



GRAVES CONCRETE

Precast & Septic Supplies







GRAVES CONCRETE

Precast • Aggregate • Septic Supply • Stone Yard

Graves Concrete is a family owned and operated company and has been in business in East Templeton since 1997. We now operate ready mix plants to service contractors and homeowners in Central Massachusetts, Western Massachusetts, Southern New Hampshire, and Southern Vermont. Here at Graves Concrete our company is focused on providing quality concrete and are devoted to our precast manufacturing of quality products including one piece septic tanks, pump chambers, The Recon Wall System and Redi-Rock International. With the combination of our knowledgeable sales and delivery staff and our substantial inventory of septic, masonry and landscaping supplies, we are able to satisfy your projects requirements to your complete satisfaction.

At our aggregate division, WJ Graves Construction we have a large variety of construction material. For over 50 years WJ Graves has been supplying sand, gravel, stone, loam and other products to the construction industry. We have the experience to provide you with quality products, competitive pricing and prompt delivery. Service and customer satisfaction is the cornerstone that our business was built on back in 1956.

Graves Concrete

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Recon Retaining Wall Systems

Aesthetics and Performance

The look, size and durability of massive natural stone and the long-term performance of a fully engineered structural wall.



ReCon Retaining Wall Systems

ReCon Retaining Wall Systems, Inc. is an industry leader in supplying aesthetically pleasing and structurally superior retaining wall solutions. ReCon focuses on providing value to its customers, including:

- Engineering and testing for tall gravity walls and taller geogrid walls.
- Solutions that accommodate wall needs rather than dictate them.
- Durability (wet-cast, air-entrained).
- Four texture options.
- Product shape and size choices that work.

Let us bring value to your project.

Features and Benefits:

- **Large Size and Mass**
- **Tall Gravity Walls**
 - Unique tongue-and-groove lock-and-placement design, combined with massive size and weight, permits wall heights up to 17 ft. 4 in. (5.28 m) without reinforcing geogrid. Eliminates the time and cost associated with excavation and soil replacement when reinforcing geogrid is required.
 - Significantly taller ReCon Walls can be built by incorporating geogrid, setback or tiers.
- **Durability**
 - Made of wet-cast, air-entrained concrete with a minimum psi of 4,000 (28 MPa). The durability required in environments prone to the challenges of freeze/thaw cycle, road salts or brackish water.
- **Faster Installation**
 - Walls can be constructed quickly using equipment generally available to contractors (skid steers or backhoes), maximizing productivity and minimizing manual labor. No mortar, no pins.
- **Engineered and Tested**
 - A ReCon Wall can be professionally engineered and designed (using shear and geogrid connection data unique to ReCon) for wall performance that is generally unavailable for natural stone walls.
- **Customized Design and Aesthetics**
 - The natural stone finish has several different textures, which prevents repetition in the overall wall pattern. Stains are readily available and easily applied in the field after installation to achieve a natural look that will last for years.
 - Block comes in multiple depths, to optimize design efficiency by providing the mass when required or eliminating it when not required to save material and freight cost.
 - Tapered block design allows both inside and outside 90-degree corners or curves.
 - Caps or special top units that allow greenscape within four inches of the finished wall's face are available for top-of-wall finishing options.

Block Specifications

- **Block Face:** 5.33 sq. ft. (0.5 m²), or 48 in. x 16 in. (120 cm x 40 cm)
- **Available Depths:** 24", 39", 45" or 60" (60, 100, 115 or 150 cm)
- **Mass:** 1,000 to 3,000 pounds (450 to 1,350 kg) per block.
- **Concrete:** Minimum of 4,000 psi (28 MPa)
- **Lifting Device:** Lifting insert loop
- **Turning Radius:** Approximately 15 feet (4.5 m) (varies with wall height)
- **Retaining Wall Batter:** 3.6 degrees automatically built into the system. Can be adjusted to 7.2 degrees with the use of field-installed spacers.

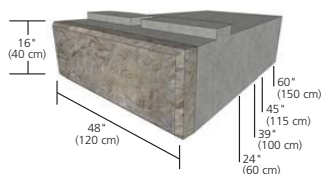


Full Block

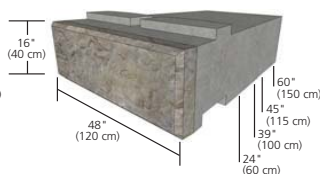


Block Shapes

FULL BASE BLOCK

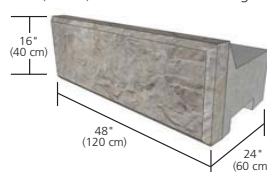


FULL MIDDLE BLOCK

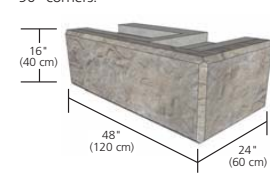


FULL TOP BLOCK

Top of block is recessed (starting behind the 4" (11 cm) texture on top of block at the face). Permits planting of sod to within 4" (11 cm) of front of the retaining wall.



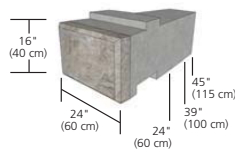
REVERSIBLE CORNER BLOCK
90° corners.



CORNER TOP BLOCK
Top of block is recessed.

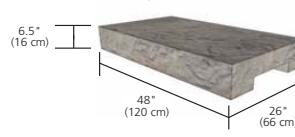


HALF BLOCK



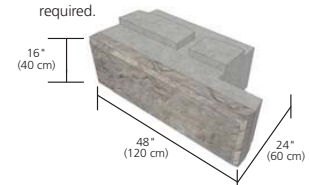
CAPSTONE

Alternate top-of-wall treatment used in lieu of full top block.



FITTING BLOCK

Used when occasional field cut is required.



Recon Retaining Wall Systems

Engineering and Installation Guidelines

Design and Specification

A ReCon Wall requires a site-specific design and analysis prepared by a registered professional engineer. ReCon has a comprehensive set of tools to aid architects and engineers in the specification and design of a ReCon Wall.



A block being set in place with a backhoe and chain.

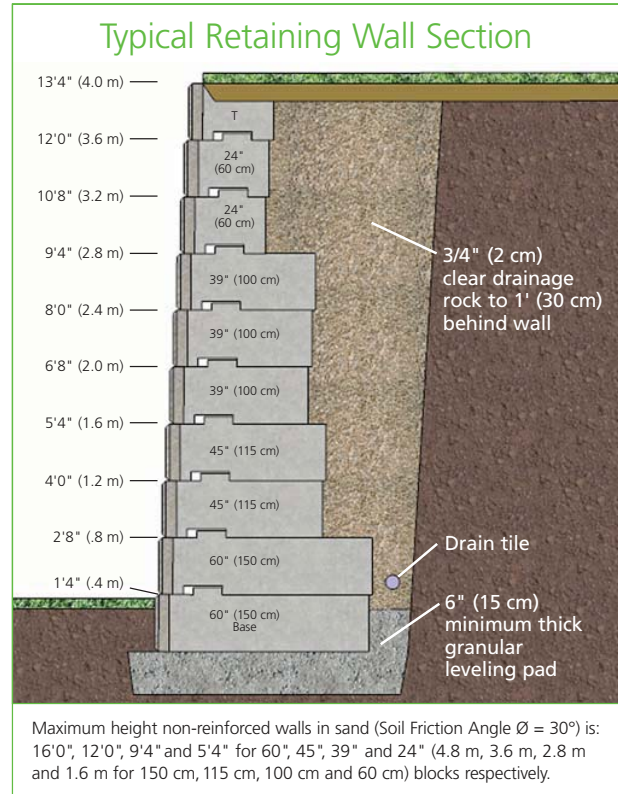


A block being set in place with a skid steer.

Installation Steps

- Excavate and prepare soil foundation.
- Prepare leveling pad: A level and compacted base is essential for proper wall installation.
- Install and level base course: Individual blocks are then set in place using the lifting insert loop. The lifting insert loop is attached to a chain suspended from a backhoe or other lifting equipment.
- Drain tile
- Drainage aggregate.
- Install additional courses.
- Place geogrid (if required).
- Install additional courses.
- Backfill and compact.
- Check compaction regularly.

ReCon Block is produced and marketed pursuant to a license agreement with ReCon Wall Systems, Inc., 7600 West 27th St., #229, St. Louis Park, MN 55426. Patents issued: US 6,620,364 B2, US 6,829,867 B2 and US 7,341,685 B2.



The installation steps represent a basic outline for a ReCon Wall installation and are not meant to serve as a complete construction or installation guide. Every ReCon Wall must be designed by a registered professional engineer. Design and other industry professionals can view online or download a complete ReCon design and construction reference manual at www.reconwalls.com.



Infiltrator Chamber Systems

Benefits of a Quick4® Chamber System



Ease of Installation

Quick4 chambers can be delivered to the site in a pickup truck and hand-carried into position. For most jobs, two people can install a system in less than half the time it takes for a comparable stone and pipe leachfield.

Cost Savings

No stone or geotextile is typically required and no pipe

is required with non-pressure dosed systems. Because installations are faster with chambers, you save on heavy equipment operation and eliminate the need for heavy trucks used to transport stone.

Built to Last

- Chemical-resistant and UV-stable
- Powerful arch design supports axle loads of 16,000 lbs, with 12 inches of compacted cover, equivalent to an AASHTO H-10 load rating
- Chambers can be installed with 6" of cover to support axle loads of 4,000 lbs
- All products carry a limited warranty and are certified to the International Association of Plumbing and Mechanical Officials (IAPMO) structural testing protocol
- Infiltrator Systems has a comprehensive quality control program at their company-owned ISO 9001: 2000 certified manufacturing facilities

Less Site Disruption

Since Infiltrator chambers typically occupy a smaller total area than stone and pipe leachfields, and use less heavy equipment, there is less damage to landscaping. Elimination of stone means cleanup at the job site is much easier too.

Superior Technology

- Easy to handle four-foot length allows for more installation flexibility
- Advanced contouring capability with the Contour Swivel Connection™
- StraightLock™ Tabs ensure straight alignment
- Compact nesting provides more trench length in a smaller storage area
- MultiPort™ End Caps offer multiple piping options and minimizes the use of pipe fittings

Longevity and Reliability

Infiltrator chambers have a proven success rate since 1987 giving homeowners, installers, regulators and designers extra confidence.

Product Availability

Infiltrator Systems has an extensive network of distributors throughout North America. These knowledgeable professionals maintain local inventories of our products and also provide contractors and installers with product delivery and installation support.

Responsive Service

Our technical staff and local sales representatives maintain a strong presence where it counts - in the field. You will also have the full assistance of our customer support team, who can answer your product and ordering questions. They can also supply you with product brochures and the installation and design tools that you need.

Training and Education

Infiltrator Systems offers installer training and authorization classes, as well as field demonstrations to help educate installers and regulators.



A tested and proven success rate.

Infiltrator is the number-one septic manufactured drainfield system in the onsite industry and is approved in all 50 states and 10 Canadian provinces. There are over 1.5 million Infiltrator systems installed (and counting) and more than 42 million chambers in-ground worldwide. One in every four septic systems installed in the United States and Canada is an Infiltrator system. Infiltrator chamber systems have stood the test of time with an established history of performance and reliability, beginning in 1987. In fact, field surveys and university studies of septic system performance and failure rates demonstrate that Infiltrator chamber systems meet the long-term performance standards required for onsite wastewater treatment systems.



Science Proves the Advantage

Infiltrator chambers offer sizing reductions of up to 50%* with equal or better performance.

University laboratory research and extended field evaluation has verified the infiltrative efficiency advantage of the open surface architecture provided by chamber systems over old-fashioned stone and pipe systems.

The advantage lies in the absence of solid bodies in the leach-field surface architecture – the matrix of combined gravel, soil and biomat at the infiltrative surface.

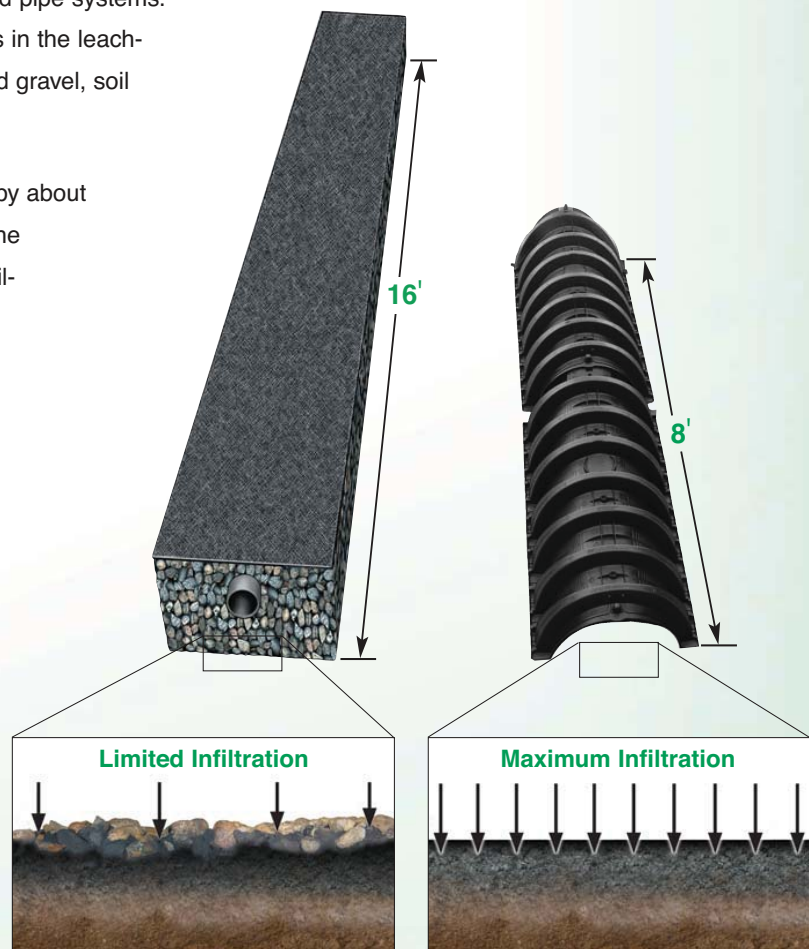
The stones embed into the soil surface and occupy about 60% of the potential infiltrative area. This forces the water to travel through the limited pores in the soil-filled gaps between the stones. An obstructing layer of biomat forms in all leachfields treating septic tank effluent. As the biomat develops, the infiltrative capacity of that remaining soil area is reduced to a point where ponding occurs in the leachfield.

The advantage of the open surface architecture is that the entire area is available for infiltration instead of the 40% remaining area between the stones. The open surface architecture of chambers over old-fashioned stone trenches is expressed as:

100% open area / 40% open area = 2.5 more infiltration potential.

With an added safety factor, a 50% smaller footprint will provide equal or better infiltration than a stone and pipe trench.

For more information on soil-based wastewater treatment research visit www.infiltratorsystems.com.



Stone and pipe system – Less than 50% efficiency

In the stone and pipe system, the effective infiltrative area is reduced due to the presence of stone.

Infiltrator chambers – 100% efficiency

With Infiltrator chamber systems, the entire area at the bottom of the trench is unobstructed by stone, which means total infiltrative effectiveness.

Side-by-Side Comparison

An 8-foot length of Infiltrator chamber trench has more effective infiltrative area than a 16-foot length of stone and pipe trench.*

* System sizing is determined by state and local regulations.



Infiltrator Chamber Systems

Infiltrator® Quick4® Product Line

Quick4® High Capacity Chamber

The Quick4 High Capacity Chamber can be installed in a 36-inch wide trench. The Contour Swivel Connection™ allows the chamber to swivel 10 degrees, left or right.

Size (W x L x H)34" x 53" x 16" (86 cm x 135 cm x 41 cm)
Effective Length48" (122 cm)



Quick4® High Capacity MultiPort™ End Cap

The MultiPort End Cap with its eight molded-in high and low inlets allows piping to enter or exit the system from multiple directions and eliminates pipe fittings.

Size (W x L x H)34" x 19" x 16" (85 cm x 48 cm x 41 cm)
Additional Length per Trench2.4 ft (71.1 cm)
Invert Height11.5" (29 cm)



Quick4® Standard Chamber

The Quick4 Standard Chamber can be installed in a 36-inch wide trench. The Contour Swivel Connection™ allows the chamber to swivel 10 degrees, left or right.

Size (W x L x H)34" x 53" x 12" (85 cm x 135 cm x 31 cm)
Effective Length48" (122 cm)



Quick4® Standard MultiPort™ End Cap

The MultiPort End Cap with its eight molded-in high and low inlets allows piping to enter or exit the system from multiple directions and eliminates pipe fittings.

Size (W x L x H)34" x 16" x 12" (85 cm x 41 cm x 31 cm)
Additional Length per Trench.....2.2 ft (66 cm)
Invert Height8" (20 cm)



High Flow Splash Plate

The High Flow Splash Plate is designed for use with the Quick4 Standard Chamber's MultiPort End Cap and is intended for use with a pump system to prevent soil erosion below the invert.





Enviro-Septic® is a versatile product that offers a great number of installation options. Enviro-Septic® can be used in many configurations and requires a smaller area than conventional leaching systems. A 10' length of Enviro-Septic® pipe can be bent to 90 degrees allowing a variety of unusual system shapes such as curved, trapezoidal, L, S, or U-shaped. Enviro-Septic® may also be installed on sloping sites.

The Unique Treatment Advantage

Conventional leaching systems disperse effluent over a soil surface, relying on the soil to develop some system of contaminant treatment. Contaminants not treated, freely enter the underlying soils. Enviro-Septic® is called a leaching system because that is a term most individuals understand. In truth, Enviro-Septic® is a concept outside the box of conventional thinking. Enviro-Septic® is a system that treats effluent contaminants before releasing leachate into the surrounding soils. Enviro-Septic® is a no-nonsense product that needs no pumps, no filters, no electricity, no additives, and no special maintenance.

Advantages Over Conventional Systems

Compared to Conventional Systems, the Enviro-Septic® System

- Requires much less area
- Lasts longer
- Costs less and requires no stone
- Installs more quickly
- Treats effluent more efficiently and completely
- Adjusts easily to difficult sites and slopes
- Complements natural environmental processes
- Uses recycled plastics

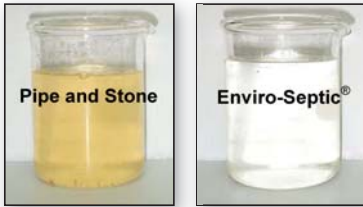
Important Note:

Should abuse or adverse circumstances cause system failure, only Enviro-Septic® may be rejuvenated in place without costly system removal and replacement.



THIRD PARTY TESTING

Which Liquid Would You Want in Your Backyard?



**Samples were taken 6" below each system*

The Enviro-Septic® System is continually tested to prove that it is providing you with the best passive Wastewater Treatment System on the market today. Independent testing by the University of New Hampshire, Environment E.S.A Inc., of Canada, and the Bureau de Normalization du Quebec, Canada, proved conclusively that Enviro-Septic® significantly outperforms pipe and stone installations. Just look at the differences in these leachate samples and test results:

| Tested Item | Effluent Concentrate | After Pipe and Stone | After Enviro-Septic® |
|---------------------|----------------------|----------------------|----------------------|
| TSS | 125 mg/L | 25 mg/L | 2 mg/L |
| MPN Fecal Coliforms | 3,091,000 per 100mL | 190,000 per 100mL | 2,300 per 100mL |
| BOD | 172 mg/L | 21 mg/L | 2 mg/L |

**The data above show the test results obtained by the Environment E.S.A, Inc. You can access the complete test result data on our website at www.presbyenvironmental.com.*

System Components

1. Each Enviro-Septic® pipe is 10' long and made from high density plastic that has been corrugated and perforated with a series of ridges on the peak of each corrugation and skimmers protruding on the interior.

2. Surrounding each pipe is a mat of randomly oriented, coarse plastic fibers that aids in the treatment of harmful contaminants.

3. Covering this mat is a special, non-woven, geo-textile plastic fabric stitched into place.

Snap-lock couplings, offset adapters and end caps are used for the System assembly. System sand is used to surround the pipe (refer to Design and Installation manual for specifications).



Why Enviro-Septic® is Naturally Different

If you need a wastewater treatment system that is easy to design, installs fast, and provides superior treatment for your clients, Enviro-Septic® is your solution. Enviro-Septic® is a multi-stage effluent treatment system for residential, commercial and community use. Unlike conventional leachfield systems, Enviro-Septic® does not rely on the underlying soils to treat leachate exiting the System. Enviro-Septic® treats effluent before it is dispersed to the soil, using all-natural environmental processes. The result is leachate that is far cleaner compared to what is dispersed from a pipe and stone system. Since leachate exiting the System has been proven to be cleaner and safer, Enviro-Septic® enjoys installation and design benefits that the competition can't match.



Multi-Level™



Enviro-Septic®





THE SCIENCE BEHIND ENVIRO-SEPTIC®

9 STAGES = SUPERIOR WASTEWATER TREATMENT

STAGE 1: Warm effluent enters the pipe and is cooled to ground temperature.

STAGE 2: Suspended solids separate from the cooled liquid effluent.

STAGE 3: Skimmers further capture grease and suspended solids from the exiting effluent.

STAGE 4: Pipe ridges allow the effluent to flow uninterrupted around the circumference of the pipe and aid in cooling.

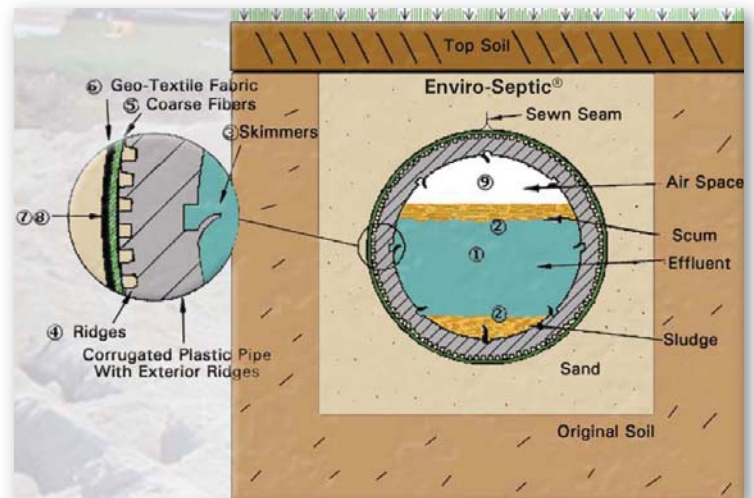
STAGE 5: A mat of random, coarse fibers separates more suspended solids from the effluent.

STAGE 6: Effluent passes into the geo-textile fabric and grows a protected bacterial surface.

STAGE 7: Sand wicks liquid from the geo-textile fabric and enables air to transfer to the bacterial surface.

STAGE 8: The fabric and fibers provide a large bacterial surface to break down solids.

STAGE 9: An ample air supply and fluctuating liquid levels increase bacterial efficiency.



Design with Ease

Enviro-Septic® provides you with more design possibilities than ever before. From trapezoidal to quadrilateral configurations and even designs with bends up to 90 degrees, Enviro-Septic® can adapt to handle your toughest jobs. And since Enviro-Septic® may be installed closer to the seasonal high water table in many states, unsightly mounding is minimized or completely eliminated in many cases.

Don't Replace, Rejuvenate!

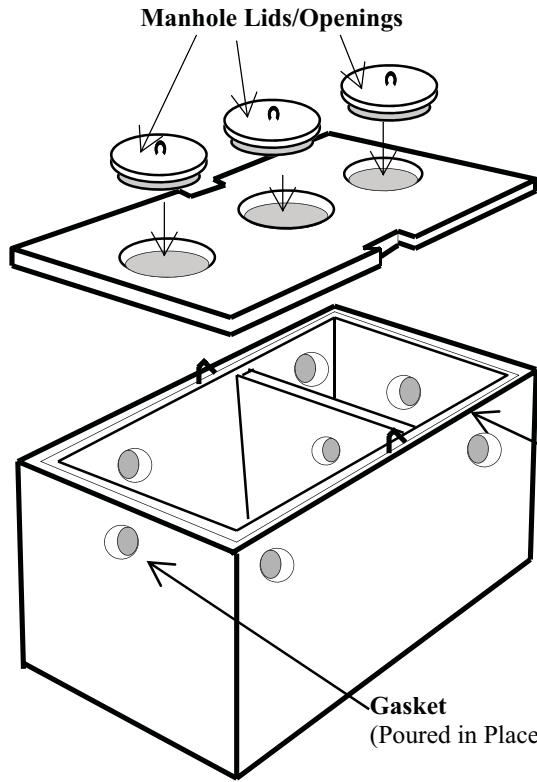
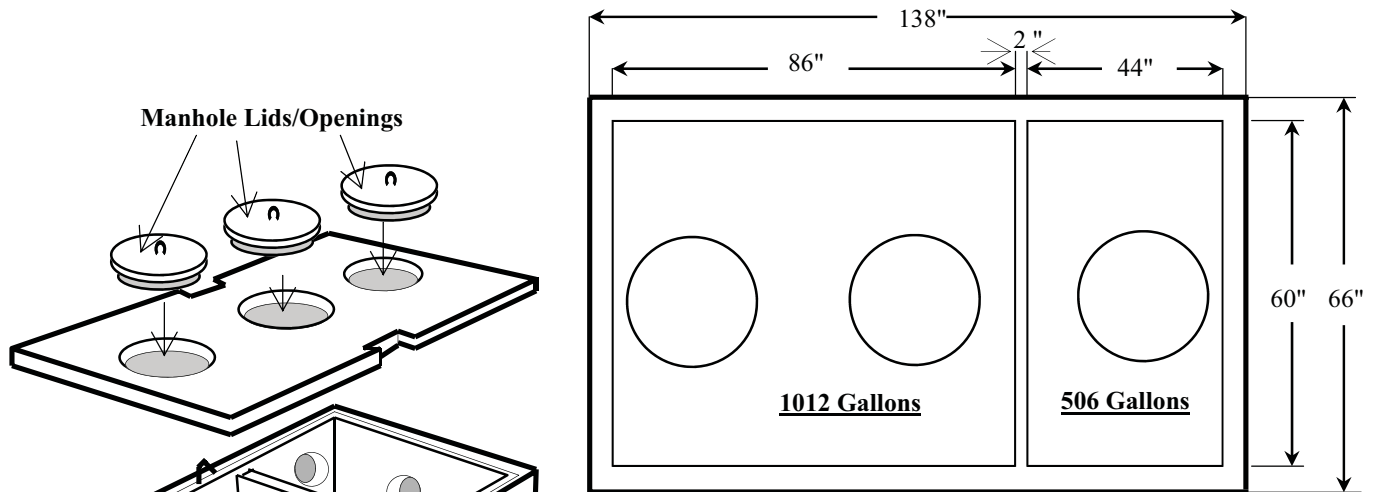
In the event that an Enviro-Septic® System malfunctions due to abuse, it can be rejuvenated in as little as 72 hours using a simple process. This can eliminate the need to replace the System. The Enviro-Septic® System can also be easily expanded to accommodate increased loading. These abilities increase the longevity of the System, resulting in happier clients.



Enviro-Septic® on sloping terrain



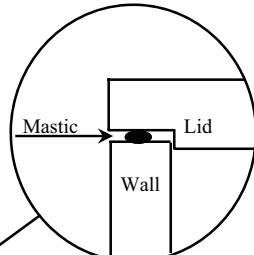
TOP VIEW



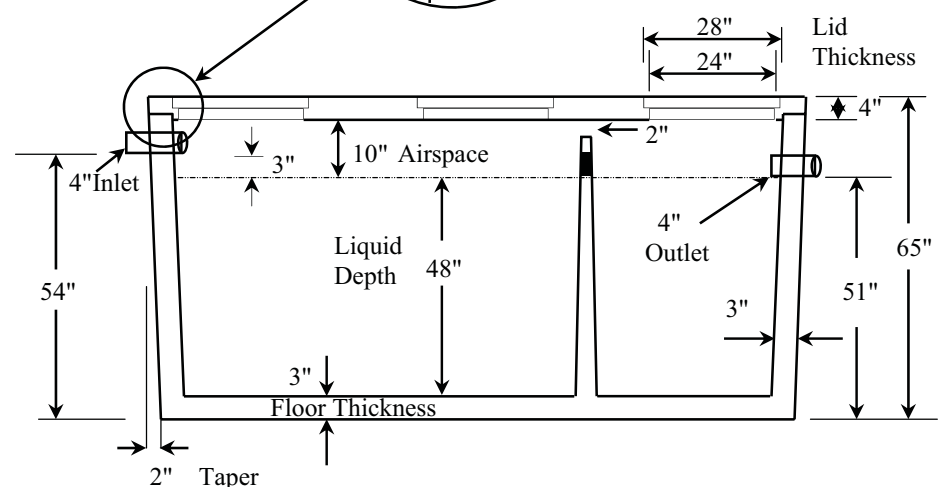
Mastic Rope

Gasket (Poured in Place)

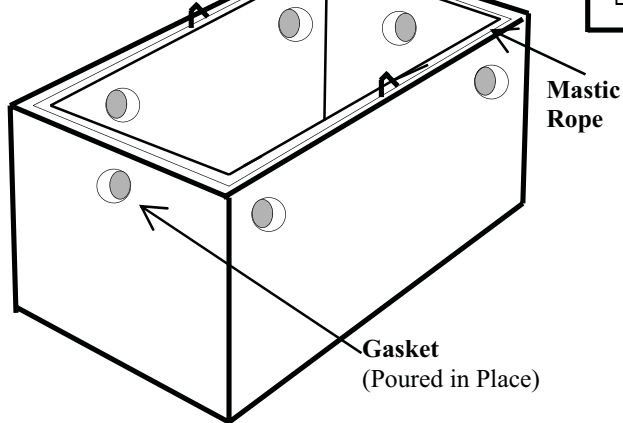
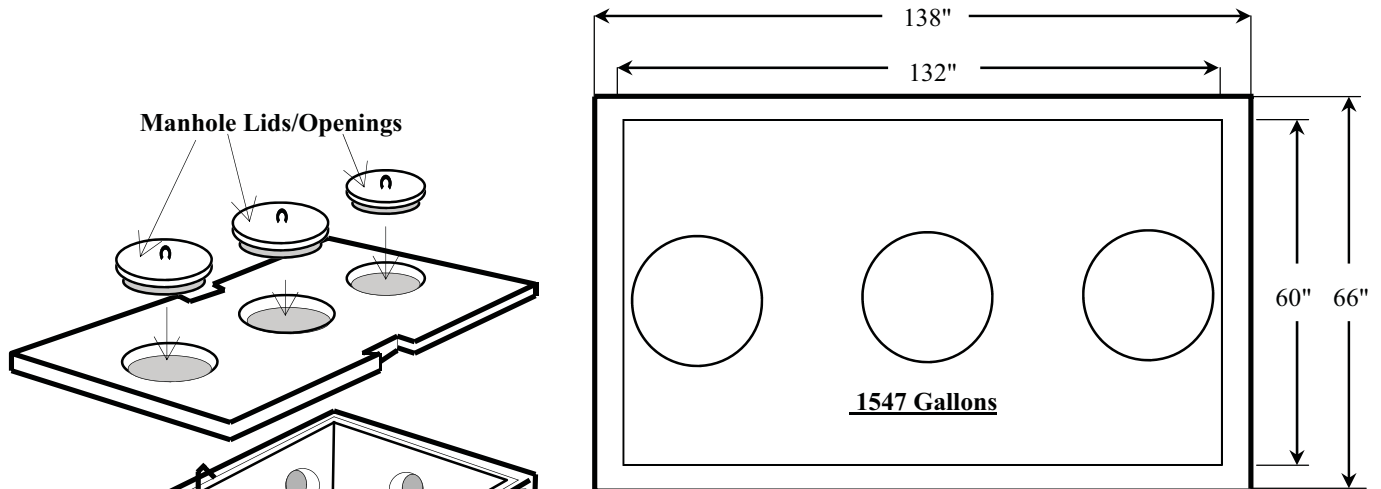
Enlarged Detail



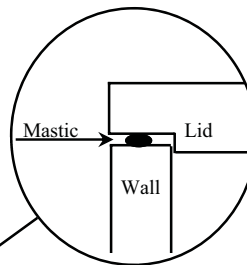
SIDE VIEW



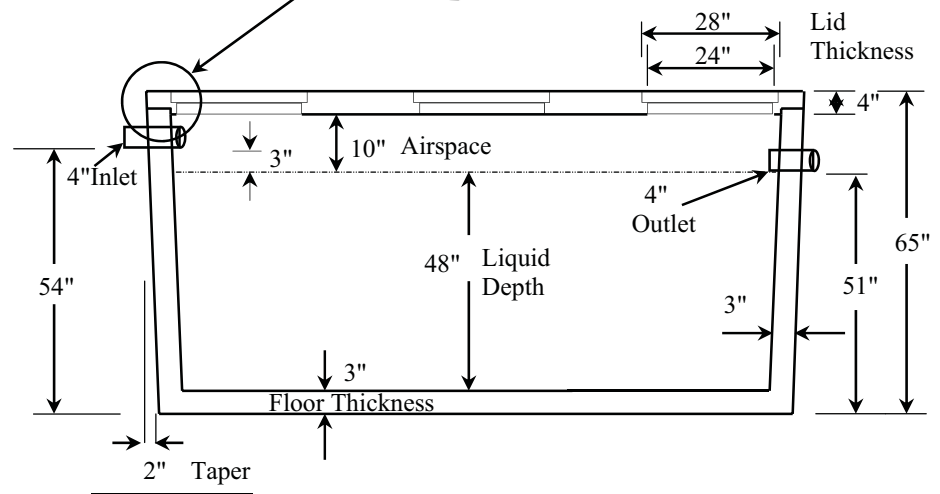
TOP VIEW



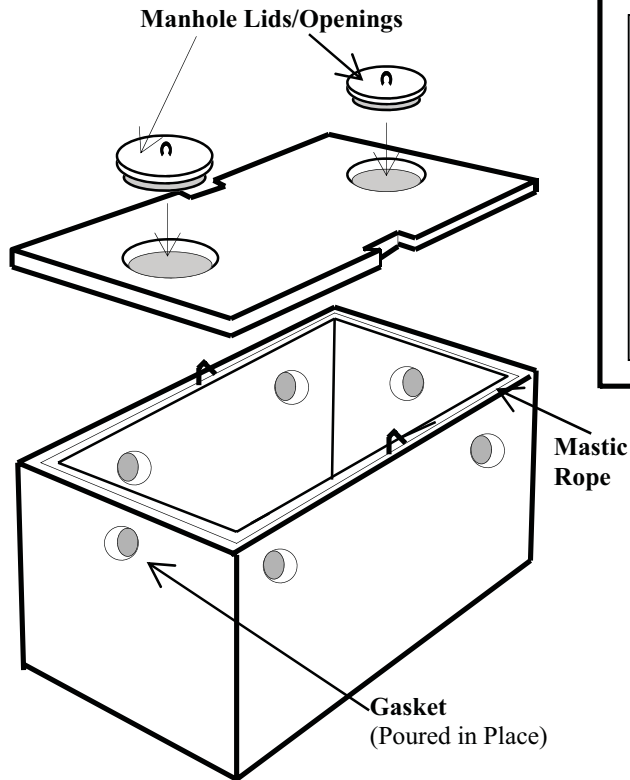
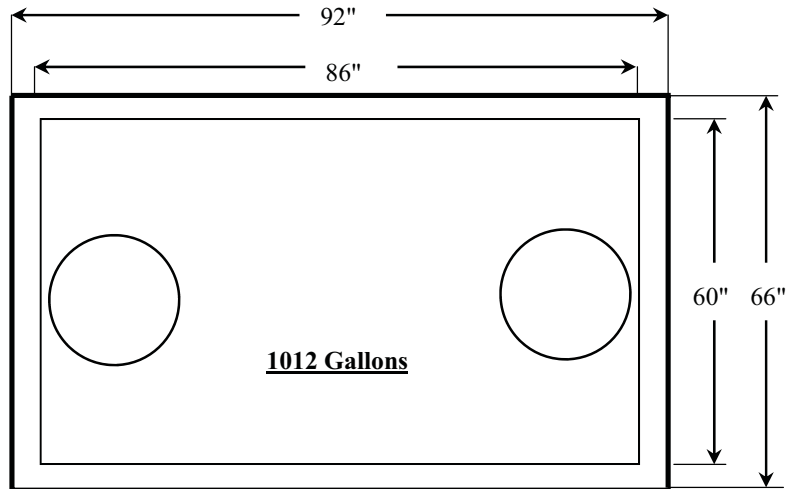
Enlarged Detail



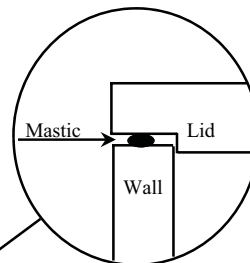
SIDE VIEW



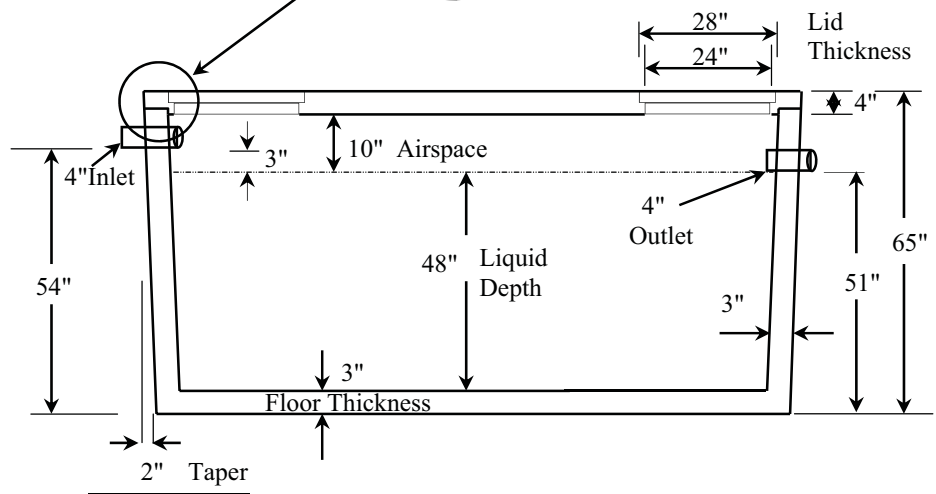
TOP VIEW



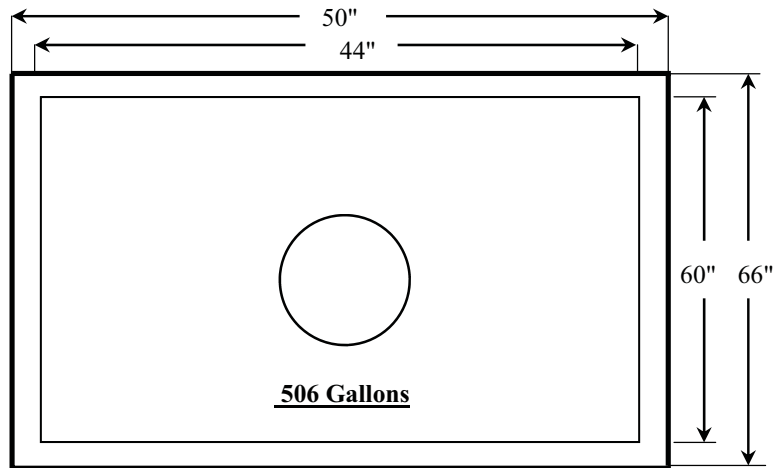
Enlarged Detail



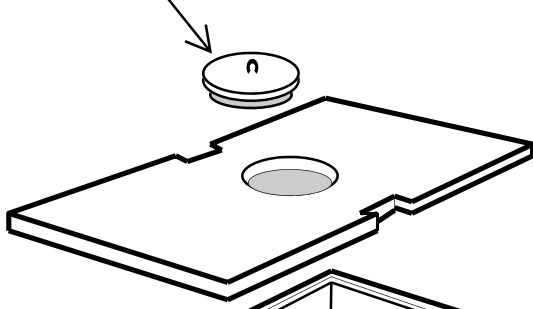
SIDE VIEW



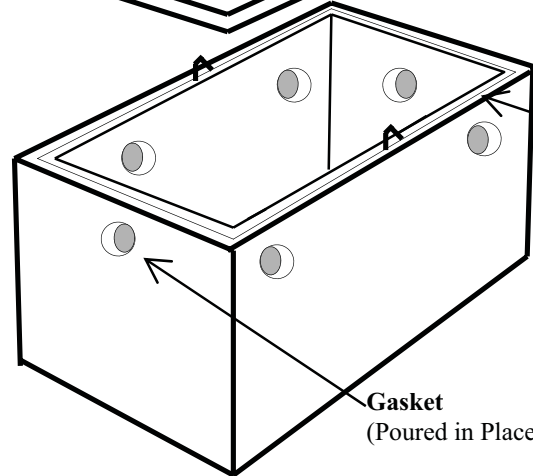
TOP VIEW



Manhole Lids/Opening

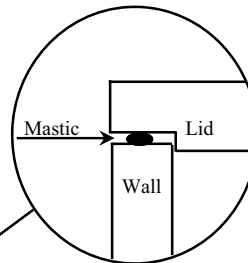


Mastic Rope

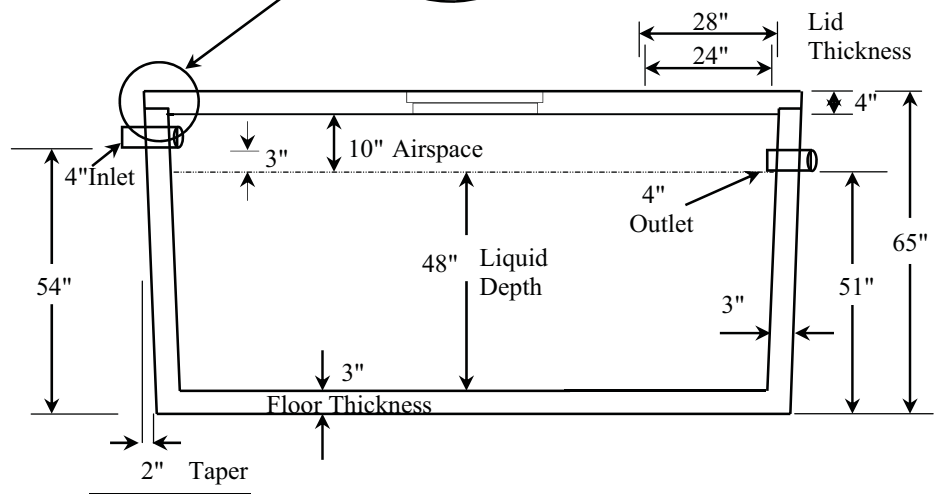


Gasket
(Poured in Place)

Enlarged Detail



SIDE VIEW



Products



Ready Mix Concrete

Flowable Fill
Grout
Pea Stone Mix
Tremie
Shot-Crete
Pump Mix
Light Weight
2000-5000 PSI



Precast Products

Septic Tanks
Leach Pits
Distribution Boxes
Well Tiles
Thrust Blocks



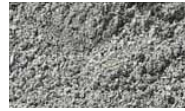
Septic Supplies

Presby Environmental
Infiltrator System
Polylok Filters & Risers
Zabel Filters
Tuf-Tite Filters & Risers
SRW Fabrics
Poly Barriers
Trench Drains
PVC Pipe & Fittings
Cast Iron Frame & Covers
Goulds Pumps
Alarms
Control Panels



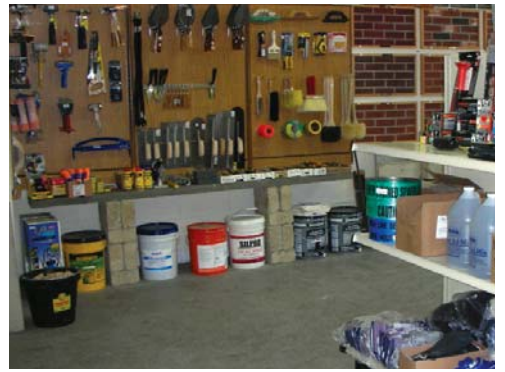
Aggregate

Washed Sand
Septic Sand
Bank Run Gravel
Crushed Gravel
Clay Silt
Screened Sand
Washed Mason Sand
Washed Concrete Sand
Stone Dust
Graded Base
60/40 Sand Stone Mix
Un-screened Loam
Screened Loam
Fill
Screened Compost
Crushed Stone
Double Washed Stone
Tailings
Rip Rap
Natural Round Stone
Red Crushed Stone
Crushed Granite
Recycled Road Grinding
Recycled Concrete Grinding
Ice Ban



Retaining Wall Blocks

Recon Wall Blocks
Redi-Rock Block
Ideal Concrete Block
226 V-Grooved Block
334 Concrete Block



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