Electrical Design Checklist

Design Element	
POWER MANAGEMENT	
Over-voltage protection - Typically reverse bias Zener diode rated several volts above supply (e.g. 18V for nominally 12V supply)	
Reverse-voltage protection - Our normal Zener setup satisfies this to some extent, forward voltage is 1.2V, check that -1.2V isn't outside component absolute maximum ratings of your components, should be placed in series with fuse - Schottky diode is another simple solution	
Overcurrent protection - Properly spec'd fuse in series with supply before any components	
Switching regulator considerations - Appropriate current supply capability (also applicable to linear regulators) - Switching frequency not close to crystal or serial bus frequencies - Appropriate input and output filtering	
Bypass capacitors near all power input pins of ICs - 0.1uF is usually good	
Bulk capacitance on power input and any high inrush current components such as relays	
Consistent Net Labels for Power - Eliminate inconsistencies (12V, +12, 5V, +5V, VCC, etc.)	
MICROCONTROLLERS	
Pull-up on reset line	
Proper programming connection	
Proper crystal connection	
All signals routed to appropriate pins - ADC - Communications busses - Interrupt pins (PCINT for 16M1) - PWM	
Series resistors (500Ohm to limit to 10mA for 5V) on ISP pins if connected to other components	
COMMUNICATIONS BUS TOPOLOGY	
CAN - Transceiver - 120 Ohm resistor between CAN High and CAN Low (DNP)	
SPI - Daisy chain or independent follower	
I2C - Pull-ups	
UART - Proper TX/RX polarity when applicable	