

Assembly LED Lights

I replaced four kinds of Lights (Fluorescent recessed light, Fluorescent ceiling dome light, Fluorescent T8 light, and Toilet light) which all the light bulbs were already replaced from old-fashioned incandescent to fluorescent.

This time, I replaced the fluorescent lights to LEDs. In this case, the lighting module itself must be fully replaced except the case of fluorescent T8 lights.

Fluorescent Recessed Light to LED Recessed Light



Wire Stripper, Long Nose Plier, Diagonal Cutter, Groove Joint Plier, 6" LED Light Module with Rectifier



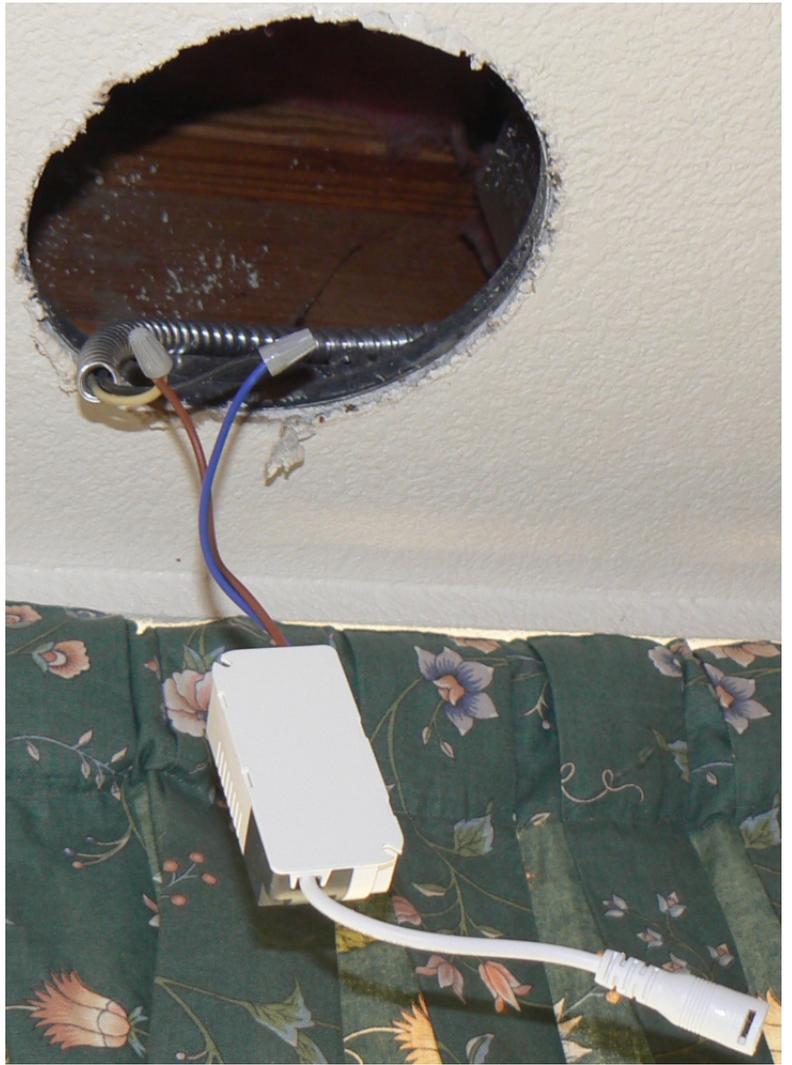
Before



Trim & Light Bulb Removed



Recessed Light Housing Detached



Rectifier Connected to AC 120V



LED Light Spring Attached

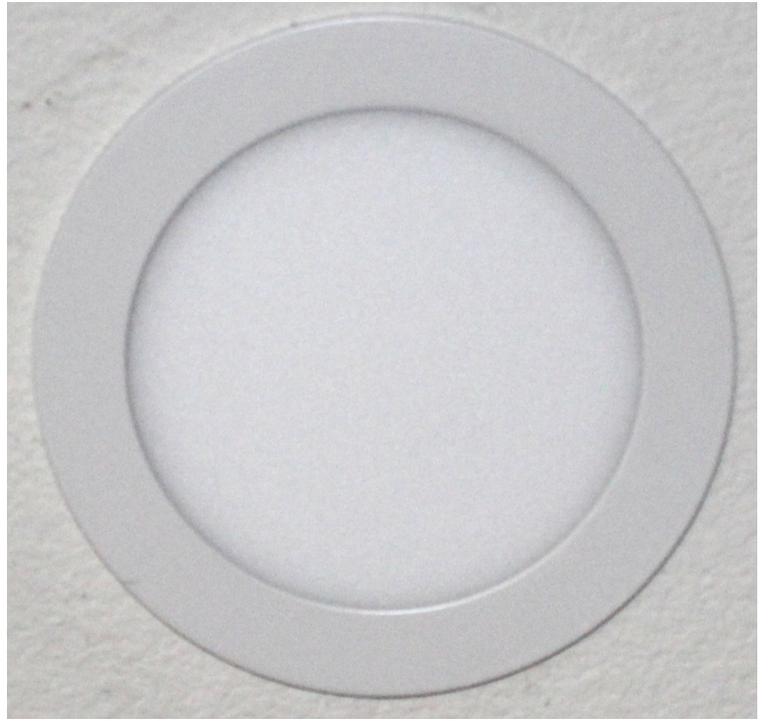


Done

Ceiling Dome Light to LED Recessed Light



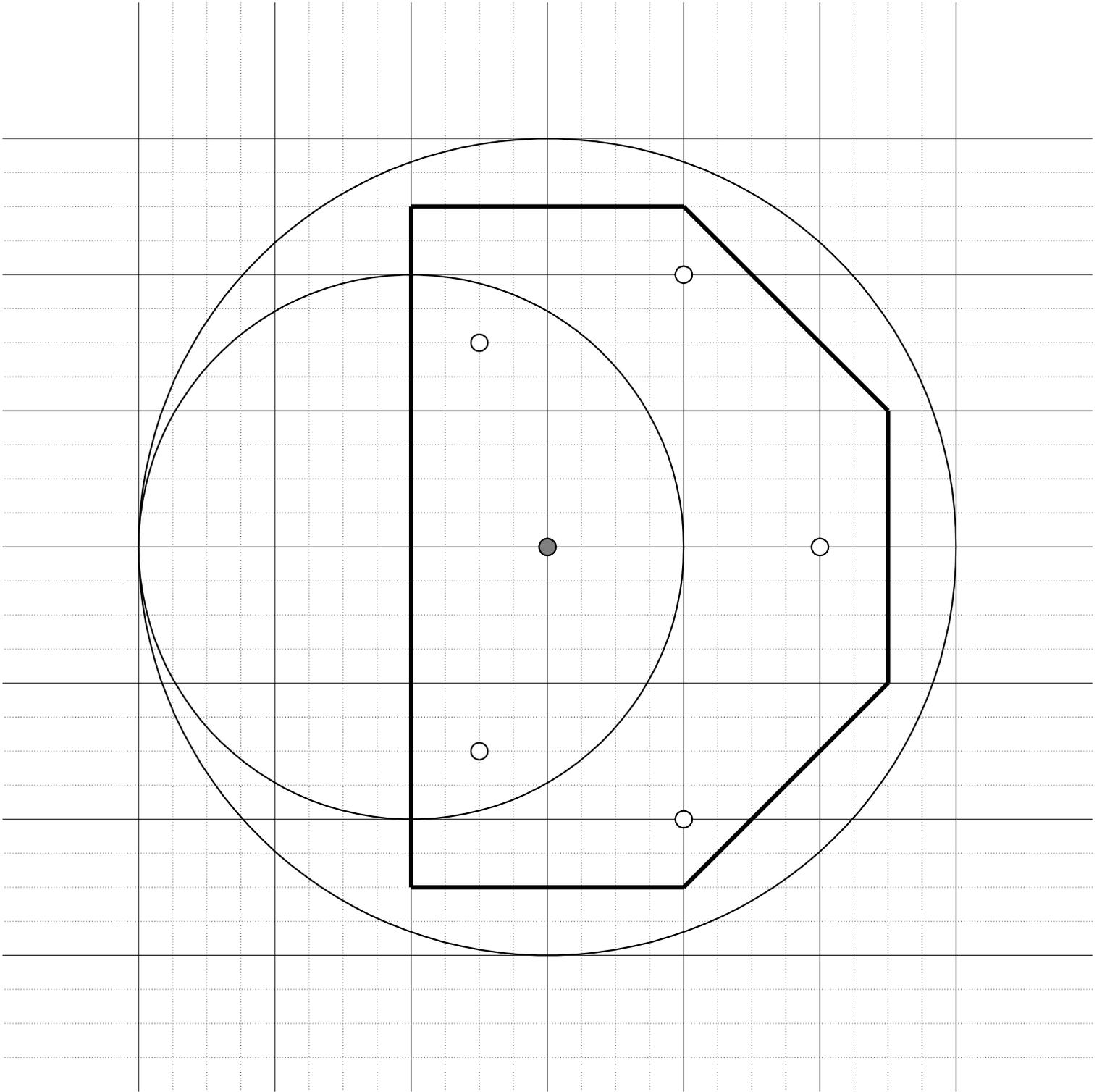
Before



After



Tools & LED Light



Assist Board Schematic

A dome type ceiling light to be replaced needs a ceiling board opening of 2" diameter. However, an LED recessed light needs a ceiling board opening of 6" diameter.

I newly designed and made two boards (thick line) to adjust cutting start point which is a contact point of existing 2" opening and 6" opening to be made (center left most).

The two boards sandwich the ceiling board to determine an exact central point (grayed) of the 6" opening where the drill bit of hole cutter is placed. The boards are fixed to the ceiling board by 5 bolts and nuts. Because the central point of hole cutter itself is inside the existing hole (in vacant air space), we can not make a 6" hole without using the two boards. See photos at next page.



Two Boards with 5 Bolts & Nuts (Handmade), Hole Cutter & Plastic Tray (Commercially Manufactured)



6" Diameter Adjusted on Hole Cutter



Ready to Sandwich Ceiling Board and Cut



Boards Attached to Ceiling Board

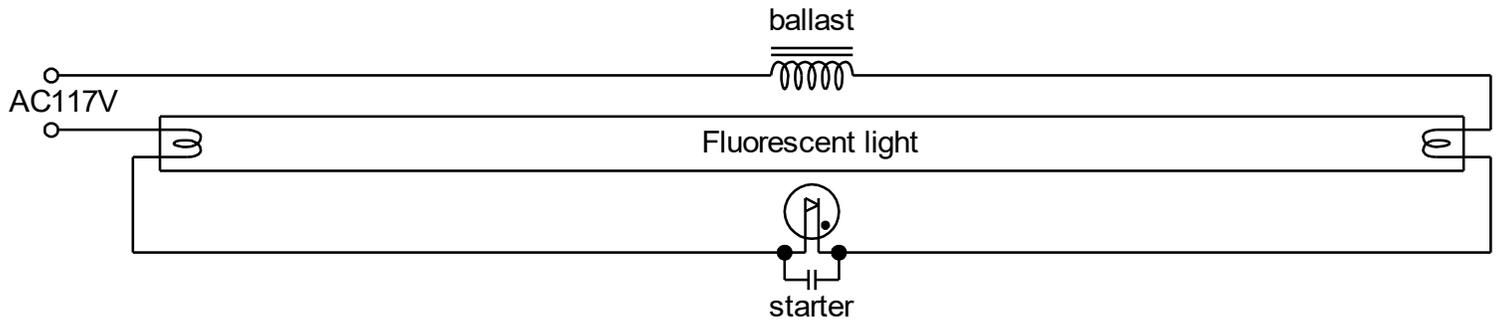


6" Opening Cut Out Done

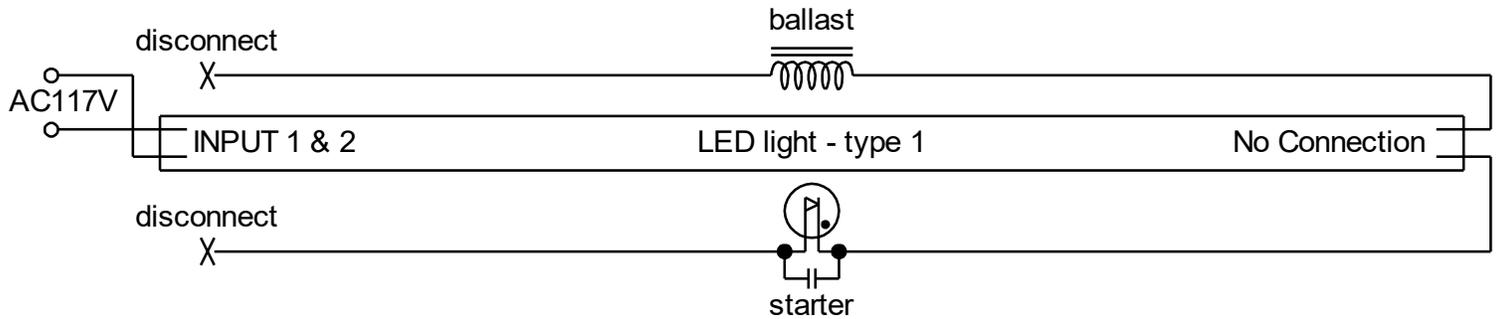


Ceiling Board Chip & Tools Stored in Plastic Tray without Scattering

Fluorescent T8 Light to LED T8 Light



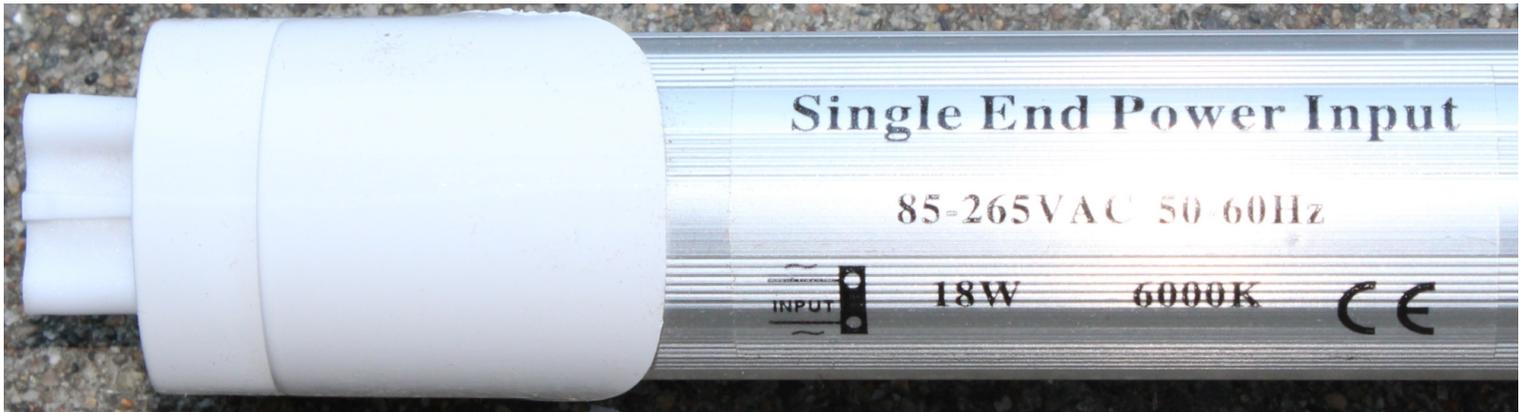
Fluorescent Light Needs Ballast & Starter (Glow Lump) to Get High Voltage for Discharge Ionization in Inert Gas



T8 LED Light Tube does not Need Ballast & Starter, Many LEDs are Serially Connected between Single Side Ports (Simply Change & Cut Wire Connection and Leave Ballast & Starter as it was)



4' Length T8 LED Light Tube



AC 120V Supply Port (Internal Rectifier Converts AC (Alternate Current) to DC (Direct Current) for LEDs)



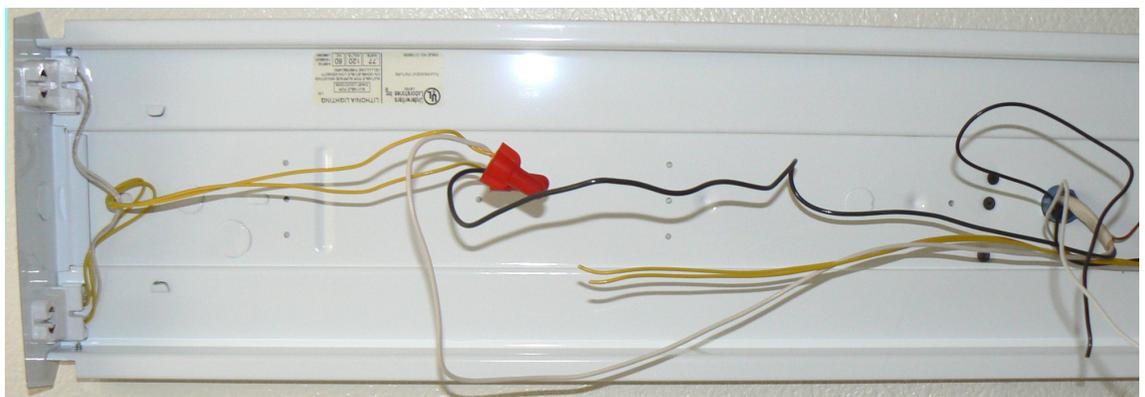
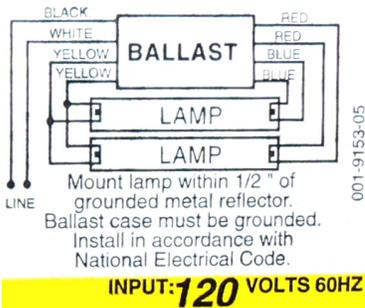
Replacement Done



Original Wiring for Fluorescent Tube Housing (Left Portion)

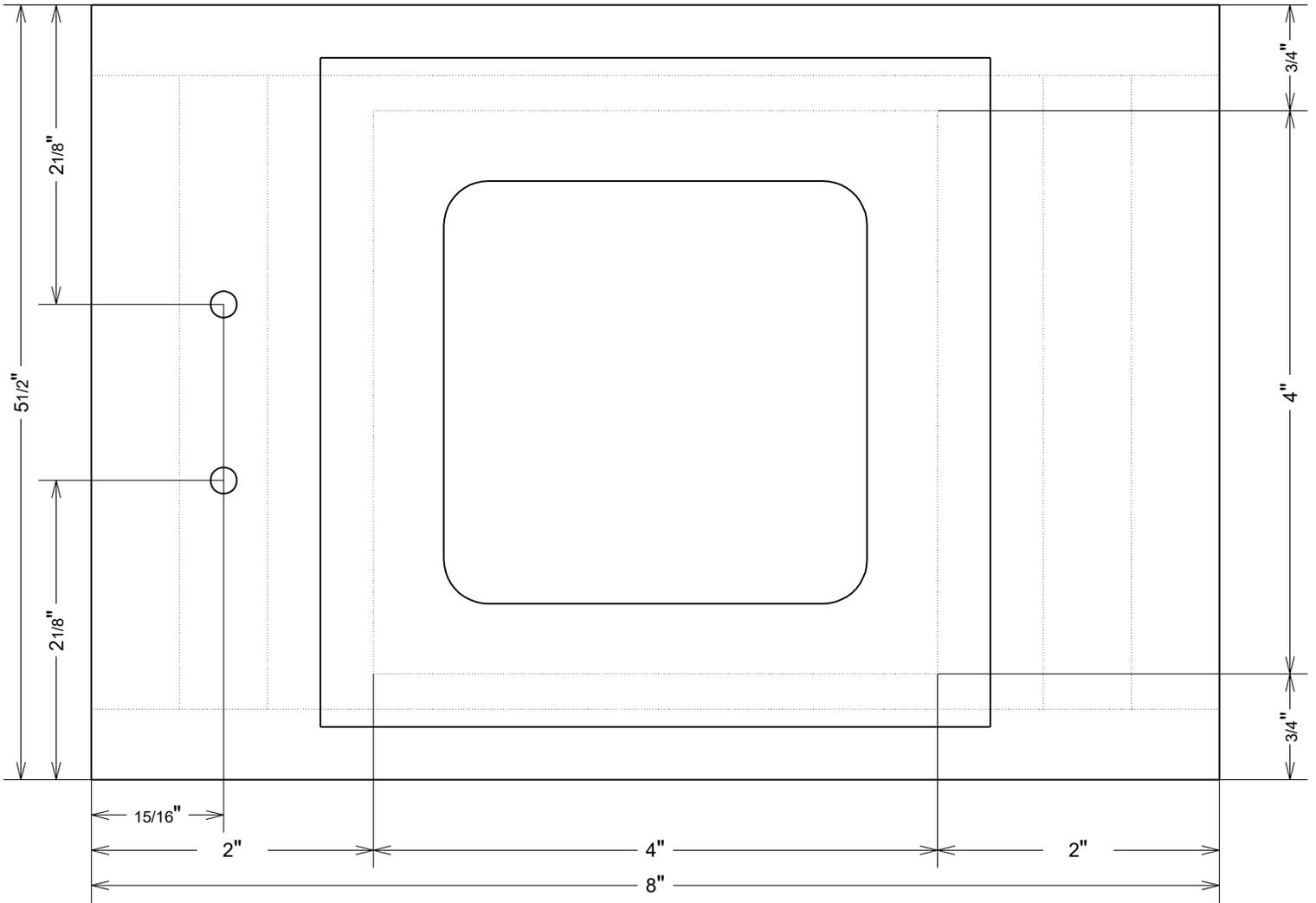


Original Wiring for Fluorescent Tube Housing (Right Portion)



Wiring Change for T8 LED Light Done

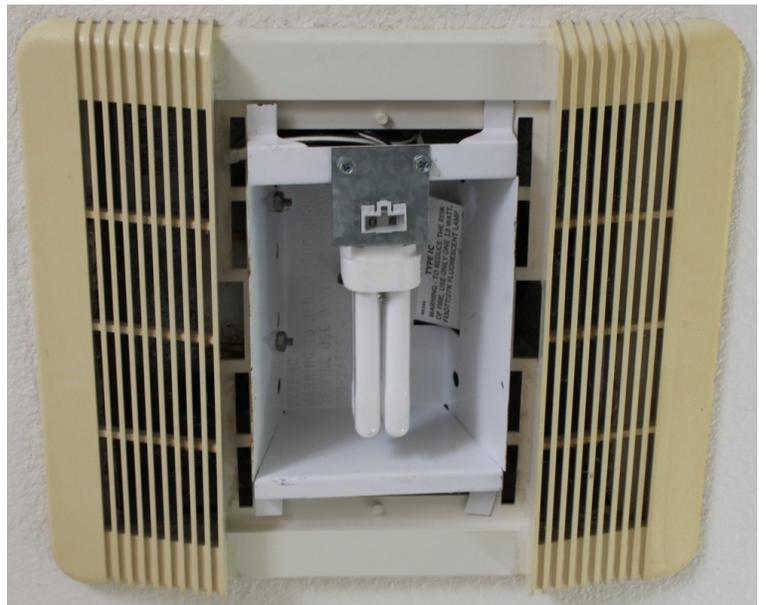
Toilet Light



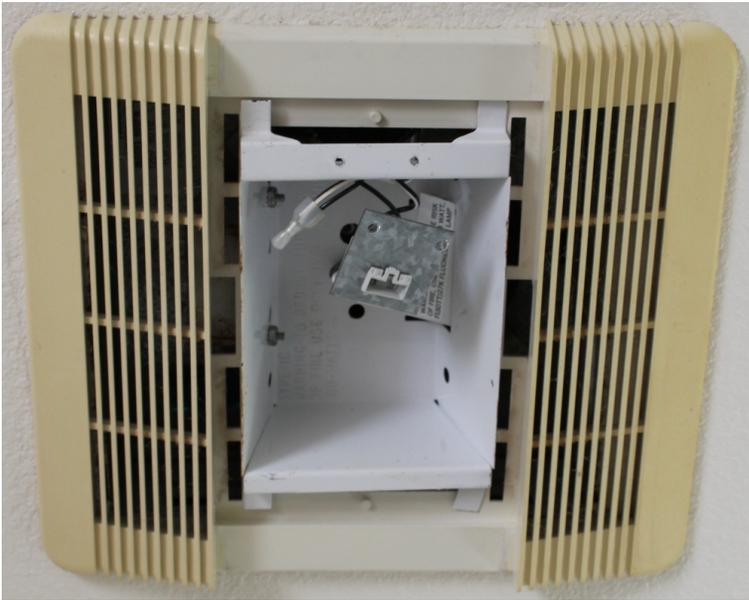
LED Light Support Board Schematic



Before



Shade Removed



Light Bulb Removed & Mount Detached



Trim Removed



Done