KCWA

Kent County Water Authority

September 16, 2026

Christopher Oliveira
EG Home, LLC
3 Pomperaug Office Park Suite 105
Southbury, CT 06488

Re: Lots 2 & 3
Centre of New England, Coventry, RI
Hydraulic Model Assessment

Dear Mr. Oliveira,

A hydraulic evaluation utilizing the Kent County Water Authority's (Authority) computerized hydraulic model has been completed to determine the suitability of the Authority water supply system to provide domestic and fire flow water service to the above identified project. The results of our findings and conclusions are presented herein.

Proposed Development

The proposed project is located off of Centre of New England Boulevard on lots 2 and 3 within the Center of New England development, which is a private development in Coventry, Rhode Island, and consists of the planned development of 362, three (3) bedroom residential units. The Authority currently provides water service to the general project area. Information pertaining to this proposed development was obtained from correspondence of August 25, 2026, from EG Home, LLC.

The layout of the proposed residential development was depicted on the plans titled *Schematic Utility Layout, EG Home Lot 3, Coventry, RI* dated August 11, 2026, prepared by VHB. These plans depict a new water main extension that would include the installation of approximately 5,795 linear feet of new 8-inch ductile iron water main that ties into the existing 12-inch ductile iron water main on Centre of New England Boulevard and extends through the proposed development terminating at a dead end.

The ground elevations within the proposed development as depicted on the aforementioned plans range from approximately 263 feet to 296 feet.

The site development plans do not depict a master meter and backflow prevention assembly to service this proposed development however, Section 2.5.4 of the Authority Rules and Regulations requires master metering of the proposed development. As such, this hydraulic model evaluation included assessing the development with a master meter and backflow prevention assembly. The implication of installing a master meter assembly in terms of hydraulic assessment is the inherent pressure losses associated with the assembly and the resulting impact of available pressure(s) and flow on the downstream side of the assembly within the proposed development.

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Typically, a master meter for domestic and fire flow water service for this size development would consist of an 8-inch Neptune model "Protectus III" or "MACH 10", or acceptable equal per Authority Regulations. This would be coupled with an 8-inch reduced pressure type backflow preventer, Watts Series 909, or acceptable equal per Authority Regulations. Cut sheets of this equipment are provided in Attachment 1. The head losses associated with the use of this equipment were considered in this hydraulic evaluation and were obtained from these cut sheets. In an effort to be conservative, the head losses through an 8-inch Neptune "Protectus III" meter were utilized for this model evaluation due to these head losses being greater than the head losses through an 8-inch Neptune "MACH 10" meter.

It was considered in this evaluation that a combination 8-inch master meter/backflow preventer assembly would contribute an additional 10 pounds per square inch (psi) of head loss for "normal" domestic water flow conditions and an additional 15 psi under fire flow conditions of up to 2,000 gallons per minute (gpm).

For this project, a required fire flow of 1,000 gallons per minute (gpm) was specified by EG Home, LLC in correspondence from the Hopkins Hill Fire Department dated August 20, 2026. This fire flow requirement was utilized in this model evaluation.

The ability of this portion of the Authority's Water Supply and Distribution System to meet the water supply (domestic and fire) requirements for this proposed development was evaluated. This evaluation was also performed in accordance with requirements as detailed in the Rules and Regulations of the Authority, dated March 2024 (Regulations). The proposed interconnection to the Authority's water distribution system for domestic water service is located within the High Service Pressure Gradient that operates at a hydraulic grade of 500 feet.

Evaluation

This evaluation was performed utilizing the Authority's computerized hydraulic model of the water supply and distribution system. The hydraulic model allows proposed improvements to the water system to be evaluated by means of computer simulation in order that the impacts of the proposed development on the water system can be considered prior to construction. The purpose of this assessment has been to determine the ability of the existing water system to successfully provide adequate pressure at the point of connection to the Authority's water system. In accordance with the Regulations, adequate pressures for domestic water supply at the point of connection to the water system are defined as a minimum pressure of 20 pounds per square inch (psi) under average day, maximum day, peak hour and fire flow demand conditions and under conditions which will not adversely impact other areas of the Authority's water system.

Secondly, the model was utilized to assess the available fire flows for the proposed development. As previously indicated, a fire flow of 1,000 gpm was provided for this project. As such, this fire flow was utilized in this model assessment.

The fire flow simulations were based on the following criteria, which were utilized in the evaluation. The calculations for fire flow were premised on having available a minimum of 20 psi residual pressure under a maximum day demand condition. This 20 psi residual pressure would necessarily be available at the water main supplying the development. Further, according to American Water Works Association (AWWA) M32, Distribution Network Analysis for Water Utilities and AWWA M31, Distribution System Requirements for Fire Protection, the volume of the fire flow over its required duration should be available from the system's water storage tanks. These constraints must also be met with system operations consisting of removing the largest pumping facility (or largest pump in a pump station facility) from service with an appropriate number of remaining pumps in service to meet system demands. Insurance Services Office (ISO) also requires that the fire flow be superimposed upon the maximum day domestic demand.

A tabulation of the water demands for the various water demand scenarios (Attachment 2) to conform to the requirements of the Authority's Regulations was completed. Per Authority Regulations, the average day demand calculation is premised upon 100 gallons per day per person with a minimum requirement of 2 persons per bedroom. This results in an average day demand flow of 600 gallons per day per 3 bedroom residential unit. Residential peak flow multipliers for maximum

day and peak hour were established as 2.3 and 4.0, respectively. The domestic flow data utilized in the model evaluation for the proposed development is as follows:

Average Day Demand	150.83 gpm (217,200 gallons per day)
Maximum Day Demand	346.92 gpm
Peak Hour Demand	603.33 gpm

In order to simulate the proposed development, modifications were performed to the geometry of the hydraulic model database and were premised on the aforementioned plans made available for this project. As previously indicated, the water main for the development would consist of a new 8-inch ductile iron water main that ties into the existing 12-inch ductile iron water main on Centre of New England Boulevard and extends through the development, terminating at a dead end within the development.

The ground elevations within the proposed development that were depicted on the plans were utilized to calculate pressures within the model. The configuration of the infrastructure geometry in the model is depicted on Attachment 3. The proposed pipelines for the development are identified as "P-595" to "P-615". Domestic water demands were allocated to seventeen (17) junction nodes identified as "J-9292" to "J-9308" located along the proposed water main servicing the development. The master meter assembly that includes the backflow preventer was represented by pipe segment "P-596" between junction nodes "J-9290" and "J-9291".

Domestic Water Service Availability

Simulations were performed to determine the ability of the existing water system to meet anticipated domestic demands under various demand scenarios. Domestic demands were allocated to seventeen (17) junction nodes ("J-9292" to "J-9308") located along the proposed 8-inch water main within the development. Junction node "J-9289" is identified as the point of connection to the Authority's system (connection at Center of New England Boulevard) and is at elevation 296 feet. In addition, as a means to represent the effects of head loss from the master meter assembly, it was assumed that an additional 10 psi (head loss associated with flow through the master meter assembly) would be required in addition to the minimum 20 psi at the junction nodes. This additional 10 psi will account for the head loss of the master meter assembly and assure that a minimum of 20 psi would be available within the development. In other words, it would be required that a minimum of 30 psi be available at the junction nodes in the model representing the development to offset the effects of head loss from the master meter assembly and assure that a minimum of 20 psi would be available within the development.

Model results indicate that the calculated pressures at the point of connection (i.e. before master meter assembly) to the Authority system under average day conditions is equal to 87 psi, which is above the required minimum of 20 psi. The calculated pressures at the point of connection to the Authority system under maximum day and peak hour demand conditions are equal to 83 psi and 81 psi, respectively, which are above the required minimum of 20 psi.

The calculated pressures within the proposed development (i.e. after the master meter) range from approximately 81 psi to 101 psi under the various demand scenarios (average day, maximum day and peak hour). The resultant pressures within the development after the master meter assembly would be approximately 10 psi less than these calculated pressures or in the range of 71 psi to 91 psi as a result of the pressure loss of 10 psi from the master meter assembly. These pressures are above the specified pressure of 30 psi (20 psi desirable pressure plus 10 psi head loss associated with the master meter assembly) under all of the demand scenarios. The calculated pressures for these junction nodes and the results of the model simulations are summarized in Attachment 4.

Fire Service Availability

An evaluation was then performed at the representative junction nodes to determine the available fire flows within the proposed development. This evaluation was performed under a maximum day demand condition in which the available fire flow was calculated while superimposing the maximum day domestic demand at the fire flow locations (i.e. representative junction nodes).

The calculated available fire flow is premised on achieving a minimum residual pressure of 20 psi at the fire flow locations within the development. The actual pressure may be greater as determined by model simulations however, the 20 psi value is a typical minimum residual pressure requirement under a fire flow condition and was utilized in the model. It is imperative that the actual required residual pressure does not go below 20 psi as this would entail the Rhode Island Department of Health (RIDOH) to require that a boil water order be implemented for the Authority's distribution system.

As a means to represent the effects of the head loss associated with flow through the master meter assembly, it was assumed that an additional 15 psi (head loss associated with flow through the master meter assembly) would be required in addition to the minimum of 20 psi at the junction nodes. This additional 15 psi will account for the head loss through the master meter assembly and provide assurance that the minimum residual pressure of 20 psi would be available at the junction nodes at the fire flow locations within the development.

As previously indicated, a fire flow of 1,000 gpm at a residual pressure of 20 psi was utilized in the model for the purpose of this evaluation. The model results indicate that fire flows of 1,000 gpm at residual pressures ranging from 73 psi to 81 psi are available at the junction nodes located within the development ("J-9292" to "J-9308"). These available fire flows meet the fire flow requirement of 1,000 gpm and are above the minimum residual pressure of 35 psi (20 psi plus 15 psi head loss through master meter assembly) utilized for this model assessment. A summary of these results is presented in Attachment 5.

It should be noted that these calculated fire flows are representative of the available capacity in the water main at this particular location and does not represent that these fire flow rates are available directly from a single hydrant assembly or hose connection. Also, these fire flow rates are exclusive in that each represents an available fire flow at a specific location within the development and the individual results calculated for each junction node cannot be combined to represent a total available fire flow.

Assessment and Conclusions

The model simulations indicate that the pressures at the point of connection to the Authority system (before the master meter assembly) are above the minimum required per Authority Regulations for all demand conditions. The calculated pressure under an average day demand condition is 87 psi, which is above the required Authority minimum of 20 psi. The calculated pressures under maximum day and peak hour demand conditions are equal to 83 psi and 81 psi, respectively, which are above the required Authority minimum of 20 psi.

The calculated pressures within the proposed development range from approximately 81 psi to 101 psi under the various demand scenarios (average day, maximum day and peak hour). The resultant pressures within the development after the master meter assembly would be approximately 10 psi less (due to the head loss associated with the use of the master meter assembly) than calculated values or in the range of 71 psi to 91 psi. These calculated pressures are above the minimum specified pressure of 30 psi under all demand scenarios. It should be noted, these pressures have been calculated at the ground elevations within the proposed development. It is necessary for the owner/engineer to account for any inherent pressure losses that may occur within the internal building plumbing systems.

As previously indicated, a fire flow of 1,000 gpm was specified for this project and was utilized in the evaluation. Simulations indicate that fire flows of 1,000 gpm at residual pressures ranging from 73 psi to 81 psi are available at the various fire flow locations within the development. These calculated available fire flows meet the minimum fire flow of 1,000 gpm and are above the minimum residual pressure of 35 psi (20 psi plus 15 psi head loss through the master meter assembly). In addition, there were no identified adverse impacts to any areas of the water system under this fire flow scenario. It will be incumbent upon the owner/engineer to confirm the adequacy of these calculated fire flow results for the project with appropriate regulatory personnel for final approval.

The results presented herein are based on the information regarding proposed infrastructure for the project that was made available at the time of the assessment. It is understood that this assessment report may be presented to various agencies having jurisdiction (i.e. Fire, Building and Planning Officials, etc.) for final approval and acceptance. The Authority does not represent that the results presented herein constitute acceptance by these aforementioned authorities having jurisdiction in relation to final approval of the project (development).

This assessment report was prepared in accordance with requirements of the Authority's Regulations and was specific to the evaluation of the proposed development and the overall capability of the water system infrastructure to provide an adequate pressure and fire flow under the given conditions. This assessment makes no representation with respect to providing an adequate source of supply (i.e. availability of water to supply the domestic demands associated with this new development) within this portion of the Authority's service system and the overall capability of the Authority's water system to meet this increase in water demand from this proposed development.

We trust that this information meets your needs. Please review the enclosed and please feel free to call us if you have any questions regarding this matter.

Very truly yours,
Kent County Water Authority

Nicole Campagnone
Deputy Director

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Attachment 1

Superior Accuracy. Zero Maintenance.

Neptune® MACH 10® Ultrasonic Meter



The MACH 10® ultrasonic water meter features solid state ultrasonic technology including a factory-calibrated, replaceable unitized measuring element (UME) with no degradation of accuracy over time. Combined with a corrosion-resistant, lead free, high-copper alloy maincase, the MACH 10 is built to withstand demanding service conditions and deliver sustained accuracy over the life of the meter.

- Sizes 3” through 12”
- Advanced ultrasonic technology with easily replaceable UME design
- Accuracy sustained over meter life
- Can be installed in both horizontal and vertical applications
- Available in standard turbine and compound lay lengths
- Lead free, high-copper alloy maincase
- Open flow path design with low pressure loss
- UL Listed and FM Approved

NEPTUNE
TECHNOLOGY GROUP

#winyourday

Specifications

AWWA C715 Compliant

NSF/ANSI 61 Certified

Application

- Cold water measurement of flow in potable, combination potable and fire service, and reclaim/secondary water applications.

Maximum Operating Water Pressure

- 175 psi

Operating Water Temperature Range

- Meets AWWA C-715 accuracy specifications for water temperatures from 33°F to 122°F (+0.5°C to 50°C).

Environmental Conditions

- Operating temperature: +14°F to +149°F (-10°C to +65°C)
- Storage temperature: -40°F to +158°F (-40°C to +70°C)

Options

Units of Measure

- U.S. gallons, cubic feet, cubic metres

Warranty

- Neptune provides a limited warranty for performance, materials, and workmanship. See warranty statement for details.

System Compatibility

- Compatible with Neptune R900® and CMIU. Also available as MACH 10®)R900*i*™ for an integrated radio solution and MACH 10®)TC for Sensus Touch Coupler compatibility.

Operating Characteristics

Meter Size	Extended Low Flow @ 100% Accuracy (+/- 3.0%)	Normal Operating Range @ 100% Accuracy (+/- 1.5%)	Safe Maximum Operating Capacity	
			Standard	Fire Service
3″	0.50 U.S. gpm	0.75 to 500 U.S. gpm	500 U.S. gpm	420 U.S. gpm
4″	0.75 U.S. gpm	1.5 to 1250 U.S. gpm	1250 U.S. gpm	1100 U.S. gpm
6″	1.0 U.S. gpm	2.0 to 2000 U.S. gpm	2000 U.S. gpm	1800 U.S gpm
8″	2.5 U.S. gpm	4.0 to 4000 U.S. gpm	4000 gpm	TBD
10″	4.0 U.S. gpm	6.0 to 6500 U.S. gpm	6500 gpm	TBD
12″	5.0 U.S. gpm	8.0 to 8000 U.S. gpm	8000 gpm	TBD

Dimensions

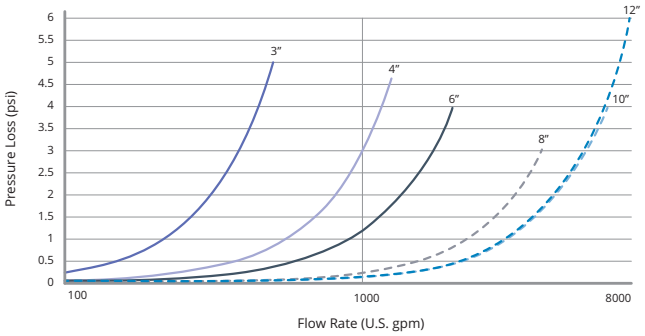
Meter Size	Length	Height	Weight
3″	12″	9½″	39 lbs
	17″	9½″	42 lbs
4″	14″	11″	51 lbs
	20″	11″	57 lbs
6″	18″	12¾″	79 lbs
	24″	12¾″	91 lbs
8″	20″	19″	165 lbs
10″	26″	21″	275 lbs
12″	19.7″	25″	300 lbs

Registration

High Resolution (8-digit reading)	3″	4″	6″	8″	10″	12″
1 U.S. Gallons	√	√				
10 U.S. Gallons			√	√	√	√
0.1 Cubic Feet	√	√				
1 Cubic Feet			√	√	√	√
0.01 Cubic Metres	√	√				
0.1 Cubic Metres			√	√	√	√

Pressure Loss

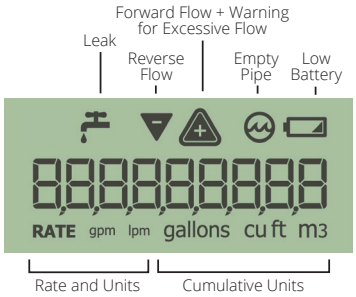
This chart shows typical meter performance. Individual results may vary. Pressure loss for sizes 8″, 10″, and 12″ is estimated.





LCD Display

9-digit display for extra resolution on manual reads.



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A PRODUCT SHEET OF NEPTUNE TECHNOLOGY GROUP

High Performance PROTECTUS® III Stainless Steel (S) Fire Service Meter

SIZES: 4", 6", 8", and 10"



The Neptune® HP PROTECTUS® III Stainless Steel (S) fire service meter measures extremely wide flow ranges at 100% ± 1.5% accuracy. All HP fire service meters meet or exceed AWWA C703 Standard, are certified to NSF/ANSI 61 and 372 requirements, and are Underwriters Laboratory (UL) Listed and Factory Manual (FM) Approved for fire service use.

Application

The HP PROTECTUS III S fire service meter is designed to measure both domestic and fire service water usage through a single water line. A typical application would be in a warehouse, hotel, or hospital where one water line may supply any number of faucets or bathrooms as well as an automatic sprinkler system.

Operation

At low flow rates, all flow is through the bypass meter. As flow increases, pressure loss through the bypass meter increases and the detector check valve automatically opens. This condition occurs, for example, when a fire sprinkler system goes into operation. This permits flow through the mainline turbine meter. As flow decreases, reduced pressure loss closes the detector check valve and flow is again directed through the bypass meter.

Construction

The combined readings of the mainline turbine and the bypass meter indicate total consumption through the HP PROTECTUS III S meter.

- 300 series stainless steel mainline body
- Integral detector check valve (stainless steel spring-loaded type)
- 300 series stainless steel strainer body with stainless steel basket
- Epoxy-coated steel strainer and valve cover
- HP Turbine measuring element
- Lockable ball valves used on bypass
- Check valve used on bypass
- 1" T-10® meter (on 4" size)
- 1½" T-10 or 1½" HP Turbine meter (on 6" size)
- 2" T-10 or 2" HP Turbine meter (on 8" and 10" sizes)

KEY FEATURES

Compact Size

- Standard laying length fits existing installations
- Lowers new installation and replacement costs

Wide Operating Range

- Measures extremely wide flow ranges at 98.5%–101.5% accuracy
- Combines low-flow sensitivity of disc meter with high-flow capacity of turbine meter
- Registers leaks or unauthorized use of water from fire service lines

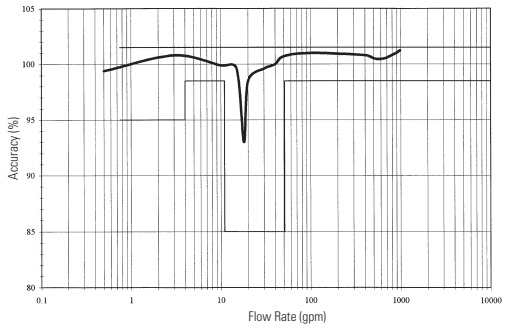
Component Repair and Maintenance

- Owner maintenance easily accomplished by replacement of major components
- Calibration vane allows in-field calibration of unitized measuring element (UME)

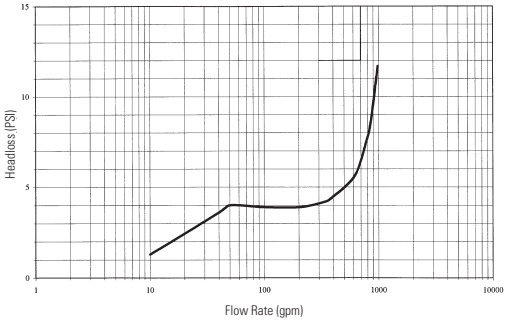
Roll-Sealed Registers

- Eliminates leaking and fogging
- In-line serviceability
- Magnetic driven, low-torque registration
- Tamperproof seal design

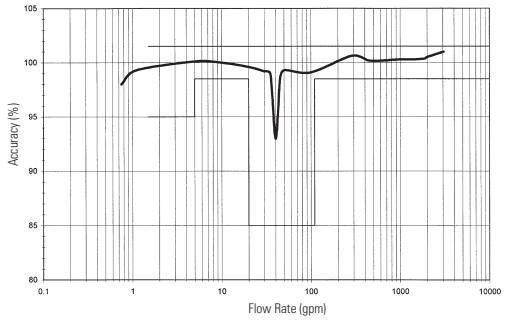
4" Accuracy



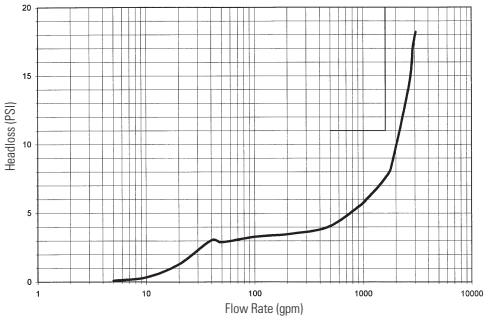
4" Headloss



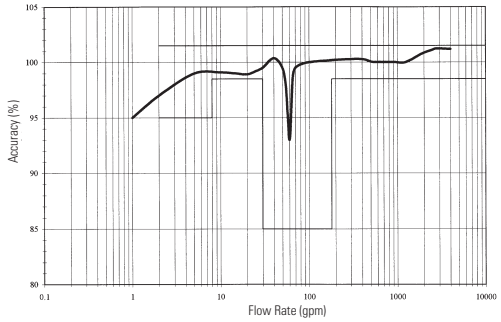
6" Accuracy



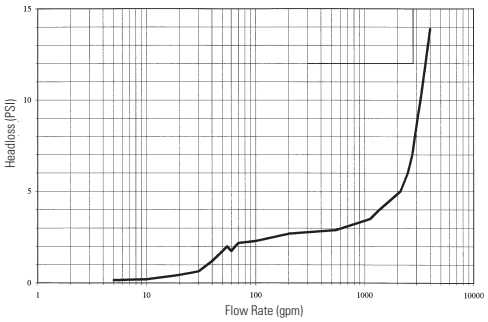
6" Headloss



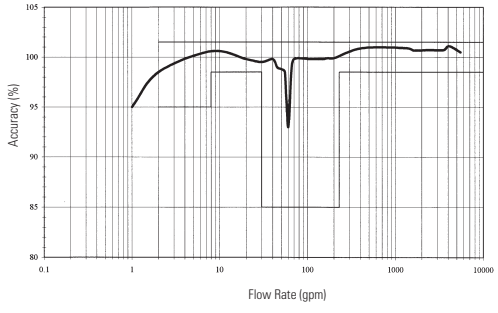
8" Accuracy



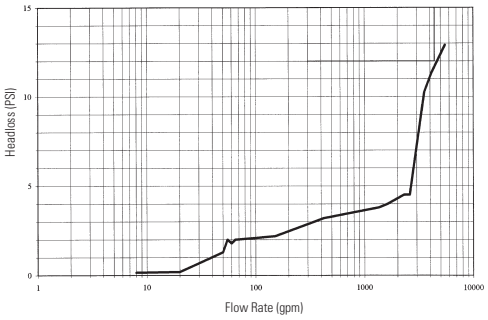
8" Headloss



10" Accuracy



10" Headloss



These charts show typical meter performance. Individual results may vary.

Operating Characteristics

Meter Size	Normal Operating Range @ 100% Accuracy (+/- 1.5%)	AWWA Standard	Low Flow @ 95% - 101% Accuracy	Maximum Intermittent Flow Rate
4"	¾ to 1200 US gpm 0.171 to 272.55 m³/h	4 to 700 US gpm 0.91 to 159 m³/h	⅜ US gpm 0.09 m³/h	1500 US gpm 340.7 m³/h
6"	1½ to 2500 US gpm 0.34 to 567.81 m³/h	5 to 1600 US gpm 1.14 to 363 m³/h	¾ US gpm 0.17 m³/h	3100 US gpm 704.1 m³/h
8"	2 to 4000 US gpm 0.45 to 908.5 m³/h	8 to 2800 US gpm 1.8 to 636 m³/h	1 US gpm 0.23 m³/h	5000 US gpm 1135.6 m³/h
10"	2 to 6500 US gpm 0.45 to 1476.31 m³/h	8 to 4400 US gpm 1.8 to 999 m³/h	1 US gpm 0.23 m³/h	8000 US gpm 1817 m³/h

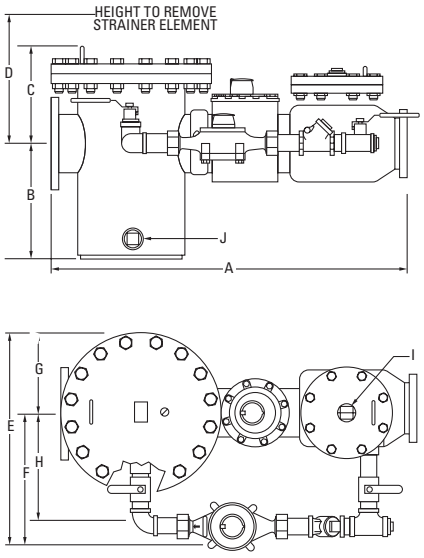
Dimensions

Meter Size	A in/mm	B in/mm	C in/mm	D in/mm	E in/mm	F in/mm	G in/mm	H in/mm	I in/mm	J in/mm	Weight lbs/kg
4"	33 838	10 254	10 ¾ 273	17 ½ 445	22 559	15 ¼ 387	6 ¾ 171	12 305	2 51	2 51	215 98
6"	45 1143	11 1/16 281	11 ⅜ 289	21 ¼ 540	29 737	19 ½ 495	9 ½ 241	16 406	2 51	3 76	570 258
8"	53 1346	11 13/16 300	13 29/64 342	25 ⅞ 657	34 ¼ 870	21 ¾ 552	12 ½ 318	17 432	3 76	3 76	765 347
10"	68 1727	14 13/16 376	15 381	30 1/16 764	36 ¼ 921	22 ½ 572	13 ¾ 349	18 457	3 76	3 76	900 408

Registration

Registration (per sweep hand revolution)	Disc Side			Turbine Side		
	1"	1½"	2"	4"	6"	8" & 10"
1,000 US Gallons					✓	✓
100 Gallons		✓	✓	✓		
100 Cubic Feet					✓	✓
10 US Gallons	✓					
10 Cubic Feet		✓	✓	✓		
1 Cubic Foot	✓					
10 Cubic Metres					✓	✓
1 Cubic Metre			✓	✓		
0.1 Cubic Metre	✓	✓				

Register Capacity (6 active wheel odometer)	Disc Side			Turbine Side		
	1"	1½"	2"	4"	6"	8" & 10"
1,000,000,000 Gallons					✓	✓
100,000,000 Gallons		✓	✓	✓		
100,000,000 Cubic Feet					✓	✓
10,000,000 Gallons	✓					
10,000,000 Cubic Feet		✓	✓	✓		
10,000,000 Cubic Metres					✓	✓
1,000,000 Cubic Metres			✓	✓		
1,000,000 Cubic Feet	✓					
100,000 Cubic Metres	✓	✓				



Specifications

Application

- Cold water measurement of flow in one direction

Maximum Operating Pressure

- 175 psi (1206 kPa)

Register

- Direct reading, center sweep, roll-sealed magnetic drive with low-flow indicator

Measuring Element

- AWWA Class II Turbine, hydrodynamically-balanced rotor, nutating disc

Flanges

- Round flanged ends per AWWA C207, Class D

Approvals

- NSF/ANSI 61
- NSF/ANSI 372
- UL Listed
- FM Approved

Options

Sizes

- 4", 6", 8", and 10"

300 Series Stainless Steel Strainer Cover and Valve Cover

300 Series Stainless Steel Bolts

Left Side Bypass

Units Of Measure

- U.S. gallons, Imperial gallons, cubic feet, cubic metres

Register types

- Remote reading systems*: ProRead™, ProCoder™, E-CODER®, E-CODER®)R900*i*™, E-CODER®)R450*i*™, TRICON®/S, TRICON/E®3
- Reclaim

Companion Flanges

- Cast iron
- Bronze (4" only)

Special Meter Flanges**

- 12" (for 10" meter size)

**Consult factory for meter performance specifications when fitted with ARB.*

***Non-UL/FM approved.*

Guaranteed Systems Compatibility

All HP PROTECTUS III S fire service meters are guaranteed adaptable to our ProRead, ProCoder, E-CODER, E-CODER)R900*i*, E-CODER)R450*i*, TRICON/S, TRICON/E3, and Neptune meter reading systems without removing the meter from service.

Warranty

Neptune provides a limited warranty with respect to its HP PROTECTUS III S fire service meter for performance, materials, and workmanship.

When desired, owner maintenance is easily accomplished by in-line replacement of the UME.

NEPTUNE TECHNOLOGY GROUP

#winyourday
neptunetg.com

Neptune Technology Group
1600 Alabama Highway 229
Tallassee, AL 36078
800-633-8754 f 334-283-7293

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Job Name _____ Contractor _____

Job Location _____ Approval _____

Engineer _____ Contractor's P.O. No. _____

Approval _____ Representative _____

LEAD FREE*

Series LF909

Reduced Pressure Zone Assemblies

Sizes: 2½" – 10"

Series LF909 Reduced Pressure Zone Assemblies are designed to provide cross-connection control protection of the potable water supply in accordance with national plumbing codes. This series can be utilized in a variety of installations, including health hazard cross-connections in plumbing systems or for containment at the service line entrance. With its exclusive relief valve design incorporating the "air-in/water-out" principle, it provides substantially improved relief valve discharge performance during the emergency conditions of combined backsiphonage and backpressure with both checks fouled. The LF909 features Lead Free* construction to comply with Lead Free* installation requirements.

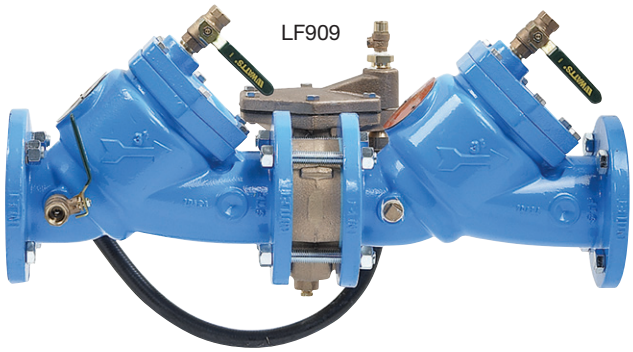
Series LF909 is also available with SentryPlus™ Alert technology to detect catastrophic relief valve discharge that could potentially cause flooding, and issue a multi-channel alert (call, e-mail, text) to selected users so they can take action to avoid potentially costly flooding.

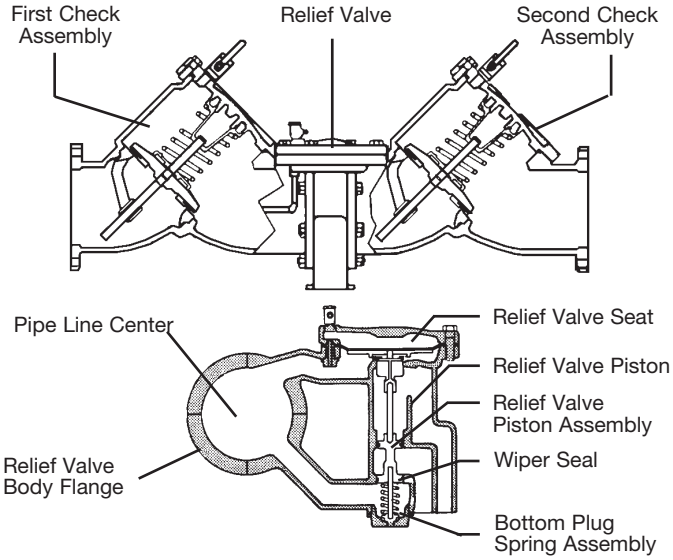
Features

- Replaceable seats
- Stainless steel internal parts
- No special tools required for servicing
- Captured spring check assemblies
- Fused epoxy coated & lined checks
- Industrial strength sensing hose
- Field reversible relief valve
- Air-in/water-out relief valve design provides maximum capacity during emergency conditions

Specifications

A Reduced Pressure Zone Assembly shall be installed at each cross-connection to prevent backsiphonage and backpressure backflow of hazardous materials into the potable water supply. The assembly shall consist of a pressure differential relief valve located in a zone between two positive seating check valves and captured springs. Backsiphonage protection shall include provision to admit air directly into the reduced pressure zone via a separate channel from the water discharge channel. The assembly shall include two tightly closing shutoff valves before and after the valve and test cocks. The Lead Free* Reduced Pressure Zone Assembly shall comply with state codes and standards, where applicable, requiring reduced lead content. The assembly shall meet the requirements of ASSE Std. 1013; AWWA Std. C511-92; CSA B64.5; and UL Classified File No. EX3185. Listed by IAPMO (UPC). Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California. The assembly shall be a Watts Series LF909.





Now Available
WattsBox Insulated Enclosures.
For more information, send for literature ES-WB.

NOTICE

The information contained herein is not intended to replace the full product installation and safety information available or the experience of a trained product installer. You are required to thoroughly read all installation instructions and product safety information before beginning the installation of this product.

NOTICE

Inquire with governing authorities for local installation requirements

***The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.**

Watts product specifications in U.S. customary units and metric are approximate and are provided for reference only. For precise measurements, please contact Watts Technical Service. Watts reserves the right to change or modify product design, construction, specifications, or materials without prior notice and without incurring any obligation to make such changes and modifications on Watts products previously or subsequently sold.

WATTS®

Available Models & Options

Suffix:

LF –	without shutoff valves
NRS –	non-rising stem resilient seated gate valves
OSY -	UL/FM outside stem & yoke resilient seated gate valves
QT-FDA –	FDA epoxy coated quarter-turn ball valves
S-FDA –	FDA epoxy coated strainer
ALERT	with SentryPlus™ Alert flood detection system

Note: The installation of a drain line is recommended. When installing a drain line, an air gap is necessary.

Materials

Check Valve Bodies: FDA epoxy coated cast iron

Seats: Stainless steel

Trim: Stainless steel

Relief Valve Body: 2½"-3" Lead Free* cast copper silicon alloy
4"-10" FDA epoxy coated cast iron

Test Cocks: Lead Free* copper silicon alloy

Pressure — Temperature

Temperature Range: 33°F-110°F (0.5°C-43°C) continuous, 140°F (60°C) intermittent

Maximum Working Pressure: 175psi (12.06 bar)

Standards

AWWA C511-92

IAPMO PS 31, SBCCI (Standard Plumbing Code)

USC manual for Cross-Connection Control, 8th Edition

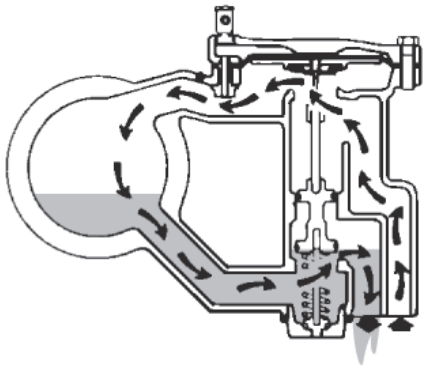
Approvals

1013 B64.4

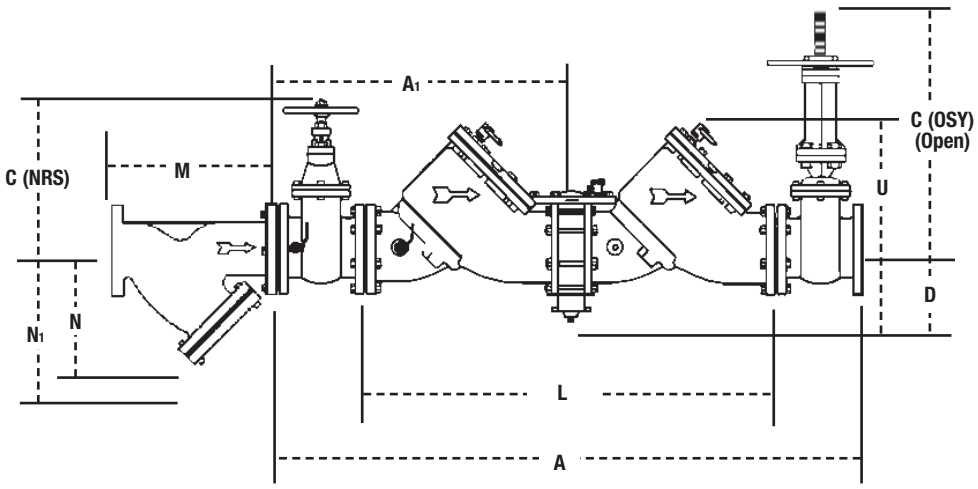
Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California.

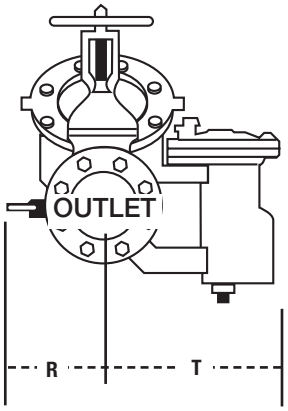
How It Operates

The unique relief valve construction incorporates two channels: one for air, one for water. When the relief valve opens, as in the accompanying air-in/water-out diagram, the right-hand channel admits air to the top of the reduced pressure zone, relieving the zone vacuum. The channel on the left then drains the zone to atmosphere. Therefore, if both check valves foul, and simultaneous negative supply and positive backpressure develops, the relief valve uses the air-in/water-out principle to stop potential backflow.

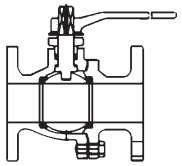


Dimensions — Weights





Quarter-turn (QT) Valve



Watts G-4000 Series
Ball Valves
Send for F-G4000

NOTE: Valve may be furnished with (2) OSY or (2) NRS Shutoffs.

NOTE: Relief valve section is reversible, therefore, can be on either side and is furnished standardly as shown. Carla.Long@wattswater.com

SIZE	DIMENSIONS																				WEIGHT					
	A		A1		C clearance for check (OSY)*		(NRS)		D		L		U		R		R (QT)		T		NRS		OSY		QT	
in.	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kgs.*	*lbs.*	*kgs.*	*lbs.*	*kgs.*
2½	41½	1053	20¾	527	16⅜	416	9⅜	238	5¼	133	26⅝	669	11	279	4	102	16	406	9 1/16	230	195	88.4	198	89.8	182	82.6
3	42½	1079	21¼	539	18⅞	479	10¼	260	5¼	133	26⅝	669	11	279	5	127	16	406	9 1/16	230	225	102	230	104	190	86
4	55 5/16	1405	27⅔	702	22¾	578	12 3/16	310	6	152	37 3/16	944	14	356	6	152	19¾	502	14⅜	365	455	206	470	213	352	160
6	65 13/16	1672	33	836	30⅛	765	16	406	6	152	44 11/16	1134	16	406	11	279	26	660	14⅜	365	718	326	798	362	762	346
8	78 9/16	1995	39 5/16	998	37¾	959	19 15/16	506	9¾	248	55⅝	1404	21	533	11¼	286	11¼	286	19¼	489	1350	612	1456	660	2286	1037
10	93 9/16	2376	46¾	1188	45¾	1162	23 13/16	605	9¾	248	67 5/16	1709	21	533	12½	318	12½	318	21	533	2160	980	2230	1011	3716	1685

*UL, FM approved backflow preventers must include UL/FM approved OSY gate valves.

Strainer Dimensions

SIZE	DIMENSIONS						WEIGHT	
	M		N1†		N			
in.	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kgs.*
2½	10	254	10	254	6½	165	28	12.7
3	10⅛	257	10	254	7	178	34	15.4
4	12⅛	308	12	305	8¼	210	60	27
6	18½	470	20	508	13½	343	133	60
8	21⅝	549	22¾	578	15½	394	247	112
10	26	660	28	711	18½	470	370	168

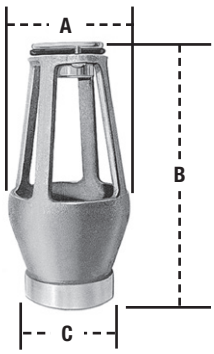
† – Dimension required for screen removal

Air Gap Dimensions

When installing a drain line on Series 909 backflow preventers that are installed horizontally, use 909 AG series air gaps.

IRON BODY MODEL NO.	ORDERING CODE	SERIES/SIZES	DIMENSIONS						WEIGHT	
			A		B		C			
			in.	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs*	*kgs*
909AG-F	881378	1¼" – 3" 009/909 1¼" – 2" 009 M1 2" 009 M2	4⅜	111	6¾	171	2	51	3.25	1.47
909AG-K	881385	4" – 6" 909 8" – 10" 909 M1	6⅜	162	9⅝	244	3	76	6.25	2.83
909AG-M	881387	8" – 10" 909	7⅜	187	11¼	286	4	102	15.5	7.03

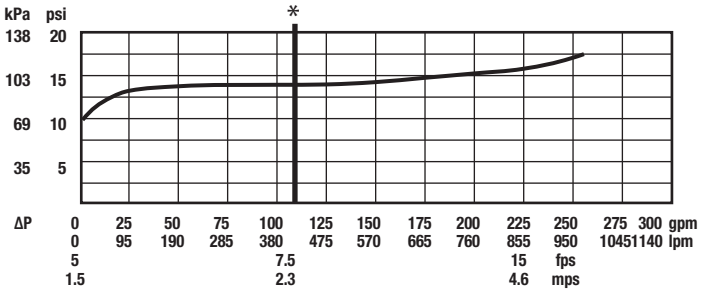
For flange size backflow preventers installed vertically (flow down), a fabricated air gap is recommended.



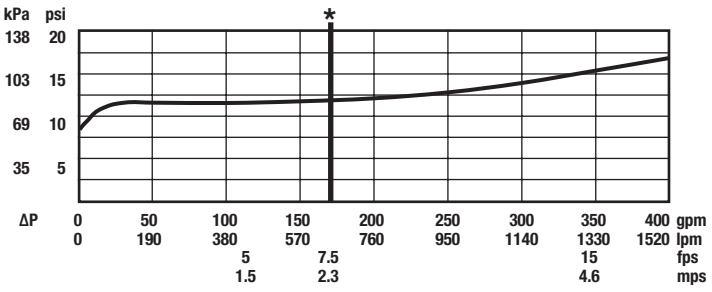
Capacity

*Typical maximum flow rate (7.5 feet/sec.)

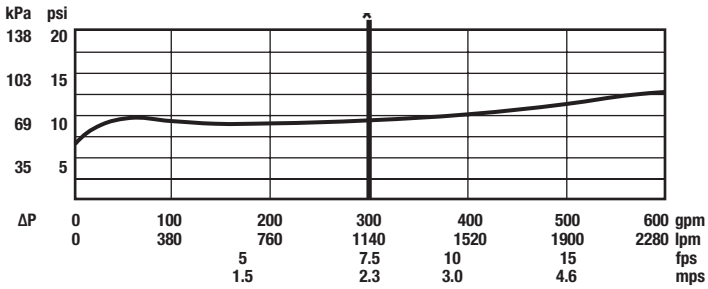
2½"



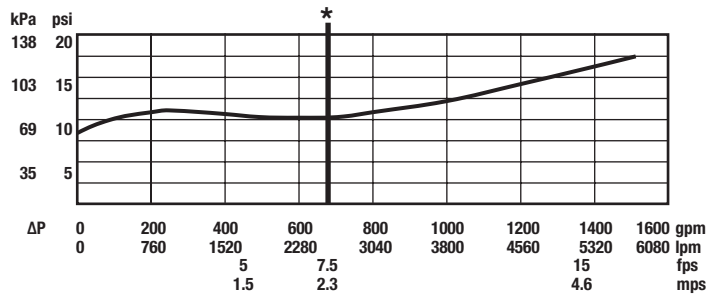
3"



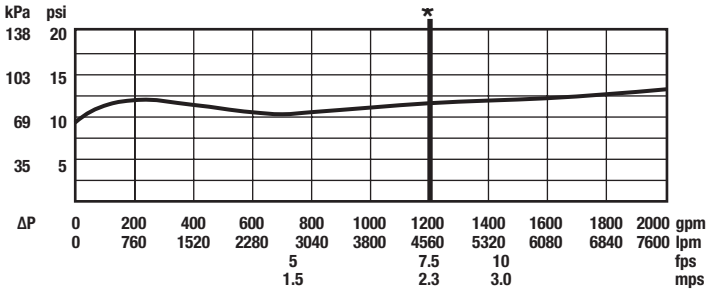
4"



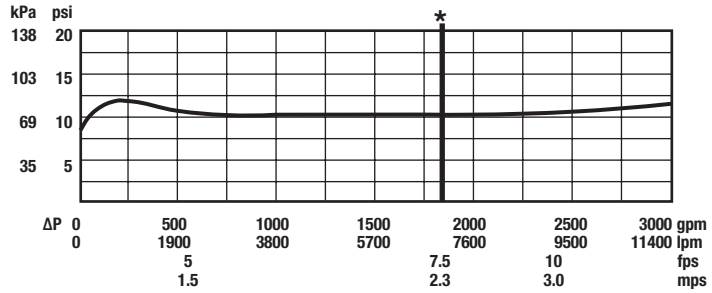
6"



8"



10"



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Attachment 2

KENT COUNTY WATER AUTHORITY
Water Usage Calculations

Kent County Water Authority

Project: Lots 2 & 3 - Centre of NE, COV Computations By: NMC Date: 9/10/2026

Checked By: _____ Date: _____

Project Description: Proposed development consists of 362, 3 bedroom residential units located off of Centre of New England Boulevard in the Centre of New England development in Coventry, RI (Plans titled *Schematic Utility Layout, EG Home Lot 3, Coventry, RI* dated August 11, 2026 and prepared by VHB).

Assume:

1. 100 gallons per person per day*
2. 2 people per bedroom - 6 people per 3 bedroom unit
3. Residential AD to MD multiplier of 2.3*
4. Residential AD to PH multiplier of 4.0*

DAVID L. SIMMONS 9-15-26
No. 11874
REGISTERED PROFESSIONAL ENGINEER ENVIRONMENTAL

Calculations:

Average Day Demand

Average Day Demand = # of people per unit x # of units x Flow per person

# of people per unit	6	
Flow per person	100	gpd
# of units	362	
Duration of water use	24	hrs
Average Day Demand	217,200	gpd
Average Day Demand	**150.83**	**gpm**

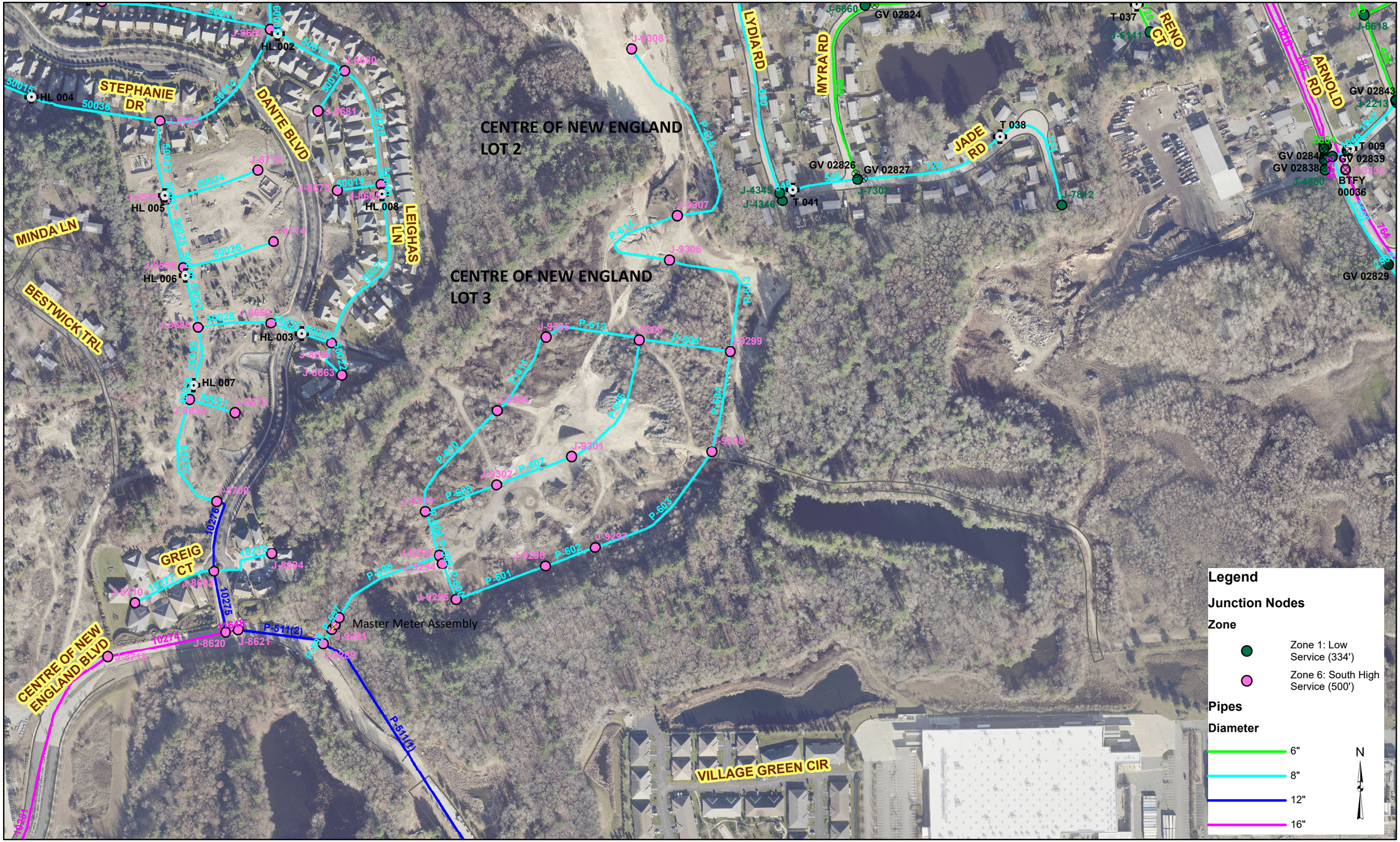
Maximum Day Demand		
Maximum Day Demand = Average Day Demand x 2.3 Maximum Day Multiplier		
Average Day Demand	150.83	gpm
Maximum Day Multiplier	2.3	
Maximum Day Demand	**346.92**	**gpm**

Peak Hour Demand		
Peak Hour Demand = Average Day Demand x 4.0 Peak Hour Multiplier		
Average Day Demand	150.83	gpm
Peak Hour Multiplier	4.0	
Peak Hour Demand	**603.33**	**gpm**

*Reference KCWA Rules and Regulations

Attachment 3

Centre of New England
Lots 2 & 3



Attachment 4

FlexTable: Junction Table

Active Scenario: ADD Centre of NE Lots 2 & 3

Label	Elevation (ft)	Zone	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Description	City/Town
J-9289	296.0	6	0.00	497.2	87	Centre of NE Lot 3 Point of Connection	COV
J-9292	294.0	6	5.10	497.1	88	Centre of NE Lot 3	COV
J-9293	284.0	6	5.10	497.0	92	Centre of NE Lot 3	COV
J-9294	284.0	6	5.10	497.0	92	Centre of NE Lot 3	COV
J-9295	284.0	6	5.10	497.0	92	Centre of NE Lot 3	COV
J-9296	284.0	6	5.10	496.9	92	Centre of NE Lot 3	COV
J-9297	285.0	6	5.10	496.9	92	Centre of NE Lot 3	COV
J-9298	281.0	6	5.10	496.9	93	Centre of NE Lot 3	COV
J-9299	282.0	6	5.10	496.9	93	Centre of NE Lot 3	COV
J-9300	283.0	6	5.10	496.9	93	Centre of NE Lot 3	COV
J-9301	284.0	6	5.10	496.9	92	Centre of NE Lot 3	COV
J-9302	284.0	6	5.10	496.9	92	Centre of NE Lot 3	COV
J-9303	283.0	6	5.10	497.0	93	Centre of NE Lot 3	COV
J-9304	282.0	6	5.10	496.9	93	Centre of NE Lot 3	COV
J-9305	284.0	6	5.10	496.9	92	Centre of NE Lot 3	COV
J-9306	279.0	6	5.10	496.8	94	Centre of NE Lot 3	COV
J-9307	274.0	6	5.10	496.8	96	Centre of NE Lot 3	COV
J-9308	263.0	6	69.17	496.7	101	Centre of NE Lot 2	COV

FlexTable: Junction Table

Active Scenario: MDD Centre of NE Lots 2 & 3

Label	Elevation (ft)	Zone	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Description	City/Town
J-9289	296.0	6	0.00	488.3	83	Centre of NE Lot 3 Point of Connection	COV
J-9292	294.0	6	11.74	488.0	84	Centre of NE Lot 3	COV
J-9293	284.0	6	11.74	487.2	88	Centre of NE Lot 3	COV
J-9294	284.0	6	11.74	487.2	88	Centre of NE Lot 3	COV
J-9295	284.0	6	11.74	487.1	88	Centre of NE Lot 3	COV
J-9296	284.0	6	11.74	487.1	88	Centre of NE Lot 3	COV
J-9297	285.0	6	11.74	487.0	87	Centre of NE Lot 3	COV
J-9298	281.0	6	11.74	486.9	89	Centre of NE Lot 3	COV
J-9299	282.0	6	11.74	486.9	89	Centre of NE Lot 3	COV
J-9300	283.0	6	11.74	487.0	88	Centre of NE Lot 3	COV
J-9301	284.0	6	11.74	487.0	88	Centre of NE Lot 3	COV
J-9302	284.0	6	11.74	487.0	88	Centre of NE Lot 3	COV
J-9303	283.0	6	11.74	487.1	88	Centre of NE Lot 3	COV
J-9304	282.0	6	11.74	487.0	89	Centre of NE Lot 3	COV
J-9305	284.0	6	11.74	487.0	88	Centre of NE Lot 3	COV
J-9306	279.0	6	11.74	486.6	90	Centre of NE Lot 3	COV
J-9307	274.0	6	11.74	486.3	92	Centre of NE Lot 3	COV
J-9308	263.0	6	159.09	486.0	96	Centre of NE Lot 2	COV

FlexTable: Junction Table

Active Scenario: PH Centre of NE Lots 2 & 3

Label	Elevation (ft)	Zone	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Description	City/Town
J-9289	296.0	6	0.00	482.8	81	Centre of NE Lot 3 Point of Connection	COV
J-9292	294.0	6	20.42	481.9	81	Centre of NE Lot 3	COV
J-9293	284.0	6	20.42	479.7	85	Centre of NE Lot 3	COV
J-9294	284.0	6	20.42	479.6	85	Centre of NE Lot 3	COV
J-9295	284.0	6	20.42	479.5	85	Centre of NE Lot 3	COV
J-9296	284.0	6	20.42	479.3	84	Centre of NE Lot 3	COV
J-9297	285.0	6	20.42	479.2	84	Centre of NE Lot 3	COV
J-9298	281.0	6	20.42	478.9	86	Centre of NE Lot 3	COV
J-9299	282.0	6	20.42	478.8	85	Centre of NE Lot 3	COV
J-9300	283.0	6	20.42	479.0	85	Centre of NE Lot 3	COV
J-9301	284.0	6	20.42	479.2	84	Centre of NE Lot 3	COV
J-9302	284.0	6	20.42	479.3	84	Centre of NE Lot 3	COV
J-9303	283.0	6	20.42	479.4	85	Centre of NE Lot 3	COV
J-9304	282.0	6	20.42	479.2	85	Centre of NE Lot 3	COV
J-9305	284.0	6	20.42	479.1	84	Centre of NE Lot 3	COV
J-9306	279.0	6	20.42	477.9	86	Centre of NE Lot 3	COV
J-9307	274.0	6	20.42	477.2	88	Centre of NE Lot 3	COV
J-9308	263.0	6	276.68	476.2	92	Centre of NE Lot 2	COV

Attachment 5

Fire Flow Node FlexTable: Fire Flow Results Table

Active Scenario: MDD-FF Centre of NE Lots 2 & 3

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Calculated Residual) (psi)	Flow (Total Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Elevation (ft)
J-9292	True	1,000.00	1,000.00	81	1,011.74	35	294.0
J-9293	True	1,000.00	1,000.00	81	1,011.74	35	284.0
J-9294	True	1,000.00	1,000.00	81	1,011.74	35	284.0
J-9295	True	1,000.00	1,000.00	80	1,011.74	35	284.0
J-9296	True	1,000.00	1,000.00	79	1,011.74	35	284.0
J-9297	True	1,000.00	1,000.00	78	1,011.74	35	285.0
J-9298	True	1,000.00	1,000.00	79	1,011.74	35	281.0
J-9299	True	1,000.00	1,000.00	79	1,011.74	35	282.0
J-9300	True	1,000.00	1,000.00	79	1,011.74	35	283.0
J-9301	True	1,000.00	1,000.00	79	1,011.74	35	284.0
J-9302	True	1,000.00	1,000.00	79	1,011.74	35	284.0
J-9303	True	1,000.00	1,000.00	80	1,011.74	35	283.0
J-9304	True	1,000.00	1,000.00	80	1,011.74	35	282.0
J-9305	True	1,000.00	1,000.00	78	1,011.74	35	284.0
J-9306	True	1,000.00	1,000.00	76	1,011.74	35	279.0
J-9307	True	1,000.00	1,000.00	74	1,011.74	35	274.0
J-9308	True	1,000.00	1,000.00	73	1,159.09	35	263.0