### QUANTITY + COST ESTIMATE

ITEM	QUANTITY	UNIT	UNIT PRICE	COST	BONDABLE
CLEARING AND GRUBBING	9.75	ACRES	4,500.00	43,875.00	\$ 43,875.0
EXCAVATION	110,800	C.Y.	2.00	221,600.00	\$ 221,600.0
EMBANKMENT	110,000	°C.Y.	2.00	221,000.00	<b>\$</b> 221,000.0
PIDHINNILINI		C.1.			
URB INLET DI- 3B, L =6'	3	EACH	1,500.00	4,500,00	\$ 4,500.0
CURB INLET DI- 3B, L =8'	2	EACH		4,000.00	
CURB INLET DI- 3B, L =10'			2,000.00		\$ 4,000.0
	1	EACH	2,500.00	2,500.00	\$ 2,500.0
CURB INLET DI-		EACH			<del></del>
CURB INLET DI- 3B, L =14'	1	EACH	3,500.00	3,500.00	\$ 3,500.0
CURB INLET DI- 3B, L =18	1	EACH	4,500.00	4,500.00	\$ 4,500.0
MEDIAN INLET DI- 7	2	EACH	1,500.00	3,000.00	\$ 3,000.0
				3	
STORM DRAIN MANHOLE, MH-1 W/ COVER B	1	EACH	1,200.00	1,200.00	\$ 1,200.0
		LIN. FT.		***	**************************************
15 IN. CONCRETE PIPE	720	LIN. FT.	20.00	14,400.00	\$ 14,400.0
NVERT SHAPING, IS-1	3	EACH	500.00	1,500.00	\$ 1,500.0
ROAD CROSSING - BORE	30	LIN. FT,	150.00	4,500.00	\$ 4,500.0
BOX CULVERT		LUMP SUM			
TYPE "B" DITCH, PG-2A, MODIFIED	68	S.F.	5.00	340.00	<b>\$</b> 340.
RIPRAP - CLASS		S.F.			
SODDED SWALE		S.Y.			
15 -IN. CONCRETE ENDWALL EW-	1	EACH	400.00	400.00	\$ 400.
CONCRETE ENERGY DISSIPATOR	1	EACH	400.00	400.00	\$ 400.
i	j				
-IN END SECTION ES-		EACH		-	
				,	
		LIN. FT.			
CONCRETE CURB & GUTTER, CG-6	1,650	LIN, FT.	11.00	18,150.00	<b>\$</b> 18,150.
VALLEY GUTTER		EACH			
GRAVEL BASE		S.Y.			
GRAVEL SHOULDER		S.Y.		`	
SURFACE TREATMENT		S.Y.			
CATEGORY I PAVEMENT SECTION	2,810	S.Y.	10.00	28,100.00	\$ 28,100.
RIGHT TURN LANE & TAPER	484	S.Y.	25.00	12,100.00	\$ 12,100.
		,			1
			,		
10" WATER LINE	1440	LIN. FT.	18.00	25,920.00	\$ 25,920.
8' WATER LINE	705	LIN. FT.	16,00	11,280.00	\$ 11,280.
SINGLE RESIDENTIAL WATER SERVICE	3	EACH	200.00	600.00	\$ 600.
DOUBLE RESIDENTIAL WATER SERVICE	10	EACH	300.00	3,000.00	\$ 3,000.
FIRE HYDRANT ASSEMBLIES		EACH	<del></del>		
BLOW OFFS W/VAULT, FRAME & COVER	3	EACH'	1,200.00	2,400.00	\$ 2,400. \$ 1,200
8 -IN. GATE VALVES, W/VAULT, FRAME & COVER		EACH EACH	400.00	1,200.00	\$ 1,200.
	1	EACH	750.00	750.00	\$ 750.
10-IN. GATE VALVES, W/VAULT, FRAME & COVER	3		950.00	2,850.00	\$ 2,850.
ROAD CROSSING - BORE	30	LIN, FT,	150.00	4,500.00	\$ 4,500.
			t a	, , , , , , , , , , , , , , , , , , , ,	3
OF CANITADY CEVED	4 6 7 6	1 Th/		***************************************	
8" SANITARY SEWER	1,952	LIN. FT.	20.00	39,040.00	\$ 39,040.
CTANDADD MANUELE 1/250115 1 25115	***	*** · · ·			<b>A</b> - ·
STANDARD MANHOLE W/FRAME & COVER	12	EACH	1,200.00	14,400.00	<b>\$</b> 14,400.
SAMPLING MANHOLE/PORT		EACH	,		<b>A</b> –
4" SANITARY SEWER SERVICE LATERALS	21	EACH	400.00	8,400.00	\$ 8,400.
AC DUTL T. DI AND					
AS-BUILT PLANS	-	LUMP SUM	500.00	500.00	<b>\$</b> 500.
STORM /ATED MANAGEMENT		1 I II III A TO TO			h,
STORMWATER - MANAGEMENT		LUMP SUM	15,000.00	15,000.00	<b>\$</b> 15,000.
SUBTOTAL				\$ 488,105.00	<b>\$</b> 488,105.
10% CONTINGENCY				\$ 48,810.00	\$ 48,810.
					,
SUBTOTAL	1	ı		<del></del>	
SUBTOTAL ESTIMATED TOTAL					,
SUBTOTAL ESTIMATED TOTAL				\$ 536 <u>,</u> 915.00	<b>\$</b> 536,915.

# **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:

- 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 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.D.T.

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

on plans.

Field construction shall honor proposed drainage divides as shown

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.D.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.D.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

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

## 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

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.

SEE LUMSDEN ASSOCIATES, P.C. COVER SHEET

#### VICINITY MAP

#### 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.

**LEGEND** 

02-115

Property Line	-		<u> </u>	stantagraphs 6 distributions
Right-of-way		•	R/W	( annual ( annual ( )
Centerline	***	-	<u>C</u>	
Minimum Building Line	(Procedure to America e	•	MBL.	
Existing Storm Sewer	######################################	=18' SD ==		=18' S D =====
Existing Sanitary Sewer		=8" SAN,=		
Existing Vater Main		4' W	<del></del>	4" W
Existing Contour	-		— <b>—</b> 1045 — —	
Proposed Contour			1045	
Proposed Drainage Divide	***************************************	$\leftarrow$	***************************************	
Proposed Limits of Clear	i <del>ng</del>	· ·		
Proposed Storm Sewer			√ 24″ S.D.	
Proposed Sanitary Sewer	· <del></del>	<del></del>	8' MH	f
Proposed Water Main	HYDRA	ANT V	ALVE	BLOVOFF

# SURVEY INFORMATION

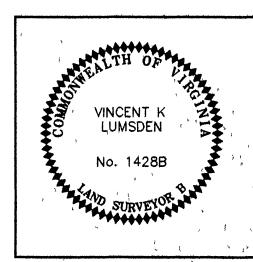
Horizontal and vertical control surveys were performed in (year) 2002 by LUMSDEN ASSOCIATES, P.C.

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

Source of topographic mapping is <u>SURVEY BY MCKENZIE SNYDER</u> dated \_\_\_SPRING, 1987

Boundary was performed by LUMSDEN ASSOCIATES, P.C.

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



PROFESSIONAL SEAL AND SIGNATURE

# COUNTY OF ROANOKE

Intal	INDEX
0,140 × 10%	= \$11,074 Total für Maintenauce Guarantea

SEE LUMSDEN ASSOCIATES, P.C. COVER SHEET

SECTION No. 3, "STONE MANOR" NAME OF DEVELOPMENT

WINDSOR HILLS MAGISTERIAL DISTRICT(S)

BOONE, BOONE & LOEB, INC. 3922 ÉLECTRIC ROAD

Proctice USWNER/DEVELOPER, AM AWARE OF THE SITE DESIGN REQUIREMENTS IMPOSED BY THIS SITE DEVELOPMENT PLAN AND OTHER APP-LICABLE COUNTY CODES. I HEREBY CERTIFY THAT I AGREE TO COMPLY WITH THESE REQUIREMENTS, UNLESS MODIFIED IN ACCORDANCE WITH LOCAL LAW.

DWNER (name, address, telephone)

ROANOKE, VIRGINIA 24018

*[540] 989-7076* 

DEVELOPER (name, address, telephone)

SAME AS ABOVE

BLOCK NO(S)

LUMSDEN ASSOCIATES, P.C. P.O. BOX 20669 ROANOKE. VIRGINIA 24018

AS-BUILTS 10/14/2005

*1540) 774-4411* 

86.01 TAX MAP NO(S)

ENGINEER, ARCHITECT OR SURVEYOR (name, address, telephone)

01

SHEET 2 , DF 12

WVWA ID# 6QSG72

PARCEL NO(S)