliefs, race, religion, sex, sexual orientation, source of income, veteran status, victim of domestic violence or stalking, or weight. It also requires that the contractors include a similar provision in all subcontracts that they execute for City work or programs.

In addition the City Non-Discrimination Ordinance requires that all contractors proposing to do business with the City of Ann Arbor must satisfy the contract compliance administrative policy adopted by the City Administrator. A copy of that policy may be obtained from the Purchasing Manager

The Contractor agrees:

- (a) To comply with the terms of the City of Ann Arbor's Non-Discrimination Ordinance and contract compliance administrative policy, including but not limited to an acceptable affirmative action program if applicable.
- (b) To post the City of Ann Arbor's Non-Discrimination Ordinance Notice in every work place or other location in which employees or other persons are contracted to provide services under a contract with the City.
- (c) To provide documentation within the specified time frame in connection with any workforce verification, compliance review or complaint investigation.
- (d) To permit access to employees and work sites to City representatives for the purposes of monitoring compliance, or investigating complaints of non-compliance.

The undersigned states that he/she has the requisite authority to act on behalf of his/her employer in these matters and has offered to provide the services in accordance with the terms of the Ann Arbor Non-Discrimination Ordinance. The undersigned certifies that he/she has read and is familiar with the terms of the Non-Discrimination Ordinance, obligates the Contractor to those terms and acknowledges that if his/her employer is found to be in violation of Ordinance it may be subject to civil penalties and termination of the awarded contract.

Sorensen Gross Company LLC
Company Name
Bruce Hemingway August 30, 2024
Signature of Authorized Representative Date
Bruce Hemingway - V.P. Midwest
Print Name and Title
111 E. Court Street, Suite 1-S, Flint, MI 48502
Address, City, State, Zip
(810) 767-4821 - bhemingway@sgcompany.com
Phone/Email Address

**Questions about the Notice or the City Administrative Policy, Please contact:
Procurement Office of the City of Ann Arbor
(734) 794-6500**

CITY OF ANN ARBOR NON-DISCRIMINATION ORDINANCE

Relevant provisions of Chapter 112, Nondiscrimination, of the Ann Arbor City Code are included below.
You can review the entire ordinance at www.a2gov.org/humanrights.

Intent: It is the intent of the city that no individual be denied equal protection of the laws; nor shall any individual be denied the enjoyment of his or her civil or political rights or be discriminated against because of actual or perceived age, arrest record, color, disability, educational association, familial status, family responsibilities, gender expression, gender identity, genetic information, height, HIV status, marital status, national origin, political beliefs, race, religion, sex, sexual orientation, source of income, veteran status, victim of domestic violence or stalking, or weight.

Discriminatory Employment Practices: No person shall discriminate in the hire, employment, compensation, work classifications, conditions or terms, promotion or demotion, or termination of employment of any individual. No person shall discriminate in limiting membership, conditions of membership or termination of membership in any labor union or apprenticeship program.

Discriminatory Effects: No person shall adopt, enforce or employ any policy or requirement which has the effect of creating unequal opportunities according to actual or perceived age, arrest record, color, disability, educational association, familial status, family responsibilities, gender expression, gender identity, genetic information, height, HIV status, marital status, national origin, political beliefs, race, religion, sex, sexual orientation, source of income, veteran status, victim of domestic violence or stalking, or weight for an individual to obtain housing, employment or public accommodation, except for a bona fide business necessity. Such a necessity does not arise due to a mere inconvenience or because of suspected objection to such a person by neighbors, customers or other persons.

Nondiscrimination by City Contractors: All contractors proposing to do business with the City of Ann Arbor shall satisfy the contract compliance administrative policy adopted by the City Administrator in accordance with the guidelines of this section. All city contractors shall ensure that applicants are employed and that employees are treated during employment in a manner which provides equal employment opportunity and tends to eliminate inequality based upon any classification protected by this chapter. All contractors shall agree not to discriminate against an employee or applicant for employment with respect to hire, tenure, terms, conditions, or privileges of employment, or a matter directly or indirectly related to employment, because of any applicable protected classification. All contractors shall be required to post a copy of Ann Arbor's Non-Discrimination Ordinance at all work locations where its employees provide services under a contract with the city.

Complaint Procedure: If any individual believes there has been a violation of this chapter, he/she may file a complaint with the City's Human Rights Commission. The complaint must be filed within 180 calendar days from the date of the individual's knowledge of the allegedly discriminatory action or 180 calendar days from the date when the individual should have known of the allegedly discriminatory action. A complaint that is not filed within this timeframe cannot be considered by the Human Rights Commission. To file a complaint, first complete the complaint form, which is available at www.a2gov.org/humanrights. Then submit it to the Human Rights Commission by e-mail (hrc@a2gov.org), by mail (Ann Arbor Human Rights Commission, PO Box 8647, Ann Arbor, MI 48107), or in person (City Clerk's Office). For further information, please call the commission at 734-794-6141 or e-mail the commission at hrc@a2gov.org.

Private Actions For Damages or Injunctive Relief: To the extent allowed by law, an individual who is the victim of discriminatory action in violation of this chapter may bring a civil action for appropriate injunctive relief or damages or both against the person(s) who acted in violation of this chapter.

THIS IS AN OFFICIAL GOVERNMENT NOTICE AND
MUST BE DISPLAYED WHERE EMPLOYEES CAN READILY SEE IT.

MICHIGAN DEPARTMENT OF TRANSPORTATION CERTIFIED PAYROLL

COMPLETION OF CERTIFIED PAYROLL FORM FULFILLS THE MINIMUM MDOT PREVAILING WAGE REQUIREMENTS

(1) NAME OF CONTRACTOR / SUBCONTRACTOR (CIRCLE ONE) (2) ADDRESS

(3) PAYROLL NO. (4) FOR WEEK ENDING (5) PROJECT AND LOCATION (6) CONTRACT ID

(a)	(b)	(c)	(d) DAY AND DATE							(e)	(f)	(g)	(h)	(i)	(j) DEDUCTIONS					(k)	
															TOTAL HOURS ON PROJECT	PROJECT RATE OF PAY	PROJECT RATE OF FRINGE PAY	GROSS PROJECT EARNED	GROSS WEEKLY EARNED		TOTAL WEEKLY HOURS WORKED ALL JOBS
EMPLOYEE INFORMATION	WORK CLASSIFICATION	Hour Type	HOURS WORKED ON PROJECT							TOTAL HOURS ON PROJECT	PROJECT RATE OF PAY	PROJECT RATE OF FRINGE PAY	GROSS PROJECT EARNED	GROSS WEEKLY EARNED	TOTAL WEEKLY HOURS WORKED ALL JOBS	FICA	FEDERAL	STATE	OTHER	TOTAL DEDUCT	TOTAL WEEKLY WAGES PAID FOR ALL JOBS
NAME:									0				\$0.00							\$0.00	\$0.00
ETH#GEN: ID #:	GROUP/CLASS #:	S							0											\$0.00	\$0.00
NAME:									0				\$0.00							\$0.00	\$0.00
ETH#GEN: ID #:	GROUP/CLASS #:	S							0											\$0.00	\$0.00
NAME:									0				\$0.00							\$0.00	\$0.00
ETH#GEN: ID #:	GROUP/CLASS #:	S							0											\$0.00	\$0.00
NAME:									0				\$0.00							\$0.00	\$0.00
ETH#GEN: ID #:	GROUP/CLASS #:	S							0											\$0.00	\$0.00
NAME:									0				\$0.00							\$0.00	\$0.00
ETH#GEN: ID #:	GROUP/CLASS #:	S							0											\$0.00	\$0.00
NAME:									0				\$0.00							\$0.00	\$0.00
ETH#GEN: ID #:	GROUP/CLASS #:	S							0											\$0.00	\$0.00
NAME:									0				\$0.00							\$0.00	\$0.00
ETH#GEN: ID #:	GROUP/CLASS #:	S							0											\$0.00	\$0.00
NAME:									0				\$0.00							\$0.00	\$0.00

Date _____

I, _____ (Name of Signatory Party) _____ (Title)

do hereby state:

(1) That I pay or supervise the payment of the persons employed by

_____ on the _____ (Contractor or Subcontractor)
 _____; that during the payroll period commencing on the _____ (Building or Work)
 _____ day of _____, _____, and ending the _____ day of _____, _____,
 all persons employed on said project have been paid the full weekly wages earned, that no rebates have been or will be made either directly or indirectly to or on behalf of said

_____ from the full _____ (Contractor or Subcontractor)

weekly wages earned by any person and that no deductions have been made either directly or indirectly from the full wages earned by any person, other than permissible deductions as defined in Regulations, Part 3 (29 C.F.R. Subtitle A), issued by the Secretary of Labor under the Copeland Act, as amended (48 Stat. 948, 63 Stat. 108, 72 Stat. 967; 76 Stat. 357; 40 U.S.C. § 3145), and described below:

(2) That any payrolls otherwise under this contract required to be submitted for the above period are correct and complete; that the wage rates for laborers or mechanics contained therein are not less than the applicable wage rates contained in any wage determination incorporated into the contract; that the classifications set forth therein for each laborer or mechanic conform with the work he performed.

(3) That any apprentices employed in the above period are duly registered in a bona fide apprenticeship program registered with a State apprenticeship agency recognized by the Bureau of Apprenticeship and Training, United States Department of Labor, or if no such recognized agency exists in a State, are registered with the Bureau of Apprenticeship and Training, United States Department of Labor.

(4) That:

(a) WHERE FRINGE BENEFITS ARE PAID TO APPROVED PLANS, FUNDS, OR PROGRAMS

- in addition to the basic hourly wage rates paid to each laborer or mechanic listed in the above referenced payroll, payments of fringe benefits as listed in the contract have been or will be made to appropriate programs for the benefit of such employees, except as noted in section 4(c) below.

(b) WHERE FRINGE BENEFITS ARE PAID IN CASH

- Each laborer or mechanic listed in the above referenced payroll has been paid, as indicated on the payroll, an amount not less than the sum of the applicable basic hourly wage rate plus the amount of the required fringe benefits as listed in the contract, except as noted in section 4(c) below.

(c) EXCEPTIONS

EXCEPTION (CRAFT)	EXPLANATION
REMARKS:	
NAME AND TITLE	SIGNATURE
THE WILLFUL FALSIFICATION OF ANY OF THE ABOVE STATEMENTS MAY SUBJECT THE CONTRACTOR OR SUBCONTRACTOR TO CIVIL OR CRIMINAL PROSECUTION. SEE SECTION 1001 OF TITLE 18 AND SECTION 231 OF TITLE 31 OF THE UNITED STATES CODE.	

Davis-Bacon and Related Acts/Prevailing Federal Wages

P.L. 111-88 requires compliance with the Davis Bacon Act and adherence to the current U.S. Department of Labor Wage Decision. Attention is called to the fact that not less than the minimum salaries and wages as set forth in the Contract Documents (see Wage Decision included herein) must be paid on this project. The Wage Decision, including modifications, must be posted by the Contractor on the job site. The "Contracting Agency" or "Contracting Officer" for Davis-Bacon Wage Decision posters on jobsites is the loan applicant/bond issuer. A copy of the Labor Standards Provisions for Federally Assisted Projects is included and is hereby a part of this contract.

"General Decision Number: MI20240100 07/05/2024

Superseded General Decision Number: MI20230100

State: Michigan

Construction Type: Building

County: Washtenaw County in Michigan.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories).

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)(1).

<p>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:</p>	<ul style="list-style-type: none"> . Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least \$17.20 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 2024.
<p>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:</p>	<ul style="list-style-type: none"> . Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least \$12.90 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 2024.

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	01/05/2024
1	01/19/2024

2 04/05/2024
3 07/05/2024

ASBE0025-003 06/01/2021

Townships of Ann Arbor, Augusta, Lodi, Northfield, Pittsfield, Salem, Saline, Scio, Superior, Webster, Ypsilanti & York

	Rates	Fringes
ASBESTOS WORKER/HEAT & FROST INSULATOR.....	\$ 35.41	32.91

ASBE0047-001 07/01/2023

Townships of Bridgewater, Dexter, Freedom, Lims, Lyndon, Manchester, Sharon & Sylvan

	Rates	Fringes
ASBESTOS WORKER/HEAT & FROST INSULATOR.....	\$ 36.62	19.78

BOIL0169-001 01/01/2024

	Rates	Fringes
BOILERMAKER.....	\$ 39.65	35.68

BRMI0009-010 08/01/2023

	Rates	Fringes
BRICKLAYER.....	\$ 39.24	27.68
TILE FINISHER.....	\$ 28.58	21.34
TILE SETTER.....	\$ 38.99	23.31

CARP0687-001 06/01/2023

	Rates	Fringes
CARPENTER, Includes Drywall Hanging, Form Work, and Metal Stud Installation.....	\$ 40.98	20.22

CARP1045-001 06/01/2023

	Rates	Fringes
CARPENTER (Floor Layer - Carpet, Resilient, & Vinyl Flooring).....	\$ 34.00	27.53

CARP1102-002 06/01/2023

	Rates	Fringes
MILLWRIGHT.....	\$ 35.47	39.24

ELEC0252-010 06/01/2021

Rates Fringes

ELECTRICIAN.....\$ 47.46 27%+12.25

* ENGI0324-017 06/01/2024

	Rates	Fringes
OPERATOR: Power Equipment		
GROUP 1.....	\$ 49.54	25.35
GROUP 2.....	\$ 48.04	25.35
GROUP 3.....	\$ 46.54	25.35
GROUP 4.....	\$ 46.24	25.35
GROUP 5.....	\$ 45.42	25.35
GROUP 6.....	\$ 44.56	25.35
GROUP 7.....	\$ 43.59	25.35
GROUP 8.....	\$ 41.88	25.35
GROUP 9.....	\$ 31.79	25.35

FOOTNOTES:

Tower cranes: to be paid the crane operator rate determined by the combined length of the mast and the boom. If the worker must climb 50 ft. or more to the work station, \$.25 per hour additional.

Derrick and cranes where the operator must climb 50 ft. or more to the work station, \$.25 per hour additional to the applicable crane operator rate.

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Crane with boom and jib or leads 400' or longer

GROUP 2: Crane with boom and jib or leads 300' or longer

GROUP 3: Crane with boom and jib or leads 220' or longer

GROUP 4: Crane with boom and jib or leads 140' or longer

GROUP 5: Crane with boom and jib or leads 120' or longer

GROUP 6: Regular crane operator, and concrete pump with boom operator

GROUP 7: Backhoe/Excavator/Trackhoe, bobcat/skid Loader, broom/sweeper, bulldozer, grader/blade, highlift, hoist, loader, roller, scraper, tractor & trencher

GROUP 8: Forklift & extend-a-boom forklift

GROUP 9: Oiler

IRON0025-019 06/01/2022

	Rates	Fringes
IRONWORKER		
REINFORCING.....	\$ 31.43	34.77
STRUCTURAL.....	\$ 34.85	40.42

LAB00334-005 06/01/2023

	Rates	Fringes
LABORER: Landscape & Irrigation		

GROUP 1.....	\$ 25.97	8.60
GROUP 2.....	\$ 23.75	8.60

CLASSIFICATIONS

GROUP 1: Landscape specialist, including air, gas and diesel equipment operator, lawn sprinkler installer, skidsteer (or equivalent)

GROUP 2: Landscape laborer: small power tool operator, material mover, truck driver and lawn sprinkler installer tender

LABO0499-005 08/01/2022

	Rates	Fringes
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LABORER

Common or General; Grade Checker; Sandblaster.....	\$ 30.66	14.70
Mason Tender - Brick; Mason Tender - Cement/Concrete.....	\$ 31.21	14.70
Pipelayer.....	\$ 31.02	14.70

PAIN022-003 06/01/2022

	Rates	Fringes
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PAINTER: Brush and Roller.....	\$ 32.85	20.41
PAINTER: Drywall Finishing/Taping.....	\$ 32.85	20.41
PAINTER: Spray.....	\$ 26.86	17.66

PAIN0357-002 06/01/2023

	Rates	Fringes
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GLAZIER.....	\$ 38.66	20.98
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PAID HOLIDAYS: New Year's Day, Decoration Day, Fourth of July, Labor Day, Thanksgiving Day and Christmas Day; provided that the employee has worked the last full regular scheduled work day prior to the holiday, and the first full regular scheduled work day following the holiday, provided the employee is physically able to work.

PLAS0514-006 06/01/2023

	Rates	Fringes
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CEMENT MASON/CONCRETE FINISHER...	\$ 32.23	22.11
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PLUM0190-004 06/01/2023

	Rates	Fringes
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PIPEFITTER (Including HVAC Pipe Installation; Excluding HVAC System Installation).....	\$ 46.88	23.70
PLUMBER, Excludes HVAC Pipe and Unit Installation.....	\$ 44.31	23.70

ROOF0070-001 05/08/2023

	Rates	Fringes
ROOFER.....	\$ 39.67	18.85

SFMI0704-001 08/01/2023

	Rates	Fringes
SPRINKLER FITTER (Fire Sprinklers).....	\$ 49.16	32.86

SHEE0080-001 06/01/2022

	Rates	Fringes
SHEET METAL WORKER, Includes HVAC Duct and Unit Installation.....	\$ 47.64	26.15

* TEAM0247-001 06/01/2024

	Rates	Fringes
TRUCK DRIVER GROUP 1 Flatbed; Pickup; Dump & Tandem.....	\$ 30.35	0.70+a+b
TRUCK DRIVER GROUP 2 Semi.....	\$ 30.50	0.70+a+b
TRUCK DRIVER GROUP 3 Lowboy.....	\$ 30.60	0.70+a+b

PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day. If any of the above holidays fall on a Sunday, the following Monday shall be considered the holiday and, if work is performed, the rate shall be double time.

FOOTNOTE:

a. \$456.70 per week, plus \$67.10 per day.

* SUMI2011-025 02/01/2011

	Rates	Fringes
IRONWORKER, ORNAMENTAL.....	\$ 18.48	7.93
TRUCK DRIVER: Tractor Haul Truck.....	\$ 13.57 **	1.18

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 (\$17.20) or 13658 (\$12.90). Please see the Note at the top of the wage determination for more information. Please also note that the minimum wage requirements of Executive Order 14026 are not currently being enforced as to any contract or subcontract to

which the states of Texas, Louisiana, or Mississippi, including their agencies, are a party.

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) (iii)).

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.

State Adopted Rate Identifiers

Classifications listed under the "SA" identifier indicate that the prevailing wage rate set by a state (or local) government was adopted under 29 C.F.R. 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 01/03/2024 reflects the date on which the classifications and rates under the ?SA? identifier took effect under state law in the state from which the rates were adopted.

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 DECISION"

"General Decision Number: MI20240074 07/05/2024

Superseded General Decision Number: MI20230074

State: Michigan

Construction Type: Heavy

County: Washtenaw County in Michigan.

Heavy, Includes Water, Sewer Lines and Excavation (Excludes Hazardous Waste Removal; Coal, Oil, Gas, Duct and other similar Pipeline Construction)

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)(1).

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 \$17.20 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 2024.
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 \$12.90 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 2024.

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	01/05/2024
1	07/05/2024

CARP0687-006 06/01/2023

	Rates	Fringes
CARPENTER, Includes Form Work....	\$ 38.48	30.22

 ELEC0252-009 06/01/2023

	Rates	Fringes
ELECTRICIAN.....	\$ 51.73	29%+13.00

 ENGI0325-019 09/01/2023

POWER EQUIPMENT OPERATORS: Underground Construction (Including Sewer)

	Rates	Fringes
POWER EQUIPMENT OPERATOR		
GROUP 1.....	\$ 41.08	25.25
GROUP 2.....	\$ 36.25	25.25
GROUP 3.....	\$ 35.52	25.25
GROUP 4.....	\$ 34.95	25.25

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Backhoe/ Excavator, Boring Machine, Bulldozer, Crane, Grader/ Blade, Loader, Roller, Scraper, Trencher (over 8 ft. digging capacity)

GROUP 2: Trencher (8-ft digging capacity and smaller)

GROUP 3: Boom Truck (non-swinging, non- powered type boom)

GROUP 4: Broom/ Sweeper, Fork Truck, Tractor, Bobcat/ Skid Steer /Skid Loader

* ENGI0326-008 06/01/2024

EXCLUDES UNDERGROUND CONSTRUCTION

	Rates	Fringes
OPERATOR: Power Equipment		
GROUP 1.....	\$ 49.54	25.35
GROUP 2.....	\$ 48.04	25.35
GROUP 3.....	\$ 46.54	25.35
GROUP 4.....	\$ 46.24	25.35
GROUP 5.....	\$ 45.42	25.35
GROUP 6.....	\$ 44.56	25.35
GROUP 7.....	\$ 43.59	25.35
GROUP 8.....	\$ 41.88	25.35
GROUP 9.....	\$ 31.79	25.35

FOOTNOTES: Tower cranes: to be paid the crane operator rate determined by the combined length of the mast and the boom.

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Crane with boom & jib or leads 400' or longer

GROUP 2: Crane with boom & jib or leads 300' or longer

GROUP 3: Crane with boom & jib or leads 220' or longer

GROUP 4: Crane with boom & jib or leads 140' or longer

GROUP 5: Crane with boom & jib or leads 120' or longer

GROUP 6: Regular crane operator

GROUP 7: Backhoe/Excavator, Bobcat/Skid Loader, Boring Machine, Broom/Sweeper, Bulldozer, Grader/Blade, Loader, Roller, Scraper, Tractor, Trencher

GROUP 8: Forklift

GROUP 9: Oiler

IRON0025-006 06/01/2023

	Rates	Fringes
IRONWORKER		
Reinforcing.....	\$ 31.43	34.77
Structural.....	\$ 34.85	40.42

LAB00334-009 06/01/2023

EXCLUDES OPEN CUT CONSTRUCTION

	Rates	Fringes
Landscape Laborer		
GROUP 1.....	\$ 25.97	8.60
GROUP 2.....	\$ 23.75	8.60

LANDSCAPE LABORER CLASSIFICATIONS

GROUP 1: Landscape specialist, including air, gas and diesel equipment operator, lawn sprinkler installer and skidsteer (or equivalent)

GROUP 2: Landscape laborer: small power tool operator, material mover, truck driver and lawn sprinkler installer tender

LAB00334-018 09/01/2022

SCOPE OF WORK:

OPEN CUT CONSTRUCTION: Excavation of earth and sewer, utilities, and improvements, including underground piping/conduit (including inspection, cleaning, restoration, and relining)

	Rates	Fringes
LABORER		
(1) Common or General.....	\$ 25.20	12.95
(2) Mason Tender- Cement/Concrete.....	\$ 22.11	12.95
(4) Grade Checker.....	\$ 25.50	12.95
(5) Pipelayer.....	\$ 22.90	12.75
(524.20) Pipelayer.....	\$ 25.65	12.95
(7) Landscape.....	\$ 19.59	12.95

LAB00499-020 08/01/2022

EXCLUDES OPEN CUT CONSTRUCTION

	Rates	Fringes
LABORER		
GROUP 1.....	\$ 30.66	14.70
GROUP 2.....	\$ 31.21	14.70
GROUP 3.....	\$ 31.02	14.70

LABORER CLASSIFICATIONS

GROUP 1: Common or General; Grade Checker

GROUP 2: Mason Tender - Cement/Concrete

GROUP 3: Pipelayer

 PAIN0022-005 07/01/2008

	Rates	Fringes
PAINTER		
Brush & Roller.....	\$ 25.06	14.75
Spray.....	\$ 25.86	14.75

 PLAS0514-002 06/01/2023

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER....	\$ 32.23	22.11

 PLUM0190-010 06/01/2021

	Rates	Fringes
PLUMBER.....	\$ 44.31	23.70

 * TEAM0007-006 06/01/2024

	Rates	Fringes
TRUCK DRIVER		
Dump Truck under 8 cu. yds.; Tractor Haul Truck....	\$ 32.40	.75 + a+b
Dump Truck, 8 cu. yds. and over.....	\$ 32.50	.75 + a+b
Lowboy/Semi-Trailer Truck....	\$ 32.65	.75+ a+b

FOOTNOTE:

- a. \$470.70 per week.
- b. \$68.70 daily.

 SUMI2010-072 11/09/2010

	Rates	Fringes
TRUCK DRIVER: Off the Road		
Truck.....	\$ 20.82	3.69

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

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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) (iii)).

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.

State Adopted Rate Identifiers

Classifications listed under the ""SA"" identifier indicate that the prevailing wage rate set by a state (or local) government was adopted under 29 C.F.R §1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 01/03/2024 reflects the date on which the classifications and rates under the ?SA? identifier took effect under state law in the state from which the rates were adopted.

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 DECISION"

Labor Standards Provisions for Federally Assisted Projects - 29 CFR Part 5

§5.5 Contract provisions and related matters.

- (a) The Agency head shall cause or require the contracting officer to insert in full in any contract in excess of \$2,000 which is entered into for the actual construction, alteration and/or repair, including painting and decorating, of a public building or public work, or building or work financed in whole or in part from Federal funds or in accordance with guarantees of a Federal agency or financed from funds obtained by pledge of any contract of a Federal agency to make a loan, grant or annual contribution (except where a different meaning is expressly indicated), and which is subject to the labor standards provisions of any of the acts listed in Sec. 5.1, the following clauses (or any modifications thereof to meet the particular needs of the agency, *Provided*, That such modifications are first approved by the Department of Labor):
- (1) *Minimum wages.* (i) All laborers and mechanics employed or working upon the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (a)(1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in Sec. 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: *Provided*, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph (a)(1)(ii) of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.
- (ii)(A) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination, and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:
- (1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

- (2) The classification is utilized in the area by the construction industry; and
- (3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.
- (B) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.
- (C) In the event the contractor, the laborers, or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.
- (D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(1)(ii) (B) or (C) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.
- (iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.
- (iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside, in a separate account, assets for the meeting of obligations under the plan or program.
- (2) *Withholding.* The **(write in name of Federal Agency or the loan or grant recipient)** shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the

work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), all or part of the wages required by the contract, the (Agency) may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

- (3) *Payrolls and basic records.* (i) Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work (or under the United States Housing Act of 1937, or under the Housing Act of 1949, in the construction or development of the project). Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made, and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.
- (ii)(A) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the (write in name of appropriate federal agency) if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant, sponsor, or owner, as the case may be, for transmission to the (write in name of agency). The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead, the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at dol.gov/agencies/whd/government-contracts/construction/forms or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the (write in name of appropriate federal agency) if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit them to the applicant, sponsor, or owner, as the case may be, for transmission to the (write in name of agency), the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the sponsoring government agency (or the applicant, sponsor, or owner).

- (B) Each payroll submitted shall be accompanied by a "Statement of Compliance", signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:
- (1) That the payroll for the payroll period contains the information required to be provided under Sec. 5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under Sec. 5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete.
 - (2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;
 - (3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.
- (C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (a)(3)(ii)(B) of this section.
- (D) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.
- (iii) The contractor or subcontractor shall make the records required under paragraph (a)(3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the Michigan Department of Environment, Great Lakes, and Energy or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the Federal agency may, after written notice to the contractor, sponsor, applicant, or owner, take such action as maybe necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.
- (4) *Apprentices and trainees-* (i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the

applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the jobsite in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

- (ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.
- (iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.
- (5) *Compliance with Copeland Act requirements.* The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

- (6) *Subcontracts.* The contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as the (write in the name of the Federal agency) may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.
- (7) *Contract termination: debarment.* A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.
- (8) *Compliance with Davis-Bacon and Related Act requirements.* All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.
- (9) *Disputes concerning labor standards.* Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.
- (10) *Certification of eligibility.* (i) By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).
- (ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).
- (iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C.1001.
- (b) *Contract Work Hours and Safety Standards Act.* The Agency Head shall cause or require the contracting officer to insert the following clauses set forth in paragraphs (b)(1), (2), (3), and (4) of this section in full in any contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by Sec. 5.5(a) or 4.6 of part 4 of this title. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.
- (1) *Overtime requirements.* No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.
- (2) *Violation; liability for unpaid wages; liquidated damages.* In the event of any violation of the clause set forth in paragraph (b)(1) of this section the contractor and any subcontractor responsible there for shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be

liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (b)(1) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (b)(1) of this section.

- (3) Withholding for unpaid wages and liquidated damages. The ***(write in the name of the Federal agency or the loan or grant recipient)*** shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b)(2) of this section.
- (4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (b)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (b)(1) through (4) of this section.
- (c) In addition to the clauses contained in paragraph (b), in any contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other statutes cited in Sec.5.1, the Agency Head shall cause or require the contracting officer to insert a clause requiring that the contractor or subcontractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three years from the completion of the contract for all laborers and mechanics, including guards and watchmen, working on the contract. Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. Further, the Agency Head shall cause or require the contracting officer to insert in any such contract a clause providing that the records to be maintained under this paragraph shall be made available by the contractor or subcontractor for inspection, copying, or transcription by authorized representatives of the Michigan Department of Environment, Great Lakes, and Energy and the Department of Labor, and the contractor or subcontractor will permit such representatives to interview employees during working hours on the job.



United States Environmental Protection Agency
Washington, D.C. 20460

**Certification Regarding
Debarment, Suspension, and Other Responsibility Matters**

The prospective participant certifies to the best of its knowledge and belief that it and its principals:

- (a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
- (b) Have not within a three year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public: (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
- (c) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and
- (d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State, or local) terminated for cause or default.

I understand that a false statement on this certification may be grounds for rejection of this proposal or termination of the award. In addition, under 18 USC Sec. 1001, a false statement may result in a fine of up to \$10,000 or imprisonment for up to 5 years, or both.

Bruce Hemingway - V.P. Midwest

Typed Name and Title of Authorized Representative

Bruce Hemingway
Signature of Authorized Representative

August 30, 2024

Date

Sorensen Gross Company LLC

I am unable to certify to the above statements. May explanation is attached.