

QUANTITY + COST ESTIMATE

ITEM	QUANTITY	UNIT	UNIT PRICE	COST	BONDABLE
CLEARING AND GRUBBING					
EXCAVATION					
EMBANKMENT					
CURB INLET DI-3A					
CURB INLET DI-3B					
CURB INLET DI-3BB					
CURB INLET DI-3C					
CURB INLET DI-4C					
CURB INLET DI-4BB					
CURB INLET DI-4CC					
YARD INLET: DI-1	8	EACH	1000.00	8000.00	
15" CONCRETE PIPE, CLASS III	684	LF	20.00	13680.00	
18" CONCRETE PIPE, CLASS III					
24" CONCRETE PIPE, CLASS III	170	LF	28.00	4760.00	
27" CONCRETE PIPE, CLASS III					
30" CONCRETE PIPE, CLASS III					
36" CONCRETE PIPE, CLASS III					
42" CONCRETE PIPE, CLASS III					
54" CONCRETE PIPE, CLASS III					
15" EW-1PC					
24" EW-1PC					
27" EW-1PC					
30" EW-1PC					
36" EW-1PC					
42" EW-7PC, 20 DEGREE SKEW					
54" EW-2PC					
STORM DRAIN MANHOLE					
BOX CULVERT					
PAVED DITCH					
RIPRAP - CLASS					
SODDED SWALE					
-IN. END SECTION ES-					
DRIVEWAY ENTRANCE. TYPE CG-9D (1986 VER.)					
SIDEWALK. -FT WIDE					
TRAIL. -FT WIDE					
HEADER CURB & GUTTER CG-					
CURB & GUTTER CG-6					
VALLEY GUTTER					
GRAVEL BASE	2300	TONS	15.00	34500.00	
GRAVEL SHOULDER					
ROADWAY PAVEMENT					
CATEGORY I	6500	SQ YD	9.00	58500.00	
8-IN. WATER LINE	385	LF	18.00	6930.00	
6-IN. WATER LINE	1750	LF	15.00	26250.00	
FIRE HYDRANT ASSEMBLIES	3	EACH	1500.00	4500.00	
BLOW OFFS W/VAULT, FRAME & COVER	1	EACH	500.00	500.00	
8-IN. GATE VALVES, W/VAULT, FRAME & COVER					
6-IN. GATE VALVES, W/VAULT, FRAME & COVER	10	EACH	450.00	4500.00	
SERVICE CONNECTIONS	29	EACH	350.00	10150.00	
4-IN. SANITARY FORCE MAIN					
8-IN. SANITARY SEWER	1330	LF	22.00	29260.00	
-IN. SANITARY SEWER					
-IN. SANITARY SEWER					
PACKAGE SEWAGE PUMP STATION					
STANDARD MANHOLE W/ FRAME & COVER	10	EACH	1200.00	12000.00	
SERVICE CONNECTIONS WITH CLEANOUTS	29	EACH	600.00	17400.00	
AS-BUILT PLANS	1	EACH	1000.00	1000.00	
STORMWATER MANAGEMENT					
SUB TOTAL				\$231,930	
10% CONTINGENCY				\$ 23,193	
ESTIMATED TOTAL				\$254,583	

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. 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 contractor's 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, culver, sanitary sewer and storm sewer.

INDEX

- COVER SHEET
- 1) SITE PLAN
- 2) UTILITY EASEMENTS
- 3) GRADING / E AND S PLAN
- 4) E & S NARRATIVE
- 5) SEWERLINE PROFILES
- 6) SEWERLINE PROFILES REVISED: Δ 02-20-03
- 7) STORM DRAIN PROFILES REVISED: Δ 03-28-03
- 8) WATERLINE PROFILES REVISED: Δ 04-24-03
- 9) E & S DETAILS REVISED: Δ 06-10-03

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.

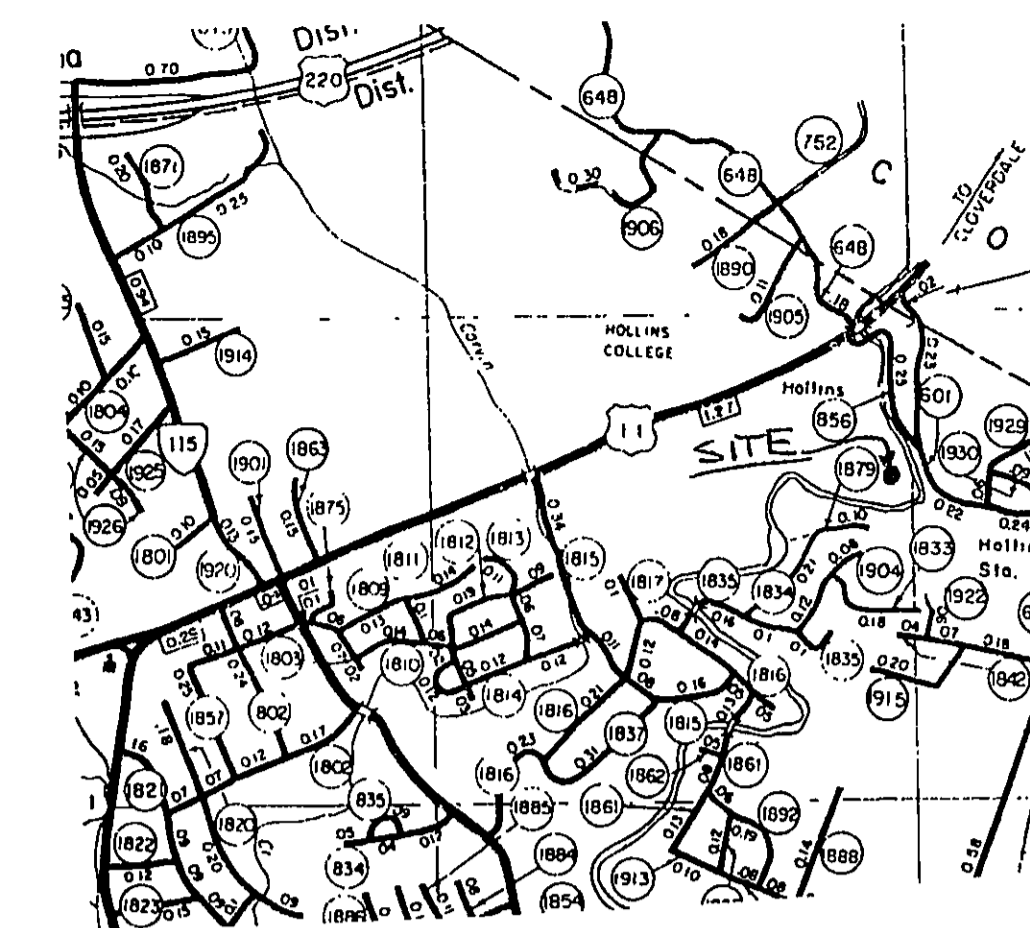
Lines shall be staked prior to construction.

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 03-16

LEGEND

- 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



VICINITY MAP

SURVEY INFORMATION

Horizontal and vertical control surveys were performed in (year) 2002 by PIERSON ENGINEERING AND SURVEYING

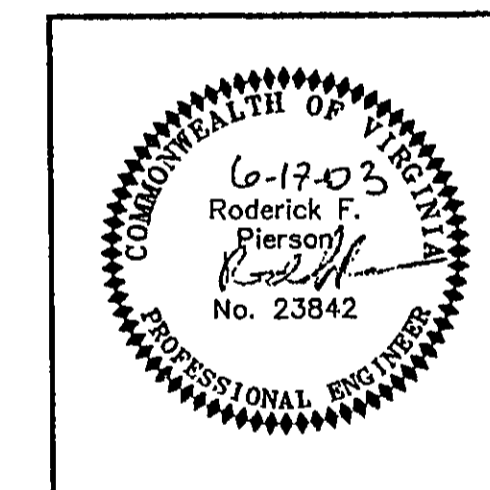
Source of topographic mapping is PIERSON ENGINEERING AND SURVEYING dated 2002

Boundary was performed by PIERSON ENGINEERING AND SURVEYING dated 2002

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

I, _____, IDENTIFY AS THE INDIVIDUAL IN CHARGE OF AND RESPONSIBLE FOR LAND DISTURBING ACTIVITIES ASSOCIATED WITH THIS EROSION AND SEDIMENT CONTROL PLAN. I AGREE TO NOTIFY THE COUNTY OF ROANOKE IN WRITING SHOULD I TRANSFER THIS RESPONSIBILITY TO ANOTHER CERTIFIED INDIVIDUAL BEFORE THE COMPLETION OF THIS PROJECT AND THE RELEASE OF THE EROSION AND SEDIMENT CONTROL BOND.

DEPARTMENT		DATE
DEVELOPMENT		
ENGINEERING	JAB	7/6/03
UTILITY DEPARTMENT		



COUNTY OF ROANOKE

NAME OF DEVELOPMENT MEADOWBROOK TOWNHOUSES-PHASE III

MAGISTERIAL DISTRICT(S) HOLLINS

OWNER (name, address, telephone) PARSELL ZEIGLER 112 KIRK AVE. S.W., ROANOKE, VA 24011

DEVELOPER (name, address, telephone) PARSELL ZEIGLER 112 KIRK AVE. S.W., ROANOKE, VA 24011

ENGINEER, ARCHITECT OR SURVEYOR (name, address, telephone) PIERSON ENGINEERING & SURVEYING 1332 ROANOKE ROAD, P.O. BOX 311, 220 NORTH DALEVILLE, VA 24083 (540)966-3027

TAX MAP NO(S) 28.05-1-13.3 BLOCK NO(S) _____ PARCEL NO(S) _____

I, _____ 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.