QUANTITY + COST ESTIMATE

ITEM	QUANTITY	UNIT	UNIT PRICE	COST	BONDABLE
CLEARING AND GRUBBING	13.50	ACRES	1000	13800	
GRADING	2150	L.F.	10	21500	
CURB INLET DI- 3B,C	17	EACH	1200	20400	
CURB INLET DI- 7	1	EACH	1200	1200	
MANHOLE MH- STORM DRAIN	2	EACH	1500	3000	
MANHOLE MH-		EACH			
18 -IN. STORM DRAIN	550	LIN. FT.	22	12100	
15 -IN. STORM DRAIN	1400	LIN. FT.	20	28000	
-IN. CULVERT		LIN. FT.			
-IN. CULVERT		LIN. FT.			
BOX CULVERT		LUMP SUM			
PAVED DITCH		LIN. FT.			
RIPRAP - CLASS		S.F.			
SODDED SWALE		S.Y.			
15 -IN. CONCRETE ENDWALL EW- 1	1	EACH	1000	1000	
15 -IN. END SECTION ES- 1	1	EACH	500	500	
HEADER CURB & GUTTER CG-		LIN. FT.			
CURB & GUTTER CG-	4650	LIN. FT.	11	51150	
VALLEY GUTTER		EACH			
GRAVEL BASE		S.Y.			
GRAVEL SHOULDER		S.Y.			
SURFACE TREATMENT		S.Y.			
2 -IN. BIT. CONC. 12 -IN. AGGREGATE BASE	3350	S.Y.	13	43550	
-IN. BIT. CONC. -IN. AGGREGATE BASE	4400	S.Y.	9	39600	
8" WATER LINE	1870	LIN. FT.	16	29920	
6" WATER LINE	375	LIN. FT.	14	5250	
FIRE HYDRANT ASSEMBLIES	2	EACH	1200	2400	
BLOW OFFS W/VAULT, FRAME & COVER	2	EACH	700	1400	
8"-IN. GATE VALVES, W/VAULT, FRAME & COVER	7	EACH	700	4900	
6"-IN. GATE VALVES, W/VAULT, FRAME & COVER	2	EACH	600	1200	
AIR RELEASE ASSEMBLY	3	EACH	700	2100	
8" SANITARY SEWER	3700	LIN. FT.	20	74000	
STANDARD MANHOLE W/FRAME & COVER	19	EACH	400	7600	
SAMPLING MANHOLE/PORT		EACH			
CLEANOUTS	25	EACH	500	10000	
AS-BUILT PLANS		LUMP SUM	500	500	
STORMWATER MANAGEMENT		LUMP SUM			
SUBTOTAL				375100	
10% CONTINGENCY				37550	
ESTIMATED TOTAL				412650	

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.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, culvert, sanitary sewer and storm sewer.

No construction/field changes can be made without the approval of the Consulting and County Engineer.

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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.

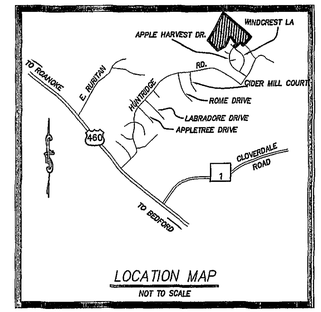
Lines shall be staked prior to construction.

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 03 - 117 RSD

LEGEND

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



LOCATION MAP
NOT TO SCALE

VICINITY MAP

SURVEY INFORMATION

Horizontal and vertical control surveys were performed in (year) 1993
by LUMSDEN ASSOCIATES, P.C.

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

Source of topographic mapping is AERIAL MAPPING
dated 1987

Boundary was performed by LUMSDEN ASSOCIATES, P.C.
dated JUNE 2001

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

COMMONWEALTH OF VIRGINIA
2/26/04
VINCENT K. LUMSDEN
No. 1428B
LAND SURVEYOR B

PROFESSIONAL
SEAL AND SIGNATURE

COUNTY OF ROANOKE

NAME OF DEVELOPMENT *"WISTERIA PLACE AT THE ORCHARDS" SECTION No. 11*

MAGISTERIAL DISTRICT(S) *HOLLINS*

I [signature] 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.

OWNER (name, address, telephone) F & W COMMUNITY DEVELOPMENT CORP
P. O. BOX 20069
ROANOKE, VA 24018 (540) 774-4415

DEVELOPER (name, address, telephone) SEE OWNER

ENGINEER, ARCHITECT OR SURVEYOR (name, address, telephone) LUMSDEN ASSOCIATES, P.C.
4664 BRAMBLETON AVENUE
ROANOKE, VA 24018 (540) 774-4411

9/16/2005 AS-BUILTS FROM WWA GPS FIELD WORK

TAX MAP NO(S) 40.01 BLOCK NO(S) 1 PARCEL NO(S) 1