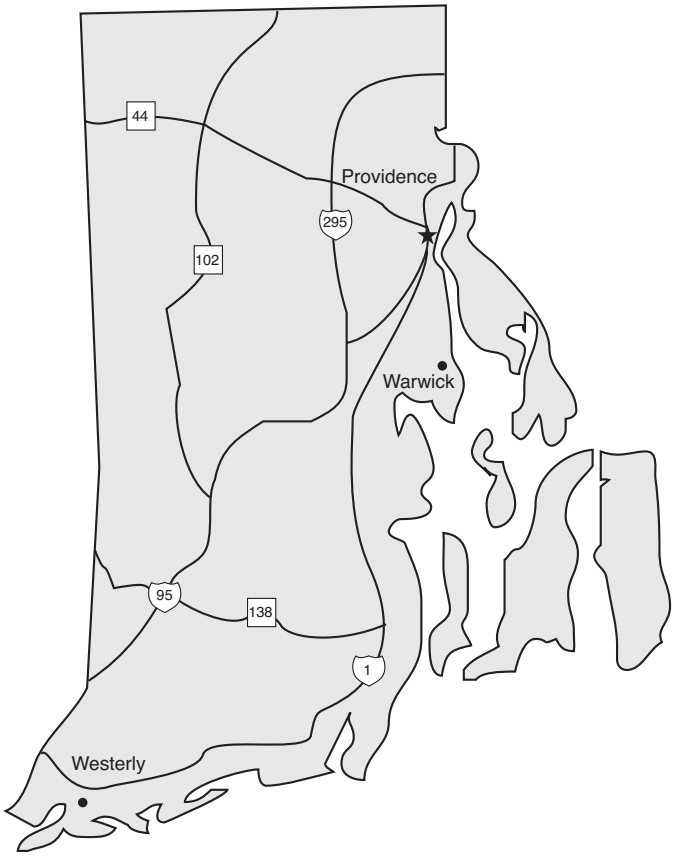
INFILTRATOR
water technologies

Design and Installation Manual for Quick4 Chambers in Rhode Island



Rhode Island

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The purpose of this product information sheet is to provide specific design and installation information pertinent for the use of Infiltrator Quick4 chambers in Rhode Island. Infiltrator products must be used in conjunction with the standards described by the Rhode Island Department of Environmental Management. This document provides a brief description of the chamber and sizing specifications.

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

Rhode Island

Quick4 Standard Chambers

The Quick4 Standard chamber fits in a 36-inch wide trench. This chamber can swivel 10 degrees, right or left. There are a variety of system inletting options to choose from.

Quick4 Standard
nominal chamber specifications

Size	34”W x 53”L x 12”H
Effective Length	48”
Invert Elevation	8”

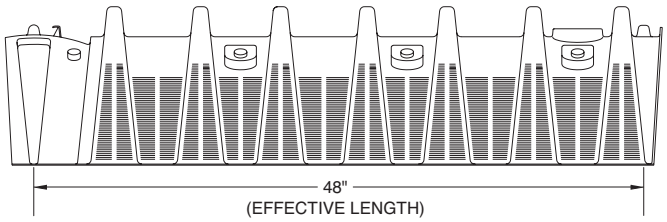


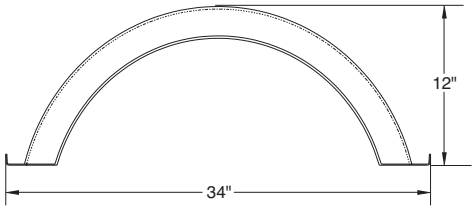
Quick4 Standard Chamber



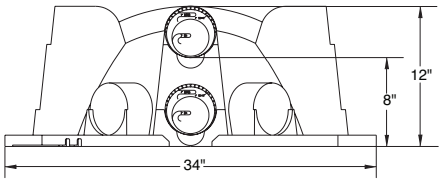
Quick4 Standard MultiPort Endcap

TYPICAL SIDE AND END VIEWS
(not to scale)

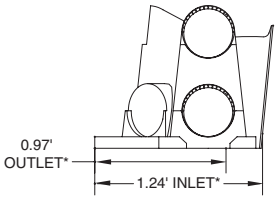




TYPICAL SIDE AND END VIEWS
(not to scale)



FRONT VIEW



SIDE VIEW

*Installed lengths.

SYSTEM SIZING

TABLE 1: CHAMBER RATING

Model	Dimensions	Invert Height	Leaching Area Rating per Linear Foot
Quick4 Standard	34”W x 48”L x 12”H	8”	4.0 SF/LF

TABLE 2: QUICK4 STANDARD TRENCH SIZING PER OWTS RULE 32.2.2 (SOIL CATEGORY)

Soil Category	Loading Rate (gals/sq. ft/day)	Number of Quick4 Chambers in Aggregate-Free Systems		
		2 Bedrooms (230 GPD)	3 Bedrooms (345 GPD)	Each Additional Bedroom (115 GPD)
1	0.70	21	31	10
1m	0.61	24	36	12
2	0.61	24	36	12
3	0.70	21	31	10
4	0.61	24	36	12
4m	0.70	21	31	10
5	0.52	28	42	14
6	0.61	24	36	12
6m	0.70	21	31	10
7	0.52	28	42	14
7m	0.61	24	36	12
8	0.46	32	47	16
8m	0.48	30	45	15
9	0.40	36	54	18
9m	0.43	34	51	17
10	Not Allowed (impervious)		– – –	– – –

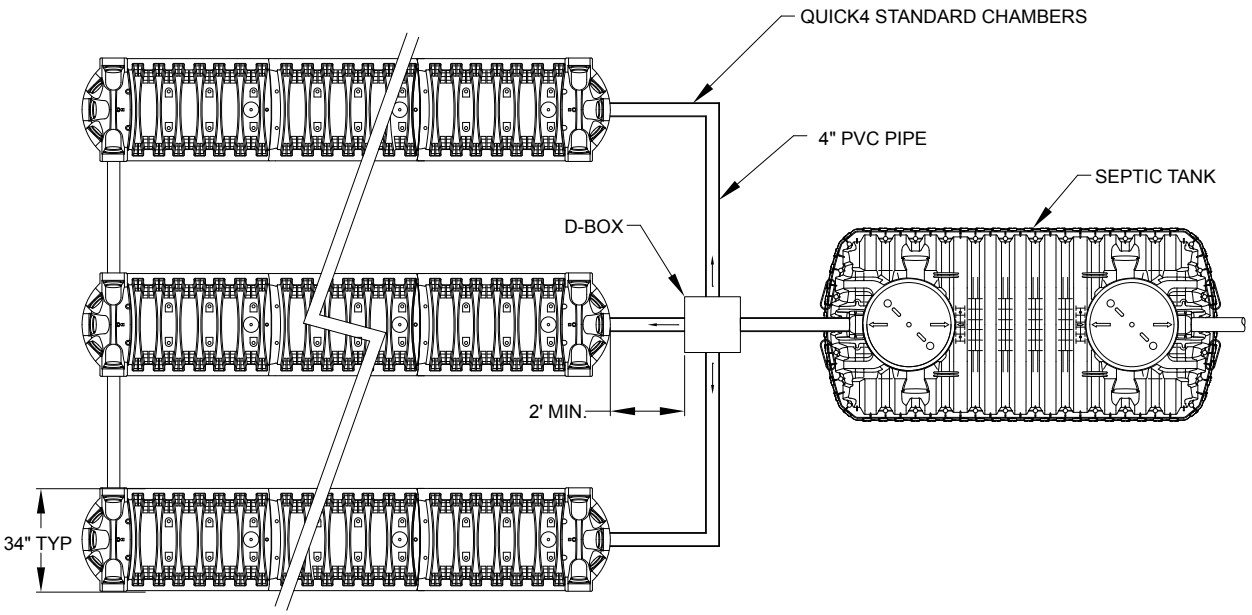
SYSTEM SIZING

TABLE 3: QUICK4 STANDARD TRENCH SIZING PER OWTS RULE 32.2.1 (PERCOLATION RATE)

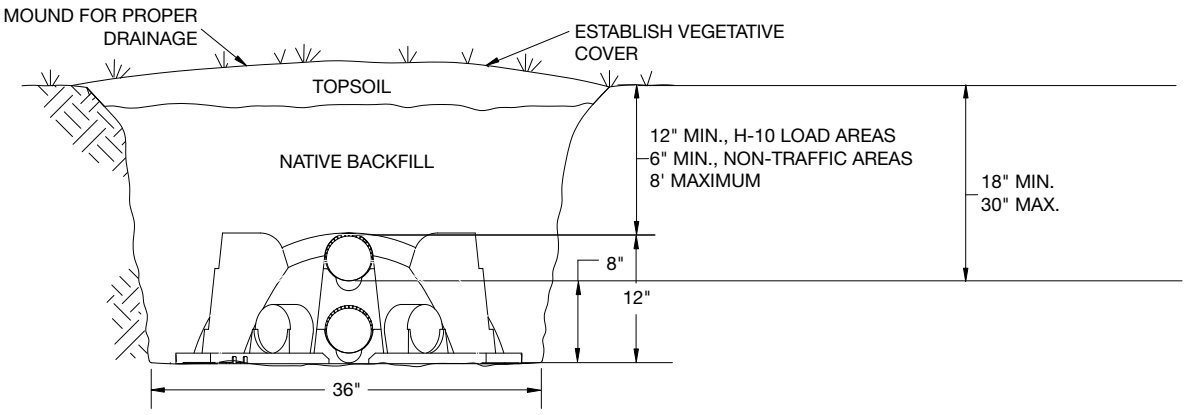
Perc. Rate (min/in)	Loading Rate (gals/sq. ft/day)	Number of Quick4 Chambers in Aggregate-Free Trench Systems		
		2 Bedrooms (230 GPD)	3 Bedrooms (345 GPD)	Each Additional Bedroom (115 GPD)
<=5*	.93	16	24	8
10	0.70	21	31	11
15	0.61	24	36	12
20	0.52	28	42	14
25	0.48	30	45	15
30	0.46	32	47	16
40	0.40	36	54	18

Quick4 Standard Trench Configurations

TYPICAL CROSS SECTION
(not to scale)



TYPICAL CROSS SECTION
(not to scale)



NOTE: Whenever a sewage leaching field is located in fine textured soils containing fine sands, silt or clays, a minimum six (6)-inch depth gravel base must be placed beneath the entire leaching field.

NOTES: Per Rule 33.2.3 the maximum length of a disposal trench shall be as follows:

(a) without dosing - fifty (50) feet

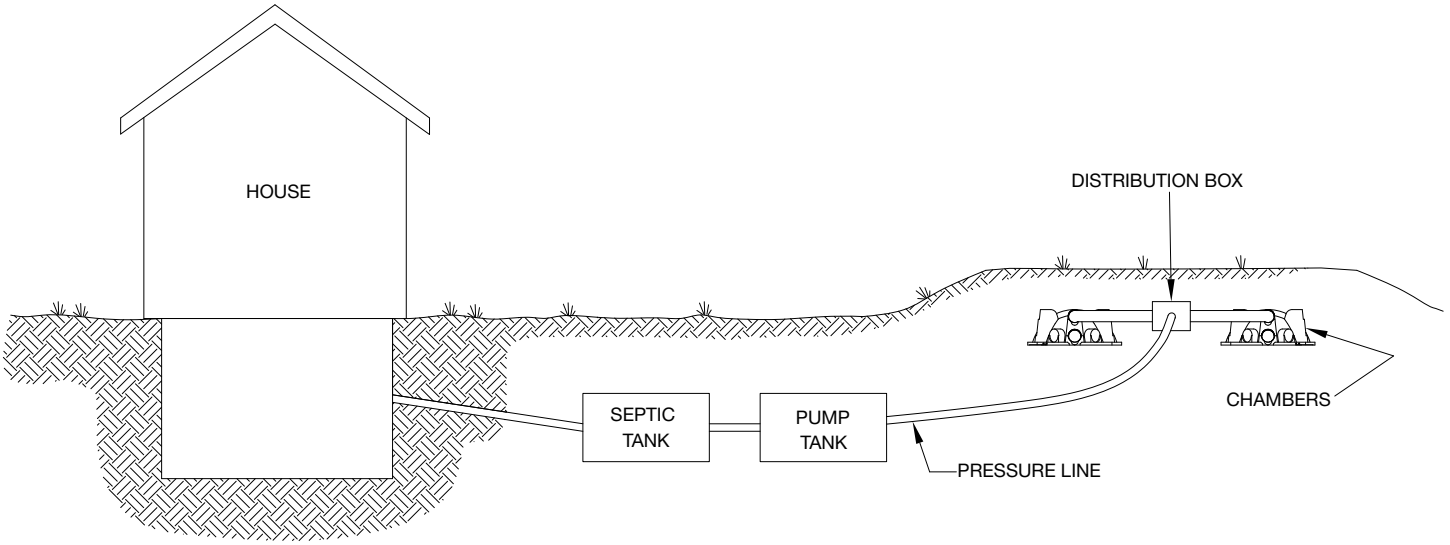
(b) with a tipping distribution box - seventy five (75) feet

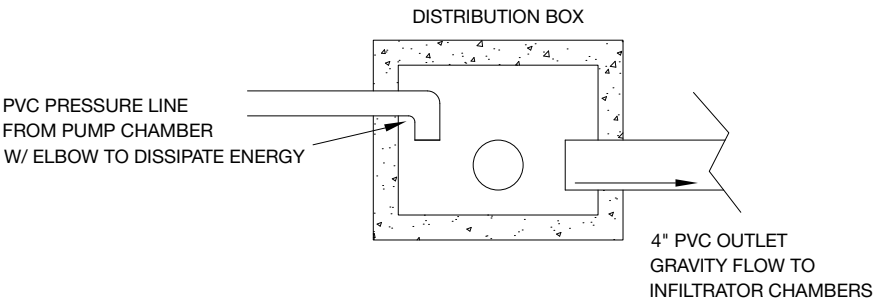
(c) with a pump - one hundred (100) feet

Quick4 Standard Chambers

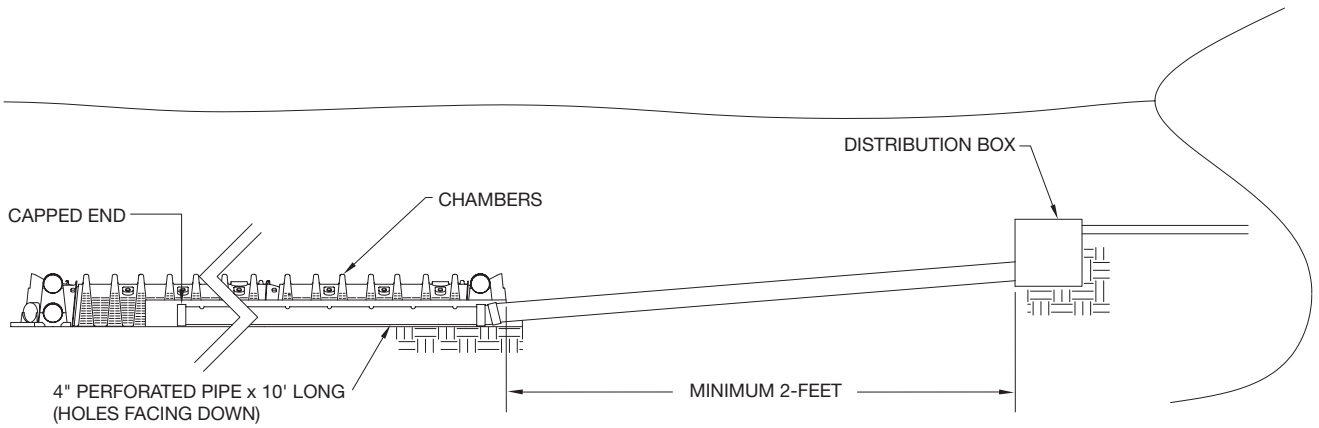
In a pump to gravity system, the effluent is pumped to a distribution box which receives a predetermined dosing volume of effluent. It is then gravity fed to the leaching area and distributed to the rows or trenches within the leachfield. In a pump to gravity system, the effluent is gravity fed as shown below.

NOTE: It is recommended that the system be designed so that the chambers receive a minimum of four doses per day.





TYPICAL SIDE VIEW
(not to scale)



Quick4 Equalizer 24 Low Profile Chambers

The Quick4 Equalizer 24 Low Profile chamber is approved as an equivalent for the dome structure in a pressurized shallow-narrow drainfield (PSND) with design and sizing per Rhode Island DEM guidance. For use in PSND applications.



Quick4 Equalizer
24 Low Profile Chamber

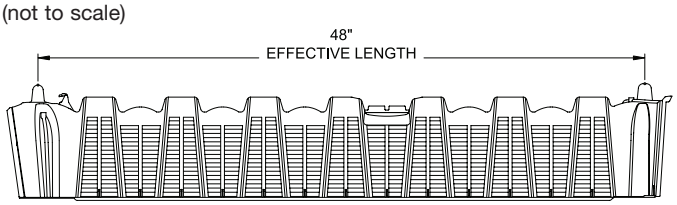


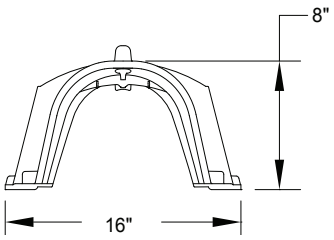
Low Profile Endcap

Quick4 Standard
nominal chamber specifications

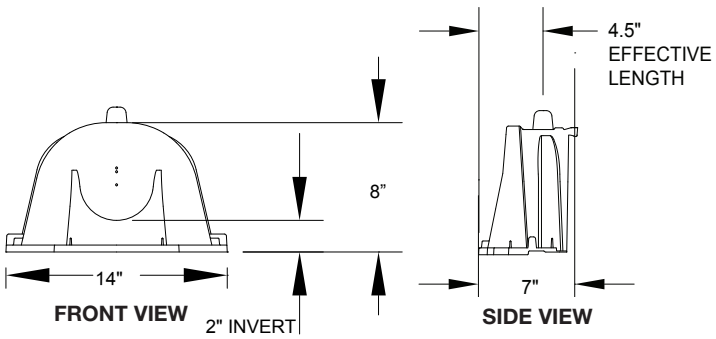
Size	16”W x 53”L x 8”H
Effective Length	48”
Invert Elevation	2”

SIDE AND END VIEWS
(not to scale)





ENDCAP
(not to scale)



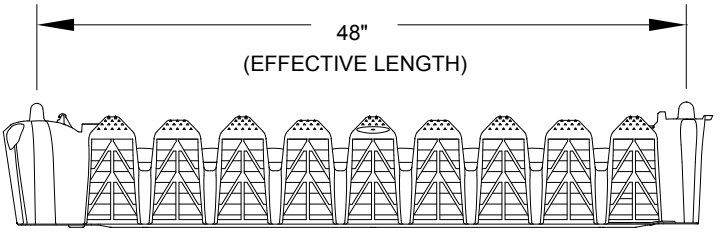
Quick4 Plus Standard LP Chambers

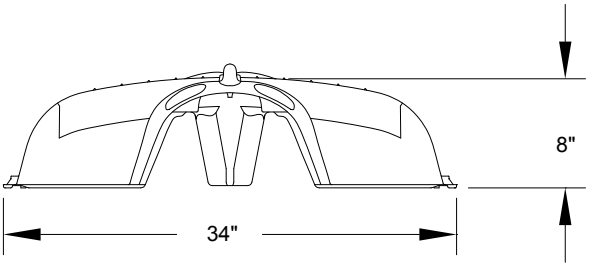
The Quick4 Plus™ Standard Low Profile (LP) is approved as an equivalent for the dome structure in a pressurized shallow-narrow drainfield (PSND) with design and sizing per Rhode Island DEM guidance. For use in PSND applications.



Quick4 Plus Standard LP nominal chamber specifications

Size	34”W x 53”L x 8”H
Effective Length	48”
Invert Elevation	3.3”

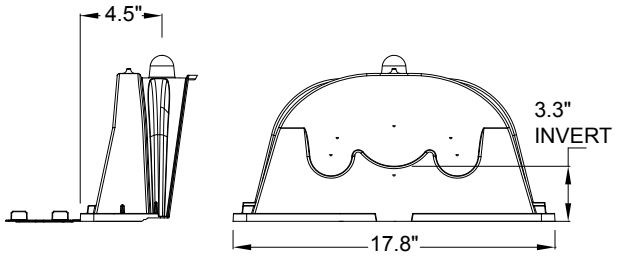




NOTE: The Quick4 Plus Standard LP Chamber is compatible with the Quick4 Plus 8 Endcap and Quick4 Plus All-in-One 8 Encap.

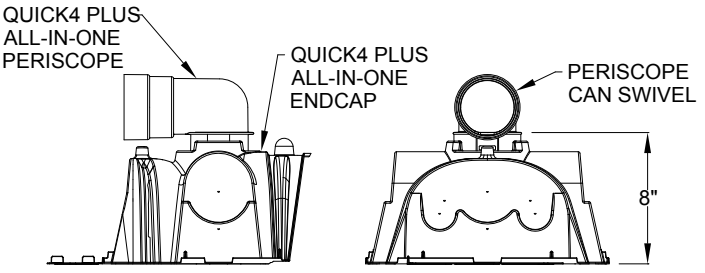
Quick4 Plus 8 Endcap

SIDE AND END VIEWS (not to scale)



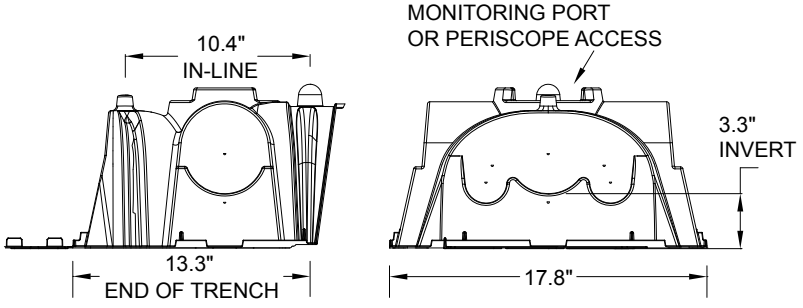
Quick4 Plus All-in-One Periscope

SIDE AND END VIEWS (not to scale)

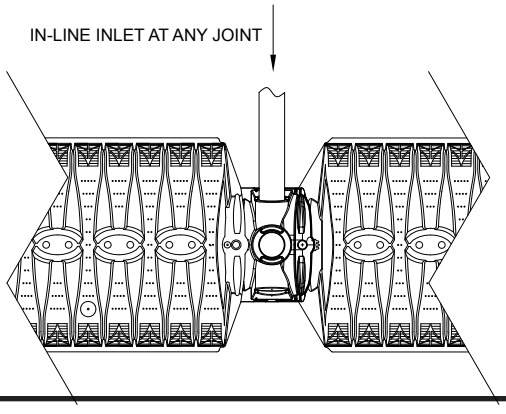


Quick4 Plus All-in-One 8 Endcap

SIDE AND END VIEWS (not to scale)



NOTE: The All-in-One Endcap can be installed in-line with chambers on either side. This allows the system to be inletted at any length along the trench.



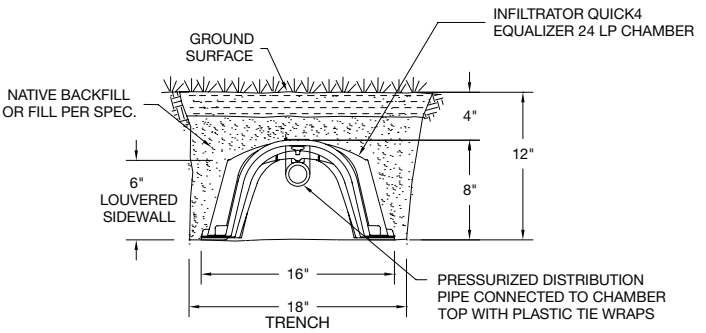
Quick4 Plus Standard Low Profile Chamber and Quick4 Equalizer 24 Low Profile Chamber

Pressurized shallow narrow drainfields shall be designed according to the most current edition of the Rhode Island Guidance Document. The required length of the Quick4 Plus Standard Low Profile chamber and the Quick4 Equalizer 24 Low Profile chamber distribution line shall be equivalent to the length of pressurized shallow narrow drainfield required by the Guidance Document.

The designer is responsible for specifying the diameter pipe used and the distribution orifice spacing based upon pump size and the calculated head loss from pressurization. Orifice size is required to be 1/8 inch in diameter. The maximum distribution line length in a PSND is 50 feet. The distribution network joints should be watertight.

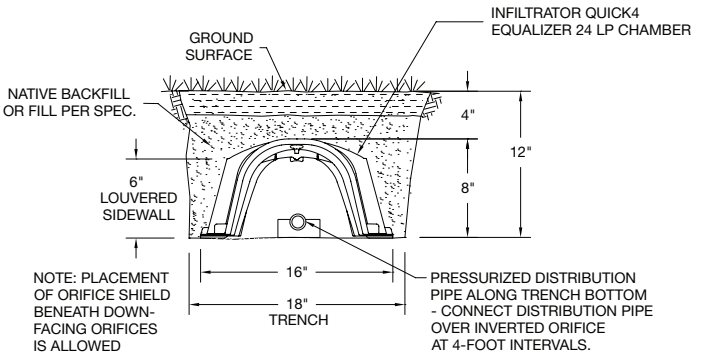
Hanging Pipe Configuration (Method A)

Distribution pipe is hung from the chamber and connected to each chamber interior top with plastic tie wraps at the chamber ends.



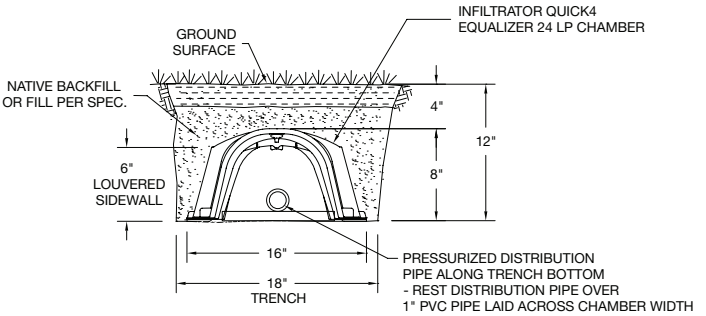
Orifice Shield Pipe Support Configuration (Method B)

Inverted orifice shields (Orenco OS-Series or equivalent) are required every four feet, or one per chamber. Placement of orifice shields beneath down-facing orifices is allowed.



Horizontal Pipe Support Configuration (Method C)

1”-diameter schedule 40 PVC pipe is cut to fit the chamber’s interior corrugations (approx. 12” wide) and placed horizontally across the chamber width to support the pressurized distribution pipe. Horizontal pipe supports are required every four feet, or one per chamber. Care must be taken to ensure that the support does not obstruct the down-facing orifices.



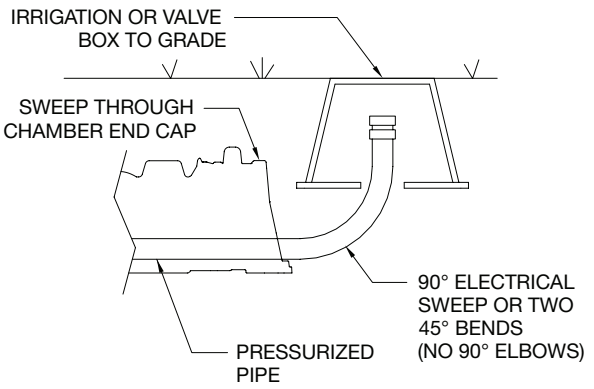
Inspection Port

Drill a 4-inch hole in the pre-marked area on the top of the chamber. Cut a section of 4-inch SCH40 pipe to the desired length. Use two screws to fasten the pipe to the chambers. Attach a threaded cap at grade, use a small valve cover box, or use a capped 6-inch to 4-inch reducer.

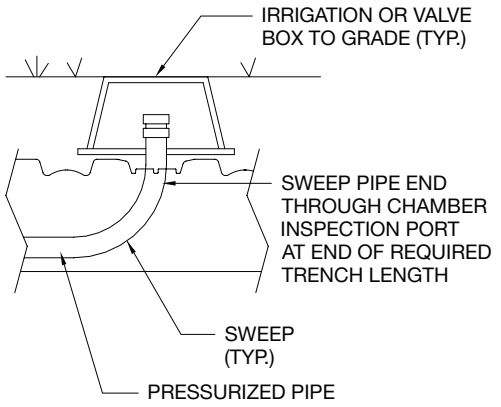
Cleanout Extensions

Provide a clean-out sweep on pressurized distribution line runs with lengths that do not correspond tot he length of a chamber run. The sweep can be extended through the chamber inspection port or through the chamber endcap and terminated in an irrigation-type valve box at grade. If chambers are overlapped to reach the desired trench length, the end of the interior chamber unit is to be removed, and an endcap placed on the outer chamber end. Otherwise, chambers must not be cut to length.

THROUGH CHAMBER END CAP:



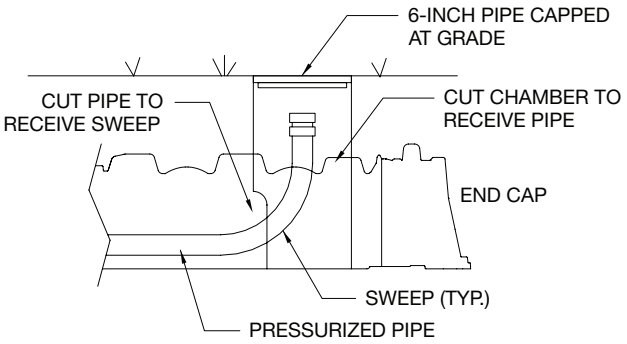
THROUGH INSPECTION PORT:



Alternate Extension / Inspection Port

Drill a 6-inch hole on the top of the chamber outlet end starting on the last tall corrugation before the endcap attachment clip. A 6-inch pipe, cut to receive the clean-out sweep, is inserted through the drilled hole in the chamber, brought to grade and capped.

THROUGH DRILLED HOLE AT CHAMBER END:



Before You Begin

This section provides installation information for Quick4 chambers in trench systems. These systems may only be installed according to State and/or local regulations. If unsure of the installation requirements for a particular site, contact the local health department.

Like conventional systems, the soil and site conditions must be approved prior to installation. Conduct a thorough site evaluation to determine the proper sizing and siting of the system before installation.

Materials and Equipment Needed

- ☐ Quick4 chambers
- ☐ Multiport Endcaps
- ☐ PVC pipe and couplings
- ☐ Backhoe
- ☐ Laser, transit or level
- ☐ Shovel and rake
- ☐ Tape Measure
- ☐ Screwdriver or Knife
- ☐ Hole Saw*
- ☐ 2-inch Drywall Screws*
- ☐ Screw gun*
- ☐ Small valve-cover box*
- ☐ 4-inch cap for Inspection port

*Optional

These guidelines for construction machinery must be followed during installation.

- ☐ Avoid direct contact with chambers when using construction equipment. Chambers require a 12-inch minimum of compacted cover to support a wheel load rating of 16,000 lbs/axle or equivalent to an H-10 AASHTO load rating.
- ☐ Only drive across the trenches when necessary. Never drive down the length of the trenches.
- ☐ To avoid additional soil compaction, never drive heavy vehicles over the completed system.

Excavating and Preparing the Site

NOTE: As is the case with conventional systems, do not install the systems in wet conditions or in overly moist soils, as this causes machinery to smear the soil.

1. Stake out the location of all trenches and lines. Set the elevations of the tank, pipe, and trench bottom.
2. Install sedimentation and erosion control measures. Temporary drainage swales/berms may be installed to protect the site during rainfall events.
3. Excavate and level 2-foot wide trenches with proper center-to-center separation. Verify that the trenches are level or have the prescribed slope.

NOTE: Over excavate the trench width in areas where you are planning to contour.

4. Rake the bottom and sides if smearing has occurred while excavating. Remove any large stones and other debris. Do not use the bucket teeth to rake the trench bottom.

NOTE: Raking to eliminate smearing is not necessary in sandy soils. In fine textured soils (silts and clays), avoid walking in the trench to prevent compaction and loss of soil structure.
5. Verify that each trench is level using a level, transit, or laser.

Preparing the Endcap

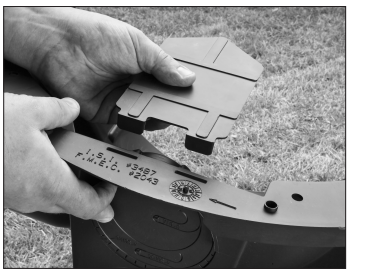
1. With a screwdriver or utility knife start the tear-out seal at the appropriate diameter for the inlet pipe. The seal allows for a tight fit for 3-inch, 4-inch SDR35, and 4-inch SCH40 pipe.
2. Pull the tab on the tear-out seal to create an opening on the endcap.
3. Snap off the molded splash plate located on the bottom front of the endcap.
4. Install splash plate into the appropriate slots below the inlet to prevent trench bottom erosion.
5. Insert the inlet pipe into the endcap at the beginning of the trench. Extend the pipe into the endcap roughly 4 inches. (Screws optional.)



1. Start tear-out seal.



2. Pull tab on tear-out seal.

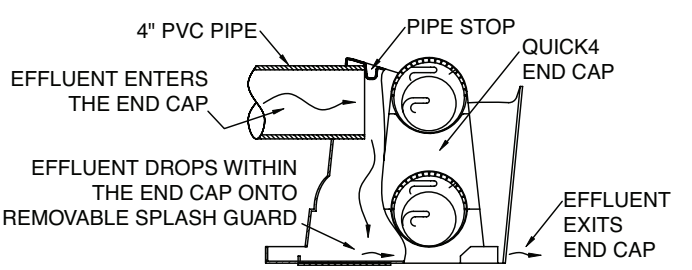


4. Install splash plate.



5. Insert inlet pipe.

MULTIPORT ENDCAP DETAIL (not to scale)



Quick4 Standard Chambers

Installing the System

1. Check the header pipe to be sure it is level or has the prescribed slope.
2. Set the invert height at 6, 9 or 10 inches as specified in the design from the bottom of the inlet.

NOTE: Use the Invert Adapter to achieve a 9” or 10” invert height.

3. Place the inlet end of the first chamber over the back edge of the endcap.
4. Lift and place the end of the next chamber onto the previous chamber by holding it at a 90-degree angle.
Line up the chamber end between the connector hook and locking pin at the top of the first chamber. Lower it to the ground to connect the chambers.


3. Place first chamber onto endcap.

NOTE: When the chamber end is placed between the connector hook and locking pin at a 90-degree angle, the pin will be visible from the back side of the chamber.

NOTE: The connector hook serves as a guide to ensure proper connection and does not add structural integrity to the chamber joint. Broken hooks will not affect the structure or void the warranty.


4. Connect the chambers.

5. Swivel the chamber on the pin to achieve the proper direction for the trench layout.

NOTE: The chamber allows up to a 15-degree swivel in either direction at each joint.

6. Where the system design requires straight runs, use the StraightLock™ Tabs to ensure straight connections. To activate the tabs, pop the tabs up with your thumb and lock into place.
7. Continue connecting the chambers until the trench is completed.

NOTE: As chambers are installed, verify they are level or have the prescribed slope.


6. Activate StraightLock Tabs.

8. The last chamber in the trench requires an endcap. Lift the endcap at a 45-degree angle and insert the connector hook through the opening on the top of the endcap. Applying firm pressure, lower the endcap to the ground to snap it into place. Do not remove the tear-out seal.

NOTE: Use straight lengths of pipe with the MultiPort Endcap at the trench ends to create fitting-free looped ends.


8. Attach endcap to chamber.

9. To ensure structural stability, fill the sidewall area by pulling soil from the sides of the trench with a shovel. Start at the joints where the chambers connect. Continue backfilling the entire sidewall area, making sure the fill covers the louvers.
10. Pack down the fill by walking along the edges of the trench and chambers. This is an important step in assuring structural support.

NOTE: In wet or clay soils, do not walk in the sidewalls.

11. Proceed to the next trench and begin with Step 1.

Installing Optional Inspection Ports

1. With a hole saw, drill the pre-marked area in the top of the chamber to create a 4-inch opening.
2. Set a cut piece of pipe of the appropriate length into the corresponding chamber's inspection port sleeve.

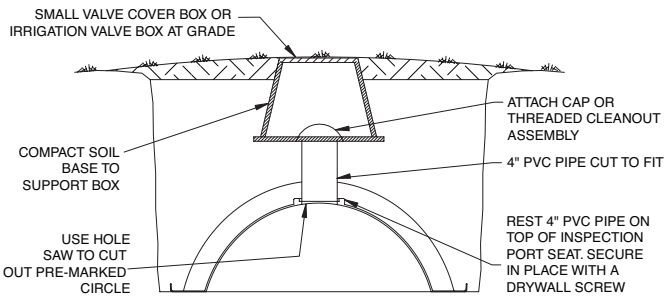
NOTE: The sleeve will accommodate a 4-inch SCH40 pipe.



1. Fasten the pipe.

3. Use two screws to fasten the pipe to the sleeve around the inspection port.
4. Attach a threaded cap or cleanout assembly onto the protruding pipe at the appropriate height.
5. A small valve cover box may be used if inspection port is below the desired grade.

INSPECTION PORT DETAIL (not to scale



Covering the System

Before backfilling, the system must be inspected by a health officer or other official as required by State and local codes. Create an as-built drawing at this time for future records.

1. Backfill the trench by pushing fill material over the chambers with a backhoe. Keep a minimum of 12 inches of compacted cover over the chambers before driving over the system.

NOTE: Do not drive over system while backfilling in sand.

NOTE: For shallow cover applications, you must mound 12 inches of soil over the system before driving over it, and then grade it back to 6 inches upon completion.



1. Backfill the trench.

2. It is best to mound several inches of soil over the finish grade to allow for settling. This also ensures that runoff water is diverted away from the system.
3. After the system is covered, the site should be seeded or sodded to prevent erosion.

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

WARRANTY

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 licensed installer, 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 states and counties 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.

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