INFILTRATOR®
water technologies

Design and Installation Manual for the Infiltrator Dual 8-inch ATL System in Jefferson County



Infiltrator Dual 8-inch ATL System in Jefferson County, Alabama

INTRODUCTION	2
JEFFERSON COUNTY - SPECIFIC INFORMATION	3
SYSTEM CONFIGURATIONS	6
SYSTEM DESIGN	11
INFORMATION FOR SYSTEM OWNERS	19
INSTALLATION INSTRUCTIONS	21
WARRANTY	24

The purpose of this manual is to provide the minimum specifications for design and installation of the Infiltrator Dual 8-inch ATL (Advanced Treatment Leachfield) System in Jefferson County, Alabama. All local ordinances, requirements, and procedures must be followed where applicable. Each revised version of this manual supersedes the previous version.

The configurations presented in this document are common designs and are provided for illustrative purposes. They are not intended to restrict the use of other configurations, which may be utilized provided the design conforms to the Jefferson County Board of Health On-Site Sewage Disposal Regulations.

For more detailed design and installation information, please contact Infiltrator at 1-800-221-4436.

Alabama

The Infiltrator Dual 8-inch ATL System

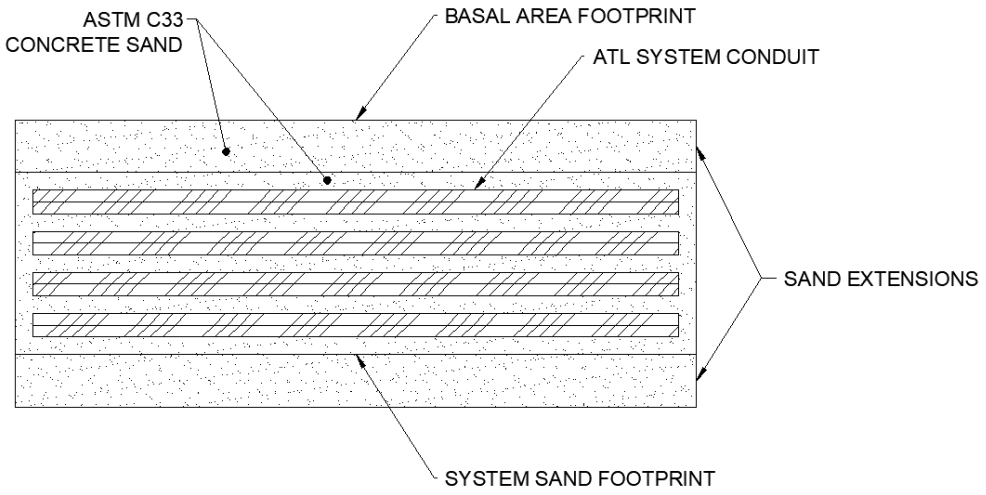
The Infiltrator Dual 8-inch ATL is a patent-pending, proprietary system consisting of six components. Upon entering the Infiltrator Dual 8-inch ATL, septic tank effluent progresses through each component as follows:

- 3-inch-diameter pipe
- Large-diameter synthetic aggregate.
- Coarse geotextile;
- Small-diameter synthetic aggregate;
- Fine geotextile; and
- 6-inch depth of specified system sand.

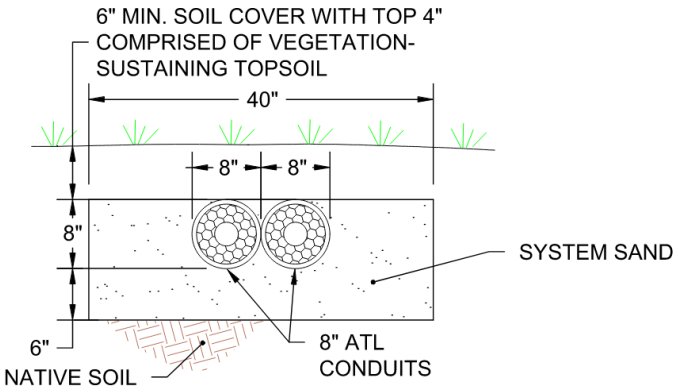
Infiltrator Dual 8-inch ATL System Definitions

"System sand" is the term used to describe the coarse sand material that surrounds the Infiltrator Dual 8-inch ATL System (ATL System) conduits. Infiltrator requires that only material which meets ASTM C33 specifications is allowed for use with the Dual 8-inch ATL System in Jefferson County, Alabama.

In this document, the "system sand footprint" refers to the surface onto which the Dual 8-inch ATL System conduits are placed and the 12 inches of component sand around the conduits. The "basal area footprint" refers to the interface between the lowermost surface of the system sand and native soil. These definitions are portrayed in the diagram below.



The Dual 8-inch ATL System is approved for use in Jefferson County. Testing in accordance with NSF/ANSI 40 has determined that the Dual 8-inch ATL System is capable of treating domestic strength wastewater to Class I (secondary treatment) levels. This approval allows for design and installation of the Dual 8-inch ATL System in Jefferson County in accordance with the specifications and instructions in this manual. If design, installation, operation, or maintenance specifications are not specifically addressed in this manual, relevant requirements in the Jefferson County Board of Health On-Site Sewage Disposal Regulations shall be applicable.



Permitting Requirements

An application for a permit to construct an on-site sewage disposal system shall be submitted to the Health Department and must be in compliance with all other applicable on-site sewage rules.

Engineered Design Required

The Dual 8-inch ATL System shall be designed by an engineer.

Minimum Dual 8-inch ATL Conduit Lengths

The minimum design length of Dual 8-inch ATL conduit in residential applications is 70 feet per bedroom. In commercial applications, 1 linear foot of Dual 8-inch ATL conduit shall be required for every 2 gallons of design flow per day (Minimum L = Q/2, where L is length and Q design flow per day in gallons).

A minimum of 140 linear feet of Dual 8-inch ATL conduit is required for any system.

Sloped Systems

Sites with slopes greater than 5% shall be considered sloped sites. In these applications, the 6-inch basal sand layer must be extended a minimum of 2.5 feet on the downslope side. Maximum slope on a site is 33%.
Use of the Dual 8-inch ATL System on sloped sites shall be restricted as follows:

Percolation Rate (min/in)	Maximum Site Slope (%)
1-15	33
16-30	25
31-60	20
61-120	10

Horizontal and Vertical Separation Distances

Horizontal separation distances shall comply with all state and local regulations where applicable and are measured from the edge of the system sand, inclusive of any sand extensions.

Vertical separation distances shall comply with all state and local regulations where applicable, and are measured from the bottom of the 6-inch basal system sand layer. The minimum separation distance from the bottom of the system sand to seasonal high water or an impervious layer shall be 12 inches. System plans shall specify the elevations of the bottom of the 6-inch basal area, to ensure that the system installation meets minimum vertical separation from any limiting condition.

Multiple Bed Systems

If site conditions prevent design and installation of a single Dual 8-inch ATL System bed along the contour, the Dual 8-inch ATL System may be installed in multiple bed configurations, with the following conditions:

- each bed must run along the length of any contour;
- each bed must receive equal flows (zoning); and
- each bed must meet all other requirements of the Rules.

Pump-to-Gravity Distribution

The Dual 8-inch ATL System can accommodate all methods of effluent distribution.

If pump-to-gravity distribution is preferred, the pump dosing cycle shall:

- include a volume no greater than one-gallon times the total length of Dual 8-inch ATL conduit; and
- occur at a minimum of 4 times a day.

Demand dosing is recommended.

Tapering

In elevated system applications, side-slope tapering shall be as follows:

- in level system applications, a minimum of 2:1 on all sides; and

- in sloped system applications, a minimum of 3:1 on the downslope, and 2:1 on the other three sides.

A Dual 8-inch ATL System is considered to be elevated when any aspect of the system, including final cover material, is above the natural ground surface.

Fill and Cover Materials

System sand shall be used to raise the elevation of the Dual 8-inch ATL System to meet minimum vertical separation requirements. System sand or approved native soil shall be used to create side slopes in elevated system applications.

The Infiltrator Dual 8-inch ATL System is approved for use in Jefferson County with a minimum of 6 inches of cover material (after settling).

At a minimum, the final 4 inches of cover material shall be comprised of topsoil and properly crowned. Topsoil is earth material, including the native soil, which is capable of sustaining plant growth. Topsoil should be seeded or covered with mulch immediately following installation to prevent erosion.

System Configurations

The Dual 8-inch ATL System can be designed for use on level or sloped sites, and in below-natural-ground and elevated systems that are designed for non-traffic applications.

The following system sand dimensions are required for all Dual 8-inch ATL System configurations:

- a minimum of 6 inches of system sand below the ATL conduit rows;
- a minimum of 12 inches of system sand adjacent to each ATL conduit row;
- a minimum 12-inch system sand extension on both ends of the ATL conduit rows; and
- a minimum 2.5-foot sand extension on the downslope side on sites with greater than 5% slope.

There is no minimum requirement for system sand on top of the Dual 8-inch ATL conduit rows.

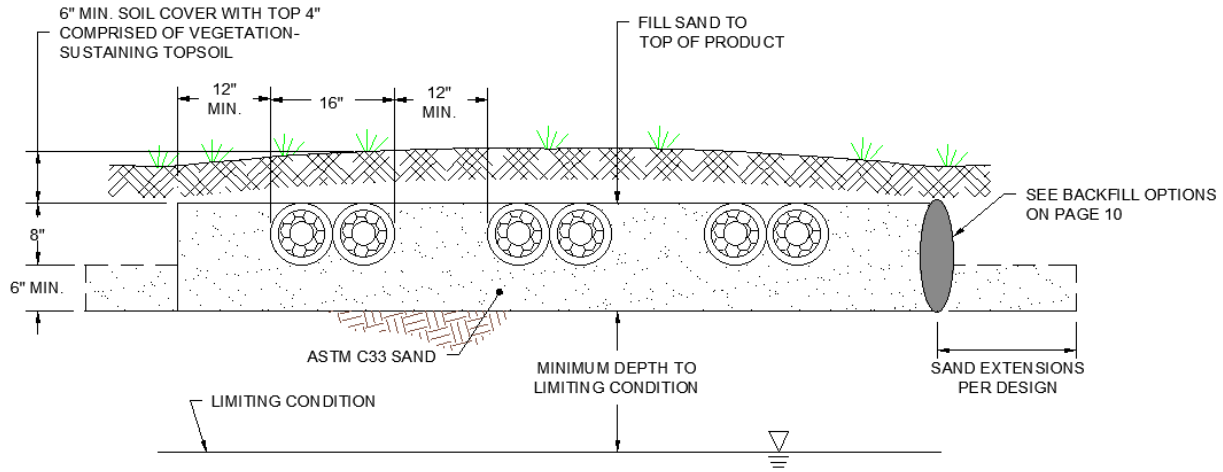
Distribution Boxes (D-boxes)

D-boxes are recommended in gravity applications (as shown in the drawings on pages 7 & 8) when equal effluent distribution is desired within a single disposal field, or when multiple beds are specified.

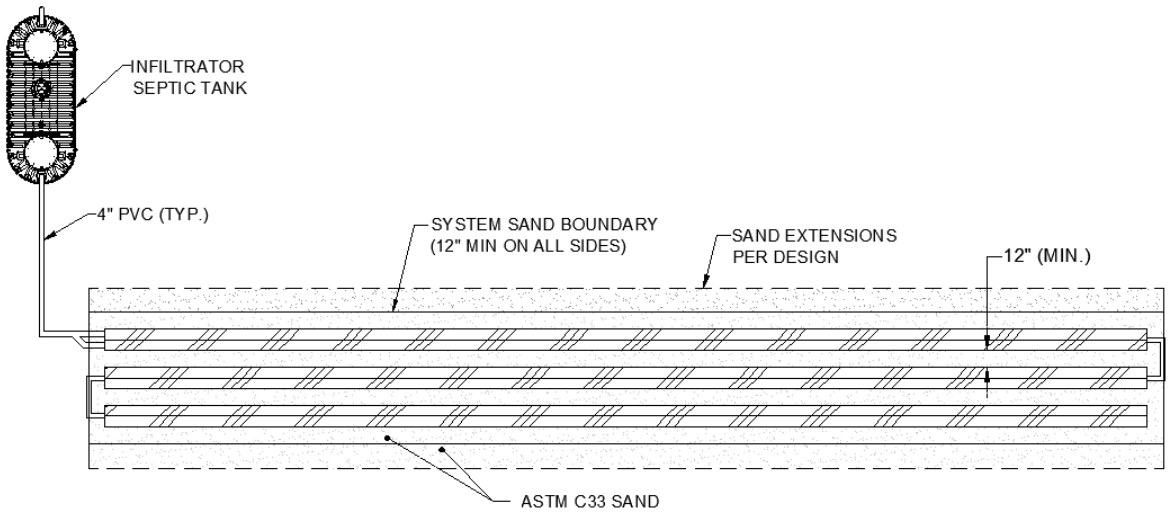
Serial distribution is allowed. In serial distribution applications, use of raised connections is recommended (see page 24 for details).

Level Below-Natural-Ground Systems

Cross-Section View



Plan View

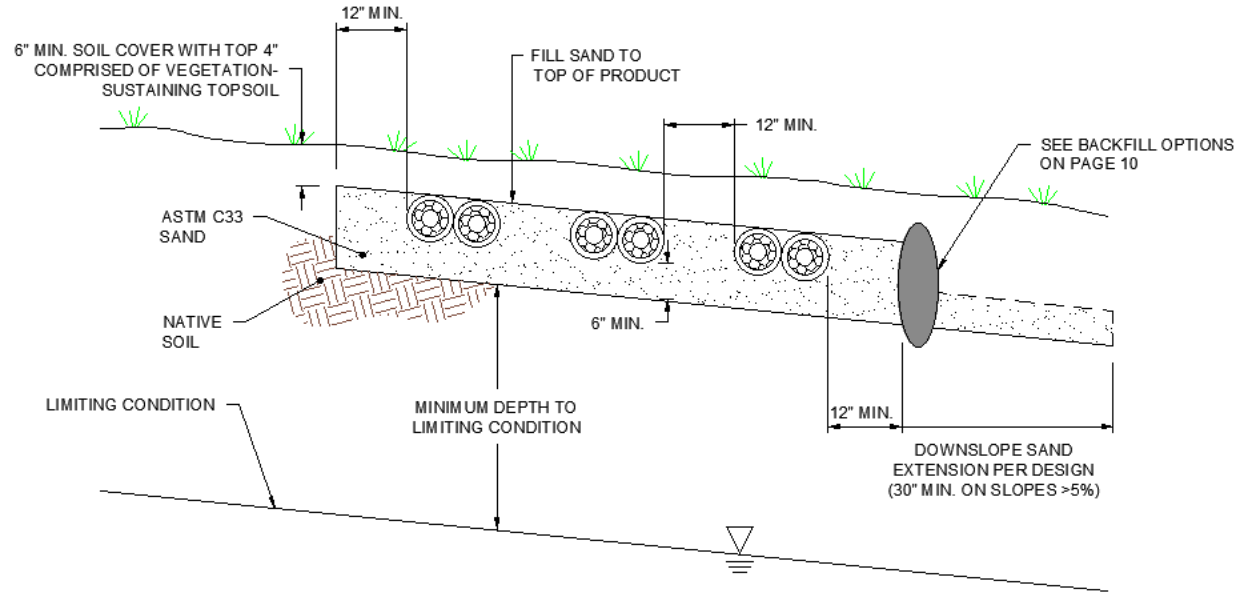


NOTES:

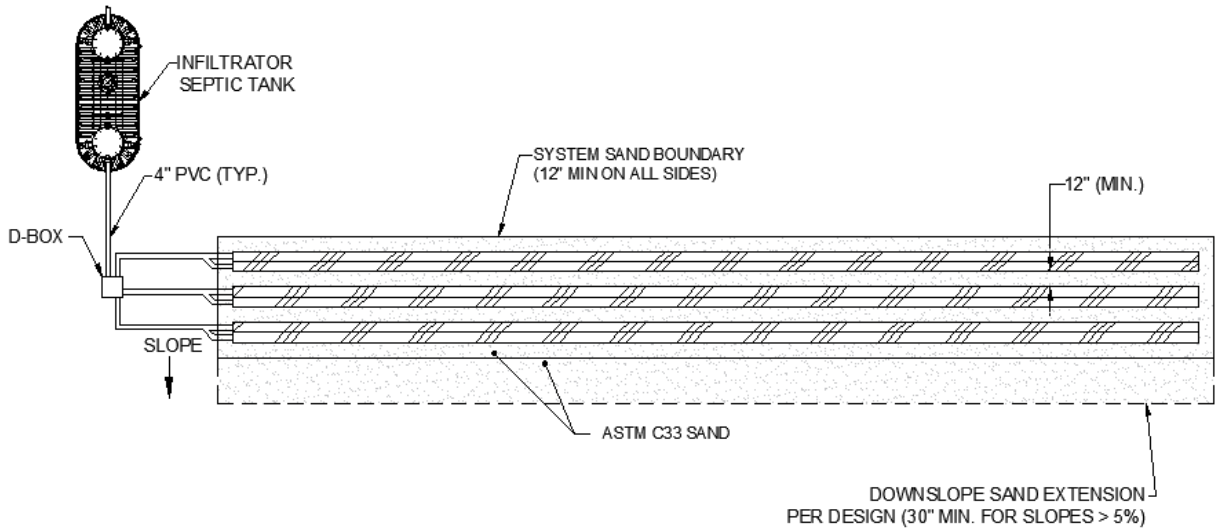
1. Number and length of conduits per design.
2. Venting is not required but is optional at the discretion of the system designer.
3. Pumping is not required unless gravity flow cannot be achieved.
4. A Dual 8-inch ATL System is considered to be below-natural-ground when all aspects of the system, including final cover material, are entirely below the natural ground surface.
5. Serial distribution shown. System may also be served by parallel (d-box) distribution.
6. The Dual 8-inch ATL System is intended for use in non-traffic applications.

Sloped Below-Natural-Ground Systems

Cross-Section View



Plan View

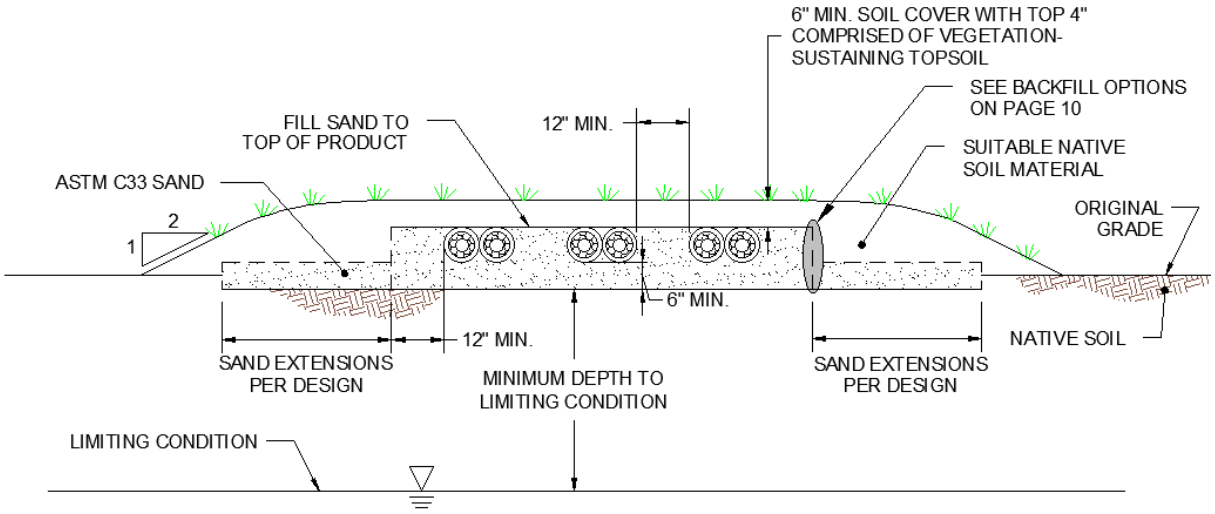


NOTES:

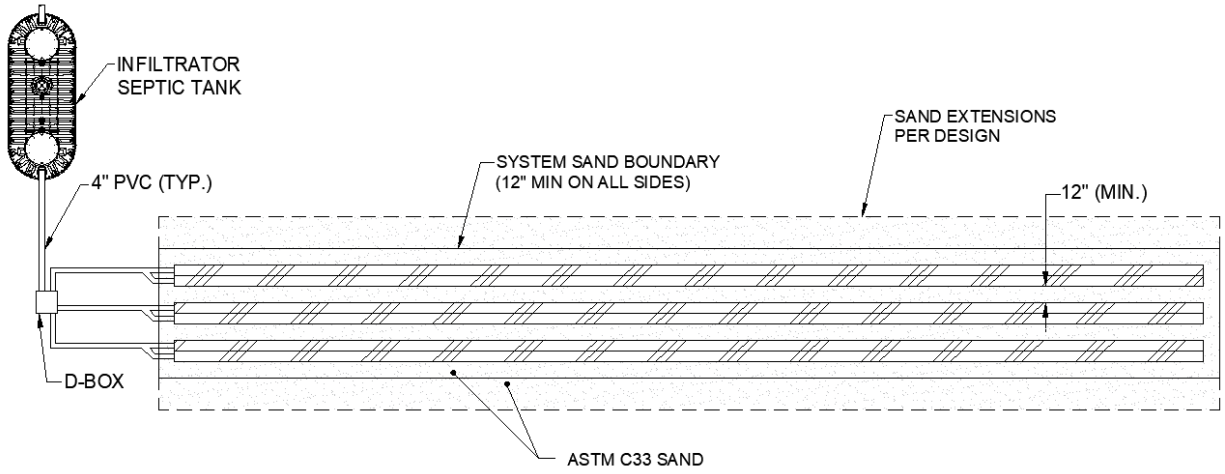
1. A site is considered to be “sloped” when the natural grade is greater than 5%.
2. A Dual 8-inch ATL System is considered to be below-natural-ground when all aspects of the system, including final cover material, are entirely below the natural ground surface.
3. Number and length of conduits per design.
4. Venting is not required but is optional at the discretion of the system designer.
5. Pumping is not required unless gravity flow cannot be achieved.
6. D-box distribution shown. System may also be served by serial distribution.
7. The Dual 8-inch ATL System is intended for use in non-traffic applications.

Level Elevated Systems

Cross-Section View



Plan View

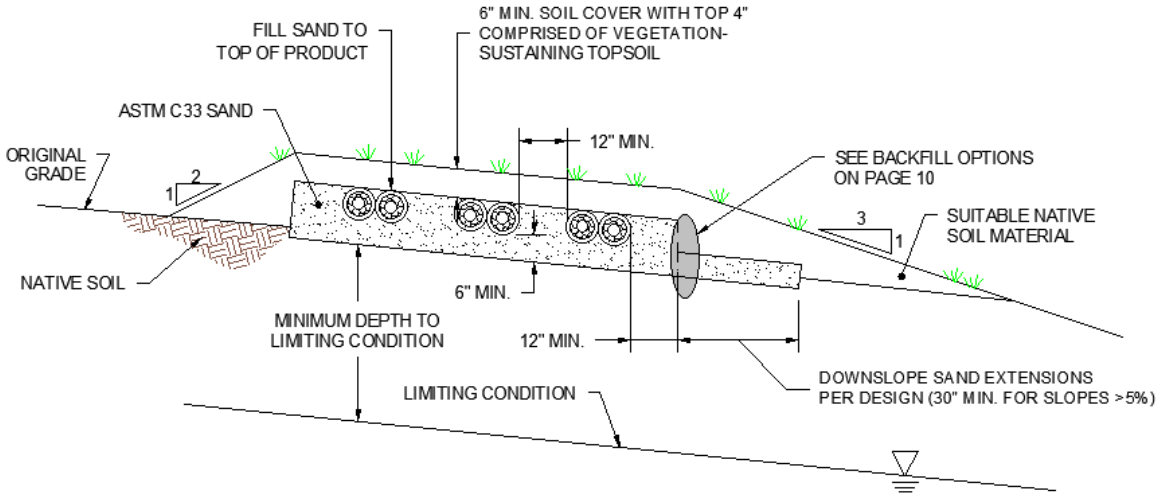


NOTES:

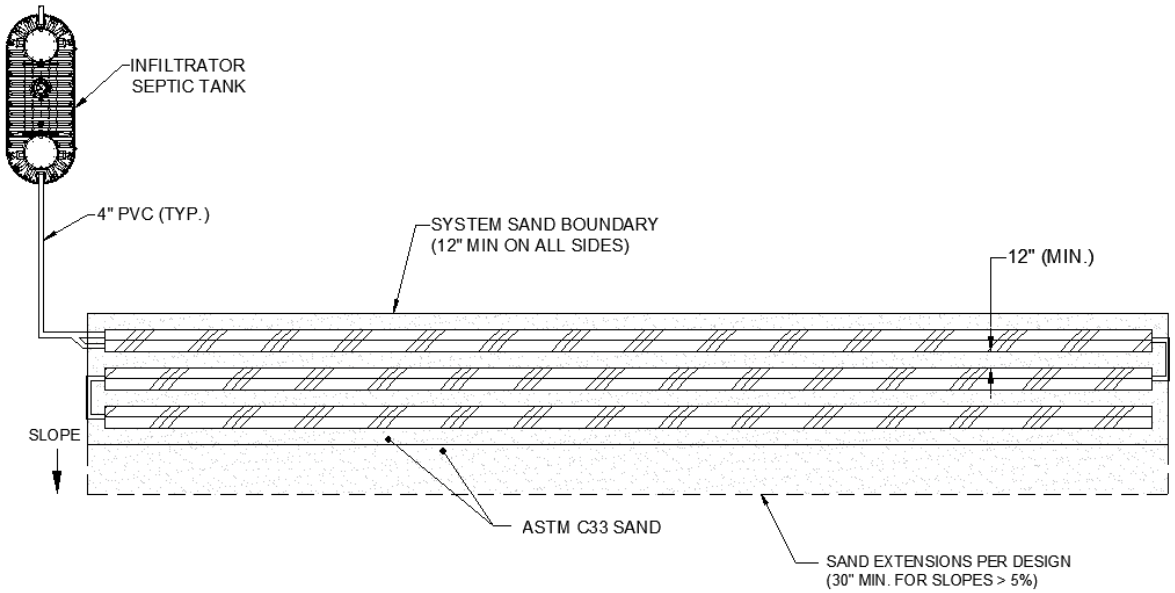
1. A Dual 8-inch ATL System is considered to be elevated if any aspect of the system, including final cover material, is above existing grade.
2. Number and length of conduits per design.
3. Venting is not required but is optional at the discretion of the system designer.
4. Pumping is not required unless gravity flow cannot be achieved.
5. If the infiltrative surface of the Infiltrator Dual 8-inch ATL System bed must be elevated to achieve minimum vertical separation requirements, the area between the original grade and the Infiltrator Dual 8-inch ATL system sand shall be comprised of additional system sand.
6. D-box distribution shown. System may also be served by serial distribution.
7. The Dual 8-inchATL System is intended for use in non-traffic applications.

Sloped Elevated Systems

Cross-Section View



Plan View

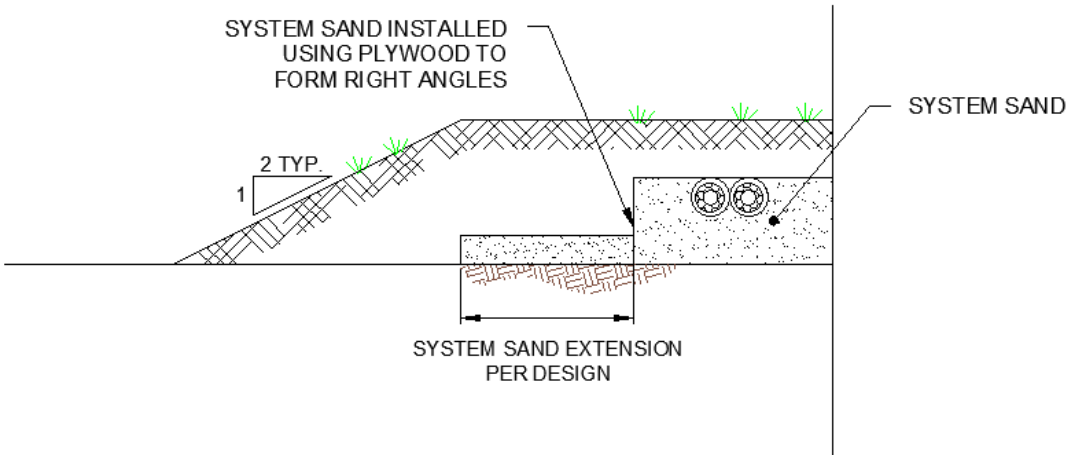


NOTES:

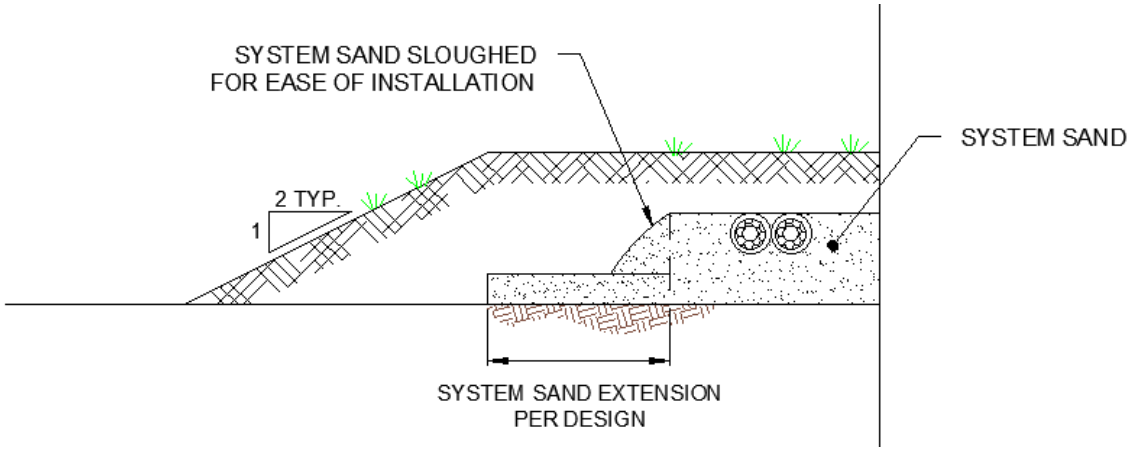
1. A Dual 8-inch ATL System is considered to be elevated if any aspect of the system, including final soil cover, is above existing grade.
2. A site is to considered to be “sloped” when the natural grade is greater than 5%.
3. Number and length of conduits per design.
4. Venting is not required but is optional at the discretion of the system designer.
5. Pumping is not required unless gravity flow cannot be achieved.
6. If the infiltrative surface of the Infiltrator Dual 8-inch ATL System bed must be elevated to achieve minimum vertical separation requirements, the area between the original grade and the Infiltrator Dual 8-inch ATL system sand shall be comprised of additional system sand.
7. Serial distribution shown. System may also be served by parallel (d-box) distribution.
8. The Dual 8-inch ATL System is intended for use in non-traffic applications.

Backfilling Options

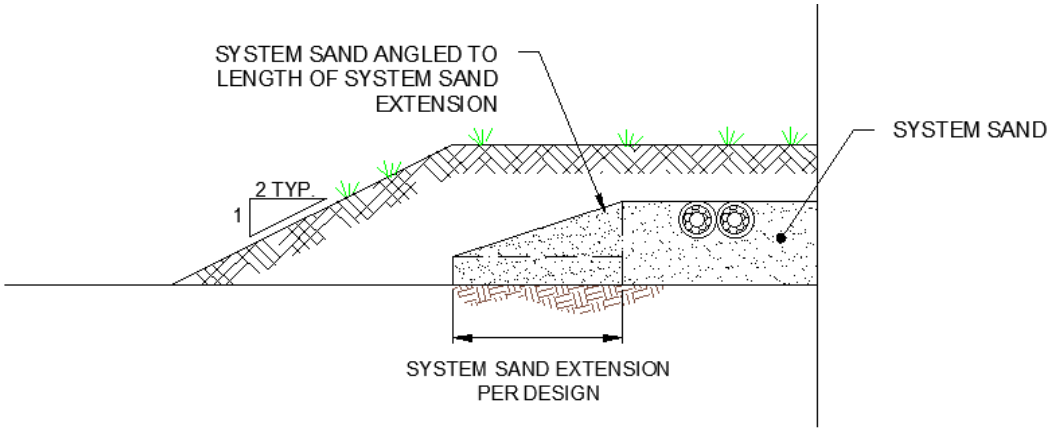
Option 1



Option 2



Option 3



System Design Process

Designing the Dual 8-inch ATL System in Jefferson County is a three-step process.

1. *Determine the minimum total Dual 8-inch ATL conduit length*
2. *Determine the minimum basal area*
3. *Locate the system sand layer (Dual 8-inch ATL conduit rows within system sand) on the basal sand area*

Step 1: Determine the minimum total ATL conduit length

Determine the minimum total length of Dual 8-inch ATL conduit from Table 1, based on the number of bedrooms for the system. The minimum length of a Dual 8-inchATL conduit row per bedroom is 70 feet.

Step 2: Determine the minimum basal area

In Table 2, determine the minimum Dual 8-inch ATL/bed loading rate. Using that loading rate, determine the minimum basal area from Table 3.

Step 3: Locate the system sand layer (ATL conduit rows within system sand) on the basal sand area

The system shall be designed as long and narrow as site conditions allow. Therefore, the number of rows of Dual 8-inch ATL conduit shall be minimized.

Level Sites:

Sites are considered level when grade is ≤ 5%. When a site is level, the system sand layer – which includes the Dual 8-inch ATL conduit rows – shall be centered on the basal sand area, with a minimum 12-inch separation between Dual 8-inch ATL rows.

Sloped Sites:

Sites are considered sloped when grade is > 5%. When a site is sloped, the system sand layer – which includes the Dual 8-inch ATL conduit rows – shall be placed on the upslope aspect of the basal sand area, with a minimum 12-inch separation between Dual 8-inch ATL rows.

Number of Bedrooms	Design Flow (gpd)	Minimum Total Dual 8-inch ATL Conduit Length (ft)
2	300	140
3	450	210
4	600	280
5	750	350
Each Additional	150	70

Table 1: Minimum required Dual 8-inch ATL conduit length

Percolation Rate (min/inch)	Soil Group U.S.D.A. Textures	Dual 8-inch ATL/Bed Loading Rate (gpd/sf)
5	**Group 1** Sand, Loamy Sand	1.50
10		1.50
15		1.50
20	**Group 2** Sandy Loam, Loam	1.00
25		1.00
30		1.00
35	**Group 3** Sandy Clay Loam, Silty Loam, Silty Clay Loam, Clay Loam	0.71
40		0.71
45		0.71
50		0.71
55		0.71
60		0.71
65	**Group 4a** Sandy Clay, Silty Clay, Clay	0.36
70		0.36
75		0.36
80		0.28
85		0.28
90		0.28
95-120	**Group 4b** High Shrink-Swell Clay, Poorly Structured Soil	0.28
121-240	**Group 5b**	Not permitted.

Table 2: Soil infiltration loading rates

Dual 8-inch ATL/Bed Loading Rate (gpd/sf)	Minimum Basal Area (sf)				
	2 Bedrooms	3 Bedrooms	4 Bedrooms	5 Bedrooms	Each Add'l Bedroom
1.50	200	300	400	500	100
1.50	200	300	400	500	100
1.50	200	300	400	500	100
1.00	300	450	600	750	150
1.00	300	450	600	750	150
1.00	300	450	600	750	150
0.71	423	634	845	1056	211
0.71	423	634	845	1056	211
0.71	423	634	845	1056	211
0.71	423	634	845	1056	211
0.71	423	634	845	1056	211
0.71	423	634	845	1056	211
0.36	834	1250	1667	2083	417
0.36	834	1250	1667	2083	417
0.36	834	1250	1667	2083	417
0.28	1072	1607	2143	2679	536

Table 3: Minimum basal area

NOTES:

1. Any system with a length greater than 100 ft must be center-fed.
2. Dual 8-inch ATL conduits are manufactured in lengths of five and ten feet. The dimensions shown above round the conduit length to the nearest 5-foot segment.
3. The system shall be designed as long and narrow as site conditions allow. Therefore, the number of rows of Dual 8-inch ATL conduit shall be minimized.
4. Multiple bed systems: where site conditions or other considerations require multiple beds, the row-specific length dimensions may be divided as follows:
    a. Center-fed configurations are recommended, with effluent distributed from the center area between the Dual 8-inch ATL conduit rows.
    b. Where a center-fed configuration is not used, the system shall be split into multiple sand beds with proportional loading between beds based on effluent flow distribution.

Example I – Level Site (Slopes Less than 5%)

Assume the following baseline specifications:

- 4-bedroom home
- 3% slope on site
- Percolation rate of 40 mpi

Step 1: Determine the minimum total Dual 8-inch ATL row length

Based on the sample system specifications and Table 1, the minimum total Dual 8-inch ATL conduit length is 280 ft.

Number of Bedrooms	Design Flow (gpd)	Minimum Total Dual 8-inch ATL Conduit Length (ft)
2	300	140
3	450	210
4	**600**	**280**
5	750	350
Each Additional	150	70

Table 1 (modified): Minimum required Dual 8-inch ATL conduit length

Step 2: Determine the minimum basal area

Referencing Table 2, at a percolation rate of 40 mpi, the soil infiltration loading rate is 0.71 gpd/sf. Using that soil infiltration loading rate and referencing Table 3, the minimum basal area is 845 sf.

Percolation Rate (min/inch)	Soil Group U.S.D.A. Textures	Dual 8-inch ATL/Bed Loading Rate (gpd/sf)
35	Group 3 Sandy Clay Loam, Silty Loam, Silty Clay Loam, Clay Loam	0.71
40		**0.71**
45		0.71
50		0.71
55		0.71
60		0.71

Table 2 (modified): Soil infiltration loading rates

ATL/Bed Loading Rate (gpd/sf)	Minimum Basal Area (sf)				
	2 Bedrooms	3 Bedrooms	4 Bedrooms	5 Bedrooms	Each Add'l Bedroom
1.50	200	300	400	500	100
1.00	300	450	600	750	150
1.00	300	450	600	750	150
1.00	300	450	600	750	150
0.71	423	634	845	1056	211
0.71	423	634	**845**	1056	211
0.71	423	634	845	1056	211

Table 3 (modified): Minimum basal area

Step 3: Locate the system sand layer (Dual 8-inch ATL rows within system sand) on the basal sand area

A minimum of 280 linear feet of Dual 8-inch ATL conduit is required (Step 1).

The minimum basal area is determined to be 845 sf (Step 2).

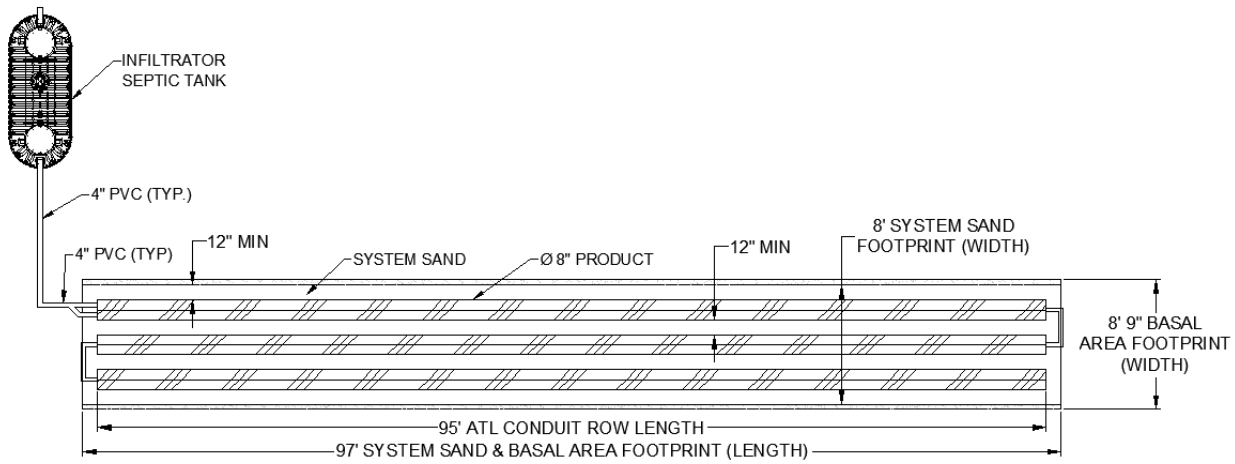
From Step 3:

Three Dual 8-inch ATL rows at 95 linear feet each meets the minimum linear feet of ATL conduit requirement (3 rows x 95 lf/row = 285 lf).

With 12 in (1 ft) of system sand between each row, and 12 in (1 ft) of system sand outside each of the outer ATL conduit rows, the width of the system sand footprint will be 8 ft, and the length will be 97 ft.

The system sand footprint is 776 sf (97 ft x 8 ft = 776 sf), which less than the minimum basal area footprint required (845 sf). The site is level, therefore the system sand footprint (8 ft x 97 ft) will be centered on the basal area footprint. To calculate the final basal area footprint configuration, divide the minimum basal area required (845 sf) by the length of the system sand footprint (97 ft) to determine the final basal area footprint width (845 sf ÷ 97 ft = 8.7 ft).

The system sand footprint (**97 ft** x **8 ft**) is centered on the basal area footprint (**97 ft** x **8.7 ft**).



Example II – Sloped Site (Slopes Greater than 5%)

Assume the following baseline specifications:

- 4-bedroom home
- 12% slope on site
- Percolation rate of 75 mpi

Step 1: Determine the minimum total ATL conduit length

Based on the sample system specifications and Table 1, the minimum total ATL conduit length is 280 ft.

Number of Bedrooms	Design Flow (gpd)	Minimum Total Dual 8-inch ATL Conduit Length (ft)
2	300	140
3	450	210
4	**600**	**280**
5	750	350
Each Additional	150	70

Table 1 (modified): Minimum required Dual 8-inch ATL conduit length

Step 2: Determine the minimum basal area

Referencing Table 2, at a percolation rate of 75 mpi, the soil infiltration loading rate is 0.36 gpd/sf. Using that soil infiltration loading rate and referencing Table 3, the minimum basal area is 1667 sf.

Percolation Rate (min/inch)	Soil Group U.S.D.A. Textures	ATL/Bed Loading Rate (gpd/sf)
65	**Group 4a** Sandy Clay, Silty Clay, Clay	0.36
70		0.36
75		**0.36**
80		0.28
85		0.28
90		0.28

Table 2 (modified): Soil infiltration loading rate

ATL/Bed Loading Rate (gpd/sf)	Minimum Basal Area (sf)			
	3 Bedrooms	4 Bedrooms	5 Bedrooms	Each Add'l Bedroom
0.36	1250	1667	2083	417
0.36	1250	1667	2083	417
0.36	1250	**1667**	2083	417
0.28	1607	2143	2679	536

Table 3 (modified): Minimum basal area

Step 3: Locate the system sand layer (Dual 8-inch ATL rows within system sand) on the basal sand area

A minimum of 280 linear feet of Dual 8-inch ATL conduit is required (Step 1).

The minimum basal area is determined to be 1667 sf (Step 2).

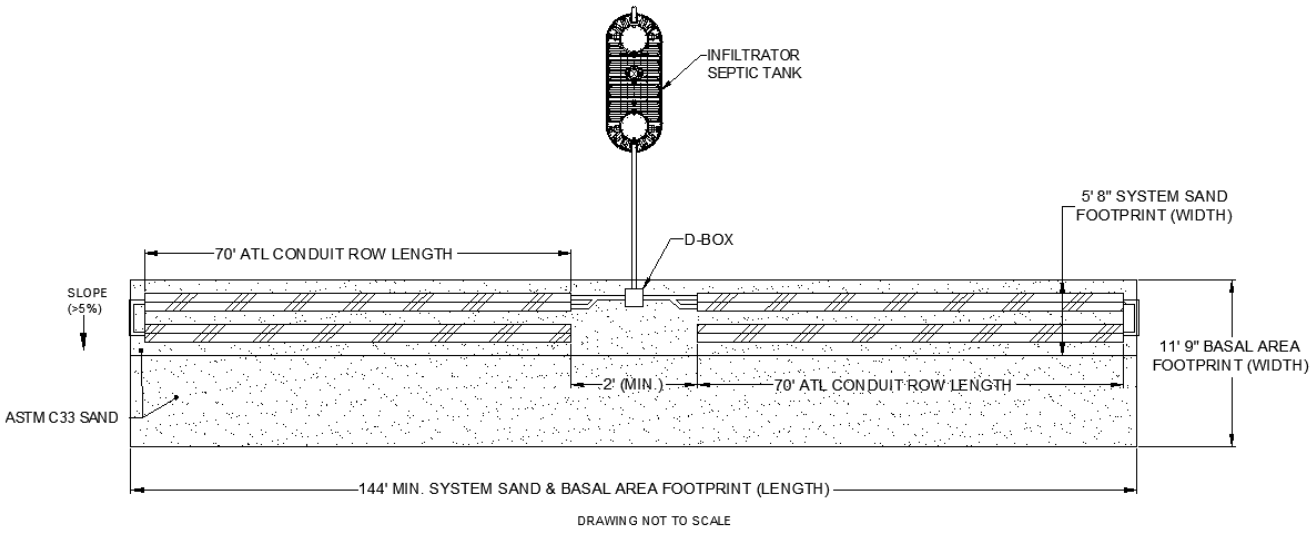
From Step 3:

Two Dual 8-inch ATL rows at 140 lf each meets the minimum linear feet of ATL conduit requirement (280 lf).

With 12 in (1 ft) of system sand between each row, and 12 in (1 ft) of system sand outside each of the outer ATL conduit rows, the width of the system sand footprint will be 5 ft 8 in, and the length will be 142 ft.

The system sand footprint is 805 sf (5 ft 8 in x 142 ft = 805 sf), which less than the minimum basal area footprint required (1667 sf). The site is sloped, therefore the system sand footprint (5 ft 8 in x 142 ft) will be fully located on the upslope side of the basal area footprint. To calculate the final basal area footprint configuration, divide the minimum basal area required (1667 sf) by the length of the system sand footprint (142 ft) to determine the final basal area footprint width (1667 sf ÷ 142 ft = 11.7 ft).

The system sand footprint (**142 ft** x **5 ft 8 in**) is located on the upslope side of the basal area footprint (**142 ft** x **11.7 ft**).


INFILTRATOR
SEPTIC TANK
5' 8" SYSTEM SAND
FOOTPRINT (WIDTH)
D-BOX
70' ATL CONDUIT ROW LENGTH
SLOPE
(>5%)
11' 9" BASAL AREA
FOOTPRINT (WIDTH)
2' (MIN.)
70' ATL CONDUIT ROW LENGTH
ASTM C33 SAND
144' MIN. SYSTEM SAND & BASAL AREA FOOTPRINT (LENGTH)
DRAWING NOT TO SCALE

Basic rules of onsite sewage treatment system use and care apply to the Dual 8-inch ATL System. System owners shall operate the system in accordance with the Rules, and the following:

System Use and Abuse

Your Dual 8-inch ATL System is intended for use with residential-strength wastewater within the design daily flow volume. To ensure long-term function of your system:

- Keep daily wastewater flow within design parameters.
  - Do not connect the rainwater management system to the ATL System.
  - Direct water from the rainwater management system away from the ATL System.
- Introduce only normal residential wastewater into the system.
  - Solvents, paint, pharmaceuticals, aggressive cleaning products, and non-biodegradable items should not enter the ATL System.
  - Solids, such as but not limited to, cigarette butts, diapers, feminine hygiene products, cat litter, and paper towels should not be introduced into the ATL System.
- Maintain leak-free household plumbing fixtures, such as faucets and toilets.
- Do not utilize a garbage grinder.
- The Dual 8-inch ATL System is intended for use in non-traffic applications. Therefore,
  - Do not allow heavy equipment or vehicles to drive over the system.
  - Install protections to prevent exposure of the system to inadvertent heavy equipment or vehicular loading.
  - Do not build structures on top of the system.

Operation and Maintenance

Your Dual 8-inch ATL System has no specific operating instructions. Proper use of the system as noted above is the primary operating concern.

Maintenance of the Dual 8-inch ATL System includes the following:

- If the septic tank has an effluent filter, it should be cleaned by a qualified maintenance provider on an annual basis, or more frequently as conditions require.
- The septic tank should be pumped on a regular basis and, if concrete, checked for leaks and cracks. The interval for septic tank pumping varies depending upon use. Check with a qualified onsite wastewater system professional or your local health department for the appropriate pumping interval.
- If present, the alarm system should be tested annually by the homeowner to ensure that it is functional if one is included in the system.

If at any time you have concerns about the use, operation, or maintenance of your Dual 8-inch ATL System, contact the Infiltrator Technical Department at 1-800-221-4436.

System Start-up

There are no specific requirements for placing the Dual 8-inch ATL System into service. If the system has an alarm, the property owner should, after system use has been initiated, test the alarm to ensure it is functional.

Intermittent Use

The Dual 8-inch ATL System is designed for intermittent use, and requires no special attention if it is to be placed out of use for extended periods of time.

Trouble Shooting

In the event that any of the following indicators arise, contact a qualified onsite wastewater system professional.

- Wastewater back-up into the dwelling
- Persistent septic odor
- Unusually wet area atop and/or around the system
- “Ponding” of effluent on the lawn
- “Breakout” of effluent along the side of a slope or other landscape feature

Repair

A qualified onsite wastewater system professional shall be contacted when there are indications of malfunction with the Dual 8-inch ATL System. When visiting the site, the qualified onsite wastewater system professional should, at a minimum, do the following:

- Assess the present condition of the Dual 8-inch ATL System and the surrounding area
- Research the history of use, including:
    - water volume use
    - contaminants
- Evaluate the site for groundwater intrusion
- Inspect the septic tank
- Inspect the Dual 8-inch ATL System conduit lines
- Check faucet and toilet function

Upon completion of the site visit, the qualified onsite wastewater system professional should contact the Infiltrator Technical Department or an authorized Infiltrator representative with his or her report.

These installation instructions are for the Dual 8-inch ATL System in Jefferson County. Dual 8-inch ATL Systems may only be installed according to this manual and local health department requirements where applicable.

If unsure of the installation requirements for a site, contact Jefferson County Department of Health. If unsure of the use of the Dual 8-inch ATL System, contact Infiltrator. The soil and site evaluation and the design of the onsite system must be reviewed, and a construction permit obtained from the local health department before installation.

Before You Begin

Materials and Equipment Needed

- ☐ Infiltrator ATL System conduits
- ☐ System sand
- ☐ PVC pipe and couplings
- ☐ Backhoe
- ☐ Laser, transit or level
- ☐ Shovel and rake
- ☐ 4-inch inspection port and cap
- ☐ Endcaps
- ☐ Infiltrator ATL System conduit internal pipe couplers
- ☐ Tape measure

Common practices shall apply to the installation of the ATL System. These include, but are not limited to:

- ☐ avoid soil compaction on the infiltrative surface area, including all areas downslope of a sloped system;
- ☐ use a tracked vehicle for material installation;
- ☐ avoid installation during wet periods; and
- ☐ install the Infiltrator ATL System conduit and system sand on the same day that the system footprint is excavated/exposed.

Excavating and Preparing the Site

NOTE: *The ATL System may not be installed during periods when the soil is sufficiently wet to exceed its plastic limit, as this causes machinery to smear the soil.*

1. Stake out the locations of tank(s), pipes, conduit rows, and corners of the system to be tilled/excavated, per the design. Set the elevations as shown on the approved plan. ***NOTE:*** *The proper elevation of solid PVC header line going to each ATL conduit row should be determined to ensure compliance with the required system bottom depth as shown on the approved permit. This height may vary dependent on system height and configuration used.*
2. Install sedimentation and erosion control measures.

   NOTE: *The installation of temporary drainage swales/berms (surface diversions) may be necessary to protect the site during rainfall events.*
3. For below-natural-ground system applications:
   (a) Excavate the bed area or till the ground as per the design.
   (b) Rake the bed bottom and sides (when applicable) if smearing has occurred during excavation. Remove large stones and protruding roots.

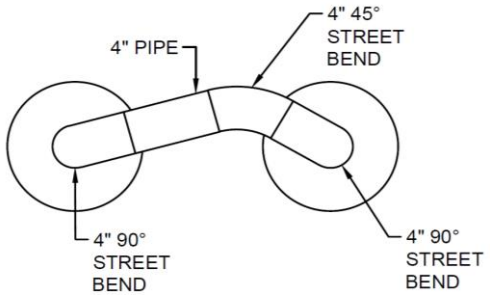
   NOTE*: Smearing does not occur in sandy soils, so raking is not necessary. In fine textured soils (silts and clays), avoid walking on the excavation bottom to prevent compaction and loss of soil structure.*
4. For elevated system applications:
   (a) All vegetation shall be cut close to the ground and removed from the site. Stumps, roots, sod, topsoil and boulders shall not be removed.
   (b) Installation shall take place from the upslope side, and contact with the basal infiltrative surface area and downslope side of the system should be avoided, where applicable.
   (c) The basal infiltrative surface of the system shall be prepared according to site conditions to maximize the infiltrative capacity of the soil surface.
   (d) Any scarification of the basal infiltrative surface shall be conducted along the contour, where applicable.

(e) Sand may be incorporated into the basal infiltrative area during the preparation process, and may be placed along the entire basal infiltrative surface area to prevent damage from precipitation or foot traffic.

5. Verify that the bed area is at the proper slope from side-to-side and from end-to-end using a level, transit, or laser.

Installing the System

1. Install the system sand basal layer over the entire ATL System basal area footprint as per design. System sand should be leveled and stabilized prior to introduction of the ATL conduit. Installer should retain records verifying that system sand meets ASTM C33 requirements.
2. Remove plastic stretch wrap from ATL conduits.
3. Place ATL conduits on the surface of the system sand in the configuration shown on the system design. Using the provided 4-inch-diameter internal pipe couplings, connect the ATL conduits end-to-end to create rows of the required length.
4. ATL conduit shall be installed level. A laser level or transit is recommended to ensure proper alignment.
5. ATL conduit rows shall be:
   - installed level end-to-end;
   - be installed parallel to any contours; and
   - be separated by a minimum of 12 inches of system sand.
6. In serial distribution applications, use of a raised connection is required. One example of a raised connection is shown below.
7. Install a cap on the end of each ATL conduit row that is not connected with piping.



8. Once the ATL conduit is placed on the surface of the system sand and distribution piping is connected to the conduits per design, additional system sand shall be ladled between and to the top of each of the ATL conduit rows. System sand shall also be installed on each side and at each end of the backfilled ATL conduit rows, per the design. This additional system sand shall be stabilized.

Installing Observation/Monitoring Ports

Observation or monitoring ports are optional in each Dual 8-inch ATL System design.

1. Cut a 4-inch Schedule 40 or SDR 35 pipe to the desired length, ensuring the pipe will extend a minimum of 6 inches above final grade.
2. Drill a minimum of ten ¼" to ½" holes within ½ to 6 inches of the bottom of the pipe and wrap the bottom end of the pipe in filter fabric.
3. Install the monitoring pipe at the appropriate location, based on site conditions, and ensure the bottom of the pipe is at the bottom of the system sand footprint (at the system sand/native soil interface).
4. Install a removable, water-tight, secure cover cap.

Covering the System

1. The Dual 8-inch ATL System was tested, and is approved for use in Jefferson County, with a minimum of 4 inches of topsoil after settling.
2. Material placed around the system sand and atop the Dual 8-inch ATL row may be additional system sand or material which meets the requirements of the Rules. However, the final 4 inches placed atop or adjacent to the ATL System shall be comprised of material that will sustain plant growth.
3. Backfill the bed by pushing material over the Dual 8-inch ATL System. It is best to mound several extra inches of soil over the finish grade to allow for settling. This also ensures that runoff is diverted away from the system.
4. After the system is covered, the site should be seeded or sodded to prevent erosion.
5. The maximum depth of cover over the Dual 8-inch ATL System is 4 feet.

NOTE: *If the system is for new home construction, it is important to leave marking stakes along the boundary of the system. This will notify contractors of the system location so they will not cross it with equipment or vehicles.*

INFILTRATOR WATER TECHNOLOGIES, LLC ("Infiltrator")
ATL SYSTEM STANDARD LIMITED WARRANTY

(a) The structural integrity of the Infiltrator ATL System conduits manufactured by Infiltrator (collectively referred to as "Units"), when installed and operated in a leachfield of an onsite septic system in accordance with Infiltrator's installation instructions, is warranted to the original purchaser ("Holder") against defective materials and workmanship for two years from the date upon which a septic permit is issued for the septic system containing the Units; provided, however, that if a septic permit is not required for the septic system by applicable law, the two (2) year warranty period will begin upon the date that installation of the septic system commences. In order to exercise its warranty rights, Holder must notify Infiltrator in writing at its corporate headquarters in Old Saybrook, Connecticut within fifteen (15) days of the alleged defect. Infiltrator will supply replacement Units for those Units determined by Infiltrator to be defective and covered by this Limited Warranty. Infiltrator's liability specifically excludes the cost of removal and/or installation of the Units.

(b) THE LIMITED WARRANTY AND REMEDIES IN SUBPARAGRAPH (a) ARE EXCLUSIVE. THERE ARE NO OTHER WARRANTIES WITH RESPECT TO THE UNITS, INCLUDING NO IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

(c) This Limited Warranty shall be void if any part of the ATL System components is manufactured by anyone other than Infiltrator. The Limited Warranty does not extend to incidental, consequential, special or indirect damages. Infiltrator shall not be liable for penalties or liquidated damages, including loss of production and profits, labor and materials, overhead costs, or other losses or expenses incurred by the Holder or any third party. Specifically excluded from Limited Warranty coverage are damage to the Units due to ordinary wear and tear, alteration, accident, misuse, abuse or neglect of the Units; the Units being subjected to vehicle traffic or other conditions which are not permitted by the installation instructions; failure to maintain the minimum ground covers set forth in the installation instructions; the placement of improper materials into the system containing the Units; failure of the Units or the septic system due to improper siting or improper sizing, excessive water usage, improper grease disposal, or improper operation; or any other event not caused by Infiltrator. This Limited Warranty shall be void if the Holder fails to comply with all of the terms set forth in this Limited Warranty.

Further, in no event shall Infiltrator be responsible for any loss or damage to the Holder, the Units, or any third party resulting from installation or shipment, or from any product liability claims of Holder or any third party. For this Limited Warranty to apply, the Units must be installed in accordance with all site conditions required by state and local codes; all other applicable laws; and Infiltrator's installation instructions.

(d) No representative of Infiltrator has the authority to change this Limited Warranty in any manner whatsoever, or to extend this Limited Warranty. No warranty applies to any party other than the original Holder.

* * * * * * *

The above represents the standard Limited Warranty offered by Infiltrator. A limited number of states and counties have different warranty requirements. Any purchaser of Units should contact Infiltrator's corporate headquarters in Old Saybrook, Connecticut, prior to such purchase, to obtain a copy of the applicable warranty, and should carefully read that warranty prior to the purchase of Units.

INFILTRATOR®
water technologies

P.O. Box 768 • Old Saybrook, CT 06475
800-221-4436