Pre-injector Upgrade Updates (22 Jun 2011 – 06 Jul 2011)

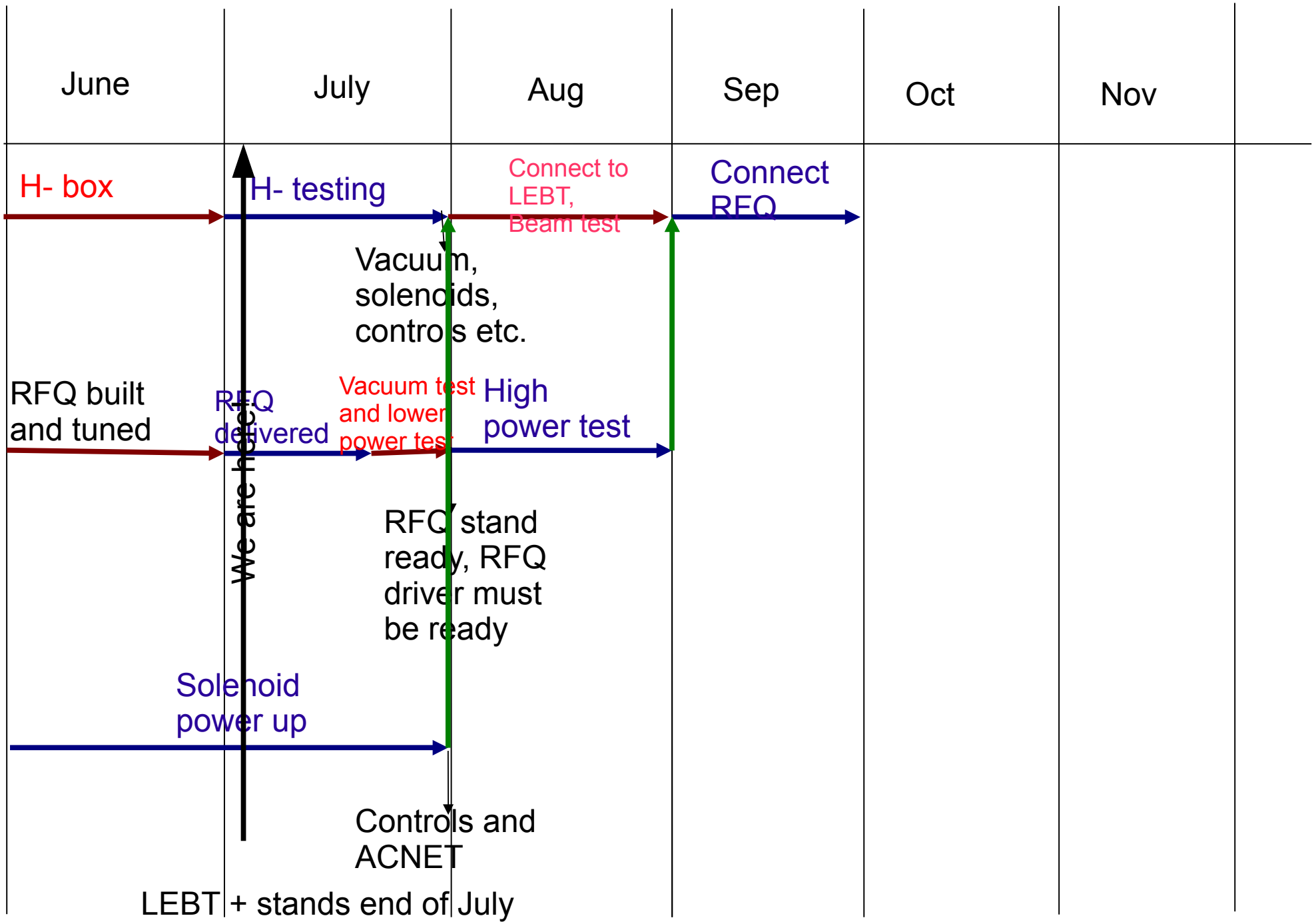
C.Y. Tan
06 Jul 2011

News

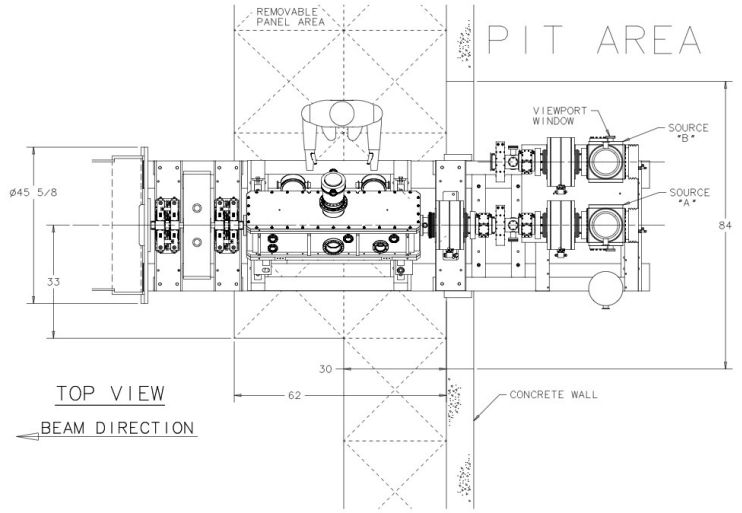
- Review for solenoid testing (29 Jun)
  - Add a smoke detector to each power supply space and not install Klixons on the cables.
  - finish the interlock switch installation.
  - Install 480vac labels on lexan panels and on the terminal block and fuse covers.
  - Do a thermal scan of the rack at full load current when the magnet is back. This will require that we turn the rack during the test.
  - Have a mini walk through after complete.

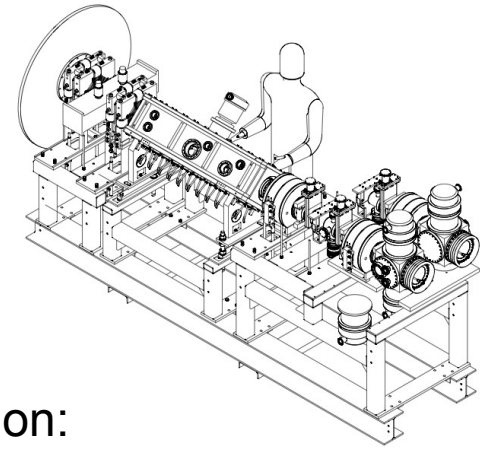
Reminders

- Fill in the MS Project time lines. See Elmie.
  - Mike Kucera
  - Vic Scarpine
- Fill in paper sections for the review.

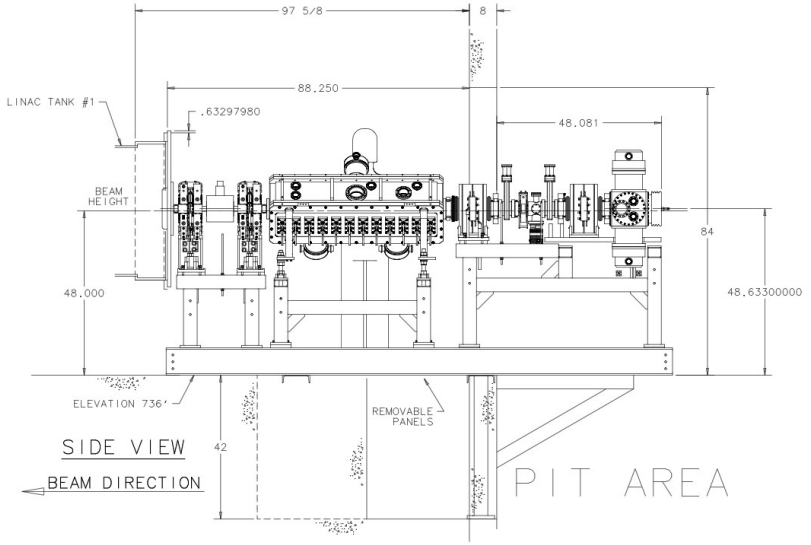

June
July
Aug
Sep
Oct
Nov
H- box
H- testing
Connect to LEBT, Beam test
Connect RFQ
Vacuum, solenoids, controls etc.
RFQ built and tuned
RFQ delivered
Vacuum test and lower power test
High power test
We are here
RFQ stand ready, RFQ driver must be ready
Solenoid power up
Controls and ACNET
LEBT + stands end of July
H- box end of June, (extractor PS status?)

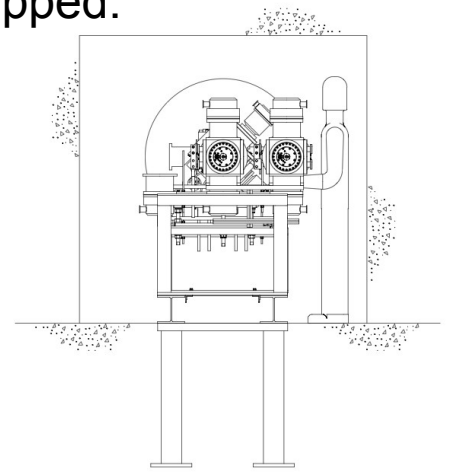
REV	DESCRIPTION	DRAWN	DATE
		APPROVED	DATE





Note modification: position of toroid and pump out port flipped.





PREACCELERATOR PRELIMINARY LAYOUT

APRIL 27, 2011

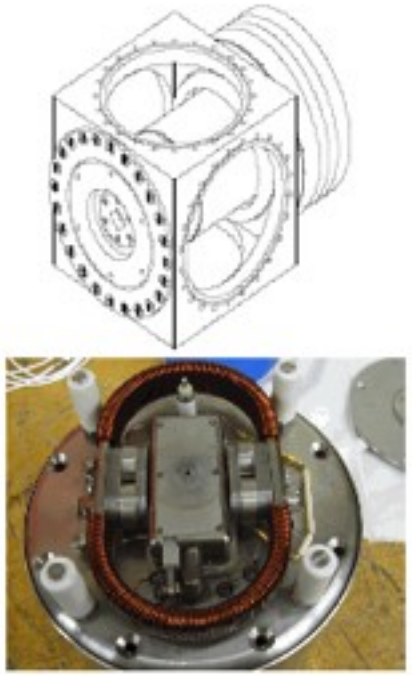
UNLESS OTHERWISE SPECIFIED		ORIGINATOR	
± ± ±		DRAWN	
1. BREAK ALL SHARP EDGES MAX.		CHECKED	
2. DO NOT SCALE DRAWING.		APPROVED	
3. DIMENSIONS BASED UPON ASME Y14.5M-1994		USED ON	
4. MAX. ALL MACH. SURFACES		MATERIAL	
5. DRAWING UNITS: U.S. INCH			

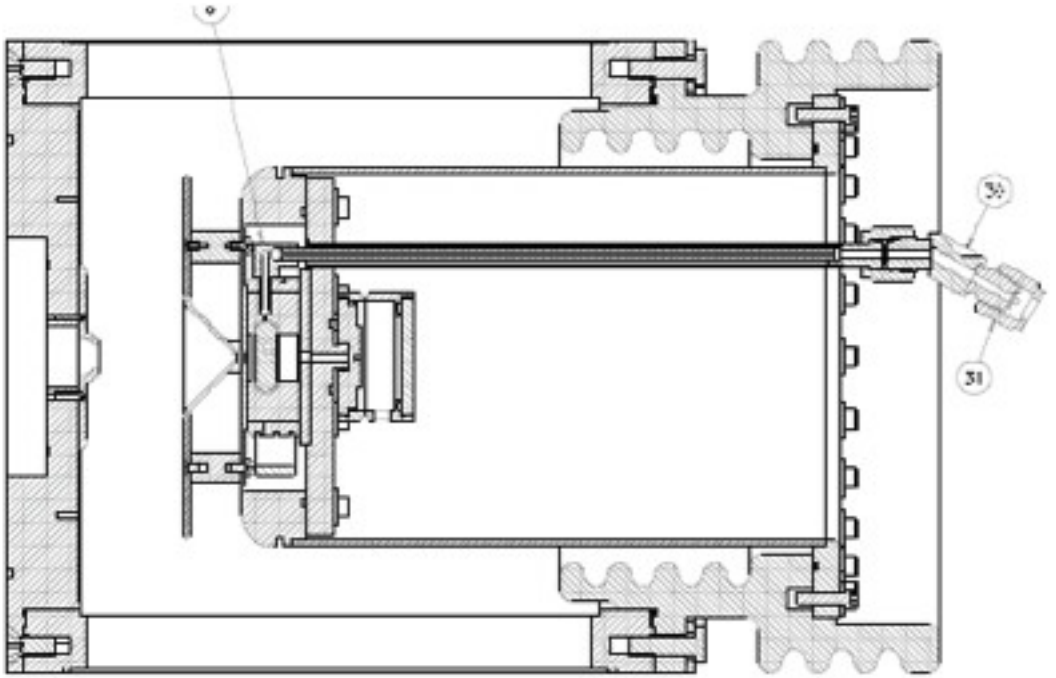
FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY

SCALE	DRAWING NUMBER	SHEET	REV
	. – –	1 OF 1	
CREATED WITH :		GROUP:	

Created: 10:31:06 on 28-06-11 (D-M-Y) By: mkielar State: 1-INITIAL

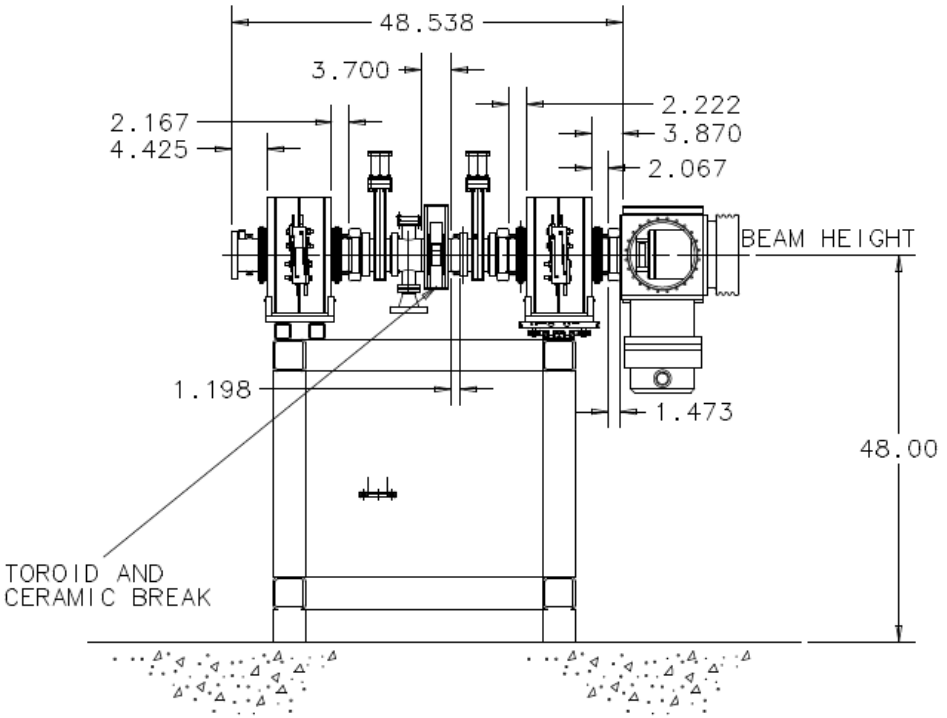
Source Status





Device	Status	Comments
2nd source cube	A few parts left to be machined	
Test stand source	Increased current by removing ground electrode	53 to 63mA with ground electrode removal. 95 mA by moving toroid closer to output. See next talk.
Extractor PS	Received transformer (16 Jun)	All parts on hand
Source Turbos	received	

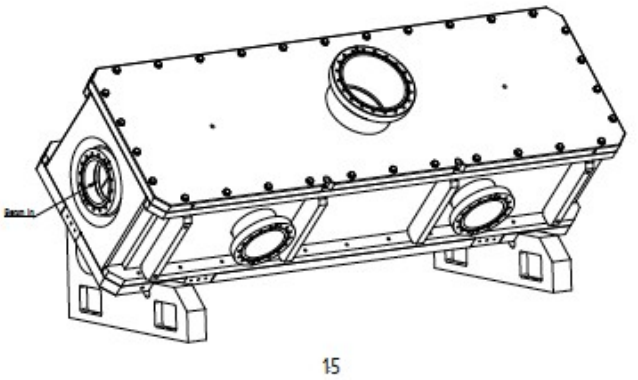
LEBT Status

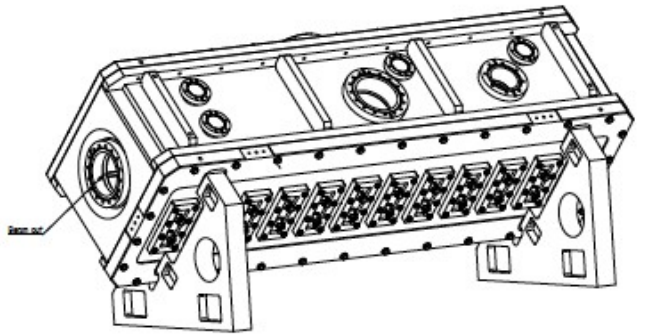


Device	Status	Comments
Solenoid PS	Ready to test solenoids	Safety review is done (29 Jun)
Solenoids	Only #4 is incomplete.	Ready to be shipped.
LEBT drawings	Being drawn	Bellows ordered End of June to early July delivery.
Correctors	final design (07 Mar 2011)	Final drawings still not here! Waiting for them to give Steve Hays inductance estimates
Solid state switches	Have quote	$75k for two. 90 days to deliver once purchase is made

RFQ Status

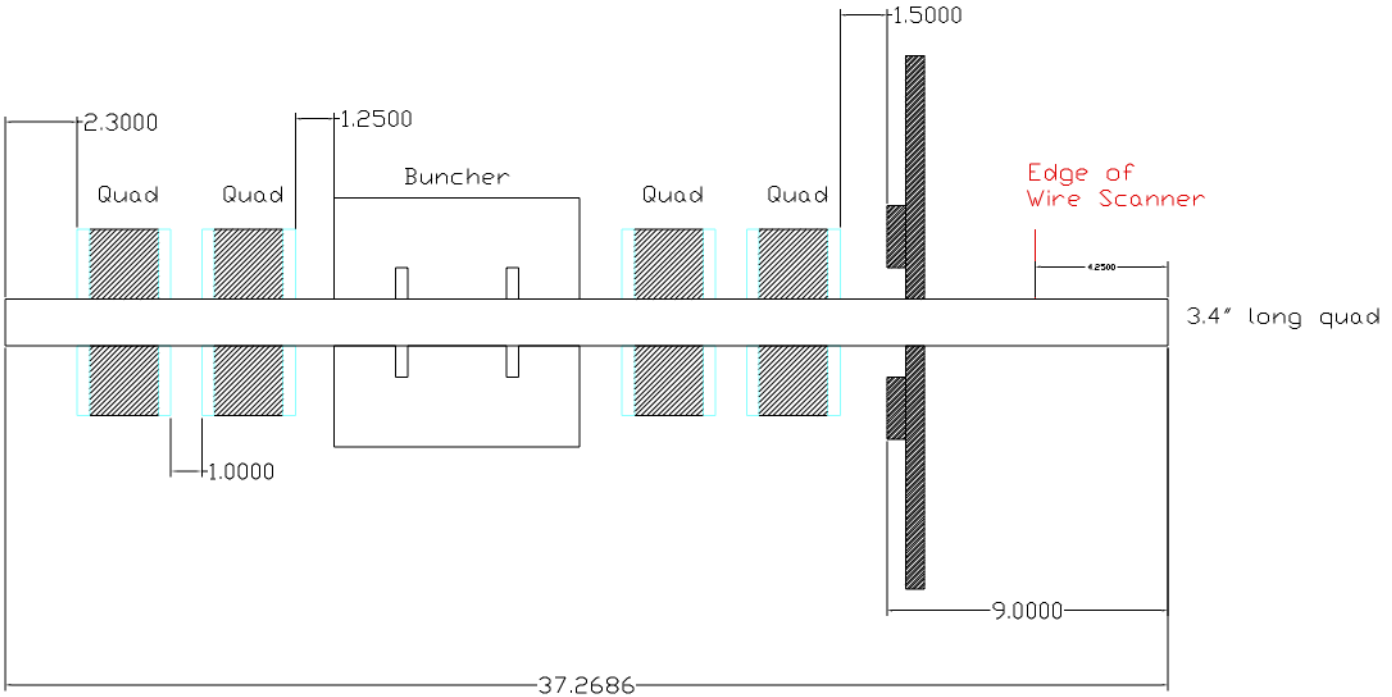
•Should be done. Waiting for email from Schempp (06 Jul)





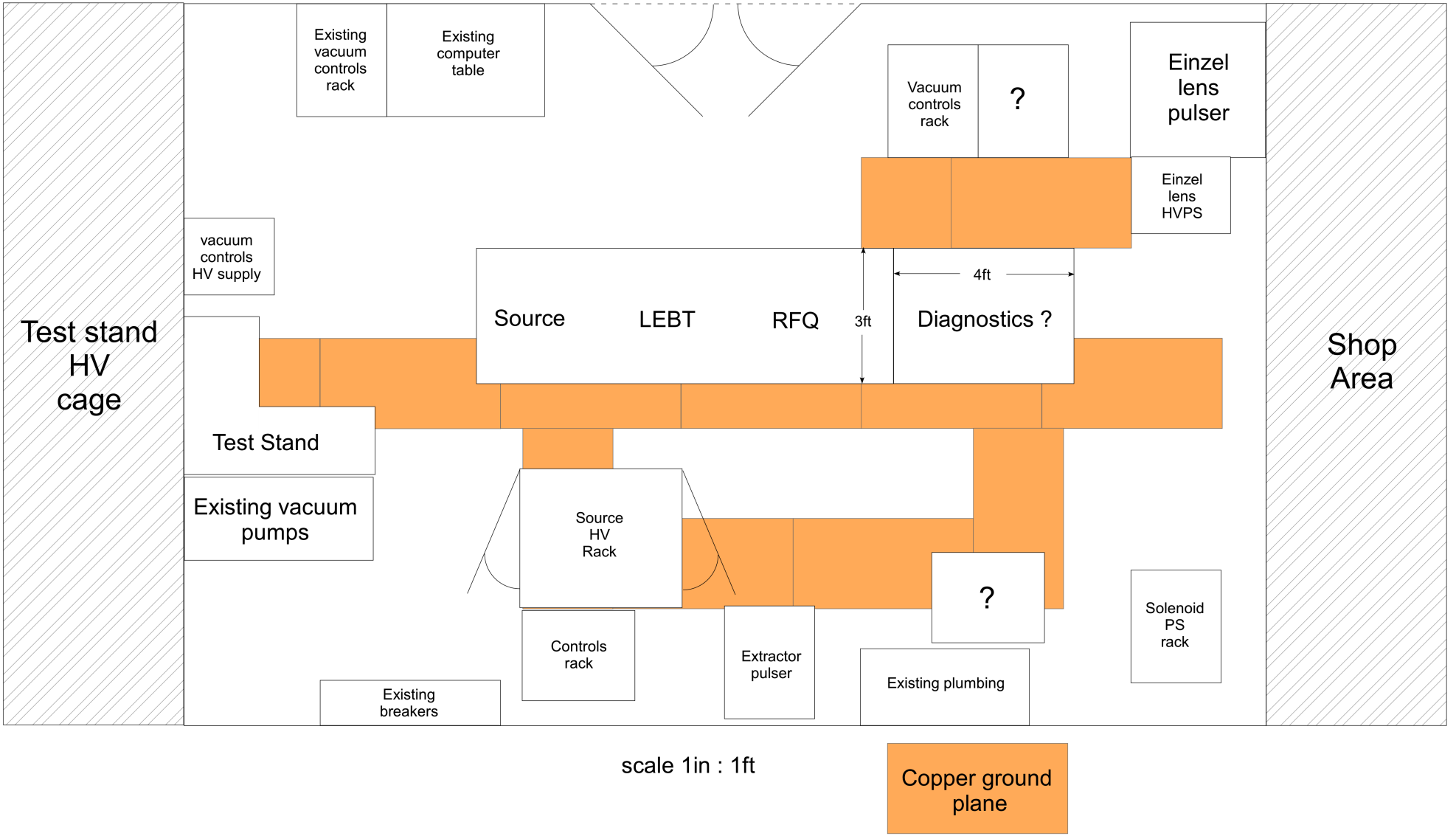
Device	Status	Comments
4816 PA	Water is hooked up. No leaks.	Expect power out of tube by 3rd week of July.

MEBT Status



Device	Status	Comments
Quads	Coil winding has started (17 May)	All quad coils are complete (28 Jun). Dipole coils for 2 magnets complete. Potting has started. Cores will be delivered in Aug. 1st magnet in Sept
Buncher	Bead pull parts are done. (29 Jun)	
Power for quads	Specs to follow	Quads being redone.
Power for buncher		Use present buncher supply in the line.

Proposed test area layout



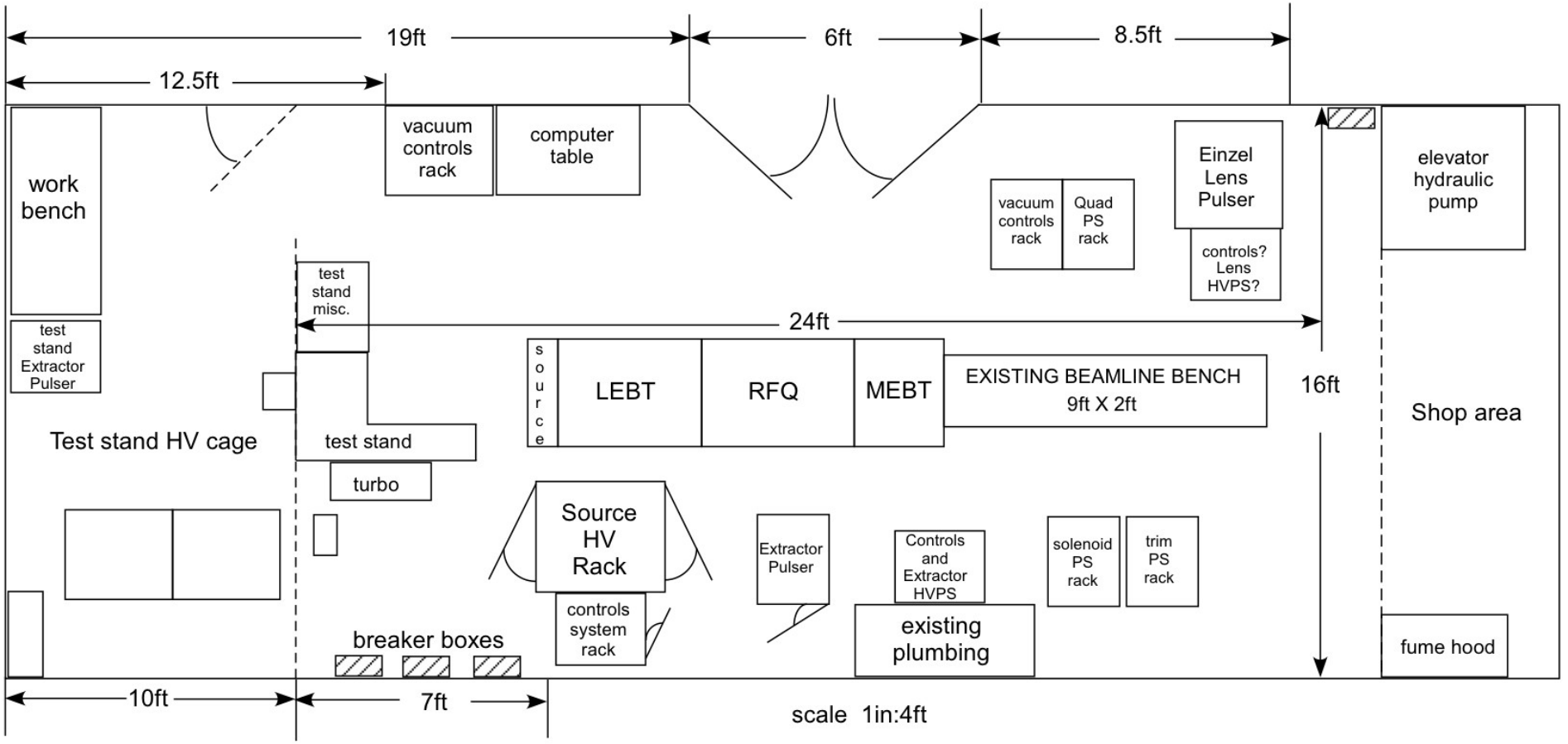
scale 1in : 1ft

Copper ground plane

Relay Racks

Rack	Owner	Space	Status
vacuum controls rack	Kent Triplett		On hand
Extractor pulser	Jim Lackey		
Extractor PS and controls	Jim Lackey		On hand
Controls (same as 4??)	Mike Kucera		????
Einzel lens Pulser	Jim Lackey		????
Source HV	Jim Lackey		On hand
Trim PS	Steve Hays	2x3U = 10.5	Can it go into solenoid PS rack?
Solenoid PS	Steve Hays		On hand
Instrumentation	Ray Tomlin	17.5” for multiwires Toroids: NIM crate TOF: NIM crate	

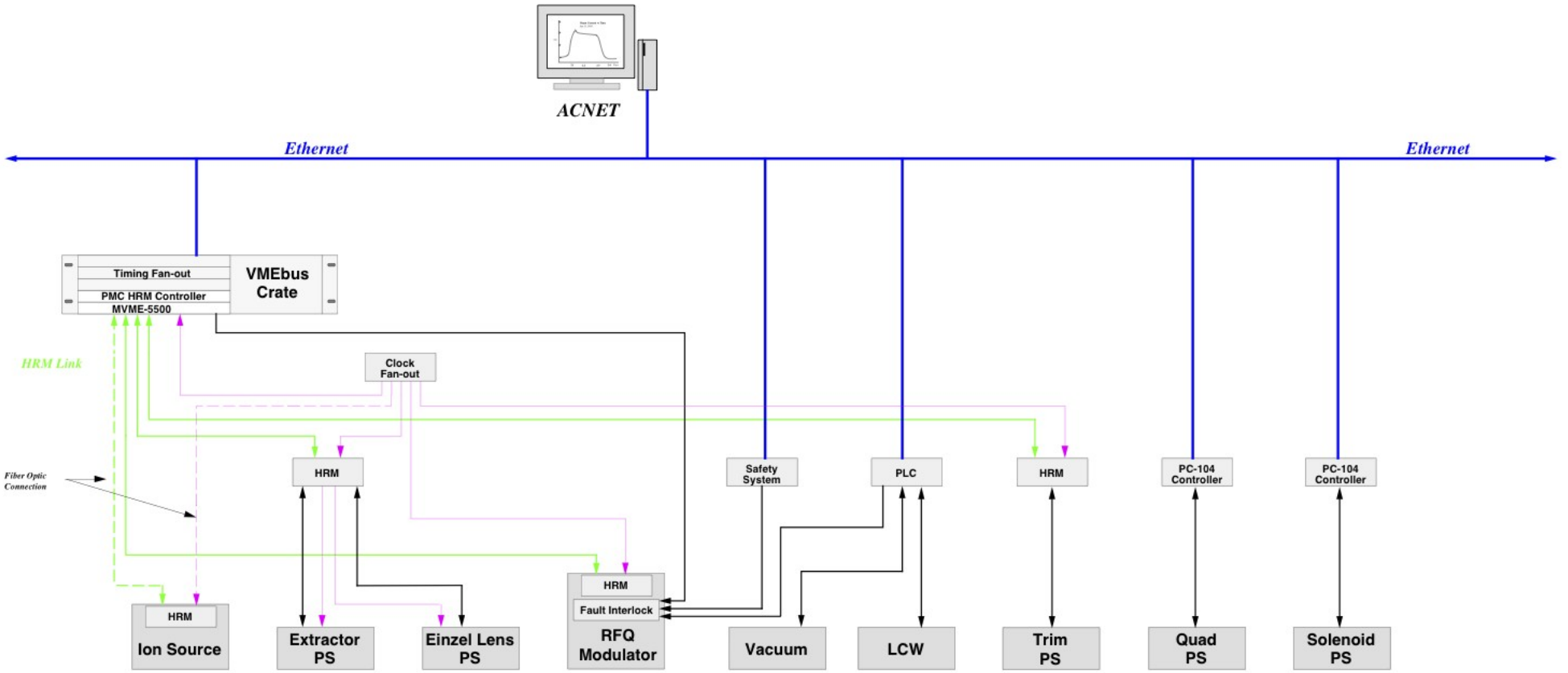
Old drawing


19ft
6ft
8.5ft
12.5ft
work bench
vacuum controls rack
computer table
vacuum controls rack
Quad PS rack
Einzel Lens Pulser
controls? Lens HVPS?
elevator hydraulic pump
test stand misc.
24ft
test stand Extractor Pulser
source
LEBT
RFQ
MEBT
EXISTING BEAMLINE BENCH 9ft X 2ft
16ft
Shop area
Test stand HV cage
test stand
turbo
Source HV Rack
controls system rack
Extractor Pulser
Controls and Extractor HVPS
existing plumbing
solenoid PS rack
trim PS rack
breaker boxes
fume hood
10ft
7ft
scale 1in:4ft

Test area, test stand and instrumentation

Device	Status	Comments
Floor	Copper flooring started. (06 Jun)	Done (06 July)
Toroid	Toroid to be installed in emittance probe can.	
Faraday Cup	On hand as dump	
Emittance probe can	4” bellows. 5” toroid.	Multiwires with dump should be ready end of July (29 Jun)
New source PS	started installation (06 July)	

Controls



Linac RFQ Upgrade Controls Block Diagram

Safety

- Beam parameters submitted to safety (Gary Lauten) 10 Jun.