Electronically Filed In TPUC Docket Room on August 9, 2019 at 1:12 p.m.

IN THE TENNESSEE PUBLIC UTILITY COMMISSION
AT NASHVILLE, TENNESSEE

IN RE:	)	
	)	
PETITION OF TENNESSEE	)	
WASTEWATER SYSTEMS, INC., TO	)	**DOCKET NO. 18-00107**
AMEND ITS CERTIFICATE OF	)	
CONVENIENCE AND NECESSITY	)	

TWSI'S RESPONSE TO TPUC'S THIRD DATA REQUEST

Tennessee Wastewater Systems, Inc. ("TWSI") files the following responses to the Tennessee Public Utility Commission's Third Data Request:

1. Provide the name of the company that will be building/constructing the treatment plant and constructing the drip fields? Also, provide a copy of the contractor's license to do business in Tennessee for the contractor pursuant to Commission Rule 1220-04-13-.17(2)(c)(4).

RESPONSE: Adenus Solutions Group, LLC. See DR3 Exhibit 1 for the license.

2. Provide a copy of the performance bond required by Commission Rule 1220-04-13-.17(2) (e) (11).

RESPONSE: The contractor is an affiliate of TWS so a bond will not be provided.

3. The LOU states at the end of item 1: "*This lot count will be used for* this *Letter of Understanding only*". Does this mean that the lot count will change from 57 in the Sewer Service Agreement or any other agreements that have not been provided in this Docket?

RESPONSE: No. The lot count for this project is 57 lots.

4. Provide a copy of the Sewer Service Agreement that reflects (1) Access fees that will be paid for all unsold/sold lots; (2) Language stating that the Utility will not be responsible for costs associated with procuring easements or pursuing condemnations even with the approval or consent of the Developer as well as any other pertinent information that was provided /amended/not provided in the LOU; and (3) language stating the total and final lot count to be included in this development.

RESPONSE: See DR Exhibit 4.

5. Provide amended pre-filed testimony with the statement that the applicant is aware of the requirement of Rule 1220-04-13-.09(7) concerning the completion of the construction of the wastewater system within three years of the Commission's approval of the CCN.

RESPONSE: See DR3 Exhibit 5 which has also been filed separately in the docket.

Oakwood Follow-up Questions

6. Please provide a copy of Exhibits A-D to the Design/Build Agreement between Echo Development and Adenus Solutions Group, LLC.

RESPONSE: See DR3 Exhibits 6A, 6B, 6C, and 6D.

7. Did TWS contract with Echo or with Adenus Solutions Group, LLC for inspection services for the expansion of the wastewater system at Oakwood.

RESPONSE: No. TWS conducts its own inspections.

8. Please provide a copy of the Sewer Service Agreement for the expansion of the development at the Oakwood Subdivision. An LOU was previously provided in response to the previous request for a copy of the Sewer Service Agreement. The LOU provided for the construction of the expansion between TWSI and the Developer and stated that the Utility was building the system; however, the Design/Build Contract provided is between Adenus Solutions and the Developer. Please explain (The Sewer Service Agreement, may answer this question).

RESPONSE: See DR3 Exhibit 8.

Prior to and at the time the LOU was executed, TWSI coordinated the construction of all systems it would eventually own and operate. After the LOU was executed, TWSI ceased coordinating the construction of its systems and now allow the developer(s) to contract with whoever they want to construct the wastewater facilities provided it is done according to approved plans and State and Utility guidelines. As set forth in the agreements, the Developer is responsible for constructing the wastewater system and conveying the completed system to TWSI.

9. The LOU states that TWS may require installation of additional piping infrastructure through the Echo Development to accommodate future development and or expansion, that TWS has the right to extend piping infrastructure at any time at its sole discretion, and TWS will be responsible for any costs incurred to extend the piping. Please explain in detail circumstances that would require the extension of piping and provide the account number where TWS will record the associated expenses, assets....

RESPONSE: The LOU/Contract language grants TWS easement rights through the Development in the event the Utility needs to install additional piping infrastructure

to serve additional properties in the area that may request service. This situation may arise when a neighboring or other area property wishes to obtain wastewater service and a pipe (or other infrastructure) needs to be run through the Development in order to provide the service such as in the case of connecting a property to a regional plant or to an existing onsite plant that has capacity for additional connections.

The language regarding TWS being responsible for costs incurred to extend the piping serves the purpose to make clear to the Developer that the Developer will not be responsible for any of the costs related to running a pipeline through their Development to benefit other projects. TWS will not pay those costs either as it would be the responsibility of the property owner/developer requesting service to pay for the infrastructure. TWSI will modify this language in future agreements to clarify the intent.

10. Based on the Design/Build Contract being between the developer and Adenus Solutions and the LOU being between TWS and Echo Development, did TWS contract the expansion to be constructed by Adenus Solutions? If so, please provide a copy of the contract between Adenus Solutions and TWS.

RESPONSE: No. See response to Question 8. The Developer is responsible for constructing the system and contracts directly with the construction company. TWS is not involved in the contracting of construction services between the Developer and the contractor.

11. Please provide the itemized cost for build-out of the expansion of the system at the Oakwood Subdivision, including calculations for contributions in aid of construction to be paid by the developer.

RESPONSE: See DR3 Exhibit 11.

RESPECTFULLY SUBMITTED,

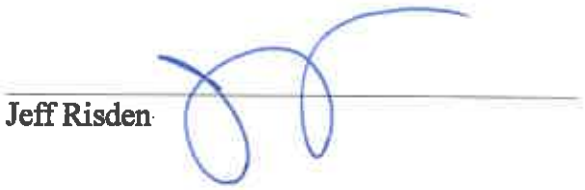
Jeff Risden (BPR No. 32769)
General Counsel
Tennessee Wastewater Systems, Inc.
851 Aviation Parkway
Smyrna, TN 37167
(615) 220-7171
jeff.risden@adenus.com

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing was served via U.S. Mail or electronic mail upon:

Karen H. Stachowski
Assistant Attorney General
Office of the Tennessee Attorney General
Financial Division, Consumer Advocate Group
PO Box 20207
Nashville, TN 37202-0207
615-741-2370
Email: Karen.Stachowski@ag.tn.gov

This the 9th day of August, 2019.



Jeff Risden

DR 3
EXHIBIT 1

ADENUS SOLUTIONS GROUP LLC.
849 AVIATION PARKWAY
SMYRNA, TN 37167

State of Tennessee

2753057

BOARD FOR LICENSING CONTRACTORS

CONTRACTOR

ADENUS SOLUTIONS GROUP LLC

This is to certify that all requirements of the State of Tennessee have been met

LIC STATUS: ACTIVE

IN-1313
DEPARTMENT OF
COMMERCE AND INSURANCE

DR 3
Exhibit 4

SANITARY SEWER SERVICE AGREEMENT

This Sanitary Sewer Service Agreement (the "Agreement") is made and entered as of this 17 day of June, 2019, by and between **TENNESSEE WASTEWATER SYSTEMS, INC.**, a Tennessee corporation ("TWS") and **Powers & Atkins LLC**, a Tennessee Limited Liability Corporation / **Riverland Partners**, a Tennessee General Partnership ("Developer").

WITNESSETH:

WHEREAS, TWS has the ability and technology to own and operate a system for the disposal and processing of wastewater in **Montgomery County**, Tennessee;

WHEREAS, Developer plans and intends to develop a 57 Lot residential development community presently known as the **Warriota Hills Subdivision** (the "Development") located on Ramblewood Drive, identified as Map 90, Parcel 54.99, in Montgomery County, TN (the "Property");

WHEREAS, Developer is responsible for constructing the wastewater treatment system along with the collection and disposal systems to serve the Development in accordance with the Plans and Specifications as approved by the State of Tennessee and TWS, so that TWS is able to serve the wastewater treatment and disposal needs of the Development;

WHEREAS, Developer has requested TWS to commit to serve the Development; and,

WHEREAS, TWS is willing and able to serve said Development upon the terms, provisions and conditions hereinafter set out, all of which are acceptable to the Developer.

NOW, THEREFORE, for and in consideration of the mutual covenants of the parties, and other good and valuable consideration, the receipt and legal sufficiency of which is hereby acknowledged, the parties do hereby agree as follows:

1. **Definitions**. In addition to the terms defined in the text of this Agreement, for purposes hereof, the following terms shall have the meaning ascribed to them below:

   (a) "Applicable Laws" means all applicable constitutions, treaties, statutes, rules, regulations, ordinances, orders, directives, codes, judgments, decrees, injunctions, writs and determinations of any governmental or quasi-governmental authority.

   (b) "Certified Installer" means a person who is certified by Adenus Technologies, LLC to construct and install the watertight tanks and service line connections within the Lot(s) of the Development.

   (c) "Development" means that certain residential housing development owned and developed by Developer upon the Property and located adjacent and contiguous to the Sewage Facility Land.

   (d) "Effective Date" means the date the last of the parties hereto executes this Agreement.

(e) "Event of Force Majeure" means a strike, lockout, labor dispute, embargo, flood, earthquake, storm, dust storm, lightning, fire, epidemic, act of God, war, national emergency, civil disturbance, riot, act of sabotage or terrorism, restraint by court order or order of another governmental authority, or any other occurrence beyond the reasonable control of the party in question; provided lack of necessary funds shall not be considered an "Event of Force Majeure" for purposes hereof.

(f) "GSPD" means average gallons of sewage per day, calculated on a monthly basis. For example, if a customer of TWS released 300 gallons of sewage into the Sewer System in a thirty (30) day month, such customer would have released 10 GSPD during such month.

(g) "Lot" or "Lots" shall mean a portion or portions of the Property, which are shown on a Plat after the Plat has been recorded in the County Register of Deeds which Lot (except as otherwise noted herein) is to be used for residential purposes.

(h) "Lot Owner" or "Lot Owners" shall mean and refer to one or more persons who hold the record title to any platted Lot within the Property, including, but not limited to the Developer, which is part of the Property, but excluding in all cases any party holding an interest merely as security for the performance of an obligation.

(i) "Plans and Specifications" shall mean and refer to the plans and specifications for construction, installation and development of the Sewer System, as more particularly described on Exhibit C, attached hereto, which have been approved in writing by TWS. The Plans and Specifications shall also be in accordance with requirements of the State of Tennessee, Montgomery County, and all Applicable Laws.

(j) "Plat" shall mean a subdivision plat of all or a portion of the Property which shows roads, open space, residential Lots and Wastewater Lots.

(k) "Property" shall mean and refer to the real property described on Exhibit A, attached hereto.

(l) "TPUC" means the Tennessee Public Utility Commission and any successor thereto.

(m) "Sewage Facility" shall mean and refer to Warrioto Hills Treatment Facility having capacity to serve all 57 lots in the development on the Sewage Facility Land which is to be operated by TWS upon conveyance to TWS by the Developer in accordance with this Agreement.

(n) "Sewage Facility Land" means that land described on Exhibit B upon which the Sewage Facility is located.

(o) "Sewer System" means the Sewage Facility Land, the Sewage Facility as more particularly described in the Plans and Specifications, including, but not limited to all lines, pipes, meters, lift stations, equipment, machinery, fixtures, trade fixtures, easements and personal property used in connection with the operation thereof, whether

or not located on the Sewage Facility Land or the Property, as the same may be altered, improved, modified, expanded or relocated from time to time.

(p) "Sewer System Construction" means the construction of improvements for the Sewer System necessary to accommodate the Development as more particularly described in the Plans and Specifications.

(q) "Wastewater Lot" means the same as shown on any Plat of the Property.

2. Compensation

(a) **Construction** – Developer will pay TWS an $800.00 per Lot review and inspection fee for each Lot shown on that Plat. The Developer agrees to pay for the entire design and construction of the treatment facility, drip fields, storage pond, fencing and collection system including but not limited to the following:

- Design and Construction of treatment and disposal capacity for the project, to include the TF construction, the drip field disposal installation, and fencing.
- Developer will provide dedicated easements for access to the treatment facility and the drip fields.
- Any other professional report fees/costs for preparation and performance of the work.
- Regulatory coordination, engineering review, and construction inspection (sewer collection/reuse mains, subdivision collection mains, individual residential tank and lot services, etc.)

Fee payment schedule:

- Payment for 57 lots will be due at time of Final Plat signing.

TWS will withhold signing the final plat for any phase of the development until all review & inspection fees have been paid in full by the Developer for the phase being presented for Final Plat.

3. Sanitary Sewer Service.

(a) *Dedication.* From and after the date the Sewer System is completed in accordance with the Plans and Specifications agreed upon by TWS, and upon the completion or satisfaction by Developer and TWS, of all the other terms and conditions set forth herein, TWS shall give written acceptance of the system to the Developer and shall provide sanitary sewer service to the Development.

(b) *Usage.* Lot Owners shall only have the right to discharge sanitary sewage into the Sewer System, and the Lot Owners agree to use the Sewer System in a manner that

complies with the "User Manual Do's and Don'ts for Effluent Collection Systems" attached hereto as Exhibit D. If sewer service to the Property is temporarily interrupted due to an Event of Force Majeure, TWS shall have no liability to the Developer or any Lot Owner on account of such interruption. In such event of temporary interruption, TWS shall use its best efforts to restore sewer service to the Property as quickly as possible. Developer represents and warrants that its contract of sale with each third-party purchaser or third-party builder of each Lot shall include in it the requirement that such person or entity must enter into a Sewer Service Agreement, in form and substance attached hereto as Exhibit E, by TWS.

(c) *Acceptance by TWS.* Upon completion of the Sewer System by the Developer, inspection and approval of the Sewer System by TWS, payment of all fees due under Section 2(a), and the satisfaction of any other of TWS's requirements set forth herein, TWS hereby agrees to and will accept contribution of the Sewer Facility and Sewer System and will commence providing sewer service to the Development. TWS shall be under no obligations to furnish sewer service for the Development until the Developer has fully and satisfactorily performed under and pursuant to this Agreement.

4. Permits. TWS shall obtain and pay for all permits, licenses and other approvals necessary to allow TWS to deposit the applicable GSPD into the Sewer System, including, but not limited to, any regulatory approvals that must be obtained from TDEC or any other governmental or quasi-governmental authority having jurisdiction over the Sewer System.

5. Sewer System Construction.

(a) Installation and Developer Responsibility. At its own expense and at no cost or expense to TWS, Developer shall furnish, install, lay and construct all the Sewer System. The construction and installation of the Sewer System improvements shall be in strict accordance with the Plans and Specifications as approved by TWS. TWS shall inspect the construction of the improvements upon intervals determined by TWS. All Sewer System improvements shall be located as set forth in the Plans and Specifications.

(b) Delegation by Developer. The Plans and Specifications require that Developer must install watertight tanks and service connection lines within Lots in accordance with the Plans and Specifications, at Developer's expense. Should Developer authorize a Lot Owner or third-party builder to construct such watertight tanks and service connection lines within any Lot, Developer represents and warrants that it will require such person or entity to comply with the Plans and Specifications and bear all expense of compliance and insure that the installation work is performed by a *certified installer*.

(c) *Wastewater System Performance Bonds.* The Developer shall post any bonds as required by the TPUC and/or County, in accordance with TPUC's and/or County rules and regulations.

(d) *No Liens.* Developer shall complete the development and construction of the Sewer System in accordance with the Plans and Specifications and the Sewer System shall be free of any laborers', materialmen's, mechanics', or other liens on any part of the Sewage Facility Land or the Sewer System and Developer shall not permit any such lien to be filed or otherwise imposed on any part of the Sewage Facility. In the event any such lien is filed against the Sewage Facility the Sewage Facility Land, or the System, Developer shall

promptly cause such lien to be discharged or in lieu thereof file a bond or other security for the payment of such lien in form and amount satisfactory to TWS.

6. Conveyance and Transfer. Upon completion, Developer shall:

(a) convey by quit claim deed (the "Deed"), in the form attached hereto as Exhibit F, the Sewage Facility Land to TWS and provide title insurance policy, not to exceed $150,000.00 (U.S. dollars);

(b) provide TWS with an owner's policy of title insurance issued by a nationally recognized title company showing the status of title to the Sewage Facility Land as free and clear of all material or interfering encumbrances (determined in TWS's sole discretion), including, but not limited to, any monetary liens, in the name of TWS for the full amount of the construction of the Sewage Facility and the value of the Sewage Facility Land (the "Title Policy");

(c) provide TWS with a survey of the Sewage Facility Land prepared by a surveyor or engineer licensed in the State of Tennessee sufficient to allow the title company to eliminate the standard printed exceptions in the owner's title policy pertaining to discrepancies in the area or boundary lines, encroachments, overlaps, improvements, or similar matters (the "Survey"), which Survey shall be certified to TWS and the title company;

(d) provide the TWS with "as-built" plans for the Sewer System; the Collection System capable of providing wastewater service for a total of 57 Equivalent Dwelling Units

(e) grant TWS a non-exclusive sewer line easement, in the form attached hereto as Exhibit G, across those portions of the Property lying within five (5) feet of either side of the sewer line within the Property.

All costs, fees and expenses related to the foregoing within this Section 6 shall be the sole responsibility of Developer, including, without limitation, recording fees, transfer taxes, title premiums, title endorsement charges and survey costs.

7. Developer Warranty. The Developer hereby warrants all Sewer System improvements installed pursuant to the provisions of this Agreement against defects in workmanship and materials from the time the system improvements for the 1st phase are conveyed to TWS and for a period of one (1) year from the date TWS obtains twenty-five percent (25%) of the platted lots in the phase connected to the system. TWS will allow the Developer to cure, repair or remedy any defects in workmanship or materials within a reasonable timeframe prior to TWS repairing the defect. The Developer shall reimburse TWS upon demand for all costs and expenses incurred by TWS to repair all breaks, leaks or defects of any type whatsoever arising from any cause whatsoever occurring from the time the system improvements for the phase are conveyed to TWS and for one (1) year from the date TWS obtains twenty-five percent (25%) of the platted lots in the phase connected to the system the Sewer System. The Developer hereby warrants that the Sewer System improvements shall be paid for in full and that no liens or encumbrances shall remain in regard to the Sewer System improvements.

8. **Representations and Warranties.**

(a) TWS represents, warrants and covenants to Developer that:

(i) (A) TWS is a corporation duly organized and validly existing and in good standing under the laws of the State of Tennessee and is duly qualified to transact business in the State of Tennessee, (B) TWS has all necessary power to execute and deliver this Agreement and perform all its obligations hereunder, (C) the execution, delivery and performance of this Agreement by the TWS does not conflict with or result in a violation of its organizational documents or Applicable Laws, and (D) the execution, delivery and performance of this Agreement by TWS does not conflict with or constitute a breach of, or constitute a default under, any contract, agreement or other instrument by which the TWS is bound; and

(ii) (A) TWS has not received notice of any litigation, administrative action, investigation or other governmental or quasi-governmental proceeding which would or could have an adverse effect upon its ability to fulfill all of its obligations under this Agreement, and (B) the execution, delivery and performance of this Agreement by TWS will not conflict with or result in a breach of any order, judgment, writ, injunction or decree of any court or governmental instrumentality; and

(iii) TWS is not a party to any voluntary or involuntary proceedings under any law relating to insolvency, bankruptcy, moratorium or creditors' rights.

(b) Developer represents, warrants and covenants to the TSW that:

(i) Developer is a joint venture between a limited liability company and a general partnership duly organized and validly existing and in good standing under the laws of the State of Tennessee and is duly qualified to transact business in the State of Tennessee, (B) Developer has all necessary power to execute and deliver this Agreement and perform all its obligations hereunder, without the consent or approval of any governmental authority, (C) the execution, delivery and performance of this Agreement by Developer does not conflict with or result in a violation of its organizational documents or Applicable Laws, and (D) the execution, delivery and performance of this Agreement by Developer does not conflict with or constitute a breach of, or constitute a default under, any contract, agreement or other instrument by which Developer is bound; and

(ii) (A) Developer has not received notice of any litigation, administrative action, investigation or other governmental or quasi-governmental proceeding which would or could have an adverse effect upon its ability to fulfill all of its obligations under this Agreement, and (B) the execution, delivery and performance of this Agreement by Developer will not conflict with or result in a breach of any order, judgment, writ, injunction or decree of any court or governmental instrumentality; and

(iii) Developer is not a party to any voluntary or involuntary proceedings under any law relating to insolvency, bankruptcy, moratorium or creditors' rights and;

(iv) Developer warrants and represents that all necessary permits as required by the State, County, and any other governing or regulatory authority have been applied for and obtained prior to the construction of the sanity sewer.

9. **Default and Termination.**

(a) Notwithstanding anything to the contrary herein, TWS may, at all times prior to the completion of the Sewer System, terminate this Agreement in the event that:

(i) Developer has materially failed to perform or has been negligent in the performance of its construction of the Sewer System pursuant to the terms of this Agreement and in accordance with the Plans and Specifications and has failed to cure said failure or negligence within fifteen (15) calendar days after receiving written notice from TWS specifying in detail the nature of such failure or negligence; provided if such failure or negligence cannot reasonably be cured within said fifteen (15) calendar day period, then TWS may not terminate this Agreement if Developer has commenced to cure the failure or negligence within said fifteen (15) calendar day period and thereafter prosecutes such cure to completion with reasonably acceptable diligence; or

(ii) Developer has defaulted in the performance of its obligations under this Agreement, including without limitation, payment to TWS of the Sewer System Fees as and when required and fail to cure such default within fifteen (15) calendar days after notice from TWS thereof; or

(iii) A receiver, liquidator, or trustee of Developer shall be appointed by court order, or a petition to liquidate or reorganize Developer shall be filed against Developer under any bankruptcy, reorganization or insolvency law and such order or petition is not vacated or dismissed within sixty (60) calendar days, or Developer shall voluntarily file a petition in bankruptcy or request for reorganization under any provision of the bankruptcy reorganizational insolvency laws unless such petition is dismissed within sixty (60) calendar days after the filing thereof, or if Developer shall make an assignment of all or substantially all of its assets for the benefit of creditors, or if Developer is adjudicated bankrupt.

(b) Developer may terminate this Agreement, at any time during the term of this Agreement prior to completion of the Sewer System, if a receiver, liquidator, or trustee of TWS shall be appointed by court order, or a petition to liquidate or reorganize TWS shall be filed against TWS under any bankruptcy, reorganization or insolvency law and such order or petition is not vacated or dismissed within sixty (60) calendar days, or TWS shall voluntarily file a petition in bankruptcy or request for reorganization under any provision of the bankruptcy reorganizational insolvency laws unless such petition is dismissed within sixty (60) calendar days after the filing thereof, or if TWS shall make an assignment of all or substantially all of its assets for the benefit of creditors, or if TWS is adjudicated bankrupt.

In the event this Agreement is terminated for any of the above reasons, TWS shall be entitled to all fees to be paid pursuant to the terms of this Agreement through the effective date of such

termination and there shall thereafter be no further obligation owed by TWS to Developer. In the event that this Agreement is terminated prior to the commencement of construction due to economic factors, this Agreement shall be terminated; provided, however, TWS shall retain the initial amount paid to TWS by Developer as set forth in Section 10 below.

10. INDEMNIFICATION.

a) Each party agrees to indemnify and hold harmless the other from, against and/or with respect to:

   i) Any loss, expense, liability, damage, or deficiency resulting from any material misrepresentation, breach of warranty, or nonfulfillment of any covenant or agreement on the part of such party made or given in or with respect to this Agreement, or from any material misrepresentation in or omission from any certificate, schedule, exhibit or other document or instrument furnished or to be furnished to the other in connection with the transactions provided for in this Agreement, or from any gross negligence or willful misconduct of the other party; and/or

   ii) Any and all costs and expenses (including attorneys' fees) arising in connection with any of the foregoing.

b) In addition to the above, Developer shall indemnify and hold TWS harmless of, from, against and in respect of:

   i) Any tax lien, levy, assessment, payment, liability, penalty or other deficiency, whether disputed or not, suffered or incurred by TWS as a result of or arising out of Developer's ownership of the Property;

   ii) Any judgment, award, payment, settlement, cost or expense arising out of Developer's ownership of the Property, and rendered against or suffered or incurred by TWS as a result of or with respect to any lawsuit or cause of action against or involving the Property;

   iii) Any and all liabilities, whether disputed or not, suffered or incurred by TWS as a result of or arising out of Developer's ownership of the Property; and/or

   iv) Any and all costs and expenses (including attorneys' fees) arising in connection with any of the foregoing.

   v) Any violation of any permit requirement of the State of Tennessee, Montgomery County, and any other governing or regulatory authority with jurisdiction over the construction of the sanitary sewer.

c) The provisions of this section shall survive completion of the Project and/or expiration or termination of this Agreement.

11. **ENVIRONMENTAL INDEMNITY.** In addition to the above, Developer represents, warrants and covenants to, for and with TWS that there are no Hazardous Materials which have been generated and disposed of by Developer or which have been generated and disposed of by Developer and have migrated to the Property (including the ground water thereon) from any adjacent real estate owned, leased, or otherwise controlled by Developer, (except for those Hazardous Materials which may be stored on or about the Property in accordance with the Applicable Environmental Laws), as such terms are defined in the Applicable Environmental Laws, or in any regulations promulgated pursuant thereto. Developer has not received any notice and to the best knowledge of Developer no notice has been given to any party in the chain of title to the Property, by any person claiming any violation of, or requiring compliance with, any Applicable Environmental Laws, demanding payment or contribution for environmental damage; and to the best knowledge of Developer no investigation, administrative order, consent order or agreement, litigation, or settlement with respect to Hazardous Materials located, on about or under all or a portion of the Property or contiguous or adjacent to the Property (provided that such contiguous or adjacent property is owned or controlled by Developer) is pending, or, to the knowledge of Developer, proposed, threatened or anticipated. To the extent that Developer breaches any of the aforementioned representations and TWS is required by law to undertake any remedial or removal actions in connection therewith, as defined in the Applicable Environmental Laws, or to the extent that TWS is otherwise liable to incur costs or may otherwise be held liable to any third party in connection with such breach or for any removal or remedial actions taken with respect thereto, then, within a reasonable period of time following receipt of notice thereof from TWS, Developer shall indemnify TWS and hold TWS harmless from all liabilities, damages and costs incurred by TWS with respect to such breach including, without limitation, all claims, liabilities, loss, costs or expenses arising from the incurrence of any penalties, charge or expenses with respect thereto in defending itself against any suit or action brought by such third party, and in paying or satisfying any judgment obtained by such third party against TWS. The obligations of Developer under this section and the indemnity given hereunder shall survive the Closing.

12. **Developer Obligations.**

(a) The Developer shall pay an annual wastewater capacity reservation fee of $120.00 per platted Lot, or as may be amended from time to time by the TPUC, for each Lot owned that is not attached to the Sewer System. Should the Developer sell a Lot, the Developer agrees to include in the sales contract with the purchaser the requirement to pay to TWS an annual wastewater capacity reservation fee at the then current TPUC established rate to defray the cost of testing and reporting to the State of Tennessee. The fee shall be payable each year by December 15th for the owners of record as of December 1. When the Lot Owner attaches to the Sewer System and accepts service with the Sewer System, such Lot Owner shall pay a prorated fee for that year and the fee shall not be charged thereafter so long as the Lot Owner maintains service.

(b) Developer shall pay TWS the federal corporate income tax associated with the amount of the contribution of the wastewater system. The formula to be used to calculate the tax is as follows:

TR/(1-TR) .*C+P. TR is the current effective corporate tax rate which is presently 21%. C is the amount of cash provided to TWS and P is the amount (cost) of the property (real and personal) to be conveyed to TWS. The taxes shall be paid at the time the Subdivision plat is presented to TWS for signature.

13. **Operation, Maintenance and Improvements.**

(a) TWS shall, (i) perform all repairs, maintenance and replacements necessary to keep the Sewer System in a good working order, and (ii) operate the Sewer System in compliance with Applicable Laws, including, but not limited to, all Applicable Laws related to human health, safety and the environment. To the extent reasonably possible, TWS shall perform all repairs, maintenance and replacements to the Sewer System in a manner that does not interfere with its ability to provide sewer service to the Property. In the event any repairs, maintenance or replacements to the Sewer System will result in an interruption of sewer service to the Property, TWS shall notify Developer thereof and use its best efforts to minimize the interference caused thereby, which efforts shall include, but not be limited to, working with Developer to schedule the repairs, maintenance and replacements so as to avoid or lessen the disruption. Service by TWS will be provided in compliance with its established tariff in effect at the Tennessee Public Utility Commission.

(b) Developer further agrees to execute, acknowledge and deliver to TWS any and all mutually agreed upon easements that may be necessary or appropriate as determined by TWS for the construction, operation and maintenance of TWS's Sewer System, or portion thereof.

(c) TWS may require the installation of additional piping infrastructure through the development to accommodate future development or expansion of the collection or disposal system. Developer agrees to provide TWS any easements necessary for the extension of this infrastructure. TWS has the right to expand the piping infrastructure at any time and in its sole discretion. The Developer will not be responsible for any costs associated with extending the piping infrastructure.

14. **Restrictive Covenants.** Developer shall include, within any declaration or other instrument regarding restrictive covenants for the Development, a provision regarding the sewage disposal system set forth herein as drafted by TWS, in form and substance as more particularly set forth in Exhibit H, attached hereto.

15. **Water Valve Requirements.** Developer is required to install a water shut off valve with an appropriate valve box in the water line on the customer's side of the water meter at each home in the subdivision. If the Developer sells the lot to allow another party to build on the lot, they must insure that the purchaser is notified of the water valve requirements.

16. **Assignment.** Neither Developer nor TWS shall not have the right to sell, assign, transfer, lease or convey all or a portion of its rights hereunder without the prior written consent of the other party. Developer and TWS shall have the right to assign all of its rights under this Agreement to any party purchasing the Sewer System or the Property so long as such party assumes all of Developer or TWS's obligations hereunder. It is agreed that as used herein, "Developer" shall mean Developer and its respective successors, assigns, transferees and tenants, with the exception of customers purchasing completed homes on the Property, and "TWS" shall mean TWS and its respective successors and assigns.

17. **Miscellaneous.**

(a) Entire Agreement. This Agreement (i) constitutes the entire agreement and understanding of Developer and TWS with respect to the subject matter hereof, and (ii) may be amended only by a written instrument executed by Developer and TWS.

(b) Governing Law. This Agreement shall be governed by and construed under the laws of the State of Tennessee.

(c) Successors and Assigns. This Agreement shall be binding upon, and inure to the benefit of, the parties hereto and their respective successors and assigns.

(d) No Waiver. No waiver of any provision of this Agreement shall be deemed to have been made unless expressed in writing and signed by the party charged therewith. No delay or omission in the exercise of any right or remedy accruing upon the breach of this Agreement shall impair such right or remedy or be construed as a waiver of such breach. The waiver by Developer or TWS of any breach shall not be deemed a waiver of any other breach of the same or any other provision of this Agreement.

(e) Severability. If any provision of this Agreement is found by a court of competent jurisdiction to be illegal, invalid or unenforceable, the remaining terms hereof will not be affected, and in lieu of each provision that is found to be illegal, invalid or unenforceable, a provision will be added as a part of this Agreement that is as similar to the illegal, invalid or unenforceable provision as may be possible and be legal, valid and enforceable.

(f) Prior Drafts. All negotiations, considerations, representations and understandings between Developer and TWS are incorporated herein. No inference shall be drawn from the addition, deletion or modification of any language contained in any prior draft of this Agreement.

(g) Attorneys' Fees. If any legal proceeding is commenced to (i) enforce the terms of this Agreement or (ii) interpret the provisions contained herein, the prevailing party in such legal proceeding shall be entitled to recover its reasonable attorneys' fees, court costs and litigation expenses from the non-prevailing party.

(h) *Exhibits.* TWS and Developer hereby acknowledge and agree that all exhibits referenced in this Agreement are attached hereto and incorporated herein by reference.

(i) *Relationship Between the Parties.* This Agreement shall not be deemed or construed to create a partnership or joint venture between Developer and TWS or cause Developer or TWS to be liable or responsible in any way for the agreements, actions, liabilities, debts or obligations of the other.

(j) *Counterparts.* This Agreement may be executed in any number of counterparts and each of such counterparts shall for all purposes be deemed as original documents and all such counterparts shall together constitute one and the same instrument.

IN WITNESS WHEREOF, the parties have entered into this Agreement as of the Effective Date.

TWS

TENNESSEE WASTEWATER SYSTEMS
a Tennessee corporation

By: _____

Name: Jeff Risden

Title: Chief Executive Officer

Developer

Powers & Atkins, LLC

By: _____
Name: Robert S. Powers
Title: Partner

Riverland Partners
a Tennessee General Partnership

By: _____
Name: _____
Title: _____

AFFIDAVIT

STATE OF TENNESSEE
COUNTY OF Rutherford

Personally appeared before me, Susan Chaffin, Notary Public, Jeff Ridgen, with whom I am personally acquainted and who acknowledged that he executed the within instrument for the purposes therein contained, and who further acknowledged that he is the CEO of Tennessee Wastewater Systems, Inc., the within named bargainor, a Tennessee corporation, and is authorized to execute this instrument on behalf of Tennessee Wastewater Systems.

WITNESS my hand, at office, this 20 day of June, 2019.

Susan R. Chaffin
Notary Public
My Commission Expires: 02/21/2022

SUSAN R. CHAFFIN
STATE OF TENNESSEE NOTARY PUBLIC
RUTHERFORD COUNTY

AFFIDAVIT

STATE OF TENNESSEE
COUNTY OF Montgomery

Personally appeared before me, Robert S Powers, Notary Public; Denise M Pickett with whom I am personally acquainted and who acknowledged that he/she executed the within instrument for the purposes therein contained, and who further acknowledged that he/she is the member of Powers + Atkins LLC, the within named bargainor, a TN LLC corporation, and is authorized to execute this instrument on behalf of Powers + Atkins, LLC company

WITNESS my hand, at office, this 17 day of June, 2019.

DENISE M. PICKETT
STATE OF TENNESSEE NOTARY PUBLIC
MONTGOMERY COUNTY

Denise M Pickett
Notary Public
My Commission Expires: 8-16-22

AFFIDAVIT

STATE OF TENNESSEE
COUNTY OF Montgomery

Personally appeared before me, Bryce Powers, **Notary Public,** Denise M Pickett **with whom I am personally acquainted and who acknowledged that he/she executed the within instrument for the purposes therein contained, and who further acknowledged that he/she is the** Partner **of** Riverbend Partners **the within named bargainor, a** TN General ~~corporation~~ **and is authorized to execute this instrument on behalf of** Riverbend Partners Partnership

WITNESS my hand, at office, this 17 **day of** June, **20** 19.

DENISE M. PICKETT
STATE OF TENNESSEE NOTARY PUBLIC
MONTGOMERY COUNTY

Denise M Pickett
Notary Public
My Commission Expires: 8-16-22

Exhibit A

Property

Exhibit B

Sewage Facility Land

Exhibit C

Plans and Specification

USER MANUAL

DO"S AND DON"TS

For

EFFLUENT COLLECTION SYSTEMS

Copy to be provided and can be viewed online at:

http://adenus.com/Adenus_Homeowners_Manual.pdf

Exhibit E

Sewer Service Agreement

DATE: _____

PRINTED NAME _____

ADDRESS OF PROPERTY _____ **LOT #** _____

MAILING ADDRESS _____

TELEPHONE NUMBER _____ **EMAIL ADDRESS** _____

I hereby make application to Tennessee Wastewater Systems, Inc. ("TWS") for sewer service at the address of property stated above. In consideration of the undertaking on the part of TWS to furnish sewer service, I understand, covenant and agree as follows:

1. I understand that the components of a sewer system have been installed on the property referred to above, which is owned or occupied by me, and which is to be connected with a wastewater disposal system owned and/or maintained by TWS. I warrant that any connection to and/or subsequent use to this system by the components on my property shall be in accordance with the Rules, Regulations and Plans of TWS. Regarding my usage of the system components on my property, which are owned by me, I covenant to follow the guidelines set forth in the USER MANUAL (Do's and Don'ts for an Effluent Collection System). Should I violate these Rules and/or abuse or damage my components, I understand that I must bear the expense to repair or replace the same in accordance with the Plans of TWS.
2. I acknowledge TWS, its successors and assigns have a perpetual easement in, over, under and upon the above specified land as shown on the property plat, with the right to operate and repair all components of the sewer system on my property, including but not limited to the interceptor tank and the Interceptor Pump or Interceptor Gravity Tank systems. I further grant TWS permission to enter upon my property for any reason connected with the provision or removal of sewer service or collection therefore.
3. For all other plumbing and structures on the property, including the outfall line to the interceptor tank, I agree that I am responsible for all operation and repair thereof.
4. I hereby authorize TWS to purchase and install a cutoff valve on my side of my water meter and grant TWS exclusive right to use such valve in accordance with its Rules and Regulations. However, the use of this valve does not in any way relieve me of my obligation to pay for water service to the service provider.
5. I understand and agree to promptly pay for service at the then current schedule of rates and fees and agree to abide by and be subject to TWS's billing and cutoff procedures. Should I not pay in accordance with TWS's Rules, I agree to pay all costs of collection, including attorney fees.
6. I accept the current Rules and Regulations and the Rates and Fees Schedule and agree to abide by any amendments to such Schedules.
7. I agree that this Agreement shall remain in effect for as long as I own, reside upon or rent the above-described property. When such circumstances no longer exist, I agree to provide notice to TWS at least thirty (30) days in advance of my vacating the property.

_____

SUBSCRIBER'S SIGNATURE

Exhibit F

Form of Deed

SPECIAL WARRANTY DEED

I, *[_____ /*, grantor, of *[address]*, County of *[_____ /*, State of Tennessee, for valuable consideration paid, the receipt of which is acknowledged, do convey and warrant to *[name of grantee]*, of *[address]*, County of *[_____]*, State of Tennessee, grantee's heirs and assigns forever, all that parcel of land situated in *[_____ /*, County of *[_____ /*, State of Tennessee, and bounded as follows: *[insert legal description]*.

To have and to hold the granted premises, and all the rights, easements, and appurtenances belonging to the premises, to *[_____ /*, grantee, and grantee's heirs and assigns, to grantee's and their own use and behalf forever.

And I do, for myself and my heirs, executors, and administrators, covenant with the grantee, grantee's heirs and assigns, that I am lawfully seized in fee of the granted premises; that they are free from all encumbrances; that I have good right to sell and convey the same; and that I will, and my heirs, executors, and administrators shall, warrant specially and defend the same to the grantee, grantee's heirs and assigns, against the lawful claims and demands of all persons that arise while grantee is in title to the Property.

In witness, I, *[_____ /*, have set my hand to this instrument this *[_____ /* day of *[month, year]*.

Signed: _____
Print Name: _____

ACKNOWLEDGEMENT

The foregoing instrument was sworn to and subscribed before me this _____ day of _____, 20____ by _____ who is personally known to me or has produced _____ as identification.

_____
Signature of Notary

My Commission Expires: _____

Exhibit G

Form of Sewer Line Easements

Tennessee Wastewater Systems, Inc.
851 Aviation Parkway
Smyrna, TN 37167

Subdivision _____
Book _____
Page _____

DEED FOR EASEMENT FOR WASTEWATER SYSTEM LINES & EQUIPMENT

This Deed made by and between _____, LLC, Grantor, and Tennessee Wastewater Systems, Inc., a public utility company, Grantee.

WITNESSETH:

WHEREAS, Grantor owns a certain Subdivision in the _____ Civil District of MontgomeryMontgomery County, Tennessee, the same being the land conveyed to them by _____ of record in Deed Book #_____, Page #_____ Register's Office of MontgomeryMontgomery County, Tennessee, and

WHEREAS, Grantee's Contractor is installing wastewater lines and equipment throughout the subdivision property for the purpose of installing a state approved sanitary sewer system, and

WHEREAS, it is the desire of the Grantor to grant a perpetual easement to the Grantee for the laying, installation, operation and maintenance of wastewater lines and equipment along, over and across the lands.

NOW, THEREFORE, Grantor, for and inconsideration of inducing Grantee to construct the said wastewater lines and equipment and for no monetary consideration and other good and valuable consideration, the receipt of all of which is hereby acknowledged, does hereby grant, give and convey unto Grantee, its successors and assigns, the perpetual right and easement to lay, construct and install wastewater lines and equipment and to operate, maintain and repair said wastewater system under and across their land. Said easement shall be a Twenty (20) foot construction easement with a Ten (10) foot perpetual easement in width and parallel to the wastewater lines. Grantor does hereby grant, give and convey to Grantee a perpetual right to cut, trim or remove the trees, shrubbery and like obstructions, and for the purpose of the constructions, reconstruction, repairing, operating and maittaining said lines along, over and across the area which is located within Five (5) feet of the side of the center line of said wastewater line as actually installed.

It is agreed and understood that the contractor for Grantee shall be financially responsible for all damages done to the fences and any other structures at the time of installation or maintenance of the wastewater lines and shall cleanup and re-grass according to present usage.

Grantor will give notice of this deed to each and all of his assigns of the subject property.

As used where, the singular includes the plural and the masculine includes the feminine.

IN WITNESS WHEREOF, the undersigned have set their hands and seals on the _____ day of _____. 20___.

GRANTOR: _____

By: _____

GRANTEE: TENNESSEE WASTEWATER SYSTEMS, INC

By: _____

STATE OF TENNESSEE

COUNTY OF _____

Personally appeared before me, the undersigned authority, a Notary Public, in and for the State and County aforesaid, the forenamed bargainers, _____. with whom I am personally acquainted, and who acknowledged the execution of the foregoing instrument for the purpose contained therein.

Witness my hand and official seal on this the _____ day of _____. 20___.

_____
NOTARY PUBLIC

MY COMMISSION EXPIRES:

_____

Exhibit H

Restrictive Covenants

SPECIAL PROVISIONS REGARDING WASTEWATER DISPOSAL

Section 1. Wastewater System. The Property and each Residential Unit located thereon shall be served by a wastewater treatment and disposal system to be operated by the Wastewater Utility. Each Owner, by purchase of a Residential Unit, agrees to enter into an agreement regarding the Wastewater System with such Wastewater Utility in form and substance satisfactory to such Wastewater Utility, and to abide by any rules, regulations or other requirements of such Wastewater Utility regarding the Wastewater System ("Do's & Don'ts for Effluent Collection Systems").

Section 2. Wastewater Utility. No individual wastewater disposal system shall be permitted on any Residential Unit. The Wastewater System of the Property will be owned and operated by the Wastewater Utility, a public utility company, which is regulated by the Tennessee Public Utility Commission. Water and sewer lines will be installed to the line of each Residential Unit. It will be the responsibility of a Lot Owner who is building a home to extend these lines to the dwelling and install components per the specifications of the Wastewater Utility.

Section 3. System Requirements.

(a) The Wastewater System being installed requires the Owner of each Residential Unit to purchase and install a tank system on the Residential Unit when constructing a building and before occupancy of the dwelling. After installation of the tank is accepted by the Wastewater Utility, all maintenance, service and/or replacement will thereafter be the responsibility of the Wastewater Utility. The Owner by accepting a deed to a Residential Unit in the Daventry subdivision grants a convenience easement onto and across the property to the Wastewater Utility responsible for maintenance of the collection lines and sewer tank system. The Owner shall purchase and install, at the Owner's expense, a tank system of a size, shape, and nature as required by and in compliance with specifications as provided to the then Owner by the Wastewater Utility.

(b) Each Owner shall be required to ensure that a water shut-off valve with an appropriate valve box is installed in the water line on the Owner's side of the water meter at each residence built on a Residential Unit within the Property. The valve shall comply with specifications established by the Wastewater Utility.

(c) The Wastewater Utility will authorize the Owner to discharge wastewater into the Wastewater System only after the Wastewater Utility has inspected and approved the equipment installation.

Section 4. Owner Responsibilities. The Owner agrees that by accepting a deed to a Residential Unit and by installing and using the tank system that such Owner will not knowingly discharge nor allow to be discharged any material, chemical, solid or liquid into the Wastewater

System that will create an environmental hazard or that will cause damage to any part of the Wastewater System.

Section 5. Fees.

(a) A stand-by fee for each Residential Unit is charged by the Wastewater Utility until a dwelling is constructed and connected to the Wastewater System and the Owner signs up for service. The amount of the stand-by fee is set by the Tennessee Public Utility Commission and is $120.00 per year as of the date of adoption of this Declaration, or as may be amended in the future by the Tennessee Public Utility Commission. Such fee shall be paid by the Owner of each Residential Unit by December 15th of each year, and shall be paid by the record Owner of such Residential Unit as of December 1st of such year.

(b) In order to secure wastewater service to a home, the Owner will be required to enter into a service agreement with the utility. The monthly rate for wastewater service is set by the Tennessee Public Utility Commission.

Section 6. Survival. The terms and conditions of this Article in its entirety shall survive closing of the sale of any Residential Unit and acceptance of a deed thereto and shall not be merged therein and shall be binding upon successive Owners of each Residential Unit.

DK exhibit 5

IN THE TENNESSEE PUBLIC UTILITY COMMISSION
AT NASHVILLE, TENNESSEE

IN RE:	)	
	)	
PETITION OF TENNESSEE	)	
WASTEWATER SYSTEMS, INC., TO	)	**DOCKET NO.** 18-00107
AMEND ITS CERTIFICATE OF	)	
CONVENIENCE AND NECESSITY	)	

ADDITIONAL DIRECT TESTIMONY OF MATTHEW NICKS

Q1. What is your name and business address?
A. My name is Matthew Nicks and my business address is 849 Aviation Parkway, Smyrna TN, 37167.

Q2. By whom are you employed and in what capacity?
A. I am the President of Tennessee Wastewater Systems, Inc.

Q3. Have you previously caused testimony to be filed in this matter?
A. Yes.

Q4. What is the purpose of the additional testimony you are providing?
A. The purpose of my additional testimony is to state that TWSI is aware of the requirements of Commission Rule 1220-04-13-.09(7) concerning the completion of the construction of the wastewater system within three years of the Commission's approval of the CCN

Q5. Does this complete your testimony?
A. Yes.

AFFIDAVIT

My name is Matthew Nicks and the attached direct testimony is true and correct to the best of my knowledge.

Matthew Nicks

County of Rutherford)
State of Tennessee)

On this 17 th day of July 2019, personally appeared before me, Susan Chaffin, a notary public, the above-named Matthew Nicks known to me personally who was duly sworn and on oath executed the above Affidavit.

Susan R. Chaffin
Notary

My commission expires: 02/21/2022

SUSAN R. CHAFFIN
STATE OF TENNESSEE NOTARY PUBLIC
RUTHERFORD COUNTY

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing was served via U.S. Mail or electronic mail upon:

Karen H. Stachowski
Assistant Attorney General
Office of the Tennessee Attorney General
Financial Division, Consumer Advocate Group
PO Box 20207
Nashville, TN 37202-0207
615-741-2370
Email: Karen.Stachowski@ag.tn.gov

This the 17 th day of July, 2019.

Jeff Risden

DK3 Exhibit 6A

WES
ENGINEERS & SURVEYORS

Development Tract to be Retained

A portion of a parcel of land located in Maury County, Tennessee, a portion of parcel 2.05 on Tax Map 30, the Cecil G. Keltner Lifetime Trust property as recorded in Deed Book R2057, page 446 (Tract 1), and shown on plat of record in Plat Book P20, page 141 and being more particularly described as follows.

Beginning at a PK nail at the north east corner of Lot 117, Oakwood Subdivision, Section 3, Plat Book P14, page 209, said point lying on the west margin of Oak Trail Drive, the Joseph and Tara Stepp property as recorded in Deed Book R2333, page 1194, (North: 516,334.3, East 1,665,152.9);
Thence with the north line of Joseph and Tara Stepp property as recorded in Deed Book R2333, page 1194, North 88°52'08" West a distance of 171.55' to an iron pin found with cap #2035;
Thence with the same, South 81°45'22" West a distance of 156.88' to an iron pin found with cap #2035;
Thence with the same, North 89°31'19" West a distance of 69.62' to an iron pin found with cap #2035;
Thence with the north line of Tennessee Wastewater Systems, Inc., as recorded in Deed Book 753, page 701, North 89°41'31" West a distance of 505.94' to a fir/2035;
Thence with the same, South 01°03'41" East a distance of 970.54' to an iron pin found with cap #2035;
Thence with the north line of Teresa and Chester Lewandowski, North 75°20'16" West a distance of 997.69' to an iron pin found with cap #2035;
Thence with the east line of Joseph and Meropi Falkenburg as recorded in Deed Book R2180, page 1183, North 06°21'12" East a distance of 832.06' to a 4" wood fence post;
Thence with the same, North 25°45'36" West a distance of 61.75' to an iron pin set;
Thence severing the parent tract, South 86°58'51" East a distance of 859.34' to an iron pin set;
Thence with the same, North 02°22'08" East a distance of 517.16' to a 1" pipe at a wood fence corner post;
Thence with the south line of Jimmy and Donna Gilliam as recorded in Deed Book 1214, page 918 South 89°18'49" East a distance of 1364.22' to an iron pin found with no cap;
Thence with the west line of Timothy and Laura Phelps as recorded in Deed Book 1113, page 393, and shown as lot 8 of Oakwood Subdivision, Section 1, as recorded in Plat Book P7, page 342, South 33°46'17" East a distance of 294.07' to an iron pin found with no cap;
Thence with the west line of Rita McWilliams as recorded in Deed Book 1257, page 141, and shown as lot 9 of Oakwood Subdivision, Section 1, as recorded in Plat Book P7, page 342South 33°47'40" East a distance of 179.13' to an iron pin found with no cap;
Thence with the west line of Jimmy and Joann Kutch as recorded in Deed Book R2285, page 816, and shown as lot 10 of Oakwood Subdivision, Section 1, as recorded in Plat Book P7, page 342South 33°47'40" East a distance of 153.06' to an iron pin found with no cap;
Thence with the north line of Warren and Traci Pettit as recorded in Deed Book R2340, page 303, Lot 78, Oakwood Subdivision, Section 3, Plat Book P14, page 209, South 53°34'14" West a distance of 218.15' to an iron pin found with no cap;
Thence with the north line of Lots 76 and 77 of Oakwood Subdivision, Section 3, Plat Book P14, page 209, South 89°59'35" West a distance of 317.00' to an iron pin found with cap #1444;
Thence with the north line of Michael and Carla Dolan as recorded in Deed Book R2157, page 1110, Lot 74, Oakwood Subdivision, Section 3, Plat Book P14, page 209, North 89°02'19" West a distance of 293.23' to a PK nail found on the east margin of Oak Trail Drive;
Thence with the terminus of Oak Trail Drive, North 73°02'10" West a distance of 52.00' to the point of beginning, having an area of 1,919,859 square feet, 44.07 acres.

This property is subject to all easements by record or prescription that a complete title search may reveal. No title search was provided as part of this survey.

Note: The above property description is based on information gathered during the course of an actual field survey conducted by WES, Engineers and Surveyors, under the direction of Allen B. O'Leary, Tennessee Registered Land Surveyor Number 1987. All iron pins set are ½" Rebar, with a plastic cap stamped "WES 1987". All deeds referenced above (Deed Book, Page) are of record in the Register's Office of Maury County, Tennessee. The above property description was prepared under my direction on this the 26TH day of July 2017.

WES Engineers & Surveyors

ALLEN O'LEARY
REGISTERED LAND SURVEYOR
TENNESSEE NO. 1987
7/26/17

Allen B. O'Leary, RLS 1987
Principal

Temporary Access Easement

A portion of a parcel of land located in Maury County, Tennessee, a portion of parcel 2.05 on Tax Map 30, the Cecil G. Keltner Lifetime Trust property as recorded in Deed Book R2057, page 446 (Tract 1), and shown on plat of record in Plat Book P20, page 141 and being more particularly described as follows,

Beginning at a PK nail at the north east corner of Lot 117, Oakwood Subdivision, Section 3, Plat Book P14, page 209, said point lying on the west margin of Oak Trail Drive, the Joseph and Tara Stepp property as recorded in Deed Book R2333, page 1194, (North: 516,334.3, East 1,665,152.9);
Thence severing the parent tract, North 01°01'09" East a distance of 249.19' to an iron pin set;
Thence with the same and with a curve turning to the left with an arc length of 39.27', with a radius of 25.00', with a chord bearing of North 43°58'51" West, with a chord length of 35.36' to an iron pin set;
Thence with the same, North 88°58'51" West a distance of 871.66' to an iron pin set;
Thence with the same, North 02°22'08" East a distance of 50.01' to an iron pin;
Thence with the same, South 88°58'51" East a distance of 945.48' to an iron pin set;
Thence with the same, South 01°01'09" West a distance of 338.48' to a PK found;
Thence with the terminus of Oak Trail Drive, North 73°02'10" West a distance of 52.00' to the point of beginning, having an area of 61,504 square feet, 1.41 acres

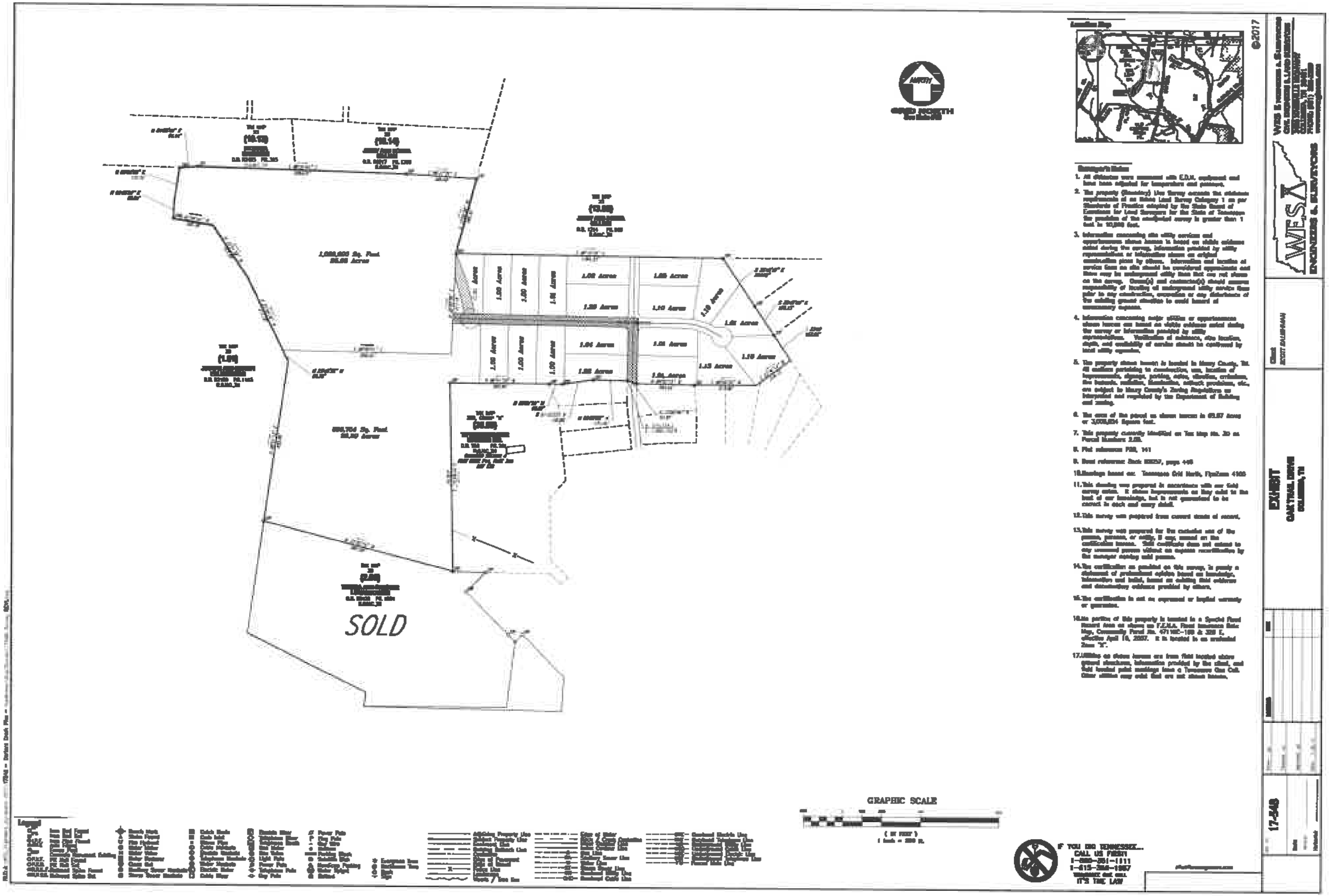
This property is subject to all easements by record or prescription that a complete title search may reveal. No title search was provided as part of this survey.

Note: The above property description is based on information gathered during the course of an actual field survey conducted by WES, Engineers and Surveyors, under the direction of Allen B. O'Leary, Tennessee Registered Land Surveyor Number 1987. All iron pins set are ½" Rebar, with a plastic cap stamped "WES 1987". All deeds referenced above (Deed Book, Page) are of record in the Register's Office of Maury County, Tennessee. The above property description was prepared under my direction on this the 26TH day of July 2017.

WES Engineers & Surveyors

Allen B. O'Leary, RLS 1987
Principal

DK 3 EXHIBIT 6B



TENNESSEE WASTEWATER SYSTEMS INC.

OAKWOOD TREATMENT FACILITY (SYSTEM UPGRADE)

AND

PHASE 5 COLLECTION SYSTEM

FOR

OAKWOOD SUBDIVISION

MAURY COUNTY, TN

BIOCLERE UPGRADE

COLLECTION SYSTEM & DRIP DISPOSAL

(SOP - 96035)

Oakwood Treatment Facility Modification
WPN 19.0140

APPROVED FOR CONSTRUCTION

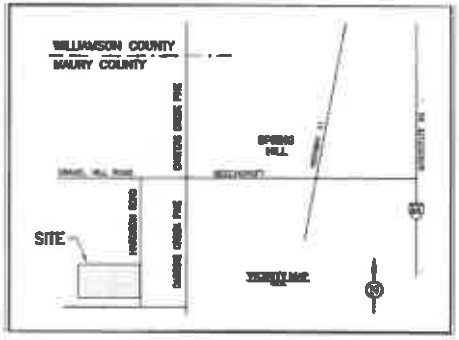
THE DOCUMENT BEARING THIS STAMP HAS BEEN RECEIVED AND REVIEWED BY THE
TENNESSEE DEPT. OF ENVIRONMENT & CONSERVATION
DIVISION OF WATER RESOURCES
AND IS HEREBY APPROVED FOR CONSTRUCTION BY THE COMMISSIONER

April 22, 2019

THIS APPROVAL SHALL NOT BE CONSTRUED AS CONFERRING A PRESUMPTION OF CORRECT OPERATION OR AS WARRANTING BY THE COMMISSIONER THAT THE APPROVED FACILITIES WILL REACH THE DESIGNED GOALS.

APPROVAL EXPIRES ONE YEAR FROM ABOVE DATE

CONTENTS:



LOCATION MAP

MARCH 14, 2019

ADENUS SOLUTIONS GROUP 849 AVIATION PARKWAY SMYRNA, TN 37167

DK3 EXHIBIT 6C

GENERAL NOTES:

1) EACH RESIDENTIAL LOT WILL REQUIRE A STEP (PUMP) TANK TO CONNECT TO THE SEWER SYSTEM.

2) ALL SITE INFORMATION WAS SUPPLIED BY THE OWNER, OR OWNERS AGENT. THE CONTRACTOR MUST VERIFY ACTUAL LOCATIONS IN THE FIELD.

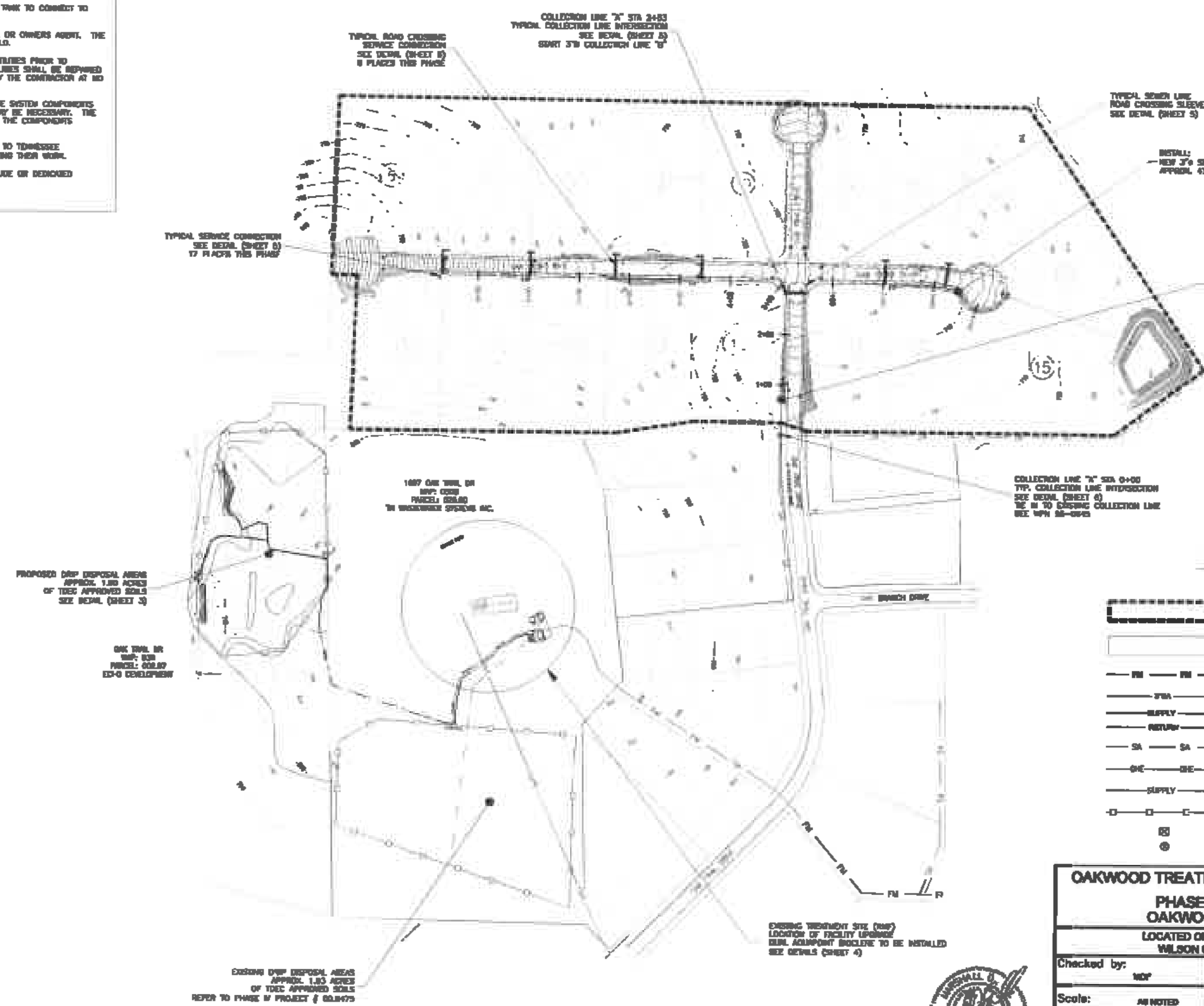
3) CONTRACTOR SHALL VERIFY LOCATIONS OF EXISTING UTILITIES PRIOR TO COMMENCING ANY EXCAVATION WORK. ANY DAMAGED UTILITIES SHALL BE REPAIRED IMMEDIATELY TO THEIR ORIGINAL OR BETTER CONDITION BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

4) THE LOCATION OF WASTEWATER COLLECTION AND REUSE SYSTEM COMPONENTS ARE GENERAL IN NATURE. MINOR FIELD ADJUSTMENTS MAY BE NECESSARY. THE CONTRACTOR MAY REQUEST TO MODIFY THE LOCATION OF THE COMPONENTS THROUGH THE OWNER AND THE UTILITY.

5) THE CONTRACTOR IS TO PROVIDE AS-BUILT DRAWINGS TO TENNESSEE WASTEWATER SYSTEMS, INC. (TWS) PRIOR TO TWS ACCEPTING THEIR WORK.

6) ALL COLLECTION LINES SHALL HAVE A MINIMUM 10' PUDE OR DEDICATED EASEMENT UNLESS OTHERWISE NOTED.

7) LINE SEPARATION EXAGGERATED TO SHOW DETAIL.



NORTH

SCALE 1" = 100'

OVERALL SITE LAYOUT

SCALE 1" = 100'

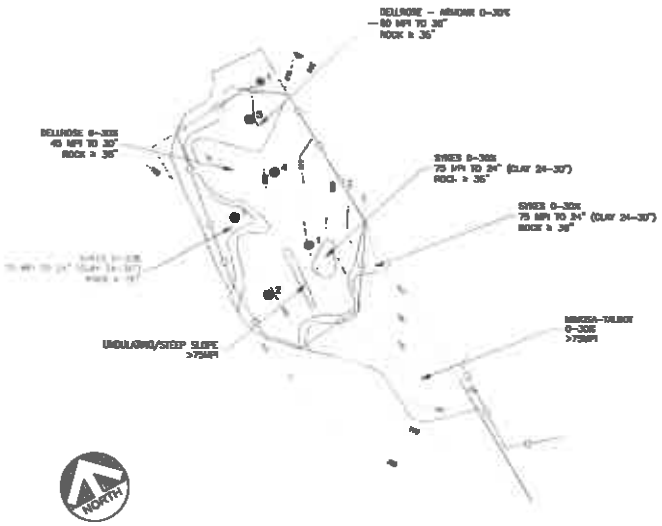
(phase line symbol)	PHASE LINE
(box)	PROPOSED SOILS EXPANSION APPROX. 80,062± SF
— FM — FM —	EXISTING FORCE MAIN (WPC 95-0645)
— 3"CA —	NEW 3"Ø COLLECTION MAIN
— SUPPLY —	NEW 3"Ø DRIP FIELD SUPPLY MAIN
— RETURN —	NEW 3"Ø DRIP FLUSH RETURN MAIN
— SA — SA —	EXISTING COLLECTION LINE (WPC 95-0645)
— OHE — OHE —	EXISTING OVERHEAD ELECTRIC
— SUPPLY —	EXISTING LOW PRESSURE DRIP SUPPLY LINE
—□—□—□—	TWS FENCE
⊠	DRIP SUPPLY SOLENOID LOCATION
⊕	AIR RELEASE VALVE LOCATION

Tennessee 811
Know what's below. Call before you dig.

OAKWOOD TREATMENT FACILITY UPGRADES AND PHASE 5 COLLECTION OAKWOOD SUBDIVISION

LOCATED OFF HORN SPRINGS ROAD
WILSON COUNTY, TENNESSEE

Checked by: MDF	Drawn by: CHF	Date: MARCH 14, 2019
Scale: AS NOTED	PLANS PREPARED BY:	
Filename: 19-016 OAKWOOD EXPANSION	Adenus SOLUTIONS GROUP	
SHEET 1 OF 5		



SOIL MAP – LAYOUT

SCALE: 1" = 100'

–EACH DRIP FIELD ZONE WILL HAVE 8,800 LFA OF BIOLINE DRIP EMITTER PIPING (APPROX.).

–SEE CALCULATIONS FOR DESIGN CRITERIA AND MAXIMUM NUMBER OF CONNECTIONS PER ZONE. MINIMUM LENGTH OF EACH DRIP LINE WILL BE 400 LF. A BIOLINE LOOP MAY BE USED ON SOME LINES. SOME LINES MAY RUNS MORE THAN ONE LOOP (i.e. – LOOP THE LINE UNTIL 400 LF, OR LESS, IS ACHIEVED).

–LOADING RATE: 0.55 GPD/SF
29,792 GPD / 0.55 GPD/SF = 103,610± SF REQUIRED
EXISTING SOILS AREA = 84,000± SF
SOILS EXPANSION = 20,000± SF
TOTAL SOILS AREA = 104,982± SF

–THE LOADING RATE WILL ENABLE THE SOILS AND APPROXIMATELY 40,000± SF OF SOILS PER ZONE. USE ONLY AS MUCH SOIL AREA AS NECESSARY TO MEET ZONE REQUIREMENTS. REMAINING SOILS AREA IS TO BE PROTECTED FROM DISTURBANCE AND RESERVED FOR FUTURE DRIP SYS. USE.

SEE ENGINEERING REPORT FOR DETAILS

APPROXIMATE ORIENTATION OF DRIP LINES

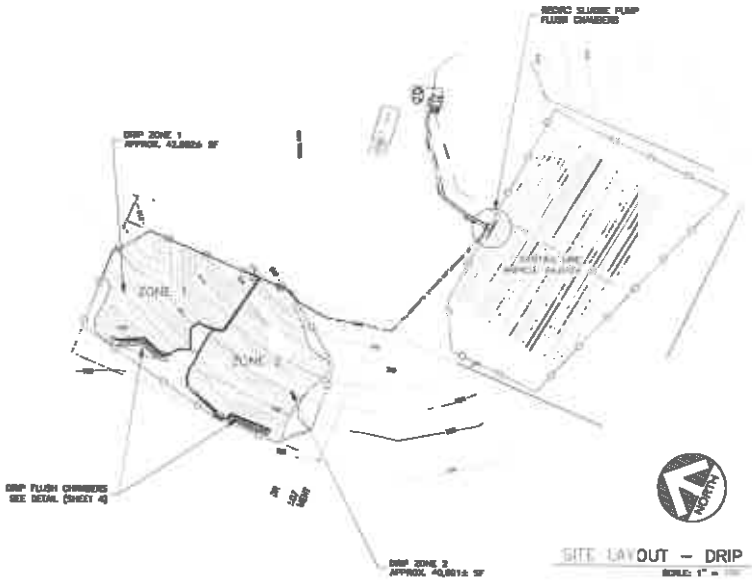
SUPPLY — NEW 3"Ø DRIP FIELD SUPPLY MAIN

RETURN — NEW 3"Ø DRIP FLUSH RETURN MAIN

FENCE (APPROX. LOCATION)

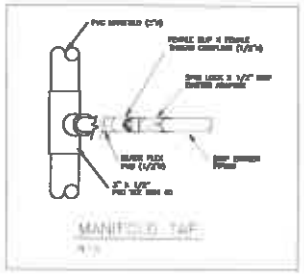
DRIP SUPPLY SOLENOID LOCATION

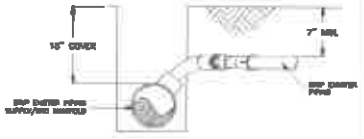
ALL SOILS SHOWN ON THIS PLAN WERE TAKEN FROM A SOIL MAP PREPARED BY MR. BERNARD MARABLE. THE SOIL MAP AND PIT PROFILE DESCRIPTIONS WERE SUBMITTED WITH THE SEWER OPERATING PERMIT APPLICATION.



SITE LAYOUT – DRIP

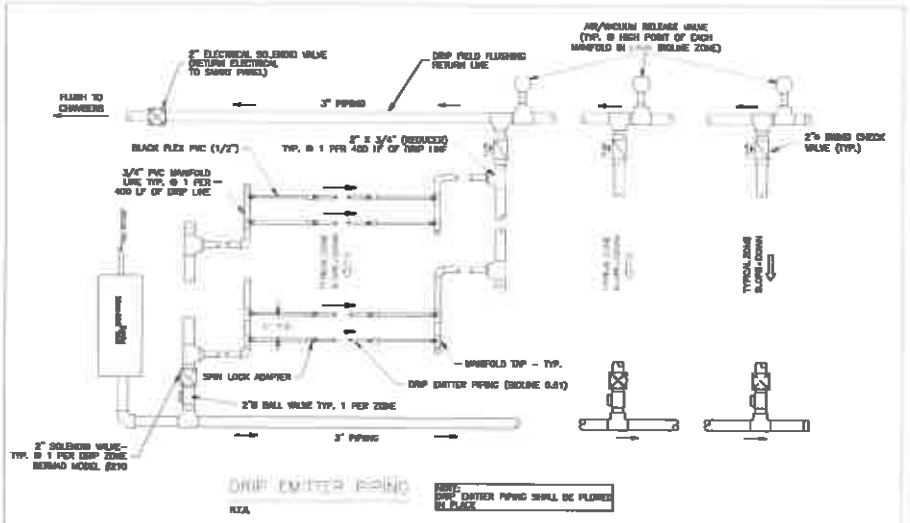
SCALE: 1" = 100'





DRIP EMITTER MANIFOLD –SECTION

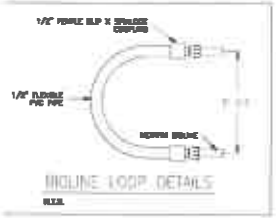
N.T.S.



DRIP EMITTER PIPING

N.T.S.

NOTE:
DRIP EMITTER PIPING SHALL BE FLUSHED IN PLACE



BIOLINE LOOP DETAILS

N.T.S.

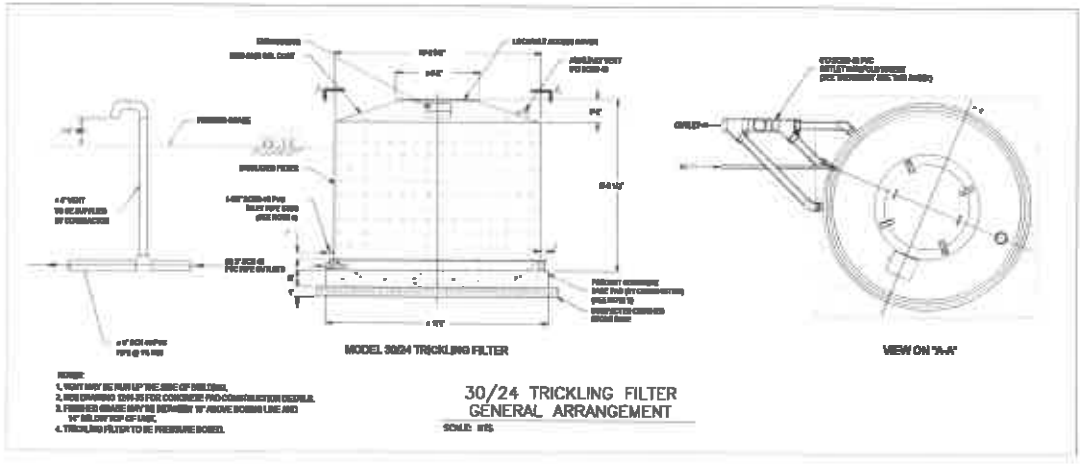
DRIP EMITTER PIPING –SECTION

N.T.S.

OAKWOOD TREATMENT FACILITY UPGRADES AND PHASE 5 COLLECTION OAKWOOD SUBDIVISION

LOCATED OFF HORN SPRINGS ROAD
WILSON COUNTY, TENNESSEE

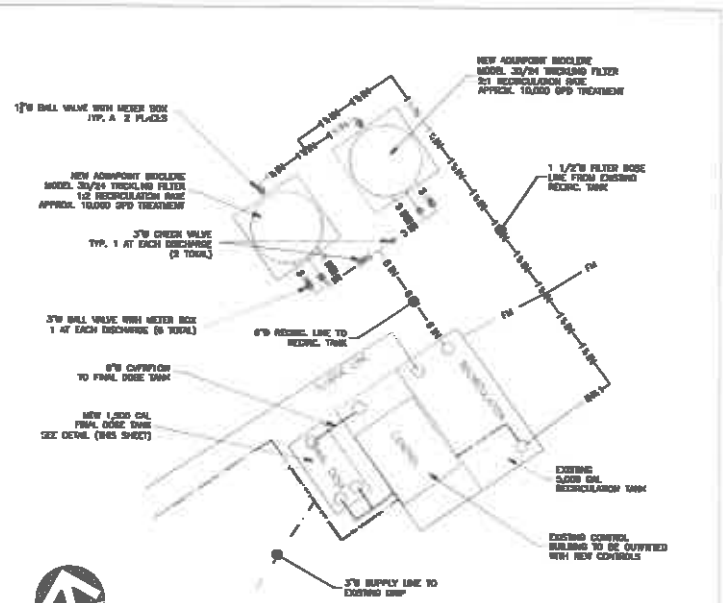
Checked by: MEP	Drawn by: DLF	Date: MARCH 14, 2019
Scale: AS NOTED	PLANS PREPARED BY: Adenus! SOLUTIONS GROUP	
Filename: BASE OAKWOOD EXPANSION		
SHEET 3 OF 9		

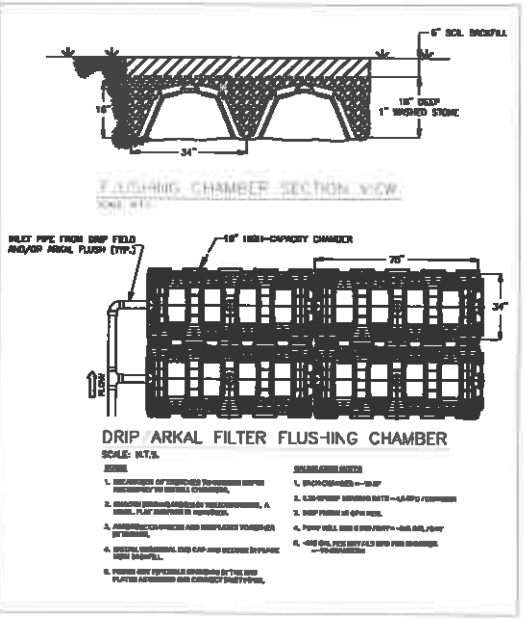


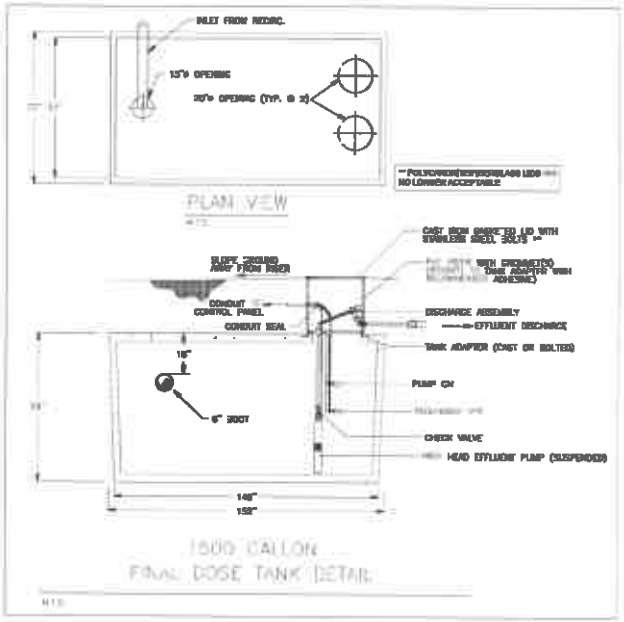
MODEL 30/24 TRICKLING FILTER

VIEW ON "A-A"

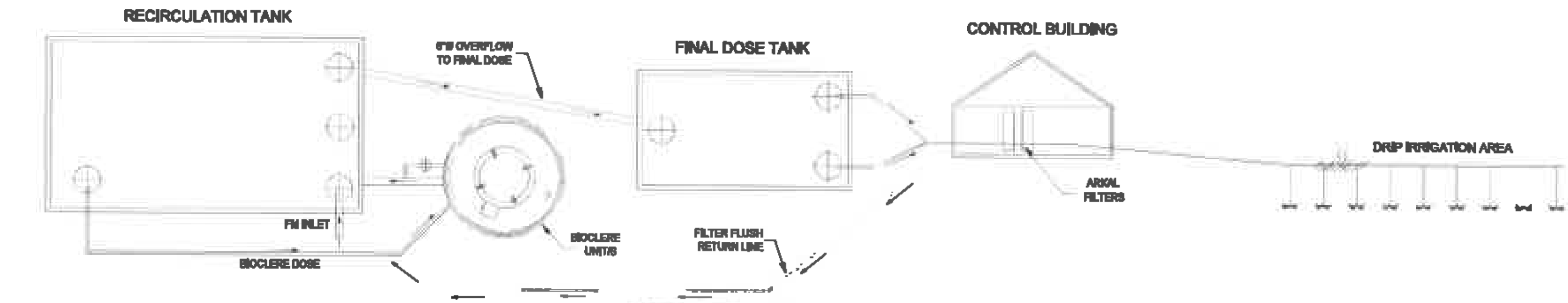
30/24 TRICKLING FILTER
GENERAL ARRANGEMENT



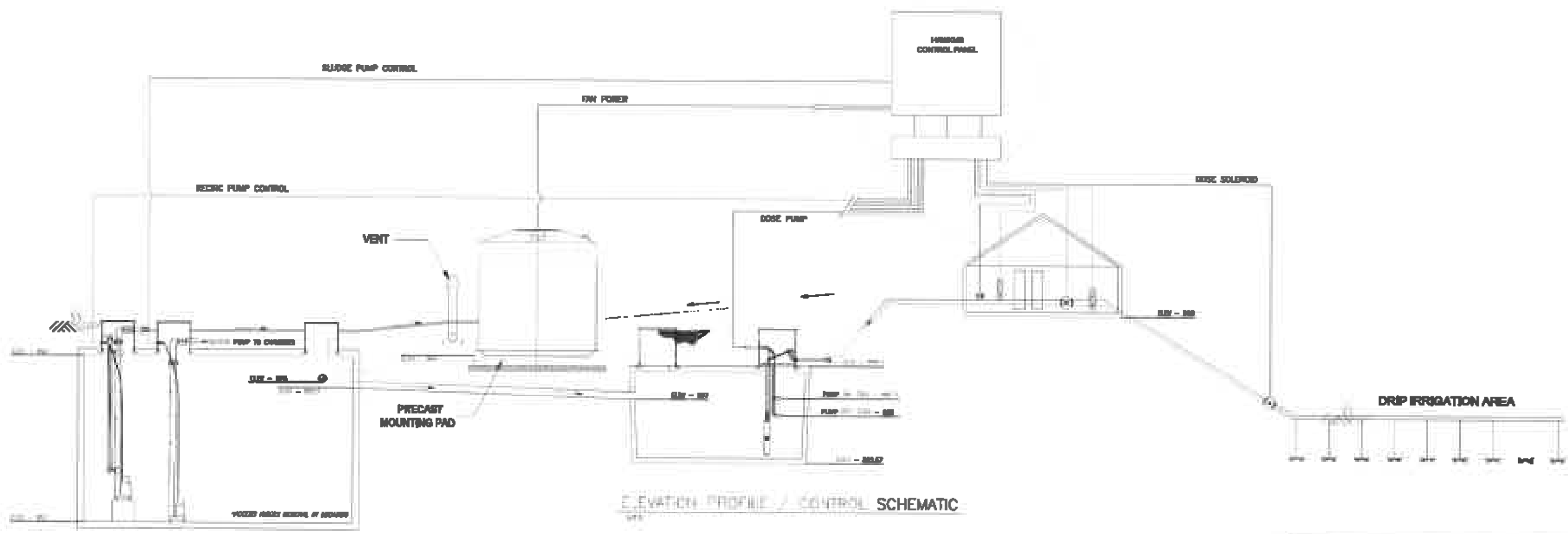




OAKWOOD TREATMENT FACILITY UPGRADES AND PHASE 5 COLLECTION OAKWOOD SUBDIVISION		
LOCATED OFF HORN SPRINGS ROAD WILSON COUNTY, TENNESSEE		
Checked by: MEF	Drawn by: PLF	Date: MARCH 14, 2019
Scale: AS NOTED	PLANS PREPARED BY: Adenus SOLUTIONS GROUP	
Filename: 18-016 OAKWOOD EXPANSION		
SHEET 4 OF 9		



GENERAL TREATMENT SCHEMATIC

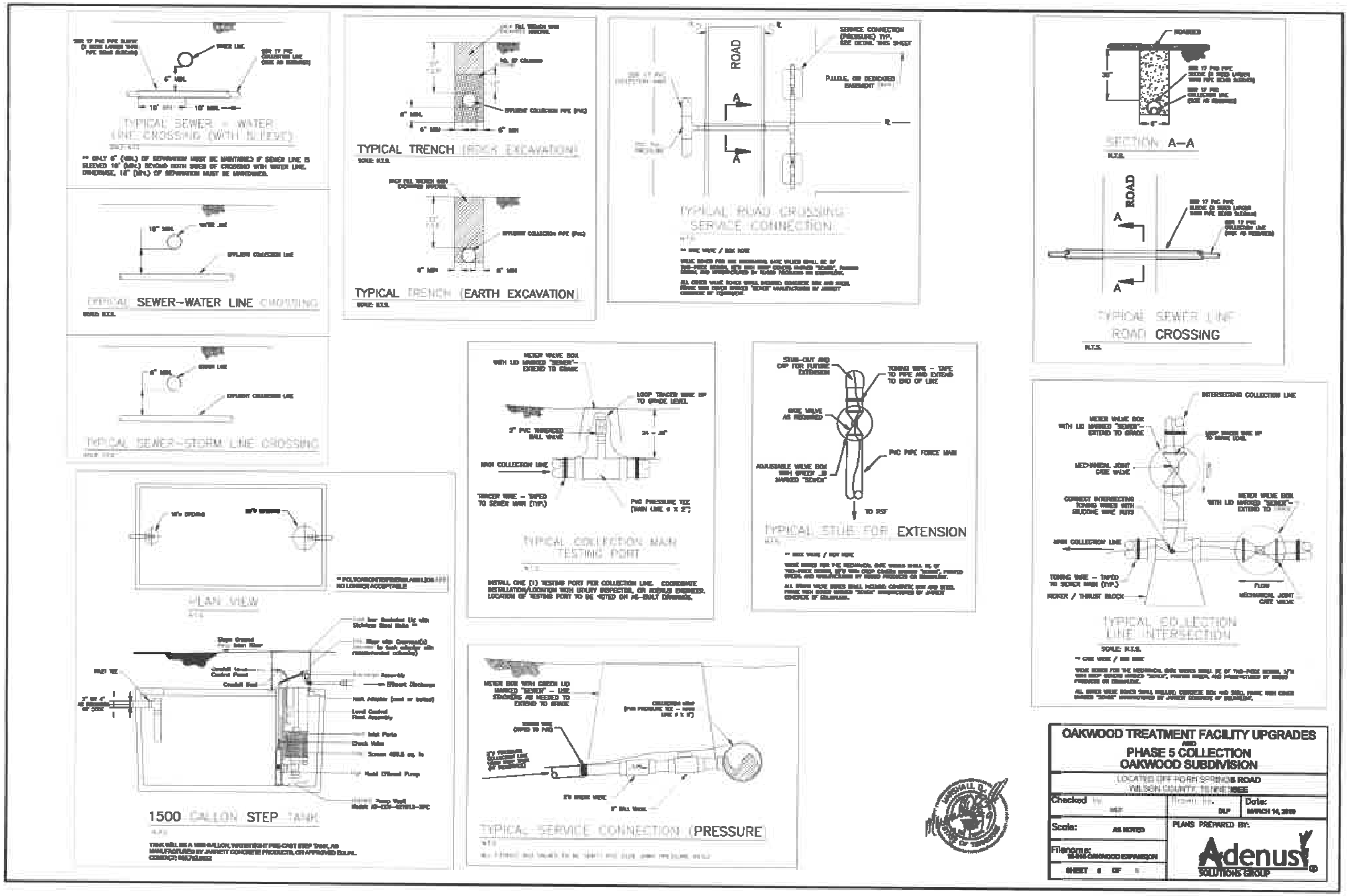


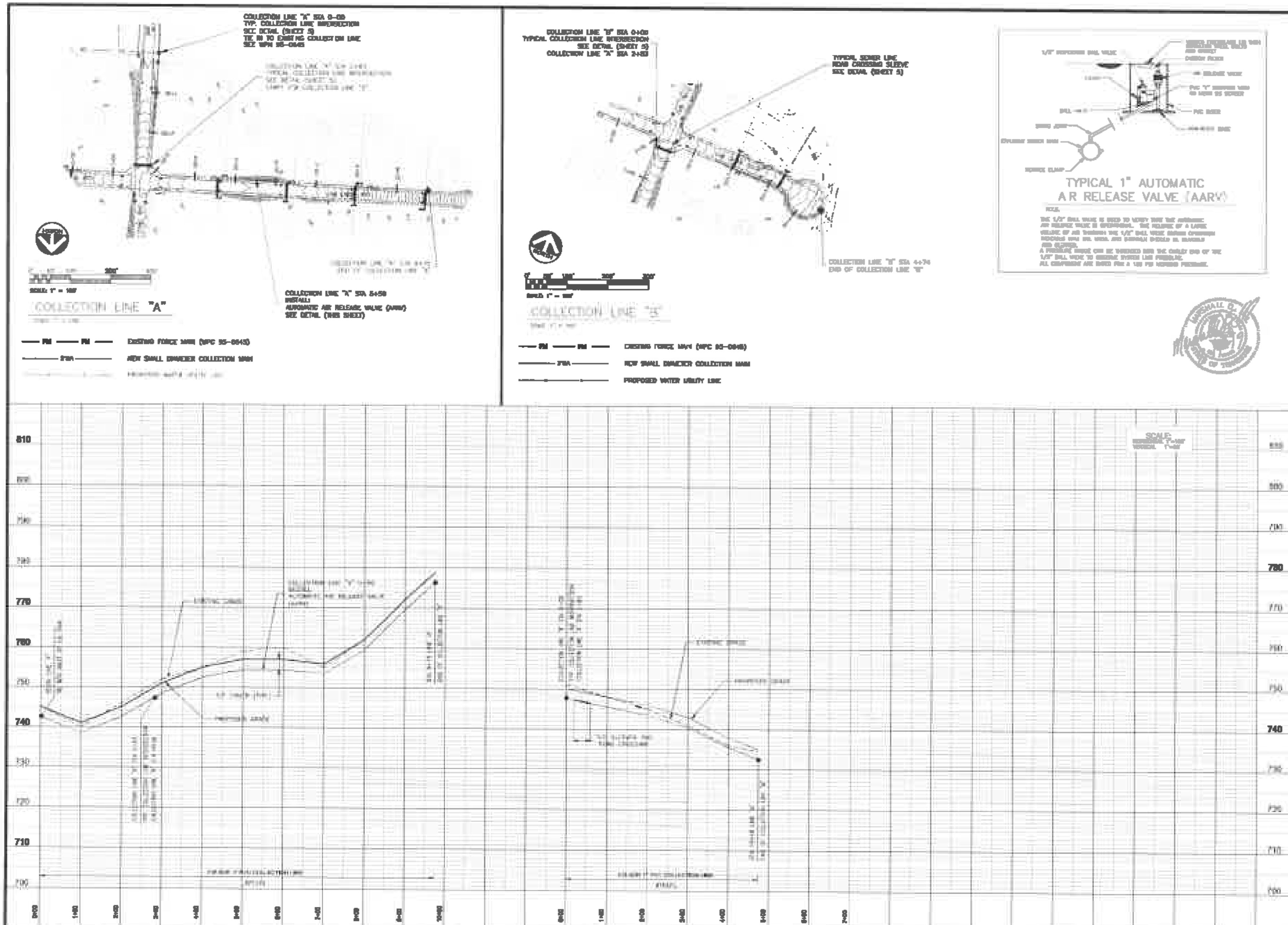
ELEVATION PROFILE / CONTROL SCHEMATIC

OAKWOOD TREATMENT FACILITY UPGRADES
AND
PHASE 5 COLLECTION
OAKWOOD SUBDIVISION

LOCATED OFF HORN SPRINGS ROAD
WILSON COUNTY, TENNESSEE

Checked by: MDF	Drawn by: DLF	Date: MARCH 14, 2019
Scale: AS NOTED	PLANS PREPARED BY:	
Filename: 18-015 OAKWOOD EXPANSION	Adenus SOLUTIONS GROUP	
SHEET 5 OF 9		


TYPICAL SEWER - WATER LINE CROSSING (WITH SLEEVE)
TYPICAL TRENCH (ROCK EXCAVATION)
TYPICAL TRENCH (EARTH EXCAVATION)
ROAD
TYPICAL ROAD CROSSING SERVICE CONNECTION
SECTION A-A
N.T.S.
TYPICAL SEWER LINE ROAD CROSSING
N.T.S.
TYPICAL SEWER-WATER LINE CROSSING
TYPICAL SEWER-STORM LINE CROSSING
TYPICAL COLLECTION MAIN TESTING PORT
TYPICAL STUB FOR EXTENSION
TO RSF
TYPICAL COLLECTION LINE INTERSECTION
SCALE: N.T.S.
PLAN VIEW
1500 GALLON STEP TANK
TYPICAL SERVICE CONNECTION (PRESSURE)
OAKWOOD TREATMENT FACILITY UPGRADES
AND
PHASE 5 COLLECTION
OAKWOOD SUBDIVISION
LOCATED OFF NORTH SPRINGS ROAD
WILSON COUNTY, TENNESSEE
Checked by:
Drawn by:
DLP
Date:
MARCH 14, 2019
Scale:
AS NOTED
PLANS PREPARED BY:
Filename:
Adenus
SOLUTIONS GROUP

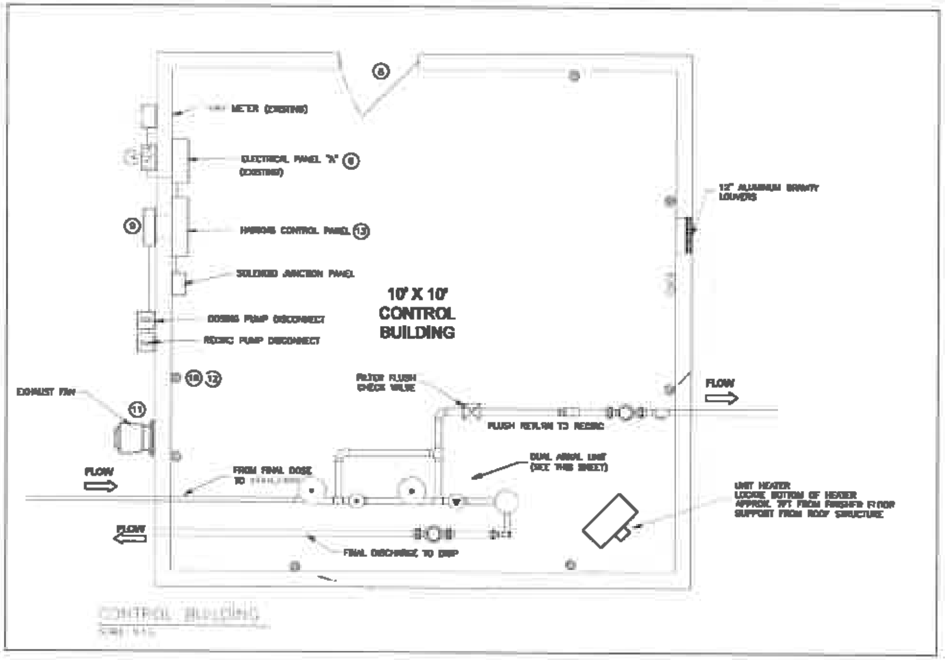

COLLECTION LINE "A" STA 0+00
TYP. COLLECTION LINE INTERSECTION
SEE DETAIL (SHEET 5)
TIE IN TO EXISTING COLLECTION LINE
SEE WPN 95-0645
COLLECTION LINE "A" STA 5+50
INSTALL:
AUTOMATIC AIR RELEASE VALVE (AARV)
SEE DETAIL (THIS SHEET)
SCALE: 1" = 100'
COLLECTION LINE "A"
EXISTING FORCE MAIN (WPC 95-0645)
NEW SMALL DIAMETER COLLECTION MAIN
COLLECTION LINE "B" STA 0+00
TYPICAL COLLECTION LINE INTERSECTION
SEE DETAIL (SHEET 5)
COLLECTION LINE "A" STA 2+50
TYPICAL SEWER LINE
ROAD CROSSING SLEEVE
SEE DETAIL (SHEET 5)
COLLECTION LINE "B" STA 4+74
END OF COLLECTION LINE "B"
SCALE: 1" = 100'
COLLECTION LINE "B"
EXISTING FORCE MAIN (WPC 95-0645)
NEW SMALL DIAMETER COLLECTION MAIN
PROPOSED WATER UTILITY LINE
TYPICAL 1" AUTOMATIC
AIR RELEASE VALVE (AARV)
SCALE:
810
800
790
780
770
760
750
740
730
720
710
700
0+00
1+00
2+00
3+00
4+00
5+00
6+00
7+00
8+00
9+00
10+00

PLANS PREPARED BY:

Adenus® SOLUTIONS GROUP

PLAN & PROFILE
OAKWOOD PHASE 5 COLLECTION SYSTEM
OAKWOOD SUBDIVISION

SHEET NO. 7 OF 8



CONTROL BUILDING

GENERAL ELECTRICAL NOTES

[illegible]

- ● ELECTRICAL OUTLET LOCATION (SEE NOTE 10-12)
- WALL MOUNTED THERMOSTAT FOR (1) HEATER UNIT AND (1) EXHAUST FAN
- ELECTRICAL NOTE REFERENCE

UNIT HEATER SCHEDULE

EQUIP. NO.	SERVICE	MANUFACTURER MODEL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	WEIGHT	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

OR APPROVED EQUAL

SHUTTER/LOUVER SCHEDULE

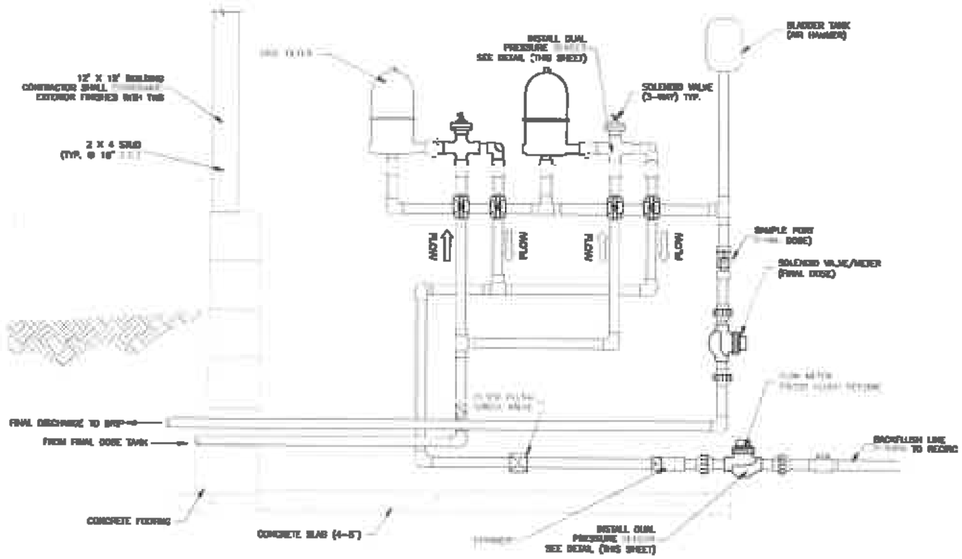
[illegible]	SERVICE	[illegible]	SIZE	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

OR APPROVED EQUAL

EXHAUST & SUPPLY FAN SCHEDULE

[illegible]	SERVICE	MANUFACTURER MODEL	CFM	HP	VOLTS	DAMPER	WEIGHT	[illegible]
EF-1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

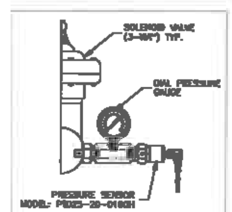
OR APPROVED EQUAL



DUAL ARKAL UNIT

DUAL ARKAL UNIT COMES PRE-ASSEMBLED AND READY TO MOUNT IN BUILDING.

MODEL # AT-DUAL ARKAL-WALL MOUNT



DUAL PRESSURE SENSOR DETAIL

SCALE: N.T.S.

PLANS PREPARED BY: Adenus SOLUTIONS GROUP

PLAN & PROFILE
OAKWOOD PHASE 5 COLLECTION SYSTEM
OAKWOOD SUBDIVISION

SHEET NO. 6 OF 8

ELECTRICAL SPECIFICATIONS

SECTION 13000 GENERAL PROVISIONS

1.01 GENERAL

1.01 REFERENCE STANDARDS

A. NFPA 70 NATIONAL ELECTRICAL CODE

B. ALL OTHER APPLICABLE STATE AND LOCAL CODES.

1.02 SUBMITTALS

A. SHOP DRAWINGS

1. SUBMIT FOR APPROVAL, PRIOR TO INSTALLATION, SIX COPIES OF COMPLETE SPECIFICATION DATA ON ALL EQUIPMENT AND DEVICES AS REQUIRED IN OTHER SECTIONS OF THESE SPECIFICATIONS. CLEARLY INDICATE ALL PROPOSED MODIFICATIONS AND DEVIATIONS FROM CONTRACT AND SPECIFICATIONS.

2. CHECK ALL ELEVATIONS FOR CLEARANCES AND INTERFERENCES with other trades. RESPONSIBLE SHALL BE ENGINEER, BY THE CONTRACTOR'S APPROVAL STAMP, THAT ALL CONFLICTING TRADE SUCH CHECKED AND THAT NO CONFLICTS EXIST.

B. RECORD DRAWINGS

1. SUBMIT, TO THE OWNER, RECORD DRAWINGS SHOWING FIELD MODIFICATIONS MADE IN RED.

1.03 COORDINATION

A. UTILITY COMPANIES

1. COORDINATE WITH UTILITY COMPANIES FOR SPECIFIC REQUIREMENTS FOR ELECTRICAL POWER.

B. OTHER TRADES

1. COORDINATE WITH APPROVED SHOP DRAWINGS FOR POWER AND CONTROL INTERCONNECTION FOR THE SPECIFIC EQUIPMENT TO BE INSTALLED.

1.04 WORK INCLUDED

A. THE WORK OF THIS SECTION INCLUDES FURNISHING OF LABOR AND MATERIALS AS REQUIRED FOR INSTALLATION OF A NEW ELECTRICAL SYSTEM AS SHOWN INCLUDING CONDUIT, WIRING, PANEL, SWITCHES, SWITCH CONTROL, LIGHTING, AND CONNECTIONS TO ALL EQUIPMENT REQUIRING ELECTRICAL POWER.

B. INSTALLATION OF EQUIPMENT FOR CONTROL AND SIGNAL WIRING.

C. TEMPORARY POWER AND LIGHTING FOR USE DURING CONSTRUCTION.

1.05 APPROVED

A. THE DRAWINGS ARE PARTLY DIAGRAMMATIC AND DO NOT SHOW IN DETAIL ALL REQUIRED COMPONENTS OF THE WORK NOR SPECIFIED CONDITIONS. THEY SHALL BE SUPPLEMENTED BY THE CONTRACTOR'S KNOWLEDGE AND EXPERIENCE.

PART 2 PRODUCTS

2.01 GENERAL

A. ALL ELECTRICAL EQUIPMENT INSTALLED SHALL BEAR THE UL LABEL EXCEPT WHERE UL DOES NOT LABEL SUCH EQUIPMENT.

2.02 SUBSTITUTIONS

A. PERMIT A SYSTEM CONTRACTOR THAT ALL EQUIPMENT FURNISHED AND INSTALLED WILL BE FREE OF DEFECTS OF DESIGN, AND WORKMANSHIP FOR A PERIOD OF 1 YEAR FROM DATE OF ACCEPTANCE OF THE WORK BY THE OWNER. PROMPTLY REPLACE AND REPAIR ALL DEFECTIVE EQUIPMENT AND ALL OTHER EQUIPMENT DAMAGED THEREBY AT NO ADDITIONAL COST TO THE OWNER.

PART 3 EXECUTION

3.01 GENERAL

A. VISIT PROJECT SITE BEFORE SUBMISSION OF BID AND BECOME FAMILIAR WITH CONDITIONS AND LIMITATIONS OF EXISTING UTILITIES.

B. THE ENTIRE INSTALLATION SHALL BE MADE IN A NEAT MANNER BY PERSONS SKILLED IN THE ELECTRICAL TRADE, AND SHALL BE IN ACCORDANCE WITH THE REFERENCE STANDARDS LISTED ABOVE.

C. MAKE FINAL CONNECTIONS TO ALL EQUIPMENT, FURNISH AND INSTALL ALL ASSOCIATED DISCONNECTS AND MISCELLANEOUS DEVICES, EXCEPT FOR EQUIPMENT MARKED SHALL BE AS RECOMMENDED BY THE EQUIPMENT MANUFACTURER.

D. FURNISH AND INSTALL CONDUIT AND WIRE FOR CONTROL AND SIGNAL SYSTEMS. SEE APPROVED EQUIPMENT SHOP DRAWINGS FOR LOCATIONS AND REQUIREMENTS.

E. ALL WIRING AND EQUIPMENT INSTALLED SHALL BE COMPLETELY TESTED AND SHALL BE LEFT IN GOOD WORKING ORDER.

SECTION 16000 BASIC ELECTRICAL MATERIALS AND METHODS

PART 1 GENERAL

NOT APPLICABLE

PART 2 PRODUCTS

2.1 RACEWAYS

A. RIGID STEEL CONDUIT

B. ELECTRICAL METALLIC TUBING

C. POLYVINYL CHLORIDE CONDUIT

2.2 WIRES AND CABLES

A. FURNISH AND INSTALL COPPER CONDUCTOR, 600 VOLT, TYPE THHN OR THWN INSULATION.

B. CONTROL CIRCUIT CONDUCTORS: COPPER CONDUCTOR, NO. 14 AWG, TYPE THHN, OR AS REQUIRED BY EQUIPMENT MANUFACTURER.

2.3 WIRING DEVICES

A. WALL SWITCHES: AS SHOWN, SPECIFICATION GRADE, NOMINAL 20 AMPERES, 120-277 VOLTS.

B. RECEPTACLES: TYPE 5-20R, SPECIFICATION GRADE, NYLON PLASTIC FACE.

C. COVER PLATES: STAINLESS STEEL.

2.4 REINFORCING

A. PROVIDE LAMINATED PLASTIC NAME PLATES FOR ALL PANEL BOARDS AND EMERGENCY DEVICES. NAME SHALL COMPLETELY IDENTIFY EQUIPMENT SERVED BY CONTROLLER.

PART 3 EXECUTION

3.01 WIRING

A. ALL WIRING SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS.

B. PERMITTED USAGE:

1. ALL INTERIOR RACEWAYS SHALL BE GALVANIZED ELECTRICAL METALLIC TUBING (EMT) OR SCHEDULE 40 PVC WHERE NOT EXPOSED TO PHYSICAL DAMAGE.

2. RACEWAYS EXPOSED TO EXTERIOR SHALL BE GALVANIZED RIGID STEEL CONDUIT (RMC).

3. ENCASED UNDERGROUND OR CONCRETE SHALL BE SCHEDULE 40 PVC.

C. INSTALLATION

1. IN LONG RADIUS SWEEPS WHERE AND WHERE, THE PROPER RADIUS AND SIZE PULL BENDS TO INCLUDE INSTALLATION OF CONDUCTORS.

2. INSTALL SEPARATE GROUNDING CONDUCTOR IN EACH RACEWAY.

3. PROVIDE NEW GALVANIZED STEEL PLANING and VERTICAL. NOTHING FOR ENDS OF PVC CONDUIT ENDINGS GROUND OR FLUSH IN UNPROTECTED LOCATIONS.

4. MINIMUM SIZE FOR CONDUIT SHALL BE 3/4" EXCEPT 2#10 1/2" MAY BE USED WHERE INDICATED; SIZE NOTED FOR #10AWG 3/4".

3.02 WIRES AND CABLES

A. ALL WIRING SHALL BE INSTALLED IN CONDUIT

SECTION 17000 SERVICE AND DISTRIBUTION

PART 1 GENERAL

1.01 SUBMITTALS

A. PANEL BOARDS.

B. DISCONNECT SWITCHES

PART 2 PRODUCTS

2.01 PANEL BOARDS

A. CIRCUIT BREAKER TYPE AS INDICATED ON THE RISER DIAGRAMS. PANEL BOARDS SHALL BE FULLY RATED FOR THE SHORT CIRCUIT INTERRUPTING CAPACITY INDICATED. LOAD CENTER TYPE PANEL BOARDS ARE NOT ACCEPTABLE. APPROVED MANUFACTURERS ARE CUTLER, ELECTRIC, SIEMENS, AND SQUARE D.

2.02 DISCONNECT SWITCHES

A. FURNISH AS INDICATED QUICK-MAKE, QUICK-BREAK, LOCK SWITCHES ENCLOSED HEAVY-DUTY WITH EXTERNALLY OPERABLE HANDLE INTERLOCKED TO PREVENT OPENING FRONT COVER WHEN SWITCH IS "ON" POSITION. ALL DISCONNECT SWITCHES SHALL BE RATED FOR SERVICE USE. APPROVED MANUFACTURERS ARE CUTLER, ELECTRIC, SIEMENS, AND SQUARE D.

B. SECURITY SWITCHES FOR PUSHBUTTONS. INTERRUPTER SWITCHES MAY BE TOGGLE SWITCH TYPE WITH HOLD-DOWN SCREW FOR THE ASSOCIATED LOCK.

PART 3 EXECUTION

3.01 GENERAL

A. INSTALL WORK REQUIRED HEREIN COORDINATED AS WORK ALL ELECTRICAL EQUIPMENT, CONSTRUCTION INSTALLATION WITH APPROVED SHOP DRAWINGS, PIPING LOCATIONS, AND ELEVATIONS.

3.02 PANEL BOARDS

A. INSTALL WITH PANEL CENTERS AS INDICATED.

B. ALL PANELS SHALL HAVE ENGRAVED PLASTIC LABELS AND TYPEWRITTEN DIRECTORIES. DIRECTORIES SHALL DESCRIBE TYPE OF LOAD AND LOCATION OF LOAD FOR EACH CIRCUIT.

SECTION 16000 LIGHTING

PART 1 GENERAL

1.01 SUBMITTALS

A. LIGHTING FIXTURES

PART 2 PRODUCTS

2.01 GENERAL

A. PROVIDE LIGHTING FIXTURES AS SPECIFIED OR LIGHTING FIXTURE SCHEDULE OF SIZES, TYPES, RATINGS, AND WITH TERMINAL HOUSINGS, ARRANGEMENTS SHALL BE USED, IN PERFORMANCE AND APPEARANCE TO FIXTURES LISTED.

B. ILLUMINATING LIGHTING FIXTURES SHALL NOT INCLUDE LOSS, LIGHTED LOAD OR WASTE.

C. FIXTURES SHALL BE COMPLETE with LAMPS, BALLASTS, AND ALL PARTS, WIRINGS, AND ACCESSORIES FOR INSTALLATION AND PROPER OPERATION.

2.02 LAMPS

A. FLUORESCENT LAMPS. TO TYPE AS SHOWN. E.XCEPT AS PHILIPS.

B. INCANDESCENT LAMPS: 120 VOLT, LONG-LIFE TYPE WITH A MINIMUM RATED LIFE OF 2,000 HOURS, BY GENERAL ELECTRIC OR PHILIPS.

C. HIGH INTENSITY DISCHARGE LAMPS:

1. MERCURY VAPOR — PULSE START TYPE BY GENERAL ELECTRIC OR PHILIPS. LAMPS IN OTHER FIXTURES SHALL BE RATED FOR SUCH USE.

2. HIGH PRESSURE SODIUM — BY GENERAL ELECTRIC OR PHILIPS.

2.03 FLUORESCENT BALLASTS

A. ELECTRONIC TYPE, BY ADVANCE OR SYLVANIA.

2.04 FLUORESCENT EMERGENCY BATTERY INVERTER

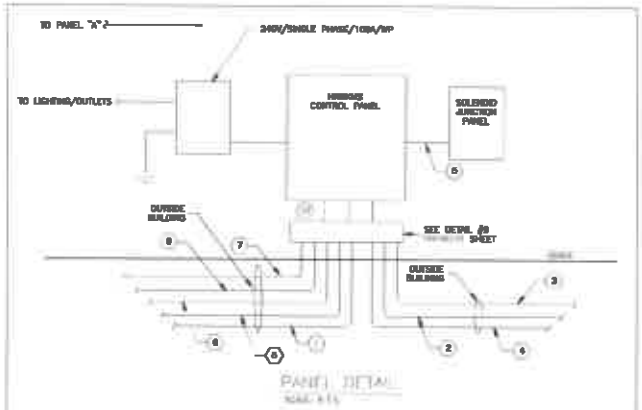
A. SPECIFICATION GRADE.

PART 3 EXECUTION

3.01 GENERAL

A. INSTALL FIXTURES AS INDICATED OR DIRECTED.

END OF ELECTRICAL SPECIFICATIONS



CONTROL/JUNCTION PANEL KEY NOTES ⬡

1. (1) 1/2" CONDUIT, With (2) #14, 14G, TO ELECTRONIC FLOW METER.
2. (4) 3/4" CONDUIT, EACH With FULL-SENSOR FOR SENSING PUMPS 1 & 2 AND SENSOR PUMPS 1 & 2, TO PUMP CONTROLLERS. TWO PUMP DISCONNECT TO MINIMUM PANEL.
3. (2) 1" CONDUIT, With (10) #14, 14G, TO 3WAY SOLENOID VALVES.
4. (4) 3/4" CONDUIT, EACH With FULL-SENSOR FOR FLOAT SWITCHES IN EFFLUENT SUMPS With AND RISERS. TEST.
5. (1) 1" CONDUIT, EACH With (2) #14, 14G TO SOLENOID JUNCTION PANEL. (FOR FLOW With, AND PUMPS PUMPS 1,2,3,4)
6. (1) 1/2" CONDUIT, With SUPPLIED PRESSURE SENSOR CABLE TO 24VP SUPPLY PRESSURE SENSOR.
7. (1) 3/4" CONDUIT, With (2) #14, 14G, TO 24VP FIELD FLUSH SOLENOID CONTROL VALVE.
8. (1) 1/2" CONDUIT, With SUPPLIED PRESSURE SENSOR CABLE TO FIXED VALVE PRESSURE SENSOR.
9. (1) 1/2" CONDUIT, With SUPPLIED PRESSURE SENSOR CABLE TO 24VP REMOTE PRESSURE SENSOR.
10. (2) 3" CONDUIT, END FOR EACH: 24VP 20VAC CONTROLS AND WIRES. PUMP CONTROLS AND WIRES, FLOAT WIRES

PLANS PREPARED BY: Adenus SOLUTIONS GROUP

NO.	DATE	BY	REVISION DESCRIPTION

PLAN & PROFILE
OAKWOOD PHASE 5 COLLECTION SYSTEM
OAKWOOD SUBDIVISION

MARCH 13, 2008

SHEET NO. 9 OF 9

DK3 Exhibit 6D

ADENUS UTILITIES GROUP, L.L.C.

SPECIFICATIONS

Version 1.8

Revised 1.3.2017

SECTION: **PAGE NUMBER:**

Part 1 - Products:

A. Valves

1. General
   a) Valves shall open counterclockwise (left) unless otherwise specified. Each valve body or operator shall have cast thereon word OPEN and an arrow indicating direction to open.
   b) All valves to be buried, submerged, or otherwise below grade valves shall be designed for such installation.
   c) Valves 2 inches in nominal diameter and smaller shall be schedule 80 PVC, easy-turn ball valves. Valves shall be King Brothers LT Series or Utility approved equal.
   d) Valves over 2 inches in nominal diameter shall be iron bodied, fully brass or bronze mounted unless thermoplastic valves are specifically called for in specifications or drawings or are required for given service.
   e) All buried, submerged, or otherwise below grade valves, and interior valves where indicated, shall be provided with a 2-inch square operating nut, valve box, extended operator, and valve position indicator as specified in this Section. Handwheel operators shall be allowed only for valves located inside structures, except where interior valves are called to also utilize an operating nut in lieu of another type of operator. Extended operators shall be provided by valve manufacturer and shall conform to valve manufacturer's recommendations for given service.
   f) All buried, submerged, or otherwise below grade valve shall be provided with restrained mechanical joints conforming to AWWA C111 unless shown otherwise on Drawings and shall be designed for underground installation. Pressure class of joint shall be at a minimum same as piping system on which joint is being installed.
   g) Flanged valves shall not be allowed for buried, underground, or otherwise below grade valves unless valves are installed in a vault or otherwise accessible location and then only with approval of Engineer or unless shown on Drawings. Flanges shall be 125/150-pound standard conforming to ANSI B16.1.

2. Gate Valves
   a) Gate valves shall conform to AWWA Standard C500 and shall be of iron body, bronze mounted, double-disc type with outside screws and yokes. Valves shall be constructed with bolted bonnets, provided with cast iron stuffing boxes having bolted followers. Stuffing boxes shall be so arranged as to be readily accessible and shall be packed ready for use with synthetic fiber, graphite impregnated stuffing.
   b) Underground gate valves shall be American Flow Control, Mueller, US Pipe Co., M&H Valve Company, Kennedy, or approved equal.

3. Air Release Valves
    a) For sewage force and gravity mains shall be similar and equal to Bermad and the valves and assemblies from Adenus Technologies. All piping for air release valves shall be Schedule 40 PVC.
    b) For 6" and larger mains, a 2" air release valve must be used. For 4" and under mains, a 1" air release may be installed.

4. Check Valves
    a) Main Line Swing-type check valves used on PVC collection and main lines 3" in diameter shall be Flo Control 1520-30. Main Line Swing-type check valves used on PVC collection and main lines 4" in diameter shall be Flo Control 1520-40.
    b) Flap check valves used on PVC lines from the interceptor tank outlet to the service connection tap shall be clear PVC as manufactured by King Brothers (model #KSCC-2000-S for 2" lines, model #KSCC-1250-S for 1 ¼" lines) or NDS (model #1520C20 for 2" lines, model #1520C12 for 1 ¼" lines). For collection systems designed with working pressures greater than 125 psi, consult with utility engineer.

5. Water Line Lockout Valve
    a) To be installed in the customer's water line on the customer's side of the water meter. Valve shall be Mueller 300 Ball Straight Service – F.I.P. x F.I.P. Quarter turn lock wing of the same size diameter as the water line. (installation requires a 12" long brass pipe nipple of the same size diameter as the water line)

6. Sewer Cleanout Relief Valve
    a) Shall be Sewer Popper – Part #S62-304 as supplied by Jones Stephens Corp.

7. Valve Boxes
    a) Service Connection – Valve boxes in non-traffic areas shall be NDS/D1800-DISG. The cover shall be green, of the Standard Drop-in variety, and must be marked "SEWER." Valve Boxes in traffic areas shall be of a solid one-piece cast iron and cast-iron traffic lid.
    b) Collection System/Forcemain Lines - Valve boxes shall be made of good quality cast iron and shall be of sectional adjustable type. Long section shall be 5-1/4 inches in inside diameter and fit around stuffing box of valve; or over valve operator, if a two-section box is used; or to fit a circular or oval-base section if a three-section box is used. Valve boxes shall be properly sized to accept a valve position indicator as described below. Valve boxes shall be heavy roadway type.

i. Upper section shall be arranged to screw on over adjoining long section and shall also be full diameter. Screw-type valve boxes shall be used unless otherwise specified. Valve boxes shall be provided with cast iron lids or covers.
ii. Lids or covers shall be marked and painted for service for which valve is used by casting words such as "SEWER", "RECLAIMED WATER", etc. Lids marked for sewer shall be painted green, lids marked for reuse shall be painted purple. An arrow shall be provided on cover to indicate direction in which valve is turned to open; this arrow shall be labeled with word "OPEN".
iii. Overall length of each valve box shall be sufficient to permit top of box to be set flush with established finished grade. In asphalt concrete pavements, top of box to be set 1/2-inch below finished grade. Asphalt concrete to be compacted 12 inches wide around upper section for a depth of 12 inches below finished grade.
iv. Valve boxes shall be set truly vertical and fully supported until sufficient backfill has been placed and compacted to ensure vertical alignment of box.

c) Water Line Lockout Valve
i. In non-traffic areas shall be NDS D1100 or approved equal. Water Line Lockout Valve Boxes in traffic areas shall be of a solid one-piece cast iron and cast-iron traffic lid.

B. Ductile Iron Fittings

- See Part 2 for fitting requirements.

Fittings 4 inches or greater shall be of mechanical joint design as defined by ANSI8/AWWA C110/A21.10.

C. Tracer Wire

Tracer wire shall be #14 AWG, PVC coated solid copper wire (green color), and shall be taped to all pipes continuously, using waterproof wire nuts where wires tie together.

D. Pipe:

See Part 2 and Part 4 for Gravity main and Force Main line pipe requirements.

All Schedule 40 PVC pipe shall have NSF approval and be manufactured in accordance with ASTM D2241.

E. Effluent Filters

Effluent gravity filters shall have filtration of effluent from the clear zone of the septic tank to less than 3/16" and be constructed from over 2-1/4 sf of 3/16"

polypropylene filter mesh encapsulated in urethane caps, top and bottom. Filter shall also have a 4" diameter Schedule 40 outlet tee with a solid plate flow reducer and a ¾" field extendable handle for easy removal of the filter cartridge for cleaning, and a float bracket on tee, such as the EF-4-36-26 from Adenus Technologies.

F. Tank Risers and Lids

Tank risers shall be constructed of ribbed, rigid PVC material and shall be color coded green. Must be certified to meet classifications CSA B182.4 and ASTM F794 for ribbed gravity sewer pipe and fittings, similar to Ipex Inc.'s Ultra-Rib riser material.

Lids for 24" riser material shall be constructed of high strength cast iron with min. 12,000 lbs. wheel load in all weather conditions, H10 rating with a baked urethane finish for positive UV protection and a hard, durable surface color-coded green. Lid must contain a soft gasket to provide a 100% waterproof seal, as the lids available from Adenus Technologies.

30" riser lids shall be constructed of heavy duty fiberglass and must provide a 100% waterproof seal in all conditions at all times, as the 30" fiberglass lid from Adenus Technologies.

G. Grommets

Grommets are to have two flanges with a smaller diameter flange on one side, which facilitates easy insertion, made of Neoprene rubber or similar material, and color coded black. Applications include Electrical Insulation, Sealing, Noise Control, and Vibration Isolation. Only proven, watertight grommets will be accepted, equal to those distributed by Adenus Technologies.

H. Adhesive

Two-part epoxies shall be such as WELD-ON 810 (A & B) KIT WHITE, a two-component, high strength, reactive adhesive for joining, fabricating, and repairing PVC and CPVC fittings. Bonds PVC and CPVC to dissimilar materials, such as metals, concrete, clay and others.

Must have a Brookfield Viscosity at minimum 40,000 cps @ 73 ± 3.6°F and max VOC emissions of 75 G/L, per SCAQMD Rule 1168, Method 361A.

Caulk-style adhesives shall have a tear propagation resistance of 7 MPa, a tensile strength at break of approximately 1.4 MPa, an elastic recovery of >90%, and a tensile strength of 0.5 MPa approx. @ 50% elongation (20°C), such as Sikaflex 11FC 1a 11FC.

I. Pump Vaults

Pump vaults shall house the pump. Vaults shall consist of a pump enclosure, an effluent filter that screens gray water before pumping made of 1/8" polypropylene filter mesh encapsulated in urethane caps (or similar filter tube

material), a bracket to hang a float tree, and PVC handles that allow the filter to hang on the rim at the opening in the tank. Filters shall be as that of STEPros HFSCV45MF12.

J. Discharge Assembly

Discharge assemblies shall include all of the necessary plumbing (pipe, fittings, check valve, etc.) to convey effluent from a pump to the outside of a riser or pump basin. Assemblies shall be corrosion resistant and adjustable for a proper fit inside risers or pump basins. Flexible high-pressure hoses shall be included to dampen vibration from the pump. All fittings on Hose and Valve Assemblies are to be either threaded and sealed with Teflon paste or solvent welded. Components shall meet or exceed the following specs: Ball Valve (Schedule 80 PVC, working pressure = 150+ psi @ 73° F), Internal Flex Hose (Specially compounded elastomer, synthetic, high tensile textile cord; high-pressure red flex hose, pressure rated at 200 psi for all discharge sizes), External Flex Hose (Same hose as listed above), Pipe and All Fittings (Schedule 40 PVC). 1" discharge assemblies for 10 gpm pumps shall include a flow restrictor. Discharge assemblies shall be as manufactured by Adenus Technologies.

K. Mercury Switch Float

All residential floats shall be control-duty, mercury wide angle, normally open float switches. No mechanical float switches will be accepted. Floats shall contain a steel tube mercury switch designed to operate under min/max temperatures of 32-170° F, and have an electrical rating of 10 Amps @ 120 Vac, 3 Amps @ 240 Vac. The float power cord shall be a chlorinated polyethylene type SJOW-300Volt and 18/2. Float ball shall be constructed of a durable polypropylene outer shell and a solid polyurethane foam interior, as that of Adenus Technologies.

L. Gas Seals

All conduit entering risers or meter boxes through grommets shall be sealed with cord grips (gas seals) to ensure that sewer gasses do not travel through conduit raceway into control panel causing corrosion. Gas seals are to have Acme threads on body to prevent skipping, constructed of polyamide 6/6 nylon with TPE or Buna N sealing gland, with a working temperature of -22°F (-30°C) to 212°F (100°C), with a protection class IP 68 per DIN 40050 up to 75 psi (5 bar) water pressure, and suitable for NEMA type 4 and 6 enclosures, like those distributed by Adenus Technologies.

M. Pumps

All pumps shall be 4" diameter (3-7/8" actual) submersible, high-head effluent pumps precision engineered of high-quality stainless steel with acetal impellers, polycarbonate diffusers, polycarbonate with stainless steel insert suction caps, polypropylene intake screen, and built in acetal check valve.

Shaft and coupling and the intake shall all be of stainless steel. Motors shall be appropriate voltage and wires from Franklin Electric or Pentair (PenTek), and pump end shall be similar to that of Sta-Rite and AY McDonald.

Residential applications are typically equal to the STEP10 pump from Sta-Rite (10gmp, 115Vac, ½ hp).

Pump data shall be submitted to accepted by the Utility prior to purchase.

N. Tanks

1. General

Tanks must be structurally sound by engineer design with a minimum safety factor 1.4. All tank designs must be certified by a Professional Engineer qualified to do structural design in the State in which tank will be constructed and used.

Tanks shall be watertight with monolithically poured walls. No seams are allowed in the wall section. (No mid-seam tanks). The structural steel must be continuous from the side walls into and across the top slab.

Tanks shall be concrete unless otherwise approved by the Utility engineer.

2. On-site interceptor (septic) tanks
   a. Interceptor tanks shall be 1500 - gallon precast concrete or fiberglass reinforced plastic (FRP)(if approved) for single-family homes and larger as appropriate for commercial installations.

   b. For residential service, one tank per structure is required, i.e. no sharing of tanks.

   c. The tanks shall be designed for the following normal loads:

Top	Lateral Loads
300 psf	62.4 psf

   d. All tanks shall be guaranteed in writing by the tank manufacturer for a period of two years from the date of delivery.

   e. Tanks shall be manufactured and furnished with inlet and outlet access openings 20 inches in diameter and of the configuration shown on the drawings. Modifications of completed tanks will not be permitted.

f. Inlet plumbing shall penetrate 18 inches into the liquid from the inlet flow line.

g. All inlet and outlet openings in the interceptor tanks must contain flexible adapter boots. A stainless-steel clamp is required with the boots.

h. Tanks shall be capable of successfully withstanding an above ground static hydraulic test and shall be individually tested.

i. All tanks shall be installed in strict accordance with the manufacturer's recommended installation instructions.

j. Manufacturer must have NPCA certification, and follow all NPCA production protocols in manufacturing concrete tanks.

k. Walls, bottom and top of reinforced-concrete shall be designed across the shortest dimension using one-way analysis. Stresses in each face of monolithically-constructed tanks may be determined by analyzing the tank cross-section as a continuous fixed frame.

l. The walls and bottom slab shall be poured monolithically. No seams are allowed in the wall section. (No mid-seam tanks). The structural steel must be continuous from the side walls into and across the top slab.

m. Reinforcing steel shall be ASTM A-615 Grade 60 fy = 60,000 psi. Details and placement shall be in accordance with ACI 315 and ACI 318.

n. Concrete shall be ready-mix with cement conforming to ASTM-C150, Type II. It shall have a cement content not less than six (6) sacks per cubic yard and maximum aggregate size of ¾ inch. Water/cement ration shall be kept low (0.35+/-), and concrete shall achieve a minimum compressive strength of 5000 psi in 28 days.

o. Tanks shall not be moved from the manufacturing site until the tank has cured for seven (7) days or has reached two-thirds of the design strength.

p. Tanks shall have a plastic adapter rings cast in place at the openings during construction.

q. In order to demonstrate water tightness, tanks shall be tested twice prior to acceptance. Each tank shall be tested at the factory, prior to shipping, by filling to two (2) inches above the top of the lid and

the exfiltration rate shall be determined by measuring the water loss during the next twenty-four hours. The same test will be conducted once the tank is in the field, prior to backfilling. Any visual leaks or wetness on the outside of the tank shall be cause failure. Minor imperfections may be corrected after installation.

O. RISERS & LIDS

PP. Inlet and outlet risers shall be ribbed PVC as manufactured by Adenus Technologies or equivalent. Risers shall be at least 12 inches high, shall have minimum of nominal diameter of 24 inches when used with a 12-inch or 15-inch diameter pump vaults or 30-inch when used in a duplex application and shall be equipped with the following:

a. Rubber Grommets are required for any riser penetrations.

b. Adhesive: Two-part epoxy, one pint per riser, for bonding riser to adapter rings. One quarter for 30-inch diameter.

i. **LIDS** shall be furnished with each riser, Lids shall be Adenus Technologies' cast iron with green nonskid finish, and provided with elastomeric gasket, stainless steel bolts, and wench. The riser and lid combination shall be able to support a 12,000 lb wheel load. (Note: This is not to imply that PVC risers are intended for traffic areas).

ii. **RISER INSTALLATION** shall be accomplished according to the manufacturer's instructions.

A. FRP TANKS

1. **Method of calculation**

a. Fiberglass tanks shall be analyzed using finite element analysis for buried structures.

b. Calculations shall address the following:
Strength with a minimum safety factor of 2.5
Buckling with a minimum safety factor of 2.5
Deflection of 5% of the tank diameter, based on service load (including long term lag)
Bouyance

c. Performance testing.

2. In lieu of calculations for fiberglass tanks, the supplier may elect for in-situ performance testing.

3. In-situ testing of each tank model shall include use of strain gauge and deflection gauge. The tank will be subjected to external forces equal to the actual load.

4. Maximum initial deflection based on test loading shall not exceed 2% of the tank diameter.

5. Performance testing will be evaluated by a Registered Professional Engineer (P.E.) approved by the Utility. The Engineer will have the sole responsibility to determine the maximum external loading on any of the tank models.

6. The tank shall be constructed with a glass fiber and resin content specified by the manufacturer and with no exposed glass fibers. The manufacturer shall supply to the engineer, without charge, satisfactory evidence of testing by an approved laboratory showing compliance with IAPMO IGC 3-74, excepting as herein modified. Any metal part shall be 300 series stainless steel.

7. Inspections must be made in the supplier's facility and again after installation. The minimum wall thickness shall be ¼ inch. If the wall thickness is suspected to be less than ¼ inch or if delamination is suspected within any portion of the tank, the engineer may drill a ¼ inch diameter hole through the tank for inspection purposes. If the required minimum ¼ inch thickness is not found, repair if feasible shall be the responsibility of the contractor. If repair is judged not feasible, the tank shall be rejected. If the required minimum ¼ inch thickness is found and no delamination is present, the repair of the inspection holes shall be the responsibility of the Engineer.

8. The Engineer shall specify the minimum weight of each tank model that will be allowed. The manufacturer will permanently mark the weight of each tank on the top near the access hole.

9. The minimum tank weight shall be specified below by the manufacturer's engineer (i.e., 350 lbs for 1000 gallon tanks…..400 lbs for 1500 gallon tanks +/-).

10. Holes specified for the tank shall be provided by the manufacturer. Resin shall be properly applied to all cut or ground edges so that no glass fibers are exposes and all voids are filled.

11. Dual Tite or Ty-Seal neoprene gaskets, or approved equal, shall be used at the inlet to join the tank wall and the inlet piping. Schedule 40 PVC pipe and fittings shall be used at the inlets.

12. Inlet plumbing shall include an inlet tee which penetrates 18 inches into the liquid from the inlet flow line. The inlet plumbing shall allow for natural ventilation back through the building sewer and vent stack.

13. Water testing shall be performed on each tank. Every tank shall be assembled by the manufacturer and filled with water to the brim of the access opening for a minimum of two (2) hours. The tank shall show no leakage from section seams, pin-holes or other imperfections. Any leakage is cause for rejection.

14. When leakage occurs, an additional water test shall be made on the tank after repairs have been completed. The manufacturer shall be responsible for making all corrective measures in production or assembly necessary to ensure a completely watertight tank.

15. After installation of the tank with riser completed, each tank shall be filled with water to a point two (2) inches into the access riser and the water loss measured after a two-hour period. Every tank test shall be witnessed by an inspector. Any leakage shall be cause for rejection. Backfill of a depth equal to the water height in the riser must be in place over the tank to prevent damage due to hydrostatic uplift.

16. Each tank shall be marked in the upper most surface over the outlet and include a permit number, weight of tank, type of tank and date of manufacture.

17. Installation shall be in accordance with manufacturer's recommendations.

P. Control Panels –

1. General.

All control panels must be UL certified and tested, capable of handling the specific application at hand.

2. Residential panels shall have the following:

i. Pump Circuit Breaker (20 amps, OFF/ON switch. Single pole 120 VAC, DIN rail mounting with thermal magnetic tripping characteristics)

ii. Controls Circuit Breaker (10 amps, OFF/ON switch. Single pole VAC. DIN rail mounting with thermal magnetic tripping characteristics)

iii. Toggle Switch (Single pole, double-throw HOA switch. 20 amps, 1 HP)

iv. Audio Alarm (95 dB at 24", warble-tone sound)

v. Audio Alarm Silence Relay (120 VAC, automatic reset)
vi. Visual Alarm (7/8" diameter red lens, "Push to Silence." NEMA 4X, 1 watt bulb, 120 VAC)
vii. Padlock Latch (Constructed of non-corrosive stainless steel)
viii. Elapsed Time Meter (120 VAC, 6-digit, non-resettable)

Suitable models of approved residential panels are the SF1-ETM, the GF1 and GF2, the SC1-ETM-PRL, and the SC1-RO-ETM control panels from Adenus Technologies.

Pump Station panels shall have the following:

Hardware/Enclosure Requirements

- Certified Compatible with HAWK® Monitoring System
- Programmable Logic Controller capable of MODBUS TCP communication
- UL Listed
- 10 Base T/100 Base-TX Ethernet Port
- Compact Flash, USB, or SD card socket for on-board logging
- Configuration is stored in non-volatile memory
- UL-Type 4X Fiberglass enclosure
- Current Sensors
- Service outlet
- Isolation Relays
- TVSS protection
- Climate Control
- Verizon approved ODI M2M modem capable of running over secure hosted Verizon Wireless VPN

Operational Specification

- Minimum Duplex (2) alternating pump configuration
- 3 level float tree or submersible level sensor
- Minimum cycle runtime
- High level renotify timer/alarm
- Current sensor alarming
- Redundant OFF low level float with emergency pump shut off

Suitable models of approved pump station panels are the AT-DUPLEX-LTE and the AO-DAC2T-RO control panels from Adenus Technologies.

Treatment Plant panels shall have the following:

Hardware/Enclosure Requirements

- Certified Compatible with HAWK® Monitoring System
- Touch Screen HMI

- Programmable Logic Controller capable of MODBUS TCP communication
- UL Listed
- Up to 5 RS-232/422/485 Serial ports
- 10 Base T/100 Base-TX Ethernet Port To network Units, host web pages, and FTP server
- Compact Flash, USB, or SD card socket for on-board logging
- Configuration is stored in non-volatile memory
- NEMA 4X / IP66 Front Panel
- Current Sensors
- Service outlet
- Isolation Relays
- TVSS protection
- Climate Control
- Verizon approved ODI M2M modem capable of running over secure hosted Verizon Wireless VPN

Software Requirements

- Certified Compatible with HAWK® Monitoring System
- SCADA driven Adaptive Recirculation Rate
- SCADA driven Adaptive Pump Management
- Zone-specific dynamic subsurface dispersal logic providing supply/return PSI and GPM values.
- Data logging

SCADA Requirements

- Certified Compatible with HAWK® Monitoring System
- Remote Web Access and Control Facility over secure hosted Verizon VPN managed by Certified Verizon Vertical Solution Provider
- Alarm polling with specified user acknowledgement feature
- Key Performance Indicator email reporting
- Chart based performance reporting

Suitable models of approved treatment plant panels are the FFRT-2R-2D-5Drip and the FFRT-12RZ-2D-15DZ control panels from Adenus Technologies.

Q. Pump Stations – Pump stations shall consist of the following items, as described specifically above: ball valves, check valves, tracer wire, PVC Schedule 40 or Class 200 piping, tank risers and lids, grommets, adhesives, pump vaults, discharge assemblies, mercury float switches, high-head effluent pumps, and control panel. All other fittings (ell, 45, etc.) shall only be Schedule 40 PVC pressure fittings. Gravity (DWV) fittings will not be accepted. No cell-core or

foam pipe or fittings will be accepted. Tankage for pump station shall be certified watertight concrete, one-piece tanks, tested, and certified for installation like that of Jarrett Concrete Products. Other tanks (fiberglass, if applicable) shall meet above specs, like that of Xerxes and Adenus Technologies.

R. **PVC Fittings** – All PVC fittings (coupling, Tee's, 90's, etc) must be Sch. 40 pressure rated fittings. No gravity, DWV, or thin-walled fitting will be accepted.

S. **Watertight Tanks** – All tanks must be approved and meet the design parameters of Adenus. See page 21.

Part 2 - Force Main Products:

General: The installer is responsible to furnish all material, equipment, tools, and labor in connection with the sewage force main, complete and in accordance with the drawings and these Specifications. The installer shall be responsible for safely storing materials needed for the work. Keep the interiors of all pipes, fittings, and other accessories free from dirt and foreign matter at all times.

A. Pipe

1. All plastic pipe shall be made from Class 12454-B polyvinyl chloride plastic as defined by ASTM D1784.
2. All Class 200 pipes (200 pressure rating) shall have NSF approval and be manufactured in accordance with ASTM D2241.
3. Furnish a certificate from the pipe manufacturer stating that the company is fully competent to manufacture PVC pipe of uniform texture and strength and in full compliance with these specifications and further stating that he has manufactured such pipe and done so in sufficient quantities to be certain that it will meet all normal field conditions.
4. Certain information shall be applied to each piece of pipe. At the least, this shall consist of:
    i. Nominal Size
    ii. Type of Material
    iii. SDR or Class
    iv. Manufacturer
    v. NSF Seal of Approval
5. Pipe that fails to comply with the requirements set forth in these specifications shall be rejected.
6. Pipe 1 ¼ through 2 ½ inches may be solvent weld Sch. 40 PVC. Pipe 3 inches in diameter and larger shall have push-on joints designed with grooves in which continuous molded rubber ring gaskets can be placed. Gaskets shall be made of vulcanized natural or synthetic rubber; no reclaimed rubber will be allowed. The gaskets shall be of the manufacturer's standard design dimensions and of such size and shape as to provide a positive seal under all combinations of joint and gasket tolerance. The gasket and annular groove shall be designed and shaped so that when the joint is assembled, the gasket will be radially compressed to the pipe and locked in place against displacement, thus forming a positive seal.
7. PVC Collection pipe 4" or smaller must be SDR 17, 6" and above may be SDR 21. Other materials (PE) will be determined on a site by site basis.
8. The spigot end of each pipe shall be beveled so that it can be easily inserted into the gasket joint, which in turn shall be designed so that the spigot end may move in the socket as the pipe expands or contracts.

B. Fittings/Joints - Fittings for use on PVC pressure pipe of 4-inch nominal inside diameter or less shall be Schedule 40 PVC pressure fittings, Schedule 40 or Class 200 piping, etc. No gravity, DWV (non-pressure), or thin-walled fittings or pipe will be accepted. Fittings for use on PVC pressure pipe of 4-inch nominal inside diameter or greater shall be ductile iron with restrained mechanical joints as described in ANSI 21.10/AWWA C110 or ANSI 21.53/AWWA C153. Coatings and linings of fittings shall be as specified for ductile iron pipe. Mechanical joints for fittings shall be supplied with rubber gasket joints in conformance with ANSI 21.11/AWWA C111.

Part 3 - Installation of Force Main:

General: The specs for installing a force (pressure/pump) main shall be as follows:

B. Lay the force main to keep it at the lines and grades required by the approved drawings stamped by Adenus.

C. Upon completion of force main installation, it shall be pressure tested to 125 psi. A pressure gauge shall be inserted in line with the main so pressure can easily be read. If there is no pressure loss over 90 minutes of applied pressure to the whole system at 125 psi, the force main shall pass inspection.

D. Service connections (sewer taps) for each residence shall consist of a 2" ball valve, a clear 2" check valve, and a meter box covering these components. The components shall be as specified in Part 1 of this document. The check valve shall be installed between the septic tank and the ball valve, with the check valve pointing away from the tank. Top of meter box marked "Sewer" shall be installed with top of box even with final grade.

E. Force main shall be installed with a minimum of 30" cover over the pipe. If there are any rocks in force main ditch, the pipe shall be bedded in 6" of crusher-run, #67 gravel, or similar fill material. Then, pipes are to be covered in a minimum of one (1) foot of soil or engineer approved granular material before remainder of backfill is placed.

F. All pipes installed in ground shall have a tracer wire as specified above taped to them.

G. All work must be inspected by Adenus prior to backfilling.

Part 4 – Gravity Main Products:

General: All fittings, components, and piping for gravity mains shall be in accordance with the specifications for the Force Main as described above (Schedule 40 PVC pressure fittings, Schedule 40 or Class 200 piping, etc.). No gravity, DWV (non-pressure), or thin-walled fittings or pipe will be accepted.

Part 5 – Installation of Gravity Main:

General: The specs for installing a gravity main shall be as follows:

B. Lay the gravity main to keep it at the lines and grades required by the approved drawings stamped by Adenus.

C. Upon completion of gravity main installation, it shall be pressure tested to 125 psi. A pressure gauge shall be inserted in line with the main so pressure can easily be read. If there is no pressure loss over 90 minutes of applied pressure to the whole system at 125 psi, the main shall pass the pressure portion of the inspection.

D. Service connections (sewer taps) for each residence shall consist of a 2" ball valve, a clear 2" check valve, and a meter box covering these components. The components shall be as specified in Part 1 of this document. The check valve shall be installed between the septic tank and the ball valve, with the check valve pointing away from the tank. Top of meter box marked "Sewer" shall be installed with top of box even with final grade.

E. Gravity main shall be installed with a minimum of 30" cover over the pipe. If there are any rocks in force main ditch, the pipe shall be bedded in 6" of crusher-run, #67 gravel, or similar fill material. Then, pipes are to be covered in a minimum of one (1) foot of soil or engineer approved granular material before remainder of backfill is placed.

F. All pipes installed in ground shall have a tracer wire as specified above taped to them.

G. All work must be inspected by Adenus prior to backfilling. Install PVC gravity main as per Utility approved plans. Gravity mains shall be a minimum of 4 inches. Four inch diameter mains shall have no less that 1% fall (1' drop in elevation for every 100 linear feet of pipe) towards the pump station. If the main falls to less than 1% for more than 100 ft., a six inch pipe must be installed. Gravity mains that are 6" may be laid at 0.5% fall (6" drop in elevation for every 100 feet). If gravity main has any swags (ups and downs), then an air release assembly as per specs in Part 1 above shall be installed at every high point in the main, for all diameters of pipes. Main shall have a minimum depth as per approved plans, and shall have a tracer wire taped to it. If there are any rocks in gravity main ditch, the pipe shall be bedded in 6" of crusher-run, #67 gravel, or similar fill material. Then, pipes are to be covered in a minimum of one (1) foot of soil or engineer approved granular material before rest of backfill is placed.

Part 6 – Installation of Water Line Lockout Valve:

General: The lockout valve is to be installed immediately after the water provider's meter on the customer's side. A brass pipe nipple 12" in length and of the same size diameter as the water line is to be screwed into the exit end of the water meter. The water line lockout valve is to be screwed onto the opposite end of the 12" brass pipe nipple. The water line to the customer's home is screwed into the exit end of the water lockout valve. The center of the water line lockout valve box should be placed over the center of the lockout valve during installation of the box. The lid of the box should be adjusted in height using an appropriate length section of 10" pipe to set the top of the lid at grade level.

Part 7 – Installation of Service Lines from Tank to Tap (Pressure and Gravity):

General: the specifications for installing gravity and pressure service lines and service connections (taps) shall be met as follows:

A. Installation of STEP Service Line and Connection:

STEP SYSTEM INSTALLATION SEQUENCE

1. Install an Adenus approved watertight tank and test it according to specifications.

2. Clean the area around the opening of the tank.

3. Measure the appropriate grade level for the riser. If necessary cut the bottom of the riser to the correct height (drilled and tapped holes are on the top.)

4. Clean the bottom mounting surface of the riser (inside surface up to 1 ½") with PVC cleaner using a rag or applicator.

5. If using a concrete tank with a grooved mounting surface:

   a. Mix ADHQ10 two-part epoxy and coat epoxy on grooved mounting surface allowing epoxy to run down into the groove.

   b. Place the riser in the grooved mounting surface of the tank.

   c. After mounting the riser pour epoxy between the inside of the riser and the grooved tank mounting surface.

   d. Twist the riser for a tight fit.

   e. Fill in gaps with the epoxy.

   f. Epoxy will set in (4) hours and reach full strength in 24 hours at 70 degrees F and above.

6. If using a concrete tank with a black riser mounting ring:

   a. Apply Sikaflex 11FC around the outside of the black riser mounting ring approximately 1" from the top.

   b. Apply Sikaflex 11FC around the inside of the riser approximately 1 ½"-2" from the bottom of the riser.

   c. Place the riser on the black riser mounting ring.

d. Twist the riser for a tight fit.

e. Fill in the gaps by running a bead of Sikaflex 11FC along the inside of the riser where the black riser mounting ring and riser meet.

7. If using a fiberglass tank:

   a. Apply ADHQ10 around the outside of the fiberglass tank approximately 1" from the top.

   b. Apply ADHQ10 around the inside of the riser approximately 1 ½"-2" from the bottom of the riser.

   c. Place the riser on the tank.

   d. Twist the riser for a tight fit.

   e. Fill in gaps by running a bead of ADHQ10 along the inside of the tank where the tank and riser meet.

   f. Epoxy will set in (4) hours and reach full strength in 24 hours at 70 degrees F and above.

8. Install the pump vault by sliding it down in the tank opening inside the mounting ring (the hanger brackets should sit on top of the concrete surface depending on the concentricity of the tank opening.)

9. Trim the hanger brackets if necessary.

10. Move the pump chamber so that it is located 180 degrees from the intended exit location of the discharge line.

11. Select the location where the conduit exits the pump vault (generally in a straight line to the control panel location on the building.)

12. Mark the location of the (3) conduit holes approximately 2" above the mounting surface and generally 2" center to center.

13. Remove the outside riser fins with a flat blade bit or other tool (ensure that the riser fin surface is cut until it is even with the adjacent surface.)

14. Drill (3) holes 1" in diameter on 2" centers for the ½" grommet installation (trim any edge material so that the holes are smooth and even.)

15. Select the location of the discharge line (usually in a straight line in the direction of the tap at the collection line) and remove the outside riser fins with a flat blade bit or suitable tool.

16. Drill one hole 1 9/16" in diameter for the installation of the 1" grommet (trim any edge material so that the holes are smooth and even.)

17. Install the control panel SF1-ETM-ADT on the side of the building near the tank (the control panel should be installed according to the electrical code.)

18. The three #10 wires (power, neutral, ground) from the building should run from a 30 amp single pole breaker and come out the side of the building through the control panel.

19. Install (3) ½" grommets in the (3) 1" diameter holes drilled in the side of the riser.

20. File a bevel at the end of the conduit.

21. Lubricate the conduits and grommets with soap.

22. Install (3) ½" PVC electrical conduits (schedule 40) into the (3) ½" rubber grommets (the conduit should extend about ¾"-1" into the riser.

23. Install the female adapters to (3) conduit ends.

24. Screw the (1) gas seal for the pump cord into (1) female adapter and screw the (2) remaining gas seals for the (2) floats into the remaining female adapters.

25. Remove the float stem assembly from inside the pump vault.

26. Secure top float collar 6 ½" down from the base of the handle on the float stem with a setscrew.

27. Secure bottom float collar 4 ½" below the top float collar.

28. Secure the yellow pump operating float with a 3" tether to the bottom float collar.

29. Secure the yellow alarm float with a 3" tether to the bottom float collar.

30. Use wire tie straps to keep (2) float cords and (1) pump cord organized along the float stem.

31. Using the small fish tape, pull the (1) pump cord and (2) float cord through the conduits into the control panel (leave approximately 5 feet of spare cord inside the vault.)

32. Make sure that all floats are rotated 15 to 20 degrees so that they are not in a vertical line or making contact with the vault walls.

33. Install the hose and valve stem into the top of the pump using thread seal. Do not use wrenches!

34. Attach the hose and valve discharge assembly to the hose and valve stem coming up from the pump.

35. Lubricate the 1" grommet and the gray 1" x 4" nipple on the discharge assembly with soap.

36. Slide the 1" x 4" nipple through the 1" grommet in the side of the riser (the nipple should extend to the outside of the riser approximately 2".)

37. Adjust the discharge hose assembly that is running across the top of the vault so that it can be properly operated and is maintenance friendly.

38. Connect the external flex extension to the 1¼" service line using PVC glue.

39. Install 1 ¼" schedule 40 PVC service line pipe to the service connection.

40. Connect the power, neutral, and ground wires from the building to the appropriate connection points in the control panel according to the wiring diagram.

41. Connect the (2) float wires and (1) pump cord wire to the terminal block in the control panel according to the wiring diagram.

42. When connecting the main collection line, ensure that the ball shut-off valve has been installed on the service line leaving the collection line and is in working order.

43. Also ensure that a flapper check valve is installed on the service line from the main collection line (verify the direction of the flow arrow on the check valve is pointing towards the main collection line).

44. Also ensure that the flapper is in working order and seating properly when closed.

45. Connect the 1 ¼" service line to the check valve; make sure that the glue applicator touches only the surface that will come in contact with the pipe (do not get any glue on the flapper).

46. Turn both circuit breakers in the control panel to the "on" position and test for 125 volts of power.

47. Flip the auto-off-manual toggle switch to manual and test the pump run conditions.

48. If pump is running flip the toggle switch to the auto position and raise the float stem to a vertical position.

49. Raise the pump operating float (bottom float) and check for pump running conditions.

50. While keeping the pump operating float (bottom float) in the raised position, raise the audio alarm float (top float), audio alarm should sound and red pushbutton should illuminate.

51. Lower the alarm float (top yellow float.)

52. Lower the pump operating float (bottom yellow float.)

53. When the pump operating float (bottom yellow float) is lowered the pump should stop.

54. Install the float stem in the pump vault.

55. Using the wire tie straps bundle each wire together to ensure that no loose wires fall into the pump vault, this makes it easier to raise the float stem for testing and maintenance.

56. Open the ball valve at the collection line and run the pump. Verify that water is flowing properly through the check valve and ball valve by observing the clear check valve.

57. With the pump running, turn the ball valve at the collection line to the off position and check for any leaks in the 11/4" service line.

58. Fix leaks if necessary.

59. Open the ball valve at the collection line.

60. Secure lid on riser with provided stainless steal bolts.

61. Note: The tank will need to be inspected to ensure that it is watertight. Contact company/person responsible for operation and maintenance before and after installation for any specifications and instructions.

B. Installation of Gravity Service Line and Connection:

STEG SYSTEM INSTALLATION SEQUENCE

STEG service connections will be allowed only on a case by case basis by the Utility Engineer.

1. Review engineer's design drawings to verify that the tank outlet is at least three feet above the hydraulic gradient of the collection line at the connection point (if not, this site is not suitable for the STEG system and a pump will be required.)
2. Ensure that STEG tank has been tested by the manufacturer and is watertight.
3. Prepare the tank hole by leveling the bottom of the tank bed.
4. Remove all rock greater than 1".
5. If large rocks are close to the bottom of the tank add sand or small gravel to serve as a cushion for the tank.
6. Install the tank in a level condition (not varying more than 1" end to end.)
7. Install the inlet baffle tee with a 4" downward pipe section 18" long into the influent side of the tank.
8. Secure the inlet pipe seal with a stainless steal clamp.
9. Install the 4" effluent outlet pipe through the boot in the tank.
10. Extend the 4" pipe at least (1') one foot onto the hard ground.
11. Secure the outlet pipe seal with a stainless steal clamp.
12. Clean the area around the opening of the tank.
13. Measure the appropriate grade level for the riser. If necessary cut the bottom of the riser to the correct height (drilled and tapped holes are on the top.)

14. Clean the bottom mounting surface of the riser (inside surface up to 1 ½") with PVC cleaner using a rag or applicator.

15. If using a concrete tank with a grooved mounting surface:

    a. Mix ADHQ10 two-part epoxy and coat epoxy on grooved mounting surface allowing epoxy to run down into the groove.

    b. Place the riser in the grooved mounting surface of the tank.

    c. After mounting the riser pour epoxy between the inside of the riser and the grooved tank mounting surface.

    d. Twist the riser for a tight fit.

    e. Fill in gaps with the epoxy.

    f. Epoxy will set in (4) hours and reach full strength in 24 hours at 70 degrees F and above.

16. If using a concrete tank with a black PVC riser mounting ring:

    a. Apply Sikaflex 11FC around the outside of the black riser mounting ring approximately 1" from the top.

    b. Apply Sikaflex 11FC around the inside of the riser approximately 1 ½"-2" from the bottom of the riser.

    c. Place the riser on the black riser mounting ring.

    d. Twist the riser for a tight fit.

    e. Fill in the gaps by running a bead of Sikaflex 11FC along the inside of the riser where the black riser mounting ring and riser meet.

17. If using a fiberglass tank:

    a. Apply ADHQ10 around the outside of the fiberglass tank approximately 1" from the top.

    b. Apply ADHQ10 around the inside of the riser approximately 1 ½"-2" from the bottom of the riser.

    c. Place the riser on the tank.

    d. Twist the riser for a tight fit.

e. Fill in gaps by running a bead of ADHQ10 along the inside of the tank where the tank and riser meet.

18. Install the effluent filter by priming the end of the 4" discharge pipe and the effluent filter mounting coupling.

19. Use PVC glue to mount the effluent filter on the end of the discharge pipe (the final filter location should allow at least 2" of clearance between the outside of the filter and the opening of the tank.

20. Remove the effluent screen by lifting up the handle.

21. Plug the orifice plate holes in the effluent filter with rubber plugs or other item.

22. If water is subject to flow out of the building, temporarily plug the inlet pipe with a rubber plug or other item.

23. Fill the tank with water about ¼" above the tank top.

24. Check for leaks around the tank, riser, and piping connections (no leaks are allowed)

25. Install a 4" x 2" PVC reducing adapter on the end of the 4" outlet pipe.

26. Run 2" schedule 40 pipe to the service connection (ensure that the discharge line has a steady fall, if the line rises then falls air bubbles will get trapped and will restrict the effluent flow.)

27. Use a laser plane or other measuring tool to ensure 2" schedule 40 pipe has a steady fall.

28. When connecting the main collection line, ensure that the ball shut-off valve has been installed on the service line leaving the collection line and is in working order.

29. Also ensure that a flapper check valve is installed from the main collection line (verify the direction of the flow arrow on the check valve is pointing towards the main collection line.

30. Also ensure that the flapper is in working order and seating properly when closed.

31. Connect the 2" service line to the check valve; make sure that the glue applicator touches only the surface that will come in contact with the pipe (do not get any glue on the flapper.)

32. Open the ball valve at the collection line and remove the temporary plugs on the orifice plate of the effluent filter.

33. Observe the flow of water through the orifice plate in the effluent filter and allow water in the tank to drop 2 inches.

34. Turn the ball valve at the collection line to the off position and check for any leaks in the 2" service line (no water should be flowing through the orifice plate.)

35. Fix leaks if necessary.

36. Open the ball valve at the collection line and observe that the tank empties to its normal working level (to the bottom baffle hole.)

37. Install the effluent screen into the filter housing.

38. Install the lid on the riser.

39. Tighten four bolts on the lid for a watertight seal.

40. Backfill around the tank with soft dirt.

41. Rough grade the dirt around the riser 1"-2" above the riser to allow for settling (finished grade should be at grass level)

42. Ensure that the valve box is installed over the ball valve and check valve at the collection line connection.

43. Rough grade the dirt around the valve box lid 1"-2" inches above the box to allow for settling.

44. Remove the temporary plug from the inlet pipe.

45. Note: The tank will need to be inspected to ensure that it is watertight. Contact company/person responsible for operation and maintenance before and after installation for any specifications and instructions.

DR3
EXHIBIT 8

SANITARY SEWER SERVICE AGREEMENT

This Sanitary Sewer Service Agreement (the "Agreement") is made and entered as of this 22 day of June, 2019, by and between TENNESSEE WASTEWATER SYSTEMS, INC., a Tennessee corporation ("TWS") and Echo Development, a Tennessee General Partnership ("Developer").

WITNESSETH:

WHEREAS, TWS has the ability and technology to own and operate a system for the disposal and processing of wastewater in Maury County, Tennessee;

WHEREAS, Developer plans and intends to develop a 17 Lot residential development community presently known as the Oakwood Subdivision Expansion Phase (the "Development") located on Hardison Road & Oak Trail Drive, identified as Map 030, Parcel 002.07, in Maury County, TN (the "Property");

WHEREAS, Developer is responsible for constructing the wastewater treatment system along with the collection and disposal systems to serve the Development in accordance with the Plans and Specifications as approved by the State of Tennessee and TWS, so that TWS is able to serve the wastewater treatment and disposal needs of the Development;

WHEREAS, Developer has requested TWS to commit to serve the Development; and,

WHEREAS, TWS is willing and able to serve said Development upon the terms, provisions and conditions hereinafter set out, all of which are acceptable to the Developer.

NOW, THEREFORE, for and in consideration of the mutual covenants of the parties, and other good and valuable consideration, the receipt and legal sufficiency of which is hereby acknowledged, the parties do hereby agree as follows:

1. **Definitions.** In addition to the terms defined in the text of this Agreement, for purposes hereof, the following terms shall have the meaning ascribed to them below:

   (a) "Applicable Laws" means all applicable constitutions, treaties, statutes, rules, regulations, ordinances, orders, directives, codes, judgments, decrees, injunctions, writs and determinations of any governmental or quasi-governmental authority.

   (b) "Certified Installer" means a person who is certified by Adenus Technologies, LLC to construct and install the watertight tanks and service line connections within the Lot(s) of the Development.

   (c) "Development" means that certain residential housing development owned and developed by Developer upon the Property and located adjacent and contiguous to the Sewage Facility Land.

   (d) "Effective Date" means the date the last of the parties hereto executes this Agreement.

(e) "Event of Force Majeure" means a strike, lockout, labor dispute, embargo, flood, earthquake, storm, dust storm, lightning, fire, epidemic, act of God, war, national emergency, civil disturbance, riot, act of sabotage or terrorism, restraint by court order or order of another governmental authority, or any other occurrence beyond the reasonable control of the party in question; provided lack of necessary funds shall not be considered an "Event of Force Majeure" for purposes hereof.

(f) "GSPD" means average gallons of sewage per day, calculated on a monthly basis. For example, if a customer of TWS released 300 gallons of sewage into the Sewer System in a thirty (30) day month, such customer would have released 10 GSPD during such month.

(g) "Lot" or "Lots" shall mean a portion or portions of the Property, which are shown on a Plat after the Plat has been recorded in the County Register of Deeds which Lot (except as otherwise noted herein) is to be used for residential purposes.

(h) "Lot Owner" or "Lot Owners" shall mean and refer to one or more persons who hold the record title to any platted Lot within the Property, including, but not limited to the Developer, which is part of the Property, but excluding in all cases any party holding an interest merely as security for the performance of an obligation.

(i) "Plans and Specifications" shall mean and refer to the plans and specifications for construction, installation and development of the Sewer System, as more particularly described on Exhibit C, attached hereto, which have been approved in writing by TWS. The Plans and Specifications shall also be in accordance with requirements of the State of Tennessee, Maury County, and all Applicable Laws.

(j) "Plat" shall mean a subdivision plat of all or a portion of the Property which shows roads, open space, residential Lots and Wastewater Lots.

(k) "Property" shall mean and refer to the real property described on Exhibit A, attached hereto.

(l) "TPUC" means the Tennessee Public Utility Commission and any successor thereto.

(m) "Sewage Facility" shall mean and refer to Oakwood Treatment Facility having capacity to serve all 17 lots in the development on the Sewage Facility Land which is to be operated by TWS upon conveyance to TWS by the Developer in accordance with this Agreement.

(n) "Sewage Facility Land" means that land described on Exhibit B upon which the Sewage Facility is located.

(o) "Sewer System" means the Sewage Facility Land, the Sewage Facility as more particularly described in the Plans and Specifications, including, but not limited to all lines, pipes, meters, lift stations, equipment, machinery, fixtures, trade fixtures, easements and personal property used in connection with the operation thereof, whether

or not located on the Sewage Facility Land or the Property, as the same may be altered, improved, modified, expanded or relocated from time to time.

(p) "Sewer System Construction" means the construction of improvements for the Sewer System necessary to accommodate the Development as more particularly described in the Plans and Specifications.

(q) "Wastewater Lot" means the same as shown on any Plat of the Property.

2. Compensation

(a) Construction – Developer will pay TWS an $1,200.00 per Lot review and inspection fee for each Lot shown on that Plat. The Developer agrees to pay for the entire design and construction of the treatment facility, drip fields, storage pond, fencing and collection system including but not limited to the following:

- Design and Construction of treatment and disposal capacity for the project, to include the TF construction, the drip field disposal installation, and fencing.
- Developer will provide dedicated easements for access to the treatment facility and the drip fields.
- Any other professional report fees/costs for preparation and performance of the work.
- Regulatory coordination, engineering review, and construction inspection (sewer collection/reuse mains, subdivision collection mains, individual residential tank and lot services, etc.)

Fee payment schedule:

- Payment for 17 lots will be due at time of Final Plat signing.

TWS will withhold signing the final plat until all review & inspection fees have been paid in full by the Developer.

3. Sanitary Sewer Service.

(a) *Dedication.* From and after the date the Sewer System is completed in accordance with the Plans and Specifications agreed upon by TWS, and upon the completion or satisfaction by Developer and TWS, of all the other terms and conditions set forth herein, TWS shall give written acceptance of the system to the Developer and shall provide sanitary sewer service to the Development.

(b) *Usage.* Lot Owners shall only have the right to discharge sanitary sewage into the Sewer System, and the Lot Owners agree to use the Sewer System in a manner that complies with the "User Manual Do's and Don'ts for Effluent Collection Systems"

attached hereto as Exhibit D. If sewer service to the Property is temporarily interrupted due to an Event of Force Majeure, TWS shall have no liability to the Developer or any Lot Owner on account of such interruption. In such event of temporary interruption, TWS shall use its best efforts to restore sewer service to the Property as quickly as possible. Developer represents and warrants that its contract of sale with each third-party purchaser or third-party builder of each Lot shall include in it the requirement that such person or entity must enter into a Sewer Service Agreement, in form and substance attached hereto as Exhibit E, by TWS.

(c) *Acceptance by TWS.* Upon completion of the Sewer System by the Developer, inspection and approval of the Sewer System by TWS, payment of all fees due under Section 2(a), and the satisfaction of any other of TWS's requirements set forth herein, TWS hereby agrees to and will accept contribution of the Sewer Facility and Sewer System and will commence providing sewer service to the Development. TWS shall be under no obligations to furnish sewer service for the Development until the Developer has fully and satisfactorily performed under and pursuant to this Agreement.

4. Permits. TWS shall obtain and pay for all permits, licenses and other approvals necessary to allow TWS to deposit the applicable GSPD into the Sewer System, including, but not limited to, any regulatory approvals that must be obtained from TDEC or any other governmental or quasi-governmental authority having jurisdiction over the Sewer System.

5. Sewer System Construction.

(a) Installation and Developer Responsibility. At its own expense and at no cost or expense to TWS, Developer shall furnish, install, lay and construct all the Sewer System. The construction and installation of the Sewer System improvements shall be in strict accordance with the Plans and Specifications as approved by TWS. TWS shall inspect the construction of the improvements upon intervals determined by TWS. All Sewer System improvements shall be located as set forth in the Plans and Specifications.

(b) Delegation by Developer. The Plans and Specifications require that Developer must install watertight tanks and service connection lines within Lots in accordance with the Plans and Specifications, at Developer's expense. Should Developer authorize a Lot Owner or third-party builder to construct such watertight tanks and service connection lines within any Lot, Developer represents and warrants that it will require such person or entity to comply with the Plans and Specifications and bear all expense of compliance and insure that the installation work is performed by a *certified installer*.

(c) *Wastewater System Performance Bonds.* The Developer shall post any bonds as required by the TPUC and/or County, in accordance with TPUC's and/or County rules and regulations.

(d) *No Liens.* Developer shall complete the development and construction of the Sewer System in accordance with the Plans and Specifications and the Sewer System shall be free of any laborers', materialmen's, mechanics', or other liens on any part of the Sewage Facility Land or the Sewer System and Developer shall not permit any such lien to be filed or otherwise imposed on any part of the Sewage Facility. In the event any such lien is filed against the Sewage Facility the Sewage Facility Land, or the System, Developer shall

promptly cause such lien to be discharged or in lieu thereof file a bond or other security for the payment of such lien in form and amount satisfactory to TWS.

6. Conveyance and Transfer. Upon completion, Developer shall:

(a) convey by quit claim deed (the "Deed"), in the form attached hereto as Exhibit F, the Sewage Facility Land to TWS and provide title insurance policy, not to exceed $150,000.00 (U.S. dollars);

(b) provide TWS with an owner's policy of title insurance issued by a nationally recognized title company showing the status of title to the Sewage Facility Land as free and clear of all material or interfering encumbrances (determined in TWS's sole discretion), including, but not limited to, any monetary liens, in the name of TWS for the full amount of the construction of the Sewage Facility and the value of the Sewage Facility Land (the "Title Policy");

(c) provide TWS with a survey of the Sewage Facility Land prepared by a surveyor or engineer licensed in the State of Tennessee sufficient to allow the title company to eliminate the standard printed exceptions in the owner's title policy pertaining to discrepancies in the area or boundary lines, encroachments, overlaps, improvements, or similar matters (the "Survey"), which Survey shall be certified to TWS and the title company;

(d) provide the TWS with "as-built" plans for the Sewer System; the Collection System capable of providing wastewater service for a total of 17 Equivalent Dwelling Units

(e) grant TWS a non-exclusive sewer line easement, in the form attached hereto as Exhibit G, across those portions of the Property lying within five (5) feet of either side of the sewer line within the Property.

All costs, fees and expenses related to the foregoing within this Section 6 shall be the sole responsibility of Developer, including, without limitation, recording fees, transfer taxes, title premiums, title endorsement charges and survey costs.

7. Developer Warranty. The Developer hereby warrants all Sewer System improvements installed pursuant to the provisions of this Agreement against defects in workmanship and materials from the time the system improvements for the 1st phase are conveyed to TWS and for a period of one (1) year from the date TWS obtains twenty-five percent (25%) of the platted lots in the phase connected to the system. TWS will allow the Developer to cure, repair or remedy any defects in workmanship or materials within a reasonable timeframe prior to TWS repairing the defect. The Developer shall reimburse TWS upon demand for all costs and expenses incurred by TWS to repair all breaks, leaks or defects of any type whatsoever arising from any cause whatsoever occurring from the time the system improvements for the phase are conveyed to TWS and for one (1) year from the date TWS obtains twenty-five percent (25%) of the platted lots in the phase connected to the system the Sewer System. The Developer hereby warrants that the Sewer System improvements shall be paid for in full and that no liens or encumbrances shall remain in regard to the Sewer System improvements.

8. **Representations and Warranties.**

(a) TWS represents, warrants and covenants to Developer that:

(i) (A) TWS is a corporation duly organized and validly existing and in good standing under the laws of the State of Tennessee and is duly qualified to transact business in the State of Tennessee, (B) TWS has all necessary power to execute and deliver this Agreement and perform all its obligations hereunder, (C) the execution, delivery and performance of this Agreement by the TWS does not conflict with or result in a violation of its organizational documents or Applicable Laws, and (D) the execution, delivery and performance of this Agreement by TWS does not conflict with or constitute a breach of, or constitute a default under, any contract, agreement or other instrument by which the TWS is bound; and

(ii) (A) TWS has not received notice of any litigation, administrative action, investigation or other governmental or quasi-governmental proceeding which would or could have an adverse effect upon its ability to fulfill all of its obligations under this Agreement, and (B) the execution, delivery and performance of this Agreement by TWS will not conflict with or result in a breach of any order, judgment, writ, injunction or decree of any court or governmental instrumentality; and

(iii) TWS is not a party to any voluntary or involuntary proceedings under any law relating to insolvency, bankruptcy, moratorium or creditors' rights.

(b) Developer represents, warrants and covenants to the TSW that:

(i) Developer is a general partnership duly organized and validly existing and in good standing under the laws of the State of Tennessee and is duly qualified to transact business in the State of Tennessee, (B) Developer has all necessary power to execute and deliver this Agreement and perform all its obligations hereunder, without the consent or approval of any governmental authority, (C) the execution, delivery and performance of this Agreement by Developer does not conflict with or result in a violation of its organizational documents or Applicable Laws, and (D) the execution, delivery and performance of this Agreement by Developer does not conflict with or constitute a breach of, or constitute a default under, any contract, agreement or other instrument by which Developer is bound; and

(ii) (A) Developer has not received notice of any litigation, administrative action, investigation or other governmental or quasi-governmental proceeding which would or could have an adverse effect upon its ability to fulfill all of its obligations under this Agreement, and (B) the execution, delivery and performance of this Agreement by Developer will not conflict with or result in a breach of any order, judgment, writ, injunction or decree of any court or governmental instrumentality; and

(iii) Developer is not a party to any voluntary or involuntary proceedings under any law relating to insolvency, bankruptcy, moratorium or creditors' rights and;

(iv) Developer warrants and represents that all necessary permits as required by the State, County, and any other governing or regulatory authority have been applied for and obtained prior to the construction of the sanity sewer.

9. **Default and Termination.**

(a) Notwithstanding anything to the contrary herein, TWS may, at all times prior to the completion of the Sewer System, terminate this Agreement in the event that:

(i) Developer has materially failed to perform or has been negligent in the performance of its construction of the Sewer System pursuant to the terms of this Agreement and in accordance with the Plans and Specifications and has failed to cure said failure or negligence within fifteen (15) calendar days after receiving written notice from TWS specifying in detail the nature of such failure or negligence; provided if such failure or negligence cannot reasonably be cured within said fifteen (15) calendar day period, then TWS may not terminate this Agreement if Developer has commenced to cure the failure or negligence within said fifteen (15) calendar day period and thereafter prosecutes such cure to completion with reasonably acceptable diligence; or

(ii) Developer has defaulted in the performance of its obligations under this Agreement, including without limitation, payment to TWS of the Sewer System Fees as and when required and fail to cure such default within fifteen (15) calendar days after notice from TWS thereof; or

(iii) A receiver, liquidator, or trustee of Developer shall be appointed by court order, or a petition to liquidate or reorganize Developer shall be filed against Developer under any bankruptcy, reorganization or insolvency law and such order or petition is not vacated or dismissed within sixty (60) calendar days, or Developer shall voluntarily file a petition in bankruptcy or request for reorganization under any provision of the bankruptcy reorganizational insolvency laws unless such petition is dismissed within sixty (60) calendar days after the filing thereof, or if Developer shall make an assignment of all or substantially all of its assets for the benefit of creditors, or if Developer is adjudicated bankrupt.

(b) Developer may terminate this Agreement, at any time during the term of this Agreement prior to completion of the Sewer System, if a receiver, liquidator, or trustee of TWS shall be appointed by court order, or a petition to liquidate or reorganize TWS shall be filed against TWS under any bankruptcy, reorganization or insolvency law and such order or petition is not vacated or dismissed within sixty (60) calendar days, or TWS shall voluntarily file a petition in bankruptcy or request for reorganization under any provision of the bankruptcy reorganizational insolvency laws unless such petition is dismissed within sixty (60) calendar days after the filing thereof, or if TWS shall make an assignment of all or substantially all of its assets for the benefit of creditors, or if TWS is adjudicated bankrupt.

In the event this Agreement is terminated for any of the above reasons, TWS shall be entitled to all fees to be paid pursuant to the terms of this Agreement through the effective date of such

termination and there shall thereafter be no further obligation owed by TWS to Developer. In the event that this Agreement is terminated prior to the commencement of construction due to economic factors, this Agreement shall be terminated; provided, however, TWS shall retain the initial amount paid to TWS by Developer as set forth in Section 10 below.

10. **INDEMNIFICATION.**

a) Each party agrees to indemnify and hold harmless the other from, against and/or with respect to:

i) Any loss, expense, liability, damage, or deficiency resulting from any material misrepresentation, breach of warranty, or nonfulfillment of any covenant or agreement on the part of such party made or given in or with respect to this Agreement, or from any material misrepresentation in or omission from any certificate, schedule, exhibit or other document or instrument furnished or to be furnished to the other in connection with the transactions provided for in this Agreement, or from any gross negligence or willful misconduct of the other party; and/or

ii) Any and all costs and expenses (including attorneys' fees) arising in connection with any of the foregoing.

b) In addition to the above, Developer shall indemnify and hold TWS harmless of, from, against and in respect of:

i) Any tax lien, levy, assessment, payment, liability, penalty or other deficiency, whether disputed or not, suffered or incurred by TWS as a result of or arising out of Developer's ownership of the Property;

ii) Any judgment, award, payment, settlement, cost or expense arising out of Developer's ownership of the Property, and rendered against or suffered or incurred by TWS as a result of or with respect to any lawsuit or cause of action against or involving the Property;

iii) Any and all liabilities, whether disputed or not, suffered or incurred by TWS as a result of or arising out of Developer's ownership of the Property; and/or

iv) Any and all costs and expenses (including attorneys' fees) arising in connection with any of the foregoing.

v) Any violation of any permit requirement of the State of Tennessee, Maury County, and any other governing or regulatory authority with jurisdiction over the construction of the sanitary sewer.

c) The provisions of this section shall survive completion of the Project and/or expiration or termination of this Agreement.

11. **ENVIRONMENTAL INDEMNITY.** In addition to the above, Developer represents, warrants and covenants to, for and with TWS that there are no Hazardous Materials which have been generated and disposed of by Developer or which have been generated and disposed of by Developer and have migrated to the Property (including the ground water thereon) from any adjacent real estate owned, leased, or otherwise controlled by Developer, (except for those Hazardous Materials which may be stored on or about the Property in accordance with the Applicable Environmental Laws), as such terms are defined in the Applicable Environmental Laws, or in any regulations promulgated pursuant thereto. Developer has not received any notice and to the best knowledge of Developer no notice has been given to any party in the chain of title to the Property, by any person claiming any violation of, or requiring compliance with, any Applicable Environmental Laws, demanding payment or contribution for environmental damage; and to the best knowledge of Developer no investigation, administrative order, consent order or agreement, litigation, or settlement with respect to Hazardous Materials located, on about or under all or a portion of the Property or contiguous or adjacent to the Property (provided that such contiguous or adjacent property is owned or controlled by Developer) is pending, or, to the knowledge of Developer, proposed, threatened or anticipated. To the extent that Developer breaches any of the aforementioned representations and TWS is required by law to undertake any remedial or removal actions in connection therewith, as defined in the Applicable Environmental Laws, or to the extent that TWS is otherwise liable to incur costs or may otherwise be held liable to any third party in connection with such breach or for any removal or remedial actions taken with respect thereto, then, within a reasonable period of time following receipt of notice thereof from TWS, Developer shall indemnify TWS and hold TWS harmless from all liabilities, damages and costs incurred by TWS with respect to such breach including, without limitation, all claims, liabilities, loss, costs or expenses arising from the incurrence of any penalties, charge or expenses with respect thereto in defending itself against any suit or action brought by such third party, and in paying or satisfying any judgment obtained by such third party against TWS. The obligations of Developer under this section and the indemnity given hereunder shall survive the Closing.

12. **Developer Obligations.**

(a) The Developer shall pay an annual wastewater capacity reservation fee of $120.00 per platted Lot, or as may be amended from time to time by the TPUC, for each Lot owned that is not attached to the Sewer System. Should the Developer sell a Lot, the Developer agrees to include in the sales contract with the purchaser the requirement to pay to TWS an annual wastewater capacity reservation fee at the then current TPUC established rate to defray the cost of testing and reporting to the State of Tennessee. The fee shall be payable each year by December 15th for the owners of record as of December 1. When the Lot Owner attaches to the Sewer System and accepts service with the Sewer System, such Lot Owner shall pay a prorated fee for that year and the fee shall not be charged thereafter so long as the Lot Owner maintains service.

(b) Developer shall pay TWS the federal corporate income tax associated with the amount of the contribution of the wastewater system. The formula to be used to calculate the tax is as follows:

TR/(1-TR) *C+P. TR is the current effective corporate tax rate which is presently 21%. C is the amount of cash provided to TWS and P is the amount (cost) of the property (real and personal) to be conveyed to TWS. The taxes shall be paid at the time the Subdivision plat is presented to TWS for signature.

13. Operation, Maintenance and Improvements.

(a) TWS shall, (i) perform all repairs, maintenance and replacements necessary to keep the Sewer System in a good working order, and (ii) operate the Sewer System in compliance with Applicable Laws, including, but not limited to, all Applicable Laws related to human health, safety and the environment. To the extent reasonably possible, TWS shall perform all repairs, maintenance and replacements to the Sewer System in a manner that does not interfere with its ability to provide sewer service to the Property. In the event any repairs, maintenance or replacements to the Sewer System will result in an interruption of sewer service to the Property, TWS shall notify Developer thereof and use its best efforts to minimize the interference caused thereby, which efforts shall include, but not be limited to, working with Developer to schedule the repairs, maintenance and replacements so as to avoid or lessen the disruption. Service by TWS will be provided in compliance with its established tariff in effect at the Tennessee Public Utility Commission.

(b) Developer further agrees to execute, acknowledge and deliver to TWS any and all mutually agreed upon easements that may be necessary or appropriate as determined by TWS for the construction, operation and maintenance of TWS's Sewer System, or portion thereof.

(c) TWS may require the installation of additional piping infrastructure through the development to accommodate future development or expansion of the collection or disposal system. Developer agrees to provide TWS any easements necessary for the extension of this infrastructure. TWS has the right to expand the piping infrastructure at any time and in its sole discretion. The Developer will not be responsible for any costs associated with extending the piping infrastructure.

14. Restrictive Covenants. Developer shall include, within any declaration or other instrument regarding restrictive covenants for the Development, a provision regarding the sewage disposal system set forth herein as drafted by TWS, in form and substance as more particularly set forth in Exhibit H, attached hereto.

15. Water Valve Requirements. Developer is required to install a water shut off valve with an appropriate valve box in the water line on the customer's side of the water meter at each home in the subdivision. If the Developer sells the lot to allow another party to build on the lot, they must insure that the purchaser is notified of the water valve requirements.

16. Assignment. Neither Developer nor TWS shall not have the right to sell, assign, transfer, lease or convey all or a portion of its rights hereunder without the prior written consent of the other party. Developer and TWS shall have the right to assign all of its rights under this Agreement to any party purchasing the Sewer System or the Property so long as such party assumes all of Developer or TWS's obligations hereunder. It is agreed that as used herein, "Developer" shall mean Developer and its respective successors, assigns, transferees and tenants, with the exception of customers purchasing completed homes on the Property, and "TWS" shall mean TWS and its respective successors and assigns.

17. **Miscellaneous.**

(a) Entire Agreement. This Agreement (i) constitutes the entire agreement and understanding of Developer and TWS with respect to the subject matter hereof, and (ii) may be amended only by a written instrument executed by Developer and TWS.

(b) Governing Law. This Agreement shall be governed by and construed under the laws of the State of Tennessee.

(c) Successors and Assigns. This Agreement shall be binding upon, and inure to the benefit of, the parties hereto and their respective successors and assigns.

(d) No Waiver. No waiver of any provision of this Agreement shall be deemed to have been made unless expressed in writing and signed by the party charged therewith. No delay or omission in the exercise of any right or remedy accruing upon the breach of this Agreement shall impair such right or remedy or be construed as a waiver of such breach. The waiver by Developer or TWS of any breach shall not be deemed a waiver of any other breach of the same or any other provision of this Agreement.

(e) Severability. If any provision of this Agreement is found by a court of competent jurisdiction to be illegal, invalid or unenforceable, the remaining terms hereof will not be affected, and in lieu of each provision that is found to be illegal, invalid or unenforceable, a provision will be added as a part of this Agreement that is as similar to the illegal, invalid or unenforceable provision as may be possible and be legal, valid and enforceable.

(f) Prior Drafts. All negotiations, considerations, representations and understandings between Developer and TWS are incorporated herein. No inference shall be drawn from the addition, deletion or modification of any language contained in any prior draft of this Agreement.

(g) Attorneys' Fees. If any legal proceeding is commenced to (i) enforce the terms of this Agreement or (ii) interpret the provisions contained herein, the prevailing party in such legal proceeding shall be entitled to recover its reasonable attorneys' fees, court costs and litigation expenses from the non-prevailing party.

(h) *Exhibits.* TWS and Developer hereby acknowledge and agree that all exhibits referenced in this Agreement are attached hereto and incorporated herein by reference.

(i) *Relationship Between the Parties.* This Agreement shall not be deemed or construed to create a partnership or joint venture between Developer and TWS or cause Developer or TWS to be liable or responsible in any way for the agreements, actions, liabilities, debts or obligations of the other.

(j) *Counterparts.* This Agreement may be executed in any number of counterparts and each of such counterparts shall for all purposes be deemed as original documents and all such counterparts shall together constitute one and the same instrument.

IN WITNESS WHEREOF, the parties have entered into this Agreement as of the Effective Date.

TWS

TENNESSEE WASTEWATER SYSTEMS
a Tennessee corporation

By: _____

Name: Jeff Risden

Title: Chief Executive Officer

Developer

Echo Development
A Tennessee General Partnership

By: Scott Kalishman
Name: Scott Kalishman
Title: Partner

DR3 Exhibit 11

Project Pricing Worksheet

Project Name	Oakwood 18-016
Location	Maury Co.
Size	
# of Lots	45
Rating/lot	300
GPD	13,500
Type	BioKlear
Bid Price/lot	$4,500
Cycle Time	
Months	1
Year	8%
Financing	
Type	
Amount	
Cost	

Revenue	
Per Lot	$2,300
Per Gal.	$7.67
Total	$103,500
Cost	
Per Lot	$5,126
Per Gal.	$17.09
Total	$230,677
Margin	
Per Lot	
Per Gal.	
Total	-$127,177
%	-123%
NPV	

Cost Elements	Per Lot	Total
Engineering	$250	$11,250
Design	$100	$4,500
Soils	$0	$1,000
Permits	$0	$500
SG&A	$0	$0
Financing	$0	$0
Construction	$4,743	$213,427
Inspection	$0	$0
Total	$5,093	$230,677

Payment Schedule	Event	Date	Amount
Milestone 1	Contract Execution		$25,875
Milestone 2	50% of const.		$51,750
Milestone 3	Treatment completion		$25,875
Milestone 4			
Total			$103,500

Construction Cost Elements	Per Month	Total
Crew	$14,614	$14,613.75
Equiptment Rental	$4,000	$4,000
Mob/Demobilization		$10,000
Treatment	**Unit**	**Total**
Bio-Clear (package)		$75,569
Media (ton)		$0
RSF pad (dust) TON)		$0
Forming mat.+steel	0	$1,918
6" Cross Pipes		$2,656
Stone (filter)		$250
Stone (Misc)		$1,032
Panel(s)		$0
Tankage		$5,500
Blasting		$5,600
Crane		$0
Adenus Tech (filter)		$0
Adenus Tech (Tank acc)		$13,553
Adenus Tech (Drip)		$14,020

Cash Flow Sources	Month 1	Month 2	Month 3	Month 4
Uses	**Month 1**	**Month 2**	**Month 3**	**Month 4**
Crew	$3,653.44			
Equiptment				
Mobilization	$15,000			
Material				
Media				
Components				
Drip				
Total	$18,653	$0	$0	$0
Net Cash	($18,653)	$0	$0	$0
Net Cash Cumm.	($18,653)	($18,653)	($18,653)	($18,653)

Return and Supply (lf)	3,020	$6,089
Manifold Piping	4,300	$1,577
Fence (inc gate)	2,100	$7,150
Building	Control Panel	$30,197
Seed & Straw		$500
Misc CYA 10%		$19,402
Reuse	Per Lot	Total
Drip		$0
Total	$28,034	$213,427

Man Hours (ind)	
Filter Layout	1
Pad construction	23
Dust for pad	0
Wall (build and set)	0
Cross Pipes	12
Riser Construction	0
Install Chambers	0
Install valve boxes	0
Stone (pads)x2	1
Top of filter piping	0
Checkvalves	0
Solenoids	0
Stone on top of filter	0
Backfill around filter	3
Stone around edge of	0
Tank excavation	4
Backfilling Tanks	3
Installing pumps	20
Solenoid Wireing	6
Building Wireing	12
Building Plumbing	12
Controlls wireing	15
Zone Layout	15
Drip plowing	30
Supply and return line	48
Excavate supply and r	16
Hook up drip tubing	9
Installing manifolds	25
Flush Chambers	12
Ditch backfill	10
Seed & Straw	9
Commissioning	16
Finish Grade	12
TOTAL	315
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