Parameters:

Pulse width: 5ms  
Current pulse amplitude: <20mA  
Pulse repetition: 27ms (37Hz)  
Magnet voltage: 19V  
Magnet current: 70A  
Field (Gauss probe): ~60G

Simple end plate drawing and test setup below:

Test notes:

Started with superlayer 2 using a field wire in the medium length section of the prototype chamber.

Without the magnet power supply turned on, the tension monitor was connected and there was a significant signal from the wire that had a frequency response of 540Hz. We do not see this frequency response in our EEL109 lab at Jlab, but we will move on with tension measurements and note the presence of this nuisance signal.

Next we connect the tension pulse drive to a sense wire in the medium length section of superlayer 2. The signal response is rather remarkable and again a very large amplitude is recorded on the oscilloscope.
We then attempted to measure the tension of the short wires for both superlayer sections. The magnet is not in the optimum position, and the readback signal from the tension monitor showed no clear indication of a resonant signal. The ‘short’ wire measurements were not successful.

We then moved the magnet coil so the center of the field was perpendicular to the longest wire sections. Starting with a sense wire in the longest section of superlayer 2, the response from the wire was very clear and measured 40Hz.

Figure 2 shows a very clear response from the sense wire at 75Hz which dominates the FFT. Note that the 540Hz peak still exists on the FFT trace, but the resonant response is clear.

We kept the magnet current amplitude at 70A for these tests.
Next was the measurement of a field wire in the long wire section of superlayer1. The amplitude was not as remarkable as the sense wire, but the resonant FFT result was clear. Depending on where the cursor is located, the largest peak on the FFT plot is approximately 25Hz.

Figure 3 shows a very clear response from the sense wire at 40Hz and note that the amplitude of the response is saturating the amplifier. One could measure the frequency without the FFT match function!
Figure 4 shows a very clear response from the field wire at 25Hz and note that the amplitude of the response has a significant amount of other frequency components.