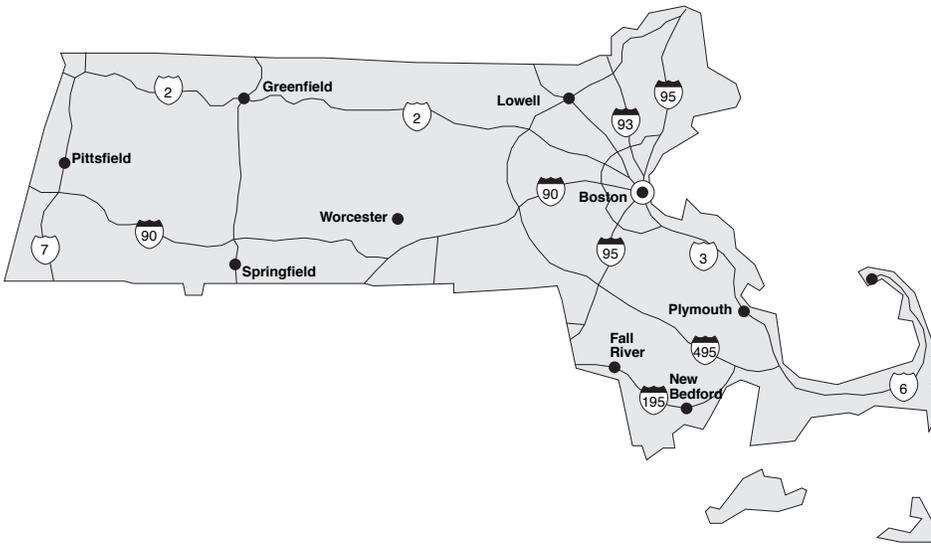




INFILTRATOR[®]
systems inc.

Design and Installation Manual for Infiltrator Chambers in Massachusetts



Massachusetts



Infiltrator Chambers in Massachusetts

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The purpose of this manual is to provide specific design and installation information pertinent for the use of Infiltrator products in Massachusetts. Infiltrator products must be used in conjunction with the standards described in the Massachusetts Dep Title 5, 310 CMR 15.000 and Infiltrator's approval (www.mass.gov.dep). This document provides a brief description of the chamber and sizing specifications.

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

Massachusetts

INTRODUCTION

Quick4 Chambers

The Quick4 Plus High Capacity, Quick 4 High Capacity, Quick4 Plus Standard, Quick4 Standard and Quick4 Plus Standard Low Profile (LP) chambers fit into a 36-inch-wide trench. The Quick4 Plus Standard LP chamber is 4 inches shorter than the other standard chamber model, allowing for shallower installation. The Quick4 Plus chambers offer advanced contouring capability and superior strength through a system of center structural columns. The Quick4 Plus line of endcaps is available with these chambers, providing increased flexibility in system configurations. The 3050 chamber can be installed in a 53-inch-wide system trench. All chambers can be installed in a bed. Ask your local Infiltrator sales representative for specific information on various system-inletting options.

Quick4 Standard Nominal Chamber Dimensions

Size:	34"W x 48"L x 12"H
Storage Capacity:	44 gal
Invert Elevation:	8"

Quick4 Plus Standard Nominal Chamber Dimensions

Size:	34"W x 48"L x 12"H
Storage Capacity:	45 gal
Invert Elevation:	5.3", 8"

Quick4 High Capacity Nominal Chamber Dimensions

Size:	34"W x 48"L x 16"H
Storage Capacity:	62 gal
Invert Elevation:	11.5"

Quick4 Plus High Capacity Nominal Chamber Dimensions

Size:	34"W x 48"L x 14"H
Storage Capacity:	54 gal
Invert Elevation:	8"

Quick4 Plus Standard Low Profile (LP) Nominal Chamber Dimensions

Size:	34"W x 48"L x 8"H
Storage Capacity:	32 gal
Invert Elevation:	3.3", 8"

QUICK4 STANDARD



QUICK4 PLUS STANDARD



QUICK4 HIGH CAPACITY



QUICK4 PLUS HIGH CAPACITY



QUICK4 PLUS STANDARD LOW PROFILE (LP)



INTRODUCTION

High Capacity H-20 Nominal Chamber Dimensions

Size:	34"W x 75"L x 16"H
Storage Capacity:	114 gal
Invert Elevation:	11"

HIGH CAPACITY H-20



Infiltrator 3050 Nominal Chamber Dimensions

Size:	51"W x 85.4"L x 30"H
Storage Capacity:	343 gal
Invert Elevation:	22.25"

INFILTRATOR 3050



NOTE: The MassDEP approval allows the use of the High Capacity H-20 Chamber but makes no determination as to the chambers meeting the H-20 loading requirements.

IM-Series Septic Tanks

The IM-Series Septic Tanks are durable and watertight. The injection-molded plastic tank offers exceptional strength in a two-piece design efficient for shipping and local assembly. The IM-Series Septic Tanks enable a wide variety of installation options including shallow, multiple and serial tank configurations. No special backfill, installation or waterfilling procedures are required. Tanks can be pumped dry during pump-outs and can be installed with 6" to 48" of cover. Ask your local Infiltrator sales representative for specific information on IM-Tanks.

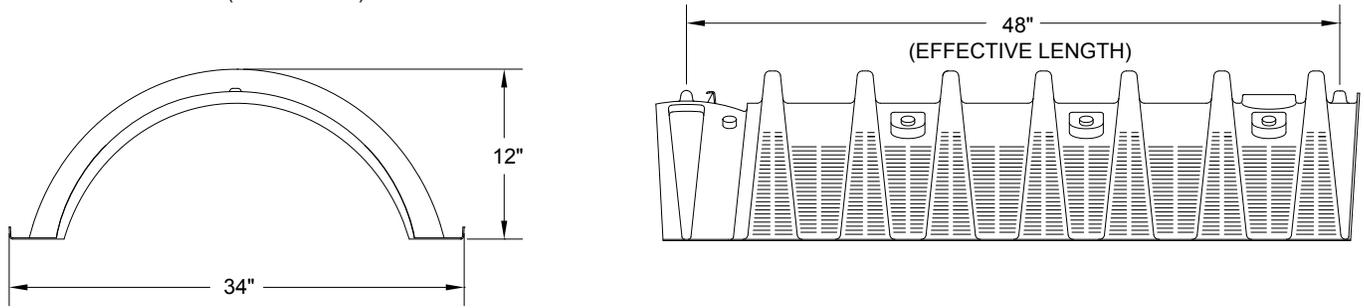
Infiltrator IM-Series Tanks

	IM-1060	IM-1530
Tank		
Applications	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	1094 gal (4141 L)	1509 gal (5712 L)
Total Capacity	1287 gal (4872 L)	1787 gal (6765 L)

PRODUCTS

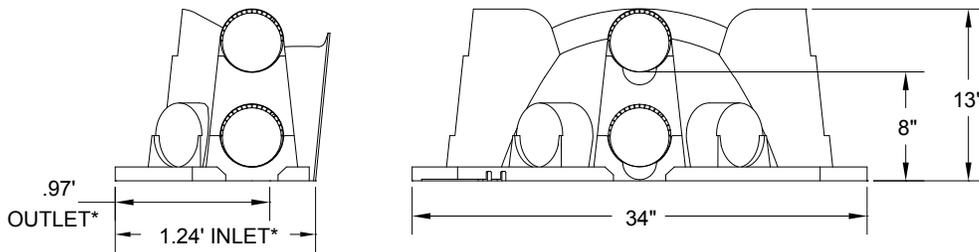
Quick4 Standard Chamber

SIDE AND END VIEWS (not to scale)



Quick4 Standard MultiPort Endcap

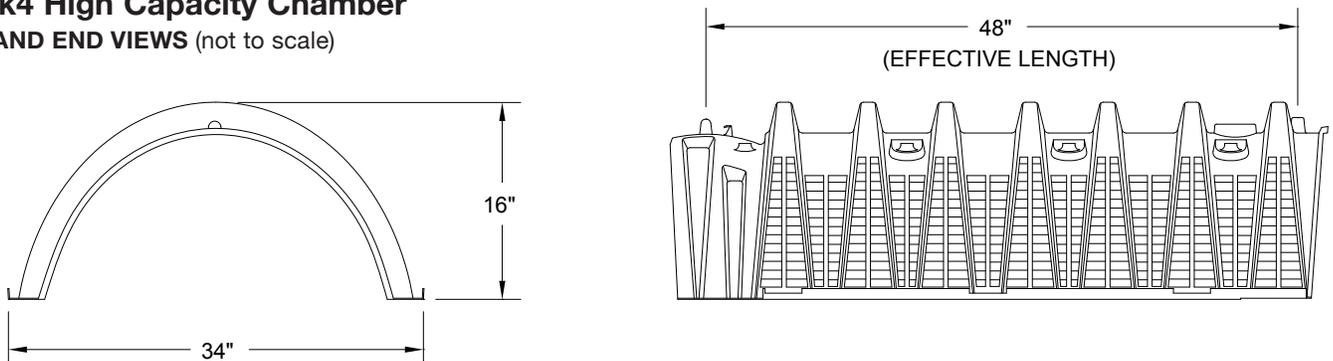
SIDE AND END VIEWS (not to scale)



**Effective Length When Connected*

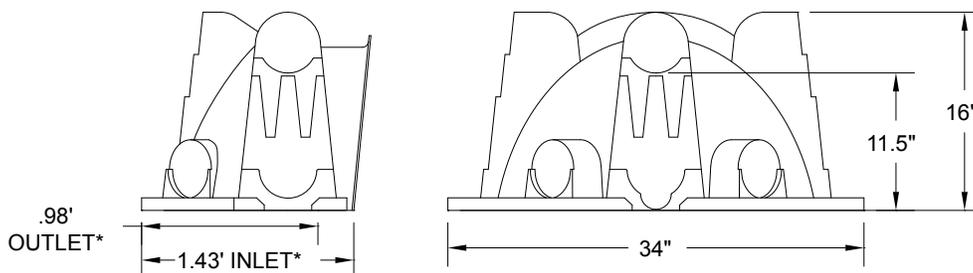
Quick4 High Capacity Chamber

SIDE AND END VIEWS (not to scale)



Quick4 High Capacity MultiPort Endcap

SIDE AND END VIEWS (not to scale)



**Effective Length When Connected*

PRODUCTS

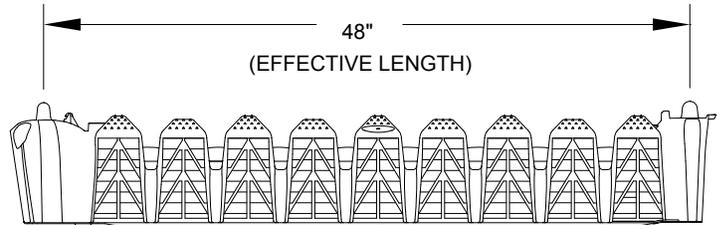
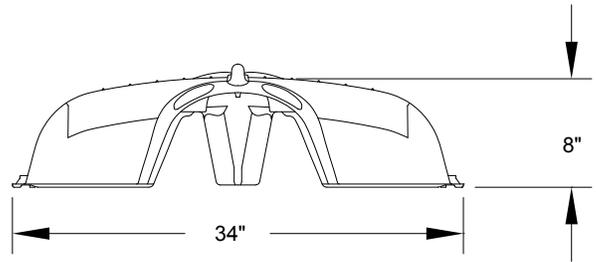
Quick4 Plus Standard LP Chamber

SIDE AND END VIEWS (not to scale)

Reduced Vertical Profile

The Quick4 Plus Standard LP chamber provides a lower vertical profile. This feature provides two distinct benefits:

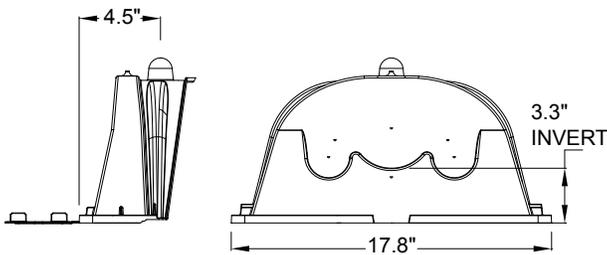
- Promotion of aerobic treatment**
 The reduced vertical profile moves infiltration closer to the ground surface, thereby improving the potential for subsoil aeration from the atmosphere. This promotes oxygen recharge to the biologically active vadose zone beneath the infiltrative surface and helps support aerobic decomposition of wastewater.
- Increased vertical separation**
 For a site with a shallow groundwater table, impervious conditions, or other restrictions that limit vertical separation distance, the reduced height of the LP chamber increases separation distance.



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

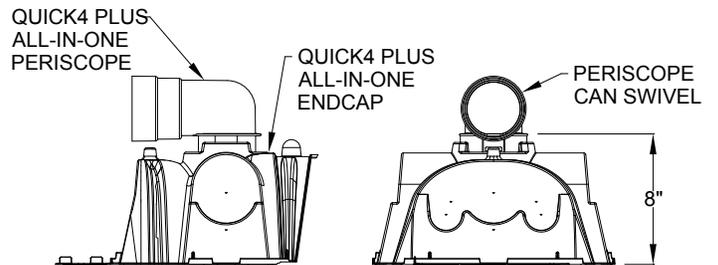
Quick4 Plus 8 Endcap

SIDE AND END VIEWS (not to scale)



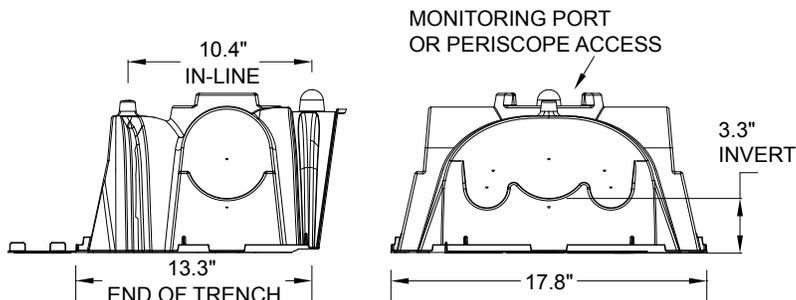
Quick4 Plus All-in-One Periscope

SIDE AND END VIEWS (not to scale)

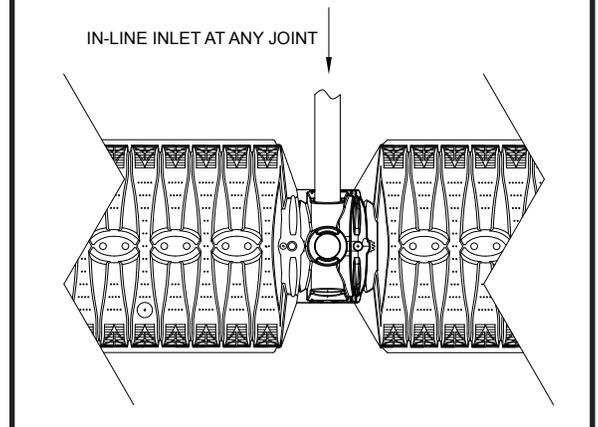


Quick4 Plus All-in-One 8 Endcap

SIDE AND END VIEWS (not to scale)



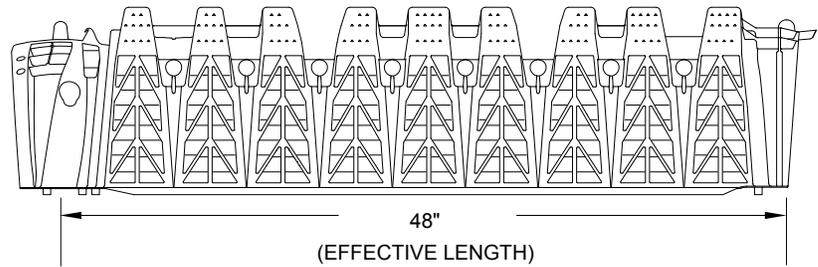
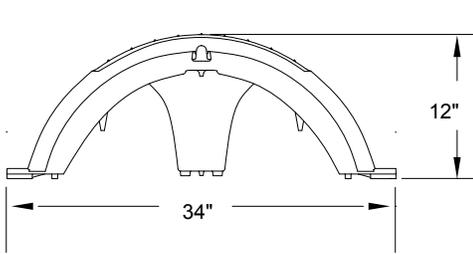
NOTE: The All-in-One Endcap can be installed in-line with chambers on either side. This allows the system to be inletted at any length along the trench.



PRODUCTS

Quick4 Plus Standard Chamber

SIDE AND END VIEWS (not to scale)

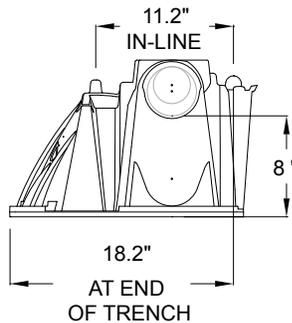
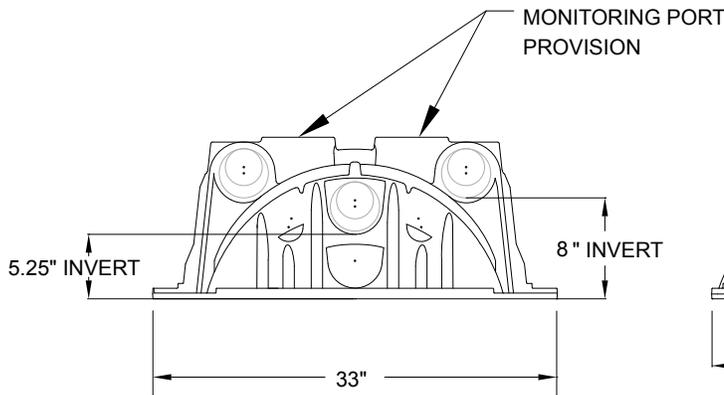


NOTES:

1. The Quick4 Plus Standard Chamber is compatible with the Quick4 Plus All-in-One 12 Endcap.
2. Optional monitoring ports can be installed in the Quick4 Plus All-in-One Encap.

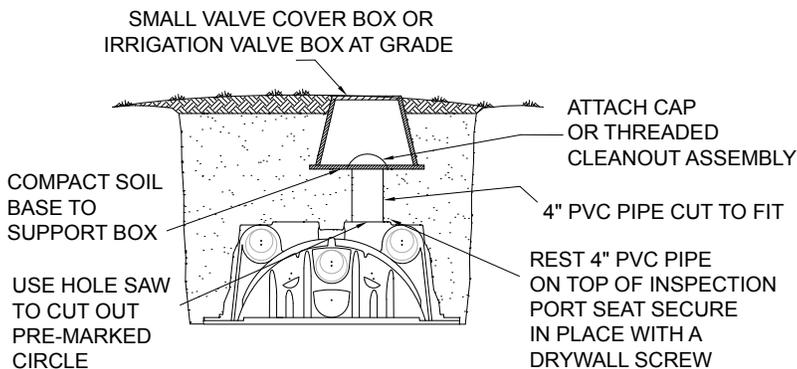
Quick4 Plus All-in-One 12 Endcap

SIDE AND END VIEWS (not to scale)

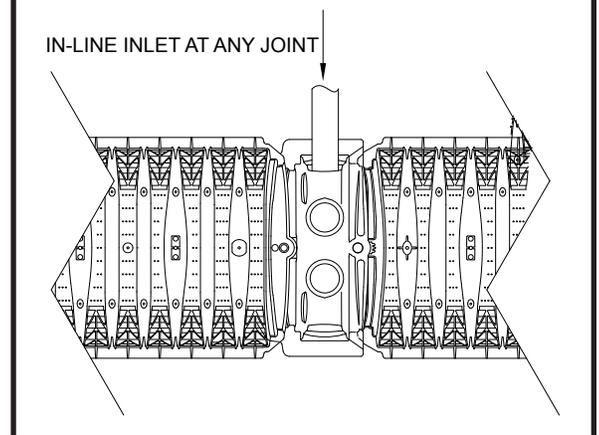


Quick4 Plus All-in-One 12 Endcap Monitoring Port

(not to scale)



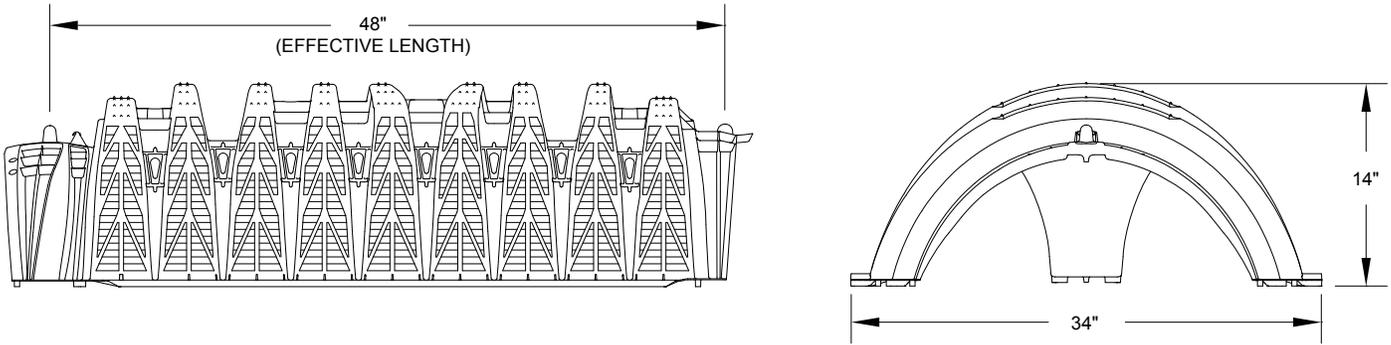
NOTE: The All-in-One Endcap can be installed in-line with chambers on either side. This allows the system to be inletted at any length along the trench.



PRODUCTS

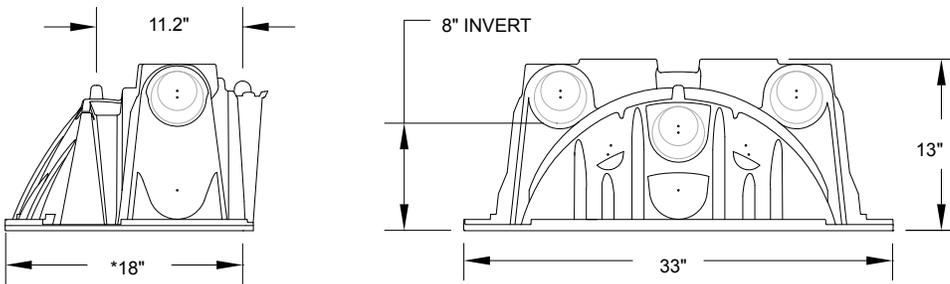
Quick4 Plus High Capacity Chamber

SIDE AND END VIEWS (not to scale)



Quick4 Plus High Capacity Endcap

SIDE AND END VIEWS (not to scale)

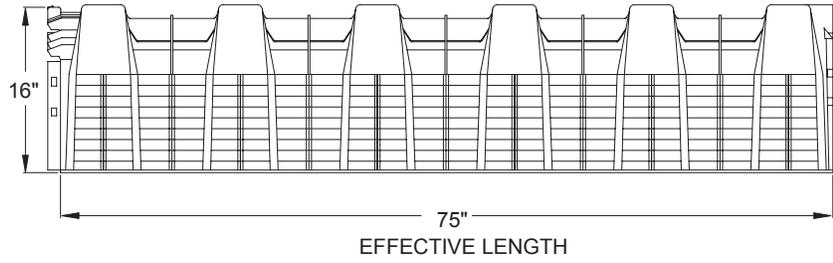
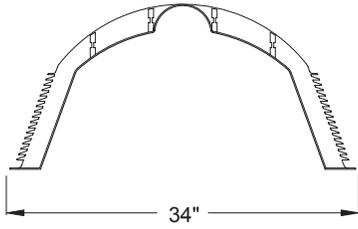


**Effective Length When Connected*

PRODUCTS

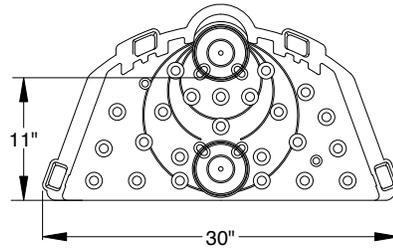
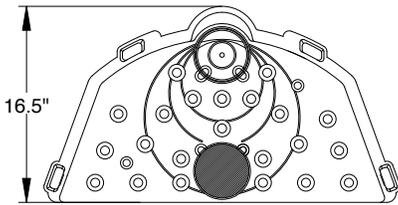
High Capacity Chamber

SIDE AND END VIEWS (not to scale)



Posilock Endplates

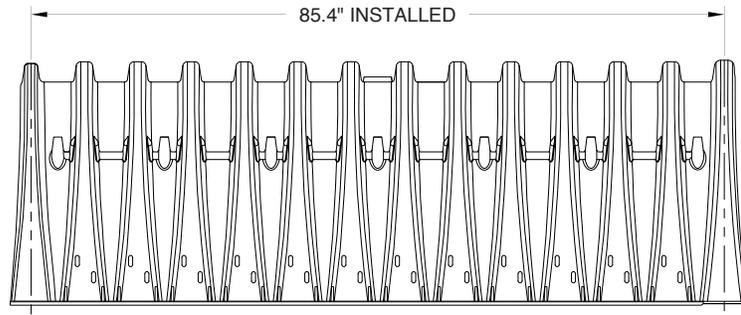
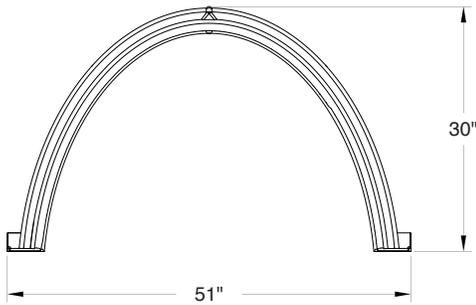
(not to scale)



Open Part # HCEO

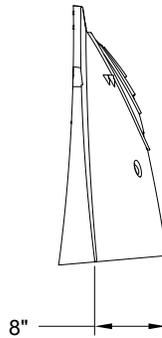
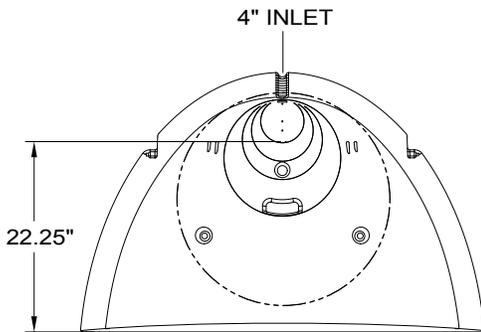
3050 Chambers

SIDE AND END VIEWS (not to scale)



3050 Endcap

(not to scale)



Note: The MassDEP approval allows the use of the 3050 Chamber but makes no determination as to the chambers meeting the H-20 loading requirements.

SYSTEM SIZING

Table 1: Chamber Ratings

Model	Dimensions W x L x H (Inches)	Invert Height (Inches)	Trench	Bed or Field
			Effective Leaching Area (sf/lf)	Effective Leaching Area (sf/lf)
Quick4 Standard	34 x 48 x 12	8	6.96	4.72
Quick4 Plus Standard LP	34 x 48 x 8	8 ⁴	6.96	4.72
Quick4 Plus Standard	34 x 48 x 12	8	6.96	4.72
Quick4 High Capacity	34 x 48 x 16	11.5	7.93	4.72
Quick4 Plus High Capacity	34 x 48 x 14	13 ⁴	7.93	4.72
High Capacity	34 x 75 x 16	11	7.79 ²	4.72 ²
High Capacity H-20	34 x 75 x 16	11	7.79 ²	4.72 ²
3050	51 x 85.4 x 30	22.25	6.71 ²	7.10 ²

NOTES:

1. For new construction, no system shall be designed and constructed with a soil absorption system area of less than 400 square feet. Per DEP the sizing is based upon conventional system sizing.
2. For traffic applications, the High Capacity H-20 and 3050 model chambers can be used in H-20 load bearing applications when installed using the AASHTO H-20 design, detailed on Page 17. Due to stone on the bottom of the trench or bed for AASHTO H-20 designs, the above-listed chamber ratings do not apply. AASHTO H-20 chamber systems are sized per 310 CMR 15.242.
3. The following chamber sizes are approved for use. For information and sizing please contact Infiltrator Systems at 800-221-4436.
Quick4 Equalizer 24
Quick4 Equalizer 24 LP
Quick4 Equalizer 36
Quick4 Equalizer 24 HD
Equalizer 24
4. Must install the periscope to attain the stated invert height for trench leaching area.
5. The MassDEP approval allows the use of the High Capacity H-20 and 3050 Chambers but makes no determination as to the chambers meeting the H-20 loading requirements.

SYSTEM SIZING

Quick4 Chambers in Bed Systems

Table 2: Bed Sizing

Soil Class	Percolation Rate (min/in)	Number of Chambers in Aggregate-Free Bed Systems (See note below for minimum requirements & Endcap benefits)		
		330 GPD Design Flow 3 Bedrooms or Less	440 GPD Design Flow 4 Bedrooms or Less	550 GPD Design Flow 5 Bedrooms or Less
		Q4 Plus Std, Q4 Plus Std LP, Q4 HC, Q4+HC, Q4 Std 4.72 SF/LF	Q4 Plus Std, Q4 Plus Std LP, and Q4 Std 4.72 SF/LF	Q4 Plus Std, Q4 Plus Std LP, and Q4 Std 4.72 SF/LF
		See Note 1 below for minimum number of chambers for new construction		
Class I Sandy, Loamy Sands	<=5	36 ¹	36 ¹	40
	6	36 ¹	36 ¹	42
	7	36 ¹	36 ¹	43
	8	36 ¹	36	45
Class II Sandy Loams, Loams	<=5	36 ¹	39	49
	6	36 ¹	39	49
	7	36 ¹	39	49
	8	36 ¹	39	49
	10	36 ¹	39	49
	15	36 ¹	42	53
	20	36 ¹	44	55
	25	44	59	73
Class III Silty Loams	30	53	71	89
	15	48	63	79
	20	52	69	86
	25	53	71	89
	30	61	81	101
	40	70	94	117
Class IV Clays, Silty Clay Loams	50	88	117	146
	60	117	156	195

NOTES:

- For new construction, no system shall be designed and constructed with a soil absorption system area of less than 400 square feet. Per DEP the sizing is based upon conventional system sizing; therefore, a 2.83 ft chamber width. $(400 \text{ sf}) / (2.83 \text{ ft}) = 141.3 \text{ ft} = 36 \text{ chamber minimum}$.
- For repair systems, per DEP, where 400 sf of leaching area is not feasible, the greatest leaching area shall be installed provided that no more than a 40% reduction is taken.
- Combined, the Quick4 chamber MultiPort inlet and outlet Endcaps add an increased sizing benefit to the system. Two endplates are required for each row of chambers. The appropriate sizing factor may be applied in a bed or trench to account for the Multi Port Endcaps. The minimum number of chambers shown above may be reduced by accounting for the area/length provided by the Multi Port Endcaps.

4. All Quick4 chambers are 4 feet long.

Average additional length added by endcaps

- Quick4 Plus Standard and Quick4 Plus Standard LP - 1.1 linear feet/pair
- Quick4 Standard - 1.1 linear feet/pair
- Quick4 High Capacity - 1.2 linear feet/pair
- Quick4 Plus All-in-One Endcap at end of trench - 1.1 linear feet/endcap
- Quick4 Plus All-in-One Endcap mid-line in chamber row - 0.9 linear feet/pair
- Quick4 Plus Endcap at end of trench - 0.4 linear feet/endcap

SYSTEM SIZING

Quick4 Chambers in Trench Systems

Table 3: Trench Sizing

Soil Class	Percolation Rate (min/in)	Number of Chambers in Aggregate-Free Trench Systems (See note below for minimum requirements & Endcap benefits)					
		330 GPD Design Flow 3 Bedrooms or Less		440 GPD Design Flow 4 Bedrooms		550 GPD Design Flow 5 Bedrooms	
		Q4 Plus Std, Q4 Plus Std LP, and Q4 Std 3' Wide Trench 6.96 SF/LF	Q4 HC Q4+HC 3' Wide Trench 7.93 SF/LF	Q4 Plus Std, Q4 Plus Std LP, and Q4 Std 3' Wide Trench 6.96 SF/LF	Q4 HC Q4+HC 3' Wide Trench 7.93 SF/LF	Q4 Plus Std, Q4 Plus Std LP, and Q4 Std 3' Wide Trench 6.96 SF/LF	Q4 HC Q4+HC 3' Wide Trench 7.93 SF/LF
		See Note 1 below for minimum number of chambers for new construction					
Class I Sandy, Loamy Sands	<=5	24 ¹	22 ¹	24 ¹	22 ¹	27	24
	6	24 ¹	22 ¹	24 ¹	22 ¹	29	25
	7	24 ¹	22 ¹	24	22 ¹	30	26
	8	24 ¹	22 ¹	24	22	30	27
Class II Sandy Loams, Loams	<=5	24 ¹	22 ¹	27	24	33	29
	6	24 ¹	22 ¹	27	24	33	29
	7	24 ¹	22 ¹	27	24	33	29
	8	24 ¹	22 ¹	27	24	33	29
	10	24 ¹	22 ¹	27	24	33	29
	15	24 ¹	22 ¹	29	25	36	31
	20	24 ¹	22 ¹	30	27	38	33
	25	30	27	40	35	50	44
Class III Silty Loams	30	36	32	48	43	60	53
	15	33	29	43	38	54	47
	20	35	31	47	41	59	51
	25	36	32	48	43	60	53
	30	41	36	55	48	69	60
	40	48	42	64	56	80	70
	50	60	53	80	70	99	87
Class IV Clays, Silty Clay Loams	60	80	70	106	93	132	116
	50	60	53	80	70	99	87
	60	80	70	106	93	132	116

NOTES:

- For new construction, no system shall be designed and constructed with a soil absorption system area of less than 400 square feet. Per DEP the sizing is based upon conventional system sizing; therefore, a Quick4 Standard with a 2.83 ft chamber width and 8 inch invert height. $(400 \text{ sf}) / (2 \times .667 + 2.83) \text{ ft} = 96 \text{ ft} = 24$ chambers. A Quick4 High Capacity with a 2.83 ft chamber width and 11.5 inch invert height. $(400 \text{ sf}) / (2 \times .958 + 2.83) \text{ ft} = 84.21 \text{ ft} = 22$ chambers. Average additional length added by endcaps.
- For repair systems, per DEP, where 400 sf of leaching area is not feasible, the greatest leaching area shall be installed provided that no more than a 40% reduction is taken.
- Combined, the Quick4 chamber MultiPort inlet and outlet Endcaps add an increased sizing benefit to the system. Two endplates are required for each row of chambers. The appropriate sizing factor may be applied in a bed or trench to account for the Multi Port Endcaps. The minimum number of chambers shown above may be reduced by accounting for the area/length provided by the Multi Port Endcaps.

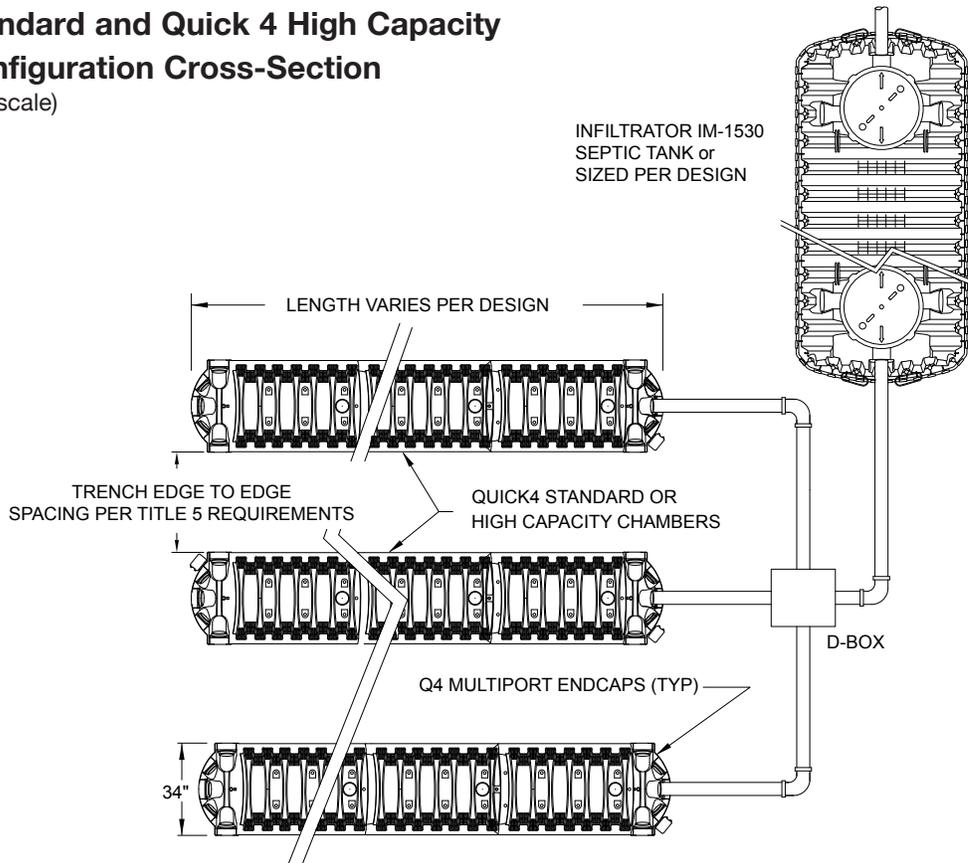
- All Quick4 chambers are 4 feet long.

Average additional length added by endcaps

- Quick4 Plus Standard and Quick4 Plus Standard LP - 1.1 linear feet/pair
- Quick4 Standard - 1.1 linear feet/pair
- Quick4 High Capacity - 1.2 linear feet/pair
- Quick4 Plus All-in-One Endcap at end of trench - 1.1 linear feet/endcap
- Quick4 Plus All-in-One Endcap mid-line in chamber row - 0.9 linear feet/pair
- Quick4 Plus Endcap at end of trench - 0.4 linear feet/endcap

TRENCH CONFIGURATIONS

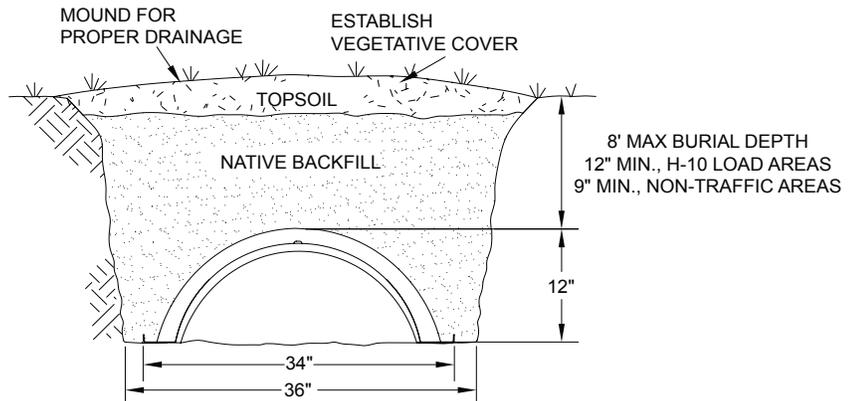
Quick4 Standard and Quick 4 High Capacity Trench Configuration Cross-Section Typical (not to scale)



NOTE: For trench configurations, the spacing between trenches may be used as reserve area per 310 CMR 15.251 (4).

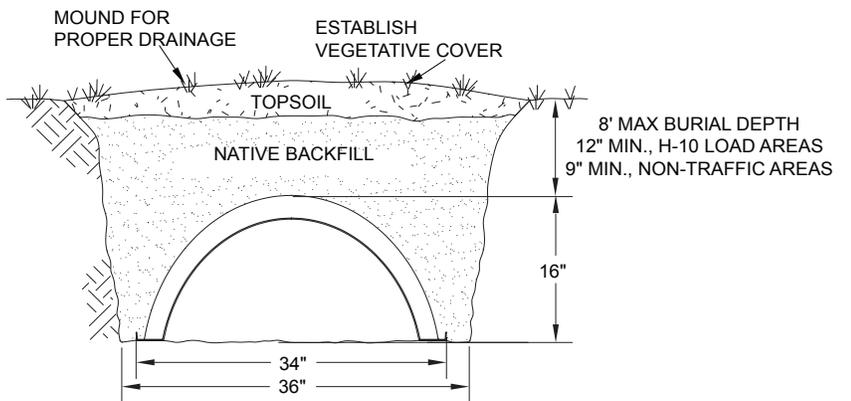
Quick4 Standard Cross-Section Typical (not to scale)

Rating: 6.96 sf/lf



Quick4 High Capacity Cross-Section Typical (not to scale)

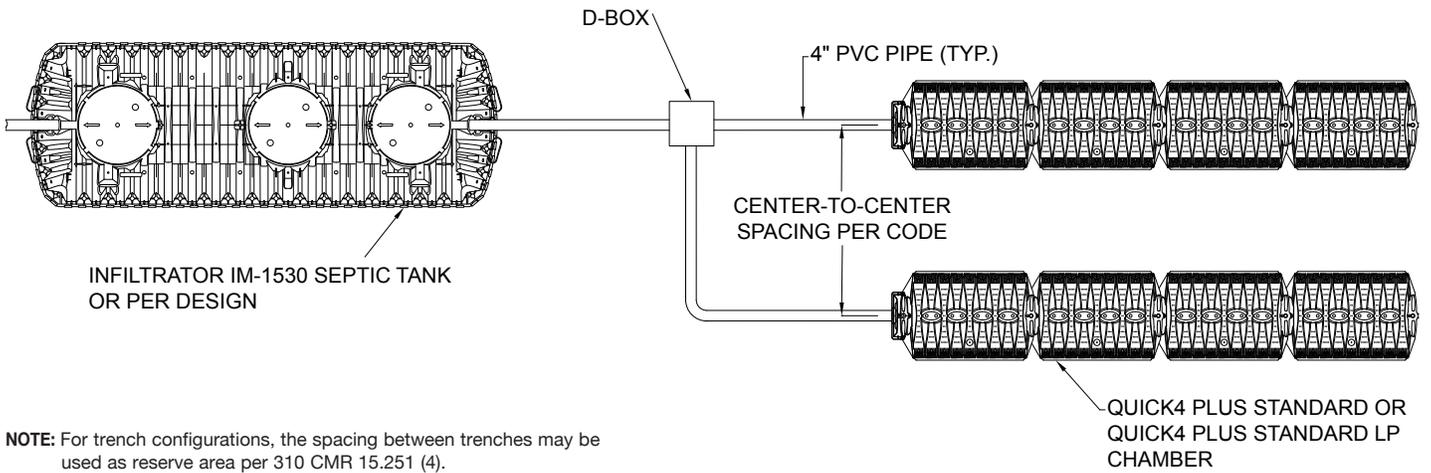
Rating: 7.93 sf/lf



TRENCH CONFIGURATIONS

Quick4 Plus Standard and Quick4 Plus Standard LP Cross-Section

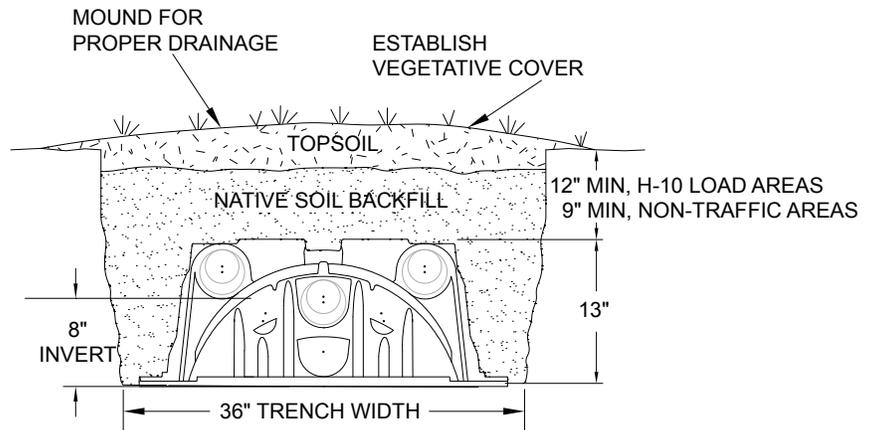
Typical (not to scale)



Quick4 Plus Standard and Quick 4 Plus High Capacity Cross-Section

Typical (not to scale)

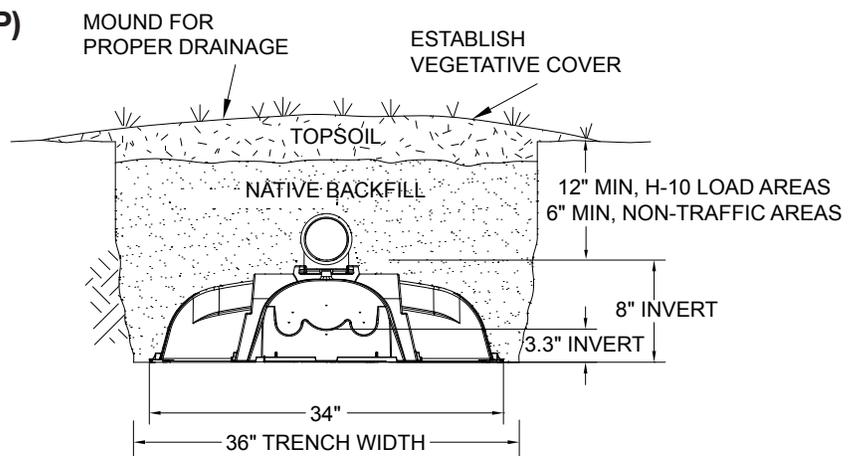
Rating: 6.96 sf/lf with 8" invert



Quick4 Plus Standard Low Profile (LP) Cross-Section

Typical (not to scale)

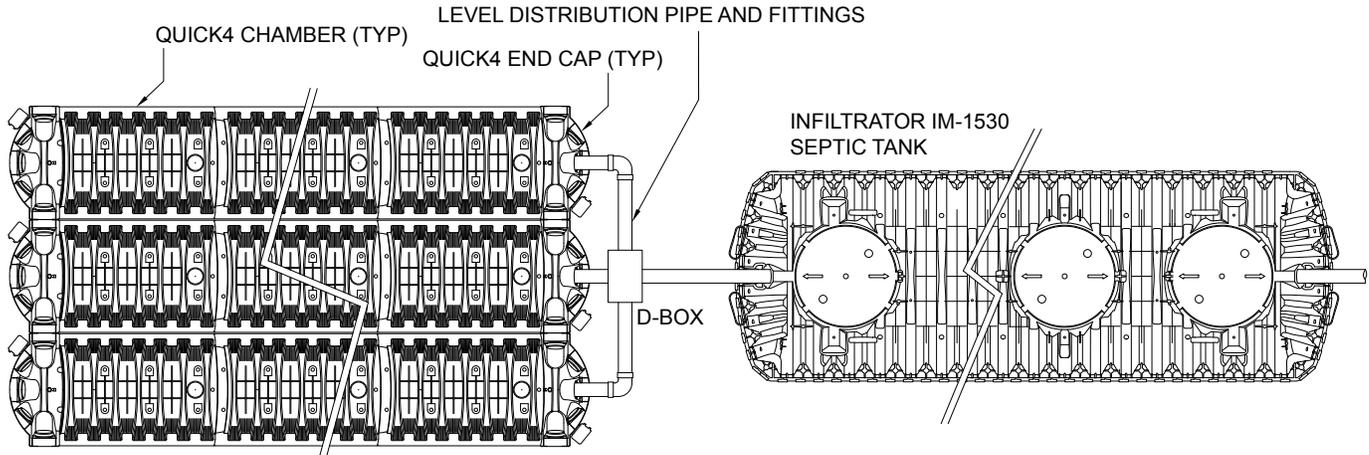
Rating: 6.96 sf/lf with 8" invert



BED CONFIGURATIONS

Quick4 Standard and Quick4 High Capacity Cross-Section

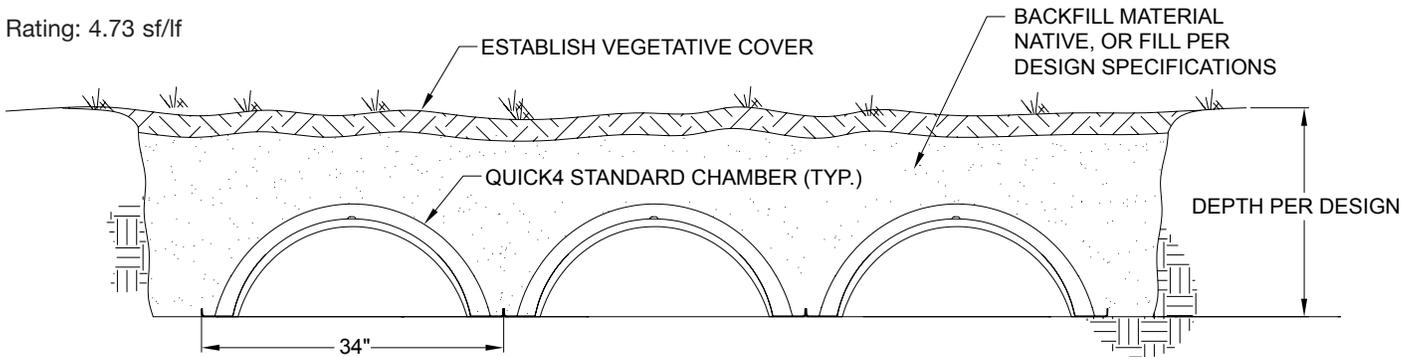
Typical (not to scale)



Quick4 Standard Cross-Section

Typical (not to scale)

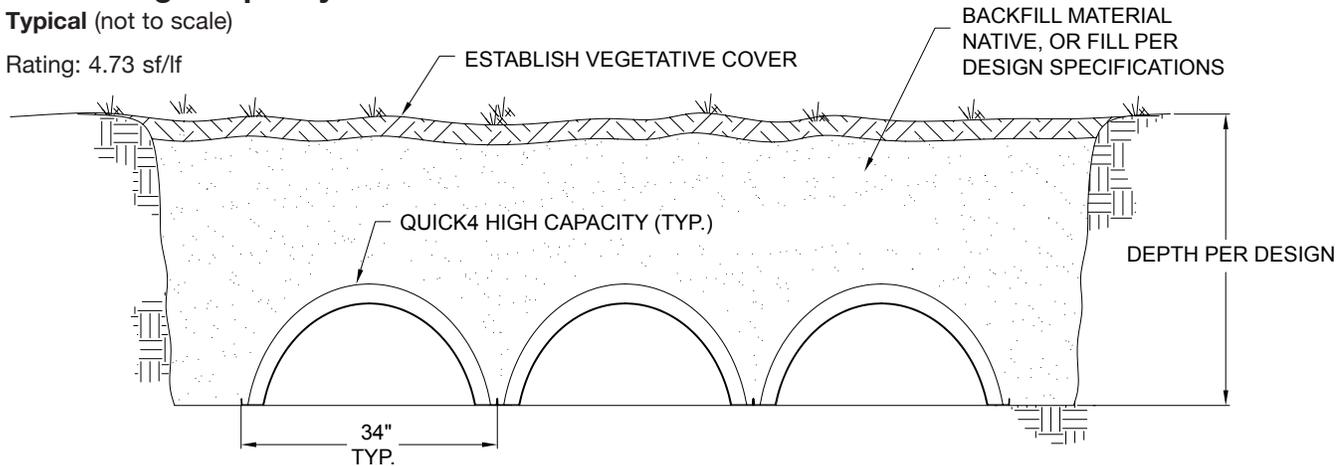
Rating: 4.73 sf/lf



Quick4 High Capacity Cross-Section

Typical (not to scale)

Rating: 4.73 sf/lf

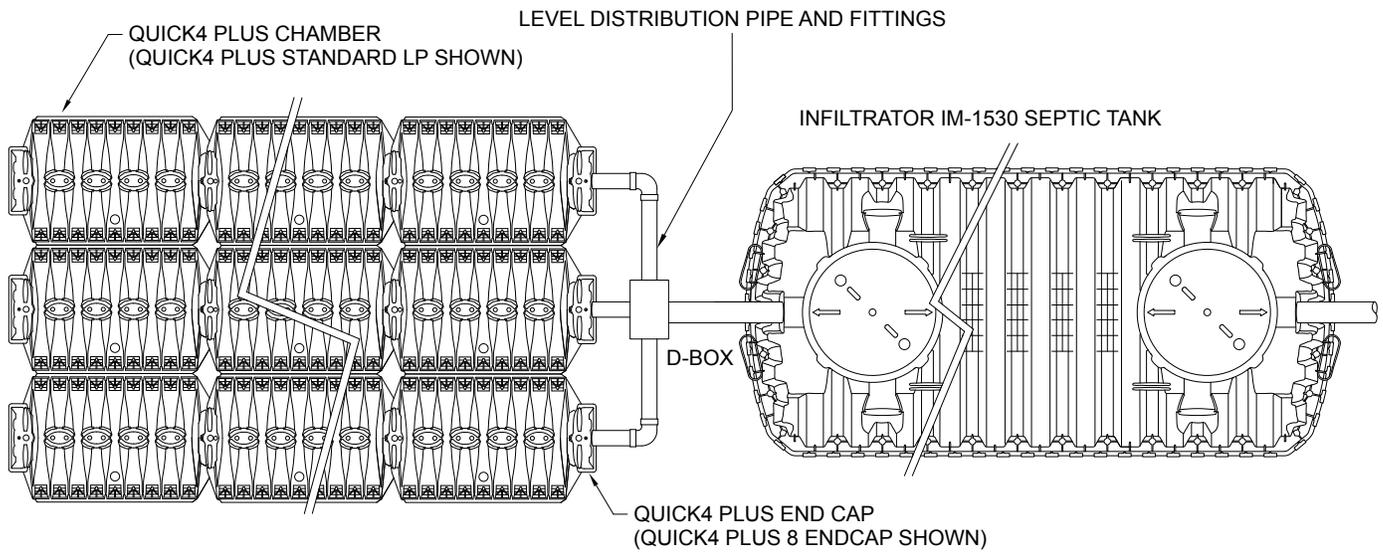


NOTE: Spacing between chamber rows is not required.

BED CONFIGURATIONS

Quick4 Plus Standard and Quick4 Plus Standard LP Cross Section

Typical (not to scale)

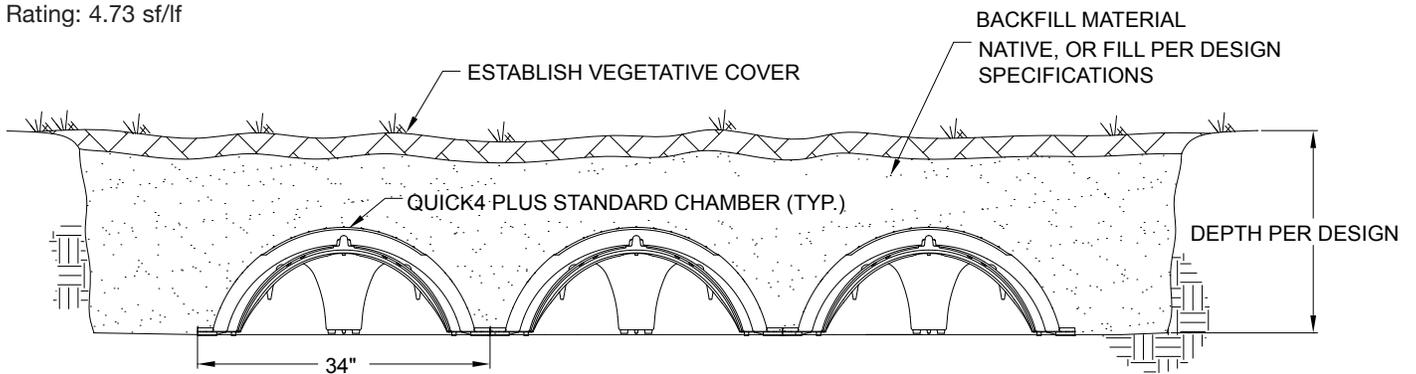


NOTE: Spacing between chamber rows is not required.

Quick4 Plus Standard Cross-Section

Typical (not to scale)

Rating: 4.73 sf/lf

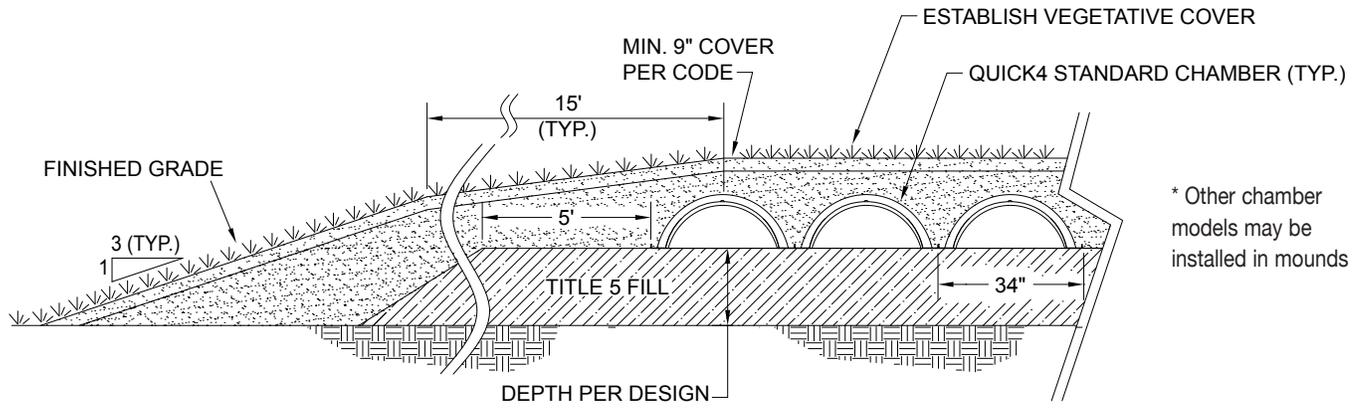


NOTE: Spacing between chamber rows is not required.

MOUND CONFIGURATIONS

Quick4 Standard Mound Cross Section

Typical (not to scale)



* Other chamber models may be installed in mounds

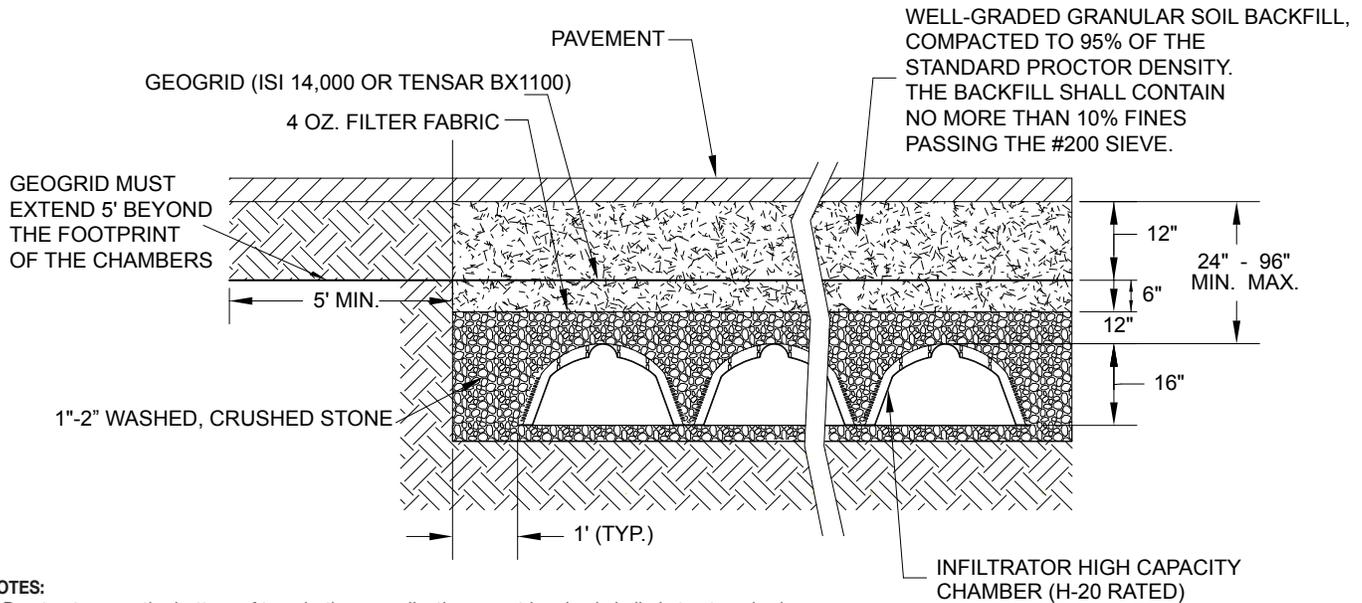
NOTE: Spacing between chamber rows is not required.

TRAFFIC CONFIGURATIONS

High Capacity H-20 Chamber: AASHTO H-20 Wheel Load Cross Section

Typical (not to scale)

Rating size per 310 CMR 15.242



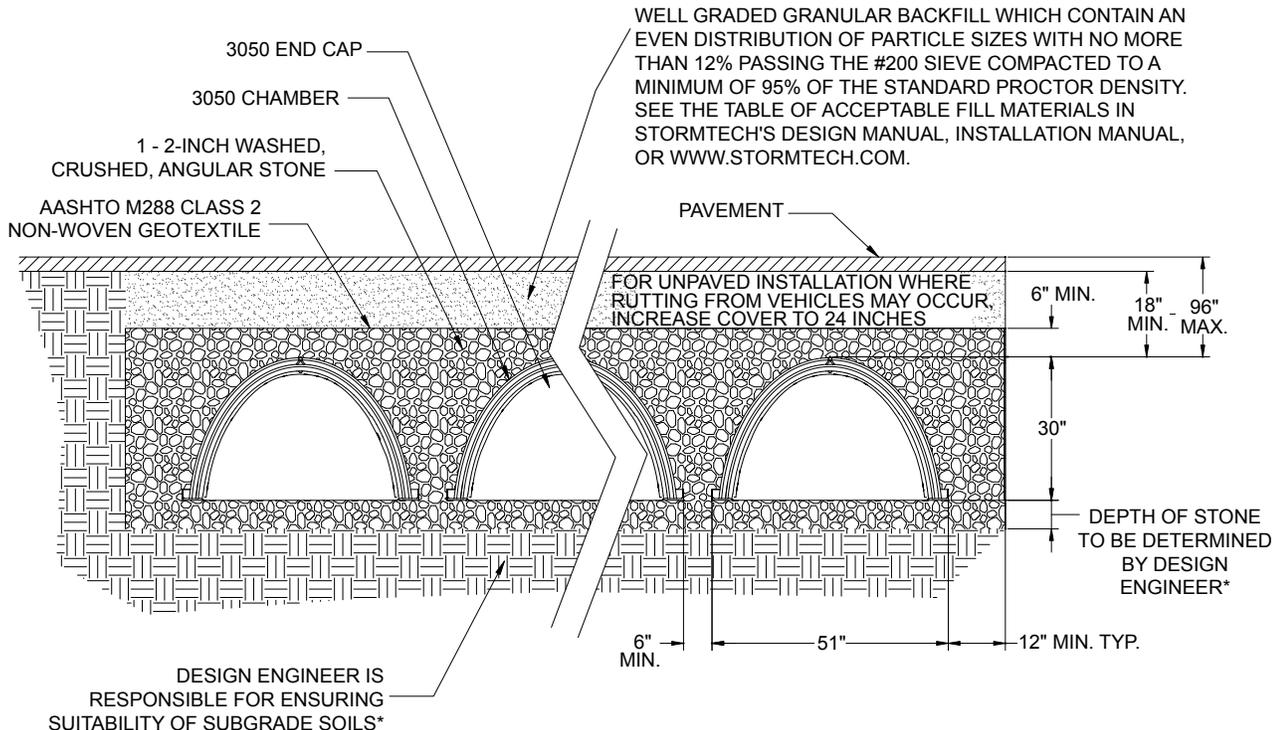
NOTES:

1. Due to stone on the bottom of trench, these applications must be sized similarly to stone beds.
2. The MassDEP approval allows the use of the High Capacity H-20 Chamber but makes no determination as to the chambers meeting the H-20 loading requirements.

3050 Chamber: AASHTO H-20 Wheel Load Cross Section

Typical (not to scale)

Rating size per 310 CMR 15.242



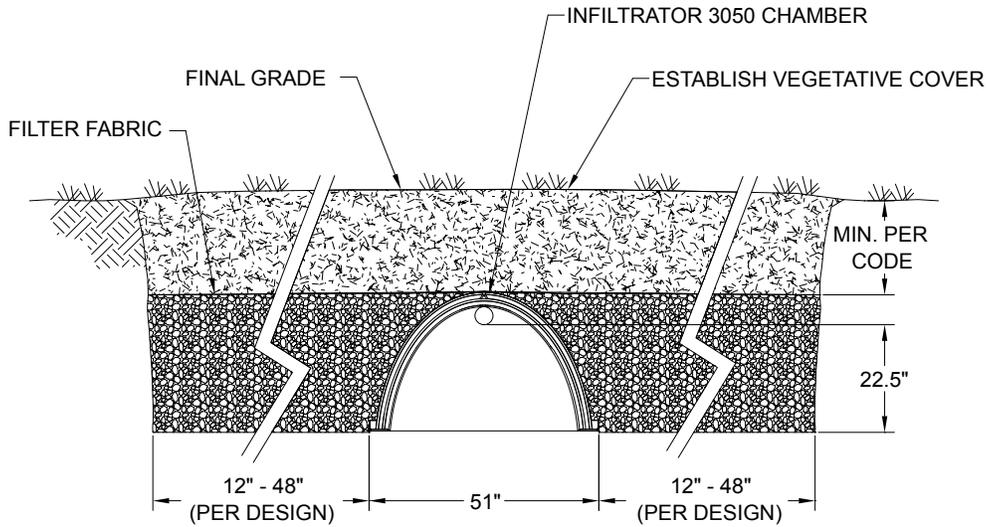
NOTE: The MassDEP approval allows the use of the 3050 Chamber but makes no determination as to the chambers meeting the H-20 loading requirements.

NON-TRAFFIC CONFIGURATIONS

3050 Chamber: AASHTO H-10 Wheel Load Gallery Cross Section

Typical (not to scale)

Rating varies based on stone width, see Note 1.



NOTES:

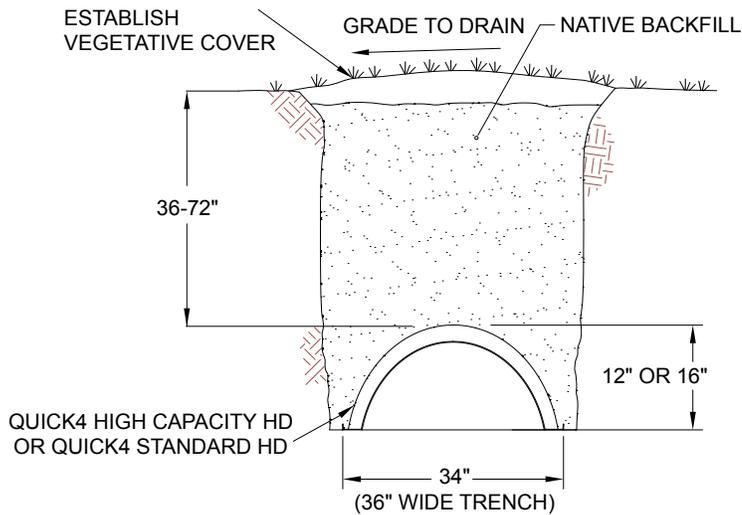
1. System sizing based on bottom area and sidewall beneath the invert
2. Stone must be placed 1'-2' along the sidewall of the chambers to prevent soil intrusion into the sidewall openings.

HEAVY DUTY CHAMBERS IN 310 CMR 15.405 APPLICATIONS

Quick4 Standard HD and Quick4 High Capacity Heavy Duty (HD) Chamber: 310 CMR 15.405 Trench

Cross Section

Typical Trench Detail (not to scale)
Rating size per 310 CMR 15.24

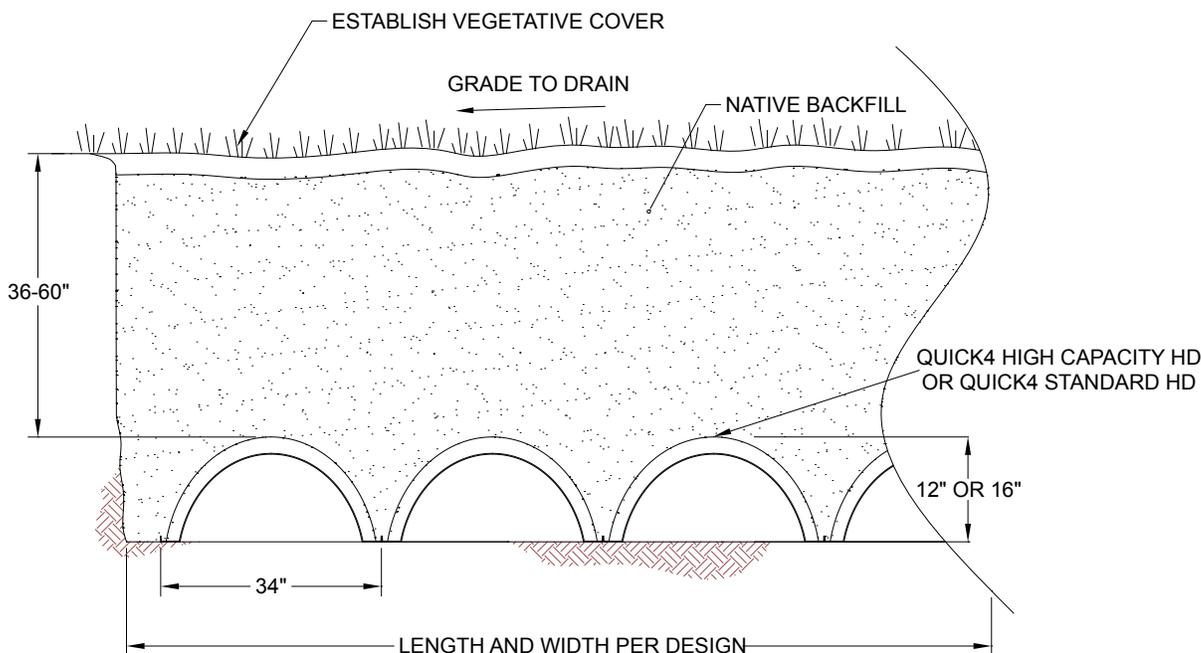


* Length and number of trenches determined by design.

Quick4 Standard HD and Quick4 High Capacity Heavy Duty (HD) Chamber: 310 CMR 15.405 Bed Cross Section

Typical (not to scale)

Rating size per 310 CMR 15.242



310 CMR 15.405 Contents of Local Upgrade Approval states in part:

- (1) In granting local upgrade approvals where full compliance as defined in 310 CMR 15.404(1) is not feasible the options set forth below should be considered.
- (b) an increase in the maximum allowable depth of system components required by 310 CMR 15.221(7), from 36" to 72" below finish grade, provided that. H-20 loading is provided for all system components.

Infiltrator manufactures chambers for use in "deep cover" applications, including the detailed in 310 CMR 15.405(1)(b) (above). These chambers are known as "Heavy Duty" model chambers, and carry a "Heavy Duty" or "HD" label. When installed in accordance with the instructions in this manual and a minimum of 36 inches of cover material, HD chambers can sustain an H-20 load. Infiltrator specifically recommends the use of these "Heavy Duty" model chamber products in deep burial applications, including those specified in 310 CMR 15.405(1)(b).

The following "Heavy Duty" chamber products are required by Infiltrator for use in 310 CMR 15.405(1)(b) applications:

- Quick4 Standard HD Chamber
- Quick4 High Capacity HD Chamber
- High Capacity H-20 Chamber
- 3050 Chamber

"Heavy Duty" or "HD" chambers may be installed with up to a maximum of five-feet (5') of cover in bed and eight-feet (8') of cover in trench installations respectively. These chambers are not designed for use in commercial traffic loading applications.

HD Chamber installation instructions: Follow normal chamber installation instructions as detailed starting on page 16 herein. Be sure to "walk in" the backfill material along the sidewall of the chamber units prior to introduction of cover material. No compaction of cover material is required.

INSTALLATION INSTRUCTIONS – QUICK4 CHAMBER SYSTEMS

Before You Begin

Quick4 Chambers 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. The system installer must schedule required regulatory inspections.

Materials and Equipment Needed

- | | |
|---|--|
| <input type="checkbox"/> Quick4 Chambers | <input type="checkbox"/> Utility Knife |
| <input type="checkbox"/> Endcaps | <input type="checkbox"/> Hole Saw* |
| <input type="checkbox"/> PVC Pipe and Couplings | <input type="checkbox"/> 2-inch Drywall Screws* |
| <input type="checkbox"/> Backhoe | <input type="checkbox"/> Screw Gun* |
| <input type="checkbox"/> Laser, Transit, or Level | <input type="checkbox"/> Small Valve-Cover Box* |
| <input type="checkbox"/> Shovel and Rake | <input type="checkbox"/> 4-inch Cap for Inspection Port* |
| <input type="checkbox"/> Tape Measure | |
- *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 (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, do not drive vehicles over the completed system.

Excavating and Preparing the Site

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

1. Stake out locations of trenches and lines. Set the elevations of the tank, pipe, and system.
2. Install sedimentation and erosion control measures. Temporary drainage swales/berms should be installed to protect the site during rainfall events.
3. Excavate and level the bed or trenches with proper center-to-center separation. Verify that the bottom of the system is level.

Note: Over excavate the trench width in areas where the chamber line will 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 the bottom of the system is level using a level, transit, or laser.

Preparing the MultiPort Endcap

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, and 4-inch Schedule 40 pipe.



1

Start tear-out seal.

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.

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. The pipe will go in several inches before reaching a stop. (Screws optional.)



5

Insert inlet pipe.

INSTALLATION INSTRUCTIONS – QUICK4 CHAMBER SYSTEMS

Installing the System

1. Check the inlet pipe to be sure it is level or has the prescribed slope. It should be firmly supported on a solid base of unexcavated soil (not required).

2. Place the inlet end of the first chamber over the back edge of the endcap so that the chamber overlaps the endcap when in place.



2 Place first chamber onto endcap.

3. 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 it to the ground to connect the chambers.



3 Connect the chambers.

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

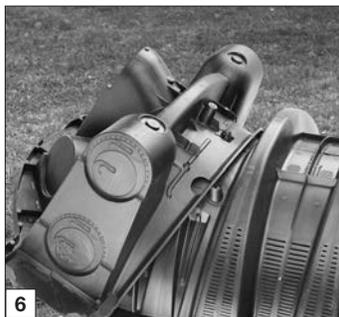
Note: The connector hook serves as a guide to insure proper connection and does not add structural integrity to the chamber joint. Broken hooks will not affect the structure nor void the warranty.

4. Swivel the chamber on the pin to the proper direction if contouring.
Note: The Quick4 Standard chamber and Quick4 High Capacity chamber allow 10° of swivel in either direction at each joint. The Quick4 Equalizer 36 and Quick4 Equalizer 24 allow for 15° of swivel.

5. Continue connecting the chambers until the chamber line is completed.

Note: As chambers are installed, verify they are level or have the prescribed slope to meet code requirements.

6. The last chamber in the trench requires an endcap. Lift the endcap at a 45° 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.



6 Attach endcap to chamber.

7. 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.

8. Pack down the fill by walking along the edges of the chambers.

9. Proceed to the next chamber line 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.

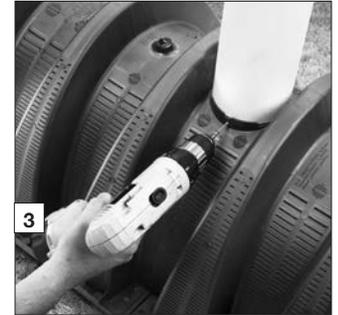
2. Set a cut piece of pipe of the appropriate length into the corresponding chamber's inspection port sleeve.

Note: The sleeve will accommodate a 4-inch Schedule 40 pipe.

3. Use two screws to fasten the pipe to the sleeve around the inspection port.

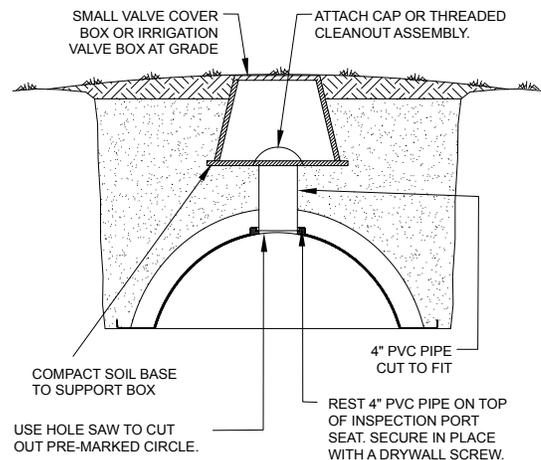
4. Attach a threaded cap or cleanout assembly onto the protruding pipe at the appropriate height.

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



3 Fasten the pipe.

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. Apply the desired backfill material along the sides of the chambers and walk the soil in.

2. Continue backfilling the soil to the top of chambers.



1 Walk the soil in.



2 Backfill the soil.

INSTALLATION INSTRUCTIONS – QUICK4 PLUS CHAMBER SYSTEMS

Before You Begin

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

Materials and Equipment Needed

- | | |
|---|---|
| <input type="checkbox"/> Chambers and Endcaps | <input type="checkbox"/> Hole Saw* |
| <input type="checkbox"/> PVC Pipe and Couplings | <input type="checkbox"/> 1 1/2-inch Drywall Screws* |
| <input type="checkbox"/> Backhoe | <input type="checkbox"/> Screw Gun* |
| <input type="checkbox"/> Laser, Transit, or Level | <input type="checkbox"/> Small Valve-Cover Box* |
| <input type="checkbox"/> Shovel and Rake | <input type="checkbox"/> 3 or 4-inch Threaded Plug for Inspection Port* |
| <input type="checkbox"/> Tape Measure | |
| <input type="checkbox"/> Utility Knife | *Optional |

These guidelines for construction machinery must be followed during installation:

- Avoid direct contact with chambers with construction equipment. Chambers require a 12-inch minimum of compacted cover to support a wheel load rating of 16,000 lbs/axle (H-10 AASHTO 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.
- Remove stones larger than 3 inches in diameter in backfill.

Excavating and Preparing the Site

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

- Stake out location of all trenches and lines. Set elevations of tank, pipe, and system and/or other system components pump tank, etc.
- Install sedimentation and erosion control measures. Temporary drainage swales/berms should be installed to protect site during rainfall.
- 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 if the system will contour.

- 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

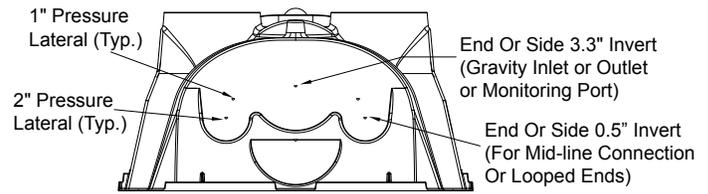
Note: Quick4 Plus 8 and Quick4 Plus All-in-One 8 Endcaps are available for use with the Quick4 Plus Standard LP and Quick4 Equalizer 36LP chambers on either end of the trench, depending upon the installer's preference and configuration requirements.

- With a hole saw, drill an opening appropriate size hole for the inlet pipe using the center point marking (see illustration) as a guide.
- Snap off the molded splash plate located on the bottom front of the endcap.

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



1 Drill endcap.



Preparing the Low Profile Endcap

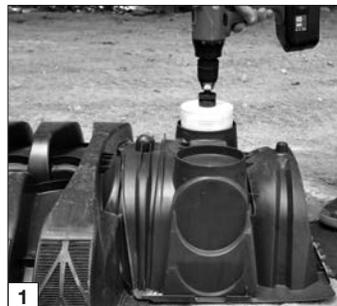
- With a hole saw, drill an opening appropriate for the pipe diameter being used (normally 3 to 4 inches) on the front of the endcap.
- Snap off the molded splash plate located on the bottom front of the endcap.
- Install splash plate into the appropriate slots below the inlet to prevent trench bottom erosion.

Installing the Quick4 Plus Periscope/ Monitoring Port

Note: Available for use with Quick4 Plus All-in-One 8 Endcap only. Invert options based on system design.

- With a 4" hole saw drill the pre-marked area on top of the Quick4 Plus All-in-One Endcap.
- Insert the Quick4 Plus Periscope into top of the Quick4 Plus All-in-One 8 Endcap. Insert the Quick4 Plus Periscope until it snaps into place.
- Insert a 4" Schedule 40 PVC pipe into the Quick4 Plus Periscope at the appropriate locations for the system design.
- Rotate Quick4 Plus Periscope to desired angle.

Note: Install Monitoring Port as described above but replace with Monitoring Port.



1 Drill Quick4 Plus Periscope



3 Connect inlet pipe

INSTALLATION INSTRUCTIONS – QUICK4 PLUS CHAMBER SYSTEMS

Installing Quick4 Plus All-in-One Endcap as a Mid-line Connection

Note: See mid-line piping options on the back of this document.

1. With a hole saw drill an opening appropriate for the pipe diameter being used on the side (3.3" invert) or on top (9.0" invert) of the Quick4 Plus All-in-One Endcap.

Note: Piping configurations are determined by the preference of the installer or designer.

2. With a hole saw, drill an opening on the end of the Quick4 Plus All-in-One Endcap to create an invert at 0.5 inches. This will allow effluent to fill both sides of the chamber line.

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.

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.

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

5. Insert the connection pipe 2.5" into the opening on endcap.

6. Repeat Steps 1 through 5 for additional trenches.



Drill endcap.



All-in-One 8 as mid-line connection.

INSTALLATION INSTRUCTIONS – PRESSURE DISTRIBUTION SYSTEMS

Before You Begin

Quick4 chambers can only be installed according to state and/or local regulations. Contact your local health department for specific requirements.

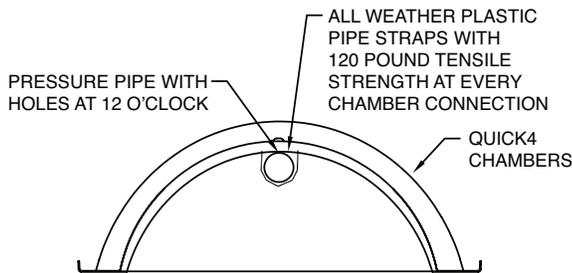
Soil and site conditions must be approved prior to installation. Conduct a thorough site evaluation to determine proper sizing and siting of the system before installation. The system installer must schedule required regulatory inspections.

These guidelines 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. Do not drive wheeled machinery over chambers.
- Avoid stones larger than 3 inches in diameter in backfill. Remove stones this size or larger that are in contact with chambers.

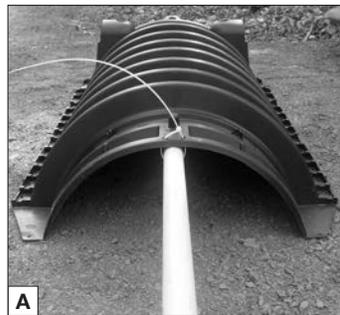
Pressure Pipe Design Options

METHOD A TOP PLACEMENT

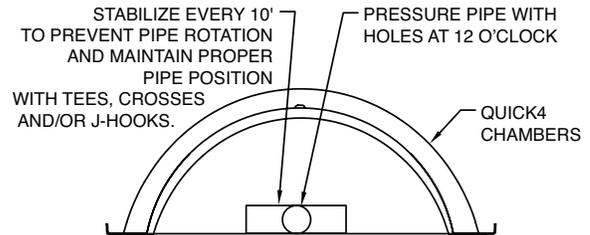


Advantages of Method A

- Pipe and orifice placed closer to the chamber dome offer improved distribution.
- Pipe positioned at the top of the chamber places it well above effluent.
- Plastic pipe hanger easily secures pipe in place.

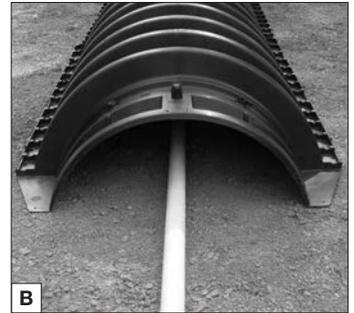


METHOD B BOTTOM PLACEMENT

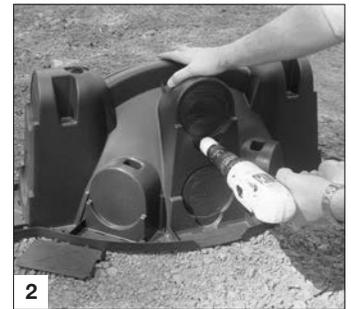
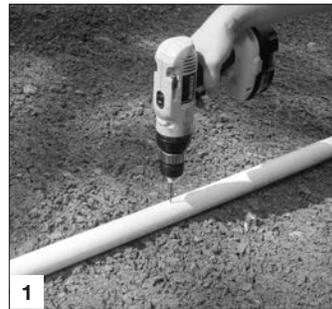


Advantages of Method B

- Pipe resting on the trench bottom allows easy installation and maintenance.
- Stabilizing tees, crosses or J-hooks keep pipe level.
- System promotes efficient pressure checks.
- Pipe resting on the trench bottom allows easier inspection if monitoring ports are installed.



Installing the Chambers and Endcaps



1. To allow pressure laterals to drain after each dose, drill a hole in the bottom of the pipe at the beginning and end of the pressure line. Place the snap-off splash plate or a paving block at the bottom of the chamber line to protect the infiltrative surface from erosion.

2. With a hole saw, drill out the appropriate diameter hole to accommodate the pressure lateral pipe.

3. Insert the pressure lateral pipe into the endcap's drilled opening and slide it into the manifold pipe. Glue the pressure lateral pipe to the manifold pipe.

4. With the pressure lateral pipe through the endcap, place the inlet end of the first chamber over the back edge of the endcap.

Note: Health departments may require a wet-run pressure check be performed prior to chamber installation when the pipe is laying on the ground. Check with your local health department for the proper procedure.



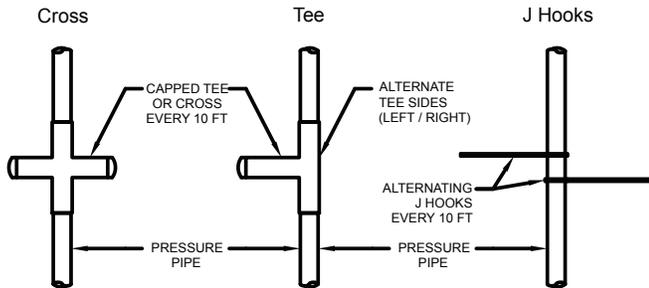
INSTALLATION INSTRUCTIONS – PRESSURE DISTRIBUTION SYSTEMS

5. (Method A) Secure the pressure lateral pipe to the top of the first chamber with a plastic pipe strap at the outlet end of the unit. Slide the strap up through a slot in the chamber top, down through the other slot, and cinch the two ends around the pipe.



5 Secure with plastic strap.

6. (Method B) With the holes pointing up, stabilize the pressure lateral pipe on the ground to prevent it from moving by using tees, crosses or J-hooks.

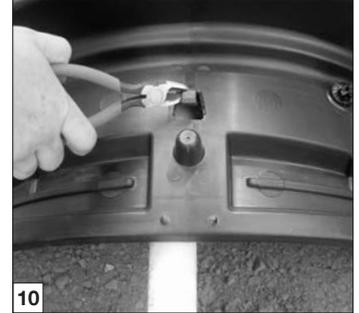


7. Lift and place the next chamber onto the previous one at a 45° angle. Line up the chamber end between the connector hook and locking pin at the top of the first chamber. Lower it to the ground to engage the interlocks.

8. (Method A) Secure the lateral pipe to the top of the next chamber once in place. Follow the same method in Step 5.

9. Continue interlocking chambers and securing the pipe until the chamber line is completed.

10. Before attaching the final endcap, remove the tongue of the connector hook on the last chamber with a pair of pliers.



10 Remove tongue of connector.

11. Insert the pressure lateral pipe through the hole in the final endcap and slide the endcap toward the last chamber. Lift the endcap over the modified connector hook and push straight down to secure it to the chamber.

Note: If cleanout extensions are required, use a hole saw to cut a hole in the endcap at the proper elevation so that the lateral pipe can extend. For clean-out access, a 90-degree elbow that extends to the ground surface can be attached to the lateral pipe.

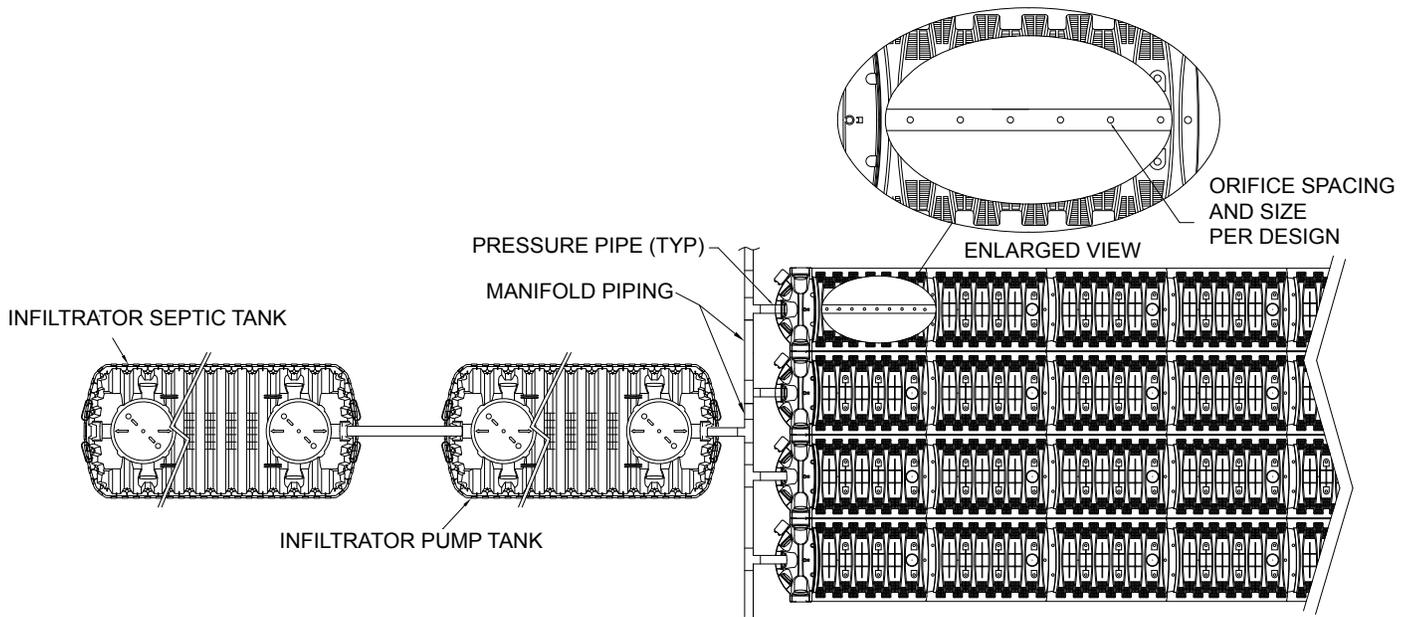


11 Insert pressure pipe.

12. If installing multiple rows of chambers, follow Steps 1-9 to lay the next row of chambers parallel to the first.

Low Pressure Dosing for Quick4 Plus Chambers

Typical (not to scale)



INSTALLATION INSTRUCTIONS – PRESSURE DISTRIBUTION SYSTEMS

Quick4 Plus Standard and Quick4 Plus Standard LP

Before You Begin

Quick4 chambers can only be installed according to state and/or local regulations. Contact your local health department for specific requirements.

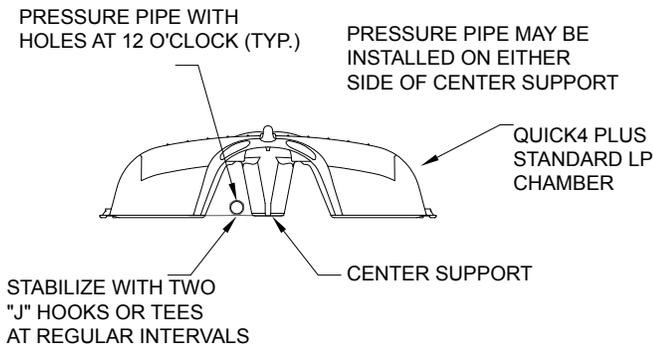
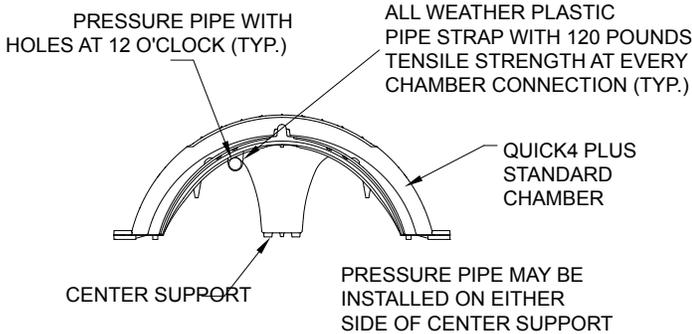
Soil and site conditions must be approved prior to installation. Conduct a thorough site evaluation to determine proper sizing and siting of the system before installation. The system installer must schedule required regulatory inspections.

These guidelines 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. Do not drive wheeled machinery over chambers.
- Avoid stones larger than 3 inches in diameter in backfill. Remove stones this size or larger that are in contact with chambers.

Pressure Pipe Design Options

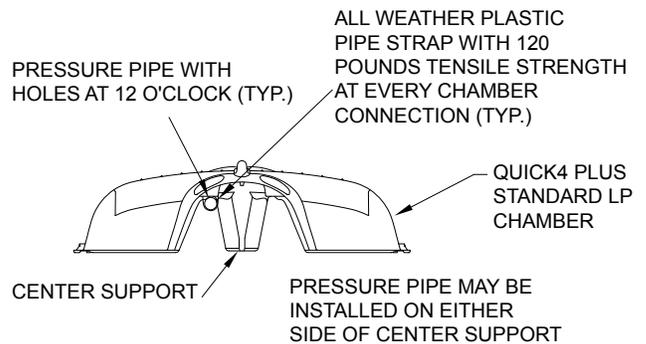
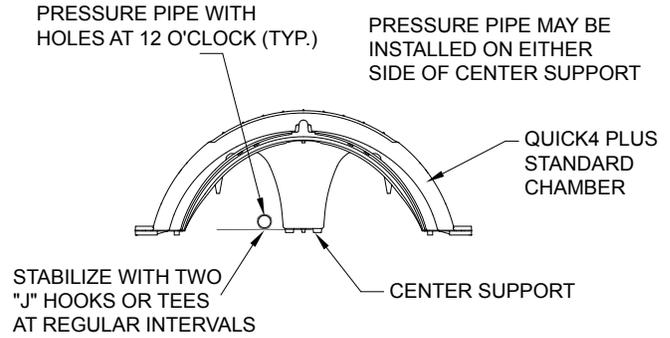
METHOD A TOP PLACEMENT



Advantages of Method A

- Pipe and orifice placed closer to the chamber dome offer improved distribution.
- Pipe positioned at the top of the chamber places it well above effluent.
- Plastic pipe hanger easily secures pipe in place.

METHOD B BOTTOM PLACEMENT



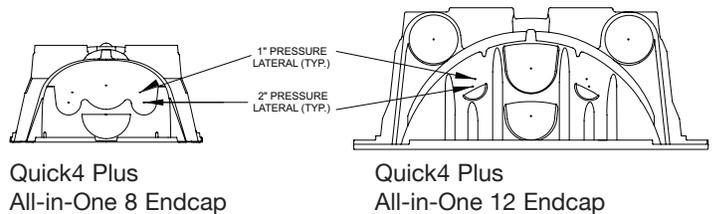
Advantages of Method B

- Pipe resting on the trench bottom allows easy installation and maintenance.
- Stabilizing “T”s or J-hooks keep pipe level.
- System promotes efficient pressure checks.
- Pipe resting on the trench bottom allows easier inspection if monitoring ports are installed.

Installing the Chambers and Endcaps

Note: Pressurized systems can be constructed with either the Quick4 Plus 8 Endcap, the Quick4 Plus All-in-One 8 Endcap, or the Quick4 Plus All-in-One 12 Endcap.

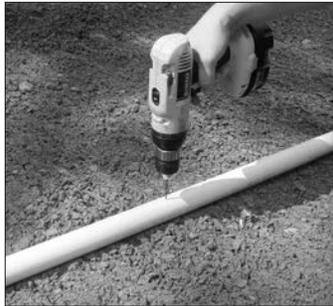
1. The Quick4 Plus All-in-One 12 Endcap is compatible with the Quick4 Plus Standard chamber. The Quick4 Plus All-in-One 8 Endcap and Quick4 Plus 8 Endcap are compatible with the Quick4 Plus LP chambers.



Note: Endcap photos shown throughout this document are for demonstrative purposes only. The endcap being used may differ and is dependent upon the chamber being used and system design.

INSTALLATION INSTRUCTIONS – PRESSURE DISTRIBUTION SYSTEMS

2. To allow pressure laterals to drain after each dose, drill a hole in the bottom of the pipe at the end of the pressure line. Place the snap-off splash plate or a paving block at the bottom of trench to protect infiltrative surface from erosion.



3. With a hole saw, drill out the appropriate diameter hole to accommodate the pressure lateral pipe.

4. Insert the pressure lateral pipe into the endcap's drilled opening and slide it into the manifold pipe. Glue the pressure lateral pipe to the manifold pipe.

5. With the pressure lateral pipe through the endcap, 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. Note: Health departments may require a wet-run pressure check to be done prior to chamber installation when the pipe is laying on the ground. Check with your local health department for the proper procedure.

6. (Method A) Secure the pressure lateral pipe to the top of the first chamber with a plastic pipe strap at the outlet end of the unit. Slide the strap up through a slot in the chamber top, down through the other slot, and cinch the two ends around the pipe.

Note: (Method B) With the holes pointing up, stabilize the pressure lateral pipe on the ground to prevent it from moving by using tees, crosses or J-hooks.

7. Lift and place the next chamber onto the previous one 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 it to the ground to engage the interlocks.

8. (Method A) Secure the lateral pipe to the top of the next chamber once in place. Follow the same method in Step 5.

9. Continue interlocking chambers and securing the pipe until the trench is completed.

10. Before attaching the final endcap, it may be necessary to remove the tongue of the connector hook on the last chamber with a pair of pliers depending on your pipe diameter.

11. Insert the pressure lateral pipe through the hole in the final endcap and slide the endcap toward the last chamber. Lift the endcap over the modified connector hook and push straight down to secure it to the chamber.

Note: If clean-out extensions are required, use a hole saw to cut a hole in the top or extend through the Endcap so the pressure lateral pipe with a sweep can extend to the ground surface. For clean-out access, use the "Installing Optional Inspection Ports" section in the general installation instructions.

12. If installing multiple rows of chambers, follow Steps 1-9 to lay the next row of chambers parallel to the first. Keep a minimum separation distance between each row of chambers as required by local code.

Installing the Chambers and Endcaps

Note: Pressurized systems can be constructed with either the Quick4 Plus 8 Endcap, the Quick4 Plus All-in-One 8 Endcap, or the Quick4 Plus All-in-One 12 Endcap.

1. The Quick4 Plus All-in-One 12 Endcap is compatible with the Quick4 Plus Standard chamber. The Quick4 Plus All-in-One 8 Endcap and Quick4 Plus 8 Endcap are compatible with the Quick4 Plus LP chambers.

Note: Endcap photos shown throughout this document are for demonstrative purposes only. The endcap being used may differ and is dependent upon the chamber being used and system design.

2. To allow pressure laterals to drain after each dose, drill a hole in the bottom of the pipe at the end of the pressure line. Place the snap-off splash plate or a paving block at the bottom of trench to protect infiltrative surface from erosion.

3. With a hole saw, drill out the appropriate diameter hole to accommodate the pressure lateral pipe.

4. Insert the pressure lateral pipe into the endcap's drilled opening and slide it into the manifold pipe. Glue the pressure lateral pipe to the manifold pipe.

5. With the pressure lateral pipe through the endcap, 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.

Note: Health departments may require a wet-run pressure check to be done prior to chamber installation when the pipe is laying on the ground. Check with your local health department for the proper procedure.

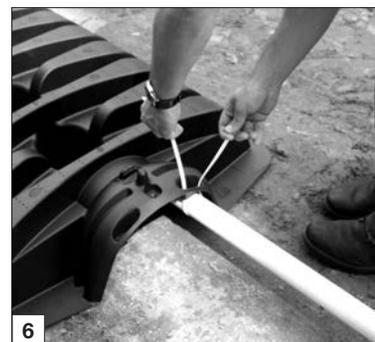
6. (Method A) Secure the pressure lateral pipe to the top of the first chamber with a plastic pipe strap at the outlet end of the unit. Slide the strap up through a slot in the chamber top, down through the other slot, and cinch the two ends around the pipe. Note: (Method B) With the holes pointing up, stabilize the pressure lateral pipe on the ground to prevent it from moving by using tees, crosses or J-hooks.



3 Drill pressure pipe hole.



5 Place endcap over inlet end.



6 Secure pressure pipe.

INSTALLATION INSTRUCTIONS – PRESSURE DISTRIBUTION SYSTEMS

7. Lift and place the next chamber onto the previous one 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 it to the ground to engage the interlocks.

8. (Method A) Secure the lateral pipe to the top of the next chamber once in place. Follow the same method in Step 5.

9. Continue interlocking chambers and securing the pipe until the trench is completed.

10. Before attaching the final endcap, it may be necessary to remove the tongue of the connector hook on the last chamber with a pair of pliers depending on your pipe diameter.



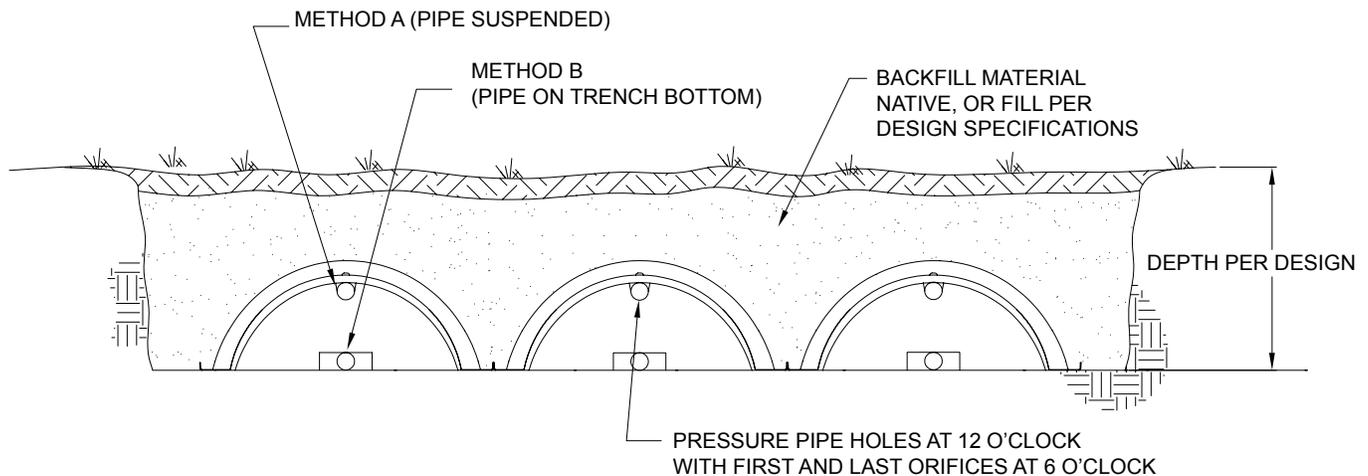
11. Insert the pressure lateral pipe through the hole in the final endcap and slide the endcap toward the last chamber. Lift the endcap over the modified connector hook and push straight down to secure it to the chamber.

Note: If clean-out extensions are required, use a hole saw to cut a hole in the top or extend through the Endcap so the pressure lateral pipe with a sweep can extend to the ground surface. For clean-out access, use the “Installing Optional Inspection Ports” section in the general installation instructions.

12. If installing multiple rows of chambers, follow Steps 1-9 to lay the next row of chambers parallel to the first. Keep a minimum separation distance between each row of chambers as required by local code.

Pressure Distribution Detail - Quick4 Standard Chamber Bed

Typical (not to scale)



WARRANTY

INFILTRATOR SYSTEMS, INC. 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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