

**QUANTITY & COST ESTIMATE
FOR ROANOKE COUNTY BONDING PURPOSES**

ITEM	UNIT	QUANTITY	UNIT PRICE	COST	BONDABLE
SANITARY SEWER ITEMS:					
STANDARD MANHOLE W/FRAME & COVER	EA	3	2500	7500	
8" SANITARY SEWER	LF	396	8	3168	
8" CLEAN OUT	EA	1	200	200	
DITCH EXCAVATION	LF	396	30	11880	
SUBTOTAL:				22748	
WATER ITEMS:					
FIRE HYDRANT	EA	1	2000	2000	
12" WATERLINE (D.I.)	LF	327	38	12426	
12" VALVE	EA	3	630	1890	
8" WATERLINE	LF	177	28	4956	
8" VALVE	EA	1	550	550	
DITCH EXCAVATION	LF	504	30	15120	
TEMPORARY BLOW-OFF ASSEMBLY	EA	2	300	600	
PERMANENT BLOW-OFF ASSEMBLY	EA	1	350	350	
SUBTOTAL:				37298	
STORM DRAINAGE ITEMS:					
DROP INLET DI-1	EA	2	2500	5000	
CATCH BASIN	EA	1	100	4500	
18" HOPE STORM DRAIN (D.I.)	LF	347	6	2082	
DITCH EXCAVATION	LF	347	30	10410	
SUBTOTAL:				22282	
EROSION AND SEDIMENT CONTROL ITEMS:					
SILT FENCE	LF	280	4	1040	
INLET PROTECTION	EA	4	500	2000	
CONSTRUCTION ENTRANCE	EA	1	500	500	
SUBTOTAL:				3540	
MISCELLANEOUS SITE CONSTRUCTION ITEMS:					
AS-BUILT PLANS	LS	1	2000	2000	
SITE PREPARATION AND GRADING	LS	1	5000	5000	
CONCRETE CURB AND GUTTER	LF	453	40	18120	
ASPHALT PAVEMENT TYPE SM-5.50	TN	240	50	12000	
ASPHALT PAVEMENT TYPE BM 23	TN	790	50	37500	
TYPE I, NO. 2 1/8 STONE	CY	650	40	26000	
RETAINING WALLS	LF	181	120	19320	
SUBTOTAL:				164940	
LANDSCAPING ITEMS:					
AMERICAN BOWWOOD SHRUBS	EA	27	75	2025	
BRADFORD PEAR TREES	TN	3	275	825	
TOP SOILING	TN	45	30	1350	
SEEDING	SY	120	1	120	
SUBTOTAL:				4320	
ESTIMATED TOTAL					
				289662	

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.
The contractor or developer is required to notify the Roanoke County Engineering Division in writing at least 10 days prior to any construction, including, but not limited to the following:
A. Installation of approved erosion control devices
B. Clearing and grubbing
C. Subgrade excavation
D. Installing storm sewers or culverts
E. Flooding curb and gutter
F. Flooding curb and gutter
G. Installing water lines
H. Installing sanitary sewer lines
K. 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 releases the developer or contractor of the responsibilities contained within the erosion and siltation control policies.
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 unstable material shall be removed from the construction limits of the roadway before grading embankment.
All roadside ditches or grades of more than 5 percent shall be paved with riprap or concrete. The contractor shall be responsible for the construction of the roadway prior to final street acceptance.
Standard street and traffic control signs shall be erected at each construction site by the developer prior to final street acceptance.
Construction debris shall be containerized in accordance with the Virginia Utility Code. No less than one litter receptacle shall be provided on site.
The contractor shall provide adequate means of cleaning mud from the site.
It is the contractor's responsibility to ensure that all utility lines are in a clean, mud and dust free condition at all times.
The developer and/or contractor shall supply all utility certificates, installation and conform to approved plans.
Contractors shall notify utilities of proposed construction at least two (2) days prior to any construction.
The developer or contractor shall supply the county with correct As-Built plans before final acceptance.
All work shall be subject to inspection by Roanoke County Engineering Division 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.
S. Douglas Freeman (Owner), will be the Erosion and Sediment Control Engineer for this project. Certificate Number: 14650, Expires 8/22/2008.

SEWER NOTES

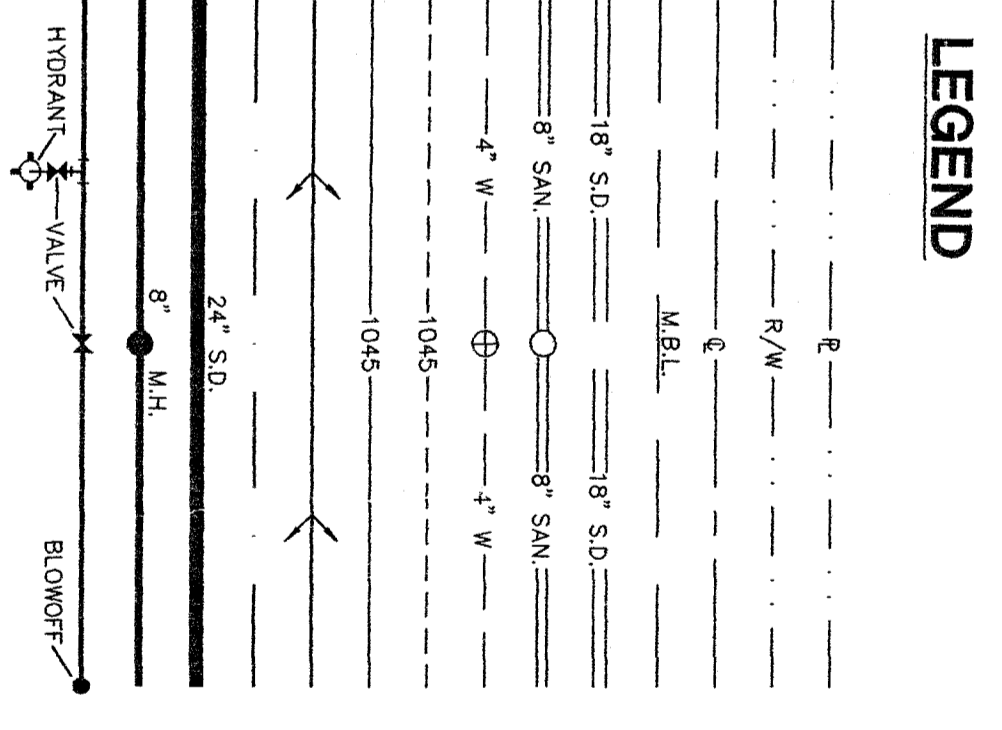
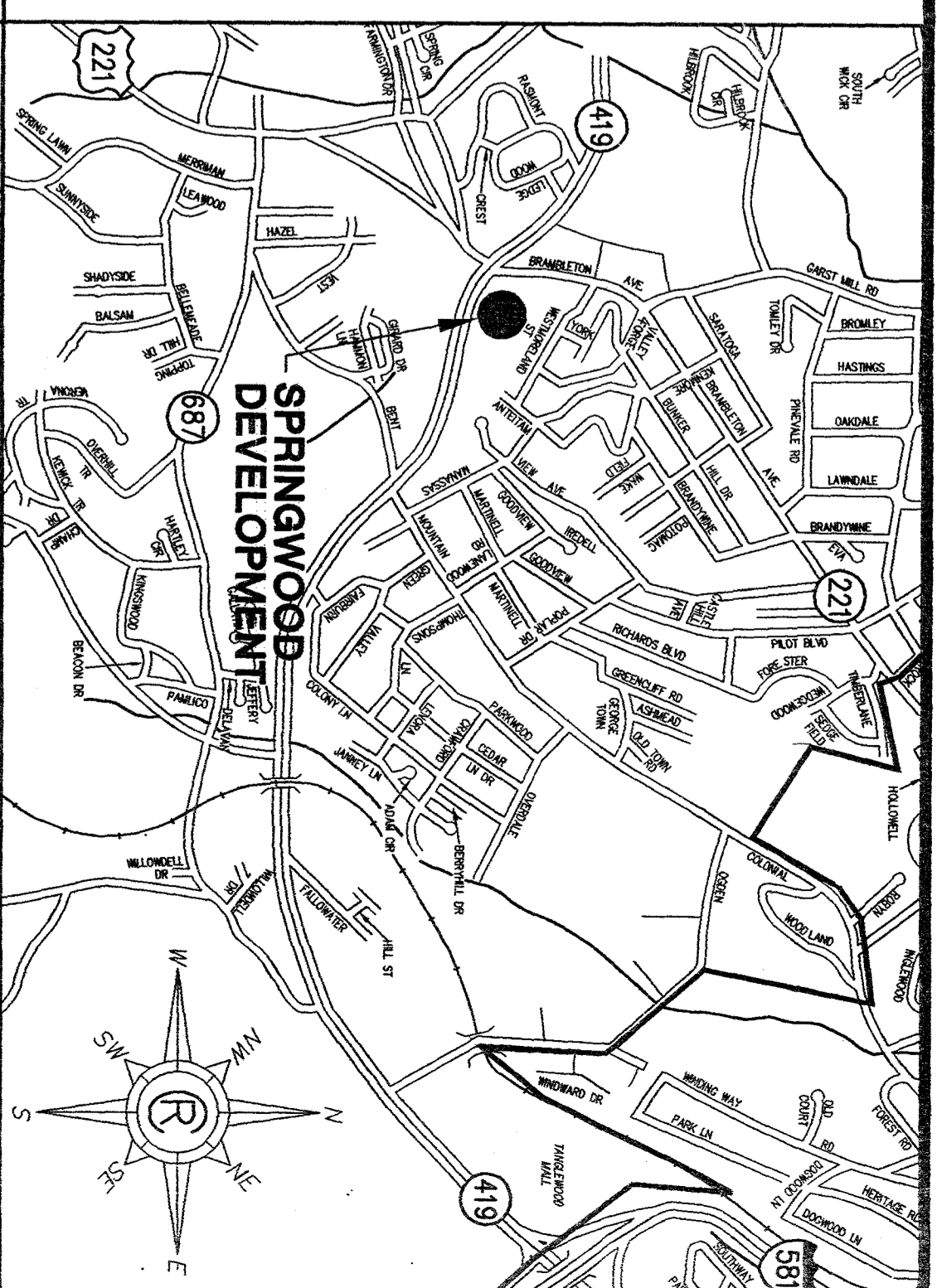
A minimum cover of three (3) feet is required over proposed lines.
Contractor shall be responsible for locating and uncovering all existing utilities. Manhole tops shall be adjusted to grade if necessary.
All existing utilities may not be shown or may not be shown in the exact location. The contractor shall comply with State Water Regulations, Section 12.05.03, where they cross.
House connections are to be made with 4" pipe installed at a minimum grade of 1/4 inch to 1 foot in R/W.
Laterals from manholes shall be PVC or Ductile Iron of sufficient length to provide two (2) feet of bearing on natural ground. The pipe shall be made with an adapter coupling in R/W.
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.
A minimum cover of three (3) feet is required over proposed lines.
Contractor shall be responsible for locating and uncovering water mains and other piping and adjustment to final grade if necessary.
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Lines shall be staked prior to construction.
Water main shall be minimum Class 52 Ductile Iron in accordance with AWWA C151 or DN-14 R19 in accordance with AWWA C-900.
Availability number: 03-22

WATER NOTES

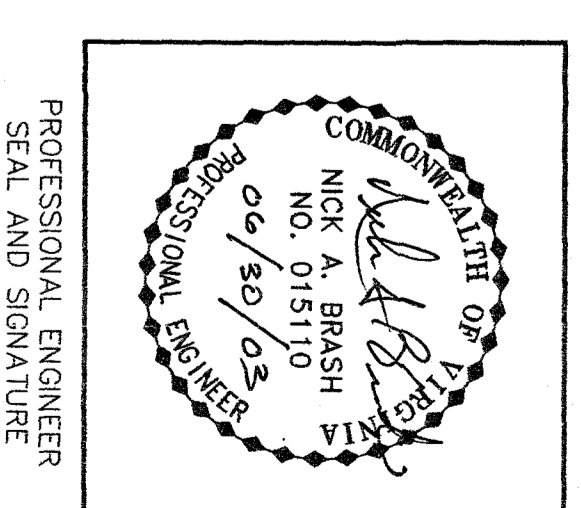
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SURVEY INFORMATION

Horizontal and vertical control surveys were performed in (year) 1998 by LUMBER ASSOCIATES, P.C.
All elevations must be referenced to the National Geodetic Vertical Datum of 1929.
Source of topographic mapping is AERIAL MAPPING PERFORMED BY P.D.S. dated SEPTEMBER 1998.
Boundary was performed by LUMBER ASSOCIATES, P.C. dated OCT 2002.
Topographic mapping was provided to L. A. Gates Company by Springwood Associates, L.L.C.



COUNTY OF ROANOKE



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NAME OF DEVELOPMENT	SPRINGWOOD DEVELOPMENT TRACT "D"
MASTERIAL DISTRICT(S)	CAVE SPRING
OWNER (name, address, telephone)	SPRINGWOOD ASSOCIATES 3214 ELECTRIC ROAD, S.W., SUITE 200 ROANOKE, VA 24018 (540) 774-6500 (540) 776-0891 (FAX)
DEVELOPER (name, address, telephone)	SPRINGWOOD ASSOCIATES 3214 ELECTRIC ROAD, S.W., SUITE 200 ROANOKE, VA 24018 (540) 774-6500 (540) 776-0891 (FAX)
ENGINEER, ARCHITECT OR SURVEYOR (name, address, telephone)	L. A. GATES COMPANY 306 MARKET STREET, SE ROANOKE, VA 24011 (540) 342-8423 (540) 342-8425 (FAX)
TAX MAP NO(S)	77.13
BLOCK NO(S)	5
PARCEL NO(S)	