My approach to optimizing the control paramters was to first get a set of parameters that could drive completely around the track and then use an online continuous Twiddle to tune those params.
The approach is to consider the average squared error over a sample that encompasses most of the turns of the track. I chose 10000 iterations. Then tweak the params as per the twiddle algorithm.

Some of my observations.

Just using Proportional (0.6 factor) I would get a fast reaction but it would overshoot quite a bit. As we went faster on the track this oscillation would get worse and eventually leave the track. You can see that in action here.

Adding proportional plus derivative vastly improved the situation.

Finally adding in the integral portion resulted in the following.

Lastly I implemented a version of the Twiddle algorithm that measured the average squared error over N iterations.
I tried various sample sizes, but realized that turns were we really had issues , so I increased the sample size to cover the entire track at least once. This captured all errors during turns as well as the straight sections.

I ran this version for a long time to let the twiddle algorithm converge on a good set of weights. I did need to find an initial set that would get around the track and had to be careful to limit the delta size to avoid cases where it would go off the track after a number of circuits.

Eventually I was able to let it run for long enough to find my final set of control parameters.

This is a screen capture video of a lap with the final control parameter settings.