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Panel upgrade Part 2 Lab

Program: Electrician Technician

Course: EL190

Objective: Under the supervision of your instructor, you should be able to do the following:

- Properly upgrade a new panel

Lab Equipment: N/A

Required Tool:

- 1 – Drill
- 1 – Ladder 6ft
- 1 – Tape measure
- 1 – Flathead screwdriver
- 1 – Phillips's screwdriver
- 1 – Strippers
- 1 – Utility knife

Materials:

- Panel
- 20' – 14/2 Romex
- 20' – 14/3 Romex
- 5 – ½" 2 screw NM wire connectors
- 6' – #8 armored ground
- 1 – Armored ground clamp

Safety (PPE):

- Safety glasses/goggles
- Hard hat

Resources: N/A

Required Time: One Day

Shop Maintenance:

- All work will cease 20 minutes prior to the end of class.
- All work areas must be cleaned.

- Tools and equipment must be cleaned and returned to the designated areas (cage, tool room, cabinets etc.)
- Any broken or missing tools must be reported immediately.
- Tools and equipment are students' responsibility

Procedures: Eye protection must always be worn. *Refer to code book as much as possible during the lab.*

Step 1, Day 1:

- Perform the "Panel upgrade lab part 1

Step 2 Day 2

- Make sure power is off to the panel.
- Start removing each wire that is in the panel and using the number marker to identify the wire. On a separate piece of paper write the number and what the breaker operates
- Remove the remaining wires for the terminal
- Remove the wires from the panel. Do not damage the wires as they will be reinstalled on the new panel.
- Once ground and all items have been removed, take the old panel off and install the new panel
- Run a #4 armored ground from the panel to the ground rod.
- Insert appropriate connectors for the wire to enter the panel.
- Reinstall the original wires making sure not to lose the wire markings.
- Start with terminating the grounds, then the neutrals and then finally your lines to the breakers.
- Label the new panel on a piece of paper using the markers as your guide.
- Assure that the panel is phased properly. (Phase = make sure any three wire has the black on buss A and the red on Buss B)