My first graph shows the frequency response. It doesn't match well enough so we scale our lengths by 0.95.

The second graph confirms our design matches our filter specifications. We see our cut-off frequency is at 2 GHz and the insertion loss at 3.2GHz is around 43dB. We were asked to design a circuit with a minimum insertion loss at 3.2GHz of 20dB so our filter fulfils the specifications.

My third figure compares our filter to the stepped impedance implementation filter we designed for last weeks lab. Both filters had to fulfil the same specifications.

We see both circuits fulfil the specifications however our stepped impedance implementation filter gives a much lower insertion loss of 26 dB, in comparison to the ~ 43dB we get using the Richard transformations. This is due to us using a lot of simplifying assumptions in our stepped impedance implementation filter that we didn't use in our Richard's Transformation Filter. Therefore the Richard's transformation filter is much more accurate.

Implementing the stepped impedance design of our filter is a lot more straightforward to manufacture than our Richard's transformation filter.

I would conclude in saying that a far more practical solution than using the Richard's transformation design would be to design ~~a~~ a higher order stepped impedance filter, As the 43dB insertion loss is really quite excessive and not merited for these specifications.