QUANTITY & COST ESTIMATE

ITEM	QUANTITY	UNIT	UNIT PRICE	COST	BONDABLE
CLEARING AND GRUBBING		L.S.	$ 500.00	$ 500.00	$ 500.00
EXCAVATION	8500	C.Y.	1.50	12,750.00	12,750.00
EMBANKMENT		C.Y.			
CURB INLET DI-3A, 2.5' LG.	1	EACH	1,000.00	1,000.00	1,000.00
CURB INLET DI-3B, 4' LG.	2	EACH	1,200.00	2,400.00	2,400.00
CURB INLET DI- 3B, 8' LG.	1	EACH	1,500.00	1,500.00	1,500.00
CURB INLET DI-3B, 10' LG.	1	EACH	1,750.00	1,750.00	1,750.00
CURB INLET DI-3B, 12' LG.	1	EACH	2,000.00	2,000.00	2,000.00
CURB INLET DI-3C, 6' LG.	1	EACH	1,500.00	1,500.00	1,500.00
CURB INLET DI-3C, 8' LG.	1	EACH	1,750.00	1,750.00	1,750.00
DROP INLET, DI-7	1	EACH	1,750.00	1,750.00	1,750.00
MANHOLE MH-1		EACH			
		LIN. FT.			
15-IN. CONCRETE PIPE	721	LIN. FT.	15.00	10,815.00	10,815.00
-IN. C.M. CULVERT		LIN. FT.			
IN C.M. CULVERT		LIN. FT.			
BOX CULVERT		LUMP SUM			
TYPE "A" DITCH	230	LIN. FT.	3.00	690.00	690.00
RIPRAP - CLASS I, TYPE B	52	S.F.	5.00	260.00	260.00
SODDED SWALE		S.Y.			
15-IN. CONCRETE ENDWALL: EW-1	2	EA.	450.00	900.00	900.00
15-IN. END SECTION ES-1		EA.			
DRIVEWAY, ENTRANCE TYPE		EACH			
SIDEWALK, - FT. WIDE		LIN. FT.			
TRAIL, - FT. WIDE		LIN. FT.			
HEADER CURB & GUTTER CG-		LIN. FT.			
CURB & GUTTER CG-6	2250	LIN. FT.	8.50	19,125.00	19,125.00
VALLEY GUTTER		EA.			
GRAVEL BASE		S.Y.			
GRAVEL SHOULDER		S.Y.			
PAVEMENT		S.Y.			
CATEGORY V	874	S.Y.	14.70	12,848.00	12,848.00
CATEGORY IV	1821	S.Y.	13.00	23,673.00	23,673.00
CATEGORY III	122	S.Y.	11.00	1,342.00	1,342.00
CATEGORY I	1278	S.Y.	7.75	9,905.00	9,905.00
STREET SIGNS		EA.			
TRAFFIC BARRICADE		EA.			
PIPES AS SHOWN ON PLAT		EA.			
MONUMENTS AS SHOWN ON PLAT		EA.			
6-IN. WATER LINE	325	LIN. FT.	13.00	4,225.00	4,225.00
8-IN. WATER LINE	760	LIN. FT.	15.00	11,400.00	11,400.00
-IN. WATER LINE		LIN. FT.			
FIRE HYDRANT ASSEMBLIES	1	EA.	1,200.00	1,200.00	1,200.00
BLOW OFFS W/VAULT, FRAME & COVER	3	EA.	500.00	1,500.00	1,500.00
6-IN. GATE VALVES W/VAULT, FRAME & COVER	1	EA.	450.00	450.00	450.00
8-IN. GATE VALVES W/VAULT, FRAME & COVER	3	EA.	600.00	1,800.00	1,800.00
-IN. GATE VALVES W/VAULT, FRAME & COVER		EA.			
SERVICE CONNECTIONS, SINGLE	5	EA.	200.00	1,000.00	1,000.00
SERVICE CONNECTIONS, DOUBLE	9	EA.	300.00	2,700.00	2,700.00
8-IN. SAN. SEWER	1076	LIN. FT.	15.00	16,140.00	16,140.00
-IN. SAN. SEWER		LIN. FT.			
-IN. SAN. SEWER		LIN. FT.			
DROP MANHOLE W/FRAME & COVER		EA.			
STD. MANHOLE W/FRAME & COVER	7	EA.	1,200.00	8,400.00	8,400.00
SERVICE CONNECTIONS W/ CLEANOUTS	23	EA.	250.00	5,750.00	5,750.00
AS-BUILT PLANS		LUMP SUM	200.00	200.00	200.00
STORM WATER MANAGEMENT		LUMP SUM	14,547.00	14,547.00	14,547.00
10% CONTINGENCIES				17,577.00	17,577.00
ESTIMATED TOTAL				193,347.00	193,347.00

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:

A. Installation of approved erosion control devices
B. Clearing and grubbing
C. Subgrade excavation
D. Installing storm sewers or culverts
E. Setting curb and gutter forms
F. Placing curb and gutter
G. Placing other concrete
H. Placing gravel base
I. Placing any roadway surface
J. Installing water lines
K. Installing sanitary sewer lines

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 for 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.&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.&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.&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.&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.&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.&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, sidewalk, sanitary sewer and storm sewer.

SURVEY INFORMATION

Horizontal and vertical control surveys were performed in (year) 1994 by LUMSDEN ASSOCIATES, P.C.

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

Source of topographic mapping is AERIAL PHOTOGRAPHY dated 1994.

Boundary survey was performed by LUMSDEN ASSOCIATES, P.C. dated 1994.

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

COMMONWEALTH OF VIRGINIA
B. LEE HENDERSON, JR.
(LICENSE) No. 1480
LAND SURVEYOR

PROFESSIONAL SEAL AND SIGNATURE

LEGEND

Property line
Right-of-way — R/W
Centerline
Minimum building line — M.B.L.
Exist. storm sewer — 18" S.D.
Exist. sanitary sewer — 8" SAN
Exist. water main — 4" W
Exist. contour — 1045
Prop. contour — 1045
Prop. drainage divide
Prop. limits of clearing
Prop. storm sewer — 24" S.D.
Prop. sanitary sewer — 8" MIN
Prop. water main — VALVE, BLOWOFF, HYDRANT

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 utilites 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.&T. standards.

Lines shall be staked prior to construction.

Water cost construction as per water construction standards.

Water main shall be minimum Class 52 ductile iron in accordance to AWWA C150 or DR-14 PVC in accordance to AWWA C900.

Application for utilities to serve development reference number 94-100.

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 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 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.&T. standards.

Lines shall be staked prior to construction.

COUNTY OF ROANOKE

NAME OF DEVELOPMENT	SECTION No. I "THE GROVES"
MAGISTERIAL DISTRICT	CAVE SPRING
OWNER (name, address, telephone)	PALM LAND COMPANY, L.C. P.O. BOX 8614 ROANOKE, VA. 24014 703-772-3887
DEVELOPER (name, address, telephone)	SAME AS ABOVE
ENGINEER, ARCHITECT OR SURVEYOR (name, address, phone)	LUMSDEN ASSOCIATES, P.C. P.O. BOX 20669 ROANOKE, VA. 24018 703-774-4411

J. C. Stone Manager 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.

TAX MAP NO(S) 96.02 96.07 BLOCK NO(S) 01 01 PARCEL NO(S) PORTION OF 45 & 46 PORTION OF 0.6

RC-5680

#94-88