

Rev. #	Date	Description
1	6/10/11	Revised per City comments dated 7/15/11
2	8/22/11	Revised per City comments dated 8/22/11

Project No.	23109
Checked by:	JH
Drawn by:	RNM
Scale:	1"=20'

HYDRANT #11211
Static Pressure 70 psi
Residual Pressure 55 psi
Pilot Pressure 55 psi
Flow Rate 1383 gpm
Flow Rate @ 20 psi 2649 gpm
Flow Rate @ 0 psi 3177 gpm
Last Flow Date October 29, 2010
Flow Data provided by WWA

HYDRANT #11211

UTILITY NOTES

- The existing underground utilities shown hereon are based upon available information. The contractor shall be responsible for determining the exact location of all utilities before commencing work and for any damages that occur by his failure to locate or preserve these utilities. If during construction the contractor should encounter utilities other than those shown on the plans, he shall notify the Owner immediately and take necessary and proper steps to protect the facility and assure the continuance of service.
- Any discrepancies found between the drawings and site conditions or any inconsistencies or ambiguities in the drawings shall be immediately reported to the Owner, who shall promptly correct such inconsistencies or ambiguities. Work done by the contractor without direction after his discovery of such inconsistencies, discrepancies or ambiguities, shall be done at the contractor's risk.
- All construction shall conform to the most current standards and specifications of the City of Roanoke, Virginia; the Western Virginia Water Authority Standards Manual; the Virginia Department of Health (VDH); and the Virginia Department of Transportation (VDOT). In case of variance among the cited standards, the most restrictive shall govern.
- The contractor shall contact the Western Virginia Water Authority and schedule a pre-construction meeting at least 24 hours prior to starting any work on the project.
- Separation of water and sewer lines shall be in accordance with Virginia Department of Health regulations.
- Maintain minimum cover of 3.0 feet over sanitary sewer lines and 3.0 feet over water lines unless otherwise specified on drawings.
- See plumbing/mechanical plans for further location and construction details of sanitary sewer, storm sewer and water line connections to the building.
- Waterlines and sanitary sewer lines shall be tested in accordance with the Western Virginia Water Authority standards.
- Sanitary sewer laterals shall be 6" PVC SDR 35 @ 1.04% (min).
- Connections to existing water lines and sanitary sewer lines shall be made in the presence of a Western Virginia Water Authority Inspector. Contractor shall contact Authority and coordinate the connections.
- Set all cleanout tops flush with finished grade.
- Water line from main to fire hydrant shall be ductile cast iron pipe of push-on joint or mechanical joint variety, conforming to AWWA C151, latest revision. Thickness class shall be minimum of Class 350. Plastic Endotj is acceptable per C.Carey 12.19.12
- Water meter vault & cover shall be in accordance with Western Virginia Water Authority Standard W-02.
- The contractor shall notify Miss Utility at (800)552-7001 48 hours prior to excavation.
- The contractor shall coordinate with the appropriate utility companies the installation of electrical, gas, telephone and CATV services.
- Grease trap shall be in accordance with the Western Virginia Water Authority FOG Policy.
- All utility service lines and laterals, including electric lines shall be constructed underground in accordance with Section 36.2-610 of the City of Roanoke Code.
- Wastewater Access Chamber shall be JM Eagle WAC 15 or equivalent.

Water and Sewer Usage:
Average daily demand = # of seats * 50 gpd/seat
= 117 seats * 50 gpd/seat
= 5,850 gpd
Peak gallons per minute = 75 gpm

SANITARY SEWER CLEANOUT SCHEDULE							
FROM CO	TO CO	LENGTH	DIA.	TYPE	SLOPE FT/FT	UPPER INVERT	LOWER INVERT
1	12	11'	6"	PVC	0.010	1115.04	1114.92
2	1	62'	6"	PVC	0.0105	1115.59	1115.04
3	2	29'	6"	PVC	0.0107	1116.00	1115.69
4	3	37'	6"	PVC	0.0103	1116.38	1116.00
10	3	4'	4"	PVC	0.0225	1116.09	1116.00
5	11	5'	4"	PVC	0.0220	1116.53	1116.42
7	6	17'	4"	PVC	0.0212	1117.22	1116.86

CONTRACTOR SHALL PERFORM TEST EXCAVATION AT CLEANOUT #12 LOCATION & FIELD VERIFY LOCATION, SIZE & ELEVATION OF EX. SANITARY SEWER LATERAL @ PROPERTY LINE PRIOR TO CONSTRUCTION & NOTIFY DEVELOPER & ENGINEER OF FINDINGS

WORK IN THIS AREA IS TO BE PERFORMED PER THE CITY OF ROANOKE RIGHT OF WAY EXCAVATION AND RESTORATION STANDARDS

REPLACE EX. SANITARY SEWER LATERAL W/ 6" PVC HOPE

Directional boring was done. 36" HOPE DR-18 DISCOplex EX. DI-38 L=10' EX. TOP=1118.85 EX. 18" INV OUT=1113.30

HERSHBERGER ROAD N.W. (variable width)

DELAIR STREET

FIRE FLOW @ STEAK-N-SHAKE HYDRANT
Required Fire Flow 2000 gpm
Static Pressure 72 psi
Residual Pressure @ 2000 psi 35 psi
Flow Rate @ 20 psi 2403 gpm
Flow Rate @ 0 psi 2865 gpm
See Fire Flow Calculations

2" 22.5" BEND & 2" 11.25" BEND
1" IRRIGATION METER & 1" IRRIGATION RPT BACKFLOW PREVENTER, METER AND METER BOX PROVIDED BY WWA. BACKFLOW PREVENTER ENCLOSURE SHALL BE APPROVED BY WWA PRIOR TO INSTALLATION

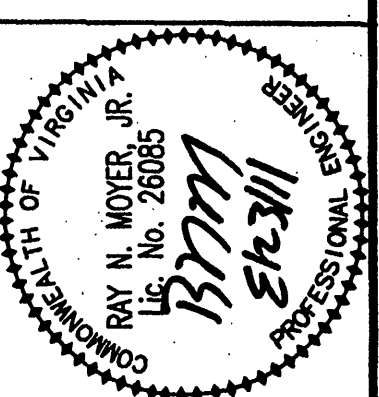
2"x2" TEE & 2"x1" REDUCER
1.5" WATER METER AND VAULT
6"x2" TEE 2" END LINE USED

CONNECT TO EX. WATERLINE W/ 6"x6" TAPPING SLEEVE & 6" GATE VALVE. CONTRACTOR SHALL PROVIDE SLEEVE AND VALVE. WATERLINE TAP SHALL BE PERFORMED BY WWA. REPAIR PAVEMENT SECTION TO MATCH EXISTING

Pressure tested 1.2.13 by Chuck Clark-passed.
Screw box used in place of Valve vault, since is located in the gutter pan.

APPROVED
NOV 19 2012

INGRAM - HAGEN & CO., P.L.C.
Surveyors - Engineers - Planners - Foresters



Steak N Shake
Utility Plan
Crossroads Center
1309 Hershberger Road
City of Roanoke, Virginia

Sheet Number:
C4

As-Built K. Winslow 5.2.13