QUANTITY + COST ESTIMATE

ITEM	QUANTITY	UNIT	UNIT PRICE	COST	BUNDABLE
CLEARING, GRUBBING, AND GRADING	PERF	ORMED WITH ESC	PLAN	\$ 0	
CURB INLET DI-3	10	EACH	\$1,500.00	\$15,000.00	
STORM DRAIN MANHOLE	3	EACH	\$1,200.00	\$3,600.00	
15" CONCRETE STORM DRAIN 18" CONCRETE STORM DRAIN	270	LIN. FT.	\$22.00 \$25.00	\$5,940.00 \$15.650.00	· · · · · · · · · · · · · · · · · · ·
15" EW-1, CONCRETE ENDWALL	626	EACH	\$1,000.00	\$15,650,00 \$1,000.00	
15" ES-1, CONCRETE END SECTION	1	EACH	\$800.00	\$800.00	
18" EW-1, CONCRETE ENDWALL	2	EACH	\$1,000.00	\$2,000.00	
GRATE INLET DI-7 W/ TY III GRATE	1	EACH	\$1,300.00	\$1,300.00	
ENERGY DISSIPATERS	2	EACH	\$300.00	\$600,00	
ROLL TOP CURB	2,610	LIN. FT.	\$11.00	\$28,710.00	
8° 21-B AGGREGATE	3,280	S.Y.	\$5.00	\$16,400.00	
2" SM-9.5A ASPHALT	3,280	S.Y.	\$ 5.00	\$16,400.00	
8" WATER LINE (DUCTILE IRON)	358	LIN. FT.	\$18.00	\$6,444.00	
8" WATER LINE (PVC)	1,944	LIN. FT.	\$14.00	\$27,216.00	
AIR RELEASE VALVES	2	EACH	\$700.00	\$1,400.00	·
BLOW OFFS W/VAULT, FRAME & COVER	3	EACH EACH	\$700.00 \$300.00	\$700.00 \$900.00	
SINGLE WATER METER SERVICES DOUBLE WATER METER SERVICES	14	EACH	\$400.00	\$5,600.00	
		LIN. FT.	\$20.00	\$40,000.00	
8" SANITARY SEWER LATERAL, CLEANOUT, STUBOUT	2,000 30	EACH	\$20.00 \$300.00	\$9,000.00	
STANDARD MANHOLE W/FRAME & COVER	14	EACH	\$1,200.00	\$16,800.00	
STORMWATER MANAGEMENT	1	LUMP SUM	\$15,000.00	\$15,000.00	
					
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SUBTOTAL				\$ 230,460.00	
10% CONTINGENCY				\$ 23,050.00	
ESTIMATED TOTAL					
	1	I	1	\$ 253,510.00	1

# **GENERAL NOTES**

All construction methods and materials shall conform to the Construction Standards and Specifications of Roanoke County, the Western Virginia Water Authority and/or the Virginia Department of Transportation.

The contractor or developer is required to notify the Roanoke County Engineering Division and the Western Virginia Water Authority in writing at least three (3) days prior to 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 and the Western Virginia Water Authority, 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.D.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

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.C.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.

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,

installation shall conform to approved plans.

Construction debris shall be containerized in accordance with the Virginia Litter Control Act. No less than one litter receptacle

The developer and/or contractor shall supply all utility companies with copies of approved plans, advising them that all grading and

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 and the Western Virginia Water Authority with correct As-Built plans before final acceptance.

All work shall be subject to inspection by Roanoke County, the Western Virginia Water Authority, and/or V.D.O.T. inspectors.

Field corrections shall be approved by the Roanoke County Engineering Division and the Western Virginia Water Authority 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.

## **SEWER NOTES**

All sanitary sewer connections to existing lines shall be coordinated with and performed by the Western Virginia Water Authority.

All sanitary sewer facilities are to be installed according to the Western Virginia Water Authority Design and Construction Standards.

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

All water connections to existing lines shall be coordinated with and performed by the Western Virginia Water Authority.

All water facilities are to be installed according to the Western Virginia Water Authority Design and Construction Standards.

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 350 Ductile Iron-in accordance to AWWA C150 or DR-14 PVC in accordance with AWWA C-900.

Availability number ____

	<u>LEGEND</u>		
Property Line -		—— <u>P</u>	
Right-of-way		— R/W ——	
Centerline			
Minimum Building Line		M.B.L.	Manager Manage
Existing Storm Sewer	18" S.D.		
Existing Sanitary Sewer :	8' SAN.		=8" SAN.=====
Existing Water Main	4" W	<del></del>	4" W
Existing Contour		-1045	
Proposed Contour	•	1045	
Proposed Drainage Divide			
Proposed Limits of Cleari	<del>ng</del> `		-
Proposed Storm Sewer		24" S.D.	
Proposed Sanitary Sewer		8" M.H.	,
Proposed Water Main	HYDRANT X-VAL	VE	BLOVOFF

### SURVEY INFORMATION

prizontal	and	vertical	control	surveys	were	performe	d in	(year	) 2002	
				LUMSDEN	ASSO	CIATES, P.C.			١.	
				,		,				

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

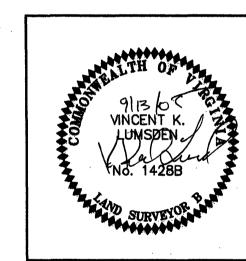
Source of	topographic mapping	is			٠.	AERIAL	MAPPING	
dated	FEBRUARY 2003		,					
		*		:		•		

Boundary was performed by _____

APRIL 2003

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

LUMSDEN ASSOCIATES, P.C.



**PROFESSIONAL** SEAL AND SIGNATURE

# COUNTY OF ROANOKE

<b>NDEX</b>
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SEE LUMSDEN ASSOCIATES, P.C. COVER SHEET

NAME OF DEVELOPMENT

"THE PRESERVE AT TWO FORD ROAD"

WINDSOR HILLS MAGISTERIAL DISTRICT(S)

OWNER/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)

BENCHMARK BUILDERS, INC. 5754 SCENIC HILLS DRIVE ROANOKE. VIRGINIA 24018

*[540] 989-0255* 

SEE OWNER DEVELOPER (name, address, telephone)

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

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

ROANOKE, VIRGINIA 24018

1540) 774-4411

PARCEL NO(S)

WVWA ID# 6YDKEF

086.01 TAX MAP NO(S)

BLOCK NO(S)

04.00-0000

COMM NO. 2002-244

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