

QUANTITY & COST ESTIMATE

| ITEM | QUANTITY | UNIT | UNIT PRICE | COST | BONDABLE |
|--|----------|----------|------------|------|----------|
| CLEARING AND GRUBBING | | ACRES | | | |
| EXCAVATION | | CY | | | |
| EMBANKMENT | | CY | | | |
| CURB INLET DI- | | EACH | | | |
| CURB INLET DI- | | EACH | | | |
| MANHOLE MH- | | EACH | | | |
| MANHOLE MH- | | EACH | | | |
| -IN CONCRETE PIPE, CLASS III | | LIN FT | | | |
| -IN CONCRETE PIPE, CLASS IX | | LIN FT | | | |
| -IN CM CULVERT | | LIN FT | | | |
| -IN CM CULVERT | | LIN FT | | | |
| BOX CULVERT | | LUMP SUM | | | |
| PAVED DITCH | | LIN FT | | | |
| RIPRAP - CLASS | | SF | | | |
| GRAVEL SWALE | | SY | | | |
| -IN CONCRETE ENDWALL EW- | | EA | | | |
| -IN END SECTION ES- | | EA | | | |
| DRIVEWAY, ENTRANCE TYPE | | EACH | | | |
| SIDEWALK, - FT WIDE | | LIN FT | | | |
| TRAIL, - FT WIDE | | LIN FT | | | |
| HEADER CURB & GUTTER CG- | | LIN FT | | | |
| CURB & GUTTER CG- | | LIN FT | | | |
| VALLEY GUTTER | | EA | | | |
| GRAVEL BASE | | SY | | | |
| GRAVEL SHOULDER | | SY | | | |
| SURFACE TREATMENT | | SY | | | |
| -IN BIT CONC. TYPE B- | | SY | | | |
| -IN BIT CONC. TYPE S- | | SY | | | |
| -IN BASE MATERIAL | | CY | | | |
| -IN SUBBASE MATERIAL | | CY | | | |
| STREET SIGNS | | EA | | | |
| TRAFFIC BARRICADE | | EA | | | |
| PIPES AS SHOWN ON PLAT | | EA | | | |
| MONUMENTS AS SHOWN ON PLAT | | EA | | | |
| -IN WATER LINE | | LIN FT | | | |
| -IN WATER LINE | | LIN FT | | | |
| -IN WATER LINE | | LIN FT | | | |
| FIRE HYDRANT ASSEMBLIES | | EA | | | |
| BLOW OFFS W/VAULT, FRAME & COVER | | EA | | | |
| -IN GATE VALVES W/VAULT, FRAME & COVER | | EA | | | |
| -IN GATE VALVES W/VAULT, FRAME & COVER | | EA | | | |
| -IN GATE VALVES W/VAULT, FRAME & COVER | | EA | | | |
| SERVICE CONNECTIONS | | EA | | | |
| -IN SAN SEWER | | LIN FT | | | |
| -IN SAN SEWER | | LIN FT | | | |
| -IN SAN SEWER | | LIN FT | | | |
| STD. MANHOLE W/FRAME & COVER | | EA | | | |
| SERVICE CONNECTIONS W/ CLEANOUTS | | EA | | | |
| AS-BUILT PLANS | | LUMP SUM | | | |
| STORM WATER MANAGEMENT | | LUMP SUM | | | |
| ESTIMATED TOTAL | | | | | |

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 Highways and 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:

- 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 preconstruction conference should be scheduled with the Roanoke County Engineering Division, to be held at least one 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 in erosion and siltation control policies.

A permit must be obtained from the VDH & T Residency Office, Roanoke County, prior to construction in the highway Right-of-Way.

Plan approval does not guarantee issuance of any permits by VDH & 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 min. CBR of 10. CBR tests are to be performed by the engineer and submitted to the VDH & 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% shall be paved with cement concrete to the limits 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 the VDH & T.

All springs shall be capped and piped to the nearest storm sewer or natural water course. The pipe shall be 6" min. dia. and conform to VDH & 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, but not more than ten working in advance. Area public utilities may be notified thru Miss Utility (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 VDH & T inspectors.

Field corrections shall be approved by the Roanoke County Engineering Division prior to such construction.

100 year floodway and flood plain shall be shown where applicable.

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

SURVEY INFORMATION

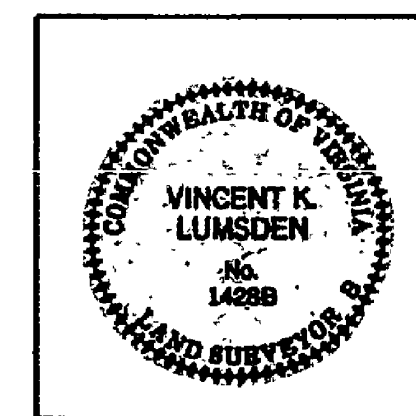
Horizontal and vertical control surveys were performed in year _____ by _____.

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

Source of topographic mapping is _____ dated _____.

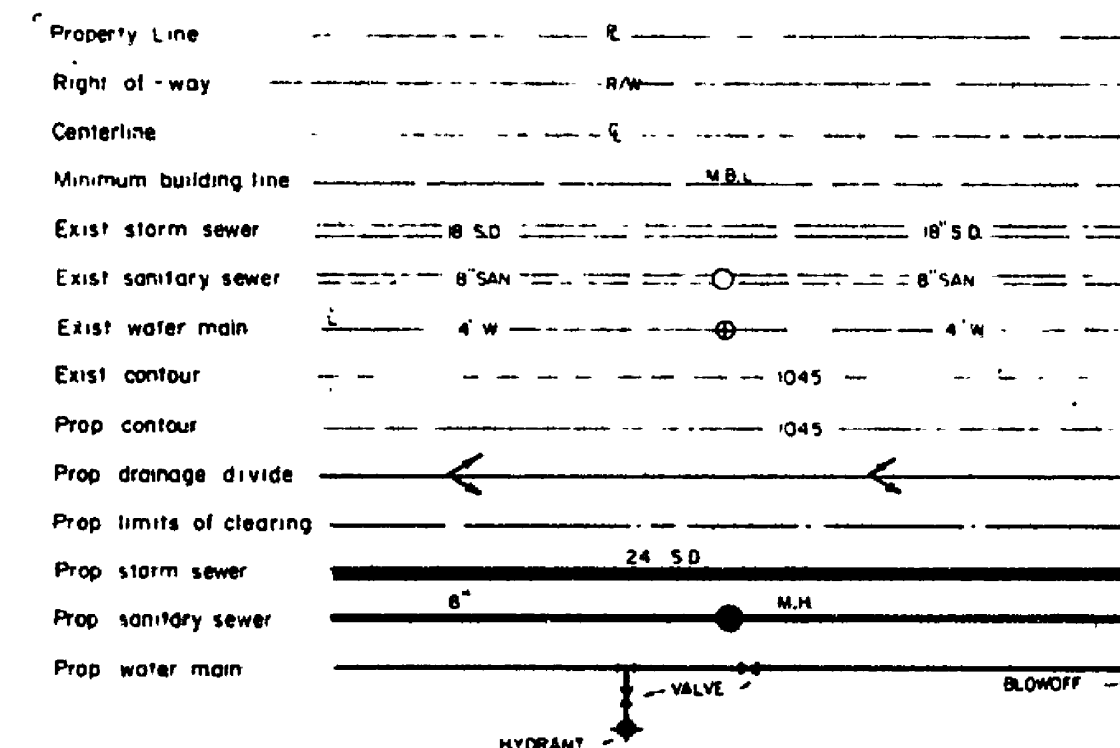
Boundary survey was performed by _____ dated _____.

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



PROFESSIONAL SEAL AND SIGNATURE

LEGEND



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 the exact location. The contractor shall comply with 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 VDH & T standards.

Lines shall be staked prior to construction.

Water cost construction as per water construction standards.

Water pipe shall be minimum Class 52 ductile iron in accordance with AWWA C151 or DR-14 PVC in accordance to AWWA C-900.

Application for utilities to serve development reference number _____.

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 on a minimum grade of 1/4 inch to 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 highway right of ways shall be compacted according to VDH & T standards.

Lines shall be staked prior to construction.



COUNTY OF ROANOKE

NAME OF DEVELOPMENT: **WATER SYSTEM IMPROVEMENTS**

MAGISTERIAL DISTRICT(S): **VINTON**

OWNER (name, address, telephone): **READ MOUNTAIN WATER COMPANY
P.O. BOX 20669
ROANOKE, VIRGINIA 24018**

(703) 774-4415

DEVELOPER (name, address, telephone): **SAME**

ENGINEER, ARCHITECT OR SURVEYOR (name, address, phone): **LUMSDEN ASSOCIATES, P.C.
P.O. BOX 20669
ROANOKE, VIRGINIA 24018**

(703) 774-4411

TAX MAP NO(S): **40.01**

BLOCK NO(S): **1**

PARCEL NO(S): **1**

Sheet **2** of **9**

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