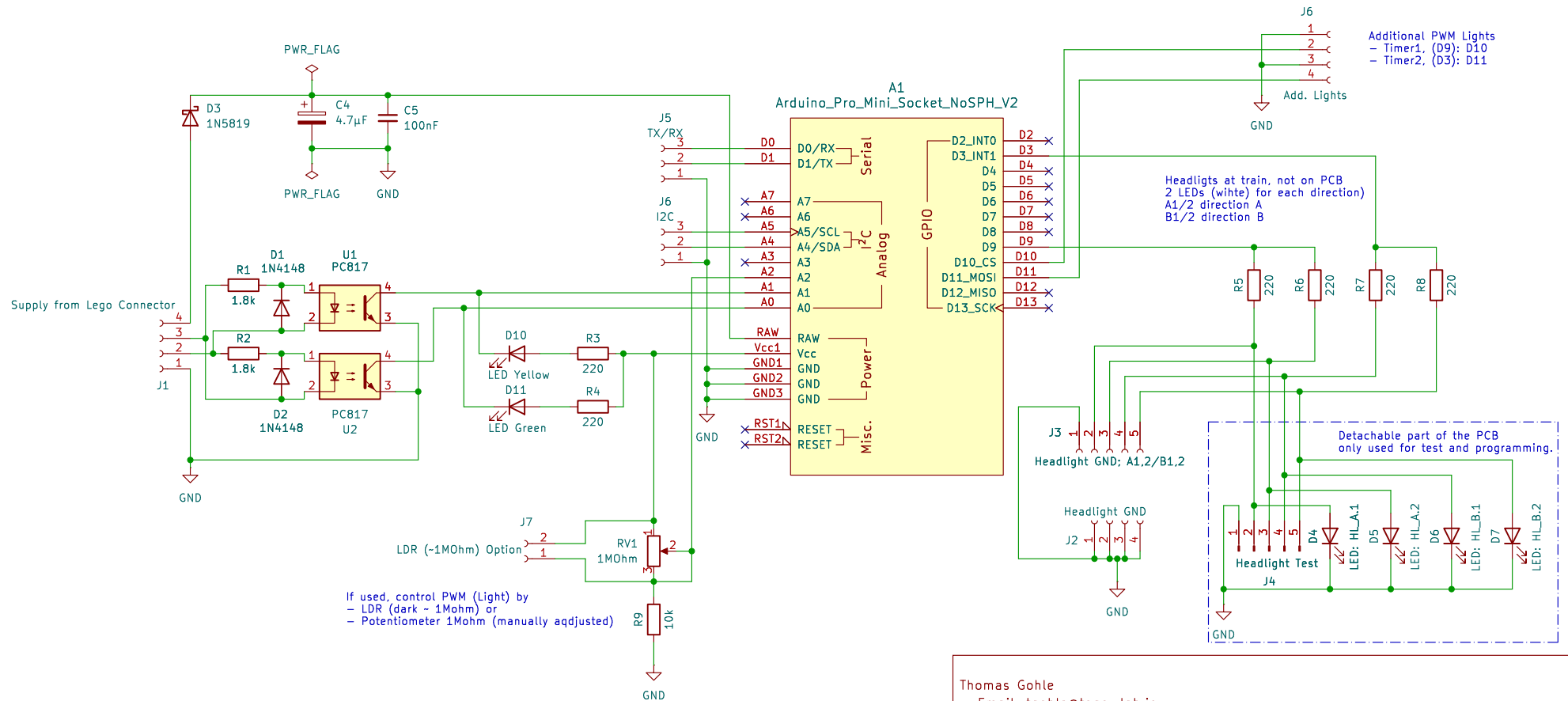


Attention:
- Need to check if bulky CPs needed (depends on noise of voltage line)

PWM LED drive - Arduino Pro Mini (ATmega328P)
- PWM pins used: D3 (Timer2, 8-bit) and D9 (Timer1, 16-bit)
- Control via analogWrite() → 0-255 on both timers (no practical difference for LEDs)
- Each PWM pin drives 2× white LEDs in parallel, each LED with its own 220 Ω resistor
- Approx. current per LED ≈ 7-8 mA, per pin ≈ 15 mA → safe for MCU
- D0/D1 (TX/RX) free for later communication
- Timer0 untouched → millis()/delay(), unaffected
- No Servo / tone / IR usage planned → no timer conflicts expected
- Remember, Unused D/A Connectors: Unconnected (no Pullup), but:
Digital ones: "pinMode(pin, INPUT_PULLUP);" and Ax: nothing.



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ToGo-Lab

Sheet: /
File: 0004-DenshaBekutoru_v0.2.kicad_sch

Title: DenshaBekutoru 電車ベクトル (Train Vector)

Size: A4 Date: 2025-11-10

KiCad E.D.A. 8.0.9

Rev: #001

Id: 1/1