

QUANTITY + COST ESTIMATE

ITEM	QUANTITY	UNIT	UNIT PRICE	COST	BONDABLE
CURB INLET DI-1	8	EACH	1,500	12,000	
CURB INLET DI-3B (10' LENGTH)	1	EACH	1,800	1,800	
MANHOLE MH-	1	EACH	1,500	1,500	
15 -IN. CONCRETE PIPE, CLASS IV	940	LIN. FT.	30	28,200	
18 -IN. CONCRETE PIPE, CLASS IV	57	LIN. FT.	36	2,052	
24 -IN. CONCRETE PIPE, CLASS IV	73	LIN. FT.	48	3,504	
18 -IN. END SECTION ES-1	1	EACH	600	600	
CURB & GUTTER CG-6	339	LIN. FT.	13.00	4,407	
PAVEMENT - HEAVY DUTY	4,071	S.Y.	\$ 12.00	\$48,852.00	
PAVEMENT -STANDARD	2,000	S.Y.	\$ 10.00	\$20,000.00	
6" WATER LINE	1080	LIN. FT.	25.00	27,000	
10" WATER LINE	240	LIN. FT.	30.00	7,200	
SINGLE WATER METERS	28	EACH	250.00	7,000	
DOUBLE WATER METERS	4	EACH	350.00	1,400	
FIRE HYDRANT ASSEMBLIES	4	EACH	1,500	6,000	
BLOW OFFS W/VAULT, FRAME & COVER	1	EACH	1,000	1,000	
10" x 8" TEE	1	EACH	800	800	
GATE VALVE	3	EACH	500	1,500	
8" SANITARY SEWER	1129	LIN. FT.	28.00	31,612	
SANITARY SEWER CLEANOUTS	60	LIN. FT.	350	21,000	
STANDARD MANHOLE W/FRAME & COVER	9	EACH	1,500	13,500	
LANDSCAPING	1	LUMP SUM	\$ 14,390.00	\$ 14,390.00	
AS-BUILT PLANS	1	LUMP SUM	\$ 2,500.00	\$ 2,500.00	
STORMWATER MANAGEMENT	1	LUMP SUM	\$ 10,000.00	\$ 10,000.00	
ESTIMATED SUB-TOTAL				\$ 267,817.00	
10% CONTINGENCY				\$ 26,781.00	
ESTIMATED TOTAL				\$ 294,598.00	

I HEREBY CERTIFY THAT THE FOREGOING ESTIMATE REFLECTS THE CURRENT IMPROVEMENT COSTS OF THIS PROJECT.
SIGNED: _____ DATE: _____

VDOT NOTES:

The preliminary pavement designs shown are based on a predicted sub-grade CBR value of 7.0 and a Resiliency Factor (RF) of 2.0 as shown in Appendix I of the 2000 Virginia Department of Transportation Pavement Design Guide for Subdivision and Secondary Roads. The sub-grade soil is to be tested by an independent laboratory and the results submitted to the Virginia Department of Transportation prior to base construction. Should the sub-grade CBR value and/or RF value be less than the predicted values, additional base material will be required in accordance with Department specifications. Refer to the same manual as the number and locations of the required soil samples to be tested. All pavement designs must be submitted to the Department for review and approval.

The street serving the property described does not meet state standards and will not be maintained by the Department of Transportation or this county. Additionally, the street will not be considered eligible for addition as an element of the secondary system of state highways until it is constructed to the standards of the current prevailing Subdivision Street Requirements or other acceptable approved standard of the Virginia Department of Transportation, utilizing funds other than those administered by the Department of Transportation.

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 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 the Western Virginia Water Authority, to be held at least three days 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 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 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.

INDEX

- C1 ROANOKE COUNTY COVER SHEET
- C2 EXISTING CONDITIONS & DEMOLITION
- C3 OVERALL DEVELOPMENT
- C4 LAYOUT & UTILITY PLAN "A"
- C5 LAYOUT & UTILITY PLAN "B"
- C6 GRADING & EROSION CONTROL "A"
- C7 GRADING & EROSION CONTROL "B"
- C8 ROANOKE COUNTY EROSION CONTROL SHEET
- C9 PROFILES
- C10 NOTES
- C11 NEWLAND ROAD IMPROVEMENTS
- C12 DETAILS
- C13 PUBLIC SANITARY SEWER/WATER EASEMENT
- C14 PAVEMENT STRIPING & LANDSCAPE BUFFER PLAN
- C15 INTERSECTION DETAIL

REVISED PER ROANOKE COUNTY, VDOT, WWA COMMENTS - 6-9-06
REVISED PER ROANOKE COUNTY, VDOT, WWA COMMENTS - 8-23-06
REVISED PER ROANOKE COUNTY, WWA COMMENTS - 9-29-06
REVISED PER ROANOKE COUNTY, VDOT, WWA COMMENTS - 12-19-06
REVISED PER VDOT & WWA COMMENTS - 1-25-07
SITE REVISIONS - 5-13-07

SEWER NOTES:

AVAILABILITY # 05-191

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.

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.

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 05-191

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

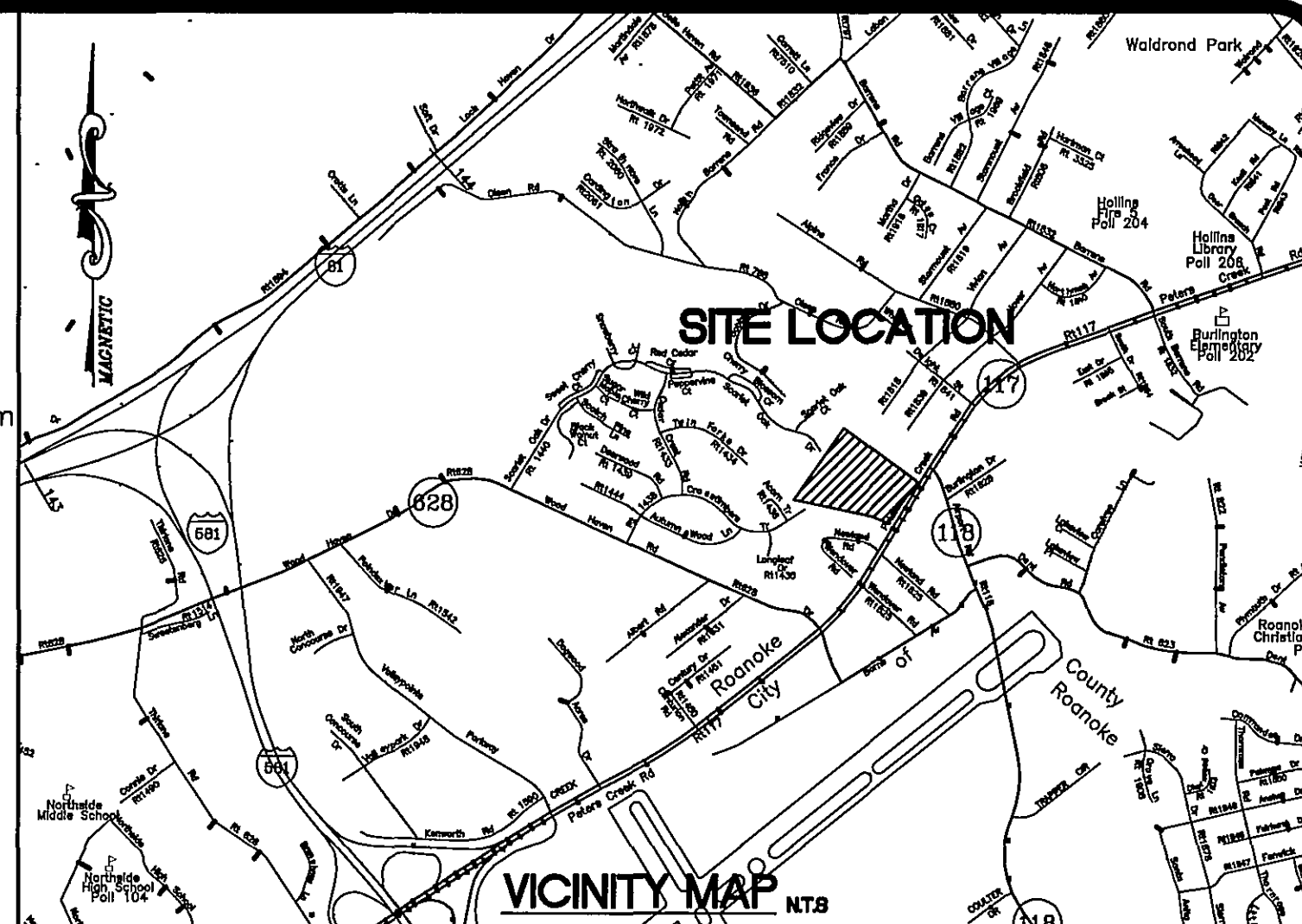
All water and sanitary sewer facilities are to be installed according to the Western Virginia Water Authority Design and Construction Standards.

Ductile Iron pipe in compliance with the WWA design and construction standards shall be required for all pipe with a working pressure equal to or greater than 100 psi.

LEGEND

Property Line	---
Right-of-way	---
Centerline	---
Minimum Building Line	---
Existing Storm Sewer	=====
Existing Sanitary Sewer	---
Existing Water Main	6"VL-----6"VL-----
Existing Contour	---1155---
Proposed Contour	---(1155)---
Proposed Drainage Divide	---
Proposed Limits of Clearing	---
Proposed Storm Sewer	=====
Proposed Sanitary Sewer	6"SAH-----6"SAH-----
Proposed Water Main	6"VL-----6"VL-----

SITE LOCATION



SURVEY INFORMATION

Horizontal and vertical control surveys were performed in 2005 by BALZER AND ASSOCIATES

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

Source of topographic mapping is BALZER & ASSOCIATES dated 2005

Boundary was performed by BALZER AND ASSOCIATES dated 2005

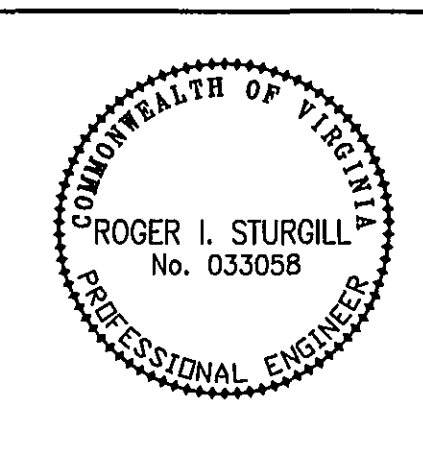
The professional seal and signature below certifies the boundary survey and topographic mapping to be accurate and correct.

ONLY SHEET EX 'A' IS AS - BUILT 10/28/2008

NOT ALL OF PROJECT CONSTRUCTED AT THIS TIME

I AM CERTIFIED BY THE STATE OF VIRGINIA AS A "RESPONSIBLE LAND DISTURBER." I SHALL BE RESPONSIBLE FOR THE IMPLEMENTATION OF THE EROSION AND SEDIMENT CONTROL PLAN AS SHOWN.
SIGNATURE _____
PRINTED NAME _____
CERTIFICATE DATE _____
TELEPHONE NUMBER _____
ADDRESS _____

RESPONSIBLE LAND DISTURBER



PROFESSIONAL ENGINEER SEAL AND SIGNATURE

COUNTY OF ROANOKE

NAME OF DEVELOPMENT VILLAS OF THE VALLEY

MAGISTERIAL DISTRICT(S) HOLLINS

OWNER (name, address, telephone) BISHOP TOWNHOUSES INC. P.O. BOX 6244 CHRISTIANSBURG, VA 24068 ATTN: ROBERT FRALIN 540-293-3234 FAX 540-381-3871

DEVELOPER (name, address, telephone) BISHOP TOWNHOUSES INC. P.O. BOX 6244 CHRISTIANSBURG, VA 24068 ATTN: ROBERT FRALIN 540-293-3234 FAX 540-381-3871

ENGINEER, ARCHITECT OR SURVEYOR (name, address, telephone) BALZER AND ASSOCIATES, INC. 1208 CORPORATE CIRCLE ROANOKE, VA 24018 540-772-9580 FAX 540-772-8050

TAX MAP NO(S) 26.20 BLOCK NO(S) 04 PARCEL NO(S) 01,02,03,04

SHEET 1 OF 15