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Designing Electronics and PMT Housing for a Liquid Scintillation Detector to be Used for Measuring Muon-Induced Processes at Homestake BRIAN WOLTMAN, Undergratuate Student, PATRICK DAVIS, Undergraduate Student, DONGMING MEI, Assistant Professor, CHAO ZHANG, Postdoctoral Student, CUBED COLLABORATION — Understanding the backgrounds produced by muon-induced processes is important to the success of experiments searching for rare event physics such as neutrinoless double-beta decay, dark matter, or neutrino oscillations, which require extremely low backgrounds. Measuring these muon-induced processes is vital for the low background experiments planned for the Sanford Lab. We have designed a detector to measure the muon-induced backgrounds produced underground. Our detector consists of a 10.8 liter scintillator joined with two PMT's. We will present our design for housing the PMT's, including their attachment to the scintillator and necessary magnetic shielding. We will also present our design for a voltage divider that was constructed and tested for use on the PMT's.

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