

ELECTRICAL SYSTEM

MAIN SUPPLY AND SERVICE ENTRANCE

- Type: Under ground
- Location of the service entrance: From the north side of the house
- Entrance amperes: 100 amps
- Entrance voltage: 220 volts
- Meter: Accessible from outside on the north side
- Conditions:
 - 1- Upgrading the system, providing more amperage, could be a costly subject due to type and condition of provided electric power.



- 2- Install a top cap for the meter to shed the water away from it.

GROUNDING SYS

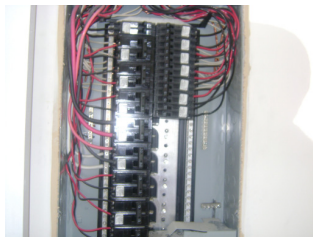
- Type: Two grounding wire were connected to the grounding rods in the north side of the house, but the effectiveness of grounding could not be verified. No sign of gas line grounding was observed.



- *Recommendation:* Install grounding wire for gas line to prevent any probable fire hazard in this regard.

DISTRIBUTION PANEL AND ITS RATING

- Panel type: Circuit breaker Panel
- Rating 125 Ampere with 240 volts
- Location: In the laundry room
- Distribution wire type: Copper for all the lines except for 30 and 40 ampere usage which were aluminum.



- Conditions:
 - 1- No AFCI was present for bedrooms' outlets due to new standards.
 - 2- No GFCI breaker was present in the panel.
 - 3- The breakers were not marked to match the directory map for any usage.
 - 4- There was room in the panel for future expansion.

- *Recommendations:*
 - 1- Replace the refrigerator location in the laundry room in order to provide 3 foot clearance in front of the electric panel.
 - 2- Get the breakers marked for any emergency situation.

OVERCURRENT DEVICES

- Type: Circuit breakers
- *Recommendations:* Use anti-oxidant compound for any aluminum wire connections or use co-al type breakers or outlets.

BRANCH CIRCUIT WIRING

- Type: There were Copper and aluminum as mentioned in the Panel section.
- Conditions:
 - 1- There was a live 40 ampere cable left, without any end connection, in the crawl space this could lead to a fire or shock hazard, and it was also a safety concern.
 - 2- There was a home made panel, for the above mentioned wire in one of the kitchen vanities.
- *Recommendation:* Remove the home made panel and added cable by a licensed contractor.



OUTLETS AND SWITCHES & LIGHTINGS

- *Recommendations:*
 - 3- Fix the reverse polarity outlet in the dinning room close to the master bed room by a licensed contractor.
 - 4- Label the service switch for the furnace located on the top right hand corner of door for the mechanical room.
 - 5- Fix the switch for the south fire place, which did not operate at the time of inspection, by a licensed contractor.

GROUND FAULT CIRCUIT INTERRUPTERS

As mentioned in the panel section.

ARC FAULT CIRCUIT INTERRUPTERS

As mentioned in the panel section

ALARM SYSTEM (SMOKE, CO, INTUDER, AND ...)

- Smoke alarm: It responded to manual tester.
- Co alarms: No Co alarm was observed.
- Intruder alarm: No intruder alarm was observed.
- Security System: There was cable for security system, but the system was not installed.



- *Recommendations:*
 - 1- Install an operable Co alarm right next to the entrance door from garage; its absence could cause a safety issue.
 - 2- Change the smoke alarm at least every 10 years, and check its operation regularly.