



851 Aviation Parkway
Smyrna, TN 37167

April 17, 2014

Mr. David Foster, Chief
Utilities Division
Tennessee Regulatory Authority
502 Deaderick Street, 4th Floor
Nashville, TN 37243

RE: Docket # 14-00006 – Scales Project - Data Response

Dear Mr. Foster:

Tennessee Wastewater Systems, Inc. provides the following information per your request dated March 19, 2014.

1. Provide copy of permit application submitted to TDEC and status of pending application.

Response: See Attachment “A” for the permit application. As with all new CCNs, the permit has been applied for and will not be approved by TDEC until we are granted the territory by the TRA.

2. What is the name of the subdivision located within the Scales Project that the wastewater system will serve?

Response: There is no name at this time for the development. Turnberry currently only has a concept plan.

3. Provide the name of the construction company building the collection, treatment and dispersal system(s).

Response: Turnberry Homes has not selected a construction contractor. That decision will be made once a sewer provider is granted the authority to provide service to the project.

4. Provide a copy of the plat map showing detailed streets, exact location of the 80 lots within the Scales Project, and exact location of treatment, collection and dispersal systems within the Scales Project.

Response: See Page 34 of Attachment “A” for a detailed map. Note that since this is still a concept plan, no street names have been issued and the details may vary from the final one.

5. Provide a copy of the plat approved by Williamson County.

Response: As has always been the case with any new development that TWSI serves, the plat cannot be recorded until TWSI signs it as the sewer utility of record. This only happens after TWSI has been granted the territory by the TRA.

6. Provide a copy of the contract between Turnberry Homes and the Construction Company building the system.

Response: Turnberry Homes has not selected a construction contractor. Therefore, there is no contract currently available for system construction, draft or otherwise.

7. Provide a copy of the contract between Turnberry Homes and the Utility.

Response: See “Attachment B” for a sample draft contract between TWSI and a developer. Such a contract would only be executed after the CCN has been granted.

8. Provide evidence that the utility owns the land, has a long-term lease or a written easement where the wastewater facilities will be located.

Response: The transfer of property that would be granted to TWSI for the treatment and dispersal facilities is contingent upon a CCN being issued by the TRA. If TWSI is granted service rights to the project, then the Williamson County Planning Commission would require the Utility to own the land for the system. The facility land would be transferred to TWSI as the Utility of Record at the recording of the final plat.

9. Has the builder of the wastewater system provided a performance bond to the utility for completion of the system? If so, provide a copy of the performance bond. If not, please provide an explanation of what ensures that the funds are available for the wastewater system and that it will be built to completion, inclusive of treatment, collection and dispersal systems.

Response: Williamson County requires the treatment and dispersal system to be constructed prior to recording the first plat phase. The bonding is established by Williamson County on behalf of TWSI and is not executed until the final platting. When the final platting occurs, the utility is then obligated to the residents of the development to provide service.

10. Please provide a detailed breakdown of the \$450,000 Contribution in Aid of Construction by cost of land, treatment system, collection and dispersal systems, materials and installation.

Response: The cost presented for the Contribution in Aid is only an estimated cost. Final design plans of the Utility providing service will be required to get an exact bid cost.

11. How many total lots will there be in the Scales Project? If more than 80, how will the other lots be serviced?

Response: The total allowed development density of the project will be 86 lots, which is based on a recent traffic study of Clovercroft Road as per the Williamson County Planning Commission. Soils for disposal and land for construction of the proposed treatment facility have been identified that would be capable of treating the 86 lots.

12. How many acres will the 86 lots encompass?

Response: Approximately 70 acres.

13. Is there more than one subdivision within the Scales Project? If so, please identify each subdivision.

Response: No, the proposed system is only intended to serve the one development.

14. Is Turnberry Homes the only developer within the Scales Project?


Response: Yes.

15. What are the proposed rates for the Scales Project? Provide all proposed tariff pages.

Response: The base rate for the project would be based on Rate Class 1 found on Section 4 Page 1 of the TWSI tariff, which was included with the original petition.

If you have any further questions, or need any additional information, please feel free to contact me.

Sincerely,



Matt Pickney, Operations Manager
Tennessee Wastewater Systems, Inc.



Tennessee Department of Environment and Conservation
Division of Water Resources
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 11th Floor
Nashville, Tennessee 37243
(615) 532-0625

Attachment "A"

APPLICATION FOR A STATE OPERATION PERMIT (SOP)

Type of application: ☒ New Permit ☐ Permit Reissuance ☐ Permit Modification

Permittee Identification: (Name of city, town, industry, corporation, individual, etc., applying, according to the provisions of Tennessee Code Annotated Section 69-3-108 and Regulations of the Tennessee Water Quality Control Board.)

Permittee

Name **Tennessee Wastewater Systems, Inc.**
(applicant):

Permittee
Address: **849 Aviation Parkway Smyrna, TN 37167**

Official Contact:

Charles Hyatt

Title or Position:

President

Mailing Address:

849 Aviation Parkway

City:

Smyrna

State:

TN

Zip:

37167

Phone number(s):

(615) 220-7200

E-mail:

Optional Contact:

Brian Carter

Title or Position:

Operator

Address:

849 Aviation Parkway

City:

Smyrna

State:

TN

Zip:

37167

Phone number(s):

615-220-7200

E-mail:

Application Certification (must be signed in accordance with the requirements of Rule 1200-4-5-.05)

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name and title; print or type

Matt Pickney, Operations Manager

Signature

Date

4/11/14

Facility Identification:		Existing Permit No.	
Facility Name:	Clovercroft Wells Treatment Facility	County:	Williamson
Facility Address or Location:	9742 Clovercroft Road Nolensville, TN 37135	Latitude:	35.93373
		Longitude:	-86.69478
Name and distance to nearest receiving waters: Unnamed tributary to Mill Creek (Approx. 700')			
If any other State or Federal Water/Wastewater Permits have been obtained for this site, list their permit numbers: N/A			
Name of company or governmental entity that will operate the permitted system: Adenus Operations			
Operator address: 849 Aviation Parkway, Smyrna, TN 37167			
Has the owner/operator filed for a Certificate of Convenience & Necessity (CCN), or an amended CCN, with the Tennessee Regulatory Authority (TRA) (may be required for collection systems and land application treatment systems)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			
If the applicant listed above does not yet own the facility/site or if the applicant will not be the operator, explain how and when the ownership will be transferred or describe the contractual arrangement and renewal terms of the contract for operations. Tennessee Wastewater Systems Inc. will be deeded the property when the subdivision plat is recorded.			
Complete the following information explaining the entity type, number of design units, and daily design wastewater flow:			
<u>Entity Type</u>	<u>Number of Design Units</u>		<u>Flow (gpd)</u>
<input type="checkbox"/> City, town or county	No. of connections:		
<input checked="" type="checkbox"/> Subdivision	No. of homes: 86	Avg. No. bedrooms per home: 3	25,800
<input type="checkbox"/> School	No. of students:	Size of cafeteria(s): No. of showers:	
<input type="checkbox"/> Apartment	No. of units:	No. units with Washer/Dryer hookups: No. units without W/D hookups:	
<input type="checkbox"/> Commercial Business	No. of employees:	Type of business:	
<input type="checkbox"/> Industry	No. of employees:	Product(s) manufactured:	
<input type="checkbox"/> Resort	No. of units:		
<input type="checkbox"/> Camp	No. of hookups:		
<input type="checkbox"/> RV Park	No. of hookups:	No. of dump stations:	
<input type="checkbox"/> Car Wash	No. of bays:		
<input type="checkbox"/> Other			
Describe the type and frequency of activities that result in wastewater generation. Typical Domestic Waste			

Engineering Report (required for collection systems and/or land application treatment systems):	<input type="checkbox"/> N/A
<input type="checkbox"/> Prepared in accordance with Rule 1200-4-2-.03 and Section 1.2 of the Tennessee Design Criteria (see website for more information)	
<input checked="" type="checkbox"/> Attached, or	
<input type="checkbox"/> Previously submitted and entitled:	Approved? <input type="checkbox"/> Yes. Date: <input type="checkbox"/> No

Wastewater Collection System:	<input type="checkbox"/> N/A
System type (i.e., gravity, low pressure, vacuum, combination, etc.): Watertight effluent collection	
System Description: Septic tank effluent with 2", 3", and 4" diameter SDR 21 PVC pipe and required fittings	
Describe methods to prevent and respond to any bypass of treatment or discharges (i.e., power failures, equipment failures, heavy rains, etc.): Tanks have a minimum of 24-36 hours storage in the STEP tank. Heavy rains have a minimal impact on a watertight collection system. Small generators can be connected to the pump stations and treatment system as necessary during an extended power outage.	
In the event of a system failure describe means of operator notification: All pumps have redundancy & alarms.	
List the emergency contact(s) (name/phone): Brian Carter /615-220-7200	
For low-pressure systems, who is responsible for maintenance of STEP/STEG tanks and pumps or grinder pumps (list all contact information)? STEP and STEG tanks - Adenus Operations, 849 Aviation Parkway, Smyrna, TN 37167 (615) 220-7200	
Approximate length of sewer (excluding private service lateral): Approx. 10,00 LF	
Number/hp of lift stations: 0 /	Number/hp of lift pumps 0/0
Number/volume of low pressure and or grinder pump tanks 0/0	
Number/volume septic tanks	100/1,500 gallon
Attach a schematic of the collection system. <input checked="" type="checkbox"/> Attached	
If this is a satellite sewer and you are tying in to another sewer system complete the following section, listing tie-in points to the sewer system and their location (attach additional sheets as necessary):	
<u>Tie-in Point</u>	<u>Latitude (xx.xxxx°)</u>
<u>Longitude (xx.xxxx°)</u>	
N/A	

Land Application Treatment System:	<input type="checkbox"/> N/A
Type of Land Application Treatment System: <input checked="" type="checkbox"/> Drip <input type="checkbox"/> Spray <input type="checkbox"/> Other, explain:	
Type of treatment facility preceding land application (recirculating media filters, lagoons, other, etc.): Recirculating Media Filter	
Attach a treatment schematic. <input checked="" type="checkbox"/> Attached	
Describe methods to prevent and respond to any bypass of treatment or discharges (i.e., power failures, equipment failures, heavy rains, etc.): Same as above	
For New or Modified Projects:	
Name of Developer for the project: Turnberry Homes, LLC	
Developer address and phone number: Bright Hour Building, 210 Jamestown Park Drive, Suite 102 Brentwood, TN 37027	
For land application, list: Proposed acreage involved: 2.96 acres Inches/week gpd/sq.ft loading rate to be applied: 2.25 inches/week, 0.2 gpd/sf	
Is wastewater disinfection proposed?	
<input type="checkbox"/> Yes Describe land application area access:	
<input checked="" type="checkbox"/> No Describe how access to the land application area will be restricted: Fenced	
Attach required additional Engineering Report Information (see website for more information)	
<input checked="" type="checkbox"/> Topographic map (1:24,000 scale presented at a six inch by six inch minimum size) showing the location of the project including quadrangle(s) name(s) GPS coordinates, and latitude and longitude in decimal degrees should also be included.	
<input checked="" type="checkbox"/> Scaled layout of facility showing the following: lots, buildings, etc. being served, the wastewater collection system routes, the pretreatment system location, the proposed land application area(s), roads, property boundaries, and sensitive areas such as streams, lakes, springs, wells, wellhead protection areas, sinkholes and wetlands.	
<input checked="" type="checkbox"/> Soils information for the proposed land disposal area in the form of a Water Pollution Control (WPC) Soils Map per Chapter 16 and 17 State of Tennessee Design Criteria for Sewage Work. The soils information should include soil depth (borings to a minimum of 4 feet or refusal) and soil profile description for each soil mapped.	
<input checked="" type="checkbox"/> Topographic map of the area where the wastewater is to be land applied with no greater than ten foot contours presented at a minimum size of 24 inches by 24 inches.	
<input checked="" type="checkbox"/> Describe alternative application methods based on the following priority rating: (1) connection to a municipal/public sewer system, (2) connection to a conventional subsurface disposal system as regulated by the Division of Groundwater Protection, and/or (3) land application.	

For Drip Dispersal Systems Only: Unless otherwise determined by the Department, sewage treatment effluent wells, i.e, large capacity treatment/drip dispersal systems after approval of the SOP Application, will be issued an UIC tracking number and will be authorized as Permit by Rule per UIC Rule 1200-4-6-.14(2) and upon issue of a State Operating Permit and Sewage System Construction Approval by the Department.

☒ N/A

Describe the following:

The area of review (AOR) for each Drip Dispersal System shall, unless otherwise specified by the Department, consist of the area lying within a one mile radius or an area defined by using calculations under 1200-4-6-.09 of the Drip Dispersal System site or facility, and shall include, but not be limited to general surface geographic features, general subsurface geology, and general demographic and cultural features within the area. Attach to this part of the application a general characterization of the AOR, including the following: (This can be in narrative form) See 2.0

☒ A general description of all past and present groundwater uses as well as the general groundwater flow direction and general water quality. See 3.0

☒ A general description of the population and cultural development within the AOR (i.e. agricultural, commercial, residential or mixed) See 4.0

☒ Nature of injected fluid to include physical, chemical, biological or radiological characteristics. See 5.0

☒ If groundwater is used for drinking water within the area of review, then identify and locate on a topographic map all groundwater withdrawal points within the AOR, which supply public or private drinking water systems. Or supply map showing general location of publicly supplied water for the area (this can be obtained from the water provider) See 6.0

☐ If the proposed system is located within a wellhead protection area or source water protection area designated by Rule 1200-5-1-.34, show the boundary of the protection area on the facility site plan.

☒ Description of system, Volume of injected fluid in gallons per day based upon design flow, including any monitoring wells See 7.0

☒ Nature and type of system, including installed dimensions of wells and construction materials See 8.0

Pump and Haul:

☒ N/A

Reason system cannot be served by public sewer:

Distance to the nearest manhole where public sewer service is available:

When sewer service will be available:

Volume of holding tank: gal.

Tennessee licensed septage hauler (attach copy of agreement):

Facility accepting the septage (attach copy of acceptance letter):

Latitude and Longitude (in decimal degrees) of approved manhole for discharge of septage:

Describe methods to prevent and respond to any bypass of treatment or discharges (i.e., power failures, equipment failures, heavy rains, etc.):

Holding Ponds (for non-domestic wastewater only):	<input checked="" type="checkbox"/> N/A
Pond use: <input type="checkbox"/> Recirculation <input type="checkbox"/> Sedimentation <input type="checkbox"/> Cooling <input type="checkbox"/> Other (describe):	
Describe pond use and operation:	
If the pond(s) are existing pond(s), what was the previous use?	
Have you prepared a plan to dispose of rainfall in excess of evaporation? <input type="checkbox"/> Yes <input type="checkbox"/> No	
If so, describe disposal plan:	
Is the pond ever dewatered? <input type="checkbox"/> Yes <input type="checkbox"/> No	
If so, describe the purpose for dewatering and procedures for disposal of wastewater and/or sludge:	
Is(are) the pond(s) aerated? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Volume of pond(s): _____ gal.	Dimensions: _____
Is the pond lined (Note if this is a new pond system it must be lined for SOP coverage. Otherwise, you must apply for an Underground Injection Control permit.)? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Describe the liner material (if soil liner is used give the compaction specifications):	
Is there an emergency overflow structure? <input type="checkbox"/> Yes <input type="checkbox"/> No	
<i>If so, provide a design drawing of structure.</i>	
Are monitoring wells or lysimeters installed near or around the pond(s)? <input type="checkbox"/> Yes <input type="checkbox"/> No	
<i>If so, provide location information and describe monitoring protocols (attach additional sheets as necessary):</i>	

Mobile Wash Operations:		<input checked="" type="checkbox"/> N/A
<input type="checkbox"/> Individual Operator <input type="checkbox"/> Fleet Operation Operator		
Indicate the type of equipment, vehicle, or structure to be washed during normal operations (check all that apply):		
<input type="checkbox"/> Cars <input type="checkbox"/> Trucks <input type="checkbox"/> Trailers (Interior washing of dump-trailers, or tanks, is prohibited.) <input type="checkbox"/> Other (describe):	<input type="checkbox"/> Parking Lot(s): sq. ft. <input type="checkbox"/> Windows: sq. ft. <input type="checkbox"/> Structures (describe):	
Wash operations take place at (check all that apply):		
<input type="checkbox"/> Car sales lot(s) <input type="checkbox"/> Private industry lot(s) <input type="checkbox"/> County(ies), list:	<input type="checkbox"/> Public parking lot(s) <input type="checkbox"/> Private property(ies) <input type="checkbox"/> Statewide	
Wash equipment description:		
<input type="checkbox"/> Truck mounted <input type="checkbox"/> Rinse tank size(s) (gal.): <input type="checkbox"/> Collection tank size(s) (gal.):	<input type="checkbox"/> Trailer mounted <input type="checkbox"/> Mixed tanks size(s) (gal.): Number of tanks per vehicle:	
Pressure washer: psi (rated) gpm (rated) <input type="checkbox"/> gas powered <input type="checkbox"/> electric		
Vacuum system manufacturer/model:		Vacuum system capacity: inches Hg
Describe any other method or system used to contain and collect wastewater:		
List the public sewer system where you are permitted or have written permission to discharge waste wash water (include a copy of the permit or permission letter):		
Are chemicals pre-mixed, prior to arriving at wash location? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Describe all soaps, detergents, or other chemicals used in the wash operation (attach additional sheets as necessary):		
Chemical name:	Manufacturer:	Primary CAS No. or Product No.

APPLICATION FOR A STATE OPERATION PERMIT (SOP) INSTRUCTIONS

Purpose of this form A completed SOP application must be submitted to obtain SOP coverage. This permit is required to operate a sewage, industrial waste or other waste collection and/or treatment system that does not have a point source discharge to any surface or subsurface waters. This form must be submitted at least 180 days before starting any new activity, before an existing permit expires, or when renewing a permit.

Complete the form Type or print clearly, using black or blue ink; not markers or pencil. Answer each item or enter "N/A," for not applicable. If you need additional space, attach a separate piece of paper to the SOP application. Applicants may be required to submit engineering reports, plans and specifications. Contact the division for the applicable items, or visit the Division of Water Pollution Control world wide web site at: <http://www.tn.gov/environment/wpc> for more information. **The application will be considered incomplete without supplying all of the required information, Engineering Reports, and an original signature.**

Permittee Identification/Facility Identification Describe and locate the project, use the legal or official name of the facility or site. Provide the latitude and longitude (expressed in decimal degrees) of the center of the site, which can be located on USGS quadrangle maps. The quadrangle maps can be obtained at 1-800-USA-MAPS, or at the Census Bureau world wide web site: <http://www.census.gov/cgi-bin/gazetteer>. Attach a copy of a portion of a 7.5 minute quad map, showing location of site, with boundaries at least one mile outside the site boundaries. If business is mobile give the owner of operations' home, or business office address, and list all current areas of operation by city and county.

Wastewater Collection System These types of systems require engineering reports, refer to the website (<http://www.tn.gov/environment/wpc/>) for more information.

Land Application Treatment System These types of systems require engineering reports, refer to the website (<http://www.tn.gov/environment/wpc/>) for more information. Public access to the treatment area must be restricted, if disinfection is not part of the treatment. Applicants completing this section of the application must also complete the Wastewater Collection System section.

Pump and Haul These types of systems may require engineering reports, refer to the website (<http://www.tn.gov/environment/wpc/>) for more information.

Holding Ponds Given that annual rainfall onto open ponds exceeds annual evaporation (in Tennessee), the permittee must develop a written plan (to be retained on site and be available to the division upon request) that addresses how excess rainfall will be disposed of in compliance with the no discharge requirement of this permit. Treatment ponds are not to be used for stormwater treatment or storage. All new and existing point source industrial stormwater discharges associated with industrial activity require coverage under the Tennessee industrial stormwater multi-sector general permit TMSP, refer to the website (<http://www.tn.gov/environment/permits/strmh2o.shtml>) for more information. Describe the system for re-routing surface runoff away from ponds in the rainfall disposal plan.

Mobile Wash Operations Indicate whether the operation is run by an individual or a corporation with a fleet of vehicles equipped to wash and collect waste waters. If a corporation, indicate the home office as the "Official Contact". Indicate if operations take place at specific sites and list those counties that apply. Note that this permit covers operations for all of Tennessee. Operations indicated as "statewide" generally apply as a fleet type operation and each office location shall be individually permitted. Equipment may be truck or trailer-mounted, or both, indicate all that applies. Soaps, detergents, and other chemicals used should be non-toxic and biodegradable. All "chemically enhanced" (soaps, detergents, and other chemicals) waste-wash waters must be collected for proper disposal. If no chemically enhanced washwaters are used, clear-wash waters may travel by sheet flow to a gravel or grassy area where there is no opportunity to enter waters of the

APPLICATION FOR A STATE OPERATION PERMIT (SOP)
INSTRUCTIONS - CONTINUED

state. There should be no discharge to a storm water inlet, ditch, conveyance, stream, etc. If you are unsure of your wash area drainage, contact the area Environmental Field Office (EFO) prior to setting up your wash operation.

Fees There is no application fee for this permit. An annual maintenance fee is required and you will be invoiced at a later date.

Submitting the form and obtaining more information Note that this form must be signed by the chief executive officer, owner, or highest ranking elected official. For more information, contact your local EFO at the toll-free number 1-888-891-8332 (TDEC). Submit three complete applications (keep a copy for your records) to the appropriate EFO for the county(ies) where the facility is located, addressed to **Attention: WPC, Permit Section Manager**.

EFO	Street Address	Zip Code	EFO	Street Address	Zip Code
Memphis	2510 Mt. Moriah Road STE E-645	38115-1520	Cookeville	1221 South Willow Ave.	38506
Jackson	1625 Hollywood Dr	38305-4316	Chattanooga	540 McCallie Avenue STE 550	37402-2013
Nashville	711 R S Gass Boulevard	37243	Knoxville	3711 Middlebrook Pike	37921
Columbia	2484 Park Plus Drive	38401	Johnson City	2305 Silverdale Road	37601

Upon receipt of the required items, the division conducts a review of the material, and the applicant is notified of any deficiencies. When all the deficiencies have been corrected, the division makes a determination of whether to publish a draft permit. When a draft permit is generated, a public notice is issued and published in a local newspaper. The draft permit is then reviewed by the applicant, and division field staff. The general public also has an opportunity to review the permit. Based on public response, a public hearing may be held. After considering public comments and a final review, the permit may be issued. The entire process normally takes from five (5) to nine (9) months. Permits are normally valid for five (5) years, except those for pump and haul systems, which are generally valid for one (1) year.

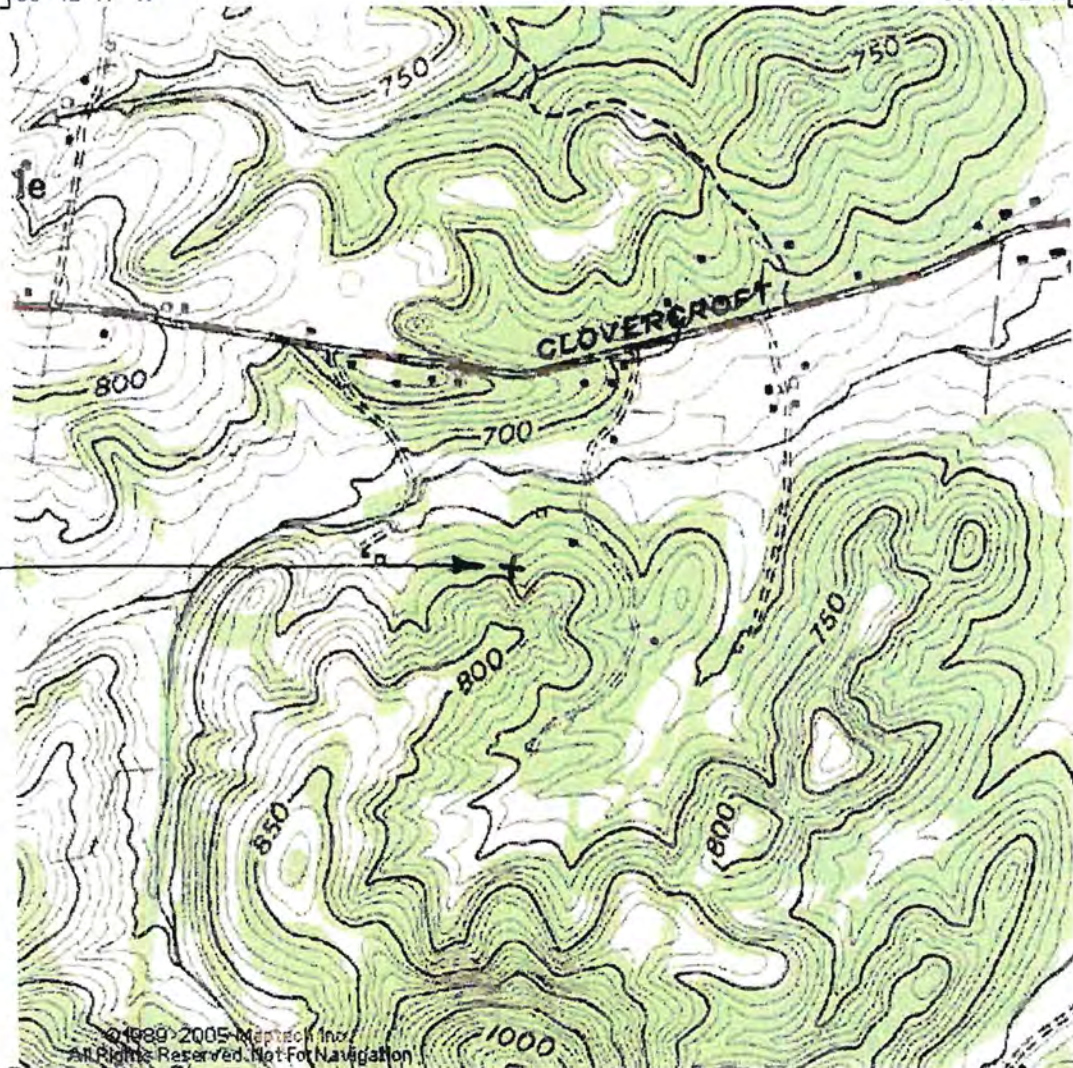
The division has the right to inspect a facility when deemed necessary. In addition, the division has the right to revoke or suspend any permit for violation of permit conditions or any other provisions of the Tennessee Water Quality Control Act and other water pollution control rules.

The division is responsible for regulating any activity, which involves a potential discharge in order to protect waters of the State from pollution and to maintain the highest possible standards in water quality.



35° 56' 33" N
86° 42' 17" W

35° 56' 33" N
86° 41' 2" W



SITE
35.93373
-86.69478

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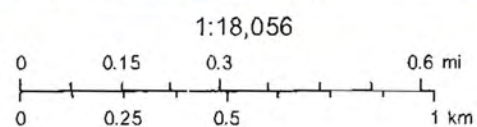
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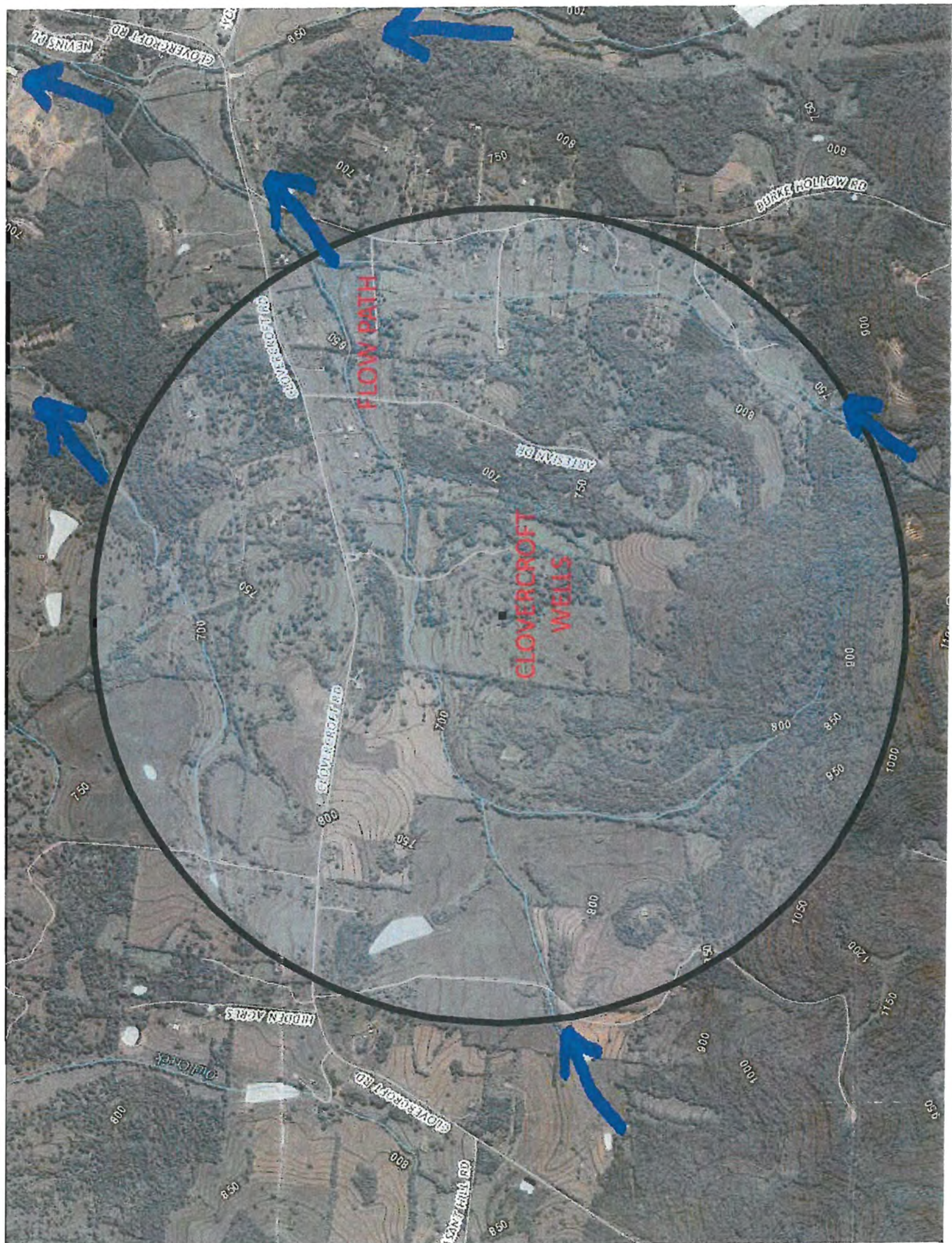
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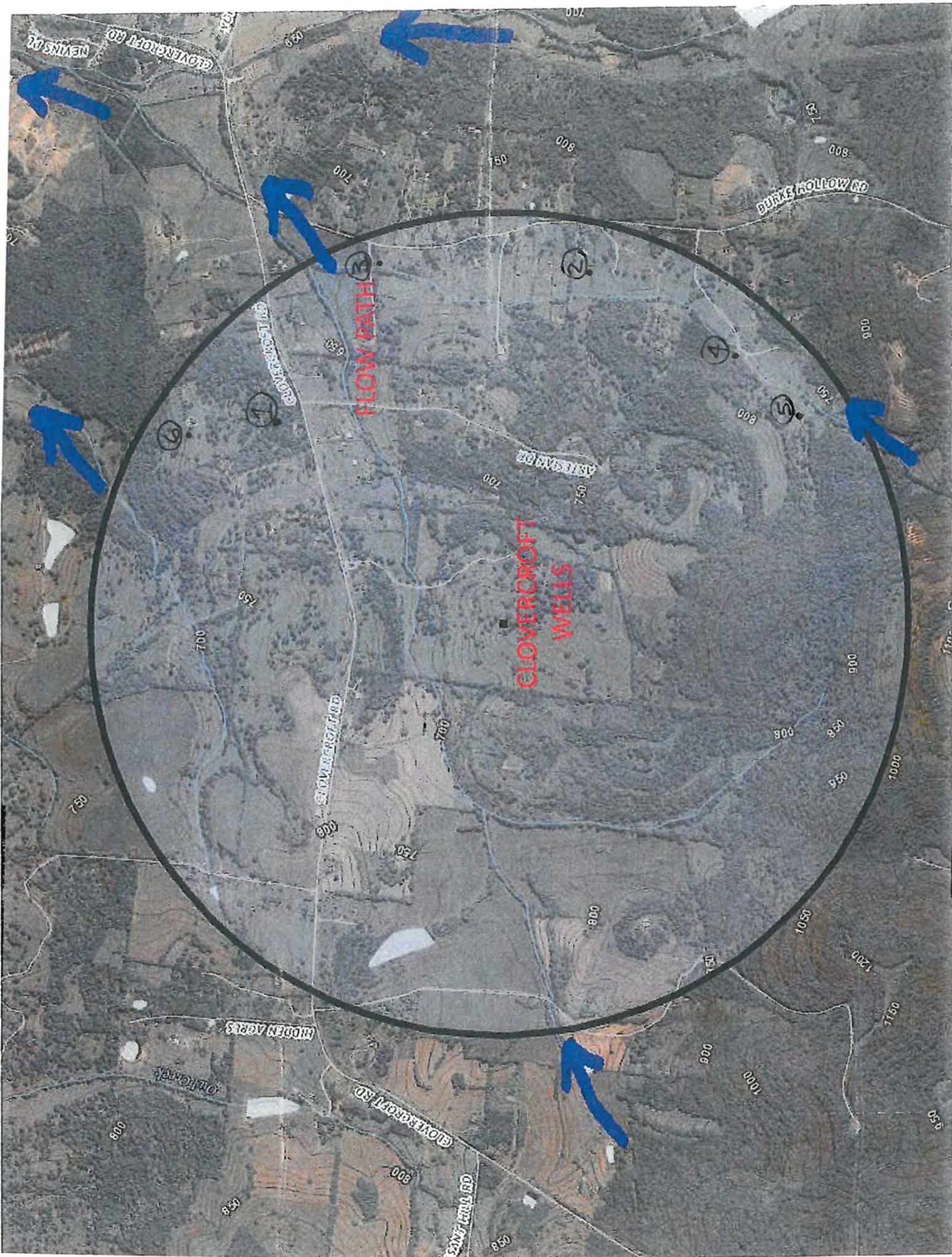
CLOVERCROFT WELLS TF



April 3, 2014







AREA OF REVIEW (AOR)

Groundwater uses within the AOR (past & present): Past and present groundwater uses within the AOR include residential and agricultural supply from private wells.

3.0 Groundwater General Description: The proposed site is a mix of pasture and mature woodlands. The attached maps indicate the proposed Clovercroft Wells TF wastewater treatment area drainage flow path is the east-northeast discharging into .

4.0 Population and Cultural Development: The majority of the Area of Review is agricultural land used primarily for pasture. To the east of the property is Artesian Road. Clovercroft Road is at the northern boundary of the project. The surrounding area is predominantly large tracts of land.

5.0 Nature of Fluid: Clovercroft Wells TF will have an approximate peak design flow of 25,800 GPD of typical residential sanitary wastewater.

6.0 Public Water Supply: Nolensville/College Grove Utility District supplies public drinking water within the AOR.

N/CG Utility District
2002 Johnson Industrial Blvd.
Nolensville, TN 37135
Phone: (615) 776-2511
Fax: (615) 776-2591
Email: office@ncgud.com

7.0 Description of System: Approximately 25,800 GPD of treated wastewater will be pumped and then distributed to HDPE drip lines with pressure compensating emitters. The drip lines are to be installed on 5-foot centers along the contours with the emitters spaced at 2-foot centers along the drip lines. Drip lines are plowed into the soils that have been approved by a certified soil scientist and placed at an approximate depth of 7-8 inches below the ground surface. Distribution of the treated wastewater is managed through solenoid valves and controlled by a programmable PLC.

8.0 Nature and Type of System: Treated wastewater from the proposed Subdivision will first be pumped from numerous 1,500 gal water tight septic tanks. Grey water is pumped from the septic tanks via a small diameter gravity/pressure collection line along the roadways and lot lines to a recirculating sand filter (RSF). The wastewater will then cycle through the RSF ~5 times before discharging from the RSF to the drip fields.

SOP Soils Investigation Report

Private Soils Consultant(s): Jay Andrews

Field Work Date: February 28, 2014

Site Location: Clovercroft Road – Helen Williams Property

County: Williamson County

SOP#: Upon permit issuance

Number of Pits: 15

Minimum Pit Depth: 36

Type of System: DRIP Irrigation

Physiographic Location: Nashville Basin

Soil Series or Phases: Hampshire, Lynnville, Lobelville, Egam, Nesbitt, Sykes

Soils Area 1

Geomorphic Description: Upland ridgetop and sideslope

Concern: Varying depths to weak structured clays

This area contains soils similar to the Hampshire Series. These soils are well drained and formed in clayey residuum of interbedded siltstone, sandstone and limestone. The slopes range from 0 to 15 percent and the pits were dug in locations where the slopes range from 2 to 15 percent. The depth varies greatly to weak structured clays. Three of the eight pits were less than 20 inches deep to weak structured clays. One pit just met the minimum depth requirement of 20 inches and the remaining three pits easily met the depth requirement.

Soils Area 2A and 2B

Geomorphic Description: Stream terrace and floodplain

Concern: Wetness

This area contains soils similar to the Lindsie, Lobelville and Lynnville Series. These soils are very deep, moderately-well drained and formed in alluvium. Slopes range from 0 to 5 percent, but the pits have slopes of 2 or 4 percent. Redox features range from 12 to 33 inches deep in these soils, but no chroma 2 or less depletions were present above 20 inches. Groundwater did not enter any of the pits in this area during the soils investigation.

Soils area 2B was not investigated due to the fact that the area was fenced and the heavy equipment could not access the area.

Soils Area 3

Geomorphic Description: Stream terrace/footslope and floodplain

Concern: Wetness (Egam Series)

This area contains soils similar to the Egam, Sykes and Nesbitt Series. These soils are very deep, well drained or moderately well drained and formed in alluvium. Slopes range from 0 to 5 percent, but the pits have slopes of 2 or 3 percent. The Egam soil has redox features and chroma 2 depletions at a depth of 16 inches deep. Groundwater did not enter the pit during the soils investigation.

Summary: An important limitation to the widespread use of Area 1 is the varying depths to weak structured clays. You cannot assume that Area 1 has a uniform depth to a flow-restricting horizon. All the soils in Area 2A and the Egam soils in Area 3 contain redox features. These soils frequently are seasonally saturated with natural waters and have morphological features associated with wetness. I recommend draining these soils to remove the excess subsurface water associated with these soils.

State Soil Consultant:

Report Date:

DWR Soil Pedon Description (Field) Form

Described By: <u>Ta. Andrews & Terry Hume</u>	Date: <u>2-28-14</u>
Site Location: <u>Cherokee St Rd / Williamson Co (William's Drags)</u>	
Stop or Pit #: <u>1</u>	SOP # (office use only):
Soil Series: <u>Humphreys</u>	Drainage Class: <u>well</u>
Soil Classification (control section):	Ground Water: <u>none</u>
Parent Material: <u>interbedded Limestone</u>	Erosion: <u>none - slight</u>
Climate: <u>Humid</u>	Land Cover: <u>Forest</u>
Slope of Map Unit: <u>2-5%</u>	Slope of Pit: <u>5%</u>
Geomorphic Description: <u>upland</u>	
Physiographic Location: <u>Outer - north horizon</u>	
Additional Notes:	

Soil Pedon Description

Horizon	Depths	Matrix Color	Depletions/Concentrations Redox/Mottles, etc.	Texture	Structure			Soil Horizon Notes
					Grade	Size	Type	
<u>A₁</u>	<u>0-3</u>			<u>S₁</u>	<u>1</u>	<u>F</u>	<u>gr</u>	
<u>A₂</u>	<u>3-14</u>			<u>S₁cl</u>	<u>2</u>	<u>m</u>	<u>sbk</u>	<u>gr</u>
<u>B₁2₁</u>	<u>14-22</u>			<u>S₁cl</u>	<u>2</u>	<u>m</u>	<u>sbk</u>	<u>gr</u>
<u>B₂3</u>	<u>22-28</u>			<u>C</u>	<u>1</u>	<u>m</u>	<u>sbk</u>	<u>gr</u>
<u>B₃4/B₂4</u>	<u>28-40</u>			<u>C</u>	<u>3+ 1</u>	<u>m</u>	<u>sbk</u>	

DWR Soil Pedon Description (Field) Form

Described By: Terry Harty & Jay Anderson Date: 2-28-14

Site Location: Claremont Rd / Williamson G (William's Property)

Scop or Pit #: 2 SOP # (office use only):

Soil Series: Hempden Drainage Class: well

Soil Classification (control section): Ground Water: none

Parent Material: Interbedded limestone Erosion: non-slight

Climate: humid Land Cover: Forest/Woods

Slope of Map Unit: 0-5% Slope of Pit: 5%

Geomorphic Description: upland

Physiographic Location: Ocala - Lake Wales

Additional Notes:

Soil Pedon Description

Horizon	Depths	Matrix Color	Depletions/Concentrations Redox/Mottles, etc.	Texture	Structure			Soil Horizon Notes
					Grade	Size	Type	
A ₀	0-10			Sil	1	F	gr	
B ₀	10-16			Sil	2	m	shk	
B ₁	16-20			C	1	m	shk	gr
B ₂	20-33			C	1	m	shk	gr
B ₃ /B ₄	33-46			C	1	m	shk	gr

DWR Soil Pedon Description (Field) Form

Described By: Terry Harg + Tim Adams Date: 2-25-14

Site Location: Mountain Rd / Williams Co (Williams property)

Stop or Pit #: 3 A30 slope SOP # (office use only):

Soil Series: Hampshire / Stiversville Drainage Class: well

Soil Classification (control section): Ground Water: none

Parent Material: Interbedded sandstone Erosion: non-sloped

Climate: Thermose Land Cover: Fescue

Slope of Map Unit: 0-5% Slope of Pit: 3%

Geomorphic Description: upland

Physiographic Location: Outer - Inner Basin

Additional Notes:

Soil Pedon Description

Horizon	Depth	Matrix Color	Depletions/Concentrations Redox/Mottles, etc.	Texture	Structure			Soil Horizon Notes
					Grade	Size	Type	
<u>A₀</u>	<u>0-6</u>			<u>Sil</u>	<u>1</u>	<u>F</u>	<u>gr</u>	
<u>A</u>	<u>6-15</u>			<u>Sil</u>	<u>1</u>	<u>m</u>	<u>shk</u>	
<u>B₀</u>	<u>15-26</u>			<u>Sil</u>	<u>2</u>	<u>m</u>	<u>shk</u>	
<u>B₁</u>	<u>26-31</u>			<u>C</u>	<u>1</u>	<u>m</u>	<u>shk</u>	
<u>Z₀</u>	<u>31-46</u>			<u>C</u>	<u>0</u>		<u>m</u>	

DWR Soil Pedon Description (Field) Form

Described By: Terra Henry & Jess Andrews Date: 2-28-14

Site Location: Clovercroft Rd / Williams Co (Williams Park)

Stop or Pit #: 4 1st slice (1st off) A30 SOP # (office use only):

Soil Series: Hampshire Drainage Class: well

Soil Classification (control section): Ground Water: none

Parent Material: interbedded limestone Erosion: none silt

Climate: Thermal Land Cover: forest

Slope of Map Unit: 0-5% Slope of Pit: 3%

Geomorphic Description: upland

Physiographic Location: Outer - Inner Corners

Additional Notes:

Soil Pedon Description

Horizon	Depth	Matrix Color	Depletions/Concentrations Redox/Mottles, etc.	Texture	Structure			Soil Horizon Notes
					Grade	Size	Type	
<u>Ap</u>	<u>0-3</u>			<u>Sil</u>	<u>1</u>	<u>F</u>	<u>sr</u>	
<u>A</u>	<u>3-13</u>			<u>Sil</u>	<u>1</u>	<u>m</u>	<u>sbk</u>	
<u>AB</u>	<u>13-16</u>			<u>Sil</u>	<u>1</u>	<u>m</u>	<u>sbk</u>	<u>gr</u>
<u>Bt₁</u>	<u>16-24</u>			<u>C</u>	<u>1</u>	<u>m</u>	<u>sbk</u>	<u>gr</u>
<u>Bt₂</u>	<u>24-33</u>			<u>C</u>	<u>1</u>	<u>m</u>	<u>sbk</u>	
<u>2Bt₃</u>	<u>33-46</u>			<u>C</u>	<u>0</u>		<u>m</u>	

DWR Soil Pedon Description (Field) Form

Described By: Terry Dean + Tim Andrews Date: 7-24-14

Site Location: Clayton Rd / Williams Co. (Williams property)

Stop or Pit #: 5 SOP # (office use only):

Soil Series: Itampshire Drainage Class: well

Soil Classification (control section): Ground Water: None

Parent Material: Tubercled limestone Erosion: moderate

Climate: Thermic Land Cover: Forest

Slope of Map Unit: 5-15% Slope of Pit: 1.5%

Geomorphic Description: inland

Physiographic Location: Outer - Inner Basin

Additional Notes:

Soil Pedon Description

Horizon	Depth	Matrix Color	Depletions/Concentrations Redox/Mottles, etc.	Texture	Structure			Soil Horizon Notes
					Grade	Size	Type	
Ap ₁	0-2			Sil	1	F	gr	
Ap ₂	2-5			Sil	1	m	sbk	gr
B ₁	5-12			Cl	2	m	sbk	gr
B ₂	12-20			C	2	m	sbk	
B ₃	20-25			S ^r C	1	m	sbk	gr
2B _{tu}	25-40			C	0		m	

DWR Soil Pedon Description (Field) Form

Described By: Terry H. & J. Andrews Date: 2-23-14

Site Location: Piscataway rd / Williamson Co (William's property)

Stop or Pit #: 6 SOP # (office use only): _____

Soil Series: Hampshire Drainage Class: well

Soil Classification (control section): _____ Ground Water: near

Parent Material: interbedded limestone Erosion: none - slight

Climate: Thermic Land Cover: Forest

Slope of Map Unit: 5-15% Slope of Pit: 10%

Geomorphic Description: upland

Physiographic Location: Outer - Inner Basin

Additional Notes: _____

Soil Pedon Description

Horizon	Depths	Matrix Color	Depletions/Concentrations Redox/Mottles, etc.	Texture	Structure			Soil Horizon Notes
					Grade	Size	Type	
<u>Ap₁</u>	<u>0-5</u>			<u>sil</u>	<u>1</u>	<u>f</u>	<u>sl</u>	
<u>Ap₂</u>	<u>5-10</u>			<u>sil</u>	<u>1</u>	<u>m</u>	<u>slk</u>	
<u>Bt₁</u>	<u>10-29</u>			<u>c</u>	<u>2</u>	<u>m</u>	<u>slk</u>	
<u>Bt₂</u>	<u>29-42</u>			<u>cl</u>	<u>2</u>	<u>m</u>	<u>slk</u>	
<u>Bt₃</u>	<u>42-50</u>			<u>cl</u>	<u>1</u>	<u>m</u>	<u>slk</u>	

DWR Soil Pedon Description (Field) Form

Described By: Tony Dunn & Joe Andrews Date: 2-28-10

Site Location: Marionville rd / Williams Grove (Williams property)

Stop or Pit #: 7 SOP # (office use only): _____

Soil Series: Hampshire Drainage Class: well

Soil Classification (control section): _____ Ground Water: None

Parent Material: Interbedded limestone Erosion: None - slight

Climate: Thermic Land Cover: Forest

Slope or Map Unit: 0-5% Slope of Pit: 4%

Geomorphic Description: inland

Physiographic Location: Oak - Inner Basin

Additional Notes: _____

Soil Pedon Description

Horizon	Depths	Matrix Color	Depletions/Concentrations Redox/Mottles, etc.	Texture	Structure			Soil Horizon Notes
					Grade	Size	Type	
<u>Ap₁</u>	<u>0-1</u>			<u>S.l</u>	<u>1</u>	<u>F</u>	<u>gr</u>	
<u>Ap₂</u>	<u>1-7</u>			<u>Si⁺</u>	<u>2</u>	<u>m</u>	<u>shk</u>	
<u>Bt₁</u>	<u>7-18</u>			<u>SiCl</u>	<u>2</u>	<u>m</u>	<u>shk</u>	
<u>Bt₂</u>	<u>18-32</u>			<u>C</u>	<u>1</u>	<u>m</u>	<u>shk</u>	
<u>Bt₃</u>	<u>32-46</u>			<u>Cl</u>	<u>1</u>	<u>m</u>	<u>shk</u>	

DWR Soil Pedon Description (Field) Form

Described By: Terry Henry & Tim Andrews

Date: 2-28-14

Site Location: Chamcroft Rd / Williamson Co. (Williamson County)

Stop or Pit #: 8

SOP # (office use only):

Soil Series: Nesbitt

Drainage Class: Med - well

Soil Classification (control section):

Ground Water: None

Parent Material: Limestone

Erosion: None - slight

Climate: Theriac

Land Cover: Forest

Slope of Map Unit: 0-5%

Slope of Pit: 2%

Geomorphic Description: upland

Physiographic Location: Outer - Inner Basin

Additional Notes: under 5' no + nodules upper 20"

Soil Pedon Description

Horizon	Depths	Matrix Color	Depletions/Concentrations Redox/Mottles, etc.	Texture	Structure			Soil Horizon Notes
					Grade	Size	Type	
<u>Ap¹</u>	<u>0-2</u>			<u>Sil</u>	<u>1</u>	<u>F</u>	<u>gr</u>	
<u>Ap²</u>	<u>2-9</u>			<u>Sil</u>	<u>1</u>	<u>m</u>	<u>sbk</u>	
<u>A</u>	<u>9-13</u>			<u>Sil</u>	<u>1</u>	<u>m</u>	<u>sbk</u>	
<u>Bt₁</u>	<u>13-15</u>			<u>Sic1</u>	<u>2</u>	<u>m</u>	<u>sbk</u>	
<u>Bt₂</u>	<u>15-25</u>			<u>Sic1</u>	<u>1</u>	<u>m</u>	<u>sbk</u>	
<u>Bt₃</u>	<u>25-33</u>			<u>Sic1</u>	<u>1</u>	<u>C</u>	<u>Pr</u>	
<u>2Bt</u>	<u>33-46</u>			<u>L</u>	<u>0</u>		<u>M</u>	

10/11 3/13

DWR Soil Pedon Description (Field) Form

Described By: <u>Terra Ham & Tony Andrews</u>	Date: <u>2-23-10</u>
Site Location: <u>Clayco Rd / Williams C (Williams Road)</u>	
Stop or Pit #: <u>9</u>	SOP # (office use only):
Soil Series: <u>Lynnville</u>	Drainage Class: <u>Med - well</u>
Soil Classification (control section):	Ground Water: <u>None</u>
Parent Material:	Erosion: <u>none - silty</u>
Climate: <u>Temperate</u>	Land Cover: <u>Forest / woods</u>
Slope of Map Unit: <u>0-5%</u>	Slope of Pit: <u>2%</u>
Geomorphic Description: <u>Flood plain</u>	
Physiographic Location: <u>Outer-Town Basin</u>	
Additional Notes:	

Soil Pedon Description

Horizon	Depth	Matrix Color	Depletions/Concentrations Redox/Mottles, etc.	Texture	Structure			Soil Horizon Notes
					Grade	Size	Type	
<u>A₁</u>	<u>0-2</u>	<u>10YR 3/2</u>		<u>Sil</u>	<u>1</u>	<u>F</u>	<u>sr</u>	
<u>A₂</u>	<u>2-9</u>	<u>10YR 3/2</u>		<u>Sil</u>	<u>1</u>	<u>m</u>	<u>shk</u>	
<u>B₁</u>	<u>9-19</u>	<u>10YR 3/3</u>	<u>10YR 4/3</u>	<u>Sic1</u>	<u>2</u>	<u>m</u>	<u>shk</u>	
<u>B₂</u>	<u>19-24</u>	<u>10YR 4/3</u>	<u>10YR 5/4</u> <u>10YR 5/6</u> <u>10YR 3/4</u> <u>10YR 5/3</u> <u>10YR 6/6</u>	<u>Sic1</u>	<u>2</u>	<u>m</u>	<u>shk</u>	<u>Common Iron & manganese masses</u>
<u>C</u>	<u>24-42</u>	<u>10YR 5/6</u>	<u>10YR 6/6</u> <u>10YR 5/3</u>	<u>Sic1</u>				<u>Many masses Iron & manganese</u>

DWR Soil Pedon Description (Field) Form

Described By: Terry Boring & Tim Anderson

Date: 2-26-14

Site Location: Flowercraft rd / Williams Co (Williams Prop)

Stop or Pit #: 10

SOI #: (office use only):

Soil Series: Linside

Drainage Class: mod-well

Soil Classification (control section):

Ground Water: none

Parent Material:

Erosion: slight none

Climate: Thermal

Land Cover: Forest

Slope of Map Unit: 0-5%

Slope of Pit: 2%

Geomorphic Description: Flood plain

Physiographic Location: Outer - Trench Basin

Additional Notes:

Soil Pedon Description

Horizon	Depths	Matrix Color	Depletions/Concentrations Redox/Mottles, etc.	Texture	Structure			Soil Horizon Notes
					Grade	Size	Type	
<u>Ap</u>	<u>0-5</u>	<u>10yr 5/3</u>		<u>S.l</u>	<u>1</u>	<u>F</u>	<u>sr</u>	
<u>A</u>	<u>5-11</u>	<u>10yr 3/2</u>		<u>S.l</u>	<u>1</u>	<u>m</u>	<u>shk</u>	
<u>Bw₁</u>	<u>11-14</u>	<u>10yr 3/3</u> <u>10yr 4/4</u>		<u>Sicl</u>	<u>2</u>	<u>m</u>	<u>sblc</u>	
<u>Bw₂</u>	<u>14-26</u>	<u>10yr 3/4</u>		<u>Sicl</u>	<u>2</u>	<u>m</u>	<u>sblc</u>	
<u>Bw₃</u>	<u>26-37</u>	<u>10yr 3/4</u>	<u>10yr 6/4</u> <u>10yr 5/4</u> <u>7.5yr 4/4</u>	<u>cl</u>	<u>2</u>	<u>m</u>	<u>shk</u>	<u>many masses</u>
<u>C</u>	<u>37-45</u>	<u>10yr 5/3</u> <u>7.5yr 5/6</u> <u>10yr 6/6</u> <u>7.5yr 4/4</u>		<u>cl</u>				<u>many masses</u>

DWR Soil Pedon Description (Field) Form

Described By: Terry Hines & Tony Andrews Date: 7-28-14

Site Location: Chlorine Rd / Williamson Co. (Williamson DNR)

Stem or Pit #: 11 SOP # (office use only): _____

Soil Series: Loblolly Drainage Class: mod-well

Soil Classification (control section): _____ Ground Water: none

Parent Material: _____ Erosion: none - slight

Climate: Temperate Land Cover: Forest

Slope of Map Unit: 5% Slope of Pit: 2%

Geomorphic Description: Flood plain

Physiographic Location: Ozark - Inner Basin

Additional Notes: _____

Soil Pedon Description

Horizon	Depths	Matrix Color	Depletions/Concentrations Redox/Mottles, etc.	Texture	Structure			Soil Horizon Notes
					Grade	Size	Type	
<u>A₁</u>	<u>0-3</u>	<u>10YR 3/3</u>		<u>Sil</u>	<u>1</u>	<u>F</u>	<u>gr</u>	
<u>A₂</u>	<u>3-8</u>	<u>10YR 3/3</u>		<u>Sil</u>	<u>1</u>	<u>m</u>	<u>S₂ic</u>	
<u>A₃</u>	<u>8-15</u>	<u>10YR 3/2</u>		<u>Sil</u>	<u>1</u>	<u>m</u>	<u>sbl</u>	
<u>B₁</u>	<u>15-33</u>	<u>10YR 4/3</u>	<u>10YR 5/4</u> <u>7.5YR 5/3</u>	<u>Sicl</u>	<u>1</u>	<u>m</u>	<u>sbl</u>	<u>gr x many nodules</u>
<u>B₂</u>	<u>33-42</u>	<u>mixed</u> <u>10YR 5/2</u> <u>10YR 5/6</u>	<u>7.5YR 5/3</u> <u>7.5YR 5/6</u>	<u>C</u>	<u>1</u>	<u>F</u>	<u>sbl</u>	<u>gr x</u>

DWR Soil Pedon Description (Field) Form

Described By: Terry Wilson & Ty Anderson Date: 2-23-10

Site Location: Chavonville Rd / Williams Co (Indiana Road)

Stop or Pit #: 12 SOP # (office use only):

Soil Series: Nicholls Drainage Class: Med. well

Soil Classification (control section): Ground Water: none

Parent Material: Limestone Erosion: non-silt

Climate: Temperate Land Cover: Forest

Slope of Map Unit: 0-5% Slope of Pit: 4%

Geomorphic Description: Footslope

Physiographic Location: Outer Inner Basin

Additional Notes: no obvious mottles upper 10"

Soil Pedon Description

Horizon	Depth	Matrix Color	Depletions/Concentrations Redox/Mottles, etc.	Texture	Structure			Soil Horizon Notes
					Grade	Size	Type	
A ₁	0-1			Sil	1	F	sr	
A ₂	1-12			Sil	1	mi	sbl	
B ₁	12-20	10 yr 4/10	5 yr 5/6	Sil	1	C	Pr	Many nodules
2B ₁	20-36	7.5 yr 5/6	5 yr 6/3 10 yr 6/2	C	0		m	

DWR Soil Pedon Description (Field) Form

Described By: Terry Hume & Tom Andrews Date: 2-28-14

Site Location: (Overcast Pt) / Williamson Co (Williamson property)

Stop or Pit #: 13 10' below x12 SOR # (office use only):

Soil Series: Asbl.n Drainage Class: W11

Soil Classification (control section): Ground Water: None

Parent Material: Erosion: none - slight

Climate: Thermic Land Cover: Forest

Slope of Map Unit: Slope of Pit: 4%

Geomorphic Description: Footslope

Physiographic Location: Outer - Inner Basin

Additional Notes: No mottles within upper 20"

Soil Pedon Description

Horizon	Depths	Matrix Color	Depletions/Concentrations Redox/Mottles, etc.	Texture	Structure			Soil Horizon Notes
					Grade	Size	Type	
<u>Do</u>	<u>0-1</u>	<u>10Yr 3/3</u>		<u>Sil</u>	<u>1</u>	<u>F</u>	<u>sr</u>	
<u>A</u>	<u>1-24</u>	<u>10Yr 3/3</u>		<u>Sil</u>	<u>2</u>	<u>m</u>	<u>slk</u>	
<u>Bw</u>	<u>24-33</u>	<u>10Yr 3/2</u>		<u>Sil</u>	<u>1</u>	<u>m</u>	<u>slk</u>	
<u>2C1</u>	<u>33-43</u>	<u>10Yr 5/1</u>	<u>7.5Yr 4/6</u> <u>5Yr 4/6 5Yr 4/4</u>	<u>C</u>	<u>0</u>		<u>m</u>	

DWR Soil Pedon Description (Field) Form

Described By: Terry Hines & Tom Andrews Date: 2-23-14
 Site Location: Clowcroft Rd / Williamson Co. (William's Property)
 Stop or Pit #: 14 SOP # (office use only):
 Soil Series: Feam or similar soil Drainage Class: Med-well
 Soil Classification (control section): Ground Water: None
 Parent Material: Erosion: none - stable
 Climate: Thermic Land Cover: Forest
 Slope of Map Unit: 0-5% Slope of Pit: 3%
 Geomorphic Description: Flood plain
 Physiographic Location: Outer - Tupper Basin
 Additional Notes:

Soil Pedon Description

Horizon	Depth	Matrix Color	Depletions/Concentrations Redox/Mottles, etc.	Texture	Structure			Soil Horizon Notes
					Grade	Size	Type	
<u>AP</u>	<u>0-3</u>			<u>Sil</u>	<u>1</u>	<u>F</u>	<u>sr</u>	
<u>B₁</u>	<u>3-16</u>	<u>10YR 3/2</u>		<u>Sil</u>	<u>2</u>	<u>m</u>	<u>sbk</u>	
<u>B₂</u>	<u>16-22</u>	<u>10YR 3/2</u>	<u>10YR 4/2 7.5YR 5/6 7.5YR 1/8</u>	<u>Sil or Sil</u>	<u>1</u>	<u>m</u>	<u>sbk</u>	
<u>B₃</u>	<u>22-30</u>	<u>10YR 4/2</u>	<u>10YR 4/6 7.5YR 5/6 4/4</u>	<u>Sil or Sil</u>	<u>1</u>	<u>m</u>	<u>sbk</u>	<u>Iron & manganese masses & nodules</u>
<u>B₄</u>	<u>30-40</u>	<u>10YR 5/2</u>	<u>7.5YR 4/4 7.5YR 5/6 7.5YR 5/6</u>	<u>L</u>	<u>0</u>		<u>m</u>	<u>Nodules & masses (primary)</u>

DWR Soil Pedon Description Form

Described by: Terry Henry & Terry Andrews

h1-g2-2 21EQ

Site Location: Clovermont rd / Williams L. Williamsburg

Stop or Pull In 15


Soil Source: Sinks Drainage Class: to 11

Soil Classification (control section)

Reaction Material / *Unreacted*

Climate: Tropical

Slope of Map Unit: $D = 5^\circ$	Slope of Vti: Σ^2
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
16	16
17	17
18	18
19	19
20	20
21	21
22	22
23	23
24	24
25	25
26	26
27	27
28	28
29	29
30	30
31	31
32	32
33	33
34	34
35	35
36	36
37	37
38	38
39	39
40	40
41	41
42	42
43	43
44	44
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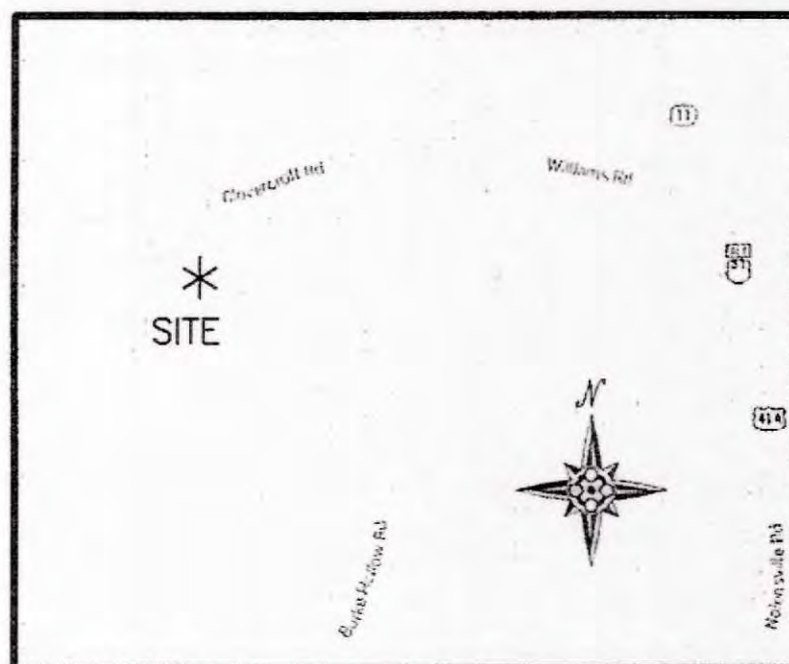
Geometry Description	$\frac{1}{\mu_{eff}} \frac{d\mu_{eff}}{d\lambda}$
<div style="display: flex; align-items: center;">  <div style="margin-left: 10px;"> a b </div> </div>	$\frac{1}{\mu_{eff}} \frac{d\mu_{eff}}{d\lambda} = \frac{1}{\mu_{eff}} \frac{d\mu_{eff}}{d\lambda} \left(\frac{a}{b} \right)$

Physiographic Location: Outer - Tropic - Tropic

Additional Notes: No shells in core 30" / Depth 30-40" rock

Soil Pedon Description

[illegible]



VICINITY MAP: NOT TO SCALE

Water Resources Soils Map Completed by:

Jay Andrews
Soil Scientist
License # 42
2-19-14

"I, Jay Andrews affirm that this Water Resources Soils Map has been prepared in accordance with accepted standards of soil science practice and the standards and methodologies established in the Soil Survey Manual and USDA Soil Taxonomy. No other warranties are made or implied."



100 0 100
1" = 100'

Legend:

WCD - With Curtain Drainage

end of evaluation

Drain; Path of run-off

Drain, generally >1' depth

Loss of distinct path of drainage

Embarkment; slope break

Fence

Rock Fence

Possible/potential sinkhole

Agricultural diversion berm, may consider taking down to an acceptable grade to allow for closer installation.

ROC - Rock Outcropping to surface in places (✓) and/or <36" to rock.

(S) UR - (Some) Underlying; unconsolidated Rock was encountered.

S.E. - Severely Eroded

MID-CUMBERLAND SOILS INC
1012 SPARTA PIKE
LEBANON, TN. 37087
615-443-1159

ENVIRONMENTAL CERTIFICATION:

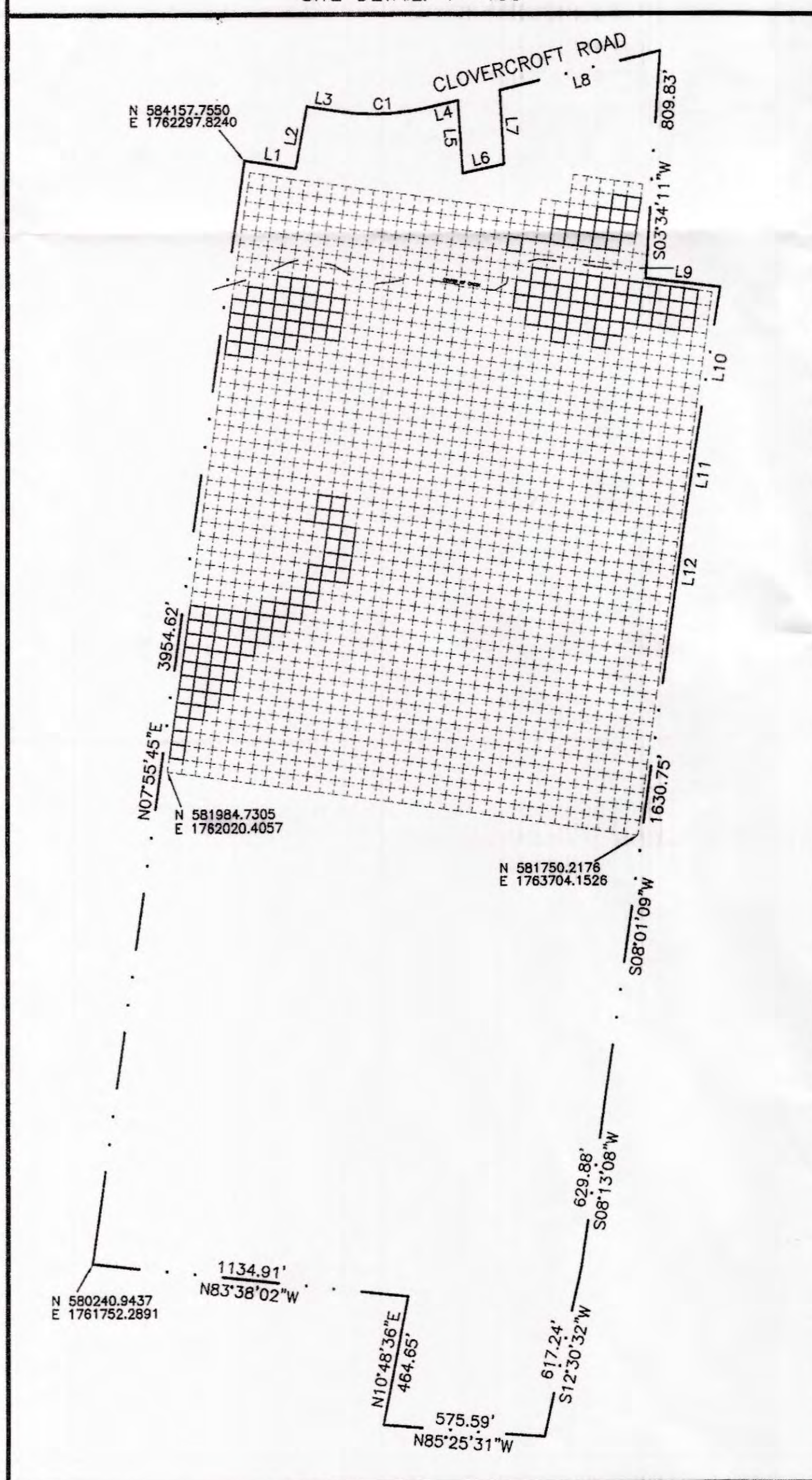
Plat approval is hereby granted for this property, owned by Helen S. Williams, in Williamson County Tennessee, as being suitable for subsurface sewage disposal (SSD) with the listed or attached restrictions. Any cutting, filling, or alterations of the soil conditions may void this approval.

Signature: _____
Williamson County Department of Sewage Disposal Management

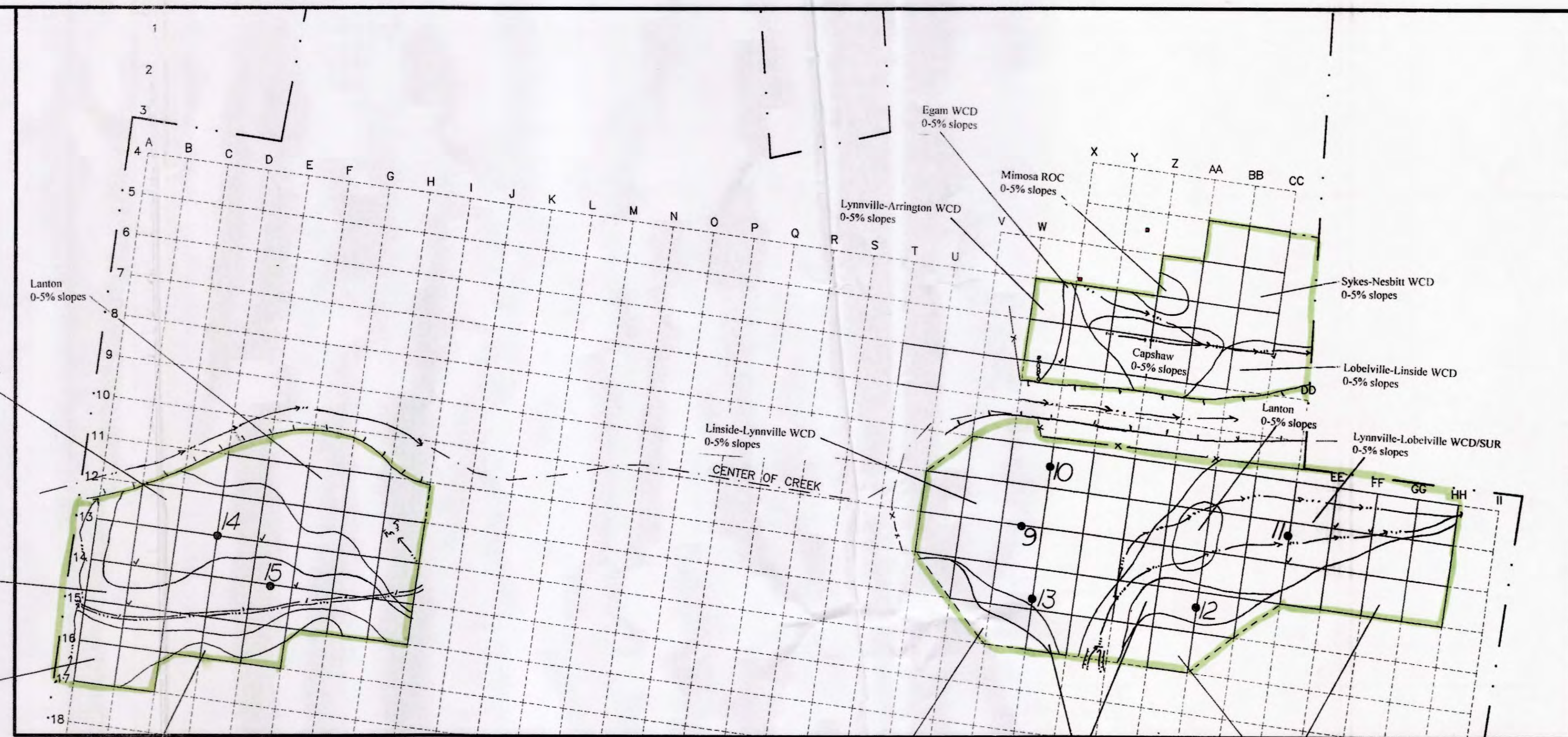
Date: _____

This parcel is approved for _____ bedrooms.

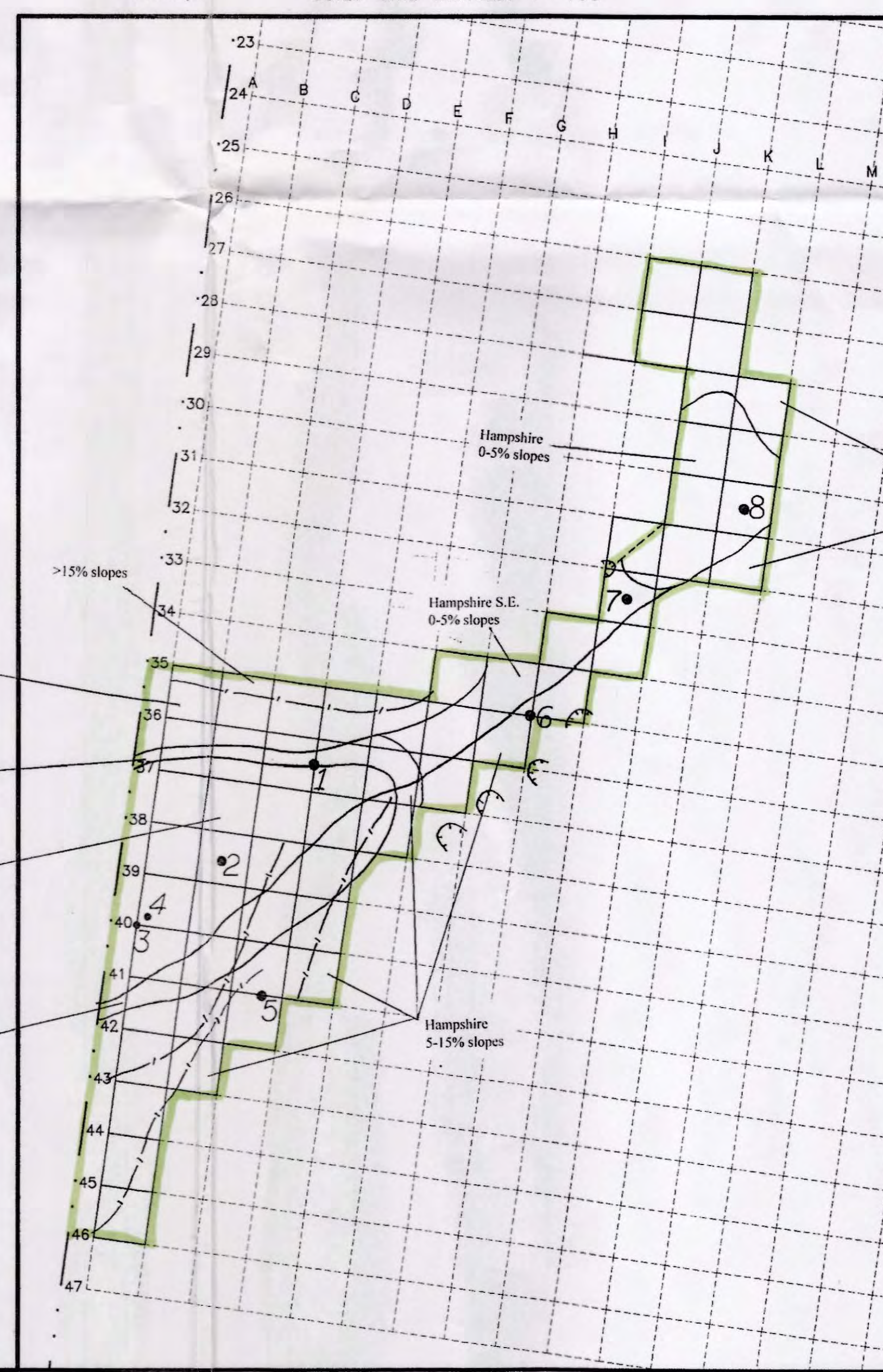
SITE DETAIL: 1"=400'



LINE	BEARING	LENGTH
L1	S80°53'41"E	185.74'
L2	N10°25'31"E	222.25'
L3	S80°51'35"E	111.74'
L4	N76°06'54"E	102.88'
L5	S03°56'55"E	258.12'
L6	N77°58'53"E	151.90'
L7	N03°26'31"W	262.49'
L8	N76°29'12"E	589.42'
L9	S83°06'26"E	268.65'
L10	S08°49'27"W	569.43'
L11	S08°57'23"W	210.52'
L12	S07°36'29"W	479.93'



SOILS GRID DETAILS: 1"=100'



SURVEYOR'S CERTIFICATE:

I, Beau M. Agee, do hereby certify that the location of the soil(s) area shown hereon is true and accurate to the best of my knowledge, and meets and/or exceeds an unadjusted closure ratio of 1:1,000 and all other standards as set forth by the Williamson County Department of Sewage Disposal Management

Beau M. Agee, TN RLS# 2871 Date 2-24-14
Phone: 615.443.7796
1012 Sparta Pike
Lebanon, Tennessee 37087

PROPERTY INFORMATION:
OWNER: HELEN S. WILLIAMS
OWNER ADDRESS: 9742 CLOVERCROFT RD
NOLENSVILLE, TN 37135
MAP 59, PARCEL 92.00
DEED BOOK 4754, PAGE 1
REGISTER'S OFFICE of
WILLIAMSON COUNTY TENNESSEE

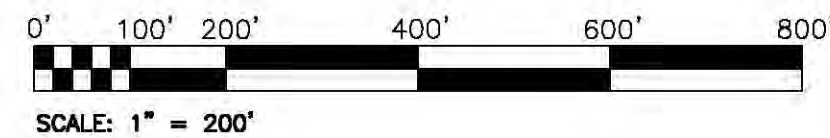
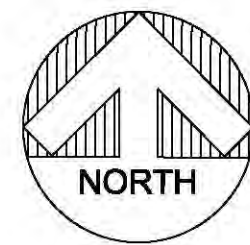
K&A Land Surveying
1012 Sparta Pike Lebanon TN, 37087
Office Phone- 615-443-7796
Mobile Phone- 615-351-3915

50' SOILS GRID LOCATION ON THE

HELEN S. WILLIAMS PROPERTY
MAP 59, PARCEL 92.00
17TH CIVIL DISTRICT of WILLIAMSON COUNTY, TN

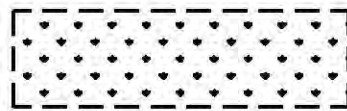
DATE: FEBRUARY 24, 2014 JOB # 14-0205-1747

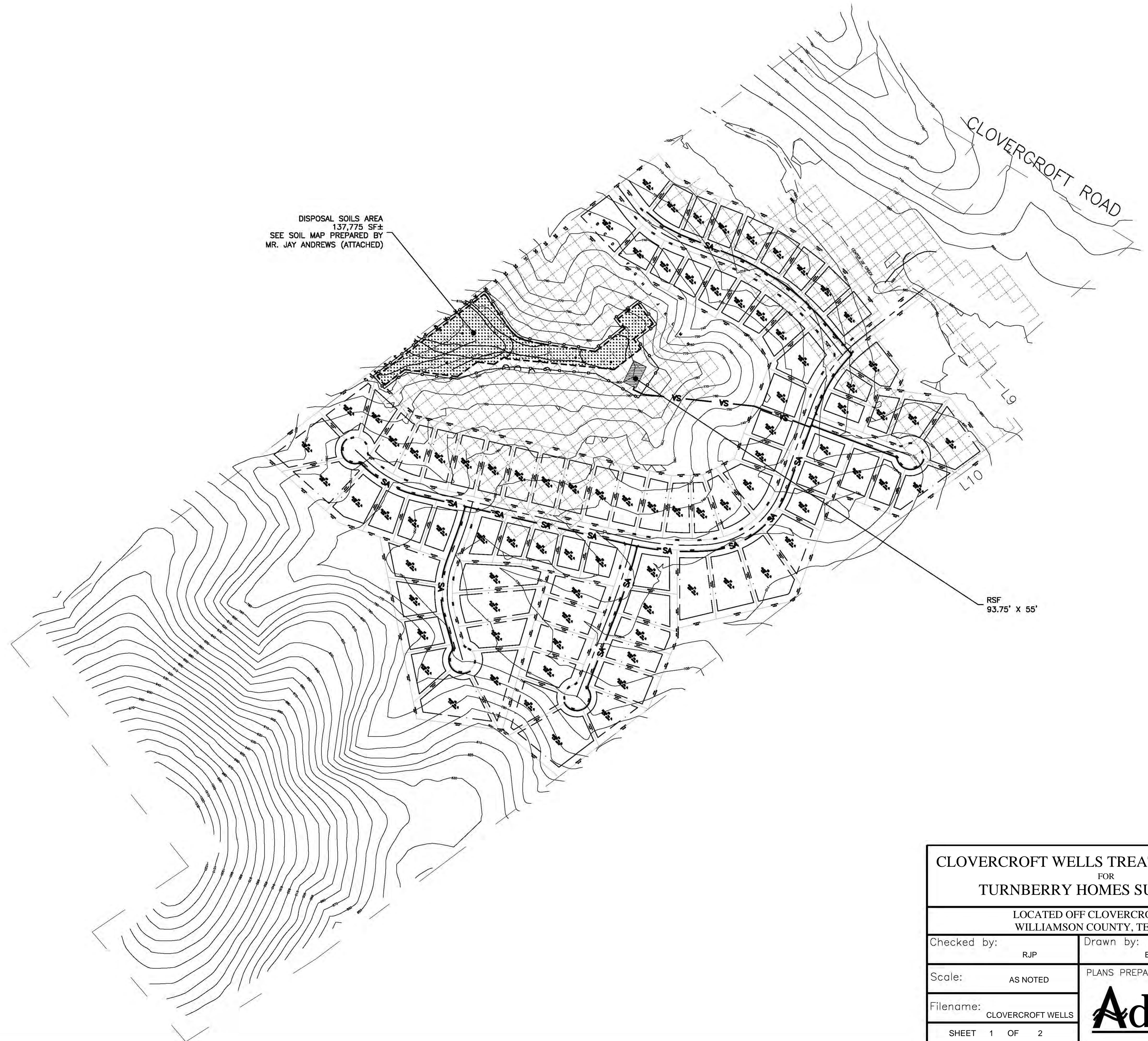
FOR ENVIRONMENTAL USE ONLY




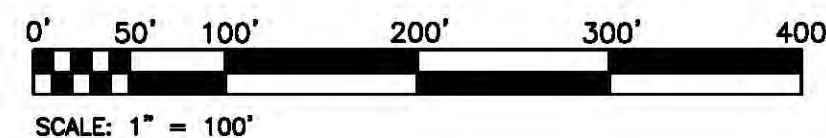
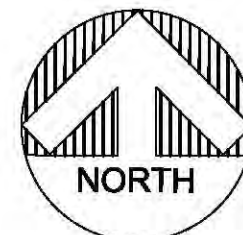
SITE LAYOUT
SCALE: 1" = 200'

CONTOUR INTERVAL = 10 FEET

- SOIL PIT
- SA — PROPOSED COLLECTION LINE
-  PROPOSED DRIP DISPOSAL AREAS
- * ALL LOCATIONS ARE PRELIMINARY



CLOVERCROFT WELLS TREATMENT FACILITY FOR TURNBERRY HOMES SUBDIVISION		
LOCATED OFF CLOVERCROFT ROAD WILLIAMSON COUNTY, TENNESSEE		
Checked by: RJP	Drawn by: BKT	Date: APRIL 8, 2014
Scale: AS NOTED	PLANS PREPARED BY:	
Filename: CLOVERCROFT WELLS		
SHEET 1 OF 2		



SITE LAYOUT

SCALE: 1" = 100'

CONTOUR INTERVAL = 2 FEET

- SOIL PIT
- SA — PROPOSED COLLECTION LINE
- ▨ PROPOSED DRIP DISPOSAL AREAS
- * ALL LOCATIONS ARE PRELIMINARY

DISPOSAL SOILS AREA
137,775 SF ±
SEE SOIL MAP PREPARED BY
MR. JAY ANDREWS (ATTACHED)

RSF
93.75' X 55'



NOTES:

1. NO PART OF THE TREATMENT FACILITY IS LOCATED WITHIN THE 10-YEAR OR THE 100-YEAR FLOOD PLAINS.
2. NO HABITABLE STRUCTURES, OR EXISTING BUILDING ENVELOPES ARE LOCATED WITHIN 300 LF OF THE PROPOSED TREATMENT FACILITIES.
3. ACCESS TO THE TREATMENT AND DISPOSAL SITES WILL BE RESTRICTED BY A FENCE WITH SIGNS POSTED IDENTIFYING USE.
4. TENNESSEE WASTEWATER SYSTEMS, INC., SHALL BE THE OWNER OF THE WASTEWATER TREATMENT AND DISPOSAL SYSTEM AND ALL REQUIRED LAND TO OPERATE SAID SYSTEM.
5. SOIL INFORMATION TAKEN FROM A SOIL MAPS PREPARED BY MR. JAY ANDREWS, DATED 2/19/2014.
6. FENCE MUST AT LEAST MEET MINIMUM REQUIREMENTS OF TDEC, AND WILLIAMSON COUNTY.

SOILS:

	REQUIRED	AVAILABLE
DISPOSAL SOILS	129,000 SF	137,775 SF

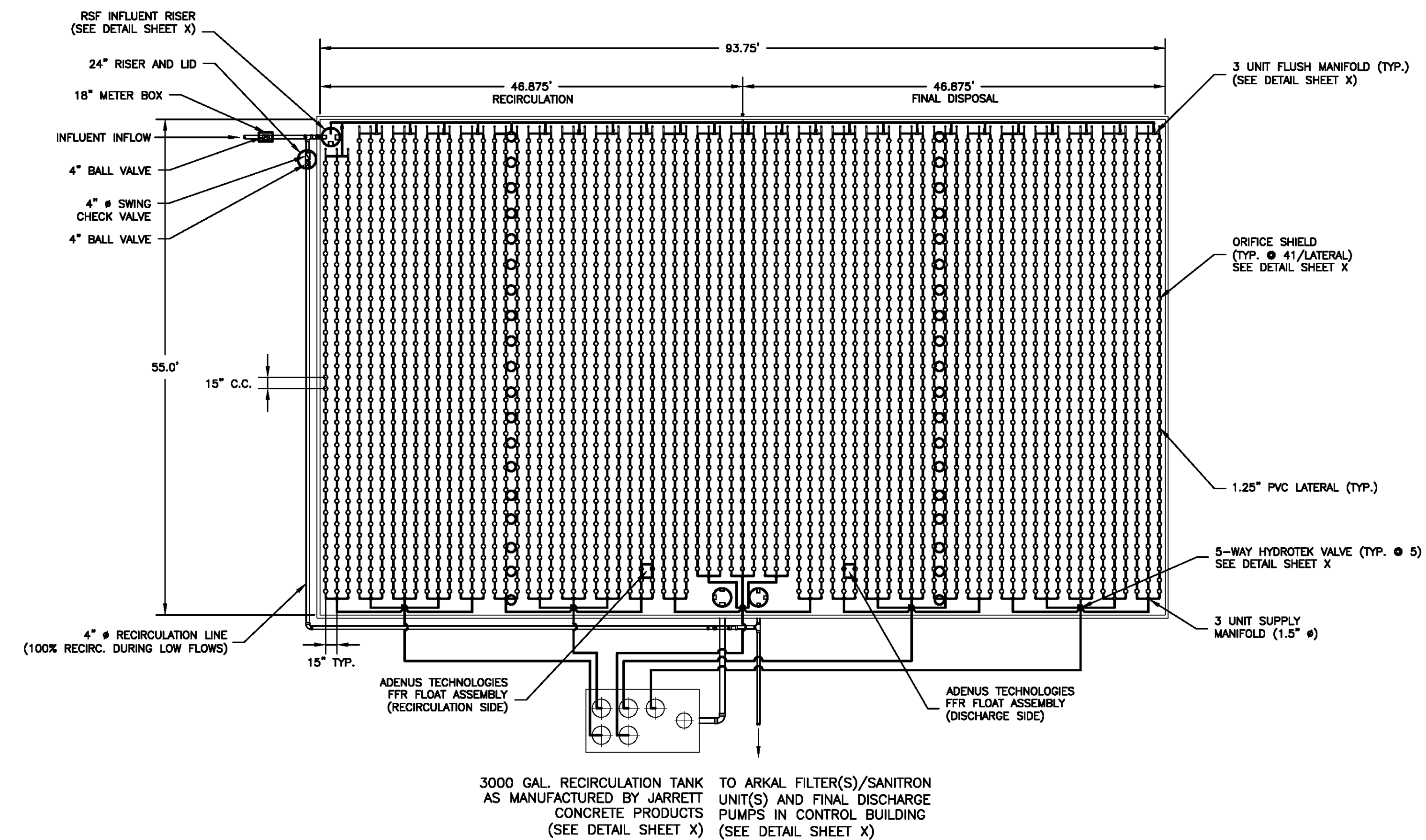
CLOVERCROFT WELLS TREATMENT FACILITY FOR TURNBERRY HOMES SUBDIVISION

LOCATED OFF CLOVERCROFT ROAD
WILLIAMSON COUNTY, TENNESSEE

Checked by: RJP	Drawn by: BKT	Date: APRIL 8, 2014
Scale: AS NOTED	PLANS PREPARED BY:	
Filename: CLOVERCROFT WELLS		
SHEET 2 OF 2		

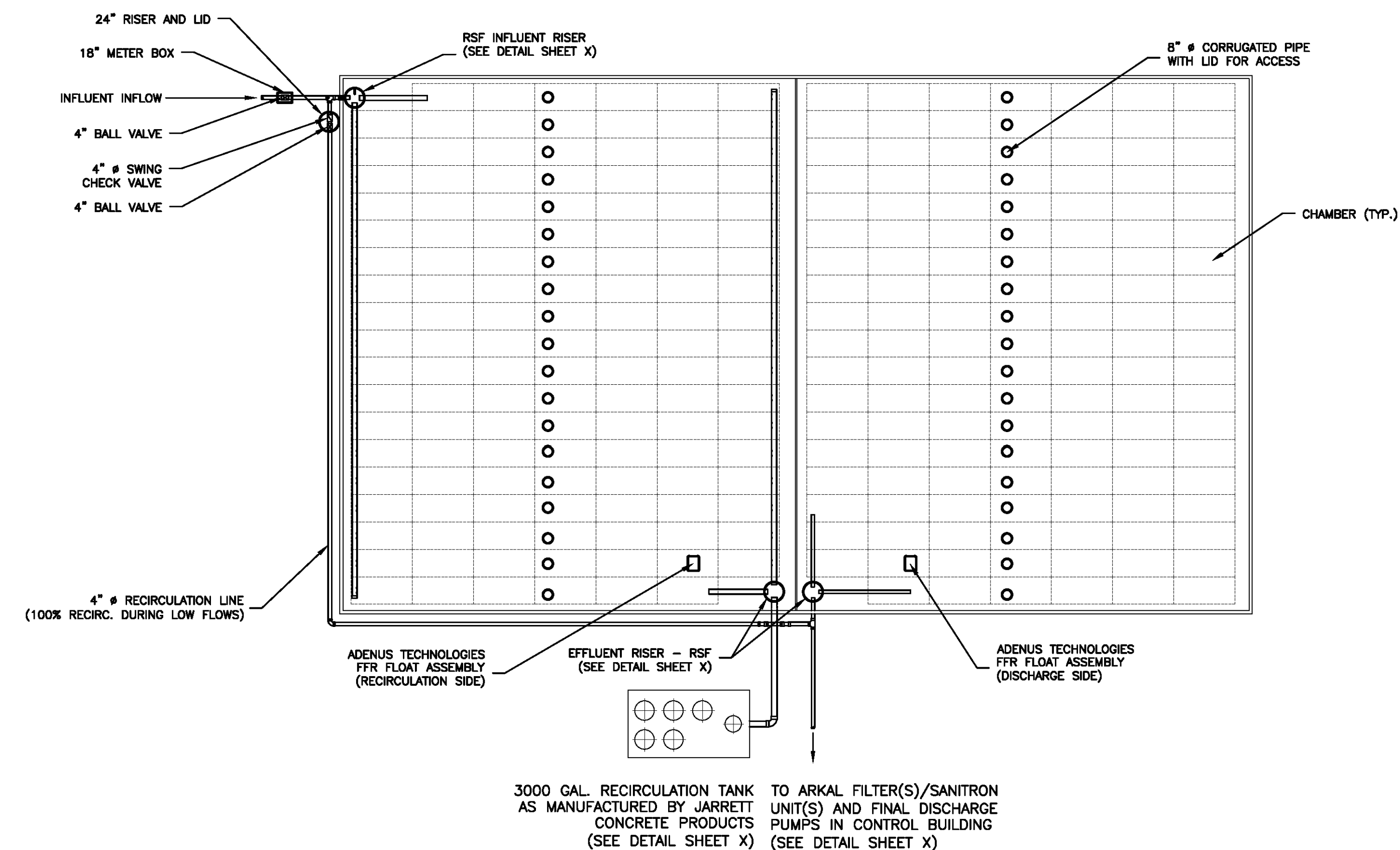
RECIRCULATING SAND FILTER – 55' x 93.75'
25,781 GALLONS PER DAY @ 5 GAL./SQ.FT./DAY

FFR # AT-5593.75



RECIRCULATING SAND FILTER – PLAN

SCALE: 1" = 10'



**RECIRCULATING SAND FILTER
CHAMBER LEVEL – PLAN**

SCALE: 1" = 10'



849 AVIATION PKWY.
SMYRNA, TN 37167

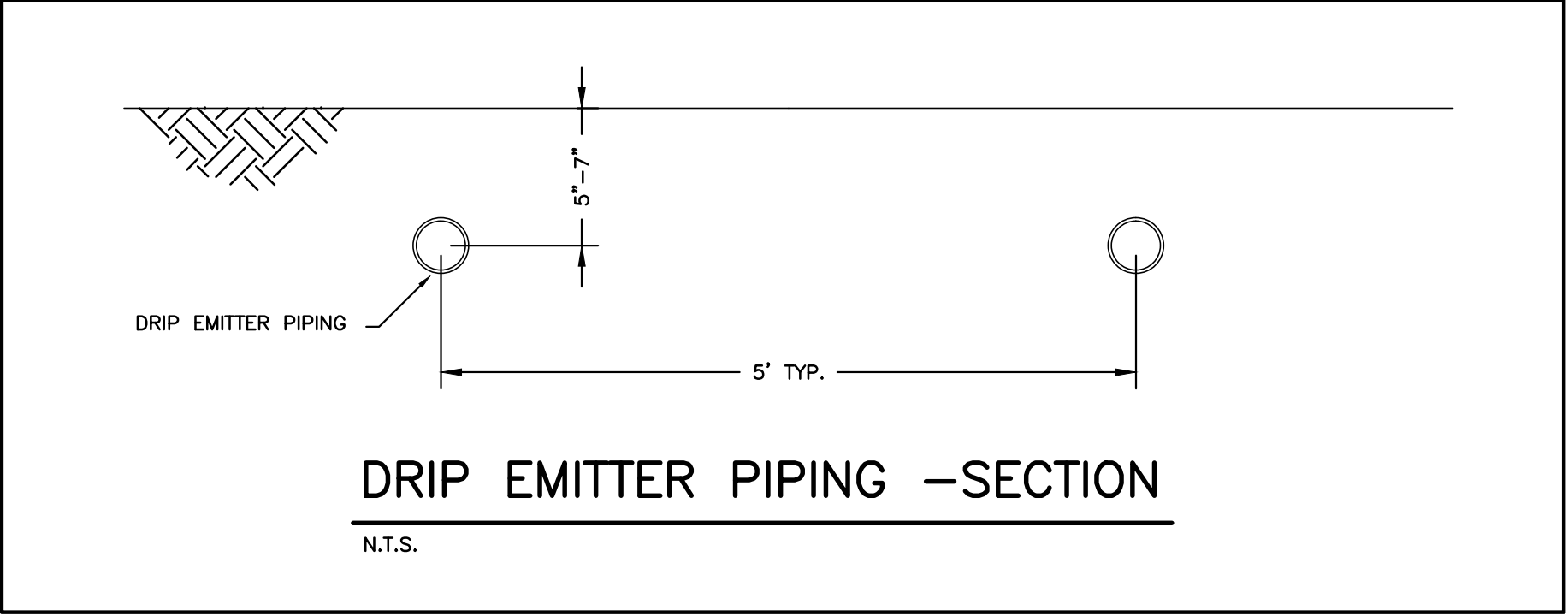
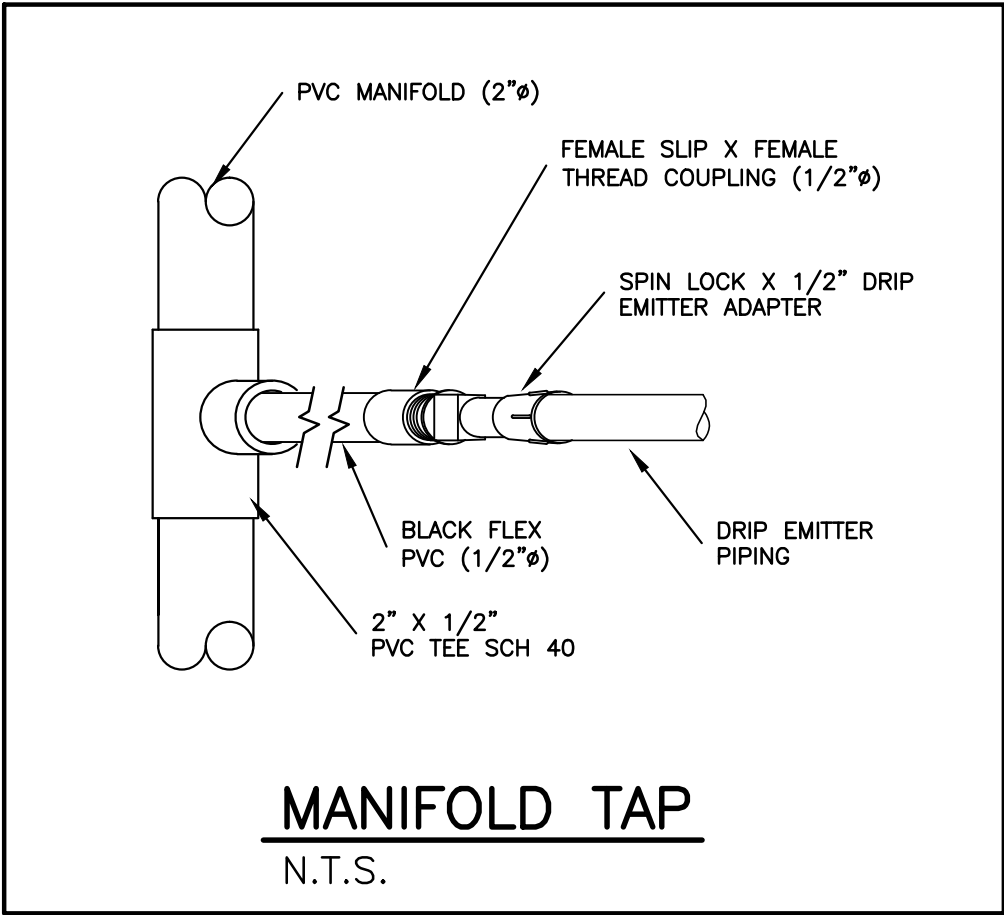
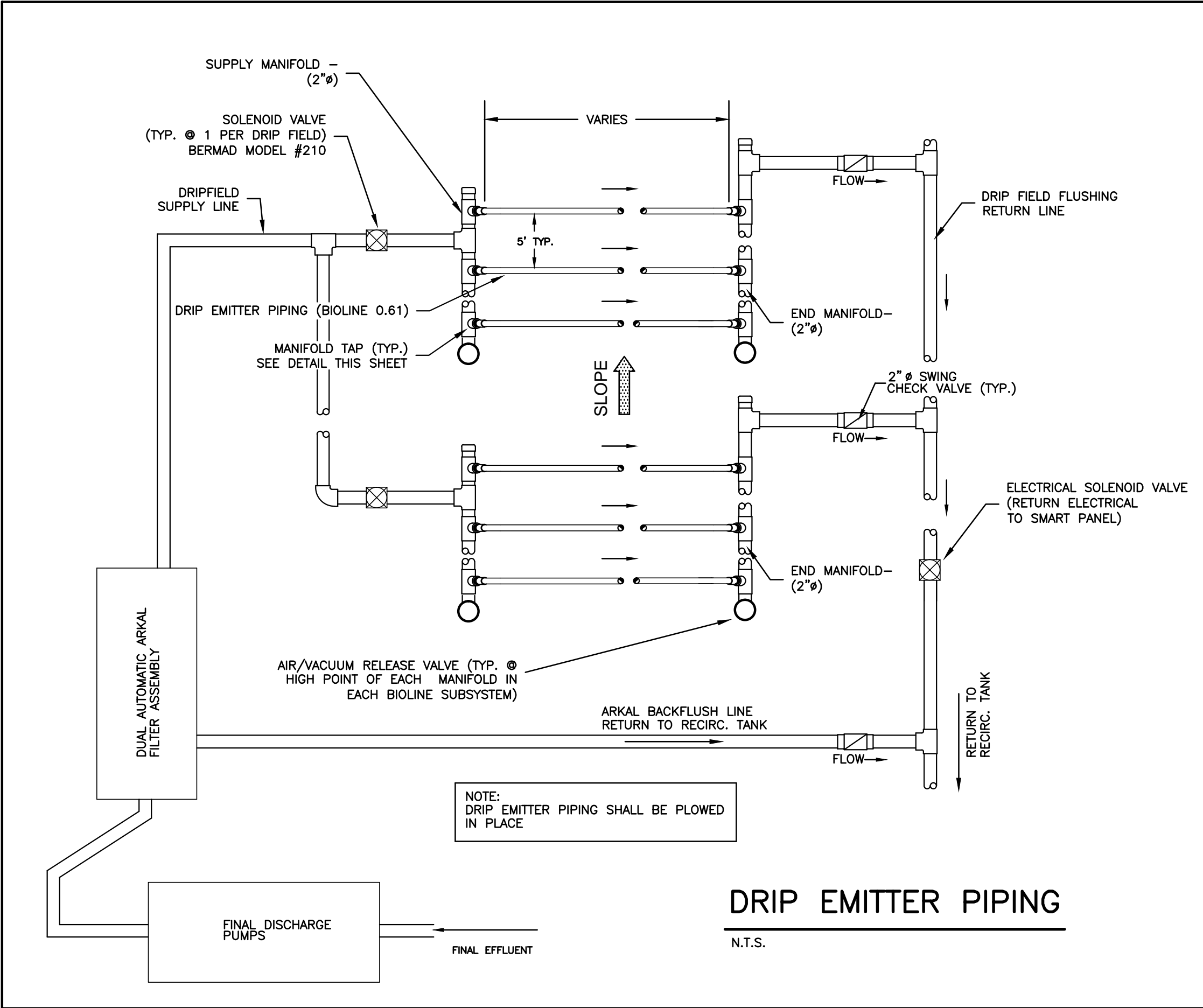
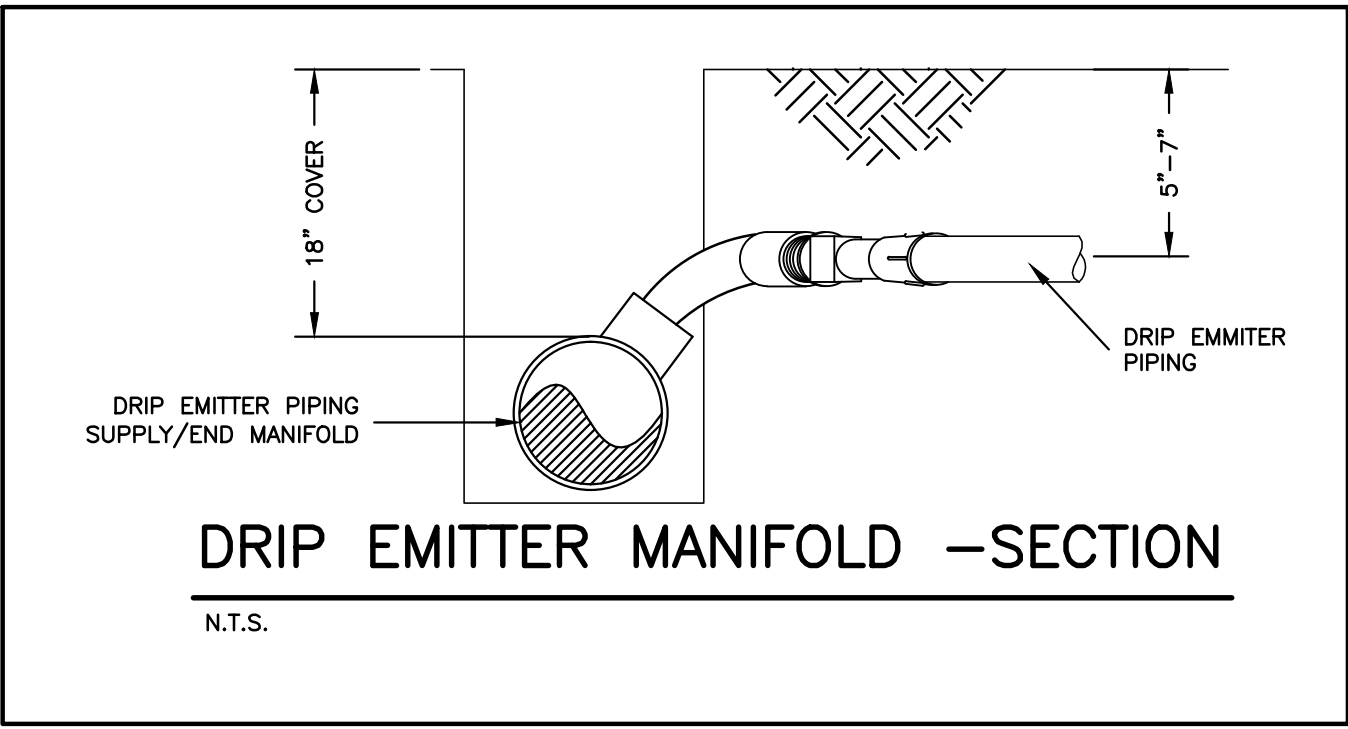
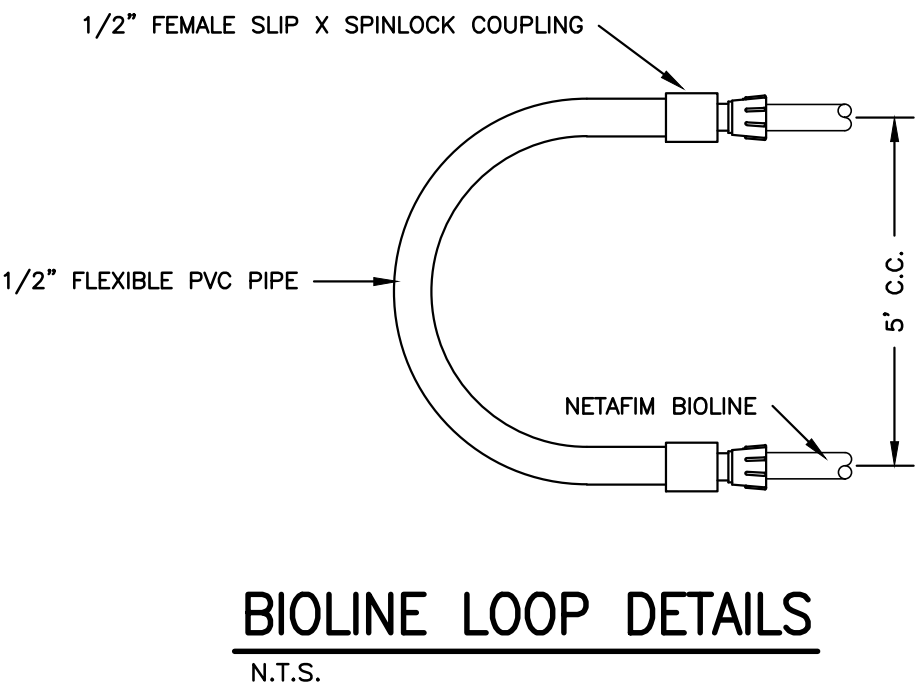
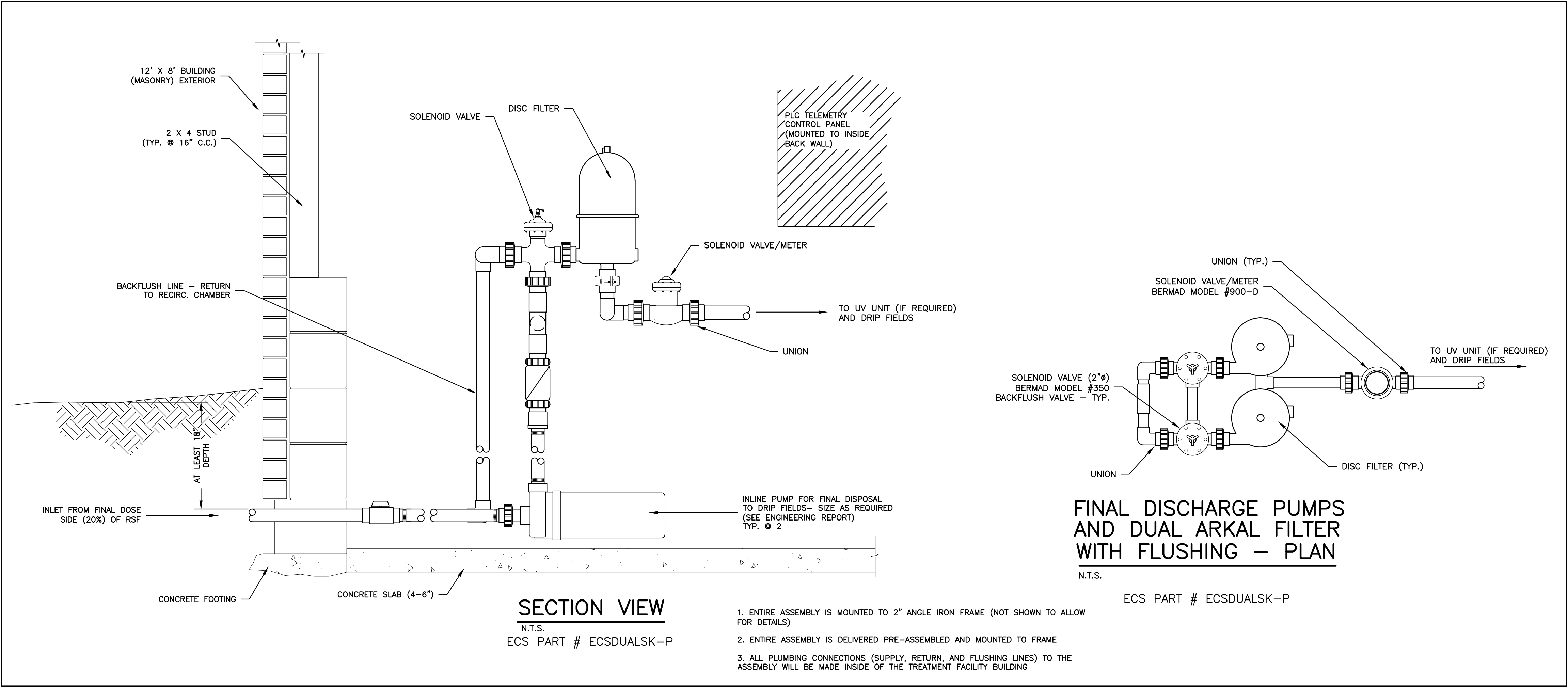
DRAWN BY NRF
RSF 55' X 93.75'.dwg

TOLL FREE:(888)4ADENUS

PHONE: (615) 220-7210

FAX: (615) 220-7208

EMAIL: info@adenus.com



SANITARY SEWER SERVICE AGREEMENT

This Sanitary Sewer Service Agreement (the "Agreement") is made and entered as of this ____th day of _____, 2014, by and between **TENNESSEE WASTEWATER SYSTEMS, INC.**, a Tennessee corporation ("TWS") and _____, a _____ ("Developer").

WITNESSETH:

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

WHEREAS, Developer plans and intends to develop a residential development community presently known as _____ (the "Development");

WHEREAS, Developer has completed the plans for the Development and the same have been approved by the appropriate authorizing entity;

WHEREAS, Developer agrees to be responsible for all costs and expenses necessary and related to the installation of a wastewater treatment system, as approved by TWS, such being necessary to service properly the Development and to provide for future wastewater disposal in 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) "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.
- (c) "Effective Date" means the date the last of the parties hereto executes this Agreement.
- (d) "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.

(e) "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.

(f) "Lot" or "Lots" shall mean a portion of the Property, whether developed or undeveloped, intended for development, use and occupancy as a residence, as well as vacant land intended for development as such, all as may be developed and used. In the case of a parcel of vacant land or land on which improvements are under construction, the parcel shall be deemed to contain the number of Lots designated for such parcel on the Plat or the site plan approved by the applicable local governmental entity having jurisdiction, until such time as a certificate of occupancy is issued on all or a portion thereof by the applicable local government entity having jurisdiction, after which the portion designated in the certificate of occupancy shall constitute a separate Lot or Lots as determined above and the number of Lots on the remaining land, if any, shall continue to be determined in accordance with this definition.

(g) "Lot Owner" or "Lot Owners" shall mean and refer to one or more persons who hold the record title to any platted Lot, 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.

(h) "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 and all Applicable Laws.

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

(j) "TRA" means the Tennessee Regulatory Authority and any successor thereto.

(k) "Sewage Facility" shall mean and refer to that certain sewage treatment facility constructed by or for the Developer on the Sewage Facility Land which is to be operated by TWS upon conveyance to TWS by the Developer in accordance with this Agreement.

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

(m) "Sewer System" means the Sewage Facility Land approved for ?? residential lots, the Sewage Facility 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.

(n) "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.

2. **Compensation.**

TWS will receive from Developer, prior to the signing of any plat, an \$350.00 per lot fee for each lot proposed on that plat. This fee covers the cost of legal expenses, regulatory

coordination, plans review, construction inspections, and individual residential service installation inspections, etc.

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 by the Developer of all of TWS's requirements set forth herein, TWS hereby agrees to and will accept contribution of the system as an expansion and improvement of its sewage disposal facilities. 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.

3. **Permits.** Developer 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 the TRA or any other governmental or quasi-governmental authority.

4. **Sewer System Construction.**

(a) *Installation.* At its own expense and at no cost or expense to TWS, Developer shall furnish, install, lay and construct all of the Sewer System as required by TWS to be installed to serve the Development, including labor and material. 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 approved by TWS.

(b) *Development Responsibility.* Developer agrees to install the Sewer System as part of its initial development of the Property and the Development. Developer shall (i) cause the Sewer System to be completed in strict accordance with the Plans and Specifications, including the service connection for all sewers to the property line of each Lot, (ii) cause the Sewer System to be constructed in a good and workmanlike manner and in compliance with all Applicable Laws (iii) ensure that the Sewer System will be able to receive and properly treat the required amount of GSPD after completion of the Sewer System. Developer understands and agrees that no third party shall obtain any benefits or rights under this Agreement with respect to sewer privileges, and no connection shall be made to any other customer site until all necessary arrangements have been made in accordance with TWS's Wastewater System Specifications.

(c) *Delegation by Developer.* 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.

(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.

5. **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;

(e) grant TWS a non-exclusive sewer line easement, in the form attached hereto as Exhibit H, 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 5 shall be the sole responsibility of Developer, including, without limitation, recording fees, transfer taxes, title premiums, title endorsement charges and survey costs.

6. **Developer Warranty.** The Developer hereby warrants all Sewer System improvements installed pursuant to the provisions of this Agreement against defects in workmanship and materials for a period of one (1) year from the date of acceptance thereof in writing by TWS. 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 within one (1) year from the date the Sewer System improvements are accepted in writing by TWS. 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.

7. **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 affect 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 TWS that:

(i) Developer is a _____ 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 affect 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.

8. **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.

9. **Developer Obligations.**

The Developer shall pay an annual fee of \$120.00, or as may be amended in the future, per platted Lot 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 fee of \$120.00 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.

10. **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 Regulatory Authority.

(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.

11. **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 I, attached hereto.

12. **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.

13. **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, and "TWS" shall mean TWS and its respective successors and assigns.

14. **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.

(e) *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.

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

(g) *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.

(h) *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: Charles Hyatt
Title: President

Developer

By: _____
Name: _____
Title: _____

STATE OF TENNESSEE
COUNTY OF _____

Personally appeared before me, _____, Notary Public, _____
_____, 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 President of
Tennessee Wastewater Systems, 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 ____ day of _____, 20____.

Notary Public
My Commission Expires: _____

STATE OF TENNESSEE
COUNTY OF _____

Personally appeared before me, _____, Notary Public, _____
_____, 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
_____ of _____, the within named bargainor, a _____, and is
authorized to execute this instrument on behalf of _____.

WITNESS my hand, at office, this ____ day of _____, 20____.

Notary Public
My Commission Expires: _____

Exhibit A

Property

The plat that is intended for recording will be used for the property description.

Exhibit B

Sewage Facility Land

This will need to be a survey of the land that is proposed to be transferred to TWS to operate and maintain the treatment and disposal system.

Exhibit C

Plans and Specification

The plans and specifications when approved will be used here.

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

Exhibit G

Form of Bill of Sale

(To convey treatment and disposal system to Tennessee Wastewater Systems, Inc.)

Exhibit H

Form of Easement

Easement

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 Williamson County, Tennessee, the same being the land conveyed to them by _____ of record in Deed Book # _____, Page # _____, Register's Office of Williamson 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 maintaining 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 I

Restrictive Covenant Language

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 Regulatory Authority. Water and sewer lines will be installed to the property 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 Griffit’s Mill 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 Regulatory Authority and is \$120.00 per year as of the date of adoption of this Declaration. 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. This fee may be amended by the Tennessee Regulatory Authority in the future.

(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 Regulatory Authority.

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.