

January 2, 2013

Meghan Jop
Planning Director
Town of Wellesley
525 Washington Street
Wellesley, MA 02482

RE: A&M Project #1828-02
Wellesley Country Club
Wellesley, MA

Ms. Jop:

On behalf of our client, the Wellesley Country Club and General Manager Martin Ryan, Allen & Major Associates (A&M) is providing this response letter to comments and issued from the municipal departments as solicited during the Project of Significant Impact (PSI) review process. The following municipal letters are addressed herein:

- Letter to Meghan Jop dated December 12, 2012 from the Town of Wellesley Fire Department
- Letter to Meghan Jop dated December 6, 2012 from the Wellesley Municipal Light Plant
- Letter to George Saraceno dated December 7, 2012 from the Department of Public Works Water & Sewer Division
- Letter Meghan Jop dated December 7, 2012 from the Department of Public Works Engineering Division

All changes based on this letter are contained herewith or in the revised plans dated December 28, 2012 prepared by A&M. The response to comments are in the order presented from the original review. The initial comment (shown in *italics*) precedes the response (shown in **bold**).

Letter to Meghan Jop dated December 12, 2012 from the Town of Wellesley Fire Department

Comment 1: *The Fire Department has reviewed the project for the Wellesley Country Club and they have agreed to add a hydrant as requested by us. They also know that they will have to apply for a street address for the Maintenance Facility.*

Response 1: **A&M met with Fire Department representatives on December 11th to review the site plans. As requested, an additional hydrant will be located adjacent to the "high side" of the turf care facility. Additionally, the proposed hydrant location from the submittal will be relocated from its current position to be closer to the Environmental Management Center adjacent to the main driveway.**

Letter to Meghan Jop dated December 6, 2012 from the Wellesley Municipal Light Plan

Comment 1: *The Municipal Light Plant has reviewed the documents provided for this project and has also met with some of the consultants working for the Wellesley Country Club to make sure*

a better understanding of the electric services, needed for the upgrades was obtained. The electrical infrastructure around Wellesley Country Club has adequate capacity to support the proposed electric services, but it is advised that both parties continue to work closely together to make sure the outcome of the project is satisfactory.

Response 1: **As noted, the Club met with MLP on December 6 to review the project. We are committed to working with the Department on needed requirements. The revised plans included with this response letter provider the first round of revisions necessary based on MLP review. No additional response required.**

Letter to George Saraceno dated December 7, 2012 from the Department of Public Works Water & Sewer Division

Comment 1: *The sewer connection to the municipal system should be clarified by showing the municipal sewer on the plan and if needed extending the main out to Oakland Street.*

Response 1: **The current sewer layout alignment has been added to the plans as requested.**

Comment 2: *The connection manhole should be identified by its cast number so it can be located on a site visit.*

Response 2: **The proposed connection manhole is identified as 1882. This information has been added to the plans as requested.**

Comment 3: *The plan location of the force main along Brookside Road needs to be revised to show it along the roadway as stated.*

Response 3: **The layout of the force main has been revised to follow the shoulder alignment of the roadway prior to the manhole connection as requested.**

Comment 4: *The Comfort Station is located within the Watershed Protection District and within the DEP Zone II. From the plans submitted, I did not see any provisions that would be in non compliance with the Watershed Protection regulations or the DEP Groundwater Supply Protection regulations.*

Response 4: **No response required.**

Comment 5: *The hydrant should be repositioned nearer the start of the facility to provide better access for the Fire Department in case of emergency.*

Response 5: **The hydrant position and quantity has been revised per Fire Department review. Please see Comment 1 under the Fire Department review section.**

Comment 6: *The existing municipal and building service sewer lines need to be shown on the plan.*

Response 6: **The record sewer layout information has been added to the plans as requested. The fuel and wash facility will reuse the existing 6" PVC sewer. The Turf care facility will reuse an existing onsite pump station that discharges through a 1" PVC line**

into the gravity sewer along Wellesley Avenue. The approximate location of the line has been added to the plans.

Comment 7: *The Turf Management Facility and the Bulk Material Storage Building are located within the Watershed Protection District. The Turf Management Facility is located within the DEP Zone II and the Bulk Material Storage Building is located at the edge of the DEP Zone II. It is appreciated that these revised plans show the building at a further distance from the Wellesley Avenue wells.*

Response 7: **No response required.**

Letter Meghan Jop dated December 7, 2012 from the Department of Public Works Engineering Division

Comment 1: *Brookside Road is an ancient way and scenic road. The existing curb opening for the proposed Comfort Station will be modified. There are no proposed curb cuts for the project.*

Response 1: **The use of the term “curb cut” is a misnomer. There is no curbing along Brookside Road and no “curb cut” to speak of. The correct terminology should refer to an access point as this area is a historic access point for the Club for port-o-potty maintenance and the Academy Brook restoration project.**

Comment 2: *The “graphic scale” on the plans is incorrect and should be re-inserted into the plans at the correct scale.*

Response 2: **The graphic scale on the plan sheets has been revised**

Comment 3: *The Applicant should provide a copy of the Order of Conditions for the proposed Comfort Station.*

Response 3: **At the time of initial PSI submission the Order of Conditions had not been finalized. The Order was issued on December 19, and is included herein.**

Comment 4: *The stormwater drainage system, shown on the plans adequately provides for onsite with pretreatment units, sub-surface infiltration and overflow to low-lying areas on the site. The soil report provided, which was obtained from the Natural Resources Conservation Service shows mostly loamy sandy soils, which typically drain well. However, for Zoning Board of Appeals (ZBA) Site Plan Review, the plans should show the location of the test pits and any groundwater encountered.*

Response 4: **A&M conducted test pits within the proposed development area. Reference is made to the test pit locations as shown on Sheet 2.1 of the Grading and Drainage plans. The results of the test pits were included in the PSI submission report, but are reproduced herewith.**

Comment 5: *Work within the limits of the Sudbury Aqueduct requires a permit from the MWRA. There are proposed site regrading, drainage, landscaping and paving work that encroaches onto the Sudbury Aqueduct. Please provide DPW with a copy of the permit.*

Response 5: **The 8M permit is currently pending through MWRA. The project was preliminarily reviewed by MWRA prior to formal submission to determine if any project hurdles existing. Some minor layout modifications were made that make the project acceptable to the MWRA. The permit will be provided for record prior to the start of construction.**

Comment 6: *The project is providing 20 additional parking spaces at the existing maintenance building and redirecting vehicle trips for staff and materials to Forest Street, which should improve the flow of traffic through the Club House parking lot.*

Response 6: **No response required.**

Comment 7: *As suggested in the Traffic Impact and Access Study, the brush and trees on the site of the Forest Street driveway should be cleared to improve site distance on Forest Street. ...Brush and tree removed should be coordinated with the Town of Wellesley Park Division.*

Response 7: **The selective clearing of vegetation was made a condition of the Selectmen’s and BEA Group review of the traffic. The removal will be coordinated with the Park Division as requested.**

Comment 8: *According the Traffic Impact and Access Study submitted by Ron Miller (sic) Associates, as a result of the redirecting of 10 vehicle trips, the Wellesley Avenue and Forest Street intersection increases traffic-volume at the peak hour by 0.3-0.4 percent, well within the daily fluctuations of traffic. The project does not negatively impact existing traffic conditions on Wellesley Avenue, Forest Street and Brookside Road.*

Response 8: **No response required.**

Comment 9: *Provide in the Storm Drainage Impact Analysis a table that shows the amount of impervious surface added to the site.*

Response 9: **The amount of impervious cover for each watershed area was contained within the project report under the Stormwater Management Standards section – Standard 4 – Water Quality. The values from the report are reproduced below:**

Watershed Label	Project Area	Impervious Coverage (sf)
PR-100	Comfort Station	1,350
PR-202	Fuel and Wash Building	34,508
PR-303	Turf Maintenance Facility	84,245

Comment 10: *Provide complete watershed maps including the design points for all three (3) sites.*

1	2,300/4 bays	bay	Service Bay	150	600	330	990
2	2,330	SF	General Office	0.075	175	96	288
3	200 (10 persons per day, assumed)	person	Public Park, Toilet Waste Only	5	50	27	81
4	1,700	SF	(General Storage)	0	0	0	0
5	24,700	SF	(Total Square footage)	--	--	--	--
	16,700/ 7 bays	bay	Service Bay	150	1,050	578	1,734
	3,000	SF	Maintenance	0.075	225	124	372
	2,500	SF	Office	0.075	188	103	309
	2,500	SF	Storage	0.075	188	103	309
					2,476	1,361	4,083

*GPD/Unit based on 310 CMR 15.00

Water Demand notes

Office	75	1. Avg day demand = Title V/2 + 10% unaccounted for losses 2. Max day demand = 3x average day
Service Bay	gpd/1000sf	
Public Park Toiler	150 gpd/bay 5 gpd/person	

Comment 15: *See attached memo dated December 7, 2012 from the Superintendent of the Water & Sewer Division.*

Response 15: **Issues raised in the Water & Sewer memo are addressed elsewhere in this letter.**

Comment 16: *The Sewer System Analysis should include the specifications for the proposed eOne sewer pump system and detail how the eOne grinder pump will be winterized.*

Response 16: **A specification booklet from the manufacturer is included herein. A secondary documenting outlining seasonal usage winterization is also included.**

Comment 17: *The applicant should provide the existing sanitary sewer generation from the sites and any other pertinent information that will identify flow reductions.*

Response 17: **The existing sewer flow is provided in the water analysis table above as requested.**

Comment 18: *See attached memo dated December 7, 2012 from the Superintendent of the Water & Sewer Division.*

Response 18: **Issues raised in the Water & Sewer memo are addressed elsewhere in this letter.**

Comment 19: *The refuse generate from the site will continue to be removed by private haulers and will not impact the Town of Wellesley refuse disposal program.*

Response 19: **No response required.**

Comment 20: *A recycling program should be provided for the proposed project.*

Response 20: **The club currently utilizes a recycling program through the clubhouse. This includes separation of cans, bottles, glass, plastic, and paper from the club departments. These materials are placed in recycle bins located in the receiving area**

of the clubhouse. The goods are picked up by Allied Waste two to three times per week. The club also collects used cooking heat which is recycled into heating oil. he proposed project will be considered part of the program and provide bins for separation of trash and recyclables.

We believe the above responses satisfy the issues raised. If you require further information or need anything addition please contact our office.

Very truly yours,

ALLEN & MAJOR ASSOCIATES, INC.



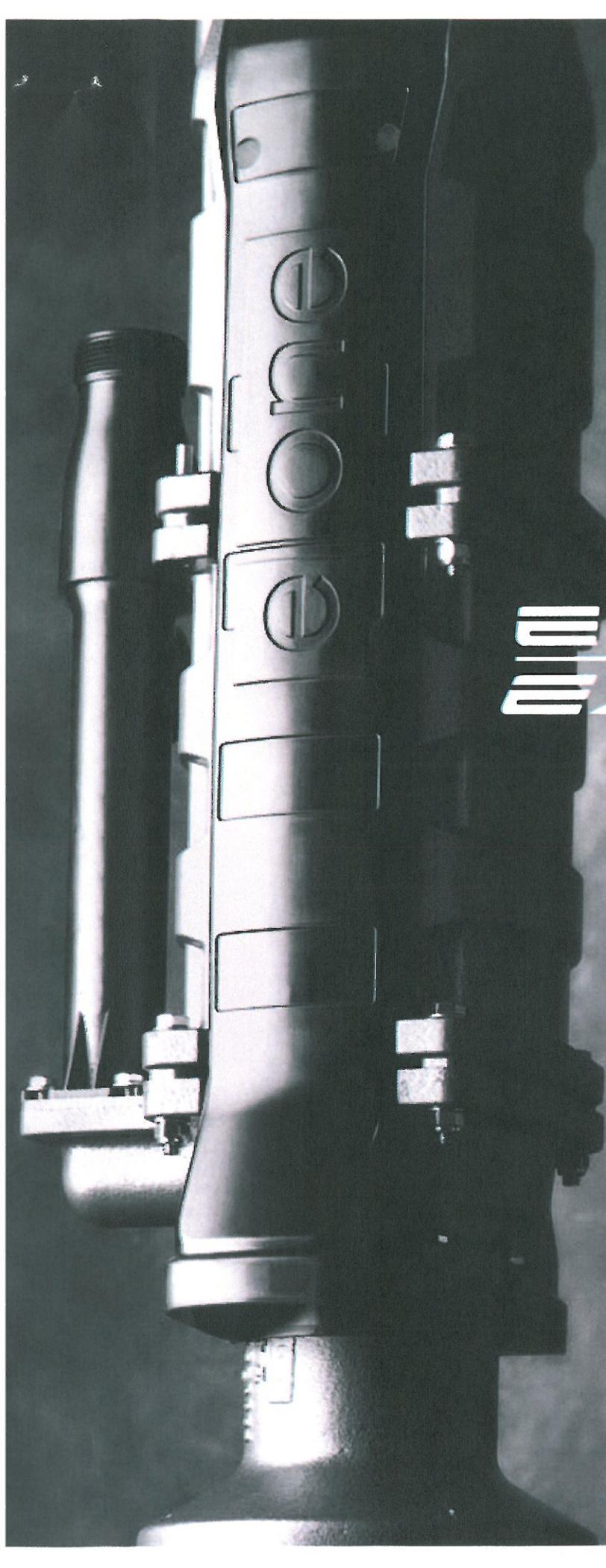
Philip Cordeiro, PE

Project Manager

pcordeiro@allenmajor.com

cc: M. Grimes/P. Deyesso/M. Ryan/B. Sansone, Wellesley Country Club
L. Shea, Wilder and Shea
L. Hudon, New England Construction
A&M File 1828-02

Enclosures



ENGINEERED
TO DO ONE JOB
PERFECTLY

E/ONE
EXTREME
S E R I E S

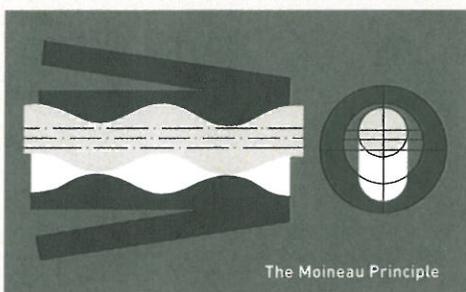
PRESSURE
SEWER
SYSTEMS

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 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.

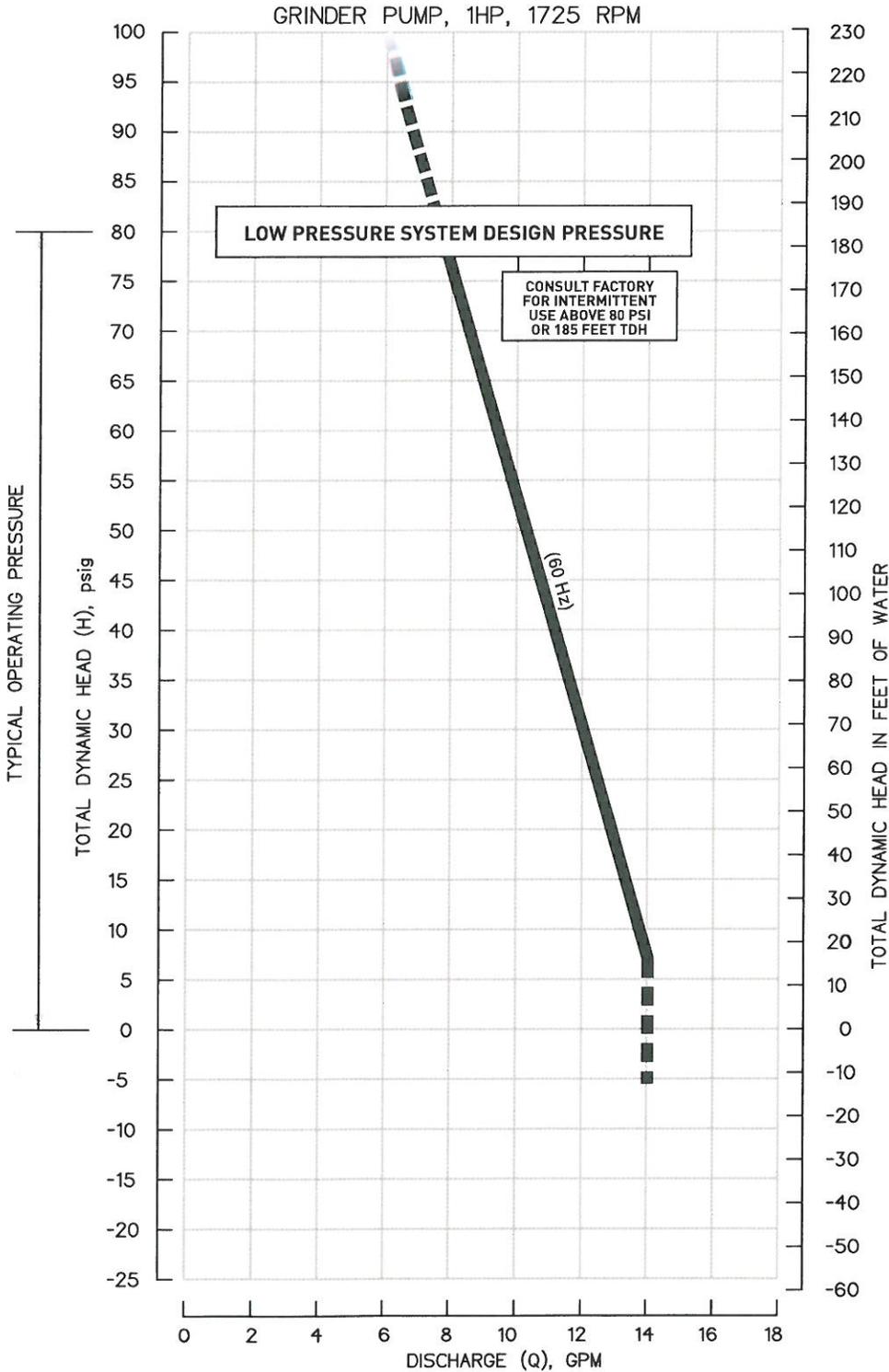
GRAVITY SEWERS ARE NO LONGER THE RULE FOR SOLVING WASTEWATER PROBLEMS.

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.

ENGINEERED LOW PRESSURE SYSTEMS

REPEALING THE LAW OF GRAVITY

E/ONE SPD PUMP PERFORMANCE CURVE



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.

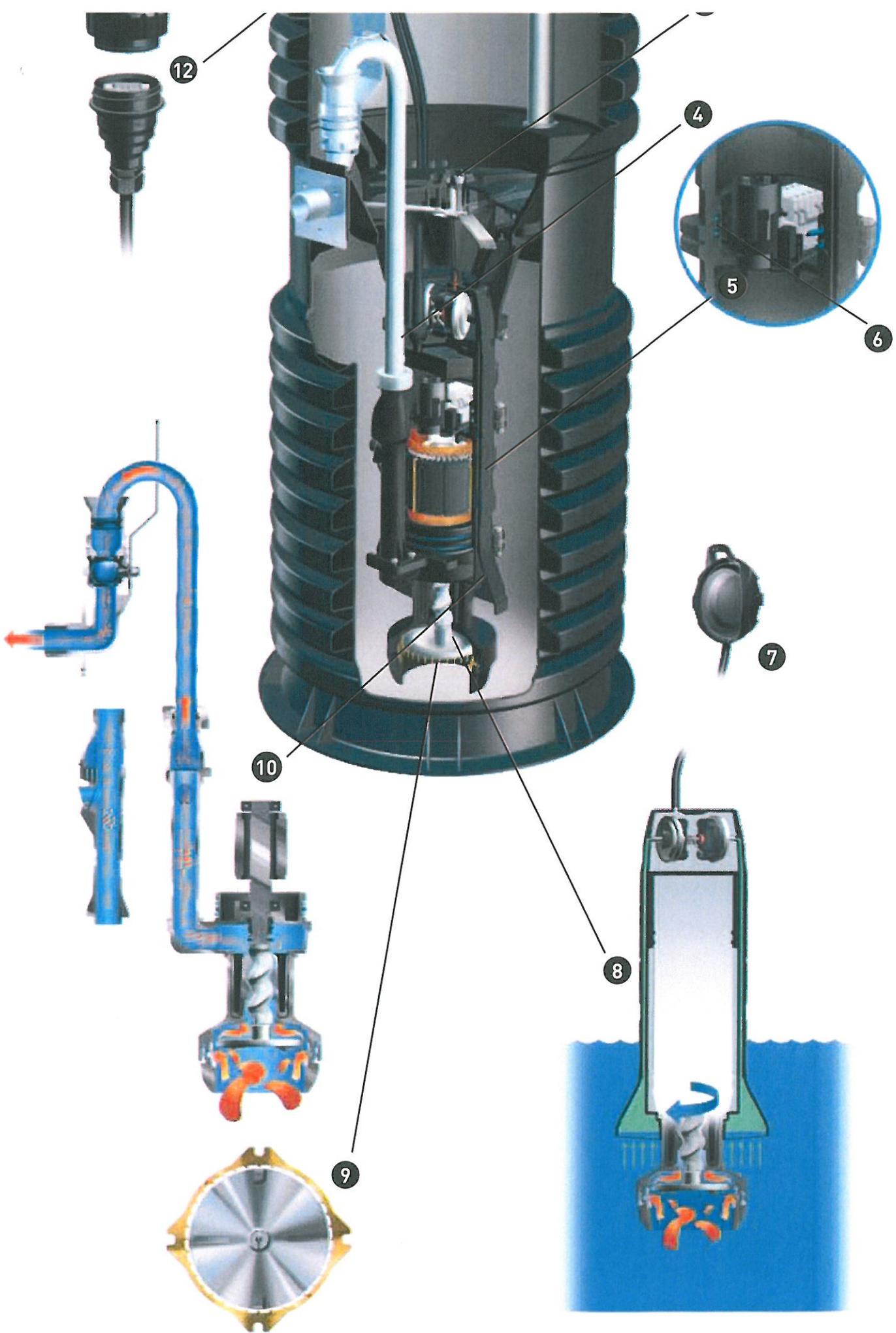
These E/One pump characteristics translate into:

- 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.





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



ENVIRONMENT ONE GRINDER PUMP UNITS WINTERIZATION PROCEDURES

Questions on any procedure should be directed to F.R. Mahony service dept at 508-765-0051.

OUTDOOR UNIT

If Power Is To Be Left On To the Pump Control Panel

It is recommended that when possible to leave the power on the unit. There is a very small resistance heater in the pump core to keep moisture from becoming a problem.

For small periods of time – 2-3 weeks

- 1.) Flush entire system with clean water. A couple of toilet flushes will do
- 2.) Leave Power on to the unit

For an entire season

- 1.) Flush entire system with clean water. A couple of toilet flushes will do.
- 2.) 10 gallons of **Non-petroleum** food grade antifreeze (such as that obtained from a pool supply store) may be added to the pump chamber to prevent ice damage
- 3.) Leave Power on to the unit

If Power Is To Be Left Off

For small periods of time – 2-3 weeks

- 1.) Flush entire system with clean water. A couple of toilet flushes will do

For an entire season

- 1.) Flush entire system with clean water. A couple of toilet flushes will do.
- 2.) 10 gallons of **Non-petroleum** food grade antifreeze (such as that obtained from a pool supply store) may be added to the pump chamber to prevent ice damage. *Ethylene glycol or petroleum based antifreeze will harm the pump*

INDOOR UNIT

If Power Is To Be Left On To the Pump

It is recommended that when possible to leave the power on the unit. There is a very small resistance heater in the pump core to keep moisture from becoming a problem.

For small periods of time – 2-3 weeks

- 1.) Flush entire system with clean water. A couple of toilet flushes will do
- 2.) Leave Power on to the unit

For an entire season

- 1.) Flush entire system with clean water. A couple of toilet flushes will do.
- 2.) 10 gallons of **Non-petroleum** food grade antifreeze (such as that obtained from a pool supply store) may be added to the pump chamber to prevent ice damage in the event of power failure.
Ethylene glycol or petroleum based antifreeze will harm the pump
- 3.) Leave Power on to the unit

If Power Is To Be Left *Off*

If power is to be left off we recommend pumping down the tank and making sure the discharge line inside the house is blown out of any water that will freeze.

The following is suggested as a guideline. Your local plumber should be aware of the process needed to close a seasonal residence or commercial establishment for the season. Questions on any procedure should be directed to F.R. Mahony service dept at 508-765-0051.

- 1.) Flush entire system with clean water. The pump will pump 11 gallons per minute under average conditions. An example of pipe capacity will give you an idea of the run time to flush the system. A 150-foot service lateral of 1-1/4 inch pipe will hold 14 gallons of water. The **Model 2010-IDU** will hold 47 gallons below the “on” setting. I would suggest that the volume of water be changed three to four times. The pump should therefore be run for 5-7 minutes.
- 2.) Holding the “**Push To Run**” button can manually pump the chamber down until the chamber is empty. An airline connection should be connected to the discharge line and air pressure can be used to blow the line out. Close the “curb stop” at the property line. Once these steps are complete the discharge line can be left open the pump core removed for storage. (See details below)
- 3.) All water to fixtures should be shut off to prevent leaks into the pump chamber. **Non-petroleum** food grade antifreeze (**RV** antifreeze) may be added to the pump chamber to prevent ice damage. Water Departments use food-grade antifreeze to protect poorly draining hydrants from freezing.
Ethylene glycol or petroleum based antifreeze will harm the pump.
- 4.) Pump shut down after removal from the chamber should include a wash down of debris and then the unit should be drained of trapped water. The core will need to be inverted to drain water from discharge lines. Some water may be trapped above the check valve assembly. The pump core should be brought into a dry location for storage.



33 Plan Way – Bldg. 3B Warwick, RI 02886
Tel: (401) 732-8886 Fax: (401) 732-8887

Hydrant Flow Test

Wellesley Country Club

Wellesley, MA

Date: 10-24-12

Time: 10:00 am

Present at Test:

Wellesley Water Dept

Nicole Zarella, AAA Sprinkler Co

Hyd. Butt: 2-1/2"

COEF: 0.9

Static: 78 PSI

Residual: 75 PSI

Pitot: 40 PSI

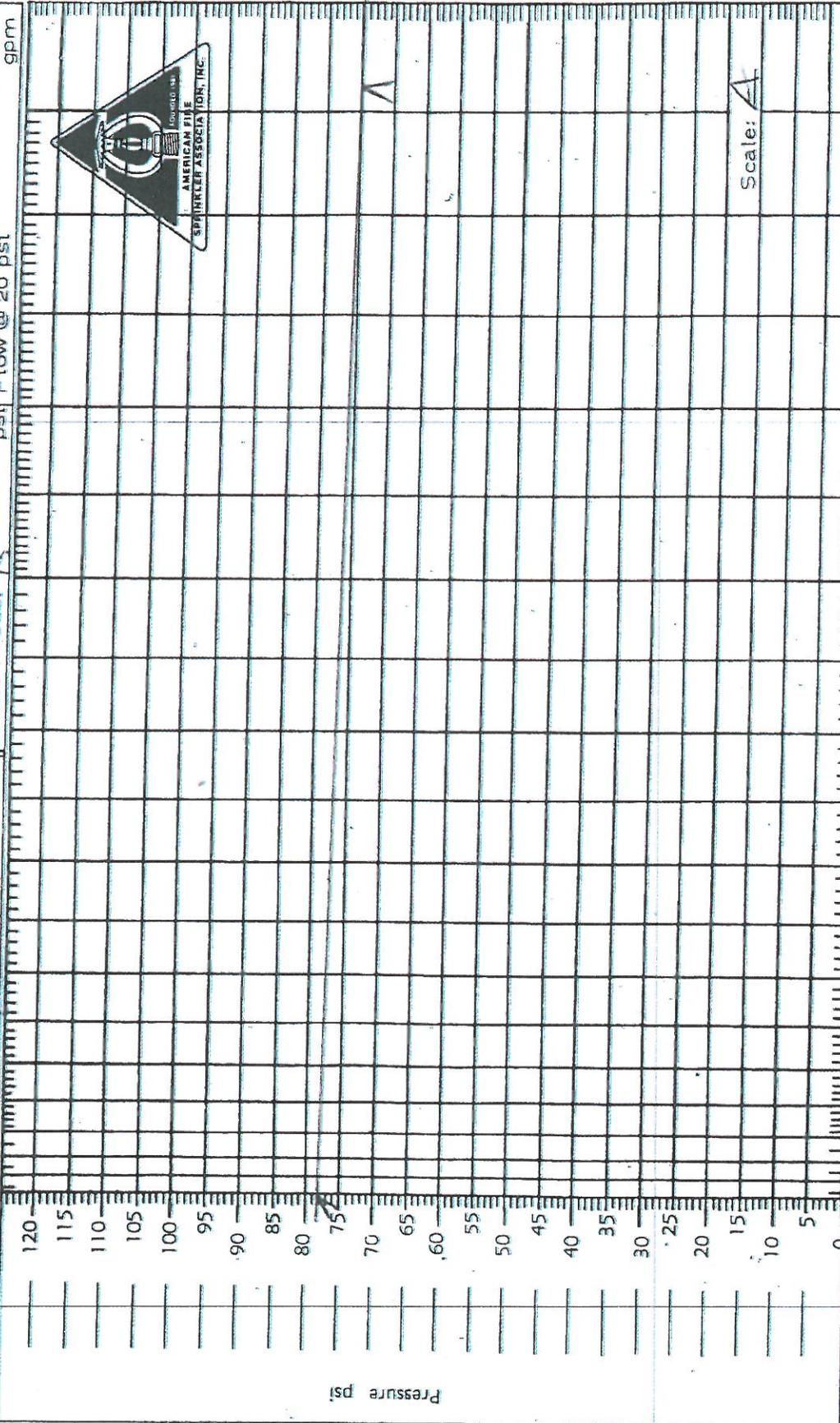
Flow: 961 GPM

Hyd. Condition: good

Main Size: 12"

WATER FLOW TEST SUMMARY SHEET

Hydrant No.	Outlet I.D. inches	Pitot Press. psi	Flow gpm	Residual psi	Date: 10/24/12	Time: 11:00 AM	Cont. No.
1	2 1/2	40	961	75	Cont. Name: AAA Sprinkler Co, Inc		
2					Address: 33 Plan Way Bldg 3B		
3					WYVICK, RI 02826		
Total Flow					Static Press: 75	psi Flow @ 20 psi	gpm



Scale:

Scale A 100 200 300 400 500 600 800 1000 1200 1400 1600 1800 2000 2400 2600 2800 3000 3200 3600 4000

Scale B 100 200 300 400 500 600 800 1000 1200 1400 1600 1800 2000 2400 2600 2800 3000 3200 3600 4000

Scale C 100 200 300 400 500 600 800 1000 1200 1400 1600 1800 2000 2400 2600 2800 3000 3200 3600 4000

Water Flow gpm



Address **Wellesley Ave & Forest St**
Wellesley, MA 02481

Get Google Maps on your phone

Text the word "GMAPS" to 466453





33 Plan Way – Bldg. 3B Warwick, RI 02886
Tel: (401) 732-8886 Fax: (401) 732-8887

Hydrant Flow Test

Wellesley Country Club

Hyd. Butt: 2-1/2"

Wellesley, MA

COEF: 1.0

Date: 3-8-12

Static: 110 PSI

Time: 10:30 am

Residual: 109 PSI

Present at Test:

Pitot: 21 PSI

Joe Doherty Wellesley Water Dept

Flow: 773 GPM

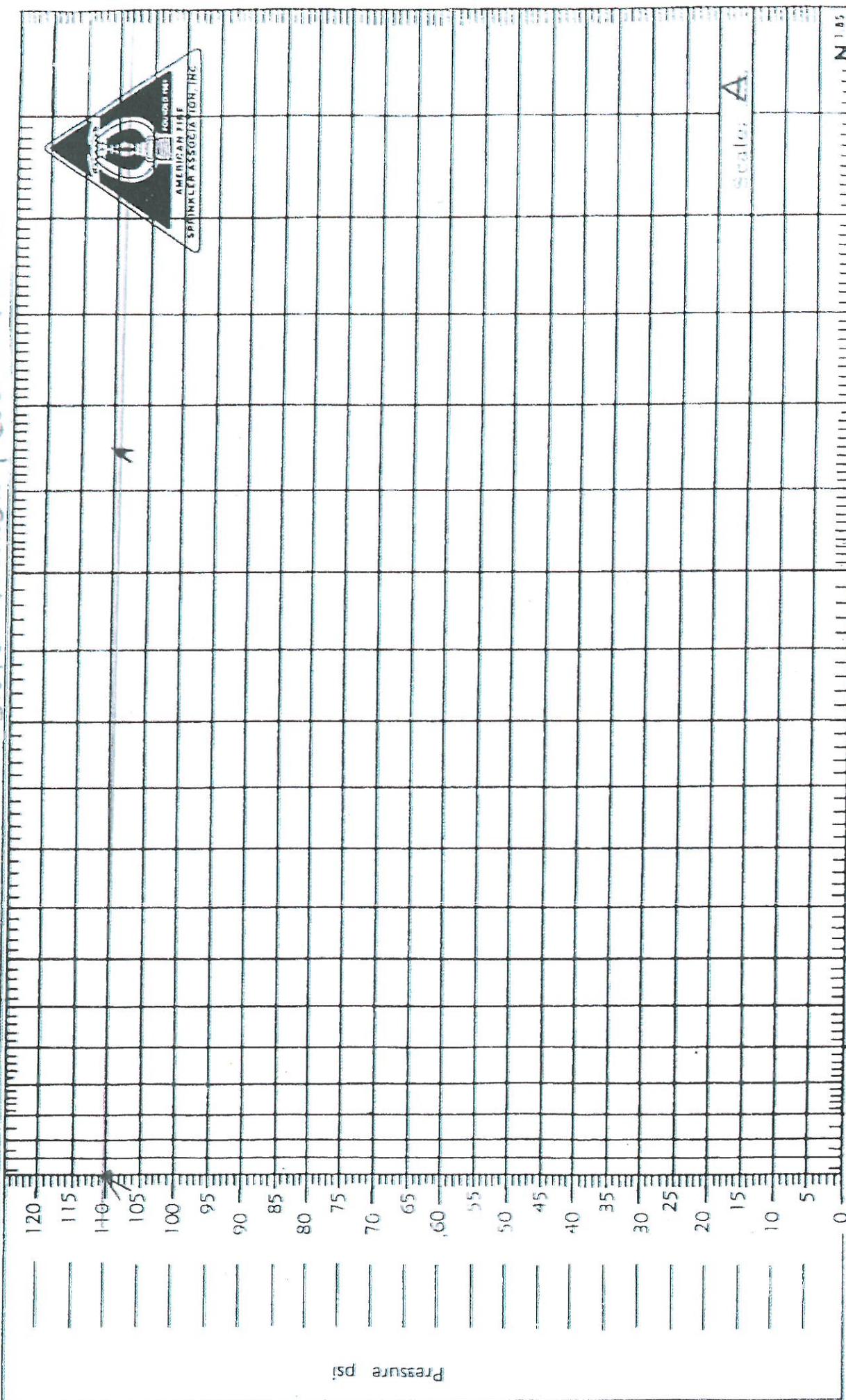
Nicole Zarella, AAA Sprinkler Co

Hyd. Condition: good

Main Size: 6"

Static on Flow Hyd: 100 PSI

318112 Wellesley Country Club



Scale A

Scale A
 Scale B
 Scale C

100 200 300 400 500 600 700 800 900 1000 1200 1400 1600 1800 2000 2400 2800 3200 3600 4000

Water Flow gpm

AMERICAN FIRE SPRINKLER ASSOCIATION, INC.
 1329 Progress Street, Suite 1000
 Dallas, Texas 75201



GEORGE J. GEISSER, JR., P.E.
GEORGE J. GEISSER, III, P.E.
NORMAN R. PAQUETTE, P.E.
1921-1985

New England Construction
Attn: Leo Hudon
293 Bourne Ave
Rumford, RI

RE: Soil Review & Evaluation
Wellesley Country Club
Wellesley, MA

Geisser Engineering Corporation
Consulting Engineers

227 Wampanoag Trail
Riverside, R.I. 02915-0480
(401) 438-7711
Fax # (401) 438-0281

December 13, 2011

Mr. Hudon,

At your request our office witnessed and reviewed the excavation at the above referenced project in order to determine the suitability of various on-site soils for structural bearing. Three test pits were excavated, one in the footprint of each of the proposed structures. At each test pit, an overlying layer of fill material covered the native soils. The native soils, including subsoil, were uniformly acceptable for structural bearing.

In the area of the wash pad, the test pit was excavated near the center of the pad, in-line with the ridge of the existing structure. At this location, there was a 1.3' thick layer of crushed stone and sand resting atop a 1.2' thick layer of native subsoil (Sample A). Beneath this subsoil, at a total depth below grade of 2.5', a native substratum was encountered (Sample B). This substratum was composed of a fine to coarse sand, containing trace gravel and trace fines.

In the area of the existing mulched plantings to the north of the paddle court, there was a 6.1' thick layer of mixed loamy fill, comprised of blended sands, organics and rubbish. This fill is resting atop a 1.3' thick layer of native subsoil. Beneath this subsoil, at a total depth below grade of 7.4', a native substratum was encountered. This substratum was identical to that found in the area of the wash pad.

The final test pit was performed near the west end of the proposed turf center. At this location, there was a +/-3.5' thick layer of mixed loamy fill, comprised of blended sands, organics and rubbish. This fill is directly resting atop a native substratum. This substratum was very similar to that found at the other locations, though the grain size distribution tended towards finer particles, and the color was a slightly lighter brown.

The blended loamy fill should be stripped down to the native subsoil or native substrata. This native substratum is excellent material for structural bearing purposes, and should be allowed a design bearing capacity of 5,500 psf if fully compacted. Once the loamy fill is stripped, the native material should be compacted with a heavy vibratory plate compactor or a vibratory roller in order to re-consolidate the soil disturbed during excavation. The soil may then be brought back up to the required grade by placing and compacting 8" lifts of structural fill. The fill must be compacted to 95% of the maximum dry density. The native sub-strata may be used as structural fill. The native subsoil may be used as a bearing stratum if prepared in the manner described above; however an allowable bearing capacity of 4,000 psf should be used in design if bearing on the subsoil.

If you have any questions, or require any additional information, please do not hesitate to contact our office.

Sincerely,

Geisser Engineering Corporation


Asa Bender

Project Engineer
ADB

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Test Pit Results

December 2011

Equipment Service Center:

TP-1

Fill	0-27"	Asphalt / Gravel fill
C	27" – 91"	Sand / LS, Trace gravel

Perc Test Results: 1.45 min/in → use 2 min/in.

Environmental Management Center

TP-2

Fill	0-37"	Blended Fill, Fine course sand, Rubbish
B	37" –73"	LS, Trace gravel
C	73-88"	Sand

Perc Test Results: No perc test performed. Material was consistent with TP-1

Maintenance Building

TP-3

Fill	0-36"	Asphalt / Gravel fill
C	27" – 54"	Loamy Sand (LS)

Perc Test Results: No Perc test performed.

TP-4

A	0-12"	Loam
B	12"-60"	Loamy Sand (LS)
C	60" – 120"	Loamy Sand (LS)

Perc Test Results: 0.88 min/in → Use 2 min/in.

Test Pit Results

July 2, 2012

All tests conducted adjacent to existing environmental management center (see sketch)

Environmental Management Center

TP-2 (Conducted in December 2011)

Fill	0-37"	Blended Fill, Fine course sand, Rubbish
B	37" -73"	LS, Trace gravel
C	73-88"	Sand

Perc Test Results: No perc test performed. Material was consistent with TP-1 performed in December 2011 (use 2 min/in.)

TP-2A (Conducted on July 2, 2012)

Location: Range line intersection of east paddle ball court stairs and propane tank

Fill		Blended Fill, Fine course sand, Rubbish
B		Coarse sand
C		Gravelly Coarse Sand

Perc Test Results: Less than 2 minutes per inch

TP-2B (Conducted on July 2, 2012)

Location: Approximately 75' north of TP-2A located on gravel cart path

Fill		Blended Fill, Fine course sand, Rubbish
B		Coarse sand with cobbles and boulders
C1		Coarse sand
C2		Gravelly Coarse Sand

Perc Test Results: 2 minutes per inch (No perc test performed. Material was consistent with TP-2A)