F.R. MAHONY & ASSOC.
A Division Of CUMMINS-WAGNER
100% Employee Owned

**273 Weymouth Street, Rockland, MA 02370**
**P-781-982-9300 F-781-982-1056**

## Celebrating Over 50 Years 1964-2021

# ENVIRONMENT ONE PRODUCTS

Thank you for your interest in the **Environment One Corporation** Grinder pump system. It is our pleasure to provide you with the following information about the **Environment/One** Low-pressure sewer system.

## CAPABILITY

The **Environment One** low-pressure system was developed to provide a low-cost sewer collection system to homes in remote locations or with high groundwater or ledge restrictions. "**Low-pressure sewers"** can follow hilly terrain in narrow trenches reducing construction cost and disturbance to the landscape. This is important in situations where conventional gravity sewers might otherwise be too destructive or expensive.

Low-pressure sewers can transport wastewater over relatively long distances through small diameter pipes. The progressing cavity, semi-positive displacement pumps can lift to heads of 185 feet with a low horsepower, low speed (1725 rpm) motor. We are able to develop high cutting torque at these low speeds to reduce wastewater solids to a $^1/_4$ inch particle size. This system enables the use of small diameter pipelines that are sized on hydraulic needs and not governed by the ability to pass solids. This feature reduces retention time and improves pipe-scouring velocity.

## HISTORY

Since 1970, the **Environment/One Corporation** has provided low-pressure sewers, powered by the UL listed progressing cavity grinder pump to over 2,000,000 users each day. F.R. Mahony & Associates, Inc. has been the **Environment/One Corporation's** New England representative for forty plus years.

## APPLICATIONS

The **E/One** sewer can provide service to a single home needing one pump, or to several hundred homes and businesses pumping to a common small diameter low-pressure sewer line or to an on-site treatment system. The possibilities are endless.

## COST TO OPERATE

The **E/One** sewer powered by the **EXTREME SERIES** grinder pump will be cost effective to install, and since there are no owner maintenance requirements, inexpensive to operate. With a $0.11 cost per kWh, the energy cost per pump would average $22.00 a year for a single family home.

## THIRD PARTY LISTING - WARRANTY

The **Environment/One**, UL – NSF – CSA listed pump models have **the most comprehensive warranty available** with our standard "two year parts & service warranty" and models are available for installation inside a home with a "five year parts & service warranty"

F.R. Mahony & Associates, Inc. provides 24-hour service for emergency service.

## MODEL CONFIGURATIONS

**Environment One** products are available in a variety of configurations and Model styles.

**The flagship Model DH071 with separate wet well** is available for a variety of installations and is available in depths of 44 inches to 160 inches.

**Our most common model is the DH071-93**

Single-family outdoor model is rated for flows up to **700 gpd**. Accessway provides four feet of frost protection above inlet and discharge pipes. Easily installs with conventional drainlayer connection.

*Rev 5/5/21*

## E/One EXTREME SERIES CONTINUED

- **Model IH091** Indoor single-family home with flows up to **700 gpd**. Easily installs in almost any basement.
  ***This model along with all of our indoor models is approved by the Massachusetts Board of State Examiners of Plumbers and Gas Fitters for indoor installations under the 2000 Series designations.***

## HIGHER CAPACITY MODELS

- **Model DH151** Indoor/Outdoor single-family home flows up to **1,500 gpd**.

**Duplex Pump Stations**

- **Model DH152** Indoor/Outdoor single-family and multi-family home or commercial flows up to **3,000 gpd**.
- **Model DH272** Indoor/Outdoor single-family and multi-family home or commercial flows up to **5,000 gpd**.
- **Model DH502** Indoor/Outdoor single-family and multi-family home or commercial flows up to **6,000 gpd**.

***All of these outdoor models are available in a variety of heights to meet your plumbing needs.***

## WETWELL MODELS

- **Model WH101** Wetwell style pump uses the **Upgrade** pump in a standard HDPE wetwell with lower front-end cost. Available in several size configurations. Simplex HDPE stations or Fiberglass to Duplex Fiberglass stations
- **Model WH231 Squat Tank** Complete station that combines the wetwell grinder pump core with an all-new, rotational-molded polyethylene basin. This tank is designed to minimize the retained volume in the tank to 25 gallons while providing 247 gallons of tank capacity. Rated flows to 850 gpd.

## PUMP CONVERSIONS

- **UPGRADE** pump for direct installation in existing wetwell. Upgrade worn out centrifugal pumps with this easy drop-in-ready to connect conversion.

The UPGRADE Model makes a perfect retrofit to existing, troublesome pump chambers

## DESIGN ASSISTANT

**Environment One Corporation** offers free design assistance with our exclusive **Design Assistant Software package**. We can help you or your engineer layout your project and help you select the proper pipe size and best route to sewer your project.

## AVOID ON-SITE DESIGN BUILD NIGHTMARES

The **Environment One** system was "Engineered Perfectly" to meet a variety of conditions. No need to design oversized storage tanks with slide rail mounted pumps. **Environment One** systems are designed to meet the day-to-day needs with engineered wet wells and easily removable pump cores. Service does not require a plumber and electrician to remove a pump. With a mean time between service calls of 8 - 10 years **Environment One Corporation** provides the industries most reliable and trouble free grinder pump.

**Be sure to visit our web sites**
http://www.eone.com and
http://www.frmahony.com and please contact us at 781-982-9300 with questions about the enclosed information or anytime you believe the **F.R. Mahony** professional staff can be of assistance.

Very Truly Yours,
Daryl Coppola, Outside Grinder Pump Sales
F.R. Mahony & Associates, Inc
(781) 820-5808
darylcoppola@frmahony.com

GENUINE

## — E/One-DRIVEN —

# ALL-TERRAIN SEWER™

## Flat? Wet?
## Rocky? Hilly?
## Get after it.

ALL-TERRAIN SEWER™ low pressure systems from E/One give you the freedom to sewer anywhere

Environmentally Sensitive
Economically Sensible™

eone SEWER SYSTEMS

# E/ONE SEWER™ SYSTEMS GIVE YOU THE FREEDOM TO SEWER ANYWHERE –


**ALL-TERRAIN SEWER™ LOW PRESSURE SYSTEMS FROM E/ONE** are cost-effective, highly reliable central sewering systems that can be installed in any terrain – flat, wet, rocky, even on sites with dramatic elevation changes. Plus, they are much more affordable than conventional gravity sewers, which require major excavation, and much safer for communities than septic systems, which can eventually fail, polluting ground and recreational water and endangering public health.

# AT A FRACTION OF THE COST OF GRAVITY SEWERS.

**With E/One, you can set your sites higher – or lower**. In fact, you can site new homes in formerly infeasible locations – rugged hills, isolated flatlands, coastal areas, below grade, or sites with high water tables.

For the developer or prospective homebuilder, ALL-TERRAIN SEWER low pressure systems from E/One free you to utilize the best sightlines on any plot – regardless of the location of the sewer main or septic field. This means better sightlines, aesthetics, and views, as well as the possibility of utilizing "difficult" or orphan lots, and maximizing the density of any development.

ALL-TERRAIN SEWER low pressure systems from E/One also feature a lighter "footprint." That's because they follow the contour of the land, so they can go anywhere without destroying the landscape. Even around existing features like mature trees, streams, and rock formations.

They're easier to install than conventional gravity sewers, so they greatly reduce the high cost of sewering. And they're highly reliable. So they lower operating costs.

Environmentally sensitive. Economically sensible. Plus the freedom to build anywhere.

**Break the restrictions of gravity – and enjoy true freedom.**

# THE E/ONE® SEWER SYSTEM.

## HERE'S HOW THE E/ONE SEWER SYSTEM WORKS:

The E/One system stores, grinds and pumps wastewater under pressure to a treatment site or central sewer, depending on the location. Because the output is pressurized, the wastewater can be transported horizontally two or more miles, or uphill some 185 feet vertically. Because the system does not rely on gravity to carry the waste, it provides more options for siting and building, as well as system renovations.

## WHY THE E/ONE SYSTEM IS BETTER THAN GRAVITY:

Both the gravity sewer and the ALL-TERRAIN SEWER low pressure system from E/One are known as central sewer systems. Most cities and villages use central sewering, which simply means that waste is transferred, usually by pipe or a main, to a central treatment plant.

Gravity sewers are the "original" central sewers, with origins in the Roman aqueducts. Unfortunately, the technology behind gravity sewers is also centuries old: they're bulky systems using a large main and usually require major excavation to install. They must be accurately placed and bedded along a continuous downward grade and often involve large, costly lift stations. Plus they're expensive and not entirely efficient in transporting waste because they can tend to leak, and can be compromised by storm water infiltration.

## ENGINEERED TO DO ONE JOB PERFECTLY™.

The Extreme series grinder pump, the heart of the E/One system, is the industry leader in ruggedness, watertight design, serviceability and reliability. It provides wastewater storage, grinding, and pumping in a single unit. Translation: it lowers operating costs, the cost of waste collection, and reduces maintenance.

The E/One grinder pump is engineered to do one thing perfectly and in the process, provides the best value for homeowners, builders, developers and municipalities.

## THE MOST RUGGED, LONGEST-LASTING PUMP IN THE INDUSTRY.

The E/One sewer grinder pump results in a 10 year average mean time between service calls and requires no preventive maintenance. Plus, low upfront costs, reduced operating expenses, and the ability to be installed at any site, regardless of the challenges of topography.

## DEFY GRAVITY WITH E/ONE.

The beauty of the ALL-TERRAIN SEWER low pressure system from E/One is that, unlike conventional central sewers, it defies gravity. Because installation follows the natural contour of the land, it is ideal for all terrain, including land that is flat, wet, rocky, or hilly. It gives the freedom to sewer anywhere including sites where old septic systems have contaminated water and posed severe public health issues.

# HOW DOES IT WORK? WHY IS IT BETTER?

## HOW WILL IT LOOK?

Aesthetics are a major consideration for homeowners. ALL-TERRAIN SEWER low pressure systems from E/One are virtually out of sight — the only visible part is a low-profile cover that blends seamlessly into the environment but provides easy access for servicing operations.

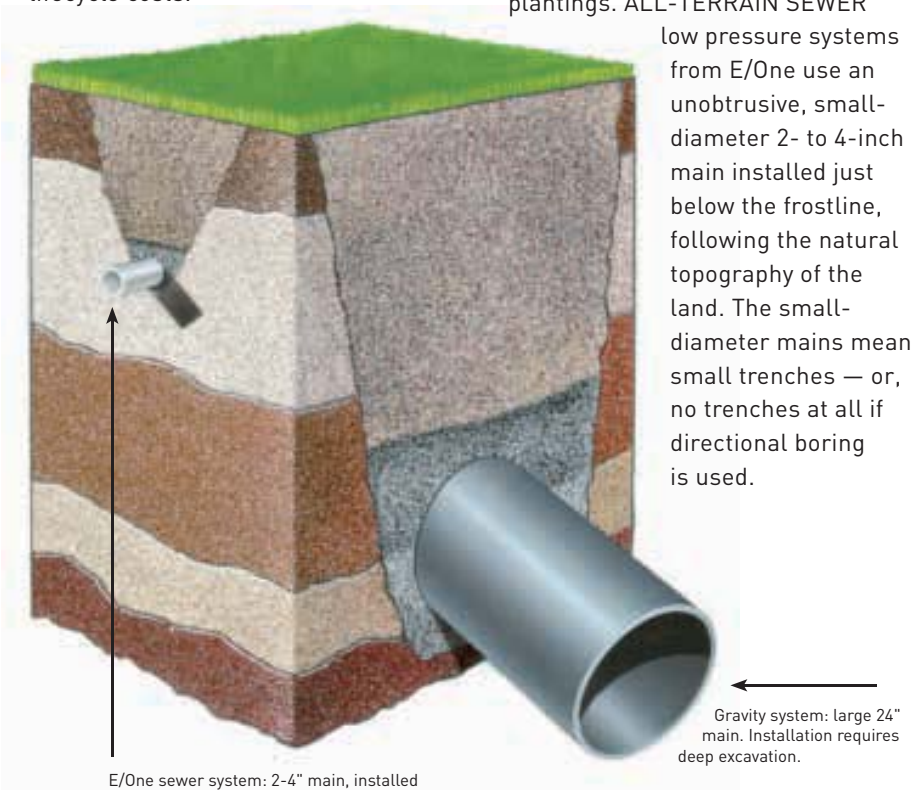
The Extreme series indoor grinder pump station from E/One was specifically designed for installation in a basement mechanical room or in the slab foundation. Its clean look fits unobtrusively into any environment, virtually eliminating excavation.

## PRICED RIGHT FOR INSTALLATION. AND FOR THE LONG TERM.

E/One can solve sewering problems and replace failing septic systems at a fraction of the cost of conventional gravity sewers. ALL-TERRAIN SEWER low pressure systems from E/One sharply reduce both front-end installation costs and overall lifecycle costs.

## WHEN IT COMES TO SEWER SYSTEM TECHNOLOGY, BIGGER ISN'T BETTER.

Conventional gravity sewers can use up to a 24-inch large-diameter pipe, or main, which requires major excavation and severely disrupts the landscape and any built structures such as lawns, driveways, and plantings. ALL-TERRAIN SEWER low pressure systems from E/One use an unobtrusive, small-diameter 2- to 4-inch main installed just below the frostline, following the natural topography of the land. The small-diameter mains mean small trenches — or, no trenches at all if directional boring is used.

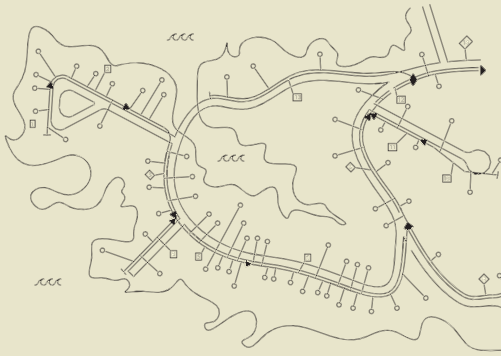


E/One sewer system: 2-4" main, installed to follow the contour of the land.

Gravity system: large 24" main. Installation requires deep excavation.

## SET YOUR SITES ANYWHERE

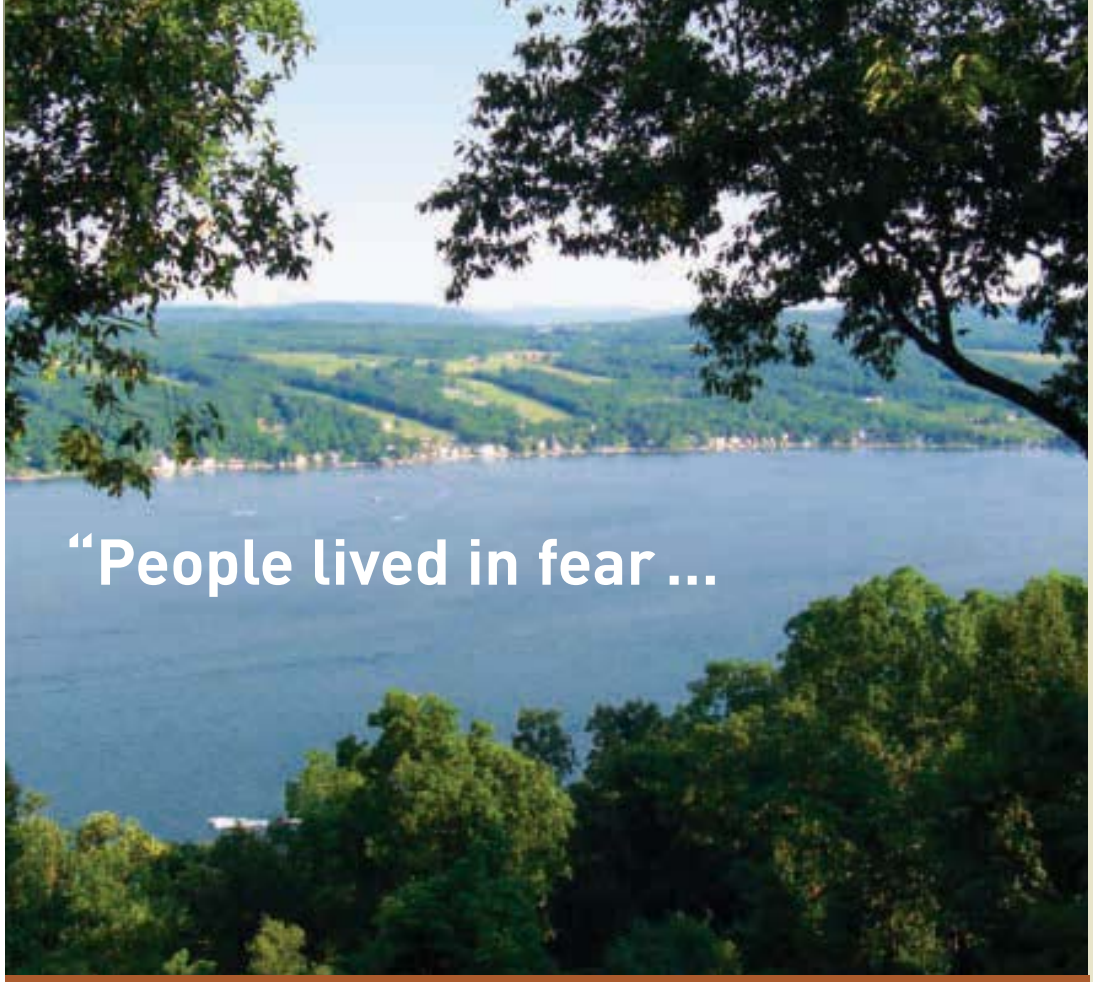
ALL-TERRAIN SEWER low pressure systems from E/One serve the entire community and give engineers, developers, community planners, and homeowners the freedom to sewer anywhere, taking advantage of scenic vistas and the ability to locate structures for the best return. Even sites that – to date – have been deemed undevelopable.



## SEPTIC SYSTEMS – POTENTIAL TIME BOMBS IN OUR MIDST

While septic systems may be a common way of disposing of residential sanitary waste, they are, at best, a temporary solution and come at a high cost to public health. Around the world, septic systems have degraded ground and recreational water, creating serious safety problems.

Because of failing septic systems, water is not safe to drink. In addition, failing septic systems decrease real estate values. ALL-TERRAIN SEWER low pressure systems from E/One can go wherever septic systems were initially used, reclaiming water quality and quality of life while providing an efficient, cost-effective solution to wastewater disposal and treatment.




The pristine shoreline is a primary reason that lakefront homes are sought after in Jerusalem, New York, located on Keuka Lake. However, eutrophication generated by septic seepage and other sources of nutrient loading frequently had led to poor water quality. The town recognized a solution was needed, but its geography presented some challenging site conditions. ALL-TERRAIN SEWER low pressure systems from E/One eliminated 12 lift stations (versus a gravity sewer design), saving $900,000.

After 10 years, analysis of operation and maintenance costs showed an average of $37 per pump per year. The lake's water quality has also shown improvement.


Nestled between the Cascade and the Olympic Mountain ranges, the Kitsap Peninsula boasts 300 miles of scenic coastline in the Puget Sound. So when failing septic threatened that pristine coast, municipal engineers found a cost-effective solution – and an ally – in E/One sewer systems.

They compared the construction and O&M costs of four distinct sewer collection systems, and the E/One pressure system came out on top - in both categories. Compared to a gravity system, the E/One system was less than a quarter of the cost to install, and less than half projected O&M.

Nearly 350 E/One grinder pumps and six miles of high-density polyethylene pressure main were installed along the waterfront. A careful analysis of the operating and maintenance costs revealed that after seven years, only 16 service calls per year were required – less than half the number projected. And the mean time between service calls was 22 years – more than double the pre-project estimate of 10 years. The cost of those repairs came in at 68 percent less than projected.


## E/One showed us how to preserve it... and our capital."

This 2,200 site development is nestled in the rugged, hilly north Georgia terrain. A dramatic setting that offers fresh air, pristine forests, and breathtaking views. Plus considerable sewering challenges.

That's why the developer turned to E/One, a trusted resource, to help him engineer an elegant, simple solution. By using pressure sewering, only shallow, contour-hugging small-diameter lines were needed to carry wastewater – even uphill.

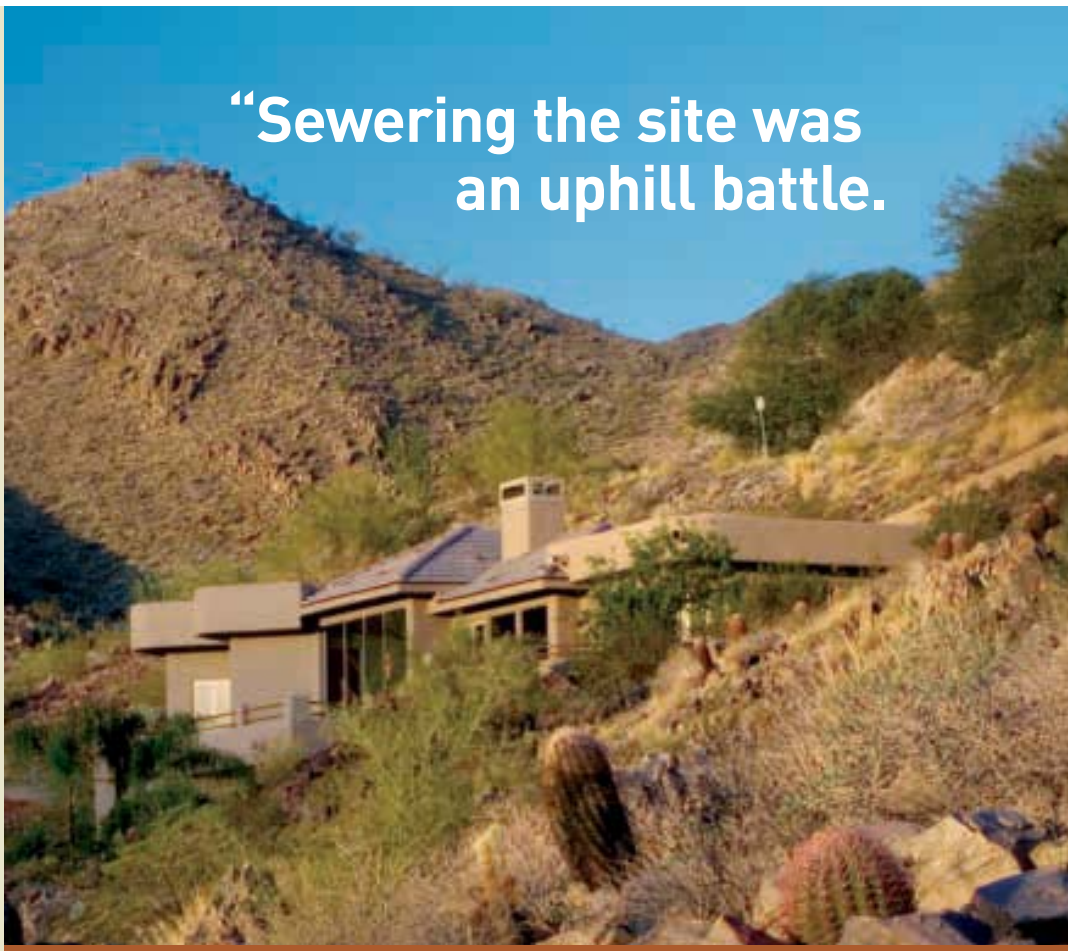
Powered by reliable E/One grinder pumps, the system carries waste offsite, and away from the community reservoir. And, at a fraction of the cost of gravity sewers. This solution minimized the number of unsightly and expensive lift stations from 20 – to just three!

The developer says it best: "The E/One system allows us to offer the best environmental quality of life in a most attractive new community."

Arizona's Paradise Valley is no picnic for builders. These exclusive home lots present daunting challenges with steep grade, rocky terrain and restrictive land use covenants. No wonder other builders walked away from this challenging infill lot – except one.

This builder turned adversity into profit with the proven E/One pressure sewer system. Instead of the expensive and disruptive lift station system proposed, he saved lots of money – and got an elegantly simple, cost-effective solution. He preserved the environment as well as his budget, with pumps mounted at grade and low impact, small diameter piping installed just below the surface.

The bottom line: E/One defied both gravity and conventional wisdom and rescued an "unbuildable" lot – for a lot less.




## With E/One I found gold in these hills"

# THE ADVANTAGES OF THE E/ONE® SEWER SYSTEM

## HOMEOWNERS

- Safe – protects water quality and enhances quality of life
- Reduces costs of housing – both initial and ongoing
- Visually pleasing – only evidence is a low-profile cover that is easily camouflaged
- Does not disrupt the beauty of the landscape or damage built structures
- Virtually no preventive maintenance required of homeowner
- Central sewer increases value of home

## CONTRACTORS/CONSTRUCTION MANAGERS

- Installation follows contour of the land – does not require major excavation
- Needs only shallow trenches – increases ease and safety of installation procedures
- Labor and material costs are much less than gravity sewer systems

## MUNICIPALITIES/DEVELOPERS

- Permits freedom to sewer anywhere in any kind of terrain
- Low initial costs make central sewers economically feasible
- Low initial costs make development economically feasible
- Central sewer increases value of development units
- High reliability – no preventive maintenance
- Reduces operating costs
- Protective of public health
- Permits regulatory compliance
- Closed system – not compromised by stormwater infiltration – plus zero exfiltration

## ENGINEERS/OPERATORS

- Proven engineering and design
- Cost-effective central sewering solution for new construction or retrofits
- Engineering and technical support during design, construction, installation, and operation
- Reliable performance means reduced O&M costs – up to 50% or more savings over gravity
- When needed, E/One pumps are easy and safe to access and service
- Designed to keep maintenance to absolute minimum
- Will work with gravity in a hybrid system

# E/ONE® SEWER SYSTEMS ARE MAKING BETTER COMMUNITIES ALL OVER THE WORLD

Many communities have been made possible because of ALL-TERRAIN INFRASTRUCTURE™ pressure sewer systems from E/One and hundreds more have been made safe once again after failing septic systems created serious public health problems by contaminating ground and recreational water.

The E/One sewer system delivers safe, cost-effective, reliable performance and enables controlled growth, permitting communities to maintain their quality of life at a cost they can afford.

Contact us regarding a free system design analysis to see how an ALL-TERRAIN SEWER system from E/One can save you 50 percent or more on your next project.

e one
SEWER SYSTEMS

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www.eone.com

A Precision Castparts Company

LM000363 Rev A


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TO DO ONE JOB
PERFECTLY
E/ONE
EXTREME
SERIES
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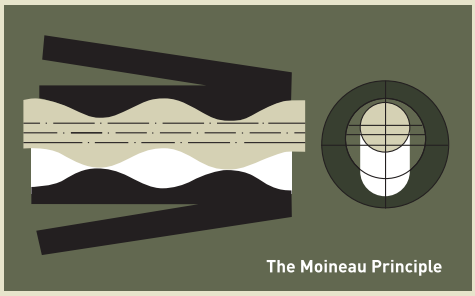
# ENGINEERED TO DO ONE JOB PERFECTLY

At the heart of the E/One Sewer System is the toughest, hardest working pump in the industry. The new standard in excellence, durability, and longevity, the E/One Extreme Series Grinder Pump. Its evolution reflects everything we've learned in 40 years as the originator and leader in the category of low pressure sewer systems.

The pump stations incorporate the grinder pump, motor controls and level sensing device integrated into a compact unit, easily removable for servicing when necessary.

And, the geometry of the pump not only produces a near-vertical pump curve, but allows passage of ground solids without clogging. Because of the low rpm and highest quality components, we experience the lowest service call rate in the industry. An average mean time of 10 years between service calls is typical.



The Moineau Principle

The progressing cavity pump itself is based on the Moineau principle. A rotor turns within a stator, creating a sequence of sealed chambers. The precision-cast and polished stainless steel rotor moves wastewater through these chambers at a nearly constant flow, over a wide range of conditions – from negative to abnormally high heads. Turning at just 1,725 rpm, the one-horsepower motor can pump fluid through more than two miles of small-diameter piping or elevation changes of over 185 feet.

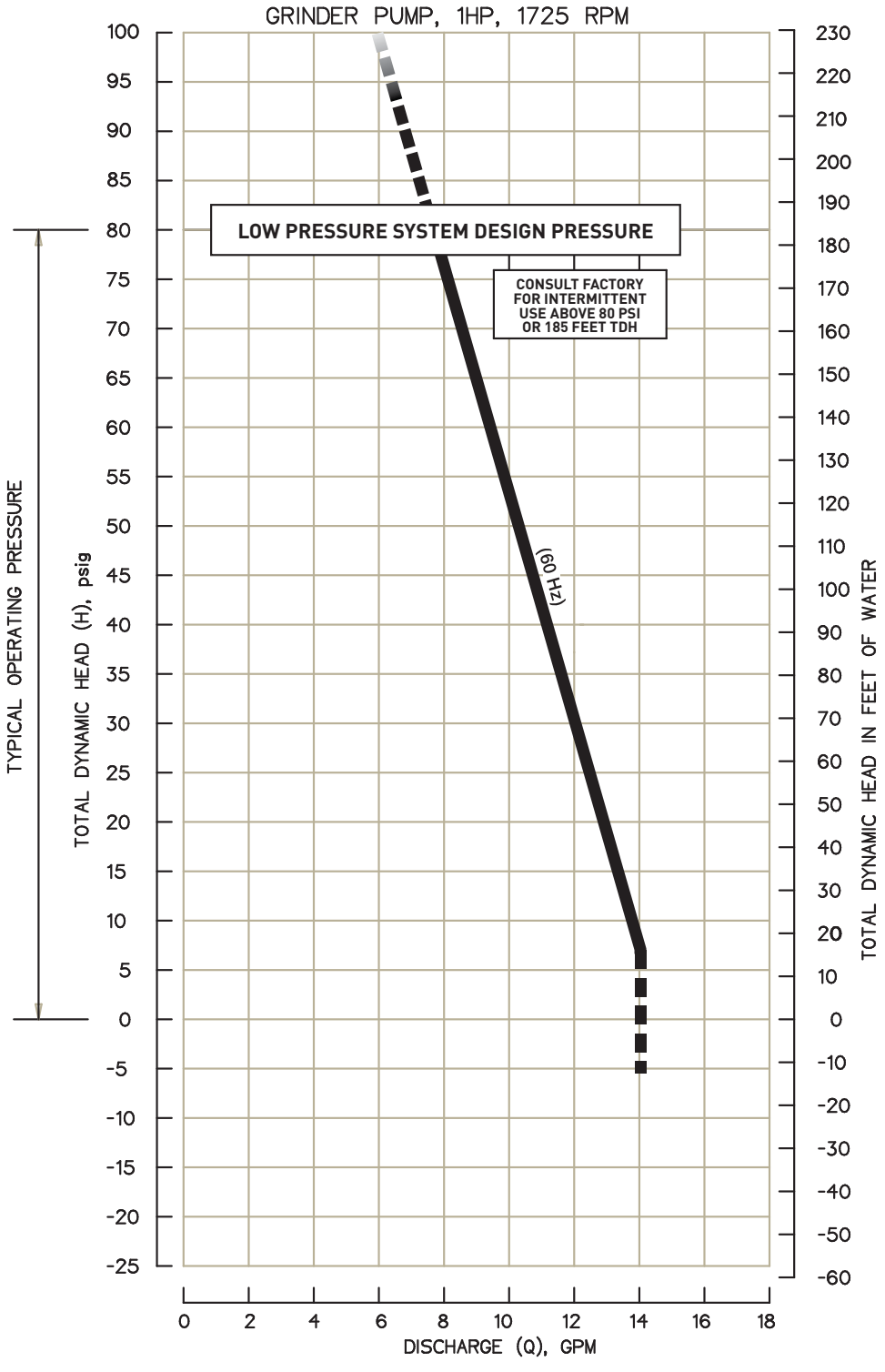
## SOME KEY ADVANTAGES:

- **HIGH HEADS/NEGATIVE HEADS.** Reliable operation from negative head to 185 feet of total head for continuous duty reduces the number of lift stations and pipe sizes. This cuts costs – both initially and in long-term operation and maintenance.
- **CONSTANT FLOW.** The system pressures to be overcome by any given grinder pump in a low pressure system vary dramatically over the course of a day. E/One's progressing cavity pump readily accommodates these pressure variations while maintaining a nearly constant flow without ever operating at "near shut off" – thus avoiding the wear and motor burn-out suffered by other pump types.
- **HIGH GRINDING TORQUE.** Our unique pump system, driven by a one-horsepower motor turning at 1725 rpm, produces grinding torque greater than a two-horsepower pump turning at twice the speed.
- **ENERGY EFFICIENT.** The pump is activated automatically and runs for short periods. Typical annual energy consumption is comparable to a 40-watt light bulb.
- **LOW MAINTENANCE SUBMERSIBLE MOTOR.** Low maintenance and long life are the hallmarks of our air-filled motor. Permanently lubricated ball bearings and Class F insulation eliminate the need for periodic oil changes and oil disposal costs required by oil-filled submersible motors.
- **LARGE-DIAMETER GRINDER ASSEMBLY.** Almost twice the diameter of most other types of grinder pumps, contributing to a dramatic reduction of inflow velocity for less wear and no blinding, clogging or jamming.
- **NO PREVENTIVE MAINTENANCE.** Non-fouling static level sensors require no preventive maintenance. Because of our unique, near constant discharge rate, no main line flushing is required in a properly designed system.
- **CORROSION RESISTANCE.** E/One's stainless steel ball-type discharge valve and piping won't corrode like copper or galvanized, and hold up years longer. No corrosion, no maintenance.
- **DEPENDABILITY.** E/One pumps typically run ten years between service calls with 40 years of in-ground experience.
- **PROVIDES FOR ENVIRONMENTALLY SOUND WASTEWATER MANAGEMENT.** The E/One Extreme Series grinds waste material into small particles. This enables the use of inexpensive, small-diameter pressure pipes, buried at shallow depths, to transport wastewater to a suitable processing site. Result: Ground water contamination from failing septic tanks can be eliminated.
- **SERVICEABILITY.** Our unique core design eliminates the need for in-field troubleshooting and pump servicing. This means lower maintenance costs and minimum homeowner inconvenience.

# GRAVITY SEWERS ARE NO LONGER THE RULE FOR SOLVING WASTEWATER PROBLEMS.

At the heart of the system is the E/One progressing cavity grinder pump – with high heads that can eliminate costly lift stations, and a robust, powerful design that translates into the industry's highest levels of reliability, availability and maintainability.

## E/ONE SPD PUMP PERFORMANCE CURVE




# ENGINEERED LOW PRESSURE SYSTEMS

# REPEALING THE LAW OF GRAVITY

**NOBODY CAN TOUCH OUR CURVE.**

In a low pressure system, constant, predictable pump output is the foundation for proper hydraulic design. It enables the engineer to minimize retention time, pump wear, and keep scouring action at effective levels.

Environment One's semi-positive displacement, progressing cavity pump has a nearly vertical H-Q curve. It is by far the most "forgiving" pump design – providing predictable flow over the full range of typical system pressures; strengths critical in a large-scale, low pressure sewer.

E/One's superior high head capability allows a system with few, if any, lift stations. And, it easily accommodates additional future connections without compromising system performance.

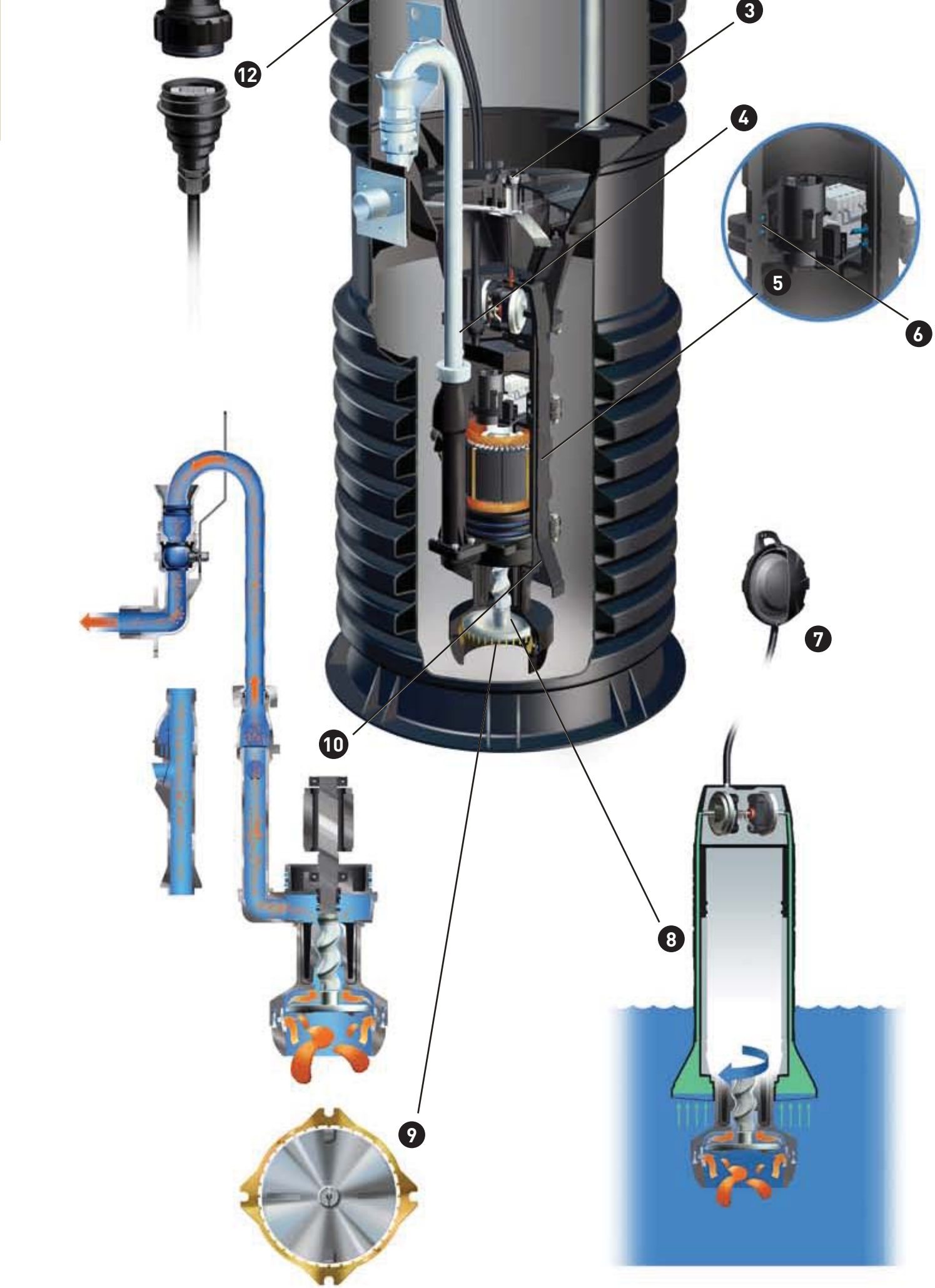
These E/One pump characteristics translate into:

- predictable hydraulic design
- lower collection system capital costs
- less maintenance
- lower operating costs

# ANATOMY OF A LEADER:

# THE INSIDE STORY ON THE E/ONE GRINDER PUMP STATION.

1. **LOW-PROFILE COVER:** Aesthetically pleasing. Provides easy access for service while blending with surroundings.
2. **HIGH-DENSITY POLYETHYLENE TANK:** Double-wall construction of high-density thermoplastic for rugged reliability. Factory pressure tested for infiltration and exfiltration free installation.
3. **QUICK-RELEASE CORE LATCH:** All stainless mechanism secures core in place and can be easily released from ground level.
4. **STAINLESS STEEL PIPING & HARDWARE:** E/One's SS discharge piping and ball valve won't corrode. No corrosion, no maintenance, no tools required.
5. **UNIQUE CORE DESIGN:** Eliminates the need for in-field troubleshooting and service. Modular controls simplify service.
6. **DOUBLE O-RING SEALS:** Make assemblies waterproof and novel joint geometry minimizes the effects of crevice corrosion.
7. **E/ONE EQUALIZER:** Compensates for fluctuations in atmospheric pressure to enable accurate level sensing while assuring the level sensing system is watertight.
8. **PROGRESSING CAVITY PUMP:** A deceptively simple design produces a nearly constant flow under a wide range of continuously varying conditions.
9. **GRINDER WHEEL AND SHREDDER RING:** Hardened corrosion-resistant cutter bars and teeth process sewage, grinding wastewater solids, as well as wood, plastic and cloth. Will not jam or clog!
10. **PRESSURE SWITCH LEVEL CONTROL:** Self-cleaning level sensors require no preventive maintenance.
11. **DIRECT-BURY CABLE:** For simple and inexpensive installation.
12. **ELECTRICAL QUICK DISCONNECT:** For safe and easy service. UL-listed, compatible with OSHA regulations for confined space entry.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# LEADING THE INDUSTRY WE INVENTED.

Environment One not only pioneered the low pressure sewer system, but consistently leads the industry both in system deployment and innovation. The company is dedicated to Total Quality, Continuous Improvement, and Customer Satisfaction, as evidenced by the E/One Extreme Series. Today, there are nearly a million end users worldwide.


## SEWER ANYWHERE

Driven by the remarkable E/One Extreme grinder pump, E/One Sewers give engineers, developers, municipal sanitarians, and land planners unprecedented new freedom in land usage and septic tank replacement.

With a smaller footprint and a softer touch on the land, they're so much easier to install. Front-end costs can be reduced by as much as 80%. Total installed costs by half. And O&M costs by up to 75%.

The E/One Extreme grinder pump reduces all forms of sanitary waste to a non-clogging slurry and pumps it through a network of small-diameter pipes. Since gravity is replaced by the power of the pump, sewer systems need not run downhill nor require large-diameter pipes, deep trenches, multiple booster stations – or their associated costs.

A system powered by the E/One Extreme grinder pump converts formerly cost-prohibitive building sites into cost-effective reality. "Problem areas," with high ground water, elevation changes or impenetrable bedrock, are transformed into valuable, developable real estate.

Of course, E/One's low upfront cost advances apply to conventional building sites as well.

In addition, E/One units are easy to install and virtually maintenance-free – refined through 40 years of experience with the largest installed base in the industry.

## SAVE THOUSANDS, VIRTUALLY SERVICE-FREE.

**Contact your local distributor:**

e|one
SEWER SYSTEMS

**Environment One Corporation**
**2773 Balltown Road**
**Niskayuna, NY USA 12309-1090**
**Voice (01) 518.346.6161**
**Fax 518.346.6188**
**www.eone.com**

**A Precision Castparts Company**
**LM000364 Rev B**

UL NSF CSA


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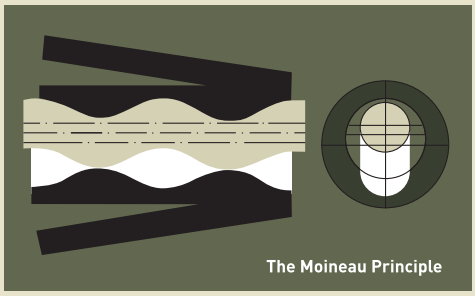


The Moineau Principle

The progressing cavity pump itself is based on the Moineau principle. A rotor turns within a stator, creating a sequence of sealed chambers. The precision-cast and polished stainless steel rotor moves wastewater through these chambers at a nearly constant flow, over a wide range of conditions – from negative to abnormally high heads. Turning at just 1,725 rpm, the one-horsepower motor can pump fluid through more than two miles of small-diameter piping or elevation changes of over 185 feet.

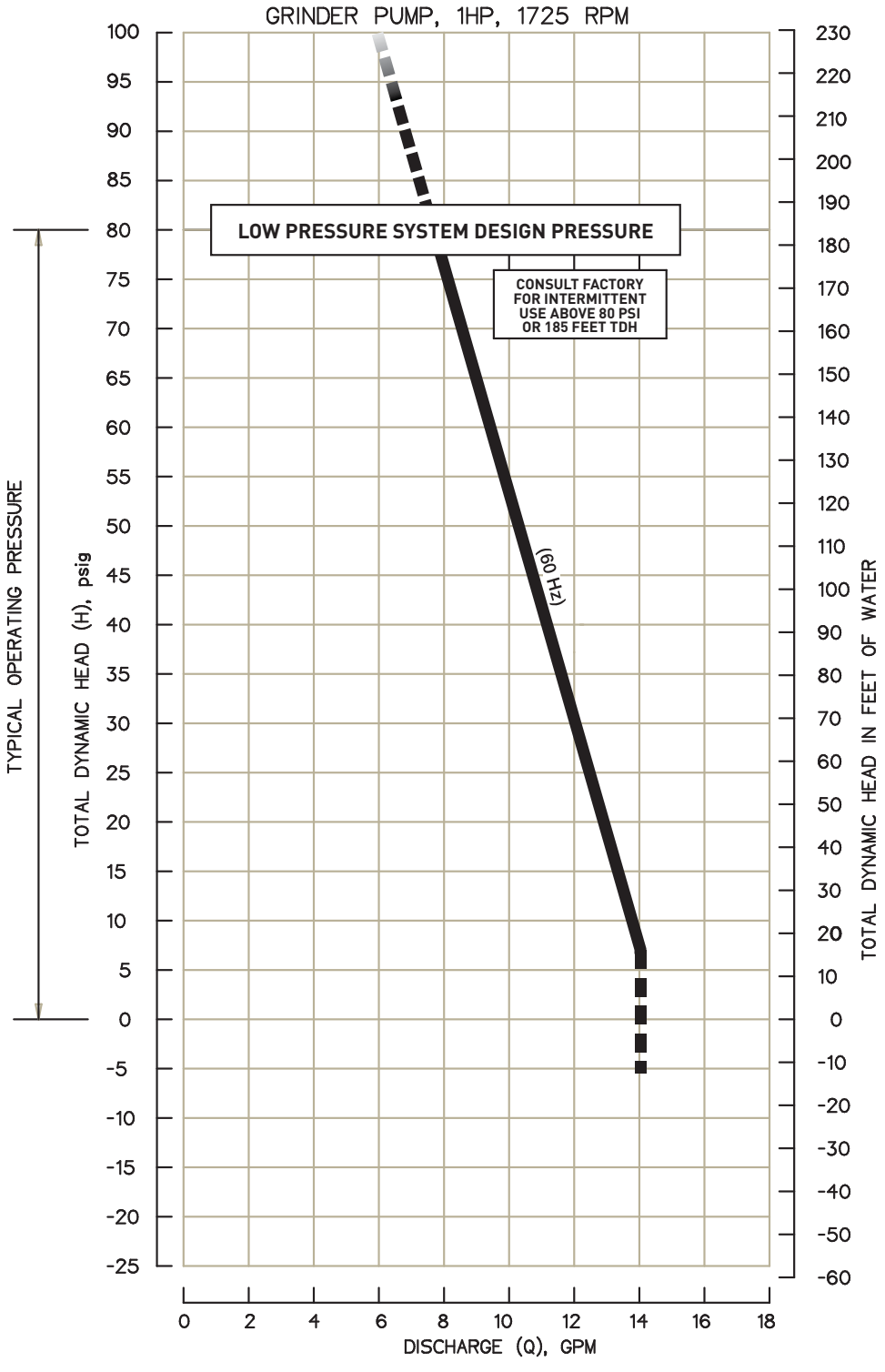
## SOME KEY ADVANTAGES:

- **HIGH HEADS/NEGATIVE HEADS.** Reliable operation from negative head to 185 feet of total head for continuous duty reduces the number of lift stations and pipe sizes. This cuts costs – both initially and in long-term operation and maintenance.
- **CONSTANT FLOW.** The system pressures to be overcome by any given grinder pump in a low pressure system vary dramatically over the course of a day. E/One's progressing cavity pump readily accommodates these pressure variations while maintaining a nearly constant flow without ever operating at "near shut off" – thus avoiding the wear and motor burn-out suffered by other pump types.
- **HIGH GRINDING TORQUE.** Our unique pump system, driven by a one-horsepower motor turning at 1725 rpm, produces grinding torque greater than a two-horsepower pump turning at twice the speed.
- **ENERGY EFFICIENT.** The pump is activated automatically and runs for short periods. Typical annual energy consumption is comparable to a 40-watt light bulb.
- **LOW MAINTENANCE SUBMERSIBLE MOTOR.** Low maintenance and long life are the hallmarks of our air-filled motor. Permanently lubricated ball bearings and Class F insulation eliminate the need for periodic oil changes and oil disposal costs required by oil-filled submersible motors.
- **LARGE-DIAMETER GRINDER ASSEMBLY.** Almost twice the diameter of most other types of grinder pumps, contributing to a dramatic reduction of inflow velocity for less wear and no blinding, clogging or jamming.
- **NO PREVENTIVE MAINTENANCE.** Non-fouling static level sensors require no preventive maintenance. Because of our unique, near constant discharge rate, no main line flushing is required in a properly designed system.
- **CORROSION RESISTANCE.** E/One's stainless steel ball-type discharge valve and piping won't corrode like copper or galvanized, and hold up years longer. No corrosion, no maintenance.
- **DEPENDABILITY.** E/One pumps typically run ten years between service calls with 40 years of in-ground experience.
- **PROVIDES FOR ENVIRONMENTALLY SOUND WASTEWATER MANAGEMENT.** The E/One Extreme Series grinds waste material into small particles. This enables the use of inexpensive, small-diameter pressure pipes, buried at shallow depths, to transport wastewater to a suitable processing site. Result: Ground water contamination from failing septic tanks can be eliminated.
- **SERVICEABILITY.** Our unique core design eliminates the need for in-field troubleshooting and pump servicing. This means lower maintenance costs and minimum homeowner inconvenience.

# GRAVITY SEWERS ARE NO LONGER THE RULE FOR SOLVING WASTEWATER PROBLEMS.

At the heart of the system is the E/One progressing cavity grinder pump – with high heads that can eliminate costly lift stations, and a robust, powerful design that translates into the industry's highest levels of reliability, availability and maintainability.

## E/ONE SPD PUMP PERFORMANCE CURVE




# ENGINEERED LOW PRESSURE SYSTEMS

# REPEALING THE LAW OF GRAVITY

**NOBODY CAN TOUCH OUR CURVE.**

In a low pressure system, constant, predictable pump output is the foundation for proper hydraulic design. It enables the engineer to minimize retention time, pump wear, and keep scouring action at effective levels.

Environment One's semi-positive displacement, progressing cavity pump has a nearly vertical H-Q curve. It is by far the most "forgiving" pump design – providing predictable flow over the full range of typical system pressures; strengths critical in a large-scale, low pressure sewer.

E/One's superior high head capability allows a system with few, if any, lift stations. And, it easily accommodates additional future connections without compromising system performance.

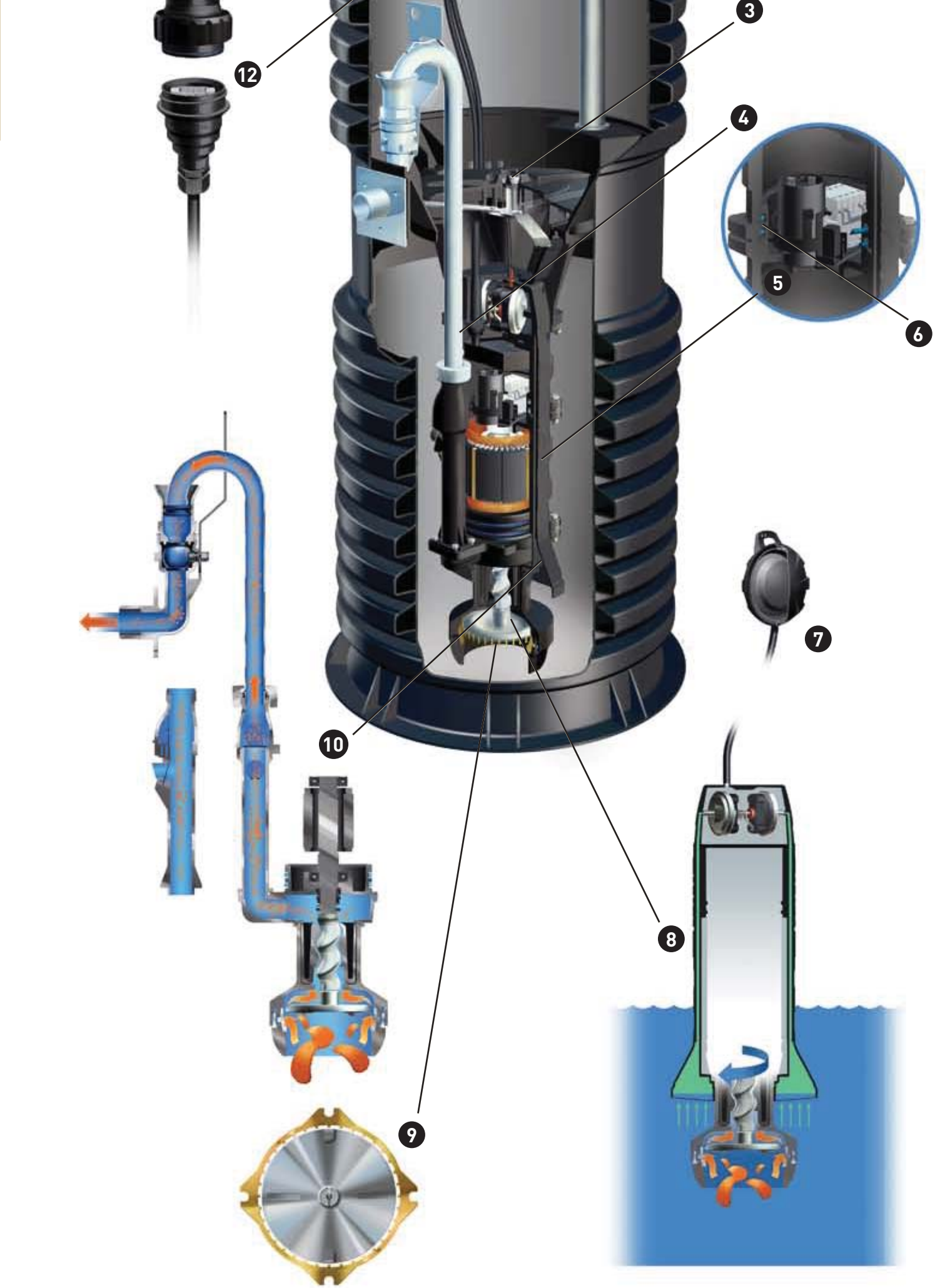
These E/One pump characteristics translate into:

- predictable hydraulic design
- lower collection system capital costs
- less maintenance
- lower operating costs

# ANATOMY OF A LEADER:

# THE INSIDE STORY ON THE E/ONE GRINDER PUMP STATION.

1. **LOW-PROFILE COVER:** Aesthetically pleasing. Provides easy access for service while blending with surroundings.
2. **HIGH-DENSITY POLYETHYLENE TANK:** Double-wall construction of high-density thermoplastic for rugged reliability. Factory pressure tested for infiltration and exfiltration free installation.
3. **QUICK-RELEASE CORE LATCH:** All stainless mechanism secures core in place and can be easily released from ground level.
4. **STAINLESS STEEL PIPING & HARDWARE:** E/One's SS discharge piping and ball valve won't corrode. No corrosion, no maintenance, no tools required.
5. **UNIQUE CORE DESIGN:** Eliminates the need for in-field troubleshooting and service. Modular controls simplify service.
6. **DOUBLE O-RING SEALS:** Make assemblies waterproof and novel joint geometry minimizes the effects of crevice corrosion.
7. **E/ONE EQUALIZER:** Compensates for fluctuations in atmospheric pressure to enable accurate level sensing while assuring the level sensing system is watertight.
8. **PROGRESSING CAVITY PUMP:** A deceptively simple design produces a nearly constant flow under a wide range of continuously varying conditions.
9. **GRINDER WHEEL AND SHREDDER RING:** Hardened corrosion-resistant cutter bars and teeth process sewage, grinding wastewater solids, as well as wood, plastic and cloth. Will not jam or clog!
10. **PRESSURE SWITCH LEVEL CONTROL:** Self-cleaning level sensors require no preventive maintenance.
11. **DIRECT-BURY CABLE:** For simple and inexpensive installation.
12. **ELECTRICAL QUICK DISCONNECT:** For safe and easy service. UL-listed, compatible with OSHA regulations for confined space entry.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# LEADING THE INDUSTRY WE INVENTED.

Environment One not only pioneered the low pressure sewer system, but consistently leads the industry both in system deployment and innovation. The company is dedicated to Total Quality, Continuous Improvement, and Customer Satisfaction, as evidenced by the E/One Extreme Series. Today, there are nearly a million end users worldwide.


## SEWER ANYWHERE

Driven by the remarkable E/One Extreme grinder pump, E/One Sewers give engineers, developers, municipal sanitarians, and land planners unprecedented new freedom in land usage and septic tank replacement.

With a smaller footprint and a softer touch on the land, they're so much easier to install. Front-end costs can be reduced by as much as 80%. Total installed costs by half. And O&M costs by up to 75%.

The E/One Extreme grinder pump reduces all forms of sanitary waste to a non-clogging slurry and pumps it through a network of small-diameter pipes. Since gravity is replaced by the power of the pump, sewer systems need not run downhill nor require large-diameter pipes, deep trenches, multiple booster stations – or their associated costs.

A system powered by the E/One Extreme grinder pump converts formerly cost-prohibitive building sites into cost-effective reality. "Problem areas," with high ground water, elevation changes or impenetrable bedrock, are transformed into valuable, developable real estate.

Of course, E/One's low upfront cost advances apply to conventional building sites as well.

In addition, E/One units are easy to install and virtually maintenance-free – refined through 40 years of experience with the largest installed base in the industry.

## SAVE THOUSANDS, VIRTUALLY SERVICE-FREE.

**Contact your local distributor:**

e|one
SEWER SYSTEMS

**Environment One Corporation**
**2773 Balltown Road**
**Niskayuna, NY USA 12309-1090**
**Voice (01) 518.346.6161**
**Fax 518.346.6188**
**www.eone.com**

**A Precision Castparts Company**
**LM000364 Rev B**

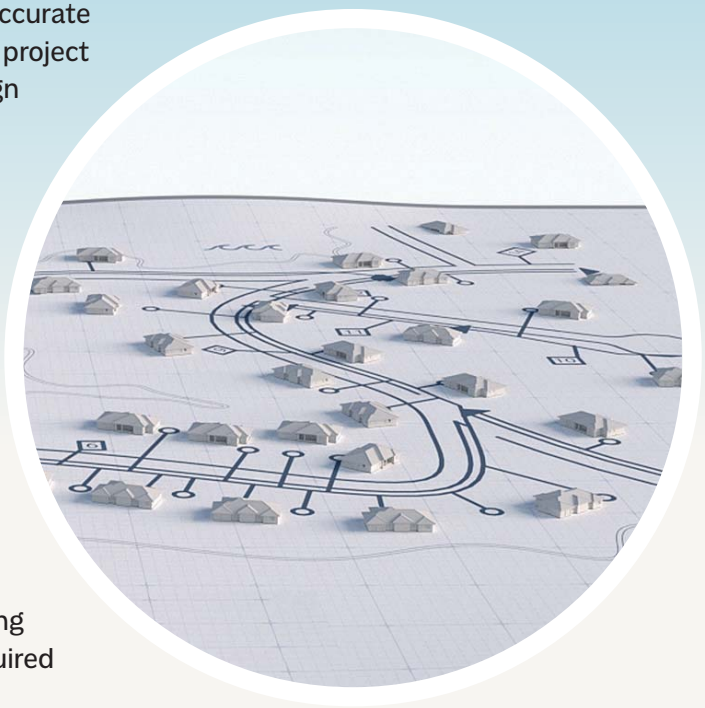
UL NSF CSA

F.R. MAHONY & ASSOC.
frma
A Division Of CUMMINS-WAGNER
100% Employee Owned

# Sewer System Design Analysis

## Guidelines for Submitting Your Map

Following these guidelines will ensure that we collect all relevant information in order to provide you with the most accurate pressure sewer recommendation possible. Depending upon project size and backlog, please allow 5-10 business days for a design analysis. Contact us if you have any questions.



## Required Information

- Project Reference Information
  - Customer name, company name, company contact info, address, project name & location
- Drawing of lot layout/area to be served
  - Preferred: PDF
  - Not recommended: Multiple PDFs, drawing sets or sheets with matchlines
- Scale or include graphical scale to measure distance
- Topographical information (contour map preferred)
- Discharge location and type — if connecting to an existing force main, tie-in pressure in feet/meters or psi/kPa required

## Requested Information

- Total daily flow and building/site use for non-residential applications (GPD/LPD, non-peaked to allow selecting a station)
- Other design requirements
  - Pipe type preference (min 160 psi/1100 kPa rating) – SDR11 HDPE, SDR21 PVC, SCH40 PVC, etc.
  - Hazen-Williams C-factor (150 recommended)
- Other information beneficial to providing a quality recommendation: site conditions, special requirements, etc.

eone
SEWER SYSTEMS

**When your design is completed, you will receive a design report and letter outlying the design recommendations as well as pump sizing recommendations.**

**To submit your information, please email your F.R. Mahony Outside Sales Engineer.**

F.R. MAHONY & ASSOC.
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100% Employee Owned

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Replace Your

# Failed Grinder Pump

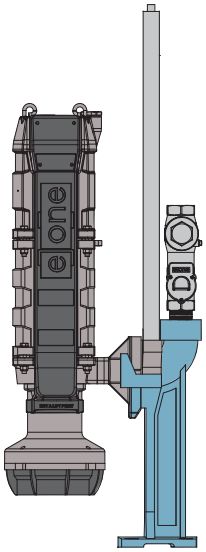
Upgrade to the industry's leading grinder pump with an easy, drop-in replacement or adapter system

## C-Channel Systems

- Uses existing guide rail assembly
- Field kit or factory-installed on pump
- All 316 stainless steel construction

## Other Systems

- Factory-installed on pump
- Stainless steel discharge assembly and lifting harness



## Guide Rail Systems

- Uses existing guide rail system
- Factory-installed on pump
- Cast iron construction
- Optional stainless steel check valve/anti-siphon