

QUANTITY & COST ESTIMATE

ITEM	QUANTITY	UNIT	UNIT PRICE	COST	BONDABLE
CLEARING AND GRUBBING	6	ACRES	1500.00	9000.00	
EXCAVATION	4000	C.Y.	2.50	10000.00	
EMBANKMENT SEE EXCAVATION		C.Y.			
CURB INLET DI-1		EACH			
CURB INLET DI-7 (MH FRAME AND COVER)	1	EACH	750.00	750.00	
MANHOLE MH-		EACH			
MANHOLE MH-		EACH			
		LIN. FT.			
		LIN. FT.			
		LIN. FT.			
18-IN. R.C.P. CULVERT	34	LIN. FT.	18.00	612.00	
15-IN. R.C.P. CULVERT	40	LIN. FT.	15.00	600.00	
24" RCP CL III CULVERT	105	LIN. FT.	25.00	2625.00	
BOX CULVERT		LUMP SUM			
PAVED DITCH		LIN. FT.			
ROADSIDE DITCH (GRASS)	550	LIN. FT.	2.00	1100.00	
RIPRAP -- CLASS TYPE A	150	TON	10.00	1500.00	
SODDED SWALE		S.Y.			
24-IN. CONCRETE ENDWALL EW-1	2	EACH	400.00	800.00	
24-IN. END SECTION ES-1	2	EACH	400.00	800.00	
HEADER CURB & GUTTER		LIN. FT.			
CURB & GUTTER CG-2		LIN. FT.			
VALLEY GUTTER		EACH			
GRAVEL BASE		S.Y.			
GRAVEL SHOULDER		S.Y.			
SURFACE TREATMENT		S.Y.			
-IN. BIT. CONC.: TYPE B-		S.Y.			
2-IN. BIT. CONC.: TYPE S-M 2A	775	S.Y.	2.25	1743.75	
6-IN. BASE MATERIAL 21-B	775	S.Y.	6.00	4650.00	
-IN. SUBBASE MATERIAL		C.Y.			
TRAFFIC BARRICADE		EACH			
8" WATER LINE	450	LIN. FT.	17.00	7650.00	
FIRE HYDRANT ASSEMBLIES	1	EACH	1400.00	1400.00	
BLOW OFFS W/VAULT, FRAME & COVER	1	EACH	250.00	250.00	
8-IN. GATE VALVES, W/VAULT, FRAME & COVER	1	EACH	450.00	450.00	
-IN. GATE VALVES, W/VAULT, FRAME & COVER		EACH			
8" SANITARY SEWER (SDR 35)	650	LIN. FT.	15.00	9750.00	
4" DR-25	475	LIN. FT.	10.00	4750.00	
STANDARD MANHOLE W/FRAME & COVER	5	EACH	750.00	3750.00	
SAMPLING MANHOLE/PORT		EACH			
6" S.S. LAT		L.F.			
PUMP STATION	1	LUMP SUM	15000.00	15000.00	
AS-BUILT PLANS	1	LUMP SUM	2500.00	2500.00	
STORMWATER MANAGEMENT (SEE E & S SHEET)		LUMP SUM			
ACCESS ROADS	1	LUMP SUM	630.00	630.00	
SUBTOTAL				79510.75	
10% CONTINGENCY				7951.08	
ESTIMATED TOTAL				87461.83	
I HEREBY CERTIFY THAT THE FOREGOING ESTIMATE REFLECTS THE CURRENT IMPROVEMENT COSTS OF THIS PROJECT.					
SIGNED: <i>[Signature]</i>	DATE: JANUARY 1999 1/18/99 rev. 4/1/99				

GENERAL NOTES

All construction methods and materials shall conform to the Construction Standards and Specifications of Roanoke County and/or the Virginia 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 with correct As-Built plans before final acceptance.

All work shall be subject to inspection by Roanoke County and/or V.D.O.T. inspectors.

Field corrections shall be approved by the 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, culver, sanitary sewer and storm sewer.

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- SHEET 1 - COVER SHEET
- SHEET 2 - OVERALL DEVELOPMENT PLAN
- SHEET 3 - GRADING & EROSION - SEDIMENT CONTROL PLAN.
- SHEET 4 - ROAD PLAN AND PROFILE
- SHEET 5 - SEWAGE PUMP STATION PLAN AND DETAIL SHEET
- SHEET 6 - MISCELLANEOUS PROFILES SHEET
- SHEET 7 - MISCELLANEOUS DETAILS SHEET
- SHEET 8 - MISCELLANEOUS NOTES SHEET
- SHEET 9 - WATER DETAIL SHEET
- SHEET 10 - SANITARY SEWER DETAIL SHEET
- SHEET 11 - E & S DETAIL SHEET

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 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 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 rights-of-way shall be compacted according to V.D.O.T. standards.

Lines shall be staked prior to construction.

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 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.

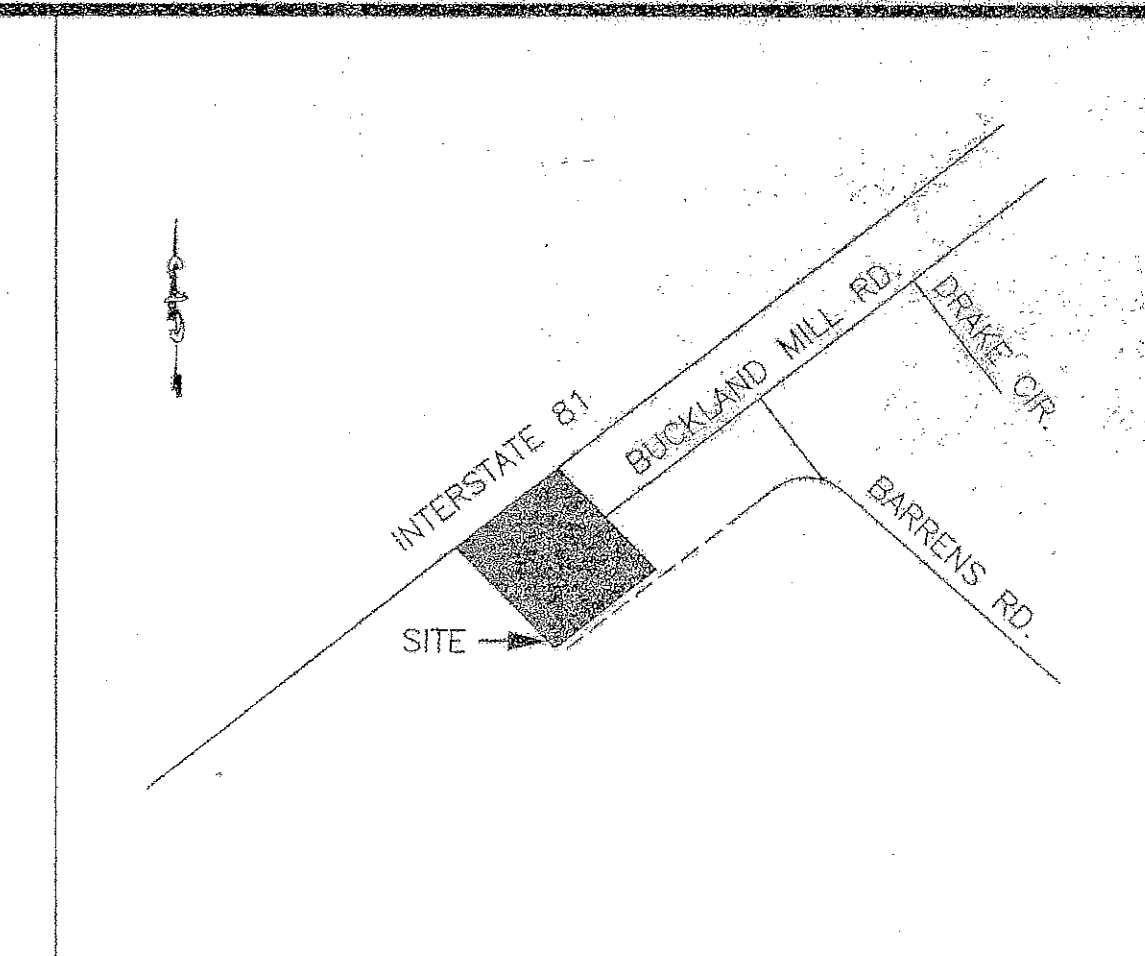
Water main shall be minimum Class 52 Ductile Iron in accordance to AWWA C151 or DR-14 PVC in accordance with AWWA C-900.

Availability number 97-38

LEGEND

Property Line	---
Right-of-way	--- R/W ---
Centerline	---
Minimum Building Line	--- M.B.L. ---
Existing Storm Sewer	--- 18" S.D. --- 8" S.D. ---
Existing Sanitary Sewer	--- 8" SAN. --- 8" SAN. ---
Existing Water Main	--- 4" W --- 4" W ---
Existing Contour	--- 1045 ---
Proposed Contour	--- 1045 ---
Proposed Drainage Divide	--- < ---
Proposed Limits of Clearing	--- 24" S.D. ---
Proposed Storm Sewer	--- 8" M.H. ---
Proposed Sanitary Sewer	---
Proposed Water Main	---

HYDRANT VALVE BLOWOFF



VICINITY MAP
N.T.S.

SURVEY INFORMATION

Horizontal and vertical control surveys were performed in (year) JULY 1998 by ENGINEERING CONCEPTS, INC.

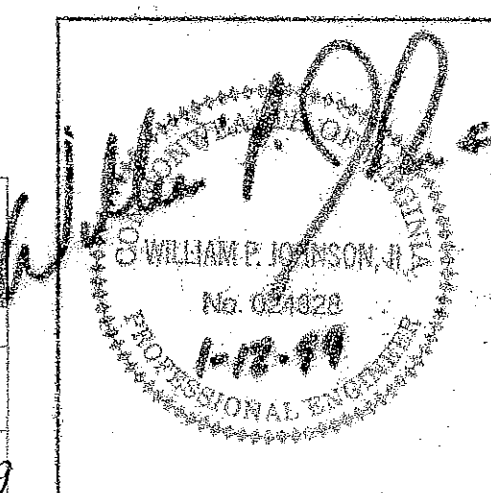
All elevations must be referenced to the National Geodetic Vertical Datum of 1929.

Source of topographic mapping is ENGINEERING CONCEPTS, INC. dated JULY 1998

Boundary was performed by ENGINEERING CONCEPTS, INC. dated JULY 1998

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

DEVELOPMENT PLAN APPROVED FOR CONSTRUCTION	
DEPARTMENT	DATE
DEVELOPMENT	
ENGINEERING	
UTILITY	
DEPARTMENT	



PROFESSIONAL ENGINEER
SEAL AND SIGNATURE

COUNTY OF ROANOKE

NAME OF DEVELOPMENT	BUCKLAND MILLS	I, <i>[Signature]</i> OWNER/DEVELOPER, AM A OF THE SITE DESIGN REQUIREMENTS IMPOSED 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
MAGISTERIAL DISTRICT(S)	HOLLINS	
OWNER (name, address, telephone)	SIGNATURE BUILDERS 1423 CRAVENS CREEK LANE ROANOKE, VIRGINIA 24018 (540) 774-4489	
DEVELOPER (name, address, telephone)	SIGNATURE BUILDERS 1423 CRAVENS CREEK LANE ROANOKE, VIRGINIA 24018 (540) 774-4489	
ENGINEER, ARCHITECT OR SURVEYOR (name, address, telephone)	ENGINEERING CONCEPTS, INC., 20 S. ROANOKE STREET FINCASTLE, VA 24090 (540)473-1253	
TAX MAP NO(S)	26.08	
BLOCK NO(S)	3	
PARCEL NO(S)	2	