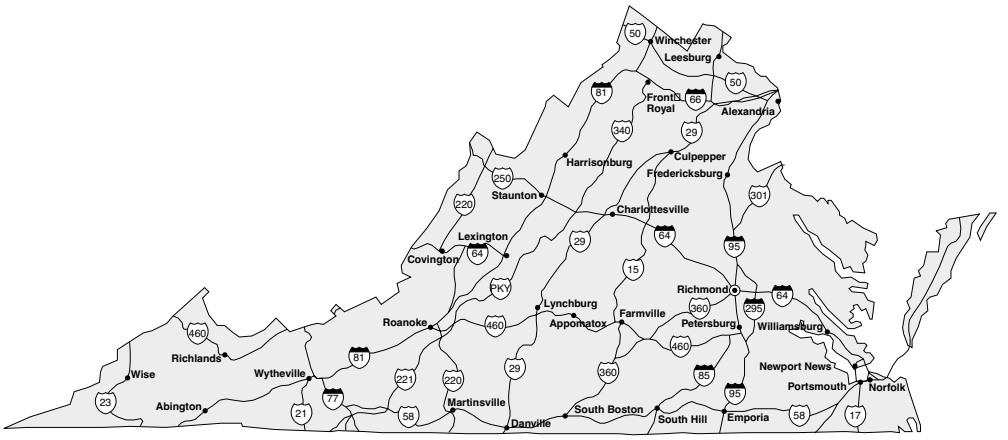
Infiltrator™
Water Technologies
Part of ADS

Virginia

Design and Installation Manual for Infiltrator Chambers in Virginia



The purpose of this manual is to provide the minimum specific design and installation information pertinent to the use of Infiltrator chambers in Virginia. The configurations presented in this document are common designs and are provided for illustrative purposes. They are not intended to restrict the use of other configurations, which may be utilized provided the design conforms with the Sewage Handling and Disposal Regulations (12VAC5-610) and/or Alternative Onsite Sewage System Regulations (12VAC5-613) as applicable. Each revised version of this manual supersedes the previous version.

The use of Infiltrator chambers in this manual at regulation sizing is authorized per product approval by the Virginia Department of Health (VDH) and allowed under 12VAC5-610.

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

Infiltrator Chambers in Virginia

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Virginia

INTRODUCTION

Quick4 Plus Standard LP Chambers

The Quick4 Plus Standard Low Profile (LP) chamber fits into a 36-inch-wide trench. The Quick4 Plus line of endcaps is available with this chamber, providing increased flexibility in system configurations. Ask your local Infiltrator sales representative for specific information on various system-inletting options.

Quick4 Plus Standard Low Profile (LP)
Nominal Chamber Dimensions

Size:	34"W x 53"L x 8"H
Storage Capacity:	32 gal (4.3 ft^3)
Invert Elevation:	3.3"
Effective Length:	48"

Note: Invert elevations can be adapted to various heights using accessory items such as the Quick4 Plus All-in-One Periscope.

QUICK4 PLUS STANDARD LP CHAMBER



Quick4 and Quick 5 Standard Chambers

The Quick4 and Quick5 Standard Chambers fit in a 36" wide trench and offers advanced contouring capability with their Contour Swivel Connection™ The MultiPort™ Endcap allows multiple piping options and eliminates pipe fittings.

Quick4 Standard Nominal Chamber Dimensions

Size:	34”W x 53”L x 12”H
Storage Capacity:	43 gal (5.7 ft^3)
Invert Elevation:	8”
Effective Length	48”

QUICK4 STANDARD



Quick5 Standard Nominal Chamber Dimensions

Size:	34”W x 65”L x 12”H
Storage Capacity:	57 gal (7.6 ft^3)
Invert Elevation:	8”
Effective Length	60”

QUICK5 STANDARD



Quick4 and Quick5 Equalizer 36 Chambers

The Quick4 and Quick5 Equalizer 36 chambers can be installed in a 24-inch-wide trench and offers advanced contouring capability with its Contour Swivel Connection™. The MultiPort™ Endcap, with its molded-in high and low inlets, allows for maximum piping flexibility. There are a variety of system inletting options to choose from.

Quick4 Equalizer 36
Nominal Chamber Dimensions

Size:	22”W x 53”L x 12”H
Storage Capacity:	32 gal (4.3 ft^3)
Invert Elevation:	6”
Effective Length	48”

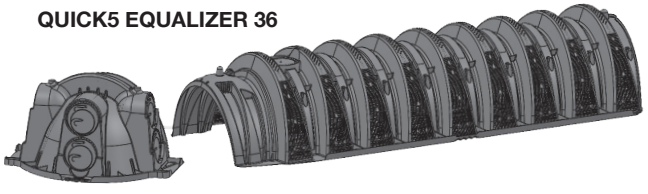
QUICK4 EQUALIZER 36



Quick5 Equalizer 36 Nominal Chamber Dimensions

Size:	22”W x 65”L x 12”H
Storage Capacity:	42 gal (5.3 ft^3)
Invert Elevation:	6 ”
Effective Length	60”

QUICK5 EQUALIZER 36



Additional products approved for use by VDH

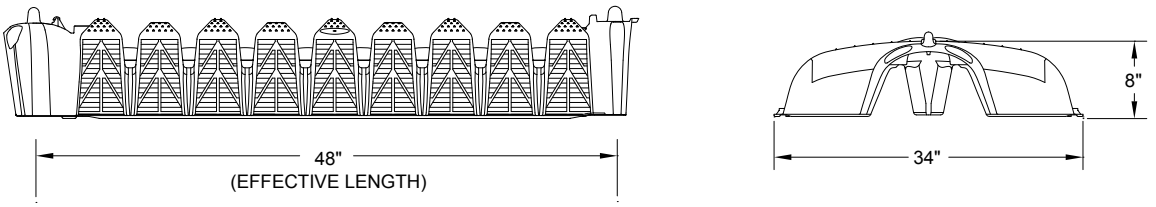
Quick4 Plus Standard
Quick4 Equalizer 24 LP
Quick4 High Capacity

The sizing information for these models is available by calling Infiltrator Water Technologies' Technical Services Department.

Infiltrator Tanks				
Tank	 **IM-540**	 **IM-1060**	 **CM-1060**	 **IM-1530**
Applications	Suitable for use as a pump tank, trash-tank, rainwater (non-potable) tank, or as the second compartment of an in-series septic tank.	Suitable for use as a pump tank, septic tank or rainwater tank, shallow, multiple, and serial tank configurations.	Suitable for use as a pump tank, septic tank or rainwater tank, shallow, multiple, and serial tank configurations.	Suitable for use as a pump tank, septic tank or rainwater tank, shallow, multiple, and serial tank configurations.
Working Capacity	475 gal (1,799 L)	1,094 gal (4,141 L)	1,111 gal (4,207 L)	1,537 gal (5,818 L)
Total Capacity	552 gal (2,089 L)	1,287 gal (4,872 L)	1,309 gal (4,956 L)	1,787 gal (6,765 L)

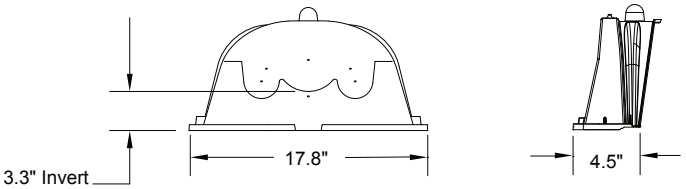
Quick4 Plus Standard LP Chamber

SIDE AND END VIEWS (not to scale)



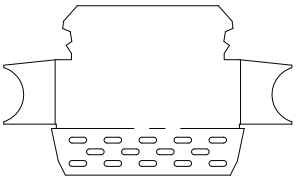
Quick4 Plus 8 Endcap

SIDE AND END VIEWS (not to scale)



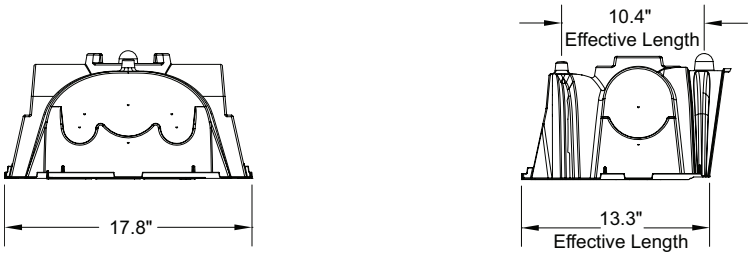
Quick4 Plus Standard LP High Flow Splash Plate

FLAT VIEW (not to scale)



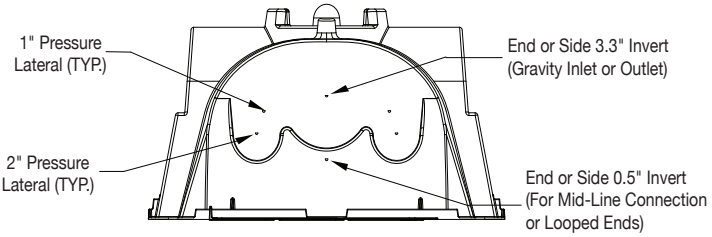
Quick4 Plus All-in-One 8 Endcap

SIDE AND END VIEWS (not to scale)



Quick4 Plus All-In-One 8 Endcap Drill Points

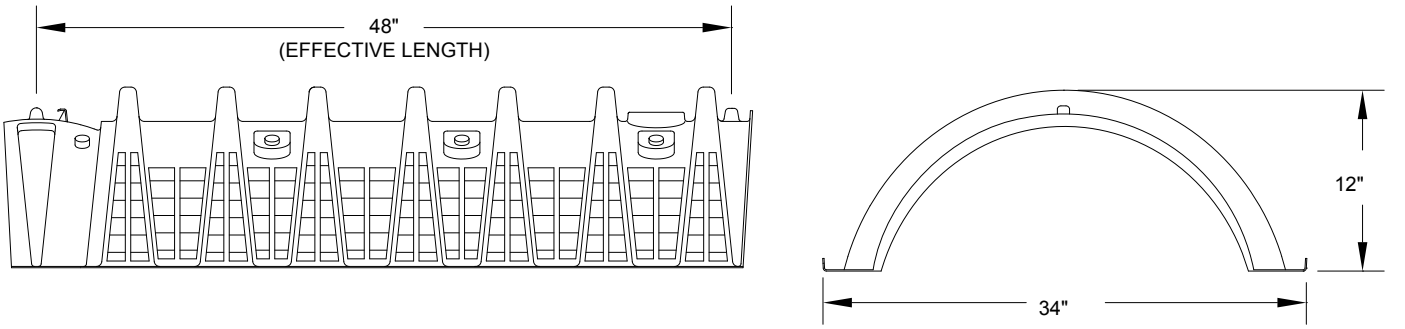
END VIEW (not to scale)



PRODUCTS

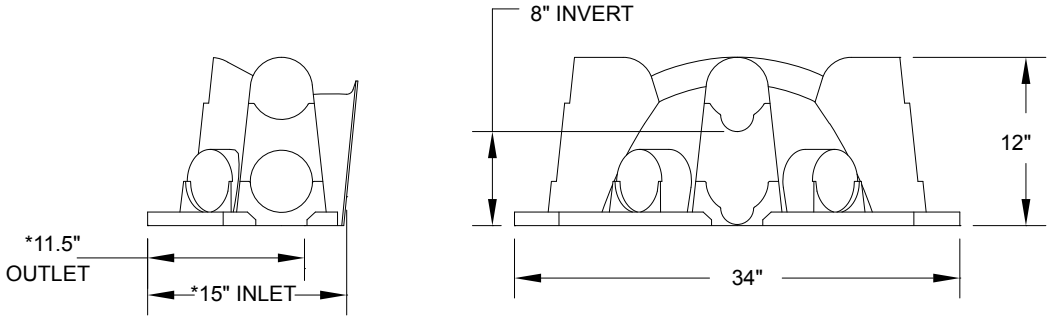
Quick4 Standard Chamber

SIDE AND END VIEWS (not to scale)



Quick4 Standard MultiPort Endcap

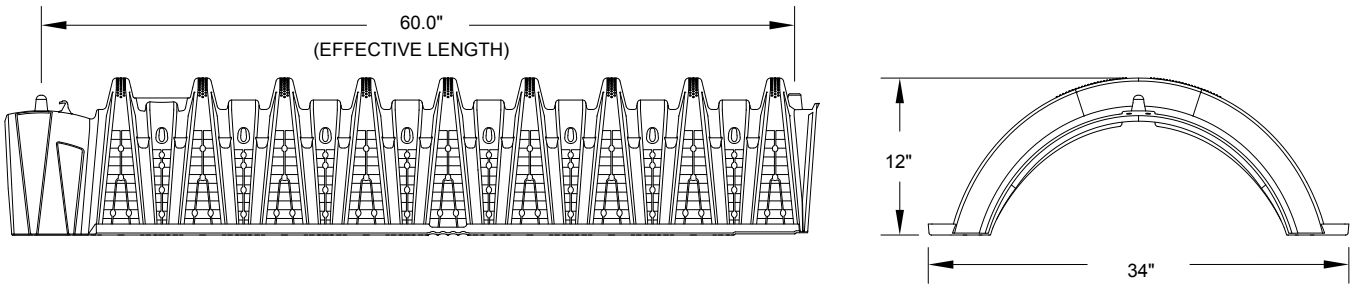
SIDE AND END VIEWS (not to scale)



Effective Length When Connected

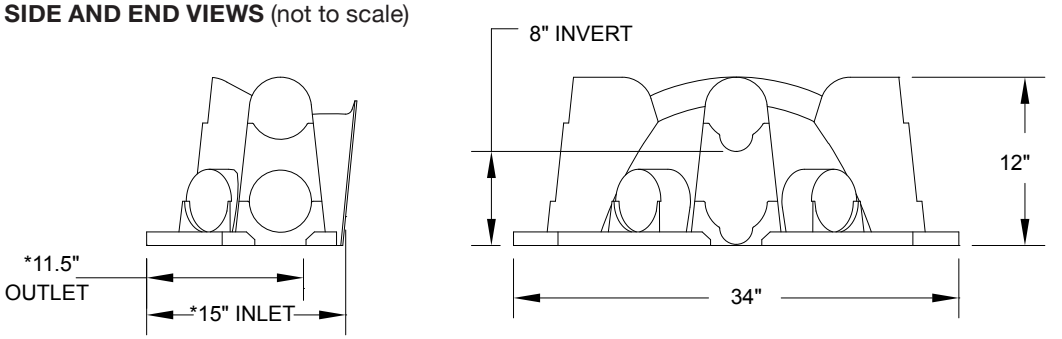
Quick5 Standard Chamber

SIDE AND END VIEWS (not to scale)



Quick5 Standard MultiPort Endcap

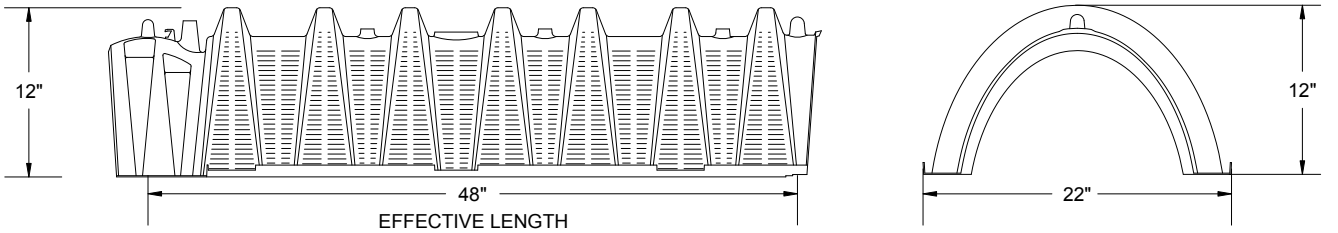
SIDE AND END VIEWS (not to scale)



Effective Length When Connected

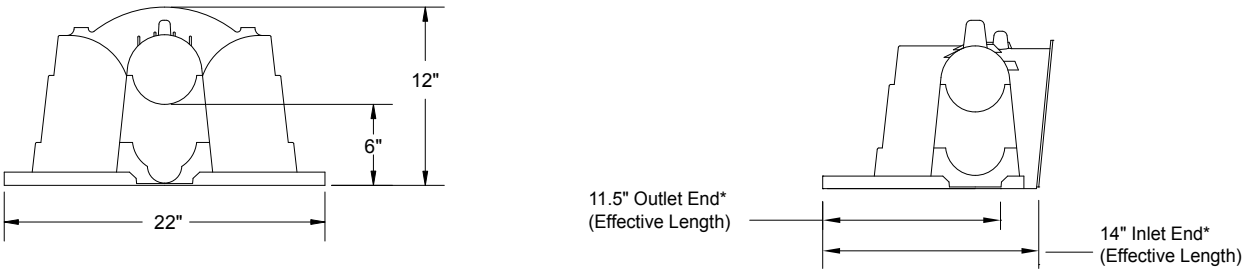
Quick4 Equalizer 36 Chamber

SIDE AND END VIEWS (not to scale)



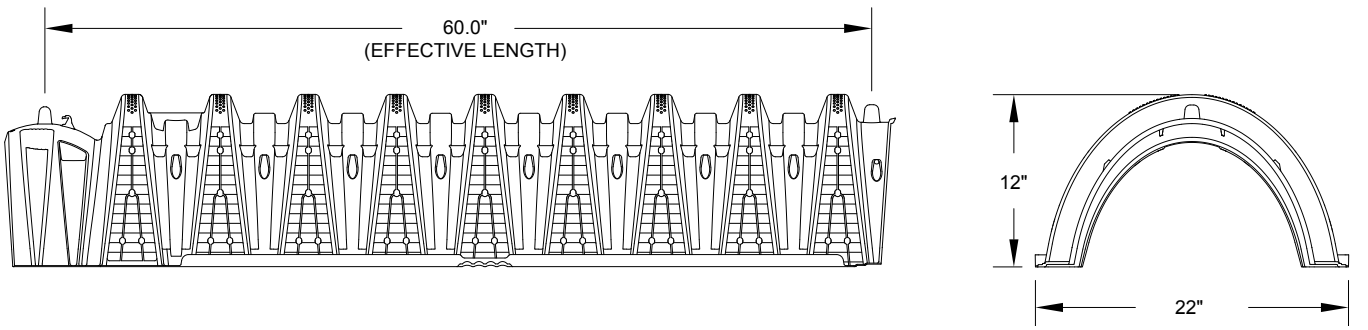
Quick4 Equalizer 36 MultiPort Endcap

SIDE AND END VIEWS (not to scale)



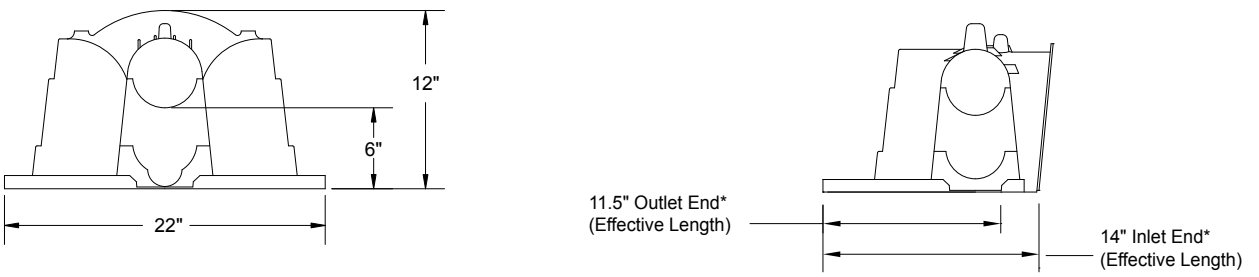
Quick5 Equalizer 36 Chamber

SIDE AND END VIEWS (not to scale)



Quick5 Equalizer 36 MultiPort Endcap

SIDE AND END VIEWS (not to scale)



SYSTEM SIZING – GENERAL

Table 1 below represents Table 5.4 of the Sewage Handling and Disposal Regulations (12VAC5-610, as amended January 2, 2014). This table establishes minimum area requirements for absorption trenches, including gravelless materials such as Infiltrator chambers. Table 1 provides regulation sizing for gravity and low-pressure distribution applications.

Table 1. 12VAC5-610-950 Table 5.4 – Regulation Sizing for Absorption Trenches

Percolation Rate (minutes/inch)	Area Required (ft^2/100 gals)			Area Required (ft^2/bedroom)		
	Gravity Gravel and Pipe	Gravity Gravelless Quick4 and Quick5 Chambers	Low Pressure Distribution[1]	Gravity Gravel and Pipe	Gravity Gravelless Quick4 and Quick5 Chambers	Low Pressure Distribution[1]
5	110	83	110	165	124	165
10	120	90	120	180	135	180
15	132	99	132	198	149	198
20	146	110	146	218	164	218
25	158	119	158	237	178	237
30	174	131	164	260	195	255
35	191	143	170	286	215	260
40	209	157	176	314	236	264
45	229	172	185	344	258	279
50	251	188	193	376	282	293
55	275	206	206	412	309	309
60	302	227	217	452	339	325
65	331	248	228	496	372	342
70	363	272	240	544	408	359
75	398	299	251	596	447	375
80	437	328	262	656	492	394
85	479	359	273	718	539	409
90	525	394	284	786	590	424
95	575	489	288	862	733	431
100	631	536	316	946	804	473
105	692	588	346	1,038	882	519
110	759	645	379	1,138	967	569
115	832	707	416	1,248	1,061	624
120	912	775	456	1,368	1,163	684

NOTES:
1. Low-pressure distribution applicable to Quick4 and Quick5 chambers and gravel and pipe.
2. The minimum absorption area required for any system is 400 sf.
3. Optional end cap sizing credits: Quick4 Plus 8 Endcap = 0.5 lf; Multiport Endcap = 1.25 lf.

CHAMBER SYSTEM SIZING METHODOLOGY:
1. Determine the minimum total trench length required by dividing the minimum area required in Table 1 by 3 feet for the Quick4 Standard, Quick5 Standard, and Quick4 Plus Standard LP chambers, and 2 feet for the Quick4 Equalizer 36 and Quick5 Equalizer 36 chambers.
2. For Quick4 chambers, determine the minimum number of chambers required by dividing the minimum total trench length required by the 4-foot engaged chamber length. Round up to the nearest whole number (chambers cannot be cut).
3. For Quick5 chambers, determine the minimum number of chambers required by dividing the minumum total trench length required by the 5-foot engaged chamber length. Round up to the nearest whole number (chambers cannot be cut).
4. The design trench length is determined by multiplying the number of chambers to be installed in each trench times the 4-foot chamber length for Quick4 chambers or the 5-foot chamber length for Quick5 chambers and adding the lengths of the endcaps.

NOTE: *The Quick4 Plus Standard, Quick4 Equalizer 24 LP, and Quick4 High Capacity chambers are also approved for use by VDH when designed and installed in accordance with 12VAC5-610. The sizing information for these models is available by calling Infiltrator Water Technologies' Technical Services Department.*

SYSTEM SIZING – GRAVITY

Regulation sizing may be utilized on any site that meets VDH requirements for conventional systems in accordance with Table 2.

Table 2. Gravity Regulation Sizing

Perc rate (mpi)	Ksat (cm/d)	Soil Texture Group	Gravity Gravel-less Trench Bottom Area Required per Bedroom (sf)	Minimum Requirement Per Bedroom							
				Quick4 Standard Quick4 Plus Standard LP (34”W x 48”L)		Quick5 Standard (34"W x 60"L)		Quick4 Equalizer 36 (22”W x 48”L)		Quick5 Equalizer 36 (22"W x 60"L)	
				Trench Length (lf)	Number of Chambers[2] [3]	Trench Length (lf)	Number of Chambers[2] [3]	Trench Length (lf)	Number of Chambers[2] [3]	Trench Length (lf)	Number of Chambers[2] [3]
Up to 16	>17.4	I	149	52	13	50	10	76	19	75	15
20	15.9 - 17.4	IIa	164	56	14	55	11	84	21	85	17
25	14.6 - 15.9	IIa	178	60	15	60	12	92	23	90	18
30	13.3 - 14.6	IIa	195	68	17	65	13	100	25	100	20
35	12.0 - 13.3	IIb	215	72	18	75	15	108	27	110	22
40	11.0 - 12.0	IIb	236	80	20	80	16	120	30	120	24
45	10.0 - 11.0	IIb	258	88	22	90	18	132	33	130	26
50	9.1 - 10.0	III	282	96	24	95	19	144	36	145	29
55	8.3 - 9.1	III	309	104	26	105	21	156	39	155	31
60	7.6 - 8.3	III	339	116	29	115	23	172	43	170	34
65	6.9 - 7.6	III	372	124	31	125	25	188	47	190	38
70	6.4 - 6.9	III	408	136	34	140	28	204	51	205	41
75	5.8 - 6.4	III	447	152	38	150	30	224	56	225	45
80	5.2 - 5.8	III	492	164	41	165	33	248	62	250	50
85	4.8 - 5.2	III	539	180	45	180	36	272	68	270	54
90	4.4 - 4.8	III	590	200	50	200	40	296	74	295	59
95	4.0 - 4.4	IV	733	248	62	245	49	368	92	370	74
100	3.6 - 4.0	IV	804	272	68	270	54	404	101	405	81
105	3.3 - 3.6	IV	882	296	74	295	59	444	111	445	89
110	3.0 - 3.3	IV	967	324	81	325	65	484	121	485	97
115	2.6 - 3.0	IV	1,061	356	89	355	71	532	133	535	107
120	2.2 - 2.6	IV	1,163	388	97	390	78	584	146	585	117

NOTES:
1. Number of chambers is determined based on absorption area requirements in 12VAC5-610-950 Table 5.4. (Table 1, page 5 herein)
2. The minimum absorption area required for any system is 400 sf.
3. Optional end cap sizing credits: Quick4 Plus 8 Endcap = 0.5 lf; Multiport Endcap = 1.25 lf.

Soil Texture Description
I - Sand and loamy sand
II - Sandy loam, loam, and sandy clay loam
IIa - Sandy loam per rate < 31 mpi only
IIb - Remainder of soils in group II
III - Silt loam, clay loam, silty clay loam
IV - Sandy clay, silty clay, clay

NOTE: *The Quick4 Plus Standard, Quick4 Equalizer 24 LP, and Quick4 High Capacity chambers are also approved for use by VDH when designed and installed in accordance with 12VAC5-610. The sizing information for these models is available by calling Infiltrator Water Technologies' Technical Services Department.*

SYSTEM SIZING – LOW-PRESSURE DISTRIBUTION

Regulation sizing may be utilized on any site that meets VDH requirements for low-pressure distribution systems in accordance with Table 3.

Table 3. Low Pressure Systems Regulation Sizing

Perc rate (mpi)	Ksat (cm/d)	Soil Texture Group	Low Pressure Trench Bottom Area Required per Bedroom (sf)	Minimum Requirement Per Bedroom							
				Quick4 Standard Quick4 Plus Standard LP (34"W x 48"L)		Quick5 Standard (34"W x 60"L)		Quick4 Equalizer 36 (22"W x 48"L)		Quick5 Equalizer 36 (22"W x 60"L)	
				Trench Length (lf)	Number of Chambers[2] [3]	Trench Length (lf)	Number of Chambers[2] [3]	Trench Length (lf)	Number of Chambers[2] [3]	Trench Length (lf)	Number of Chambers[2] [3]
Up to 16	>17.4	I	198	68	17	70	14	100	25	100	20
20	15.9 - 17.4	IIa	218	76	19	75	15	112	28	110	22
25	14.6 - 15.9	IIa	237	80	20	80	16	120	30	120	24
30	13.3 - 14.6	IIa	255	88	22	85	17	128	32	130	26
35	12.0 - 13.3	IIb	260	88	22	90	18	132	33	130	26
40	11.0 - 12.0	IIb	264	88	22	90	18	132	33	135	27
45	10.0 - 11.0	IIb	279	96	24	95	19	140	35	140	28
50	9.1 - 10.0	III	293	100	25	100	20	148	37	150	30
55	8.3 - 9.1	III	309	104	26	105	21	156	39	155	31
60	7.6 - 8.3	III	325	112	28	110	22	164	41	165	33
65	6.9 - 7.6	III	342	116	29	115	23	172	43	175	35
70	6.4 - 6.9	III	359	120	30	120	24	180	45	180	36
75	5.8 - 6.4	III	375	128	32	125	25	188	47	190	38
80	5.2 - 5.8	III	394	132	33	135	27	200	50	200	40
85	4.8 - 5.2	III	409	140	35	140	28	208	52	205	41
90	4.4 - 4.8	III	424	144	36	145	29	212	53	215	43
95	4.0 - 4.4	IV	431	144	36	145	29	216	54	220	44
100	3.6 - 4.0	IV	473	160	40	160	32	240	60	240	48
105	3.3 - 3.6	IV	519	176	44	175	35	260	65	260	52
110	3.0 - 3.3	IV	569	192	48	190	38	288	72	285	57
115	2.6 - 3.0	IV	624	208	52	210	42	312	78	315	63
120	2.2 - 2.6	IV	684	228	57	230	46	344	86	345	69

NOTES:
1. Number of chambers is determined based on absorption area requirements in 12VAC5-610-950 Table 5.4 (Table 1, page 5 herein).
2. The minimum absorption area required for any system is 400 sf.
3. Optional end cap sizing credits: Quick4 Plus 8 Endcap = 0.5 lf; Multiport Endcap = 1.25 lf.

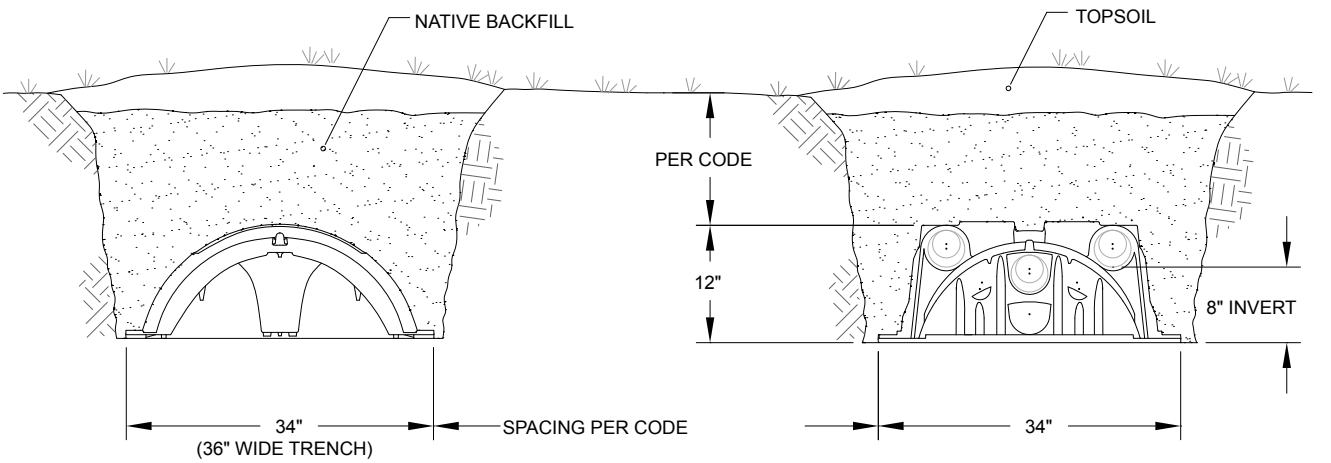
Soil Texture Description
I - Sand and loamy sand
II - Sandy loam, loam, and sandy clay loam
IIa - Sandy loam per rate < 31 mpi only
IIb - Remainder of soils in group II
III - Silt loam, clay loam, silty clay loam
IV - Sandy clay, silty clay, clay

NOTE: *The Quick4 Plus Standard, Quick4 Equalizer 24 LP, and Quick4 High Capacity chambers are also approved for use by VDH when designed and installed in accordance with 12VAC5-610. The sizing information for these models is available by calling Infiltrator Water Technologies' Technical Services Department.*

CHAMBER CONFIGURATIONS – GRAVITY

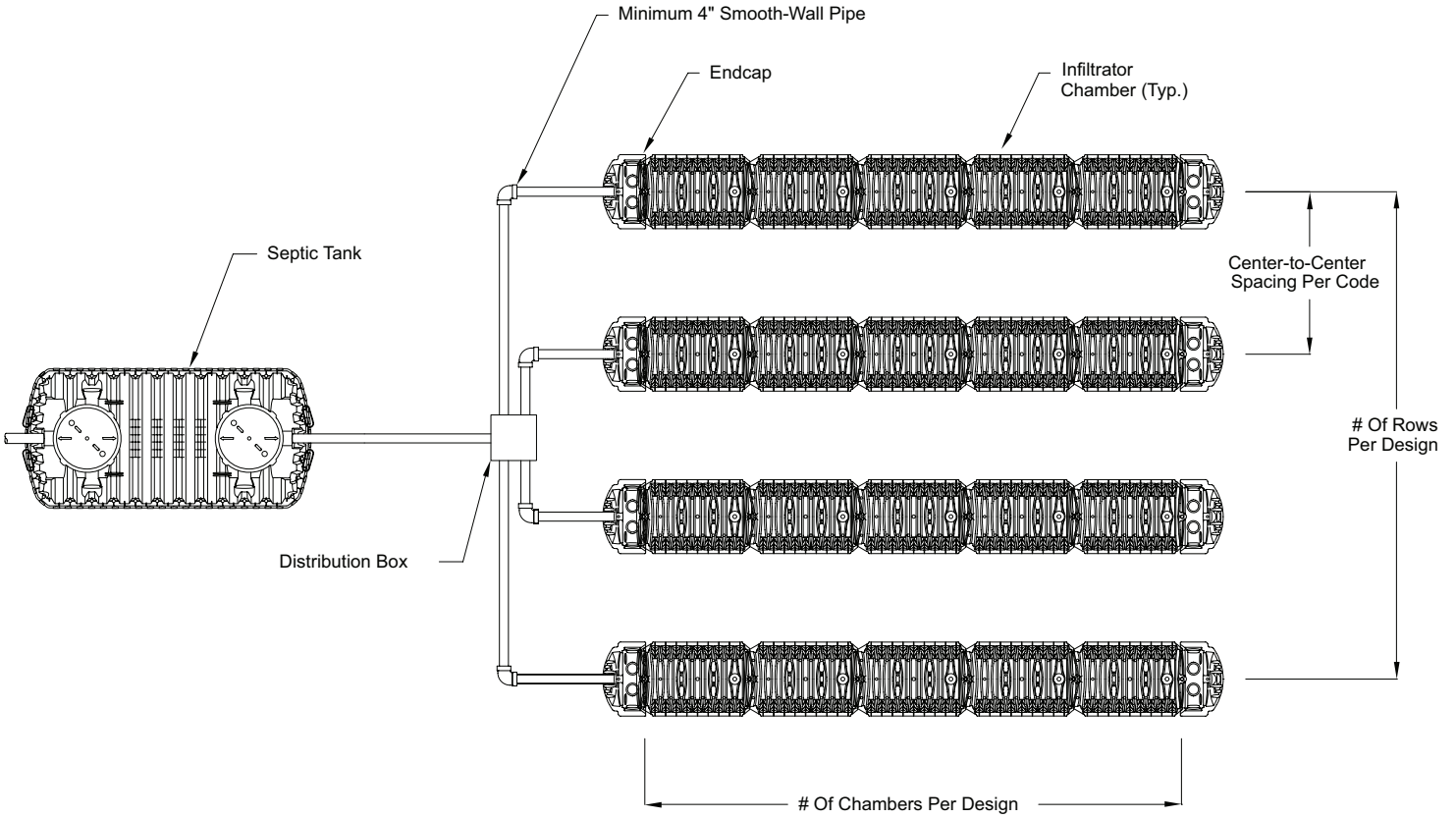
Trench Configuration Cross-Section

Typical (not to scale)



Trench End-Inletted Configuration

Typical (not to scale)



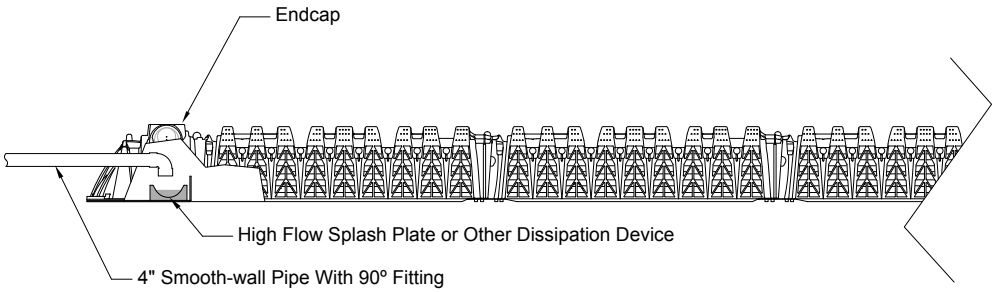
NOTES:

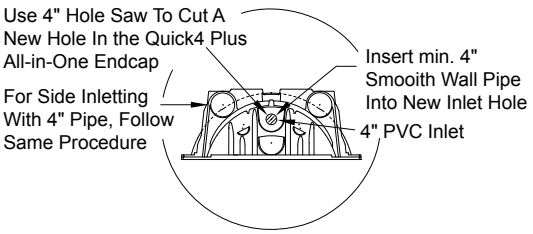
1. Infiltrator recommends the use of standard flow systems rather than enhanced flow systems.
2. Infiltrator chambers are designed for use under 6 inches to 8 feet of cover (trench applications).
3. Maximum installation depth shall be 8 feet plus the height of the chamber model specified in the design.
4. For trench depths exceeding 9 feet, gravel or crushed stone having a size range from 1/2 inch to 1-1/2 inches may be placed under the chambers.
5. Approved chambers are for non-traffic applications, but are capable of withstanding AASHTO H-10 loadings with 12" of cover minimum.

CHAMBER CONFIGURATIONS – PUMP-TO-GRAVITY

Infiltrator Chamber Pump-to-Gravity Side View

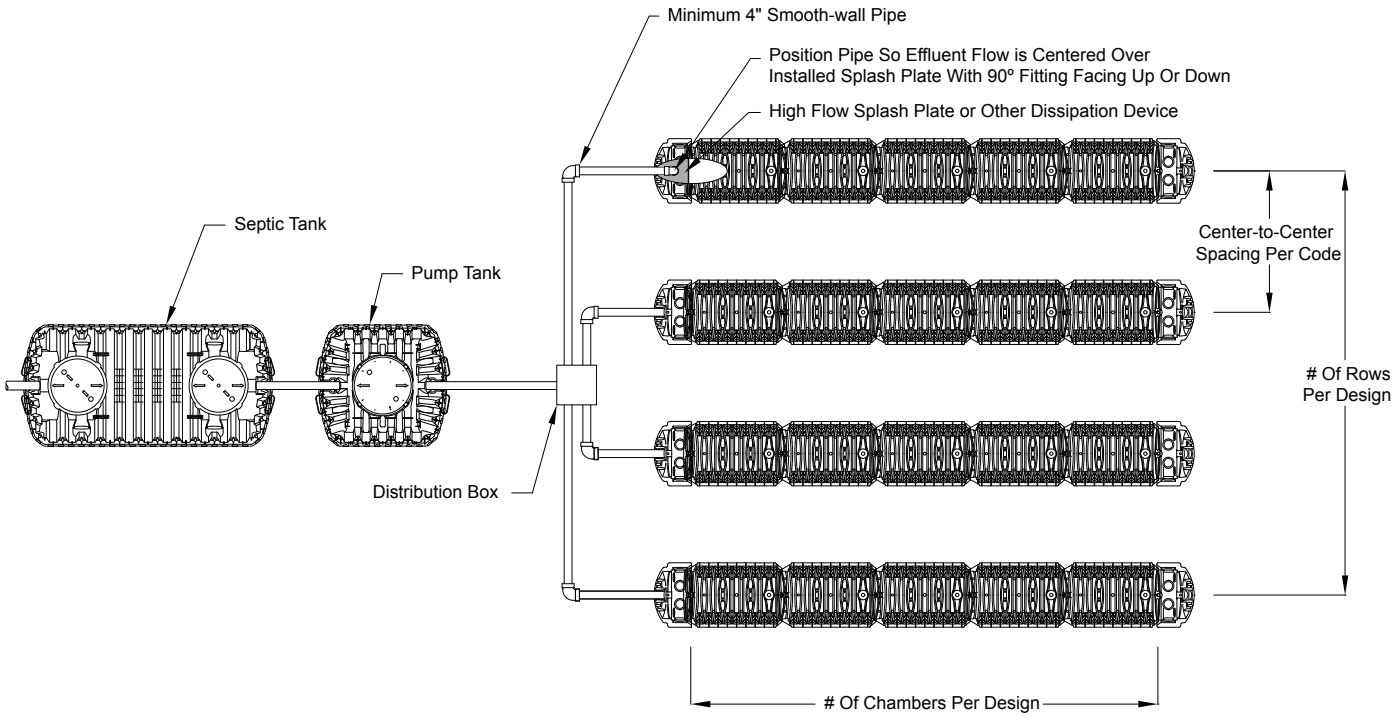
Typical (not to scale)





Pump-to-Gravity Trench Configuration

Typical (not to scale)



NOTES:

1. Infiltrator recommends the use of standard flow systems rather than enhanced flow systems.
2. Infiltrator chambers are designed for use under 6 inches to 8 feet of cover (trench applications).
3. Maximum installation depth shall be 8 feet plus the height of the chamber model specified in the design.
4. For trench depths exceeding 9 feet, gravel or crushed stone having a size range from 1/2 inch to 1-1/2 inches may be placed under the chambers.
5. Approved chambers are for non-traffic applications, but are capable of withstanding AASHTO H-10 loadings with 12" of cover minimum.

INSTALLATION INSTRUCTIONS

These installation instructions are for Quick4 and Quick5 chambers in Virginia. These chambers may only be installed according to state and/or local regulations. If unsure of the installation requirements for a site, contact Infiltrator Water Technologies. The soil and site conditions must be approved for installation. Be sure that a thorough site evaluation is conducted to determine the proper size and location of the system before proceeding with the installation.

NOTE: Please contact Infiltrator Water Technologies for other chamber specific installation instructions.

Before You Begin

Materials and Equipment Needed

- ☐ Quick4 or Quick5 chambers
- ☐ Endcaps
- ☐ PVC pipe and couplings
- ☐ Backhoe
- ☐ Laser, transit or level
- ☐ Shovel and rake
- ☐ Tape measure
- ☐ Screwdriver or utility 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 AASHTO H-10 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.

Note: These instructions are applicable for all Infiltrator Water Technologies Chambers that are approved for shallow placement.

Optional backhoe bucket may also be used to attain proper compaction.

EXCAVATING AND PREPARING THE SITE

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

1. Stake out location of trenches and lines. Set elevations of the tank, pipe, and trench bottom.

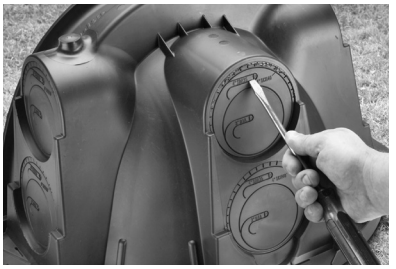
2. Install sedimentation and erosion control measures. Temporary drainage swales/berms may be installed to protect the site during rainfall events.

3. Excavate and level trenches with proper center-to-center separation. Verify trenches are level or have prescribed slope.

4. Rake 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.

5. Verify that each trench is sloped per applicable state and local codes using a level, transit, or laser.

PREPARING THE ENDCAP



1. Start tear-out seal.



2. Pull tab tear-out seal.

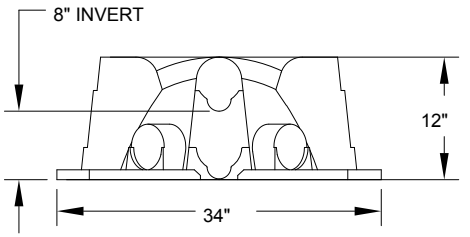
1. With a utility knife start the tear-out seal at the appropriate diameter for the inlet pipe. The seal allows for a tight fit for 3-inch, 4-inch SDR35, and4-inch Schedule 40 pipe.

2. Pull the tab on the tear-out seal or use an appropriately sized hole saw to create an opening on the endcap.

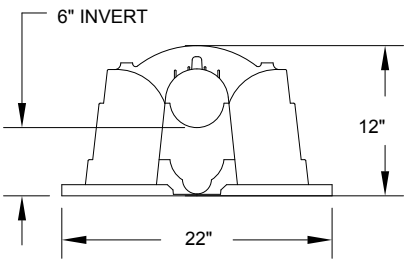
3. Snap off the molded splash plate located on the bottom front of the endcap.

4. Install splash plate into the appropriate slots below the inlet to prevent bottom erosion of the system.

5. Insert the inlet pipe into the endcap at the beginning of the chamber line.



MultiPort Encap for Quick4 Standard and Quick5 Standard chambers.



MultiPort Encap for Quick4 Equalizer 36 and Quick5 Equalizer 36 chambers.

ENDCAP DRILL LOCATIONS:

1. With an appropriately sized hole saw (4-1/2-inch for gravity, 2- to 3-inch for pump-to-gravity), drill an opening on the front or side of the endcap, using the center point marking as a guide.

INSTALLING THE SPLASH PLATE

The molded in splash plate is designed for use with the Quick4 and Quick5 chambers. The splash plate prevents soil erosion beneath the invert, and can be used in conjunction with any pump or pressure system. No special tools or adhesives are needed for installation.

1. Snap off the molded splash plate located on the bottom front of the endcap.

2. Install splash plate into the appropriate slots below inlet to prevent trench bottom erosion.

INSTALLING THE SYSTEM

1. Check the header pipe to be sure it is level or has the prescribed slope.

2. Set the invert height as specified in the design from the bottom of the inlet.



3. Place inlet end over endcap.

3. Place the inlet end of the first chamber over the back edge of the endcap. Be sure to line up the locking pins on the top of both the chamber and endcap.

4. Insert the inlet pipe 2.5 inches into the opening on the endcap.



4. Insert inlet pipe.

5. Lift and place the end of the next chamber onto the previous chamber by holding it at a 45-degree angle. Line up the chamber end between the connector hook and locking pin at the top of the first chamber. Lower the chamber to the ground to connect the chambers.

NOTE: When the chamber end is placed between the connector hook and locking pin at a 45-degree angle, the pin will be visible from the back side of the chamber.



5. Connect chambers

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

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



6. Swivel chambers.

NOTE: The Quick4 and Quick5 Standard chambers allow up to a 10-degree swivel in either direction at each joint the Quick4 and Quick5 Equalizer 36 chambers allow up to a 15-degree swivel in either direction at each joint.

7. Continue connecting chambers until the trench is completed.

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

8. The last chamber in the trench requires an endcap. Lift the endcap at a 45-degree angle and align the connector hook on the top of the chamber with the raised slot on the top of the endcap. Lower the endcap to the ground and into place.

NOTE: Place a few shovels of soil around the endcap to secure it during backfill.

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 fill by walking along the edges of trench and chambers.

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

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

INSTALLING INSPECTION PORTS

Inspection ports may be installed on any of the chamber tops.

1. With a hole saw drill the pre-marked area in the top of the chamber to create an opening based on pipe type.

NOTE: Drill a 2½-inch opening on the chamber to accommodate a 2-inch Schedule 40 inspection port pipe.

2. Set a cut piece of pipe of the appropriate length into the corresponding chamber's inspection port sleeve.



3. 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 the inspection port is below the desired grade.

COVERING THE SYSTEM

Before backfilling, the system must be inspected as required by State regulations. 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.

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.

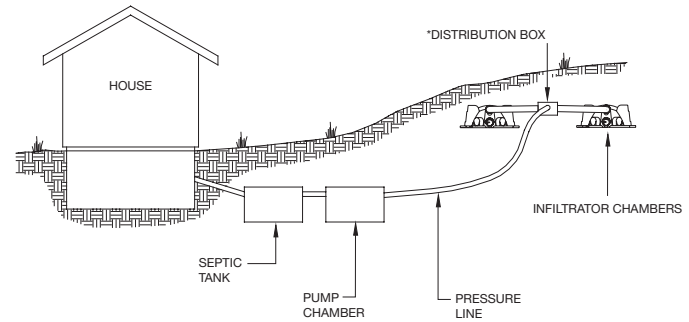
3. After the system is covered, the site should be seeded or sodded to prevent erosion.

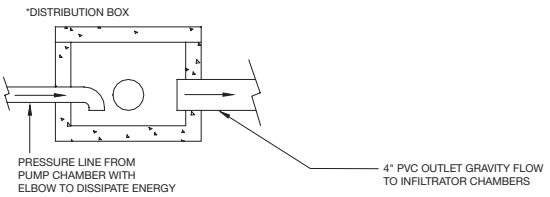
NOTE: If the system is for new home construction, it is important to leave marking stakes along the boundary of the system. This will show contractors where the site is located so they will not cross it with equipment or vehicles.

PUMP UP DISTRIBUTION SYSTEMS

In a pump up 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. This design is commonly confused with a pressure dosed system because the two share much of the same equipment. The main difference between the two lies in how the effluent is distributed within each trench. In a pressure dosed system, the effluent is distributed throughout the trench with a pressurized pipe. In a pump up system, the effluent is gravity fed as shown in the figure below.

PUMP UP SYSTEM ILLUSTRATION





INSTALLATION INSTRUCTIONS – QUICK4 LOW PROFILE CHAMBERS

These installation instructions are for Quick4 Plus Standard LP and Quick4 Equalizer 24 LP chambers. These chambers may only be installed according to state and/or local regulations. If unsure of the installation requirements for a site, contact Infiltrator Water Technologies. The soil and site conditions must be approved for installation. Be sure that a thorough site evaluation is conducted to determine the proper size and location of the system before proceeding with the installation.

NOTE: Please contact Infiltrator Water Technologies for other chamber specific installation instructions.

Before You Begin

Materials and Equipment Needed

- ☐ Low Profile (LP) chambers
- ☐ Quick4 Plus 8 Endcaps
- ☐ Quick4 Plus All-in-One 8 Endcaps
- ☐ PVC pipe and couplings
- ☐ Backhoe
- ☐ Laser, transit or level
- ☐ Tape measure
- ☐ Shovel and rake
- ☐ Utility knife
- ☐ 1 1/4-inch drywall screws*
- ☐ Drill
- ☐ Hole saw
- ☐ 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 AASHTO H-10 load rating.
- ☐ When installing in sandy soil conditions, wheeled construction equipment is prohibited over top of system. Tracked equipment can be used over top of system with a minimum of 6” of soil cover.
- ☐ Avoid stones larger than 3 inches in diameter in backfill. Remove stones this size or larger that are in contact with chambers.

Excavating and Preparing the Site

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

1. Stake out location of all trenches and lines. Set elevations of tank, pipe, and trench bottom.

2. Install sedimentation and erosion control measures. Temporary drainage swales/berms may be installed to protect site during rainfall.

3. Excavate and level trenches with proper width and center-to-center separation. Verify that trenches are level or have the prescribed slope.

Note: Over excavate in areas where you are planning to contour.

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

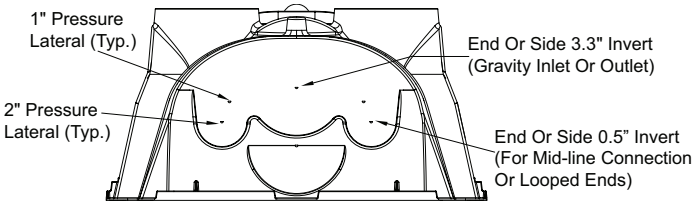
Preparing the Endcap

NOTE: Quick4 Plus 8 and Quick4 Plus All-in-One 8 Endcaps are avaliable for use with the Quick4 Plus Standard LP chambers on either end of the trench, depending upon the installer’s preference and configuration requirements.



1. Drill endcap.

1. With a hole saw drill an opening appropriate for pipe diameter being used (normally 3 - 4 inches) on front or side of endcap using center point marking (see illustration) as a guide.



2. Snap off the molded splash plate located on the bottom front of the endcap.

3. Install splash plate into the appropriate slots below the inlet to prevent trench bottom erosion.

Installing the System

1. Check the header pipe to be sure it is level or has the prescribed slope.

2. Set the invert height as specified in the design from the bottom of the inlet.

3. Place the first chamber in the trench.

4. Place the back edge of the endcap over the inlet end of the first chamber. Be sure to line up the locking pins on the top of both the chamber and endcap.



4. Place endcap inlet end.

Optional: Fasten the endcap to the chamber with a screw at the top of the endcap.

5. Insert the inlet pipe 2.5 inches into the opening on the front of the endcap. Insert fully to the internal pipe stop.

6. Lift and place the end of the next chamber onto the previous chamber by holding it at a 45-degree angle. Line up the chamber end between the connector hook and locking pin at the top of the first chamber. Lower the chamber to the ground to connect the chambers.



5. Insert inlet pipe.

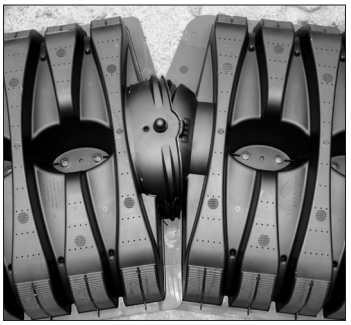
NOTE: The connector hook serves as a guide to ensure proper connection and does not add structural integrity to the chamber joint. Broken hooks will not affect the structure or void the warranty.

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

NOTE: The chamber allows up to 10-degree swivel in either direction at each joint.

8. Continue connecting chambers until the trench is completed.

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



7. Swivel chambers.

9. The last chamber in the trench requires an endcap. Lift the endcap at a 45-degree angle and align the connector hook on the top of the chamber with the raised slot on the top of the endcap. Lower the endcap to the ground and into place.

NOTE: Place a few shovels of soil around the endcap to secure it during backfill.



9. Place endcap outlet end.

10. 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.

11. Pack down fill by walking along the edges of trench and chambers.

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

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

IInstalling Optional Inspection Ports

Inspection ports may be installed on the chamber or the Quick4 Plus All-in-One 8 Endcap. The Quick4 Plus 8 Endcap does not allow inspection port construction.

Quick4 Plus All-in-One 8 Inspection Port

1. With a hole saw drill the pre-marked area in the top of the Quick4 Plus All-in-One 8 Endcap to create a 4 1/3 to 4 1/2-inch opening based on type of pipe.

2. Set a cut piece of pipe of the appropriate length into the corresponding endcap's inspection port sleeve.

NOTE: The sleeve will accommodate up to a 4-inch Schedule 40 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 protuding pipe at the appropriate height.



All-in-One 8 inspection port.

5. A small valve cover box may be used if the inspection port is below the desired grade.

Chamber Inspection Port

1. With a hole saw drill the pre-marked area in the top of the chamber to create a 2.5-inch opening.

2. Set a cut piece of pipe of the appropriate length into the corresponding chamber's inspection port hole.

NOTE: The sleeve will accommodate up to a 2.5-inch Schedule 40 pipe.



Chamber inspection port.

3. Use two screws to fasten the pipe to the chamber dome adjacent to the inspection port.

4. Attach a threaded cap or cleanout assembly onto the protuding pipe at the appropriate height.

5. A small valve cover box may be used if the inspection port is below the desired grade.

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 system by pushing fill material over the chambers. Keep a minimum of 12 inches of compacted cover over the chambers before driving over the system with wheeled construction equipment.

NOTE: Do not drive over the system while backfilling in sandy soil.

NOTE: For shallow cover, sand fill, and sandy soil applications, tracked construction equipment must be used. You must mound 12 inches of soil over the system before driving over it with wheeled construction equipment, then grade it back a minimum 6 inches upon completion.

2. It is best to mound several inches of soil over the finished grade to allow for settling. A slight crown also ensures that runoff water is diverted away from the system trench.

3. After the system is covered, the site should be seeded or sodded to prevent erosion.

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

WARRANTY

INFILTRATOR WATER TECHNOLOGIES STANDARD LIMITED WARRANTY

(a) The structural integrity of each chamber, endcap and other accessory manufactured by Infiltrator (collectively referred to as "Units"), when installed and operated in a leachfield of an onsite septic system in accordance with Infiltrator's installation instructions, is warranted to the original purchaser ("Holder") against defective materials and workmanship for one year from the date upon which a septic permit is issued for the septic system containing the Units; provided, however, that if a septic permit is not required for the septic system by applicable law, the one (1) year warranty period will begin upon the date that installation of the septic system commences. In order to exercise its warranty rights, Holder must notify Infiltrator in writing at its corporate headquarters in Old Saybrook, Connecticut within fifteen (15) days of the alleged defect. Infiltrator will supply replacement Units for those Units determined by Infiltrator to be defective and covered by this Limited Warranty. Infiltrator's liability specifically excludes the cost of removal and/or installation of the Units.

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

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

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

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

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

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