Phase I Goals (January – July)

1. Commission gun 350 kV
2. Commission beam line
3. High Current SSL Lifetime studies
4. RF commission new QCM (at UITF or CMTF)

Install gun (January-February)

* Locate gun table
* Assemble NEG sheet + smaller mesh ground screen + some WPs front or back of gun (or configured ~ like our 200kV gun, and just operate at lower voltage)
* Mate high voltage chamber to UITF prep chamber
* Assemble ball electrode + black R30 ceramic + Yan’s shed + fiducialize
* Install/align electrode to HV chamber
* Vent Prep for puck alignment + test wafer? + new strips? Yes, + lithium for Mulhollan lifetime test + new mask? (yes with tapered 3mm hole to allow activation)
* Assemble double insulated anode for bias and current monitoring
* Install 80/20 Y-chamber stand
* Assemble NEG tube + FH solenoid and NEG coat
* Assemble Y-chamber NEG
* Install NEG tube + FH + valve + Y-chamber and align
* Bake Prep + HV + NEG tube to first valve VBV01
* Baseline Prep + HV + NEG + Y vacuum
* Dummy photocathode to HV chamber

HV commission gun (January-March)

* Assemble Glassman 450kV/3mA stack + cond. resistor to SF6 tank + test
* Install SF6 tank to permanent position + controls (shorter manipulators?)
* Commission Glassman to 450kV into cond. resistor
* Assemble Kr plumbing to gun chamber
* Assemble radiation monitoring + control
* Assemble anode monitoring + control
* Close cave with blocks + TOSP
* HV and gas condition for 350 kV operation with no field emission

Install beam line (January-April)

* Install 80/20 stand from Y-chamber to QCM
* No Wien filter : replace with nipple + harp
* No chopping chamber : replace with nipple + spare? DP can
* No connection to QCM : replace with 2 kW dump or cup (10 mA \* 200 kV) Degas a dump in Big Blue? Easier that way….
* Magnets:
  + DS will operate to 200kV + start fab of 450keV DS
  + 11 pairs of Haimson
  + FH + FB + FA map + address FA captured to chopper
  + Dipole for 450keV
* RF:
  + Install 1500 MHz chopper 1 + chopper 2 + NO rf
  + Install 750 MHz Buncher + RF if possible
  + Replace YAO with 1500 MHz Brock + fast scope
* Diagnostics:
  + 7 + 2 total in/out viewers + controls
  + First viewer w/ hole can be chromox; YAG for others?
  + 2 Cups + controls
  + 1 + 1 Harps
  + 5 new BPM cans
  + A3/A4 can eliminate or retract
  + Dump Line = minimum is viewer + dump
* Vacuum
  + 1 + 1 DP can
  + X ion pumps
  + Region 2 bakeout (Y-chamber to before chopper)
  + Region 3 bakeout (before chopper to after chopper)
  + Region 4 bakeout (after chopper to QCM/dump)
* Laser
  + 250/750/1500 ? MHz gain switched freq. doubled 780 nm: higher rep rate is better, but if we want to use buncher, then 750MHz is our operating rep rate.
  + Shutter + tune mode + attenuator + lens + power meter
  + LLRF source
  + SCAM module

Commission beam line (April-May)

* HCO w/o beam : vacuum, magnets, viewers, valves
* HCO w/ beam threaded to dump : magnets, viewers, harp
* Commission buncher w/ spectrometer line + Brock cavity

High Current SSL Lifetime Studies (June-July)

* Laser rep rate >= 1.5 GHz (so no bunching)
* Measure lifetime vs. spot size @ 3mA and 200kV
* Change to 225kV Spellman
* Measure lifetime vs. current @ max spot size and 200kV

QCM Commissioning. (January-July)

* Complete string assembly
* UITF ODH installation
* Complete cryo installation + testing
* Klystron installation
* Mech design to create waveguide layout
* QCM installation
* Waveguide installation