



## HAMILTON COUNTY PUBLIC HEALTH

PREVENT. PROMOTE. PROTECT.

March 11, 2019

Timothy Ingram, Health Commissioner

250 William Howard Taft Road

Cincinnati, OH 45219

Phone: 513.946.7800 Fax: 513.946.7890

hcph.org

Dear Property Owner,

Hamilton County Public Health (HCPH) recently pre-approved you at 50% grant funding through the Water Pollution Control Loan Fund (WPCLF) to help in the sewage treatment system (STS) replacement project at your primary residence. The WPCLF requires at least three quotes be submitted to Hamilton County Public Health for each eligible project. HCPH recently reviewed and approved the STS replacement plan for your property at 6820 Hillside. Attached you will find a copy of the approved plan which you will need to use in order to solicit quotes on behalf of HCPH.

Using the attached forms, sample contract, approved STS design plan for your property and the guidance provided in this letter, you will need to contact registered STS installers individually for quotes. Attached is a list of registered STS installers you may contact. Any contractors interested in your project must be given a copy of this letter with all attachments. Interested contractors will need to provide a quote for the total cost for all work needed to install the approved STS using the form provided. This will include all items specified on the approved STS design plan, any needed connection of plumbing into the building sewer, disconnection and re-routing of any clear water from the plumbing system or STS, any needed electrical service upgrade if required to accommodate the replacement STS components, any other eligible and justified items, finished grading, seed and straw, and proper abandonment of the existing STS components.

To keep the process moving forward at least three quotes must be obtained by you on behalf of HCPH. All quotes must be collected by you and submitted at one time to HCPH by 05/17/2019. Keep in mind that returning all quotes sooner will be better to help your chances of receiving the WPCLF funding. Quotes will be reviewed by a team of individuals at HCPH. The contract will be awarded to the qualified applicant based on the lowest and best bid and will be dependent upon bidder's availability to complete the requested work in a timely fashion. Awarded contracts are strictly between HCPH and the selected contractor. Any attempt to enter into separate contract, addendum, modification, invoice or other contractual agreement, except for the property owner's matching percentage to be paid directly by the owner to the contractor, without prior approval by HCPH may disqualify the bidder.

If selected to complete the STS installation, the contractor will be contacted directly by HCPH. At that time, they will be required to sign a site specific version of the attached contract and submit all required contract paperwork to HCPH. Once verified, a Notice-to-Proceed will be issued to the contractor by HCPH allowing the selected contractor to begin the installation. All work required must be completed (including final inspection) by October 31, 2019 and following receipt of the Notice-to-Proceed.

It should be noted that any unexpected changes and/or alterations needed during the performance of work, requires a Contract Change Order (see Contract - Attachment B). Payment for any changed or extra services will not occur without pre-approval using this method. Also note that the contract has special insurance and bid bonding/financial guarantee requirements that must be followed.



Healthy choices. Healthy lives. Healthy communities.



PREVENT. PROMOTE. PROTECT.

For the WPCLF portion of the payment to occur, HCPH must approve the final STS installation. After which, the contractor must submit to HCPH an invoice, by November 1, 2019, to document the incurred costs for the repair/replacement along with an approval certificate issued by HCPH. Upon verification of this information, HCPH will send a request to Ohio EPA for reimbursement of the eligible system repair/replacement costs. After confirmation by Ohio EPA, the Ohio Water Development Authority will distribute the funding to HCPH, who will then pay the contractor the approved amount. Any portion of the approved bid amount not covered by the WPCLF must be paid directly by the property owner to the contractor.

At this time, if you would like to remain eligible for the WPCLF, you must solicit quotes, on behalf of HCPH, for your STS replacement project. When submitting each quote to you, the contractor must include a completed, signed and dated copy of the following attachments:

- i Hamilton County Bid Proposal Form
- i Contractor Equal Employment Opportunity (EEO) Certification Form
- i Certification Regarding Debarment, Suspension, and Other Responsibility Matters Form
- i American Iron and Steel (AIS) Form

At least three quotes must be collected by you, then be submitted together to HCPH with the items listed above, on or before May 17, 2019 to:

Hamilton County Public Health  
Attn: Chris Griffith  
250 William Howard Taft  
Cincinnati, OH 45219

If you have any questions concerning this program, please feel free to contact me directly at 946-7866.

Sincerely,

A handwritten signature in black ink, appearing to read "CMS/RS", written over a horizontal line.

Christopher M. Griffith, RS  
Director of Water Quality

## Hamilton County Bid Proposal Form

Contractor Name: \_\_\_\_\_

Contractor Address: \_\_\_\_\_

Contractor Phone(s): \_\_\_\_\_

Project Address: \_\_\_\_\_

Bid Due Date: \_\_\_\_\_

Total Amount of Bid: \_\_\_\_\_

Total Amount in Written Words: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_  
Signature, Printed Name, Contractor

\_\_\_\_\_  
Date

I will begin the work within upon receipt of the written Design Contract and Notice to Proceed Order, and will complete the work within 45 days, unless otherwise agreed to by Hamilton County Public Health.

The above total price includes all materials, labor and other costs such as overhead, permits, sales tax and profit. This bid is valid for a period of 30 days after the date this proposal is received by Hamilton County Public Health.

Mail Bid Packet to: Hamilton County Public Health

Attn: Chris Griffith

250 William Howard Taft

Cincinnati, OH 45219

## Contractor Equal Employment Opportunity Certification

During the performance of this contract, the undersigned agrees as follows:

1. The undersigned will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The undersigned will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The undersigned agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this equal opportunity (federally assisted construction) clause.
2. The undersigned will, in all solicitations or advertisements for employees placed by or on behalf of the undersigned, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex or national origin.
3. The undersigned will send to each labor union or representative of workers, with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representative of the undersigned's commitment under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
4. The undersigned will comply with all provisions of Executive Order No. 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
5. The undersigned will furnish all information and reports required by Executive Order No. 11246 of September 24, 1965, and by the rules, regulations, and relevant orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records and accounts by the administering agency of the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
6. In the event of the undersigned's non compliance with the equal opportunity (federally assisted construction) clause of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated or suspended in whole or in part, and the undersigned may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order No. 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order No 11246 of September 24, 1965, or by rules, regulations, or order of the Secretary of Labor, or as provided by law.
7. The undersigned will include this equal opportunity (federally assisted construction) clause in every subcontract or purchase order unless exempted by the rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order No 11246 of September 24, 1965, so that such provision will be binding upon each subcontract or vendor. The undersigned will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for non-compliance: Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor, as a result of such direction by the administering agency the undersigned may request the United States to enter into such litigation to protect the interest of the United States.

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(Signature)

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(Date)

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(Name and Title of Signer, Please type)

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(Firm Name)

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

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

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

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

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Type Name & Title of Authorized Representative

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Signature of Authorized Representative

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Date

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

Certification Regarding Debarment, Suspension, and Other Responsibility Matters  
INSTRUCTIONS

Under Executive Order 12549 an individual or organization debarred or excluded from participation in Federal assistance or benefit programs may not receive any assistance award under a Federal program or a subagreement thereunder for \$25,000 or more.

Accordingly, each prospective recipient of an EPA grant, loan, or cooperative agreement and any contract or subagreement participant thereunder must complete the attached certification provide an explanation why they cannot. For further details, see 40 CFR 32.510, Participants' responsibilities, in the attached regulation.

Go to <https://www.sam.gov/portal/SAM/##11> to access the Excluded Parties List System (EPLS). The EPLS includes information regarding entities debarred, suspended, proposed for debarment, excluded or disqualified under the nonprocurement common rule, or otherwise declared ineligible from receiving Federal contracts, certain subcontracts, and certain Federal assistance and benefits. This information may include names, addresses, DUNS numbers, Social Security Numbers, Employer Identification Numbers or other Taxpayer Identification Numbers, if available and deemed appropriate and permissible to publish by the agency taking the action.

Where To Submit

The prospective EPA grant, loan, or cooperative agreement recipient must return the signed certification or explanation with its application to the appropriate EPA Headquarters, Regional office, or Ohio EPA, as required in the applications.

A prospective prime contractor must submit a complete certification or explanation to the individual or organization awarding the contract.

Each prospective subcontractor must submit a complete certification or explanation to the prime contractor for the project.

Applicants may reproduce these materials as needed and provide them to their prospective prime contractor, who, in turn, may reproduce and provide them to prospective subcontractors.

Additional copies / assistance may be requested from:

Ohio EPA

Division of Environmental and Financial Assistance

P.O. Box 1049

Columbus, Ohio

43216 1049 (614)

644 2798

<http://epa.ohio.gov/defa/EnvironmentalandFinancialAssistance.aspx>

## American Iron and Steel Acknowledgement

The Contractor acknowledges to and for the benefit of \_\_\_\_\_  
("Purchaser") and the State of Ohio (the "State") that it understands the goods and services under this Agreement are being funded with monies made available by the Clean Water State Revolving Fund and/or Drinking Water State Revolving Fund that have statutory requirements commonly known as "American Iron and Steel;" that requires all of the iron and steel products used in the project to be produced in the United States ("American Iron and Steel Requirement") including iron and steel products provided by the Contractor pursuant to this Agreement. The Contractor hereby represents and warrants to and for the benefit of the Purchaser and the State that (a) the Contractor has reviewed and understands the American Iron and Steel Requirement, (b) all of the iron and steel products used in the project will be and/or have been produced in the United States in a manner that complies with the American Iron and Steel Requirement, unless a waiver of the requirement is approved, and (c) the Contractor will provide any further verified information, certification or assurance of compliance with this paragraph, or information necessary to support a waiver of the American Iron and Steel Requirement, as may be requested by the Purchaser or the State. Notwithstanding any other provision of this Agreement, any failure to comply with this paragraph by the Contractor shall permit the Purchaser or State to recover as damages against the Contractor any loss, expense, or cost (including without limitation attorney's fees) incurred by the Purchaser or State resulting from any such failure (including without limitation any impairment or loss of funding, whether in whole or in part, from the State or any damages owed to the State by the Purchaser). While the Contractor has no direct contractual privity with the State, as a lender to the Purchaser for the funding of its project, the Purchaser and the Contractor agree that the State is a third-party beneficiary and neither this paragraph (nor any other provision of this Agreement necessary to give this paragraph force or effect) shall be amended or waived without the prior written consent of the State.

Signature\_\_\_\_\_

Date\_\_\_\_\_

Name and Title of Authorized Signatory, Please Print or Type\_\_\_\_\_

Bidder's Firm\_\_\_\_\_

☐

Check here if the WPCLF or WSRLA applicant will be requesting an individual waiver for non-American made iron and steel products. Please note that the waiver box does not need to be marked for nationwide waivers.

CONSTRUCTION CONTRACT  
HAMILTON COUNTY PUBLIC HEALTH  
With Herrmann Services  
For the Property at xxxxx Road  
Dated xx xx, 2019

PROJECT: HOUSEHOLD SEWAGE TREATMENT SYSTEM REPAIR/REPLACEMENT PROJECT

This CONTRACT, made and entered into at HAMILTON COUNTY, Ohio, on xxxx xx, 2019 by the HAMILTON COUNTY PUBLIC HEALTH, hereinafter referred to as "HCPH"); and xxxxxxxx (hereinafter referred to as "CONTRACTOR").

WITNESSETH, the HCPH and the CONTRACTOR hereby agree as follows:

1. CONTRACT DOCUMENTS

The Contract consists of this document, the Contractor's Bond, the Contractor's Bid, the Design Drawings, the Design Specifications, all Addenda issued prior to execution of this Contract, the Notice To Proceed (Attachment A), all Change Orders (Attachment B) issued subsequent thereto and Federal, State, and/or Local Regulations; and when specified: Labor and Material Bond, Affirmative Action and Equal Opportunity Requirements, Contractor Equal Employment Opportunity Certification Form (Attachment C), Certification Regarding Debarment, Suspension and Other Responsibility Matters Form (Attachment D), and American Iron and Steel Acknowledgement Form (Attachment E).

2. CONTRACT REGULATIONS

Terms and conditions of this Contract shall be governed by the provisions of Chapters 153 and 4115 and Section 149.53 of the Ohio Revised Code, and all applicable local, State and Federal Ordinances, Statutes and Regulations.

The CONTRACTOR agrees not to discriminate against any employee or applicant for employment because of race, creed, sex, handicap, or color, including, but not limited to the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation and selection for training, including apprenticeship. All records, manuals, forms, drawings, schedules, lists, surveys, specifications, designs, and other data pertaining to the work specified in this contract are and shall remain the sole property of the HCPH. The use of any Subcontractor must be reported to the HCPH and they shall be bound by the same requirements as the CONTRACTOR.



3. BONDING

A bond or other form of financial guarantee shall be submitted by the CONTRACTOR in accordance with Sections 153.54/307.89 of the Ohio Revised Code and Section 3.4 of the Water Pollution Control Loan Agreement for the full amount of the Contractor's Bid.

4. THE WORK

The CONTRACTOR shall perform and complete all work of the Project required by the Contract Documents for xxxxxx Road, supplying all the labor, materials, supervision, tools and equipment necessary and required for the proper abandonment of the existing sewage treatment system (tanks and drywells, if present) and replacement of the sewage treatment system in accordance with the Installation Permit, Design, Project and Contract Documents; shall proceed in a prompt and diligent manner, and shall do the several parts thereof at such times and in such order as the HCPH may direct, and shall execute, construct, finish, and test when required, the Project in an expeditious, substantial and workmanlike manner to the satisfaction of HCPH, and to the final acceptance of the Project by HCPH.

5. TIME OF COMMENCEMENT AND COMPLETION

The CONTRACTOR shall commence work upon receipt of the written Notice To Proceed (Attachment A) issued by HCPH. The CONTRACTOR shall complete the Project work by October 31, 2019 and following the Notice To Proceed.

6. RIGHTS OF ACCESS

The signatories agree to ensure that the Director or its duly authorized agents shall have the right at all reasonable times to enter upon the Project Site(s) and Project Facilities, and to examine and inspect the same and to exercise the Director's rights pursuant to the WPCLF Assistance Agreement.

7. CONTRACT CONFLICTS

In the event of a conflict between the contract and the WPCLF Assistance Agreement, the provisions of the WPCLF Agreement shall prevail.

8. CONTRACT SUM

Hamilton County Public Health, utilizing OHIO EPA funding, shall pay the CONTRACTOR for the performance of the Work, up to the sum of \$xx,xxx.xx (xx% of eligible costs paid by HCPH with \$x,xxx.xx - xx%

covered by the property owner) subject to additions and deductions by Change Orders (Attachment B) properly approved and executed. All properly approved and executed Change Orders for increases will be paid by HCPH, utilizing OHIO EPA funding, and/or homeowner contribution. Neither HCPH nor OHIO EPA will be responsible for additional reinspection fees.

9. PAYMENTS

Based upon Applications for Payment submitted to the HCPH by the CONTRACTOR, and after installation approval by HCPH, the contractor shall submit an invoice that documents costs all incurred to HCPH. The invoice shall detail the services rendered, including charge rates, number of hours, materials or supplies consumed, and other information needed to support the invoice to HCPH. Upon verification of this information, HCPH will send a request to Ohio EPA for reimbursement of the eligible costs. After confirmation by Ohio EPA, the Ohio Water Development Authority will distribute the funding to HCPH, who will then pay the Contract Sum to the CONTRACTOR as provided in Chapter 153 of the Ohio Revised Code and after payment is received from the Ohio EPA.

10. NEGLECT, DEFAULT, DELAY, ETC.

Hamilton County Public Health or Hamilton County Board of Health shall not be liable to the CONTRACTOR for any neglect, default, delay, or interference of or by another contractor, nor shall any such neglect, default, delay, or interference of or by another contractor, or alteration which may be required in said Work within the time aforesaid, or from the damage to be paid in default thereof. The CONTRACTOR shall pay HCPH \$200.00 for each and every calendar day of completion the Project is delayed beyond the date fixed for completion in Section 3 herein.

11. INSURANCE

The Insurance Specifications for Contractors and their subcontractors are as follows:

- A. All insurance required herein shall be issued by companies licensed to do business in Ohio, and which are rated not less than A: VII by A. M. Best.
- B. Commercial General Liability insurance with commercial general liability form GC 00 01 or its equivalent, with limits of at least \$1,000,000 per occurrence and \$1,000,000 in the aggregate covering death, bodily injury, and property damage. Coverage must include premise and

operations, contractual liability, third party property damage, severability of interest, completed operations coverage, maintained for at least three years beyond the date of the contractor's completion of the work, waiver of subrogation, and waiver of "cross claim exclusion between insured's".

- C. Business auto liability insurance of at least \$1,000,000 combined single limit, on all owned and non-owned leased and hired automobiles.
- D. Umbrella and excess liability policies of at least \$1,000,000, per occurrence and in the aggregate, above the underlying General Liability and business auto policies. Coverage must include drop down features, concurrency of effective dates; aggregates in the primary apply in the Umbrella, waiver of subrogation.
- E. The Commercial General Liability and business auto policies must endorse the Board of Health of Hamilton County, Ohio, their employees, officials, agents and volunteers as additional insureds. Further these policies must waive subrogation claims against the aforesaid individuals.
- F. Owner shall require its contractors and subcontractors to provide Workers' Compensation Insurance coverage at the statutory limits required by the Ohio Revised Code. The Contractor shall provide Workers Compensation Insurance for all employees engaged in Work who may come within the protection of the workers compensation law, and, where applicable, employer's General Liability Insurances for employees not so protected and shall require all Subcontractors to provide corresponding insurance. The Contractor shall indemnify the Owner, Hamilton County Board of Health, their employees, officials, agents and volunteers and the Consulting Engineer against any and all liabilities, cost and expenses due to accidents or other occurrences covered by the workers compensation law.
- G. Each policy required herein may not be canceled or materially changed except upon thirty days prior written notice given to: Hamilton County Public Health, 250 William Howard Taft, Cincinnati, Ohio 45219.

H. Maintenance of the insurance required hereunder is a material element of this Agreement. Material changes of the required coverage or cancellation of the coverage in violation of subsection G, above, is a material breach of this Agreement.

I. Builders Risk: In addition to such fire and other physical damage insurances as the Contractors elects to carry for his own protection, he shall also secure and maintain in the name of the Owner, the government agency sponsoring the Project, Subcontractors, the Consulting Engineer and any other parties having an interest in the Project, as named insured as their interest may appear; a builders' risk policy for fire, extended coverage, vandalism and malicious mischief in the amount of one hundred (100) percent of the value of the complete parts of the Project and Materials in storage, except that such coverage shall not be required in connection with sewer, water main or paving construction. Pump or lift station construction shall not be considered sewer or water main construction for purposes of this paragraph.

J. Contractor's Public Liability and Property Damage Liability Insurance:

Contractor's Public Liability Insurance providing a limit of not less than \$500,000 for all damages arising out of bodily injuries, including accidental death to one person, and a total limit of 1,000,000 for all damages arising out of bodily injuries, including accidental death, to two or more persons in any one occurrence. Contractor's Property Damage Liability Insurance providing for a limit on not less than \$500,000 for all damages to or destruction of property.

Coverage under this policy shall include, to the limits indicated above, the collapse or damage to any structure, building or its contents, public or private utility, or pavement during construction and for two (2) years thereafter.

Whenever Work under the Contract is to be done in the vicinity of existing underground utilities or structures, coverage under the policy shall also include, to the limits indicated, all damages to said underground utilities or structures during construction and for a period of two (2) years thereafter. Whenever Work under the Contract is to be done by blasting, coverage under the policy shall also include, to the limits indicated above, all damages of any kind whatsoever caused by blasting.

K. Contractor's Protective Public Liability and Property Damage Liability

Insurance: Contractor's Protective Public Liability and Property Damage Liability Insurance for operations performed by Subcontractors providing for coverage and limits corresponding to those described in subparagraph J.

L. Owner's (HCPH) Protective Public Liability and Property Damage Liability

Insurance: Regular Owner's Protective Public Liability and Property Damage Liability Insurance for operations performed by the Contractor or any Sub-contractor providing for coverage and limits corresponding to those specified elsewhere herein.

M. Railroad Protective Liability Insurance: In any of the Work under this Contract is on railroad R/W, the Contractor shall at its sole cost and expense, procure and provide, for and in behalf of each railroad company. Protective Liability Insurance (AARAASHO form) with minimum limits per occurrence of not less than \$2,000,000 for bodily injury, death and/or property damage, subject to an aggregate limit of \$6,000,000 per annum. The policy shall name each railroad company as the insured and be issued to the Contractor. Each railroad company shall be provided with a copy of each policy of insurance prior to commencement of any work.

#### Certificates of Insurance

The Contractor shall file a Certificate of Insurance for all coverage required in these Insurance Specifications on the ACORD 25 Form (preferred), and a copy of his current Worker's Compensation Certificate, with the Hamilton County Public Health before starting work on the project, and shall keep such Certificates current and on file with the County for the life of this Contract.

#### Indemnification Clause

The Contractor agrees to indemnify and save The Board of County Commissioners, Hamilton County Ohio, Hamilton County Board of Health, HCPH, their officials, officers, agents, and employees harmless from any and all losses, claims, actions, costs, expenses, judgments, subrogation's, or other damages resulting from injury to any person (including injury resulting in death), or damage (including loss or destruction) to property of whatsoever nature of any person, firm, or corporation arising out of the errors, omissions or negligent acts of the Contractor in the performance of the terms of this Contract by the Contractor, including but not limited to the Contractor's

employees, agents, subcontractors, sub-subcontractors, and others designated by the Contractor to perform work or services in, about, or attendant to, the work and services under the terms of this contract.

#### Notice To Proceed

The Contractor shall not commence work under this contract until he has obtained all the insurance required herein, has submitted appropriate Certificates of Insurance to and received approval of the County as evidenced by a Notice to Proceed (Attachment A).

#### Subcontractors

The Insurance Specifications apply equally to all subcontractors and sub-subcontractors at any tier during the period of their work on the project. The Prime Contractor shall be solely responsible for his subcontractor's liability if he permits the Sub to work on the project without the Sub having been issued a Notice to Proceed by the County.

#### 12. FAILURE TO COMPLY

If the CONTRACTOR shall fail to comply with any of the terms, conditions, provisions or stipulations of this Contract, HCPH may avail itself of any and all remedies provided in their behalf in the Contract, and shall have the right and power to proceed in accordance with the provisions thereof.

#### 13. RESOLUTION OF DISPUTES

In the event of a dispute covering additional costs, claims and any other matter arising out of or relating to this Contract, or the breach thereof, such disputes shall be decided by submission to a court of competent jurisdiction within one (1) year of the date upon which HCPH accepts and approves the project for use. The CONTRACTOR hereby waives any right to rely upon the statute of limitations for actions on contracts.

Failure to bring an action within one year of the above date shall constitute a bar to such action. If, however, within ten (10) days of the specific event giving rise to the disputed matter, the CONTRACTOR gives HCPH, by written notice, a request to submit the matter to arbitration, HCPH and the CONTRACTOR may agree, within sixty (60) Days of receipt of the above notice, to submit the matter to arbitration as set forth below.

If the parties agree, by written change order signed by HCPH, the Ohio EPA, and the CONTRACTOR, to submit such dispute to arbitration, all proceedings shall be according to Ohio

Revised Code Chapter 2711, and, unless waived, the Ohio Rules of Civil Procedure and the Ohio Rules of Evidence. HCPH and the CONTRACTOR shall each choose one arbitrator. The two arbitrators shall agree upon and choose a third arbitrator, who shall preside over the proceedings.

Compensation of the arbitrators shall be as agreed upon by HCPH, the CONTRACTOR and the arbitrators. Payment for the arbitrators shall be shared equally by HCPH and the CONTRACTOR. The CONTRACTOR shall deposit, as a precondition to commencement of the hearing, its equal share of the compensation of the arbitrators with HCPH to be placed in an account for that purpose, or with an escrow agent suitable to both parties. The hearing or the arbitration shall commence within sixty (60) days of the agreement to arbitrate. If the hearing is not commenced within sixty (60) days of the agreement to arbitrate, said agreement shall be void and the dispute shall be resolved by submission to a court of competent jurisdiction as herein before specified. The award rendered by the arbitrators shall be final, and judgment may be entered upon it in any court having jurisdiction thereof. All questions with regard to the rights and authority of the arbitration panel shall be resolved pursuant to Chapter 2711, of the Ohio Revised Code.

14. IN FORCE AND EFFECT

Subject to the applicable provisions of law, this contract shall be in full force and effect from and after the date when a fully executed and approved counterpart hereof is forwarded to the CONTRACTOR, but the CONTRACTOR shall not start work on the Project until written notification to proceed is received from HCPH.

15. Executive Order 11246 Sec.202

Except in contracts exempted in accordance with Section 204 of this Order, all Government contracting agencies shall include in every Government contract hereafter entered into the following provisions:

During the performance of this contract, the contractor agrees as follows:

- A. The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The contractor will take affirmative action to ensure that applicants are employed and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer, recruitment, or recruitment advertising, layoff or termination; rates of pay or other forms of compensation; and

selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of the nondiscrimination clause.

- B. The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.
- C. The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency contracting officer, advising the labor union or workers' representative of the contractor's commitments under Section 202 of Executive Order No. 11246 of September 24, 1965, and shall post copies of this notice in conspicuous places available to employees and applicants for employment.
- D. The contractor will comply with all provisions of Executive Order No. 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
- E. The contractor will furnish all information and reports required by Executive Order No. 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the contracting agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
- F. In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of such rules, regulations, or orders, this contract may be cancelled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order No. 11246 of September 24, 1965, or by rule regulation, or order of the Secretary of Labor, or as otherwise provided by law.
- G. The contractor will include the provisions of Paragraphs (A) through (G) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued



pursuant to Section 204 of Executive Order No. 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the contracting agency may direct as a means of enforcing such provisions, including sanctions for noncompliance; provided, however, that in the event the contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the contracting agency, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

16. Violating Facilities Clause

The Contractor agrees to comply with all applicable standards, orders or requirements under Section 306 of the Clean Air Act, 42 USC 1857 (h), Section 508 of the Clean Water Act, 33 USC 1368, Executive Order 11738, and EPA regulations, 40 CFR Part 32, which prohibits the use under non-exempt Federal contracts, grants, or loans of facilities included on the EPA List of Violating Facilities.

17. Certification Regarding Debarment, Suspension, and Other Responsibility Matters

The Contractor certifies to the best of its knowledge and belief that it and its principles:

- A. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or Agency;
- B. Have not within a year period preceding this proposal been convicted of or had a civil judgement rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or Local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property.
- C. Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State, or Local) with commission of any of the offenses enumerated in paragraph (B) of this certification;

- D. Have not within a three year period preceding this application / proposal had one or more public transactions (Federal, State, or Local) terminated for cause or default' and
- E. Will not utilize a subcontractor or supplier who is unable to certify (A) through (D) above.

IN WITNESS WHEREOF, the County and the Contractor affix their signatures:

WITNESS: HAMILTON COUNTY PUBLIC HEALTH

\_\_\_\_\_  
Health Commissioner

\_\_\_\_\_  
Date

WITNESS: CONTRACTOR:\_\_\_\_\_

\_\_\_\_\_  
By: \_\_\_\_\_

\_\_\_\_\_  
Title

Contractor to complete applicable paragraph below:

\_\_\_\_\_ A Corporation organized under the Laws of \_\_\_\_\_ and qualified to do business in the State of Ohio.

\_\_\_\_\_ Co-partners trading and doing business under the firm name and style of

\_\_\_\_\_

\_\_\_\_\_ List names of all Partners \_\_\_\_\_

Or Joint Venture Participants \_\_\_\_\_

\_\_\_\_\_ An individual doing business under the firm name and style of

\_\_\_\_\_

ATTACHMENT A  
HAMILTON COUNTY PUBLIC HEALTH  
NOTICE TO PROCEED

Date \_\_\_\_\_  
Contractor Name  
Street Address  
City, State, Zip Code

Notice To Proceed With: \_\_\_\_\_

Enclosed is your copy of the completely executed contract in the amount of \$\_\_\_\_\_ to be paid from  
the\_\_\_\_\_ fund.

You are hereby authorized and notified to PROCEED with the repair or replacement of the household sewage  
treatment system located at \_\_\_\_\_ in accordance with all terms and conditions of your contract with  
HCPH. This includes by reference the specifications upon which you bid.

Sincerely,

Tim Ingram  
Health Commissioner, Hamilton County Public Health

## CONTRACT CHANGE ORDER

APPROVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
 (Health Department Representative)

ACCEPTED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
 (Contractor)

\_\_\_\_\_  
 (Company)

Original Contract Amt		
Previous Changes (+ / --)		
This Change (+ / --)		
Adjusted Contract Amt		
Ohio EPA Acceptance		Date

## ATTACHMENT B

### CHANGE ORDER INSTRUCTIONS:

All Change Orders for this work, regardless of costs, must be submitted to Ohio EPA for review.

#### Changes Requiring Prior Approval

Any change which substantially modifies the Project Facilities as specified in the Ohio EPA approved Facilities Plan and Final Permit to Install or Final Plan Approval (when applicable) or alters the direct or indirect impact of the Project Facilities upon the environment must be incorporated into a Change Order. One copy of the Change Order prior to execution is to be submitted to Ohio EPA for review and prior approval of the acceptability of the change. "Prior to execution" means before the Change Order is signed by the Owner.

Ohio EPA will review the Change Order and inform the Owner of the technical, environmental and operational acceptability of the change, and give the Owner permission to proceed with the proposed work.

#### All Other Changes

Change Orders not requiring prior approval as described above must be submitted to Ohio EPA within one (1) month of the time at which they are approved by the Owner. Change Orders for WPCLF projects should be submitted to the Division of Environmental and Financial Assistance (DEFA).

#### Change Order Approval Process

After the Change Order is executed, one (1) copy of the Change Order, including the supporting documentation, is to be sent to Ohio EPA for final review. The HSTS Change Order form must have original signatures.

Health Departments should submit change orders electronically to the DEFA Engineer who reviewed and approved their project.

After the Change Order is accepted and eligible costs determined, Ohio EPA will return a signed copy of the HSTS Change Order form.

#### Payments for Change Order Work

The Owner is precluded from submitting to the OWDA payment requests for Eligible Project Costs associated with the Change Orders until the Ohio EPA's approval of the Change Orders has been obtained.

ATTACHMENT C  
Contractor Equal Employment Opportunity Certification

During the performance of this contract, the undersigned agrees as follows:

8. The undersigned will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The undersigned will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The undersigned agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this equal opportunity (federally assisted construction) clause.
9. The undersigned will, in all solicitations or advertisements for employees placed by or on behalf of the undersigned, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex or national origin.
10. The undersigned will send to each labor union or representative of workers, with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representative of the undersigned's commitment under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
11. The undersigned will comply with all provisions of Executive Order No. 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
12. The undersigned will furnish all information and reports required by Executive Order No. 11246 of September 24, 1965, and by the rules, regulations, and relevant orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records and accounts by the administering agency of the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
13. In the event of the undersigned's non compliance with the equal opportunity (federally assisted construction) clause of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated or suspended in whole or in part, and the undersigned may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order No. 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order No. 11246 of September 24, 1965, or by rules, regulations, or order of the Secretary of Labor, or as provided by law.
14. The undersigned will include this equal opportunity (federally assisted construction) clause in every subcontract or purchase order unless exempted by the rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order No. 11246 of September 24, 1965, so that such provision will be binding upon each subcontract or vendor. The undersigned will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for non compliance: Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor, as a result of such direction by the administering agency the undersigned may request the United States to enter into such litigation to protect the interest of the United States.

---

(Signature)

---

(Date)

---

(Name and Title of Signer, Please type)

---

(Firm Name)

ATTACHMENT D

Certification Regarding Debarment, Suspension, and Other Responsibility Matters

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

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

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

---

Type Name & Title of Authorized Representative

---

Signature of Authorized Representative

---

Date

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

ATTACHMENT D

Certification Regarding Debarment, Suspension, and Other Responsibility Matters

INSTRUCTIONS

Under Executive Order 12549 an individual or organization debarred or excluded from participation in Federal assistance or benefit programs may not receive any assistance award under a Federal program or a subagreement thereunder for \$25,000 or more.

Accordingly, each prospective recipient of an EPA grant, loan, or cooperative agreement and any contract or subagreement participant thereunder must complete the attached certification provide an explanation why they cannot. For further details, see 40 CFR 32.510, Participants' responsibilities, in the attached regulation.

Go to <https://www.sam.gov/portal/SAM/##11> to access the Excluded Parties List System (EPLS). The EPLS includes information regarding entities debarred, suspended, proposed for debarment, excluded or disqualified under the nonprocurement common rule, or otherwise declared ineligible from receiving Federal contracts, certain subcontracts, and certain Federal assistance and benefits. This information may include names, addresses, DUNS numbers, Social Security Numbers, Employer Identification Numbers or other Taxpayer Identification Numbers, if available and deemed appropriate and permissible to publish by the agency taking the action.

#### Where To Submit

The prospective EPA grant, loan, or cooperative agreement recipient must return the signed certification or explanation with its application to the appropriate EPA Headquarters, Regional office, or Ohio EPA, as required in the applications.

A prospective prime contractor must submit a complete certification or explanation to the individual or organization awarding the contract.

Each prospective subcontractor must submit a complete certification or explanation to the prime contractor for the project.

Applicants may reproduce these materials as needed and provide them to their prospective prime contractor, who, in turn, may reproduce and provide them to prospective subcontractors.

Additional copies / assistance may be requested from: Ohio EPA

Division of Environmental and Financial Assistance

P.P. Box 1049

Columbus, Ohio 43216 1049

(614) 644 2798

<http://epa.ohio.gov/defa/EnvironmentalandFinancialAssistance.aspx>



ATTACHMENT E

American Iron and Steel Acknowledgement

The Contractor acknowledges to and for the benefit of \_\_\_\_\_ (“Purchaser”) and the State of Ohio (the “State”) that it understands the goods and services under this Agreement are being funded with monies made available by the Clean Water State Revolving Fund and/or Drinking Water State Revolving Fund that have statutory requirements commonly known as “American Iron and Steel;” that requires all of the iron and steel products used in the project to be produced in the United States (“American Iron and Steel Requirement”) including iron and steel products provided by the Contractor pursuant to this Agreement. The Contractor hereby represents and warrants to and for the benefit of the Purchaser and the State that (a) the Contractor has reviewed and understands the American Iron and Steel Requirement, (b) all of the iron and steel products used in the project will be and/or have been produced in the United States in a manner that complies with the American Iron and Steel Requirement, unless a waiver of the requirement is approved, and (c) the Contractor will provide any further verified information, certification or assurance of compliance with this paragraph, or information necessary to support a waiver of the American Iron and Steel Requirement, as may be requested by the Purchaser or the State. Notwithstanding any other provision of this Agreement, any failure to comply with this paragraph by the Contractor shall permit the Purchaser or State to recover as damages against the Contractor any loss, expense, or cost (including without limitation attorney’s fees) incurred by the Purchaser or State resulting from any such failure (including without limitation any impairment or loss of funding, whether in whole or in part, from the State or any damages owed to the State by the Purchaser). While the Contractor has no direct contractual privity with the State, as a lender to the Purchaser for the funding of its project, the Purchaser and the Contractor agree that the State is a third-party beneficiary and neither this paragraph (nor any other provision of this Agreement necessary to give this paragraph force or effect) shall be amended or waived without the prior written consent of the State.

\_\_\_\_\_  
Signature

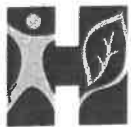
\_\_\_\_\_  
Date

\_\_\_\_\_  
Name and Title of Authorized Signatory, Please Print or Type

\_\_\_\_\_  
Bidder’s Firm

☐

Check here if the WPCLF or WSRLA applicant will be requesting an individual waiver for non-American made iron and steel products. Please note that the waiver box does not need to be marked for nationwide waivers.



250 William Howard Taft, 2<sup>nd</sup> Floor  
Cincinnati, Ohio 45219  
Phone: (513) 946-7800  
Fax: (513) 946-7890  
Web: www.hamiltoncountyhealth.org

Sub./Lot Review: \_\_\_\_\_

Complaint: \_\_\_\_\_

Other: \_\_\_\_\_

Fee Paid: 300.00

Receipt #: 2128

Received By: MB

## HAMILTON COUNTY GENERAL HEALTH DISTRICT

### APPLICATION TO CONSTRUCT OR REPLACE A SEWAGE TREATMENT SYSTEM

#### APPLICANT TO FILL OUT SHADED SECTIONS ONLY.

☐ NEW ☒ REPLACEMENT (Plumbing Permit Required If All Wastewater Is Not Directed To Septic System)

Address of Construction Site: 6820 Hillside Avenue Political Subdivision: Delhi Township  
Owner(s) Name: William and Judith Long Tax Parcel #: 540-0150-0103-00 Lot Size: 0.629 acre(s)  
Phone Number: \_\_\_\_\_ System To Serve: ☒ Single Family ☐ Public (Water Supplier \_\_\_\_\_)  
Mailing Address: 6820 Hillside Avenue ☐ Duplex ☐ Private  
Cincinnati, Ohio 45233 ☐ Triplex ☐ Well ☐ Cistern ☐ Hauled Water  
☒ Plumbing Under Basement ☐ Ejector Pit ☐ Hung Sewer ☐ Other: \_\_\_\_\_

Number of Bedrooms: 3 Number of People in Structure: \_\_\_\_\_ Monthly Water Usage: \_\_\_\_\_  
☐ Water Softener ☐ Garbage Disposal ☐ Whirlpool Style Tub ☐ High Capacity Shower  
☐ Other Large Water Usage Fixtures: \_\_\_\_\_

Soil Type / Characteristics: See Soil Report  
STS Daily Design Flow: 360 STS Average Design Flow: 216 Soil Absorption Rate: 0 Linear Loading Rate: 0

Sewage Treatment System Type: Subs-Aer FT Series w/ U.V. & Re-aeration

**Primary Treatment Tank:** ☒ Building Sewer Replace w/ 4" Sch. 40 PVC Comments: Tanks shall be water tight.  
☒ Controls Subs-Aer SBC 4000UV  
☐ Trash Trap \_\_\_\_\_ Gallons \_\_\_\_\_ Compartment(s) \_\_\_\_\_  
☐ Septic Tank \_\_\_\_\_ Gallons \_\_\_\_\_ Compartment(s) \_\_\_\_\_  
☐ Dosing Tank \_\_\_\_\_ Gallons \_\_\_\_\_ Compartment(s) \_\_\_\_\_  
☐ Dosing Septic Tank \_\_\_\_\_ Gallons \_\_\_\_\_ Compartment(s) \_\_\_\_\_  
☐ Dosing Basin \_\_\_\_\_ Depth \_\_\_\_\_ Diameter or \_\_\_\_\_ x \_\_\_\_\_  
☐ Effluent Filter \_\_\_\_\_ ☐ Pump \_\_\_\_\_  
☐ Screen Vault Filter \_\_\_\_\_ ☐ Siphon \_\_\_\_\_  
☐ Other \_\_\_\_\_ ☐ Gravity \_\_\_\_\_

**Secondary Treatment Unit:** ☐ Intermittent Sand Filter \_\_\_\_\_ ft x \_\_\_\_\_ ft = \_\_\_\_\_ ft<sup>2</sup>  
☐ Recirculating Gravel Filter \_\_\_\_\_ ft x \_\_\_\_\_ ft = \_\_\_\_\_ ft<sup>2</sup>  
☐ Recirculating Sand Filter \_\_\_\_\_ ft x \_\_\_\_\_ ft = \_\_\_\_\_ ft<sup>2</sup>  
☐ Recirculating Textile Filter \_\_\_\_\_ Manufacturer \_\_\_\_\_ Unit(s) \_\_\_\_\_  
☐ Peat Biofilter \_\_\_\_\_ Manufacturer \_\_\_\_\_ Unit(s) \_\_\_\_\_  
☒ Aerobic Treatment Unit Subs-Aer FT 500/25 Manufacturer 600 GPD  
☒ Other Re-aeration ☒ Pump Champion  
☐ Filter Following Treatment Unit \_\_\_\_\_ ☐ Siphon CB-13  
☐ Dosing Basin \_\_\_\_\_ Depth \_\_\_\_\_ Diameter or \_\_\_\_\_ x \_\_\_\_\_ ☐ Gravity \_\_\_\_\_  
☐ Soil Absorption (See Below) \_\_\_\_\_

**Soil Absorption Component:** ☐ Gravel Pad \_\_\_\_\_ ft x \_\_\_\_\_ ft = \_\_\_\_\_ ft<sup>2</sup> Depth \_\_\_\_\_  
☐ Leaching Trenches \_\_\_\_\_ ft x \_\_\_\_\_ ft = \_\_\_\_\_ ft<sup>2</sup> Depth \_\_\_\_\_ Total Ln. Ft. \_\_\_\_\_  
☐ Leach Bed \_\_\_\_\_ ft x \_\_\_\_\_ ft = \_\_\_\_\_ ft<sup>2</sup> Depth \_\_\_\_\_  
☐ At-Grade \_\_\_\_\_ ft x \_\_\_\_\_ ft = \_\_\_\_\_ ft<sup>2</sup> Sand Thickness \_\_\_\_\_  
☐ Modified Mound \_\_\_\_\_ ft x \_\_\_\_\_ ft = \_\_\_\_\_ ft<sup>2</sup> Sand Thickness \_\_\_\_\_  
☐ Wisconsin Mound \_\_\_\_\_ ft x \_\_\_\_\_ ft = \_\_\_\_\_ ft<sup>2</sup>  
☐ Other \_\_\_\_\_  
☐ Gravity Distribution \_\_\_\_\_  
☐ Drip Distribution \_\_\_\_\_  
☐ LPP Distribution \_\_\_\_\_

**Drainage Enhancement:** ☐ Gradient Drain \_\_\_\_\_ Depth \_\_\_\_\_  
☐ Interceptor Drain \_\_\_\_\_ Depth \_\_\_\_\_  
☐ Diversion Swale \_\_\_\_\_  
☐ Other \_\_\_\_\_  
☐ Pump \_\_\_\_\_

**Disinfection Device:** ☐ Chlorinator \_\_\_\_\_  
☐ Chlorine Contact Chamber \_\_\_\_\_  
☐ De-Chlorinator \_\_\_\_\_  
☒ UV Fluorid  
☒ Other Sample Well

**Remarks:** A preconstruction meeting is required at the site.  
Installer must have system laid out prior to meeting.  
Electrical approval from IBI required.

**ODH System Type:** ☐ Pretreat SDC ☐ Pretreat SDC & Drip  
☐ Below Grade ☐ At or Above Grade ☐ Drip Only  
☒ NPDES Discharge ☐ Spray/Surface App.  
☐ None of the Above

Refer to Site Plan 6820-A For Additional Details And Install System Per HCGHD Manual.

By my signature below I certify that I have read, I understand, and I agree to comply with the conditions set forth on the reverse hereof.

Owner's/Owner's Agent Signature: F. Daniel Brennan Date: 2/8/18

Field Inspection By: Robert Gallatin, R.E. Date: 2-13-18 Approved By: Greg Cassone, R.E. Date: 5/17/18

This Application Expires One Year From The Approved By Date. Replacement Systems Must Be Installed Within 120 Days of Approval Date.

Address of Construction Site: 6820 Hillside Ave

Political Subdivision: Delhi

File #: PT 2018010



## PROCEDURES FOR ASSEMBLY AND INSTALLATION

(500-600 GPD SYBR-AER FT SERIES)

SBR WASTEWATER TECHNOLOGIES INC.

1501 COMMERCE CENTER DRIVE

FRANKLIN, OHIO

TEL: 937-790-4149

FAX: 937-790-4150

WWW.SBRWW.COM

6820-1A

Thank you for purchasing the Sybr-Aer advanced wastewater treatment system.  
The following will provide step-by-step installation instructions.

The SYBR-AER FT series comes with all components factory installed for ease of installation.  
The Unit is also pre-wired and comes with 100' of direct burial 12 conductor wire ( If your application requires a longer run of wire please let us know at time of order).

The SYBR-AER FT series comes with or without disinfection depending on your application. The following instructions address both versions.

The SYBR-AER FT Series contains:

- Vented fiberglass blower enclosure with electrical junction box, cord grips, gel coated cover and exterior tamper proof latches
- (2) 24" diameter risers with pre-installed air manifolds, (2) covers
- (1) float tree
- (1) blower with galvanized fittings, air filter, and mission couplings
- (1) discharge pump with quick disconnect fittings, floats and pedestal
- Engineered diffusers
- 1 1/2" air drops with quick disconnect fittings
- Outdoor alarm with logic control module, individual circuit breakers for service disconnect, and a battery back-up incase of power outage
- 100' twelve-conductor direct burial wire
- conduit with a sweep for control panel
- Fiberglass tank with lifting eyelits
- (F2-UV disinfection system if you are using disinfection)



## SYBR-AER FT SERIES INSTRUCTIONS

*The installation must comply with all state and local regulations.*

### SITE PREPARATION

#### LOCATION

The site plan should show the desired location of the waste treatment plant and the location of the effluent disposal system. **CAUTION:** Check to make sure the site plan accurately reflects the conditions actually existing at the site and that all required set-backs (i.e., to wells, property lines, etc.) are being met.

#### GRADE AND GROUND COUNTOUR

Position the waste treatment plant so that surface water and effluent will drain to a lower grade under all known conditions.

#### COVER EXPOSURE

The access covers must be exposed at all times to permit the system to function properly and to allow for routine maintenance. There should be a minimum of (2) two inches between the bottom of the lid and the finished grade.

#### BUILDING SEWER LINE

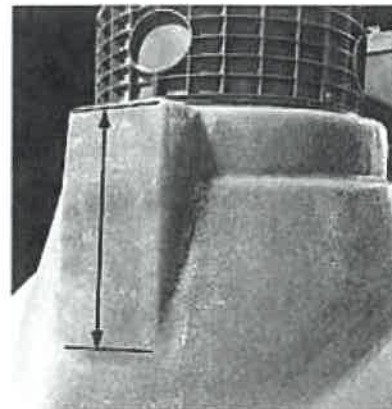
Carefully check all elevations to insure that the building sewer will have the proper fall [slope] to meet the inlet of the **SYBR-AER** and maintain the grade requirements to insure proper exposure of the cover. The elevation of the outlet should also be checked to insure proper elevation of the effluent disposal system.

#### EXCAVATION PREPARATION

Clear an area at least two (2) feet larger than the dimensions of the tank, which is to be installed.

Determine the required depth of the excavation based upon the elevation of the invert of the inlet sewer line or the elevation of the finished grade.

**NOTE:** Riser needs are built into the tank. There is 13 inches of adjustment built into the tank. Locate the proper elevation and drill a 5" inlet hole on the flat section of the tank and install the supplied 4" gasket seal





Excavate a hole approximately two (2) feet wider than the perimeter of the plant.

**NOTE:**

If the final elevations will not allow for the proper installation of the SYBR-AER, a lift station can be installed upstream.

Care should be taken to not dig too large (or too deep) of a hole. If the hole is dug too deep, fill in the bottom of the excavation with a minimum of 6" of sand, pea gravel or crushed stone to the required bottom depth. **This material should be well compacted to prevent settling of the tank when it is filled with water.**

### OFF-LOADING AND UNPACKING

The SYBR-AER FT Series comes with four lifting eyelits to lift the tank.

**NOTE:** Be sure to use all four lifting eyelits for safety when moving the tank and that your lifting harness is long enough not to pinch the blower housing.

Caution: Unit is top heavy move with care.

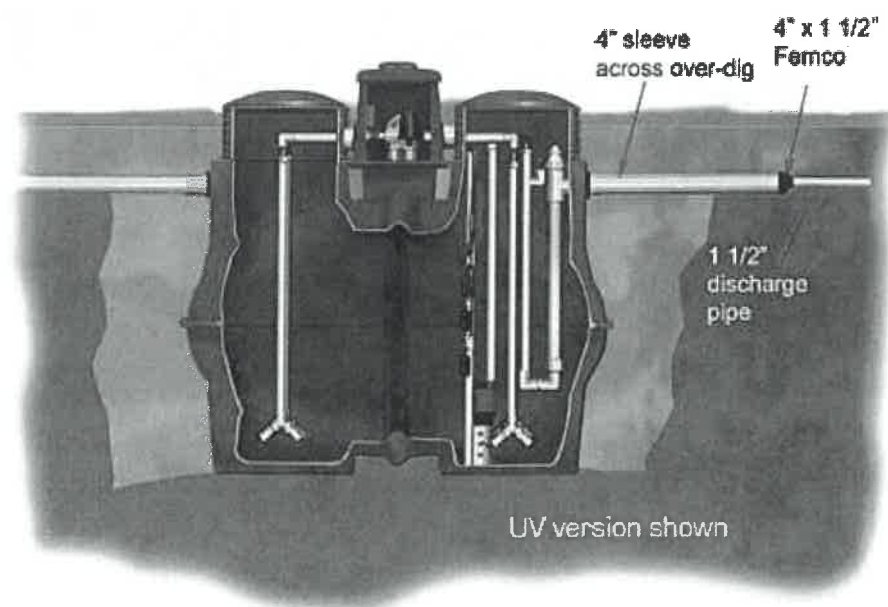


### BACKFILLING

Once the tank is set and leveled start filling the tank with water and begin backfilling with friable material up to the inlet. Firmly insert the inlet pipe into the tank. (pipe lube recommended)

**CAUTION:** To prevent any damage to the inlet or outlet pipes due to settling or backfilling, make sure that both inlet and outlet pipes are set on undisturbed or firmly-packed fill material prior to final backfilling procedures.





Once you have slid the discharge pipe through the protective sleeve ( 4" piece of pipe long enough to span across the overdig) and connected it to the pump line, install the supplied 4"x 1 1/2" Fernco on the end of the 4" pipe in the trench to prevent ground water from entering the pipe. The protective sleeve provides protection during backfilling and eliminates the chance of sheering off the pipe if the tank settles.

#### ELECTRICAL

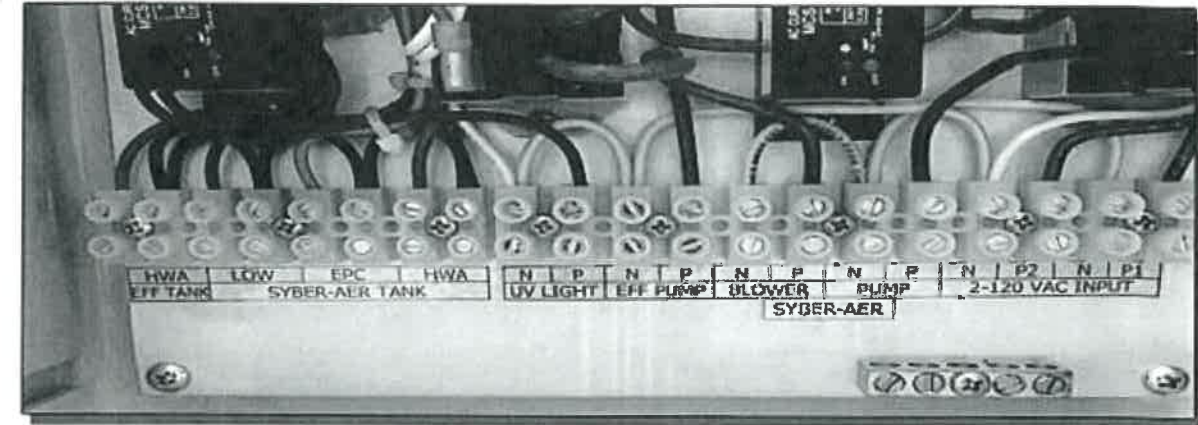
**NOTE: SBC4080UV Control Panel requires 2 dedicated circuits to power the panel (with UV)**  
**SBC4060 Control Panel requires 1 dedicated circuit to power the panel (without UV)**

All the components for the SYBR-AER are pre-installed and pre-wired so no need to make any electrical connections at the tank. Run the 100' of direct burial cable supplied to the location you want to mount the control panel.

Use care and drill control panel box for 1" conduit. ( Make sure you do not drill into the terminal strip in the bottom of the panel.) Mount the control panel with the supplied hardware and install the conduit and sweep.

Feed the 12 wire through the conduit and into the panel.





The control panel is clearly labeled and utilizes terminal blocks so no need for wirenuts.

Wiring instructions are listed on backside of control panel access door.

#### **SBC 4060 (NON UV)**

SOLID RED TO BLOWER POWER  
 RED W/STRIPE TO BLOWER NUETRAL  
 SOLID BLACK TO PUMP POWER  
 BLACK W/STRIPE TO PUMP NUETRAL  
 SOLID YELLOW TO E.P.C. FLOAT POWER  
 YELLOW W/STRIPE TO E.P.C. FLOAT NUETRAL  
 SOLID ORANGE TO HIGH WATER FLOAT POWER  
 ORANGE W/STRIPE TO HIGH WATER NUETRAL  
 SOLID BROWN TO GROUND BAR  
 BROWN W/STRIPE TO GROUND BAR

\* 2-BLUE WIRES NOT USED

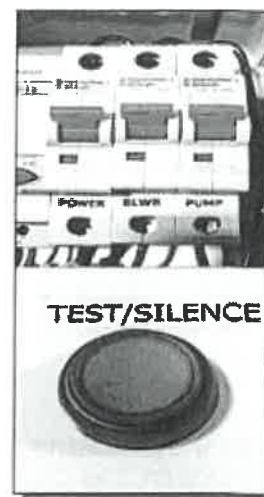
#### **SBC 4080UV (WITH UV)**

SOLID BLUE TO UV POWER  
 BLUE W/STRIPE TO UV NEUTRAL  
 SOLID RED TO BLOWER POWER  
 RED W/STRIPE TO BLOWER NUETRAL  
 SOLID BLACK TO PUMP POWER  
 BLACK W/STRIPE TO PUMP NUETRAL  
 SOLID YELLOW TO E.P.C. FLOAT POWER  
 YELLOW W/STRIPE TO E.P.C. FLOAT NUETRAL  
 SOLID ORANGE TO HIGH WATER FLOAT POWER  
 ORANGE W/STRIPE TO HIGH WATER NUETRAL  
 SOLID BROWN TO GROUND BAR  
 BROWN W/STRIPE TO GROUND BAR

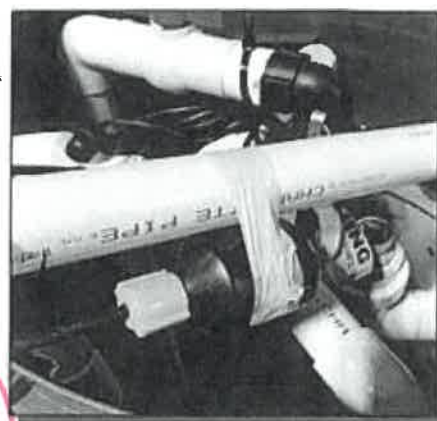




Once all connections are made power can be supplied to the panel. Turn on all the Breakers. Press and hold the test button to activate the alarm.



Remove the discharge side lid and unhook and raise the float tree up out of the tank and cut the shipping tape off of the floats. (Floats are taped to float tree for shipping purposes and failure to remove tape will prevent system from operating properly)



**Top Float is the E.P.C. Float**  
**Middle Float is the Highwater Float**  
**Bottom Float is the Redundant ON/OFF Float**



(Low alarm is an optional alarm it is designed for a float to be set low so that when the tank pumps out if it is still up it will go into a latching alarm to alert you it didn't pump out enough)

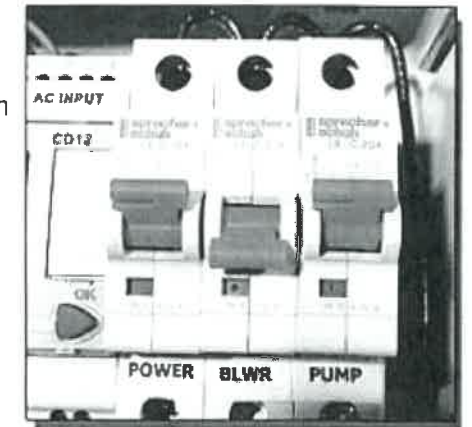
Raise the highwater float and make sure alarm sounds. With the blower running raise the E.P.C. float and make sure the blower shuts off. Raise the Redundant ON/OFF float and flip the manual pump run switch in the panel and make sure the pump runs.

**NOTE:** The E.P.C. will shut the blower off and start a 1 hour settling cycle then run the pump. To clear this alarm once you activated the float shut the power breaker off to clear the alarm condition then turn back on



Turn the Blower Breaker off and make sure the alarm activates then turn breaker back on. If the system has enough water in it you can let it run or turn it off until you are finished with the installation.

Once everything has been tested and operational install lids and continue backfilling. Finish backfilling to a level approximately 2" below the access lid. Finish Grade should be contoured so that surface water drains away from the unit.



**The following instructions are for units with Ultraviolet Light.**

The quartz tube is shipped inside the UV housing. Loosen the large union and remove quartz tube to remove protective packaging.

**Note:** Failure to remove packaging from the quartz tube will prevent proper operation and will not allow the system to discharge properly.

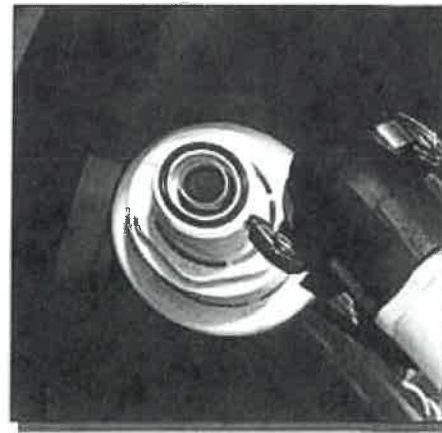


The UV Bulb is transported in a tube taped to the float tree. Carefully cut the tube free from the float tree and open to remove bulb.

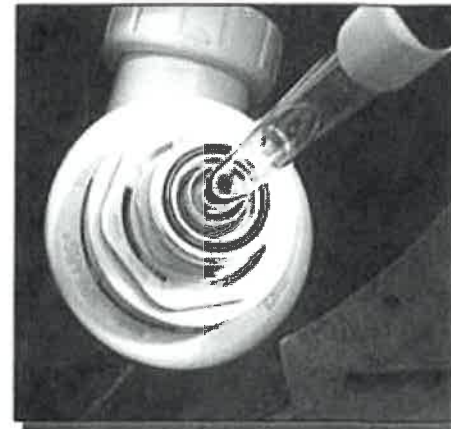
**NOTE:** Care should be taken to not touch the glass of the bulb if you are not wearing gloves. Oil from your skin can create hot spots on the bulb and shorten the life of the bulb.



Once the packaging has been removed re-install the quartz tube and tighten down the Large union



Plug the UV Whip (chord) onto the uv bulb and lower into the quartz tube



Tighten down the small union



The UV is designed to treat up to 14 gallons a minute. In the SYBR-AER FT Series we set the ball-valve to 10 gallons a minute to simplify adjusting the flow ( adjusted flow should fill a 5 gallon bucket in 30 seconds).



Once the UV light is hooked up turn the UV breaker on. Flip the sample mode switch this shuts the blower off and turns the UV on you should see the current switch on the left in the panel light up red when the UV comes on as well as listed on the operating screen of the logic module. Shut the UV Light breaker off and the alarm should sound turn the breaker back on and clear the alarm .Once this is verified turn the sample mode switch off this puts it back into normal operation



**NOTE: Blower will not operate if sample switch is left in the ON position.**

The control panel is programmed to turn the UV light on when the Blower turns off and goes into settle mode at midnight. In normal operation the UV light is only on 4 hours a day. If the system goes into a highwater situation and the homeowner continues to use water and triggers the E.P.C. float the blower will turn off and turn the UV light on for a 1 hour settle mode and then pump the excess water out.

The control panel is failsafed in the event of a blower or UV light failure the pump is locked out and will not discharge until the alarm condition has been cleared.

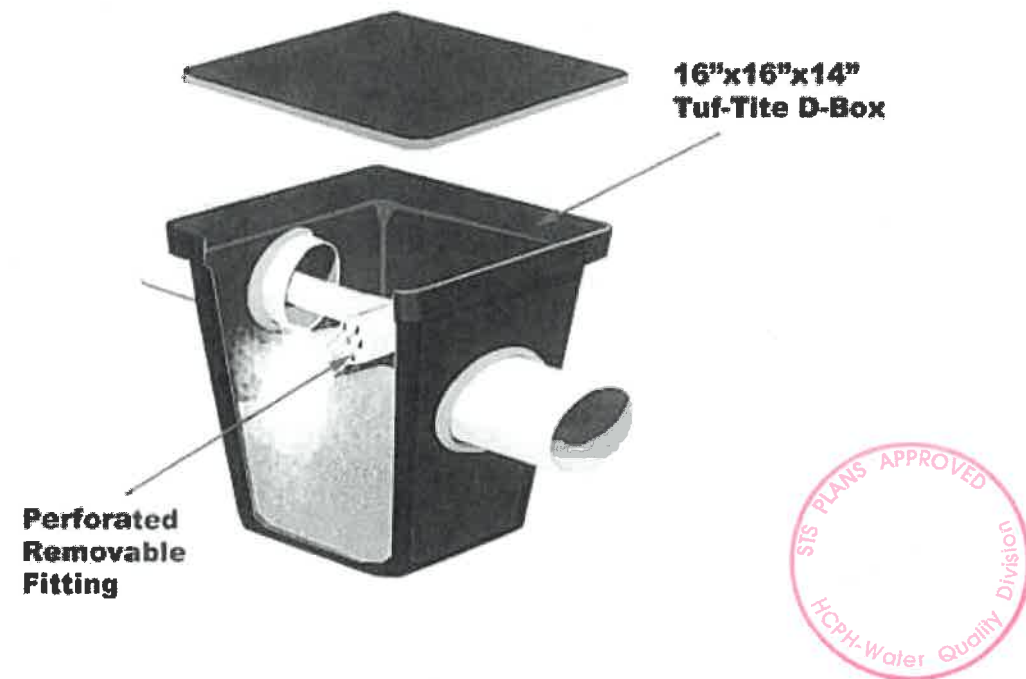
**CAUTION: Do not look at UV Light when it is on can damage eyes.**

**DANGER**  
**ULTRAVIOLET RADIATION**  
**DISCONNECT POWER BEFORE**  
**REMOVING OR SERVICING BULB**

## POST AERATION (IF REQUIRED)

Re-aeration is achieved by spraying effluent against a surface when pumped effluent is drawn from the tank. The effluent pump discharges through a perforated fitting into a standard 16"x16"x14" Tuf-Tite polyethylene distribution box prior to discharge. The vigorous spraying provides sufficient agitation to raise the dissolved oxygen level to almost saturated concentrations.

\* **NOTE:** Mark the ball-valve in the discharge line then adjust in order to slow the flow enough to take a freeflowing sample once sample is taken return the ball valve to it's original position

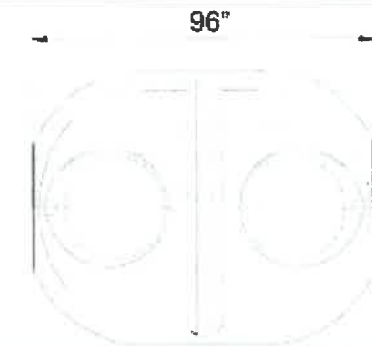


Once the installation is complete be sure to give the property owner the owners manual, explain the Do's and Dont's, and fill out and send in the installation report

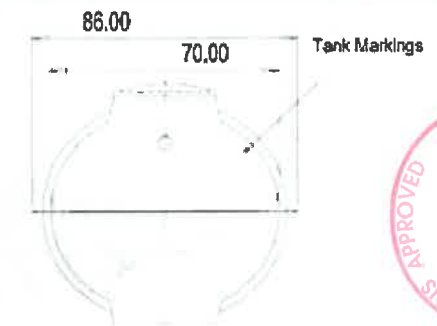


# TANK INFORMATION

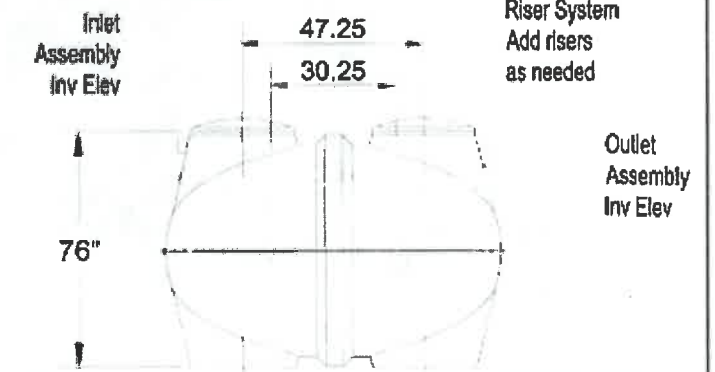
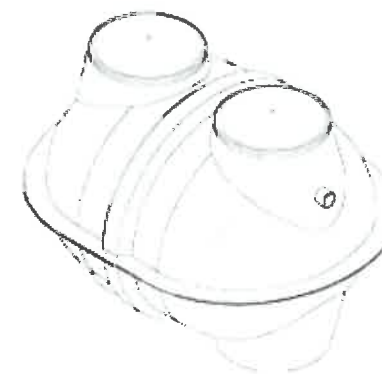
S-A 1250 FIBERGLASS TANK	
MATERIALS	Glass-Reinforced Polyester
TOTAL CAPACITY	1,499 GAL
LENGTH	96 INCHES
WIDTH	86 INCHES
HEIGHT	69 INCHES
MANWAYS	24"
INLET INVERT	57"-70"
OUTLET INVERT	67.5 INCHES
COMPARTMENTS	ONE
MAXIMUM BURIAL DEPTH	24 INCHES
MAXIMUM PIPE DIAMETER	4"
JOINT SEALANT	Consoal CS-102 or equal
WEIGHT	590 LBS
DISPLACED WEIGHT (assuming saturated conditions)	12506.7 LBS.
BUOYANCY FORCE	11916.7 LBS.



TOP VIEW



END VIEW



SIDE VIEW

S-A 1250 FIBERGLASS TANK

TITLE: **1250 SA**

**CONSOLIDATED**

TREATMENT SYSTEMS  
1501 Commerce Center Drive  
Franklin, Ohio 45005  
937-148-2727

1250SA Volume Table  
1250 Gallon Septic Tank

(Liquid Depth in inches)

(in)	(ft)	(in)	(ft)	(in)	(ft)	(in)	(ft)	(in)	(ft)	(in)	(ft)	(in)	(ft)	(in)	(ft)
0.000	0.0	10.000	115.0	20.000	336.7	30.000	615.7	40.000	912.9	50.000	1187.8	60.000	1400.5	70.000	1602.6
0.125	0.7	10.125	118.3	20.125	339.9	30.125	619.3	40.125	916.6	50.125	1190.9	60.125	1403.6	70.125	1605.6
0.250	1.3	10.250	120.6	20.250	343.1	30.250	623.0	40.250	920.2	50.250	1194.0	60.250	1406.6	70.250	1608.6
0.375	2.0	10.375	122.8	20.375	346.3	30.375	626.7	40.375	923.9	50.375	1197.2	60.375	1409.7	70.375	1611.6
0.500	2.6	10.500	125.1	20.500	349.5	30.500	630.4	40.500	927.5	50.500	1200.3	60.500	1412.8	70.500	1614.6
0.625	3.3	10.625	127.4	20.625	352.8	30.625	634.0	40.625	931.2	50.625	1203.3	60.625	1415.8	70.625	1617.6
0.750	4.1	10.750	129.7	20.750	356.0	30.750	637.6	40.750	934.8	50.750	1206.4	60.750	1418.8	70.750	1620.6
0.875	4.8	10.875	132.1	20.875	359.3	30.875	641.2	40.875	938.5	50.875	1209.5	60.875	1421.8	70.875	1623.6
1.000	5.5	11.000	134.4	21.000	362.6	31.000	644.8	41.000	942.1	51.000	1212.6	61.000	1424.8	71.000	1626.6
1.125	6.3	11.125	136.8	21.125	365.9	31.125	648.6	41.125	945.7	51.125	1215.8	61.125	1427.8	71.125	1629.6
1.250	7.0	11.250	139.1	21.250	369.1	31.250	652.3	41.250	949.3	51.250	1218.9	61.250	1430.7	71.250	1632.6
1.375	7.8	11.375	141.5	21.375	372.4	31.375	656.0	41.375	953.0	51.375	1222.0	61.375	1433.7	71.375	1635.6
1.500	8.6	11.500	143.9	21.500	375.7	31.500	659.7	41.500	956.6	51.500	1224.8	61.500	1436.6	71.500	1638.6
1.625	9.4	11.625	146.3	21.625	379.0	31.625	663.5	41.625	960.2	51.625	1227.8	61.625	1439.6	71.625	1641.6
1.750	10.3	11.750	148.8	21.750	382.4	31.750	667.2	41.750	963.8	51.750	1230.6	61.750	1442.6	71.750	1644.6
1.875	11.1	11.875	151.2	21.875	385.7	31.875	670.9	41.875	967.4	51.875	1233.0	61.875	1445.6	71.875	1647.6
2.000	11.9	12.000	153.6	22.000	389.0	32.000	674.7	42.000	971.0	52.000	1236.8	62.000	1448.6	72.000	1650.6
2.125	12.8	12.125	156.1	22.125	392.4	32.125	678.4	42.125	974.6	52.125	1239.5	62.125	1451.6	72.125	1653.6
2.250	13.7	12.250	158.6	22.250	395.7	32.250	682.1	42.250	978.2	52.250	1242.4	62.250	1454.6	72.250	1656.6
2.375	14.6	12.375	161.1	22.375	399.1	32.375	685.9	42.375	981.8	52.375	1245.4	62.375	1457.6	72.375	1659.6
2.500	15.5	12.500	163.6	22.500	402.4	32.500	689.6	42.500	985.4	52.500	1248.3	62.500	1460.6	72.500	1662.6
2.625	16.4	12.625	166.1	22.625	405.8	32.625	693.4	42.625	989.0	52.625	1251.2	62.625	1463.6	72.625	1665.6
2.750	17.3	12.750	168.6	22.750	409.2	32.750	697.1	42.750	992.5	52.750	1254.1	62.750	1466.6	72.750	1668.6
2.875	18.2	12.875	171.1	22.875	412.6	32.875	700.9	42.875	996.1	52.875	1257.0	62.875	1469.6	72.875	1671.6
3.000	19.1	13.000	173.6	23.000	416.0	33.000	704.6	43.000	999.6	53.000	1259.9	63.000	1472.6	73.000	1674.6
3.125	20.0	13.125	176.1	23.125	419.4	33.125	708.4	43.125	1003.2	53.125	1262.8	63.125	1475.6	73.125	1677.6
3.250	21.0	13.250	178.6	23.250	422.8	33.250	712.1	43.250	1006.7	53.250	1265.8	63.250	1478.6	73.250	1680.6
3.375	22.0	13.375	181.1	23.375	426.2	33.375	715.9	43.375	1010.3	53.375	1268.8	63.375	1481.6	73.375	1683.6
3.500	23.0	13.500	183.6	23.500	429.6	33.500	719.7	43.500	1013.8	53.500	1271.7	63.500	1484.6	73.500	1686.6
3.625	24.0	13.625	186.1	23.625	433.1	33.625	723.4	43.625	1017.3	53.625	1274.7	63.625	1487.6	73.625	1689.6
3.750	25.0	13.750	188.6	23.750	436.5	33.750	727.1	43.750	1020.8	53.750	1277.6	63.750	1490.6	73.750	1692.6
3.875	26.0	13.875	191.1	23.875	440.0	33.875	730.9	43.875	1024.4	53.875	1280.6	63.875	1493.6	73.875	1695.6
4.000	27.0	14.000	193.6	24.000	443.4	34.000	734.6	44.000	1027.9	54.000	1283.5	64.000	1496.6	74.000	1698.6
4.125	28.0	14.125	196.1	24.125	446.8	34.125	738.4	44.125	1031.4	54.125	1286.5	64.125	1499.6	74.125	1701.6
4.250	29.0	14.250	198.6	24.250	450.2	34.250	742.1	44.250	1034.9	54.250	1289.5	64.250	1502.6	74.250	1704.6
4.375	30.0	14.375	201.1	24.375	453.6	34.375	745.9	44.375	1038.4	54.375	1292.5	64.375	1505.6	74.375	1707.6
4.500	31.0	14.500	203.6	24.500	457.0	34.500	749.6	44.500	1041.8	54.500	1295.5	64.500	1508.6	74.500	1710.6
4.625	32.0	14.625	206.1	24.625	460.4	34.625	753.4	44.625	1045.3	54.625	1298.5	64.625	1511.6	74.625	1713.6
4.750	33.0	14.750	208.6	24.750	463.8	34.750	757.1	44.750	1048.8	54.750	1301.5	64.750	1514.6	74.750	1716.6
4.875	34.0	14.875	211.1	24.875	467.2	34.875	760.9	44.875	1052.3	54.875	1304.5	64.875	1517.6	74.875	1719.6
5.000	35.0	15.000	213.6	25.000	470.6	35.000	764.6	45.000	1055.8	55.000	1307.5	65.000	1520.6	75.000	1722.6
5.125	36.0	15.125	216.1	25.125	474.0	35.125	768.4	45.125	1059.3	55.125	1310.5	65.125	1523.6	75.125	1725.6
5.250	37.0	15.250	218.6	25.250	477.4	35.250	772.1	45.250	1062.8	55.250	1313.5	65.250	1526.6	75.250	1728.6
5.375	38.0	15.375	221.1	25.375	480.8	35.375	775.9	45.375	1066.3	55.375	1316.5	65.375	1529.6	75.375	1731.6
5.500	39.0	15.500	223.6	25.500	484.2	35.500	779.6	45.500	1069.8	55.500	1319.5	65.500	1532.6	75.500	1734.6
5.625	40.0	15.625	226.1	25.625	487.6	35.625	783.4	45.625	1073.3	55.625	1322.5	65.625	1535.6	75.625	1737.6
5.750	41.0	15.750	228.6	25.750	491.0	35.750	787.1	45.750	1076.8	55.750	1325.5	65.750	1538.6	75.750	1740.6
5.875	42.0	15.875	231.1	25.875	494.4	35.875	790.9	45.875	1080.3	55.875	1328.5	65.875	1541.6	75.875	1743.6
6.000	43.0	16.000	233.6	26.000	497.8	36.000	794.6	46.000	1083.8	56.000	1331.5	66.000	1544.6	76.000	1746.6
6.125	44.0	16.125	236.1	26.125	501.2	36.125	798.4	46.125	1087.3	56.125	1334.5	66.125	1547.6	76.125	1749.6
6.250	45.0	16.250	238.6	26.250	504.6	36.250	802.1	46.250	1090.8	56.250	1337.5	66.250	1550.6	76.250	1752.6
6.375	46.0	16.375	241.1	26.375	508.0	36.375	805.9	46.375	1094.3	56.375	1340.5	66.375	1553.6	76.375	1755.6
6.500	47.0	16.500	243.6	26.500	511.4	36.500	809.6	46.500	1097.8	56.500	1343.5	66.500	1556.6	76.500	1758.6
6.625	48.0	16.625	246.1	26.625	514.8	36.625	813.4	46.625	1101.3	56.625	1346.5	66.625	1559.6	76.625	1761.6
6.750	49.0	16.750	248.6	26.750	518.2	36.750	817.1	46.750	1104.8	56.750	1349.5	66.750	1562.6	76.750	1764.6
6.875	50.0	16.875	251.1	26.875	521.6	36.875	820.9	46.875	1108.3	56.875	1352.5	66.875	1565.6	76.875	1767.6
7.000	51.0	17.000	253.6	27.000	525.0	37.000	824.6	47.000	1111.8	57.000	1355.5	67.000	1568.6	77.000	1770.6
7.125	52.0	17.125	256.1	27.125	528.4	37.125	828.4	47.125	1115.3	57.125	1358.5	67.125	1571.6	77.125	1773.6
7.250	53.0	17.250	258.6	27.250	531.8	37.250	832.1	47.250	1118.8	57.250	1361.5	67.250	1574.6	77.250	1776.6
7.375	54.0	17.375	261.1	27.375	535.2	37.375	835.9	47.375	1122.3	57.375	1364.5	67.375	1577.6	77.375	1779.6
7.500	55.0	17.500	263.6	27.500	538.6	37.500	839.6	47.500	1125.8	57.500	1367.5	67.500	1580.6	77.500	1782.6
7.625	56.0	17.625	266.1	27.625	542.0	37.625	843.4	47.625	1129.3	57.625	1370.5	67.625	1583.6	77.625	1785.6
7.750	57.0	17.750	268.6	27.750	545.4	37.750	847.1	47.750	1132.8	57.750	1373.5	67.750	1586.6	77.750	1788.6
7.875	58.0	17.875	271.1	27.875	548.8	37.875	850.9	47.875	1136.3	57.875	1376.5	67.875	1589.6	77.875	1791.6
8.000	59.0	18.000	273.6	28.000	552.2	38.000	854.6	48.000	1139.8	58.000	1379.5	68.000	1592.6	78.000	1794.6
8.125	60.0	18.125	276.1	28.125	555.6	38.125	858.4	48.125	1143.3	58.125	1382.5	68.125	1595.6	78.125	1797.6
8.250	61.0	18.250	278.6	28.250	559.0	38.250	862.1	48.250	1146.8	58.250	1385.5	68.250	1598.6	78.250	1800.6
8.375	62.0	18.375	281.1	28.375	562.4	38.375	865.9	48.375	1150.3	58.375	1388.5	68.375	1601.6	78.375	1803.6
8.500	63.0	18.500	283.6	28.500	565.8	38.500	869.6	48.500	1153.8	58.500	1391.5	68.500	1604.6	78.500	1806.6
8.625	64.0	18.625	286.1	28.625	569.2	38.625	873.4	48.625	1157.3	58.625	1394				

# TANK INFORMATION

BOYANCY DESIGN		1250 S-A Tank
Materials		
Soil (dry)	(lbs/cf)	90.0
Void Ratio	%	28.00%
Water	(lbs/cf)	62.4
Saturated Soil	(lbs/cf)	107.5
Soil (net)	(lbs/cf)	72.5
Concrete	(lbs/cf)	150.0
Tank Data		
Tank Weight	(lbs)	590
Volume	(gal)	1499.2
Volume	(cf)	200.4
Displaced Weight (assuming saturated conditions)	(lbs)	12506.7
Boyant Force (less manways)	(lbs)	12022.7
Tank Projected Area	(sf)	53.0
Cover required w/o Deadman	(in)	37.5
Deadman Data		
Deadman Weight	(lbs)	300
Deadman Area	(sf)	4.0
Deadman Burial Depth	(in)	75.0
Deadman Hold Down Force / each	(lbs)	2112.5
Number of Deadman	(ea)	4
Minimum Required Tank Covering	(in)	11.2





Recommended SYBR-AER Installation Check List			
Date:		Installer:	
Permit:		Site Address:	
Property ID:		Site City and State:	
Item		Item	
Administrative Issues		Excavation and Installation	Yes No
Permit On Site	Yes No	Level Excavation	Yes No
Site Protected from Traffic	Yes No	Bedding Stone Used if rocks present	Yes No
Benchmark and Baseline	Yes No	Correct Excavation Elevation	Yes No
		Level Installation	Yes No
		Backfill is clean and friable and compacted	Yes No
Electrical Installation		Grade runs away from access lids	Yes No
Power Cords Run Through Fittings	Yes No	Inlet and Outlet Pipes Connected	Yes No
Watertight Wire Nuts Used	Yes No	Treatment Tank Filled	Yes No
Alarm Installed Per Code	Yes No	Lid 2" Min. Above Grade	Yes No
Alarm Tested and Functioning	Yes No	Internal Components	Yes No
		Blower Installed and Operating	Yes No
Final		Airline drop legs Installed	Yes No
Installation Conforms to Approved Plans	Yes No	Pump and pump pipe Installed	Yes No
		UV Light installed and operating (if present)	Yes No
		Alarm Installed and Operating	Yes No
		Lids Installed and Secured	Yes No
		Service contact info provided	Yes No
		Owner's manual left with property owner	Yes No
<p>Note: On the backside, make a sketch of the installation noting differences between the plan and actual installation.</p> <p>Comments and Notes:</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>			

6820-A

## **Service Policy**

During your initial two-year warranty, an authorized service representative will inspect your unit at six-month intervals and make necessary adjustments to the system. The only exception is for the replacement of "out of warranty" and "physically abused" parts or abuse to the treatment and dispersal components and devices, such as pre-tanks, drain fields, pump station, and the like.

In the event a problem arises or service is required, refer to the unit's data plate (located on the alarm and access lid) or the service label for instructions on contacting your closest service provider. Occasional pumping is required, due to the accumulation of solids. The pumping cost may not be covered under your maintenance and service program. If you need parts or service, please contact the factory for the name of the service provider nearest you. The owner shall be notified in writing by the service provider about improper system operations that cannot be remedied at the time of the inspection.

Before the initial two-year warranty expires, your service provider will notify you in writing, that an extended service agreement may be purchased. This extended service agreement will have terms, conditions, and limitations comparable to the initial agreement. If the service provider does not provide extended service agreements, the service provider will refer you to an authorized service provider who provides extended service agreements. You may also contact the factory for assistance in locating an authorized service provider.

Items not covered under warranty that will generate service charges for your residential SYBR-AER wastewater treatment equipment.

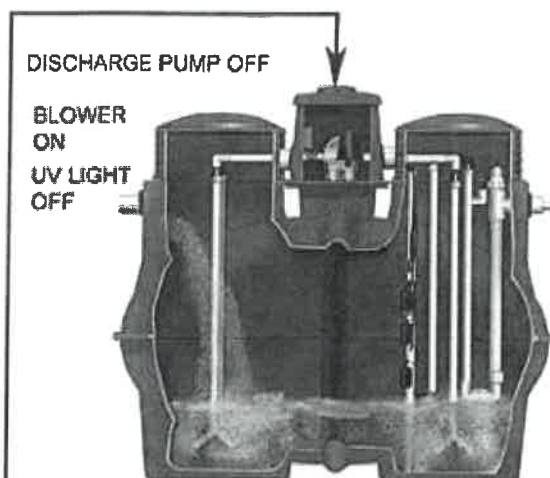
1. Use of unauthorized component parts in your SYBR-AER unit.
2. Repairs made by other than factory trained and authorized personnel.
3. Failure to maintain proper electric power to the SYBR-AER unit.
4. High water alarms due to clear water discharges including, but not limited to, backwash from water treatment systems, water softeners, swimming pools, footing drain sump pumps, down spouts, hot tubs, dehumidifiers, air conditioners, and leaking plumbing fixtures.
5. Discharge into the SYBR-AER unit of non-biodegradable materials such as paints, grease, or any other materials that are toxic.
6. Emergency service calls for alarms due to items 1 thru 5 above in addition to the following:
  - a. Water usage that exceeds the total daily flow for which your aerobic plant is rated
  - b. The septic system becoming flooded during periods of heavy rainfall.

Listed above are some of the most common items that are not covered by warranty. Specific items not herein listed. Also, please note that the warranty covers parts only. Labor will be billed at the rate in effect at time of service.



## NORMAL OPERATING CYCLE WITH UV

(Non UV same operation minus the UV)



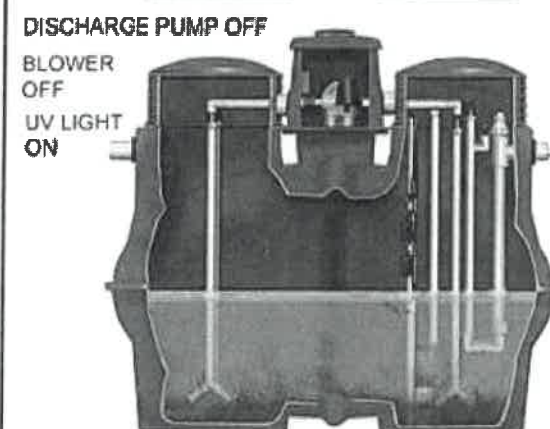
### AERATION CYCLE:

DURATION: 20 HOURS

NORMAL HOURS: 4:00 a.m.-12:00 p.m.

BLOWER: ON DISCHARGE PUMP OFF  
UV: OFF

Description: Aerobic waste treatment occurs during the aeration cycle. Air from the diffusers keeps solids in suspension. This cycle is programmed to occur at normal times of highest water usage.



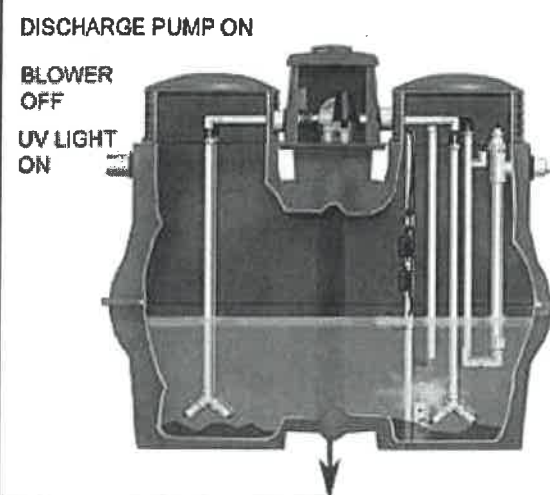
### SETTLING CYCLE:

DURATION: 3 HOURS

NORMAL HOURS: 12:00 p.m.-3:00 a.m.

BLOWER: OFF DISCHARGE PUMP OFF  
UV: ON

Description: Sludge settles to the bottom of the tank during this cycle. The settling cycle starts when the aeration cycle ends. The settling cycle is programmed to occur during normal times of lowest water usage. When the blower shuts off the UV light turns on.



### PUMP OUT CYCLE:

MAXIMUM DURATION 1 HOUR

NORMAL START TIME: 3:00 a.m.

BLOWER: OFF DISCHARGE PUMP ON  
UV: ON

Description: treated wastewater is pumped through the UV and out of the tank during the pump out cycle. The pump comes on at the end of the settling cycle and runs until the water level in the tank drops to a depth of 19 inches from the bottom of the tank. At this depth a level switch stops the pump.

One hour after the start of the pump cycle, a new aeration cycle begins. The UV light turns off and the blower starts up again. The entire process is repeated every 24 hours.



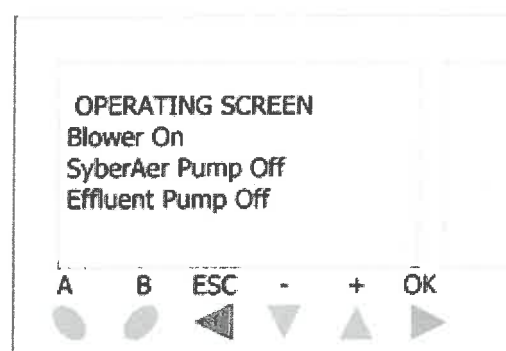


## SBC 4080 UV Logic Operating Instructions

### Screens 1 and 2

Press the A button to change screens.

#### Screen 1 – Operating Screen



This screen will show the status of the motors in the system.

Blower On/Off

SyberAer Pump On/Off

Effluent Pump On/Off



#### Screen 2 – SyberAer High Water Alarm Count



This Screen will show you the number of High Water Alarms that have occurred in the SyberAer tank. This value can be reset by pressing the – button for 3 seconds.

6020-A

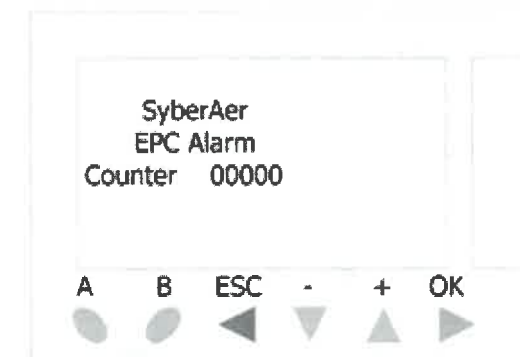


## SBC 4080 UV Logic Operating Instructions

### Screens 3 and 4

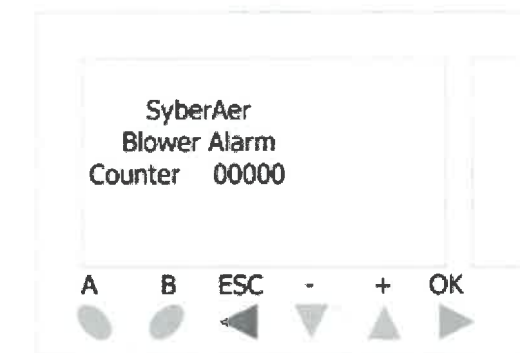
Press the A button to change screens.

Screen 3 – SyberAer EPC Alarm Count



This Screen will show you the number of EPC alarms that have occurred in the SyberAer tank. This value can be reset by pressing the – button for 3 seconds.

Screen 4 – SyberAer Blower Alarm Count



This Screen will show you the number of Blower alarms that have occurred in the SyberAer tank. This value can be reset by pressing the – button for 3 seconds.





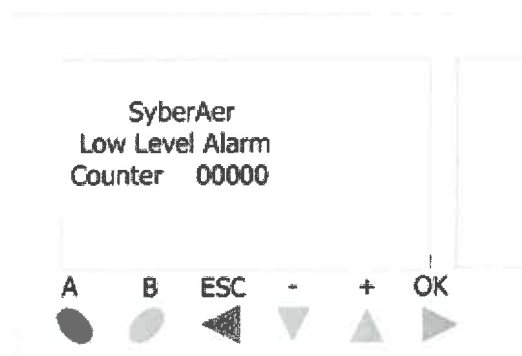


## SBC 4080 UV Logic Operating Instructions

### Screens 5 and 6

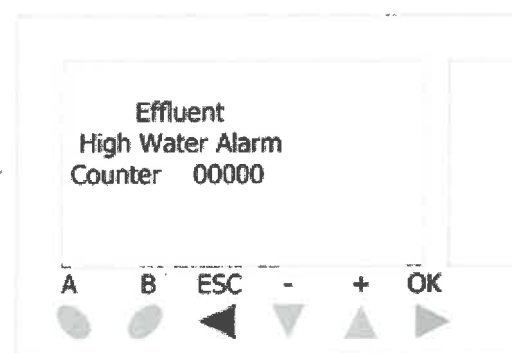
Press the A button to change screens.

#### Screen 5 – SyberAer Low Level Alarm Count



This Screen will show you the number of Low Level alarms that have occurred in the SyberAer tank. This value can be reset by pressing the – button for 3 seconds.

#### Screen 6 – Effluent High Water Alarm Count



This Screen will show you the number of High Water alarms that have occurred in the Effluent tank. This value can be reset by pressing the – button for 3 seconds.



68207A

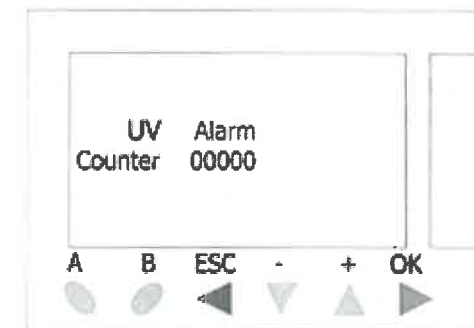


## SBC 4080 UV Logic Operating Instructions

### Screens 7 and 8

Press the A button to change screens.

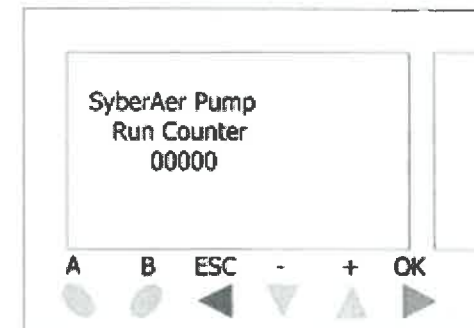
#### Screen 7 – UV Alarm Count



This Screen will show you the number of UV alarms that have occurred  
This value can be reset by pressing the – button for 3 seconds.



#### Screen 8 – SyberAer Pump Run Counter



This Screen will show you the number of times the SyberAer Pump has been turned on by the logic. The Pump Test Switch will not count. This value can be reset by pressing the – button for 3 seconds.

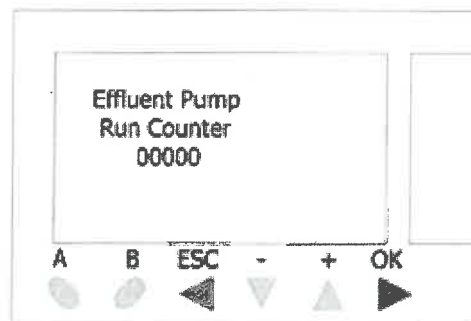


## SBC 4080 UV Logic Operating Instructions

### Screens 9 and 10

Press the A button to change screens.

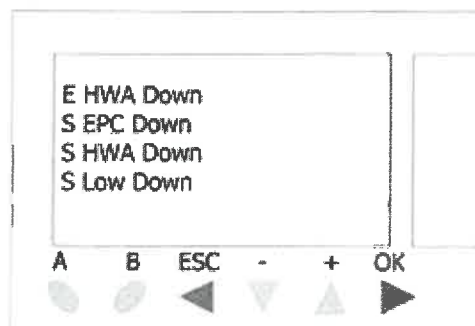
#### Screen 9 – Effluent Pump Run Counter



This Screen will show you the number of times the Effluent Pump has been turned on by the logic. The Pump Test Switch will not count. This value can be reset by pressing the – button for 3 seconds.

#### Screen 8 – Service Screen

Press the B Button for 5 seconds to access this screen.  
Press the B Button again to exit.



E HWA – Effluent HWA Float Up/Down  
S EPC – SyberAer EPC Float Up/Down  
S HWA – SyberAer HWA Float Up/Down  
S Low – SyberAer Low Float Up/Down

This screen will override the alarm screen to check float operation.



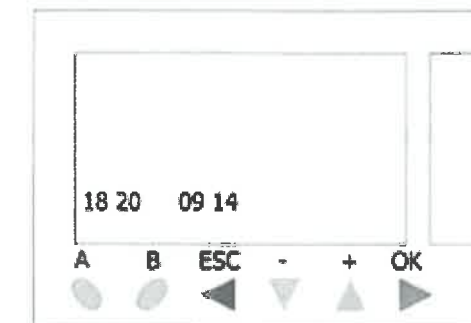
6820-A



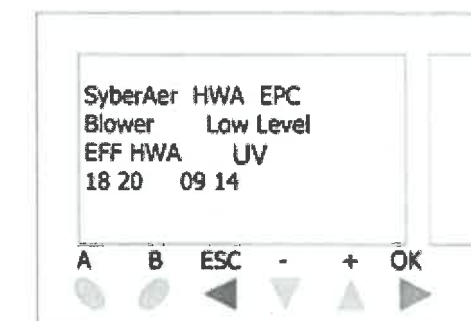


## SBC 4080 UV Logic Operating Instructions

### Alarm Screen



The information shown in the bottom of the screen when an alarm comes on is the time and Date. 18 20 = 6:20PM and 09 14 = Sept 09. This is at the time the alarm starts. If there are multiple alarms (HWA and EPC in the SyberAer) the date and time captured will be when the first alarm came on.



The alarms will be displayed on the screen in the position they are displayed above. The first line will show the SyberAer HWA and EPC, the second line will show the SyberAer Blower and Low Level. The third line will show the Effluent Tank HWA and the UV.

The SyberAer Low Level, UV, and Blower alarms are latching alarms. This means that the light and buzzer (unless silenced) will remain on even if the alarm clears. Press the OK Button to reset these alarms.

The SyberAer HWA, EPC, Effluent HWA alarms will turn the light and buzzer off if the alarm clears, but the alarm screen will remain active until the OK Button is pressed so the Date and time are visible.





## SBC 4080 UV Logic Operating Instructions

### Panel Operation

04:00 – SyberAer Blower starts.  
23:00 – Effluent Pump starts.  
00:00 – Effluent Pump stops. SyberAer Blower stops. Settling begins.  
03:00 – SyberAer Pump starts.  
04:00 – Process starts over.

#### SyberAer

SyberAer Blower – Turns the alarm light and buzzer on if the Blower stops between 04:00 and 00:00. This is a latching alarm, press the OK button to clear.

SyberAer HWA – Turns the alarm light and buzzer on, and starts the Effluent Pump. The Effluent Pump will stay on 5 minutes below the SyberAer HWA.  
( If using a secondary pump station)

SyberAer EPC – Keeps the alarm light and buzzer on. Stops the Blower and begins a 1 hour settling period in the ATU. After 1 hour the SyberAer Pump will turn on and run 4 minutes below the EPC Float.

SyberAer Low Level – Will turn the alarm light and buzzer on if the low alarm float is up between 04:00 and 04:05. This is to notify you that the ATU did not completely pump down. This is a latching alarm, press the OK button to clear.

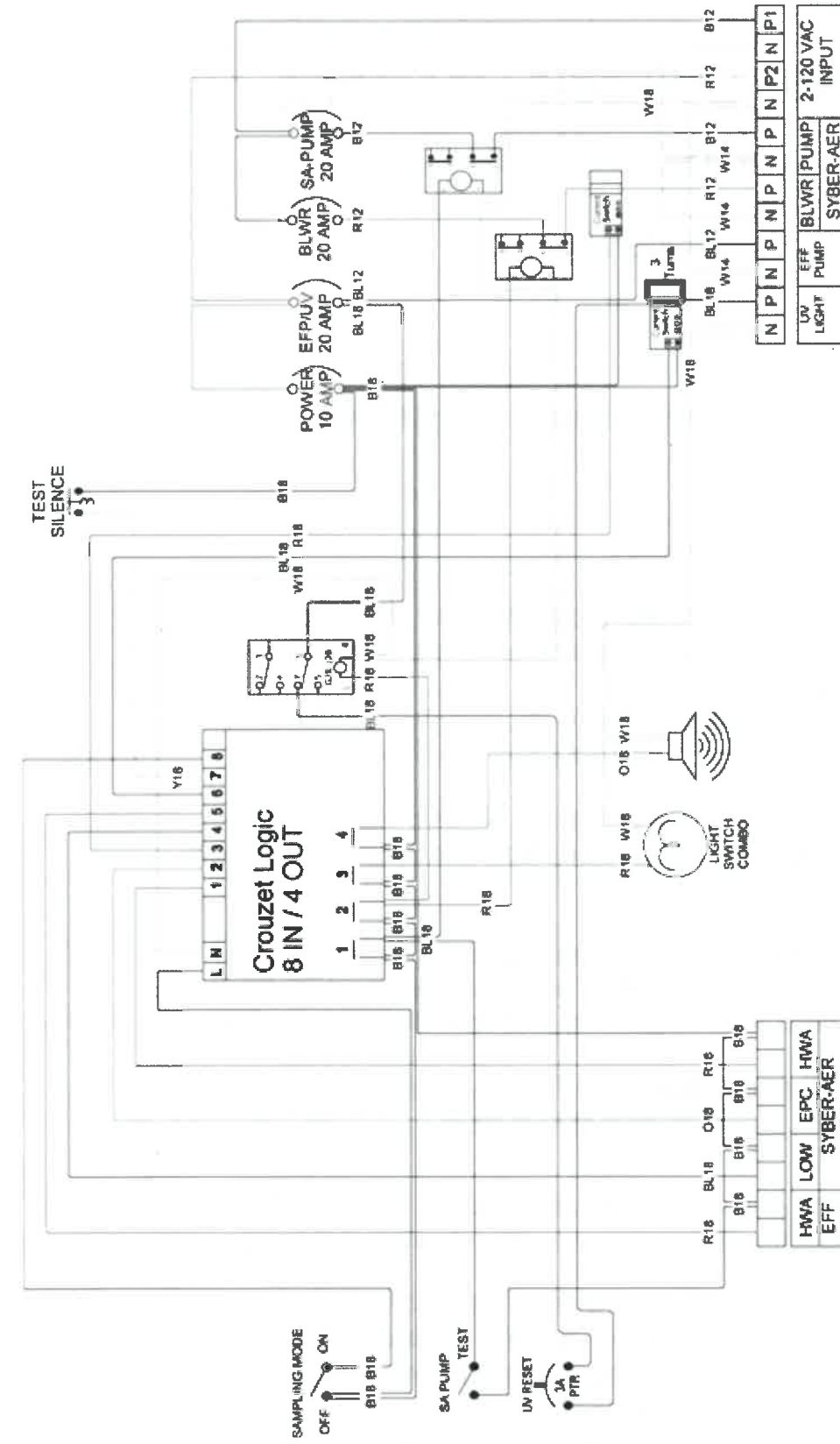
UV Alarm- Turns the alarm light and buzzer on if the UV light does not turn on. This a latching alarm, press the ok button to clear.

Fail-safe - If the Blower alarm or UV alarm are activated the SYBR-AER pump will not be allowed to run until the alarm condition has been cleared.

Sample Mode- When it is time to sample the system instruct the homeowner to flip the sample mode switch to ON before they leave for work. This will shut the blower off without sounding the alarm and turn the UV on. This will start the settling mode. When it is time to collect the sample flip the pump run switch ON and collect a free flowing sample. Once the sample has been collected turn the pump run switch OFF, and turn the sample mode switch to OFF. This will start the blower back up and resume original programming.



6820-A



GRD 00000



**SYBER-AER PUMP TANK FLOATS**

Low Float - Should be set at a level to give an alarm if the pump tank is not at that level at 4:00 am. This is a LATCHING ALARM, you must press the minus key on the logic to clear.

HWA Float - Should be set at a level to turn on the light and buzzer.

EPC Float - Should be set at a level above the HWA to turn the blower off for one hour then run the pump until the EPC Float drops.

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		<b>SyberAer Ohio</b> with UV Light	
<b>MODEL</b>		<b>4080SAOH-UV</b>	
<b>REV</b>		<b>021117RW</b>	
<b>DATE</b>		<b>EV 2</b>	



## **Sampling Instructions for the SYBR-AER with UV Disinfection**

With the SYBR-AER being an SBR (Sequential Batch Reactor) the question arises as to the proper protocol for sampling the SYBR-AER system, particularly those that incorporate disinfection and/or re-aeration. These instructions address these questions by providing an approach that, if followed, should yield data that accurately reflect the performance of the treatment system.

Sampling is part of a process for documenting succesful system operation. Sampling is a team effort that includes the homeowner, manufacturer's local representative, regulators and labortory staff.

The SYBR-AER is programmed to discharge between 3 - 4 a.m. which is not practical for taking a sample. So the control panel has a built in sample mode.

When it is time to take a sample notify the homeowner and schedule a date and time to collect the sample.

Have the homeowner on the selected date and time go out to the control panel and turn the sample mode switch ON in the panel. This will shut the blower off without sounding the alarm, and it will turn the UV light on.

After a minimum of 3 hours (maximum 5 hours) settling time from the scheduled activation time you can collect the sample.

Collect the sample by opening the sample port and unscrewing the spray head in the sample port..

Since the system is utilizing UV disinfection the pump flow has already been adjusted down slow enough to collect a free-flowing sample. Go to the control panel and turn on the manual pump run switch which will turn the pump on. Allow piping to flush for at least 30 seconds before collecting a sample.

Collect CBOD,TSS, and ammonia first then sterilize the piping before collecting fecal coliform or E. Coli samples. Sterilize piping by wiping the pipe down with bleach.

68207A



Once the sample has been collected turn off the manual pump run switch. Screw the spray head back on the pipe in the sample port. Turn pump back on let any trapped air bleed out of the line, once it is spraying consistently back in the box take your Dissolved Oxygen reading.

Once you have taken a reading put the lid back on the sample port. Turn the manual pump run switch off then turn the sample mode switch off. This will put the SYBR-AER back into it's normal operating program.

### Sampling Tips

- Understand and follow all applicable OSHA and safety standards. Wear protective gear, including gloves and eye protection. Keep hands below shoulders. Disinfect after sampling.
- Calibrate instruments. Different approaches can be used to take measurements. Be sure that electronic instruments are properly calibrated. Chemicals should be "fresh" and appropriate for the measurements to be undertaken.
- Collect samples from cleared, piping or appurtenances. Remove items that may have been deposited and do not reflect effluent as it is discharged from the system.
- Collect only free-flowing samples.
- Sterilize piping and appurtenances before collecting fecal coliform or E. Coli samples. Bacterial samples are the most sensitive of all samples. Extreme care must be excercised in collecting bacterial samples as contamination can easily occur.
- Keep notes related to sampling events and note items that may have a bearing on the results. Record the time the unit was put into settling mode and what time the sample was collected.

6820-A



**SEWAGE TREATMENT SYSTEM (STS) DESIGN FOR:**  
**William & Judith Long**  
**6820 Hillside Avenue**  
**Cincinnati, Ohio 45233**  
**Par# 540-0150-0103-00**  
**0.629 Acres**

*Designed By:*  
**SCS ENGINEERS**  
*2060 Reading Road, #200*  
*Cincinnati OH 45202*  
*513-421-5353*  
*Design Date: November 15, 2017*  
*Site Visited on: October 10, 2017*

Design Details:

New building sewer to new Sybr-Aer FT Series aerobic treatment unit (ATU), capable of treating up to 600 GPD, containing F2-UV disinfection device and post-aeration to discharge. The Sybr-Aer FT Series ATU contains a dosing pump, so the unit will have pump lockout for failsafe in the event of equipment malfunction.

Design Rationale:

This design is for a 3 bedroom home with a Daily Design Peak Flow of 360 GPD. The peak flow should not be reached on a routine basis. Average flows of 216 GPD can be accommodated routinely with typical residential wastewater strength as specified in Ohio Administrative Code (OAC) 3701-29 for households.

Poor soil quality is the main limiting factor on site. There is no area in the front yard or the side yards. The back yard has been filled in and leveled. The majority of the area consists of shallow soil with a seasonal water table at greater than 40" and flow restrictive layer of high clay at 0-3" below the surface. Conditions require an 18" Vertical Separation Distance with 8" In Situ Soil, which cannot be met with the existing soils. The owner chose a Sybr-Aer FT Series ATU for this project.

Owner will obtain a NPDES discharge permit through OEPA (owner currently does not have a permit).

System Installation, Operation And Maintenance (O&M)

All system devices and components must be operated and maintained in accordance with the Ohio Department of Health (ODH) product approval, Hamilton County Public Health Operation Permit Terms and Conditions. System devices and components must be installed per ODH product approval, Hamilton County Installation Manual and this design. Where conflicts exist, consult HCPH and designer for guidance before proceeding. Flow 2 UV Installation Manual: <http://ow.ly/I6Py30baK1V>  
Flow 2 UV O&M Manual: <http://ow.ly/sve930baK99>  
Sybr-Aer O&M Guide: <http://ow.ly/DMU330di197>  
Hamilton County Installation Manual: <http://ow.ly/ObNQs>  
This installation will require an electrical inspection(s) and approval by IBI (513) 381-6080, <http://www.inspectionbureau.com/>  
Means for O&M is provided by the driveway which is within standard distances and elevations for a service truck.

Changes and Use of This Design

This plan is the sole ownership of the designer and may not be altered, changed, used or manipulated without approval of SCS Engineers. SCS Engineers is available to make adjustments and address questions about the system design.

It is the responsibility of the contractor to verify that the system can be installed as designed, based on their preliminary lay-out of the job. It is the responsibility the installer and property owner to inform the designer of any field or other conditions that may affect the installation, operation or maintenance of the STS, including site disturbances that may affect the performance of a soil absorption component. If design changes are needed, redesign fees may apply.

System Protection

It is the owner and installation contractors responsibility to locate underground utilities. If utilities interfere with the designed system, construction shall not proceed without approval from HCPH and designer. No clearwater connections (downspouts, pool/spa water, footer tiles, cisterns, etc) shall be connected to this STS.

All system components must meet the horizontal isolation distances specified in OAC 3701-29-06(G)(3).

System Cost Information

The property owner has been informed of system options and briefed on cost factors. According to OAC 3701-29-10(B)(5), designers of STS systems must include approximate installation costs and operational costs of STS options to assist the homeowner in the selection of the STS options.

SCS Engineers estimates costs as follows :

\$17,500 - 24,400 Installation cost\*

\$1,200 annual operational cost\*

\*This is a general estimate of costs for this system. It is not a bid to install or service the STS. Contact a licensed installer and service provider or distributor for actual bids.

Disclaimer

This plan set is not a site plan to be used for constructing anything other than the Sewage Treatment System. If an accurate legal site plan is required, contact a professional surveyor. This plan offers no guarantee as to the accuracy of information provided. This plan offers no guarantees for site stability. If site stability may be an issue, a geotechnical engineer should be consulted. Plan is only as accurate as the information provided by the property owner to the designer. Easements, right-of-ways, hidden objects or information not communicated to the designer invalidates the design. It is the property owner's responsibility to review this plan and information provided to verify all site conditions and design assumptions are correct. If conflicts are found or additional information must be supplied, the owner shall contact the designer and installation shall not proceed until the approval is granted. This design shall in no way be taken as guarantee that the system will function in a satisfactory manner for any given period of time, or that SCS Engineers or any of its agents or employees assume any liability for damages, consequential or direct, which are caused, or which may be caused by a malfunction of the STS.



**SCS ENGINEERS**  
CONSULTING ENGINEERS, INC.  
2060 READING ROAD SUITE 200 CINCINNATI, OHIO 45202  
PH. (513) 421-5353

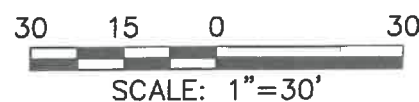
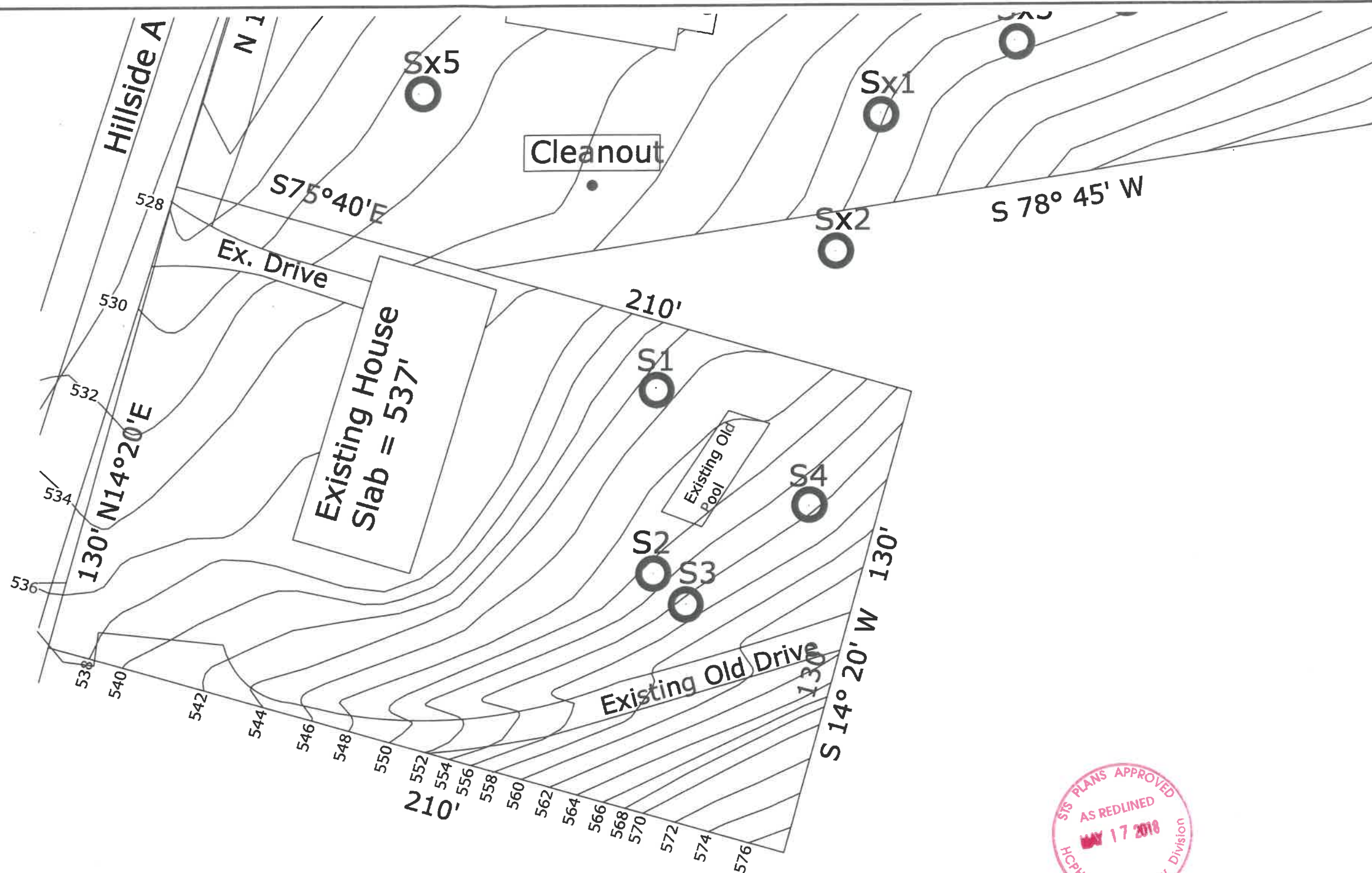
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27217008.39	LONG SEPTIC V1	November 2017	N.T.S.

REV.	DATE	DESCRIPTION	CK. BY
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△			
△			

SHEET 1

GENERAL NOTES AND DESIGN BASIS  
6820 HILLDALE AVE - LONG RESIDENCE  
PARCEL NUMBER: 540-0150-0103-00  
HAMILTON COUNTY OHIO - 0.629 ACRES

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○ Soil Test Location

CAGIS Internet Server, 2015

## SCS ENGINEERS

CONSULTING ENGINEERS, INC.  
2060 READING ROAD SUITE 200 CINCINNATI, OHIO 45202  
PH. (513) 421-5353

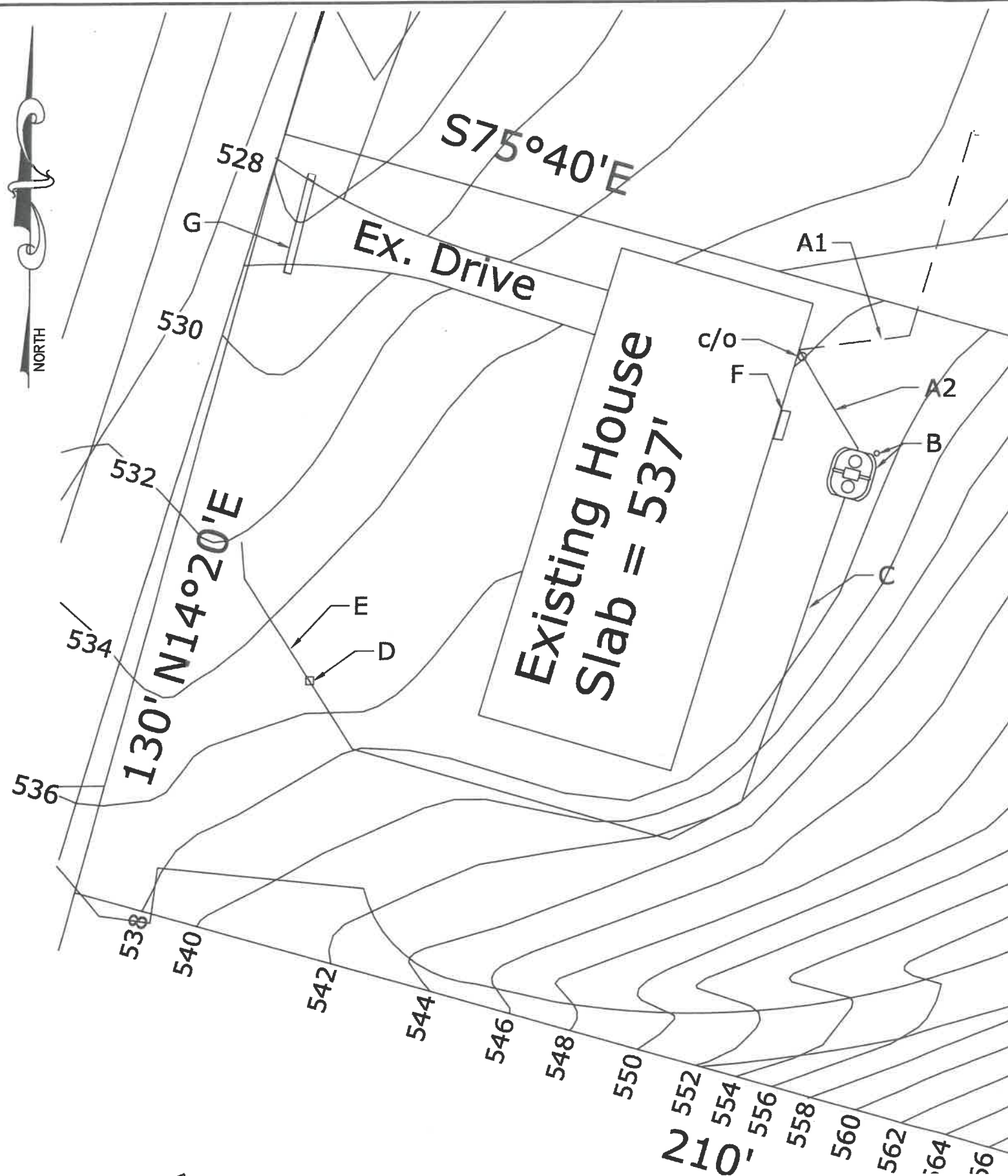
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27217008.39	LONG SEPTIC V1	November 2017	AS SHOWN

SHEET 2

SOIL SAMPLING LOCATIONS  
6820 HILLSDALE AVE - LONG RESIDENCE  
PARCEL NUMBER: 540-0150-0103-00  
HAMILTON COUNTY OHIO - 0.629 ACRES

6820-A





A1 - Approximate location of existing building sewer. Installer to remove approximately 10 feet (or just to the property line) of existing building sewer and then cap the end of pipe at cut (on existing property).

A2 - New 4" SCH40 PVC Building sewer pipe shall be a minimum 1% grade and cleanout immediately where the pipe leaves the foundation wall.

B - Sybr-Aer FT Series 600 GPD ATU with UV disinfection device and Water Table Inspection Tube (See Sheet 4 for detail). System has pump with pump lockout for failsafe.

C - Sybr-Aer 1.5" discharge pipe assembly. Pipe shall have minimum  $\frac{1}{8}$ " per foot slope towards Re-aeration and sampling chamber (D).

D - Re-aeration and sampling chamber - Tuf-Tite D-Box (16"x16"x14"). See detail Sheet 4

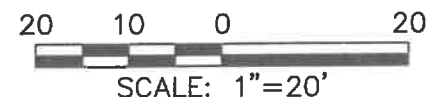
E - 4 inch Schedule 40 PVC discharge piping discharging to roadside swale. Sloped minimum  $\frac{1}{8}$ " per foot to daylight. Animal guard required at outlet end.

F - Sybr-Aer control panel model SBC 4080UV

G - Existing culvert and downstream swale need removal of excess silt and other debris. Downstream swale shall be graded to eliminate existing ponding conditions.

NOTE: No existing septic tank has been located on the property of 6820 Hillside Avenue. If a septic tank is located on 6820 Hillside Avenue, the tank is to be disconnected and abandoned per OAC 3701-29-21, and HCPH permitting and reporting requirements

NOTE: ALL PIPE SHALL BE SCHEDULE 40 PVC MEETING ASTM 1785 UNLESS OTHERWISE SPECIFIED.



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SHEET 3

SEPTIC SYSTEM LAYOUT

6820 HILLSDALE AVE - LONG RESIDENCE

PARCEL NUMBER: 540-0150-0103-00

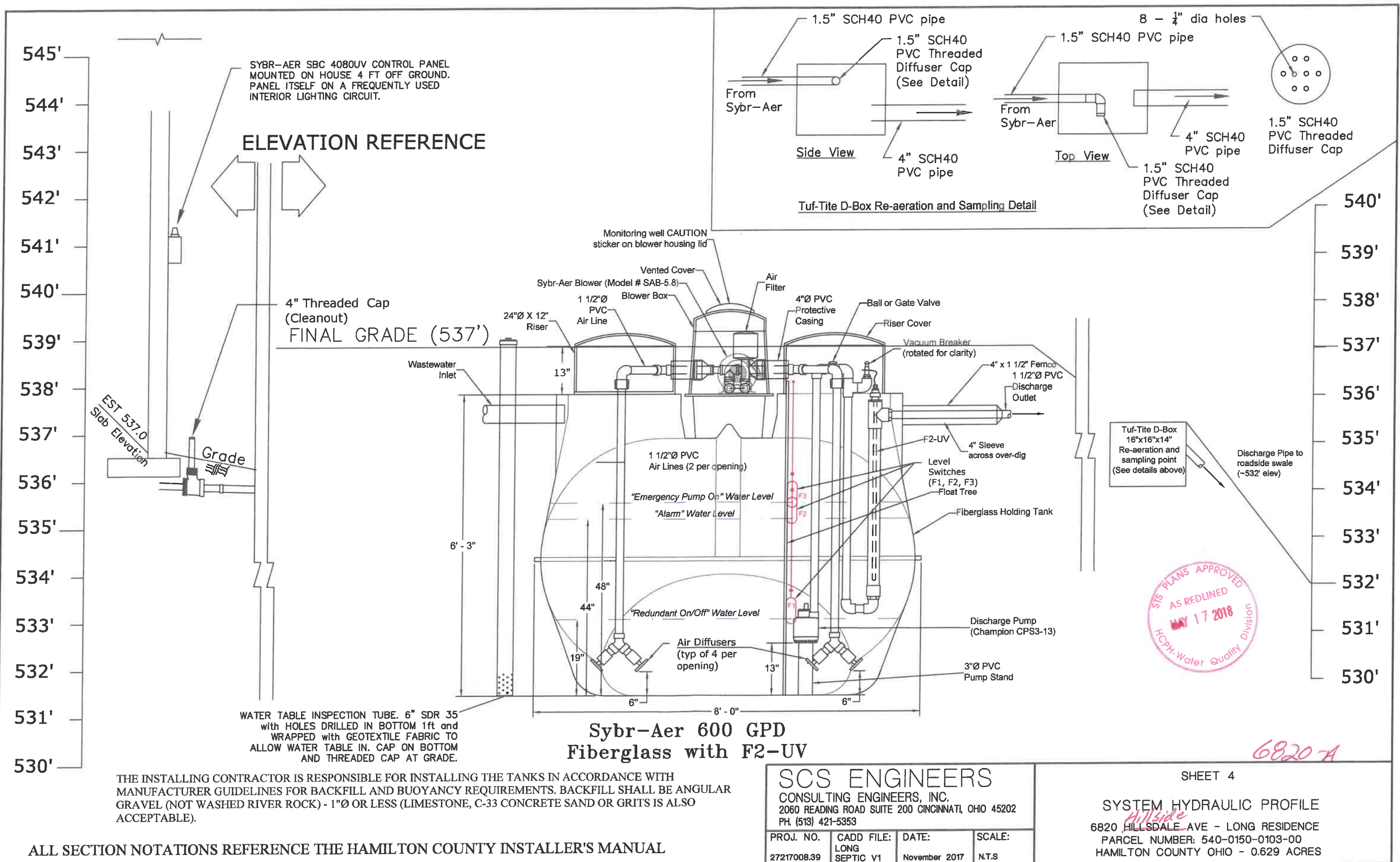
HAMILTON COUNTY OHIO - 0.629 ACRES



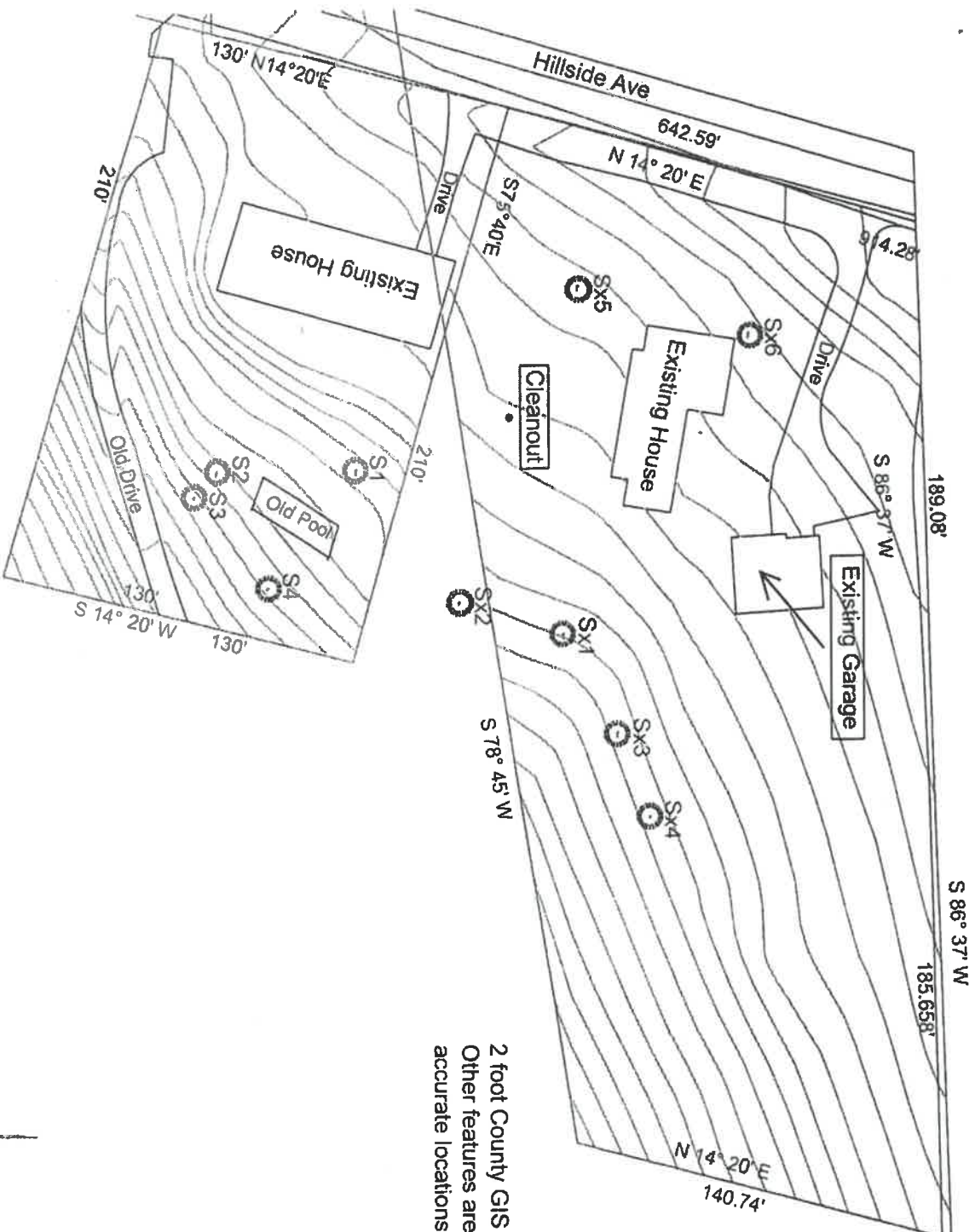
6820-A



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Long Property  
 6820 Hillside Ave  
 Cincinnati, OH 45233  
 .62 Acres



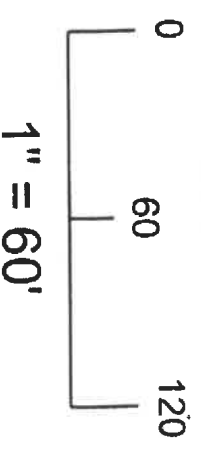
2 foot County GIS Contours shown.  
 Other features are from GIS. For more  
 accurate locations, contact a Professional Surveyor.



6820-A

Soil Locations

Scale



# Soil and Site Evaluation for Sewage Treatment and Dispersal

Land Use/Vegetation: brush

Landform: upland

Position on landform: side slope

Percent Slope: 25%

Shape of Slope: linear

Coord. Method/Accuracy: GPS - 3 ft.

1

Date: 10/10/2017

---

Evaluator: Dan Michael

903 North Broadway

Lebanon OH 45036

Phone #: 513-934-1040

Phone #: 513-934-1040

Certification Stamp or Certification# #30586

Signature: - *[Handwritten Signature]*

[illegible]



Table 3. Soil Infiltration Loading Rates.

Soil Characteristics			Soil Infiltration Loading RRate (gpd/ft2)		
Texture	Structure		CBOD5		Row
	Shape	Grade	>25mg/L (septic tank effluent)	<=25mg/L (pretreated effluent)	
COS, S, LCOS,LS FS, VFS, LFS, LVFS	--	0SG	0.8	1.6	1
	--	0SG	0.4	1	2
CSL, SL	--	0M	0.2	0.6	3
	PL	1	0.2	0.5	4
		2,3	0	0	5
	PR/BK/GR	1	0.4	0.7	6
FSL, VFSL	PR/BK/GR	2,3	0.6	1	7
		0M	0.2	0.5	8
	PL	1,2,3	0	0	9
		PR/BK/GR	1	0.2	0.6
L	PR/BK/GR	2,3	0.4	0.8	11
		0M	0.2	0.5	12
	PL	1,2,3	0	0	13
		PR/BK/GR	1	0.4	0.6
SIL	PR/BK/GR	2,3	0.6	0.8	15
		0M	0	0	16
	PL	1,2,3	0	0	17
		PR/BK/GR	1	0.4	0.6
SCL, CL, SICL	PR/BK/GR	2,3	0.6	0.8	19
		0M	0	0	20
	PL	1,2,3	0	0	21
		PR/BK/GR	1	0.2	0.3
SC, C, SIC	PR/BK/GR	2,3	0.4	0.6	23
		0M	0	0	24
	PL	1,2,3	0	0	25
		PR/BK/G	1	0	0
		2,3	0.2	0.3	27



CG20-A

Soil Characteristics			Hydraulic Linear Loading Rate (gpd/ft)												
			Slope 0-4%				Slope 5-9%				Slope >10%				
Texture	Structure	Infiltrative Distance, (inches)	Infiltrative Distance, (inches)			Infiltrative Distance, (inches)			Infiltrative Distance, (inches)			Row			
			8 - 12	12- 24	24- 48	8 - 12	12- 24	24- 48	8 - 12	12- 24	24- 48				
COS, S, LCOS,LS FS, VFS, LFS, LVFS	Shape	Grade	8 - 12	12- 24	24- 48	8 - 12	12- 24	24- 48	8 - 12	12- 24	24- 48	Row			
	--	0SG	4.0	5.0	6.0	5.0	6.0	7.0	6.0	7.0	8.0	1			
CSL, SL	--	0SG	3.5	4.5	5.5	4.0	5.0	6.0	5.0	6.0	7.0	2			
	--	0M	3.0	3.5	4.0	3.6	4.1	4.6	5.0	6.0	7.0	3			
	PL	1	3.0	3.5	4.0	3.6	4.1	4.6	4.0	5.0	6.0	4			
		2, 3										5			
FSL, VFSL	PR/BK/	1	3.5	4.5	5.5	4.0	5.0	6.0	5.0	6.0	7.0	6			
	GR	2, 3	3.5	4.5	5.5	4.0	5.0	6.0	5.0	6.0	7.0	7			
	--	0M	2.0	2.3	2.6	2.4	2.7	3.0	2.7	3.2	3.7	8			
	PL	1,2,3										9			
L	PR/BK	1	3.0	3.5	4.0	3.3	3.8	4.3	3.6	4.1	4.6	10			
	GR	2, 3	3.3	3.8	4.3	3.6	4.1	4.6	3.9	4.4	4.9	11			
	--	0M	2.0	2.3	2.6	2.4	2.7	3.0	3.2	3.2	3.7	12			
	PL	1,2,3	-	-	-	-	-	-	-	-	-	13			
SIL	PR/BK	1	3.0	3.5	4.0	3.3	3.8	4.3	3.6	4.1	4.6	14			
	GR	2, 3	3.3	3.8	4.3	3.6	4.1	4.6	3.9	4.4	4.9	15			
	--	0M	2.0	2.5	3.0	2.2	2.7	3.2	2.4	2.9	3.4	16			
	PL	1,2,3										17			
SCL, CL, SICL	PR/BK	1	2.4	2.7	3.0	2.7	3.0	3.3	3.0	3.5	4.0	18			
	GR	2, 3	2.7	3.0	3.3	3.0	3.5	4.0	3.3	3.8	4.3	19			
	--	0M										20			
	PL	1,2,3										21			
SC, C, SIC	PR/BK	1	2.0	2.5	3.0	2.2	2.7	3.2	2.4	2.9	3.4	22			
	GR	2, 3	2.4	2.9	3.2	2.7	3.0	3.3	3.0	3.5	4.0	23			
	--	0M										24			
	PL	1,2,3										25			
	PR/BK	1										26			
	GR	2, 3	2.0	2.5	3.0	2.2	2.7	3.2	2.4	2.9	3.4	27			

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