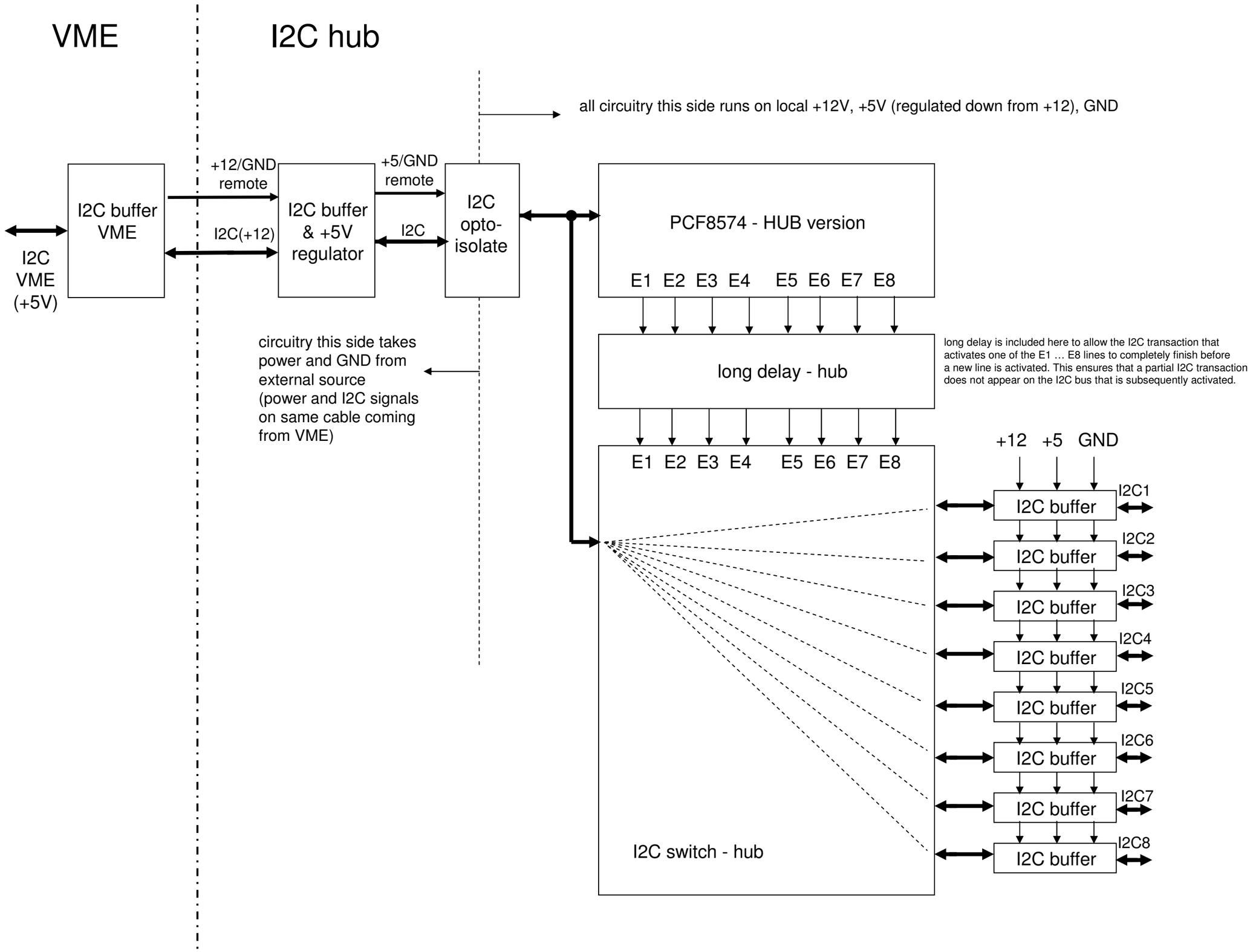
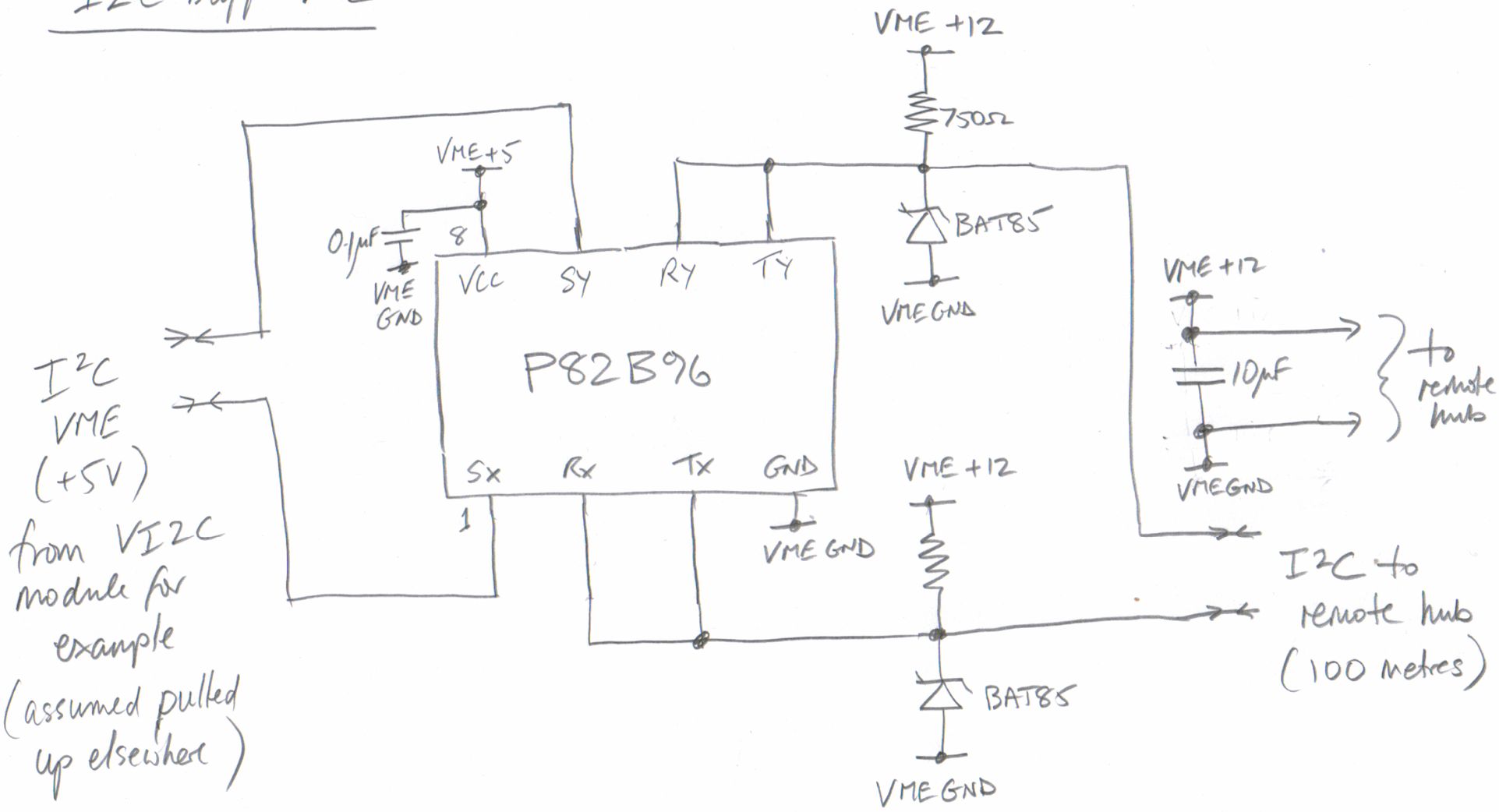
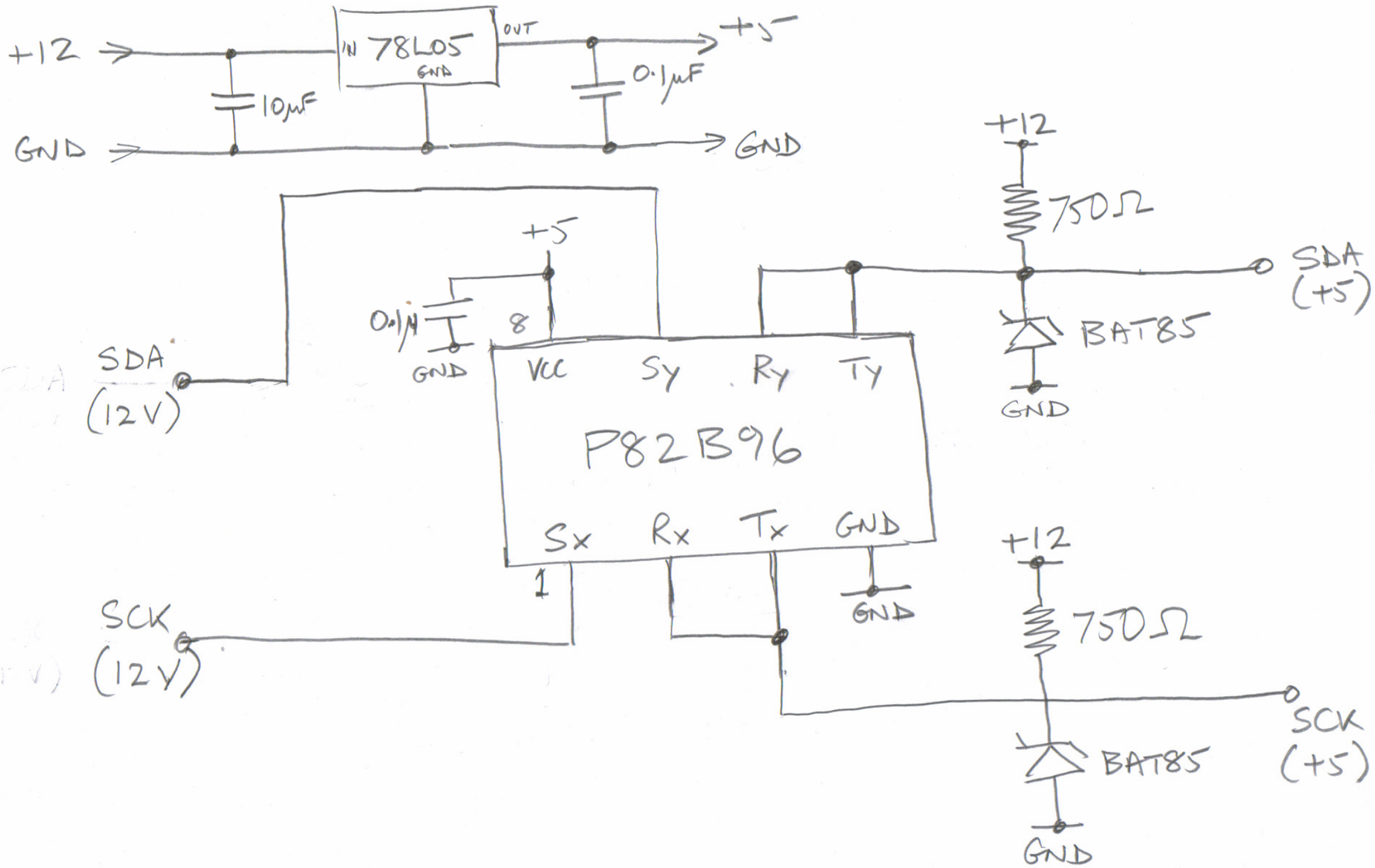

VME
I2C hub
all circuitry this side runs on local +12V, +5V (regulated down from +12), GND
I2C buffer VME
I2C VME (+5V)
+12/GND remote
I2C(+12)
I2C buffer & +5V regulator
+5/GND remote
I2C
I2C opto-isolate
circuitry this side takes power and GND from external source (power and I2C signals on same cable coming from VME)
PCF8574 - HUB version
E1 E2 E3 E4 E5 E6 E7 E8
long delay - hub
long delay is included here to allow the I2C transaction that activates one of the E1 … E8 lines to completely finish before a new line is activated. This ensures that a partial I2C transaction does not appear on the I2C bus that is subsequently activated.
E1 E2 E3 E4 E5 E6 E7 E8
I2C switch - hub
+12 +5 GND
I2C buffer
I2C1
I2C2
I2C3
I2C4
I2C5
I2C6
I2C7
I2C8

I2C buffer VME

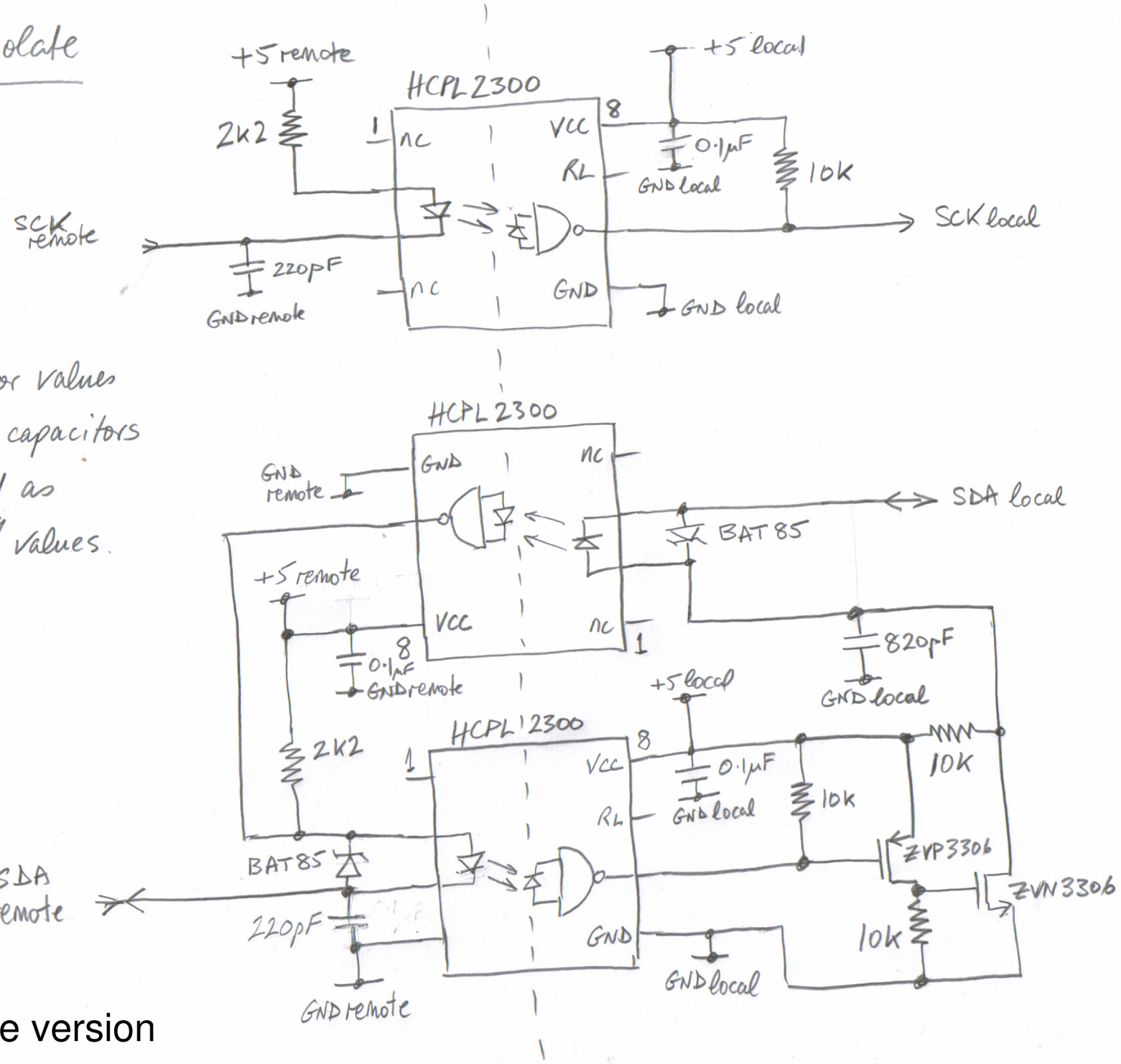


I^2C buffer & 5 V regulator



same as XY plane version

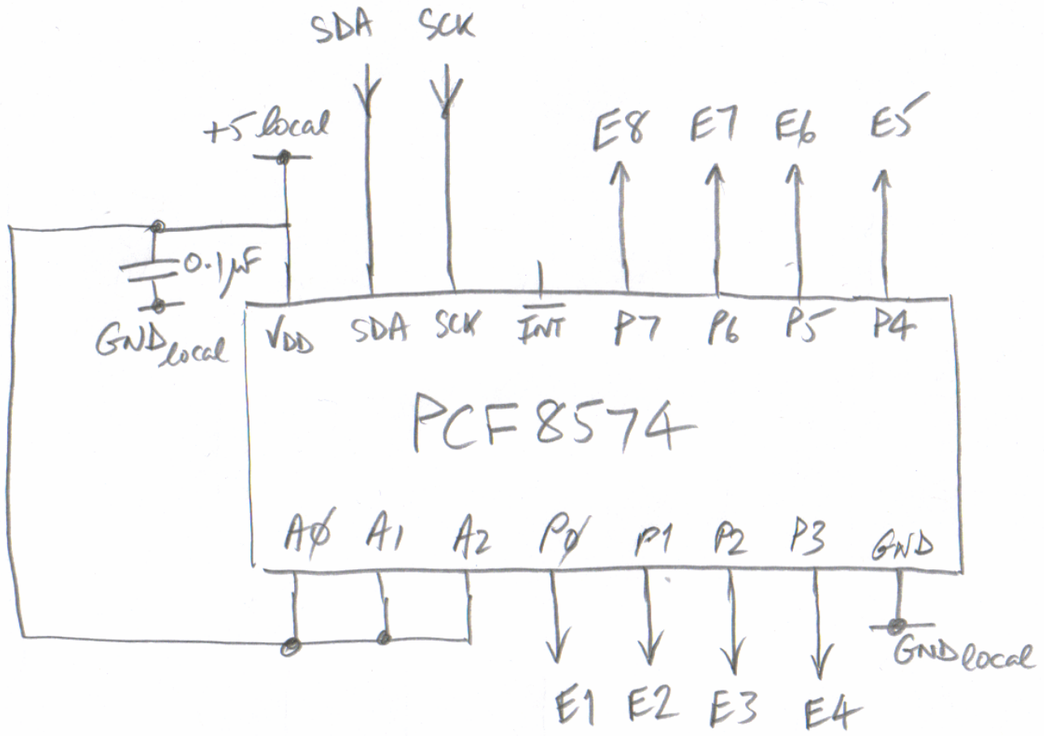
I2C opto-isolate



note: pull-up resistor values and 220pF/820pF capacitors should be regarded as "select-on-test" values.

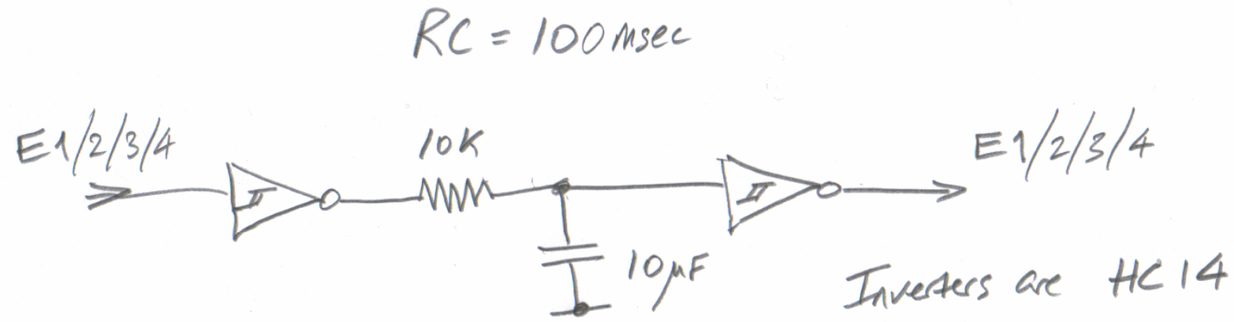
same as XY plane version

PCF8574 - hub version



Note: I^2C address here b 0100111 because PCF8574 (not PCF8574A)
(need to make sure this address different from PCF8574A in XY plane)

long delay

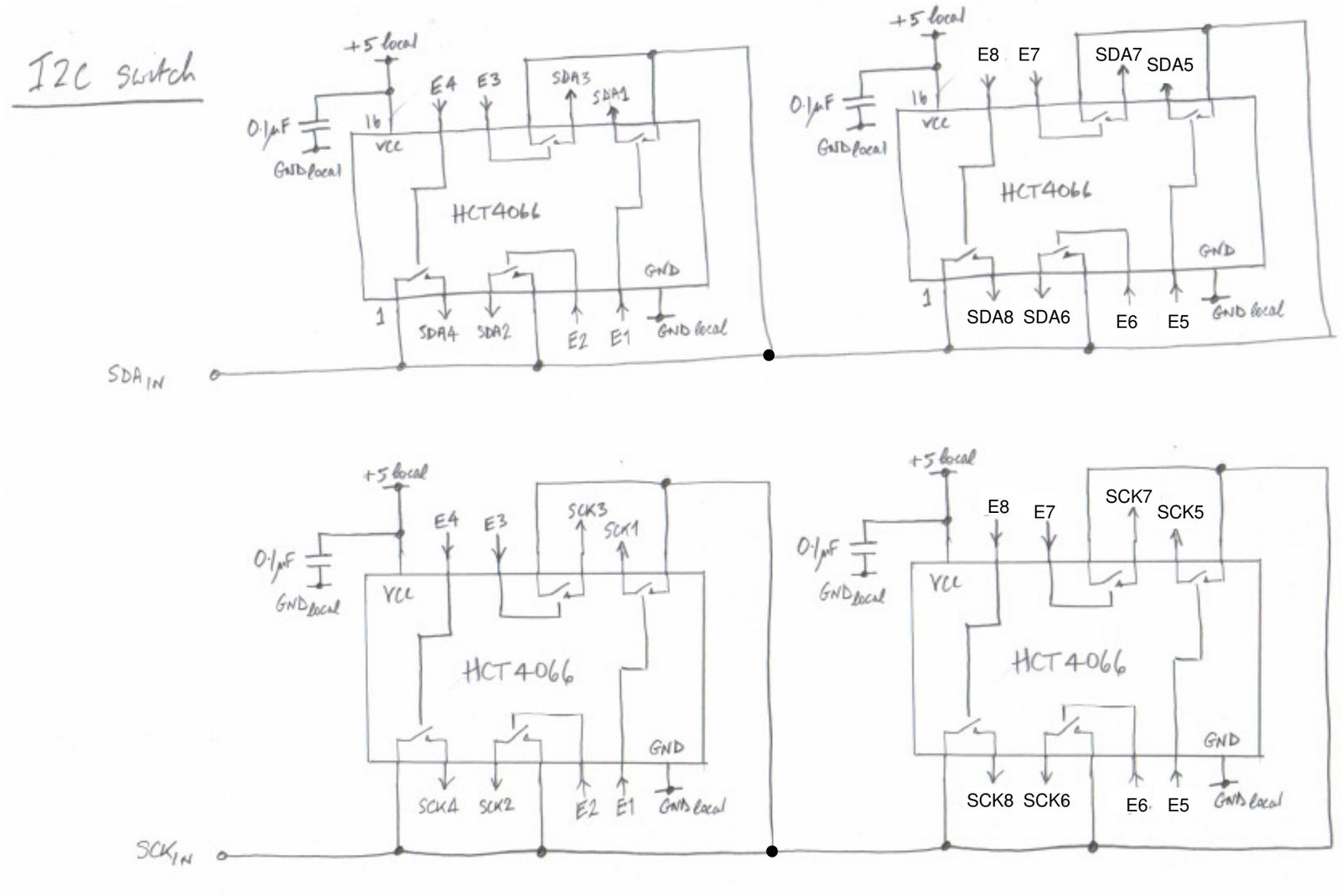


notes

1) Use as many delays as are necessary for the number of I^2C busses you want to switch (6 inverters/package)
2) RC time constant of 100 msec is very long (could be shorter)

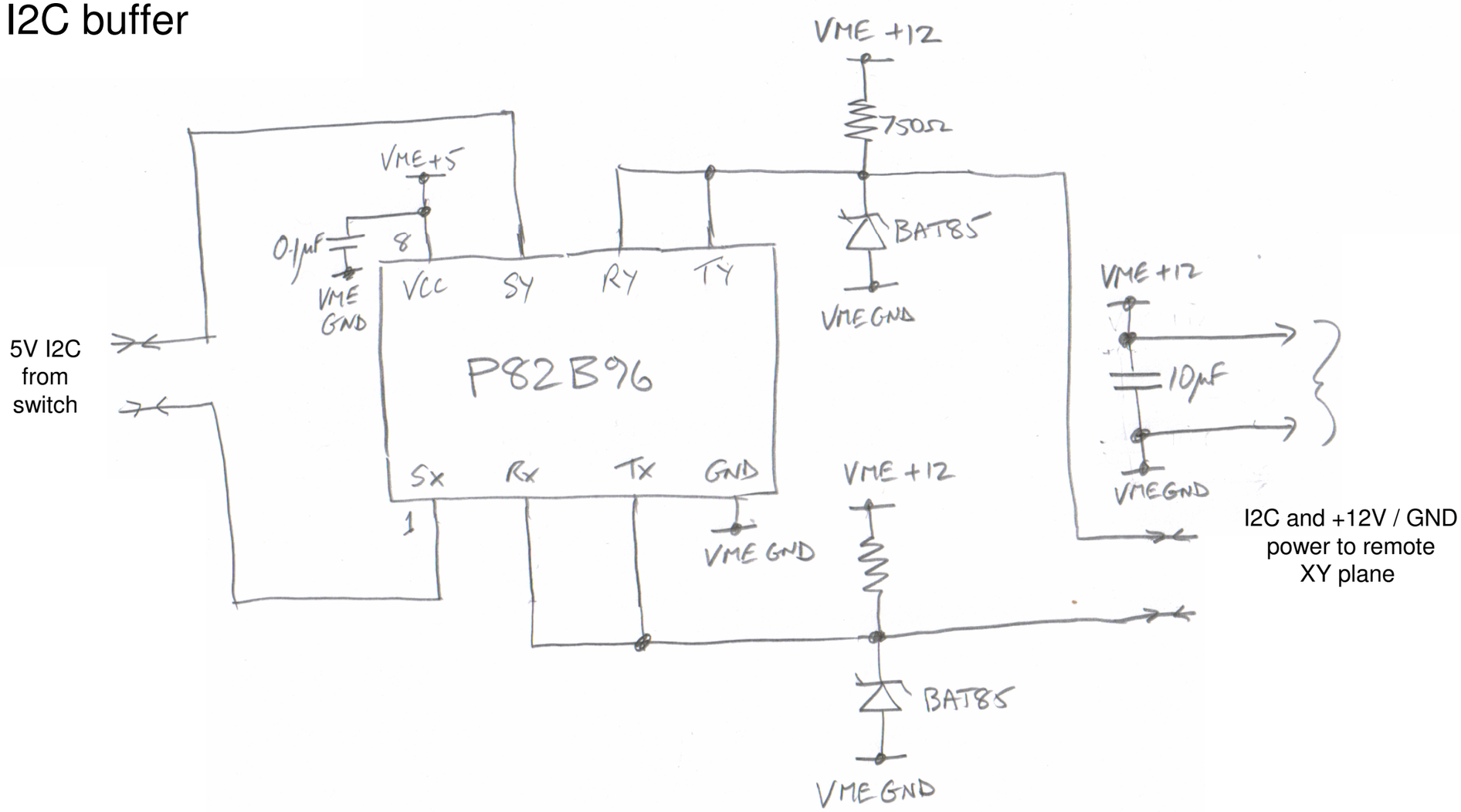
same as XY plane version
need up to eight of these for I2C hub

I2C switch - hub



2x the number of switches in XY plane - but same circuit

I2C buffer



The 12V power from the I2C hub is transmitted along with the I2C signals, to power the P82B96 and the opto-isolate stage in the XY plane