Electrical System

The 120/240 volt service enters the house via an underground lateral to a meter located at the north side of the house. The seal on the meter is intact.

The main service panel is a 200-amp Square-D Homeline product containing breakers located in the garage. The service disconnect is one 200-amp breaker located here. The panel was opened and examined. The service entrance conductors are 4/0 AWG Aluminum. All breakers appear to be appropriate for the observed wire sizes. There are some unused breaker slots allowing for expansion of the system. The circuits were labeled on an attached list.

The final service rating was determined to be 200 amps.

The service ground was visible connected to the water supply line and an exterior ground rod.

The distribution wiring observed is non-metallic sheathed copper.

Ground Fault Circuit Interrupt (GFCI) protected outlets are located at the exterior, all bathrooms, kitchen countertops, and the garage.

Smoke detectors are present at all recommended locations in the house.

Observations and Recommendations

All repairs or improvements should be made by a qualified and licensed electrician.

Comment: The main service panel has a completed circuit directory (labeling) indicating which breakers service which areas of the house. It is strongly recommended that a new owner verify the accuracy of any such directory or labeling as soon as possible after moving in.

Comment: Receptacles at kitchen countertops, near sinks, in bathrooms, garages, unfinished basements or crawl spaces and any exterior outlets are now required to have GFCI protection. GFCI (ground fault circuit interrupter) receptacles and breakers are modern safety devices designed to help prevent shock hazards by quickly de-energizing a circuit or portion of a circuit. In this house all recommended locations were protected and all GFCI devices tested OK. **Note that these devices should be tested on a monthly basis to ensure proper function.** This simply involves pushing the test button; the outlet should “click” off at which point you can press the reset button. Any outlet that fails this test should be replaced by a licensed electrician.

Comment: Bedroom circuits are now required to have Arc-Fault protection. AFCI devices, usually breakers within the main service panel are modern safety devices designed to sense wiring or appliance problems that could lead to “arcing” which in turn can lead to overheating or fires. When a problem is detected the breaker will trip. If this happens you should first ensure that all plugs are completely and firmly inserted into the wall outlets before resetting the breaker. If the breaker trips again you should consult a licensed electrician to determine the cause. As with GFCI devices **these breakers should be tested on a regular basis,** in this case by pressing the blue test button on the two breakers; the breaker should click off at which time you can reset it by turning it all the way off and then back on. Any AFCI breaker that fails this test should be replaced by a licensed electrician.

Comment: All light switches were tested and functioned normally. All accessible receptacles were tested and showed proper polarity and grounding.

SAFETY CONCERN: Smoke detectors should be tested on a monthly basis (some manufacturers suggest weekly). Because of this I feel it could lead to a false sense of security if I were to say that I tested them and they were found to be functioning. **You should test all smoke detectors immediately upon occupancy and at the recommended intervals thereafter and take the appropriate steps to remedy any found to be non-functional.**