

UTILITY ADJUSTMENT DETAILS & NOTES

WATER NOTES - CITY OF ROANOKE

1. THE CONTRACTOR SHALL INSTALL REACTION BLOCKING IN ACCORDANCE WITH STANDARD RB-1.
2. WATER MAIN PIPE SHALL BE DUCTILE IRON CONFORMING TO AWWA C151. ALL PIPE SHALL BE BITUMINOUS COATED AND CEMENT LINED IN ACCORDANCE WITH AWWA C104.
3. THICKNESS CLASS FOR WATER MAIN PIPE 12 INCHES OR SMALLER IN DIAMETER SHALL BE CLASS 50. ALL PIPE THICKNESS DESIGN SHALL BE IN ACCORDANCE WITH AWWA C104.
4. PIPE JOINTS SHALL BE IN 18 FOOT LENGTHS AND SHALL BE SINGLE RUBBER GASKET TYPE. SINGLE RUBBER GASKET TYPE JOINTS SHALL BE INDUSTRY STANDARD AND SHALL BE MADE IN ACCORDANCE WITH AWWA C111. JOINTS SHALL BE PUSH ON TYPE.
5. WATER MAIN FITTINGS SHALL BE MECHANICAL JOINT CAST IRON, CLASS 250, DIMENSIONS MEETING THE REQUIREMENTS OF AWWA C110. JOINTS SHALL MEET THE REQUIREMENTS OF AWWA C111. ALL FITTINGS SHALL BE COATED AND CEMENT LINED IN ACCORDANCE WITH AWWA C104.
6. GATE VALVES SHALL BE IRON BODY, BRONZE MOUNTED, DOUBLE DISC, PARALLEL SEAT, O-RING SEALED, INSIDE SCREW, NON-RISEING STEM, FITTING WITH A 2 INCH SQUARE OPERATING NUT FOR VALVE VAULT SERVICE, ALL IN ACCORDANCE WITH AWWA C500. CONNECTIONS SHALL BE SUITABLE FOR 200 PSI WATER WORKING PRESSURE AND SHALL BE TESTED AT TWICE THE RATED WORKING PRESSURE. THE OPERATING NUT SHALL BE MARKED WITH AN ARROW AND THE WORD "OPEN" AND SHALL OPEN BY TURNING TO THE RIGHT (CLOCKWISE). THE VALVES SHALL BE MUELLER # A-2380-22 IMPROVED GATE VALVES, DARLING #55 OR APPROVED EQUAL.
7. FIRE HYDRANTS SHALL BE DRY TOP, DRY BARREL, COMPRESSION TYPE WITH A 6 INCH BASE AND WITH DOUBLE O-RING SEALS, AND SHALL CONFORM TO AWWA C502. FIRE HYDRANTS SHALL BE MUELLER A24113, DARLING B50B, KENNEDY K10B OR APPROVED EQUAL.
10. ALL WATER SERVICE LINES LONGER THAN 1 1/2" SHALL BE TYPE 'K' RIGID COPPER PIPE. WATER SERVICE LINES 1" AND SMALLER SHALL BE TYPE 'K' FLEXIBLE COPPER TUBING.
11. ALL WATER LINE ADJUSTMENTS ARE TO THE BENEFIT OF THE CITY OF ROANOKE EXCEPT FOR BRANCH LINE TAPS WHICH ARE TO THE BENEFIT OF ROANOKE COUNTY.
12. VALVE VAULTS & FRAMES & COVERS SHALL BE CONSTRUCTED ACCORDING TO DETAILS AT RIGHT.
13. THE CONTRACTOR SHALL CONTACT MR. CRAIG SLUSS OF THE ROANOKE CITY WATER DEPARTMENT AT (703) 981-2601 TO COORDINATE WORK TO BE PERFORMED BY ROANOKE CITY FORCES. THE CONTRACTOR SHALL PROVIDE AT LEAST 48 HRS. ADVANCE NOTICE TO THE CITY FOR WORK TO BE PERFORMED BY CITY FORCES.
14. METHOD OF MEASUREMENT-
 - A) TAPPING SLEEVE, VALVE & VAULT SHALL BE MEASURED IN UNITS OF EACH FOR THE SIZE SPECIFIED, COMPLETE IN PLACE.
 - B) INSTALL WATER METER AND VAULT SHALL BE MEASURED IN UNITS OF EACH FOR THE SIZE SPECIFIED AND/OR REQUIRED AS DETERMINED BY THE CITY OF ROANOKE WATER DEPARTMENT, COMPLETE IN PLACE.
15.
 - A) BASIS OF PAYMENT-
TAPPING SLEEVE, VALVE & VAULT SHALL INCLUDE A CITY OF ROANOKE STANDARD PRECAST CONCRETE VALVE VAULT, A CITY OF ROANOKE STANDARD VALVE VAULT FRAME & COVER, EXCAVATION, BACKFILL WITH SUITABLE MATERIAL AND RESTORATION OF PROPERTY.
 - B)
INSTALL WATER METER AND VAULT SHALL INCLUDE A CITY OF ROANOKE STANDARD PRECAST CONCRETE VALVE VAULT, A CITY OF ROANOKE STANDARD VALVE VAULT FRAME & COVER, INSTALLATION OF WATER METERS, CHECK VALVES, BYPASSES AND APPURTENANCES, COORDINATION WITH THE CITY OF ROANOKE WATER DEPARTMENT, EXCAVATION, BACKFILL WITH A SUITABLE MATERIAL, STONE, BRICK SUPPORTS, AND RESTORATION OF PROPERTY. WATER METERS, CHECK VALVES, BYPASSES AND APPURTENANCES TO BE SUPPLIED TO THE CONTRACTOR BY THE CITY OF ROANOKE WATER DEPARTMENT.

PAYMENT WILL BE MADE UNDER:

<u>PAY ITEM</u>	<u>PAY UNIT</u>
TAPPING SLEEVE, VALVE & VAULT	EA.
INSTALL (SIZE) WATER METER & VAULT	EA.

WATER NOTES - ROANOKE COUNTY

1. FIRE HYDRANT RELOCATION (3-4) SHALL BE IN ACCORDANCE WITH THESE NOTES. ALL OTHER WATER FACILITY ADJUSTMENTS SHALL BE IN ACCORDANCE WITH CITY OF ROANOKE WATER NOTES SHOWN ABOVE.
2. WATER VALVES SHALL MEET THE SAME SPECIFICATION AS DETAILED IN NOTE #6 ABOVE EXCEPT VALVES SHALL OPEN TO THE LEFT (COUNTERCLOCKWISE).

GENERAL UTILITY NOTES

- SANITARY SEWER NOTES -- ROANOKE COUNTY
1. POLYVINYL CHLORIDE (PVC) PIPE AND FITTINGS SHALL BE SDR 35 AND SHALL CONFORM WITH ASTM D 3034.
2. PVC PIPE AND FITTINGS SHALL BE BELL AND SPIGOT TYPE JOINTS. THE BELL AND SPIGOT JOINT SHALL BE SEALED WITH ELASTOMERIC GASKETS CONFORMING TO ASTM D 3212 AND IN STRICT ACCORDANCE WITH THE RECOMMENDATIONS OF THE PIPE MANUFACTURER.
3. RECONSTRUCTED MANHOLE INVERTS SHALL BE SHAPED IN ACCORDANCE WITH STANDARD IS-1.
4. PIPE CONNECTIONS WITH MANHOLES SHALL BE MADE WITH A FLEXIBLE BOOT CONFORMING WITH ASTM C-443.
5. PIPE TO BE ABANDONED SHALL BE PLUGGED, CAPPED OR SEALED WITH CONCRETE.
6. STRUCTURES TO BE ABANDONED SHALL BE CUT OFF OR REMOVED TO A MINIMUM DEPTH OF TWENTY FOUR (24) INCHES BELOW FINISHED GRADE AND BACKFILLED COMPLETELY. EXISTING FRAMES & COVERS NOT REUSED SHALL BE RETURNED TO ROANOKE COUNTY.
7. ALL UNITS USED IN MANHOLE CONSTRUCTION SHALL BE SECURELY CONNECTED BY INTERLOCKING BETWEEN UNITS, CONCRETE COLLARS OR OTHER APPROVED METHODS.
8. MANHOLE FRAMES & COVERS SHALL BE DEWEY BROS., INC. MH-RCR-3000EC IN PAVED AREAS & MH-RCR-3000W IN UNPAVED AREAS OR APPROVED EQUAL.
9. RECONSTRUCTED MANHOLES SHALL HAVE INVERTS SHAPED IN ACCORDANCE WITH STANDARD IS-1.



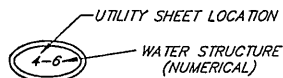




















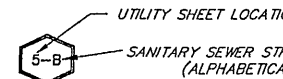


1. VAULTS, MANHOLE BASES, RISERS, TAPERS, AND GRADE RINGS SHALL BE PRECAST REINFORCED CONCRETE MANUFACTURED IN ACCORDANCE TO VIRGINIA DEPARTMENT OF TRANSPORTATION, ROAD AND BRIDGE SPECIFICATIONS, SECTION 503.
2. A MAXIMUM OF 2 CONSTRUCTION GRADE RINGS OR MAXIMUM OF 1' OF GRADE RINGS AND FRAME AND COVER ADJUSTMENT ARE ALLOWABLE.
3. FINAL ADJUSTMENT OF FRAME AND COVER SHALL BE IN ACCORDANCE TO FRAME AND COVER ADJUSTMENT DETAIL USING NON SHRINK CONCRETE WITH MAXIMUM OF 4 BRICKS OR CONCRETE BLOCKS FOR GRADE CONTROL. FRAME AND COVERS ARE TO BE SET AT FINISH GRADE OR 1/4" ABOVE FINISH GRADE IN PAVEMENT AND YARD AREAS AND MINIMUM 6" ABOVE FINISH GRADE IN OTHER AREAS. MANHOLE FRAMES AND COVERS ARE NOT TO BE SET IN DRAINAGE SWALE, VALLEY GUTTER, ETC.
4. JOINTS AND OPENINGS IN MANHOLE UNITS SHALL BE MADE WATERTIGHT BY USING BUTYL SEALANTS, "O" RING GASKETS OR MASTIC. THE CONCRETE SURFACE SHALL BE CLEANED PRIOR TO USE OF SEALANT.
5. ALL LIFT HOLES, OPENINGS AROUND PIPE, ETC. SHALL BE FILLED INSIDE AND OUTSIDE TO THICKNESS OF STRUCTURE.
6. SEE CONTRACT SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION ON THE ADJUSTMENT OF PRIVATELY OWNED UTILITIES INCLUDING ELECTRICAL POWER, TELEPHONE, CABLE TV, AND I.T.T. FACILITIES.

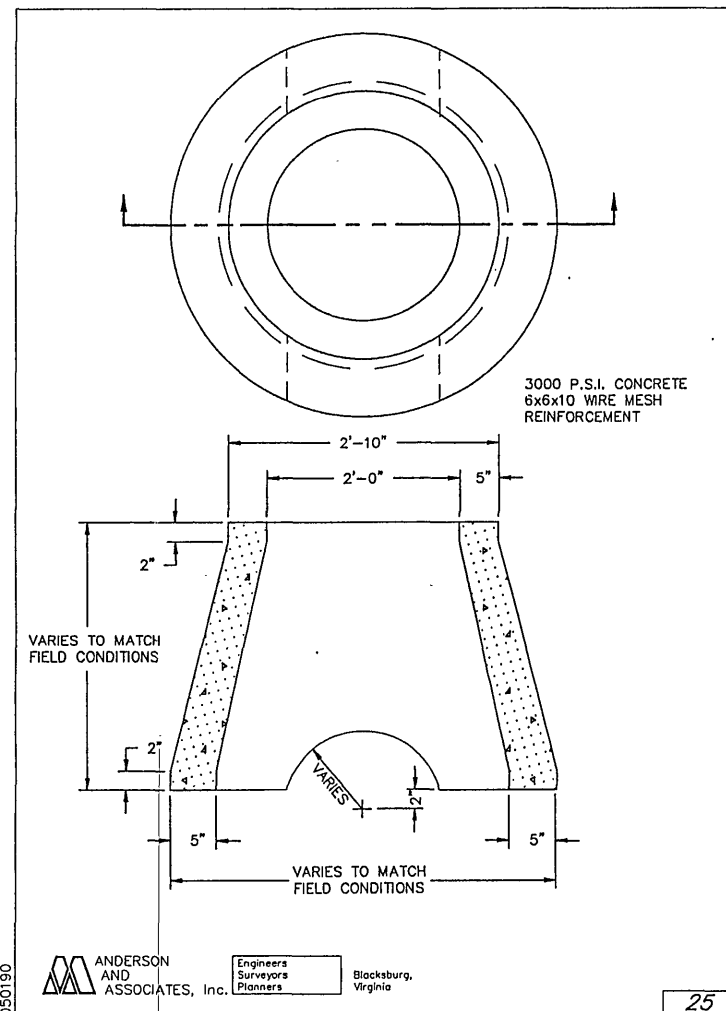
DESIGN FEATURES RELATING TO CONSTRUCTION
OR TO REGULATION AND CONTROL OF TRAFFIC
MAY BE SUBJECT TO CHANGE AS DEEMED
NECESSARY BY THE DEPARTMENT

REVISED	FHWA REGION	STATE	FEDERAL AID PROJECT	ROUTE	STATE	SHEET NO.
					PROJECT	
	3	VA.		115	0115-080-103, PE-102 RK-202 C-501	6(1A)

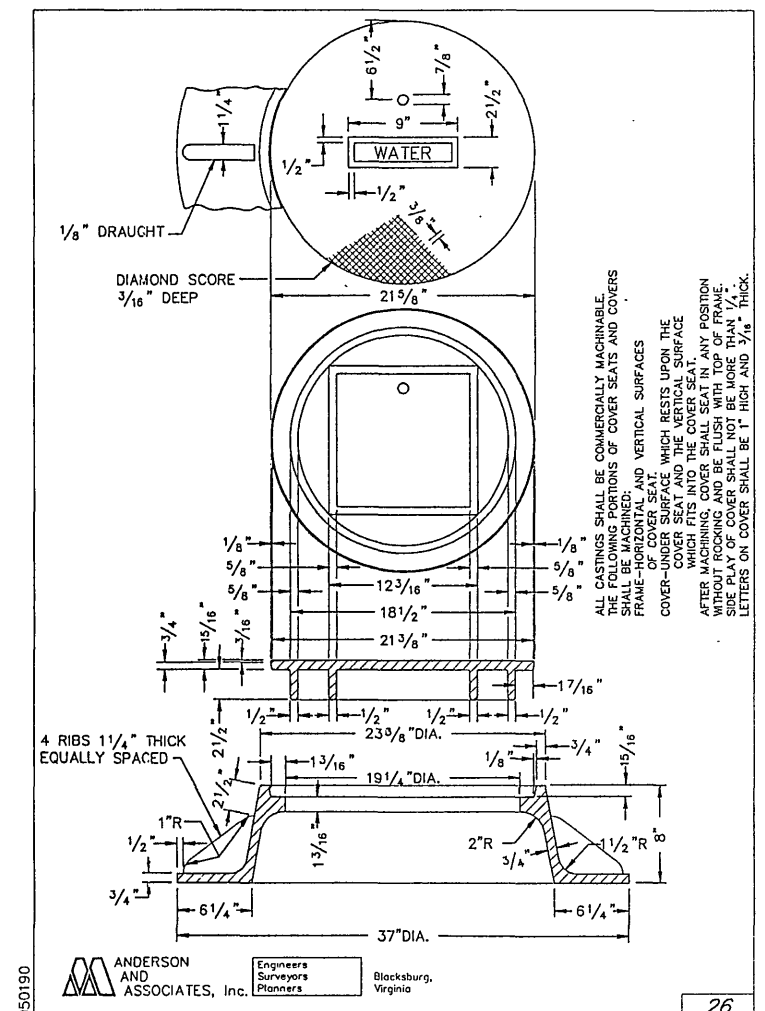
Power Poles Property of APCO, Roanoke, Va.
Telephone Poles & Underground Cable Property of C&P Telephone Co., Roanoke, Va.
Water Lines Property of City of Roanoke, Roanoke, Va.
Sewer Lines Property of Roanoke County, Salem, Va.
Gas Lines Property of Roanoke Gas Co., Roanoke, Va.
Television Cable Property of Cox Cable, Roanoke, Va.

LEGEND

	4"W	PROPOSED WATER LINE		EX. MANHOLE	
	4"W	EXISTING WATER LINE		POWER POLE	
	T	UNDERGROUND TELEPHONE		TELEPHONE OR TELEGRAPH POLE	
		PROPOSED STORM SEWER		PROPOSED RIGHT-OF-WAY LINE	
	6"S	EXISTING SANITARY SEWER		PROPERTY LINE	
	4"F	EXISTING FORCE MAIN		CENTER LINE	
		EXISTING STORM SEWER		LIMITS OF CONSTRUCTION	
	2"G	EXISTING GAS LINE		EXISTING GUARD RAIL	
		VALVE		PROPOSED GUARD RAIL	
		EXISTING WATER METER		EQUALITY	
		PROPOSED WATER METER		PROPOSED FIRE HYDRANT	
		EX. FIRE HYDRANT		PROP. SANITARY SEWER	



STANDARD PRECAST CONCRETE VALVE VAULT
CITY OF ROANOKE



STANDARD VALVE VAULT FRAME AND COVER
CITY OF ROANOKE