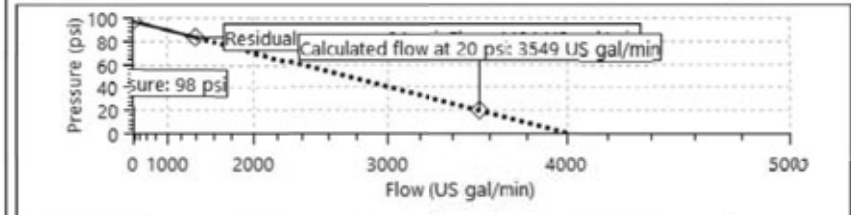


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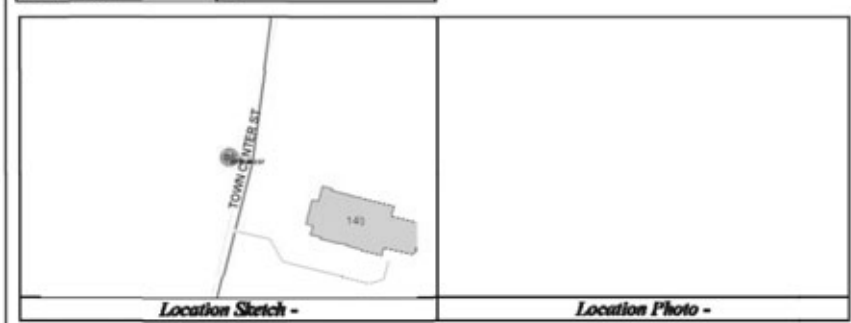
Hydrant Test Record

ID	HYD-40237 110499				
Inspection Type	Testing AWWA				
Hydrant ID	HYD-40237				
Location	56 LAYMAN BRICKS TR				
Diameter (in)	-	Flow (US gal/min)	1404		
Flush Time	-	Water Used (US Mgal)	0.007		
X Coordinate (US Survey ft)	11072551.15	Y Coordinate (US Survey ft)	3678646.91		
Time to Clear	-	Initial Color	-		
Initial Turbidity	-	Final Turbidity	-		
Initial Chlorine (mg/l)	-	Final Chlorine (mg/l)	-		
Temperature	-	pH Level	-		
Static Pressure	98.00	Residual Pressure	84.00		

Hydrant ID	Diameter (in)	Coefficient	Flow Pressure (psi)	Flush Time (min)	Flow (US gal/min)	Water Used (US Mgal)
HYD-40237	2.500	0.90	70.00	5	1404	0.007



Actual Duration	-	Actual Cost (\$)	-
Estimated Duration	-	Estimated Cost (\$)	-
Schedule Number	110499	Completed	Y
Date/Time Planned	15 Dec 2021	Task Status	-
Estimated Completion	-	Date/Time Started	-
Date	-	-	-
Report Period	-	Date Completed	-
Team Leader	BOYX (ENG-Sanya Fox)	Report Schedule Number	-
Contractor	-	-	-



Hydrant 2 Id	HYD-40263	Static Pressure Hyd 2	98.000
Hydrant 3 Id	-	Residual Pressure Hyd 2	84.000
Caps Status	ALL CAPS (All caps present)	Static Pressure Hyd 3	-
ID Tag Status	INTL TAG (Intact and)	Residual Pressure Hyd 3	-

InfoAsset

InfoAsset Hydrant Test Report
Created: 15/12/2021 12:56

Damaged?	NO	Absolute % Difference for Residual vs. Pipe	-
Observable?	YES	Flushing (CPM)	-
Authority ID	40237	Day 2 Chlorine (mg/l)	-
Start Time	10:45	Day 3 Chlorine (mg/l)	-
End Time	10:50	Day 4 Chlorine (mg/l)	-
Area	-	Day 5 Chlorine (mg/l)	-

Notes	Flow - 1404 gpm Calculated Flow @ 20 psi - 3549.3 gpm HYD-40231 Monitor Static - 99 psi Residual - 84 psi HYD-40237 Test Static - 98 psi Residual - 77 psi Pipe - 70 HYD-40263 Residual Static - 98 psi Residual - 84 psi HYD-40282 Monitor Static - 95 psi Residual - 81 psi HYD-40283 Monitor Static - 91 psi Residual - 79 psi
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InfoAsset

InfoAsset Hydrant Test Report
Created: 15/12/2021 12:56

WWVA WATER AND SEWER NOTES

1. ALL CONSTRUCTION METHODS AND MATERIALS SHALL CONFORM TO THE LATEST EDITION OF THE DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS OF THE WESTERN VIRGINIA WATER AUTHORITY (WWVA) AVAILABLE AT WWW.WESTERNWATER.ORG OR BY CONTACTING THE AUTHORITY AT 540-863-5700. THE PROJECT SHALL ALSO COMPLY WITH THE GOVERNING JURISDICTION'S STANDARDS AND OTHER AGENCY STANDARDS (E.G., VDOT, DEQ, DCR, VDH, ETC.) WHERE APPLICABLE.

2. A MINIMUM COVER OF THREE (3) FEET IS REQUIRED ON ALL WWVA WATER AND SEWER LINES.

3. ALL EXISTING UTILITIES MAY NOT BE SHOWN IN THEIR EXACT LOCATIONS. THE CONTRACTOR SHALL NOTIFY MISS UTILITY AND SHALL VERIFY LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES IN THE AREAS OF CONSTRUCTION PRIOR TO STARTING WORK.

4. PLEASE SHOW ALL WWVA WATER AND SEWER UTILITIES ON ANY DEVELOPMENT PLAN.

5. THE LOCATION OF EXISTING UTILITIES ACROSS OR ALONG THE LINE OF PROPOSED WORK ARE NOT NECESSARILY SHOWN ON THE PLANS AND WHERE SHOWN ARE ONLY APPROXIMATELY CORRECT. THE CONTRACTOR SHALL ON HIS OWN INITIATIVE AND AT NO EXTRA COST, LOCATE ALL UNDERGROUND LINES AND STRUCTURES AND POT HOLE AS NECESSARY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO UNDERGROUND STRUCTURES. ALL DAMAGE INCURRED TO EXISTING UTILITIES DURING CONSTRUCTION SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

6. PLAN APPROVAL BY THE WWVA DOES NOT REMOVE THE CONTRACTOR'S RESPONSIBILITY TO REMOVE OR RELOCATE ANY EXISTING CONFLICTS FOUND DURING CONSTRUCTION.

7. ALL PRIVATE UTILITY CONSTRUCTION, I.E. PIPING, VALVES, HYDRANTS, METERS AND BOXES, CLEAN OUTS, SANITARY SEWER MANHOLES, BEDDING, ETC. SHALL COMPLY WITH THE CURRENT VIRGINIA UNIFORM STATEWIDE BUILDING CODE (INCLUDING AMENDMENTS).

8. THE CONTRACTOR SHALL MAINTAIN A MINIMUM OF 18" CLEARANCE VERTICALLY AND TWO (2) FOOT MINIMUM HORIZONTALLY FROM THE OUTSIDE OF PIPE TO OUTSIDE OF PIPE WITH ALL OTHER UNDERGROUND UTILITIES. WHERE THIS CANNOT BE ACHIEVED, ADDITIONAL MEASURES IN ACCORDANCE WITH WWVA STANDARDS SHALL BE ENFORCED, INCLUDING BUT NOT LIMITED TO UTILIZING PRESSURE RATED PIPE FOR SEWER.

9. ALL UTILITY GRADE ADJUSTMENTS SHALL BE IN ACCORDANCE WITH WWVA STANDARDS AND ARE THE RESPONSIBILITY OF THE CONTRACTOR.

10. FIELD CHANGES SHALL BE SUBMITTED BY THE ENGINEER OF RECORD TO THE LOCALITY AND APPROVED BY THE WWVA.

11. PRIOR TO REQUESTING SUBSTANTIAL COMPLETION INSPECTION BY THE WWVA, THE DEVELOPER MUST SUBMIT AS BUILTS FOR REVIEW AND APPROVAL.

WATER SERVICE CONNECTION - STANDARD
STANDARD METER CONNECTION SHALL BE INSTALLED WHEN STATIC PRESSURE IS LESS THAN 120 PSI.

WATER METER BOX AND ACCESSORIES THEREIN NECESSARY FOR STANDARD METER INSTALLATION SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR JUST WITHIN RIGHT-OF-WAY/EASEMENT AT THE PROPERTY LINE AS SHOWN ON CONSTRUCTION PLANS. WATER METER BOX AND METER SETTER SHALL BE FURNISHED AND INSTALLED AS SHOWN IN THE DETAIL DRAWINGS. ALL METER SETTERS SHALL BE EQUIPPED WITH AN INTEGRAL LOCKABLE VALVE AND CHECK VALVE.

FOR PRESSURE RANGING BETWEEN 80 - 120 PSI IT IS RECOMMENDED THAT A PRESSURE REDUCING VALVE (PRV) BE INSTALLED ON THE PRIVATE SIDE OF THE WATER METER TO PROTECT THE PRIVATE PLUMBING, AND TO ENSURE COMPLIANCE WITH UNIFORM STATEWIDE BUILDING CODE, AND/OR THE GOVERNING JURISDICTIONS BUILDING CODE REQUIREMENTS. IT IS ENCOURAGED THAT THE PRV BE INSTALLED IN A SEPARATE METER BOX JUST DOWNSTREAM OF THE WATER METER BOX. THIS INSTALLATION WILL ALLOW EASY ACCESS FOR MAINTENANCE AND WILL REDUCE THE PRESSURE ON THE SERVICE LINE BETWEEN THE PRV AND THE STRUCTURE.

UTILITY SUMMARY

SERVICE PROVIDER: THE PROJECT WILL BE SERVED BY THE WESTERN VIRGINIA WATER AUTHORITY FOR WATER AND SANITARY SEWER.

SANITARY SEWER: SANITARY SEWER SHALL BE PROVIDED BY A 144" GRAVITY FLOW EXTENSION OF 6" PVC PIPE FROM AN EXISTING MANHOLE LOCATED AT THE SOUTH ENTRANCE TO THE SITE. THE EXISTING MANHOLE 400-1958.0 IS 6.5' DEEP AND IS SERVED BY AN 8" MAN. THE 6" PVC PIPE WILL CONNECT AT THE EAST END OF THE BUILDING TO SERVE THE RESTAURANT. A 6" PVC WILL WYE INTO THE LATERAL TO SERVE A GREASE TRAP.

FATS, OILS, & GREASE: A GREASE TRAP WILL BE PROVIDED TO SERVE THE BUILDING. A FOG DISCHARGE PERMIT APPLICATION SHALL BE SUBMITTED BY THE BUILDING PLUMBING DESIGNER FOR SIZING AND APPROVAL OF THE GREASE TRAP.

DOMESTIC WATER SERVICE: WATER WILL BE PROVIDED BY CONNECTING BY WET TAP TO THE EXISTING 8" WATERLINE IN TOWN CENTER STREET. A COMMERCIAL METER VAULT WILL BE SET AT THE PROPERTY LINE WITH A 2" METER SETTER. A 1-1/2" METER WILL BE USED FOR DOMESTIC SERVICE WITH BUSHINGS TO FIT THE SETTER. A 2" WATERLINE WILL BE EXTENDED 213' TO PROVIDE SERVICE TO BUILDING. A DRAINAGE FIXTURE COUNT WILL BE PROVIDED BY THE BUILDING PLUMBING ENGINEER FOR CONFIRMATION OF METER SIZING.

FIRE FLOW REQUIREMENTS: FIRE FLOW REQUIREMENTS FOR THE RESTAURANT SHALL BE 2,000GPM BASED ON WWVA GUIDANCE DOCUMENT. BOTETOURT COUNTY FIRE MARSHAL SHALL CONFIRM FIRE FLOW REQUIREMENT.

FIRE SERVICE: A NEW FIRE HYDRANT WILL BE INSTALLED BY A NEW CUT-IN TEE ON THE EXISTING 8" WATERLINE ALONG TOWN CENTER STREET AND SET AT THE NORTHWEST CORNER OF THE SITE. THE PROPOSED BUILDING DOES NOT HAVE A SPRINKLER SYSTEM.

BACKFLOW PREVENTION: BACKFLOW PREVENTION SHALL BE PROVIDED INSIDE THE BUILDING. SEE ARCHITECTURAL PLUMBING PLANS FOR DETAILS.

CS-1 GENERAL WATER AND SEWER SPECIFICATIONS

1.1 QUALITY ASSURANCE

- QUALIFICATIONS OF MANUFACTURERS - PRODUCTS USED IN THIS WORK SHALL BE PRODUCED BY MANUFACTURERS REGULARLY ENGAGED IN THE MANUFACTURE OF SIMILAR ITEMS AND WITH A HISTORY OF QUALITY PRODUCTION ACCEPTABLE TO THE PARTICIPATING UTILITY.
- QUALIFICATIONS OF INSTALLERS - USE EXPERIENCED WORKERS TO ENSURE PROPER INSTALLATION OF THE PRODUCTS SPECIFIED HEREIN. THE ACCEPTANCE OR REJECTION OF INSTALLED WORK, NO ALLOWANCE SHALL BE MADE FOR THE LACK OF EXPERIENCE ON THE PART OF THE WORKERS.
- MAIN LINE CONSTRUCTION CAN ONLY BE PERFORMED BY CLASS A CONTRACTORS LICENSED BY THE COMMONWEALTH OF VIRGINIA.
- A PRECONSTRUCTION CONFERENCE SHALL BE HELD ON ALL WATER AND SEWER PROJECTS BY THE AT LEAST TWO DAYS PRIOR TO ANY CONSTRUCTION WORK BEING PERFORMED. THE CONTRACTOR SHALL HAVE A REPRESENTATIVE OF APPROPRIATE AUTHORITY AT THIS MEETING. PRIOR TO THE START OF CONSTRUCTION, CONTRACTOR MUST HAVE AN APPROVED SET OF CONSTRUCTION DOCUMENTS ON-SITE.

1.2 LINES AND GRADES

- PIPES SHALL BE LAID TRUE TO THE LINES AND GRADES SHOWN ON THE DRAWINGS EXCEPT AS AUTHORIZED BY THE PARTICIPATING UTILITY. THE GRADE SHOWN ON THE PROFILE IS THE INVERT TO WHICH THE WORK MUST CONFORM. WORK NOT CONFORMING TO THE GRADE SHALL BE CORRECTED BY THE CONTRACTOR AT HIS OWN EXPENSE IN A MANNER ACCEPTABLE TO THE PARTICIPATING UTILITY.
- LOCATIONS OF WATER AND SEWER LINES
 - THE LOCATIONS OF THE PROPOSED LINES ARE SHOWN ON THE DRAWINGS.
 - THE PARTICIPATING UTILITY RESERVES THE RIGHT TO MAKE CHANGES IN LINES AND GRADES OF PIPE LINES, AND IN LOCATIONS OF PIPES AND/OR APPURTENANCES WHEN SUCH CHANGES MAY BE NECESSARY OR ADVANTAGEOUS.
 - ANY DEVIATION IN LOCATION OR LINE GRADE OF SEWER, OR THE LOCATION OR ELEVATION OF A WATER LINE, STRUCTURE OR APPURTENANCE AS SHOWN ON THE CONTRACT DRAWINGS, WILL REQUIRE A REVISION OF THE DRAWINGS CLEARLY SHOWING THE PROPOSED DEVIATION, AND SHALL BE SUBMITTED TO THE PARTICIPATING UTILITY FOR REVIEW AND APPROVAL BEFORE ANY CHANGES ARE CONSTRUCTED. DESIGN ENGINEER OF RECORD MUST CONCUR IN ANY REVISION OF DRAWINGS. MINOR FIELD CHANGES MAY BE MADE WITH APPROVAL OF THE PARTICIPATING UTILITY'S CONSTRUCTION INSPECTOR.

1.3 SUBMITTALS

- GENERAL - CONTRACTOR SHALL FURNISH ENGINEERING DATA COVERING DESIGN AND INSTALLATION. SUBMITTAL SHALL BE MADE IN A TIMELY MANNER SO THAT THE PROJECT SCHEDULE CAN BE MET.
- SHOP DRAWINGS - AS A MINIMUM, THE FOLLOWING SHOP DRAWING INFORMATION SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL:

- COMPLETE BILL OF MATERIALS TO BE PROVIDED FOR THE WORK DESCRIBED UNDER THIS SECTION.
- MANUFACTURER'S CATALOG CUT SHEETS FOR ALL MATERIALS TO BE PROVIDED UNDER THIS SECTION.

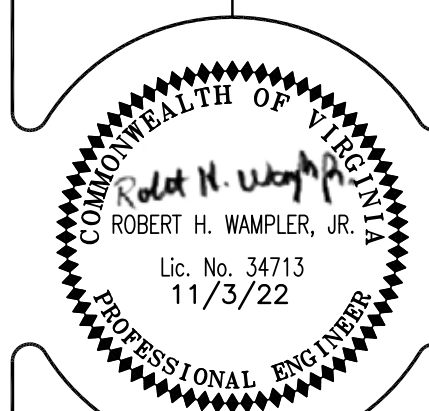
1.2 RESPONSIBILITY FOR MATERIALS

- MATERIAL FURNISHED BY CONTRACTOR - THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MATERIAL FURNISHED BY HIM, AND SHALL REPLACE AT HIS OWN EXPENSE ALL SUCH MATERIAL FOUND DEFECTIVE IN MANUFACTURE OR DAMAGED IN HANDLING AFTER DELIVERY BY THE MANUFACTURER. THIS SHALL INCLUDE THE FURNISHING OF MATERIALS AND LABOR REQUIRED FOR THE REPLACEMENT OF INSTALLED MATERIAL DISCOVERED DEFECTIVE PRIOR TO THE FINAL ACCEPTANCE OF THE WORK.
- MATERIAL FURNISHED BY PARTICIPATING UTILITY - THE CONTRACTOR'S RESPONSIBILITY FOR MATERIAL FURNISHED BY THE PARTICIPATING UTILITY SHALL BEGIN AT THE POINT OF DELIVERY TO CONTRACTOR. MATERIALS ALREADY ON THE SITE SHALL BECOME THE CONTRACTOR'S RESPONSIBILITY ON THE DATE OF THE AWARD OF THE CONTRACT. THE CONTRACTOR SHALL EXAMINE ALL MATERIAL FURNISHED BY THE PARTICIPATING UTILITY AT THE TIME AND PLACE OF DELIVERY TO HIM AND SHALL REJECT ALL DEFECTIVE MATERIAL. ANY MATERIAL FURNISHED BY THE PARTICIPATING UTILITY AND INSTALLED BY THE CONTRACTOR WITHOUT DISCOVERY OF SUCH DEFECTS WILL, IF FOUND DEFECTIVE PRIOR TO FINAL ACCEPTANCE OF THE WORK, BE REPLACED WITH SOUND MATERIAL BY THE PARTICIPATING UTILITY. THE CONTRACTOR, HOWEVER, SHALL, AT HIS OWN EXPENSE, FURNISH ALL SUPPLIES, LABOR AND FACILITIES NECESSARY TO REMOVE SAID DEFECTIVE MATERIAL AND INSTALL THE SOUND MATERIAL IN A MANNER SATISFACTORY TO THE PARTICIPATING UTILITY.



No.	Description	REVIEW COMMENTS	Date
1			01/04/22

DAIRY QUEEN DALEVILLE TOWN CENTER WWVA UTILITY NOTES



0	1	2
GRAPHIC SCALE		
PROJECT:	21055	

06

PROPOSED FIRE HYDRANT PERFORMANCE

THE PROPOSED FIRE HYDRANT AT DAIRY QUEEN WILL BE LOCATED BETWEEN EXISTING HYDRANTS 40237 AND 40263 TESTED ABOVE. THE PROPOSED HYDRANT IS EXPECTED TO PERFORM THE SAME AS HYDRANT 40237 LOCATED ACROSS TOWN CENTER STREET AND WITHIN 200' OF THE NEW HYDRANT LOCATION. THEREFORE, THE FIRE FLOW REQUIREMENT OF 2,000GPM IS EXCEEDED.