

QUANTITY & COST ESTIMATE

ITEM	QUANTITY	UNIT	UNIT PRICE	COST	BONDABLE
CLEARING AND GRUBBING	15	ACRES	1000	15000	15000
EXCAVATION	12,000	C.Y.	1.25	15,000	15,000
EMBANKMENT		C.Y.			
15" INLET DI-		EACH			
15" INLET DI-		EACH			
DI-7 TYPE III	1	EA.	1000	1000	1000
MANHOLE MH-		EACH			
MANHOLE MH-		EACH			
15" IN CONCRETE PIPE, CLASS III	108	LIN. FT.	15	1620	1620
15" IN CONCRETE PIPE, CLASS IV		LIN. FT.			
30" IN. C.M. CULVERT	120	LIN. FT.	30	3600	3600
18" IN. C.M. CULVERT	130	LIN. FT.	18	2340	2340
8" X 6" ARCH PIPE	135	L.F.	80	10800	10800
SPL. DESIGN ENDWALL	2	EA.	4000	8000	8000
BOX CULVERT		LUMP SUM			
PAVED DITCH - 2' FLAT BOTTOM	40	LIN. FT.	12	480	480
RIPRAP - CLASS MIN d ₅₀ = 24"	230	S.F.	70	16,100	16,100
EC-1 TYPE A	10	S.Y.	35	350	350
OF DED SWALE		S.Y.			
EC-1 TYPE B	7	S.Y.	45	315	315
15" IN. CONCRETE ENDWALL EW-		EA.			
15" IN. END SECTION ES-1	1	EA.	300	300	300
CAT I PAVEMENT & BASE	1200	S.Y.	6.80	8160	8160
CAT II PAVEMENT & BASE		S.Y.	8.40	2500	21,000
DRIVEWAY, ENTRANCE TYPE		EACH			
SIDEWALK, - FT. WIDE		LIN. FT.			
TRAIL, - FT. WIDE		LIN. FT.			
HEADER CURB & GUTTER CG-		LIN. FT.			
CURB & GUTTER CG-		LIN. FT.			
VALLEY GUTTER		EA.			
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.			
STREET SIGNS		EA.			
TRAFFIC BARRICADE		EA.			
PIPES AS SHOWN ON PLAT		EA.			
MONUMENTS AS SHOWN ON PLAT		EA.			
8" IN. WATER LINE	1100	LIN. FT.	12.70	13,970	13,970
15" IN. WATER LINE		LIN. FT.			
15" IN. WATER LINE		LIN. FT.			
FIRE HYDRANT ASSEMBLIES	1	EA.	1500	1500	1500
BLOW OFFS W/VAULT, FRAME & COVER	1	EA.	500	500	500
8" IN. GATE VALVES W/VAULT, FRAME & COVER	3	EA.	800	2400	2400
15" IN. GATE VALVES W/VAULT, FRAME & COVER		EA.			
15" IN. GATE VALVES W/VAULT, FRAME & COVER		EA.			
SERVICE CONNECTIONS		EA.			
DOUBLE SERVICE	7		350	2450	2450
8" IN. SAN. SEWER	963	LIN. FT.	15	14445	14445
15" IN. SAN. SEWER		LIN. FT.			
15" IN. SAN. SEWER		LIN. FT.			
MANHOLE BARREL	38	V.F.	80	3040	3040
STD. MANHOLE W/FRAME & COVER		EA.			
SERVICE CONNECTIONS W/ CLEANOUTS	14	EA.	200	2800	2800
DROP CONNECTION	1	EA.	300	300	300
AS-BUILT PLANS		LUMP SUM			
STORM WATER MANAGEMENT		LUMP SUM			
10% Contingency					13,125
ESTIMATED TOTAL					144,315.00

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 Virginia Department of Highways and 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.
- Cleaning 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 liner.

A preconstruction conference should be scheduled with the Roanoke County Engineering Division, to be held at least one 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 in erosion and siltation control policies.

A permit must be obtained from the V.D.H.B.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.H.B.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 min. CBR of 10. CBR tests are to be performed by the engineer and submitted to the V.D.H.B.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% shall be paved with cement concrete to the limits 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 the V.D.H.B.T.

All springs shall be capped and piped to the nearest storm sewer or natural water course. The pipe shall be 6" min. dia. and conform to V.D.H.B.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, but not more than ten working in advance. Area public utilities may be notified thru Miss Utility: (800) 552-7001.

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 and/or V.D.H.B.T. inspectors.

Field corrections shall be approved by the Roanoke County Engineering Division prior to such construction.

100 year floodway and flood plain shall be shown where applicable.

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

SURVEY INFORMATION

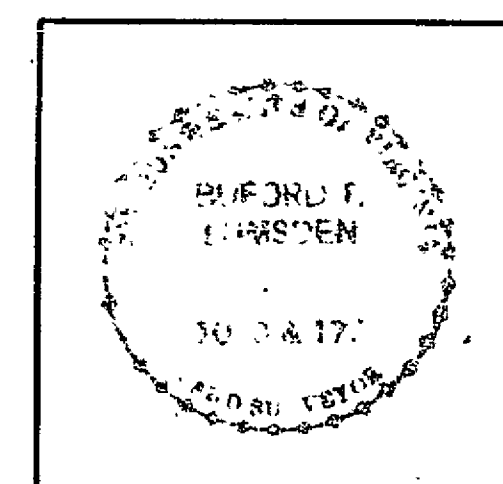
Horizontal and vertical control surveys were performed in year 1986 by Buford T. Lumsden & Assoc.

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

Source of topographic mapping is Aerial photography dated April 12, 1986

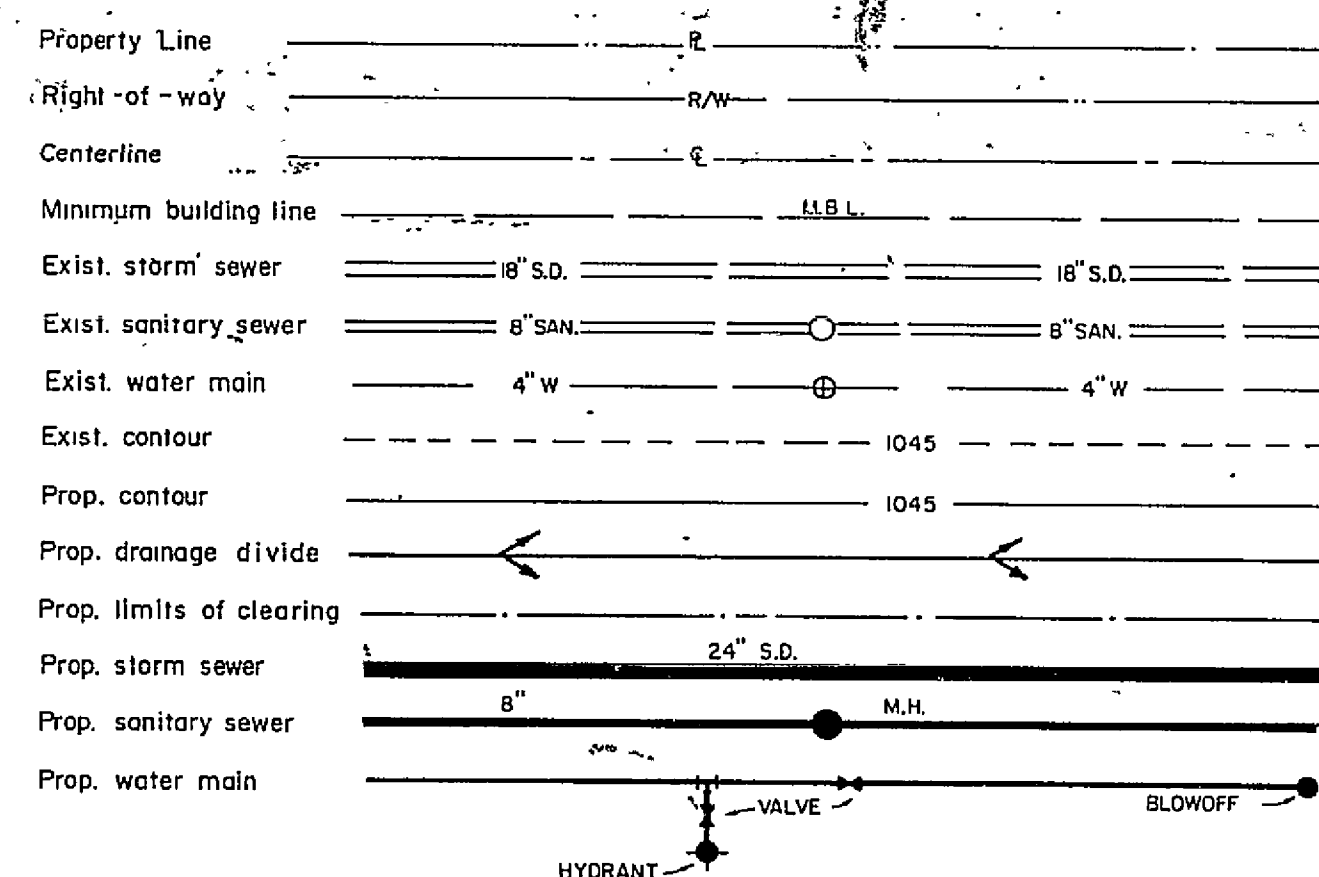
Boundary survey was performed by Buford T. Lumsden & Assoc. dated August 1986

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



PROFESSIONAL SEAL AND SIGNATURE

LEGEND



WATER NOTES

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 or may not be shown the exact location. The contractor shall comply with 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.H.B.T. standards.

Lines shall be staked prior to construction

Water mains shall be class 50mm, ductile iron pipe.

SEWER NOTES

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.

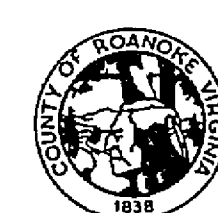
All existing utilities may not be shown or may not be shown in the exact location. The contractor shall comply with State Water Works Regulations, Section 12.05.03, where lines cross.

House connections are to be made with 4" pipe installed on a minimum grade of 1/4 inch to 1 foot in R/W.

Laterals from manholes shall be P.V.C. or Ductile Iron of sufficient length to provide two (2) feet of bearing on natural ground. The transition from ductile iron to asbestos cement or concrete pipe shall be made with an adapter coupling in R/W

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

Lines shall be staked prior to construction.



COUNTY OF ROANOKE

NAME OF DEVELOPMENT	FAIRWAY FOREST ESTATES SECTION NO. 1
MAGISTERIAL DISTRICT(S)	WINDSOR HILLS
OWNER (name, address, telephone)	R. WILLIAM REID BUILDER, INC. 5706 EQUESTRIAN DR. S.W. ROANOKE, VA. 989-3849
DEVELOPER (name, address, telephone)	SAME AS ABOVE
ENGINEER, ARCHITECT OR SURVEYOR (name, address, phone)	BUFORD T. LUMSDEN & ASSOCIATES, P.C. ENGINEERS - SURVEYORS ROANOKE, VIRGINIA 774-4431
TAX MAP NO(S)	66.04
BLOCK NO(S)	11
PARCEL NO(S)	8