Homeowner Questions

Homeowner: What is an Environment One grinder pump?

The Environment One grinder pump is a UL-listed, self-contained appliance that consists of a wastewater-holding basin, a 1-hp SPD grinder pump, on-off controls and a high water alarm. The Environment One system is engineered with specific features for residential applications. For example, we have a 5 ¼-inch grinding area that eliminates clogging. Also, the design of the pump will virtually eliminate a clogged discharge line due to sediment buildup, and the non-fouling level controls, as well as the entire grinder pump station, require zero preventive maintenance.

Homeowner: Why does my lot need a grinder pump?

Because of difficult terrain (flat, wet, rocky or hilly) or a failing septic tank, using an E/One system is more practical for moving wastewater from the lot to the public sewer system. Conventional sewer systems are impractical, if not impossible, for this location.

Homeowner: Is an E/One system the same as a septic tank?

No. An E/One grinder pump grinds waste from the home and pumps it to a public sewer system. Septic tanks leach the wastewater into the ground and require periodic pumping.

Homeowner: My septic tank works fine.

You have probably done a great job maintaining your septic tank. But, we still have pollution in the area from the existing septic sites. This is a problem that your sewer authority has to address. The E/One low pressure sewer system is designed to eliminate the pollution issues that are having an impact on the quality of life in your community.

Homeowner: How much does an E/One grinder pump cost?

The cost of a completely installed system depends on the type of system you select, the soil conditions of your lot, and the distance from your grinder pump to the public sewer tap.

Homeowner: What happens when this pump fails? I don't worry about the current system failing; I never have a problem. Will I have to stop using my toilet while this pump is fixed?

The E/One grinder pump is a self-contained unit designed to be repaired quickly and easily. Each unit has an alarm that alerts you to call the local service center. Service calls usually are finished in less than one hour. You should keep water use to a minimum until a technician arrives. If you need to shower, close the drain so you won't overwhelm the unit. Use your toilet sparingly.

Homeowner: How long will my pump last before I need to repair or replace it?

E/One currently has systems in place that have been in operation for over 25 years. Typically there is an 8- to 10-year period before service is required to replace wearing pump parts. Some of the very first pumps were installed in 1974 at Weatherby Lake, Missouri. Today, after more than 25 years of successful operation, the E/One Sewer system at Weatherby Lake has grown to more than 600 pumps; more than 300 of these pumps are more than 20 years old.

Homeowner: Does the pump have an alarm to warn me if something is wrong?

Yes. An alarm panel, located outside your home or inside your garage, has an audible and visual alarm that indicates high water levels in your grinder pump's tank. If there is a problem with the unit, you will get a notification by the alarm. Use the silence switch to silence the alarm and call for service immediately.

Homeowner: Do E/One pumps require much maintenance?

No. Unlike other appliances or equipment in your home, no periodic maintenance is required. The E/One system is designed to be virtually maintenance-free for long periods. The grinder pump core is an electro-mechanical device that will eventually require service. You can expect some sort of repair to a properly installed unit after 8 to 10 years.

Homeowner: Am I limited as to what I can pour down the drain or into my E/One pump? What materials or objects will clog the pump?

As with conventional sewer systems, do not allow strong chemicals, oils, flammables, glass, metal, diapers, plastics, etc. to enter the pump or pressure sewer system. If in doubt, refer to your grinder pump owner instructions/warranty card.

Please contact your local authority for proper disposal methods.

Homeowner: Can I use a garbage disposal?

Yes; again, refer to instructions/warranty card for items/foods that are not to be put in the garbage disposal. Also, check your local regulations. Some sewer districts do not allow garbage disposals on their system.

Homeowner: Do I need to do anything special to the system if I am gone for long periods of time?

The system does not need to be turned off or altered before you leave for a length or time. If you plan to be away for more than one week, fill the bathtub with water, and then drain it. The water will flush the tank and pump out any solids before you leave.

In vacation (part-time residences) homes, it can be expected that many of the units would not operate for prolonged periods of time. This has not proven to cause a problem in any of the currently installed systems in the United States.

Homeowner: Do I need to pump out my E/One Sewer like I would a septic tank?

No. Wastewater is temporarily stored in the basin and then pumped out when the water reaches a certain level; solids are ground up and removed as well. Septic tanks are simply tanks and need to be pumped periodically.

Homeowner: How is all the stuff that might go down my toilet going to go out through 1¼-inch pipe?

The pump has been designed to grind up everything that normally goes into a sewer — even plastic toys, clothes pins, diapers, or socks. Everything is ground up small enough to pass through the 1 ¼-inch lines to the main sewer line.

Homeowner: What about a power outage? What happens when the power comes back on?

It is important to be aware of the power outage history in the community. The maximum duration of failure is the relevant parameter. As shown by data from the Federal Power Commission, the average power outage in the United States lasts less than two hours, and the tank storage capacity is more than adequate for these short intervals. This is especially true since all water-using appliances are inoperable during a power outage, and the per capita usage drops dramatically during such periods.

Even so, it is a legitimate question to ask, "What happens if the power is off for several days and all the pumps try to turn on at once when power is restored?" In such a situation, the pipe friction losses go far above the calculated values, which are based on simultaneous operation of a small fraction of the pumps at any given time. Under such circumstances, those pumps with the highest total dynamic head losses will turn on momentarily but will be automatically tripped off the line in a few seconds by the built-in thermal overload protector. Meanwhile, those pumps nearest the discharge point and with the lowest static heads will see lower pressures, will pump out normally, and shut off in three or four minutes.

Meanwhile, the other pumps will have cooled down enough to come back on a second time and try again. Some will still see high enough heads to be tripped back off again. Others will find the line pressure has reduced enough to permit them to pump out and shut off. In this way, the system completely and automatically restores itself to normal operation within 30 to 45 minutes following restoration of power. No one must visit the pumps because they reset automatically.

Although such long outages are rare, several instances of automatic resetting, including Weatherby Lake, Missouri, are known to have successfully occurred.

The automatic reset thermal overload protectors are very rugged devices custom designed for the grinder pump motor. *As evidence of this durability, these protectors must cycle on and off locked rotor current for 15 continuous days before gaining the UL seal of approval.*

E/One pumps automatically resets after a power failure. E/One pumps are designed to handle flows and heads developed when all the pumps come on at the same time. Centrifugal pumps will all go to shut-off because of the high head and won't pump anything.

Homeowner: How much tank storage capacity does the E/One station offer?

The E/One grinder pump stations have storage space in their wet wells for storage of sewage in the event of pump or power failure. The detention time in each E/One unit is given below.

	Model DH071 Standard Unit (Gallons)	Model DH151 Larger Tank (Gallons)
Capacity of emergency use	38	66
Average flow per day	180	180
Total gallons per hour (over 12 hours)	15	15
Average emergency storage	2.5 hours	4.4 hours
Average emergency storage at 50% reduced flows*	hours**	8.8 hours**

*During power failure, washing machines, dishwashers, etc. cannot operate and washing up and showering is likely to be diminished. Therefore, a 50 percent flow reduction is reasonable.

**As shown by data from the Federal Power Commission, the average power outage in the United States is less than 2 hours in duration, and the tank storage capacity is more than adequate for these short intervals.

Given the fact that E/One sewers eliminate inflow and infiltration, these emergency storage volumes provide greater reliability than the storage volume provided in sewer pumping stations.

Homeowner: But I have six kids.

If you desire, we can give you larger storage capacity. The Environment One pump is standardized, so the same size is used even for larger applications. For instance, at a day care center, the pump is the same but we can go up to a 500-gallon storage tank if needed.

Homeowner: What if the unit requires service? If I get an alarm what should I do?

Call your local distributor if you experience problems with your pump (information should be written on your user instruction/warranty card). Also, each alarm panel has a company name tag on it with a telephone number to reach our 24-hour service department. A trained service technician will respond to your home to service the pump. The occupants of the home can continue minimal use of the system while the service technician is in route. Most repairs are completed on site.

Homeowner: How long is the warranty for the E/One grinder pump? What type of Warranty does this pump unit have?

The standard warranty is two years. Contact your local distributor or Environment One Customer Service (518-346-6161, press "1") for more information.

Homeowner: What will this do to my electric bill? What is the average yearly electrical cost to operate a unit servicing the typical single typical home?

A typical single family home will use 250 gallons of water per day. The E/One pump for this home will consume about 200 KWh of electricity per year. At $.011 KWh x 200 KWh = $22.00 per year cost of electricity to operate the E/One pump.

Homeowner: How noisy is the pump?

With an outdoor unit buried in the ground, you will not hear it at all if you're 10 or 15 feet away. If you're standing on top of it, it sounds like your washing machine when it's running — just a hum.

Homeowner: What will this look like in my yard?

The system will be buried and the only thing you'll see is top cover, which is less than 30 inches in diameter. The cover is designed to blend into your yard as much as possible and can easily be landscaped to become more invisible.

Homeowner: Does the E/One grinder pump emit any unpleasant odors?

Odors can be a problem from time to time in all types of sewer systems. Large-diameter, long-distance gravity mains have been a classic source of gas generation and odor. The closed network of small-diameter pipelines of a pressure sewer system is inherently less susceptible to odor problems.

Well-designed pressure sewer systems minimize the potential for odor by designing for short retention time. When pressure sewers discharge a short distance, as in a typical service line to a receiving gravity sewer, the residence time in the pipeline is usually short enough for the wastewater to be relatively fresh or even stale, but not so septic as to present a problem of odors or corrosion at the receiving sewer. With increased retention time the wastewater becomes totally septic. Corrosive gases tend to deteriorate capital equipment and have a negative impact on treatment. Long lines, oversized piping, seasonal occupancy and slow build-out are among the causes for excessive retention times, but properly designed systems can minimize excessive retention times.

Homeowner: What about my property values?

It is well founded that a public sewer system adds value to your property over the installation of a septic tank.

Homeowner: What if I have a party and my neighbor has one too? Will the pumps be overloaded?

No, the pumps operate independently of each other and are designed to handle the flow from the number of fixtures in your house without being overloaded.

Homeowner: What about vandalism? That's just plastic top — what's to prevent kids from getting in there?

Every unit has a lid that is bolted down and can be locked to prevent unauthorized people from opening the cover.

Homeowner: Who can install my E/One grinder pump?

For newly constructed homes, your builder, through his plumbing subcontractor, can install the unit as part of the normal course of construction of your home.

Homeowner: Who can I call for more information about E/One grinder pumps?

Call your local distributor or Environment One Customer Service for complete information about E/One grinder pumps. Information can also be found at E/One's web site, www.eone.com.

Homeowner: If I want to replace the unit in 10 years, can I put in a new E/One pump? Will this pump become obsolete?

The E/One pump station is designed to be repaired or replaced indefinitely.

Homeowner: Is there a chance of backflow into my home from my unit or the whole system?

No. Check valves on the grinder pump and at the street prevent the street main sewage from entering your pump and home. If installed properly any serious malfunction will result in sewage discharging outside the home.

Homeowner: What if the alarm goes on during heavy use and then goes off?

During this event, it is recommended that you reduce flow to the pump station until the alarm stops.

THE BENEFITS OF E/ONE PRESSURE SEWERS

Less expensive connection to the town sewer
Homeowner connection costs to E/One pressure sewers generally result in significant savings compared to the conventional or modified gravity alternatives.

In hooking up to the E/One pressure sewer system, the homeowner has only to make the short connection from his septic tank to the inlet of the grinder pump unit, which is generally located adjacent to the house.

This homeowner savings represent a major advantage compared to gravity sewers. This should be considered as part of any tender evaluation.

Individual customer consultation
With pressure sewers, the grinder pump facility for each property must be located at each house. Each homeowner will be individually consulted to ensure that his/her preference for locating the unit is taken into account. Other aspects of the project will be addressed on a personal level at the same time.

Less disruption to property during construction
The use of pressure sewers creates the opportunity to locate the sewer line in the street verge wherever possible, thereby eliminating direct impacts to private property except for the installation of the house service line. The impact of the house service line itself is small (similar to the installation of a gas or water line) because its diameter is only 1 ¼ inches. The narrow, shallow trenches required by E/One pressure sewers in the street result in significantly less excavation disruption and minimum restoration needs compared to the conventional and modified gravity alternatives. Customers can enjoy minimal disruption to their properties during the installation of E/One Sewers.

Less environmental disruption during construction
Less excavation inevitably leads to less environmental impact during the installation of pressure sewers. This means less silty runoff, shorter construction periods, a lower level of property access problems with customers, less construction noise, and so on.

Location of transfer pumping stations no longer need be at the lowest point
Traditionally pumping stations are located at the lowest point so that all properties may drain by gravity to them. With pressure sewers this constraint is removed because the grinder pumps themselves can lift sewage up to 90 feet, enabling pumping stations to be located away from sensitive areas if this is desirable.

Fewer pumping stations make the sewer system less obtrusive
Sewage pumping stations can be visually obtrusive, require regular maintenance activity and can be the source of odors. E/One pressure sewers can eliminate many of the pumping stations required when gravity systems are adopted. In one project for 1500 properties, the number of pumping stations was reduced from 13 to just one.

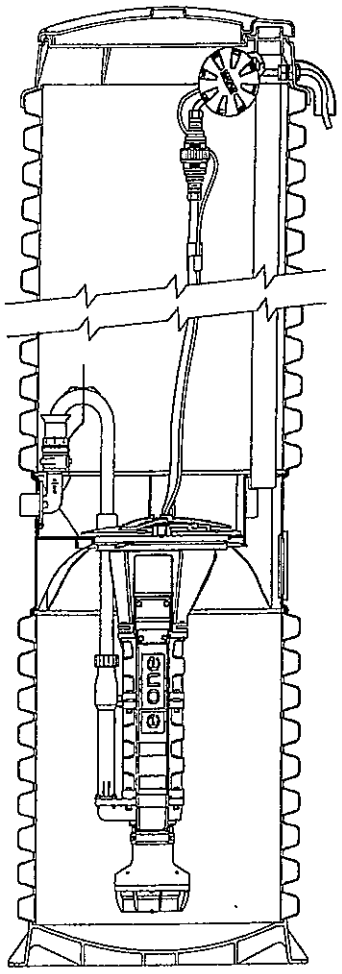
Faster construction
Faster construction means community disruption is minimized and the environmental benefits delivered by sewers can be delivered earlier. Faster construction can be achieved because there is less excavation and fewer pumping stations.

No manholes
Manholes, which can exert visual impact, can be eliminated with pressure sewers.

Protection of vegetation and trees
In many areas, the protection of trees and other vegetation is a vital issue. The small diameter and flexibility of polyethylene pipe normally used in E/One networks easily facilitates the protection of important flora.

E/ONE EXTREME SERIES

DH071/DR071



General Features

The model DH071 or DR071 grinder pump station is a complete unit that includes: the grinder pump, check valve, HDPE (high density polyethylene) tank and controls. The DH071 or DR071 is packaged into a single complete unit, ready for installation.

The DH071 is the "hardwired," or "wired," model where a cable connects the motor controls to the level controls through watertight penetrations.

The DR071 is the "radio frequency identification" (RFID), or "wireless," model that uses wireless technology to communicate between the level controls and the motor controls.

All solids are ground into fine particles, allowing them to pass easily through the pump, check valve and small diameter pipelines. Even objects not normally found in sewage, such as plastic, rubber, fiber, wood, etc., are ground into fine particles.

The 1:25-inch discharge connection is adaptable to any piping materials, thereby allowing us to meet your local code requirements.

The tank is made of tough corrosion-resistant HDPE. The optimum tank capacity of 70 gallons is based on computer studies of water usage patterns. A single DH071 or DR071 is ideal for one, average single-family home and can also be used for up to two average single-family homes where codes allow and with consent of the factory. This model can accommodate flows of 700 GPD.

The internal check valve assembly, located in the grinder pump, is custom-designed for non-clog, trouble-free operation.

The grinder pump is automatically activated and runs infrequently for very short periods. The annual energy consumption is typically that of a 40-watt light bulb.

Units are available for indoor and outdoor installations. Outdoor units are designed to accommodate a wide range of burial depths.

Operational Information

Motor

1 hp, 1,725 rpm, high torque, capacitor start, thermally protected, 120/240V, 60 Hz, 1 phase

Inlet Connections

4-inch inlet grommet standard for DWV pipe. Other inlet configurations available from the factory.

Discharge Connections

Pump discharge terminates in 1.25-inch NPT female thread. Can easily be adapted to 1.25-inch PVC pipe or any other material required by local codes.

*Discharge**

15 gpm at 0 psig

11 gpm at 40 psig

7.8 gpm at 80 psig

Overload Capacity

The maximum pressure that the pump can generate is limited by the motor characteristics. The motor generates a pressure well below the rating of the piping and appurtenances. The automatic reset feature does not require manual operation following overload.

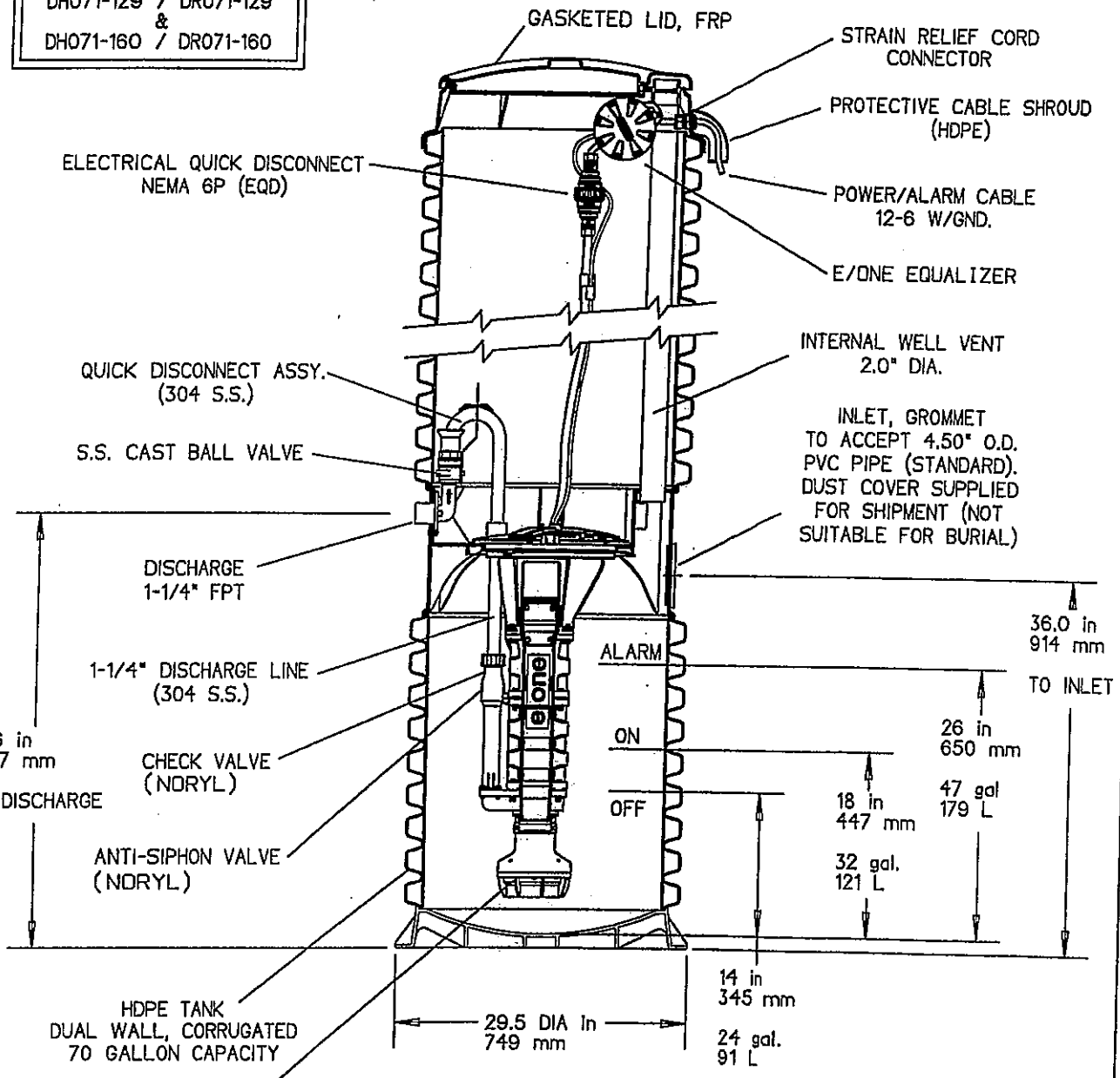
Patent Numbers: 5,752,315 5,562,254 5,439,180

* Discharge data includes loss through check valve, which is minimal.

NA0050P01

OPTIONS : ☐ DH071 (HARD WIRED LEVEL CONTROLS)
☐ DR071 (WIRELESS LEVEL CONTROLS)

FIELD JOINT REQUIRED
FOR MODELS
DH071-129 / DR071-129
&
DH071-160 / DR071-160



CONCRETE BALLAST MAY BE REQUIRED
SEE INSTALLATION INSTRUCTIONS
FOR DETAILS

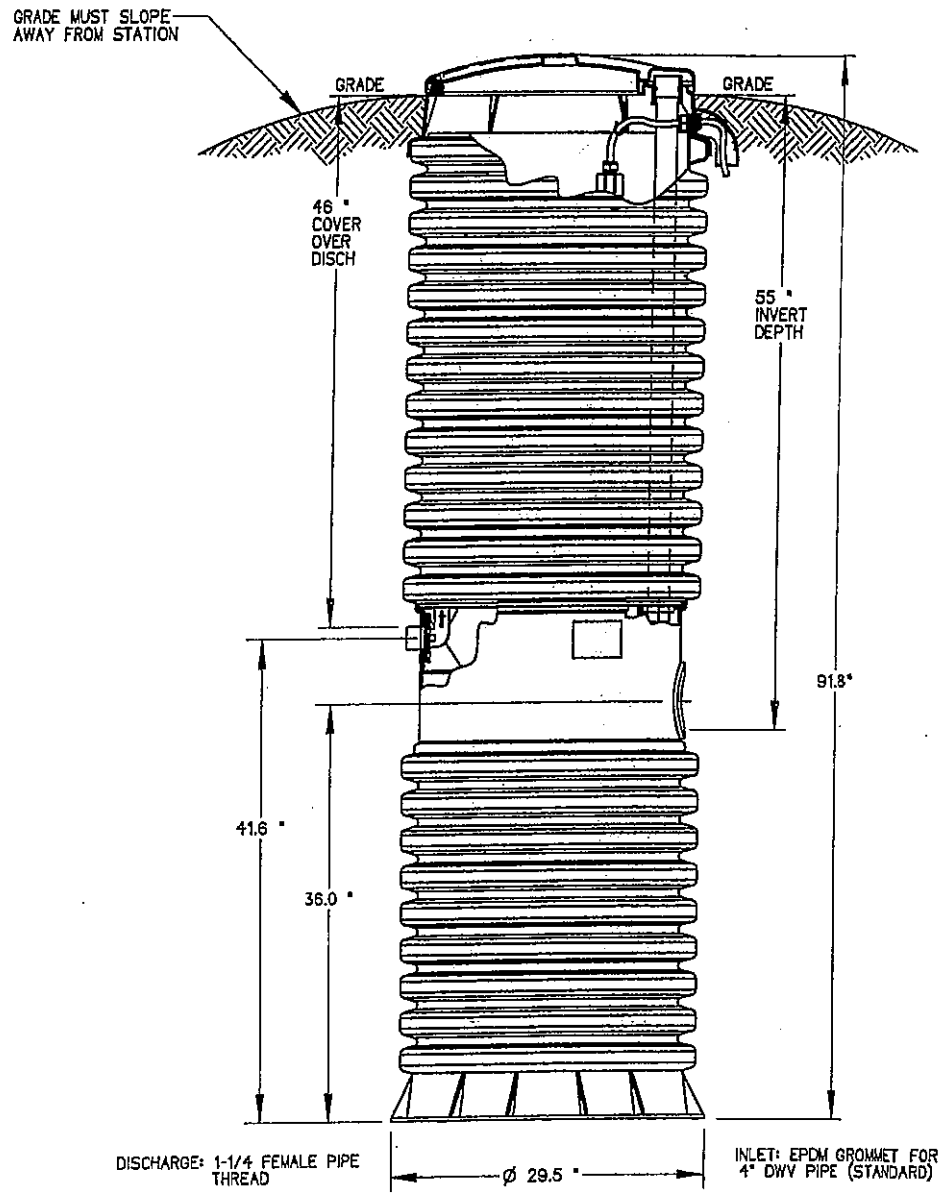
AD	CH	07/12/07	A	
DR BY	CHK'D	DATE	ISSUE	SCALE

e/one SEWER SYSTEMS

MODEL DH071 / DR071
DETAIL SHEET

NA0050P02

OPTIONS : ☐ DH071-93 (HARD WIRED LEVEL CONTROLS)
☐ DR071-93 (WIRELESS LEVEL CONTROLS)



CONCRETE BALLAST MAY BE REQUIRED
SEE INSTALLATION INSTRUCTIONS
FOR DETAILS

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DR BY	CHK'D	DATE	ISSUE	SCALE

SEWER SYSTEMS

MODEL DH071-93 / DR071-93

NA0050P06