Schematic Creation Guidelines

Create the gold standard schematic that all design stakeholders will easily understand by following the checklist below.

Create a Logical Flow

- ☐ Have signals flowing from left (input) to right (output)
- ☐ Place circuits based on functionality
- ☐ Place bypass and decoupling capacitors in their own groups
- ☐ Use pull-up or pull-down resistors wherever appropriate
- ☐ Add graphics that show relation between circuits and physical objects

For larger or complex schematics:

- ☐ Break the schematic into multiple sheets based on circuit functionality
- ☐ Make the schematic hierarchical

Create Consistency and Improve Readability

- ☐ Reference ASME Y14.44-2008 and IEEE 315-1975
- ☐ Utilize an accurate part library
- ☐ Consistently orient symbols
- ☐ Name all nets
- ☐ Include vital component information (value, voltage, etc.)
- ☐ Label and differentiate power ground and signal ground

Add Notes to Clearly Communicate Your Design Intent

- ☐ A legend for off-board signals
- ☐ Installation instructions for unidirectional parts
- ☐ Critical voltage and current information
- ☐ The original/source sheet number for the ports on the schematic
- ☐ Trace width for traces carrying a lot of current
- ☐ Length matching for high-speed lines
- ☐ Traces that need controlled impedance
- ☐ Resistor purpose (pull-up/pull-down resistors)
- ☐ Critical capacitor placement
- ☐ Intentional part placement

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