

**QUANTITY + COST ESTIMATE**

ITEM	QUANTITY	UNIT	UNIT PRICE	COST	BONDABLE
CLEARING AND GRUBBING	2	ACRES	\$2,000.00	\$4,000.00	\$4,000.00
EXCAVATION		C.Y.			
EMBANKMENT		C.Y.			
CURB INLET DI-		EACH			
CURB INLET DI-		EACH			
MANHOLE MH-		EACH			
MANHOLE MH-		EACH			
-IN. CONCRETE PIPE, CLASS III		LIN. FT.			
-IN. CONCRETE PIPE, CLASS IV		LIN. FT.			
-IN. C.M. CULVERT		LIN. FT.			
-IN. C.M. CULVERT		LIN. FT.			
BOX CULVERT		LUMP SUM			
PAVED DITCH		LIN. FT.			
RIPRAP - CLASS		S.F.			
SODDED SWALE		S.Y.			
-IN. CONCRETE ENDWALL EW-		EACH			
-IN. END SECTION ES-		EACH			
HEADER CURB & GUTTER CG-		LIN. FT.			
CURB & GUTTER CG-		LIN. FT.			
VALLEY GUTTER		EACH			
GRAVEL BASE		S.Y.			
GRAVEL SHOULDER		S.Y.			
SURFACE TREATMENT		S.Y.			
-IN. BIT. CONC.: TYPE B-		S.Y.			
-IN. BIT. CONC.: TYPE S-		S.Y.			
-IN. BASE MATERIAL		C.Y.			
-IN. SUBBASE MATERIAL		C.Y.			
TRAFFIC BARRICADE		EACH			
24" WATER LINE (FURNISH AND INSTALL)	3,680	LIN. FT.	\$75.00	\$276,000.00	\$276,000.00
24" WATER LINE (INSTALL ONLY)	5,020	LIN. FT.	\$25.00	\$125,500.00	\$125,500.00
8" WATER LINE	72	LIN. FT.	\$16.00	\$1,152.00	\$1,152.00
6" WATER LINE	36	LIN. FT.	\$15.00	\$1,080.00	\$1,080.00
FIRE HYDRANT ASSEMBLIES	5	EACH	\$1,500.00	\$7,500.00	\$7,500.00
BLOW OFFS W/VAULT, FRAME & COVER	7	EACH	\$700.00	\$4,900.00	\$4,900.00
AUTO. AIR RELIEF VALVE W/VAULT, FRAME & COVER	9	EACH	\$700.00	\$6,300.00	\$6,300.00
24" BUTTERFLY VALVES, W/VAULT, FRAME & COVER	4	EACH	\$6,500.00	\$26,000.00	\$26,000.00
12 -IN. GATE VALVES, W/VAULT, FRAME & COVER	1	EACH	\$1,000.00	\$1,000.00	\$1,000.00
8 -IN. GATE VALVES, W/VAULT, FRAME & COVER	4	EACH	\$800.00	\$3,200.00	\$3,200.00
MISC. TEES, CROSSES, AND BENDS	1	LS	\$34,000.00	\$34,000.00	\$34,000.00
8" SANITARY SEWER	40	LIN. FT.	\$20.00	\$800.00	\$800.00
STANDARD MANHOLE W/FRAME & COVER		EACH			
SAMPLING MANHOLE/PORT		EACH			
AS-BUILT PLANS		LUMP SUM			
STORMWATER MANAGEMENT		LUMP SUM			
10% CONTINGENCY					
ESTIMATED TOTAL					\$498,632.00

I HEREBY CERTIFY THAT THE FOREGOING ESTIMATE REFLECTS THE CURRENT IMPROVEMENT COSTS OF THIS PROJECT.  
 SIGNED: \_\_\_\_\_ DATE: \_\_\_\_\_

**GENERAL NOTES**

All construction methods and materials shall conform to the Construction Standards and Specifications of Roanoke County and/or the Western Virginia Water Authority and Department of Transportation.

The contractor or developer is required to notify the Roanoke County Engineering Division in writing at least three (3) days prior to any construction, including, but not limited to the following:

- Installation of approved erosion control devices
- Clearing and grubbing
- Subgrade excavation
- Installing storm sewers or culverts
- Setting curb and gutter forms
- Placing curb and gutter
- Placing other concrete
- Placing gravel base
- Placing any roadway surface
- Installing water lines
- Installing sanitary sewer lines

A pre-construction conference should be scheduled with the Roanoke County Engineering Division, to be held at least one (1) day prior to any construction.

Measures to control erosion and siltation must be provided prior to plan approval. Plan approval in no way relieves the developer or contractor of the responsibilities contained within the erosion and siltation control policies.

A permit must be obtained from the V.D.O.T. Residency Office, Roanoke County, prior to construction in the highway right-of-way.

Plan approval does not guarantee issuance of any permits by V.D.O.T.

An approved set of plans and all permits must be available at the construction site.

Field construction shall honor proposed drainage divides as shown on plans.

All unsuitable material shall be removed from the construction limits of the roadway before placing embankment.

Pavement sections on approved plans are based on a minimum CBR of 10. CBR tests are to be performed by the engineer and submitted to V.D.O.T. and to the Roanoke County Engineering Division prior to placement. CBR values < 10 will require revised pavement sections.

All roadside ditches or grades of more than 5 percent shall be paved with cement concrete to the limits as indicated on the plans and as required at the field inspection.

Location of guard rails shall be determined at a joint field inspection by the County and V.D.O.T.

All springs shall be capped and piped to the nearest storm sewer or natural watercourse. The pipe shall be 6 inch minimum diameter and conform to V.D.O.T. Standard SB-1.

Standard street and traffic control signs shall be erected at each intersection by the developer prior to final street acceptance.

Construction debris shall be containerized in accordance with the Virginia Litter Control Act. No less than one litter receptacle shall be provided on site.

The contractor shall provide adequate means of cleaning mud from trucks and/or other equipment prior to entering public streets. It is the contractors responsibility to insure that the streets are in a clean, mud and dust free condition at all times.

The developer and/or contractor shall supply all utility companies with copies of approved plans, advising them that all grading and installation shall conform to approved plans.

Contractors shall notify utilities of proposed construction at least two (2), but not more than ten (10) working days in advance. Area public utilities may be notified thru "Miss Utility": 1-800-552-7001.

The developer or contractor shall supply the County and the Western Virginia Water Authority with correct As-Built plans before final acceptance.

All work shall be subject to inspection by Roanoke County, the Western Virginia Water Authority and V.D.O.T. inspectors.

Field corrections shall be approved by the Roanoke County Engineering Division and/or the Western Virginia Water Authority prior to such construction.

100 year floodway and floodplain information shall be shown where applicable.

Grade stakes shall be set for all curb and gutter, culvert, sanitary sewer and storm sewer.

**INDEX**

SEE COVER

**SEWER NOTES**

All sanitary sewer facilities shall be installed according to the Western Virginia Water Authority Design and Construction Standards. (Latest Edition).

A minimum cover of three (3) feet is required over proposed lines.

Contractor shall be responsible for locating and uncovering all manholes after paving. Manhole tops shall be adjusted to grade if necessary.

All existing utilities may not be shown or may not be shown in their exact location. The contractor shall comply with (State Water Works Regulations, Section 12.05.03, where lines cross.)

All trenches in existing or future rights-of-way shall be compacted according to V.D.O.T. standards.

Lines shall be staked prior to construction.

**WATER NOTES**

All water facilities shall be installed according to the Western Virginia Water Authority Design and Construction Standards/ (Latest Edition).

A minimum cover of three (3) feet is required over proposed lines.

Contractor shall be responsible for locating and uncovering valve vaults after paving and adjustment to final grade if necessary.

All existing utilities may not be shown in the exact location. The contractor shall comply with the State Water Works Regulations, Section 12.05.03, where lines cross.

All trenches in existing or future highway right-of-ways shall be compacted according to V.D.O.T. standards.

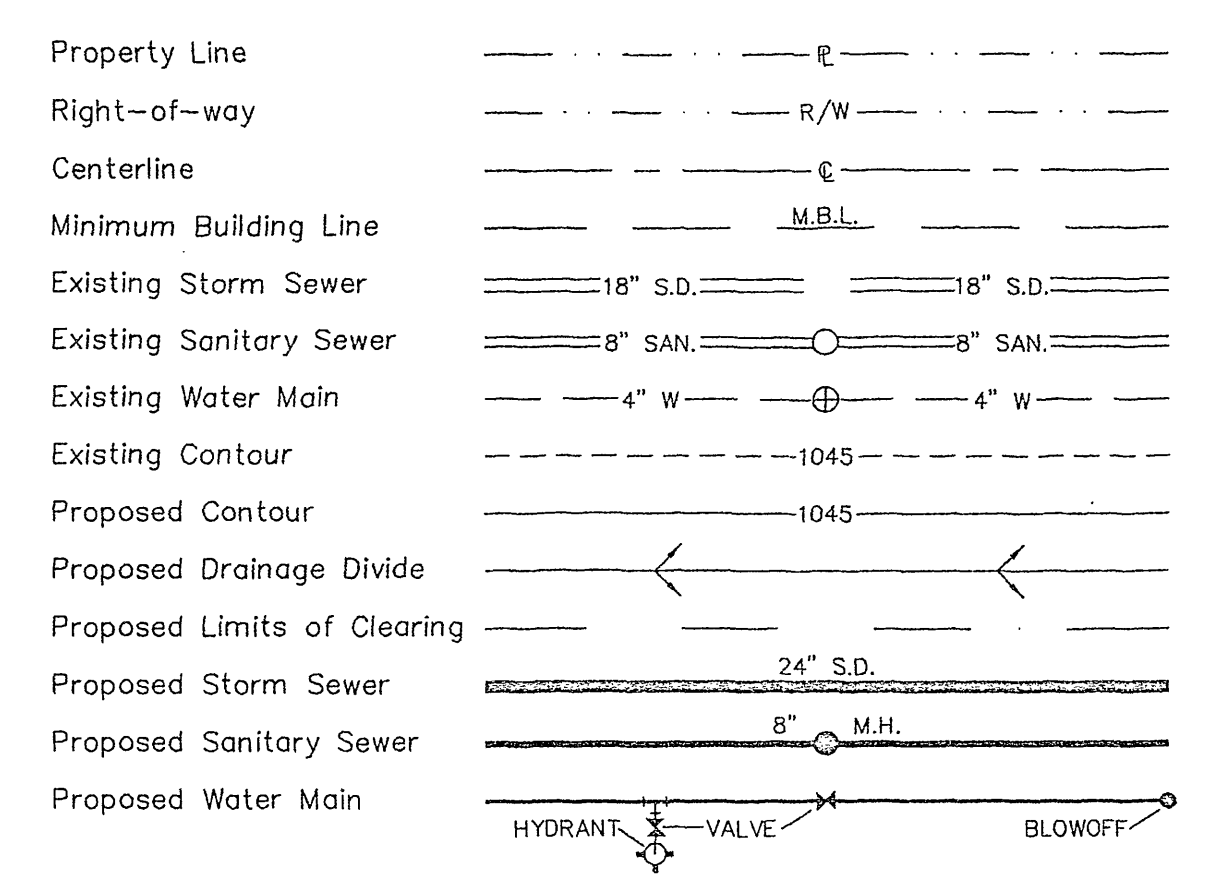
Lines shall be staked prior to construction.

Water main shall be minimum Class 350 Ductile Iron in accordance to AWWA C151 or DR-14 PVC in accordance with AWWA C-900.

Ductile Iron Pipe in accordance with the Western Virginia Water Authority Design and Construction Standards shall be required for all pipe with a working pressure equal to or greater than 100 p.s.i.

Availability letter number \_\_\_\_\_

**LEGEND**



SEE COVER

VICINITY MAP

**SURVEY INFORMATION**

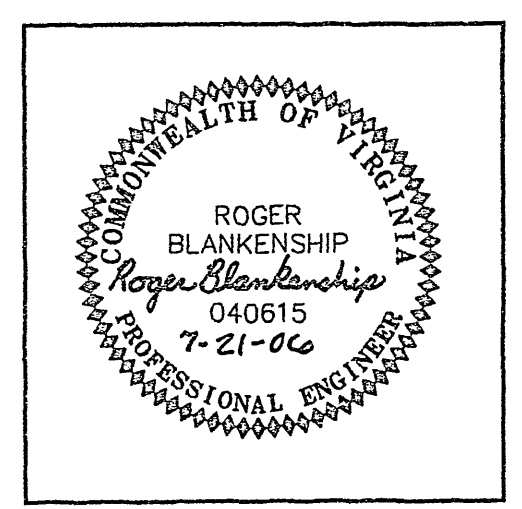
Horizontal and vertical control surveys were performed in (year) \_\_\_\_\_ by \_\_\_\_\_

All elevations must be referenced to the National Geodetic Vertical Datum of 1929.

Source of topographic mapping is \_\_\_\_\_ dated \_\_\_\_\_

Boundary was performed by \_\_\_\_\_ dated \_\_\_\_\_

The professional seal and signature below certifies the boundary survey and topographic mapping to be accurate and correct.



PROFESSIONAL ENGINEER  
SEAL AND SIGNATURE

**COUNTY OF ROANOKE**

NAME OF DEVELOPMENT	NORTH LOOP PHASE 5 - WATER LINE PROJECT	I, _____ WVVA _____ OWNER/DEVELOPER, AM AWARE OF THE SITE DESIGN REQUIREMENTS IMPOSED BY THIS SITE DEVELOPMENT PLAN AND OTHER APPLICABLE COUNTY CODES. I HEREBY CERTIFY THAT I AGREE TO COMPLY WITH THESE REQUIREMENTS, UNLESS MODIFIED IN ACCORDANCE WITH LOCAL LAW.
MAGISTERIAL DISTRICT(S)		
OWNER (name, address, telephone)	WESTERN VIRGINIA WATER AUTHORITY 601 SOUTH JEFFERSON STREET ROANOKE, VA 24011	
DEVELOPER (name, address, telephone)		
ENGINEER, ARCHITECT OR SURVEYOR (name, address, telephone)	WESTERN VIRGINIA WATER AUTHORITY 601 SOUTH JEFFERSON STREET ROANOKE, VA 24011	
TAX MAP NO(S)	BLOCK NO(S)	PARCEL NO(S)