City of Altoona Building Department
Electrical Requirements for Accessory Buildings

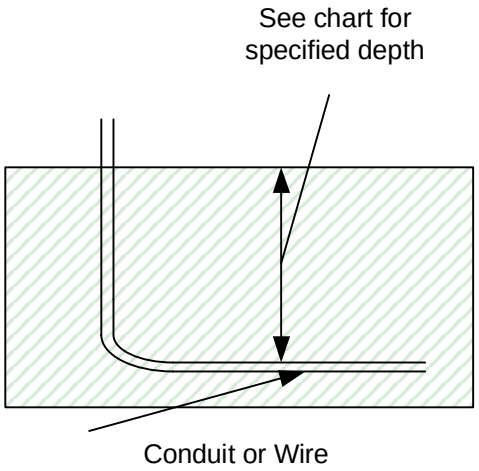
Please call 967-5138 for inspections and questions

This handout is designed to assistant those that choose to install electricity to accessory buildings. The items contained in this handout will not address every installation or situation that may arise during the process, these are general guidelines. If you are not familiar with electrical work then a professional electrician will need to perform the work. A professional must be licensed with the City of Altoona. Whether the homeowner or the electrician performs the work, an electrical permit is required. Overhead Electrical Wiring is not allowed.

Burial Depth

Location of Wiring Method or Circuit	Column 1 Direct Burial Cables or Conductors	Column 2 Rigid Metal Conduit or Intermediate Metal Conduit	Column 3 Nonmetallic Raceways Listed for Direct Burial Without Concrete Encasement or Other Approved Raceways	Column 4 Residential Branch Circuits Rated 120 Volts or Less with GFCI Protection and Maximum Overcurrent Protection of 20 Amperes
All locations Not specified below	24 inches	6 inches	18 inches	12 inches
In trench below 2 inch thick concrete or equivalent	18 inches	6 inches	12 inches	6 inches
One and two-family dwelling driveways and outdoor parking areas, and used only for dwelling related purposes	18 inches	18 inches	18 inches	12 inches

Note: Be cautious on conduit fill. Cables and insulated wires installed in enclosures and raceways in underground locations shall be listed for wet locations. **Type THHN wire is not rated for wet locations.**



Definitions

1. Feeder Circuit - Is a circuit that supplies energy to additional circuits.
2. Branch Circuit - Is a single circuit and does not energize additional circuits. A 3 wire circuit can be considered a single circuit.
3. Ground/ Grounded Conductor - Is known as the Neutral Wire.
4. Equipment Ground Conductor/ Grounding Conductor - Is the ground wire, typically the bare copper wire.

Supply Wire Requirements

- The feeder circuit shall have an equipment-grounding conductor installed.
- This can be either an actual grounding conductor or rigid/intermediate metal conduit.
- The equipment grounding conductor ran with the feeder shall be used for grounding to equipment and connected to a grounding electrode.
- The equipment-grounding conductor shall be terminated in the panel separately from the neutral ground bar and a grounding electrode.

If no equipment grounding conductor is run with the feeder wires and there are no metallic paths between the two buildings then the Neutral shall be connected to the building/structure disconnecting means and to the grounding electrodes and shall be used for grounding and bonding.

City of Altoona Building Department
Electrical Requirements for Accessory Buildings

Sub - Panel Requirements

- If more than six circuit breakers are installed in the sub-panel then a main disconnect switch shall be installed.
- The panel shall be secured and all connections made secured and tight.
- The circuit breakers shall be of the single throw type and not more than 6 foot 7 inches in height above finished floor.
- A minimum clear working space of 30 inches wide, 36 inches in depth shall be maintained.
- Sub - Panel shall be bonded to the grounding system.
- All circuits shall be identified on the panel.

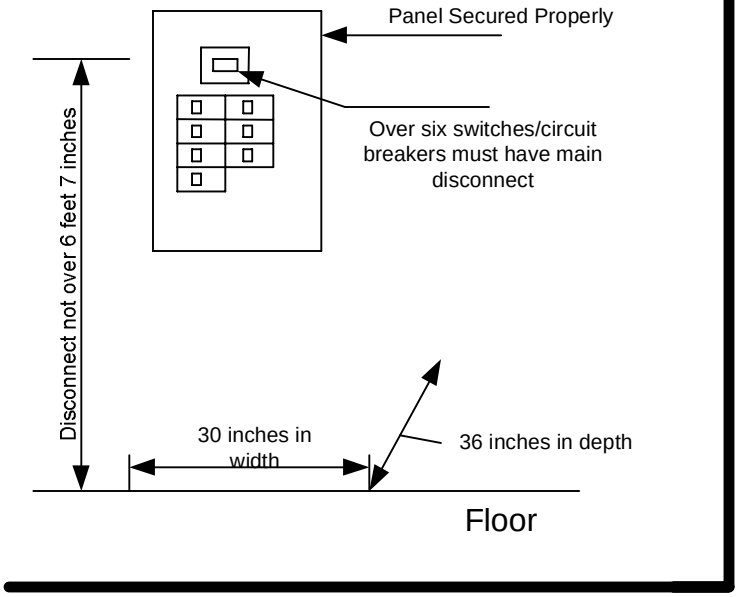
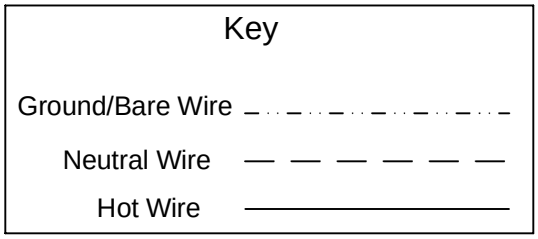
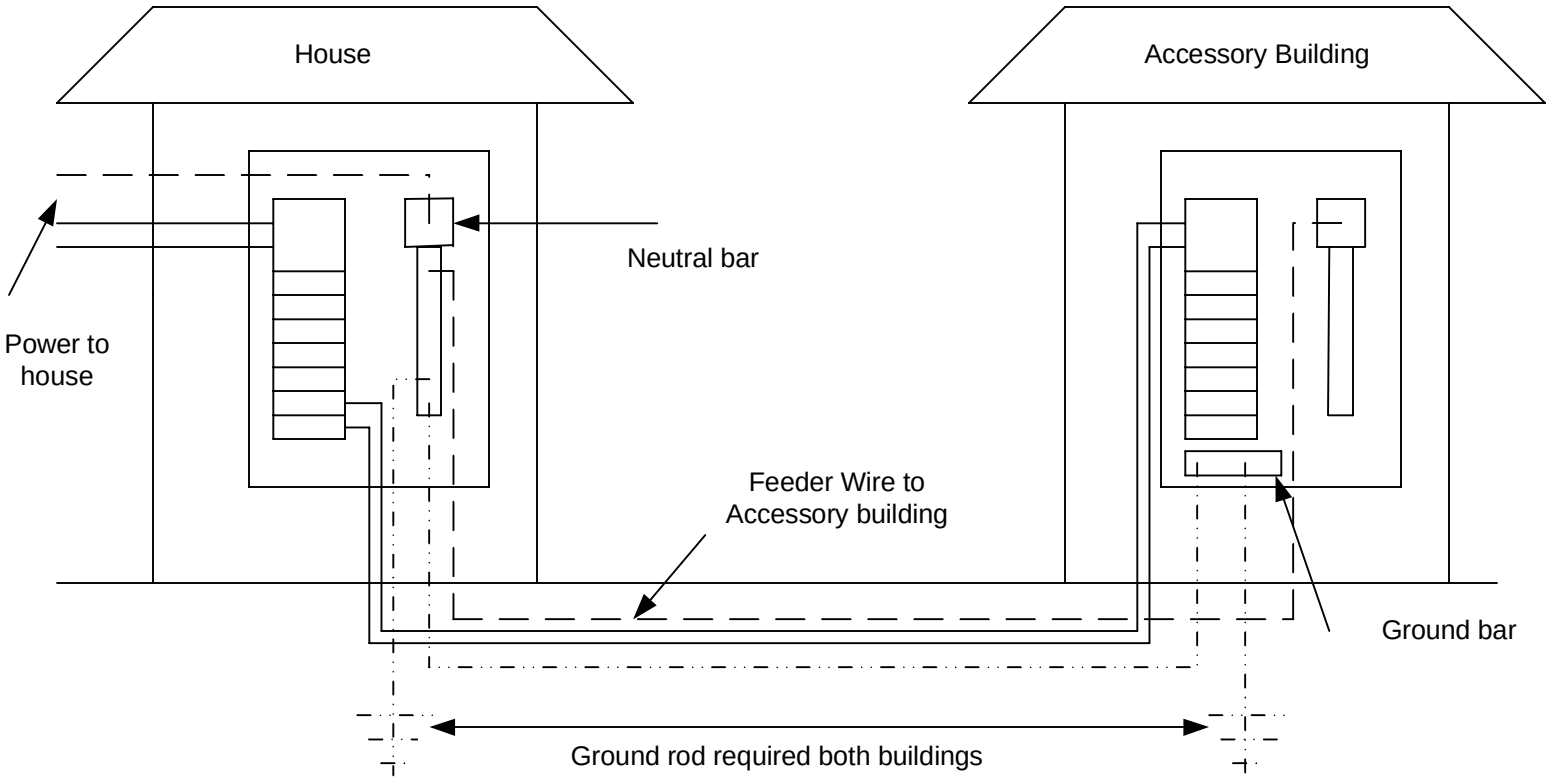


Fig 1.
This is the preferred way of wiring an accessory building. Any other means of grounding will need to be approved by the building department.

If wiring only a single branch circuit into the accessory building with an equipment ground conductor, the requirements below do not pertain.





Other Requirements to Fig 1.
- The ground rod shall be at least 8 feet in length and 5/8 inch in diameter
- The size of the wire from the ground rod to the electrical panel is based on the size of feeder wires ran.
- The ground rod shall be buried in the ground at least 8 feet and shall be at least 6 feet from any other electrode of another system.
- The size of the branch circuit wires is dependant on the size of the circuit breaker.
- The size of the feeder wire is dependant on the size of the circuit breaker.

Wiring and Outlets
- All exposed wiring in the walls from the bottom of the ceiling joists/trusses shall be in conduit.
- Any romax wiring ran in the walls (permitted if face of walls are sheathed) shall not be closer than 1 ¼ inches from face of wood stud. **All wiring shall be inspected prior to covering up.**
- Romax wiring shall be secured every 4 ½ feet on center.
- Romax shall be secured 8 inches prior to entering any outlet/junction box.
- All receptacles and lighting switches shall have the ground wire (bare wire) of branch circuit connected.
- All receptacle outlets mounted on exterior walls shall be GFCI protected and an in use cover shall be installed.
- All outlets shall be GFCI protected.

  Exception 1. Those not readily accessible (over 6 feet 6 inches from finished floor and ceiling mounted).
  Exception 2. Those that are of the single receptacle type and used for dedicated equipment that is not readily moved from location to location and equipment is cord and plug connected.