

PUBLIC IMPROVEMENT REQUEST FOR PROPOSAL

RFP# 26-06

TERTIARY FILTER #4 - SAND REMOVAL

City of Ann Arbor
WATER RESOURCES RECOVERY FACILITY



Due Date: January 20, 2026 by 11:00 a.m. (local time)

Issued By:

City of Ann Arbor
Procurement Unit
301 E. Huron Street
Ann Arbor, MI 48104

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SECTION I - GENERAL INFORMATION

A. OBJECTIVE

The purpose of this Request for Proposal (RFP) is to select a contractor to remove the sand from filter #4 located in the Tertiary Building at the City of Ann Arbor Water Resource Recovery Facility.

The bidder will be required to follow City safety requirements while on City property. This includes but is not limited to following all appropriate safety precautions for the filters as non-permit required confined spaces, bringing locks to follow LOTO protocols of valves going in to the filters, using a ladder that extends at least 3' above the railings around the filters, wearing appropriate safety gear (e.g., hard hats, safety glasses, vests, and steel-toed boots), and participating in safety tailgate meetings prior to the commencement of work.

B. BID SECURITY

Each bid must be accompanied by a certified check or Bid Bond by a surety licensed and authorized to do business within the State of Michigan, in the amount of 5% of the total of the bid price.

Proposals that fail to provide a bid security upon proposal opening will be deemed non-responsive and will not be considered for award.

C. QUESTIONS AND CLARIFICATIONS / DESIGNATED CITY CONTACTS

All questions regarding this Request for Proposal (RFP) shall be submitted via e-mail. Questions will be accepted and answered in accordance with the terms and conditions of this RFP.

All questions shall be submitted on or before January 9, 2026 at 2:00 p.m. (local time), and should be addressed as follows:

Scope of Work/Proposal Content questions shall be e-mailed to Anne Warrow, P.E., Senior Engineer, awarrow@a2gov.org

RFP Process and Compliance questions shall be e-mailed to Colin Spencer, Buyer - CSpencer@a2gov.org

Should any prospective bidder be in doubt as to the true meaning of any portion of this RFP, or should the prospective bidder find any ambiguity, inconsistency, or omission therein, the prospective bidder shall make a written request for an official interpretation or correction by the due date for questions above.

All interpretations, corrections, or additions to this RFP will be made only as an official addendum that will be posted to a2gov.org and MITN.info and it shall be the prospective bidder's responsibility to ensure they have received all addenda before submitting a proposal. Any addendum issued by the City shall become part of the RFP and must be incorporated in the proposal where applicable.

D. PRE-PROPOSAL MEETING

A pre-proposal conference for this project will be held on **Tuesday, January 6, 2026, at 11:00 a.m. at 49 S. Dixboro Road, Ann Arbor, MI 48105.**

Attendance at this conference is highly recommended. Administrative and technical questions regarding this project will be answered at this time. The pre-proposal conference is for information only. Any answers furnished will not be official until verified in writing by the Financial Service Area, Procurement Unit. Answers that change or substantially clarify the proposal will be affirmed in an addendum.

E. PROPOSAL FORMAT

To be considered, each firm must submit a response to this RFP using the format provided in Section III. No other distribution of proposals is to be made by the prospective bidder. An official authorized to bind the bidder to its provisions must sign the proposal. Each proposal must remain valid for at least one hundred and twenty (120) days from the due date of this RFP.

Proposals should be prepared simply and economically providing a straightforward, concise description of the bidder's ability to meet the requirements of the RFP. No erasures are permitted. Mistakes may be crossed out and corrected and must be initialed in ink by the person signing the proposal.

F. SELECTION CRITERIA

Responses to this RFP will be evaluated using a point system as shown in Section III. A selection committee comprised primarily of staff from the City will complete the evaluation.

If interviews are desired by the City, the selected firms will be given the opportunity to discuss their proposal, qualifications, past experience, and their fee proposal in more detail. The City further reserves the right to interview the key personnel assigned by the selected bidder to this project.

All proposals submitted may be subject to clarifications and further negotiation. All agreements resulting from negotiations that differ from what is represented within the RFP or in the proposal response shall be documented and included as part of the final contract.

G. SEALED PROPOSAL SUBMISSION

All proposals are due and must be delivered to the City on or before JANUARY 20, 2026, by 11:00 a.m. (local time). Proposals submitted late or via oral, telephonic, telegraphic, electronic mail or facsimile **will not** be considered or accepted.

Each respondent should submit in a sealed envelope

- **one (1) original proposal**
- **one (1) additional proposal copy**
- **one (1) digital copy of the proposal preferably on a USB/flash drive as one file in PDF format**

Proposals submitted should be clearly marked: **“RFP No. 26-06 – Tertiary Filter #4 – Sand Removal”** and list the bidder’s name and address.

Proposals must be addressed and delivered to:
City of Ann Arbor
c/o Customer Service
301 East Huron Street
Ann Arbor, MI 48107

All proposals received on or before the due date will be publicly opened and recorded on the due date. No immediate decisions will be rendered.

Hand delivered proposals may be dropped off in the Purchasing drop box located in the Ann Street (north) vestibule/entrance of City Hall which is open to the public Monday through Friday from 8am to 5pm (except holidays). The City will not be liable to any prospective bidder for any unforeseen circumstances, delivery, or postal delays. Postmarking on the due date will not substitute for receipt of the proposal.

Bidders are responsible for submission of their proposal. Additional time will not be granted to a single prospective bidder. However, additional time may be granted to all prospective bidders at the discretion of the City.

A proposal may be disqualified if the following required forms are not included with the proposal:

- **Attachment B – General Declarations**
- **Attachment D - Prevailing Wage Declaration of Compliance**
- **Attachment E - Living Wage Declaration of Compliance**
- **Attachment G - Vendor Conflict of Interest Disclosure Form**
- **Attachment H - Non-Discrimination Declaration of Compliance**

Proposals that fail to provide these forms listed above upon proposal opening may be deemed non-responsive and may not be considered for award.

H. DISCLOSURES

Under the Freedom of Information Act (Public Act 442), the City is obligated to permit review of its files, if requested by others. All information in a proposal is subject to disclosure under this provision. This act also provides for a complete disclosure of contracts and attachments thereto.

I. TYPE OF CONTRACT

A sample of the Construction Agreement is included as Attachment A. Those who wish to submit a proposal to the City are required to review this sample agreement carefully. **The City will not entertain changes to its Construction Agreement.**

For all construction work, the respondent must further adhere to the City of Ann Arbor General Conditions. The General Conditions are included herein. Retainage will be held as necessary based on individual tasks and not on the total contract value. The Contractor shall provide the required bonds included in the Contract Documents for the duration of the Contract.

The City reserves the right to award the total proposal, to reject any or all proposals in whole or in part, and to waive any informality or technical defects if, in the City's sole judgment, the best interests of the City will be so served.

This RFP and the selected bidder's response thereto, shall constitute the basis of the scope of services in the contract by reference.

J. NONDISCRIMINATION

All bidders proposing to do business with the City shall satisfy the contract compliance administrative policy adopted by the City Administrator in accordance with the Section 9:158 of the Ann Arbor City Code. Breach of the obligation not to discriminate as outlined in Attachment G shall be a material breach of the contract. Contractors are required to post a copy of Ann Arbor's Non-Discrimination Ordinance attached at all work locations where its employees provide services under a contract with the City.

K. WAGE REQUIREMENTS

The Attachments provided herein outline the requirements for payment of prevailing wages or of a "living wage" to employees providing service to the City under this contract. The successful bidder must comply with all applicable requirements and provide documentary proof of compliance when requested.

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. Use of Michigan Department of Transportation Prevailing Wage Forms (sample attached hereto) or a City-approved equivalent will be required along with wage rate interviews.

For laborers whose wage level are subject to federal, state and/or local prevailing wage law the appropriate Davis-Bacon wage rate classification is identified based upon the work including within this contract. **The wage determination(s) current on the date 10 days before proposals are due shall apply to this contract.** The U.S. Department of Labor (DOL) has provided explanations to assist with classification in the following resource link: www.sam.gov.

For the purposes of this RFP the Construction Type of Building will apply.

L. CONFLICT OF INTEREST DISCLOSURE

The City of Ann Arbor Purchasing Policy requires that the consultant complete a Conflict of Interest Disclosure form. A contract may not be awarded to the selected bidder unless and until the Procurement Unit and the City Administrator have reviewed the Disclosure form and determined that no conflict exists under applicable federal, state, or local law or administrative regulation. Not every relationship or situation disclosed on the Disclosure Form may be a disqualifying conflict. Depending on applicable law and regulations, some contracts may awarded on the recommendation of the City Administrator after full disclosure, where such action is allowed by law, if demonstrated competitive pricing exists and/or it is determined the award is in the best interest of the City. A copy of the Conflict of Interest Disclosure Form is attached.

M. COST LIABILITY

The City of Ann Arbor assumes no responsibility or liability for costs incurred by the bidder prior to the execution of an Agreement. The liability of the City is limited to the terms and conditions outlined in the Agreement. By submitting a proposal, bidder agrees to bear all costs incurred or related to the preparation, submission, and selection process for the proposal.

N. DEBARMENT

Submission of a proposal in response to this RFP is certification that the Respondent is not currently debarred, suspended, proposed for debarment, and declared ineligible or voluntarily excluded from participation in this transaction by any State or Federal departments or agency. Submission is also agreement that the City will be notified of any changes in this status.

O. PROPOSAL PROTEST

All proposal protests must be in writing and filed with the Purchasing Manager within five (5) business days of any notices of intent, including, but not exclusively, divisions on prequalification of bidders, shortlisting of bidders, or a notice of intent to award. Only bidders who responded to the solicitation may file a bid protest. The bidder must clearly state the reasons for the protest. If any bidder contacts a City Service Area/Unit and indicates a desire to protest an award, the Service Area/Unit shall refer the bidder to the Purchasing Manager. The Purchasing Manager will provide the bidder with the appropriate instructions for filing the protest. The protest shall be reviewed by the City Administrator or designee, whose decision shall be final.

Any inquiries or requests regarding this procurement should be only submitted in writing to the Designated City Contacts provided herein. Attempts by the bidder to initiate contact with anyone other than the Designated City Contacts provided herein that the bidder believes can influence the procurement decision, e.g., Elected Officials, City Administrator, Selection Committee Members, Appointed Committee Members, etc., may lead to immediate elimination from further consideration.

P. SCHEDULE

The following is the schedule for this RFP process.

Activity/Event	Anticipated Date
Pre-Proposal Conference	January 6, 2025, 11:00 a.m. (Local Time)
Written Question Deadline	January 9, 2025, 2:00 p.m. (Local Time)
Addenda Published (if needed)	Week of January 12, 2025
Proposal Due Date	January 20, 2026, 11:00 a.m. (Local Time)
Selection/Negotiations	January 2026
Expected City Council Authorizations	February 2026

The above schedule is for information purposes only and is subject to change at the City's discretion.

Q. IRS FORM W-9

The selected bidder will be required to provide the City of Ann Arbor an IRS form W-9.

R. RESERVATION OF RIGHTS

1. The City reserves the right in its sole and absolute discretion to accept or reject any or all proposals, or alternative proposals, in whole or in part, with or without cause.

2. The City reserves the right to waive, or not waive, informalities or irregularities in terms or conditions of any proposal if determined by the City to be in its best interest.
3. The City reserves the right to request additional information from any or all bidders.
4. The City reserves the right to reject any proposal that it determines to be unresponsive and deficient in any of the information requested within RFP.
5. The City reserves the right to determine whether the scope of the project will be entirely as described in the RFP, a portion of the scope, or a revised scope be implemented.
6. The City reserves the right to select one or more contractors or service providers to perform services.
7. The City reserves the right to retain all proposals submitted and to use any ideas in a proposal regardless of whether that proposal is selected. Submission of a proposal indicates acceptance by the firm of the conditions contained in this RFP, unless clearly and specifically noted in the proposal submitted.
8. The City reserves the right to disqualify proposals that fail to respond to any requirements outlined in the RFP, or failure to enclose copies of the required documents outlined within the RFP.

S. IDLEFREE ORDINANCE

The City of Ann Arbor adopted an idling reduction Ordinance that went into effect July 1, 2017. The full text of the ordinance (including exemptions) can be found at: www.a2gov.org/idlefree.

Under the ordinance, No Operator of a Commercial Vehicle shall cause or permit the Commercial Vehicle to Idle:

- (a) For any period of time while the Commercial Vehicle is unoccupied; or
- (b) For more than 5 minutes in any 60-minute period while the Commercial Vehicle is occupied.

In addition, generators and other internal combustion engines are covered

- (1) Excluding Motor Vehicle engines, no internal combustion engine shall be operated except when it is providing power or electrical energy to equipment or a tool that is actively in use.

T. ENVIRONMENTAL COMMITMENT

The City of Ann Arbor recognizes its responsibility to minimize negative impacts on human health and the environment while supporting a vibrant community and economy. The City further recognizes that the products and services the City buys have inherent environmental and economic impacts and that the City should make procurement decisions that embody, promote and encourage the City's commitment to the environment.

The City strongly encourages potential vendors to bring forward tested, emerging, innovative, and environmentally preferable products and services that are best suited to the City's environmental principles. This includes products and services such as those with lower greenhouse gas emissions, high recycled content, without toxic substances, those with high reusability or recyclability, those that reduce the consumption of virgin materials, and those with low energy intensity.

As part of its environmental commitment, the City reserves the right to award a contract to the most responsive and responsible bidder, which includes bids that bring forward products or services that help advance the City's environmental commitment. In addition, the City reserves the right to request that all vendors report their annual greenhouse gas emissions, energy consumption, miles traveled, or other relevant criteria in order to help the City more fully understand the environmental impact of its procurement decisions.

U. MAJOR SUBCONTRACTORS

The Bidder shall identify each major subcontractor it expects to engage for this Contract if the work to be subcontracted is 15% or more of the bid sum or over \$50,000, whichever is less. The Bidder also shall identify the work to be subcontracted to each major subcontractor. The Bidder shall not change or replace a subcontractor without approval by the City.

V. LIQUIDATED DAMAGES

A liquidated damages clause, as given on page C-2, Article III of the Contract, provides that the Contractor shall pay the City as liquidated damages, and not as a penalty, a sum certain per day for each and every day that the Contractor may be in default of completion of the specified work, within the time(s) stated in the Contract, or written extensions.

Liquidated damages clauses, as given in the General Conditions, provide further that the City shall be entitled to impose and recover liquidated damages for breach of the obligations under Chapter 112 of the City Code.

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.

SECTION II - SCOPE OF WORK

A. Objective

The City of Ann Arbor operates a Water Resource Recovery Facility at 49 S. Dixboro Road in Ann Arbor, Michigan.

The Tertiary Filter Building consists of 12 sand filters that trap remaining suspended solids, nutrients (like nitrogen and phosphorus), and pathogens missed by secondary treatment. The filtration of the secondary effluent also improves clarity and protects the ultraviolet disinfection lamps.

Each filter consists of two 15 foot by 25 foot cells, containing approximately 3 feet of sand, which equates to approximately 2,250 cubic feet of sand.

The Contractor shall work with the WRRF staff on the scheduling and logistics in advance of the work being performed. The sand in filter #4 shall be removed, dewatered and stored on-site to be reintroduced back into the filter at a later date. Removal shall be done in accordance with the recommended WRRF procedure as indicated below. All removal, dewatering and reinstallation costs are included as part of this work. WRRF staff will be available to assist in operating tertiary filter components as needed to perform the removal and reinstallation of the sand. The bidder is responsible for providing the necessary labor and equipment, as needed for the removal, dewatering and reinstallation of the sand.

Sand Removal

- a. Make sure that the filter influent valve has been properly locked out.
- b. Vactor trucks may utilize bulk water supply at the City of Ann Arbor's Wheeler Service Center located at 4251 Stone School Road, Ann Arbor, Michigan between the hours of 7:00 a.m. and 4:00 p.m. Monday through Friday. Contractor may reach out to Ann Arbor Township to obtain a hydrant meter and backflow prevent for use at one of the on-site potable water fire hydrants.
- c. Use appropriate media pneumatic vacuum system or other appropriate equipment to remove sand from both cells of filter #4, following vacuum equipment guidelines.
- d. Floor protection shall be used in all areas where hose coupling and equipment may come into contact with the floor, stairways, doors or railings.
- e. Removed sand should be properly dewatered and then stored in the appropriate containers for future reinstallation back into the filter.
- f. Water collected from dewatering shall be properly disposed of by the Contractor. This water could be discharged back into the waste wash water well at the treatment plant, if done slowly.
- g. Removed sand may be stored at WRRF until reinstalled into filter #4.

Reinstallation of sand into filter #4

- a. Make sure that the filter influent valve has been properly locked out.
- b. Use appropriate vacuum system or other appropriate equipment to remove sand

- from storage containers and reinstall into both cells of filter #4.
- c. Floor protection shall be used in all areas where hose coupling and equipment may come into contact with the floor, stairways, doors or railings.

Work Hours and Safety Equipment

- a. Work hours are Monday through Friday from 7:00 a.m. to 7:00 p.m. for any work that requires outdoor equipment (i.e. vacuums and other noisy equipment). Saturday outside work hours require pre-approval by the City.
- b. The contractor shall be responsible for supplying any equipment needed to complete the project, which includes any and all safety equipment and machinery i.e. forklift. All personnel working on the project will be required to wear hard hats, high visibility safety vests, safety glasses and steel toes boots.

B. Standard Specifications

All work performed 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 Advertisement. 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 provided during the implementation of individual tasks under this Contract.

Copies of the Standard Specifications can be downloaded from the following web link.

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

SECTION III - MINIMUM INFORMATION REQUIRED

PROPOSAL FORMAT

The following describes the elements that should be included in each of the proposal sections and the weighted point system that will be used for evaluation of the proposals.

Bidders should organize Proposals into the following Sections:

- A. Qualifications, Experience and Accountability
- B. Workplace Safety
- C. Workforce Development
- D. Social Equity and Sustainability
- E. Schedule of Pricing/Cost
- F. Authorized Negotiator
- G. Attachments

Bidders are strongly encouraged to provide details for all of the information requested below within initial proposals. Backup documentation may be requested at the sole discretion of the City to validate all of the responses provided herein by bidders. False statements by bidders to any of the criteria provided herein will result in the proposal being considered non-responsive and will not be considered for award.

Pursuant to Sec 1:325 of the City Code which sets forth requirements for evaluating public improvement bids, Bidders should submit the following:

A. Qualifications, Experience and Accountability - 20 Points

1. Qualifications and experience of the bidder and of key persons, management, and supervisory personnel to be assigned by the bidder.
2. References from individuals or entities the bidder has worked for within the last five (5) years including information regarding records of performance and job site cooperation.
3. A statement from the bidder as to any major subcontractors it expects to engage including the name, work, and amount.

B. Workplace Safety – 20 Points

1. Provide evidence of a bidder's safety program (link to information on bidder's publicly available web-site preferred) and evidence of a safety-training program for employees addressing potential hazards of the proposed job site. Bidders must

identify a designated qualified safety representative responsible for bidder's safety program who serves as a contact for safety related matters.

2. Provide the bidder's Experience Modification Rating ("EMR") for the last three consecutive years. Preference within this criterion will be given to an EMR of 1.0 or less based on a three-year average.
3. Evidence that all craft labor that will be employed by the bidder for the project has, or will have prior to project commencement, completed at least an authorized 10-hour OSHA Construction Safety Course.
4. For the last three years provide a copy of any documented violations and the bidder's corrective actions as a result of inspections conducted by the Michigan Occupational Safety & Health Administration (MIOSHA), U.S. Department of Labor – Occupational Safety and Health Administration (OSHA), or any other applicable safety agency.

C. Workforce Development – 20 Points

1. Documentation as to bidder's pay rates, health insurance, pension or other retirement benefits, paid leave, or other fringe benefits to its employees.
- 2.. Documentation that the bidder participates in a Registered Apprenticeship Program that is registered with the United States Department of Labor Office of Apprenticeship or by a State Apprenticeship Agency recognized by the USDOL Office of Apprenticeship. USDOL apprenticeship agreements shall be disclosed to the City in the solicitation response.
3. Bidders shall disclose the number of non-craft employees who will work on the project on a 1099 basis, and the bidders shall be awarded points based on their relative reliance on 1099 work arrangements with more points assigned to companies with fewer 1099 arrangements. Bidders will acknowledge that the City may ask them to produce payroll records at points during the project to verify compliance with this section.

D. Social Equity and Sustainability – 20 Points

1. A statement from the bidder as to what percentage of its workforce resides in the City of Ann Arbor and in Washtenaw County, Michigan. The City will consider in evaluating which bids best serve its interests, the extent to which responsible and qualified bidders employ individuals in either the city of the county.

Washtenaw County jurisdiction is prioritized for evaluation purposes for this solicitation.

2. Evidence of Equal Employment Opportunity Programs for minorities, women, veterans, returning citizens, and small businesses.
3. Evidence that the bidder is an equal opportunity employer and does not discriminate on the basis of race, sex, pregnancy, age, religion, national origin, marital status, sexual orientation, gender identity or expression, height, weight, or disability.
4. The bidder's environmental record, including findings of violations and penalties imposed by government agencies.

E. Schedule of Pricing/Cost – 20 Points

Company: _____

Unit Price Bid

Item #	Item Description	Quantity	Unit	Unit Price	Total Price
1	Removal of sand	2250	cubic feet		
2	Dewater sand	2250	cubic feet		
3	Storage of sand	3	months		
4	Reinstallation of sand	2250	cubic feet		

ESTIMATED TOTAL \$ _____

F. AUTHORIZED NEGOTIATOR / NEGOTIATIBLE ELEMENTS (ALTERNATES)

Include the name, phone number, and e-mail address of persons(s) in your organization authorized to negotiate the agreement with the City.

The proposal price shall include materials and equipment selected from the designated items and manufacturers listed in the bidding documents. This is done to establish uniformity in bidding and to establish standards of quality for the items named.

If the bidder wishes to quote alternate items for consideration by the City, it may do so under this Section. A complete description of the item and the proposed price differential must be provided. Unless approved at the time of award, substitutions where items are specifically named will be considered only as a negotiated change in Contract Sum.

If the Bidder takes exception to the time stipulated in Article III of the Contract, Time of Completion, page C-2, it is requested to stipulate its proposed time for performance of the work.

Consideration for any proposed alternative items or time may be negotiated at the discretion of the City.

G. ATTACHMENTS

General Declaration, Legal Status of Bidder, Conflict of Interest Form, Living Wage Compliance Form, Prevailing Wage Compliance Form and the Non-Discrimination Form should be completed and returned with the proposal. These elements should be included as attachments to the proposal submission.

PROPOSAL EVALUATION

1. The selection committee will evaluate each proposal by the above-described criteria and point system. The City reserves the right to reject any proposal that it determines to be unresponsive and deficient in any of the information requested for evaluation. A proposal with all the requested information does not guarantee the proposing firm to be a candidate for an interview if interviews are selected to be held by the City. The committee may contact references to verify material submitted by the bidder.
2. The committee then will schedule interviews with the selected firms if necessary. The selected firms will be given the opportunity to discuss in more detail their qualifications, past experience, proposed work plan (if applicable) and pricing.
3. The interview should include the project team members expected to work on the project, but no more than six members total. The interview shall consist of a

presentation of up to thirty minutes (or the length provided by the committee) by the bidder, including the person who will be the project manager on this contract, followed by approximately thirty minutes of questions and answers. Audiovisual aids may be used during the oral interviews. The committee may record the oral interviews.

4. The firms interviewed will then be re-evaluated by the above criteria and adjustments to scoring will be made as appropriate. After evaluation of the proposals, further negotiation with the selected firm may be pursued leading to the award of a contract by City Council, if suitable proposals are received.

The City reserves the right to waive the interview process and evaluate the bidder based on their proposal and pricing schedules alone.

The City will determine whether the final scope of the project to be negotiated will be entirely as described in this RFP, a portion of the scope, or a revised scope.

Work to be done under this contract is generally described through the detailed specifications and must be completed fully in accordance with the contract documents.

Any proposal that does not conform fully to these instructions may be rejected.

PREPARATION OF PROPOSALS

Proposals should have no plastic bindings but will not be rejected as non-responsive for being bound. Staples or binder clips are acceptable. Proposals should be printed double sided on recycled paper.

Each person signing the proposal certifies that they are a person in the bidder's firm/organization responsible for the decisions regarding the fees being offered in the Proposal and has not and will not participate in any action contrary to the terms of this provision.

ADDENDA

If it becomes necessary to revise any part of the RFP, notice of the addendum will be posted to Michigan Inter-governmental Trade Network (MITN) www.mitn.info and/or the City of Ann Arbor web site www.A2gov.org for all parties to download.

Each bidder should acknowledge in its proposal all addenda it has received on the General Declarations form provided in the Attachments section herein. The failure of a bidder to receive or acknowledge receipt of any addenda shall not relieve the bidder of the responsibility for complying with the terms thereof. The City will not be bound by oral responses to inquiries or written responses other than official written addenda.

SECTION IV - ATTACHMENTS

Attachment A – Sample Standard Contract

Attachment B – General Declarations

Attachment C - Legal Status of Bidder

Attachment D – Prevailing Wage Declaration of Compliance Form

Attachment E – Living Wage Declaration of Compliance Form

Attachment F – Living Wage Ordinance Poster

Attachment G – Vendor Conflict of Interest Disclosure Form

Attachment H – Non-Discrimination Ordinance Declaration of Compliance Form

Attachment I – Non-Discrimination Ordinance Poster

Sample Certified Payroll Report Template

Appendix A: Operation and Maintenance of City of Ann Arbor Tertiary Filter Renovation,
dated May 4, 1998

ATTACHMENT A SAMPLE STANDARD CONTRACT

If a contract is awarded, the selected contractor will be required to adhere to a set of general contract provisions which will become a part of any formal agreement. These provisions are general principles which apply to all contractors of service to the City of Ann Arbor such as the following:

CONTRACT

THIS CONTRACT is between the CITY OF ANN ARBOR, a Michigan Municipal Corporation, 301 East Huron Street, Ann Arbor, Michigan 48104 ("City") and _____
_____("Contractor")

(An individual/partnership/corporation, include state of incorporation) (Address)

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 **RFP No. 26-06 – Tertiary Filter #4 – Sand Removal** 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)
Bid Forms
Contract and Exhibits
Bonds

General Conditions
Standard Specifications
Detailed Specifications
Plans
Addenda

ARTICLE II - Definitions

Administering Service Area/Unit means **Water Resource Recovery Facility**

Project means **RFP No. 26-06 – Tertiary Filter #4 – Sand Removal**

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 Anne M. Warrow whose job title is Senior 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 _____ **[Insert name]** whose job title is **[Insert job title]**.

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 Ninety (90) consecutive calendar days.
- (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 \$100 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

Choose one only.

- (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:

_____ Dollars (\$_____)

- (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.

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.

[Signatures on next page]

***[INSERT CONTRACTOR NAME
HERE]***

CITY OF ANN ARBOR

By: _____

By: _____

Name: _____

Name: Milton Dohoney Jr.

Title: _____

Title: City Administrator

Date: _____

Date: _____

Approved as to substance:

By: _____

Name: Jordan Roberts

Title: Public Services Area
Administrator

Date: _____

Approved as to form:

By: _____

Name: Atleen Kaur

Title: City Attorney

Date: _____

(Signatures continue on following page)

CITY OF ANN ARBOR

By: _____

Name: Christopher Taylor

Title: Mayor

Date: _____

By: _____

Name: Jacqueline Beaudry

Title: Clerk

Date: _____

PERFORMANCE 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 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 **Tertiary Filter #4 – Sand Removal**, for RFP No. **26-06** 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)

Approved as to form:

Atleen Kaur, City Attorney

(Name of Principal)

By _____
(Signature)

Its _____
(Title of Office)

Name and address of agent:

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 Tertiary **Filter #4 – Sand Removal**, for RFP No. **26-06**; 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 _____, 2026

(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 I3. 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.

CONTRACTOR'S AFFIDAVIT

GC-18

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>

APPENDIX

ATTACHMENT B
GENERAL DECLARATIONS

City of Ann Arbor
Guy C. Larcom Municipal Building
Ann Arbor, Michigan 48107

Ladies and Gentlemen:

The undersigned, as Bidder, declares that this Bid is made in good faith, without fraud or collusion with any person or persons bidding on the same Contract; that this Bidder has carefully read and examined the bid documents, including City Nondiscrimination requirements and Declaration of Compliance Form, Living Wage requirements and Declaration of Compliance Form, Prevailing Wage requirements and Declaration of Compliance Form, Vendor Conflict of Interest Form, Notice of Pre-Bid Conference, General Information, Bid, Bid Forms, Contract, Bond Forms, General Conditions, Standard Specifications, Detailed Specifications, all Addenda, and the Plans (if applicable) and understands them. The Bidder declares that it conducted a full investigation at the site and of the work proposed and is fully informed as to the nature of the work and the conditions relating to the work's performance. The Bidder also declares that it has extensive experience in successfully completing projects similar to this one.

The Bidder acknowledges that it has not received or relied upon any representations or warrants of any nature whatsoever from the City of Ann Arbor, its agents or employees, and that this Bid is based solely upon the Bidder's own independent business judgment.

The undersigned proposes to perform all work shown on the plans or described in the bid documents, including any addenda issued, and to furnish all necessary machinery, tools, apparatus, and other means of construction to do all the work, furnish all the materials, and complete the work in strict accordance with all terms of the Contract of which this Bid is one part.

In accordance with these bid documents, and Addenda numbered _____, the undersigned, as Bidder, proposes to perform at the sites in and/or around Ann Arbor, Michigan, all the work included herein for the amounts set forth in the Bid Forms.

The Bidder declares that it has become fully familiar with the liquidated damage clauses for completion times and for compliance with City Code Chapter 112, understands and agrees that the liquidated damages are for the non-quantifiable aspects of non-compliance and do not cover actual damages that may be shown and agrees that if awarded the Contract, all liquidated damage clauses form part of the Contract.

The Bidder declares that it has become fully familiar with the provisions of Chapter 14, Section 1:320 (Prevailing wages) and Chapter 23 (Living Wage) of the Code of the City of Ann Arbor and that it understands and agrees to comply, to the extent applicable to employees providing services to the City under this Contract, with the wage and reporting requirements stated in the City Code provisions cited. Bidder certifies that the statements contained in the City Prevailing Wage and Living Wage Declaration of Compliance Forms are true and correct. Bidder further agrees that the cited provisions of Chapter 14 and Chapter 23 form a part of this Contract.

The Bidder declares that it has become familiar with the City Conflict of Interest Disclosure Form and certifies that the statement contained therein is true and correct.

The Bidder encloses a certified check or Bid Bond in the amount of 5% of the total of the Bid Price. The Bidder agrees both to contract for the work and to furnish the necessary Bonds and insurance documentation within 10 days after being notified of the acceptance of the Bid.

If this Bid is accepted by the City and the Bidder fails to contract and furnish the required Bonds and insurance documentation within 10 days after being notified of the acceptance of this Bid, then the Bidder shall be considered to have abandoned the Contract and the certified check or Bid Bond accompanying this Bid shall become due and payable to the City.

If the Bidder enters into the Contract in accordance with this Bid, or if this Bid is rejected, then the accompanying check or Bid Bond shall be returned to the Bidder.

In submitting this Bid, it is understood that the right is reserved by the City to accept any Bid, to reject any or all Bids, to waive irregularities and/or informalities in any Bid, and to make the award in any manner the City believes to be in its best interest.

SIGNED THIS _____ DAY OF _____, 2026.

Bidder's Name

Authorized Signature of Bidder

Official Address

(Print Name of Signer Above)

Telephone Number

Email Address for Award Notice

ATTACHMENT C
LEGAL STATUS OF BIDDER

(The bidder shall fill out the appropriate form and strike out the other three.)

Bidder declares that it is:

* A corporation organized and doing business under the laws of the State of _____, for whom _____, bearing the office title of _____, whose signature is affixed to this Bid, is authorized to execute contracts.

NOTE: If not incorporated in Michigan, please attach the corporation's Certificate of Authority

• A limited liability company doing business under the laws of the State of _____, whom _____ bearing the title of _____ whose signature is affixed to this proposal, is authorized to execute contract on behalf of the LLC.

* A partnership, organized under the laws of the state of _____ and filed in the county of _____, whose members are (list all members and the street and mailing address of each) (attach separate sheet if necessary):

* An individual, whose signature with address, is affixed to this Bid: _____
(initial here)

Authorized Official

_____ **Date** _____, 2026

(Print) Name _____ Title _____

Company:

Address:

Contact Phone () _____ Fax () _____

Email _____

ATTACHMENT D
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 have been deemed a material breach of the terms of the contract and grounds for termination of same by the City.

Company Name

Signature of Authorized Representative Date

Print Name and Title

Address, City, State, Zip

Phone/Email address

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

ATTACHMENT E

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.

<i>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 <input type="checkbox"/> No. of employees _____</i>
--

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 \$17.08/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 \$19.04/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

- | | |
|--------------------------|---|
| <input type="checkbox"/> | Employees who are assigned to any covered City contract/grant will be paid at or above the applicable living wage without health benefits |
| <input type="checkbox"/> | 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.

Company Name

Street Address

Signature of Authorized Representative

Date

City, State, Zip

Print Name and Title

Phone/Email address

Attachment F

CITY OF ANN ARBOR LIVING WAGE ORDINANCE

RATE EFFECTIVE APRIL 30, 2025 - ENDING APRIL 29, 2026

\$17.08 per hour

If the employer provides health care benefits*

\$19.04 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**



ATTACHEMENT G

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.	() Relationship to employee
	() Interest in vendor's company
	() Other (please describe in box below)

*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:		
Vendor Name		Vendor Phone Number
Signature of Vendor Authorized Representative	Date	Printed Name of Vendor Authorized Representative

ATTACHMENT I

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

[illegible]

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.	

INSTRUCTIONS

This instruction folder has been prepared for your convenience, to assist you in the installation of your United States Filter Corporation equipment.

Carefully study these instructions, and any instructions or information attached to the equipment or supplied with it, before beginning erection of the equipment. Refer to accompanying prints and parts lists for parts identification and location.

If any details are not clearly understood, consult United States Filter Corporation for additional information before commencing erection. Be sure to refer to United States Filter Corporation order number as shown below in any correspondence.

Retain this folder and any other information pertinent to the equipment for future reference.

INSTRUCTIONS FOR:

EQUIPMENT: Gravity Filter Parts

LOCATION: ANN ARBOR, MICHIGAN

USF NO. 988170

PURCHASER NO. 3885102-000

United States Filter Corporation assumes no responsibility for work done, apparatus furnished, or repairs made by others. Purchaser shall notify United States Filter Corporation of seemingly extraordinary difficulties in the erection of the equipment prior to any remedial action by purchaser or others. Allowance will not be made for repairs, alterations, or additional work of any kind made or ordered by purchaser or other without prior written authorization from United States Filter Corporation.

Equipment furnished but not manufactured by United States Filter Corporation is offered subject to the manufacturer's warranty only, but not to exceed one year.

In case of loss or damage of equipment enroute, consignee must notify the carrier's agent at destination, in writing, in order to substantiate formal claim when presented. An unqualified receipt given the carrier will constitute a waiver of claim for damage in transit unless the equipment is unpacked and carefully examined promptly on delivery and any damage or shortages reported to and noted by carrier and any shortages reported to United States Filter Corporation.

UNITED STATES FILTER CORPORATION

600 Arrasmith Trail
Ames, Iowa

Form 5931-2 4/12/93

☒ NO EXCEPTIONS TAKEN ☐ REJECTED
☐ FURNISH AS CORRECTED
☐ REVISE & RESUBMIT
☐ ACKNOWLEDGE RECEIPT

Corrections or comments on the shop drawings during review do not relieve the contractor from compliance with requirements of the contract documents.

Checking is only for conformance with the design concept of the project and compliance with the information given in the Contract Documents. Contractor is responsible for dimensions to be confirmed and correlated at the job site; for information that pertains solely to the fabrication processes or to techniques of construction; and for coordination of the work of all trades.

BY MGE
DATE 5/4/98 1

988170

IGF
General Filter Products

McNAMEE, PORTER & SEELEY, INC.

UNITED STATES FILTER CORPORATION GUARANTEE

Company agrees to repair or replace, f.o.b. Ames, Iowa, or point of manufacture, any United States Filter Corporation part that shall prove defective in material for workmanship or otherwise faulty within the lesser of one year from owner acceptance/beneficial occupancy or eighteen months from final ship date, provided that the installation and operation of such part was in accordance with Company's instructions; and provided further, that Purchaser shall give prompt written notice of any such defect to Company. Failure to give such notice in the manner above provided as soon as Purchaser knows or ought to know of any such defect shall operate as a complete waiver of purchaser's rights under this warranty and Company shall be released from all claims and liabilities thereunder. Company shall have the option of requiring prompt return of such parts, transportation prepaid, for its inspection and to establish the claim. The foregoing shall constitute Company's entire liability under this provision. Equipment furnished but not manufactured by Company is offered subject to the manufacturer's warranty only. Corrosion and erosion are expressly excluded from this warranty.

UNITED STATES FILTER CORPORATION

AMES, IOWA

INSTRUCTIONS
FOR
INSTALLING - OPERATING - MAINTAINING
GRAVITY FILTER PARTS

GENERAL

The instructions and drawings mentioned herein should be studied carefully before beginning erection of the equipment. If any questions arise or there are any apparent discrepancies in this information, the matter should be called to the attention of the United States Filter Corporation.

Before commencing erection, the material should be checked with packing lists and Parts Lists for the project to make sure that everything that will be required is on hand. Any shortages should be brought to the immediate attention of United States Filter Corporation. Any loss or damages in transit must be reported to the carrier (see front of these instructions).

It is assumed that all necessary foundations have been provided by others to suit the equipment design, local soil bearing values and layout of the plant. Also, all cast in anchor bolts have been set.

UNITED STATES FILTER CORPORATION
AMES, IOWA

UNITED STATES FILTER CORPORATION

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UNITED STATES FILTER CORPORATION

PERTINENT DATA ON TREATMENT PLANT

I. INSTALLATION LOCATION:

Name: Ann Arbor WWTP
Address: 49 South Dixboro Road
Ann Arbor, Michigan 48105
Tel: FAX:

II. ENGINEERING FIRM:

Name: McNamee Porter & Seeley
Address: 3131 S. State Street
Ann Arbor, Michigan 48108
Tel: (313) 665-6000 FAX:
Project No.: 0106.059-S-1

III. INSTALLING CONTRACTOR:

Name: Webb Electric Company
Address: 34875 Twelve Mile Road
Farmington Hills, Michigan 48331
Tel: (810) 442-3385 FAX: (810) 478-2020

IV. MANUFACTURER:

Name: United States Filter Corporation
Address: 600 Arrasmith Trail
Ames, IA 50010
Tel: (515) 232-4121 FAX: (515) 232-2571
Sales Order No.: 988170
Customer: Webb Electric Company Customer Order No: 388 5102-000

V. MANUFACTURER'S REGIONAL REPRESENTATIVE:

Name: Cowles Equipment Sales
Address: 508 Avon Street
Flint, Michigan 48503
Tel: (810) 235-6595 FAX: (810) 235-8048

UNITED STATES FILTER CORPORATION
PERTINENT DATA ON GRAVITY FILTRATION EQUIPMENT

A. Performance:

1. Filtering Area per Cell: 375 sq. ft.
2. Total Filtering Area: 9000 sq. ft.
3. Filtering Rate (normal) per Cell: 3 gpm/sq. ft.
4. Filtering Rate (maximum) per Cell: 3 gpm/sq. ft.
5. Flow Rate per Cell: 1125 gpm
6. Total Flow Rate: 27000 gpm normal
7. Total Flow Rate: 27000 gpm maximum

B. Backwash:

1. Backwash Rate: 15 gpm/sq. ft.
2. Backwash Flow Rate per Cell: 5625 gpm
3. Airwash Rate: 5 cfm/sq. ft.
4. Airwash Flow Rate per Cell: 1875 cfm
5. Backwash Water Source: Pumped from clearwell
6. Backwash Control: By others

C. Filter Specifications:

1. Number of Filter Cells: 24
2. Tank or Cell Size: 15'-0" x 25'-0"
3. Basin Material: Concrete
4. Type of Underdrain: MULTICRETE II
5. Underdrain Height: 1'-8"
6. Filter Sand: 1.35-1.65 MM
7. Filter Media Bed Depth: 36 Inches

PERTINENT DATA ON GRAVITY FILTRATION EQUIPMENT (Continued)

D. Washtroughs Specifications: Existing

1. Number per Cell: Four
2. Size: 18" wide x 24 3/4" deep x 15'-0" long
3. Material: Concrete
4. MULTIWASH Baffles: Wing type
5. Baffle Material: 304 stainless steel

E. Air Distribution Header:

1. Size: 8" Sch. 5
2. Material: 304 stainless steel
3. Number per Cell: One

UNITED STATES FILTER CORPORATION

GENERAL PRECAUTIONS REGARDING MULTICRETE II INSTALLATION

1. Vacuuming below a filter underdrain is the only recommended method of cleaning the underdrain chamber. Operating the filter cells with a relatively high hydraulic rate will not flush debris from the floor of an underdrain chamber.
 - a. Vacuum clean all areas below underdrain.
 - b. Vacuum clean all backwash supply piping.
 - c. Vacuum clean all tankage in contact with backwash supply water.
 - d. Vacuum clean all other surfaces in contact with backwash water supply.
2. Filter media will plug strainers from reverse (or downstream) side during backwashing, if media is allowed to get below the underdrain area.
 - a. Plugged strainers will cause failure of the underdrain system if the backwash water supply pressure exceeds the strength of the underdrain system.
 - b. Plugged strainers will require individual removal, disassembly, cleaning, reassembly and installation.

***** CAUTION *****

Cleaning is especially important on existing filters retrofitted with USF MULTICRETE II underdrains using media retaining strainers with 0.040" and smaller slots. It is imperative that all existing backwash supply piping, backwash supply basins, and existing underdrains with interconnecting piping to retrofitted underdrain sections be free of media and debris.

USF is not responsible for cleaning and repair if a new retrofitted underdrain fails due to reverse plugging of underdrain strainers by preexisting contaminated sources of backwash water.

THE BACKWASH WATER MUST BE CLEAN.

- c. Clean all of the area below the underdrain before installing the last forms in each cell.
 - d. Clean and remove any possible source of loose material which could be picked up and carried along by the backwash water.
3. When air scour is used in combination with water backwash, media retaining strainers with tail pipes are used to meter the air scour. Cutting off the tail pipes at places where the tail pipe interferes with mislocated concrete piers, air headers, water distribution header, or wall ledges will result in large "boils" of air over the area covered by the nozzle involved. If a tail pipe interferes with the underdrain structure, it is recommended that the particular insert be plugged. However, do not plug more than two adjacent inserts or more than one percent of the total number of inserts in a cell without contacting USF Customer Service Department with exact details of the problem.

The percentage of strainer inserts plugged cannot be localized to more than two adjacent

GENERAL PRECAUTIONS REGARDING MULTICRETE II INSTALLATION (Continued)

inserts. If a larger localized area of problem insert exists special modified strainers may need to be purchased from United States Filter Corporation.

******* CAUTION *******

Strainers have factory correct slot widths for the installed media size. These may become plugged from suspended material in the backwash supply water. SOLIDS MUST BE KEPT OUT OF THE BACKWASH SUPPLY WATER. The backwash water must be CLEAN.

******* CAUTION *******

Please note carefully all of the special precautions to be followed while installing the strainers and filter media as called out on drawing 98817103. Please use good judgment.

4. BE VERY CAREFUL NOT TO STEP ON, KICK OR OTHERWISE DAMAGE THE STRAINERS DURING OR AFTER INSTALLATION.
5. DO NOT HIT STRAINER ASSEMBLIES WITH ANY SHOVEL OR OTHER HEAVY TOOL.
6. PROTECT STRAINERS FROM ALL FOREIGN MATERIALS WHICH MAY HAVE A DETERIOUS EFFECT ON PLASTIC. THIS IS PARTICULARLY TRUE OF PAINTS, SOLVENTS, OILS, GREASES, ETC.
7. BEFORE INSTALLING MEDIA, take the following precautions:
 - a. Make sure there is a strainer properly installed in each underdrain insert. Allow no open inserts which could pass media to the area below underdrain.
 - b. Check to see that all strainers are properly installed as directed on drawing 98817103.
 - c. Be certain there are no broken or damaged strainers anywhere in the underdrain system.

UNITED STATES FILTER CORPORATION

INSTALLATION OF AIR WASH HEADERS AND FLUME BAFFLES

Reference Drawing: 98817101, 98817196, 98817197

1. Correctly position the airwash header (parts list #98817196, item #1) in the cells as required.
2. Slide the special underdrain pan form (parts list #98817198, item #5) over the vertical pipe section.
3. Install air wash header support brackets (parts list #98817196, item #2) using anchors (parts list #98817196, item #3). Locate brackets per reference drawings.

NOTE: Care must be taken when locating the support brackets to avoid possible interference with the underdrain support piers.

4. Install the Depend-O-Lok coupling (parts list #98817196, item #6) on the vertical pipes (parts list #98817196, item #4).
5. Install the vertical pipe support bracket (parts list #98817196, item #5, 3) per reference drawing.
6. Install the flume baffles (parts list #98817197, items 4, 5) with support rods and wedge anchors (parts list #98817197, items #6-9), per reference drawing 98817197.

UNITED STATES FILTER CORPORATION

INSTALLATION OF MULTICRETE II UNDERDRAIN SYSTEM

Reference drawings: 98817101, 98817102, 98817196, 98817197, 98817198

******* NOTICE *******

Read entire instruction before installing this underdrain system. If instructions are not followed in detail, the underdrain may be structurally unsound and the strainer assemblies may not fit into their imbedded inserts.

United States Filter Corporation normally includes field service time to allow for an inspection of the underdrain forms and reinforcement placement. Arrangements for this inspection should be made by the contractor so that the inspection can be made prior to the first concrete pour. United States Filter Corporation will not be responsible for modifications required to correct improper installations after concrete is poured.

Preliminary Procedures:

1. Install the perimeter support angles (parts list #98817197, items #1-3) at the correct elevation per reference drawing 98817102 and 98817197.

The difference in elevation between the highest and lowest nozzle insert within a given cell should not exceed 1/2 inch.

Any modifications which may have occurred during construction which will affect the underdrain or its rebar anchorage must be reviewed and approved by U. S. Filter prior to installation.

When using adhesive anchor system to set the minimum grade 60 #4 vertical rebar, a single preformed 90 degree bar of sufficient length can be used. Care must be taken to pass the rebar thru the pier form before setting. Visual inspection of the anchor setting will be limited by the pier form.

2. If not cast into the filter cell floor, the minimum grade 60 #4 vertical rebars may be anchored into the floor using the Hilti HVA Adhesive Anchor System, or an approved equal. See U. S. Filter reference drawings for location and installation details.

******* NOTICE *******

Follow Hilti instructions for drilling, cleaning of holes, rebar end cutting, etc. in full detail.

(Rebar and adhesive anchors are not by U. S. Filter.)

INSTALLATION OF MULTICRETE II UNDERDRAIN SYSTEM (Continued)

If vertical rebars were set with an adhesive anchoring system then a random selection of vertical rebars must be pull tested, to insure that they will not pull out, in the following manner:

- A. Approximately 10% of the anchors, randomly selected in each cell, will be tested. Each anchor to be tested will be loaded to 3,600 lb. tension in 900 lb. increments. Data required for a load versus displacement graph will be recorded. After reaching 3,600 lbs., the anchor shall hold this load for a minimum of 2 minutes. Any anchor which fails to reach 3,600 lbs. or whose graph indicates a clip or yielding of the anchor will be considered a failure.
 - B. In the event of failure of any anchor in any cell, all anchors within that cell shall be tested by the procedure described and all failed anchors shall be replaced and retested. Any anchor which fails shall be drilled out and replaced with a 3/4" diameter "Hilti Adhesive Anchor". The cost of the 100 percent cell testing and the retesting of replacement anchors shall be borne by the installing contractors.
3. The filter cell walls must be drilled for installation of the horizontal rebars which will be imbedded in the underdrain. See U. S. Filter reference drawings for hole locations. Note that the required elevation is 1/2" different on adjacent walls and that lower rebars generally should run perpendicular to the center channels or depressions in the center MULTICRETE II forms.
 4. The air distribution headers should be installed per Sheet CE-4. Check their location per U. S. Filter reference drawings. The riser pipes from the header must be located between, NOT UNDERNEATH, the strainer tailpipes so that air will not rise directly into the open bottom end of the tailpipe.
 5. The nozzle inserts (parts list #98817198, item #7) may be cemented onto the MULTICRETE II underdrain forms (parts list #98817198, items #3-4) prior to installation of the forms, or as the forms are installed. Use an ABS Medium Body Solvent Cement such as Chemtrol's ABS solvent cement or RectorSeal Corporation's "Honest John 647". The ABS solvent cement is not provided by United States Filter Corporation. Apply coat of cement around the outer perimeter of the insert recess in the MULTICRETE II form and seat the insert with 1/4 turn with the base down, the red cap up.

***** NOTICE *****

Care should be taken to prevent excess cement from flowing under the base into the open area of the insert recess. Excess cement may harden and prevent passage of the strainer tailpipe.

Allow the cement to set at least 8 hours before handling or walking on the forms.

Because the solvents in the ABS solvent cement will not evaporate as readily when the temperature is below 40 degrees F. a sheltered work area heated to 40 degrees F. should be used if needed.

INSTALLATION OF MULTICRETE II UNDERDRAIN SYSTEM (Continued)

Installing Plastic Pier Pipes and Forms:

6. Starting at one end of the cell and working toward the opposite end, install the 6" sch. 40 PVC pier pipes (parts list #98817198, item #1-2) over the vertical rebars with the notched end up.

******* NOTICE *******

If the pier pipes are not being furnished by U. S. Filter, notches must be installed per U. S. Filter reference drawings. Too large a notch will allow adjacent forms to gap, which will allow concrete fines to fall into the underdrain chamber. These fines may break loose and plug the strainers during backwash.

7. See U. S. Filter reference drawings for form identification and form number layout within the cell (parts list #98817198, item #3-5). Install the MULTICRETE II forms onto the support angles and PVC pier pipes working from one end of the cell to the other.
 - A. Each form has two center channels or depressions which could be aligned per reference drawings for more uniform support of reinforcement bars.
 - B. As the forms are installed, make sure that the PVC pier pipes are standing straight up, setting squarely on the floor so that concrete will not leak out between the PVC pipe and the floor.
 - C. If the nozzle inserts were not glued into the forms in advance, glue them into the recesses in the forms as the forms are installed. See instruction Note 6 for details.
 - D. If so equipped, make certain that air wash header riser pipes are falling between the strainer-insert locations in the forms as the forms are installed.
 - E. MULTICRETE II panel forms may need to be field cut for nonstandard cell sizes or configurations. Whenever possible cut panels perpendicular to the two center channels or depressions in the MULTICRETE II forms for better form strength. Panels should be premeasured then cut so the cut edge fits tightly against the cell wall over the support ledge or angle. If forms cannot be accurately cut to fit these forms may require the wall to form joint be sealed with a non-shrink grout, duct tape, or expanded foam sealant prior to actual concrete being poured.
 - F. If the filter cell is slightly oversized additional side pressure can be placed on the forms by installing 1 1/2" high wood blocking between the wall and form to fill the required gap.

******* NOTICE *******

Vacuum clean the underdrain chamber below the forms as they are installed. All debris, especially small, light materials must be removed or they will plug the strainers during backwashing procedures. See sheet MC-1 in the I-O-M manual for further precautions concerning underdrain cleanliness.

INSTALLATION OF MULTICRETE II UNDERDRAIN SYSTEM (Continued)

NOTE: Leave 1 form out for underdrain inspection by U. S. Filter prior to concrete placement if access to the underdrain chamber is not possible by a conventional manway or large pipe nozzle.

Installation of Rebar:

8. Install the minimum grade 60 #4 horizontal rebars on top of the MULTICRETE II underdrain forms per U. S. Filter reference drawings. (Rebar not by U. S. Filter.)

***** NOTICE *****

Do not step on or kick the nozzle inserts. Any inserts accidentally loosened must be reglued into place at once, making sure that no dirt or debris falls into the underdrain chamber.

- A. Bend and tie all rebar as shown on U. S. Filter reference drawings.
- B. Install rebar into predrilled holes in concrete walls using Hilti HVA Adhesive Anchor System or an approved equal. (Adhesive anchor system not by U. S. Filter.)

***** NOTICE *****

Follow Hilti instructions for anchor system in full detail.

- C. Support the lower rebar on top of the center MULTICRETE II form using Preko bar span clips, (parts list #98817198, item #6), located per U. S. Filter reference drawings. 2 clips per form. Lower bars should run perpendicular to the center channels or depressions in the center MULTICRETE II forms.

- D. Tie upper rebar to lower rebar.

NOTE: Do not install the rebars over the form being left out for U. S. Filter inspection prior to concrete placement.

9. Install the 90 degree bent minimum grade 60 #4 tie reinforcement at each pier. The vertical leg must be held next to the preset pier anchor and can be held in place by tight wire ties to at least two lower level horizontals just installed in step 8.

The vertical leg does not require wire ties to the pier anchor within the 6" PVC pier form if tightly secured at the horizontal leg.

10. Contact United States Filter Corporation for scheduling of the inspection of the underdrain system at least two weeks prior to anticipated concrete placement.

INSTALLATION OF MULTICRETE II UNDERDRAIN SYSTEM (Continued)**Concrete Placement:**

Concrete formulation to be used is a six-sack mix (564 lbs. cement per cubic yard), 1/2" and smaller aggregate size, with a 3" slump. Do not use aggregate in excess of 1/2". This formulation will achieve well over 4,000 psi.

NOTE: *The concrete should be poured as dry as possible to avoid excessive fines from washing between the forms, etc. It may be necessary to add some water to the concrete at the job site to obtain a workable mix, dependent upon temperature, size of cell, etc. KEEP CONCRETE MIX AS DRY AS POSSIBLE.*

******* NOTICE *******

Make certain that all concrete inserts are securely glued onto the underdrain from, and that each insert has the red threaded cap installed prior to pouring concrete.

11. Pour concrete as evenly as possible to a depth equal to the height of the concrete inserts.
 - A. Do not pour concrete directly onto an insert.
 - B. Do not pour concrete from a height of more than 12" above the form.

******* NOTICE *******

Avoid stepping on concrete inserts or hitting them with shovels, etc., while pouring concrete.

12. Work across the cell pouring a 6-8 foot width at each pass to insure each pier form is filled and slab leveled. Use vibration to fill the vertical pier forms, etc., not a wetter mix.
13. Vibrate concrete around each strainer insert and reinforcement. Care should be taken with vibrator to prevent damage to the insert or cause excess mixture to flow between forms.
14. Screed and then trowel the concrete to the level of the red threaded caps in the nozzle inserts.

******* NOTICE *******

Do not allow finished concrete depth to exceed the height of the caps. Any concrete above the caps will make it difficult, if not impossible, to remove the caps and to seat the strainers onto the inserts. The smoothness of the finish is not critical, but the proper depth of concrete is essential.

INSTALLATION OF MULTICRETE II UNDERDRAIN SYSTEM (Continued)

15. Allow the concrete to cure for 3 days before working on it to remove the threaded caps and to install the strainer assemblies.

Installing Strainer Assemblies:

16. Using a piece of steel flat or other tool which will fit the slot in the threaded cap of the nozzle insert, loosen the cap from the nozzle insert.

***** NOTICE *****

Before completely removing the threaded cap from the nozzle insert, vacuum up the small concrete chips around the cap. Do not allow these chips to fall through the underdrain, as they may plug the strainer during backwash.

17. Before installing the strainer assemblies, refer to U. S. Filter reference drawings and the following steps to minimize installation and operation problems.
 - A. Area below underdrain shall be vacuum cleaned and all piping from source of backwash water to be cleaned of all foreign material which could plug the strainers during backwash.
 - B. Remove the red threaded cap from the nozzle insert and vacuum clean all dirt and foreign material at bearing surface of strainer and insert prior to installation.
 - C. Place rubber O-ring seal (parts list #98817198, item #8) over the tailpipe of the strainer assembly and against the bottom bearing surface of the strainer head.
 - D. Install strainer assemblies (parts list #98817198, item #8) after all filter painting and after installation of the underdrain has been completed.
 - E. Tighten strainer assemblies hand tight to insert surface. Strainer must not tighten in threads but must tighten firmly against the O-ring. If difficulty is encountered, run a stiff nylon brush into strainer insert to clean threads.
 - F. Do not use any power tool or wrench to install strainers.
 - G. Do not use grease, thread sealing compounds, or other lubricants on the threads. Strainers should be installed dry.
 - H. If the strainer is equipped with a tailpipe and it should interfere with something below the underdrain, DO NOT CUT OFF THE TAILPIPE. Call U. S. Filter for advise.
 - I. Be very careful not to step on, kick, or otherwise damage the strainers during or after installation. Do not hit strainer assemblies with any shovel or other heavy tool. Take extra care when installing filter media.

INSTALLATION OF MULTICRETE II UNDERDRAIN SYSTEM (Continued)

- J. Protect strainers from all foreign materials which may adversely effect the plastic. This is particularly true of paints, solvents, oils, greases, etc.
- 18. After fully curing in accordance with American Concrete Institute Specification #308, the filter cell will be ready for media installation.

UNITED STATES FILTER CORPORATION
INSTALLATION OF MULTIWASH BAFFLES

1. Reference drawing: 98817104, 98817199
2. The existing concrete troughs are to be used. New stn. stl. MULTIWASH baffle/weirs are to be field mounted on concrete troughs per reference drawings. The weirs and baffles are integral.
3. Place MULTIWASH baffles (parts list #98817199, item #1) into filter cell. Gaskets if required between baffles and washtroughs are not by U. S. Filter.
4. Block up the baffle assembly in place on trough at proper elevation. The top of the baffle assembly should be set at 3 1/4" (reference dimensions) above the top of trough. All the weirs should be at the same elevation to provide uniform collection of backwash water.
5. Drill through trough at appropriate locations for all-thread rods.
6. Due to irregularities in the existing concrete structures, it may be necessary to seal the following locations with a bead of caulk or sealant (parts list #98817199, item #13) to prevent media loss:
 - A. Between trough and baffle
 - B. Between wall angle and wall
 - C. Between wall angle and baffle

NOTE: Any gap that the filter media can pass through requires sealing.

7. Attach baffles to troughs using hardware provided (parts list #98817199 items #6, 7, 9-12).
8. Remove blocking and check baffle to insure that it is level and at the same elevation as all other baffles.
9. Once the baffles are properly located, attach wall angles to baffles using bolts, washers and nuts. Use wedge anchors to attach angle to wall (parts list #98817199, items #2, 3, 8, 10, 11, 14).
10. Check that all fasteners are tightened and baffles are level.
11. Install baffle vent pipes and bolt clamps as shown on reference drawing (parts list #98817199, items #4-5).

UNITED STATES FILTER CORPORATION**FILTER MEDIA INSTALLATION**

1. Reference drawings: 98817899
2. Clean each filter cell thoroughly before the filter media is placed within the filter.
3. Place filter media (parts list #98817899, item #1) within the filter cell. Workmen should not stand or walk directly on the filter media. Place boards or plywood on the media that will sustain their weight without displacing the material.
4. After the filter media has been placed into the filter cell, slowly fill the filter by adding water up through the underdrain.
5. After the media is submerged, slowly backwash the filter.
6. After the initial backwash, scrape the filter media as directed by the engineer.
7. The filter should be backwashed three times between additional scrapings if so required.
8. After the final scraping add filter media as required to bring the top surface of the media to the correct elevation.

UNITED STATES FILTER CORPORATION

FILTER OPERATION

I. What is the purpose of the filter?

The principal object of the filter plant is the removal of solids from the water.

II. What is the purpose of backwashing the filter?

During the treating process the solids taken from the water accumulate on top of the filter media in the filter. This material must be removed by periodically flushing out, or backwashing, following the instructions given in this booklet.

Correct backwashing is the most important part of the operation of a filter plant. When the filter is washed at the proper rate, the media bed is lifted and the grains rub together. If the rate is too great, media will be lost from the filter. If the rate is too low, the bed will not be completely cleansed.

III. How often should the filter be backwashed?

The length of filtering cycle is somewhat dependent upon the load being handled by the plant. Adequate backwashing is essential to the successful operation of this plant.

It is good practice to periodically backwash the filter at least every seven days, however, even though a maximum loss of head may not have developed.

UNITED STATES FILTER CORPORATION

FILTER OPERATION (Continued)

IV. What is the proper procedure for backwashing filter?

1. Close influent valve on filter requiring backwash.
 2. Let water level in filter lower to not less than washtrough level.
 3. Close the effluent valve for the filter to be backwashed.
 4. Start air wash blower (s).
 5. Open air wash supply valves on filter cell to be backwashed.
 6. Air wash rate set a 5 scfm/sq. ft. (1875 scfm total).
 7. Start the backwash pump.
 8. Open the backwash supply valve on filter to be backwashed.
 9. MULTIWASH water backwash rate set at 15 gpm/sq. ft. (5625 gpm total).
10. Let the filter simultaneously air-water "MULTIWASH" for at least 7 minutes or until backwash waste water is clear.
11. Close the air wash supply valves on filter cell backwashed.
12. Stop the air wash blower (s).
13. Let the filter water wash at 15 gpm/sq. ft. (5625 gpm total) for 2 minutes (minimal) to purge air.
14. Close backwash supply valve on filter backwashed.
15. Stop backwash supply pump.
16. Open filter influent.
17. Open effluent valve on filter just backwashed.
18. Filter is now back in service.

NOTE: *The actual time required for the MULTIWASH and air purge cycles may vary from the above values.*

NOTE: *This is a basic description of the backwash procedure as recommended by U. S. Filter Corp. These instructions may differ from actual backwashing procedures as dictated by the engineer.*

UNITED STATES FILTER CORPORATION

FILTER OPERATION WITH MEDIA RETAINING STRAINERS

******* WARNING *******

Filter media retaining strainers, furnished by United States Filter Corporation, are designed for use in municipal and industrial water and waste water treatment filters. All filters utilizing these strainers with the exception of our Model 125 MCA and MSA will require backwashing with filtered water only. Should any filter equipped with our media retaining strainers be backwashed with unfiltered, dirty, debris-laden backwash supply water, the strainers will become plugged. Underdrain failure is possible unless the strainers are maintained in a clean, free flow state.

As a manufacturer of filter underdrain components, we advise all engineers and contractors to review each installation in advance of construction for filter backwash supply water contamination sources. Possible sources of contamination to filter backwash supply would include, but not be limited to the following:

- A. Filter bypass water should not discharge into the filter underdrain chamber, filter effluent weir tank, or backwash supply tank.
- B. Open effluent weir tanks or backwash supply tanks provide no means of preventing contamination by acts of nature or human negligence. These tanks should be covered.
- C. If a positive backwash supply pressure relief standpipe is provided, it must be protected from possible entry of debris. If a screen cover is provided, it should not alter the design hydraulics of the pressure relief device.
- D. Filters which are designed for air wash, either staggered or simultaneous, should include pressure relief valve on the discharge line of the air wash blower. The relief valve should be set to relieve the blower design capacity at a pressure less than the underdrain design pressure.
- E. All valves which connect to the filter underdrain chamber, such as the effluent, backwash supply and air wash supply, should be equipped with speed control or manual activators, which will not allow sudden pressure surges into the underdrain chamber.

FILTER OPERATION WITH MEDIA RETAINING STRAINERS (Continued)INSTALLATION

Follow the suggestions and cautions listed on additional Instruction Sheets and Drawings included in the manual, to prevent possible damage to the strainers during installation of the filter equipment.

Factory assembled steel filters will be vacuum cleaned below the underdrain and shipped with all tank openings covered. This should not be considered adequate for final hookup as field contamination may occur.

Filters with concrete underdrain slabs should have the entire underdrain including the plenum section vacuum cleaned before the final few slabs are placed. All foreign debris such as paper, dirt, dust, leaves, rust, mill scale or cigarette butts must be removed before the slabs are grouted in place.

All piping that connects to the underdrain or backwash supply piping must be thoroughly flushed and cleaned. This includes, but is not limited to, effluent piping, air wash piping, backwash supply piping, or cell isolation piping. Cleaning must take place immediately prior to final piping hookup to prevent contamination before the plant is started up.

The source of the backwash supply water must be thoroughly cleaned. This includes, but is not limited to, clearwells, chlorine contact tanks, effluent weir tanks, or any other areas which may come in contact with the backwash supply water. These areas must also be covered or protected from possible contamination after the plant is started.

STRAINERS EQUIPPED WITH AIR WASH TAIL PIPE

If there is interference between the underdrain support structure and a strainer tail pipe, the interference must be removed or the strainer taken out and the hole plugged completely. This procedure can be performed on no more than one percent of the strainers. No modifications whatever can be made to the strainer tail pipe. If significant fitting problems occur, consult the General Filter factory.

******* CAUTION *******

Be absolutely positive before the media is installed that each and every strainer is intact and has been properly installed. If the strainers were factory installed, do not assume they have not been loosened or damaged during shipment.

FILTER OPERATION WITH MEDIA RETAINING STRAINERS (Continued)

OPERATION

Since the filter must be backwashed with filtered water only, it is advisable to fill the backwash supply tank (or clearwell, etc.) with potable water from the city water supply at time of start-up. This water should be used to backwash the filters before they are placed in initial service.

If for any reason the filters are bypassed and raw water or sewage is allowed to come in contact with the backwash supply piping or tankage, all equipment must be drained and re-cleaned before the filters are returned to service.

On waste water treatment filters that are equipped with media retaining nozzles, it should be a normal operation to continuously pre-chlorinate to help reduce biological growth in the filter media and underdrain collection chamber. If this is not possible then at least once a month the filter should be shock chlorinated prior to backwash. This monthly cycle will help control biological growth and prevent premature fouling of the media, media retaining nozzle and its air control orifices if so equipped.

GUARANTEE AND WARRANTIES

United States Filter Corporation's liability is limited exclusively to the replacement of defective materials, F.O.B. Ames, Iowa, as stated in our Standard Guarantee and Warranties. This warranty expressly excludes improper installation or operation and any problems or failures caused by parts, materials, or labor furnished and installed by others.

UNITED STATES FILTER CORPORATION**PLANT INSPECTION AND SERVICE**

Welcome to the ranks of United States Filter Corporation equipment owners! Your USF equipment has been designed, constructed and tested to give you years of dependable operation.

This Installation-Operation-Maintenance manual has been prepared as a guide to help you get the most utility from your equipment. It contains information about operating procedures and performance as well as suggestions for its servicing and care. We urge you to read it from cover to cover and to refer to it frequently. Additional copies may be purchased from United States Filter Corporation.

If your equipment is to retain that "new-performance" and dependability, certain inspection and maintenance requirements must be followed. It is wise to adopt a planned schedule of lubrication and preventive maintenance based on climatic conditions encountered in your locality.

Our interest in your equipment has not ceased with your purchase from United States Filter Corporation. We have qualified customer service technicians, trained on United States Filter Corporation products, having the parts, tools, and equipment to service your equipment. However, factory service trips can be expensive. Before calling for service we recommend you define and review the problem yourself. Make reference to the Installation-Operation-Maintenance manual. If you can not solve the problem, call us for advice and if necessary we will schedule a service trip by one of our customer service technicians.

CONVERSION FACTORS

Acres	X 43,560	= Square feet	Horse-power (boiler)	X 33,479	= B.T.U./hr.
"	X 4047	= Square meters	"	X 9.803	= Kilowatts
Acre-feet	X 43,560	= Cubic feet	Inches	X 2.540	= Centimeters
"	X 325,851	= Gallons	Inches of mercury	X 1.133	= Feet of water
"	X 1233.49	= Cubic meters	"	X 0.4912	= Lbs./sq. inch
Atmospheres	X 29.92	= Inches of mercury	"	X 0.03342	= Atmospheres
"	X 33.90	= Feet of water	Inches of water	X 0.07355	= Inches of mercury
"	X 76.0	= Cms. of mercury	"	X 0.03613	= Lbs./sq. inch
"	X 14.70	= Lbs./sq. inch	Kilograms	X 2.205	= Lbs.
British Thermal Units	X 777.5	= Foot-lbs.	Kilowatts	X 56.92	= B.T. Units/min.
"	X 3.927x10 ⁻⁴	= Horse-power-hrs.	"	X 737.6	= Foot-lbs./sec.
"	X 2.928x10 ⁻⁴	= Kilowatt-hrs.	"	X 1.341	= Horse-power
"	X 0.2520	= Kilogram-calories	"	X 14.34	= Kg.-calories/min.
"	X 107.5	= Kilogram-meters	Liters	X 0.2642	= Gallons
B.T.U./min.	X 12.96	= Foot-lbs./sec.	"	X 61.02	= cubic inches
"	X 0.02356	= Horse-power	"	X 0.03531	= Cubic feet
"	X 0.01757	= Kilowatts	Meters	X 3.281	= Feet
Cubic feet	X 7.48052	= Gallons	"	X 39.37	= Inches
"	X 1728	= Cubic inches	"	X 1.094	= Yards
"	X 0.03704	= Cubic yards	Miles	X 5280	= Feet
"	X 28.32	= Liters	"	X 1.609	= Kilometers
"	X 2.832x10 ⁻⁴	= Cubic cms.	Miles/min.	X 88	= Feet/sec.
"	X 0.02832	= Cubic meters	"	X 1.609	= Kilometers/min.
Cubic feet/second	X 0.646317	= Million gals./day	Milligrams/liter	X 1	= Parts/million
"	X 448.831	= Gallons/min.	Million gals./day	X 1.54723	= Cubic ft./sec.
Cubic inches	X 16.39	= Cubic centimeters	"	X 694	= Gals./min.
"	X 5.787x10 ⁻⁴	= Cubic feet	Miner's inches	X 1.5	= Cubic ft./min.
"	X 1.639x10 ⁻⁵	= Cubic meters	Ounces	X 28,349.527	= Grams
"	X 4.329x10 ⁻³	= Gallons	"	X 437.5	= Grains
"	X 1.639x10 ⁻²	= Liters	"	X 0.9115	= Ounces (troy)
Cubic yards	X 27	= Cubic feet	Ounces (fluid)	X 1.805	= Cubic inches
"	X 46.656	= Cubic inches	"	X 29.57	= Cubic cm.
"	X 0.7646	= Cubic meters	Parts/million	X 8.345	= Lbs./million gal.
"	X 202.0	= Gallons	"	X 0.0584	= Grains/U.S. gal.
"	X 764.6	= Liters	"	X 0.07016	= Grains/Imp. gal.
Feet of water	X 0.8826	= Inches of mercury	Pounds	X 16	= Ounces
"	X 0.4335	= Lbs./sq. inch	"	X 7000	= Grains
"	X 62.43	= Lbs./sq. ft.	"	X 453.5924	= Grams
"	X 0.02950	= Atmospheres	"	X 1.21528	= Pounds (troy)
"	X 304.8	= Kgs./sq. meter	Pounds of water	X 0.01602	= Cubic feet
Foot-Pounds	X 1.286x10 ⁻⁸	= British thermal unit	"	X 27.68	= Cubic inches
"	X 5.050x10 ⁻⁷	= Horse-power-hrs.	"	X 0.1198	= Gallons
"	X 0.1383	= Kilogram-meters	Pounds/sq. inch	X 2.307	= Feet of water
"	X 3.766x10 ⁻⁷	= Kilowatt-hrs.	"	X 2.036	= Inches of mercury
Foot-pounds/min.	X 3.030x10 ⁻⁵	= Horse-power	"	X 0.06804	= Atmospheres
"	X 2.260x10 ⁻⁵	= Kilowatts	Quires	X 25	= Sheets
Gallons	X 0.1337	= Cubic feet	Reams	X 500	= Sheets
"	X 231	= Cubic inches	Square feet	X 144	= Square inches
"	X 3785	= Cubic centimeters	"	X 0.09290	= Square meters
"	X 3.785x10 ⁻⁸	= Cubic meters	"	X 2.296x10 ⁻⁵	= Acres
"	X 3.785	= Liters	Square inches	X 6.452	= Square centimeters
Gallons, Imperial	X 1.200095	= U. S. gallons	Square miles	X 640	= Acres
" U. S.	X 0.83267	= Imperial gallons	Tons (short)	X 2000	= Pounds
Gallons water	X 8.3453	= Pounds of water	"	X 907.18486	= Kilograms
Gallons/min.	X 0.002228	= Cubic feet/sec.	Watts	X 0.05692	= B.T. Units/min.
"	X 0.06308	= Liters/sec.	"	X 0.7376	= Foot-pounds/sec.
"	X 8.0208	= Cu. ft./hr.	"	X 1.341x10 ⁻⁸	= Horse-power
Grains/U.S. gal.	X 17.118	= Parts/million	"	X 0.01434	= Kg.-calories/min.
" /U.S. gal.	X 142.86	= Lbs./million gal.	Yards	X 0.9144	= Meters
" /Imp. gal.	X 14.254	= Parts/million			
Grams	X 15.43	= Grains			
"	X 0.03527	= Ounces			
Grams/liter	X 58.417	= Grains/gal.			
"	X 8.345	= Pounds/1000 gals.			
"	X 1000	= Parts/million			
Horse-power	X 42.44	= B.T. Units/min.			
"	X 550	= Foot-lbs./sec.			
"	X 0.7457	= Kilowatts			



GENERAL FILTER *Company*
AMES, IOWA

TABLE TA-4
10-69
(Replaces T-104)



MASTER PARTS LIST

GENERAL FILTER PRODUCT

ITEM NO.	PART QTY.	TOTAL ORDER QTY.	PART DESCRIPTION	SECTION NUMBER	DRAWING NUMBER	PART NUMBER	TOTAL PART WT. (LB)	TOTAL ORDER WT. (LB)	USF OFFICE USE
1	1	24	Gravity filter MULTICRETE II underdrain parts	988171	98817198	98817198A	1612.0	38688.0	
2	1	24	Underdrain supports and flume baffles	988171	98817197	98817197A	322.0	7728.0	
3	1	24	Airwash headers	988171	98817196	98817196A	417.0	10728.0	
4	1	24	Wing baffles	988171	98817199	98817199A	1365.0	32760.0	
5	1	1	Lot of media	988178	98817899	98817899A	2836800.0	2836800.0	
							TOTAL	2,926,704.0	

PROJECT DESCRIPTION				REVISION DESCRIPTION		BY:	DATE:
MULTIWASH GRAVITY FILTER PARTS				1.	Correct wt. items #3 & 4	DKC	3-20-98
				2.	Correct item #2	DKC	4-1-98
				3.	Correct wt., item #3	DKC	4-7-98
				4.			
MASTER PARTS LIST		DOCUMENT RELEASE		CUSTOMER NAME: WEBB ELECTRIC COMPANY		CUST. P.O. # 388 5102-000	
		BY: DKC	DATE: 12-19-97				
Page 1 of 1	Contract No. 988170	CHK'D: JHS	DATE: 1-12-98	JOB NAME: ANN ARBOR, MICHIGAN			
		APPR'D: TAD	DATE: 1-23-98				



PARTS LIST

GENERAL FILTER PRODUCTS

ITEM NO.	PART QTY.	PART DESCRIPTION	MATERIAL	PART NUMBER	TOTAL PART WT. (LB)	USF OFFICE USE
1	1	Airwash header, 8" with risers	S.S.	98817105A	300.0	
2	4	Support brackets	S.S.	B0007207D	15.0	
3	12	Hilti wedge anchors, 1/2" dia. x 4 1/2" long	S.S.	A0007272K	3.0	
4	1	Vertical airwash pipe, 8" flanged one end	S.S.	98817106A	90.0	
5	2	Support bracket for vertical pipe	S.S.	98817107A	9.0	
6	1	Depend-O-Lok coupling, 1 segment, EXE, 8 5/8" I.D. x 0.109" x 10" w., T-304L S.S.	S.S.		30.0	
				TOTAL	447.0	

REVISION DESCRIPTION		BY:	DATE:	CHK'D:	DATE:	APPR'D:	DATE:
5.							
4.							
3.							
2. Add Item #6, Depend-O-Lok coupling		DKC	4-7-98	JHS	4-7-98	TAD	4-7-98
1. Correct wt. items #1 & #4 and delete item #6		DKC	3-20-98				
PRODUCT/COMPONENT DESCRIPTION		DKC	12-19-97	JHS	1-12-98	TAD	1-23-98
FABRICATION RELEASE							
STANDARDS RELEASE							
AIRWASH HEADER		COPIED FROM			PARTS LIST NO. 98817196		
PAGE 1 OF 1							



GENERAL FILTER PRODUCTS

REVISION DESCRIPTION		BY:	DATE:	CHK'D:	DATE:	APPR'D:	DATE:
5.							
4.							
3.							
2.							
1. Add items 4-9		DKC	4-1-98			TAD	4-3-98
PRODUCT/COMPONENT DESCRIPTION		FABRICATION RELEASE	DKC	12-19-97	JHS	1-12-98	TAD
		STANDARDS RELEASE					
PERIMETER SUPPORT ANGLES & FLUME BAFFLES					COPIED FROM		PARTS LIST NO.
		PAGE 1 OF 1					98817197



PARTS LIST

GENERAL FILTER PRODUCTS

[illegible]

REVISION DESCRIPTION		BY:	DATE:	CHK'D:	DATE:	APPR'D:	DATE:
5.							
4.							
3.							
2.							
1. Correct length of item #1		DKC	3-20-98	JHS	3-23-98	TAD	3-23-98
PRODUCT/COMPONENT DESCRIPTION		FABRICATION RELEASE	DKC	12-19-97	JHS	1-12-98	TAD 1-23-98
		STANDARDS RELEASE					
MULTICRETE II UNDERDRAIN PARTS		PAGE 1 OF 1			COPIED FROM		PARTS LIST NO. 98817198



PARTS LIST

GENERAL FILTER PRODUCTS

ITEM NO.	PART QTY.	PART DESCRIPTION	MATERIAL	PART NUMBER	TOTAL PART WT. (LB)	USF OFFICE USE
1	8	Wing baffle plates	304 S.S.	98817113A	1106.0	
2	8	Baffle mounting angles	304 S.S.	98817114A	27.0	
3	8	Baffle mounting angles (mirror image of item #2)	304 S.S.	98817115A	27.0	
4	16	Air relief pipes, 2" sch. 10S	304 S.S.	98817116A	88.0	
5	16	Dresser style 364 water repair clamp, 2.35-2.75 range x 7 1/2" wide	304 S.S.		32.0	
6	96	Fabricated flat washers	304 S.S.	98817117A	29.0	
7	96	All-thread rods, 3/8"-16NC x 6" lg.	304 S.S.		14.0	
8	32	Hex head bolts, 1/2"-13NC x 1" lg.	304 S.S.		3.0	
9	24	All-thread rods, 1/2"-13NC x 1'-1" lg.	304 S.S.		14.0	
10	112	Flat washers, 1/2"	304 S.S.		3.0	
11	80	Hex nuts, 1/2"-13NC	304 S.S.		3.0	
12	192	Hex nuts, 3/8"-16NC	304 S.S.		3.0	
13	1	Hilti HIT C-100 adhesive cartridge w/mixer, #000680660	Adhesive		1.0	
14	3	Hilti HIT-M Mixer, #000899120	Plastic		---	

REVISION DESCRIPTION		BY:	DATE:	CHK'D:	DATE:	APPR'D:	DATE:
5.							
4.							
3.							
2.							
1.	Correct wt. on items #1 and #4	DKC	3-20-98	JHS	3-23-98	TAD	3-23-98
PRODUCT/COMPONENT DESCRIPTION		FABRICATION RELEASE	DKC	12-22-97	JHS	1-12-98	TAD
		STANDARDS RELEASE					
WING BAFFLES		PAGE 1 OF 2		COPIED FROM 96077197		PARTS LIST NO. 98817199	



PARTS LIST

GENERAL FILTER PRODUCTS

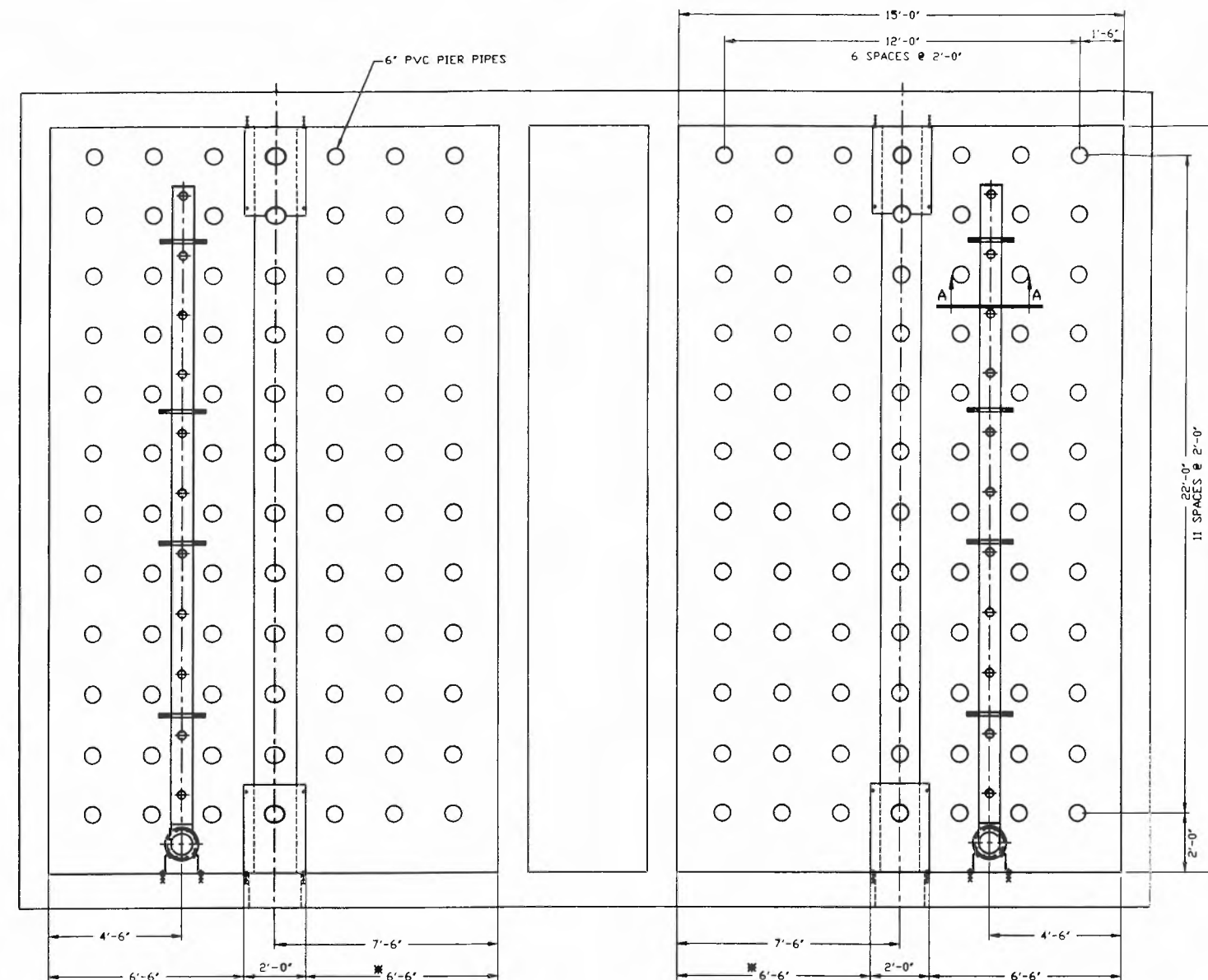
[illegible]

REVISION DESCRIPTION		BY:	DATE:	CHK'D:	DATE:	APPR'D:	DATE:
5.							
4.							
3.							
2.							
1. Correct wt. on items #1 and #4		DKC	3-20-98	JHS	3-23-98	TAD	3-23-98
PRODUCT/COMPONENT DESCRIPTION		FABRICATION RELEASE		DKC	12-22-97	JHS	1-12-98
		STANDARDS RELEASE					
WING BAFFLES		PAGE 2 OF 2		COPIED FROM 96077197		PARTS LIST NO. 98817199	

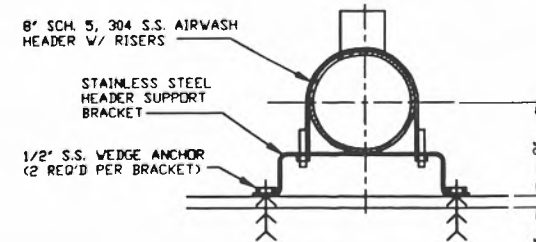


GENERAL FILTER PRODUCTS

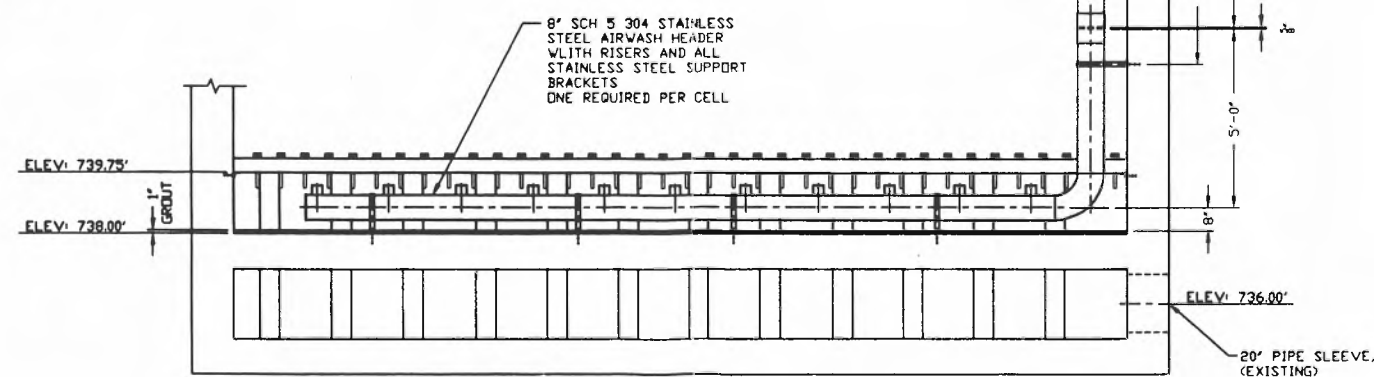
REVISION DESCRIPTION		BY:	DATE:	CHK'D:	DATE:	APPR'D:	DATE:
5.							
4.							
3.							
2.							
1.							
PRODUCT/COMPONENT DESCRIPTION	FABRICATION RELEASE STANDARDS RELEASE	DKC	12-19-97	JHS	1-12-98	TAO	1-23-98
MEDIA	PAGE 1 OF 1			COPIED FROM 96077299		PARTS LIST NO. 98817899	



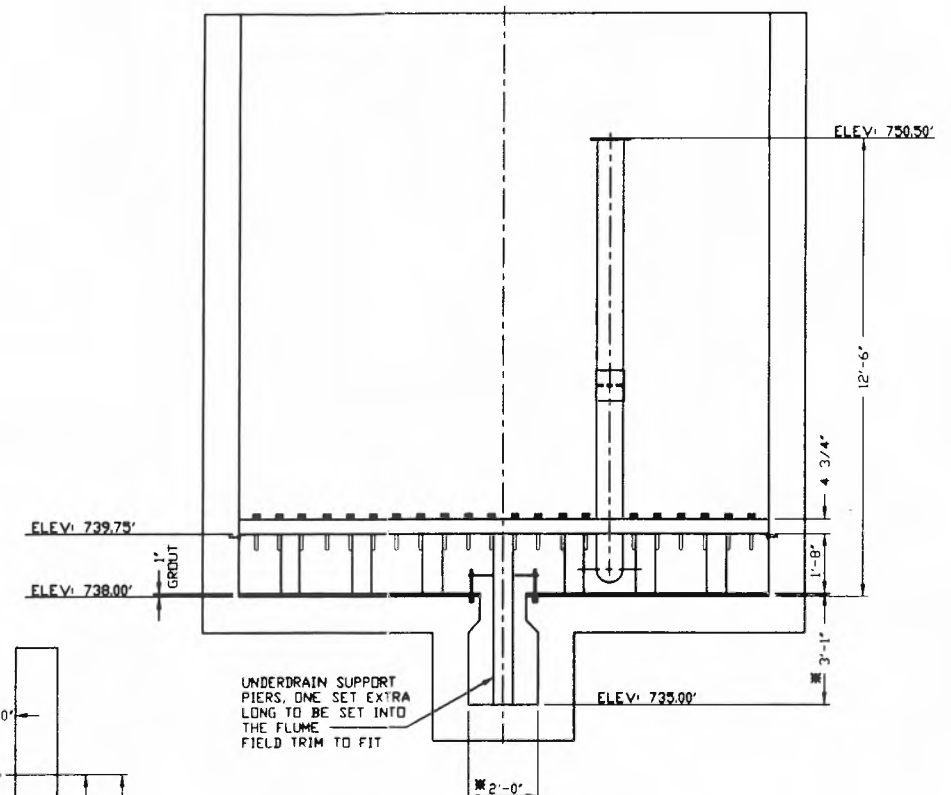
PLAN VIEW



SECTION A-A
SCALE: 1 1/2" = 1'-0"



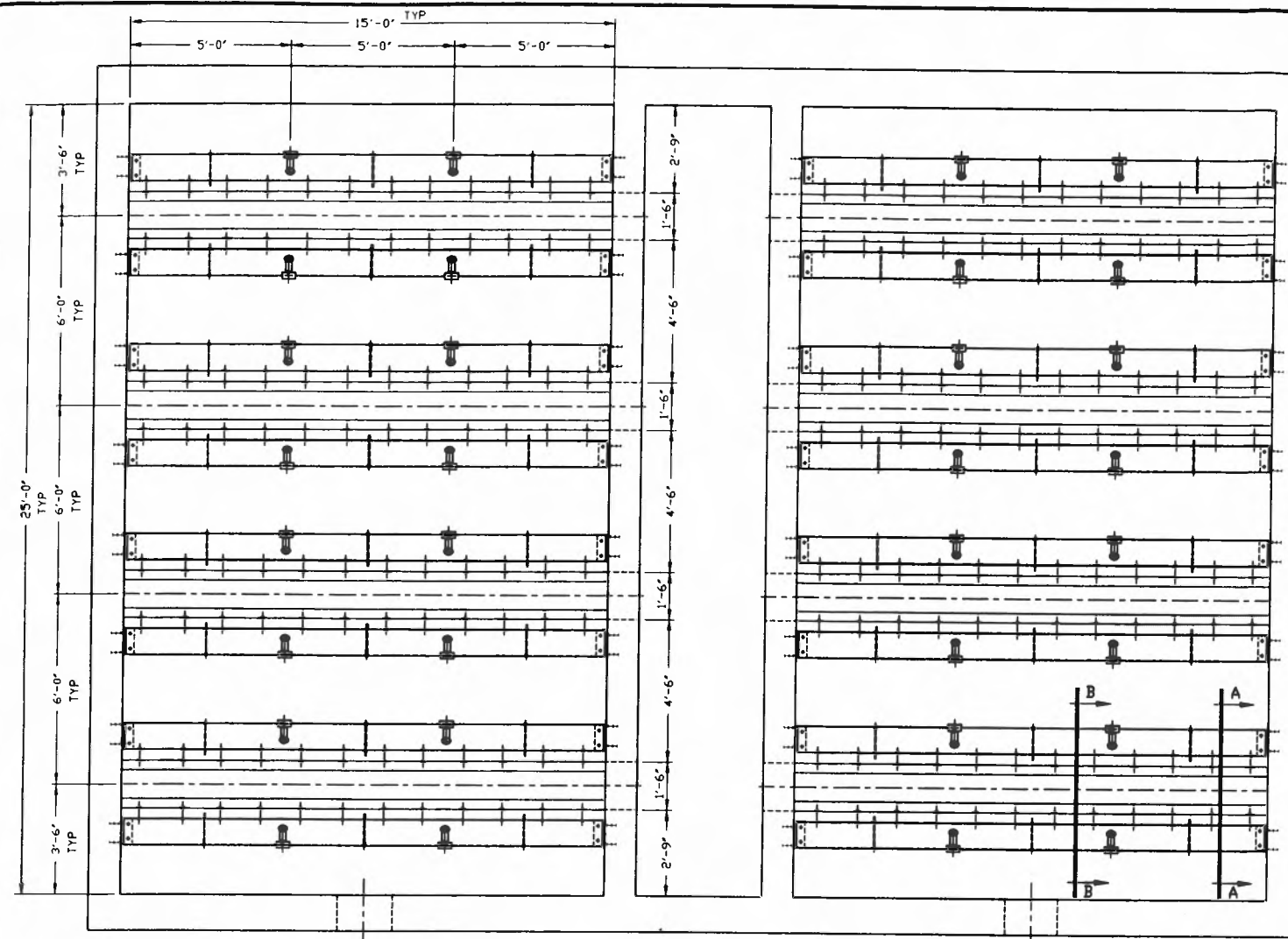
ELEVATION VIEW



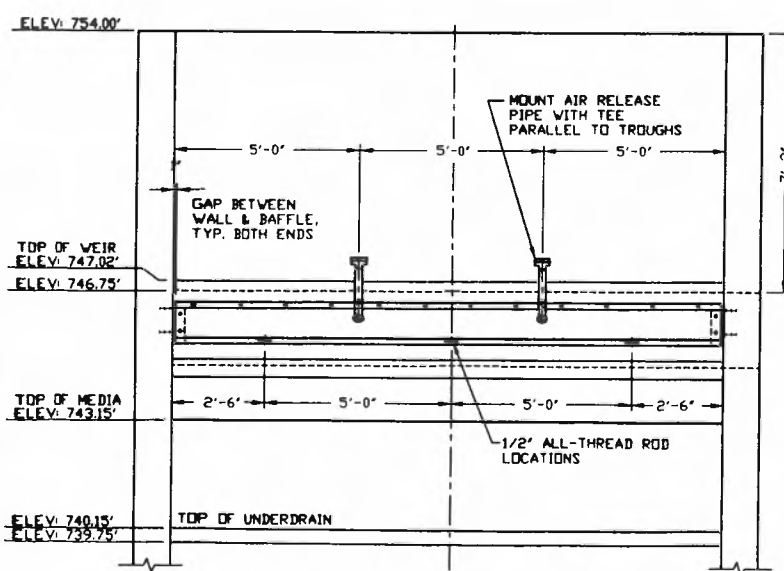
END VIEW

* CONTRACTOR VERIFY DIMENSIONS

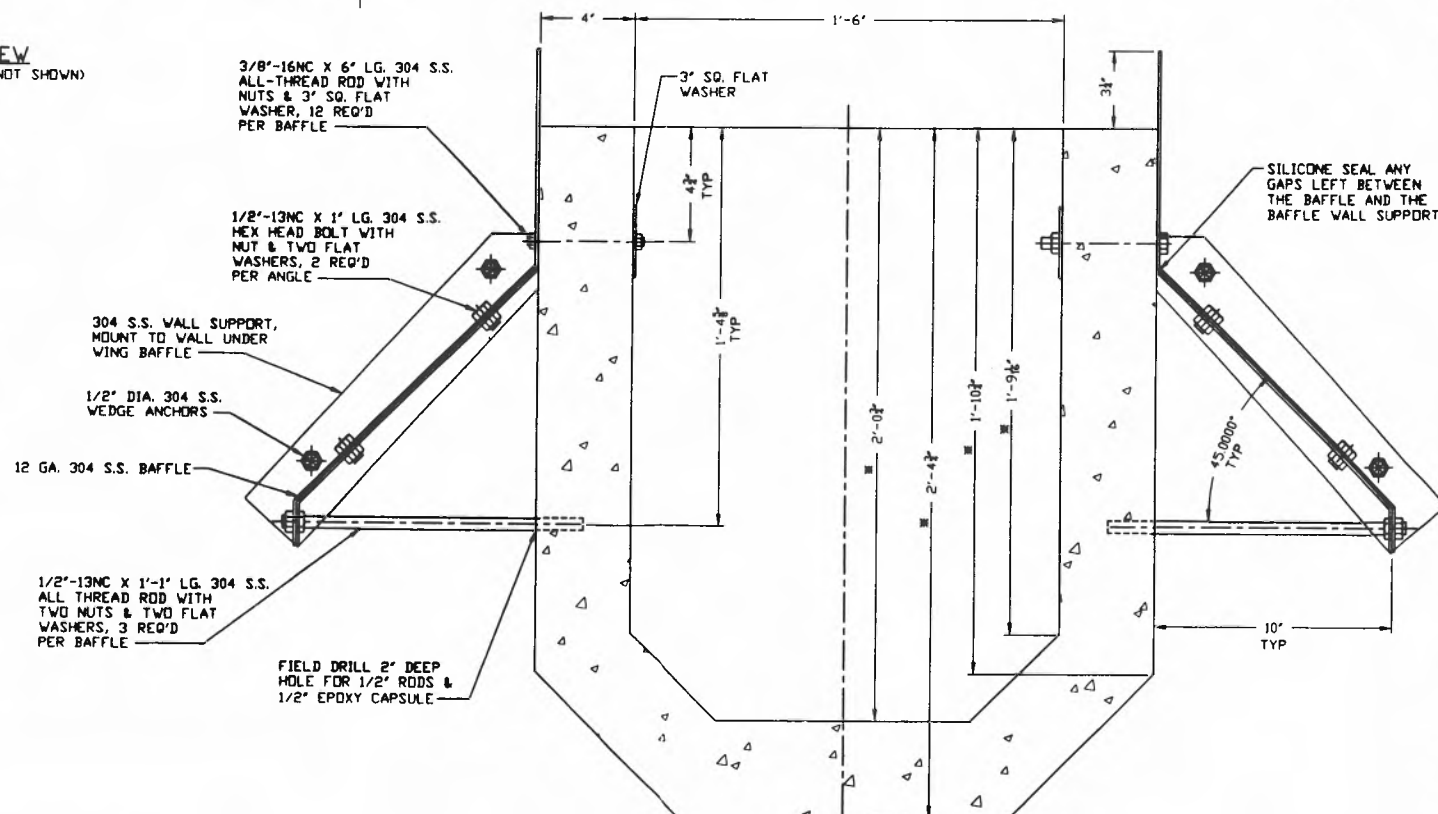
JOB NAME: AMN ARBOR, IN		ORDER NO: 988170	
CUSTOMER: WEIR ELECTRIC COMPANY		CUST. NO: 200100-000	
ENGINEER: ROYAL, PORTER & BEELEY		SPEC. NO:	
NO. 1: ADD COUPLING TO AIRWASH HEADER		BKC	4-7-98
NO. 2: REMOVE COUPLING & ADD FIELD WELD		BKC	3-28-98
NO. 3: REVISION DESCRIPTION		BY:	CHK'D: APP'D: DATE:
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RELEASE FOR FABRICATION: SCALE: 1/2" = 1'-0"		RELEASE FOR STANDARD	
BY: BKC	DATE: 08-08-97	BY:	DATE:
CHKD:	DATE:	CHKD:	DATE:
APP:	DATE:	APP:	DATE:
U.S. FILTER AMES, IOWA		GRAVITY FILTER CELLS 15'-0" X 25'-0" UNDERDRAIN LAYOUT	
SIZE: D	DRAWING NUMBER: 98817101	REV: 2	



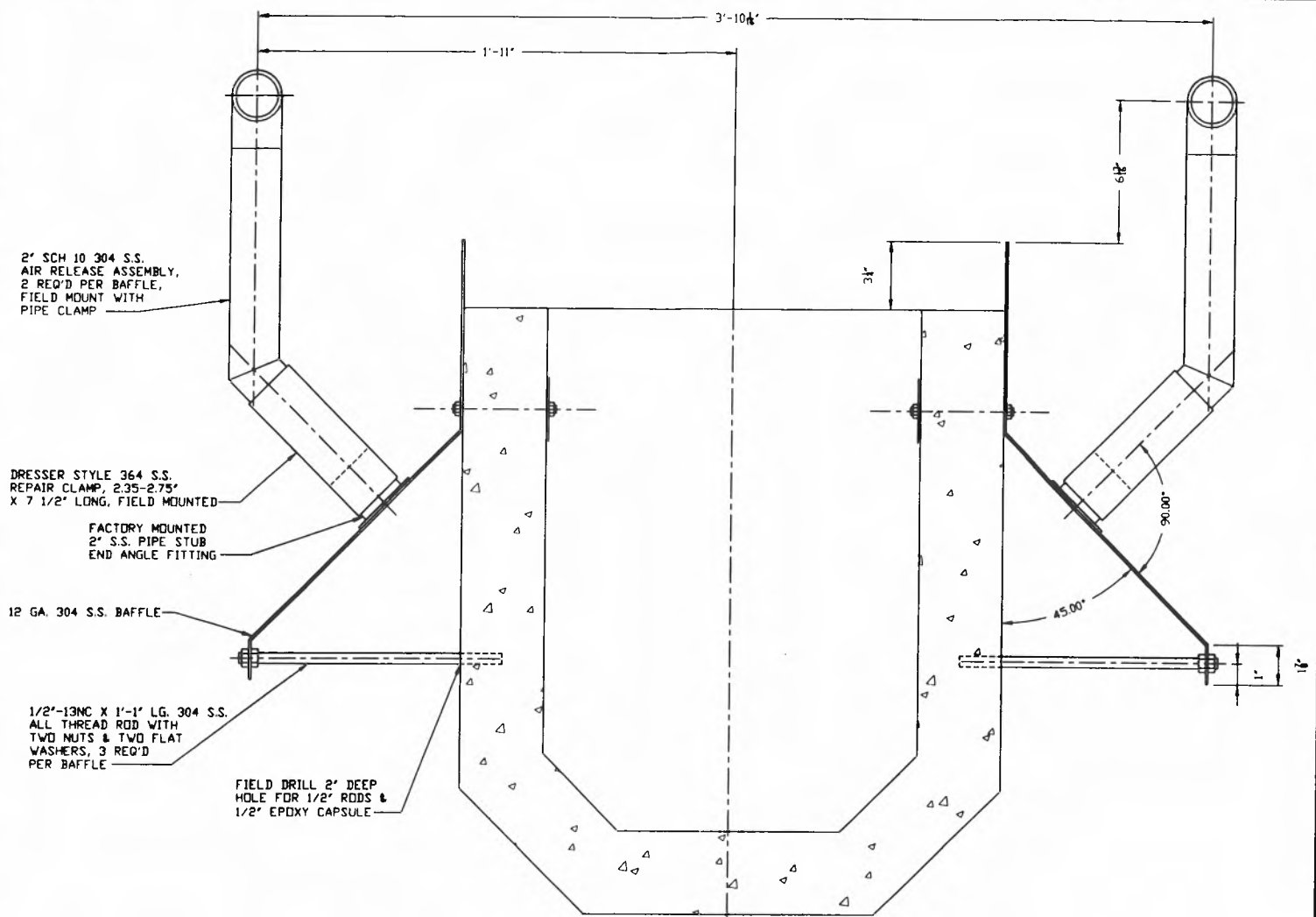
PLAN VIEW
(WALL OVERHANGS NOT SHOWN)



END VIEW



SECTION A-A
SCALE: 3" = 1'-0"



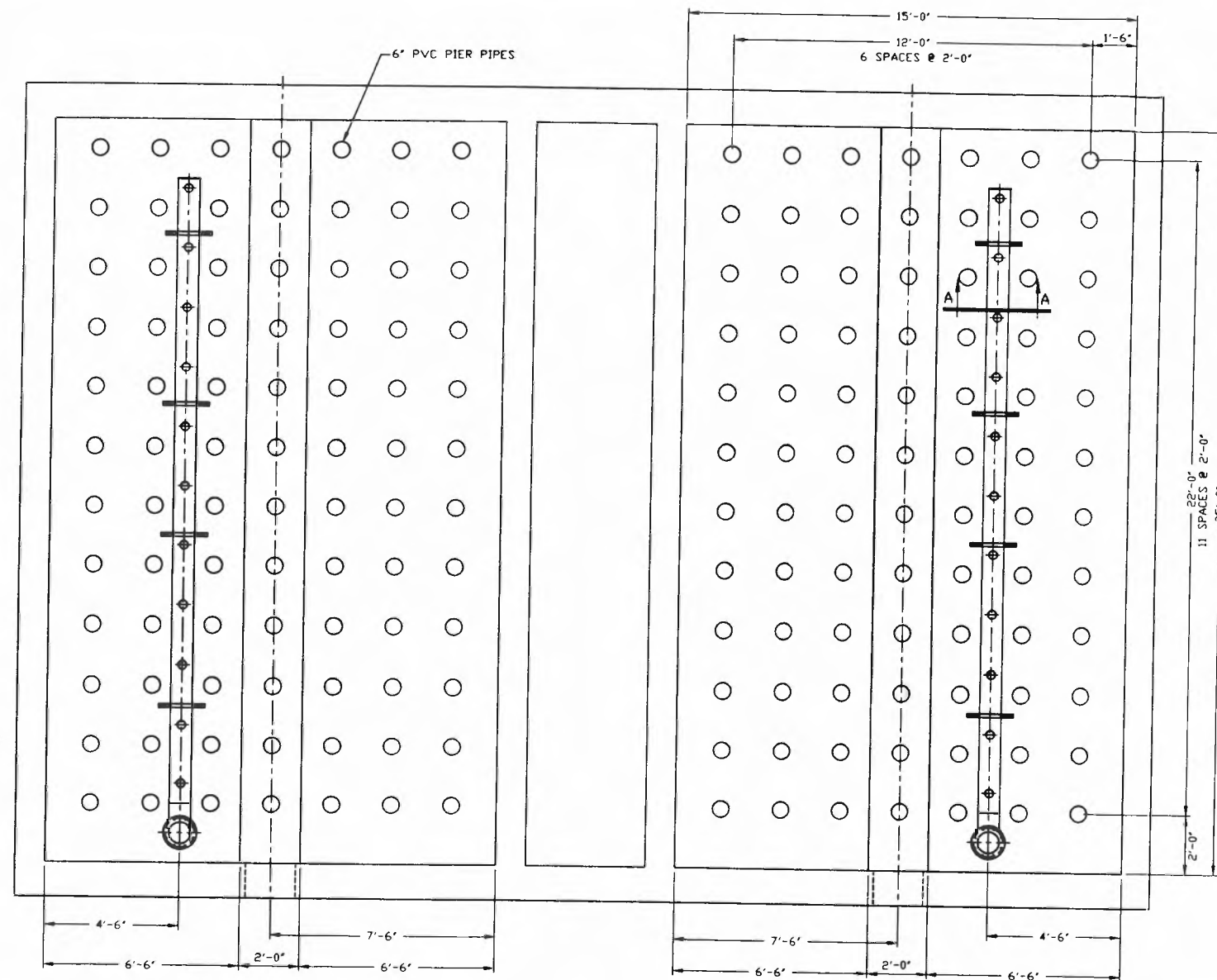
SECTION B-B
SCALE: 3" = 1'-0"

NOTES:

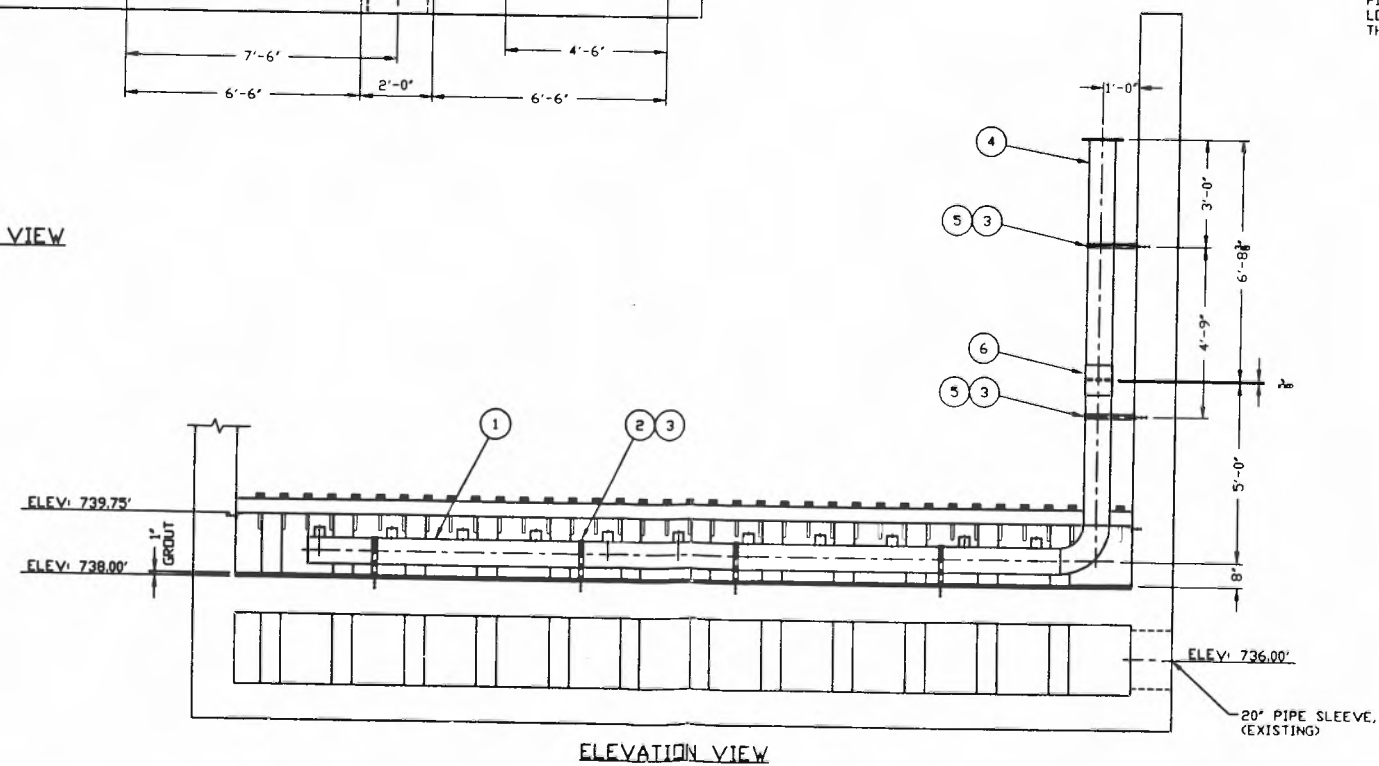
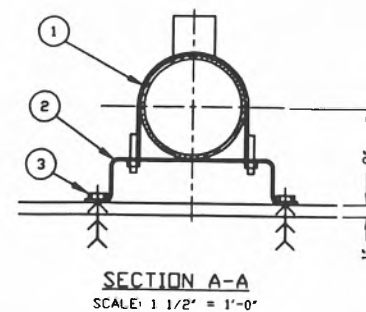
1. TWO CELLS ARE SHOWN IN THE PLAN VIEW, 24 CELLS REQUIRED TOTAL.
2. 96 TOTAL SETS OF BAFFLES ARE REQUIRED.
3. SEE DRAWING 98817801 FOR MEDIA INFORMATION.

■ CONTRACTOR VARY DIMENSIONS

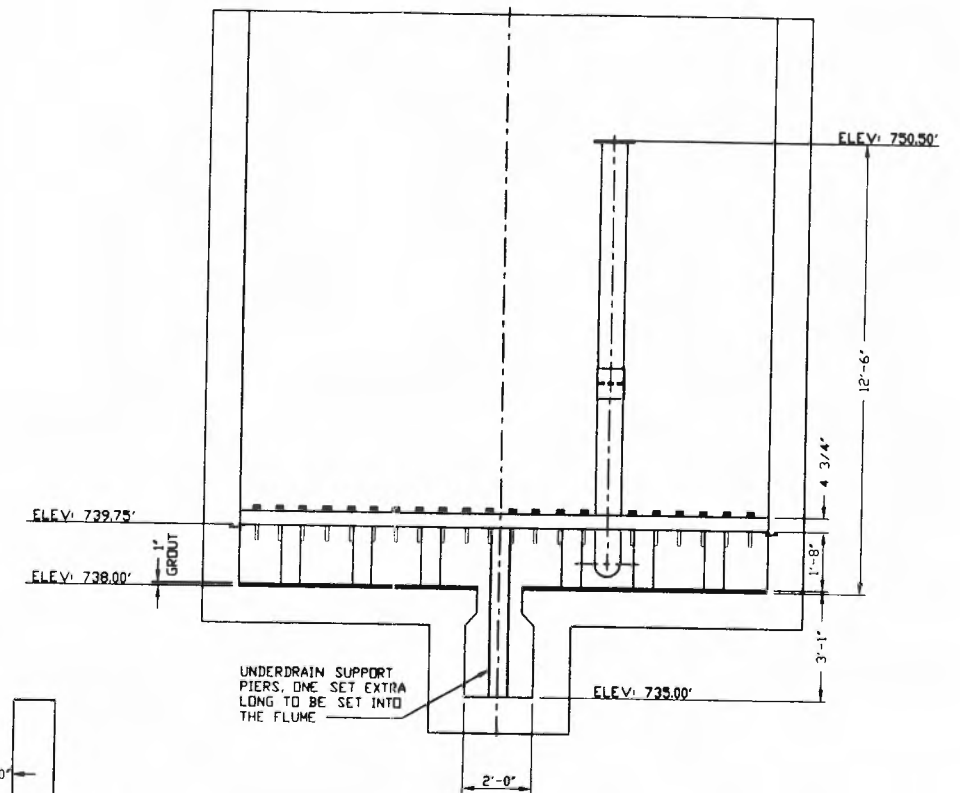
JOB NAME: ANN ARBOR, MI		ORDER NO: 988178	
CUSTOMER: VEEB ELECTRIC COMPANY		CUST. NO: 988178-000	
ENGINEER: ROHMER, PORTER & BEELEY		SPEC. NO:	
NO. REVISION DESCRIPTION		BY:	CHK'D:
1. REVISE BAFFLES TO INCLUDE WEIRS		INC	APP'D:
2. 96 TOTAL SETS OF BAFFLES ARE REQUIRED.		DATE:	DATE:
3. SEE DRAWING 98817801 FOR MEDIA INFORMATION.		DATE:	DATE:
RELEASE FOR FABRICATION: SCALE: 3" = 1'-0"		RELEASE FOR STANDARD	
BY: INC	DATE: 10-17-97	BY: INC	DATE:
CHK: YAD	DATE: 1-23-98	CHK: YAD	DATE:
APP: YAD	DATE:	APP: YAD	DATE:
U.S. FILTER WPC AMES, IOWA		WASHTROUGH BAFFLE INSTALLATION ON EXISTING WASHTROUGHS	
SIZE: D	DRAWING NUMBER: 98817104	REV: 1	



PLAN VIEW

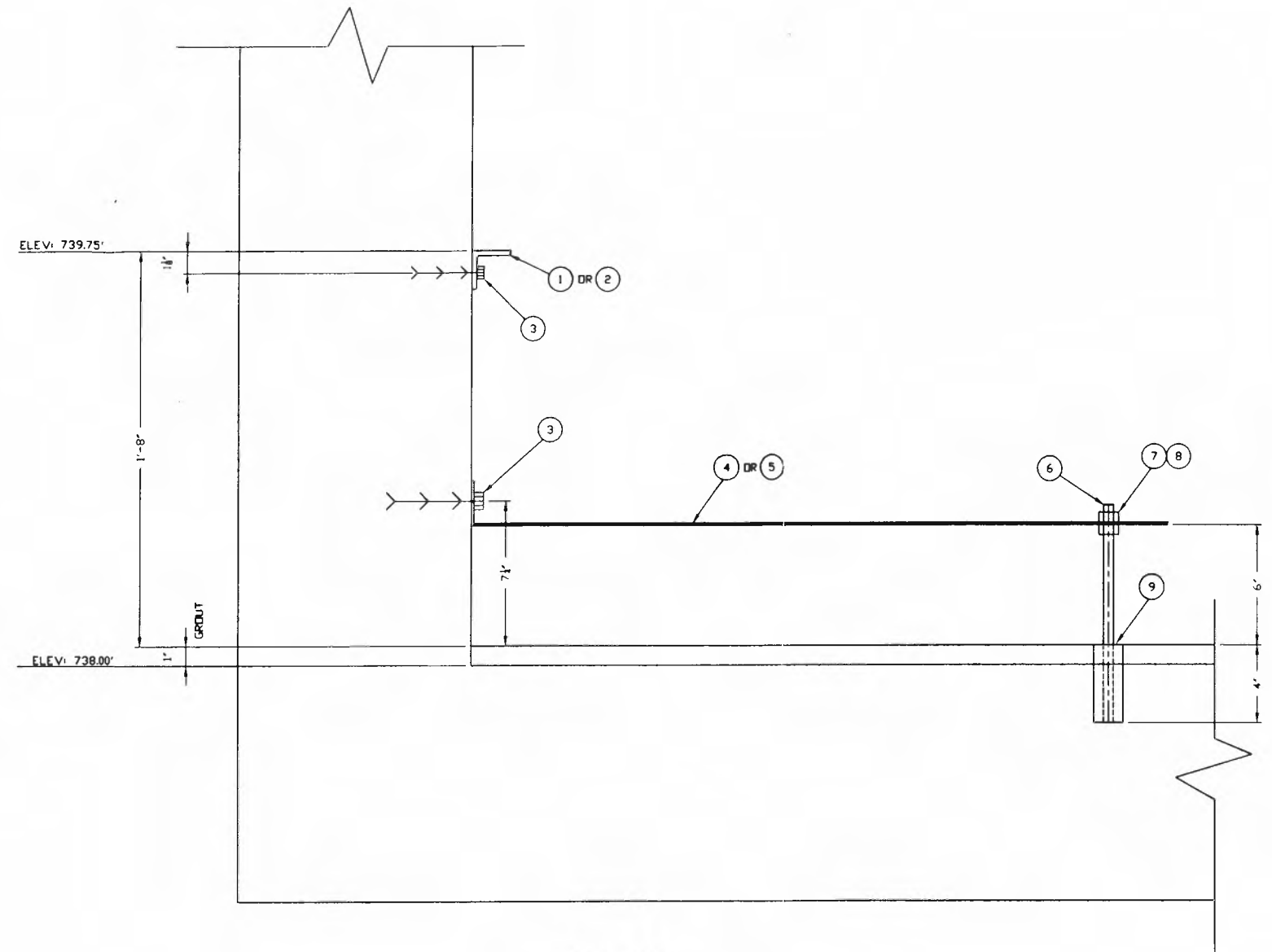
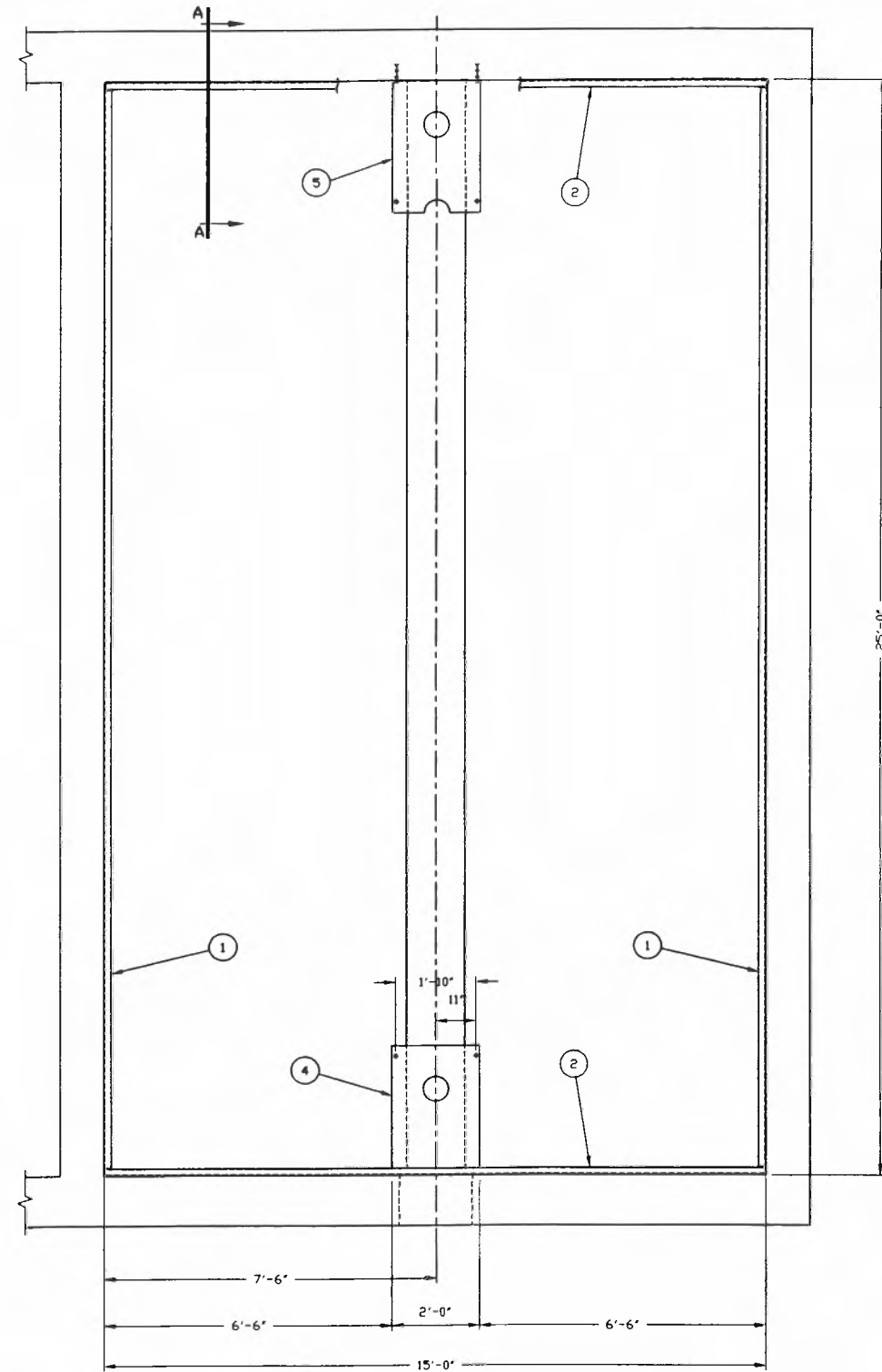


ELEVATION VIEW

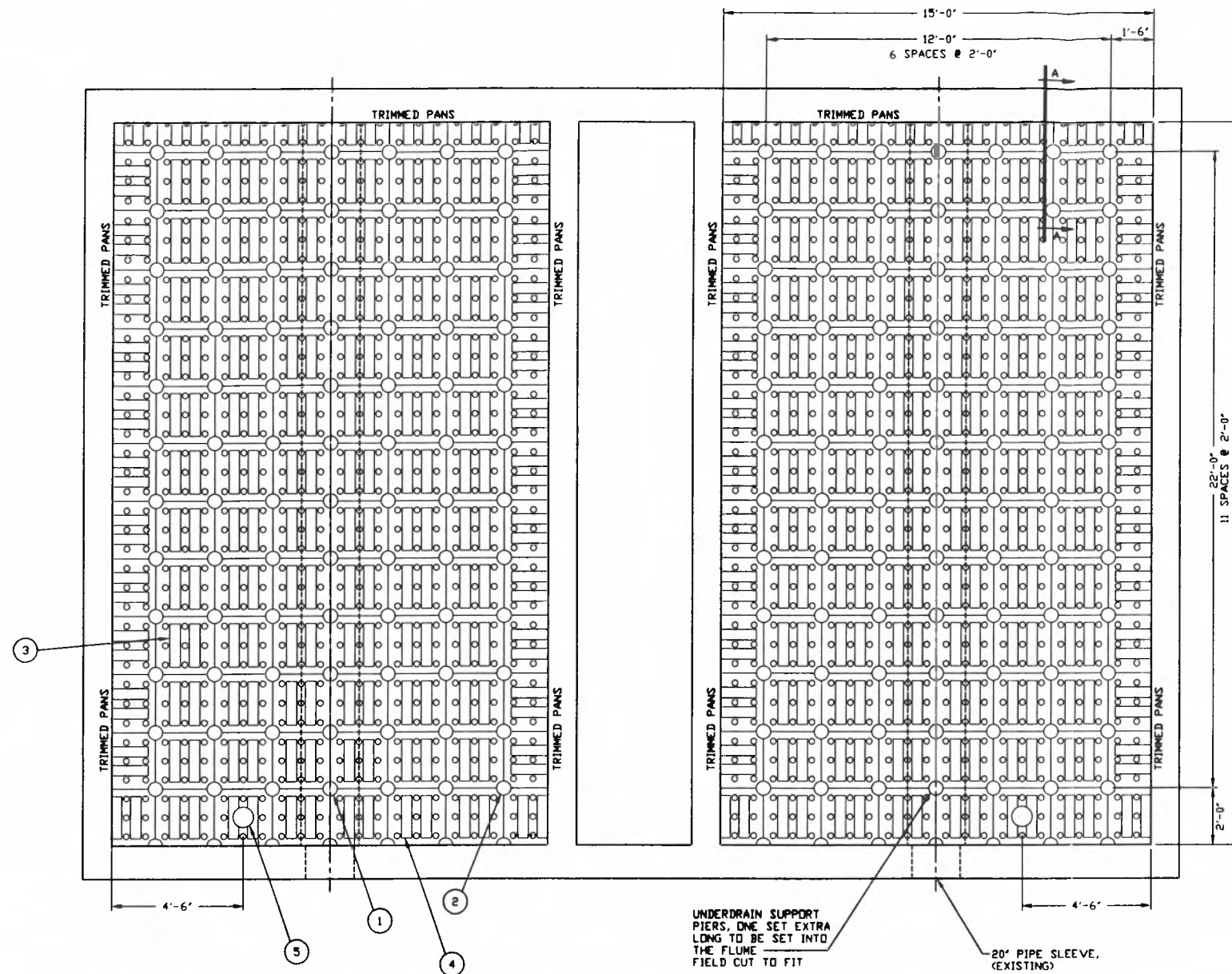


END VIEW

JOB NAME: AMI ARBOR, NE				DIBOR NO: 988179			
CUSTOMER: VECO ELECTRIC COMPANY				CUST. NO: 988179-000			
ENGINEER: HOWARD, PORTER & SHELLEY				SPEC. RECD:			
①	REMOVE COUPLING & CHANGE ELBOV TO LONG RADIUS	BY: BNC	CHKD: JBS	DATE: 4-7-98			
②	ADD COUPLING, ITEM 04	BY: BNC	CHKD: JBS	DATE: 9-30-98			
NO. REVISION DESCRIPTION				BY:	CHKD:	APP'D:	DATE:
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RELEASE FOR FABRICATION SCALE: 1/4" = 1'-0"				RELEASE FOR STANDARD			
BY: BNC	DATE: 12-15-97	CHECKED FROM: BNC	BY: BNC	DATE:			
CHKD:	DATE:	APP'D:	DATE:				
U.S. FILTER WPC AMES, IOWA				GRAVITY FILTER CELLS 15'-0" X 25'-0" UNDERDRAIN LAYOUT			
SIZE: D				DRAWING NUMBER: 98817196		REV: 2	

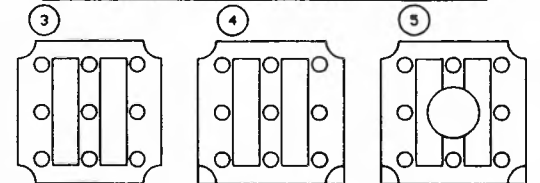


JOB NAME: ANN ARBOR, MI				ORDER NO. 988179			
CUSTOMER: WEBB ELECTRIC COMPANY				CUST. NO. 988102-000			
ENGINEER: MCNAMEE, PORTER & BEELEY				SPEC. RECD.			
①							
②							
③							
④	ADD FLUME BAFFLES						4-1-98
⑤	REVISION DESCRIPTION	BY:	CHK'D	APP'D		DATE:	
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RELEASE FOR FABRICATION		SCALE: 1/4" = 1'-0"		RELEASE FOR STANDARD			
BY: BNC	DATE: 12-19-97	COPIES FROM	BY:	DATE:			
CHKD:	DATE:	DRAWING	CHKD:	DATE:			
APP'D: JLP	DATE: 3-5-98		APP'D:	DATE:			
U.S. FILTER W.P.C. AMES, IOWA				PERIMETER SUPPORTS AND FLUME BAFFLES FOR 15'-0" X 25'-0" CELLS			
SIZE		DRAWING NUMBER		REV.			
D		98817197		1			



UNDERDRAIN PAN FORM LAYOUT
THREE SIDES OF THE FILTERS WILL
REQUIRED TRIMMED PANS

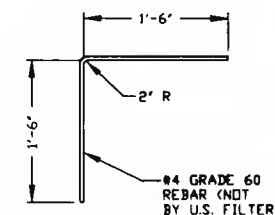
MULTICRETE II UNDERDRAIN PAN FORMS



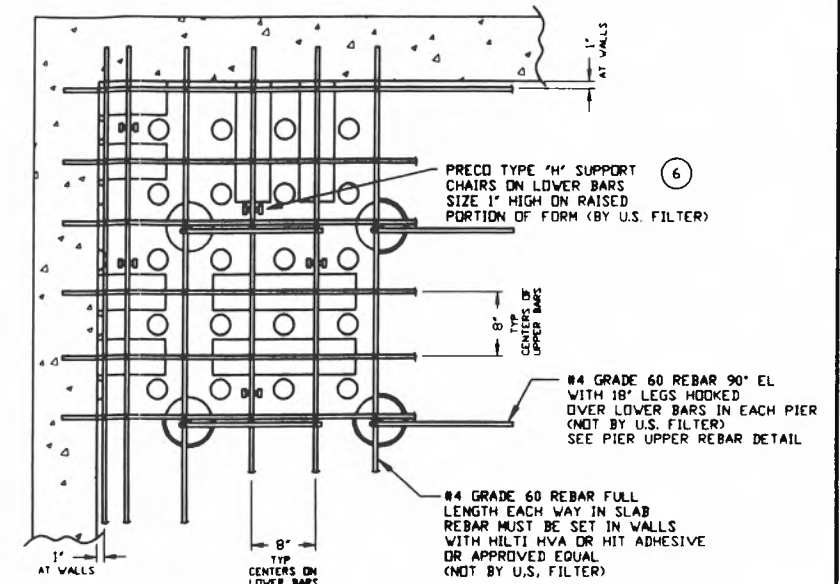
STANDARD PANEL 36 REQ'D/CELL
2304 REQ'D TOTAL

SIDE PANEL 7 REQ'D/CELL
168 REQ'D TOTAL

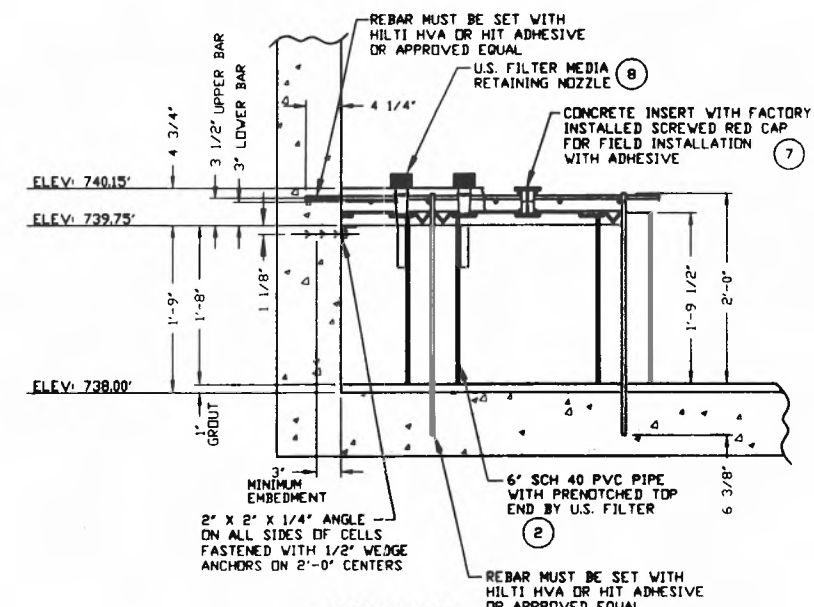
SIDE PANEL W/ SOCKET 1 REQ'D/CELL
24 REQ'D TOTAL



PIER UPPER REBAR DETAIL
SCALE: 1' = 1'-0"



UNDERDRAIN INSTALLATION PLAN
SCALE: 1' = 1'-0"



SECTION A-A
SCALE: 1' = 1'-0"

NOTES:

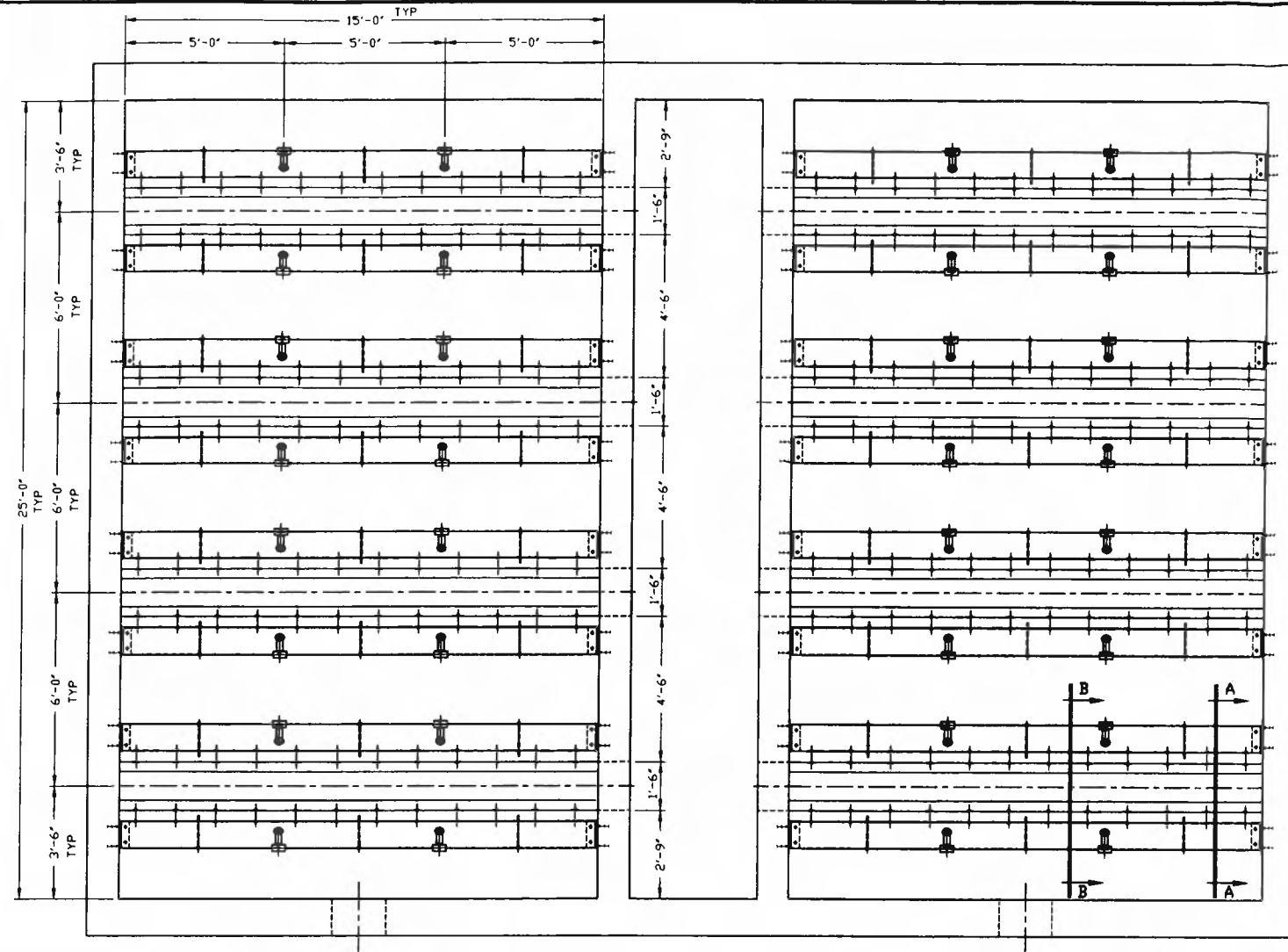
1. TWO FILTER CELLS SHOWN, 24 REQUIRED TOTAL.
2. SEE DRAWING 98817103 FOR STRAINER INSTALLATION.
3. FIELD TRIMMING OF THE STANDARD PANELS IS REQUIRED ON THREE SIDES OF EACH FILTER CELL.

JOB NAME: AMI ARBOR, MI		ORDER NO: 9881719	
CLIENT: VECO ELECTRIC COMPANY		CUST. NO: 2005102-000	
ENGINEER: NORMAN, PORTER & BEELEY		SPEC. NO:	
REV. 1		REV. 2	
REV. 3		REV. 4	
REV. 5		REV. 6	
REV. 7		REV. 8	
REV. 9		REV. 10	
REV. 11		REV. 12	
REV. 13		REV. 14	
REV. 15		REV. 16	
REV. 17		REV. 18	
REV. 19		REV. 20	
REV. 21		REV. 22	
REV. 23		REV. 24	
REV. 25		REV. 26	
REV. 27		REV. 28	
REV. 29		REV. 30	
REV. 31		REV. 32	
REV. 33		REV. 34	
REV. 35		REV. 36	
REV. 37		REV. 38	
REV. 39		REV. 40	
REV. 41		REV. 42	
REV. 43		REV. 44	
REV. 45		REV. 46	
REV. 47		REV. 48	
REV. 49		REV. 50	
REV. 51		REV. 52	
REV. 53		REV. 54	
REV. 55		REV. 56	
REV. 57		REV. 58	
REV. 59		REV. 60	
REV. 61		REV. 62	
REV. 63		REV. 64	
REV. 65		REV. 66	
REV. 67		REV. 68	
REV. 69		REV. 70	
REV. 71		REV. 72	
REV. 73		REV. 74	
REV. 75		REV. 76	
REV. 77		REV. 78	
REV. 79		REV. 80	
REV. 81		REV. 82	
REV. 83		REV. 84	
REV. 85		REV. 86	
REV. 87		REV. 88	
REV. 89		REV. 90	
REV. 91		REV. 92	
REV. 93		REV. 94	
REV. 95		REV. 96	
REV. 97		REV. 98	
REV. 99		REV. 100	

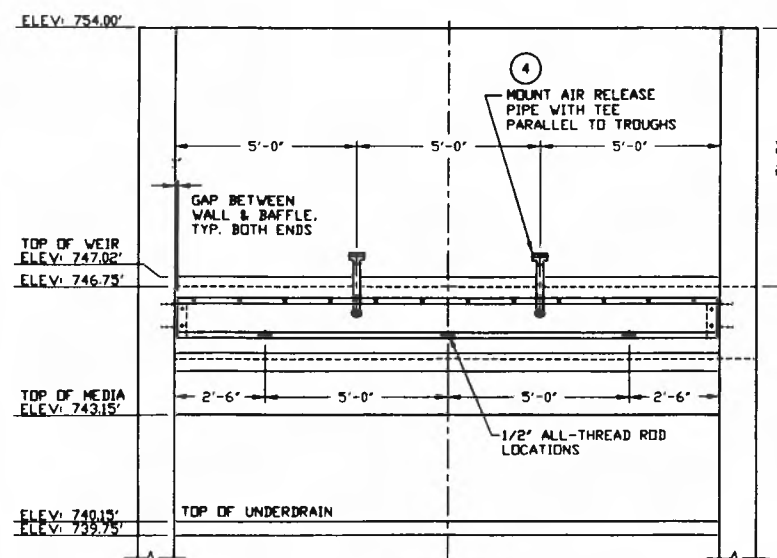
U.S. FILTER
WPA
AMES, IOWA

MULTICRETE II
UNDERDRAIN LAYOUT
15'-0" X 25'-0" CELLS

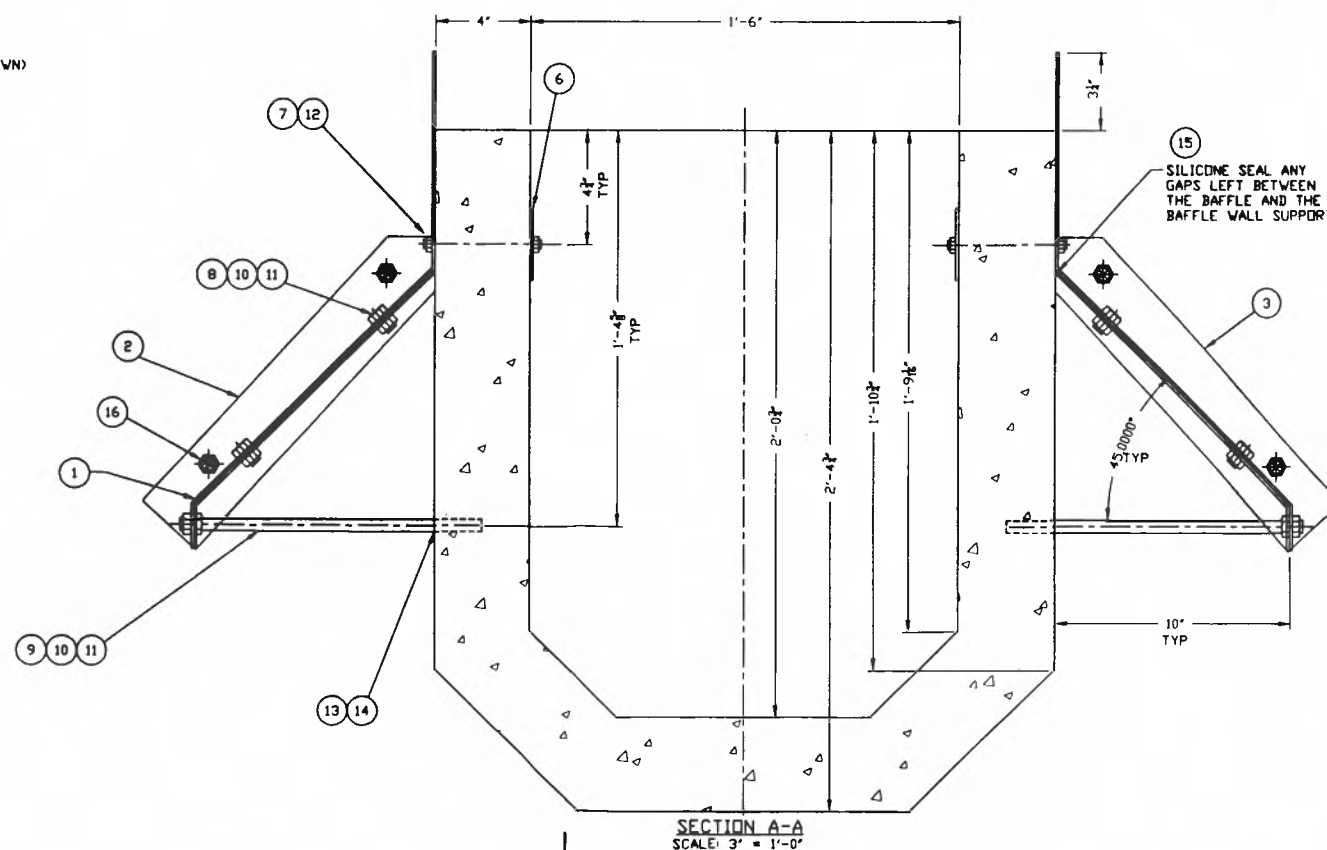
SIZE: D
DRAWING NUMBER: 98817198
REV: 1



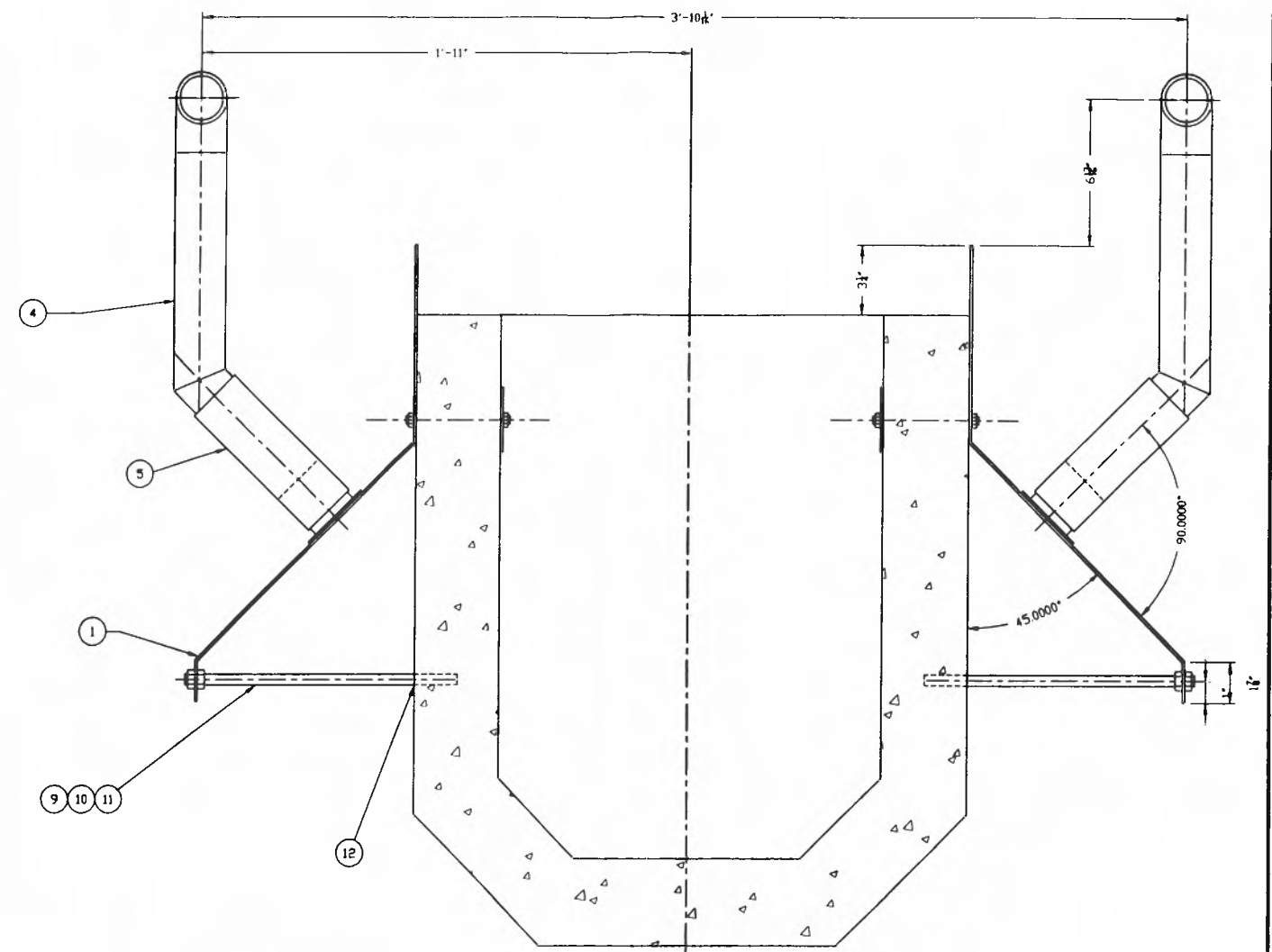
PLAN VIEW
(WALL OVERHANGS NOT SHOWN)



END VIEW



SECTION A-A
SCALE: 3' = 1'-0"

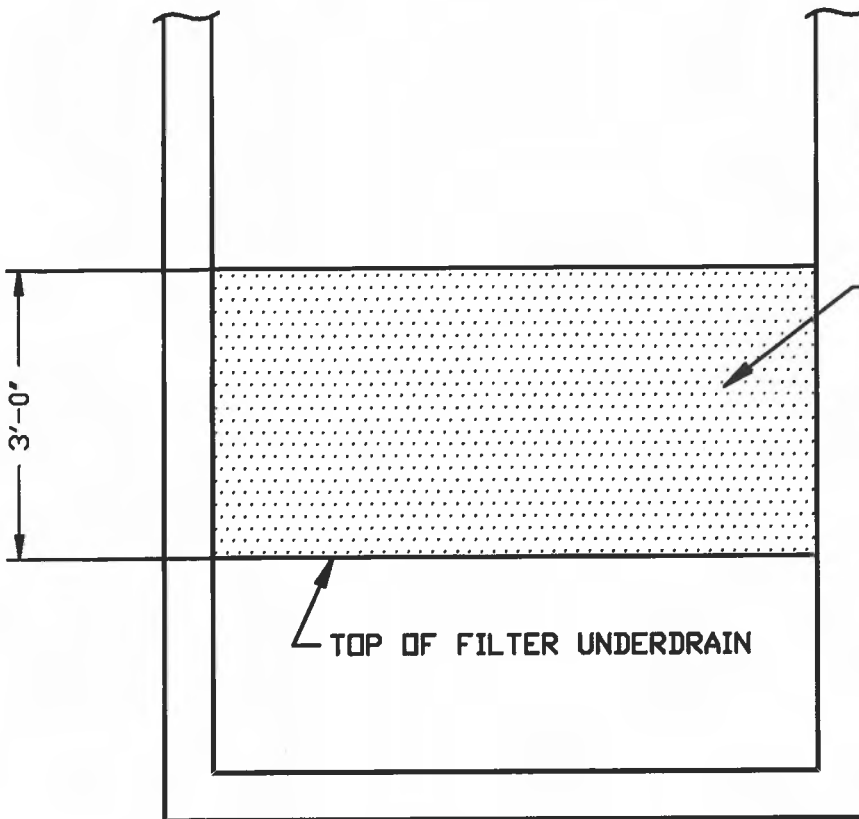


SECTION B-B
SCALE: 3' = 1'-0"

NOTES:

1. TWO CELLS ARE SHOWN IN THE PLAN VIEW, 24 CELLS REQUIRED TOTAL.
2. 96 TOTAL SETS OF BAFFLES ARE REQUIRED.
3. SEE DRAWING 98817801 FOR MEDIA INFORMATION.

JOB NAME: AMES, IOWA		ORDER NO. 988179	
CUSTOMER: WEBB ELECTRIC COMPANY		CUST. NO. 3885100-000	
ENGINEER: NORMAN, PORTER & BEELEY		SPEC. REVISION	
1	REVISE BAFFLES TO INCLUDE WEIRS	BY: JHS	DATE: 3-28-98
2		BY: CHB	DATE:
3		BY: APP'D	DATE:
RELEASE FOR FABRICATION SCALE: 3/4" = 1'-0"		RELEASE FOR STANDARD	
BY: JHS	DATE: 12-08-97	CHECKED: JHS	DATE:
APP'D: JHS	DATE: 7-17-98	BY: CHB	DATE:
APP'D: JHS	DATE: 3-23-98	BY: APP'D	DATE:
U.S. FILTER AMES, IOWA		WASHTROUGH BAFFLE INSTALLATION ON EXISTING WASHTROUGHS	
SIZE: D	DRAWING NUMBER: 98817199	REV. 1	



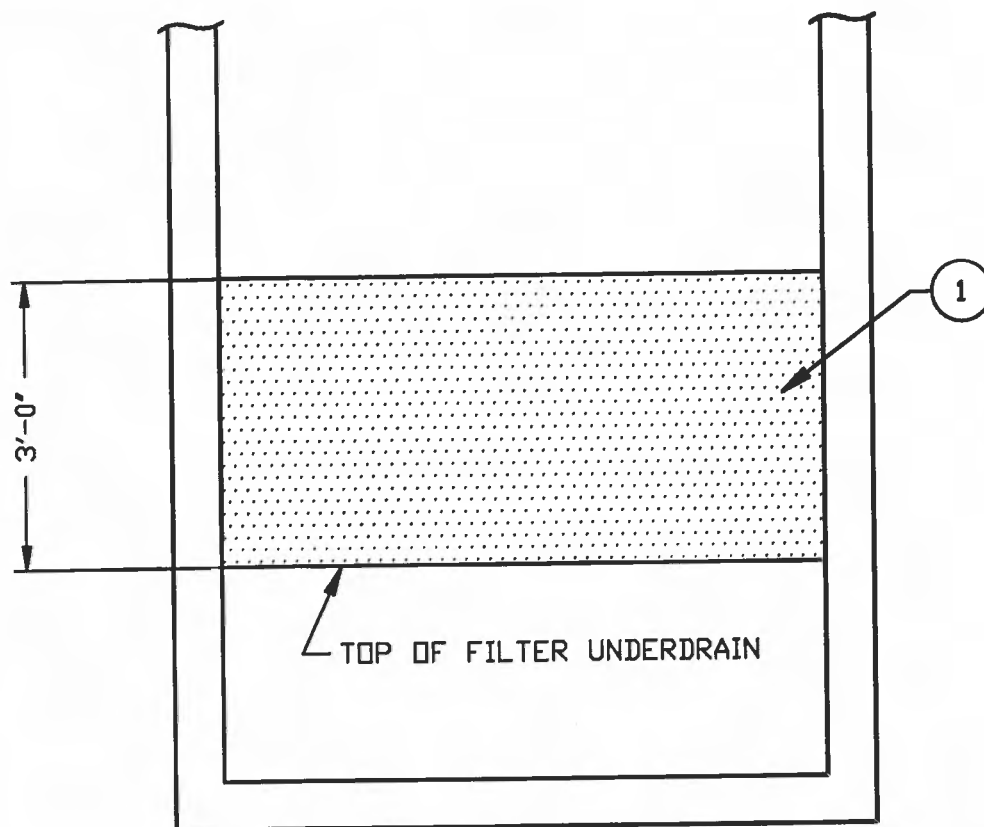
36" OF FILTER SAND,
1.35 - 1.65 mm
EFFECTIVE SIZE,
1.6 UNIFORMITY COEFFICIENT
(APPROX. 28,368 CU. FT.)

TOP OF FILTER UNDERDRAIN

NOTES:

1. MEDIA WILL BE PROVIDED FOR THE SIZE AND NUMBER OF FILTER UNITS SOLD TO MEET THE NOMINAL DEPTH INDICATED. (24 CELLS THAT ARE 15'-0" X 25'-0").
2. MEDIA WILL BE SHIPPED IN SUPER SACKS.
3. 5% EXCESS WILL BE PROVIDED FOR SKIMMING.

JOB NAME: ANN ARBOR, MI				ORDER NO: 988170				
CUSTOMER: WEBB ELECTRIC COMPANY				CUST. NO: 3885102-000				
ENGINEER: McNAMEE, PORTER & SEELEY				SPEC SECT:				
④								
③								
②								
①								
NO.	REVISION DESCRIPTION			BY:	CHK'D:	APPR'D:	DATE:	
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RELEASE FOR FABRICATION		SCALE: N.T.S. (16)		RELEASE FOR STANDARD				
BY: DKC	DATE: 12-16-97	COPIED FROM DRAWING A0002151	BY:	DATE:				
CHK: TAD	DATE: 12-29-97		CHK:	DATE:				
APP:	DATE:		APP:	DATE:				
<div style="text-align: center;"> U.S. FILTER WPC AMES, IOWA </div>				FILTER MEDIA LOADING SCHEDULE SINGLE MEDIA				
				SIZE	DRAWING NUMBER		REV.	
				A	98817801		0	



NOTES:

1. MEDIA WILL BE PROVIDED FOR THE SIZE AND NUMBER OF FILTER UNITS SOLD TO MEET THE NOMINAL DEPTH INDICATED. (24 CELLS THAT ARE 15'-0" X 25'-0").
2. MEDIA WILL BE SHIPPED IN SUPER SACKS.
3. 5% EXCESS WILL BE PROVIDED FOR SKIMMING.

JOB NAME: ANN ARBOR, MI	ORDER NO: 988170
CUSTOMER: WEBB ELECTRIC COMPANY	CUST. NO: 3885102-000
ENGINEER: McNAMEE, PORTER & SEELEY	SPEC SECT:

④					
③					
②					
①					
NO.	REVISION DESCRIPTION	BY:	CHK'D:	APPR'D:	DATE:

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RELEASE FOR FABRICATION		SCALE: N.T.S. (6)	RELEASE FOR STANDARD		FILTER MEDIA LOADING SCHEDULE SINGLE MEDIA		
BY: DKC	DATE: 12-19-97	COPIED FROM DRAWING	BY:	DATE:			
CHK: JHS	DATE: 1-12-98		CHK:	DATE:			
APP: TAD	DATE: 1-23-98		APP:	DATE:			
<div><div>U.S. FILTER</div><div>WPC</div><div>AMES, IOWA</div></div>					SIZE	DRAWING NUMBER	REV.
					A	98817899	0