

QUANTITY & COST ESTIMATE

ITEM	QUANTITY	UNIT	UNIT PRICE	COST	LTR. OF CREDIT
CLEARING AND GRUBBING	2.0	ACRES	1,000.00	\$ 2,000.00	
EXCAVATION: CUT	5,000	C.Y.	1.00	\$ 5,000.00	
: FILL	5,000	C.Y.	1.00	\$ 5,000.00	
CURB INLET DI -		EACH			
CURB INLET DI -		EACH			
MANHOLE MH -		EACH			
MANHOLE MH -		EACH			
48 IN CONCRETE PIPE, CLASS III	72	LIN. FT.	55.00	\$ 3,960.00	
IN CONCRETE PIPE, CLASS IV		LIN. FT.			
18 IN C.M. CULVERT	278	LIN. FT.	18.00	\$ 5,004.00	
IN C.M. CULVERT		LIN. FT.			
BOX CULVERT		LUMP SUM			
PAVED DITCH		LIN. FT.			
LINED DITCH	3,250	L.F.	0.50	\$ 1,625.00	
RIPRAP - CLASS I	1,000	S.F.	3.00	\$ 3,000.00	
SODDED SWALE		S.Y.			
48 IN CONCRETE ENDWALL - EW-2	2	EA.	\$ 2,000.00	\$ 4,000.00	
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		LIN. FT.			
VALLEY GUTTER		EA.			
GRAVEL BASE - 6" DEPTH	1,305	C.Y.	3.25	\$ 4,241.00	
GRAVEL BASE - 8" DEPTH	295	C.Y.	3.25	\$ 958.00	
GRAVEL SHOULDER		S.Y.			
SURFACE TREATMENT - TYPE D	7,500	S.Y.	6.00	\$ 42,960.00	
IN BIT CONCRETE: TYPE B -		S.Y.			
IN BIT CONCRETE: TYPE S -		S.Y.			
IN BASE MATERIAL		C.Y.			
IN SUBBASE MATERIAL		C.Y.			
STREET SIGNS		EA.			
TRAFFIC BARRICADE		EA.			
PIPES AS SHOWN ON PLAT		EA.			
MONUMENTS AS SHOWN ON PLAT		EA.			
6 IN WATER LINE	2,050	LIN. FT.	15.00	\$ 30,750.00	
4 IN WATER LINE	1,150	LIN. FT.	14.00	\$ 16,100.00	
IN WATER LINE		LIN. FT.			
FIRE HYDRANT ASSEMBLIES	3	EA.	1,200.00	\$ 3,600.00	
BLOW OFFS W/ VAULT, FRAME, & COVER		EA.			
6 IN GATE VALVES W/ VAULT, FR. & COVER	4	EA.	650.00	\$ 2,600.00	
4 IN GATE VALVES W/ VAULT, FR. & COVER	2	EA.	600.00	\$ 1,200.00	
IN GATE VALVES W/ VAULT, FR. & COVER		EA.			
SERVICE CONNECTIONS - DOUBLE	13	EA.	500.00	\$ 6,500.00	
2" BLOW-OFF	3	EA.	500.00	\$ 1,500.00	
		TON			
SOD		S.Y.			
SEEDING		1000 S.F.			
TEMP. SEDIMENT BASIN		JOB			
AS-BUILT PLANS		LUMP SUM			
STORM WATER MANAGEMENT		LUMP SUM			
ESTIMATED TOTAL				\$ 139,998.00	
I HEREBY CERTIFY THAT THE FOREGOING ESTIMATE REFLECTS ALL CURRENT IMPROVEMENT COSTS OF THIS PROJECT.					
SIGNED: <i>Kub Lumsden</i>	DATE: 29 JULY 1993				

GENERAL NOTES

- ALL CONSTRUCTION METHODS AND MATERIALS SHALL CONFORM TO THE MOST CURRENT CONSTRUCTION STANDARDS AND SPECIFICATIONS OF FRANKLIN COUNTY AND / OR THE VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT), WHICHEVER IS MORE STRINGENT. STREETS MUST ALSO CONFORM TO THE MOST CURRENT VDOT SUBDIVISION STREET SPECIFICATIONS / STANDARDS.
- ALL CONSTRUCTION METHODS AND MATERIALS MUST BE IN ACCORDANCE WITH JANUARY 1991 VDOT ROAD AND BRIDGE SPECIFICATIONS.
- MEASURES TO CONTROL EROSION AND SILTATION MUST BE PROVIDED FOR PRIOR APPROVAL. PLAN APPROVAL IN NO WAY RELIEVES THE DEVELOPER OR CONTRACTOR OF THE RESPONSIBILITIES CONTAINED IN THE EROSION AND SILTATION CONTROL POLICIES.
- AN ENTRANCE PERMIT MUST BE OBTAINED FROM THE VDOT RESIDENCY OFFICE, FRANKLIN COUNTY, PRIOR TO CONSTRUCTION IN THE HIGHWAY RIGHT-OF-WAY.
- PLAN APPROVAL DOES NOT GUARANTEE ASSURANCE OF ANY PERMITS BY THE VDOT.
- 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 PLAT.
- ALL UNSUITABLE MATERIALS SHALL BE REMOVED FROM THE CONSTRUCTION LIMITS OF THE ROADWAY BEFORE PLACING EMBANKMENT.
- ALL SPRINGS SHALL BE CAPPED AND PIPED TO THE NEAREST NATURAL WATERCOURSE. THE PIPE SHALL BE 6" (SIX INCH) MINIMUM DIAMETER AND CONFORM TO VDOT STANDARD SB-1, UNLESS OTHERWISE STATED IN A REVIEW BY THE VDOT.
- CONSTRUCTION DEBRIS SHALL BE CONTAINERIZED IN ACCORDANCE WITH VIRGINIA LITTER CONTROL ACT. NO LESS THAN ONE LITTER RECEPTACLE SHALL BE PROVIDED ON SITE.
- A TEMPORARY GRAVEL CONSTRUCTION ENTRANCE WILL BE REQUIRED AT INTERSECTION OF SUBDIVISION STREETS AND PUBLIC STREETS AND HIGHWAYS.
- 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 ENSURE THAT 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.
- CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES SHOWN ON PLANS IN AREAS OF CONSTRUCTION PRIOR TO STARTING WORK. CONTACT ENGINEER IMMEDIATELY IF LOCATION OR ELEVATION IS DIFFERENT FROM THAT SHOWN ON PLAN. IF THERE APPEARS TO BE A CONFLICT, AND UPON DISCOVERY OF ANY UTILITY NOT SHOWN ON THIS PLAN, CALL "MISS UTILITY" OF CENTRAL VIRGINIA AT 1-800-552-7001.
- UTILITY LOCATION SHALL BE SHOWN ON PLAT AND LOCATION APPROVED BY VDOT PRIOR TO PLACEMENT.
- ALL UTILITIES TO BE IN PLACE PRIOR TO LAYING BASE MATERIAL AND SHALL BE ENCASED. THE DEVELOPER IS ENCOURAGED TO UTILIZE THE P.U.E. (PUBLIC UTILITY EASEMENT) FOR THE PLACEMENT OF PARALLEL POWER, TELEPHONE, WATER AND SEWER FACILITIES.
- ANY EASEMENTS GRANTED TO A UTILITY COMPANY, PUBLIC OR PRIVATE, FOR PLACEMENT OF UTILITIES MUST BE RELEASED PRIOR TO ACCEPTANCE IN ORDER TO MEET PUBLIC SERVICE REQUIREMENTS. ALL STREETS MUST SERVE A MINIMUM OF THREE (3) DWELLINGS PRIOR TO ACCEPTANCE.
- THE DEVELOPER SHALL PROVIDE THE COUNTY & VDOT WITH A LETTER FROM A LICENSED LAND SURVEYOR CONFIRMING THAT THE STREETS, RIGHTS-OF-WAY, AND EASEMENTS SUBSTANTIALLY CONFORM TO THE CONSTRUCTION PLANS & SUBDIVISION PLAT. SUFFICIENT DEVIATION OF ACTUAL STREET LOCATION FROM PROPOSED CONSTRUCTION PLANS SHALL REQUIRE SUBMITTAL OF AS-BUILT PLANS FOR REVIEW & APPROVAL PRIOR TO FINAL ACCEPTANCE FOR ADDITION TO THE VDOT ROAD AND STREET SYSTEM.
- ALL WORK SHALL BE SUBJECT TO INSPECTION BY FRANKLIN COUNTY AND VDOT INSPECTORS.
- FIELD CORRECTIONS OR DEVIATIONS FROM PLANS APPROVED "FOR CONSTRUCTION ONLY" SHALL BE APPROVED BY THE VDOT PRIOR TO SUCH CONSTRUCTION.
- 100 YEAR FLOODWAY AND FLOOD PLAIN SHALL BE SHOWN WHERE APPLICABLE.
- MINIMUM LOT FRONTAGES SHALL BE IN ACCORDANCE WITH CURRENT FRANKLIN COUNTY SUBDIVISION & ZONING ORDINANCES.
- ALL ROADSIDE DITCHES SHOWN AS PAVED ON PLANS ARE TO BE PAVED IN ACCORDANCE WITH STANDARD TYPICAL SECTION AS SHOWN ON PLANS UNLESS OTHERWISE DIRECTED BY THE RESIDENT ENGINEER IN WRITING. ANY ADDITIONAL PAVING OF THE DITCHES, OTHER THAN THOSE SHOWN ON THE ROAD PLANS, WILL BE DETERMINED PRIOR TO ACCEPTANCE OF THE ROADS INTO THE VDOT SECONDARY ROAD SYSTEM.
- ALL DRAINAGE FACILITIES OR OTHER ROADWAY FACILITIES TO BE MAINTAINED BY THE DEPARTMENT MUST BE CONTAINED WITHIN THE STREET RIGHT-OF-WAY OR WITHIN THE VDOT APPROVED EASEMENT.
- ALL DRAINAGE OUTFALL EASEMENTS WILL BE TWENTY (20) FEET WIDE.
- FIELD REVIEW WILL BE MADE DURING CONSTRUCTION TO DETERMINE THE NEED AND LIMITS OF ADDITIONAL DRAINAGE EASEMENTS. ALL DRAINAGE EASEMENTS MUST BE CUT AND MADE TO FUNCTION TO A NATURAL WATERCOURSE. ANY EROSION PROBLEMS ENCOUNTERED IN AN EASEMENT MUST BE CORRECTED BY ANY MEANS NECESSARY PRIOR TO SUBDIVISION ACCEPTANCE. THE FIELD REVIEW WILL ALSO DETERMINE THE EXTENT OF OUTFALL DITCHES AND ASSOCIATED EASEMENTS, THE NEED OF ADDITIONAL OUTFALL DITCHES AND EASEMENTS, AND THE DIMENSIONS OF SAME.
- CLEARING AND GRUBBING SHALL BE COMPLETED WITHIN THE RIGHTS-OF-WAY AS INDICATED ON THE LAYOUT PLAN.
- ALL VEGETATION AND OVERBURDEN TO BE REMOVED FROM SHOULDER TO SHOULDER PRIOR TO THE ESTABLISHMENT OF SUBGRADE.
- EXCESS EXCAVATION TO BE DISPOSED OF AS DIRECTED BY THE ENGINEER.
- ACTUAL COPIES OF THE CBR REPORTS ARE TO BE SUBMITTED PRIOR TO THE ACCEPTANCE OF THE ROADS INTO THE SECONDARY SYSTEM. IF THE CBR VALUES ARE LESS THAN 10, THE DEVELOPER WILL BE REQUIRED TO SUBMIT FOR OUR APPROVAL HIS PROPOSED METHOD OF CORRECTION. ONE CBR TEST PER STREET WILL BE SUBMITTED. OTHERWISE, A CBR TEST WILL BE REQUIRED WHEN THE TYPE OF SUBGRADE MATERIAL CHANGES. NO CONSOLIDATED CBR VALUES WILL BE ACCEPTED. ALL CBR REPORTS MUST INDICATE STREET AND STATION NUMBER. CBR TESTS ARE TO BE TAKEN AT SUBGRADE LEVEL BY THE ENGINEERING COMPANY PERFORMING THESE TESTS. THE DESIGN ENGINEER SHALL INCORPORATE THE ACTUAL CBR VALUES IN THE CONSTRUCTION COST ESTIMATE.
- THE SUBGRADE MUST BE APPROVED BY VDOT PRIOR TO PLACEMENT OF THE BASE.
- BASE MUST BE APPROVED BY VDOT PRIOR TO THE PLACEMENT OF THE SURFACE.
- AN INSPECTOR WILL NOT BE FURNISHED EXCEPT FOR PERIODIC PROGRESS INSPECTION. THE ABOVE MENTIONED FIELD REVIEWS AND CHECKING FOR REQUIRED STONE DEPTHS. THE DEVELOPER WILL BE REQUIRED TO POST A SURETY TO GUARANTEE THE ROAD FREE OF DEFECTS FOR ONE (1) YEAR AFTER ACCEPTANCE BY THE DEPARTMENT OF TRANSPORTATION.
- THE STREETS MUST BE PROPERLY MAINTAINED UNTIL ACCEPTANCE. AT SUCH TIME AS ALL REQUIREMENTS HAVE BEEN MET FOR ACCEPTANCE, ANOTHER INSPECTION WILL BE MADE TO DETERMINE THAT THE STREET HAS BEEN PROPERLY MAINTAINED.
- THE CONSTRUCTION OF THE ROADWAY TO STATE STANDARDS DOES NOT MEAN THE ROADWAY WILL EVER BE ACCEPTED INTO THE VDOT SYSTEM. THE SERVICE REQUIREMENT MUST ALSO BE MET.
- A MINIMUM PAVEMENT RADIUS OF TWENTY-FIVE (25) FEET IS REQUIRED AT ALL STREET INTERSECTIONS.
- ALL ENTRANCE PIPES FOR PRIVATE ENTRANCES WILL BE A MINIMUM DIMENSIONS 24" X 15" UNLESS A REVIEW BY DEPARTMENTAL REPRESENTATIVES DETERMINES OTHERWISE. CONCRETE OR CORRUGATED METAL PIPE IS RECOMMENDED.
- RADIUS FOR CUL-DE-SAC PAVEMENT AND RIGHT-OF-WAY MUST MEET CURRENT VDOT STANDARDS OR FRANKLIN COUNTY SUBDIVISION AND ZONING ORDINANCES, WHICHEVER IS GREATER.
- ON SECTIONAL DEVELOPMENTS, THE DEPARTMENT REQUIRES SUBMITTAL OF AN OVERALL DEVELOPMENT SCHEME TO DETERMINE TRAFFIC GENERATION FIGURES AND FLOW.
- UNLESS DISCUSSED WITH AND APPROVED BY VDOT'S ENGINEERS, ALL CROSSPIPE WILL HAVE A MINIMUM DIAMETER OF EIGHTEEN (18) INCHES.
- INDIVIDUAL SUBDIVISION PLAN SUBMITTED MAY REQUIRE CHANGES/ADDITIONS TO THIS LIST, AS DETERMINED BY VDOT REVIEW. VDOT APPROVAL OF THESE PLANS EXPIRES THREE (3) YEARS FROM DATE OF SIGNATURES.
- ALL STREET NAMES ARE TO BE REVIEWED AND APPROVED BY 9-1-1 SERVICES.
- LIMITS OF STREET ROADWAY CATEGORY WILL BE NOTED ON THE SUBDIVISION PLANS FOR EACH STREET. LIMITS WILL BE FROM STREET INTERSECTION TO STREET INTERSECTION.
- STOPPING DISTANCES AT GRADE CHANGES AND CURVES AND SITE DISTANCES AT STREET INTERSECTIONS WILL BE ILLUSTRATED ON THE CONSTRUCTION PLANS AND MUST CONFORM TO VDOT SPECIFICATIONS.
- PRIOR TO ACCEPTANCE FOR THE VDOT ROAD AND STREET SYSTEM, THE DEVELOPER SHALL PROVIDE VDOT WITH FIVE (5) SETS OF CONSTRUCTION PLANS ILLUSTRATING THE LOCATION OF ALL UTILITIES WITHIN THE STREET RIGHTS-OF-WAY (PRIVATE OR PUBLIC TO INCLUDE SEWER LINES RUNNING FROM A PRIVATE RESIDENCE TO A DRAINAGE AREA LOCATED ON A SEPARATE LOT WHERE CROSSING OF A STREET IS REQUIRED) WITH NAMES & ADDRESSES OF THE RESPONSIBLE PUBLIC UTILITY COMPANIES.
- PRIOR TO THE TIME THE STREETS ARE CONSIDERED FOR ADDITION TO THE VDOT ROAD AND STREET SYSTEM, THE DEVELOPER SHALL PROVIDE, BY LETTER, TO VDOT THE DEED BOOK, PAGE, AND DATE OF RECORDATION OF THE SUBDIVISION IN FRANKLIN COUNTY CLERK OF THE CIRCUIT COURT'S OFFICE OF THE STREET RIGHTS-OF-WAY.
- PROPOSED DENSITY (P.D.): SINGLE 27 MULTI FAMILY TRIPS PER DAY TRAFFIC VOLUME PER DAY = 270

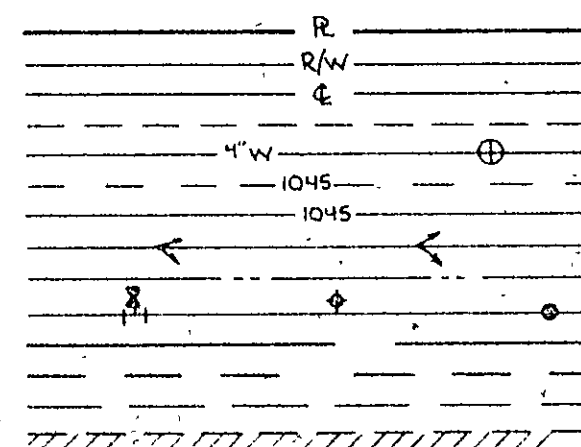
SURVEY INFORMATION

HORIZONTAL AND VERTICAL SURVEYS WERE PERFORMED IN 1993 BY LUMSDEN ASSOCIATES
 ALL ELEVATIONS MUST BE REFERENCED TO THE NATIONAL GEODETIC VERTICAL DATUM OF 1929
 SOURCE OF TOPOGRAPHIC MAPPING IS FIELD SURVEY DATE DEC. 1986 & APRIL 1993
 BOUNDARY SURVEY WAS PERFORMED BY LUMSDEN ASSOCIATES, P.C. DATE DEC. 1986 & APRIL 1993

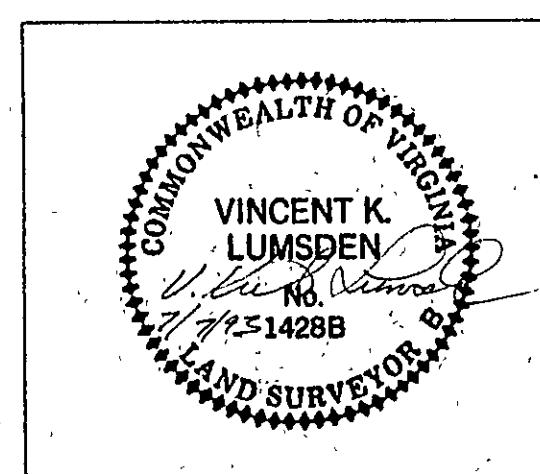
THE PROFESSIONAL SEAL AND THE SIGNATURE BELOW CERTIFIES THE BOUNDARY SURVEY AND TOPOGRAPHIC MAPPING TO BE ACCURATE AND CORRECT.

LEGEND

PROPERTY LINE
 RIGHT-OF-WAY
 CENTERLINE
 MINIMUM BUILDING LINE
 EXISTING WATER MAIN
 EXISTING CONTOUR
 PROPOSED CONTOUR
 PROPOSED DRAINAGE DIVIDE
 PROPOSED LIMITS OF CLEARING
 PROPOSED WATER MAIN
 EXISTING SEWER
 PROPOSED SEWER
 DEDICATED EASEMENT
 CROSSING EASEMENT



PROFESSIONAL SEAL & SIGNATURE



COUNTY OF FRANKLIN

NAME OF DEVELOPMENT SECTION No. 7
"THE WATER'S EDGE"

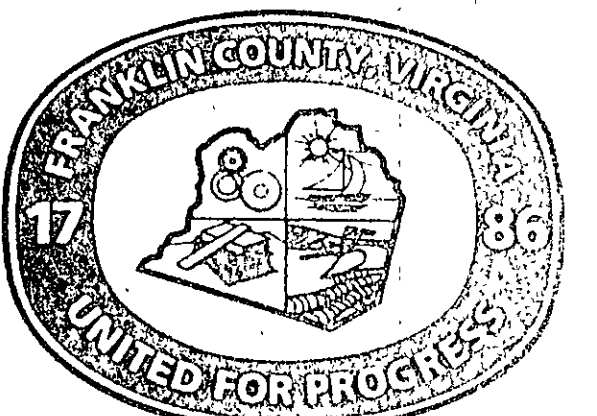
MAGISTERIAL DISTRICT(S) UNION HALL

OWNER WILLARD CONSTRUCTION OF ROANOKE VALLEY, INC.
 NAME P.O. BOX 8424 (703) 989-6280
 ADDRESS ROANOKE, VIRGINIA 24014
 TELEPHONE

DEVELOPER SAME AS ABOVE
 NAME
 ADDRESS
 TELEPHONE

ENGINEER, ARCHITECT, OR SURVEYOR LUMSDEN ASSOCIATES, P.C. (703) 774-4411
 NAME
 ADDRESS P.O. BOX 20669
 TELEPHONE ROANOKE, VIRGINIA 24018

TAX MAP NO(S) 51-97 & 51-52
 ZONING CLASSIFICATION 51-97 (APD) & 51-52 (A-1)



#43-70