

THESE PLANS ARE UNFINISHED
AND ARE NOT TO BE USED FOR
ANY TYPE OF CONSTRUCTION.

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

REVISED	FEMA REGION	STATE	FEDERAL AID	ROUTE	STATE	SHEET NO.
			PROJECT		PROJECT	
	3	VA			U000-128-117, RW-201 C-501	9 (1)

WATER SUMMARY																	
SHEET NO.	DUCTILE IRON WATER MAIN					GATE VALVE AND BOX		TEE		FIRE HYDRANT	WATER SERVICE LINE		ADJUST EXISTING WATER MANHOLE FRAME AND COVER	RELOCATE EXISTING WATER METER AND BOX	CONCRETE ENCASEMENT		
					1		2				3/4"	4				5	6
	4"	6"	8"			6"		16"X16"X6"			EA.	L.F.					EA.
	L.F.	L.F.	L.F.			EA.		EA.	EA.	L.F.		EA.	EA.	C.Y.			
6 (3)	30	43	—			1		1	1	132		3	6	2			
6 (4)	—	—	—			—		—	—	—		4	—	—			
6 (5)	—	—	40			—		—	—	—		5	—	2			
TOTAL	30	43	40			1		1	1	132		12	6	4			

SANITARY SEWER SUMMARY

SHEET NO.	SANITARY SEWER LATERAL CONNECTION		SEWER CLEANOUT	CONCRETE ENCASEMENT OR CAP	ADJUST EXISTING FRAME AND COVER
	4"				
	L.F.		EA.	C.Y.	EA.
6 (3)	120	—	6	—	2
6 (4)	—	—	—	—	2
6 (5)	—	—	—	2	2
TOTAL	120	—	6	—	6

GENERAL NOTES:

- BEFORE THE WORK IS STARTED, THE CONTRACTOR SHALL NOTIFY ALL COMPANIES, CORPORATIONS, MUNICIPALITIES AND INDIVIDUALS WHO OWN UTILITIES ON THE CONSTRUCTION SITE, IN THE RIGHT OF WAY OR IMMEDIATELY ADJACENT TO THE CONSTRUCTION AREA OF THE WORK TO BE PERFORMED. THE CONTRACTOR SHALL ARRANGE TO HAVE THE VARIOUS UTILITIES LOCATED AND TO HAVE THEM REMOVED OR RELOCATED AS REQUIRED, OR TO DETERMINE THE METHOD OF PROTECTION ACCEPTABLE TO THE RESPECTIVE OWNER.
- THE LOCATION OF EXISTING UTILITIES SHOWN ON THE DRAWINGS WAS TAKEN IN PART FROM EXISTING RECORDS AND IN PART FROM FIELD SURVEYS, AND MAY NOT REPRESENT EXACT LOCATION. THE CONTRACTOR SHALL EXCAVATE TO LOCATE BURIED UTILITIES FAR ENOUGH IN ADVANCE OF PIPELINE LAYING TO ALLOW FOR ADJUSTMENTS IN PIPELAYING BOTH HORIZONTALLY AND VERTICALLY.
- THE CONTRACTOR SHALL ASCERTAIN THE EXACT LOCATION OF EACH EXISTING UTILITY THAT MAY INTERFERE WITH THE WORK. THE CONTRACTOR MAY OBTAIN FIELD UTILITY LOCATIONS BY CALLING "MISS UTILITY" (1-800-552-7001) FIVE (5) DAYS PRIOR TO WORKING IN THE VICINITY OF EXISTING UTILITIES.
- ALL WATER AND SEWER FACILITY WORK SHALL BE IN ACCORDANCE WITH SECTION 520 OF THE VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE SPECIFICATIONS, DATED JANUARY 1991, UNLESS OTHERWISE SHOWN ON PLANS.
- ALL WORK SHALL BE COORDINATED WITH THE CITY OF ROANOKE, OWNER OF THE WATER AND SEWER MAINS, AND SHALL BE PERFORMED IN SUCH A MANNER AS TO CAUSE NO INTERRUPTION TO SERVICE AT ANY TIME, EXCEPT AS APPROVED BY THE ENGINEER.
- THE CONTRACTOR SHALL MAKE ALL CONNECTIONS TO EXISTING WATER MAINS. EXISTING WATER MAINS OR SERVICES SHALL NOT BE ABANDONED UNTIL THEIR REPLACEMENT IS IN SERVICE.
- THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAINS VALVES ON THE EXISTING WATER SYSTEM. THE CONTRACTOR SHALL NOTIFY THE CITY OF ROANOKE WATER DEPARTMENT FOR VALVE OPERATION.
- ALL WATER MAINS SHALL HAVE A MINIMUM OF 36 INCH COVER UNLESS SHOWN ON THE DRAWINGS OR DIRECTED.
- THE CONTRACTOR SHALL FURNISH AND INSTALL CONCRETE REACTION BLOCKS FOR ALL BENDS, FITTINGS, VALVES, AND PLUGS. PER VDOT STD. RB-1.

WATER SUMMARY NOTES:

- DUCTILE IRON PIPE SHALL CONFORM WITH AWWA C 151/ANSI 21.51 AND FITTINGS SHALL CONFORM WITH ANSI/AWWA C 110. THE PIPE AND FITTINGS SHALL BE BITUMINOUS COATED AND CEMENT LINED IN ACCORDANCE WITH AWWA C 104/ANSI 21.40. THE PIPE THICKNESS SHALL CONFORM WITH AWWA C 150/ANSI 21.50 AND SHALL BE CLASS 50, AS A MINIMUM, UNLESS SPECIFIED OR INDICATED OTHERWISE. FITTINGS FOR WATER PIPE SHALL BE MECHANICAL OR PUSH-ON JOINT. FITTINGS SHALL BE EITHER DUCTILE IRON OR GRAY IRON.
- DUCTILE IRON PIPE AND FITTINGS SHALL BE EITHER MECHANICAL OR BELL AND SPIGOT TYPE JOINTS AS SPECIFIED OR INDICATED. JOINTS SHALL BE MADE WITH A SINGLE WATERTIGHT RUBBER GASKET MANUFACTURED IN ACCORDANCE WITH AWWA C 111/ANSI 21.11. THE JOINTS SHALL BE MADE IN STRICT ACCORDANCE WITH THE RECOMMENDATIONS OF THE PIPE MANUFACTURER. WATER PIPE BEDDING TO BE PER VDOT STD. UB-1, TYPE 2.
- GATE VALVES SHALL BE SIZE INDICATED ON THE DRAWING AND SHALL CONFORM TO AWWA C 500 (LATEST REVISION). THE DESIGN WORKING WATER PRESSURE FOR ALL VALVES SHALL BE 200 PSI. THE INTERIOR AND EXTERIOR OF THE VALVES SHALL BE COATED IN ACCORDANCE WITH AWWA C 500 (LATEST REVISION). GATE VALVES SHALL BE DOUBLE DISC, PARALLEL SEAT, BRONZE MOUNTED IRON BODY VALVES. THE STEM SEAL SHALL BE AN O-RING. VALVES SHALL HAVE A NON-RISING STEM. GATE VALVES SHALL BE FIGURE 571X AS MANUFACTURED BY KENNEDY VALVE OR MODEL A-2380-20 AS MANUFACTURED BY MUELLER COMPANY OR #55 BY DARLING.
- EACH GATE VALVE SHALL BE PROVIDED WITH A VALVE BOX, CONSTRUCTED OF CAST IRON WITH A ROUND BASE. THE VALVE BOX SHALL BE THE SCREW TYPE WITH A FIVE INCH SHAFT AND THE COVER SHALL BE SLOTTED FOR EASY REMOVAL. COVERS SHALL HAVE THE WORD "WATER" CAST INTO THEM. THE VALVE BOX SHALL BE CLOW MODEL F-2454 OR TYLER MODEL 562-S, AS MANUFACTURED BY RICHARD FOUNDRY CORPORATION, DEWEY BROTHERS, INC. OR CLOW CORPORATION. VALVE BOX TO BE PER VDOT VB-1 TYPE "A" (SCREW TYPE). EACH VALVE SHALL BE PROVIDED WITH REACTION BLOCKING PER VDOT STD. RB-1.
- FIRE HYDRANTS SHALL CONFORM TO AWWA C 502 (LATEST REVISION) AND SHALL BE DRY TOP, DRY BARREL, COMPRESSION TYPE WITH DOUBLE O-RING SEALS SUITABLE FOR 150 PSI WORKING PRESSURE. THE FIRE HYDRANTS SHALL BE GUARDIAN (K-1101) AS MANUFACTURED BY KENNEDY VALVE, A DIVISION OF ITT-GRINNELL VALVE COMPANY, CENTURION AS MANUFACTURED BY MUELLER COMPANY, B84B FOR 5 1/4" VALVE (MARK 73-1 FOR 4 1/2" VALVE) AS MANUFACTURED BY DARLING, OR GUARDIAN K81A BY KENNEDY. HYDRANTS SHALL BE PRIME COATED AND PAINTED IN ACCORDANCE WITH AWWA STANDARD SPECIFICATIONS. PAINT TO MATCH CITY OF ROANOKE STANDARDS. FIRE HYDRANT TO BE PER VDOT STD. FH-1.
- ALL WATER SERVICE LINES SHALL BE COPPER TUBING AND COMPLY WITH THE LATEST STANDARD SPECIFICATIONS FOR SEAMLESS COPPER WATER TUBE, ASTM DESIGNATION 8-88, SOFT TEMPER, TYPE K WITH COMPRESSION TYPE JOINTS, UNLESS OTHERWISE NOTED.
- "ADJUST EXISTING WATER MANHOLE FRAME AND COVER" WILL BE MEASURED IN UNITS OF EACH. THE PRICE BID SHALL INCLUDE, BUT NOT BE LIMITED TO, SALVAGE OR DISPOSAL OF MATERIALS, EXCAVATION, TRENCHING, BACKFILLING AND ALL NECESSARY MATERIALS, LABOR, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.
- THE 28-DAY COMPRESSIVE STRENGTH OF ALL CONCRETE FOR ENCASEMENT SHALL BE 3,000 POUNDS PER SQUARE INCH. THE 28-DAY STRENGTH OF THE OTHER CONCRETE SHALL BE 4,000 POUNDS PER SQUARE INCH. CONCRETE ENCASEMENT TO BE PER VDOT STD. UB-1.

SANITARY SEWER SUMMARY NOTES:

- SERVICE CONNECTION WYES TO BE PER DETAIL ON SHEET 9 (2).
- POLYVINYL CHLORIDE (PVC) PIPE AND FITTINGS SHALL BE SDR 35 AND SHALL CONFORM WITH ASTM D 3034.
- THE 28-DAY COMPRESSIVE STRENGTH OF ALL CONCRETE FOR ENCASEMENT OR CAP SHALL BE 3,000 POUNDS PER SQUARE INCH. THE 28-DAY STRENGTH OF THE OTHER CONCRETE SHALL BE 4,000 POUNDS PER SQUARE INCH. CONCRETE ENCASEMENT OR CAP TO BE PER VDOT STD. UB-1.
- "ADJUST EXISTING FRAME AND COVER" WILL BE MEASURED IN UNITS OF EACH. THE PRICE BID SHALL INCLUDE, BUT NOT BE LIMITED TO, SALAGE OR DISPOSAL OF MATERIALS, EXCAVATION, TRENCHING, BACKFILLING AND ALL NECESSARY MATERIALS, LABOR, TOOLS, EQUIPMENT AND INCIDENTALS TO COMPLETE THE WORK.