#### QUANTITY + COST ESTIMATE

TTEM	QUANTITY	UNIT	UNIT PRICE	COST	BONDABLE
CLEARING AND GRUBBING	16	ACRES	2,500.00	40,000.00	\$ 40,000.
EXCAVATION	62,400	C.Y.	2.00	124,800.00	\$ 124,800.
EMBANKMENT		C.Y.			
CURB INLET DI-3B, L = 6'	1	EACH	1,500.00	1,500.00	\$ 1,500.
CURB INLET DI- 38, L = 12'	4	EACH	3,000.00	12,000.00	\$ 12,000.
CURB INLET DI- 38, L = 14°	5	EACH	3,500.00	17,500.00	<b>\$</b> 17,500.
CURB INLET DI-388, L = 6'	1	EACH	1,500.00	1,500.00	\$ 1,500.
CURB INLET DI-388, L = 10'	1	EACH	2,500.00	2,500.00	\$ 2,500.
CURB INLET DI-389, L = 14'	1	EACH	3,500.00	3,500.00	\$ 3,500.
CURB INLET DI-388, L = 16'	1	EACH	4,000.00	4,000.00	\$ 4,000.
CURB INLET DI-3C, L = 10'	1	EACH	2,500.00	2,500.00	\$ 2,500.
STORM DRAIN MANHOLE, MH-1 W/ COVER "B"	3	EACH	1,200.00	3,600.00	\$ 3,600.
24 -IN. CONCRETE PIPE	263	LIN. FT.	32.00	8,416.00	\$ 8,416.
21 -IN. CONCRETE PIPE	131	LIN. FT.	28.00	3,668.00	\$ 3,668
18 -IN. CONCRETE PIPE	375	LIN, FT.	24.00	9,000.00	\$ 9,000
15 -IN. CONCRETE PIPE	813	LIN, FT.	20.00	16,260.00	\$ 16,260
NVERT SHAPING, IS-1	hay a second	EACH	500.00	3,500.00	\$ 3,500
					<i>b</i>
ROAD CROSSING - BORE	30	LIN, FT,	150.00	4,500.00	\$ 4,500
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BOX CULVERT	And the second s	LUMP SUM			
PARTY NAME PARTY IN / ALL MAN . PRAMISEL MAINTEN AND AND AND AND AND AND AND AND AND AN	per per per	Co tu	- m-	Property on a	di a a a a
TYPE "A" DITCH W/ CLASS I EROSION CONTROL STONE	560	S.F.	5.00	2,800.00	\$ 2,800.
TYPE "B" DITCH - PG-2A, MODIFIED	135	S.F.	5.00	675.00	\$ 675
RIPRAP - CLASS	**************************************	S.F.			
SUDDED SWALE		S.Y.			
	The state of the s	۵.۲.		, MAN	والمساورة
24 -IN. CONCRETE ENDWALL EW-1	4	EACH	900.00	900.00	\$ 900
		EACH	_	700.00	\$ 900 \$ 700
CONCRETE ENERGY DISSIPATOR	***************************************		700.00	700.00	a /UU
-IN. END SECTION ES-		EACH			***************************************
		F-17 G-11			
					***************************************
		LIN. FT.			,000-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1
CONCRETE CURB & GUTTER, CG-6	3,125	LIN. FT.	11.00	34,375.00	\$ 34,375
VALLEY GUTTER	All F Con the	EACH			Additional Control of the Control of
GRAVEL BASE		S.Y.		A THE RESIDENCE AND A STREET AN	التأثير ويونون أخارا أدافه والمتارات المتاركة والمتاركة والمتاركة والمتاركة والمتاركة والمتاركة والمتاركة والم
				A STATE OF THE STA	g that the desired and project garden and the desired and the
GRAVEL SHOULDER		S.Y.		And the second s	ngerth dathair and san ag the Perkent Perket to the telephone group good at
SURFACE TREATMENT		S.Y.			
CATEGORY I PAVEMENT SECTION	3,220	S.Y.	10.00	32,200.00	\$ 32,200
CATEGORY II PAVEMENT SECTION	1,200	S.Y.	11.25	13,500.00	\$ 13,500
CATEGORY III PAVEMENT SECTION	1,190	S.Y.	12.50	14,875.00	\$ 14,875
RIGHT TURN LANE & TAPER	490	S.Y.	25.00	12,250.00	\$ 12,250
10" WATER LINE	1,145	LIN. FT.	18.00	20,610.00	\$ 20,610
8' WATER LINE	65	LIN, FT.	16.00	1,040.00	\$ 1,040
6' WATER LINE	480	LIN. FT.	14.00	6,720.00	\$ 6,720
SINGLE RESIDENTIAL WATER SERVICE	1	EACH	200.00	200.00	\$ 200
DOUBLE RESIDENTIAL WATER SERVICE	11	EACH	300.00	3,300.00	\$ 3,300
FIRE HYDRANT ASSEMBLIES	2	EACH	1,200.00	2,400.00	\$ 2,400
BLOW OFFS W/VAULT, FRAME & COVER	4	EACH	400.00	1,600.00	\$ 1,600
10-IN. GATE VALVES, W/VAULT, FRAME & COVER	4	EACH	950.00	3,800.00	\$ 3,800
8-IN. GATE VALVES, W/VAULT, FRAME & COVER	·	EACH	750.00	750.00	\$ 750
6-IN. GATE VALVES, W/VAULT, FRAME & COVER		EACH	600.00	1,200.00	\$ 1,200
AIR RELEASE VALVE, W/ VAULT. FRAME & COVER	*		600.00	600.00	\$ 600
8" SANITARY SEWER, PVC	3,165	LIN. FT.	20.00	63,300.00	\$ 63,300
8" SANITARY SEWER, D.I., CLASS 52	53	LIN. FT.	30.00	1,590.00	\$ 1,590
STANDARD MANHOLE W/FRAME & COVER	20	EACH	1,200.00	24,000.00	\$ 24,000
SAMPLING MANHOLE/PORT		EACH			
4" SANITARY SEWER SERVICE LATERALS	37	EACH	400.00	14.800.00	\$ 14,800
ROAD CROSSING - BORE	60	LIN. FT.	150.00	9,000.00	\$ 9,000
CONCRETE ENCASEMENT	20	LIN. FT.	50.00	1,000.00	\$ 1,000
		The state of the s			
AS-BUILT PLANS		LUMP SUM	500.00	500.00	\$ 500
STORMWATER MANAGEMENT .		LUMP SUM			
C) TTTTTT				\$ 527,429.00	\$ 527,429
SUBTOTAL				52,743.00	52,743
	1		-		· · · · · · · · · · · · · · · · · · ·
				l	
10% CONTINGENCY				& MAK 100	& 20 mm
10% CONTINGENCY  ESTIMATED TOTAL				\$ 580,172.00	\$ 580,172

# 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.

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.Q.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 notural watercourse. The pipe shall be 6 inch minimum diameter and conform to V.D.C.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.

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.

Contractors shall notify utilities of proposed construction at least

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, culvert, sanitary sewer and storm sewer.

### NDEX

SEE LUMSDEN ASSOCIATES, P.C. COVER 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.

SEE LUNSDEN 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.

Availability number <u>02–115</u>

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Property Line	and the state of t		
Right-of-way	propulation is a manageferror . Mathematical	- R/W	77-hishwanninama I daysalaman dalah san
Centerline	manyly gifty, manuscript's action to the wife and an analysis determined to the second	- <u>C</u>	many () The state of the state
Minimum Building Line	magazatakan da aran aran da aran aran da aran aran	M.B.L.	and the second s
Existing Storm Sewer	18" S.D.	18'	S.D.
Existing Sanitary Sewer	8' SAN.		SAN,
Existing Water Main			' W
Existing Contour	and the second s	-1045	and the second section of the section
Proposed Contour	enthistings, manifest the property of the same and the sa	-1045	/Fin-j
Proposed Drainage Divide			<del></del>
Proposed Limits of Clear	i <del>ng</del>	mana bira	
Proposed Storm Sewer		24° S.D.	
Proposed Sanitary Sewer	Triangle and the second	ermand Commencement and summers of the commencement of the commenc	<b>化多氧化基甲亚化医医克克内氏中毒性多类化医毒性皮肤的医毒性</b>
Proposed Water Main	HYDRANT VALV	and and the figure and the second as	BLOVOFF

# SURVEY INFORMATION

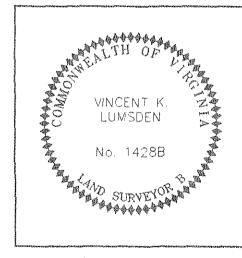
Horizontal and vertical	control surveys	were performed in	(year) <u>2002</u>
by LUMSDEN ASSOCIATES,	P.C.		

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 <u>SPRING, 1987</u>

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.



PRDFESSIONAL SEAL AND SIGNATURE

# COUNTY OF ROANOKE

OF I	DEVELOPMENT	SECTION	No.		"STONE	MANOR
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MAGISTERIAL DISTRICT(S) WINDSOR HILLS

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.

Ser LOWNER/DEVELOPER, AM AWARE

DWNER (name, address, telephone)

NAME

BOONE, BOONE & LOEB, INC. 3922 ELECTRIC ROAD ROANOKE, VIRGINIA 24018

15401 989-7076

DEVELOPER (name, address, telephone) SAME AS ABOVE

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

LUMSDEN ASSOCIATES, P.C. P.O. BOX 20669

P.O. BOX 20669
ROANOKE. VIRGINIA 24018 (540) 774-4411

TAX MAP NO(S) 86.01 BLOCK NO(S) 03 PARCEL NO(S)

SHEET 2 OF 12

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