



Onsite Wastewater Treatment System Installation Permit

Inspection Request Line: (719) 575-8699

Inspection requests must be received prior to 3:00p.m. on standard business days and 1:00p.m. the business day prior to a holiday. Construction installation requests are only accepted when made by the licensed installer or a homeowner having declared intent and been approved to install their own conventional system.

Permit Information		
Permit #: 139296	Record Id: ON0052258	Issued: April 3, 2026 Expires: April 3, 2027
System Information		
OWTS Location: 15835 Bankers Ct Peyton, CO 80831		
Owner: Audrey and Sara Taylor	Schedule: 4134001006	Permit Type: New
Use: Residential	No. Bedrooms: 3	Design Flow: 450
Distribution: Pressure Distribution	Treatment Level: TL1PD	Water Source: Well
Permit Requirements		
Designer: Innovative Process Engineering	Document Id: 251045	Document Date: 02.24.2026
Profile Pit: 39 2' 49" N, 104 32' 9" W		Profile Pit: 39 2' 48" N, 104 32' 10" W
Tank: 1000	Add. Tank: NA	Pump Tank: 500
STA: 900 (75 Q4/ 60 Arc 36)	Media: Chamber/Bed	STA Depth: Maximum 6"
Sand Filter: NA	Sand Depth: NA	O&M Required: Yes
Permit Comments		
<ul style="list-style-type: none"> - An Engineered OWTS system to be installed on site due to utilizing pressure distribution, requiring a Tier II licensed installer. - TIER II LICENSED INSTALLER MUST BE NAMED AND VERIFIED PRIOR TO FINAL APPROVAL OF SYSTEM. - MAXIMUM INSTALLATION DEPTH 6" due to encountering redoximorphic features at 42". - 50' MINIMUM SETBACK to be maintained from OWTS to high water mark of the wetland identified on the property. - Changes to approved design document must be submitted to EPCPH and design engineer prior to installation of changes - All horizontal setbacks must be maintained through system installation. In addition, system must remain completely uncovered, including the tank size, for final inspection. - The well must be installed at time of final inspection, or final approval will not be given until well installation is verified. Must maintain 100' set back to all wells on property or neighboring property. - Engineered systems require the as built drawing and certification letter from the engineer be submitted to Public Health prior to final approval and Regional Building sign off - Ensure that all work is completed prior to contacting and requesting final line for inspection, otherwise additional fees may be incurred. - Installation of an OWTS system utilizing pressure distribution or higher level treatment is subject to the requirements of Operation and Maintenance. This requires the submission of an O&M maintenance contract prior to final approval. - REQUIRED: A residual head (squirt height) test is required prior to final approval. A full OWTS startup inspection must be completed within 60 days of installation approval. See EPCPH OWTS regulations section 8.14 for more details. - REQUIRED: Control panel must be installed a minimum of 36" above grade as measured from grade to top of the panel. - During excavation, if bedrock, groundwater, changes in soil type from that previously identified, or other notable soil changes are encountered, all excavation must cease and EPCPH is to be contacted for an evaluation to determine if additional tests are required 		

- Issuance of this permit allows construction of the system as proposed. It does not imply or guarantee final system installation approval. System design or construction changes may be required based upon changed or newly discovered site conditions.

Review Specialist: Joel D'Cristina

Contact: joeld'cristina@elpasoco.com

This permit is issued in accordance with 25-10-106 Colorado Revised Statutes. Permit for construction EXPIRES upon completion/installation of the onsite wastewater treatment system (OWTS), or at the end of twelve (12) months from the date of issuance, whichever occurs first. This permit is revokable if all stated requirements are not met. The OWTS must be installed by an El Paso County licensed system contractor, or property owner.

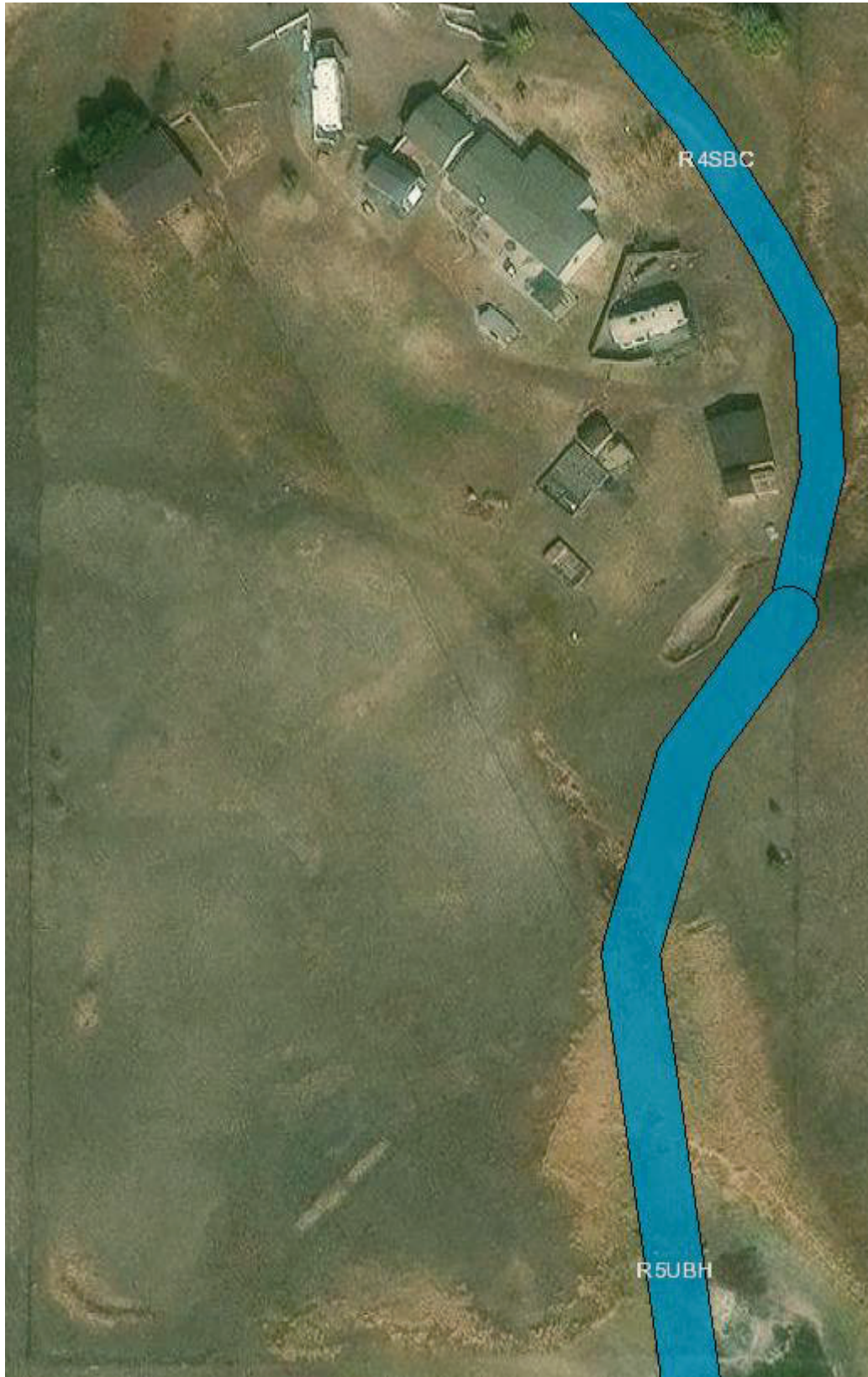
The health officer shall assume no responsibility in case of failure or inadequacy of an OWTS, beyond consulting in good faith with the property owner or representative. Access to the property shall be authorized at a reasonable time for the purpose of making such inspections as are necessary to determine compliance with the requirements of this law (permit).



Onsite Wastewater Treatment System

Application Review: Engineered

Record ID: ON0052258	Permit: New	Approval Date: 03.10.2026	Specialist: Joel D'Cristina	
System Permit Information				
OWTS Address: 15835 Bankers Ct Peyton, CO 80831				
Site Evaluation: 03.09.2026	Use: Residential		Treatment Level: TL1PD	
DSD: 02.27.2026	Floodplain: No		Outside of FP: NA	
Approved Permitted Design Document				
Soil Report				
Engineer: Innovative Process Engineering		Report Date: 12.29.2025		Report #: 251054
High Rock Content: NA	Type: 3	LTAR: 0.35	Groundwater: 42"	Bedrock: None
Design Document				
Engineer: Innovative Process Engineering		Report Date: 02.24.2026	Report #: 251045	Design Flow: 450
Multifamily: No		Total No. Bedroom: 3	Structure 1 Bedroom: 3	Structure 2 Bedroom: NA
<i>Minimum bedroom design for new construction is 300gpd.</i>				
Minimum OWTS Requirements				
Tank				
Main Tank (gal): 1000		Secondary Tank (gal): NA	Other Type: NA	Other capacity: NA
Advanced Treatment: NA			Recirculation: NA	
Pump Specifications				
Pump Tank (gal): 500		Pump Model: Zoeller 151		Dose Type: <input checked="" type="checkbox"/> Demand <input type="checkbox"/> Timed
Gal/Dose: 75		Flow(gpm): 38		TDH: 15'
Run Time(min): NA		Off Time(min): NA		Override(min): NA
Soil Treatment Area				
Distribution: Pressure Distribution				
Add. Component(s)	<input type="checkbox"/> Distribution box <input type="checkbox"/> Diverter Valve <input type="checkbox"/> Other: NA			
<input checked="" type="checkbox"/> Standard	Sq Ft (10-1): 1286	Sq Ft (10-2): 1286	Sq Ft (10-3): 900	Sq Ft (DV): NA
<input type="checkbox"/> Mound	Imported LTAR: NA	Chamber Adj.: NA	Dist. Area: NA	Basal Area: NA
	End Slope: NA	Down Slope: NA	Up slope: NA	Greenbelt: NA
<input type="checkbox"/> NDDS	Sq Ft (10-1): NA		NDDS Factor: NA	Sq Ft (NDDS Adj): NA
Media	Type: Chambers		Configuration: Bed	Installation Depth: Max 6"
	Q4/Pro36 Cham.: 75	Arc 36 Cham.: 60	Laterals: NA	Rings: NA
Laterals	Pipe Diameter: 1.5" SCH 40		Orifice Size: 1/8"	Orifice Spacing: 36" OC
Review Notes				
Maximum installation depth 6" due to encountering redoximorphic features at 42"				
50' MINIMUM setback to be maintained from OWTS to high water mark of the wetland identified on the property.				



R4SBC

R5UBH



ONSITE WASTEWATER TREATMENT SYSTEM PERMIT APPLICATION

Property Information			
Applicant name	M and S Plowing/Sheldon Bennett		
Property address	15835 Bankers Ct	City, State, Zip	Peyton Co 80831
Phone	(719) 351-9325	Email	mandsplowing@yahoo.com
Legal description			
Tax schedule #	4134001006	Lot size	
Is the property gated?	<input type="checkbox"/> Yes <input type="checkbox"/> No Code:	Water supply	<input type="checkbox"/> Well <input type="checkbox"/> Cistern <input type="checkbox"/> Municipal
Proposed use:	<input checked="" type="checkbox"/> Residential <input type="checkbox"/> Multifamily <input type="checkbox"/> Commercial		
No. of potential bedrooms: 3	Commercial wastewater flow:		
Is there unfinished space?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Unfinished (sq ft):	Who will install the system? <input type="checkbox"/> Homeowner <input checked="" type="checkbox"/> Licensed Installer	
Homeowners requesting to install their own system must complete and submit the Homeowner Installation Affidavit. All engineered-design systems must be installed by a Tier II licensed installer			
Owner Information			
Owner name	Audrey and Sara Taylor	Phone	(480) 294-5036
Mailing address	15835 Bankers Ct	City, State, Zip	Peyton, CO 80831
Owner email	angel9kitty@msn.com		
General contractor		Phone/Email	
System installer	M and S Plowing/Sheldon Bennett	Phone/Email	7193519325 mandsplowing@yahoo.com
Permit Fees as Established by the El Paso County Board of Health			
Permits expire one year from the date of issuance, unless otherwise noted.			
Invoice, along with payment instructions, will be generated at time of application submission review. Payment is required prior to being assigned for review. Review time applicable after payment is verified.			
<input checked="" type="checkbox"/> New Permit	\$1131.00 includes \$961.00 (EPCPH Charge) + \$147.00 (EPC Planning Dept. Surcharge) + \$23.00 (CDPHE Surcharge)		
Permit fee includes: 1: Application design review, 1: design revision request, 1: site evaluation, 1: inspection and 1: re-inspection. Additional design revisions, site evaluations, or inspections incur additional fees.			
<input type="checkbox"/> Modification Permit	\$914.00 includes \$891.00 (EPCPH Charge) + \$23.00 (CDPHE Surcharge)		
Permit fee includes: 1: Application design review, 1: design revision request, 1: site evaluation, and 1: inspection. Additional design revisions, site evaluations, or inspections incur additional fees.			
<input type="checkbox"/> Major Repair Permit	\$914.00 includes \$891.00 (EPCPH Charge) + \$23.00 (CDPHE Surcharge)		
Permit fee includes: 1: Application design review, 1: design revision request, 1: site evaluation, and 1: inspection. Additional design revisions, site evaluations, or inspections incur additional fees.			
<input type="checkbox"/> Minor Repair Permit	\$577.00 includes \$554.00 (EPCPH Charge) + \$23.00 (CDPHE Surcharge)		
Permit fee includes: 1: Application design review, 1: design revision request, and 1: inspection. Additional design revisions, site evaluations, or inspections incur additional fees.			

Required Additional Property Information

System type (conventional/engineered) Engineered - Pressure Distribution

Number of structure(s) to be connected 1

Written scope of work

This is a second residence on the property for family. A new septic system for the additional residence is to be installed. Water and power will be from the existing well and power will be connected to the new residence

Please provide directions to the property from a main highway

North from Highway 24 on Elbert Rd to Murphy rd
?
3.8 mi

Turn right onto Murphy Rd

- Property address or lot number must be clearly marked and visible from the road.
- Profile excavation test pit and/or soil profile holes must be clearly marked.
- Proposed and alternate soil treatment areas must be protected from compaction and disturbance.
- Locked gates require the gate code or lock combination be provided on front of application.
- Failure to comply with the above information may result in an additional charge for a return trip.

Required Application Documents

EPCPH will only accept submissions when all required components are included in submission.

Colorado Professional Engineer (P.E.) stamped soils report

Soils report: including at least 2 soil profile excavation pits, in accordance with section 8.5 A-F of OWTS regulations

Calculation/Design worksheet.

New permit applications require submission of the structure floor plan.

Minor repair applications require a clear site plan including proposed connections/components.

Clear legible 8.5'x11' design document

Design document must include, property lines, proposed and alternate locations, profile pit locations with respect to system layout, all setbacks to pertinent structures and features in table 7-1.

Submission of this application certifies that the information provided on this application is in compliance with the El Paso County Board of Health Chapter 8 Onsite Wastewater System (OWTS) Regulations. I also authorize the assigned representative of El Paso County Public Health to enter onto this property in order to obtain information necessary for the issuance of a permit.



Innovative Process Engineering

Water and Waste Solutions

PROFILE PIT REPORT

15835 Bankers Ct

Client: Clayton Homes

Location: El Paso County, CO

Date: December 29, 2025

Project: 251054

Prepared by:

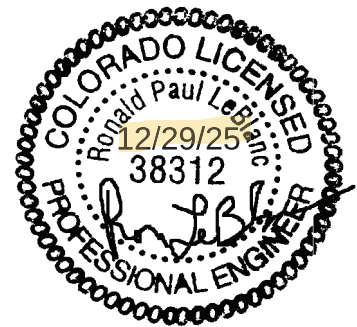
Christopher Tracy/Ron LeBlanc, MS, PE

Innovative Process Engineering, PLLC

18490 Dunes Lake Lane

Monument, CO 80132

Ron@ipepllc.com



Introduction:

This property in El Paso County, is off Bankers Ct. The property is currently occupied. A new OWTS system will be installed for a 2 bedroom residence. The legal description is **LOT 7 TIBORIA ESTATES FIL NO 1** .

This Profile Pit Examination was performed to evaluate soil conditions for a new Soil Treatment Area (STA) on the property. **Two profile pits were dug to a depth of 3.5 feet and 5 feet.** A **visual/tactile examination** was performed, as well as an analysis to determine the percent rock (larger than 2mm) in each sample.

Site:

The property consists of 5.07 acres south of Bankers Ct. The property is mostly flat and open with some drainage areas. The area investigated for the new **STA slopes 2%** from northwest to southeast. The Profile Pit areas were undisturbed. The property's water source is a well.

Figure 1 Google earth image with Profile pits and home location.



Figure 2 County assessors' property outline.



	Profile Pit #1	Profile Pit #2
Groundwater	Not Encountered	Not Encountered
Bedrock	Not Encountered	Not Encountered
Redoximorphic Features	3' 6"	5' 6"
Well	>100'	>100'
Gulches	>25'	>25'
Water Body	>150'	>150'
Grade	<2%	<2%
GPS	39° 2'48.70"N, 104°32'9.46"W	39° 2'48.16"N, 104°32'9.67"W

Benchmark Elevations:

Residence 7042ft
 Profile Pit #1 7041ft
 Profile Pit #2 7040ft

SOIL PROFILE PIT LOG

BY: CT/RL
 Client Clayton Homes
 Address 15835 Bankers Ct
 Date Sampled 12/18/2025.
 Project: 251045

PIT 1

DEPTH	USDA Texture	% Rock	USDA Struct.	TYPE
0" - 6"	-	-	-	-
7" - 2'	Sandy Clay Loam	<5	GR-2	3
2' 1" - 3' 6"	Sandy Clay Loam	<5	BK-3	3
3' 7" - 6'	-	-	-	-
6' 1" - 8'	-	-	-	-

PIT 2

DEPTH	USDA Texture	% Rock	USDA Struct.	TYPE
0" - 6"	-	-	-	-
7" - 2'	Sandy Loam	<10	GR-2	2
2' 1" - 4'	Loamy Sand	<15	SG-0	2
4' 1" - 5' 6"	Loamy Sand	<15	SG-0	2
5' 7" - 8'	-	-	-	-

Results:

Based on a visual and tactile examination, the soils in PP-1 were acceptable down to 3 feet 6 inches. Profile Pit-2 was acceptable to 5 feet 6 inches.

LTAR **0.35**

Engineered System required due to Limiting Layer at 3' 6"

Site Protection:

The Soil Treatment Area should not be disturbed prior to system installation. Protect the area from construction activity by fencing or staking.

Pre-Construction Inspection:

The County health department may choose to do an inspection of the property prior to issuance of a permit to construct a new OWTS.

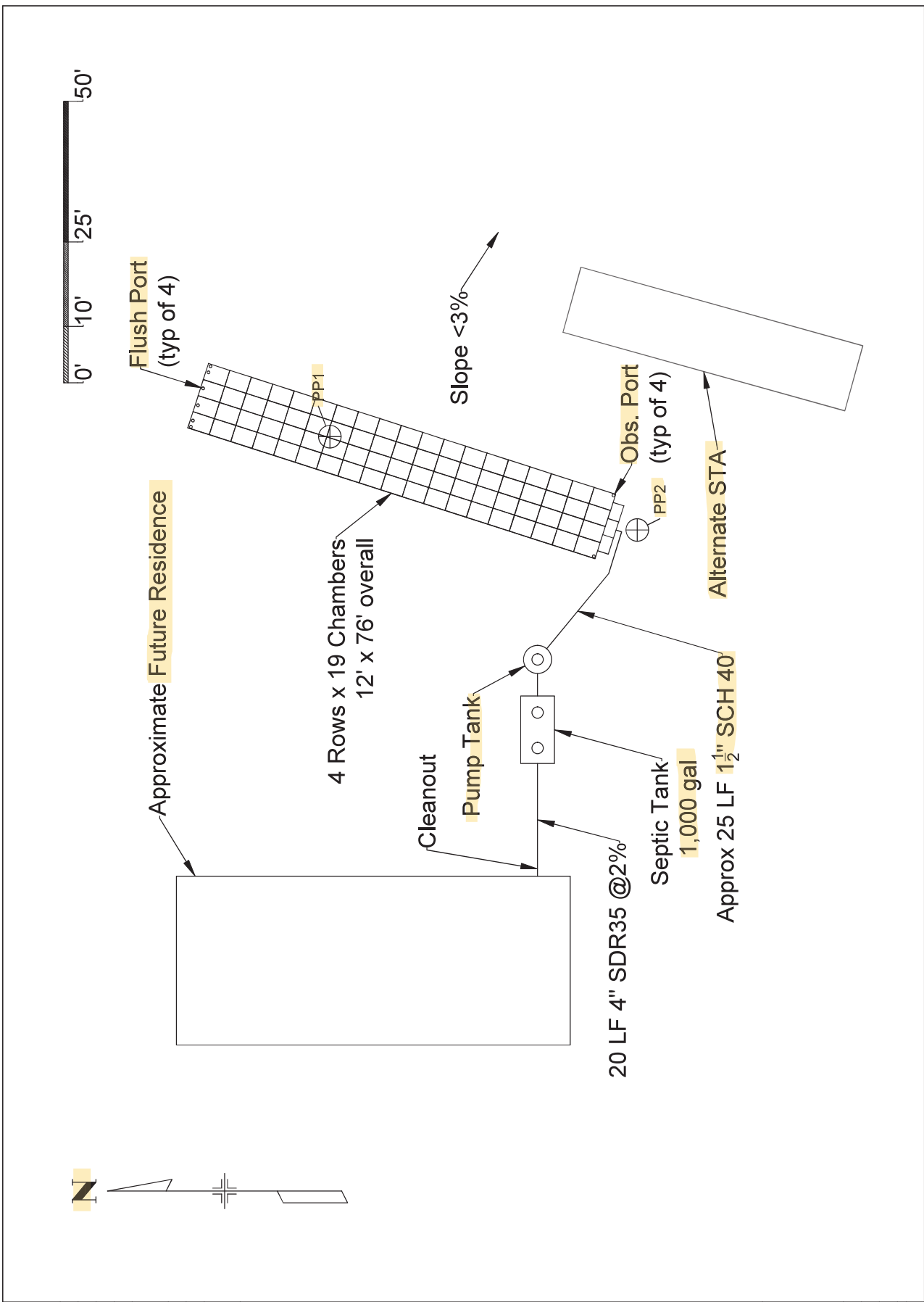
Limitations:

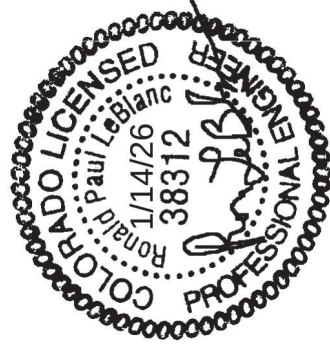
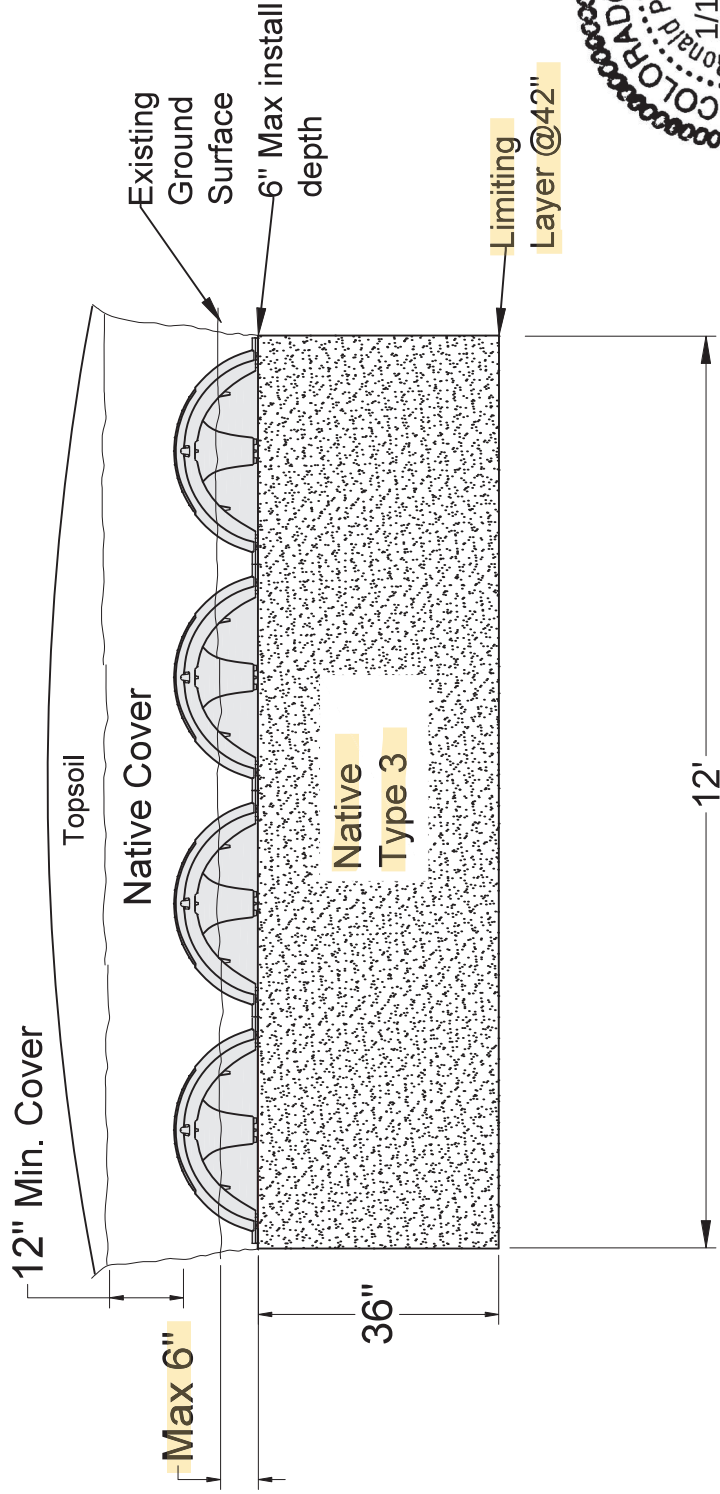
This report has been prepared exclusively for Owners and Representatives of 15835 Bankers Ct. Use by any other persons or for any other site is not permitted without approval from this office. Additionally, this report assumes that the actual soil conditions do not deviate in any significant way from those described in this report. In the event that any variations or undesirable conditions are detected, please notify this office immediately.

Innovative Process Engineering, PLLC makes no warranty as to the findings or recommendations provided in this report except that they were prepared in accordance with the local and Colorado State Regulations.

Setbacks are determined by the County Planning & Zoning Department, as well as OWTS Regulations. Innovative Process Engineering, PLLC attempted to locate any items in the vicinity of the exploratory profile examination holes that may affect minimum setbacks, however, there may be additional wells, gulches, streams, etc. not observed during the site visit. It is the owner's responsibility to make certain that all items that affect the minimum setbacks are properly maintained and represented to all parties, to whom it may concern.

SITE DETAIL





Innovative Process Engineering, PLLC
 Monument, CO 80132

15835 Bankers Ct
 El Paso County, CO
 January 5, 2026

Project 251045

BED SECTION

**Typical Double Sweep Cleanout
with Screw Cap**



**Typical Flush Port
with Ball Valve**
(Ball Valve not Required in all Counties)



**Innovative Process
Engineering, PLLC**
Monument, CO 80132

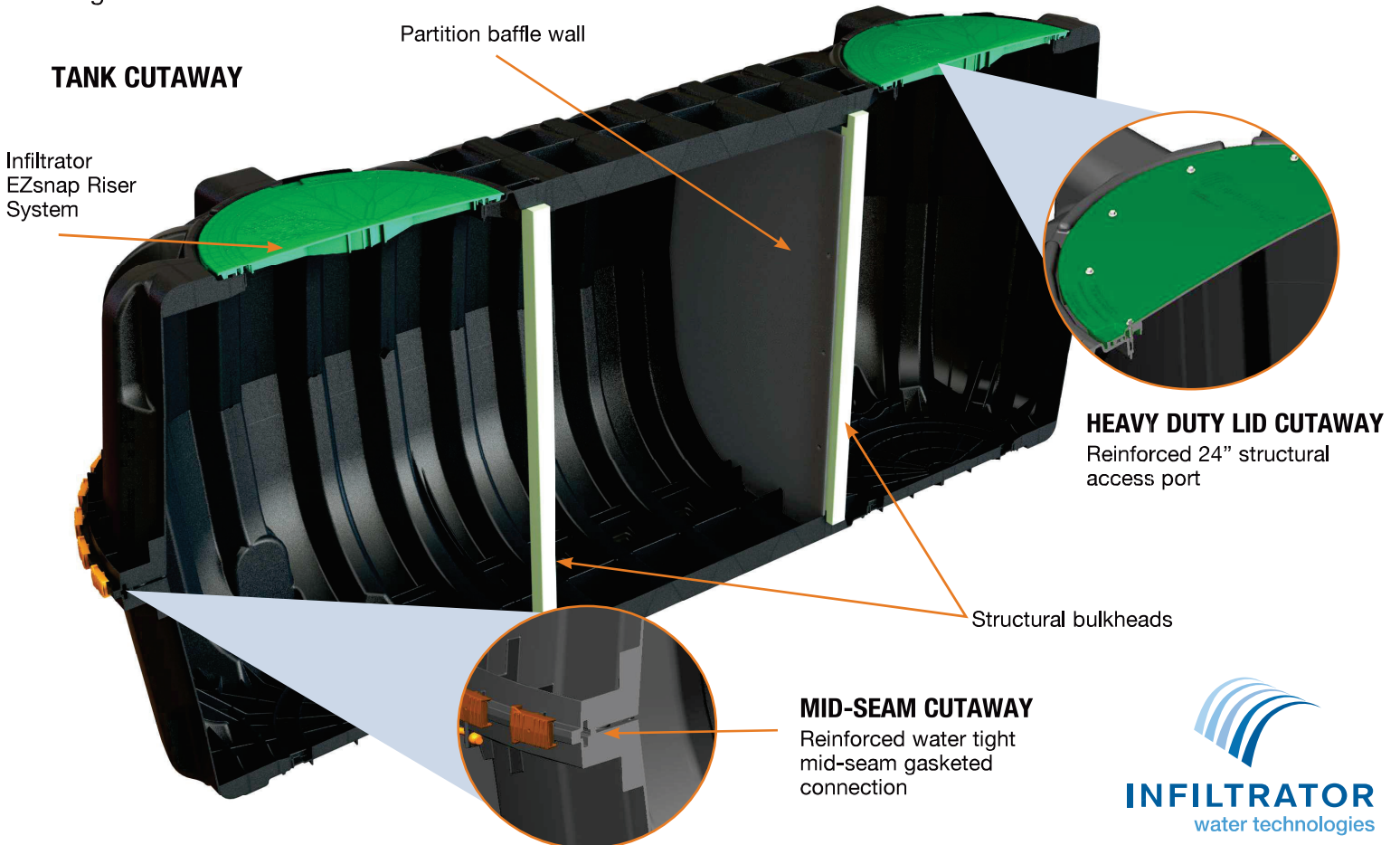
Standard Details



Features & Benefits

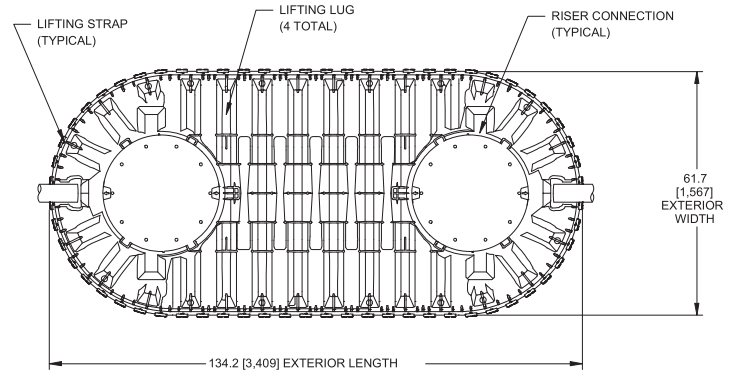
- Strong compression molded polypropylene construction
- Lightweight plastic construction and inboard lifting lugs allow for easy delivery and handling
- Integral heavy-duty green lids that interconnect with EZsnap risers and pipe riser solutions
- Structurally reinforced access ports eliminate distortion during installation and pump-outs
- Reinforced structural ribbing and fiberglass bulkheads offer additional strength
- Can be installed with 6" to 48" (152 to 1,219 mm) of cover
- Can be pumped dry during pump-outs
- Suitable for use as a septic tank, pump tank, or rainwater (non-potable) tank
- No special water filling requirements are necessary
- The tank may be backfilled with suitable native soil. See installation instructions for guidance.

The Infiltrator CM-1060 is a lightweight, strong and durable septic tank. This watertight tank design is offered with Infiltrator's line of custom-fit risers and heavy-duty lids. Infiltrator compression molded tanks provide a revolutionary improvement in thermoplastic septic tank design, offering exceptional long-term strength and watertightness.

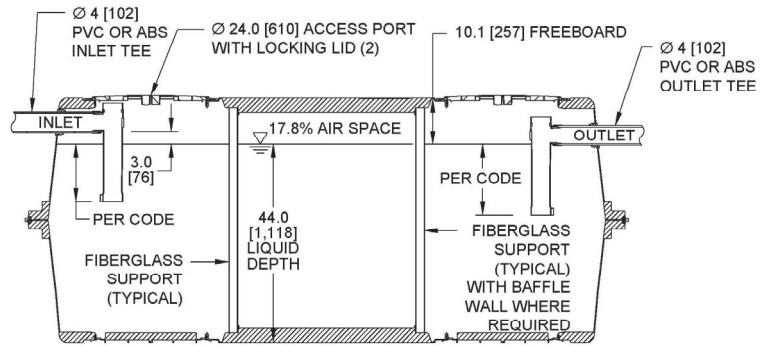


CM-1060 General Specifications and Illustrations

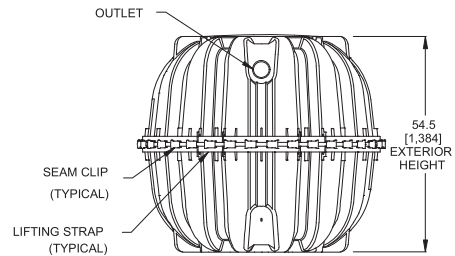
The CM-1060 is a compression molded two-piece mid-seam thermoplastic tank. The CM-1060 compression molded design allows for a mid-seam joint that has precise dimensions for accepting an engineered EPDM gasket. Infiltrator's gasket design utilizes technology from the water industry to deliver proven means of maintaining a watertight seal. The two-piece design is permanently fastened using a system of molded-in alignment dowels and locking seam clips. The CM-1060 is assembled and sold through a network of certified Infiltrator distributors.



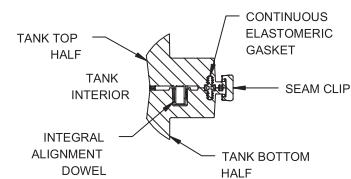
TOP VIEW



SIDE VIEW



END VIEW



MID-HEIGHT SEAM SECTION

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

Please visit www.infiltratorwater.com or scan QR code for the latest information.



CM-1060	
Working Capacity	1,111 gal (4,207 L)
Total Capacity	1,309 gal (4,956 L)
Airspace	17.8%
Length	134.2" (3,409 mm)
Width	61.7" (1,567 mm)
Length-to-Width Ratio	2.3 to 1
Height	54.5" (1,384 mm)
Liquid Level	44" (1,118 mm)
Invert Drop	3" (76 mm)
Fiberglass Supports	2
Compartments	1 or 2
Maximum Burial Depth	48" (1,219 mm)
Minimum Burial Depth	6" (152 mm)
Maximum Pipe Diameter	4" (102 mm)
Weight	331 lbs (151 kg)



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

U.S. Patents: 8322948; 8337119; 8297880; 7914230; 7008138. Other patents pending. Infiltrator, Quick4 and EZflow are registered trademarks of Infiltrator Water Technologies. Infiltrator Water Technologies is a wholly-owned subsidiary of Advanced Drainage Systems, Inc. (ADS).

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


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1200 Flex Ct Lake Zurich, IL 60047



Effluent Filters, Residential and Commercial

EF-4 Residential Series Effluent Filter

800 GPD
86 ft. of 1/16" Filtration


The EF-4 series filters remove solids down to 1/16" and greatly extend the life of the septic system. Shown at the left is the **EF-4 Combo** which includes the 4" standard length (14" rise) T-Baffle™, the **EF-4** Filter, and the **B4035** bushing for reducing the outlet from Sch. 40 to SDR35 pipe. The **SD-4** Solids Deflector is optional. Also available is the new **EF-4-18** which is the same except has an 18" rise (see below).

The Filter and the T-Baffle are NSF Standard 46 rated. The filter is rated at 800 GPD. The EF-4 Series is protected by U.S. Pat. Nos. 6,319,403; D,431,629; and other Patents Pending.

Tuf-Tite, Inc.

Construction Products

1200 Flex Court
 Lake Zurich, IL 60047
 800-382-7009
 847-550-1011
 847-550-8004 (fax)

ABOUT US

SUSTAINABILITY

		
EF-4 Filter Only 18 per carton	EF-4-18 Combo Same as EF-4 but with 18" rise 20 per carton	SD-4 Solids Deflector Increases time between filter cleanings. 18/112 per carton

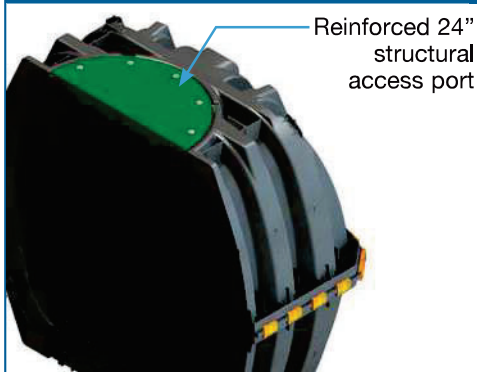


The Infiltrator IM-540 is a lightweight strong and durable septic/pump tank. This watertight tank design is offered with Infiltrator's line of custom-fit risers and heavy-duty lids. Infiltrator injection molded tanks provide a revolutionary improvement in plastic tank design, offering long-term exceptional strength and watertightness.

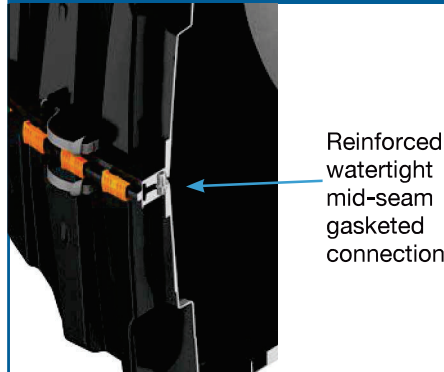
Features & Benefits

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

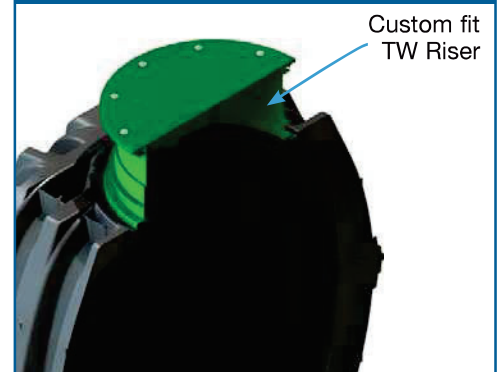
TANK CUTAWAY



MID-SEAM CUTAWAY



RISER CUTAWAY



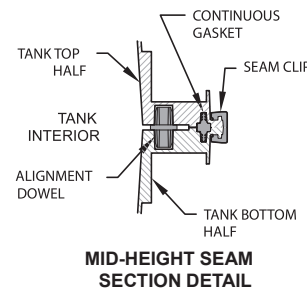
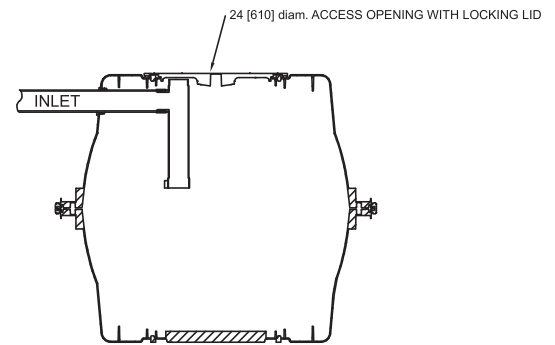
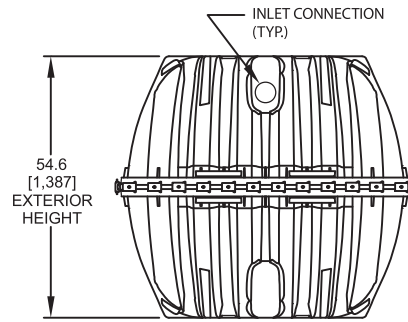
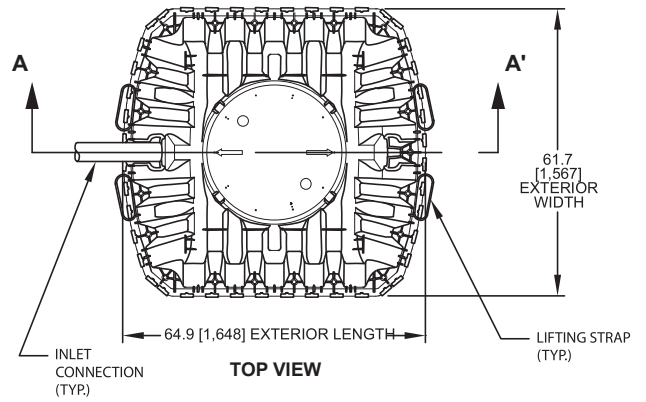
IM-540 General Specifications and Illustrations

The IM-540 is an injection molded two piece mid-seam plastic tank. The IM-540 injection molded plastic design allows for a mid-seam joint that has precise dimensions for accepting an engineered EPDM gasket. Infiltrator's gasket design utilizes technology from the water industry to deliver proven means of maintaining a watertight seal. The two-piece design is permanently fastened using a series of non-corrosive plastic alignment dowels and locking seam clips. The IM-540 is assembled and sold through a network of certified Infiltrator distributors.

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

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

IM-540	
Total Capacity	552 gal (2090 L)
Length	64.9" (1648 mm)
Width	61.7" (1567 mm)
Height	54.6" (1387 mm)
Maximum Burial Depth	48" (1219 mm)
Minimum Burial Depth	6" (152 mm)
Maximum Pipe Diameter	4" (100 mm)
Weight	169 lbs (77 kg)



4 Business Park Road
P.O. Box 768
Old Saybrook, CT 06475
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1-800-221-4436
www.infiltratorwater.com

U.S. Patents: 4,759,661; 5,017,041; 5,156,488; 5,336,017; 5,401,116; 5,401,459; 5,511,903; 5,716,163; 5,588,778; 5,839,844 Canadian Patents: 1,329,959; 2,004,564 Other patents pending. Infiltrator, Equalizer, Quick4, and SideWinder are registered trademarks of Infiltrator Water Technologies. Infiltrator is a registered trademark in France. Infiltrator Water Technologies is a registered trademark in Mexico. Contour, MicroLeaching, PolyTuff, ChamberSpacer, MultiPort, PosiLock, QuickCut, QuickPlay, SnapLock and StraightLock are trademarks of Infiltrator Water Technologies. PolyLok is a trademark of PolyLok, Inc. TUF-TITE is a registered trademark of TUF-TITE, INC. Ultra-Rib is a trademark of IPEX Inc.

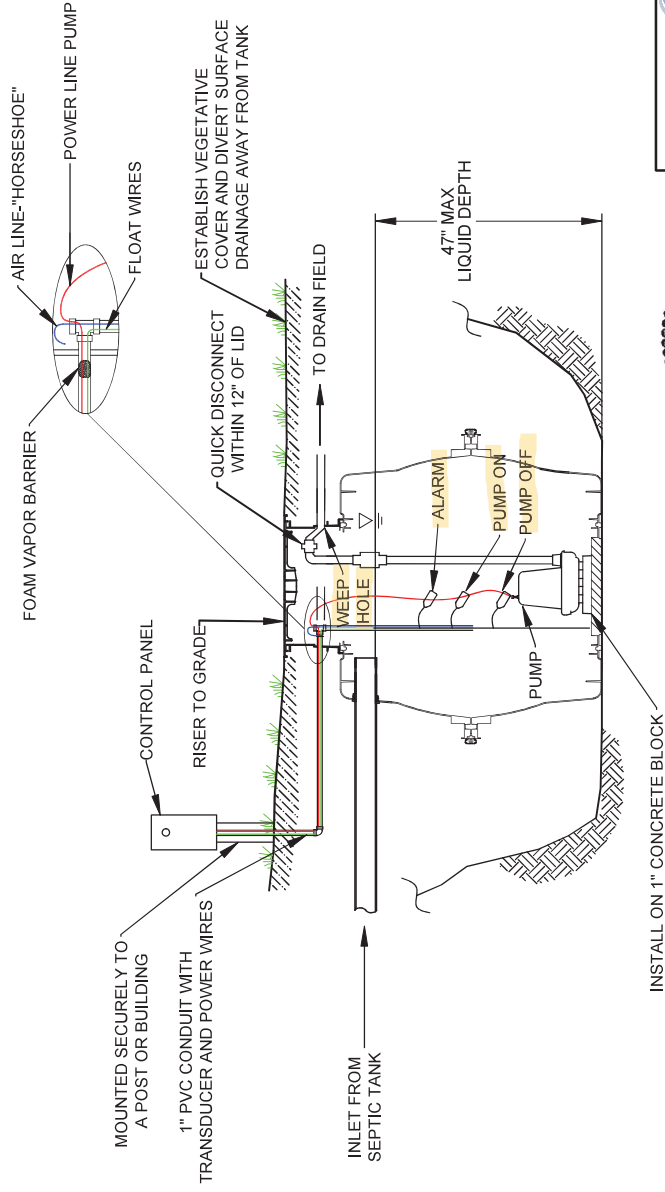
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IM11 1116

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

INFILTRATOR SYSTEMS INC.
 IM-540 PUMP TANK WITH
 DEMAND DOSE
 TYPICAL TANK DETAIL

TO ILLUSTRATE FLOAT ARRANGEMENT AND WEEP HOLE



Modified By Ron LeBlanc, PE

INFILTRATOR SYSTEMS INC. 4 Business Park Rd. Old Saybrook, CT 06475 (800) 221-4436	
IM-540 PUMP TANK WITH AQUAWORX SECTION VIEW	
Drawn by: DGC Scale: NOT TO SCALE	Date: 04/04/2014 Checked by: DFH Sheet: 1 of 1

- NOTES:
1. Float settings are in each individual design for a specified dosage volume.
 2. Transducers may be used in place of floats.
 3. Orenco Biotube may be used where it will fit.

Pump Selection for a Pressurized System - Single Family Residence Project

251045-15835 Bankers Ct

Parameters

Discharge Assembly Size	1.50	inches
Transport Length	25	feet
Transport Pipe Class	40	
Transport Line Size	1.50	inches
Distributing Valve Model	None	
Max Elevation Lift	1	feet
Manifold Length	9	feet
Manifold Pipe Class	40	
Manifold Pipe Size	1.50	inches
Number of Laterals per Cell	4	
Lateral Length	76	feet
Lateral Pipe Class	40	
Lateral Pipe Size	1.50	inches
Orifice Size	1/8	inches
Orifice Spacing	4	feet
Residual Head	5	feet
Flow Meter	None	inches
'Add-on' Friction Losses	0	feet

Calculations

Minimum Flow Rate per Orifice	0.43	gpm
Number of Orifices per Zone	80	
Total Flow Rate per Zone	34.7	gpm
Number of Laterals per Zone	4	
% Flow Differential 1st/Last Orifice	1.4	%
Transport Velocity	5.5	fps

Frictional Head Losses

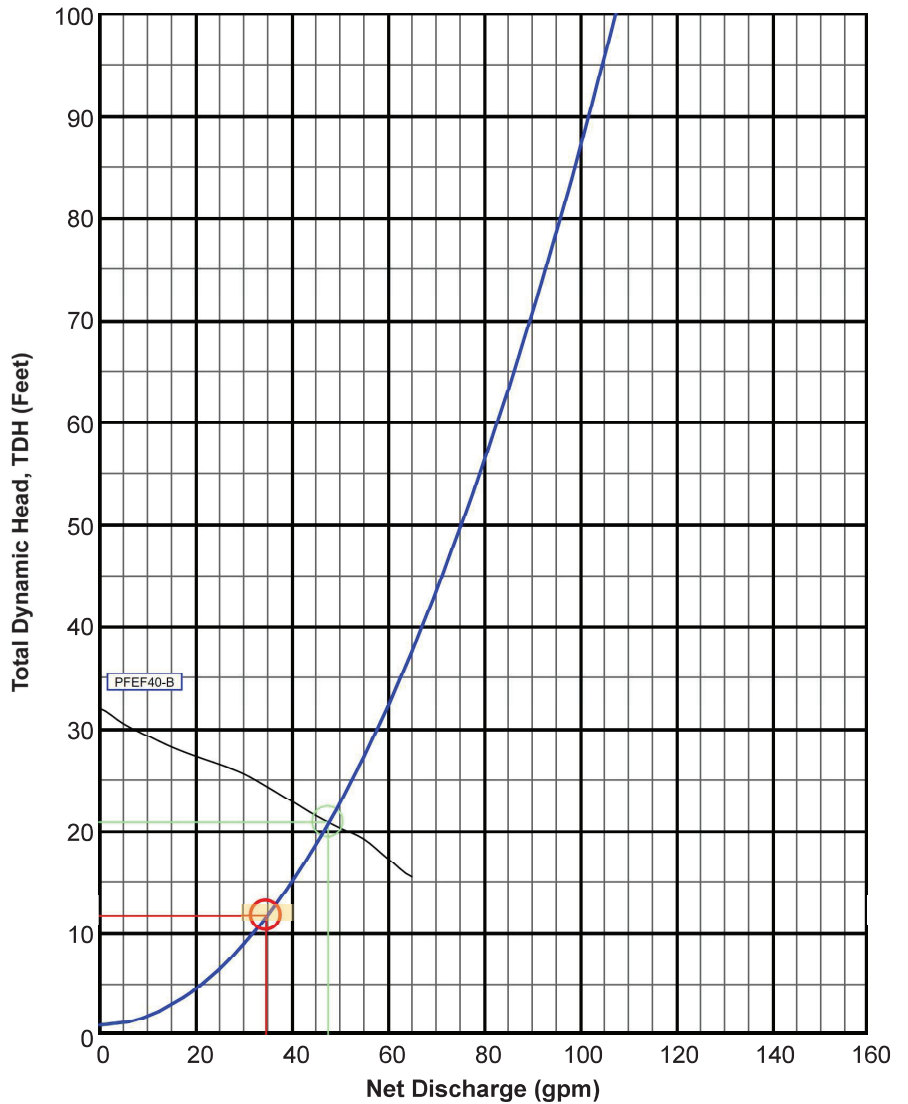
Loss through Discharge	3.6	feet
Loss in Transport	1.7	feet
Loss through Valve	0.0	feet
Loss in Manifold	0.2	feet
Loss in Laterals	0.2	feet
Loss through Flowmeter	0.0	feet
'Add-on' Friction Losses	0.0	feet

Pipe Volumes

Vol of Transport Line	2.6	gals
Vol of Manifold	0.9	gals
Vol of Laterals per Zone	32.1	gals
Total Volume	35.7	gals

Minimum Pump Requirements

Design Flow Rate	34.7	gpm
Total Dynamic Head	11.7	feet



PumpData

PFEF40 Effluent Pump
4/10HP, 115/230V 1Ø

Legend

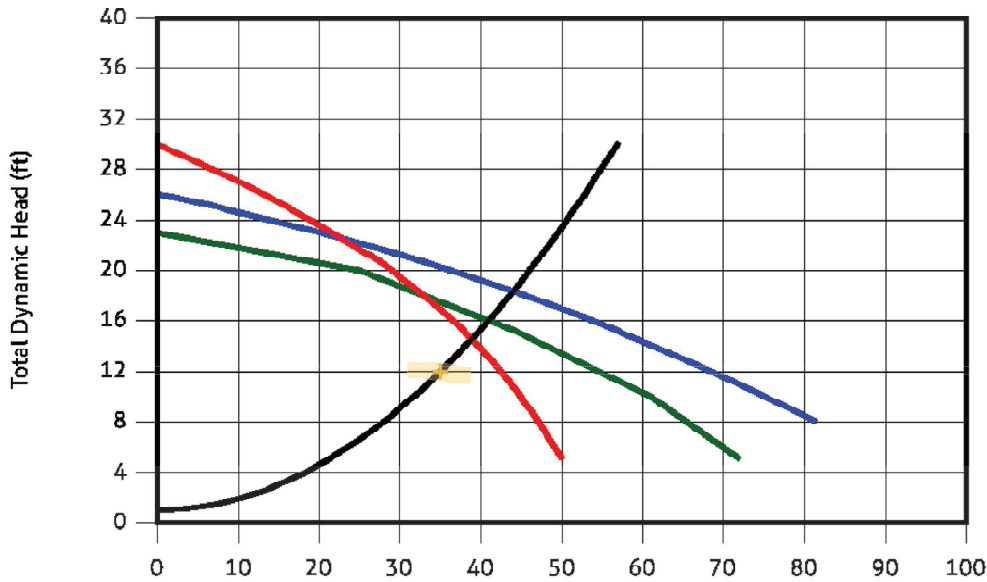
System Curve:	—
Pump Curve:	—
Pump Optimal Range:	—
Operating Point:	○
Design Point:	○



Known Flow and TDH

Effluent

Sizing ID: SS0-QRR-SAF



System Curve

GPM	TDH (ft)
0.00	1.00
9.00	1.73
18.00	3.91
27.00	7.55
36.00	12.64
45.00	19.18
54.00	27.18

Fittings

None Selected

Flow (GPM)*: 35.00

TDH (ft)*: 12.00

*Per user data

Curve Models	Eq. Flow	Eq. Head
151	38.87	14.57
98	40.90	16.02
137	43.97	18.36

Flow (GPM)

Pump Specs

Electrical	115 volt, 1 phase, 60 Hertz
Physical	
Discharge Size	1.50" NPT
Solids Handling (in.)	0.5
Static Head (ft)	1.0000
TDH (ft)	12



By registering on this site, user acknowledges that Zoeller Company is not responsible for inaccurate pump sizing or misapplication due to incorrect information entered by the user. For sizing assistance, please contact Zoeller's Product Support Department at [1-800-928-7867](tel:1-800-928-7867) (or [+1-502-778-2731](tel:+1-502-778-2731)), extension 6, or email zcotechnical@zoeller.com

137, 139, 140, 145

Flow-Mate

In high head dewatering or effluent applications where pumping performance is critical, this robust family of pumps is known for reliability, durability and performance. These pumps are especially suited for harsh environments. Zoeller's cool run design and corrosion-resistant, powder coated epoxy finish add up to a long-lasting, trouble-free product.



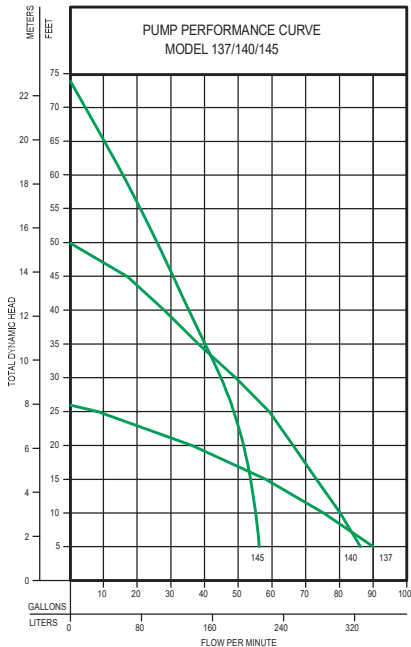
APPLICATIONS:

- STEP or onsite applications
- Water transfer
- Light commercial dewatering

SPECIFICATIONS:

- 1-1/2" NPT discharge
- 1/2 HP through 1 HP
- Available in automatic or nonautomatic
- Model 137, 139, 140: 1/2" (12 mm) spherical solids capacity with vortex impeller
- Model 145: 3/4" (19 mm) spherical solids capacity with vortex impeller
- Bronze construction available (139 series)
- High head version available (145 series)
- Double shaft seal versions available for added protection on models 140/145.

For more information, see Technical Data Sheets FM2782, FM2783.



152656

151, 152, 153

Dose-Mate

This is our fastest growing line of effluent pumps. The 150 series is truly a workhorse designed for reliability under extreme conditions in an effluent environment. 150 series pump curves cover a wide range of applications. They are well suited to applications with low pressure pipe (LPP) and enhanced flow STEP systems. Zoeller's cool run design and corrosion-resistant, powder coated epoxy finish, in addition to the hermetically sealed, oil-filled motor and non-clogging vortex impeller add up to a long-lasting, trouble-free product.



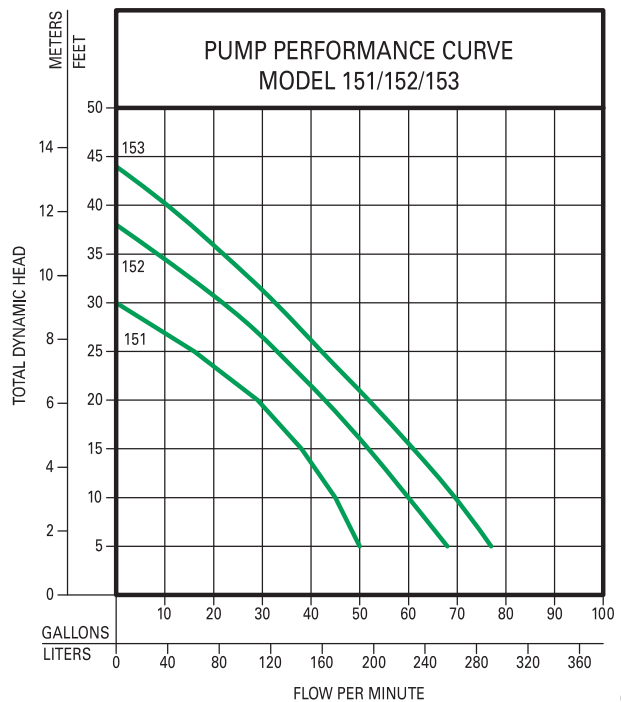
APPLICATIONS:

- STEP or onsite applications
- Light commercial dewatering

SPECIFICATIONS:

- 1-1/2" NPT discharge
- 3/10 HP through 1/2 HP
- Available in nonautomatic or with a variable level piggyback mechanical switch
- 1/2" (12 mm) spherical solids capacity with vortex thermoplastic impeller

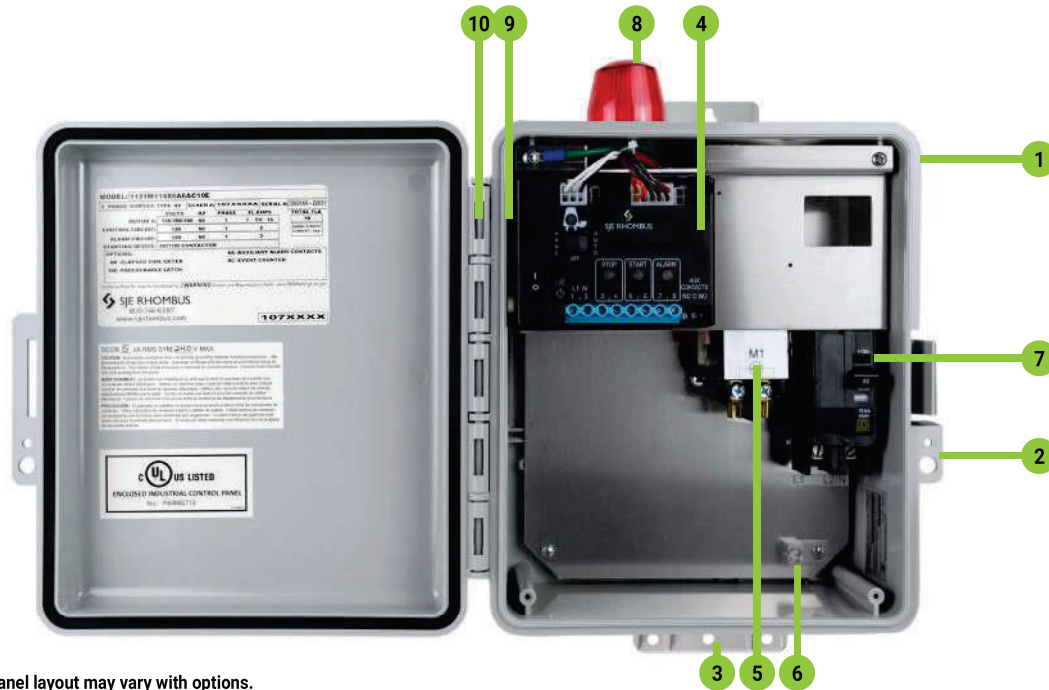
For more information, see Technical Data Sheet FM2784.



014508

MODEL 112 CONTROL PANEL

Single Phase, Simplex Motor Contactor Control



Panel layout may vary with options.

This latest generation Model 112 control panel controls one 120, 208, or 240 VAC single phase pump in water and sewage installations. This panel includes a new innovative simplex controller for pump control and alarm; including float status LEDs, control/alarm power on/off switch with LED indicator, pump run LED, HOA switch, auxiliary contacts and more!

The Model 112 control panel features built in pump failure and float out of sequence detection. In addition, there are three user selectable field programmable options: alarm steady state or flashing; alarm auto reset or manual reset; and optional seal failure alarm beacon plus horn activation.

Simplex controller features include:

- Touch safe circuit board housing and low voltage 24 VDC float circuits
- Alarm (field programmable to flash)
- Alarm automatic reset (field programmable to manual alarm reset)
- Float out-of-sequence detection
- Pump contactor failure detection
- Controller protected by three auto resettable fuses (control, alarm, and pump 1)

Note: SJE Rhombus recommends separate pump and control/alarm power sources.

COMPONENTS

1. Enclosure measures 10 x 8 x 4 inches (25 x 20 x 10 cm) NEMA 4X (ultraviolet stabilized thermoplastic) for indoor or outdoor use
2. Integral padlockable latch for added safety
3. Integral mounting feet for indoor or outdoor use
4. Simplex controller provides pump and alarm control; elevated in the enclosure for easy access and field wiring
 - a. HOA switch for manual control of the pump
 - b. Pump run green LED indicator
 - c. Control power ON/OFF switch
 - d. Power ON green LED indicator
 - e. Float push-to-test buttons
 - f. Float status red LED indicators
 - g. Auxiliary alarm contacts Form C
 - h. Option: adjustable seal failure circuit and red LED indicator (must select option 5E when ordering)
5. Magnetic motor contactor
6. Ground lug
7. Circuit breaker
8. Red LED beacon provides 360° visual check of alarm condition - Note: NEMA 1 style utilizes a door mounted indicator in lieu of a beacon
9. Alarm horn provide audible warning of alarm condition (83 to 85 decibel rating) - Note: NEMA 1 style utilizes an internally mounted buzzer in lieu of horn (**Not shown**)
10. Exterior alarm test/normal/silence switch allows horn to be silenced in an alarm condition; alarm automatically resets once alarm condition has been cleared (**Not shown**)

Notes: Options, voltage, and amp range selected may change enclosure size and component layout.

Other options available.

Schematic/Wiring Diagram and Pump Specification Label are located inside the panel.



Model 112 - Single phase, simplex motor contactor control.

Part #	Pre-configured Panels for Easy Ordering
1071824	1121W114X6A10E
1071853	1121W124X6A10E
1071823	1121W114H6A10E17G
1071822	1121W124H6A10E17G
1071841	1121W114H6A8AC10E17G
1075046	1121W124H6A8AC10E17G

112 CONTROL PANEL	1 ALARM PACKAGE	W ENCLOSURE RATING	1 STARTING DEVICE	1 PUMP FULL LOAD AMPS	4 PUMP DISCONNECTS	H or E LEVEL CONTROL APPLICATION	6A10E OPTIONS (LISTED BELOW)
-----------------------------	---------------------------	------------------------------	-----------------------------	---------------------------------	------------------------------	--	--

CONTROL PANEL	✓	112	Single Phase Simplex
ALARM PACKAGE	✓	1	Alarm Package (includes test/normal/silence switch, fuse, red light, horn & float)
ENCLOSURE RATING	✓	W	Weatherproof, NEMA 4X (engineered thermoplastic)
STARTING DEVICE	✓	1	Magnetic Motor Contactor 120/208/240V
PUMP FULL LOAD AMPS		0	0 - 7 FLA
		1	7 - 15 FLA
		2	15 - 20 FLA
		3	20 - 30 FLA (Enclosure Upsize Required)
PUMP DISCONNECT	✓	4	Circuit Breaker 120/208/240V
LEVEL CONTROL APPLICATION		H	Floats - Pump Down (select Option 17G below - 3 floats by default when selected)
		L	Floats - Pump Up (select Option 17G below - 3 floats by default when selected)
		E	EZconnex® Float Switch System
		X	No Floats

PRICING WORKSHEET	Model 112 Base Price _____ (includes Alarm Package, Enclosure Rating, Starting Device and Pump Disconnect)
	Pump Full Load Amps _____
	Total Options _____
	TOTAL LIST PRICE _____

OPTIONS	DESCRIPTION
5A	Thermal Cutout/Heat Sensor Auto Reset (for pumps with thermal switch leads)
5E	Seal Failure Circuit & Red Indicator (2 wire) (Normally Open)
✓ 6A	Auxiliary Alarm Contact, Form C (included as standard)
X 8A	Elapsed Time Meter
X 8C	Event (Cycle) Counter
9_A	Pump Overload - Specify Amperage after Number 9 Followed by Letter "A" Example: 912A = 12 amp pump
✓ 10E	Lockable Latch - NEMA 4X (included as standard)
10F	Lightning Arrestor
10K	Anti-condensation Heater
10P	Panel Mounting Post - factory installed (max. enclosure 14x12x6)
14B	Main Disconnect (rotary style, mounted through door, non-fused, padlockable in the OFF position, door interlock in the ON position (must select Circuit Breaker)
	20 - 30 FLA

OPTIONS	DESCRIPTION
15A	Control / Alarm Circuit Breaker
16C	30' Cord in Lieu of 20' Cord (per Float)
16D	40' Cord in Lieu of 20' Cord (per Float)
17G	SJE MilliAmpMaster™ / Pipe Clamp (3 Floats) - Mechanical
17H	SJE MilliAmpMaster™ / Externally Weighted (3 Floats) - Mechanical
19T	TOA (Test/Off/Automatic) Switch and Pump Run Light through Door Mounted
19U	HOA (Hand/Off/Automatic) Switch and Pump Run Light through Door Mounted
19X	Door Mounted Pump Run Indicator
33D	EZconnex® 3-Port, 25', with 10' Floats (3) / Pipe Clamp
35D	EZconnex® 4-Port, 25', with 10' Floats (4) / Pipe Clamp

For additional control panel options, please contact Technical Support at techsupport@sjeinc.com.

Single Phase



INFILTRATOR®
water technologies

Quick4™
CHAMBER SYSTEMS

The Quick4® Standard Chamber

Quick4® Series

Quick4 Standard with MultiPort EndCap



The Quick4® Standard Chamber fits in a 36" wide trench and is ideal for curved or straight systems. It features the patent-pending Contour Swivel Connection™ which permits turns up to 15°, right or left. The MultiPort™ endcap allows multiple piping options and eliminates pipe fittings. The chamber's four-foot length provides optimal installation flexibility.

Chamber Benefits:

- Advanced contouring connections swivel up to 15°, right or left
- Latching mechanism allows for quick installation
- Four-foot chambers are easy to handle and install
- The Quick4 Standard Chamber supports wheel loads of 16,000 lbs/axle with only 12" of cover
- Certified by the International Association of Plumbing and Mechanical Officials (IAPMO)



MultiPort Endcap Benefits:

- Tear-out seals on inlet ports provide a tight fit to the pipe
- Eight molded-in inlets/outlets allow for maximum piping flexibility
- Eliminates pipe fittings
- Fits on either end of the Quick4 Standard Chamber

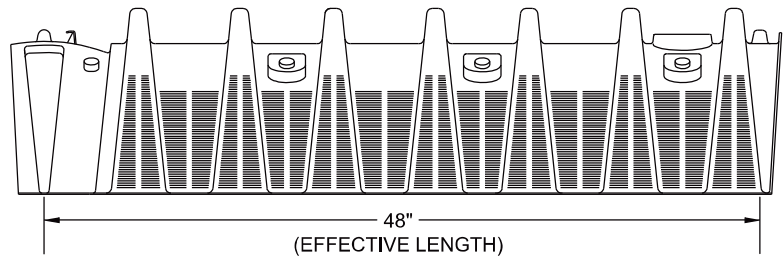
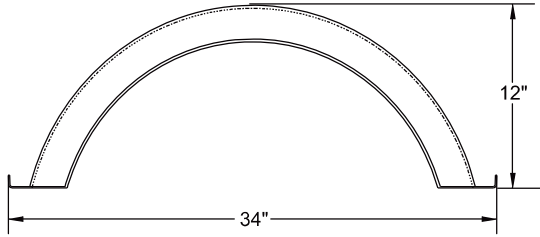


Quick4® Series

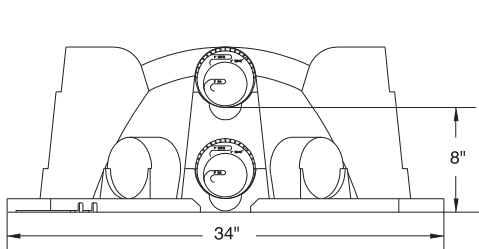
Because installations are faster with Quick4 chambers, you save on heavy equipment operation and labor.

APPROVED in _____

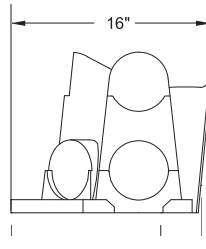
Quick4 Standard Chamber



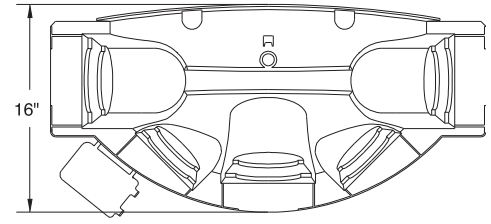
MultiPort EndCap



FRONT VIEW

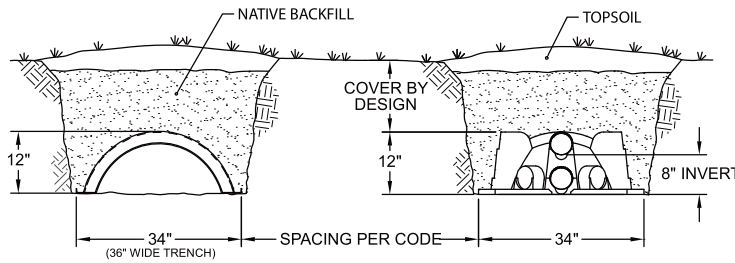


SIDE VIEW



TOP VIEW

Typical Trench View



INFILTRATOR WATER TECHNOLOGIES, LLC ("INFILTRATOR")

Infiltrator Water Technologies, LLC STANDARD LIMITED Drainfield WARRANTY

(a) The structural integrity of each chamber, endcap, EZflow expanded polystyrene and/or other accessory manufactured by Infiltrator ("Units"), when installed and operated in a leachfield of an onsite septic system in accordance with Infiltrator's instructions, is warranted to the original purchaser ("Holder") against defective materials and workmanship for one year from the date that the septic permit is issued for the septic system containing the Units; provided, however, that if a septic permit is not required by applicable law, the warranty period will begin upon the date that installation of the septic system commences. 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 Units determined by Infiltrator to be 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 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 or 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.

Quick4® Standard Chamber Specifications

Size	34"W x 53"L x 12"H (864 mm x 1346 mm x 305 mm)
Effective Length	48" (1219 mm)
Louver Height	8" (203 mm)
Storage Capacity	43 gal (163 L)
Invert Height	8" (203 mm)



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