To return to ball collection and collect when done firing:

* Decide that we’re done firing
  + Nothing in loading mechanism after x second delay
* Continue until side wall switch triggered
* Drive about 1/3 of the way across based on time
* Convert to differential, turn 180
* Acquire middle tape (by driving forward and at a slight angle)
* Follow tape to collection area
* If the collection mechanism has been turning for at least X seconds and the loading QRD is not triggered, assume that the collection area is empty of balls:
  + Continue strafing (with wall following algorithm) in the same direction until a side wall switch is triggered. Target IR can be ignored.
  + Switch directions and strafe for X seconds (until approx. between the side-most and center tape lines).
  + Convert to differential steering (turn servos to differential angles).
  + Turn about 135 degrees (motors driven in opposite directions, for X seconds). The robot should be pointing at an angle towards the center line of tape.
    - If it was strafing left-to-right, turn 135 degrees clockwise.
    - If it was strafing right-to-left, turn 135 degrees counter-clockwise.
  + Turn on collection mechanism.
  + Drive forwards until either of the center tape sensors detect the tape.
  + Follow the tape using the center tape sensors (PD algorithm) until either of the front touch sensors are triggered.
  + Slowly (50% speed) turn towards the triggered touch sensor until the other front touch sensor triggers as well.
  + Wait X seconds.
  + Back up straight a short ways (X seconds while motors are reversed).
  + Drive forwards until both front touch sensors are triggered again.
  + Check if loading arm QRD has been triggered.
    - If it has, loading is done.
    - If it has not been triggered, continue to briefly back up and then ram the wall until the loading QRD is triggered. Angle the robot slightly after backing up each time as well.

To return to wall

* Reverse straight from wall
* Do 180
* Acquire tape (any tape will work)
* When T detected, drive forward until front touch sensor trigger
* Turn on lasers, reverse until threshold is reached
* Convert to bicycle, move sideways following wall

Wall following

* Strafe sideways at constant distance from wall using PID algorithm, while detecting IR and side touch
* Detect IR:
  + Stop
  + (?) adjust so signal is strongest, adjust so parallel to wall
  + Spin-up firing at same time
  + Lift servo, confirm that lifter IR goes off
  + Fire
  + Wait with collection running for x seconds (possibly strafe in direction ball deflects)
* Detect side wall:
  + Reverse wall following direction