

ITEM	QUANTITY	UNIT	UNIT PRICE	COST	BONDABLE
CLEARING AND GRUBBING	16	ACRES	\$ 5,000	\$ 80,000	
EXCAVATION	75,000	C.Y.	\$ 3.00	\$ 225,000	
CURB INLET DI- 3C	2	EACH	\$ 2,500	\$ 5,000	
CURB INLET DI- 3B	4	EACH	\$ 2,500	\$ 10,000	
CLEANOUT	4	EACH	\$ 600	\$ 2,400	
12"x12" YARD INLET	14	EACH	\$ 2,000	\$ 28,000	
MANHOLE MH- 48"	20	VF	\$ 325	\$ 6,500	
MANHOLE MH- 60"	11	EACH	\$ 2,500	\$ 27,500	
15 IN. CONCRETE PIPE, CLASS III	670	LIN. FT.	\$ 31.90	\$ 21,373	
36 IN. CONCRETE PIPE, CLASS III	869	LIN. FT.	\$ 75.00	\$ 65,175	
36 IN. CONCRETE PIPE, CLASS IV	442	LIN. FT.	\$ 125.00	\$ 55,250	
12 IN. PIPE, HDPE	721	LIN. FT.	\$ 26.00	\$ 18,746	
18 IN. PIPE, HDPE	134	LIN. FT.	\$ 27.00	\$ 3,618	
12 IN. CONCRETE PIPE, RCP	843	LIN. FT.	\$ 24.00	\$ 20,232	
18 IN. CONCRETE PIPE	134	LIN. FT.	\$ 27.00	\$ 3,618	
36 IN. END WALL	1	EACH	\$ 3,200	\$ 3,200	
15 IN. END WALL	1	EACH	\$ 1,750	\$ 1,750	
RIPRAP - CLASS	250	S.F.	\$ 77.50	\$ 19,375	
HEADER CURB & GUTTER CG-6	1050	LIN. FT.	\$ 18.00	\$ 18,900	
ROLL TOP CURB & GUTTER	5,000	LIN. FT.	\$ 17.00	\$ 85,000	
CONCRETE SIDEWALK	3505	S.Y.	\$ 28.00	\$ 98,140	
GRAVEL BASE	10	TON	\$ 15.00	\$ 150	
4 IN. BASE, 2 IN. S.M.	7000	S.Y.	\$ 13.90	\$ 97,300	
2 IN. SM	15,000	S.Y.	\$ 6.07	\$ 91,050	
6 IN. BASE STONE	5,000	TON	\$ 12.50	\$ 62,500	
8" WATER LINE	2,750	LIN. FT.	\$ 33.50	\$ 92,125	
FIRE HYDRANT ASSEMBLIES	7	EACH	\$ 2,650	\$ 18,550	
8 IN. GATE VALVES, W/VAULT, FRAME & COVER	8	EACH	\$ 1,500	\$ 12,000	
8" SANITARY SEWER	2100	LIN. FT.	\$ 36	\$ 75,600	
6" SANITARY SEWER	650	LIN. FT.	\$ 32	\$ 20,800	
STANDARD MANHOLE	125	V.F.	\$ 375	\$ 46,875	
MANHOLE FRAME AND COVER	13	EACH	\$ 450	\$ 5,850	
LANDSCAPE BUFFER	1	LUMP SUM	\$ 8,800	\$ 8,800	
SUBTOTAL				\$ 1,330,377	
10% CONTINGENCY				\$ 133,038	
ESTIMATED TOTAL				\$ 1,463,415	
I HEREBY CERTIFY THAT THE FOREGOING ESTIMATE REFLECTS THE CURRENT IMPROVEMENT COSTS OF THIS PROJECT.					
SIGNED:		DATE:			

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

The contractor or developer is required to notify the Roanoke County Engineering Division, Western Virginia Water Authority 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, and 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.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 Roanoke 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, 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 flood plain information shall be shown where applicable.

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

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All water and 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 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 Right of Way (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.

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

All water and 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 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 C-51 or DR-14 PVC in accordance with AWWA C-900.

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

Availability number 05-358

Property Line

Right-of-way

Centerline

Minimum Building Line

Existing Storm Sewer

Existing Sanitary Sewer

Existing Water Main

Existing Contour

Proposed Contour

Proposed Drainage Divide

Proposed Limits of Clearing

Proposed Storm Sewer

Proposed Sanitary Sewer

Proposed Water Main

HYDRANT

VALVE

BLOWOFF

18" S.D.

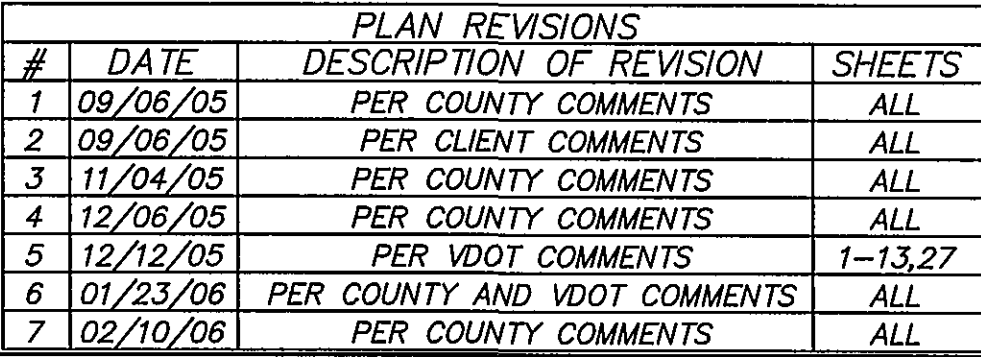
8" SAN.

4" W

1045

24" S.D.

8" M.H.



Horizontal and vertical control surveys were performed in (year) \_\_\_\_\_  
by HORIZONTAL CONTROL BY HURT & PROFFITT, INC IN 2004 (CONTROL PROVIDED BY LUMSDEN & ASSOCIATES)

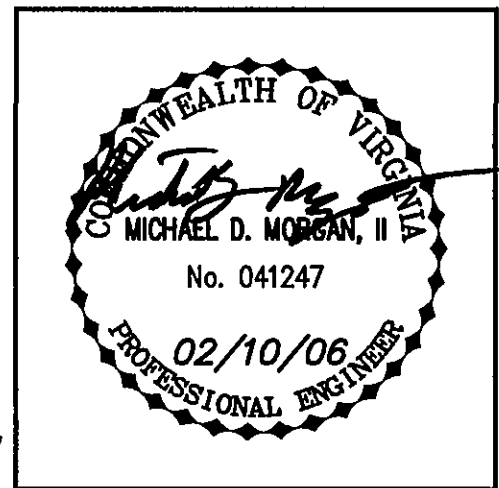
All elevations must be referenced to the National Geodetic Vertical Datum of 1929

Source of topographic mapping is AND TOPOGRAPHICAL INFORMATION BY HURT & PROFFITT, INC.  
dated MAY 05, 2004

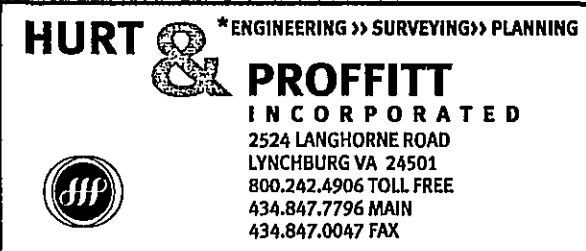
Boundary was performed by HURT & PROFFITT, INC.  
dated revised 10/29/04

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

DEVELOPMENT PLAN APPROVED FOR CONSTRUCTION BY ROANOKE COUNTY	
Department	Date
Development Review	JE 2/15/06
Engineering	JE 3-15-06 MC 3/15/06
Water & Sewer	RRB 2/15/06
Planning & Zoning	TW 2/15/06



AS - BUILT  
6/9/2006



# COUNTY OF ROANOKE

NAME OF DEVELOPMENT SITE, UTILITIES, GRADING AND E&S PLAN  
FOR  
ORCHARD VILLAS

MAGISTERIAL DISTRICT(S) HOLLINS DISTRICT

OWNER (name, address, telephone)  
ORCHARD VILLAS, LLC, 9401 SUMMERLOOK COURT, CHESTERFIELD, VIRGINIA (804) 221-1260 JIM THORPE

DEVELOPER (name, address, telephone)  
ORCHARD VILLAS, LLC, 9401 SUMMERLOOK COURT, CHESTERFIELD, VIRGINIA (804) 221-1260 JIM THORPE

ENGINEER, ARCHITECT OR SURVEYOR (name, address, telephone)  
HURT & PROFFITT, INC, 2524 LANGHORNE RD., LYNCHBURG VIRGINIA, 24501. 800-242-4906 TOLL FREE, MAIN-(434)-847-7796, FAX-(434)-847-0047

TAX MAP NO(S) 040.01-01-04.05-0000 BLOCK NO(S) 5400 PARCEL NO(S) N/A