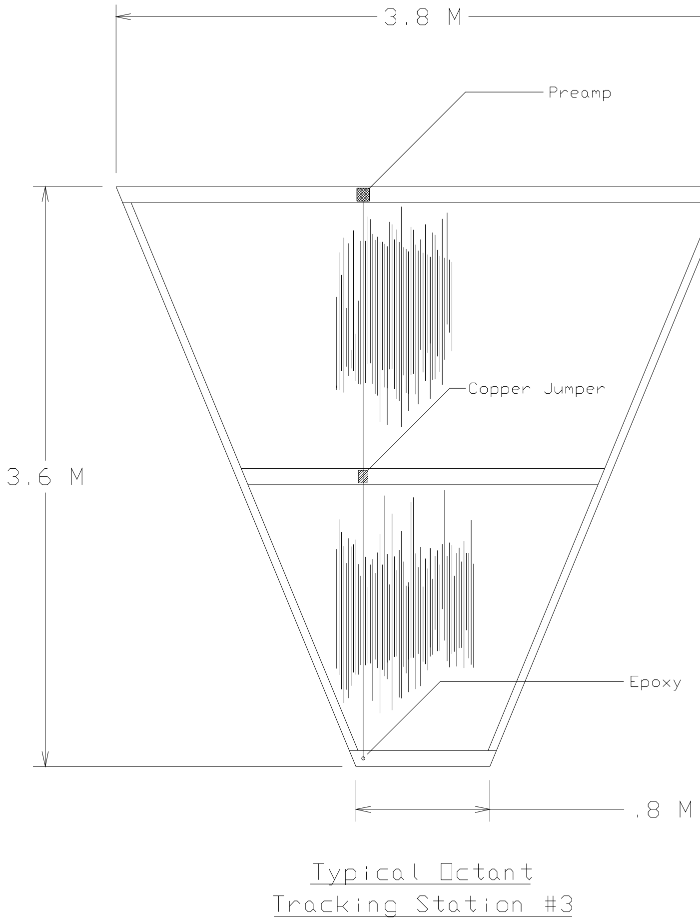

Figure 10.18: A possible method of segmenting the wires in tracking station #3 of the muon arm.

after installation by addition of lateral supports which attach to the tops of the identifier concrete walls and to the end wall of the hall, as seen in Fig. 10.23. The block walls are tall enough to require use of rebar to stabilize the several courses of block during construction of each wall. The pattern of penetrations for this rebar consists of two pairs of holes to permit use of one pair to install and grout the rebar for a given set of block courses, thus anchoring it to the courses below it, followed by use of the next pair to attach this course to the succeeding ones.

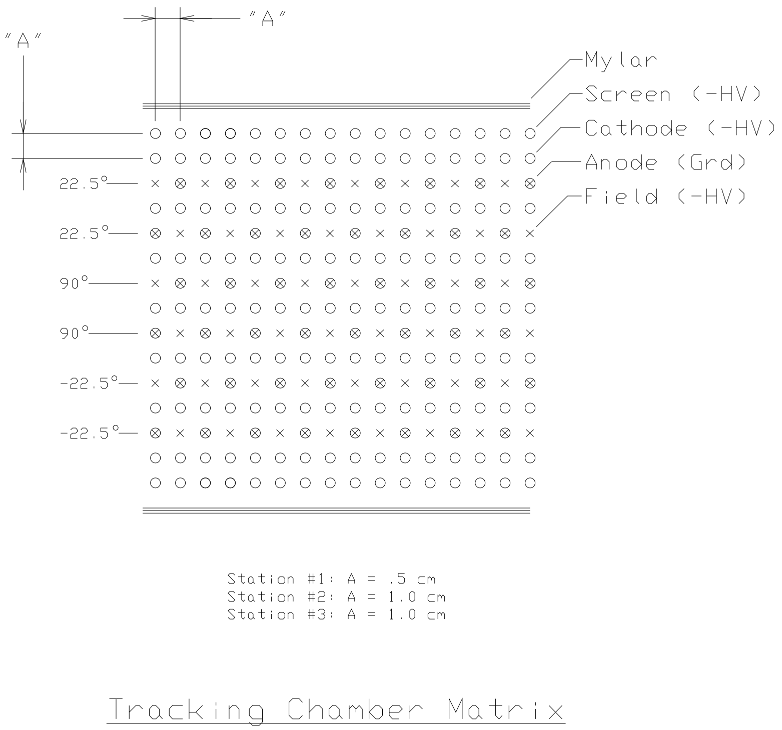

Figure 10.19: Drift cell geometry for the muon arm tracking stations. The cross section is shown at an intersection of the normal and stereo wire layers.

10.3 Electronics

10.3.1 Front-end

The front-end electronics for the muon tracking chambers will be similar to that used for the drift chambers in the central arms of PHENIX, for which a design similar to that developed at the University of Pennsylvania for the SDC straw tubes is being considered. A functional diagram of this bipolar monolithic ASIC is shown in Fig. 10.24. The principle difference in emphasis between the central and muon tracking is that the central drift chambers need good two track resolution in an environment where every anode wire may fire in a central Au + Au event, whereas the muon tracking stations have occupancies less than 10% for the same events but must obtain the best single track resolution possible in order to resolve the Υ(1S) from the Υ(2S+3S), as noted in Fig. 10.30. Therefore the muon system may emphasize better noise rejection and thus reduction of timing jitter by increasing the peaking time in the preamplifier-shaper for the muon arm tracking chambers compared to the peaking time ($\sim$10 ns) used for the central arm drift chambers.

We anticipate that engineering development will be required to develop a front end tuned to the impedance of the drift chambers. Measurement of this on a full-scale prototype

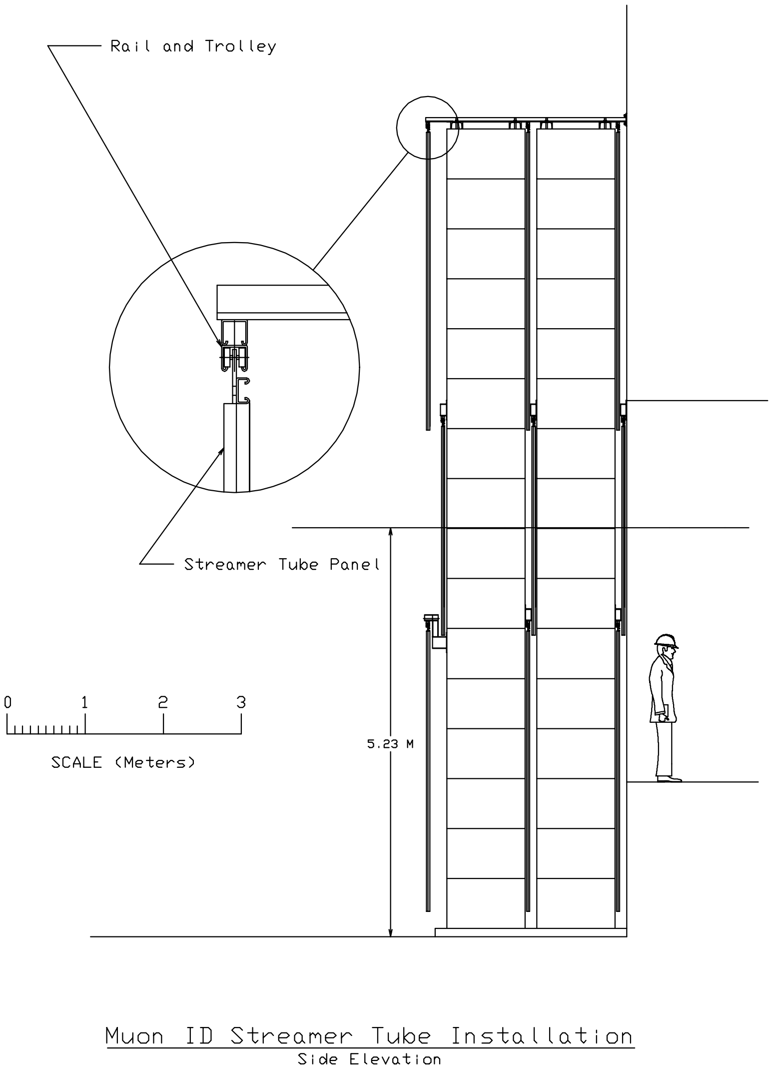

Figure 10.20: Side elevation view of the muon identifier.

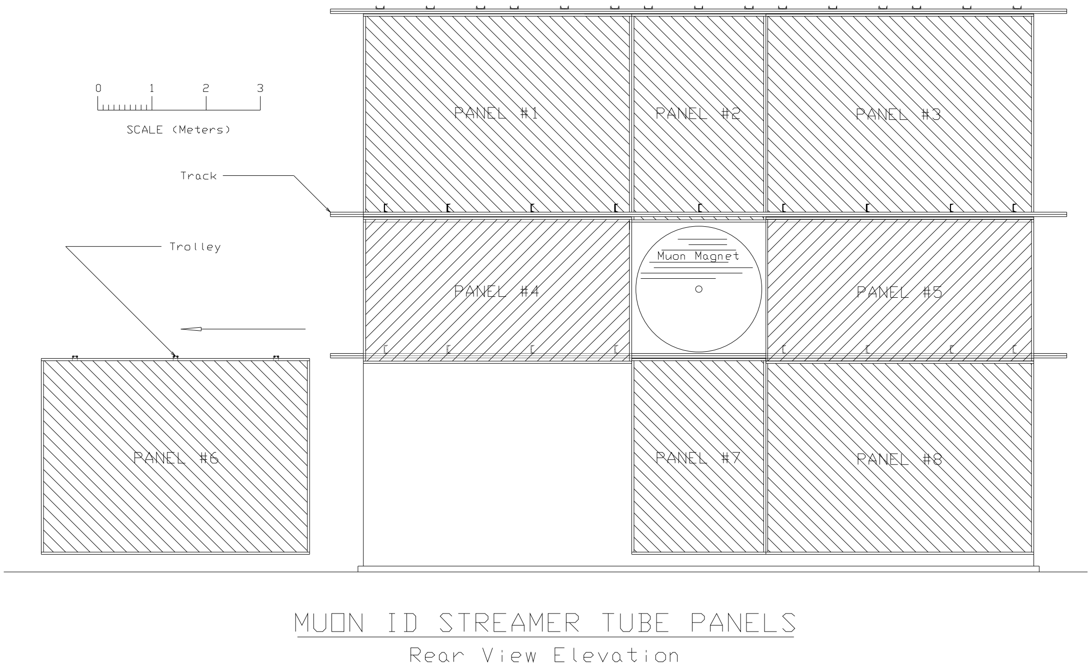

Figure 10.21: End elevation of the panels of streamer tubes forming the active element of the muon identifier. The installation of the sixth panel is indicated. This installation requires the stacked block shielding wall for the hall be removed locally.

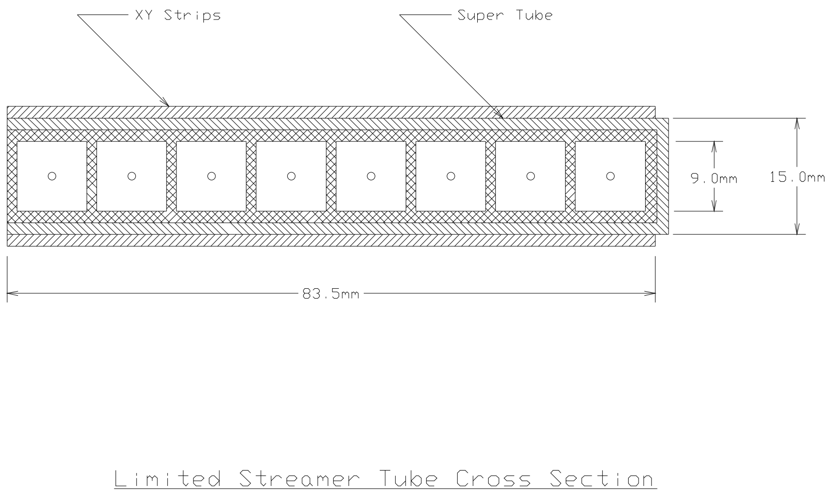

Figure 10.22: Cross section of a limited streamer tube showing the "supertube" support and the pad readouts.

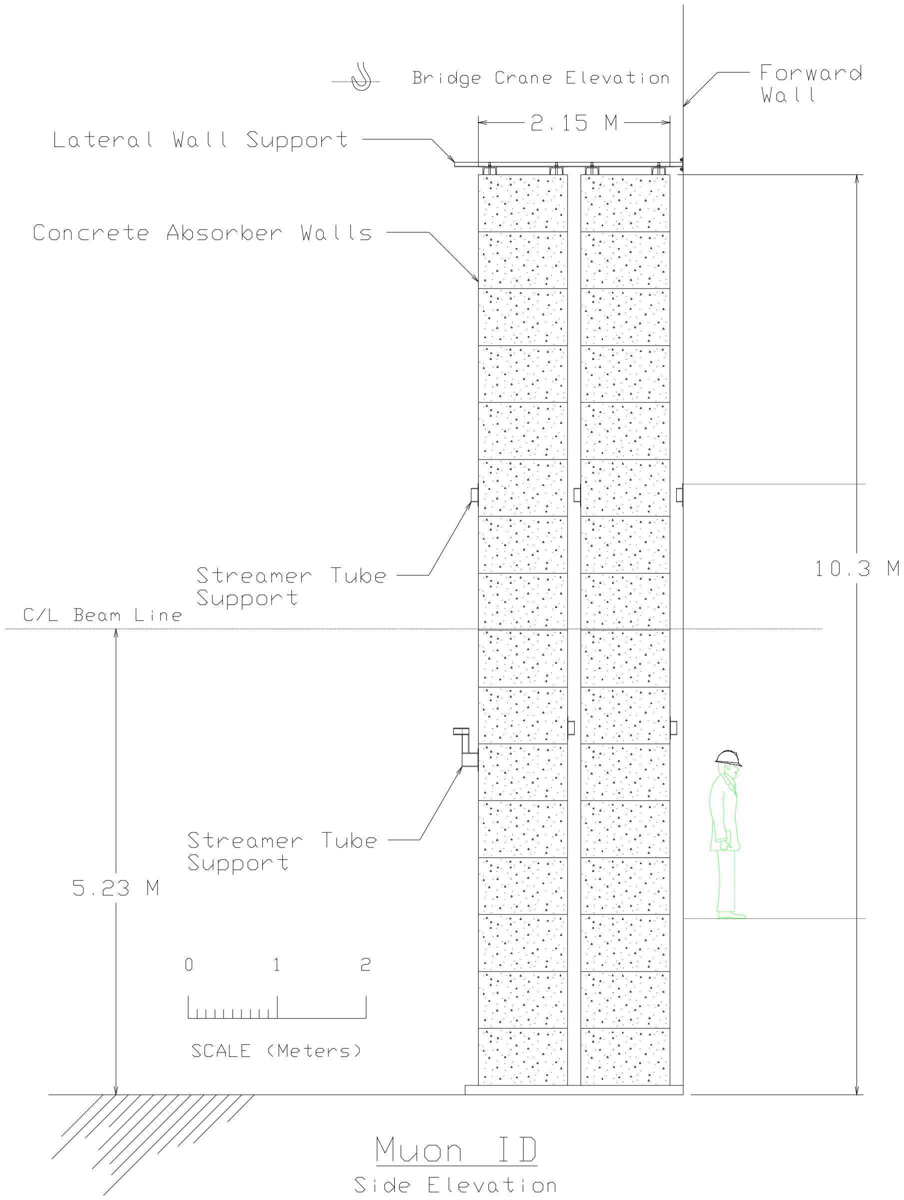

Figure 10.23: Side elevation of muon identifier concrete absorber showing support details.