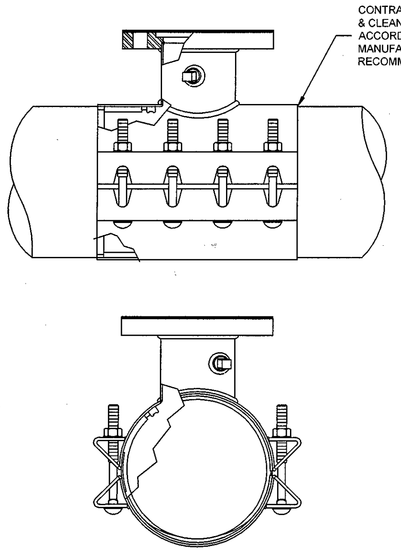
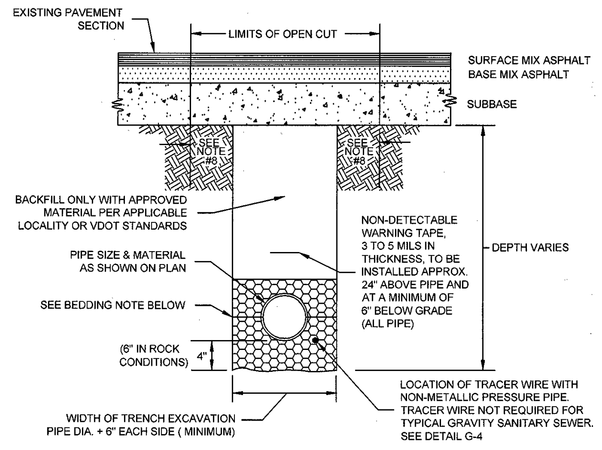
1. TAPPING SLEEVE SHALL BE POWERSEAL MODEL 3490 TYPE 304 STAINLESS STEEL WITH CARBON STEEL FLANGE, ROMAC'S MODEL SST III, FORD MODEL FTSS WITH CARBON STEEL FLANGE OR APPROVED EQUIVALENT. SLEEVE SHALL BE RATED AT 100 PSI OVER WORKING PRESSURE AND MUST HAVE A TEST PLUG.
2. TAPPING VALVE SHALL BE AVK RESILIENT SEATED GATE VALVE SERIES 25 MJFL, MUELLER T-2360 RESILIENT WEDGE TAPPING VALVE WITH MJFL, OR AFC SERIES 2500 RESILIENT WEDGE TAPPING VALVE WITH MJFL. VALVE SHALL BE RATED AT 250 PSI.
3. TAPPING SLEEVE AND VALVE SHALL BE FULL PORT TO ACCEPT FULL SIZE SHELL CUTTER.
4. STEEL FLANGE SHALL MEET AWWA C207.
5. SIZE-ON-SIZE TAPPING NOT ALLOWED UNLESS APPROVED BY PARTICIPATING UTILITY.



WESTERN VIRGINIA REGIONAL – CONSTRUCTION DETAIL

TAPPING SLEEVE AND VALVE — W-21 — 01/01/14

1. BEDDING, HAUNCHING AND INITIAL BACKFILL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THIS DETAIL AND MANUFACTURER'S RECOMMENDATION.
2. ALL PVC PIPE SHALL BE BEDDED IN COMPACTED VDOT #57 OR #68 STONE.
3. IN VDOT ROW, THE CONTRACTOR SHALL REPLACE THE PAVEMENT AS REQUIRED AND SPECIFIED BY VDOT. IN ROANOKE CITY, CONTRACTOR SHALL REPLACE PAVEMENT AS REQUIRED BY CITY OF ROANOKE RIGHT OF WAY EXCAVATION AND RESTORATION STANDARDS, LATEST EDITION.
4. ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE AS SPECIFIED BY VDOT OR APPLICABLE LOCALITY.
5. PRIOR TO CONSTRUCTION, CONTRACTOR IS RESPONSIBLE FOR SECURING ALL REQUIRED PERMITS FROM VDOT AND/OR APPLICABLE LOCALITY.
6. IN AREAS SUBJECTED TO VEHICULAR TRAFFIC, BEDDING STONE AND FILL SHALL BE PLACED IN 6" LIFTS AND SHALL BE COMPACTED TO AT LEAST 95% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D 698.
7. ALL SEWER LINE PIPE SHALL BE BEDDED IN COMPACTED GRANULAR MATERIAL. BEDDING REQUIREMENTS FOR DUCTILE SEWER LINE ARE DEPENDENT ON MANUFACTURER'S BEDDING CRITERIA.
8. BENCH CUT ON EACH SIDE OF PAVEMENT SHALL BE IN ACCORDANCE WITH VDOT OR APPLICABLE LOCALITY'S SPECIFICATIONS.
9. ALL EXCAVATIONS SHALL COMPLY WITH OSHA TECHNICAL MANUAL, CHAPTER 2, TITLED "EXCAVATIONS: HAZARD RECOGNITION IN TRENCHING AND SHORING."
10. THE TRACER WIRE SHALL BE PLACED ALONG THE LOWER QUADRANT OF THE PIPE. THE WIRE SHALL NOT TOUCH THE PIPE, BUT SHALL BE A MAXIMUM OF 6" FROM THE PIPE. NON-METALLIC SPACERS MAY BE USED TO MAINTAIN A SET DISTANCE FROM THE UTILITY.



BEDDING: FOR WATERLINES, INSTALL BEDDING STONE TO SPRING LINE OF PIPE AT A MINIMUM, OR PER MANUFACTURER'S RECOMMENDATION. FOR SEWER LINES, BEDDING SHALL BE MINIMUM 6" ABOVE PIPE.

WESTERN VIRGINIA REGIONAL – CONSTRUCTION DETAIL

BEDDING AND BACKFILL UNDER PAVEMENT AND IN RIGHT-OF-WAY — G-12 — 08/01/15

UNDERGROUND GENERAL NOTES:

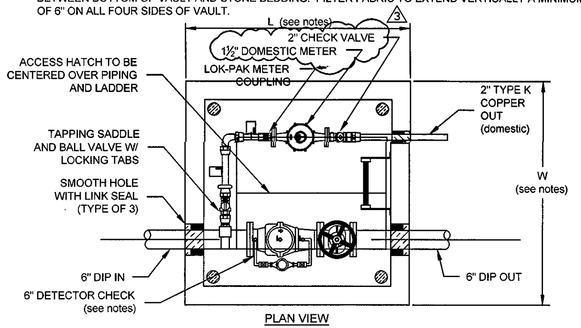
1. ALL CONSTRUCTION METHODS SHALL CONFORM TO THE LATEST WVWA DESIGN AND CONSTRUCTION STANDARD.
2. THE CONTRACTOR OR DEVELOPER IS REQUIRED TO NOTIFY THE WESTRN VIRGINIA WATER AUTHORITY IN WRITING AT LEAST (3) DAYS PRIOR TO ANY CONSTRUCTION. PLEASE CONTACT MARK SINK AT (540) 537-3460.
3. ALL WORK SHALL BE SUBJECT TO INSPECTION BY THE WESTEN VIRGINIA WATER AUTHORITY
4. FIELD CORRECTIONS SHALL BE APPROVED BY THE WESTRN VIRGINIA WATER AUTHORITY PRIOR TO SUCH CONSTRUCTION.
5. THE CONTRACTOR SHALL MAINTAIN A MINIMUM OF 18" CLEARANCE VERTICALLY AND 2'-0" MINIMUM HORIZONTALLY FROM OUTSIDE OF PIPE TO OUTSIDE OF PIPE AT ALL WATER, SANITARY SEWER CROSSINGS OF ANY OTHER UTILITIES. WHERE THIS CANNOT BE ACHIEVED, ADDITIONAL MEASURES IN ACCORDANCE WITH WVWA STANDARDS SHALL BE ENFORCED.
6. IT IS THE CONTRACTOR'S RESPONSIBILITY TO HAVE ALL EXISTING UTILITIES LOCATED AND POTHOLED TO VERIFY LOCATIONS. THIS PLAN REVIEW DOES NOT REMOVE THE CONTRACTOR'S RESPONSIBILITY TO RELOCATED ANY EXISTING CONFLICTS FOUND DURING CONSTRUCTION.
7. CONTRACTOR TO FURNISH AND INSTALL TAPPING SLEEVE AND VALVE, TAP TO BE MADE BY WVWA. CONTRACTOR SHALL BE RESPONSIBLE FOR EXCAVATION AND SHORING PER OSHA REGULATIONS.
8. THE WATER SERVICE FOR THIS PROJECT WILL REQUIRE A CONCRETE VAULT. PLEASE CONTACT CLEAR FLOW AT (540) 942-2300 TO ORDER THE VAULT. THE APPLICANT IS RESPONSIBLE FOR PAYMENT, DELIVERY AND COORDINATION OF THE VAULT, AND INSTALLATION OF THE WATER SERVICE BETWEEN THE AUTHORITY MAIN AND THE VAULT INCLUDING THE TAPPING SLEEVE AND VALVE. CONTRACTOR TO EXCAVATE AND INSTALL TAPPING SLEEVE AND VALVE, THE WET TAP WILL BE MADE BY THE AUTHORITY UPON PAYMENT AND SCHEDULING.

AS-Built 4/17/18
Inspector: Brian Whitemack

Materials - 6" DIP - U.S. Pipe
6" Gate Valve Resilient Seat 20 Turn to the Right to close

Vault CSI
Frame & Cover - Capital Foundry Water 2-hole

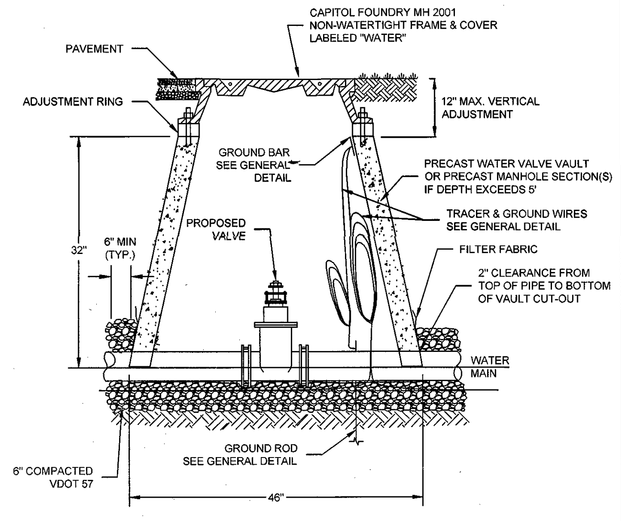
1. FOR 6" FIRE LINE, EXTERIOR VAULT DIMENSIONS SHALL BE (L x W x H) 6' X 6' X 5' WITH DOMESTIC TAP MADE INSIDE VAULT AS SHOWN BELOW.
2. FOR 8" FIRE LINE EXTERIOR VAULT DIMENSIONS SHALL BE (L X W X H) 6' X 6' X 6' WITH DOMESTIC TAP MADE OUTSIDE VAULT. BALL VALVE WITH LOCKING TABS SHALL BE PROVIDED INSIDE VAULT TO ALLOW FOR ISOLATION OF DOMESTIC METER.
3. SINGLE DETECTOR CHECK VALVE SHALL BE WILKINS 310 DALM , WATTS ES-SS07F - BP, OR APPROVED EQUAL WITH FLANGED END CONNECTIONS, BYPASS ASSEMBLY, AND ONE OS&Y GATE VALVE.
4. BYPASS ASSEMBLY SHALL INCLUDE 2 BALL VALVES TO ISOLATE METER.
5. DOMESTIC SHALL BE TYPE K COPPER WITH GRIP JOINT FITTINGS, BALL VALVE AT TAPPING SADDLE (WITH LOCKING TABS) AND CHECK VALVE ON OUTLET.
6. DOMESTIC METER AND BYPASS METER TO BE SUPPLIED BY OWNER AND INSTALLED BY VENDOR.
7. "UNI FLANGE" ADAPTOR FLANGE, OR APPROVED EQUAL, OR FLANGED - PLAIN END PIPING REQUIRED FOR INLET AND OUTLET PIPING.
8. VAULT TO BE INSTALLED ON MIN. 6" COMPACTED VDOT #57 STONE WITH FILTER FABRIC PLACED BETWEEN BOTTOM OF VAULT AND STONE BEDDING. FILTER FABRIC TO EXTEND VERTICALLY A MINIMUM OF 6" ON ALL FOUR SIDES OF VAULT.



WESTERN VIRGINIA REGIONAL – CONSTRUCTION DETAIL

COMMERCIAL METER VAULT — W-7 — 02/10/15

1. FILTER FABRIC TO BE INSTALLED BETWEEN BOTTOM OF PIPE AND STONE BEDDING. FABRIC TO EXTEND VERTICALLY A MINIMUM OF 6" FROM BOTTOM OF VAULT (FULL CIRCUMFERENCE).



WESTERN VIRGINIA REGIONAL – CONSTRUCTION DETAIL

WATER LINE VALVE & VAULT — W-9 — 01/01/14

FACTOR OF SAFETY = 1.5

PIPE SIZE	PIPE MAT'L	90° BEND	45° BEND	22 ½° BEND	11 ¼° BEND	VALVE/ PLUG (NOTE 2)	TEE BRANCH (NOTE 3)	REDUCER (NOTE 4)	45° VERT.	22 ½° VERT.	11 ¼° VERT.
6"	D.I.	28'	21'	6'	3'	50'	26'	26'	21'	10'	5'
8"	D.I.	36'	21'	8'	4'	65'	41'	27'	27'	13'	7'
10"	D.I.	43'	21'	9'	5'	77'	53'	26'	32'	16'	8'
12"	D.I.	51'	21'	10'	5'	91'	67'	27'	38'	18'	9'
6"	PVC	29'	21'	6'	3'	78'	25'	40'	32'	16'	8'
8"	PVC	37'	21'	8'	4'	102'	49'	43'	42'	21'	10'
10"	PVC	44'	21'	9'	5'	122'	68'	41'	51'	25'	12'
12"	PVC	51'	21'	11'	6'	143'	89'	42'	60'	29'	15'

1. ALL JOINTS SHALL BE RESTRAINED ON BOTH SIDES OF THE FITTING AND DOCUMENTED BY THE INSPECTOR FOR THE LENGTH SHOWN UNLESS OTHERWISE INDICATED.
2. RESTRAINED LENGTH SHOWN REFERS TO ANY DESIGNED OR POTENTIAL LINE STOP, INCLUDING ALL GATE VALVES.
3. RESTRAINED LENGTH SHOWN REFERS TO THE BRANCH LINE ONLY. THE CONTINUOUS PIPE LENGTH OF THE MAIN RUN SHALL BE A MINIMUM OF 10' ON EACH SIDE OF THE TEE.
4. RESTRAINED LENGTH SHOWN IS BASED ON REDUCING PIPE DIAMETER TO ONE SIZE SMALLER THAN PIPE LISTED (ANY OTHER DIAMETER REDUCTION WILL REQUIRE ADDITIONAL CALCULATIONS BEFORE INSTALLATION). RESTRAINED LENGTH SHOWN IS UPSTREAM ON THE LARGE SIDE OF THE REDUCER.
5. 12" AND SMALLER DIAMETER: IF UNDER 150 PSI WORKING PRESSURE, RESTRAINED JOINT(S) ARE TO BE USED. IF EQUAL TO OR OVER 150 PSI WORKING PRESSURE, BOTH THRUST BLOCK(S) AND RESTRAINED JOINT(S) SHALL BE USED.

   LARGER THAN 12" DIAMETER: IF UNDER 100 PSI WORKING PRESSURE, RESTRAINED JOINT(S) ARE TO BE USED. IF EQUAL TO OR OVER 100 PSI WORKING PRESSURE, BOTH THRUST BLOCK(S) AND RESTRAINED JOINT(S) SHALL BE USED (UNLESS OTHERWISE APPROVED BY THE PARTICIPATING UTILITY).
6. FOR RESTRAINED JOINT PIPING REQUIREMENTS AT FITTING R.J. PVC AND R.J. DIP MAY BE USED INTERCHANGEABLY WITH APPROVAL FROM PARTICIPATING UTILITY. CONTRACTOR MUST PLAN ACCORDINGLY FOR THE DIFFERENCE IN PVC AND DIP BELL AND SPIGOT DIMENSIONS.

WESTERN VIRGINIA REGIONAL – CONSTRUCTION DETAIL

MINIMUM THRUST RESTRAINT OF PIPE JOINTS DESIGN LENGTHS — W-19 — 02/10/15

AUTOMATIC FIRE SPRINKLER NICET CERTIFIED
LEVEL IV
NO. 82735
CLAUDE D. RATCHFORD
SENIOR TECHNICIAN

SCALE: 3/8" = 1'-0"
SCALE: 3/4" = 1'-0"
SCALE: 3/4" = 1'-0"

CLIENT : A.P. WILLIAMS, INC.

ROANOKE SPRINKLER, INC.
FIRE PROTECTION SYSTEMS

1334 7TH STREET N.E.
ROANOKE, VIRGINIA 24012
(540) 981-0009 FAX (540) 981-1010

PLAN NORTH

SYSTEM DESIGN CRITERIA

Type of System: ☒Wet ☐Dry ☐Preaction ☐Other_____ NFPA Standard: ☒#13 ☐#13R ☐#14 ☐#20 ☐#24

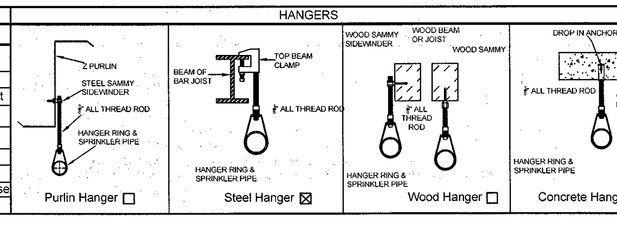
- Occupancy: Dialysis Center
- Maximum Head Spacing: 225 & 256sq.ft.
- Hazard: Light & Ordinary Group 1
- Authority Having Jurisdiction: Local
- Sprinkler Heads Center Point Of Tiles: Yes ☒No ☐
- All 1" Piping to be Schedule 40 w/Threaded Fittings.
- All Piping 1¼" and Larger to be Schedule 10 w/Grooved ends & Fittings
- Owner's Responsibility To Maintain Minimum Temperature of 40 °F In All Areas Of Building To Prevent Freezing Of Wet Portions Of Sprinkler Systems

SYMBOLS

Symbol	Description
⬡	Hydraulic Reference Points
9'-0"ACT	Acoustical Ceiling Height
9'-0"GYP	Gypsum Board Ceiling Height
12"*	Center of Pipe From Bottom of Deck
9'-0"℄	Center of Pipe From Finish Floor
	Denotes Pipe Hanger
	End Cap on Pipe

EC/extended coverage QR/quick response
SR/standard response SDWL/sidewall

HANGERS



Purlin Hanger ☐ Steel Hanger ☒ Wood Hanger ☐ Concrete Hanger ☐

SPRINKLERS TOTAL = 49

Symbol	Manufacturer	Count	Model	Type	Thread	Temp.	Finish	K-Factor	Escutcheon
◎	TYCO	3	TY5237	EC QR/PENDENT	½"	155°	CHROME	11.2	REC
◉	VICTAULIC	46	V2708	QR-PENDENT	½"	155°	CHROME	5.6	REC

COMMENTS

REVISIONS:	DATE:	REVISIONS:
MOVE PIPING TO AVOID ELECTRICAL PANELS	12-18-17	1
REVISE PER WVWA REVIEW COMMENTS DATED 12-26-17	12-27-17	2
REVISE DOMESTIC METER FROM 2" TO 1 ½"	1-25-18	3

JOB No.		SPRINKLER PLAN, DETAILS, & NOTES	SHEET No.
DATE	12/5/17	U.S. RENAL CARE	1 OF 2
DESIGNER	J.T.GREENE	117 DUKE OF GLOUCESTER ST., S.W. ROANOKE, VA., 24014	
SCALE	AS NOTED		