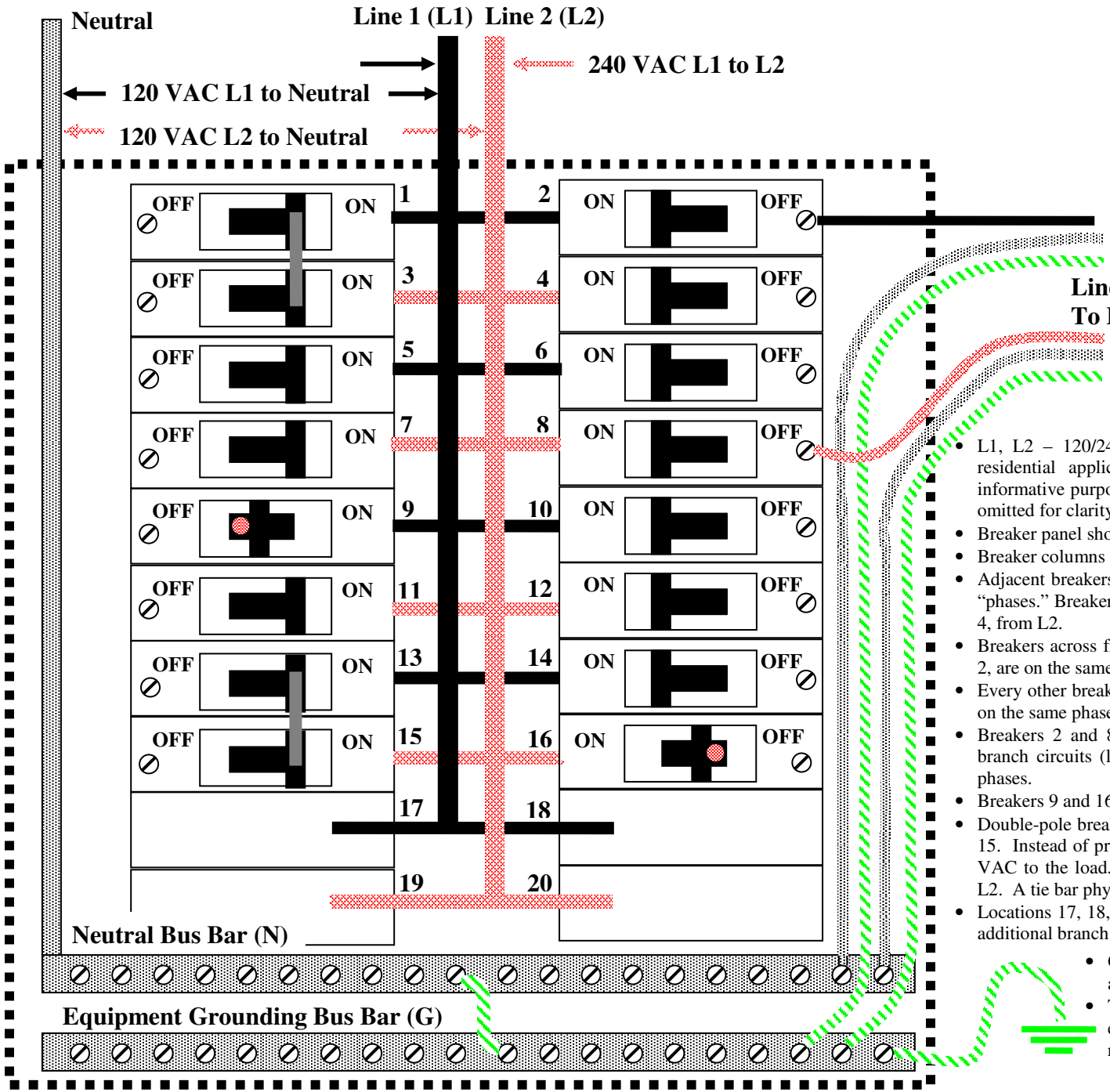
Typical Circuit Breaker Panel Configuration – Part 1

Home Controls
Comfort, Convenience, Security



Line, Neutral, and Equipment Ground To Branch Circuits

NOTES

- L1, L2 – 120/240 VAC Split, Single Phase Power. Typical residential application. Color and panel layout shown for informative purposes only. Circuit breaker amp ratings purposely omitted for clarity.
- Breaker panel shown within the dashed lines.
- Breaker columns are identified with odd and even numbers.
- Adjacent breakers, such as 1 and 3, and 4 and 6, are on opposite "phases." Breakers 1 and 6 derive power from L1, breakers 3 and 4, from L2.
- Breakers across from each other, on the same row such as 1 and 2, are on the same phase.
- Every other breaker on the same column, such as 2, 6, 10, etc., is on the same phase.
- Breakers 2 and 8 are shown providing 120 VAC each to two branch circuits (loads). Note that these circuits are on opposite phases.
- Breakers 9 and 16 are shown in the off, or tripped, position.
- Double-pole breakers are shown in locations 1 and 3, and 13 and 15. Instead of providing 120 VAC, these "doubles" provide 240 VAC to the load. Note that the breakers are across both L1 and L2. A tie bar physically connects the two breakers together.
- Locations 17, 18, 19, and 20 are empty slots and can be used for additional branch circuits.

- Observe that the Neutral Bus and Equipment Bus are tied together in the panel.
- The Equipment Grounding Bus is connected to earth ground, via the cold water pipe, a grounding rod, or through the concrete foundation.