

QUANTITY + COST ESTIMATE									
ITEM	QUANTITY SECTION 1	QUANTITY SECTION 2	QUANTITY SECTION 3	UNIT	UNIT PRICE	COST SECTION 1	COST SECTION 2	COST SECTION 3	
CURB INLET DI-3CC			2	EACH	2500.00			5,000.00	
CURB INLET DI-3B	7	7	7	EACH	2000.00	14,000.00	14,000.00	14,000.00	
CURB INLET DI-3BB			2	EACH	2500.00			5,000.00	
MANHOLE MH-1			1	EACH	2000.00			2,000.00	
36 -IN. CONCRETE PIPE, CLASS III			250	LIN. FT.	45.00			11,250.00	
15 -IN. CONCRETE PIPE, CLASS III	154			LIN. FT.	21.00	3,234.00			
18 -IN. HDPE PIPE		188	467	LIN. FT.	18.00		3,384.00	8,406.00	
15 -IN. HDPE PIPE	500	440	512	LIN. FT.	16.00	8,000.00	7,040.00	8,192.00	
12 -IN. HDPE PIPE				LIN. FT.					
24 -IN. CMP PIPE, RISER				LIN. FT.					
48 -IN. CMP PIPE, RISER				LIN. FT.					
-IN. C.M. CULVERT				LIN. FT.					
-IN. C.M. CULVERT				LIN. FT.					
BOX CULVERT				LUMP SUM					
PAVED DITCH				LIN. FT.					
PAVED DITCH PG-5	15.5		73	LIN. FT.	12.00	186.00		876.00	
RIPRAP - CLASS				S.F.					
SODDED SWALE				S.Y.					
-IN. CONCRETE ENDWALL				EACH					
-IN. CONCRETE ENDWALL				EACH					
-IN. CONCRETE ENDWALL				EACH					
36 -IN. END SECTION ES-1				EACH					
18 -IN. END SECTION ES-1		1	1	EACH	300.00		300.00	300.00	
15 -IN. END SECTION ES-1	4	1	1	EACH	250.00	1,000.00	250.00	250.00	
HEADER CURB & GUTTER CG-				LIN. FT.					
CURB & GUTTER CG-6	1822	1640	2857	LIN. FT.	10.00	18,220.00	16,400.00	28,570.00	
VALLEY GUTTER				EACH					
GRAVEL BASE				S.Y.					
GRAVEL SHOULDER				S.Y.					
SURFACE TREATMENT				S.Y.					
-IN. BIT. CONC.: TYPE B-				S.Y.					
PAVEMENT AND BASE	3,902	3,497	5,282	S.Y.	16.00	62,432.00	55,952.00	84,512.00	
-IN. BASE MATERIAL				S.Y.					
-IN. SUBBASE MATERIAL				C.Y.					
TRAFFIC BARRICADE				EACH					
16" WATER LINE (BONDED AS 12")	946	689	718	LIN. FT.	20.00	18,920.00	13,780.00	14,360.00	
6" WATER LINE			652	LIN. FT.	16.00			10,976.00	
FIRE HYDRANT ASSEMBLIES	2		2	EACH	1500.00	3,000.00		3,000.00	
2" BLOW-OFF W/VAULT, FRAME & COVER	1			EACH	750.00	750.00			
6" GATE VALVE, W/VAULT,FRAME&COVER			2	EACH	500.00			1,000.00	
12" GATE VALVE, W/VAULT,FRAME&COVER	1			EACH	800.00	800.00			
16" GATE VALVE, W/VAULT,FRAME&COVER	2	1	1	EACH	800.00	1,600.00	800.00	800.00	
AIR RELEASE			1	EACH	750.00			750.00	
5/8" METER WITH SERVICE (DOUBLE)	7	6	11	EACH	125.00	875.00	750.00	1,375.00	
5/8" METER WITH SERVICE (SINGLE)	1	1	7	EACH	150.00	150.00	150.00	1,050.00	
8" SANITARY SEWER	1011	683	1060	LIN. FT.	18.00	18,198.00	12,294.00	19,080.00	
4" SANITARY SEWER LATERAL W/ CO	15	13	29	EACH	100.00	1,500.00	1,300.00	2,900.00	
STANDARD MANHOLE W/FRAME & COVER	8	4	10	EACH	1,250.00	10,000.00	5,000.00	12,500.00	
SAMPLING MANHOLE/PORT				EACH					
AS-BUILT PLANS	1	1	1	LUMP SUM	2,500.00	2,500.00	2,500.00	2,500.00	
STORMWATER MANAGEMENT(SEE SHEET 7)	1	1	1	LUMP SUM		21,359.00	20,028.00	37,576.00	
SUB TOTAL						186,724.00	153,928.00	276,223.00	
10% CONTINGENCY						18,672.00	15,393.00	27,622.00	
ESTIMATED TOTAL						220,196.00	169,321.00	303,845.00	
I HEREBY CERTIFY THAT THE FOREGOING ESTIMATE REFLECTS THE CURRENT IMPROVEMENT COSTS OF THIS PROJECT									
SIGNED: _____					DATE: _____				

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. Settling 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.	
INDEX	
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C4	PLAN/PROFILE CONNORS RUN
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C6	EROSION CONTROL PLAN
C7	EROSION CONTROL DETAILS
C8	PROFILES
C9	NOTES
C10	DETAILS
C11	WATERLINE OVERVIEW
05-12-04 REVISED PER COUNTY COMMENTS 03-30-04 REVISED PER COUNTY COMMENTS 11-04-03 REVISED PER COUNTY AND VDOT COMMENTS 04-02-03 REVISED PER COUNTY AND VDOT COMMENTS	

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.	
All water and sanitary sewer facilities are to be installed according to the Roanoke County Water and Sanitary Sewer 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 02-122	
All water and sanitary sewer facilities are to be installed according to the Roanoke County Water and Sanitary Sewer Design and Construction Standards.	
LEGEND	
Property Line	_____
Right-of-way	_____
Centerline	_____
Minimum Building Line	_____
Existing Storm Sewer	=====
Existing Sanitary Sewer	=====
Existing Water Main	=====
Existing Contour	--- --1155--- --
Proposed Contour	--- --1155--- --
Proposed Drainage Divide	-----
Proposed Limits of Clearing	-----
Proposed Storm Sewer	=====
Proposed Sanitary Sewer	=====
Proposed Water Main	=====

<div>DEVELOPMENT PLAN APPROVED FOR CONSTRUCTION BY ROANOKE COUNTY</div> <table><tr><td>Department</td><td>Date</td></tr><tr><td>Development Review</td><td>8/8/04</td></tr><tr><td>Engineering</td><td>8/19/04</td></tr><tr><td>Water &amp; Sewer</td><td>8-19-04</td></tr><tr><td>Planning &amp; Zoning</td><td>8/19/04</td></tr></table> <div>VICINITY MAP</div>		Department	Date	Development Review	8/8/04	Engineering	8/19/04	Water & Sewer	8-19-04	Planning & Zoning	8/19/04
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<div>SURVEY INFORMATION</div> <div>Horizontal and vertical control surveys were performed in (year) 2002 by <u>BALZER AND ASSOCIATES, INC.</u></div> <div>All elevations must be referenced to the National Geodetic Vertical Datum of 1929.</div> <div>Source of topographic mapping is <u>BALZER AND ASSOCIATES, INC.</u> dated <u>JUNE 2002</u></div> <div>Boundary was performed by <u>BALZER AND ASSOCIATES, INC.</u> dated <u>JUNE 2002</u></div> <div>The professional seal and signature below certifies the boundary survey and topographic mapping to be accurate and correct.</div> <div>BENCHMARK: EXISTING SANITARY SEWER MANHOLE IN CARLETON DRIVE (OUR PROJECT TIES INTO IT). TOP=504.87, INV OUT=492.00 SHELF=492.6</div> <div><div><div>COMMONWEALTH OF VIRGINIA REGISTERED LAND DISTURBER SEAL AND SIGNATURE</div><div><div>ROGER I. STURGILL No. 033058 8/11/04 PROFESSIONAL ENGINEER</div></div></div><div><div>COMMONWEALTH OF VIRGINIA PROFESSIONAL ENGINEER SEAL AND SIGNATURE</div><div><div>ROGER I. STURGILL No. 033058 8/11/04 PROFESSIONAL ENGINEER</div></div></div></div>											
COUNTY OF ROANOKE											
NAME OF DEVELOPMENT	HANGING ROCK TERRACE SECTIONS 1, 2 & 3										
MAGISTERIAL DISTRICT(S)	CATAWBA										
OWNER (name, address, telephone)	R. FRALIN DEVELOPMENT CORP. P.O. BOX 8911 ROANOKE, VA 24014 PHONE: 540-381-9700 FAX: 540-81-3871										
DEVELOPER (name, address, telephone)	R. FRALIN DEVELOPMENT CORP. P.O. BOX 8911 ROANOKE, VA 24014 PHONE: 540-381-9700 FAX: 540-381-3871										
ENGINEER, ARCHITECT OR SURVEYOR (name, address, telephone)	BALZER AND ASSOCIATES, INC. 1208 CORPORATE CIRCLE ROANOKE, VA 24018 PHONE: 540-772-9580 FAX 540-772-8050										
TAX MAP NO(S)	35.00										
BLOCK NO(S)	1										
PARCEL NO(S)	27										