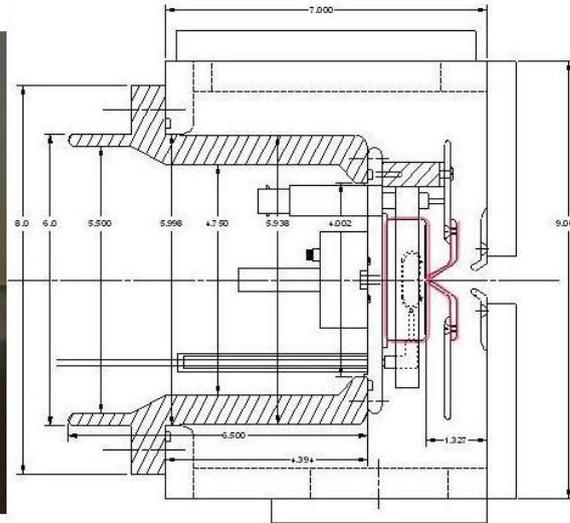
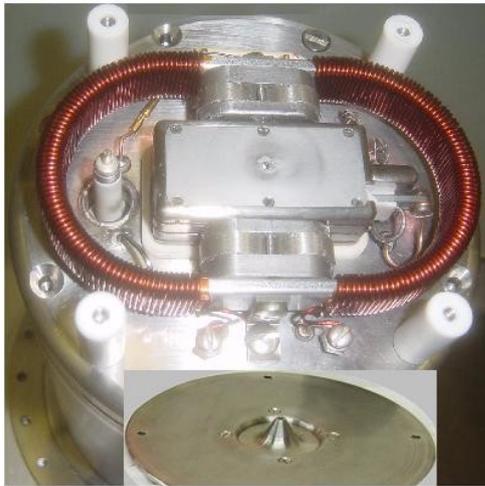


# Pre-injector Upgrade Updates (13 Oct – 27 Oct 2010)

C.Y. Tan  
27 Oct 2010

# Source Status

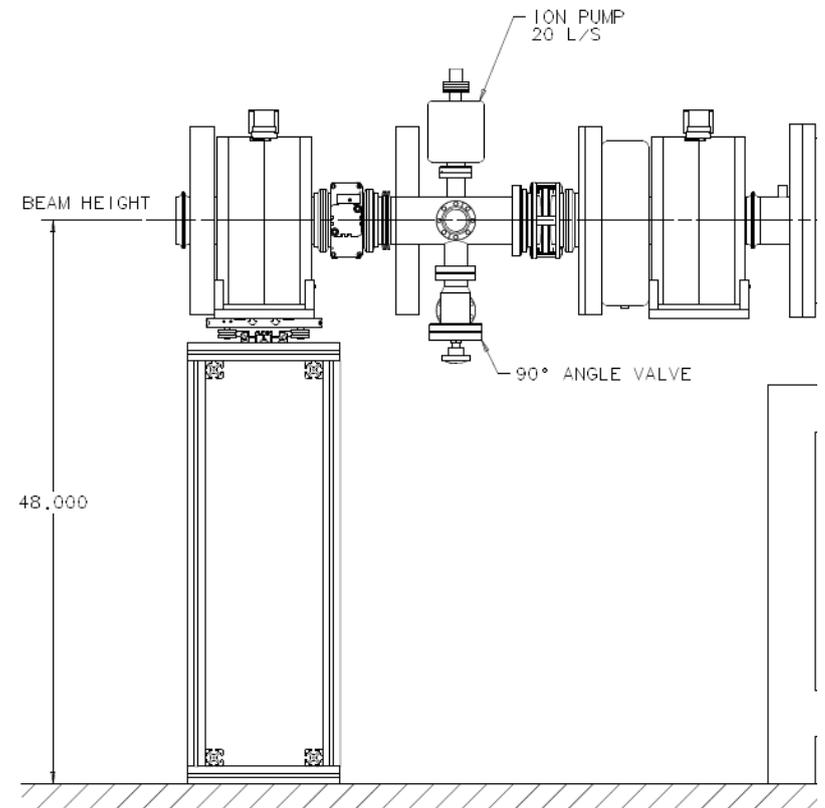
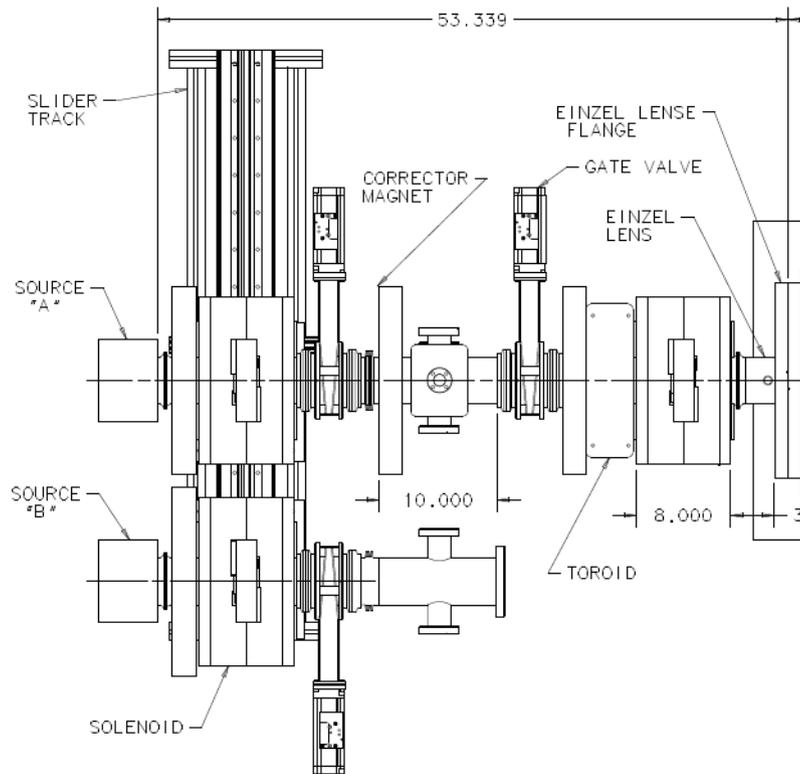


Device	Status	Comments
Source	35kV without sparking.	New cone being manufactured. Thermocouple caused short from anode to cathode this morning (27 Oct 2010)
Pulser	Tested up to 40kV with dummy load	Installed with new caps. Much less droop, 1V/us

# Source News

- HINS wants their source back
  - Priority must be to get the Einzel lens test work done before we return the source.
  - Status of the crowbar circuit – Jim is away.

# LEBT Status



## Status

Bdl=186.5 gauss inches

Solenoids

Toroids

Einzel lens crowbar circuit

## Comments

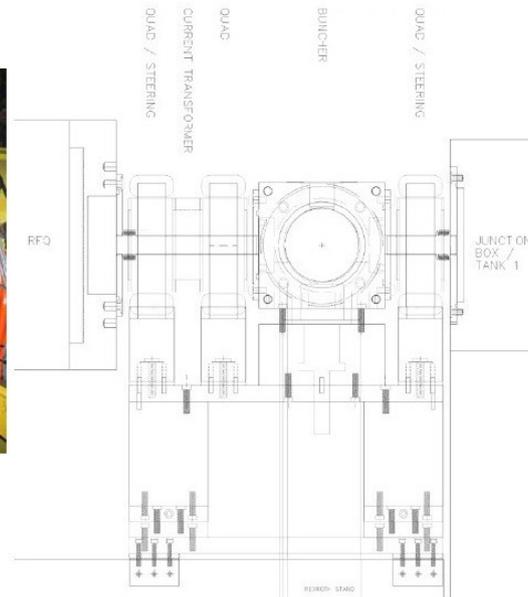
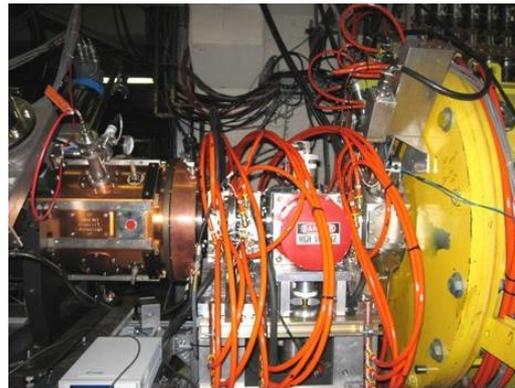
Out for bid.

Beam shot at it at >35kV. No sparking

1<sup>st</sup> solenoid Jan/Feb next year

Must be done before HINS gets their source back

# MEBT Status



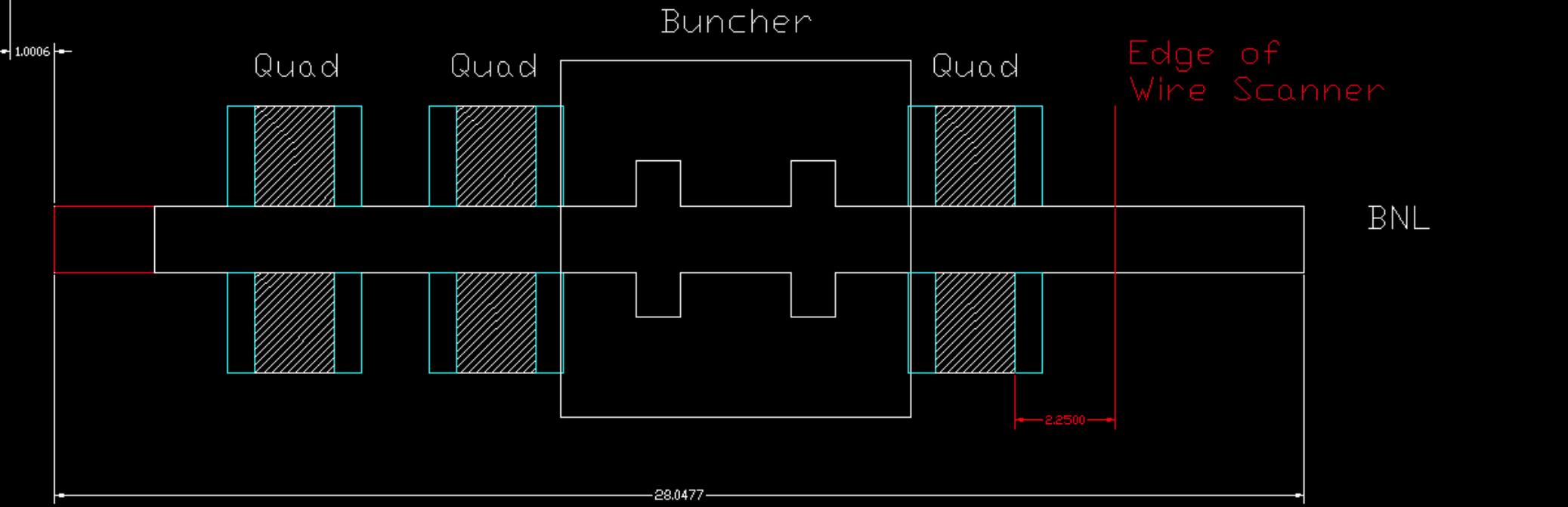
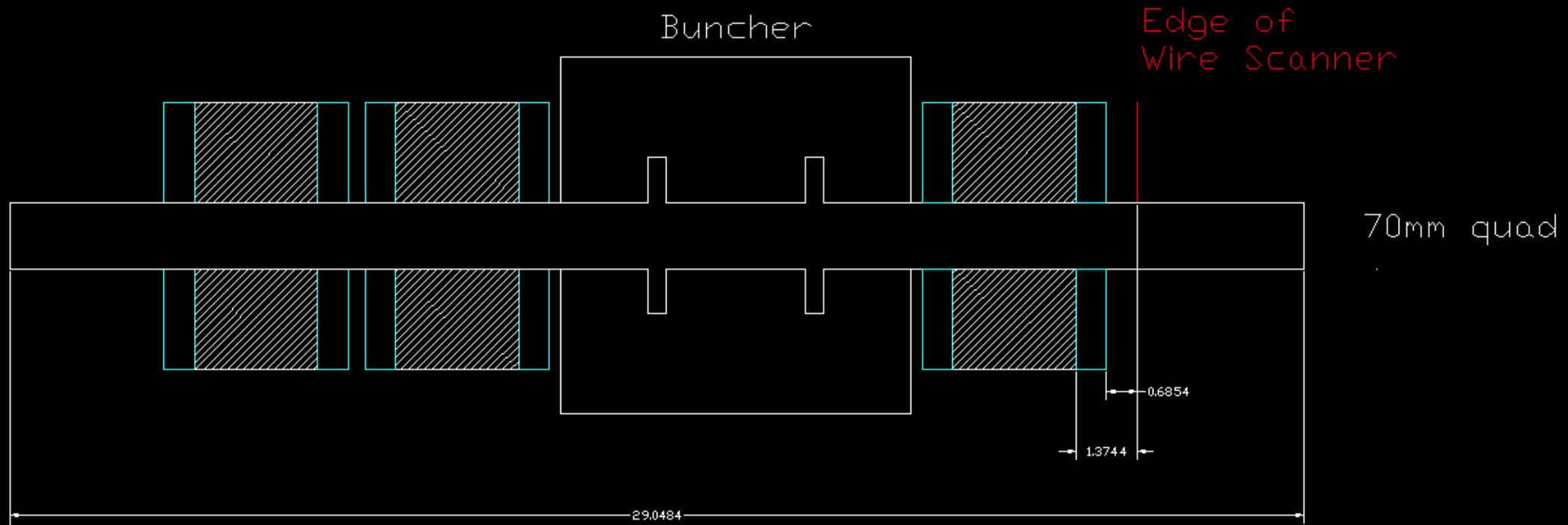
Device	Status	Comments
Quads	Design in progress. Length of quad is too long! Capture efficiency is ~70% compared to 80% before. BNL quads?	Sextupole problem solved with saddle correctors. Length of quad is 70mm. Physical length is > 100 mm!
Buncher	On order	
Power for quads	Specs to follow	Quads being redone.
Power for buncher		Use present buncher supply in the line.
Connection to Tank	Remove large flange of Tank1	

# MEBT Problems

- The quads are extremely difficult to make
  - Quads are too long, c.f. 45mm to 70mm and occupied length from 76.2mm to 105mm (1.37x longer).
  - Capture efficiency at the end of DTL1 down from 80% to about 75%. (Presently at 72.5%, still optimising)
  - Good news is that BNL has finally solved their cooling problems. Is this the type of quads that suitable for us?

# MEBT Problems (cont'd)

- May consider getting rid of MEBT and slapping RFQ right next to the RFQ
  - Perhaps with addition of PMQ quads.
  - Previous calculations show unrealistically large quad strengths ( $\sim 100$  T/m!). Capture 99%!

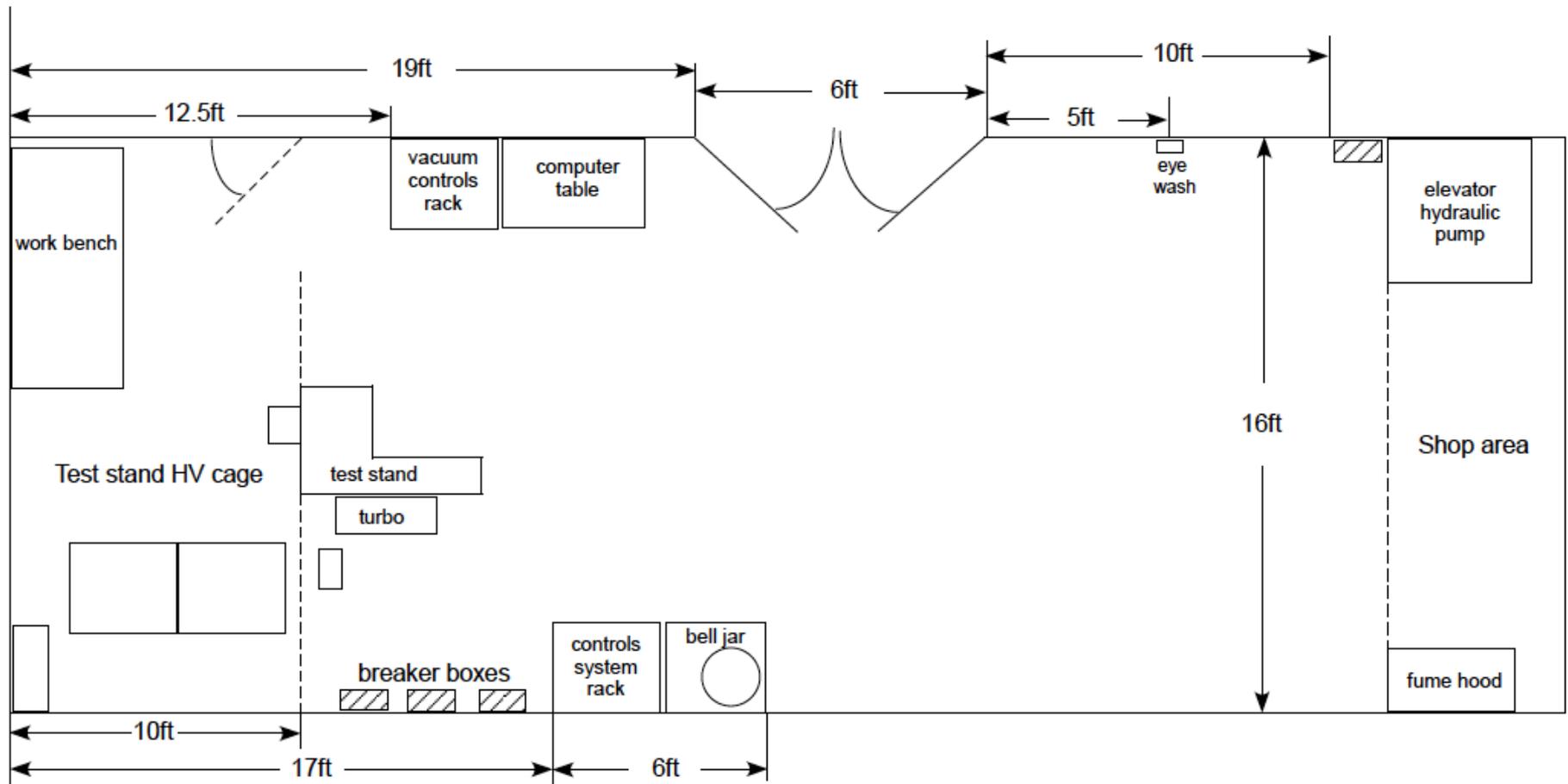




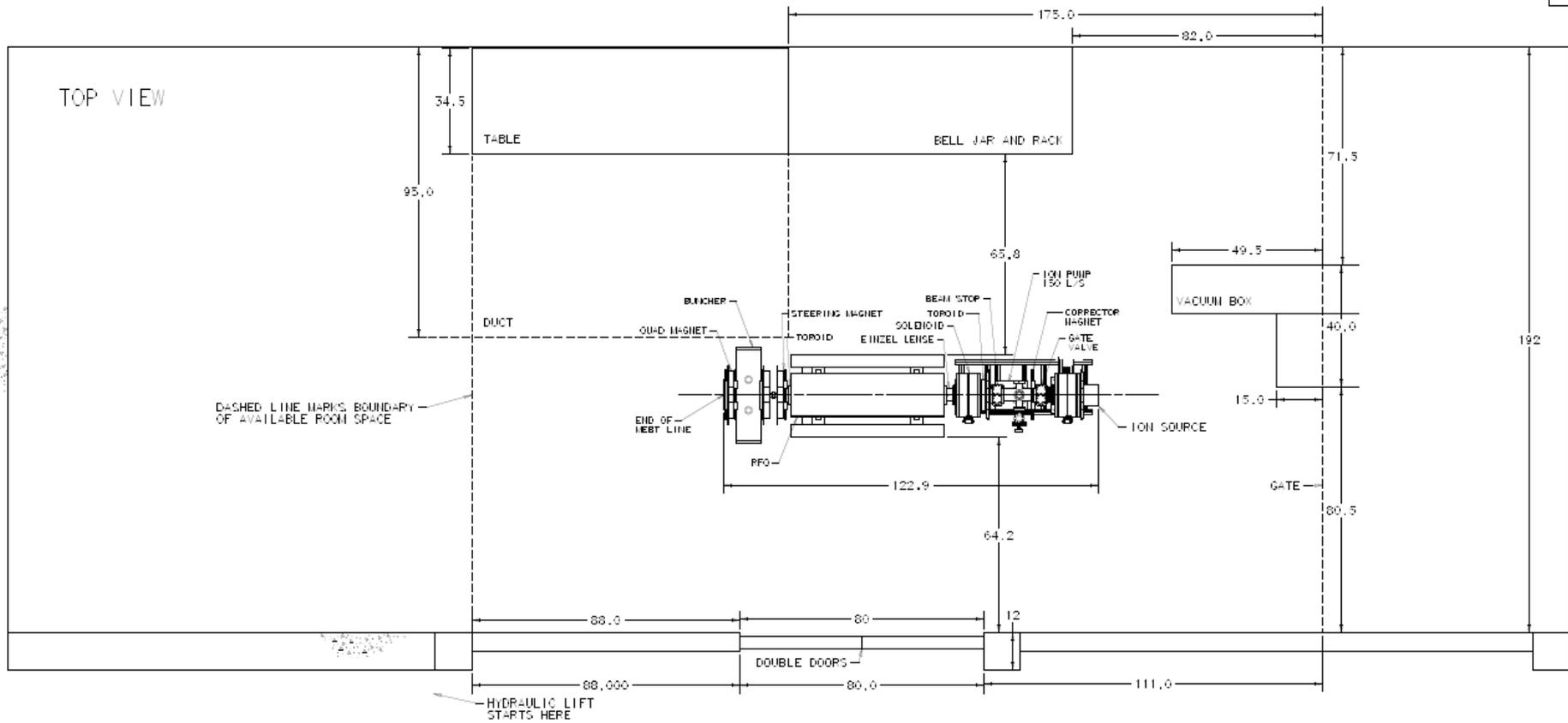
# Test Stand

- Room has been cleaned up.
  - Beam line layout in progress
    - Water – Bob Slazak
    - Electrical – Jim Ranson
- Need to test LEBT before RFQ connection
  - Wires, toroids at the end of the LEBT, same position as the RFQ.
- Design diagnostic line.
- Are drawings from Schempp sufficient to build table?

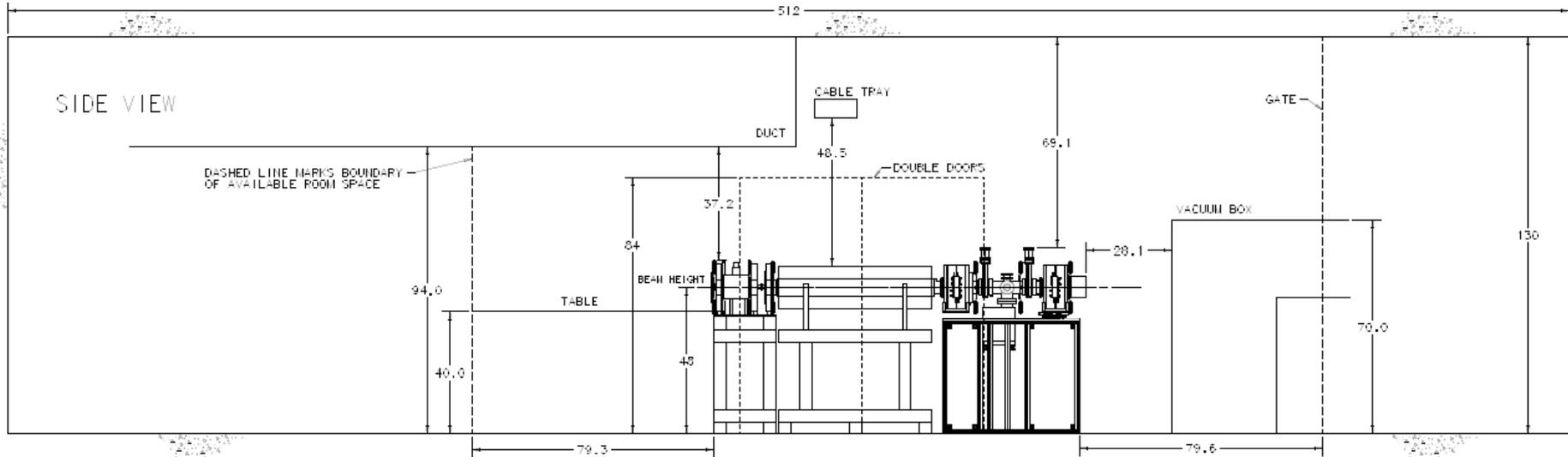
# Test Area



# TOP VIEW



# SIDE VIEW



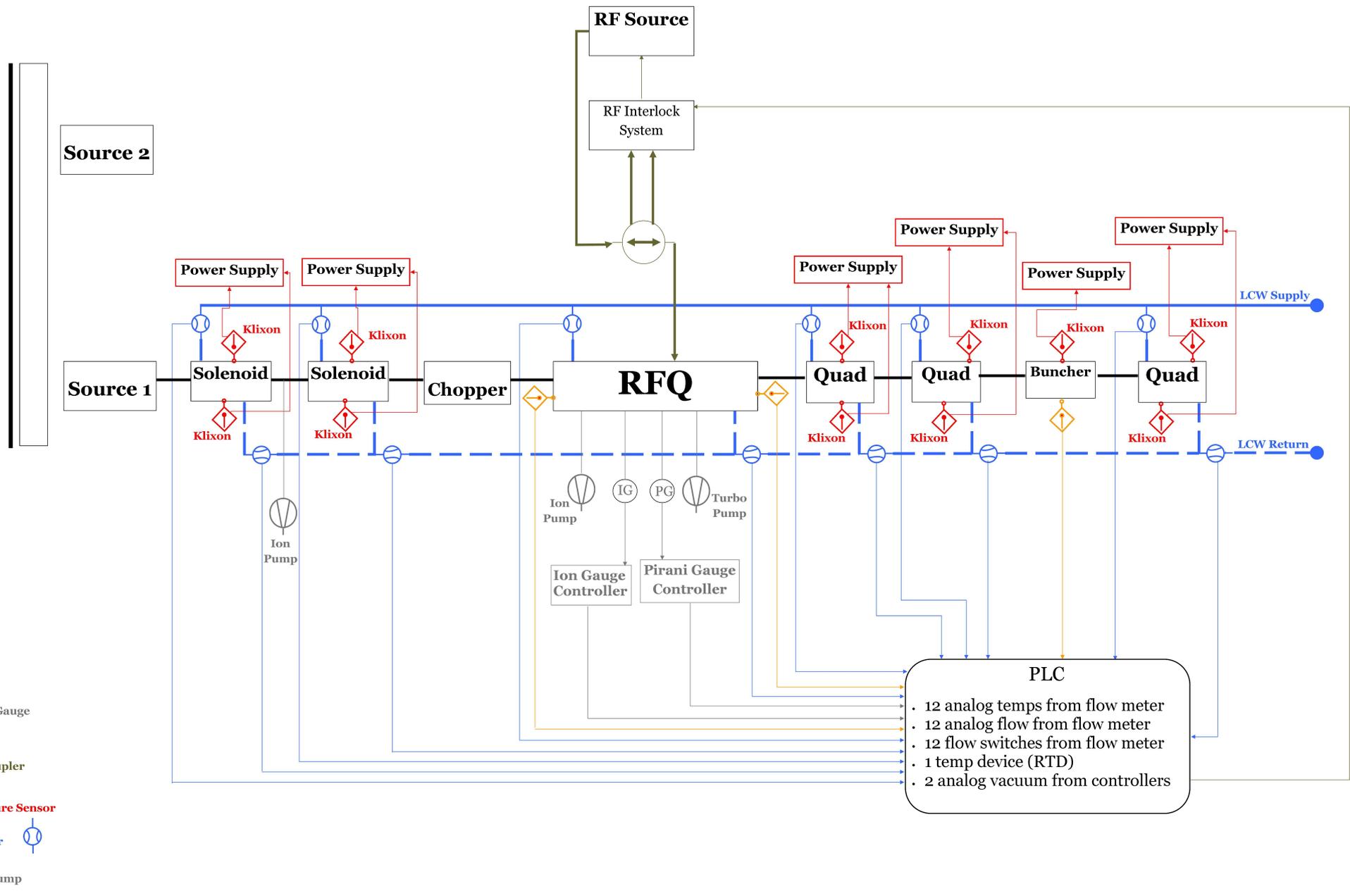
# Instrumentation

- Toroids?

# Safety

- When can the beam line layout in test area be done?

# Controls



# RFQ reminders

- Schempp is vendor
  - Make sure that the vanes are cleaned! See ISIS email.
    - Some cleaning details supplied by ISIS.
  - Review and verify on site mechanical design and construction (already in contract).