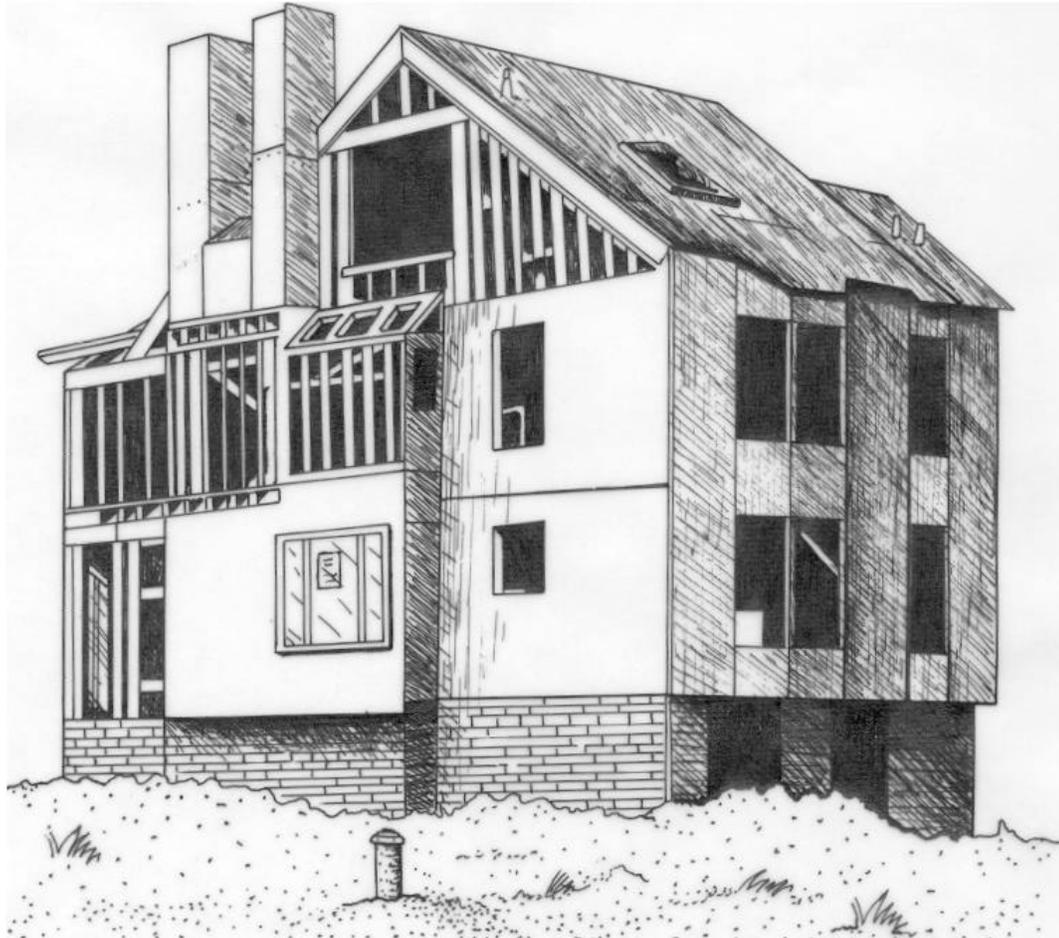


**Baltimore County Department of Environmental Protection
and Resource Management**



BUILDING WITH
WELL AND SEPTIC

INTRODUCTION

This booklet is intended for use by people planning to develop an existing residential lot to be served by private water well and sewage disposal systems. It is not intended for those planning to subdivide property or to develop commercial property.

For information regarding subdivision or commercial developments, contact the Development Coordination office, Resource Management and Engineering Services at 410-887-5859.

Questions regarding information contained in this booklet should be directed to Ground Water Management 410-887-2762.

PROCEDURES FOR DEVELOPING A HOUSE LOT TO BE SERVED BY PRIVATE WATER & SEWERAGE

New homes constructed outside the service area of public water and sewerage in Baltimore County requires considerable site evaluation before a building permit can be approved. Careful planning prior to construction is in the best interests of the potential homeowner and the public at large. The proper placement and construction of your well and septic system is extremely important in protecting water quality and human health.

The 10 steps outlined in this booklet will assist you in understanding procedures and the information that will be required in the building process.

Step 1 - Prepare a site plan.

Step 2 - File for a percolation test.

Step 3 - Schedule the percolation test.

Step 4 - Obtain a well permit.

Step 5 - Arrange for well site approval.

Step 6 - Drill the well.

Step 7 - File for a building permit.

Step 8 - Build the house.

Step 9 - Arrange for water quality testing.

Step 10 - Obtain the Certificate of Potability.

Step 1: Prepare a site plan

The first step in the building process is preparation of a scaled site plan and vicinity map. Consider the desired placement of your house on the property and then contact the County Zoning Office (410-887-3391) for guidance and setback requirements.

The proposed house, well drilling area, and septic reserve area (SRA) must be depicted on the plan using the siting restrictions. The siting restrictions are required by state and local codes to protect the well and ground water from contamination and to ensure a properly functioning septic system.

The plan must include topographic lines and be drawn to a scale of 1" = 100' or larger. Features such as existing wells, septic systems, streams, and structures, which are within 200 feet of a property line must be shown. The zoning designation for the property must be noted on the plan. Mapped soil types as designated in the Baltimore County Soil Survey Manual may expedite review and approval. An example of an acceptable site plan is presented.

Well Locations Must Be:

- At least 10 feet from property lines.
- At least 15 feet from roads or dedicated easements.
- At least 30 feet from a building foundation.
- At least 100 feet from neighboring SRA.
- At least 100 feet from neighboring wells.
- At an elevation higher or equivalent to the highest elevation of the septic system.

SRA's Must Be:

- At an elevation lower or equivalent to the well.
- At least 20 feet from the proposed house.
- At least 100 feet from any well.
- At least 10,000 square feet in areas for property subdivided after March, 1972. Property subdivided prior to March, 1972, must have sufficient area for one septic system installation and one complete repair (generally, 5,000 square feet area is needed).
- At least 10 feet from property lines or dedicated easements.
- At least 25 feet from steep slopes (i.e., slopes 25% or greater).
- At least 100 feet from any stream or body of water.
- Outside of forest buffer and forest conservation easements or habitat protection area in the Chesapeake Bay Critical Area.

Sample Plot Plan

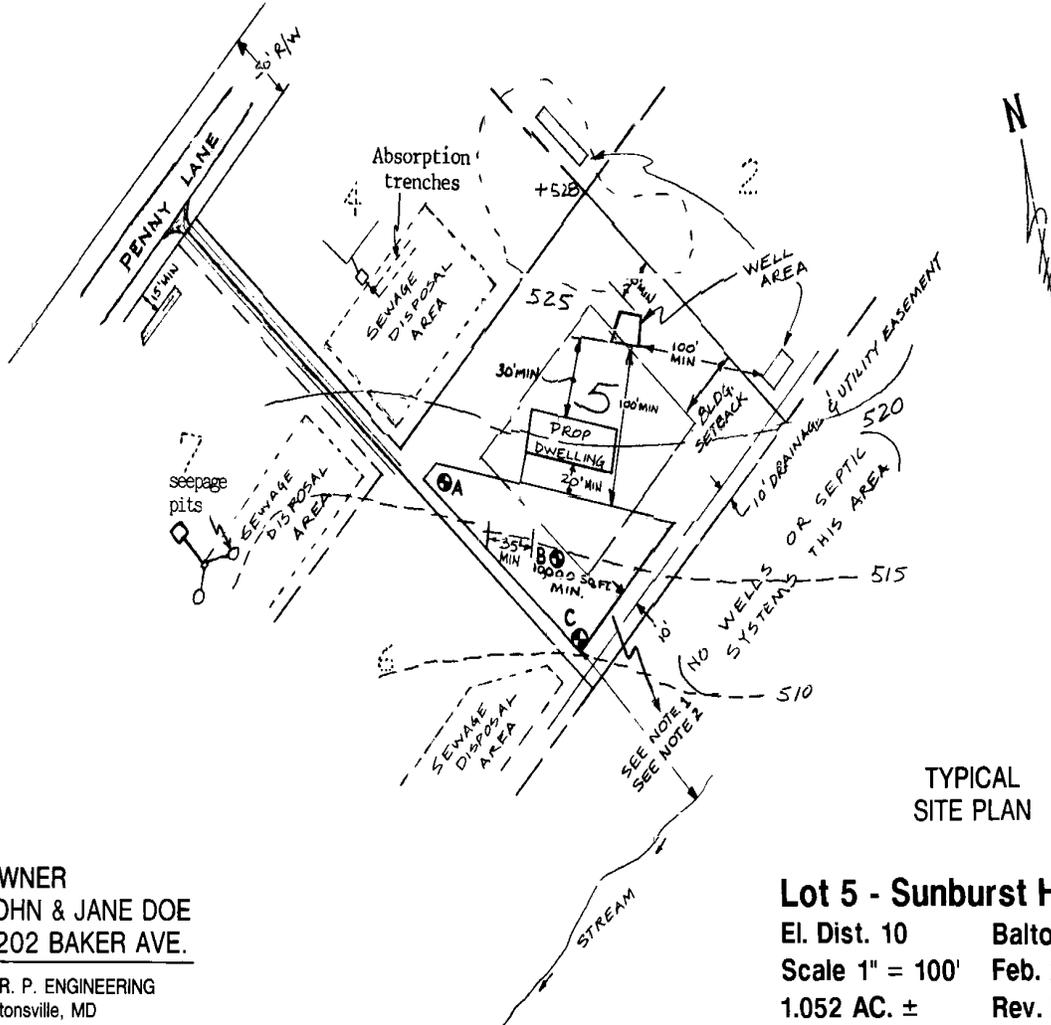
(not to scale)

NOTES:

- 1) MIN. 100' TO STREAMS OR OTHER BODIES OF WATER.
- 2) MIN. 25' DISTANCE FROM GRADES OF 25% SLOPE OR MORE.

LEGEND

● A, B and C Percolation Test Locations



OWNER
JOHN & JANE DOE
7202 BAKER AVE.

J. R. P. ENGINEERING
 Catonsville, MD

Lot 5 - Sunburst Hills

El. Dist. 10 Balto. Co.
 Scale 1" = 100' Feb. 28, 1985
 1.052 AC. ± Rev. Feb. 5, 1990

Step 2: File for a Percolation Test

County certified soil percolation tests, or “perc” tests, are required to determine the suitability of a sewage disposal system on your property. To file for a perc test permit, an application must be made and four site plans submitted, at the Baltimore County Department of Permits and Development Management (PADM: 410-887-3900). Currently, a \$40.00 fee per lot is required with this application.

To process your permit application, a review must be conducted by:

1. the Planning Office of determine zoning requirements or restrictions;
2. the Department of Public Works to determine the Master Water and Sewer Plan designation, and individual street address of your property, and
3. the Department of Environmental Protection and Resource Management (DEPRM).

At DEPRM, the Ground Water Management (GWM) office will conduct a preliminary review of the drawings you have prepared. If details depicted on the preliminary plans are found to be in conformance with the siting criteria, the permit application will be accepted.

The perc application and plans will subsequently be reviewed by the Environmental Impact Review (EIR) office of DEPRM for compliance with forest conservation, forest buffer and wetland regulations. If the property is zoned RC-2 or RC-4 the application will also be reviewed by the Agricultural Land Preservation office within DEPRM.

Depending on the property, you may be contacted for additional information or a request to visit the site before approving the perc test locations.

Upon completion of DEPRM review, you will be sent a letter indicating the status of your perc application. If approval is granted, you may proceed with scheduling the perc tests.

Step 3: Scheduling the Perc Test

An excavation contractor is usually hired by the property owner to dig the soil evaluation pits. The contractor should contact GWM directly to make an appointment with one of the Sanitarians.

Typically, the pits are dug with a backhoe to a depth of approximately 16 feet. Soil characteristics, ground water levels (if encountered), and depth to bedrock (if encountered) are noted. A water test to assess the soil permeability will be performed by the Sanitarian at a depth equivalent to where drain lines will be installed (typically 4 to 6 feet).

For a single lot, standard perc tests can be completed in about an hour. Sand mound testing (for soils of slow permeability only) may take up to 5 hours to complete.

A letter indicating results of the perc tests and whether the lot is approved or disapproved for the construction of an on-site sewage disposal system will be sent to you by GWM.

Occasionally, prior to approval, modifications must be made to the proposed plan. The applicant will be notified in writing regarding the revisions necessary. These changes are the responsibility of the applicant and should be completed as soon as possible, so that site development may progress.



Soil Evaluation Test Pit

Step 4: Obtain a Well Permit

Upon completion and approval of the perc tests and SRA, arrangements should be made to drill a well for a domestic water supply. You must hire a well driller who is licensed in the State of Maryland. The well driller should visit the site and be provided a copy of the most recent site plan to properly bid on the job.

The well driller is responsible for obtaining the well permit, as well as submitting to DEPRM a well completion report, and yield test results after the well is drilled.

Step 5: Arrange for Well Site Approval

Prior to drilling, the applicant (or driller) must call GWM to approve the proposed well location area. You are responsible for accurately locating the property corners, house corners, and well area according to the approved perc test plot plan. It is recommended that a professional surveyor be hired to stake the pertinent features on your property.

A Sanitarian from GWM will arrange for a site visit, and sign the well stake if it is in conformance with the plot plan.

Step 6: Drill the Well

The driller may only drill within the approved well area. If an unsuccessful well is drilled, the driller may move to another location within the approved well area without an additional inspection by GWM. If locations are proposed outside of the staked area, revised plans must be submitted to GWM for review and approval.



Typical Well Rig

After drilling the well, the driller is required to perform a yield test to determine whether there is a sufficient quantity of water in the well.

The testing procedure takes from three to six hours, depending on the well yield. The well driller must record the water level and pumping rate every 15 minutes until the test is completed.

As stipulated in the MD State Well Construction Regulations (C.O.M.A.R. 26.04.04), a minimum yield of one gallon per minute for six hours is required. A building permit will not be issued for a property unless it has an individual water supply that meets the minimum yield requirements.

Upon verifying adequate yield, the well driller completes the well by sealing the casing into the bedrock with a procedure known as grouting. The grout prevents surface water from contaminating the ground water.

A cap is placed on the well and the well tag containing the State identification number is attached. It is recommended that the well cap be securely fastened to the casing to prevent vandalism.



Typical Well Casing with I.D. Tag

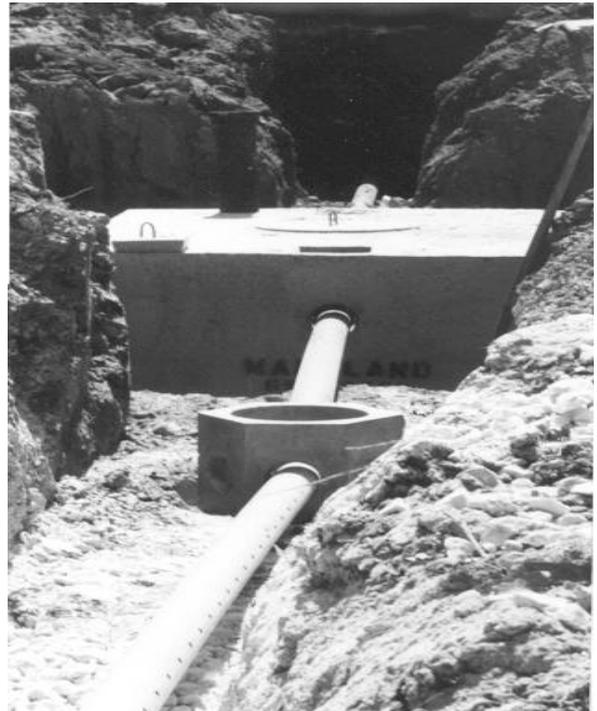
Step 7: File for a Building Permit

Once the SRA has been established and the well has been drilled, it is time to apply for a Building Permit. An application must be filed at PADM with a site plan that will be reviewed again for compliance with all siting requirements. If it has been in excess of five years since the soil percolation tests have been performed, additional tests may be required. According to Article 35, Baltimore County Code, if a water yield test is over three years old, a new test must be performed.

Eleven copies of the site plan must be submitted with the Building Permit application. Upon review and approval by GWM, you will be sent a letter detailing the septic system design. PADM is advised of the septic system design and location, so that a Plumbing Permit can be issued to a licensed plumber or licensed sewage disposal contractor for the installation of the system.

Step 8: Build the House

During construction of the house, care should be taken to ensure that the approved plans are adhered to and that the well and SRA are protected from damage. Vehicular traffic or heavy equipment should not be allowed in the SRA. In addition, no trenching, or cutting and filling of soils should be performed within the SRA without GWM approval. Compaction or removal of soils in the SRA may severely impact the proper functioning of the septic system.



**Septic Tank and Drain
Line Installation**

Arrange for Water Quality Testing

While supervising the construction of your house, it is important to keep in mind that prior to obtaining your Use and Occupancy permit, water quality tests must be performed on the water supply.

Water samples are tested to determine the bacteriological and chemical quality of the well water. GWM may be contacted to arrange for the collection of water samples or you may elect to have a private Maryland State certified laboratory collect water samples for analysis.



To obtain a representative bacteriological sample, the entire house plumbing system must be disinfected. The well water supply and distribution system must be disinfected at least 24 hours prior to water testing. This disinfection should be performed by a licensed plumber, well pump installer, or well driller.

GWM will sign off on the Use and Occupancy permit upon receipt of a satisfactory water analysis report.

Step 10: Obtain Certificate of Potability

Approval of a Use and Occupancy Permit constitutes preliminary approval of a well water supply for potability (safe to drink). Maryland State regulations require that a second bacteriological sampling be made of the water supply within six months after the first sample in order to obtain the Full Certificate of Potability. The homeowner is responsible for arranging the second test. A private certified laboratory or GWM (410-887-2762) may be contacted for these services.

Additional information can be obtained from the Department of Environmental Protection and Resource Management at the following offices:

Ground Water Management	-	410-887-2762
Waste Management, Air Quality, and Community Hygiene	-	410-887-4066

Other booklets available:

Septic Systems: A Guide to Maintenance
Ground Water and Wells in Baltimore County