Howard County Health Department

Bureau of Environmental Health
8930 Stanford Boulevard, Columbia, MD 21045
Main: 410-313-2640 | Fax: 410-313-2648
TDD 410-313-2323 | Toll Free 1-866-313-6300
www.hchealth.org
Facebook: www.facebook.com/hocohealth

Maura J. Rossman, M.D., Health Officer

RECEIPT DATE: 12/29/23

ONSITE SEWAGE DISPOSAL SYSTEM PERMIT: NEW CONSTRUCTION

P 5757750

APPROVAL DATE: _____

A _____

PROPERTY ADDRESS: 1680 Woodstock Road

SUBDIVISION: _____ LOT: _____ TAX ID: _____

CONTRACTOR: Fogles Septic Clean Inc. EMAIL: Kim@foglesinc.com

CONTRACTOR ADDRESS: 580 Obrecht Rd, Sykesville, MD 21784 PHONE: 410-795-5670

PROPERTY OWNER: Press Palmer EMAIL: _____

OWNER ADDRESS: 1680 Woodstock Road, Woodstock, MD 21163 PHONE: _____

SEPTIC TANK SIZE (GALLONS): ~~2000 GAL~~ 1500 TANK MANUFACTURER: ~~Babylon~~ Infiltrator (IM-1530)

PUMP MODEL: N/A Zoeller 151 PUMP SIZE N/A PUMP TANK CAPACITY: ~~N/A~~ 1500 (Infiltrator IM-1530)

DISTRIBUTION SYSTEM: ☒ Pump to GRAVITY ☐ PRESSURE DOSED BEDROOMS: 6 APPLICATION RATE: 1.2

TRENCHES:	LINEAR FEET REQUIRED: 76(1 new line for upgrade)	INLET DEPTH: 3.5	
	TRENCH WIDTH: 3	MAXIMUM BOTTOM DEPTH: 7	
	MINIMUM SPACE BETWEEN TRENCHES: 15-18	EFFECTIVE AREA BEGINNING DEPTH: 3.5	
LOCATION:	**PER APPROVED SITE PLAN. SEWAGE DISPOSAL AREA AND TANK LOCATIONS MUST BE STAKED BY LICENSED SURVEYOR PRIOR TO PRE-CONSTRUCTION INSPECTION.**		
NOTES:	***Existing 1500-Gal tank needs to be properly pumped, abandoned, and disconnected. Upgrade trench needs to be installed in same manner as original trench per newly approved OSDS plan, which will include a bend in the trench orientation during installation. (SEE PLAN) *** * Make sure plastic tanks are stabilized & secure * * Pump, Alarm, & Electrical checks Required		

ISSUED BY: Zack Silvast ISSUE DATE: 12/29/23 EXPIRATION DATE: 12/29/24

NOTE: CONTRACTOR MUST SCHEDULE A PRE-CONSTRUCTION INSPECTION PRIOR TO BEGINNING ANY INSTALLATION

NOTE: CONTRACTOR MUST SCHEDULE AN INSPECTION AND GAIN APPROVAL OF ALL COMPONENTS PRIOR TO COVERING

NOTE: STONE MUST BE APPROVED BY HEALTH DEPARTMENT AND GRAVEL TICKET MUST BE AVAILABLE FOR REVIEW.

NOTE: WATERTIGHT TANKS REQUIRED

NOTE: ALL PARTS OF SEPTIC SYSTEM SHALL BE AT LEAST 100 FEET DOWNGRADIENT FROM ANY WATER WELL

NOTE: MANHOLE RISERS REQUIRED ON ALL SEPTIC TANKS AND PUMP CHAMBERS

NOTE: AN ELECTRICAL PERMIT IS REQUIRED FOR INSTALLATION OF ANY ELECTRICAL COMPONENTS OF THE SYSTEM

☒ *ELECTRICAL PERMIT ISSUED* E ~~N/A~~ 24002828

NOTE: MDE RECOMMENDS SEPTIC TANKS, BAT, AND OTHER PRETREATMENT UNITS BE PUMPED AT A FREQUENCY ADEQUATE TO ENSURE THAT SOLIDS ARE NOT DISCHARGED TO THE DISPOSAL AREA

NEITHER THE HOWARD COUNTY COUNCIL NOR THE HEALTH DEPARTMENT IS RESPONSIBLE FOR THE SUCCESSFUL OPERATION OF ANY SYSTEM.

PERMITTEE RESPONSIBLE FOR OBTAINING FINAL APPROVAL ON THIS PERMIT.

CALL 410-313-1771 TO SCHEDULE INSPECTIONS.

NOT TO SCALE

ROAD NAME

TRENCH/DRAINFIELD DATA

WIDTH	INLET	BOTTOM
3'	3.5'	7'

NUMBER OF TRENCHES 1 ex + 1 new

TOTAL LENGTH 75'

ABSORPTION AREA 225' + Sidewall

DISTRIBUTION BOX LEVEL —

DISTRIBUTION BOX BAFFLE yes

DISTRIBUTION BOX PORT yes

SEPTIC TANK DATA

SEPTIC TANK 1 LEVEL yes

MANUFACTURER Infiltrator

CAPACITY 1500 GAL

SEAM LOC —

TANK LID DEPTH 1.5'-1'

BAFFLES 6" Front & 4" back

BAFFLE FILTER —

MANHOLE LOC Front & back

6" PORT LOC —

WATERTIGHT TEST —

SLOTTED

DATE ON LID —

PUMP/SEPTIC TANK LEVEL yes

MANUFACTURER Infiltrator

CAPACITY 1500 GAL

SEAM LOC —

TANK LID DEPTH 1.5'-1'

BAFFLES —

BAFFLE FILTER —

MANHOLE LOC Front & back

6" PORT LOC —

WATERTIGHT TEST —

SLOTTED —

DATE ON LID —

SEPTIC CONTRACTOR ONSITE INSTALLING SYTEM: Ricky Colson -> Mike

SEPTIC CONTRACTOR ONSITE LICENSED WITH THE STATE OF MD: (YES) NO

CONTROL PANEL DATA

CONTROL PANEL HEIGHT ______ (MIN 30")

INSPECTION DATE ______

INSPECTION: PASS/FAIL (CIRCLE ONE)

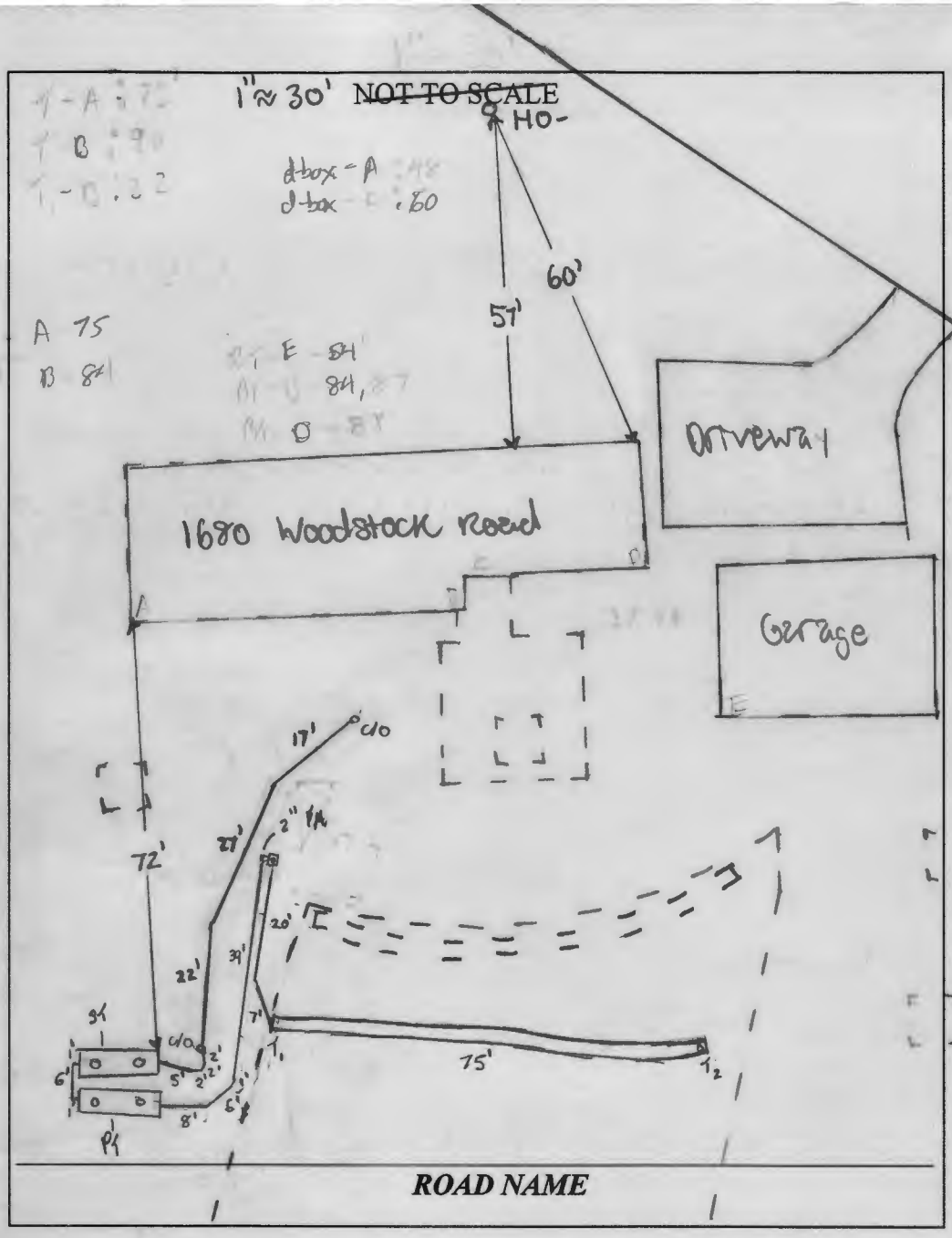
PRE-CONSTRUCTION NOTES:

1/8/24 - Met contractor onsite, tight lot to work in, the plan calls for the new 2000 gal. tank to replace the 1500 gal ST and will go in the same location, we laid out 1 trench @ 76' along contour but it's not exactly in the same location as the plan, the trench is 18'-20' away from existing trench, also the new trench location has a swale running through it at 20'-30' into the proposed trench [illegible] see file inquiry for 6/6/2024 layout (SPTMB)

INSTALLATION NOTES:

6/7/2024 - Installer not onsite. Reinspect for install (SPTMB) 6/10/2024 - Installer fell into septic tank, not onsite. Plastic tanks installed w/ stone dust. Plastic tanks pumped w/ sewage from old concrete tank. Pump tank not filled. (SPTMB) 6/11/2024 - Installer onsite for inspection. Old concrete tank abandoned. SCHD 40 PVC installed @ front line, adequate fill. 2 c/o's seen. 7' of FM sleeved w/ 4" PVC. FM is 2" SCHD 40 280 PSI. ok to backfill (SPTMB) 6/12/2024 - Trench inlet @ 3.5', width @ 3', length @ 75'. stone & fabric ok. Reinspect for P&A (SPTMB)

FINAL INSPECTOR ______________________. DATE OF APPROVAL ______________________.



TRENCH/DRAINFIELD DATA

WIDTH	INLET	BOTTOM
3'	3.5'	7

NUMBER OF TRENCHES 1 new & 1 ex.
TOTAL LENGTH 75
ABSORPTION AREA _____
DISTRIBUTION BOX LEVEL —
DISTRIBUTION BOX BAFFLE yes
DISTRIBUTION BOX PORT yes

SEPTIC TANK DATA

SEPTIC TANK 1 LEVEL yes
MANUFACTURER _____
CAPACITY _____ GAL
SEAM LOC —
TANK LID DEPTH 1.5'-1'
BAFFLES 6" Front & 4" back
BAFFLE FILTER —
MANHOLE LOC Front & back
6" PORT LOC —
WATERTIGHT TEST —
SLOTTED _____
DATE ON LID —

PUMP/SEPTIC TANK LEVEL yes
MANUFACTURER _____
CAPACITY _____ GAL
SEAM LOC _____
TANK LID DEPTH 1.5'-1'
BAFFLES —
BAFFLE FILTER _____
MANHOLE LOC Front & back
6" PORT LOC —
WATERTIGHT TEST —
SLOTTED —
DATE ON LID —

SEPTIC CONTRACTOR ONSITE INSTALLING SYTEM: Mike
SEPTIC CONTRACTOR ONSITE LICENSED WITH THE STATE OF MD (YES) NO

CONTROL PANEL DATA

CONTROL PANEL HEIGHT _____ (MIN 30")
INSPECTION DATE _____
INSPECTION: PASS/FAIL (CIRCLE ONE)

PRE-CONSTRUCTION NOTES:

6/6/2024. Met with installer on site. Septic and pump tanks staked per plan
TDA staked per plan. Could not locate existing trench. Installer locating existing trench same day. New trench length at 76' per plan with 2" difference in elevation. OK to set tanks. Re-inspect for existing trench location. (SP/MB)
6/7/24 Installer not working site today. Reinspect for tank install (MB/SP)

INSTALLATION NOTES:

6/10/2024 Installer not on site due to failing into septic tank. Plastic tanks installed with stone dust. Plastic Septic tank filled with sewage. Plastic pump tank has not been filled. (MB/SP)
6/11/2024 - Installer onsite for inspection. Old septic tank abandoned. SCH40 PVC installed @ front line, enough fall. 2 c/o seen. 7' of FM sleeved w/ 4" PVC. FM is 2" SCH 40 280 PSI PVC. OK to backfill. (SP/MB).
6/12/2024 - Trench inlet @ 3.5, width @ 3'. Stone & Fabric OK, Reinspect for P+A (SP/MB)

FINAL INSPECTOR _____. DATE OF APPROVAL _____.

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Maura J. Rossman, M.D., Health Officer

RECEIPT DATE: 1/2/2024 **ONSITE SEWAGE DISPOSAL SYSTEM** P 575750

APPROVAL DATE: _____ **PERMIT: UPGRADE** A _____

PROPERTY ADDRESS: 1680 Woodstock Road

SUBDIVISION: _____ LOT: _____ TAX ID: _____

CONTRACTOR: Fogles Septic Clean Inc EMAIL: Kim@foglesinc.com

CONTRACTOR ADDRESS: 580 Obrecht Road, Sykesville 21784 PHONE: 410-872-5670

PROPERTY OWNER: Press Scott Palmer and Maria Aliprando EMAIL: _____

OWNER ADDRESS: 1680 Woodstock Road, Woodstock, MD 21163 PHONE: _____

SEPTIC TANK SIZE:	1500 GAL (Infiltrator IM-1530)	PUMP SIZE:	Zoeller 151	PUMP TANK CAPACITY:	1500 GAL (Infiltrator IM-1530)

DISTRIBUTION SYSTEM: ☒ PUMP to GRAVITY ☐ DRIP DISPERSE BEDROOMS: 6 APPLICATION RATE: 1.2

TRENCHES:	LINEAR FEET REQUIRED: 76	INLET DEPTH: 3.5'	
	TRENCH WIDTH: 3'	MAXIMUM BOTTOM DEPTH: 7'	
	MINIMUM SPACE BETWEEN TRENCHES: 15-18'	EFFECTIVE AREA BEGINNING DEPTH: 3.3'	
LOCATION:	**SYSTEM TO BE STAKED BY DESIGNER AND VERIFIED BY APPROVING AUTHORITY DURING PRE-CONSTRUCTION INSPECTION.**		
NOTES:	Install system per approved design plans. **Make sure plastic tanks are stabilized & secure** **Pump, Alarm, and Electrical Checks Required**	Abandon old septic tank	

ISSUED BY: **Zack Silvast, L.E.H.S.** ISSUE DATE: 5/31/2024 EXPIRATION DATE: 5/31/2025

NOTE: **CONTRACTOR MUST SCHEDULE A PRE-CONSTRUCTION INSPECTION PRIOR TO BEGINNING ANY INSTALLATION**

NOTE: CONTRACTOR REGISTERED WITH THE STATE OF MD ON-SITE WASTEWATER PROFESSIONALS BOARD: CONFIRMED ☐

NOTE: CONTRACTOR MUST SCHEDULE AN INSPECTION AND GAIN APPROVAL OF ALL COMPONENTS PRIOR TO COVERING

NOTE: STONE MUST BE APPROVED BY HEALTH DEPARTMENT AND GRAVEL TICKET MUST BE AVAILABLE FOR REVIEW.

NOTE: WATERTIGHT SEPTIC TANKS REQUIRED

NOTE: ALL PARTS OF SEPTIC SYSTEM SHALL BE AT LEAST 100 FEET DOWNGRADIENT FROM ANY WATER WELL

NOTE: MANHOLE RISERS REQUIRED ON ALL SEPTIC TANKS AND PUMP CHAMBERS

NOTE: **AN ELECTRICAL PERMIT IS REQUIRED FOR INSTALLATION OF ANY ELECTRICAL COMPONENTS OF THE SYSTEM**

☒ *ELECTRICAL PERMIT ISSUED* E 24002828

NOTE: **THE HCHD DOES NOT WARRANTY ANY SYSTEM AND CANNOT GUARANTEE THE PERFORMANCE OF THIS SYSTEM AS DESIGNED. BY ACCEPTING THIS PERMIT, THE OWNER AND/OR APPLICANT ACKOWLEDGE THAT THE SPECIFICATIONS DETAILED IN THIS DESIGN ARE ONE POSSIBLE OPTION AND THAT THE HCHD WILL REVIEW OTHER PROPOSALS. YOU HAVE THE OPTION TO SEEK THE ADVICE OF A QUALIFIED DESIGN CONSULTANT OR PROFESSIONAL ENGINEER FOR FURTHER GUIADNCE.**

NOTE: **AN INDIVIDUAL CERTIFIED BY MDE AND THE MANUFACTURER FOR BAT INSTALLATION MUST BE PRESENT AT ALL TIMES DURING BAT INSTALLATION.**

NOTE: **MDE RECOMMENDS SEPTIC TANKS, BAT, AND OTHER PRETREATMENT UNITS BE PUMPED AT A FREQUENCY ADEQUATE TO ENSURE THAT SOLIDS ARE NOT DISCHARGED TO THE DISPOSAL AREA**

NEITHER THE HOWARD COUNTY COUNCIL NOR THE HEALTH DEPARTMENT IS RESPONSIBLE FOR THE SUCCESSFUL OPERATION OF ANY SYSTEM.

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Maura J. Rossman, M.D., Health Officer

RECEIPT DATE: 1/2/2024 **ONSITE SEWAGE DISPOSAL SYSTEM** P 575750

APPROVAL DATE: 6/21/24 (SIMS) **PERMIT: UPGRADE** A

PROPERTY ADDRESS: 1680 Woodstock Road

SUBDIVISION: LOT: TAX ID:

CONTRACTOR: Fogle's Septic Clean Inc EMAIL: Kim@fogleinc.com

CONTRACTOR ADDRESS: 580 Obrecht Road, Sykesville 21784 PHONE: 410-872-5670

PROPERTY OWNER: Press Scott Palmer and Maria Aliprando EMAIL:

OWNER ADDRESS: 1680 Woodstock Road, Woodstock, MD 21163 PHONE:

SEPTIC TANK SIZE: 1500 GAL (Infiltrator IM-1530) PUMP SIZE: Zoeller 151 PUMP TANK CAPACITY: 1500 GAL (Infiltrator IM-1530)

DISTRIBUTION SYSTEM: ☒ PUMP to GRAVITY ☐ DRIP DISPERSE BEDROOMS: 6 APPLICATION RATE: 1.2

TRENCHES:	LINEAR FEET REQUIRED: 76	INLET DEPTH: 3.5'	
	TRENCH WIDTH: 3'	MAXIMUM BOTTOM DEPTH: 4'	
	MINIMUM SPACE BETWEEN TRENCHES: 5'	EFFECTIVE AREA BEGINNING DEPTH: 3.3'	
LOCATION:	**SYSTEM TO BE STAKED BY DESIGNER AND VERIFIED BY APPROVING AUTHORITY DURING PRE-CONSTRUCTION INSPECTION.**		
NOTES:	Install system per approved design plans. **Make sure plastic tanks are stabilized & secure** **Pump, Alarm, and Electrical Checks Required**	Abandon old Septic Tank	

ISSUED BY: **Zack Silvast, L.E.H.S.** ISSUE DATE: 5/31/2024 EXPIRATION DATE: 5/31/2025

NOTE: CONTRACTOR MUST SCHEDULE A PRE-CONSTRUCTION INSPECTION PRIOR TO BEGINNING ANY INSTALLATION

NOTE: CONTRACTOR REGISTERED WITH THE STATE OF MD ON-SITE WASTEWATER PROFESSIONALS BOARD: CONFIRMED ☐

NOTE: CONTRACTOR MUST SCHEDULE AN INSPECTION AND GAIN APPROVAL OF ALL COMPONENTS PRIOR TO COVERING

NOTE: STONE MUST BE APPROVED BY HEALTH DEPARTMENT AND GRAVEL TICKET MUST BE AVAILABLE FOR REVIEW.

NOTE: WATERTIGHT SEPTIC TANKS REQUIRED

NOTE: ALL PARTS OF SEPTIC SYSTEM SHALL BE AT LEAST 100 FEET DOWNGRADIENT FROM ANY WATER WELL

NOTE: MANHOLE RISERS REQUIRED ON ALL SEPTIC TANKS AND PUMP CHAMBERS

NOTE: AN ELECTRICAL PERMIT IS REQUIRED FOR INSTALLATION OF ANY ELECTRICAL COMPONENTS OF THE SYSTEM

☒ *ELECTRICAL PERMIT ISSUED* E 24002828

NOTE: THE HCHD DOES NOT WARRANTY ANY SYSTEM AND CANNOT GUARANTEE THE PERFORMANCE OF THIS SYSTEM AS DESIGNED. BY ACCEPTING THIS PERMIT, THE OWNER AND/OR APPLICANT ACKOWLEDGE THAT THE SPECIFICATIONS DETAILED IN THIS DESIGN ARE ONE POSSIBLE OPTION AND THAT THE HCHD WILL REVIEW OTHER PROPOSALS. YOU HAVE THE OPTION TO SEEK THE ADVICE OF A QUALIFIED DESIGN CONSULTANT OR PROFESSIONAL ENGINEER FOR FURTHER GUIADNCE.

NOTE: AN INDIVIDUAL CERTIFIED BY MDE AND THE MANUFACTURER FOR BAT INSTALLATION MUST BE PRESENT AT ALL TIMES DURING BAT INSTALLATION.

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PERMITTEE RESPONSIBLE FOR OBTAINING FINAL APPROVAL ON THIS PERMIT.

CALL 410-313-1771 TO SCHEDULE INSPECTIONS.

NOT TO SCALE

Sees seprate

Sheet For

As-built

ROAD NAME

TRENCH/DRAINFIELD DATA

WIDTH	INLET	BOTTOM
3'	3.5'	7'

NUMBER OF TRENCHES 1 ex + 1 new

TOTAL LENGTH 75'

ABSORPTION AREA 225' + Sidewall

DISTRIBUTION BOX LEVEL —

DISTRIBUTION BOX BAFFLE yes

DISTRIBUTION BOX PORT yes

SEPTIC TANK DATA

SEPTIC TANK 1 LEVEL yes

MANUFACTURER Infiltrator

CAPACITY 1500 GAL

SEAM LOC —

TANK LID DEPTH 1.5' - 1'

BAFFLES 6" Front + 4" back

BAFFLE FILTER —

MANHOLE LOC Front + back

6" PORT LOC —

WATERTIGHT TEST —

SLOTTED

DATE ON LID —

PUMP/SEPTIC TANK LEVEL yes

MANUFACTURER Infiltrator

CAPACITY 1500 GAL

SEAM LOC —

TANK LID DEPTH 1.5' - 1'

BAFFLES —

BAFFLE FILTER —

MANHOLE LOC Front + back

6" PORT LOC —

WATERTIGHT TEST —

SLOTTED —

DATE ON LID —

SEPTIC CONTRACTOR ONSITE INSTALLING SYTEM: Ricky Colson -> Mike

SEPTIC CONTRACTOR ONSITE LICENSED WITH THE STATE OF MD: (YES)/NO

CONTROL PANEL DATA

CONTROL PANEL HEIGHT ~ 5'
(MIN 30")

INSPECTION DATE 6/21/24

INSPECTION (PASS)/FAIL (CIRCLE ONE)

PRE-CONSTRUCTION NOTES:

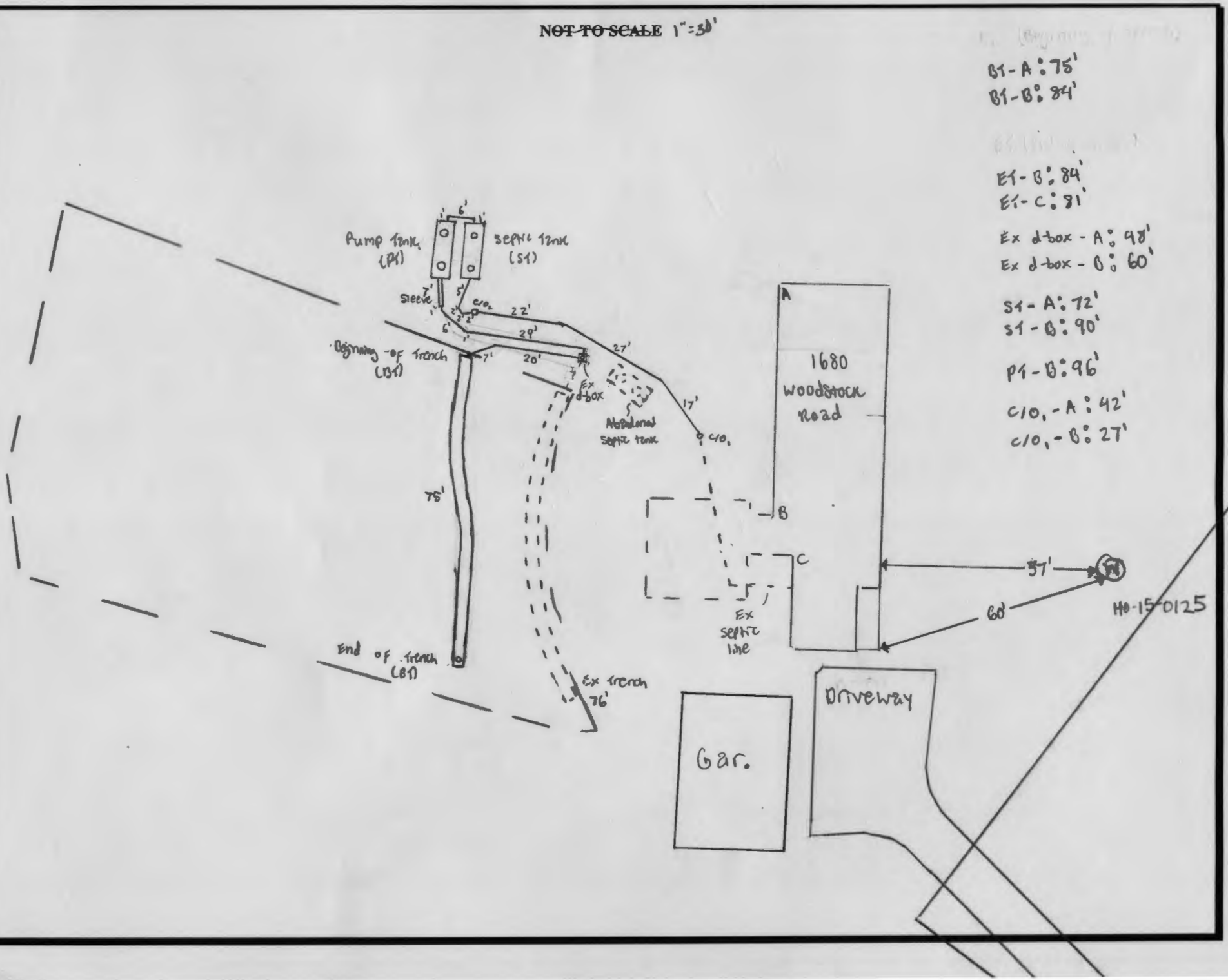
1/8/24 - Met contractor onsite, tight lot to work in, the plan calls for the new 2000 gal tank to replace the 1500 gal ST and will go in the same location, we laid out 1 trench @ 76' along Contour but it's not exactly in the same location as the plan, the trench is 18'-20' away from existing trench also the new trench location has a swale running through it at 20'-30' into the proposed trench. (R) see file inquiry for 6/6/2024 layout (SP/MB)

INSTALLATION NOTES:

6/7/2024 - Installer not onsite. Reinspect for install (SP/MB) 6/10/2024 - Installer fell into septic tank, not onsite. Plastic tanks installed w/ stone dust. Plastic tanks pumped w/ sewage from old concrete tank. Pump tank not filled. (SP/MB) 6/11/2024 - Installer onsite for inspection. Old concrete tank abandoned. SCH 40 - PVC installed @ Front line, adequate fall. 2-12' Sch. 7' of FM sleeved w/ 4" PVC. FM is 2" SCH 40 280 PSI. ok to backfill. (SP/MB) 6/12/2024 - Trench inlet @ 3.5', width @ 3', length @ 75'. stone & fabric ok. Reinspect for P&A. (SP/MB) 6/21/2024 - High water alarm successful. Pump sends water to D-box. (MB/SP)

FINAL INSPECTOR S. Page / M. Burns DATE OF APPROVAL 6/21/2024

~~NOT TO SCALE~~ 1"=30'



Silvast, Zackary

From: Silvast, Zackary
Sent: Wednesday, March 6, 2024 11:00 AM
To: Luke Groom
Cc: jwellen@howardcountymd.gov; Wolf, Kevin; Paul Cavanaugh
Subject: regarding 1680 Woodstock Road OSDS plan

Hello all,

Sorry for the delayed comments back on this project. We were contacting a Infiltrator tank distributer for some details to relay the best information. See comments below.

1. **The tank/pump detail should specify that it is an "Infiltrator IM-1530."**
2. **The pump tank detail used on this OSDS plan is from a standard concrete tank.**
   a. **We reached out to a distributer to get the gallons/inch metric that would be needed to verify all calculations.**
3. **The plastic tank can be used as a pump, but there are no directions of how to convert it to a pump tank.**
   a. **One thing missing for example, is that a pump block & stand will have to be purchased from Zoeller & have to be installed inside the tank.**
   b. **The dose calculations will be different also based on the assumption that the tank dimensions will not be the same as a standard concrete pump tank.**
4. **We will need a stamped & signed letter from the engineer certifying that this Infiltrator tank can be installed on the property & will function just like a standard concrete tank would.**
5. **Need to add a note to the plan stating, "Infiltrator tank specifications should resemble as best as possible a standard concrete tank design and it will be the responsibility of the septic contractor to ensure it has all required components for the best functionality and that it is stabilized in the ground upon inspection."**
6. **Need to provide three sets of infiltrator tank manufacturing/installation details that should be individual pamphlets separate from the OSDS plans.**

We look forward to your re-submittal. Thank you.

- ZS

Zack Silvast (LEHS)
Plan Review Supervisor - Water & Sewer Division
410-313-1777
Environmental Health Bureau
Howard County Health Department

Infiltrator IM- and CM-Series Septic Tank General Installation Instructions

APRIL 2022

INFILTRATOR tanks

BEFORE YOU BEGIN

Infiltrator Water Technologies' tanks must be installed according to state and/or local regulations and approvals, which supersede the manufacturer's installation instructions. If unsure of the installation requirements for a specific site, contact the health department or permitting authority. The IM- and CM-Series models referred to in this document include the IM-540, IM-1060, CM-1060, and IM-1530.

WARNING: IMPLOSIONS MAY CAUSE SERIOUS INJURY
Follow Infiltrator Water Technologies' vacuum test instructions

MATERIALS AND EQUIPMENT NEEDED

- ☐ IM- or CM-Series tank
- ☐ Access port lid(s)*
- ☐ 10 screws per lid*
- ☐ 2 inlet/outlet gaskets (included)
- ☐ Inlet/outlet tees*
- ☐ Tape measure
- ☐ Pipe, risers, etc.
- ☐ Socket wrench
- ☐ Excavator
- ☐ Shovel
- ☐ Level
- ☐ 5-inch-diameter (125 mm) hole saw
- ☐ Utility knife
- ☐ PVC pipe glue with primer

*tee and lid inclusion varies by state/province

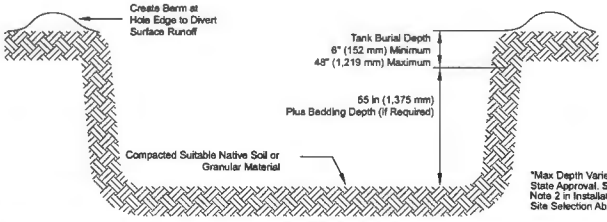
INSTALLATION SITE SELECTION

1. Do not install the tank in vehicular traffic areas. The tank is designed for non-traffic applications.
2. The allowable soil cover depth is 6 to 48* inches (150 to 1,200 mm).
   *18-inch (450 mm) max. in Florida for Cat. 3 tanks; 48-inch (1,200 mm) max. in Florida for Cat. 4 tanks; and 36-inch (900 mm) max. in Massachusetts, New Hampshire, North Carolina, and Oregon.
3. The tank shall not be installed where the subsurface water level outside the tank exceeds the height of the outlet pipe saddle. See page 4 illustration. See installation terminology on page 4 for Indiana installations.

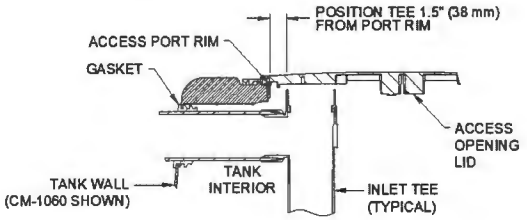
EXCAVATING AND PREPARING THE SITE

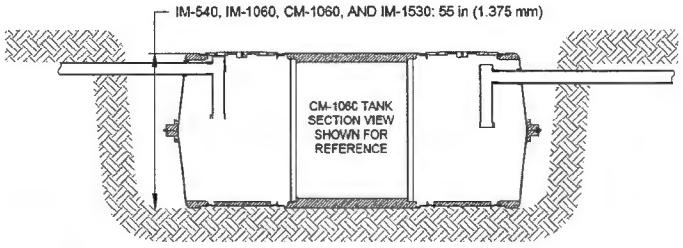
1. Unless buoyancy control measures are required, the excavation width and length should be 18 to 36 inches (450 to 900 mm) larger than the tank on each side or sized as necessary to ensure proper backfill compaction, as outlined in Steps 5-10 of "Backfilling the Tank" in this document. See Infiltrator IM- and CM-Series Tank Buoyancy Control Guidance document, available online at www.infiltratorwater.com, for specific excavation requirements when installing with buoyancy control measures.
2. Excavation depth shall account for the 55-inch (1,375 mm) tank height. Also account for 4 inches (100 mm) of bedding (if required) and cover depth (permissible cover depth is 0.5 to 4 feet (150 to 1,200 mm) of soil).
   Note: If the water level outside the tank exceeds the height of the outlet pipe saddle, tank structural integrity may be compromised. See page 4 for maximum allowable subsurface water elevation guidelines. See page 4 note. Indiana Installations: If the depth of the uninterrupted saturated soil conditions cannot be determined from the site soil evaluation report or other site-related data and other information indicates the possible presence of a perched ground water table, tank installation is permissible. See installation terminology on page 4.
3. Inspect bottom of excavation to verify suitability of native soil for tank installation. Soils with large, protruding, or sharp stones or other similar objects that may damage the tank are not suitable.
4. The tank may be installed either in suitable native soil (see Backfilling the Tank section) or a minimum 4-inch (100 mm) layer of well-graded granular soil having particles less than 3 inches (75 mm) in diameter, or maximum 0.5-inch (13 mm) diameter crushed stone.
5. Create a uniform, compacted, level surface to ensure that the bottom of the tank is evenly supported. Verify that the installation surface is flat.

INSTALLING THE TANK



1. Inspect the tank for damage before installation.
2. If the tank inlet and outlet penetrations are not drilled, drill holes using the drill points provided at each of the inlet and outlet ports according to Table 3 in the Inlet and Outlet Hole Locations section. The inlet and outlet may be drilled on either the sides or ends of the tank, as required based on applicable codes and site conditions.*
   * Kentucky and West Virginia tanks are factory-drilled. Florida and Oregon tanks must be factory- or distributor-drilled.
3. The gaskets supplied with the tank are compatible with Schedule 40 and SDR 35 pipe using a 5-inch-diameter (125 mm) hole saw.
4. Install the rubber gaskets at the inlet and outlet.
5. Using all four of the tank's integral lifting lugs, lower tank into excavation.
6. Slide the inlet and outlet pipes* through the gaskets. Soapy lubricant may be used to slide the pipe in.
   *For North Carolina, the inlet pipe shall be a straight pipe with no tee.
7. Horizontally position the tee 1½ inches (38 mm) from the access port rim, allowing the tee to fit into the recess in the access port lid (see detail).
8. Install lids and risers (see Installing Risers section) as necessary. Rotate lid over access opening until it indexes to tank and drops into position.

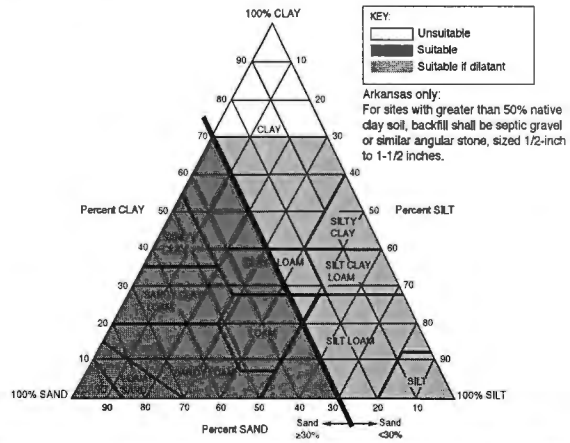




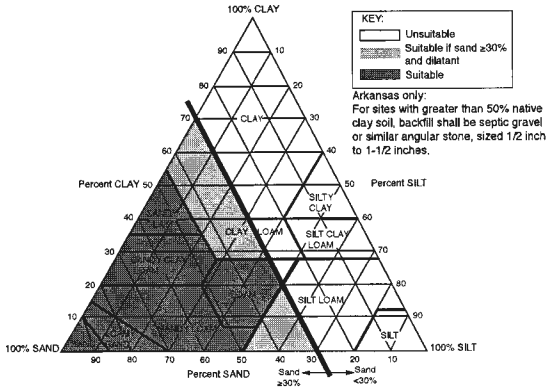
BACKFILLING THE TANK

Note: Infiltrator tanks do not require filling with water prior to backfill placement. Water filling and backfilling to the tank mid-height is required if the tank is left in either an open or backfilled excavation that may fill with water from rain or other sources.

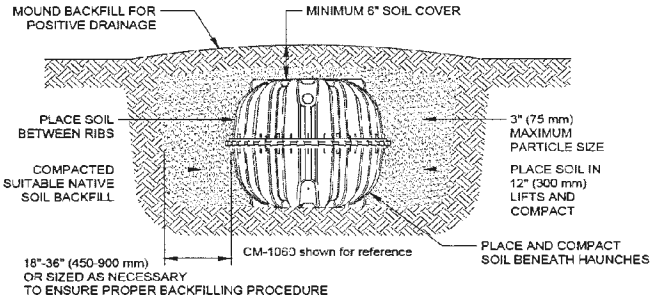
1. Backfill with suitable native soil (max. 3-inch (75-mm) stone diameter). If native soil is unsuitable, replace unsuitable fraction with suitable soil. If suitable soil is not locally available, contact Infiltrator for assistance.
2. Suitable soil shall include soil textural classes defined in the United States Department of Agriculture soil triangle.
   a) For a tank soil cover depth of 0.5 to 2.0 feet (150 to 600 mm), suitable soil textures include:



b) For a tank soil cover depth that is greater than 2.0 feet and up to 4.0 feet (600 to 1,200 mm), suitable soil textures include:



3. Backfill should not have stones greater than 3 inches (75 mm) in diameter or excessive clods that do not break apart during placement and compaction. Backfill must be capable of occupying the spaces between the tank ribs and beneath the haunches.
   Note: Rounded screened aggregate (e.g., pea gravel) is not a suitable backfill.
4. Standard field soil classification methods shall be used to determine the soil textural class.
   Note: Under most circumstances, the determination of soil dilatancy will not be required. Dilatancy shall be determined in the field using a test that does not require specialized equipment, per ASTM D2488, Section 14.3.
5. Place and compact soil by walking-in beneath the haunches of the tank.
   Note: Compacting soil beneath the haunches is critical for tank structural integrity.
6. Place backfill around the four sidewalls in an alternating manner, so that the backfill height along the four sidewalls is maintained within a 12-inch (300-mm) tolerance.
7. Do not backfill top of tank before sidewalls are completely backfilled.
8. Continue to place backfill along the sidewalls in 12-inch (300-mm) lifts. Place backfill between the ribs on the sidewalls such that the space between the ribs is completely filled with soil.
9. Compact backfill material either by walking-in, hand tamping or mechanical compaction (includes backhoe bucket). If mechanical compaction is used, such as a walk-behind tamper or backhoe bucket, a single pass is recommended. Compact each lift prior to placement of next lift. Compact backfill from tank walls to excavation sidewalls.
10. Complete backfilling and grade the area.
11. A minimum 6-inch (150-mm) depth of suitable soil must be placed over the top of the tank. The balance of backfill placed to finish grade above the tank may be either suitable or unsuitable soil.
12. Establish a strong stand of erosion-resistant vegetation.
    Grade to prevent the backfilled excavation from filling with surface runoff. If the subsurface water level in the backfilled excavation exceeds the height of the outlet pipe saddle, tank structural integrity may be compromised. See page 4 for illustration.



SHORT AND LONG-TERM GROUNDWATER CONTROL

It may be necessary to implement groundwater control measures during tank installation. Maintain dry conditions by expanding the excavation to create a short-term groundwater collection sump for temporary placement of a dewatering pump if needed. Long-term groundwater control measures such as underdrains and interceptor trenches may be sensible if the site is amenable to construction of a control system and such systems are not prohibited by regulation or law, and the tank location is not subject to flooding. Underdrains and groundwater interceptor trenches may prevent the need for tank buoyancy control measures.

INSTALLING UNDER SHALLOW GROUNDWATER CONDITIONS

Buoyancy control measures may be required if the tank is to be installed with less than 12 inches (300 mm) of soil backfill cover, and where the water level outside the tank (See Table 1, Note 4) has the potential to rise 30 inches (750 mm) or more above the elevation of the tank bottom. Otherwise, no control measures are required (see Table 1). The need for buoyancy control measures must be determined based on backfill cover depth and height of water outside of tank above the tank bottom according to Table 1. Refer to Infiltrator IM- and CM-Series Tank Buoyancy Control Guidance document for more information.

Table 1: Tank models[1] and conditions requiring buoyancy control[2]

Subsurface water height above tank bottom[4]	Soil cover depth above tank[3]	
	6 in (150 mm) to 12 in (300 mm)	12 in (300 mm) or greater
Above outlet pipe saddle	Do not install tank	Do not install tank
36 in (900 mm) to outlet pipe saddle	All models	None
30 in (750 mm) to 36 in (900 mm)	IM-1530	None
Less than 30 in (750 mm)	None	None

1. IM-540, IM-1060, CM-1060 and IM-1530.
2. See Infiltrator IM- and CM-Series Tank Buoyancy Control Guidance document for detailed information on the use of controls.
3. No controls are required for soil cover depths exceeding 12 in (300 mm).
4. The tank shall not be installed where uninterrupted saturated soil conditions could be present from the tank bottom to a height above that of the outlet pipe saddle. See page 4 illustration. For Indiana installations, if the depth of the uninterrupted saturated soil conditions cannot be determined from the site soil evaluation report or other site-related data and other information indicates the possible presence of a perched ground water table, no buoyancy controls are required. See installation terminology on page 4.

INSTALLING RISERS

1. Compatible risers include 24-inch (600 mm) diameter products such as the Infiltrator EZsnap, TW-Riser, and EZset by Infiltrator, PolyLok®, Inc., and Tuf-Tite® Corporation, in addition to 24-inch (600 mm) diameter corrugated HDPE and IPEX Ultra Rib® PVC pipe. Follow Infiltrator's IM- and CM-Series Tank Riser Connection Guidance Document.
2. In Oregon only, watertightness testing shall include filling with water at least 2 inches above riser connection, with no more than 1 gallon leakage per 24 hours, per OAR 340-073-0025(3).

INSTALLING PUMPS AND RELATED EQUIPMENT

Pumps may be supported on a stable, level 16x16-inch (400x400-mm) platform positioned on the bottom of the tank. One 16x16-inch block or two 8x16-inch (200 -mm x 400-mm) side-by-side blocks may be used. Limit block height to account for pump height and liquid levels during pump cycles. Block(s) should be placed below an access opening and level upon the tank bottom. For two blocks, orient them perpendicular to ribs on the tank bottom, if present, for stability.

Installation of products such as electrical conduit and wiring, pumps, water level control equipment, valves, siphon equipment, etc. shall be in accordance with the product manufacturer's instructions and compliant with applicable state or local rules and regulations. Appurtenances shall be fastened to the tank riser system and not the tank body or access opening rim. Where possible, appurtenances shall be installed to facilitate maintenance and repair access via the tank access openings.
Note: Prefabricated pump vaults may be installed.

GENERAL SPECIFICATIONS

- Failure to comply with installation instructions will void warranty.
- Prior to ground disturbance, check for subsurface obstructions and utilities in conformance with applicable requirements.
- Operating water temperature shall be less than 100° F (40° C).
- In cold conditions, handle and backfill tank with care to prevent impact damage.
- Tanks are not fire resistant. Store away from ignition sources.
- Removal of structural bulkheads is prohibited; removal of locking clips on the tank mid-seam connection is also prohibited.
- Only suitable for potable applications if the tank bears the NSF/ANSI 61 certification mark. Otherwise, tank is recommended for use in septic, rainwater/ stormwater storage, holding, and pump applications, or other non-potable uses.
- Infiltrator tanks shall not be installed above ground. Contact Infiltrator if the 6-inch (150-mm) minimum soil cover depth cannot be met.

Table 2: Nominal Volume Chart

Liquid height above tank bottom[1]		Liquid volume in tank at indicated height (measured from tank bottom to liquid surface)[1]							
		IM-540		IM-1060		CM-1060		IM-1530	
in	cm	U.S. Gal	Liters	U.S. Gal	Liters	U.S. Gal	Liters	U.S. Gal	Liters
1	3	3	11	3	11	5	21	17	64
2	5	8	30	13	49	17	64	34	128
3	8	14	53	28	106	31	119	51	192
4	10	21	80	46	174	50	188	68	256
5	13	29	109	65	246	70	263	94	357
6	15	37	141	86	326	91	344	122	463
7	18	46	173	107	405	113	429	152	573
8	20	55	207	129	488	137	517	180	681
9	23	64	243	152	575	160	608	212	802
10	25	74	279	176	666	185	700	245	928
11	28	84	317	200	757	210	795	280	1,061
12	30	94	356	225	852	236	892	312	1,182
13	33	105	396	251	950	262	991	351	1,328
14	36	116	437	277	1,049	288	1,091	387	1,463
15	38	127	480	303	1,147	315	1,192	422	1,597
16	41	138	523	330	1,249	342	1,293	464	1,756
17	43	150	566	357	1,351	369	1,396	500	1,892
18	46	161	611	384	1,454	396	1,499	537	2,034
19	48	173	656	411	1,556	423	1,602	575	2,177
20	51	186	702	438	1,658	451	1,706	614	2,322
21	53	198	749	465	1,760	478	1,811	652	2,468
22	56	210	796	493	1,866	506	1,916	690	2,612
23	58	223	843	521	1,972	534	2,022	729	2,758
24	61	235	891	549	2,078	562	2,129	770	2,914
25	64	248	940	577	2,184	591	2,236	808	3,058
26	66	261	988	605	2,290	619	2,344	847	3,208
27	69	274	1,038	633	2,396	648	2,453	887	3,356
28	71	287	1,088	662	2,506	677	2,563	928	3,513
29	74	300	1,137	691	2,616	706	2,671	968	3,665
30	76	313	1,185	719	2,722	734	2,778	1,007	3,814
31	79	326	1,233	747	2,828	762	2,885	1,048	3,966
32	81	338	1,281	775	2,934	790	2,991	1,087	4,113
33	84	351	1,328	802	3,036	818	3,096	1,126	4,262
34	86	363	1,375	830	3,142	846	3,201	1,165	4,410
35	89	375	1,421	857	3,244	873	3,305	1,204	4,557
36	91	387	1,466	884	3,346	901	3,409	1,242	4,701
37	94	399	1,511	911	3,449	928	3,512	1,280	4,846
38	97	411	1,555	938	3,551	955	3,614	1,318	4,988
39	99	422	1,598	965	3,653	982	3,716	1,355	5,131
40	102	433	1,640	992	3,755	1,008	3,817	1,393	5,272
41	104	444	1,681	1,018	3,854	1,035	3,917	1,430	5,412
42	107	455	1,722	1,044	3,952	1,061	4,016	1,466	5,550
43	109	465	1,761	1,069	4,047	1,087	4,113	1,502	5,685
44	112	475	1,799	1,094	4,141	1,111	4,207	1,537	5,817
45	114	485	1,836	1,118	4,232	1,136	4,302	1,572	5,950
46	117	494	1,871	1,142	4,323	1,160	4,393	1,604	6,070
47	119	503	1,905	1,165	4,410	1,184	4,481	1,638	6,201
48	122	512	1,938	1,187	4,493	1,206	4,566	1,667	6,310
49	124	520	1,970	1,208	4,573	1,228	4,648	1,697	6,422
50	127	528	1,999	1,228	4,648	1,248	4,724	1,724	6,527
51	130	535	2,027	1,247	4,720	1,267	4,794	1,749	6,621
52	132	542	2,050	1,265	4,789	1,282	4,851	1,766	6,684
53	135	547	2,071	1,278	4,838	1,293	4,896	1,777	6,726
54	137	551[2]	2,087	1,287	4,872	1,300[2]	4,922	1,785[2]	6,758

1. Liquid height measured from lowermost inside surface at bottom of corrugation in tank to the liquid surface elevation.
2. The total capacity of the IM-540 tank is 552 gallons; the total capacity of the CM-1060 is 1,309, the total capacity of the IM-1530 tank is 1,787 gallons.
3. To determine liquid volume between liquid heights, subract the Table 2 volume indicated for the upper and lower heights. Example: CM-1060 volume between 50 in (127 cm) and 40 in (102 cm) = 1,248 gal (4,724 L) - 1,008 gal (3,817 L) = 240 gal (907 L).

INLET AND OUTLET HOLE LOCATIONS

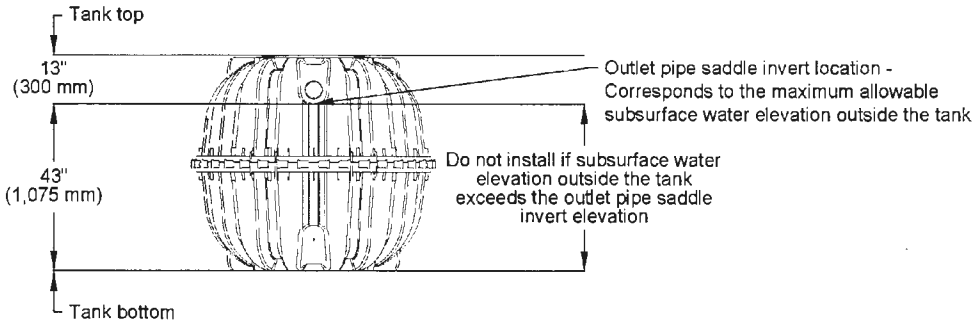
Drill height marks are provided on all Infiltrator tank models to guide inlet and outlet hole drilling. A single drill height mark is provided at each end or side port on tanks (example illustrated below). Holes may be drilled at the end or side inlet and outlet locations, as allowed by state and/or local regulations. The drill height mark indicates the center point location for the hole saw. The pilot drill bit on the hole saw should be positioned at the center of the drill height mark to align the hole saw properly. Table 3 provides drilling and invert information by regulatory jurisdiction for the installation of 4-inch-diameter (100 mm) pipe.

Table 3: Inlet and Outlet Hole Locations[1]

Jurisdiction[2]	Inlet Drill Location	Outlet Drill Location	Invert Drop (in) [mm]	Inlet Invert Height (in) [mm]		Outlet Invert Height[3] and Liquid Level (in) [mm]
				Above Inside Bottom of Tank[3]	Above Excavation Base[4]	
IM-540 and IM-1530						
All	All	All	3.00 [76]	47.00 [1,194]	47.20 [1,199]	44.00 [1,118]
CM-1060						
All Except Florida	All	All	3.00 [76]	47.00 [1,194]	47.20 [1,199]	44.00 [1,118]
Florida	End	End	2.00 [51]	46.00 [1,168]	46.20 [1,174]	44.00 [1,118]
IM-1060						
All	End	End	3.00 [76]	47.00 [1,194]	47.20 [1,199]	44.00 [1,118]
	Side	Side	3.00 [76]	47.50 [1,207]	47.70 [1,212]	44.50 [1,130]
	Side	End	3.50 [89]	47.50 [1,207]	47.70 [1,212]	44.00 [1,118]
	End	Side	2.50 [64]	47.00 [1,194]	47.20 [1,199]	44.50 [1,130]

1. State, provincial, and local regulatory requirements supersede Table 3 information.
2. Kentucky and West Virginia tanks are factory-drilled. Florida and Oregon tanks must be factory- or distributor-drilled.
3. Invert heights are measured from the lowest interior surface at the bottom of the tank to the invert.
4. Invert heights are measured from the base of the excavation to the invert.

Limitations When Subsurface Water is Present Above the Tank Bottom



Installation Terminology

1. "Subsurface water" refers to a water-saturated zone of soil. Do not install if subsurface water is continuous from the tank bottom elevation to any point above the outlet pipe saddle elevation.
2. "Uninterrupted saturated soil" refers to water-saturated soil with no gaps in the saturated condition. An example of a gap in the saturated condition is a perched water table, when two water-saturated soil zones are interrupted by an unsaturated soil zone. Do not install if uninterrupted saturated soil is present from the tank bottom elevation to any point above the outlet pipe saddle elevation.
3. A perched water table is allowable above the outlet pipe saddle elevation only if unsaturated soil is present between the perched water table and tank bottom elevation.

Infiltrator Water Technologies, LLC ("Infiltrator")

INFILTRATOR® SEPTIC TANK LIMITED WARRANTY FIVE (5) YEAR MATERIALS AND WORKMANSHIP LIMITED WARRANTY

(a) This limited warranty is extended to the end user of an Infiltrator Tank. A Tank manufactured by Infiltrator, when installed and operated in accordance with Infiltrator's installation instructions and local regulation by a person or company that is properly qualified to install the Infiltrator Tank in accordance with applicable state and/or local requirements, is warranted to you: (i) against defective materials and workmanship for five (5) years after installation. Infiltrator will, at its option, (i) repair the defective product or (ii) replace the defective materials. Infiltrator's liability specifically excludes the cost of removal and/or installation of the Tank.

(b) In order to exercise its warranty rights, you must notify Infiltrator in writing at its corporate headquarters in Old Saybrook, Connecticut within fifteen (15) days of the alleged defect.

(c) YOUR EXCLUSIVE REMEDY WITH RESPECT TO ANY AND ALL LOSSES OR DAMAGES RESULTING FROM ANY CAUSE WHATSOEVER SHALL BE SPECIFIED IN SUBPARAGRAPH (a) ABOVE. INFILTRATOR SHALL IN NO EVENT BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES OF ANY KIND, HOWEVER OCCASIONED, WHETHER BY NEGLIGENCE OR OTHERWISE. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THIS LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

(d) THIS LIMITED WARRANTY IS THE EXCLUSIVE WARRANTY GIVEN BY INFILTRATOR AND SUPERSEDES ANY PRIOR, CONTRARY, ADDITIONAL, OR SUBSEQUENT REPRESENTATIONS, WHETHER ORAL OR WRITTEN. INFILTRATOR DISCLAIMS AND EXCLUDES TO THE GREATEST EXTENT ALLOWED BY LAW ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, OR STATUTORY, INCLUDING ANY WARRANTY OF MERCHANTABILITY, FINESSE FOR A PARTICULAR PURPOSE AND ANY IMPLIED WARRANTIES OTHERWISE ARISING FROM COURSE OF DEALING, COURSE OF PERFORMANCE, OR USAGE OF TRADE. NO PERSON (INCLUDING ANY EMPLOYEE, AGENT, DEALER, OR REPRESENTATIVE) IS AUTHORIZED TO MAKE ANY REPRESENTATION OR WARRANTY CONCERNING THIS PRODUCT, EXCEPT TO REFER YOU TO THIS LIMITED WARRANTY. EXCEPT AS EXPRESSLY SET FORTH HEREIN, THIS WARRANTY IS NOT A WARRANTY OF FUTURE PERFORMANCE, BUT ONLY A WARRANTY TO REPAIR OR REPLACE.

(e) YOU MAY ASSIGN THIS LIMITED WARRANTY TO A SUBSEQUENT PURCHASER OF YOUR HOME.

(f) NO REPRESENTATIVE OF INFILTRATOR HAS THE AUTHORITY TO CHANGE THIS LIMITED WARRANTY IN ANY MANNER WHATSOEVER, OR TO EXTEND THIS LIMITED WARRANTY.

(g) NO WARRANTY OF ANY KIND IS MADE WITH REGARD TO ANY PRODUCT, COMPONENTS, DEVICES, MEDIA OR TREATMENT UNITS WHICH ARE MANUFACTURED BY OTHERS AND ARE INSTALLED IN AN INFILTRATOR TANK. USE OF THESE PRODUCTS ARE AT YOUR OWN RISK.

(h) THE INFILTRATOR TANK IS DESIGNED TO BE BURIED UNDERGROUND. NO WARRANTY OF ANY KIND IS MADE IF YOUR TANK IS NOT BURIED UNDERGROUND AS SPECIFIED IN THE PRODUCT'S INSTALLATION INSTRUCTIONS.

CONDITIONS AND EXCLUSIONS

There are certain conditions or applications over which Infiltrator has no control. Defects or problems as a result of such conditions or applications are not the responsibility of Infiltrator and are NOT covered under this warranty. They include failure to install the Tank in accordance with instructions or applicable regulatory requirements or guidance, altering the Tank contrary to the Installation Instructions and disposing of chemicals or other materials contrary to normal tank usage.

The above represents the Standard Limited Warranty offered by Infiltrator. A limited number of regulatory jurisdictions have different warranty requirements. Any purchaser of a Tank 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 a Tank.

INFILTRATOR
water technologies

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Note: Please visit www.infiltratorwater.com for updated and/or amended instructional material.

Transmittal

Via: ☐ Fax ☐ Mail ☐ Messenger ☐ E-Mail ☒ To Be Picked Up
☐ Fax (original to follow via U.S. Mail)

To:	**Bureau of Environmental Health** **8930 Stanford Blvd** **Columbia, MD 21045**	Attn:	**Zack Silvast** Fax: Phone:

From:	**Luke A. Groom, P.E.**	CC:	

Re:	**1680 Woodstock Road**	W.O.#	**23054**
Date:	**February 13, 2024**	Pages:	**3** **Page(s) Including this cover**

We are forwarding: ☒ Prints ☐ Copy of Letter ☐ Specifications ☐ Shop drawings ☐ Other
☐ Urgent ☐ For your use ☐ As requested ☐ For Review & Comment

Remarks:

Mr. Silvast:
In conjunction with the submission of the above referenced project.
Attached you should find:
3 Sets of Septic Plan

Please feel free to contact me if you require any additional information.
Regards,

Luke A. Groom, P.E.

FISHER, COLLINS & CARTER, INC.

CIVIL ENGINEERING CONSULTANTS and LAND SURVEYORS

Terrell A. Fisher, P.E., L.S.
Earl D. Collins, P.E.
Charles J. Crovo, Sr., P.E., L.S.

Paul W. Kriebel, P.E.
Mark L. Robel, P.L.S.
Frank Manalansan II, L.S.

February 12, 2024

Mr. Zack Silvast
Bureau of Environmental Health
8930 Stanford Blvd
Columbia, MD 21045

Re: 1680 Woodstock Road

Mr. Silvast,

We are in receipt for your comment letter dated January 9, 2024. We are responding to your comments with the following item-by-item response:

Review Comments:

1. *There are two options to try & resolve the lack of access to install a 2000 GAL concrete tank in the backyard.*
   - *A. Install two 1000 GAL Poly-Ethelene tanks in succession. Or one 1850 GAL Poly (if it exists).*
     - *1. Tank must be pre-approved by Howard County Health Department.*
   - *B. Design a path of construction via a non-evasive, and temporary "road" which will make bringing materials easier for all phases of project and possibly the 2000 GAL concrete tank.*
   - *C. Consult with Fogles, hired septic contractor.*

   Response:
   - A. Two 1,500 Gallon Plastic Tanks are being proposed with a pump in the second tank.
   - B. A temporary road will not be needed as the tanks will be carried to the backyard.

2. *Since we last spoke, Ricky from Fogle's Septic believes that the only way to replace the tank may be by removing the old tank off-site, which should be noted as hazardous waste, and installing the new one at the old tank location.*
   - *a. It may be possible to designate a new tank location, we were missing the septic profile to be able to determine this while out in the field.*
   - *b. Please consult with Fogle's.*

   Response: The existing septic tank is to be collapsed and abandoned. A new tank location has been designated with a septic profile.

FISHER, COLLINS & CARTER, INC.

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3. *Missing tank & septic profile showing all necessary elevations (I missed this on the previously approved plans.)*

   Response: The tank and septic profile showing all necessary elevations has been provided.

4. *The main septic line from house to tank, cannot be shown how it currently is drawn.*
   a. The addition construction will surely have a negative impact on its functionality.
   b. Consult architect.

   Response: The septic line has been revised from the house to the tank. The existing septic line is to be internally plumbed to new house connection.

5. *Add a reference point to the beginning of add-on trench that the hired septic contractor will do some slight grading to deter negative swale impact on existing SDA.*

   Response: Proposed contours on and just below the add-on trench have been added. A general note describing the minimal grading has been added.

6. *Need to add newly chosen tank details to septic plan, if applicable.*

   Response: The newly chosen tank detail has been added to the septic plan.

Thank you for your technical review. The comments have been addressed on the revised plans.

Very Truly Yours,
Fisher, Collins and Carter, Inc.

Luke Groom

Luke A. Groom, P.E.

W.O. # 23054

FISHER, COLLINS & CARTER, INC.

CIVIL ENGINEERING CONSULTANTS and LAND SURVEYORS

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Frank Manalansan II, L.S.

March 13, 2024

Mr. Zack Silvast, L.E.H.S.
Bureau of Environmental Health
8930 Stanford Blvd
Columbia, MD 21045

RE:
1680 Woodstock Road
Septic Installation Plan

Dear Mr. Silvast:

The purpose of this letter is to certify the IM-1530 Infiltrator Tank supplied by Infiltrator Water Technologies. To the best of our knowledge, information, and belief two in-line IM-1530 tanks will perform equal to a concrete septic tank.

The tank shall be installed with two feet maximum cover based on Howard County, Maryland Code of Ordinances Title 3, Subtitle 8, Section 3.809, Line (d)(14).

Very truly yours,
Fisher, Collins & Carter, Inc

Luke A. Groom P.E.

3-13-24

FISHER, COLLINS & CARTER, INC.

CIVIL ENGINEERING CONSULTANTS and LAND SURVEYORS

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Paul W. Kriebel, P.E.
Mark L. Robel, P.L.S.
Aldo M. Vitucci, P.E.
Frank Manalansan II, L.S.

October 3rd, 2023

Zackary Silvast
Ho. Co. Health Department
Well & Septic Program
8930 Stanford Blvd
Columbia, MD 21045

RE:
Septic Install Plan
1680 Woodstock Road

Dear Mr. Silvast:
On behalf of our client, please accept this resubmission package and accompanying point-by-point response to a comment email, dated September 25, 2023.

Health Department Septic Install Plan Comments:

Comment:

1. *System calculations will change based on new spec sheet.*

Response:
The trench computations have been revised based on the new spec sheet.

Comment:

2. *We will want to add one 76' line on the existing system.*
   a. *This should be shown on the plan.*
   b. *It should mirror the existing trench orientation, and be held between contours 370 and 372.*
   c. *It should be at a minimum 10' off the existing trench.*
   d. *It should also mirror the specs from the original septic system install permit & as-built.*
   e. *Eliminate "initial" system specs. It's technically the existing and the new trench will be the "add-on or upgrade."*

Response:
A 76-foot trench has been added to the existing system.

FISHER, COLLINS & CARTER, INC.

CIVIL ENGINEERING CONSULTANTS and LAND SURVEYORS

Terrell A. Fisher, P.E., L.S.
Earl D. Collins, P.E.
Charles J. Crovo, Sr., P.E., L.S.

Paul W. Kriebel, P.E.
Mark L. Robel, P.L.S.
Aldo M. Vitucci, P.E.
Frank Manalansan II, L.S.

Comment:

3. *I would rather have a center feed system shown for the 1st and 2nd replacements with the lines on contour then see all that SDA space get wasted.*

Response:
The add-on and replacement systems have been designed as center feed.

Comment:

4. *Existing tank should be labeled as such and specify 1500 GAL to remain.*

Response:
The existing tank has been labeled.

Comment:

5. *Add note, "Septic system shall be upgraded prior to building permit approval due to increase in septic flow by proposed additional bedroom."*

Response:
The note has been added to the general notes as note 9.

Comment:

6. *Should still have a tank detail shown somewhere on this plan.*
   a. *Label as existing.*

Response:
A tank detail labeled as existing has been added.

Comment:

7. *I would add a purpose note to this OSDS plan specifying the reasoning for this updated plan. Being as specific as possible.*

Response:
A purpose note has been added to the plan.

FISHER, COLLINS & CARTER, INC.

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Aldo M. Vitucci, P.E.
Frank Manalansan II, L.S.

Comment:

8. *SIDE NOTE: Floor plans submitted with future building permit will need to be fully labeled and complete. Each room should be accounted for.*

Response:
Acknowleged.

If you have any questions or require any additional information that may help in your review, please do not hesitate to call.

Very truly yours,
Fisher, Collins & Carter, Inc

Luke Groom

Luke A. Groom P.E.

FISHER, COLLINS & CARTER, INC.

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Aldo M. Vitucci, P.E.
Frank Manalansan II, L.S.

October 3rd, 2023

Zackary Silvast
Ho. Co. Health Department
Well & Septic Program
8930 Stanford Blvd
Columbia, MD 21045

RE:
Septic Install Plan
1680 Woodstock Road

Dear Mr. Silvast:
On behalf of our client, please accept this resubmission package and accompanying point-by-point response to a comment email, dated September 25, 2023.

Health Department Septic Install Plan Comments:

Comment:

1. *System calculations will change based on new spec sheet.*

Response:
The trench computations have been revised based on the new spec sheet.

Comment:

2. *We will want to add one 76' line on the existing system.*
   a. *This should be shown on the plan.*
   b. *It should mirror the existing trench orientation, and be held between contours 370 and 372.*
   c. *It should be at a minimum 10' off the existing trench.*
   d. *It should also mirror the specs from the original septic system install permit & as-built.*
   e. *Eliminate "initial" system specs. It's technically the existing and the new trench will be the "add-on or upgrade."*

Response:
A 76-foot trench has been added to the existing system.

FISHER, COLLINS & CARTER, INC.

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Comment:

3. *I would rather have a center feed system shown for the 1st and 2nd replacements with the lines on contour then see all that SDA space get wasted.*

Response:
The add-on and replacement systems have been designed as center feed.

Comment:

4. *Existing tank should be labeled as such and specify 1500 GAL to remain.*

Response:
The existing tank has been labeled.

Comment:

5. *Add note, "Septic system shall be upgraded prior to building permit approval due to increase in septic flow by proposed additional bedroom."*

Response:
The note has been added to the general notes as note 9.

Comment:

6. *Should still have a tank detail shown somewhere on this plan.*
   a. *Label as existing.*

Response:
A tank detail labeled as existing has been added.

Comment:

7. *I would add a purpose note to this OSDS plan specifying the reasoning for this updated plan. Being as specific as possible.*

Response:
A purpose note has been added to the plan.

FISHER, COLLINS & CARTER, INC.

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Aldo M. Vitucci, P.E.
Frank Manalansan II, L.S.

Comment:

8. *SIDE NOTE: Floor plans submitted with future building permit will need to be fully labeled and complete. Each room should be accounted for.*

Response:
Acknowleged.

If you have any questions or require any additional information that may help in your review, please do not hesitate to call.

Very truly yours,
Fisher, Collins & Carter, Inc

Luke A. Groom P.E.

FISHER, COLLINS & CARTER, INC.

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Aldo M. Vitucci, P.E.
Frank Manalansan II, L.S.

November 6th, 2023

Zackary Silvast
Ho. Co. Health Department
Well & Septic Program
8930 Stanford Blvd
Columbia, MD 21045

RE:
Septic Install Plan
1680 Woodstock Road

Dear Mr. Silvast:
On behalf of our client, please accept this resubmission package and accompanying point-by-point response to a comment email, dated October 20th, 2023.

Health Department Septic Install Plan Comments:

Comment:

1. *The orientation of the add-on trench does not match the as-built.*
   a. *I am seeing that the line can be bent like the original trench and be on contour between 12-15' below the original line.*

Response:
The add-on trench orientation now matches the as-built trench.

Comment:

2. *The 1st replacement trenches should get away from that small saddle.*

Response:
The first replacement trenches have been moved away from the small saddle.

Comment:

3. *Orientation of 2nd replacement could be better and more on contour & level with each other.*

Response:
The orientation of the second replacement trenches are more on contour and level.

FISHER, COLLINS & CARTER, INC.

CIVIL ENGINEERING CONSULTANTS and LAND SURVEYORS

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Mark L. Robel, P.L.S.
Aldo M. Vitucci, P.E.
Frank Manalansan II, L.S.

Comment:

4. *The "initial" trench detail is not correct.*
   a. *Inlet shown at 4.5' depth, should be at 3.5' depth.*
   b. *Effective area starts higher up in profile. Not correct.*
   c. *Title should read as "Add-on trench detail."*

Response:
The trench detail has been revised.

Comment:

5. *Under "add-on to existing system" calculations.*
   a. *Specify that one trench is existing at 76' & we are adding on ONE line at 76' to balance system.*
   b. *Second line from bottom as written could be misleading at "2 @ 76'."*

Response:
The "add-on to existing system" calculations have been revised.

Comment:

6. *Should show trench details for replacement systems as well. Bold the add-on trench detail.*

Response:
Trench details for the replacement systems have been added.

Comment:

7. *Purpose note should be more detailed to specify that building permit additions is adding one bedroom to the system, thus the reason for why the upgrade is required.*

Response:
The addition add three bedrooms so the septic system now requires a 6-bedroom design. The purpose note has been revised.

FISHER, COLLINS & CARTER, INC.

CIVIL ENGINEERING CONSULTANTS and LAND SURVEYORS

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Frank Manalansan II, L.S.

If you have any questions or require any additional information that may help in your review, please do not hesitate to call.

Very truly yours,
Fisher, Collins & Carter, Inc

Luke Groom

Luke A. Groom P.E.

Silvast, Zackary

From: Silvast, Zackary
Sent: Friday, October 20, 2023 5:29 PM
To: Luke Groom
Cc: Paul Cavanaugh; Williams, Jeffrey
Subject: regarding OSDS for 1680 Woodstock Road

To Whom It May Concern,

I have the following revision comments that need to be made to the recently submitted OSDS plan for this property. See below.

1. **The orientation of the add-on trench does not match the as-built.**
   a. **I am seeing that the line can be bent like the original trench and be on contour between 12-15' below the original line.**

2. **The 1st replacement trenches should get away from that small saddle.**
   a. **I would hold two lines to the east corner of the property SDA.**

3. **Orientation of 2nd replacement could be better and more on contour & level with each other.**

4. **The "initial" trench detail is not correct.**
   a. **Inlet shown at 4.5' depth, should be at 3.5' depth.**
   b. **Effective area starts higher up in profile. Not correct.**
   c. **Title should read as "Add-on trench detail."**

5. **Under "add-on to existing system" calculations.**
   a. **Specify that one trench is existing at 76' & we are adding on ONE line at 76' to balance system.**
   b. **Second line from bottom as written could be misleading at "2 @ 76'."**

6. **Should show trench details for replacement systems as well. Bold the add-on trench detail.**

7. **Purpose note should be more detailed to specify that building permit addition is adding one bedroom to the system, thus the reason for why the upgrade is required.**

We look forward to your corrections and re-submittal for a swift OSDS approval.

- ZS

Zack Silvast (LEHS)
Plan Review Supervisor - Water & Sewer Division
410-313-1777
Environmental Health Bureau
Howard County Health Department

FISHER, COLLINS & CARTER, INC.

CIVIL ENGINEERING CONSULTANTS and LAND SURVEYORS

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Mark L. Robel, P.L.S.
Aldo M. Vitucci, P.E.
Frank Manalansan II, L.S.

Transmittal

Via: ☐ Fax ☐ Mail ☒ Messenger ☐ E-Mail ☒ To Be Picked Up
☐ Fax (original to follow via U.S. Mail)

To:	**Bureau of Environmental Health** **8930 Stanford Blvd** **Columbia, MD 21045**	Attn:	**Zack Silvast** Fax: Phone:

From:	**Luke A. Groom, P.E.**	CC:	

Re:	**1680 Woodstock RD, Septic Install**	W.O.#	**23054-3001**
Date:	**October 3, 2023**	Pages:	**3 Page(s) Including this cover**

We are forwarding: ☒ Prints ☐ Copy of Letter ☐ Specifications ☐ Shop drawings ☐ Other
☐ Urgent ☐ For your use ☐ As requested ☐ For Review & Comment

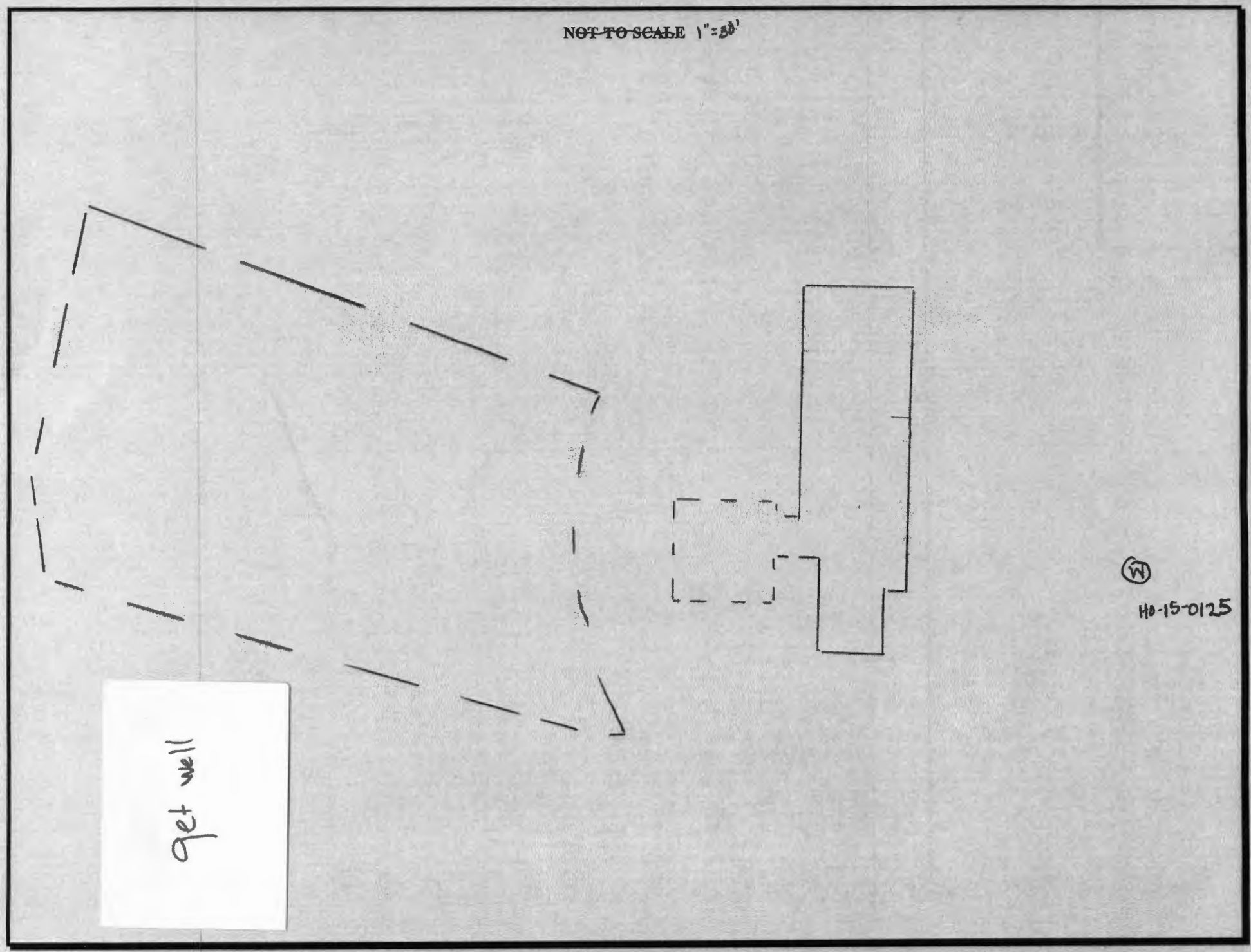
Remarks:

Mr. Silvast:
In conjunction with the resubmission of the above referenced project.
Attached you should find:
3 Sets of Septic Installation Site Plan
3 Sets of Comment Response Letters
Please feel free to contact me if you require any additional information.
Regards,

Luke Groom

Luke A. Groom, P.E.

~~NOT TO SCALE~~ 1"=50'



(W)

H0-15-0125

get well

FISHER, COLLINS & CARTER, INC.

CIVIL ENGINEERING CONSULTANTS and LAND SURVEYORS

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Transmittal

Via: ☐ Fax ☐ Mail ☒ Messenger ☐ E-Mail ☒ To Be Picked Up
☐ Fax (original to follow via U.S. Mail)

To:	**Bureau of Environmental Health**	Attn:	**Zack Silvast**
	8930 Stanford Blvd	Fax:	
	Columbia, MD 21045	Phone:	

From: **Luke A. Groom, P.E.** CC:

Re: **1680 Woodstock RD, Septic Install** W.O.# **23054-3001**

Date: **November 6, 2023** Pages: **3** **Page(s) Including this cover**

We are forwarding: ☒ Prints ☐ Copy of Letter ☐ Specifications ☐ Shop drawings ☐ Other
☐ Urgent ☐ For your use ☐ As requested ☐ For Review & Comment

Remarks:

Mr. Silvast:
In conjunction with the resubmission of the above referenced project.
Attached you should find:
3 Sets of Septic Installation Site Plan
3 Sets of Comment Response Letters
Please feel free to contact me if you require any additional information.
Regards,

Luke Groom

Luke A. Groom, P.E.

Silvast, Zackary

From: Silvast, Zackary
Sent: Monday, September 25, 2023 12:06 PM
To: 'Luke Groom'
Cc: 'Paul Cavanaugh'
Subject: regarding 1680 Woodstock Road OSDS revision comments
Attachments: 1680 Woodstock Rd (new specs, and records).pdf

To Whom It May Concern,

I have thoroughly reviewed this OSDS plan and have pulled all necessary records to build a new file for this property. It took some time. I have the following revision comments down below. I have also attached a new spec sheet for this property. (see above)

1. **System calculations will change based on new spec sheet.**
2. **We will want to add one 76' line onto the existing system.**
   a. **This should be shown on the plan.**
   b. **It should mirror the existing trench in orientation, and be held between contours 370 and 372.**
   c. **It should be at a minimum 10' off the existing trench.**
   d. **It should also mirror the specs from the original septic system install permit & as-built.**
   e. **Eliminate "initial" system specs. It's technically the existing, and the new trench will be the "add-on or upgrade."**
3. **I would rather have a center feed system shown for the 1st and 2nd replacements with the lines on contour then see all that SDA space get wasted.**
4. **Existing tank should be labeled as such and specify 1500 GAL to remain.**
5. **Add note, "Septic system shall be upgraded prior to building permit approval due to increase in septic flow by proposed additional bedroom."**
6. **Should still have a tank detail shown somewhere on this plan.**
   a. **Label as existing.**
7. **I would add a purpose note to this OSDS plan specifying the reasoning for this updated plan. Being as specific as possible.**
8. **SIDE NOTE: Floor plans submitted with future building permit will need to be fully labeled and complete. Each room should be accounted for.**

We look forward to your revisions and re-submittal. Thank you.

- ZS

Zack Silvast (LEHS)
Plan Review Supervisor - Water & Sewer Division
410-313-1777
Environmental Health Bureau
Howard County Health Department

FISHER, COLLINS & CARTER, INC.

CIVIL ENGINEERING CONSULTANTS and LAND SURVEYORS

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Transmittal

Via: ☐ Fax ☐ Mail ☐ Messenger ☐ E-Mail ☒ To Be Picked Up
☐ Fax (original to follow via U.S. Mail)

To:	**Bureau of Environmental Health**	Attn:	**Zack Silvast**
	8930 Stanford Blvd	Fax:	
	Columbia, MD 21045	Phone:	

From:	**Luke A. Groom, P.E.**	CC:	

Re:	**1680 Woodstock RD, Septic Install**	W.O.#	**23054-3001**
Date:	**August 21, 2023**	Pages:	**3 Page(s) Including this cover**

We are forwarding: ☒ Prints ☐ Copy of Letter ☐ Specifications ☐ Shop drawings ☐ Other
☐ Urgent ☐ For your use ☐ As requested ☐ For Review & Comment

Remarks:

Mr. Silvast:
In conjunction with the submission of the above referenced project.
Attached you should find:
3 Sets of Septic Installation Site Plan

Please feel free to contact me if you require any additional information.
Regards,

Luke Groom

Luke A. Groom, P.E.

1/8/24 - precon meeting - pics of swale going through the proposed trench location - RP

CLICK and LOCK RISER TECHNOLOGY

The EZsnap riser is designed to create an easy-to-assemble watertight riser system for septic tanks, pump tanks, and cisterns.

The EZsnap Riser features click and lock technology eliminating the need for assembly tools, sealant/caulk and hardware. The 24" diameter EZsnap Riser is available in 2", 6" and 12" tall sections that nest together making for efficient storage and shipping.

WATERTIGHT GASKET TO GASKET CONNECTION

2, 6 & 12 Inch Riser System Available in Green and Black

- **A.** 24" x 2" Risers
- **B.** 24" x 6" Risers
- **C.** 24" x 12" Risers
- **D.** 24" Lids
- **E.** 24" Adapter Rings
- **F.** 24" Safety Star


A.


D.


B.


E.


C.

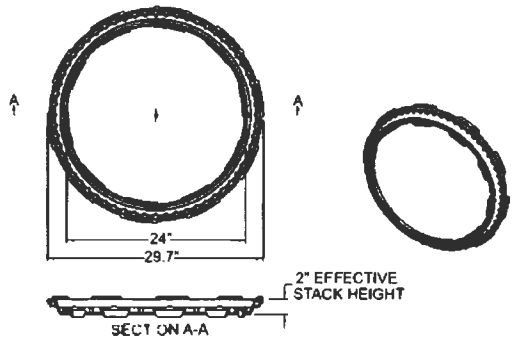

F.

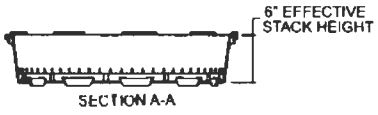
Benefits

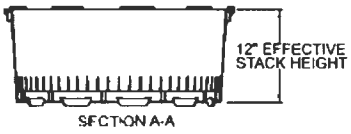
- Easy to Assemble
- No Tools or Adhesive
- Watertight – Gasketed Connection
- Nest Together for Efficient Shipping
- Available in 2, 6 and 12 Inch Heights
- Strong, Durable, Polypropylene Construction
- Available in Green or Black

EZSnap Riser System Sizes and Specifications

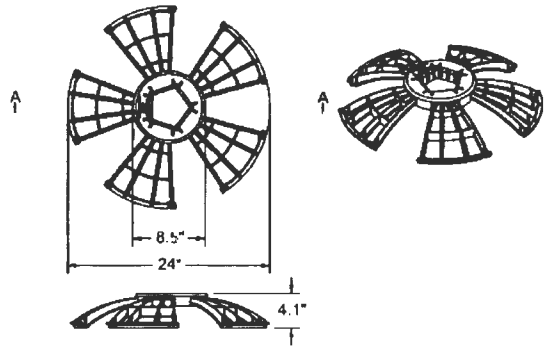
EZSnap Riser Specifications



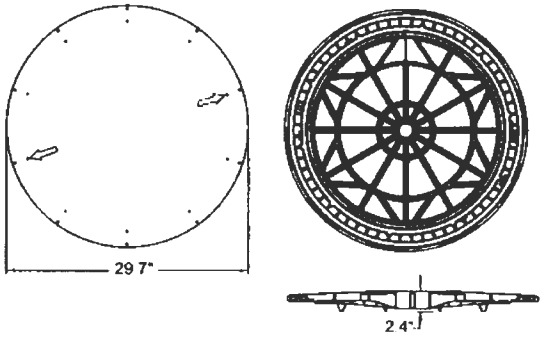




EZSnap Safety Star Specifications



EZSnap 24" Lid Specifications



INFILTRATOR WATER TECHNOLOGIES, LLC ("Infiltrator") EZsnap by Infiltrator LIMITED WARRANTY
ONE (1) YEAR MATERIALS AND WORKMANSHIP LIMITED WARRANTY

(a) This limited warranty is extended to the end user of an EZsnap by Infiltrator riser and lid system and other accessories.
An EZsnap system manufactured by Infiltrator, when installed and operated in accordance with Infiltrator's installation instructions and local regulation by a licensed installer, is warranted to you: (i) against defective materials and workmanship for one (1) year after installation. Infiltrator will, at its option, (ii) repair the defective product or (iii) replace the defective materials. Infiltrator's liability specifically excludes the cost of removal and/or installation of the EZsnap system.

(b) In order to exercise its warranty rights, you must notify Infiltrator in writing at its corporate headquarters in Old Saybrook, Connecticut within fifteen (15) days of the alleged defect.

(c) YOUR EXCLUSIVE REMEDY WITH RESPECT TO ANY AND ALL LOSSES OR DAMAGES RESULTING FROM ANY CAUSE WHATSOEVER SHALL BE SPECIFIED IN SUBPARAGRAPH (a) ABOVE. INFILTRATOR SHALL IN NO EVENT BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES OF ANY KIND, HOWEVER OCCASIONED, WHETHER BY NEGLIGENCE OR OTHERWISE. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THIS LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

(d) THIS LIMITED WARRANTY IS THE EXCLUSIVE WARRANTY GIVEN BY INFILTRATOR AND SUPERSEDES ANY PRIOR, CONTRARY, ADDITIONAL, OR SUBSEQUENT REPRESENTATIONS, WHETHER ORAL OR WRITTEN. INFILTRATOR DISCLAIMS AND EXCLUDES TO THE GREATEST EXTENT ALLOWED BY LAW ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, OR STATUTORY, INCLUDING ANY WARRANTY OF MERCHANTABILITY, FINESSE FOR A PARTICULAR PURPOSE AND ANY IMPLIED WARRANTIES OTHERWISE ARISING FROM COURSE OF DEALING, COURSE OF PERFORMANCE, OR USAGE OF TRADE. NO PERSON (INCLUDING ANY EMPLOYEE, AGENT, DEALER, OR REPRESENTATIVE) IS AUTHORIZED TO MAKE ANY REPRESENTATION OR WARRANTY CONCERNING THIS PRODUCT, EXCEPT TO REFER YOU TO THIS LIMITED WARRANTY, EXCEPT AS EXPRESSLY SET FORTH HEREIN. THIS WARRANTY IS NOT A WARRANTY OF FUTURE PERFORMANCE, BUT ONLY A WARRANTY TO REPAIR OR REPLACE.

(e) YOU MAY ASSIGN THIS LIMITED WARRANTY TO A SUBSEQUENT PURCHASER OF YOUR HOME.

(F) NO REPRESENTATIVE OF INFILTRATOR HAS THE AUTHORITY TO CHANGE THIS LIMITED WARRANTY IN ANY MANNER WHATSOEVER, OR TO EXTEND THIS LIMITED WARRANTY.

CONDITIONS AND EXCLUSIONS
There are certain conditions or applications over which Infiltrator has no control. Defects or problems as a result of such conditions or applications are not the responsibility of Infiltrator and are NOT covered under this warranty. They include failure to install the EZsnap system in accordance with instructions or applicable regulatory requirements or guidance, altering the EZsnap system contrary to the installation instructions and disposing of chemicals or other materials contrary to normal EZsnap system usage.

The above represents the Standard Limited Warranty offered by Infiltrator. A limited number of states and counties have different warranty requirements. Any purchaser of an EZsnap system 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 an EZsnap system.

INFILTRATOR
water technologies

4 Business Park Road
P.O. Box 768
Old Saybrook, CT 06475
860-577-7000 • Fax 860-577-7001
1-800-221-4436
www.infiltratorwater.com

EZSNAP01 0218

Contact Infiltrator Water Technologies' Technical Services Department for assistance at 1-800-221-4436

Infiltrator IM- and CM-Series Septic Tank General Installation Instructions

APRIL 2022

INFILTRATOR tanks

BEFORE YOU BEGIN

Infiltrator Water Technologies' tanks must be installed according to state and/or local regulations and approvals, which supersede the manufacturer's installation instructions. If unsure of the installation requirements for a specific site, contact the health department or permitting authority. The IM- and CM-Series models referred to in this document include the IM-540, IM-1060, CM-1060, and IM-1530.

WARNING: IMPLOSIONS MAY CAUSE SERIOUS INJURY
Follow Infiltrator Water Technologies' vacuum test instructions

MATERIALS AND EQUIPMENT NEEDED

- ☐ IM- or CM-Series tank
- ☐ Access port lid(s)*
- ☐ 10 screws per lid*
- ☐ 2 inlet/outlet gaskets (included)
- ☐ Inlet/outlet tees*
- ☐ Tape measure
- ☐ Pipe, risers, etc.
- ☐ Socket wrench
- ☐ Excavator
- ☐ Shovel
- ☐ Level
- ☐ 5-inch-diameter (125 mm) hole saw
- ☐ Utility knife
- ☐ PVC pipe glue with primer

*tee and lid inclusion varies by state/province

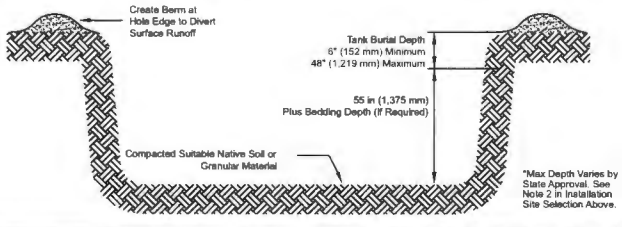
INSTALLATION SITE SELECTION

1. Do not install the tank in vehicular traffic areas. The tank is designed for non-traffic applications.
2. The allowable soil cover depth is 6 to 48* inches (150 to 1,200 mm).
   *18-inch (450 mm) max. in Florida for Cat. 3 tanks; 48-inch (1,200 mm) max. in Florida for Cat. 4 tanks; and 36-inch (900 mm) max. in Massachusetts, New Hampshire, North Carolina, and Oregon.
3. The tank shall not be installed where the subsurface water level outside the tank exceeds the height of the outlet pipe saddle. See page 4 illustration. See installation terminology on page 4 for Indiana installations.

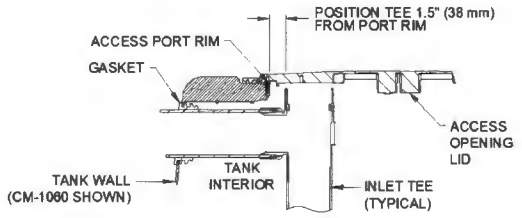
EXCAVATING AND PREPARING THE SITE

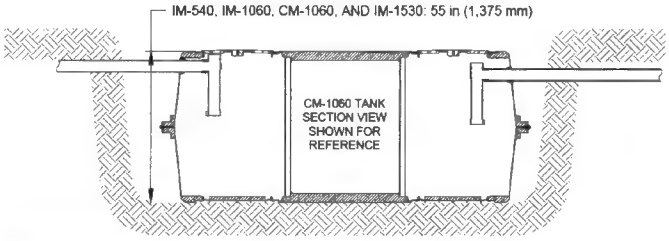
1. Unless buoyancy control measures are required, the excavation width and length should be 18 to 36 inches (450 to 900 mm) larger than the tank on each side or sized as necessary to ensure proper backfill compaction, as outlined in Steps 5-10 of "Backfilling the Tank" in this document. See Infiltrator IM- and CM-Series Tank Buoyancy Control Guidance document, available online at www.infiltratorwater.com, for specific excavation requirements when installing with buoyancy control measures.
2. Excavation depth shall account for the 55-inch (1,375 mm) tank height. Also account for 4 inches (100 mm) of bedding (if required) and cover depth (permissible cover depth is 0.5 to 4 feet (150 to 1,200 mm) of soil).
   Note: If the water level outside the tank exceeds the height of the outlet pipe saddle, tank structural integrity may be compromised. See page 4 for maximum allowable subsurface water elevation guidelines. See page 4 note. Indiana Installations: If the depth of the uninterrupted saturated soil conditions cannot be determined from the site soil evaluation report or other site-related data and other information indicates the possible presence of a perched ground water table, tank installation is permissible. See installation terminology on page 4.
3. Inspect bottom of excavation to verify suitability of native soil for tank installation. Soils with large, protruding, or sharp stones or other similar objects that may damage the tank are not suitable.
4. The tank may be installed either in suitable native soil (see Backfilling the Tank section) or a minimum 4-inch (100 mm) layer of well-graded granular soil having particles less than 3 inches (75 mm) in diameter, or maximum 0.5-inch (13 mm) diameter crushed stone.
5. Create a uniform, compacted, level surface to ensure that the bottom of the tank is evenly supported. Verify that the installation surface is flat.

INSTALLING THE TANK



1. Inspect the tank for damage before installation.
2. If the tank inlet and outlet penetrations are not drilled, drill holes using the drill points provided at each of the inlet and outlet ports according to Table 3 in the Inlet and Outlet Hole Locations section. The inlet and outlet may be drilled on either the sides or ends of the tank, as required based on applicable codes and site conditions.*
   * Kentucky and West Virginia tanks are factory-drilled. Florida and Oregon tanks must be factory- or distributor-drilled.
3. The gaskets supplied with the tank are compatible with Schedule 40 and SDR 35 pipe using a 5-inch-diameter (125 mm) hole saw.
4. Install the rubber gaskets at the inlet and outlet.
5. Using all four of the tank's integral lifting lugs, lower tank into excavation.
6. Slide the inlet and outlet pipes* through the gaskets. Soapy lubricant may be used to slide the pipe in.
   *For North Carolina, the inlet pipe shall be a straight pipe with no tee.
7. Horizontally position the tee 1½ inches (38 mm) from the access port rim, allowing the tee to fit into the recess in the access port lid (see detail).
8. Install lids and risers (see Installing Risers section) as necessary. Rotate lid over access opening until it indexes to tank and drops into position.

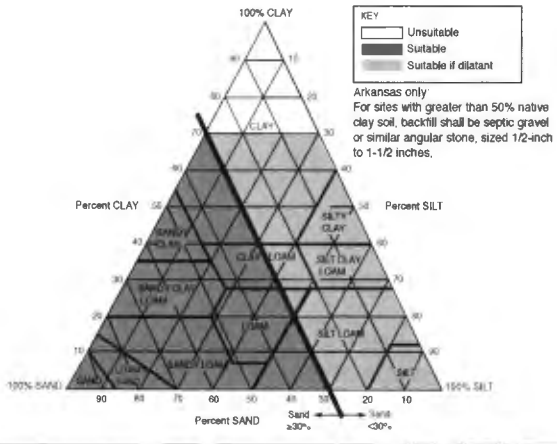




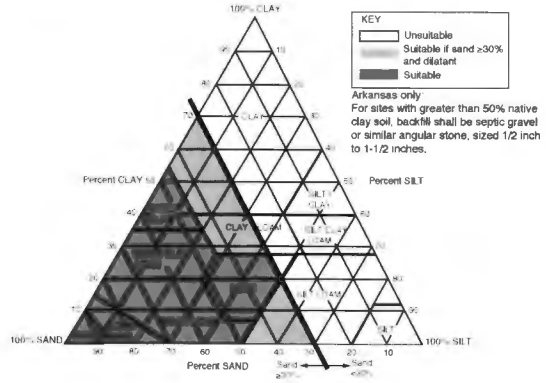
BACKFILLING THE TANK

Note: Infiltrator tanks do not require filling with water prior to backfill placement. Water filling and backfilling to the tank mid-height is required if the tank is left in either an open or backfilled excavation that may fill with water from rain or other sources.

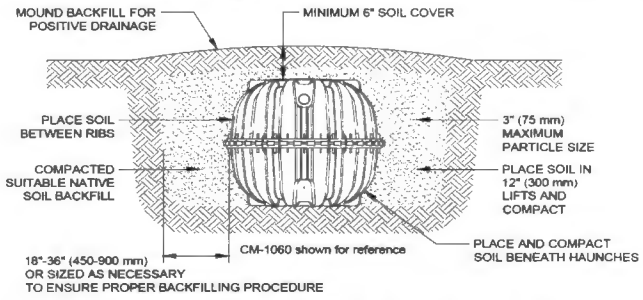
1. Backfill with suitable native soil (max. 3-inch (75-mm) stone diameter). If native soil is unsuitable, replace unsuitable fraction with suitable soil. If suitable soil is not locally available, contact Infiltrator for assistance.
2. Suitable soil shall include soil textural classes defined in the United States Department of Agriculture soil triangle.
   a) For a tank soil cover depth of 0.5 to 2.0 feet (150 to 600 mm), suitable soil textures include:



b) For a tank soil cover depth that is greater than 2.0 feet and up to 4.0 feet (600 to 1,200 mm), suitable soil textures include:



3. Backfill should not have stones greater than 3 inches (75 mm) in diameter or excessive clods that do not break apart during placement and compaction. Backfill must be capable of occupying the spaces between the tank ribs and beneath the haunches.
   Note: Rounded screened aggregate (e.g., pea gravel) is not a suitable backfill.
4. Standard field soil classification methods shall be used to determine the soil textural class.
   Note: Under most circumstances, the determination of soil dilatancy will not be required. Dilatancy shall be determined in the field using a test that does not require specialized equipment, per ASTM D2488, Section 14.3.
5. Place and compact soil by walking-in beneath the haunches of the tank.
   Note: Compacting soil beneath the haunches is critical for tank structural integrity.
6. Place backfill around the four sidewalls in an alternating manner, so that the backfill height along the four sidewalls is maintained within a 12-inch (300-mm) tolerance.
7. Do not backfill top of tank before sidewalls are completely backfilled.
8. Continue to place backfill along the sidewalls in 12-inch (300-mm) lifts. Place backfill between the ribs on the sidewalls such that the space between the ribs is completely filled with soil.
9. Compact backfill material either by walking-in, hand tamping or mechanical compaction (includes backhoe bucket). If mechanical compaction is used, such as a walk-behind tamper or backhoe bucket, a single pass is recommended. Compact each lift prior to placement of next lift. Compact backfill from tank walls to excavation sidewalls.
10. Complete backfilling and grade the area.
11. A minimum 6-inch (150-mm) depth of suitable soil must be placed over the top of the tank. The balance of backfill placed to finish grade above the tank may be either suitable or unsuitable soil.
12. Establish a strong stand of erosion-resistant vegetation.
    Grade to prevent the backfilled excavation from filling with surface runoff. If the subsurface water level in the backfilled excavation exceeds the height of the outlet pipe saddle, tank structural integrity may be compromised. See page 4 for illustration.



SHORT AND LONG-TERM GROUNDWATER CONTROL

It may be necessary to implement groundwater control measures during tank installation. Maintain dry conditions by expanding the excavation to create a short-term groundwater collection sump for temporary placement of a dewatering pump if needed. Long-term groundwater control measures such as underdrains and interceptor trenches may be sensible if the site is amenable to construction of a control system and such systems are not prohibited by regulation or law, and the tank location is not subject to flooding. Underdrains and groundwater interceptor trenches may prevent the need for tank buoyancy control measures.

INSTALLING UNDER SHALLOW GROUNDWATER CONDITIONS

Buoyancy control measures may be required if the tank is to be installed with less than 12 inches (300 mm) of soil backfill cover, and where the water level outside the tank (See Table 1, Note 4) has the potential to rise 30 inches (750 mm) or more above the elevation of the tank bottom. Otherwise, no control measures are required (see Table 1). The need for buoyancy control measures must be determined based on backfill cover depth and height of water outside of tank above the tank bottom according to Table 1. Refer to Infiltrator IM- and CM-Series Tank Buoyancy Control Guidance document for more information.

Table 1: Tank models[1] and conditions requiring buoyancy control[2]

Subsurface water height above tank bottom[4]	Soil cover depth above tank[3]	
	6 in (150 mm) to 12 in (300 mm)	12 in (300 mm) or greater
Above outlet pipe saddle	Do not install tank	Do not install tank
36 in (900 mm) to outlet pipe saddle	All models	None
30 in (750 mm) to 36 in (900 mm)	IM-1530	None
Less than 30 in (750 mm)	None	None

1. IM-540, IM-1060, CM-1060 and IM-1530.
2. See Infiltrator IM- and CM-Series Tank Buoyancy Control Guidance document for detailed information on the use of controls.
3. No controls are required for soil cover depths exceeding 12 in (300 mm).
4. The tank shall not be installed where uninterrupted saturated soil conditions could be present from the tank bottom to a height above that of the outlet pipe saddle. See page 4 illustration. For Indiana installations, if the depth of the uninterrupted saturated soil conditions cannot be determined from the site soil evaluation report or other site-related data and other information indicates the possible presence of a perched ground water table, no buoyancy controls are required. See installation terminology on page 4.

INSTALLING RISERS

1. Compatible risers include 24-inch (600 mm) diameter products such as the Infiltrator EZsnap, TW-Riser, and EZset by Infiltrator, PolyLok®, Inc., and Tuf-Tite® Corporation, in addition to 24-inch (600 mm) diameter corrugated HDPE and IPEX Ultra Rib® PVC pipe. Follow Infiltrator's IM- and CM-Series Tank Riser Connection Guidance Document.
2. In Oregon only, watertightness testing shall include filling with water at least 2 inches above riser connection, with no more than 1 gallon leakage per 24 hours, per OAR 340-073-0025(3).

INSTALLING PUMPS AND RELATED EQUIPMENT

Pumps may be supported on a stable, level 16x16-inch (400x400-mm) platform positioned on the bottom of the tank. One 16x16-inch block or two 8x16-inch (200 -mm x 400-mm) side-by-side blocks may be used. Limit block height to account for pump height and liquid levels during pump cycles. Block(s) should be placed below an access opening and level upon the tank bottom. For two blocks, orient them perpendicular to ribs on the tank bottom, if present, for stability.

Installation of products such as electrical conduit and wiring, pumps, water level control equipment, valves, siphon equipment, etc. shall be in accordance with the product manufacturer's instructions and compliant with applicable state or local rules and regulations. Appurtenances shall be fastened to the tank riser system and not the tank body or access opening rim. Where possible, appurtenances shall be installed to facilitate maintenance and repair access via the tank access openings.
Note: Prefabricated pump vaults may be installed.

GENERAL SPECIFICATIONS

- Failure to comply with installation instructions will void warranty.
- Prior to ground disturbance, check for subsurface obstructions and utilities in conformance with applicable requirements.
- Operating water temperature shall be less than 100° F (40° C).
- In cold conditions, handle and backfill tank with care to prevent impact damage.
- Tanks are not fire resistant. Store away from ignition sources.
- Removal of structural bulkheads is prohibited; removal of locking clips on the tank mid-seam connection is also prohibited.
- Only suitable for potable applications if the tank bears the NSF/ANSI 61 certification mark. Otherwise, tank is recommended for use in septic, rainwater/ stormwater storage, holding, and pump applications, or other non-potable uses.
- Infiltrator tanks shall not be installed above ground. Contact Infiltrator if the 6-inch (150-mm) minimum soil cover depth cannot be met.

FISHER, COLLINS & CARTER, INC.

CIVIL ENGINEERING CONSULTANTS and LAND SURVEYORS

Terrell A. Fisher, P.E., L.S.
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Charles J. Crovo, Sr., P.E., L.S.

Paul W. Kriebel, P.E.
Mark L. Robel, P.L.S.
Aldo M. Vitucci, P.E.
Frank Manalansan II, L.S.

October 3rd, 2023

Zackary Silvast
Ho. Co. Health Department
Well & Septic Program
8930 Stanford Blvd
Columbia, MD 21045

RE:
Septic Install Plan
1680 Woodstock Road

Dear Mr. Silvast:
On behalf of our client, please accept this resubmission package and accompanying point-by-point response to a comment email, dated September 25, 2023.

Health Department Septic Install Plan Comments:

Comment:

1. *System calculations will change based on new spec sheet.*

Response:
The trench computations have been revised based on the new spec sheet.

Comment:

2. *We will want to add one 76' line on the existing system.*
   a. *This should be shown on the plan.*
   b. *It should mirror the existing trench orientation, and be held between contours 370 and 372.*
   c. *It should be at a minimum 10' off the existing trench.*
   d. *It should also mirror the specs from the original septic system install permit & as-built.*
   e. *Eliminate "initial" system specs. It's technically the existing and the new trench will be the "add-on or upgrade."*

Response:
A 76-foot trench has been added to the existing system.

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Comment:

3. *I would rather have a center feed system shown for the 1st and 2nd replacements with the lines on contour then see all that SDA space get wasted.*

Response:
The add-on and replacement systems have been designed as center feed.

Comment:

4. *Existing tank should be labeled as such and specify 1500 GAL to remain.*

Response:
The existing tank has been labeled.

Comment:

5. *Add note, "Septic system shall be upgraded prior to building permit approval due to increase in septic flow by proposed additional bedroom."*

Response:
The note has been added to the general notes as note 9.

Comment:

6. *Should still have a tank detail shown somewhere on this plan.*
   a. *Label as existing.*

Response:
A tank detail labeled as existing has been added.

Comment:

7. *I would add a purpose note to this OSDS plan specifying the reasoning for this updated plan. Being as specific as possible.*

Response:
A purpose note has been added to the plan.

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Comment:

8. *SIDE NOTE: Floor plans submitted with future building permit will need to be fully labeled and complete. Each room should be accounted for.*

Response:
Acknowleged.

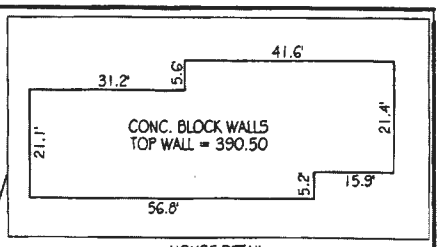
If you have any questions or require any additional information that may help in your review, please do not hesitate to call.

Very truly yours,
Fisher, Collins & Carter, Inc

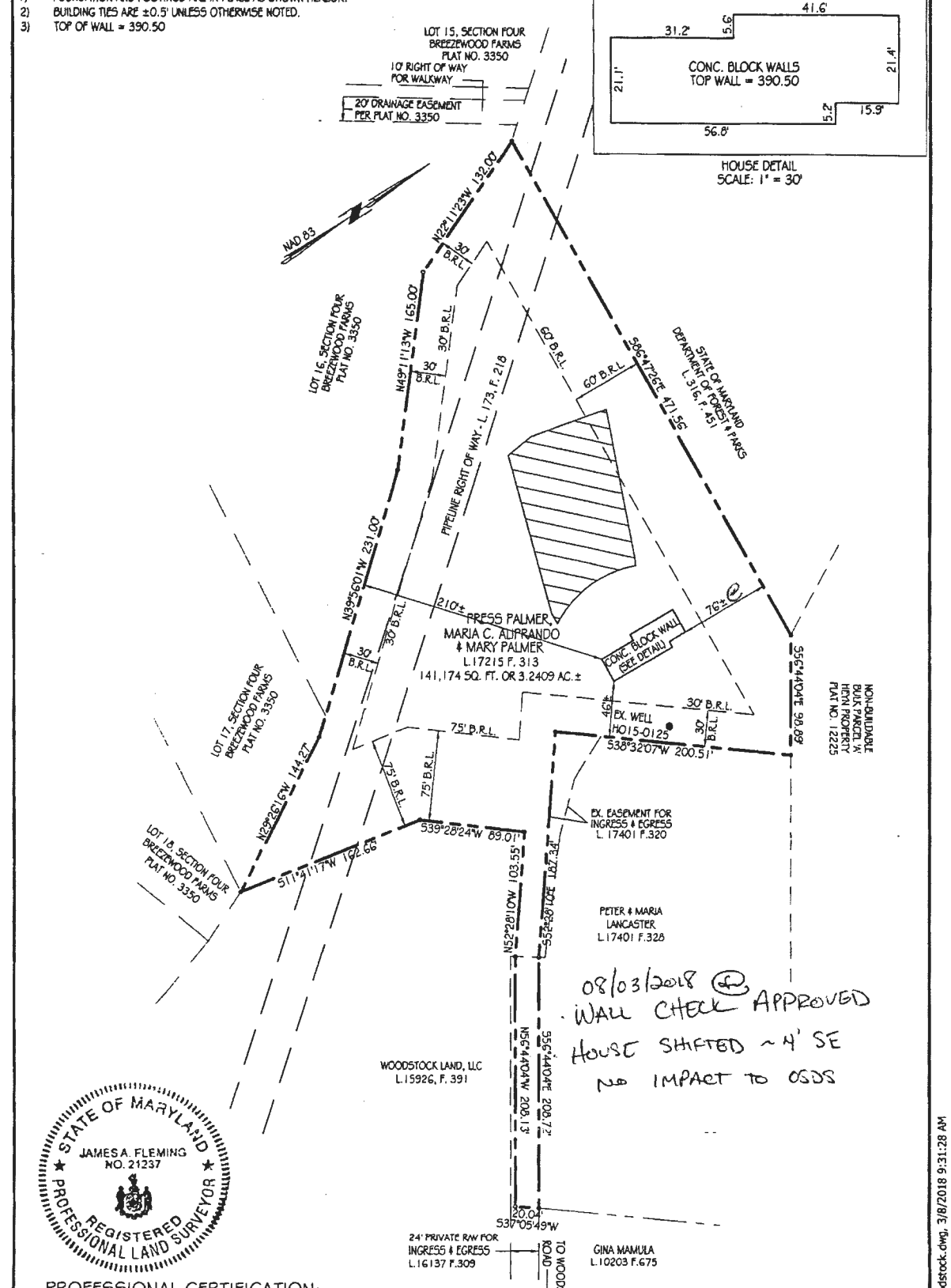
Luke Groom

Luke A. Groom P.E.

NOTES:
1) FOUNDATION AND FOOTINGS ARE IN PLACE AS SHOWN HEREON.
2) BUILDING TIES ARE ±0.5' UNLESS OTHERWISE NOTED.
3) TOP OF WALL = 390.50



HOUSE DETAIL
SCALE: 1" = 30'



STATE OF MARYLAND
JAMES A. FLEMING
NO. 21237
REGISTERED
PROFESSIONAL LAND SURVEYOR

PROFESSIONAL CERTIFICATION:

I HEREBY CERTIFY THAT THIS DOCUMENT WAS PREPARED BY ME OR UNDER MY RESPONSIBLE CHARGE, AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21237, EXPIRATION DATE JANUARY 18, 2019, IN ACCORDANCE WITH COMAR 09.13.06.12.

3-8-2018
For VanMar Associates, Inc. Date
James Alden Fleming, Prof. Land Surveyor

WALL CHECK DRAWING
LANDS CONVEYED TO
PRESS PALMER, ET AL
L. 17215 F. 315
1680 WOODSTOCK ROAD
THIRD ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
SCALE: 1" = 100' MARCH, 2018

I CERTIFY THIS PLAT TO BE CORRECT; IT IS THE RESULT OF AN ACTUAL FIELD SURVEY, BASED ON DATA FOUND AMONG THE LAND RECORDS OF HOWARD COUNTY, MARYLAND, AS REFERENCED HEREON.

REFERENCE	JOB NO.
L. 17215. F. 315	B7-5620

VANMAR
ASSOCIATES, INC.
Engineers Surveyors Planners
310 South Main Street Mount Airy, Maryland 21771
(301) 829-2890 (301) 831-5015 (410) 549-2751
vanmar.com

I:\AutoDesk\Jobs\B7-5620 WOODSTOCK\dwg\B7-5620 Woodstock.dwg, 3/8/2018 9:31:28 AM

INLET AND OUTLET HOLE LOCATIONS

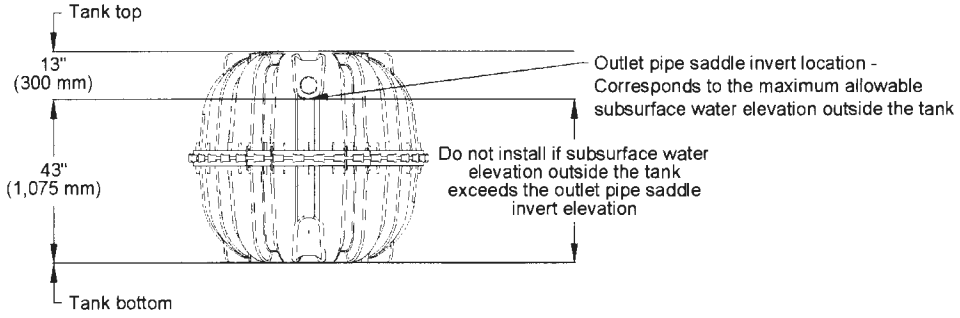
Drill height marks are provided on all Infiltrator tank models to guide inlet and outlet hole drilling. A single drill height mark is provided at each end or side port on tanks (example illustrated below). Holes may be drilled at the end or side inlet and outlet locations, as allowed by state and/or local regulations. The drill height mark indicates the center point location for the hole saw. The pilot drill bit on the hole saw should be positioned at the center of the drill height mark to align the hole saw properly. Table 3 provides drilling and invert information by regulatory jurisdiction for the installation of 4-inch-diameter (100 mm) pipe.

Table 3: Inlet and Outlet Hole Locations[1]

Jurisdiction[2]	Inlet Drill Location	Outlet Drill Location	Invert Drop (in) [mm]	Inlet Invert Height (in) [mm]		Outlet Invert Height[3] and Liquid Level (in) [mm]
				Above Inside Bottom of Tank[3]	Above Excavation Base[4]	
IM-540 and IM-1530						
All	All	All	3.00 [76]	47.00 [1,194]	47.20 [1,199]	44.00 [1,118]
CM-1060						
All Except Florida	All	All	3.00 [76]	47.00 [1,194]	47.20 [1,199]	44.00 [1,118]
Florida	End	End	2.00 [51]	46.00 [1,168]	46.20 [1,174]	44.00 [1,118]
IM-1060						
All	End	End	3.00 [76]	47.00 [1,194]	47.20 [1,199]	44.00 [1,118]
	Side	Side	3.00 [76]	47.50 [1,207]	47.70 [1,212]	44.50 [1,130]
	Side	End	3.50 [89]	47.50 [1,207]	47.70 [1,212]	44.00 [1,118]
	End	Side	2.50 [64]	47.00 [1,194]	47.20 [1,199]	44.50 [1,130]

1. State, provincial, and local regulatory requirements supersede Table 3 information.
2. Kentucky and West Virginia tanks are factory-drilled. Florida and Oregon tanks must be factory- or distributor-drilled.
3. Invert heights are measured from the lowest interior surface at the bottom of the tank to the invert.
4. Invert heights are measured from the base of the excavation to the invert.

Limitations When Subsurface Water is Present Above the Tank Bottom



Installation Terminology

1. "Subsurface water" refers to a water-saturated zone of soil. Do not install if subsurface water is continuous from the tank bottom elevation to any point above the outlet pipe saddle elevation.
2. "Uninterrupted saturated soil" refers to water-saturated soil with no gaps in the saturated condition. An example of a gap in the saturated condition is a perched water table, when two water-saturated soil zones are interrupted by an unsaturated soil zone. Do not install if uninterrupted saturated soil is present from the tank bottom elevation to any point above the outlet pipe saddle elevation.
3. A perched water table is allowable above the outlet pipe saddle elevation only if unsaturated soil is present between the perched water table and tank bottom elevation.

Infiltrator Water Technologies, LLC ("Infiltrator")

INFILTRATOR® SEPTIC TANK LIMITED WARRANTY FIVE (5) YEAR MATERIALS AND WORKMANSHIP LIMITED WARRANTY

(a) This limited warranty is extended to the end user of an Infiltrator Tank. A Tank manufactured by Infiltrator, when installed and operated in accordance with Infiltrator's installation instructions and local regulation by a person or company that is properly qualified to install the Infiltrator Tank in accordance with applicable state and/or local requirements, is warranted to you: (i) against defective materials and workmanship for five (5) years after installation. Infiltrator will, at its option, (i) repair the defective product or (ii) replace the defective materials. Infiltrator's liability specifically excludes the cost of removal and/or installation of the Tank.

(b) In order to exercise its warranty rights, you must notify Infiltrator in writing at its corporate headquarters in Old Saybrook, Connecticut within fifteen (15) days of the alleged defect.

(c) YOUR EXCLUSIVE REMEDY WITH RESPECT TO ANY AND ALL LOSSES OR DAMAGES RESULTING FROM ANY CAUSE WHATSOEVER SHALL BE SPECIFIED IN SUBPARAGRAPH (a) ABOVE. INFILTRATOR SHALL IN NO EVENT BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES OF ANY KIND, HOWEVER OCCASIONED, WHETHER BY NEGLIGENCE OR OTHERWISE. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THIS LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

(d) THIS LIMITED WARRANTY IS THE EXCLUSIVE WARRANTY GIVEN BY INFILTRATOR AND SUPERSEDES ANY PRIOR, CONTRARY, ADDITIONAL, OR SUBSEQUENT REPRESENTATIONS, WHETHER ORAL OR WRITTEN. INFILTRATOR DISCLAIMS AND EXCLUDES TO THE GREATEST EXTENT ALLOWED BY LAW ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, OR STATUTORY, INCLUDING ANY WARRANTY OF MERCHANTABILITY, FINESSE FOR A PARTICULAR PURPOSE AND ANY IMPLIED WARRANTIES OTHERWISE ARISING FROM COURSE OF DEALING, COURSE OF PERFORMANCE, OR USAGE OF TRADE. NO PERSON (INCLUDING ANY EMPLOYEE, AGENT, DEALER, OR REPRESENTATIVE) IS AUTHORIZED TO MAKE ANY REPRESENTATION OR WARRANTY CONCERNING THIS PRODUCT, EXCEPT TO REFER YOU TO THIS LIMITED WARRANTY. EXCEPT AS EXPRESSLY SET FORTH HEREIN, THIS WARRANTY IS NOT A WARRANTY OF FUTURE PERFORMANCE, BUT ONLY A WARRANTY TO REPAIR OR REPLACE.

(e) YOU MAY ASSIGN THIS LIMITED WARRANTY TO A SUBSEQUENT PURCHASER OF YOUR HOME.

(f) NO REPRESENTATIVE OF INFILTRATOR HAS THE AUTHORITY TO CHANGE THIS LIMITED WARRANTY IN ANY MANNER WHATSOEVER, OR TO EXTEND THIS LIMITED WARRANTY.

(g) NO WARRANTY OF ANY KIND IS MADE WITH REGARD TO ANY PRODUCT, COMPONENTS, DEVICES, MEDIA OR TREATMENT UNITS WHICH ARE MANUFACTURED BY OTHERS AND ARE INSTALLED IN AN INFILTRATOR TANK. USE OF THESE PRODUCTS ARE AT YOUR OWN RISK.

(h) THE INFILTRATOR TANK IS DESIGNED TO BE BURIED UNDERGROUND. NO WARRANTY OF ANY KIND IS MADE IF YOUR TANK IS NOT BURIED UNDERGROUND AS SPECIFIED IN THE PRODUCT'S INSTALLATION INSTRUCTIONS.

CONDITIONS AND EXCLUSIONS

There are certain conditions or applications over which Infiltrator has no control. Defects or problems as a result of such conditions or applications are not the responsibility of Infiltrator and are NOT covered under this warranty. They include failure to install the Tank in accordance with instructions or applicable regulatory requirements or guidance, altering the Tank contrary to the installation instructions and disposing of chemicals or other materials contrary to normal tank usage.

The above represents the Standard Limited Warranty offered by Infiltrator. A limited number of regulatory jurisdictions have different warranty requirements. Any purchaser of a Tank 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 a Tank.

INFILTRATOR
water technologies

4 Business Park Road
P.O. Box 768
Old Saybrook, CT 06475
860-577-7000 • Fax 860-577-7001
1-800-221-4436
www.infiltratorwater.com
info@infiltratorwater.com

Distributed By:

Note: Please visit www.infiltratorwater.com for updated and/or amended instructional material.

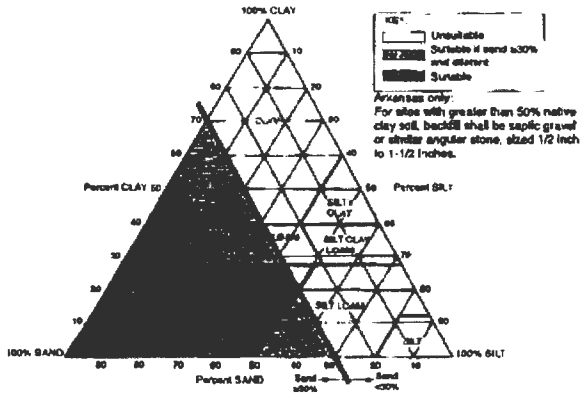
TANK01 0422

Table 2: Nominal Volume Chart

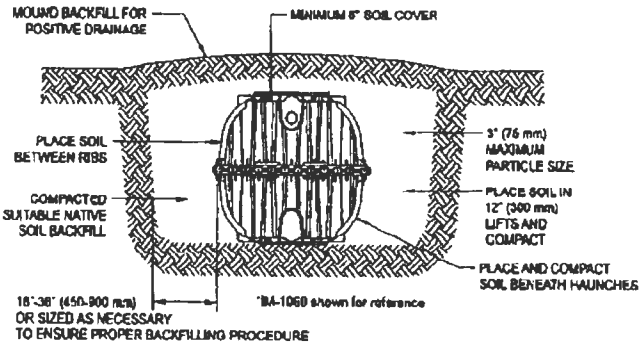
Liquid height above tank bottom[1]		Liquid volume in tank at indicated height (measured from tank bottom to liquid surface)[1]							
		IM-540		IM-1060		CM-1060		IM-1530	
in	cm	U.S. Gal	Liters	U.S. Gal	Liters	U.S. Gal	Liters	U.S. Gal	Liters
1	3	3	11	3	11	5	21	17	64
2	5	8	30	13	49	17	64	34	128
3	8	14	53	28	106	31	119	51	192
4	10	21	80	46	174	50	188	68	256
5	13	29	109	65	246	70	263	94	357
6	15	37	141	86	326	91	344	122	463
7	18	46	173	107	405	113	429	152	573
8	20	55	207	129	488	137	517	180	681
9	23	64	243	152	575	160	608	212	802
10	25	74	279	176	666	185	700	245	928
11	28	84	317	200	757	210	795	280	1,061
12	30	94	356	225	852	236	892	312	1,182
13	33	105	396	251	950	262	991	351	1,328
14	36	116	437	277	1,049	288	1,091	387	1,463
15	38	127	480	303	1,147	315	1,192	422	1,597
16	41	138	523	330	1,249	342	1,293	464	1,756
17	43	150	566	357	1,351	369	1,396	500	1,892
18	46	161	611	384	1,454	396	1,499	537	2,034
19	48	173	656	411	1,556	423	1,602	575	2,177
20	51	186	702	438	1,658	451	1,706	614	2,322
21	53	198	749	465	1,760	478	1,811	652	2,468
22	56	210	796	493	1,866	506	1,916	690	2,612
23	58	223	843	521	1,972	534	2,022	729	2,758
24	61	235	891	549	2,078	562	2,129	770	2,914
25	64	248	940	577	2,184	591	2,236	808	3,058
26	66	261	988	605	2,290	619	2,344	847	3,208
27	69	274	1,038	633	2,396	648	2,453	887	3,356
28	71	287	1,088	662	2,506	677	2,563	928	3,513
29	74	300	1,137	691	2,616	706	2,671	968	3,665
30	76	313	1,185	719	2,722	734	2,778	1,007	3,814
31	79	326	1,233	747	2,828	762	2,885	1,048	3,966
32	81	338	1,281	775	2,934	790	2,991	1,087	4,113
33	84	351	1,328	802	3,036	818	3,096	1,126	4,262
34	86	363	1,375	830	3,142	846	3,201	1,165	4,410
35	89	375	1,421	857	3,244	873	3,305	1,204	4,557
36	91	387	1,466	884	3,346	901	3,409	1,242	4,701
37	94	399	1,511	911	3,449	928	3,512	1,280	4,846
38	97	411	1,555	938	3,551	955	3,614	1,318	4,988
39	99	422	1,598	965	3,653	982	3,716	1,355	5,131
40	102	433	1,640	992	3,755	1,008	3,817	1,393	5,272
41	104	444	1,681	1,018	3,854	1,035	3,917	1,430	5,412
42	107	455	1,722	1,044	3,952	1,061	4,016	1,466	5,550
43	109	465	1,761	1,069	4,047	1,087	4,113	1,502	5,685
44	112	475	1,799	1,094	4,141	1,111	4,207	1,537	5,817
45	114	485	1,836	1,118	4,232	1,136	4,302	1,572	5,950
46	117	494	1,871	1,142	4,323	1,160	4,393	1,604	6,070
47	119	503	1,905	1,165	4,410	1,184	4,481	1,638	6,201
48	122	512	1,938	1,187	4,493	1,206	4,566	1,667	6,310
49	124	520	1,970	1,208	4,573	1,228	4,648	1,697	6,422
50	127	528	1,999	1,228	4,648	1,248	4,724	1,724	6,527
51	130	535	2,027	1,247	4,720	1,267	4,794	1,749	6,621
52	132	542	2,050	1,265	4,789	1,282	4,851	1,766	6,684
53	135	547	2,071	1,278	4,838	1,293	4,896	1,777	6,726
54	137	551[2]	2,087	1,287	4,872	1,300[2]	4,922	1,785[2]	6,758

1. Liquid height measured from lowermost inside surface at bottom of corrugation in tank to the liquid surface elevation.
2. The total capacity of the IM-540 tank is 552 gallons; the total capacity of the CM-1060 is 1,309, the total capacity of the IM-1530 tank is 1,787 gallons.
3. To determine liquid volume between liquid heights, subract the Table 2 volume indicated for the upper and lower heights. Example: CM-1060 volume between 50 in (127 cm) and 40 in (102 cm) = 1,248 gal (4,724 L) - 1,008 gal (3,817 L) = 240 gal (907 L).

b) For a tank soil cover depth that is greater than 2.0 feet and up to 4.0 feet (600 to 1,200 mm), suitable soil textures include:



3. Backfill should not have stones greater than 3 inches (75 mm) in diameter or excessive clods that do not break apart during placement and compaction. Backfill must be capable of occupying the spaces between the tank ribs and beneath the haunches.
   Note: Rounded screened aggregate (e.g., pea gravel) is not a suitable backfill.
4. Standard field soil classification methods shall be used to determine the soil textural class.
   Note: Under most circumstances, the determination of soil dilatancy will not be required. Dilatancy shall be determined in the field using a test that does not require specialized equipment, per ASTM D2488, Section 14.3. Complete instructions can be found at www.infiltratorsystems.com
5. Place and compact soil by walking-in beneath the haunches of the tank.
6. Place backfill around the four sidewalls in an alternating manner, so that the backfill height along the four sidewalls is maintained within a 12-inch (300-mm) tolerance.
7. Do not backfill top of tank before sidewalls are completely backfilled.
8. Continue to place backfill along the sidewalls in 12-inch (300-mm) lifts. Place backfill between the ribs on the sidewalls such that the space between the ribs is completely filled with soil.
9. Compact backfill material either by walking-in, hand tamping or mechanical compaction (includes backhoe bucket). If mechanical compaction is used, such as a walk-behind tamper or backhoe bucket, a single pass is recommended. Compact each lift prior to placement of next lift. Compact backfill from tank walls to excavation sidewalls.
10. Complete backfilling and grade the area.
11. A minimum 6-inch (150-mm) depth of suitable soil must be placed over the top of the tank. The balance of backfill placed to finish grade above the tank may be either suitable or unsuitable soil.
12. Establish a strong stand of erosion-resistant vegetation.
    Note: Grade to prevent the backfilled excavation from filling with surface runoff. If the water level in the backfilled excavation exceeds the height of the outlet pipe saddle, tank structural integrity may be compromised.



SHORT AND LONG-TERM GROUNDWATER CONTROL

It may be necessary to implement groundwater control measures during tank installation. Maintain dry conditions by expanding the excavation to create a short-term groundwater collection sump for temporary placement of a dewatering pump if needed. Long-term groundwater control measures such as underdrains and interceptor trenches may be sensible if the site is amenable to construction of a control system and such systems are not prohibited by regulation or law, and the tank location is not subject to flooding. Properly installed underdrains and groundwater interceptor trenches may prevent the need for tank buoyancy control measures.

INSTALLING UNDER SHALLOW GROUNDWATER CONDITIONS

Buoyancy control measures may be required if the Infiltrator tank is to be installed with less than 12 inches (300 mm) of soil backfill cover, and where the water level outside the tank has the potential to rise 30 inches (750 mm) or more above the elevation of the tank bottom. Otherwise, no control measures are required (see Table 1). The need for buoyancy control measures must be determined based on backfill cover depth and height of water outside of tank above the tank bottom according to Table 1. Refer to Infiltrator IM- and TW-Series Tank Buoyancy Control Guidance document for more information.

Table 1: Tank models[1] and conditions requiring buoyancy control[2]

Water height above tank bottom	Soil cover depth above tank[3]	
	6 in (150 mm) to 12 in (300 mm)	Above 12 in (300 mm)
Above outlet pipe saddle	Do not install	Do not install
36 in (900 mm) to outlet pipe saddle[4]	All models	None
30 in (750 mm) to 36 in (900 mm)	All models except IM-540 and IM-1060	None
Less than 30 in (750 mm)	None	None

1. IM-540, IM-1060, TW-1250, TW-1500, and IM-1530.
2. See Infiltrator IM- and TW- Series Tank Buoyancy Control Guidance for detailed information on the use of controls.
3. No controls are required for soil cover depths exceeding 12 in (300 mm).
4. The tank shall not be installed where the water level outside the tank exceeds the height of the outlet pipe saddle. Follow Table 4 guidelines.

INSTALLING RISERS

1. Compatible risers include 24-inch (600 mm) diameter products such as the Infiltrator TW-Riser, EZset by Infiltrator, PolyLok®, Inc., and Tuf-Tite® Corporation, in addition to 24-inch (600 mm) diameter corrugated HDPE and IPEX Ultra Rib® PVC pipe. Follow Infiltrator's IM- and TW-Series Tank Riser Connection Guidance.
2. In Oregon only, watertightness testing shall include filling with water at least 2 inches above riser connection, with no more than 1 gallon leakage per 24 hours, per OAR 340-073-0025(3).

INSTALLING PUMPS AND RELATED EQUIPMENT

Pumps may be supported on a stable, level 16x16-inch (400x400-mm) platform positioned on the bottom of the tank. One 16x16-inch block or two 8x16-inch (200-mm x 400-mm) side-by-side blocks may be used. Limit block height to account for pump height and liquid levels during pump cycles. Block(s) should be placed below an access opening and level upon the tank bottom. For two blocks, orient them perpendicular to ribs on the tank bottom, if present, for stability.

Installation of products such as electrical conduit and wiring, pumps, water level control equipment, valves, siphon equipment, etc. shall be in accordance with the product manufacturer's instructions and compliant with applicable state or local rules and regulations. Appurtenances shall be fastened to the tank riser system and not the tank body or access opening rim. Where possible, appurtenances shall be installed to facilitate maintenance and repair access via the tank access openings.
Note: Prefabricated pump vaults may be installed.

GENERAL SPECIFICATIONS

- Failure to comply with installation instructions will void warranty.
- Prior to ground disturbance, check for subsurface obstructions and utilities in conformance with applicable requirements.
- Operating water temperature shall be less than 100° F (40° C).
- In cold conditions, handle and backfill tank with care to prevent impact damage.
- Tanks are not fire resistant. Store away from ignition sources.
- Removal of structural bulkheads is prohibited; removal of locking clips on the IM-Series tank mid-seam connection is also prohibited.
- Only suitable for potable applications if the tank bears the NSF/ANSI 61 certification mark. Otherwise, tank is recommended for use in septic, rainwater/stormwater storage, holding, and pump applications, or other non-potable uses.
- Infiltrator tanks are designed for installation underground.
- Contact Infiltrator Systems for above-ground use requirements.

Infiltrator IM- and TW-Series Septic Tank General Installation Instructions

MARCH 2014

INFILTRATOR tanks

BEFORE YOU BEGIN

Infiltrator Systems' tanks must be installed according to state and/or local regulations, which supersede the manufacturer's installation instructions. If unsure of the installation requirements for a specific site, contact the health department or permitting authority. The IM-Series referred to in this document includes the IM-540, IM-1060, and IM-1530 tanks. The TW-Series includes the TW-1250 and TW-1500 tanks.

WARNING: IMPLOSIONS MAY CAUSE SERIOUS INJURY
Follow Infiltrator Systems Inc. vacuum test instructions

MATERIALS AND EQUIPMENT NEEDED

- ☐ Infiltrator tank
- ☐ Access port lid(s)*
- ☐ 10 screws per lid*
- ☐ 2 inlet/outlet gaskets (included)
- ☐ Inlet/outlet tees*
- ☐ Tape measure
- ☐ Pipe, risers, etc.
- ☐ Socket wrench
- ☐ Excavator
- ☐ Shovel
- ☐ Level
- ☐ 5-inch-diameter (125 mm) hole saw (IM-Series only)
- ☐ 5.25-inch-diameter (133 mm) hole saw (TW-Series only)
- ☐ Utility knife
- ☐ PVC pipe glue with primer

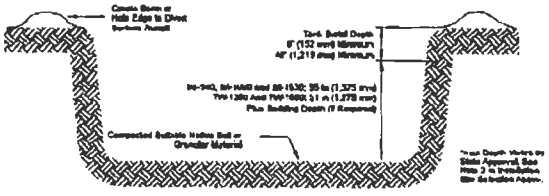
*tee and lid inclusion varies by state/province

INSTALLATION SITE SELECTION

1. Do not install the tank in vehicular traffic areas. The tank is designed for non-traffic applications.
2. The allowable soil cover depth is 6 to 48* inches (150 to 1,200 mm). *18-inch (450 mm) max. in Florida for Cat. 3 IM- and TW-Series tanks; 48-inch (1,200 mm) max. in Florida for Cat. 4 IM-Series tanks; 36-inch (900 mm) max. in Massachusetts, New Hampshire, North Carolina, and Oregon.
3. The tank shall not be installed where the subsurface water level outside the tank exceeds the height of the outlet pipe saddle. Follow Table 4 guidelines.

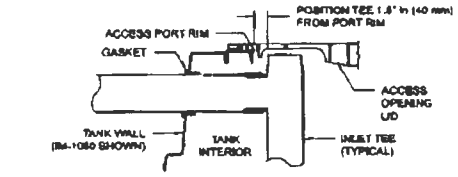
EXCAVATING AND PREPARING THE SITE

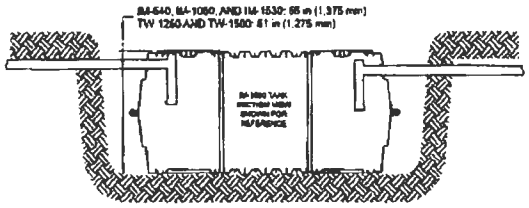
1. Unless buoyancy control measures are required, the excavation width and length should be 18 to 36 inches (450 to 900 mm) larger than the tank on each side or sized as necessary to ensure proper backfill compaction, as outlined in Steps 5-10 of "Backfilling the Tank" in this document. See Infiltrator IM- and TW-Series Tank Buoyancy Control Guidance document, available online at www.infiltratorsystems.com, for specific excavation requirements when installing buoyancy control measures.
2. Excavation depth shall account for the height of tank (55 inches (1,375 mm) for the IM-Series tanks and 51 inches (1,275 mm) for the TW-Series tanks). Also account for 4 inches (100 mm) of bedding (if required) and cover depth (permissible cover depth is 0.5 to 4 feet (150 to 1,200 mm) of soil).
   Note: If the water level outside the tank exceeds the height of the outlet pipe saddle, tank structural integrity may be compromised. Follow Table 4 guidelines.
3. Inspect bottom of excavation to verify suitability of native soil for tank installation. Soils with large, protruding, or sharp stones or other similar objects that may damage the tank are not suitable.
4. The tank may be installed either in suitable native soil (see Backfilling the Tank section) or a minimum 4-inch (100 mm) layer of well-graded granular soil having particles less than 3 inches (75 mm) in diameter, or maximum 0.5-inch (13 mm) diameter crushed stone.
5. Create a uniform, compacted, level surface to ensure that the bottom of the tank is evenly supported. Verify that the installation surface is flat.



INSTALLING THE TANK

1. Inspect the tank for damage before installation.
2. If the tank inlet and outlet penetrations are not drilled, drill holes using the drill points provided at each of the inlet and outlet ports according to the applicable Inlet and Outlet Hole Locations section of this document. The inlet and outlet may be drilled on either the sides or ends of the tank, as required based on applicable codes and site conditions.*
   * Indiana, Kentucky, Oregon, West Virginia, and certain Florida and Texas tanks are factory-drilled.
3. The gaskets supplied with the tank are compatible with Schedule 40 and SDR 35 pipe using a 5-inch-diameter (125 mm) hole saw with IM-Series tanks, and a 5¼-inch-diameter (133 mm) hole saw with TW-Series tanks.
4. Install the rubber gaskets at the inlet and outlet.
5. Using all four of the tank's integral lifting lugs, lower tank into excavation.
6. Slide the inlet and outlet pipes* through the gaskets. Soapy lubricant may be used to slide the pipe in.
   *For North Carolina, the inlet pipe shall be a straight pipe with no tee.
7. Horizontally position the tee 1½ inches (40 mm) from the access port rim, allowing the tee to fit into the recess in the access port lid (see detail).
8. Install lids and risers (see Installing Risers section) as necessary. Rotate lid over access opening until it indexes to tank and drops into position.



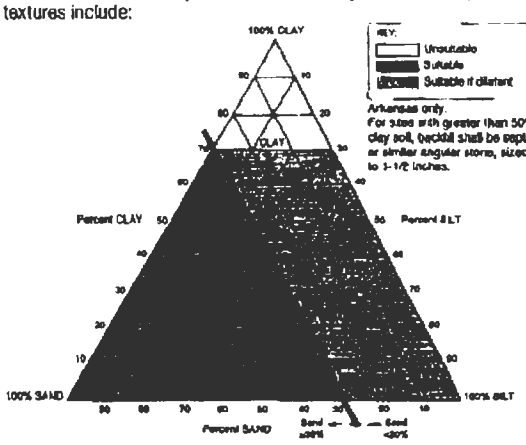


BACKFILLING THE TANK

Note: Infiltrator tanks do not require filling with water prior to backfill placement. Water filling and backfilling to the tank mid-height is required if the tank is left in either an open or backfilled excavation that may fill with water from rain or other sources.

1. Backfill with suitable native soil (max. 3-inch (75-mm) stone diameter). If native soil is unsuitable, replace unsuitable fraction with suitable soil. If suitable soil is not locally available, contact Infiltrator Systems for assistance.
2. Suitable soil shall include soil textural classes defined in the United States Department of Agriculture soil triangle. Suitable soil textural classes are based on the tank installation depth, as measured from finished grade to the top of tank.

a) For a tank soil cover depth of 0.5 to 2.0 feet (150 to 600 mm), suitable soil textures include:



Failure to comply with these installation instructions will invalidate the warranty. Contact Infiltrator Systems' Technical Services Department for assistance at 1-800-221-4436.


19A


19B


22A


22B

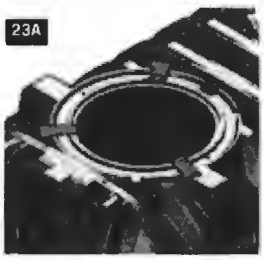
19. With the tank still in the tilted position, reach in and fasten each of the three plastic tie wrap ends on the baffle around the support post on the inlet side of the tank. Pull the tie ends to tighten, securely fastening the baffle to the post.

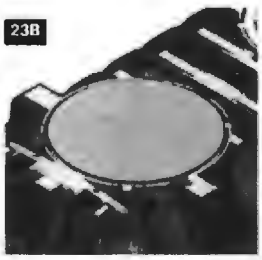
20. Carefully roll the tank back to its upright position. Do not over-rotate the tank or drag the tank along the mid-seam from this position, as doing so may damage the tank.

21. Visually inspect the seam to ensure that the gasket remains securely seated within the tank top and bottom half grooves.

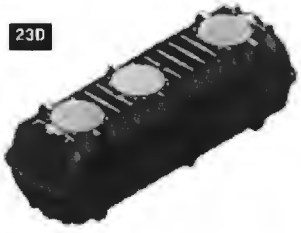
22. Attach the remaining clips in the same manner as Step 14. The seam clips should be fastened sequentially around the tank seam; either clockwise or counterclockwise starting from the eight previously installed clips. Fully engage all remaining seam clips, as described in Step 14.

23. On the inlet end of the tank, place the three lid spacers in a triangular fashion over three of the ten tank lid screw holes located on the tank access opening rim. The spacers allow air exchange during tank storage and delivery, and are required for one lid only (and only in tanks without pre-drilled inlet and outlet holes). Align one of the tank lids over the spacers and access opening. Using a nut driver with 3/8" socket, fasten the lid with three of the nine shipping screws and washers reserved in Step 15 (#14 hex-drive screws). Place the appropriate plumbing kit and three lid screw kits in the bottom of the tank. Fasten the remaining two lids (no spacers) with the six remaining shipping screws and washers reserved in Step 15. The tank is now ready for storage or delivery for installation.


23A


23B


23C


23D

NOTE: *Refer to Infiltrator IM- and TW-Series Septic Tank General Installation Instructions, Riser Connection Guidance, and Buoyancy Control Guidance documents, and state/local product approvals and applicable regulations prior to tank installation and use.*

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IM22 0314

Step 14 continued from previous page

Using a hammer and holding the top and bottom sides of the seam clip, tap the seam clip along the tank seam rail; the clip will pull toward the seam rail. Engage the clip to a full stop over the locking tabs; the seam clip will click into place when properly engaged. The seam clip is designed to lock in place with two or three swift blows of a hammer. If substantial resistance is encountered engaging the seam clips, remove the top of the tank and inspect the gasket for damage, an undulating appearance (where the gasket is not fully inserted into the groove and its height varies), dirt and debris, and any other signs of defect or damage, as described in Step 5. Once engaged, the seam clip cannot be removed without damaging the seam clip or the tank locking tabs. Attach an additional clip at the same corner from the opposite direction. Attach the remaining six corner clips in the same manner to finish this step. This will maintain seam connectivity during assembly Steps 16 to 20 that require tilting the tank.


15A


15B

15. Using a nut driver with 3/8" socket, unscrew and remove the three lids from the tank top half (three #14 hex-head shipping screws with washers per lid) and spacers. Set the lids aside and reserve the nine shipping screws, washers and spacers for later use in Step 23. If the inlet and outlet holes are pre-drilled then spacers are not needed and will not be present.

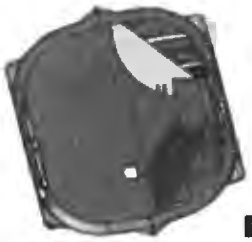

16A


16B

16. Slowly roll the joined tank onto its side along its long axis. The tank will rest tilted as shown. Do not over-rotate the tank or drag the tank along the mid-seam from this position, as doing so may damage the tank.

Note: *If you are assembling a one-compartment tank configuration without a baffle, then proceed to Step 18. Otherwise, continue to Step 17.*


17A


17B


17C


17D

17. Reach in through the access opening and unfold the tank baffle and insert the unfolded top corner baffle sections into the baffle slot on the tank top half.

18A


18B

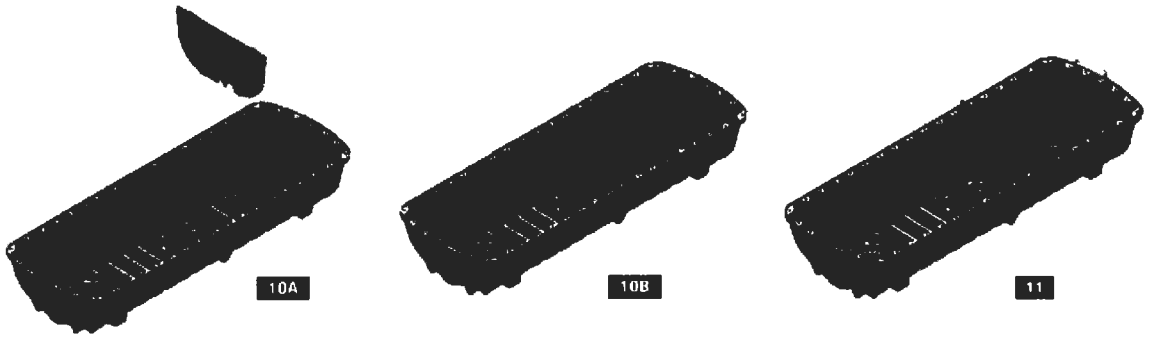
18. Insert the support post through the tank access port on the inlet side of the tank. Place one end of the post in the post seat in the bottom tank half. Swing the opposite post end into the post seat in the top tank half. A rubber mallet may be used to facilitate proper post seating. Repeat this process with remaining three (3) support posts through appropriate access openings. Use a headlamp or flashlight as needed.

CAUTION! *Do not use a metal hammer to strike the support posts as this may cause permanent damage.*

NOTE: *If you are assembling a one-compartment tank configuration without a baffle, then proceed to Step 20. Otherwise, continue to Step 19.*

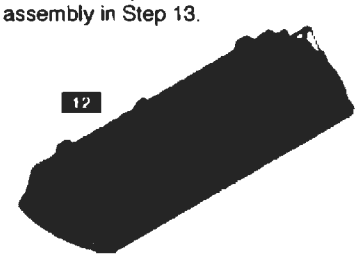
9. Fold the tank baffle along the perforations as shown. The folds are made toward the side of the baffle with the zip tie ends.

10. Insert the folded baffle into the baffle slot on the outlet side of the tank bottom half. The slots on the baffle bottom edge will index to vertical ribs within the baffle slot on the tank bottom half. This will result in the top folded portion of the baffle pointing towards the inlet end of the tank. Do not unfold the baffle at this time.

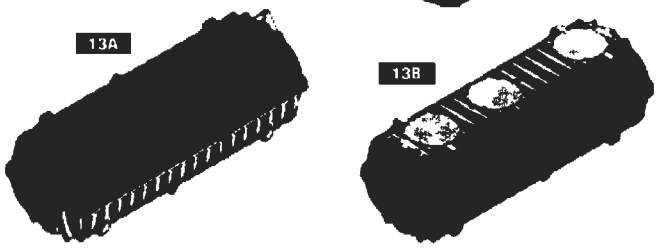


11. Before joining the tank halves, fill a 22 oz. (0 6 L) spray bottle with 8 oz. (0 25 L) of liquid soap mixed with 14 oz. (0.4 L) of tap water (1/3 + 2/3 mixture). Apply an even coat of soapy water to all surfaces of the exposed gasket along its entire length. Spray the gasket directly from above so both sides of the gasket are lubricated equally. Apply soapy water to allow placement of the tank top half when surfaces are still wet. This will facilitate engagement of the gasket in the groove on the tank top half during tank assembly in Step 13.

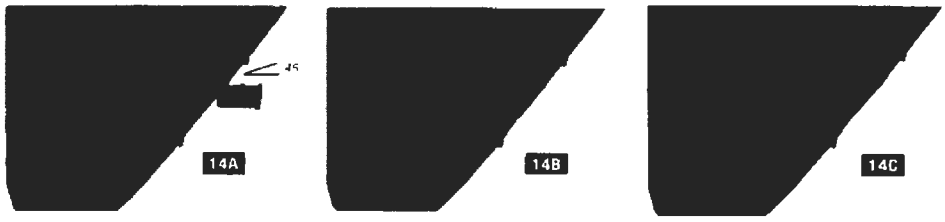
12. Using the Infiltrator Lifting Strap Assembly, attach the four lifting straps to the IM-1530 rope handles, located two on either end of the tank top half. Slowly lift the tank top straight up and off of its location.



13. Carefully lower the tank top half onto the tank bottom half, aligning the receiving holes on the tank top half with the alignment dowels installed in the tank bottom half during Step 6. Position your eyes at gasket height, and evaluate the seam. Inspect the seam around the entire perimeter of the tank. Visually inspect the seam and verify that the gasket is securely seated within the gasket groove of the tank top and bottom halves. Verify that the Infiltrator Lifting Strap Assembly is not caught within the seam before proceeding to Step 14.



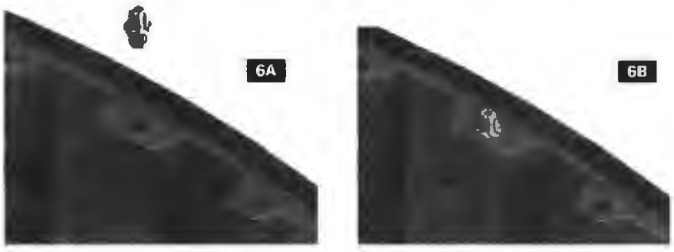
14. Identify the distinct clip-attachment locations along the midseam at each chamfered corner of the joined tank halves. There are two clip attachment locations per corner. At each corner, push the top tank half downward to engage the gasket in the top tank half. At each of the eight corner clip locations, place the open side of a seam clip against the joined seam rail of the tank halves at a 45-degree angle relative to the seam rail. The corner seam clips must be attached along the seam rail from the outside in towards the center of the corner chamber.



Step 14 continued on next page

4. Remove the leg straps from the Infiltrator Lifting Strap Assembly. Position yourself and your assembly partner on one side of the tank. Using two of the four lifting handles, one on either end of the tank half, lift and tilt the inverted bottom tank half. Together, gently roll the tank bottom half onto its flat base so that the flange groove and mid-seam gasket are facing upwards. Place the rotated tank bottom on a clean, dry, level surface so that it is stable.

5. Visually inspect the gasket to ensure that it is undamaged seated properly in the groove and free of materials that may compromise the watertightness of the connection. The gasket inspection shall include an examination while viewing the tank from both the top and side perspectives. When viewing from the top, visually examine the gasket for damage, an undulating appearance (where the gasket is not fully inserted into the groove and its height varies), dirt and debris, and any other signs of defect or damage. When viewing from the side, position your eyes at gasket height to evaluate the height of the top of the gasket around the entire mid-seam perimeter. Looking horizontally across the tank at mid-seam level (from top of gasket to top of gasket across the tank axes) inspect the gasket along the long and short axes of the tank. Verify that the gasket does not undulate, where the top elevation of the gasket varies. Correct deficiencies if identified. If the gasket is not properly seated in the groove, manually press it into place. Use a coarse-bristled paint brush and clean rags to thoroughly remove any dirt or debris present on the gasket.



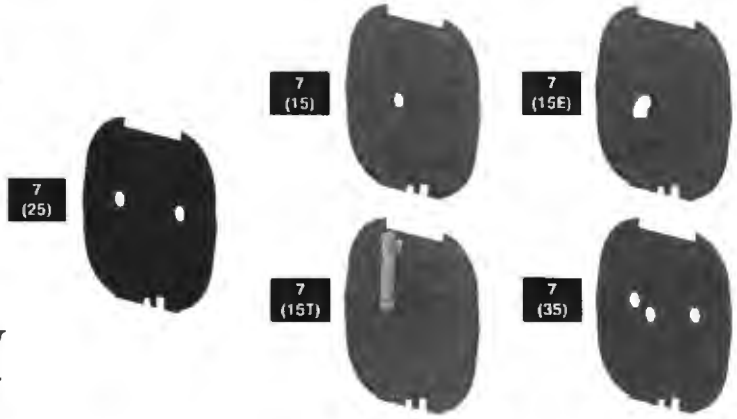
6. Insert the 46 alignment dowels into the receiving holes in the tank bottom half. The alignment dowel flange must seat firmly against the tank body for proper alignment.

NOTE: *If you are assembling a one-compartment tank configuration without a baffle, then proceed to Step 11. Otherwise, continue to Step 7.*

7. Identify the appropriate perforated baffle port opening(s) corresponding to the desired baffle configuration below. Carefully remove the perforated openings by knocking the port center with a hammer or mallet. Baffle configuration 25 shall be used in all states and provinces, with the following limited exceptions:

- 15 – Kentucky
- 15E (requires elbow attachment in baffle port) – Alaska, Arizona, New Mexico
- 15T (requires tee attachment in baffle port) – Delaware, Pennsylvania
- 35 – Minnesota, Indiana

NOTE: *If you are assembling a 15E baffle, use the Infiltrator IM-1060 15E Baffle Assembly Instructions document. If you are assembling a 15T baffle, use the Infiltrator IM-1060 15T Baffle Assembly Instructions document. For all other baffle configurations, continue to Step 8.*



8. Prepare the baffle tie wrap ends by slitting the tape that secures them to the baffle for shipping. The slit should be made just above or below the tie wrap ends and parallel to the length of the tie ends. This will facilitate fastening of the baffle to the vertical support post in Step 19.

FISHER, COLLINS & CARTER, INC.

CIVIL ENGINEERING CONSULTANTS and LAND SURVEYORS

Terrell A. Fisher, P.E., L.S.
Earl D. Collins, P.E.
Charles J. Crovo, Sr., P.E., L.S.

Paul W. Kriebel, P.E.
Mark L. Robel, P.L.S.
Frank Manalansan II, L.S.

March 13, 2024

Mr. Zack Silvast
Bureau of Environmental Health
8930 Stanford Blvd
Columbia, MD 21045

Re: 1680 Woodstock Road

Mr. Silvast,

We are in receipt for your comment email dated March 6, 2024. We are responding to your comments with the following item-by-item response:

Review Comments:

1. *The tank/pump detail should specify that it is an "Infiltrator IM-1530."*

   Response:
   The tank/pump detail has been updated to reflect the infiltration IM-1530.

2. *The pump tank detail used on this OSDS plan is from a standard concrete tank.*
   a. *We reached out to a distributer to get the gallons/inch metric that would be needed to verify all calculations.*

   Response:
   The pump tank detail has been updated to show the infiltration IM-1530 with calculations updated per the supplier GPI metric.

3. *The plastic tank can be used as a pump, but there are no directions of how to convert it to a pump tank.*
   a. *One thing missing for example, is that a pump block & stand will have to be purchased from Zoeller & have to be installed inside the tank.*
   b. *The dose calculations will be different also based on the assumption that the tank dimensions will not be the same as a standard concrete pump tank.*

   Response:
   The pump block and stand have been shown and called out in the tank detail. The calculations have been updated.

FISHER, COLLINS & CARTER, INC.

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4. *We will need a stamped & signed letter from the engineer certifying that this Infiltrator tank can be installed on the property & will function just like a standard concrete tank would.*

Response:

A stamped and signed letter certifying the infiltrator tank is being submitted with the packet.

5. *Need to add a note to the plan stating, "Infiltrator tank specifications should resemble as best as possible a standard concrete tank design and it will be the responsibility of the septic contractor to ensure it has all required components for the best functionality and that it is stabilized in the ground upon inspection."*

Response:

The note "Infiltrator tank specifications should resemble as best as possible a standard concrete tank design and it will be the responsibility of the septic contractor to ensure it has all required components for the best functionality and that it is stabilized in the ground upon inspection." Has been added to the general notes.

6. *Need to provide three sets of infiltrator tank manufacturing/installation details that should be individual pamphlets separate from the OSDS plans.*

Response:

Three sets of the infiltrator tank manufacturing/ installation details have been added to the submission packet.

Thank you for your technical review. The comments have been addressed on the revised plans.

Very Truly Yours,
Fisher, Collins and Carter, Inc.

Luke Groom

Luke A. Groom, P.E.

W.O. # 23054

FISHER, COLLINS & CARTER, INC.

CIVIL ENGINEERING CONSULTANTS and LAND SURVEYORS

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March 13, 2024

Mr. Zack Silvast, L.E.H.S.
Bureau of Environmental Health
8930 Stanford Blvd
Columbia, MD 21045

RE:
1680 Woodstock Road
Septic Installation Plan

Dear Mr. Silvast:

The purpose of this letter is to certify the IM-1530 Infiltrator Tank supplied by Infiltrator Water Technologies. To the best of our knowledge, information, and belief two in-line IM-1530 tanks will perform equal to a concrete septic tank.

The tank shall be installed with two feet maximum cover based on Howard County, Maryland Code of Ordinances Title 3, Subtitle 8, Section 3.809, Line (d)(14).

Very truly yours,
Fisher, Collins & Carter, Inc

Luke A. Groom P.E.

3-13-24

INFILTRATOR
tanks

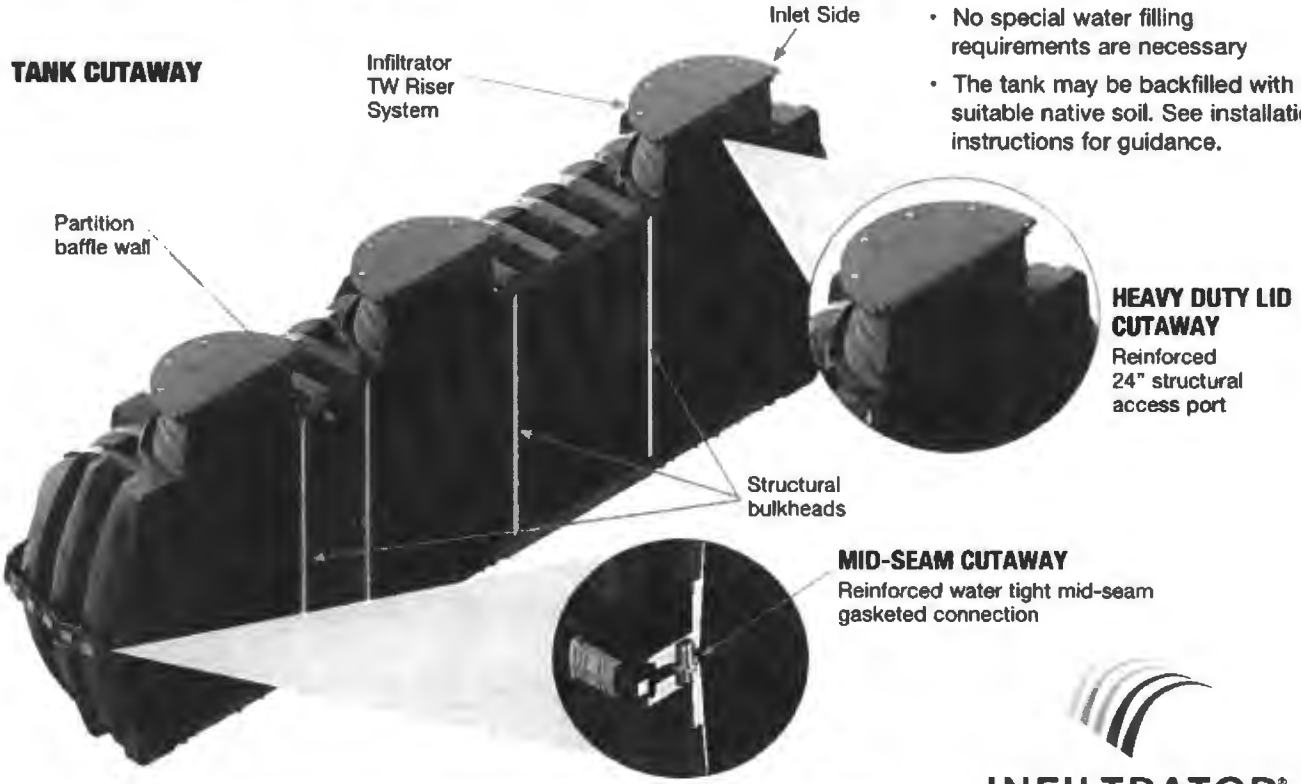
IM-1530

The Infiltrator IM-1530 is a lightweight strong and durable septic tank. This watertight tank design is offered with Infiltrator's line of custom-fit risers and heavy-duty lids. Infiltrator injection molded tanks provide a revolutionary improvement in plastic septic tank design, offering long-term exceptional strength and watertightness.

Features & Benefits

- Strong injection molded polypropylene construction
- Lightweight plastic construction and inboard lifting lugs allow for easy delivery and handling
- Integral heavy-duty green lids that interconnect with TW™ risers and pipe riser solutions
- Structurally reinforced access ports eliminate distortion during installation and pump-outs
- Reinforced structural ribbing and fiberglass bulkheads offer additional strength
- Can be installed with 6" to 48" of cover
- Can be pumped dry during pump-outs
- Suitable for use as a septic tank, pump tank, or rainwater (non-potable) tank
- No special water filling requirements are necessary
- The tank may be backfilled with suitable native soil. See installation instructions for guidance.

TANK CUTAWAY



HEAVY DUTY LID CUTAWAY
Reinforced 24" structural access port

MID-SEAM CUTAWAY
Reinforced water tight mid-seam gasketed connection

Protecting the Environment with **Innovative Wastewater Treatment Solutions**

INFILTRATOR®
water technologies

IM-1530 General Specifications and Illustrations

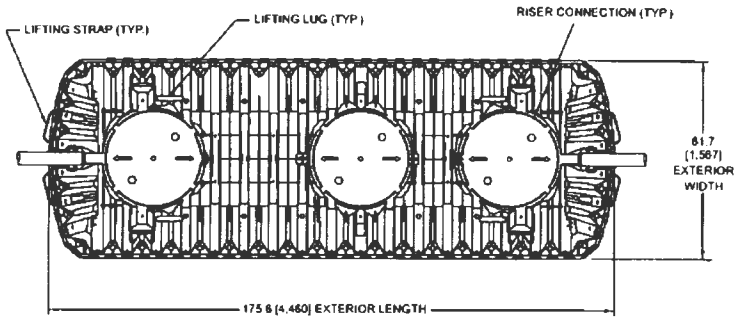
The IM-1530 is an injection molded two piece mid-seam plastic tank. The IM-1530 injection molded plastic design allows for a mid-seam joint that has precise dimensions for accepting an engineered EPDM gasket. Infiltrator's gasket design utilizes technology from the water industry to deliver proven means of maintaining a watertight seal.

The two-piece design is permanently fastened using a series of non-corrosive plastic alignment dowels and locking seam clips. The IM-1530 is assembled and sold through a network of certified Infiltrator distributors.

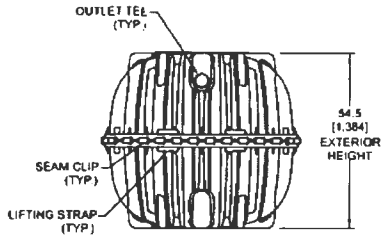
Must be backfilled and installed in accordance with Infiltrator Water Technologies, Infiltrator IM-Series Septic Tank General Installation Instructions and for shallow ground water conditions reference the Infiltrator IM-Series Tank Buoyancy Control Guidance.

Please visit www.infiltratorwater.com/images/pdf/ManualsGuides/TANK01.pdf for the latest information.

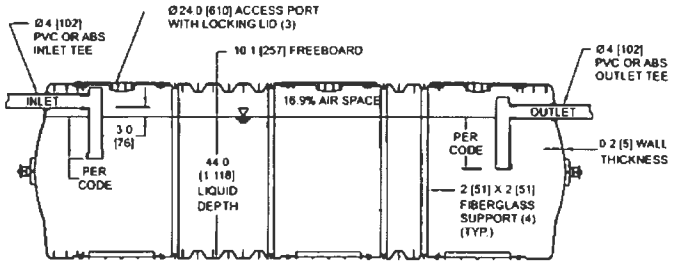
IM-1530	
Working Capacity	1537 gal (5818 L)
Total Capacity	1787 gal (6765 L)
Airspace	16.9%
Length	176" (4460 mm)
Width	62" (1567 mm)
Length-to-Width Ratio	2.8 to 1
Height	55" (1384 mm)
Liquid Level	44" (1118 mm)
Invert Drop	3" (76 mm)
Fiberglass Supports	4
Compartments	1 or 2
Maximum Burial Depth	48" (1219 mm)
Minimum Burial Depth	6" (152 mm)
Maximum Pipe Diameter	4" (100 mm)
Weight	501 lbs (228 kg)



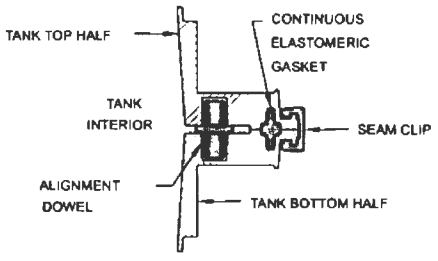
TOP VIEW



END VIEW



SIDE VIEW



MID-HEIGHT SEAM SECTION

INFILTRATOR
water t chnologie

4 Business Park Road
P.O. Box 768
Old Saybrook, CT 06475
860-577-7000 · Fax 860-577-7001
1-800-221-4436
www.infiltratorwater.com

IM21 1116

Before you Begin

The following is a complete list of tank components:

- Tank top half
- Tank bottom half (with pre-installed mid-seam gasket)
- Baffle (two-compartment configuration only)
- Alignment dowels (46)
- Seam clips (86)
- Support posts (4)
- Lids (3)*
- Lid shipping screws (9)* and washers (9)*
- Lid spacers (3)*
- Lid screw kits (3)*
- Plumbing kit

** Varies by state/province*

The following tools facilitate tank assembly:

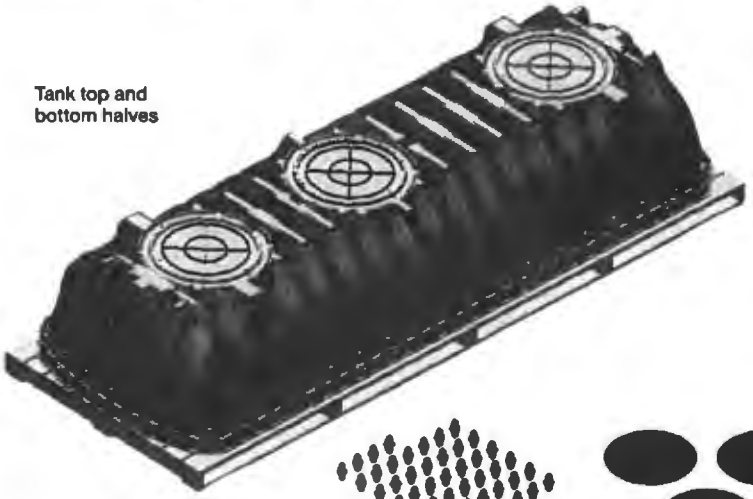
- Fork lift (5,000 lb [2,268 kg] capacity, min. 67" [1.7 m] arm, min. 12' [3.7 m] pick height)
- Infiltrator Lifting Strap Assembly*
- 22 oz. [0.6 L] spray bottle*
- 16 oz. [0.5 L] liquid soap*
- Utility knife
- Coarse-bristled paint brush
- Metal hammer (16-20 oz. [0.5 kg])
- Rubber mallet
- Hole saw (5" [125 mm] diameter)
- Nut driver (3/8", 5/16" sockets)
- Clean rags
- Headlamp or flashlight
- Screw gun
- Safety glasses

**Supplied in Infiltrator IM-1530 Starter Kit*

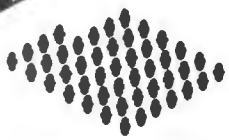
INFILTRATOR® tanks

MARCH 2014

Infiltrator IM-1530 Tank Assembly Instructions



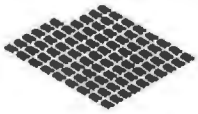
Tank top and bottom halves



Alignment Dowels (46)

Lids (3)

Support Posts (4)



Seam Clips (86)

Baffle
(2-compartment configuration only)

It is recommended that a minimum of two people participate to safely assemble the tank. Assemblers must wear safety glasses during the entire assembly. The top half of the tank weighs approximately 229 pounds (104 kg) and the bottom half of the tank weighs approximately 236 pounds (107 kg) for a total approximate weight of 465 pounds (211 kg). Each tank half must be lifted approximately 30 inches (750 mm) above ground during the assembly process. There must be enough side and overhead clearance to freely maneuver the tank components and to operate lifting machinery when used.

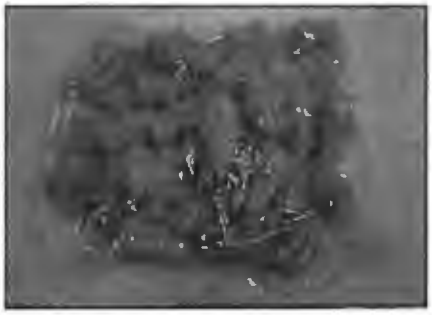
The IM-1530 tank must be assembled by an Infiltrator Water Technologies Authorized Assembler. Tanks assembled by unauthorized assemblers will not be warrantied by Infiltrator Water Technologies A signed copy of the IM-1530 Tank Assembly Checklist & Assembly Authorization is required for all Authorized Assemblers.

⚠ WARNING

IMPLOSIONS MAY CAUSE SERIOUS INJURY
Follow Infiltrator Water Technologies' vacuum test instructions
NEVER EXCEED 2.5 inches mercury vacuum pressure

WARNING: These assembly instructions do not include a protocol for vacuum testing the IM-1530 tank. If required, vacuum tests on the IM-1530 shall only be performed in strict accordance with Infiltrator's IM-1530 tank vacuum testing guidance documents. Failure to follow an Infiltrator vacuum-testing protocol and/or exceeding 2.5 inches (63 mm) of mercury vacuum pressure could result in personal harm. Never apply a positive air pressure to the IM-1530 tank. Infiltrator will not be liable for any problems that arise from such unauthorized use.

Components



Alignment Dowels (46)

Seam Clips (86)

Lid Screw Kit

P1 Plumbing Kit

IM-1530 Tank Pallet Handling

IM-1530 pallets hold either 4 or 7 tanks.

Overall Dimensions (for 7-tank pallet)

- Stacked tanks: 176"L x 62"W x 79"H
- Stacked tanks on pallet: 178.5"L x 67"W x 86"H
  Weight: 4,060 lbs (1,878 kg)

A forklift that has the following minimum specifications is needed to safely handle and off load the IM-1530 pallet: 5,000 lb (2,268 kg) capacity, 24" (0.61 m) load center, minimum 67" (1.7 m) arm and minimum 12' (3.7 m) pick height. The tank halves must be safely removed from the pallet using the Infiltrator Lifting Strap Assembly. **The IM-1530 tank pallets should never be tipped over!** The Infiltrator Lifting Strap Assembly is sized to pick up a maximum of 2 tank halves at a time using a forklift. The safety lock spring hooks are to be connected to the rope handles on the end walls of each tank. Set the tank halves on a clean surface, across several 4"x4"s, plywood, or on a clean tarp, to prevent damage or introducing dirt and debris into the mid-seam area where the gasket is located

Tank Assembly

1. Remove all plastic wrap and strapping from the IM-1530 tank and components shipping pallet. If serial numbers need to be recorded, Infiltrator recommends recording them while the tank halves are stacked on the pallet. The serial number is located at the mid-seam on the outlet end.

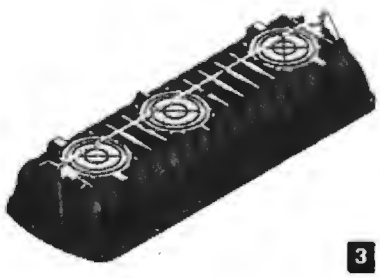
2. Using the Infiltrator Lifting Strap Assembly, attach the four lifting strap hooks to the IM-1530 rope handles, located two on either end of the tank bottom half. Slowly lift the inverted tank bottom straight up and off of the tank top nested below.

   ⚠ ***WARNING:*** *The Infiltrator Lifting Strap Assembly supplied with the starter kit is sized to pick up a maximum of two (2) IM-1530 tank halves at one time. Never lift more than two (2) IM-1530 tank halves at one time with the Infiltrator Lifting Strap Assembly. The Infiltrator Lifting Strap Assembly is intended for use ONLY with IM Series tanks in accordance with these instructions; any other use of the Infiltrator Lifting Strap Assembly, including use with Infiltrator TW-Series tank models, is prohibited. Infiltrator Water Technologies will not be liable for any problems that arise from unauthorized use of the Infiltrator Lifting Strap Assembly.*

   NOTE: *Never set the tank half with the gasket on any surface with the gasket facing downward without the use of a clean surface, pallet, several 4"x4"s, plywood, or a clean tarp to prevent damage or the introduction of dirt and debris into the mid-seam area where the gasket and groove are located. The tank half should only be left briefly with the gasket resting on such surfaces, to prevent the gasket from irreversibly deforming.*

3. Set the bottom half down on a clean surface, pallet, several 4"x4"s, plywood, or a clean tarp to prevent damage or the introduction of dirt and debris to the midseam area where the gasket and groove are located. The tank half should only be left briefly with the gasket resting on such surfaces, to prevent the gasket from irreversibly deforming.

2

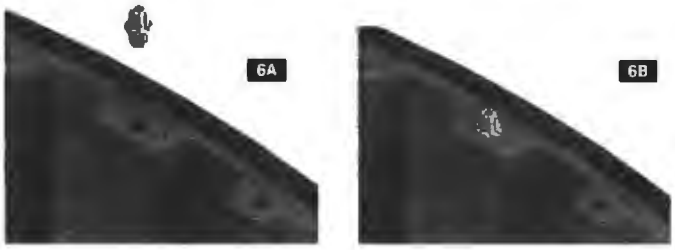


3

4. Remove the leg straps from the Infiltrator Lifting Strap Assembly. Position yourself and your assembly partner on one side of the tank. Using two of the four lifting handles, one on either end of the tank half, lift and tilt the inverted bottom tank half. Together, gently roll the tank bottom half onto its flat base so that the flange groove and mid-seam gasket are facing upwards. Place the rotated tank bottom on a clean, dry, level surface so that it is stable.


5

5. Visually inspect the gasket to ensure that it is undamaged, seated properly in the groove and free of materials that may compromise the watertightness of the connection. The gasket inspection shall include an examination while viewing the tank from both the top and side perspectives. When viewing from the top, visually examine the gasket for damage, an undulating appearance (where the gasket is not fully inserted into the groove and its height varies), dirt and debris, and any other signs of defect or damage. When viewing from the side, position your eyes at gasket height to evaluate the height of the top of the gasket around the entire mid-seam perimeter. Looking horizontally across the tank at mid-seam level (from top of gasket to top of gasket across the tank axes) inspect the gasket along the long and short axes of the tank. Verify that the gasket does not undulate, where the top elevation of the gasket varies. Correct deficiencies if identified. If the gasket is not properly seated in the groove, manually press it into place. Use a coarse-bristled paint brush and clean rags to thoroughly remove any dirt or debris present on the gasket.



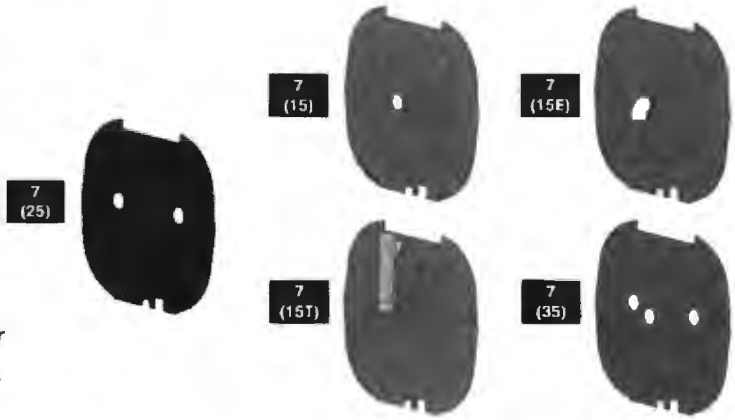
6. Insert the 46 alignment dowels into the receiving holes in the tank bottom half. The alignment dowel flange must seat firmly against the tank body for proper alignment.

NOTE: *If you are assembling a one-compartment tank configuration without a baffle, then proceed to Step 11. Otherwise, continue to Step 7.*

7. Identify the appropriate perforated baffle port opening(s) corresponding to the desired baffle configuration below. Carefully remove the perforated openings by knocking the port center with a hammer or mallet. Baffle configuration 25 shall be used in all states and provinces, with the following limited exceptions:

- 15 – Kentucky
- 15E (requires elbow attachment in baffle port) – Alaska, Arizona, New Mexico
- 15T (requires tee attachment in baffle port) – Delaware, Pennsylvania
- 35 – Minnesota, Indiana

NOTE: *If you are assembling a 15E baffle, use the Infiltrator IM-1060 15E Baffle Assembly Instructions document. If you are assembling a 15T baffle, use the Infiltrator IM-1060 15T Baffle Assembly Instructions document. For all other baffle configurations, continue to Step 8.*



8. Prepare the baffle tie wrap ends by slitting the tape that secures them to the baffle for shipping. The slit should be made just above or below the tie wrap ends and parallel to the length of the tie ends. This will facilitate fastening of the baffle to the vertical support post in Step 19.

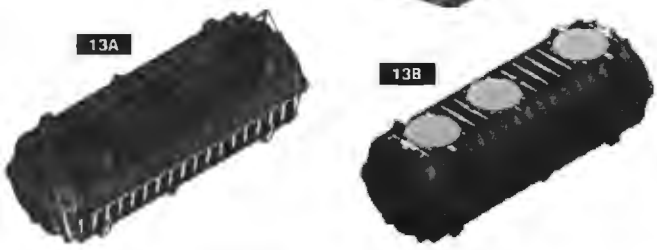
9. Fold the tank baffle along the perforations as shown. The folds are made toward the side of the baffle with the zip tie ends.

10. Insert the folded baffle into the baffle slot on the outlet side of the tank bottom half. The slots on the baffle bottom edge will index to vertical ribs within the baffle slot on the tank bottom half. This will result in the top folded portion of the baffle pointing towards the inlet end of the tank. Do not unfold the baffle at this time.

11. Before joining the tank halves, fill a 22 oz. (0.6 L) spray bottle with 8 oz. (0.25 L) of liquid soap mixed with 14 oz. (0.4 L) of tap water (1/3 + 2/3 mixture). Apply an even coat of soapy water to all surfaces of the exposed gasket along its entire length. Spray the gasket directly from above so both sides of the gasket are lubricated equally. Apply soapy water to allow placement of the tank top half when surfaces are still wet. This will facilitate engagement of the gasket in the groove on the tank top half during tank assembly in Step 13.

12. Using the Infiltrator Lifting Strap Assembly, attach the four lifting straps to the IM-1530 rope handles, located two on either end of the tank top half. Slowly lift the tank top straight up and off of its location.

13. Carefully lower the tank top half onto the tank bottom half, aligning the receiving holes on the tank top half with the alignment dowels installed in the tank bottom half during Step 6. Position your eyes at gasket height, and evaluate the seam. Inspect the seam around the entire perimeter of the tank. Visually inspect the seam and verify that the gasket is securely seated within the gasket groove of the tank top and bottom halves. Verify that the Infiltrator Lifting Strap Assembly is not caught within the seam before proceeding to Step 14.



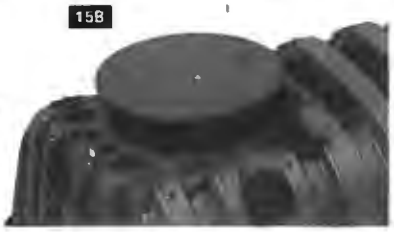
14. Identify the distinct clip-attachment locations along the midseam at each chamfered corner of the joined tank halves. There are two clip attachment locations per corner. At each corner, push the top tank half downward to engage the gasket in the top tank half. At each of the eight corner clip locations, place the open side of a seam clip against the joined seam rail of the tank halves at a 45-degree angle relative to the seam rail. The corner seam clips must be attached along the seam rail from the outside in towards the center of the corner chamber.

Step 14 continued on next page

Step 14 continued from previous page

Using a hammer and holding the top and bottom sides of the seam clip, tap the seam clip along the tank seam rail; the clip will pull toward the seam rail. Engage the clip to a full stop over the locking tabs; the seam clip will click into place when properly engaged. The seam clip is designed to lock in place with two or three swift blows of a hammer. If substantial resistance is encountered engaging the seam clips, remove the top of the tank and inspect the gasket for damage, an undulating appearance (where the gasket is not fully inserted into the groove and its height varies), dirt and debris, and any other signs of defect or damage, as described in Step 5. Once engaged, the seam clip cannot be removed without damaging the seam clip or the tank locking tabs. Attach an additional clip at the same corner from the opposite direction. Attach the remaining six corner clips in the same manner to finish this step. This will maintain seam connectivity during assembly Steps 16 to 20 that require tilting the tank.


15A


15B

15. Using a nut driver with 3/8" socket, unscrew and remove the three lids from the tank top half (three #14 hex-head shipping screws with washers per lid) and spacers. Set the lids aside and reserve the nine shipping screws, washers and spacers for later use in Step 23. If the inlet and outlet holes are pre-drilled then spacers are not needed and will not be present.

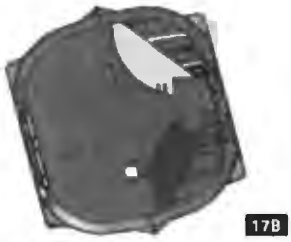

16A


16B

16. Slowly roll the joined tank onto its side along its long axis. The tank will rest tilted as shown. Do not over-rotate the tank or drag the tank along the mid-seam from this position, as doing so may damage the tank.

Note: *If you are assembling a one-compartment tank configuration without a baffle, then proceed to Step 18. Otherwise, continue to Step 17.*


17A


17B


17C


17D

17. Reach in through the access opening and unfold the tank baffle and insert the unfolded top corner baffle sections into the baffle slot on the tank top half.

18A


18B

18. Insert the support post through the tank access port on the inlet side of the tank. Place one end of the post in the post seat in the bottom tank half. Swing the opposite post end into the post seat in the top tank half. A rubber mallet may be used to facilitate proper post seating. Repeat this process with remaining three (3) support posts through appropriate access openings. Use a headlamp or flashlight as needed.

CAUTION! *Do not use a metal hammer to strike the support posts as this may cause permanent damage.*

NOTE: *If you are assembling a one-compartment tank configuration without a baffle, then proceed to Step 20. Otherwise, continue to Step 19.*


19A


19B


22A


22B

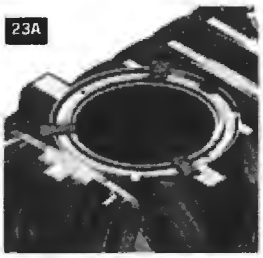
19. With the tank still in the tilted position, reach in and fasten each of the three plastic tie wrap ends on the baffle around the support post on the inlet side of the tank. Pull the tie ends to tighten, securely fastening the baffle to the post.

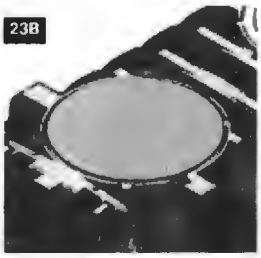
20. Carefully roll the tank back to its upright position. Do not over-rotate the tank or drag the tank along the mid-seam from this position, as doing so may damage the tank.

21. Visually inspect the seam to ensure that the gasket remains securely seated within the tank top and bottom half grooves.

22. Attach the remaining clips in the same manner as Step 14. The seam clips should be fastened sequentially around the tank seam; either clockwise or counterclockwise starting from the eight previously installed clips. Fully engage all remaining seam clips, as described in Step 14.

23. On the inlet end of the tank, place the three lid spacers in a triangular fashion over three of the ten tank lid screw holes located on the tank access opening rim. The spacers allow air exchange during tank storage and delivery, and are required for one lid only (and only in tanks without pre-drilled inlet and outlet holes). Align one of the tank lids over the spacers and access opening. Using a nut driver with 3/8" socket, fasten the lid with three of the nine shipping screws and washers reserved in Step 15 (#14 hex-drive screws). Place the appropriate plumbing kit and three lid screw kits in the bottom of the tank. Fasten the remaining two lids (no spacers) with the six remaining shipping screws and washers reserved in Step 15. The tank is now ready for storage or delivery for installation.


23A


23B


23C


23D

NOTE: *Refer to Infiltrator IM- and TW-Series Septic Tank General Installation Instructions, Riser Connection Guidance, and Buoyancy Control Guidance documents, and state/local product approvals and applicable regulations prior to tank installation and use.*

INFILTRATOR water technologies

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IM22 0314

Infiltrator IM- and TW-Series Septic Tank General Installation Instructions

MARCH 2014

INFILTRATOR tanks

BEFORE YOU BEGIN

Infiltrator Systems' tanks must be installed according to state and/or local regulations, which supersede the manufacturer's installation instructions. If unsure of the installation requirements for a specific site, contact the health department or permitting authority. The IM-Series referred to in this document includes the IM-540, IM-1060, and IM-1530 tanks. The TW-Series includes the TW-1250 and TW-1500 tanks.

WARNING: IMPLOSIONS MAY CAUSE SERIOUS INJURY
Follow Infiltrator Systems Inc. vacuum test instructions

MATERIALS AND EQUIPMENT NEEDED

- ☐ Infiltrator tank
- ☐ Access port lid(s)*
- ☐ 10 screws per lid*
- ☐ 2 inlet/outlet gaskets (included)
- ☐ Inlet/outlet tees*
- ☐ Tape measure
- ☐ Pipe, risers, etc.
- ☐ Socket wrench
- ☐ Excavator
- ☐ Shovel
- ☐ Level
- ☐ 5-inch-diameter (125 mm) hole saw (IM-Series only)
- ☐ 5.25-inch-diameter (133 mm) hole saw (TW-Series only)
- ☐ Utility knife
- ☐ PVC pipe glue with primer

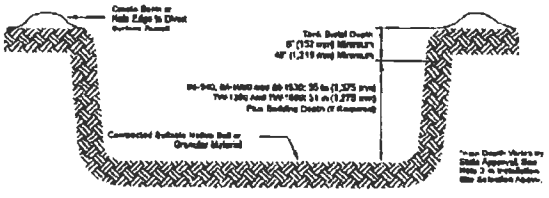
*tee and lid inclusion varies by state/province

INSTALLATION SITE SELECTION

1. Do not install the tank in vehicular traffic areas. The tank is designed for non-traffic applications.
2. The allowable soil cover depth is 6 to 48" inches (150 to 1,200 mm). *18-inch (450 mm) max. in Florida for Cat. 3 IM- and TW-Series tanks; 48-inch (1,200 mm) max. in Florida for Cat. 4 IM-Series tanks; 36-inch (900 mm) max. in Massachusetts, New Hampshire, North Carolina, and Oregon.
3. The tank shall not be installed where the subsurface water level outside the tank exceeds the height of the outlet pipe saddle. Follow Table 4 guidelines.

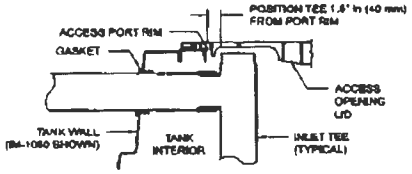
EXCAVATING AND PREPARING THE SITE

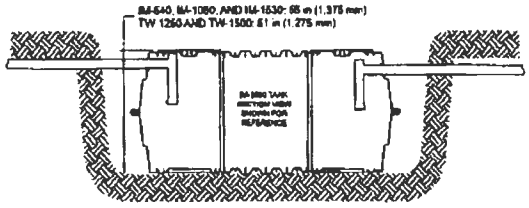
1. Unless buoyancy control measures are required, the excavation width and length should be 18 to 36 inches (450 to 900 mm) larger than the tank on each side or sized as necessary to ensure proper backfill compaction, as outlined in Steps 5-10 of "Backfilling the Tank" in this document. See Infiltrator IM- and TW-Series Tank Buoyancy Control Guidance document, available online at www.infiltratorsystems.com, for specific excavation requirements when installing buoyancy control measures.
2. Excavation depth shall account for the height of tank (55 inches (1,375 mm) for the IM-Series tanks and 51 inches (1,275 mm) for the TW-Series tanks). Also account for 4 inches (100 mm) of bedding (if required) and cover depth (permissible cover depth is 0.5 to 4 feet (150 to 1,200 mm) of soil).
   Note: If the water level outside the tank exceeds the height of the outlet pipe saddle, tank structural integrity may be compromised. Follow Table 4 guidelines.
3. Inspect bottom of excavation to verify suitability of native soil for tank installation. Soils with large, protruding, or sharp stones or other similar objects that may damage the tank are not suitable.
4. The tank may be installed either in suitable native soil (see Backfilling the Tank section) or a minimum 4-inch (100 mm) layer of well-graded granular soil having particles less than 3 inches (75 mm) in diameter, or maximum 0.5-inch (13 mm) diameter crushed stone.
5. Create a uniform, compacted, level surface to ensure that the bottom of the tank is evenly supported. Verify that the installation surface is flat.



INSTALLING THE TANK

1. Inspect the tank for damage before installation.
2. If the tank inlet and outlet penetrations are not drilled, drill holes using the drill points provided at each of the inlet and outlet ports according to the applicable Inlet and Outlet Hole Locations section of this document. The inlet and outlet may be drilled on either the sides or ends of the tank, as required based on applicable codes and site conditions.*
   * Indiana, Kentucky, Oregon, West Virginia, and certain Florida and Texas tanks are factory-drilled.
3. The gaskets supplied with the tank are compatible with Schedule 40 and SDR 35 pipe using a 5-inch-diameter (125 mm) hole saw with IM-Series tanks, and a 5¼-inch-diameter (133 mm) hole saw with TW-Series tanks.
4. Install the rubber gaskets at the inlet and outlet.
5. Using all four of the tank's integral lifting lugs, lower tank into excavation.
6. Slide the inlet and outlet pipes* through the gaskets. Soapy lubricant may be used to slide the pipe in.
   *For North Carolina, the inlet pipe shall be a straight pipe with no tee.
7. Horizontally position the tee 1½ inches (40 mm) from the access port rim, allowing the tee to fit into the recess in the access port lid (see detail).
8. Install lids and risers (see Installing Risers section) as necessary. Rotate lid over access opening until it indexes to tank and drops into position.



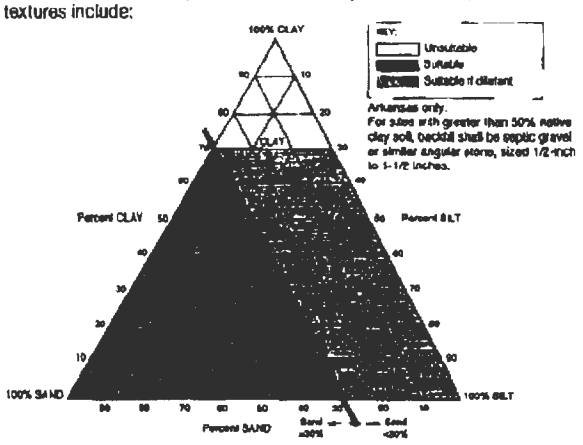


BACKFILLING THE TANK

Note: Infiltrator tanks do not require filling with water prior to backfill placement. Water filling and backfilling to the tank mid-height is required if the tank is left in either an open or backfilled excavation that may fill with water from rain or other sources.

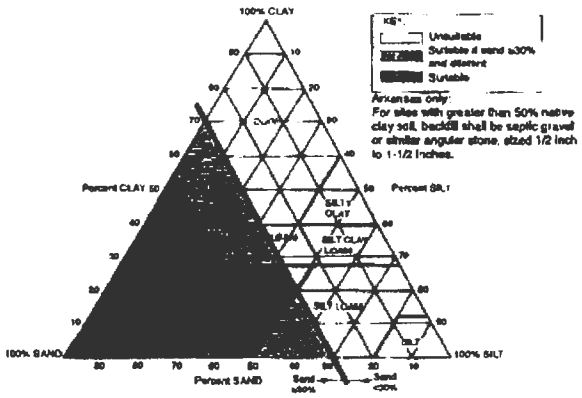
1. Backfill with suitable native soil (max. 3-inch (75-mm) stone diameter). If native soil is unsuitable, replace unsuitable fraction with suitable soil. If suitable soil is not locally available, contact Infiltrator Systems for assistance.
2. Suitable soil shall include soil textural classes defined in the United States Department of Agriculture soil triangle. Suitable soil textural classes are based on the tank installation depth, as measured from finished grade to the top of tank.

a) For a tank soil cover depth of 0.5 to 2.0 feet (150 to 600 mm), suitable soil textures include:

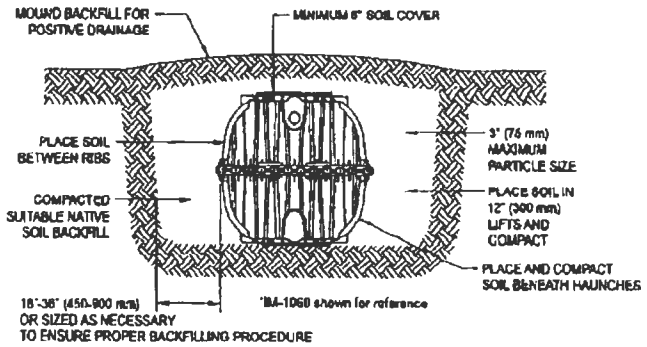


Failure to comply with these installation instructions will invalidate the warranty. Contact Infiltrator Systems' Technical Services Department for assistance at 1-800-221-4436.

b) For a tank soil cover depth that is greater than 2.0 feet and up to 4.0 feet (600 to 1,200 mm), suitable soil textures include:



3. Backfill should not have stones greater than 3 inches (75 mm) in diameter or excessive clods that do not break apart during placement and compaction. Backfill must be capable of occupying the spaces between the tank ribs and beneath the haunches.
   Note: Rounded screened aggregate (e.g., pea gravel) is not a suitable backfill.
4. Standard field soil classification methods shall be used to determine the soil textural class.
   Note: Under most circumstances, the determination of soil dilatancy will not be required. Dilatancy shall be determined in the field using a test that does not require specialized equipment, per ASTM D2488, Section 14.3. Complete instructions can be found at www.infiltratorsystems.com
5. Place and compact soil by walking-in beneath the haunches of the tank.
6. Place backfill around the four sidewalls in an alternating manner, so that the backfill height along the four sidewalls is maintained within a 12-inch (300-mm) tolerance.
7. Do not backfill top of tank before sidewalls are completely backfilled.
8. Continue to place backfill along the sidewalls in 12-inch (300-mm) lifts. Place backfill between the ribs on the sidewalls such that the space between the ribs is completely filled with soil.
9. Compact backfill material either by walking-in, hand tamping or mechanical compaction (includes backhoe bucket). If mechanical compaction is used, such as a walk-behind tamper or backhoe bucket, a single pass is recommended. Compact each lift prior to placement of next lift. Compact backfill from tank walls to excavation sidewalls.
10. Complete backfilling and grade the area.
11. A minimum 6-inch (150-mm) depth of suitable soil must be placed over the top of the tank. The balance of backfill placed to finish grade above the tank may be either suitable or unsuitable soil.
12. Establish a strong stand of erosion-resistant vegetation.
    Note: Grade to prevent the backfilled excavation from filling with surface runoff. If the water level in the backfilled excavation exceeds the height of the outlet pipe saddle, tank structural integrity may be compromised.



SHORT AND LONG-TERM GROUNDWATER CONTROL

It may be necessary to implement groundwater control measures during tank installation. Maintain dry conditions by expanding the excavation to create a short-term groundwater collection sump for temporary placement of a dewatering pump if needed. Long-term groundwater control measures such as underdrains and interceptor trenches may be sensible if the site is amenable to construction of a control system and such systems are not prohibited by regulation or law, and the tank location is not subject to flooding. Properly installed underdrains and groundwater interceptor trenches may prevent the need for tank buoyancy control measures.

INSTALLING UNDER SHALLOW GROUNDWATER CONDITIONS

Buoyancy control measures may be required if the Infiltrator tank is to be installed with less than 12 inches (300 mm) of soil backfill cover, and where the water level outside the tank has the potential to rise 30 inches (750 mm) or more above the elevation of the tank bottom. Otherwise, no control measures are required (see Table 1). The need for buoyancy control measures must be determined based on backfill cover depth and height of water outside of tank above the tank bottom according to Table 1. Refer to Infiltrator IM- and TW-Series Tank Buoyancy Control Guidance document for more information.

Table 1: Tank models[1] and conditions requiring buoyancy control[2]

Water height above tank bottom	Soil cover depth above tank[3]	
	6 in (150 mm) to 12 in (300 mm)	Above 12 in (300 mm)
Above outlet pipe saddle	Do not install	Do not install
36 in (900 mm) to outlet pipe saddle[4]	All models	None
30 in (750 mm) to 36 in (900 mm)	All models except IM-540 and IM-1060	None
Less than 30 in (750 mm)	None	None

1. IM-540, IM-1060, TW-1250, TW-1500, and IM-1530.
2. See Infiltrator IM- and TW- Series Tank Buoyancy Control Guidance for detailed information on the use of controls.
3. No controls are required for soil cover depths exceeding 12 in (300 mm).
4. The tank shall not be installed where the water level outside the tank exceeds the height of the outlet pipe saddle. Follow Table 4 guidelines.

INSTALLING RISERS

1. Compatible risers include 24-inch (600 mm) diameter products such as the Infiltrator TW-Riser, EZset by Infiltrator, PolyLok®, Inc., and Tuf-Tite® Corporation, in addition to 24-inch (600 mm) diameter corrugated HDPE and IPEX Ultra Rib® PVC pipe. Follow Infiltrator's IM- and TW-Series Tank Riser Connection Guidance.
2. In Oregon only, watertightness testing shall include filling with water at least 2 inches above riser connection, with no more than 1 gallon leakage per 24 hours, per OAR 340-073-0025(3).

INSTALLING PUMPS AND RELATED EQUIPMENT

Pumps may be supported on a stable, level 16x16-inch (400x400-mm) platform positioned on the bottom of the tank. One 16x16-inch block or two 8x16-inch (200-mm x 400-mm) side-by-side blocks may be used. Limit block height to account for pump height and liquid levels during pump cycles. Block(s) should be placed below an access opening and level upon the tank bottom. For two blocks, orient them perpendicular to ribs on the tank bottom, if present, for stability.

Installation of products such as electrical conduit and wiring, pumps, water level control equipment, valves, siphon equipment, etc. shall be in accordance with the product manufacturer's instructions and compliant with applicable state or local rules and regulations. Appurtenances shall be fastened to the tank riser system and not the tank body or access opening rim. Where possible, appurtenances shall be installed to facilitate maintenance and repair access via the tank access openings.

Note: Prefabricated pump vaults may be installed.

GENERAL SPECIFICATIONS

- Failure to comply with installation instructions will void warranty.
- Prior to ground disturbance, check for subsurface obstructions and utilities in conformance with applicable requirements.
- Operating water temperature shall be less than 100° F (40° C).
- In cold conditions, handle and backfill tank with care to prevent impact damage.
- Tanks are not fire resistant. Store away from ignition sources.
- Removal of structural bulkheads is prohibited; removal of locking clips on the IM-Series tank mid-seam connection is also prohibited.
- Only suitable for potable applications if the tank bears the NSF/ANSI 61 certification mark. Otherwise, tank is recommended for use in septic, rainwater/stormwater storage, holding, and pump applications, or other non-potable uses.
- Infiltrator tanks are designed for installation underground.
- Contact Infiltrator Systems for above-ground use requirements.

CLICK and LOCK RISER TECHNOLOGY

The EZsnap riser is designed to create an easy-to-assemble watertight riser system for septic tanks, pump tanks, and cisterns.

The EZsnap Riser features click and lock technology eliminating the need for assembly tools, sealant/caulk and hardware. The 24" diameter EZsnap Riser is available in 2", 6" and 12" tall sections that nest together making for efficient storage and shipping.

2, 6 & 12 Inch Riser System Available in Green and Black

- **A.** 24" x 2" Risers
- **B.** 24" x 6" Risers
- **C.** 24" x 12" Risers
- **D.** 24" Lids
- **E.** 24" Adapter Rings
- **F.** 24" Safety Star


A.


B.


C.


D.


E.


F.

WATERTIGHT GASKET TO GASKET CONNECTION

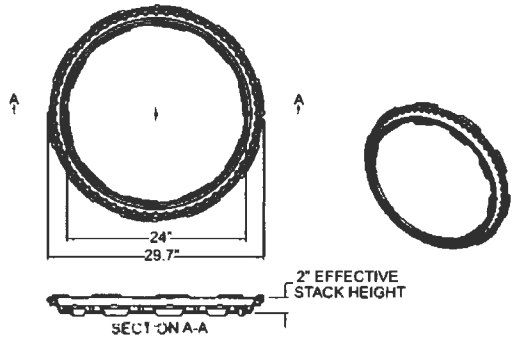
Benefits

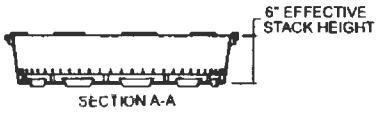
- Easy to Assemble
- No Tools or Adhesive
- Watertight – Gasketed Connection
- Nest Together for Efficient Shipping
- Available in 2, 6 and 12 Inch Heights
- Strong, Durable, Polypropylene Construction
- Available in Green or Black

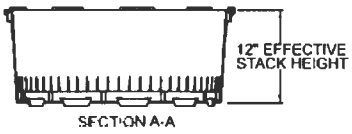
Contact Infiltrator Water Technologies' Technical Services Department for assistance at 1-800-221-4436

EZSnap Riser System Sizes and Specifications

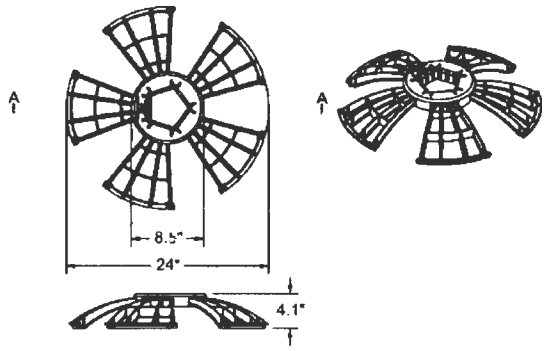
EZSnap Riser Specifications



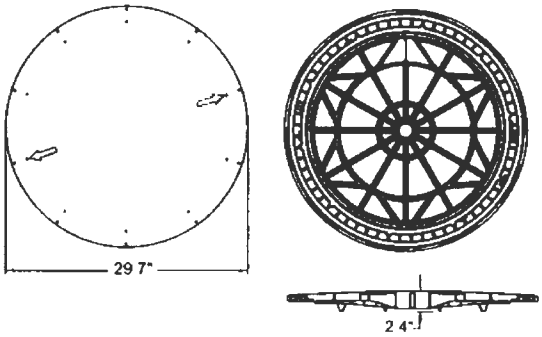




EZSnap Safety Star Specifications



EZSnap 24" Lid Specifications



INFILTRATOR WATER TECHNOLOGIES, LLC ("Infiltrator") EZsnap by Infiltrator LIMITED WARRANTY
ONE (1) YEAR MATERIALS AND WORKMANSHIP LIMITED WARRANTY

(a) This limited warranty is extended to the end user of an EZsnap by Infiltrator riser and lid system and other accessories.
An EZsnap system manufactured by Infiltrator, when installed and operated in accordance with Infiltrator's installation instructions and local regulation by a licensed installer, is warranted to you: (i) against defective materials and workmanship for one (1) year after installation. Infiltrator will, at its option, (i) repair the defective product or (ii) replace the defective materials. Infiltrator's liability specifically excludes the cost of removal and/or installation of the EZsnap system.

(b) In order to exercise its warranty rights, you must notify Infiltrator in writing at its corporate headquarters in Old Saybrook, Connecticut within fifteen (15) days of the alleged defect.

(c) YOUR EXCLUSIVE REMEDY WITH RESPECT TO ANY AND ALL LOSSES OR DAMAGES RESULTING FROM ANY CAUSE WHATSOEVER SHALL BE SPECIFIED IN SUBPARAGRAPH (a) ABOVE. INFILTRATOR SHALL IN NO EVENT BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES OF ANY KIND, HOWEVER OCCASIONED WHETHER BY NEGLIGENCE OR OTHERWISE. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THIS LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

(d) THIS LIMITED WARRANTY IS THE EXCLUSIVE WARRANTY GIVEN BY INFILTRATOR AND SUPERSEDES ANY PRIOR, CONTRARY, ADDITIONAL, OR SUBSEQUENT REPRESENTATIONS, WHETHER ORAL OR WRITTEN. INFILTRATOR DISCLAIMS AND EXCLUDES TO THE GREATEST EXTENT ALLOWED BY LAW ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, OR STATUTORY, INCLUDING ANY WARRANTY OF MERCHANTABILITY, FINESSE FOR A PARTICULAR PURPOSE AND ANY IMPLIED WARRANTIES OTHERWISE ARISING FROM COURSE OF DEALING, COURSE OF PERFORMANCE, OR USAGE OF TRADE. NO PERSON (INCLUDING ANY EMPLOYEE, AGENT, DEALER, OR REPRESENTATIVE) IS AUTHORIZED TO MAKE ANY REPRESENTATION OR WARRANTY CONCERNING THIS PRODUCT, EXCEPT TO REFER YOU TO THIS LIMITED WARRANTY. EXCEPT AS EXPRESSLY SET FORTH HEREIN, THIS WARRANTY IS NOT A WARRANTY OF FUTURE PERFORMANCE, BUT ONLY A WARRANTY TO REPAIR OR REPLACE.

(e) YOU MAY ASSIGN THIS LIMITED WARRANTY TO A SUBSEQUENT PURCHASER OF YOUR HOME.

(F) NO REPRESENTATIVE OF INFILTRATOR HAS THE AUTHORITY TO CHANGE THIS LIMITED WARRANTY IN ANY MANNER WHATSOEVER, OR TO EXTEND THIS LIMITED WARRANTY.

CONDITIONS AND EXCLUSIONS
There are certain conditions or applications over which Infiltrator has no control. Defects or problems as a result of such conditions or applications are not the responsibility of Infiltrator and are NOT covered under this warranty. They include failure to install the EZsnap system in accordance with instructions or applicable regulatory requirements or guidance, altering the EZsnap system contrary to the installation instructions and disposing of chemicals or other materials contrary to normal EZsnap system usage.

The above represents the Standard Limited Warranty offered by Infiltrator. A limited number of states and counties have different warranty requirements. Any purchaser of an EZsnap system 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 an EZsnap system.

INFILTRATOR
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1-800-221-4436
www.infiltratorwater.com

EZSNAP01 0218

Contact Infiltrator Water Technologies' Technical Services Department for assistance at 1-800-221-4436

Infiltrator IM- and CM-Series Septic Tank General Installation Instructions

APRIL 2022

INFILTRATOR tanks

BEFORE YOU BEGIN

Infiltrator Water Technologies' tanks must be installed according to state and/or local regulations and approvals, which supersede the manufacturer's installation instructions. If unsure of the installation requirements for a specific site, contact the health department or permitting authority. The IM- and CM-Series models referred to in this document include the IM-540, IM-1060, CM-1060, and IM-1530.

WARNING: IMPLOSIONS MAY CAUSE SERIOUS INJURY
Follow Infiltrator Water Technologies' vacuum test instructions

MATERIALS AND EQUIPMENT NEEDED

- ☐ IM- or CM-Series tank
- ☐ Access port lid(s)*
- ☐ 10 screws per lid*
- ☐ 2 inlet/outlet gaskets (included)
- ☐ Inlet/outlet tees*
- ☐ Tape measure
- ☐ Pipe, risers, etc.
- ☐ Socket wrench
- ☐ Excavator
- ☐ Shovel
- ☐ Level
- ☐ 5-inch-diameter (125 mm) hole saw
- ☐ Utility knife
- ☐ PVC pipe glue with primer

*tee and lid inclusion varies by state/province

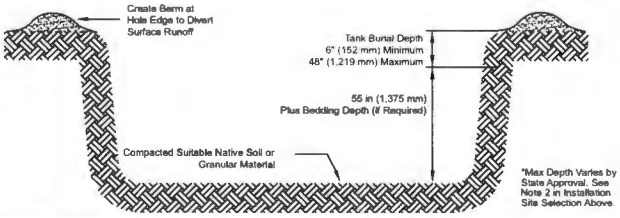
INSTALLATION SITE SELECTION

1. Do not install the tank in vehicular traffic areas. The tank is designed for non-traffic applications.
2. The allowable soil cover depth is 6 to 48* inches (150 to 1,200 mm).
   *18-inch (450 mm) max. in Florida for Cat. 3 tanks; 48-inch (1,200 mm) max. in Florida for Cat. 4 tanks; and 36-inch (900 mm) max. in Massachusetts, New Hampshire, North Carolina, and Oregon.
3. The tank shall not be installed where the subsurface water level outside the tank exceeds the height of the outlet pipe saddle. See page 4 illustration. See installation terminology on page 4 for Indiana installations.

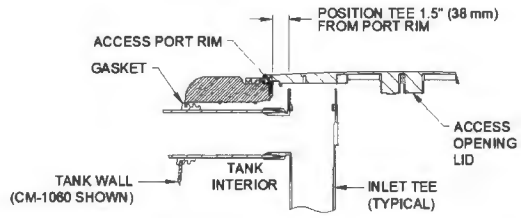
EXCAVATING AND PREPARING THE SITE

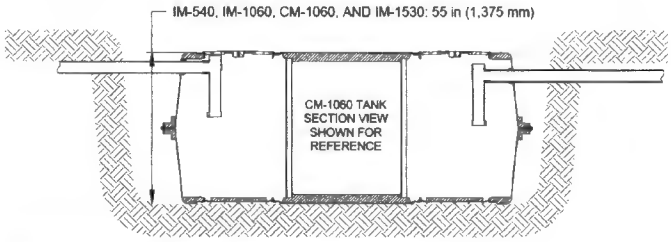
1. Unless buoyancy control measures are required, the excavation width and length should be 18 to 36 inches (450 to 900 mm) larger than the tank on each side or sized as necessary to ensure proper backfill compaction, as outlined in Steps 5-10 of "Backfilling the Tank" in this document. See Infiltrator IM- and CM-Series Tank Buoyancy Control Guidance document, available online at www.infiltratorwater.com, for specific excavation requirements when installing with buoyancy control measures.
2. Excavation depth shall account for the 55-inch (1,375 mm) tank height. Also account for 4 inches (100 mm) of bedding (if required) and cover depth (permissible cover depth is 0.5 to 4 feet (150 to 1,200 mm) of soil).
   Note: If the water level outside the tank exceeds the height of the outlet pipe saddle, tank structural integrity may be compromised. See page 4 for maximum allowable subsurface water elevation guidelines. See page 4 note. Indiana Installations: If the depth of the uninterrupted saturated soil conditions cannot be determined from the site soil evaluation report or other site-related data and other information indicates the possible presence of a perched ground water table, tank installation is permissible. See installation terminology on page 4.
3. Inspect bottom of excavation to verify suitability of native soil for tank installation. Soils with large, protruding, or sharp stones or other similar objects that may damage the tank are not suitable.
4. The tank may be installed either in suitable native soil (see Backfilling the Tank section) or a minimum 4-inch (100 mm) layer of well-graded granular soil having particles less than 3 inches (75 mm) in diameter, or maximum 0.5-inch (13 mm) diameter crushed stone.
5. Create a uniform, compacted, level surface to ensure that the bottom of the tank is evenly supported. Verify that the installation surface is flat.

INSTALLING THE TANK



1. Inspect the tank for damage before installation.
2. If the tank inlet and outlet penetrations are not drilled, drill holes using the drill points provided at each of the inlet and outlet ports according to Table 3 in the Inlet and Outlet Hole Locations section. The inlet and outlet may be drilled on either the sides or ends of the tank, as required based on applicable codes and site conditions.*
   * Kentucky and West Virginia tanks are factory-drilled. Florida and Oregon tanks must be factory- or distributor-drilled.
3. The gaskets supplied with the tank are compatible with Schedule 40 and SDR 35 pipe using a 5-inch-diameter (125 mm) hole saw.
4. Install the rubber gaskets at the inlet and outlet.
5. Using all four of the tank's integral lifting lugs, lower tank into excavation.
6. Slide the inlet and outlet pipes* through the gaskets. Soapy lubricant may be used to slide the pipe in.
   *For North Carolina, the inlet pipe shall be a straight pipe with no tee.
7. Horizontally position the tee 1½ inches (38 mm) from the access port rim, allowing the tee to fit into the recess in the access port lid (see detail).
8. Install lids and risers (see Installing Risers section) as necessary. Rotate lid over access opening until it indexes to tank and drops into position.

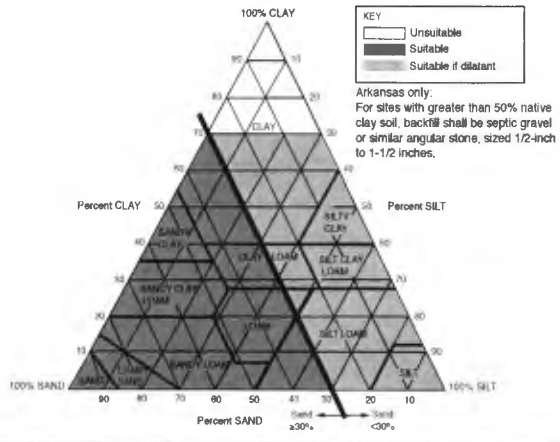




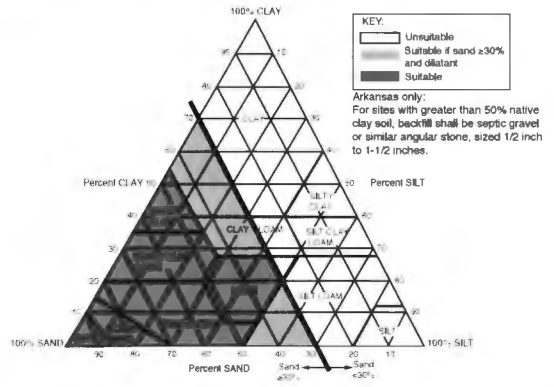
BACKFILLING THE TANK

Note: Infiltrator tanks do not require filling with water prior to backfill placement. Water filling and backfilling to the tank mid-height is required if the tank is left in either an open or backfilled excavation that may fill with water from rain or other sources.

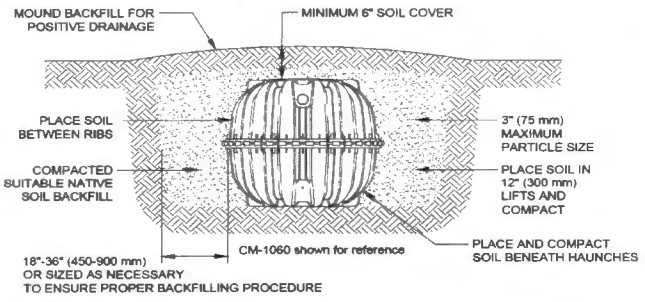
1. Backfill with suitable native soil (max. 3-inch (75-mm) stone diameter). If native soil is unsuitable, replace unsuitable fraction with suitable soil. If suitable soil is not locally available, contact Infiltrator for assistance.
2. Suitable soil shall include soil textural classes defined in the United States Department of Agriculture soil triangle.
   a) For a tank soil cover depth of 0.5 to 2.0 feet (150 to 600 mm), suitable soil textures include:



b) For a tank soil cover depth that is greater than 2.0 feet and up to 4.0 feet (600 to 1,200 mm), suitable soil textures include:



3. Backfill should not have stones greater than 3 inches (75 mm) in diameter or excessive clods that do not break apart during placement and compaction. Backfill must be capable of occupying the spaces between the tank ribs and beneath the haunches.
   Note: Rounded screened aggregate (e.g., pea gravel) is not a suitable backfill.
4. Standard field soil classification methods shall be used to determine the soil textural class.
   Note: Under most circumstances, the determination of soil dilatancy will not be required. Dilatancy shall be determined in the field using a test that does not require specialized equipment, per ASTM D2488, Section 14.3.
5. Place and compact soil by walking-in beneath the haunches of the tank.
   Note: Compacting soil beneath the haunches is critical for tank structural integrity.
6. Place backfill around the four sidewalls in an alternating manner, so that the backfill height along the four sidewalls is maintained within a 12-inch (300-mm) tolerance.
7. Do not backfill top of tank before sidewalls are completely backfilled.
8. Continue to place backfill along the sidewalls in 12-inch (300-mm) lifts. Place backfill between the ribs on the sidewalls such that the space between the ribs is completely filled with soil.
9. Compact backfill material either by walking-in, hand tamping or mechanical compaction (includes backhoe bucket). If mechanical compaction is used, such as a walk-behind tamper or backhoe bucket, a single pass is recommended. Compact each lift prior to placement of next lift. Compact backfill from tank walls to excavation sidewalls.
10. Complete backfilling and grade the area.
11. A minimum 6-inch (150-mm) depth of suitable soil must be placed over the top of the tank. The balance of backfill placed to finish grade above the tank may be either suitable or unsuitable soil.
12. Establish a strong stand of erosion-resistant vegetation.
    Grade to prevent the backfilled excavation from filling with surface runoff. If the subsurface water level in the backfilled excavation exceeds the height of the outlet pipe saddle, tank structural integrity may be compromised. See page 4 for illustration.



SHORT AND LONG-TERM GROUNDWATER CONTROL

It may be necessary to implement groundwater control measures during tank installation. Maintain dry conditions by expanding the excavation to create a short-term groundwater collection sump for temporary placement of a dewatering pump if needed. Long-term groundwater control measures such as underdrains and interceptor trenches may be sensible if the site is amenable to construction of a control system and such systems are not prohibited by regulation or law, and the tank location is not subject to flooding. Underdrains and groundwater interceptor trenches may prevent the need for tank buoyancy control measures.

INSTALLING UNDER SHALLOW GROUNDWATER CONDITIONS

Buoyancy control measures may be required if the tank is to be installed with less than 12 inches (300 mm) of soil backfill cover, and where the water level outside the tank (See Table 1, Note 4) has the potential to rise 30 inches (750 mm) or more above the elevation of the tank bottom. Otherwise, no control measures are required (see Table 1). The need for buoyancy control measures must be determined based on backfill cover depth and height of water outside of tank above the tank bottom according to Table 1. Refer to Infiltrator IM- and CM-Series Tank Buoyancy Control Guidance document for more information.

Table 1: Tank models[1] and conditions requiring buoyancy control[2]

Subsurface water height above tank bottom[4]	Soil cover depth above tank[3]	
	6 in (150 mm) to 12 in (300 mm)	12 in (300 mm) or greater
Above outlet pipe saddle	Do not install tank	Do not install tank
36 in (900 mm) to outlet pipe saddle	All models	None
30 in (750 mm) to 36 in (900 mm)	IM-1530	None
Less than 30 in (750 mm)	None	None

1. IM-540, IM-1060, CM-1060 and IM-1530.
2. See Infiltrator IM- and CM-Series Tank Buoyancy Control Guidance document for detailed information on the use of controls.
3. No controls are required for soil cover depths exceeding 12 in (300 mm).
4. The tank shall not be installed where uninterrupted saturated soil conditions could be present from the tank bottom to a height above that of the outlet pipe saddle. See page 4 illustration. For Indiana installations, if the depth of the uninterrupted saturated soil conditions cannot be determined from the site soil evaluation report or other site-related data and other information indicates the possible presence of a perched ground water table, no buoyancy controls are required. See installation terminology on page 4.

INSTALLING RISERS

1. Compatible risers include 24-inch (600 mm) diameter products such as the Infiltrator EZsnap, TW-Riser, and EZset by Infiltrator, PolyLok®, Inc., and Tuf-Tite® Corporation, in addition to 24-inch (600 mm) diameter corrugated HDPE and IPEX Ultra Rib® PVC pipe. Follow Infiltrator's IM- and CM-Series Tank Riser Connection Guidance Document.
2. In Oregon only, watertightness testing shall include filling with water at least 2 inches above riser connection, with no more than 1 gallon leakage per 24 hours, per OAR 340-073-0025(3).

INSTALLING PUMPS AND RELATED EQUIPMENT

Pumps may be supported on a stable, level 16x16-inch (400x400-mm) platform positioned on the bottom of the tank. One 16x16-inch block or two 8x16-inch (200 -mm x 400-mm) side-by-side blocks may be used. Limit block height to account for pump height and liquid levels during pump cycles. Block(s) should be placed below an access opening and level upon the tank bottom. For two blocks, orient them perpendicular to ribs on the tank bottom, if present, for stability.

Installation of products such as electrical conduit and wiring, pumps, water level control equipment, valves, siphon equipment, etc. shall be in accordance with the product manufacturer's instructions and compliant with applicable state or local rules and regulations. Appurtenances shall be fastened to the tank riser system and not the tank body or access opening rim. Where possible, appurtenances shall be installed to facilitate maintenance and repair access via the tank access openings.
Note: Prefabricated pump vaults may be installed.

GENERAL SPECIFICATIONS

- Failure to comply with installation instructions will void warranty.
- Prior to ground disturbance, check for subsurface obstructions and utilities in conformance with applicable requirements.
- Operating water temperature shall be less than 100° F (40° C).
- In cold conditions, handle and backfill tank with care to prevent impact damage.
- Tanks are not fire resistant. Store away from ignition sources.
- Removal of structural bulkheads is prohibited; removal of locking clips on the tank mid-seam connection is also prohibited.
- Only suitable for potable applications if the tank bears the NSF/ANSI 61 certification mark. Otherwise, tank is recommended for use in septic, rainwater/ stormwater storage, holding, and pump applications, or other non-potable uses.
- Infiltrator tanks shall not be installed above ground. Contact Infiltrator if the 6-inch (150-mm) minimum soil cover depth cannot be met.

INLET AND OUTLET HOLE LOCATIONS

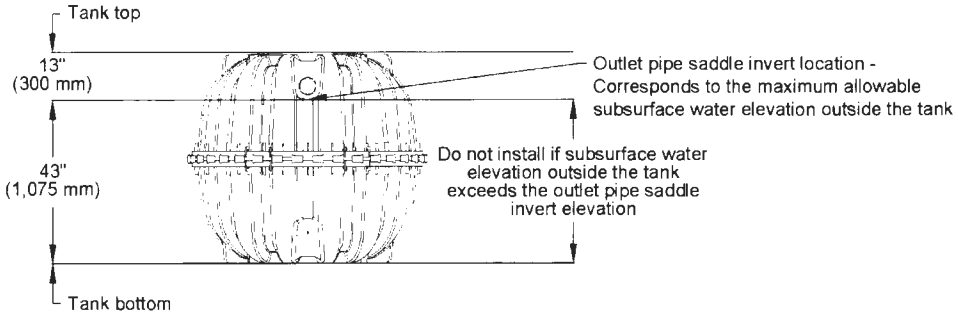
Drill height marks are provided on all Infiltrator tank models to guide inlet and outlet hole drilling. A single drill height mark is provided at each end or side port on tanks (example illustrated below). Holes may be drilled at the end or side inlet and outlet locations, as allowed by state and/or local regulations. The drill height mark indicates the center point location for the hole saw. The pilot drill bit on the hole saw should be positioned at the center of the drill height mark to align the hole saw properly. Table 3 provides drilling and invert information by regulatory jurisdiction for the installation of 4-inch-diameter (100 mm) pipe.

Table 3: Inlet and Outlet Hole Locations[1]

Jurisdiction[2]	Inlet Drill Location	Outlet Drill Location	Invert Drop (in) [mm]	Inlet Invert Height (in) [mm]		Outlet Invert Height[3] and Liquid Level (in) [mm]
				Above Inside Bottom of Tank[3]	Above Excavation Base[4]	
IM-540 and IM-1530						
All	All	All	3.00 [76]	47.00 [1,194]	47.20 [1,199]	44.00 [1,118]
CM-1060						
All Except Florida	All	All	3.00 [76]	47.00 [1,194]	47.20 [1,199]	44.00 [1,118]
Florida	End	End	2.00 [51]	46.00 [1,168]	46.20 [1,174]	44.00 [1,118]
IM-1060						
All	End	End	3.00 [76]	47.00 [1,194]	47.20 [1,199]	44.00 [1,118]
	Side	Side	3.00 [76]	47.50 [1,207]	47.70 [1,212]	44.50 [1,130]
	Side	End	3.50 [89]	47.50 [1,207]	47.70 [1,212]	44.00 [1,118]
	End	Side	2.50 [64]	47.00 [1,194]	47.20 [1,199]	44.50 [1,130]

1. State, provincial, and local regulatory requirements supersede Table 3 information.
2. Kentucky and West Virginia tanks are factory-drilled. Florida and Oregon tanks must be factory- or distributor-drilled.
3. Invert heights are measured from the lowest interior surface at the bottom of the tank to the invert.
4. Invert heights are measured from the base of the excavation to the invert.

Limitations When Subsurface Water is Present Above the Tank Bottom



Installation Terminology

1. "Subsurface water" refers to a water-saturated zone of soil. Do not install if subsurface water is continuous from the tank bottom elevation to any point above the outlet pipe saddle elevation.
2. "Uninterrupted saturated soil" refers to water-saturated soil with no gaps in the saturated condition. An example of a gap in the saturated condition is a perched water table, when two water-saturated soil zones are interrupted by an unsaturated soil zone. Do not install if uninterrupted saturated soil is present from the tank bottom elevation to any point above the outlet pipe saddle elevation.
3. A perched water table is allowable above the outlet pipe saddle elevation only if unsaturated soil is present between the perched water table and tank bottom elevation.

Infiltrator Water Technologies, LLC ("Infiltrator")

INFILTRATOR® SEPTIC TANK LIMITED WARRANTY FIVE (5) YEAR MATERIALS AND WORKMANSHIP LIMITED WARRANTY

(a) This limited warranty is extended to the end user of an Infiltrator Tank. A Tank manufactured by Infiltrator, when installed and operated in accordance with Infiltrator's installation instructions and local regulation by a person or company that is properly qualified to install the Infiltrator Tank in accordance with applicable state and/or local requirements, is warranted to you: (i) against defective materials and workmanship for five (5) years after installation. Infiltrator will, at its option, (i) repair the defective product or (ii) replace the defective materials. Infiltrator's liability specifically excludes the cost of removal and/or installation of the Tank.

(b) In order to exercise its warranty rights, you must notify Infiltrator in writing at its corporate headquarters in Old Saybrook, Connecticut within fifteen (15) days of the alleged defect.

(c) YOUR EXCLUSIVE REMEDY WITH RESPECT TO ANY AND ALL LOSSES OR DAMAGES RESULTING FROM ANY CAUSE WHATSOEVER SHALL BE SPECIFIED IN SUBPARAGRAPH (a) ABOVE. INFILTRATOR SHALL IN NO EVENT BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES OF ANY KIND, HOWEVER OCCASIONED, WHETHER BY NEGLIGENCE OR OTHERWISE. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THIS LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

(d) THIS LIMITED WARRANTY IS THE EXCLUSIVE WARRANTY GIVEN BY INFILTRATOR AND SUPERSEDES ANY PRIOR, CONTRARY, ADDITIONAL, OR SUBSEQUENT REPRESENTATIONS, WHETHER ORAL OR WRITTEN. INFILTRATOR DISCLAIMS AND EXCLUDES TO THE GREATEST EXTENT ALLOWED BY LAW ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, OR STATUTORY, INCLUDING ANY WARRANTY OF MERCHANTABILITY, FINESSE FOR A PARTICULAR PURPOSE AND ANY IMPLIED WARRANTIES OTHERWISE ARISING FROM COURSE OF DEALING, COURSE OF PERFORMANCE, OR USAGE OF TRADE. NO PERSON (INCLUDING ANY EMPLOYEE, AGENT, DEALER, OR REPRESENTATIVE) IS AUTHORIZED TO MAKE ANY REPRESENTATION OR WARRANTY CONCERNING THIS PRODUCT, EXCEPT TO REFER YOU TO THIS LIMITED WARRANTY. EXCEPT AS EXPRESSLY SET FORTH HEREIN, THIS WARRANTY IS NOT A WARRANTY OF FUTURE PERFORMANCE, BUT ONLY A WARRANTY TO REPAIR OR REPLACE.

(e) YOU MAY ASSIGN THIS LIMITED WARRANTY TO A SUBSEQUENT PURCHASER OF YOUR HOME.

(f) NO REPRESENTATIVE OF INFILTRATOR HAS THE AUTHORITY TO CHANGE THIS LIMITED WARRANTY IN ANY MANNER WHATSOEVER, OR TO EXTEND THIS LIMITED WARRANTY.

(g) NO WARRANTY OF ANY KIND IS MADE WITH REGARD TO ANY PRODUCT, COMPONENTS, DEVICES, MEDIA OR TREATMENT UNITS WHICH ARE MANUFACTURED BY OTHERS AND ARE INSTALLED IN AN INFILTRATOR TANK. USE OF THESE PRODUCTS ARE AT YOUR OWN RISK.

(h) THE INFILTRATOR TANK IS DESIGNED TO BE BURIED UNDERGROUND. NO WARRANTY OF ANY KIND IS MADE IF YOUR TANK IS NOT BURIED UNDERGROUND AS SPECIFIED IN THE PRODUCT'S INSTALLATION INSTRUCTIONS.

CONDITIONS AND EXCLUSIONS

There are certain conditions or applications over which Infiltrator has no control. Defects or problems as a result of such conditions or applications are not the responsibility of Infiltrator and are NOT covered under this warranty. They include failure to install the Tank in accordance with instructions or applicable regulatory requirements or guidance, altering the Tank contrary to the installation instructions and disposing of chemicals or other materials contrary to normal tank usage.

The above represents the Standard Limited Warranty offered by Infiltrator. A limited number of regulatory jurisdictions have different warranty requirements. Any purchaser of a Tank 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 a Tank.

INFILTRATOR
water technologies

4 Business Park Road
P.O. Box 768
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860-577-7000 • Fax 860-577-7001
1-800-221-4436
www.infiltratorwater.com
info@infiltratorwater.com

Distributed By:

Note: Please visit www.infiltratorwater.com for updated and/or amended instructional material.

Table 2: Nominal Volume Chart

Liquid height above tank bottom[1]		Liquid volume in tank at indicated height (measured from tank bottom to liquid surface)[1]							
		IM-540		IM-1060		CM-1060		IM-1530	
in	cm	U.S. Gal	Liters	U.S. Gal	Liters	U.S. Gal	Liters	U.S. Gal	Liters
1	3	3	11	3	11	5	21	17	64
2	5	8	30	13	49	17	64	34	128
3	8	14	53	28	106	31	119	51	192
4	10	21	80	46	174	50	188	68	256
5	13	29	109	65	246	70	263	94	357
6	15	37	141	86	326	91	344	122	463
7	18	46	173	107	405	113	429	152	573
8	20	55	207	129	488	137	517	180	681
9	23	64	243	152	575	160	608	212	802
10	25	74	279	176	666	185	700	245	928
11	28	84	317	200	757	210	795	280	1,061
12	30	94	356	225	852	236	892	312	1,182
13	33	105	396	251	950	262	991	351	1,328
14	36	116	437	277	1,049	288	1,091	387	1,463
15	38	127	480	303	1,147	315	1,192	422	1,597
16	41	138	523	330	1,249	342	1,293	464	1,756
17	43	150	566	357	1,351	369	1,396	500	1,892
18	46	161	611	384	1,454	396	1,499	537	2,034
19	48	173	656	411	1,556	423	1,602	575	2,177
20	51	186	702	438	1,658	451	1,706	614	2,322
21	53	198	749	465	1,760	478	1,811	652	2,468
22	56	210	796	493	1,866	506	1,916	690	2,612
23	58	223	843	521	1,972	534	2,022	729	2,758
24	61	235	891	549	2,078	562	2,129	770	2,914
25	64	248	940	577	2,184	591	2,236	808	3,058
26	66	261	988	605	2,290	619	2,344	847	3,208
27	69	274	1,038	633	2,396	648	2,453	887	3,356
28	71	287	1,088	662	2,506	677	2,563	928	3,513
29	74	300	1,137	691	2,616	706	2,671	968	3,665
30	76	313	1,185	719	2,722	734	2,778	1,007	3,814
31	79	326	1,233	747	2,828	762	2,885	1,048	3,966
32	81	338	1,281	775	2,934	790	2,991	1,087	4,113
33	84	351	1,328	802	3,036	818	3,096	1,126	4,262
34	86	363	1,375	830	3,142	846	3,201	1,165	4,410
35	89	375	1,421	857	3,244	873	3,305	1,204	4,557
36	91	387	1,466	884	3,346	901	3,409	1,242	4,701
37	94	399	1,511	911	3,449	928	3,512	1,280	4,846
38	97	411	1,555	938	3,551	955	3,614	1,318	4,988
39	99	422	1,598	965	3,653	982	3,716	1,355	5,131
40	102	433	1,640	992	3,755	1,008	3,817	1,393	5,272
41	104	444	1,681	1,018	3,854	1,035	3,917	1,430	5,412
42	107	455	1,722	1,044	3,952	1,061	4,016	1,466	5,550
43	109	465	1,761	1,069	4,047	1,087	4,113	1,502	5,685
44	112	475	1,799	1,094	4,141	1,111	4,207	1,537	5,817
45	114	485	1,836	1,118	4,232	1,136	4,302	1,572	5,950
46	117	494	1,871	1,142	4,323	1,160	4,393	1,604	6,070
47	119	503	1,905	1,165	4,410	1,184	4,481	1,638	6,201
48	122	512	1,938	1,187	4,493	1,206	4,566	1,667	6,310
49	124	520	1,970	1,208	4,573	1,228	4,648	1,697	6,422
50	127	528	1,999	1,228	4,648	1,248	4,724	1,724	6,527
51	130	535	2,027	1,247	4,720	1,267	4,794	1,749	6,621
52	132	542	2,050	1,265	4,789	1,282	4,851	1,766	6,684
53	135	547	2,071	1,278	4,838	1,293	4,896	1,777	6,726
54	137	551[2]	2,087	1,287	4,872	1,300[2]	4,922	1,785[2]	6,758

1. Liquid height measured from lowermost inside surface at bottom of corrugation in tank to the liquid surface elevation.
2. The total capacity of the IM-540 tank is 552 gallons; the total capacity of the CM-1060 is 1,309, the total capacity of the IM-1530 tank is 1,787 gallons.
3. To determine liquid volume between liquid heights, subract the Table 2 volume indicated for the upper and lower heights. Example: CM-1060 volume between 50 in (127 cm) and 40 in (102 cm) = 1,248 gal (4,724 L) - 1,008 gal (3,817 L) = 240 gal (907 L).

FISHER, COLLINS & CARTER, INC.

CIVIL ENGINEERING CONSULTANTS and LAND SURVEYORS

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Transmittal

Via: ☐ Fax ☐ Mail ☒ Messenger ☐ E-Mail ☒ To Be Picked Up
☐ Fax (original to follow via U.S. Mail)

To:	**Bureau of Environmental Health**	Attn:	**Zack Silvast, L.E.H.S.**
	8930 Stanford Blvd	Fax:	
	Columbia, MD 21045	Phone:	

From:	**Luke A. Groom, P.E.**	CC:	

Re:	**1680 Woodstock Road**	W.O.#	**23054**
Date:	**March 13, 2024**	Pages:	**3 Page(s) Including this cover**

We are forwarding: ☒ Prints ☐ Copy of Letter ☐ Specifications ☐ Shop drawings ☐ Other
☐ Urgent ☐ For your use ☐ As requested ☐ For Review & Comment

Remarks:

Mr. Silvast:
In conjunction with the submission of the above referenced project.
Attached you should find:
3 Sets of Septic Installation Plan
3 Copies of Comment respose letter
3 Sets of the infiltrator tank manufacturing/ installation details.
3 Copies of Letter certifying infiltrator tank

Please feel free to contact me if you require any additional information.
Regards,

Luke Groom

Luke A. Groom, P.E.

INFILTRATOR
tanks

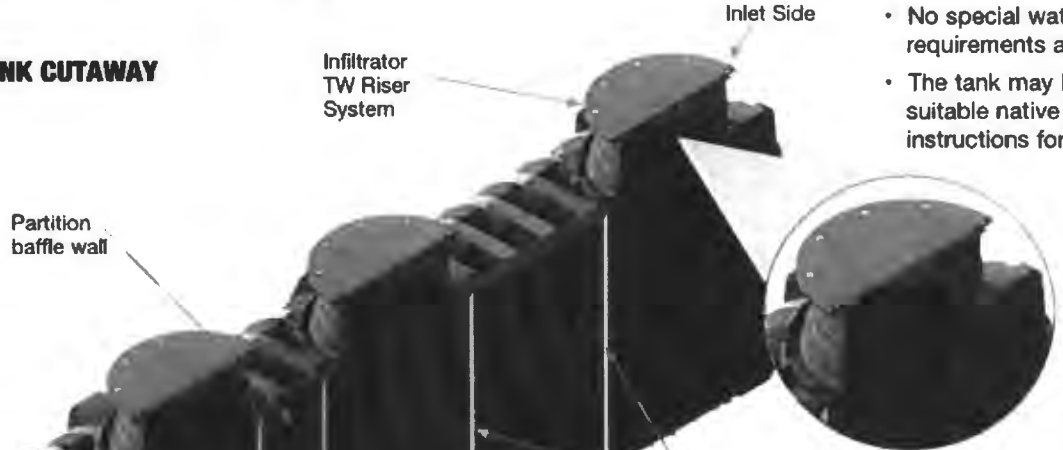
IM-1530

The Infiltrator IM-1530 is a lightweight strong and durable septic tank. This watertight tank design is offered with Infiltrator's line of custom-fit risers and heavy-duty lids. Infiltrator injection molded tanks provide a revolutionary improvement in plastic septic tank design, offering long-term exceptional strength and watertightness.

Features & Benefits

- Strong injection molded polypropylene construction
- Lightweight plastic construction and inboard lifting lugs allow for easy delivery and handling
- Integral heavy-duty green lids that interconnect with TW™ risers and pipe riser solutions
- Structurally reinforced access ports eliminate distortion during installation and pump-outs
- Reinforced structural ribbing and fiberglass bulkheads offer additional strength
- Can be installed with 6" to 48" of cover
- Can be pumped dry during pump-outs
- Suitable for use as a septic tank, pump tank, or rainwater (non-potable) tank
- No special water filling requirements are necessary
- The tank may be backfilled with suitable native soil. See installation instructions for guidance.

TANK CUTAWAY



HEAVY DUTY LID CUTAWAY
Reinforced 24" structural access port

IM-1530 General Specifications and Illustrations

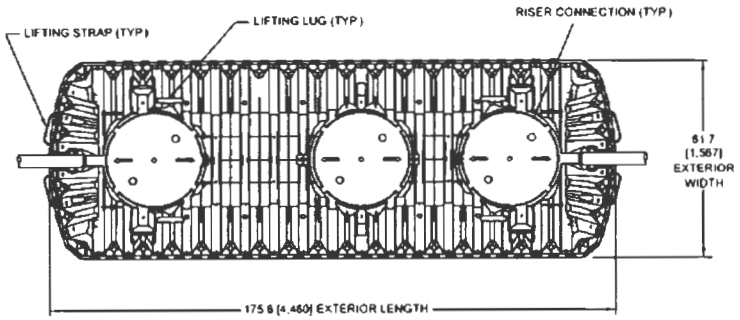
The IM-1530 is an injection molded two piece mid-seam plastic tank. The IM-1530 injection molded plastic design allows for a mid-seam joint that has precise dimensions for accepting an engineered EPDM gasket. Infiltrator's gasket design utilizes technology from the water industry to deliver proven means of maintaining a watertight seal.

The two-piece design is permanently fastened using a series of non-corrosive plastic alignment dowels and locking seam clips. The IM-1530 is assembled and sold through a network of certified Infiltrator distributors.

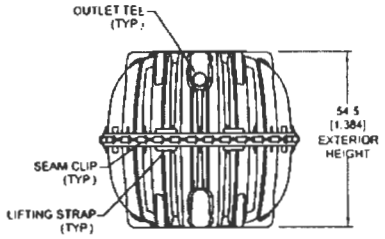
Must be backfilled and installed in accordance with Infiltrator Water Technologies, Infiltrator IM-Series Septic Tank General Installation Instructions and for shallow ground water conditions reference the Infiltrator IM-Series Tank Buoyancy Control Guidance.

Please visit www.infiltratorwater.com/images/pdf/ManualsGuides/TANK01.pdf for the latest information.

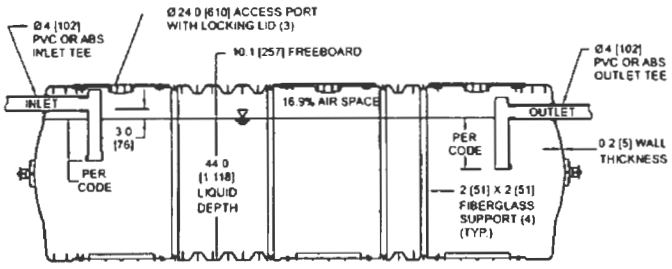
IM-1530	
Working Capacity	1537 gal (5818 L)
Total Capacity	1787 gal (6765 L)
Airspace	16.9%
Length	176" (4460 mm)
Width	62" (1567 mm)
Length-to-Width Ratio	2.8 to 1
Height	55" (1384 mm)
Liquid Level	44" (1118 mm)
Invert Drop	3" (76 mm)
Fiberglass Supports	4
Compartments	1 or 2
Maximum Burial Depth	48" (1219 mm)
Minimum Burial Depth	6" (152 mm)
Maximum Pipe Diameter	4" (100 mm)
Weight	501 lbs (228 kg)



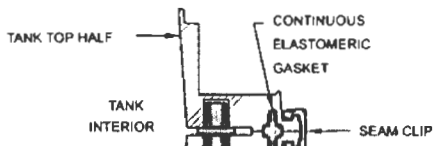
TOP VIEW



END VIEW



SIDE VIEW



Before you Begin

The following is a complete list of tank components:

- Tank top half
- Tank bottom half (with pre-installed mid-seam gasket)
- Baffle (two-compartment configuration only)
- Alignment dowels (46)
- Seam clips (86)
- Support posts (4)
- Lids (3)*
- Lid shipping screws (9)* and washers (9)*
- Lid spacers (3)*
- Lid screw kits (3)*
- Plumbing kit

** Varies by state/province*

The following tools facilitate tank assembly:

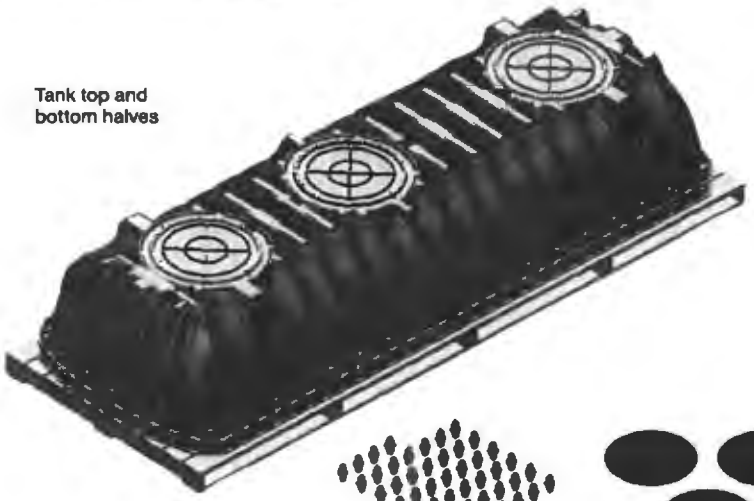
- Fork lift (5,000 lb [2,268 kg] capacity, min. 67" [1.7 m] arm, min. 12' [3.7 m] pick height)
- Infiltrator Lifting Strap Assembly*
- 22 oz. [0.6 L] spray bottle*
- 16 oz. [0.5 L] liquid soap*
- Utility knife
- Coarse-bristled paint brush
- Metal hammer (16-20 oz. [0.5 kg])
- Rubber mallet
- Hole saw (5" [125 mm] diameter)
- Nut driver (3/8", 5/16" sockets)
- Clean rags
- Headlamp or flashlight
- Screw gun
- Safety glasses

**Supplied in Infiltrator IM-1530 Starter Kit*

INFILTRATOR® tanks

MARCH 2014

Infiltrator IM-1530 Tank Assembly Instructions

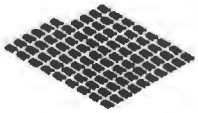


Tank top and bottom halves

Alignment Dowels (46)

Lids (3)

Support Posts (4)



Seam Clips (86)

Baffle
(2-compartment configuration only)

It is recommended that a minimum of two people participate to safely assemble the tank. Assemblers must wear safety glasses during the entire assembly. The top half of the tank weighs approximately 229 pounds (104 kg) and the bottom half of the tank weighs approximately 236 pounds (107 kg) for a total approximate weight of 465 pounds (211 kg). Each tank half must be lifted approximately 30 inches (750 mm) above ground during the assembly process. There must be enough side and overhead clearance to freely maneuver the tank components and to operate lifting machinery when used.

The IM-1530 tank must be assembled by an Infiltrator Water Technologies Authorized Assembler. Tanks assembled by unauthorized assemblers will not be warrantied by Infiltrator Water Technologies A signed copy of the IM-1530 Tank Assembly Checklist & Assembly Authorization is required for all Authorized Assemblers.

⚠ WARNING

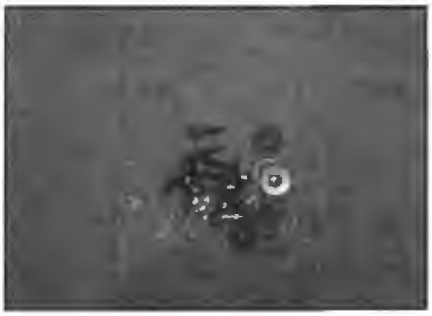
IMPLOSIONS MAY CAUSE SERIOUS INJURY
Follow Infiltrator Water Technologies' vacuum test instructions
NEVER EXCEED 2.5 inches mercury vacuum pressure

WARNING: These assembly instructions do not include a protocol for vacuum testing the IM-1530 tank. If required, vacuum tests on the IM-1530 shall only be performed in strict accordance with Infiltrator's IM-1530 tank vacuum testing guidance documents. Failure to follow an Infiltrator vacuum-testing protocol and/or exceeding 2.5 inches (63 mm) of mercury vacuum pressure could result in personal harm. Never apply a positive air pressure to the IM-1530 tank. Infiltrator will not be liable for any problems that arise from such unauthorized use.

Components

Alignment Dowels (46)

Seam Clips (86)



Lid Screw Kit

P1 Plumbing Kit

IM-1530 Tank Pallet Handling

IM-1530 pallets hold either 4 or 7 tanks.

Overall Dimensions (for 7-tank pallet)

- Stacked tanks: 176"L x 62"W x 79"H
- Stacked tanks on pallet: 178.5"L x 67"W x 86"H
  Weight: 4,060 lbs (1,878 kg)

A forklift that has the following minimum specifications is needed to safely handle and off load the IM-1530 pallet: 5,000 lb (2,268 kg) capacity, 24" (0.61 m) load center, minimum 67" (1.7 m) arm and minimum 12' (3.7 m) pick height. The tank halves must be safely removed from the pallet using the Infiltrator Lifting Strap Assembly. **The IM-1530 tank pallets should never be tipped over!** The Infiltrator Lifting Strap Assembly is sized to pick up a maximum of 2 tank halves at a time using a forklift. The safety lock spring hooks are to be connected to the rope handles on the end walls of each tank. Set the tank halves on a clean surface, across several 4"x4"s, plywood, or on a clean tarp, to prevent damage or introducing dirt and debris into the mid-seam area where the gasket is located.

Tank Assembly

1. Remove all plastic wrap and strapping from the IM-1530 tank and components shipping pallet. If serial numbers need to be recorded, Infiltrator recommends recording them while the tank halves are stacked on the pallet. The serial number is located at the mid-seam on the outlet end.

2. Using the Infiltrator Lifting Strap Assembly, attach the four lifting strap hooks to the IM-1530 rope handles, located two on either end of the tank bottom half. Slowly lift the inverted tank bottom straight up and off of the tank top nested below.

   ⚠ ***WARNING:*** *The Infiltrator Lifting Strap Assembly supplied with the starter kit is sized to pick up a maximum of two (2) IM-1530 tank halves at one time. Never lift more than two (2) IM-1530 tank halves at one time with the Infiltrator Lifting Strap Assembly. The Infiltrator Lifting Strap Assembly is intended for use ONLY with IM Series tanks in accordance with these instructions; any other use of the Infiltrator Lifting Strap Assembly, including use with Infiltrator TW-Series tank models, is prohibited. Infiltrator Water Technologies will not be liable for any problems that arise from unauthorized use of the Infiltrator Lifting Strap Assembly.*

   NOTE: *Never set the tank half with the gasket on any surface with the gasket facing downward without the use of a clean surface, pallet, several 4"x4"s, plywood, or a clean tarp to prevent damage or the introduction of dirt and debris into the mid-seam area where the gasket and groove are located. The tank half should only be left briefly with the gasket resting on such surfaces, to prevent the gasket from irreversibly deforming.*

3. Set the bottom half down on a clean surface, pallet, several 4"x4"s, plywood, or a clean tarp to prevent damage or the introduction of dirt and debris to the midseam area where the gasket and groove are located. The tank half should only be left briefly with the gasket resting on such surfaces, to prevent the gasket from irreversibly deforming.

2

3

FILE INQUIRY NOTES

DATE	RESULTS OF REVIEW FOR FILE
6/6/2024-	Installer onsite for layout. Septic & pump tank staked per plan. SDA staked
	per plan. Could not locate existing trench, installer working on locating trench.
	New trench length @ 76' per plan w/ 1" difference in elevation. OK to set tanks. SP4/3