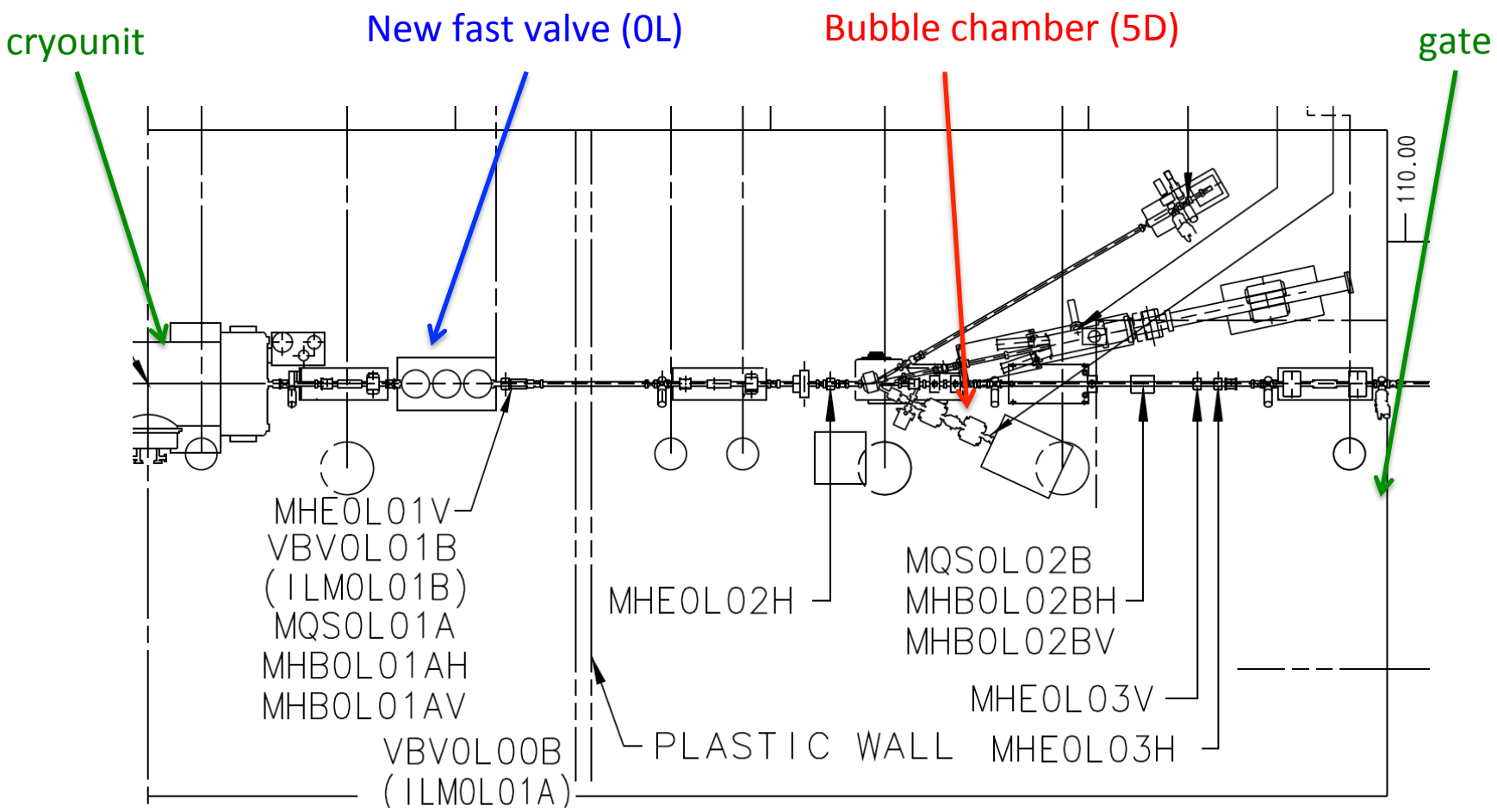
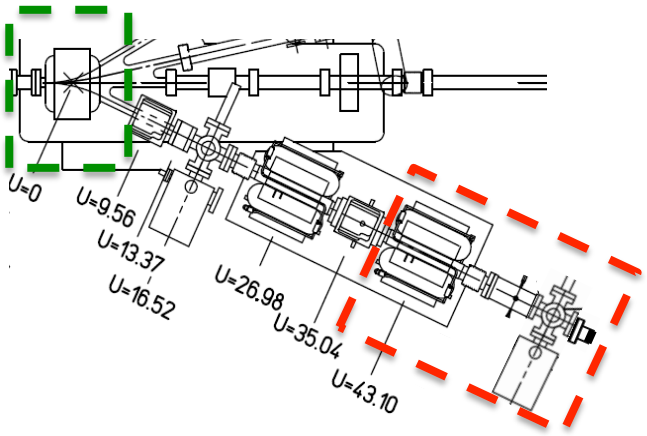
Bubble Chamber Installation Kick-Off Meeting
May 28, 2014, Grames

Let's discuss two jobs between the cryounit and injector gate.



5D NOW:

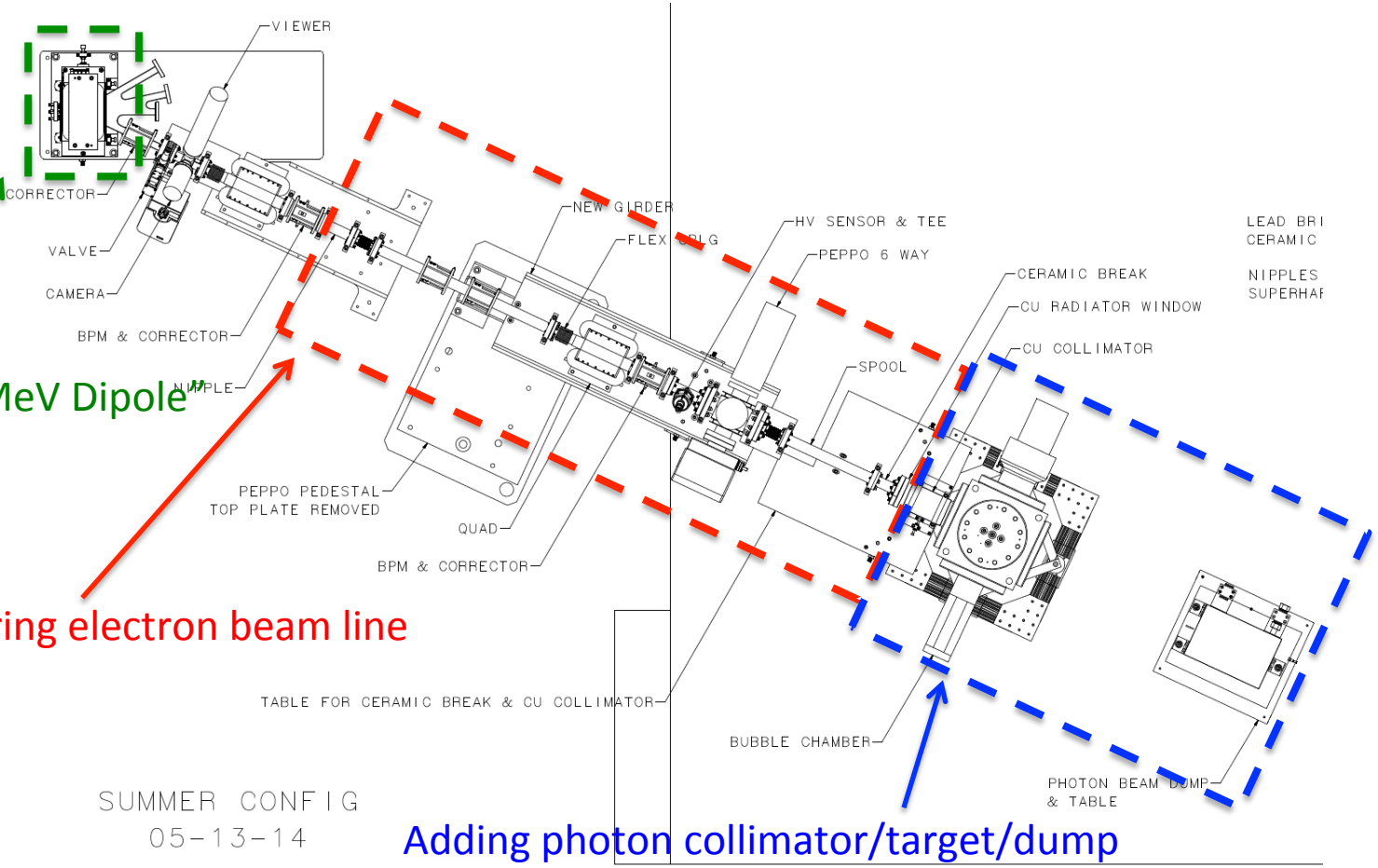


5D NEW:

Upgrading “5 MeV Dipole”

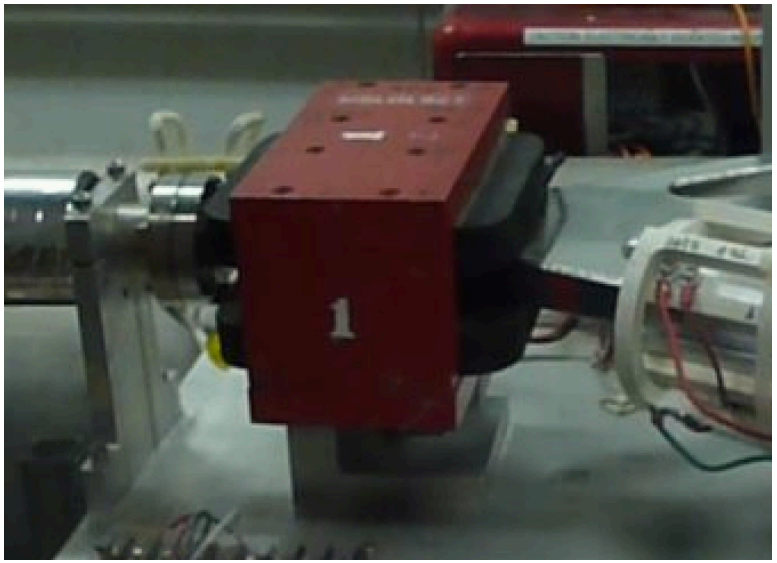
Reconfiguring electron beam line

Adding photon collimator/target/dump

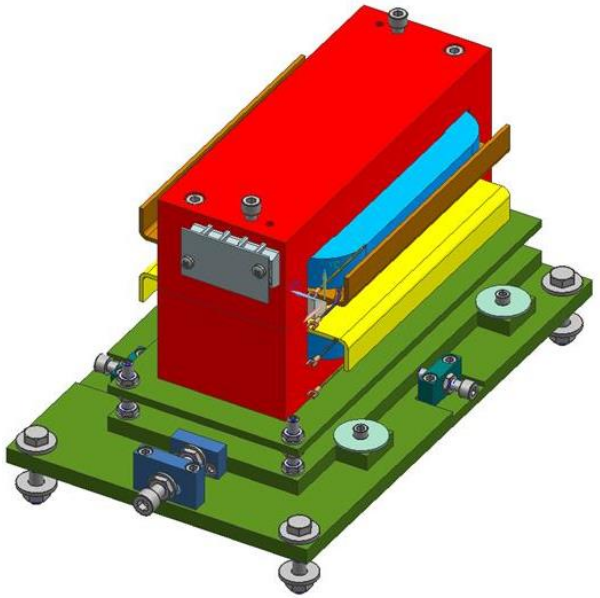


Upgrading “5 MeV Dipole”

NOW:



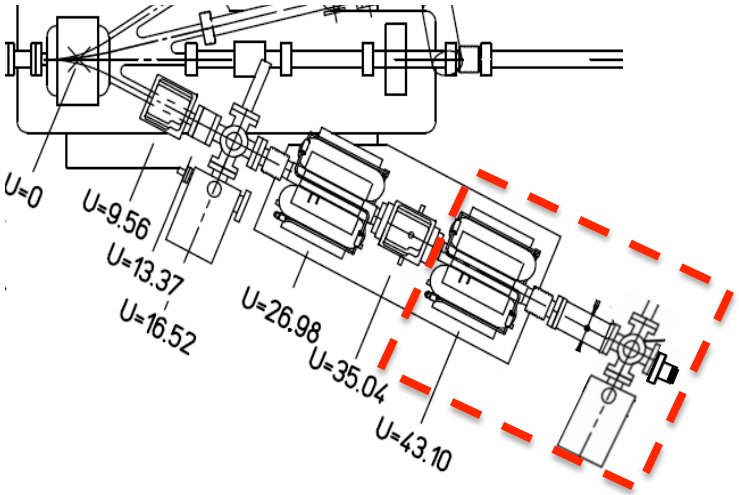
NEW:

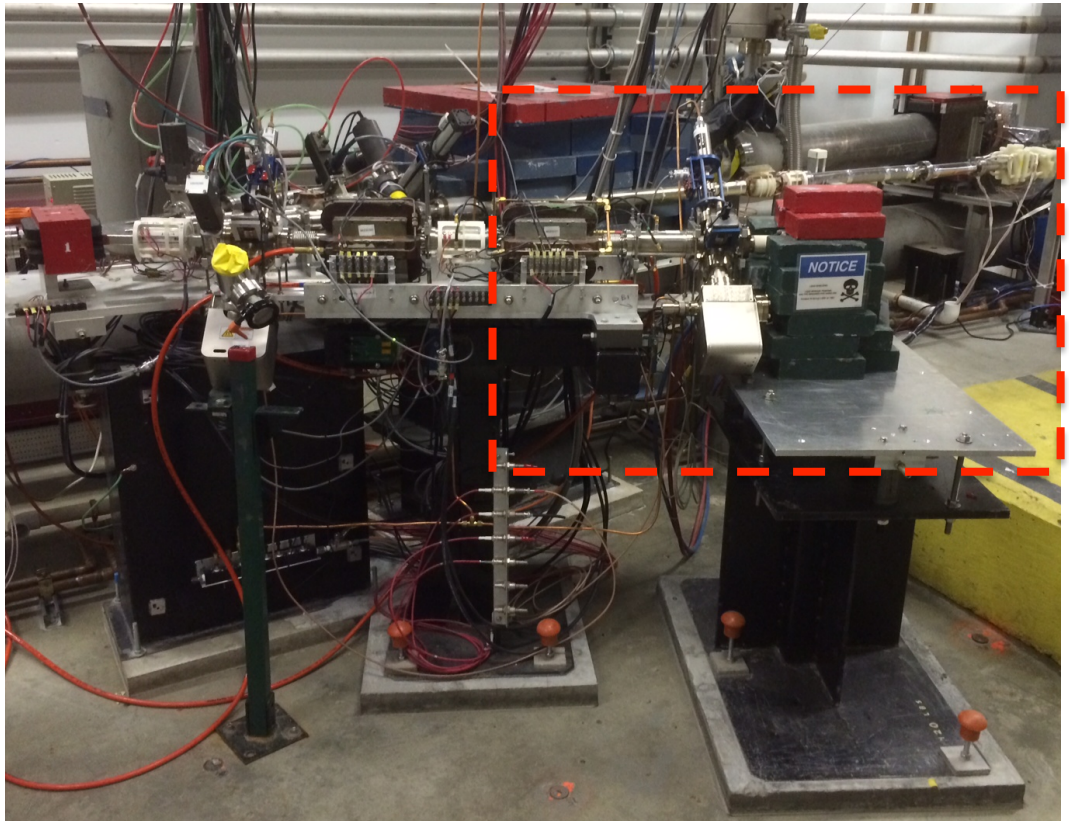


1. Plan is to built two (magnet + spare) in-hand by August 1st
2. Design of magnet complete ... waiting on magnet vendor quote.
3. Design of fixture complete … due here this week.
4. Magnet measurement plan discussed last week … looks reasonable.
5. New insitu Hall probe + tunnel meter in-hand … software (Croke) to do controls
6. EGG will swap magnets when NEW is ready, latter half of August
7. Will use same 10A trim PS
8. Will need alignment support … using new fixture
9. Will need to update field map, CED, songsheet, name instances

Decommission 5D beam line (prep task for Bubble installation)

http://opsweb.acc.jlab.org/CSUEApps/atlis/task/14308

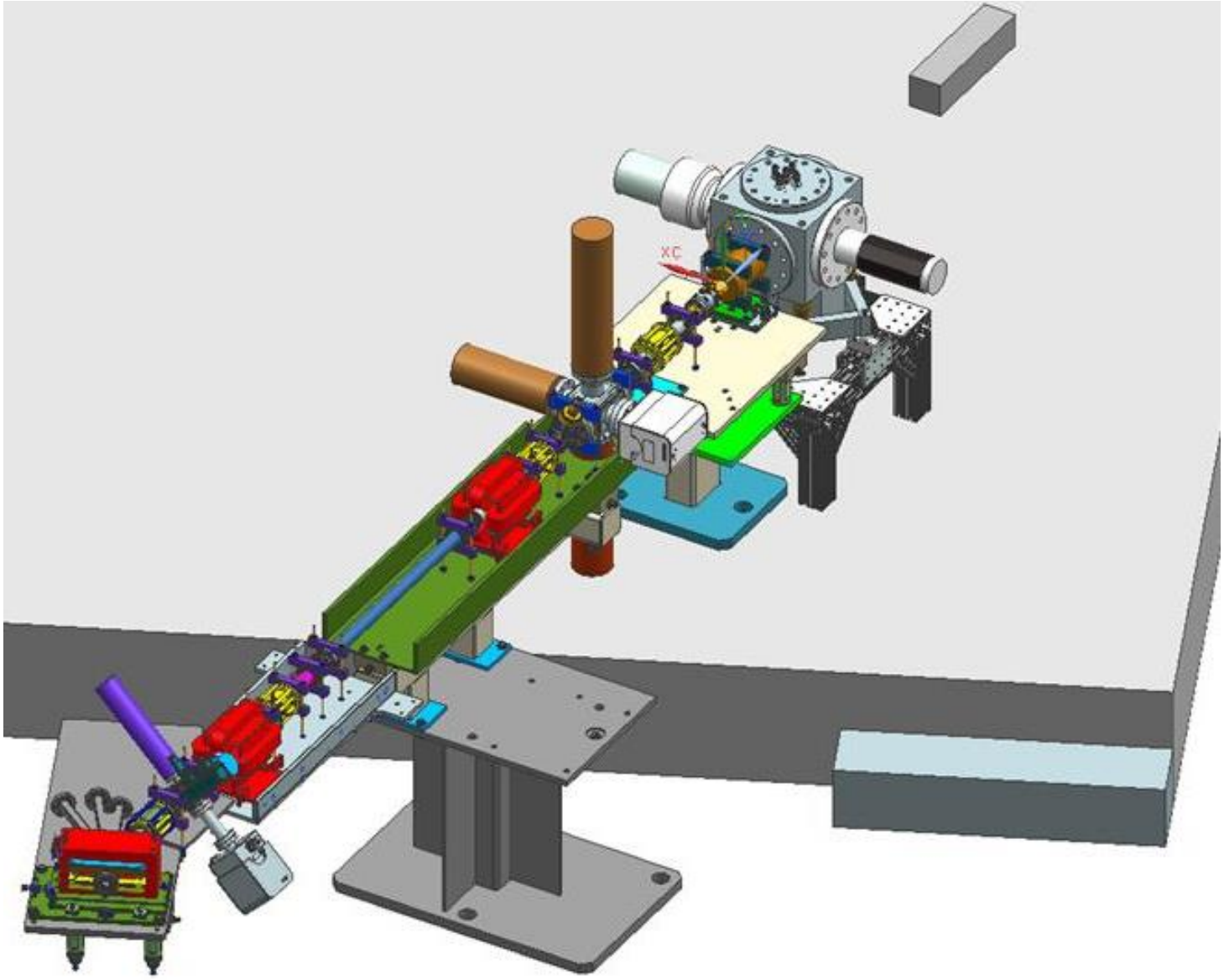




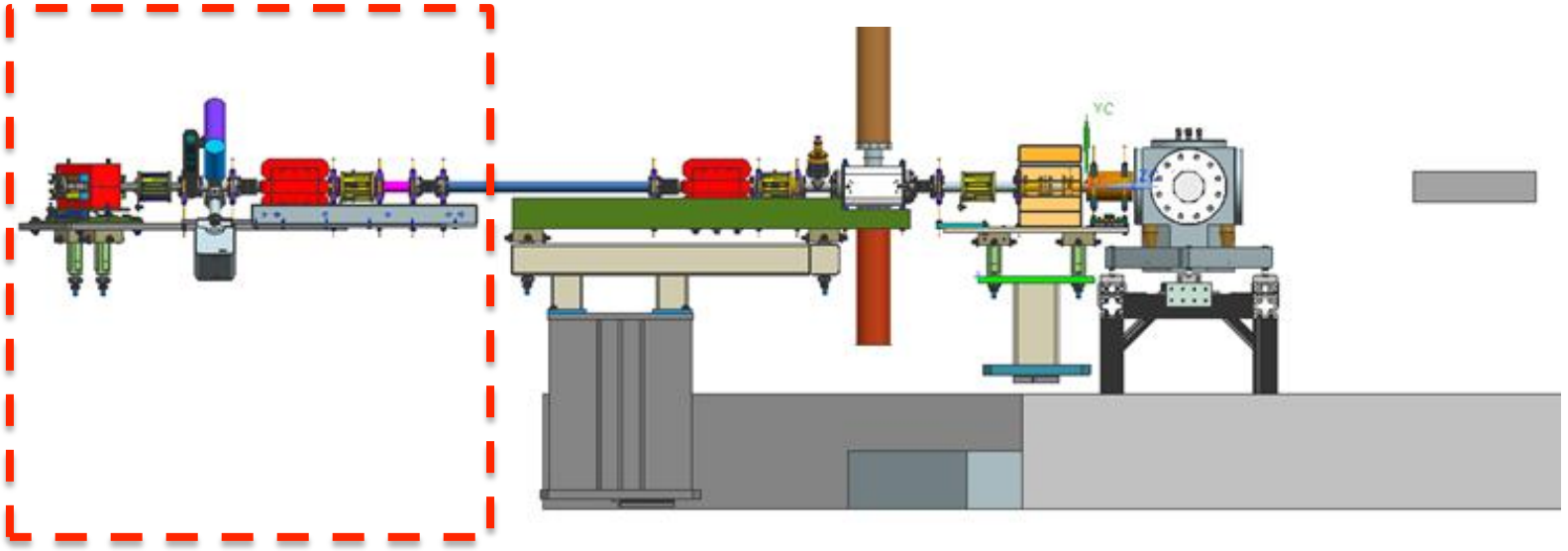
1. De-Post dump and dismantle lead hut – done
2. Temporarily disconnect and safe BPM electronics - done
3. Temporarily dismount ITV5D01 electronics
4. De-energize and disconnect power to MQD5D00, MQD5D01 (others have safe connectors)
5. EGG will temporarily isolate quad and dump LCW + viewer air lines
6. EGG will temporarily vent to remove red boxed items

Bubble Installation : one perspective to get overall size / positioning

http://opsweb.acc.jlab.org/CSUEApps/atlis/task/14323

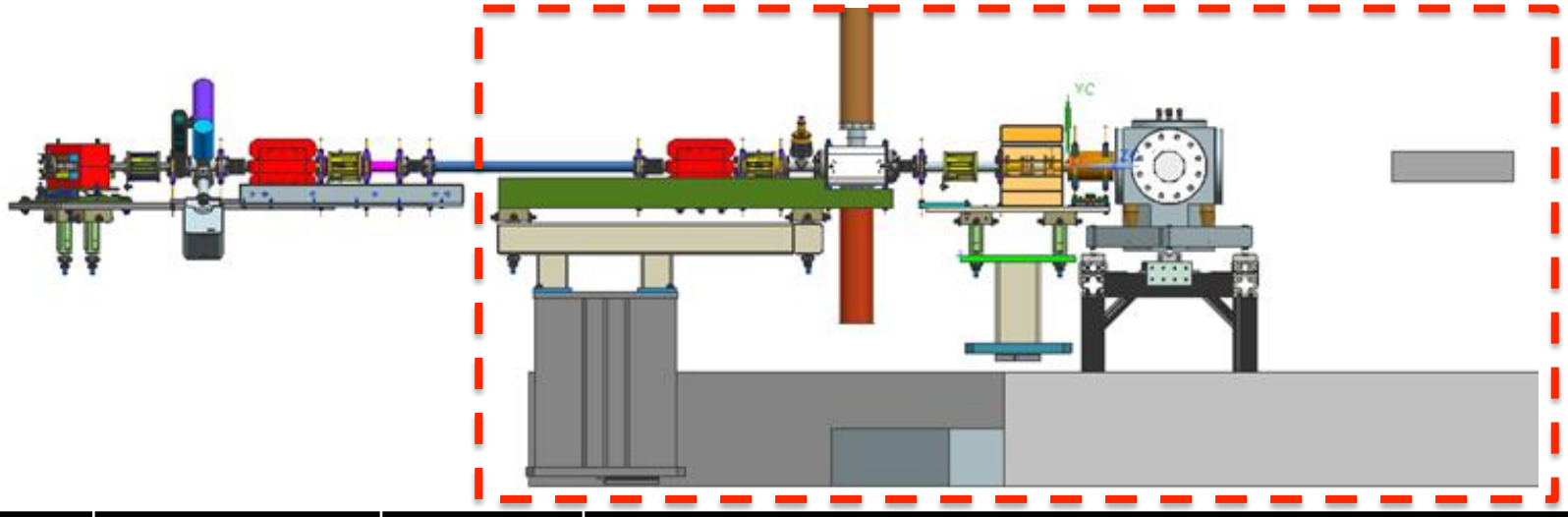


Bubble Installation (1st half of beam line, continues on next page)



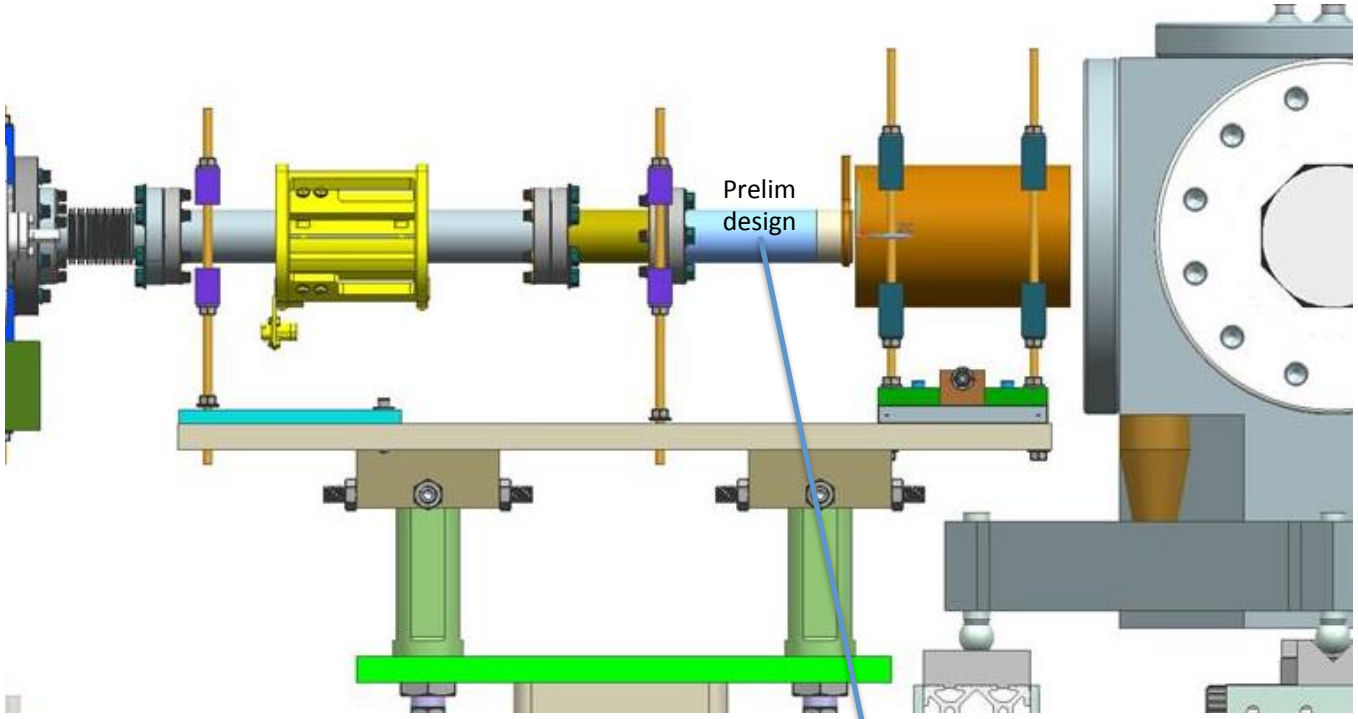
Old Name	Type	Proposed	Comment
MBV0L02	Dipole	MDL0L02	Same 10A, but new field map, limits. New Hall probe instrument.
MBH5D00H	Corrector	same	No change
MBH5D00V	Corrector	same	No change
VBV5D00	Valve	same	No change
VIP5D00	Ion pump	same	No change
ITV5D00	Viewer	same	No change
MQD5D00	Quad	same	No change
IPM5D00	BPM	same	No change
MBH5D00AH	Corrector	same	No change
MBH5D00AV	Corrector	same	No change

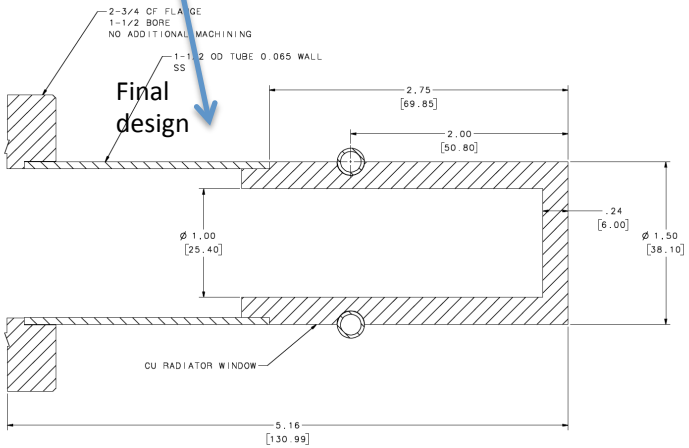
Bubble Installation (2nd half of beam line, continues from previous page)



Old Name	Type	Proposed	Comment
MQD5D01	Quad	same	New position
IPM5D01	BPM	same	New position
n/a	Corrector	MBH5D01H	New – needs 1A
n/a	Corrector	MBH5D01V	New – needs 1A
n/a	FV gauge	VCG5D01	New – fast valve
n/a	Faraday Cup	IFY5D01	PEPPo cross, Interlock ITV5D01, new LCW spigot, new picoammeter
ITV5D01	Viewer	same	New position, PEPPo cross, Interlock IFY5D01
VIP5D01	Ion pump	same	New position
n/a	Corrector	MBH5D01AH	New – needs 1A
n/a	Corrector	MBH5D01AV	New – needs 1A
IDL5D01	Dump (1kW radiator)	same	New position, Reuse LCW spigot, reuse picoammeter channel
n/a	Photon collimator	IPC5D01 ?	New, ANL ships copper annulus, S/A support
n/a	Bubble Chamber	ITG5D01	New, ANL ships, installation & S/A support, requires X (TBD) network/video cables to ISB
n/a	Photon dump	IDL5D01 ?	New, solid aluminum block positioned within 5mm on stand

Bubble Installation – Supplemental Electron Dump/Radiator Image





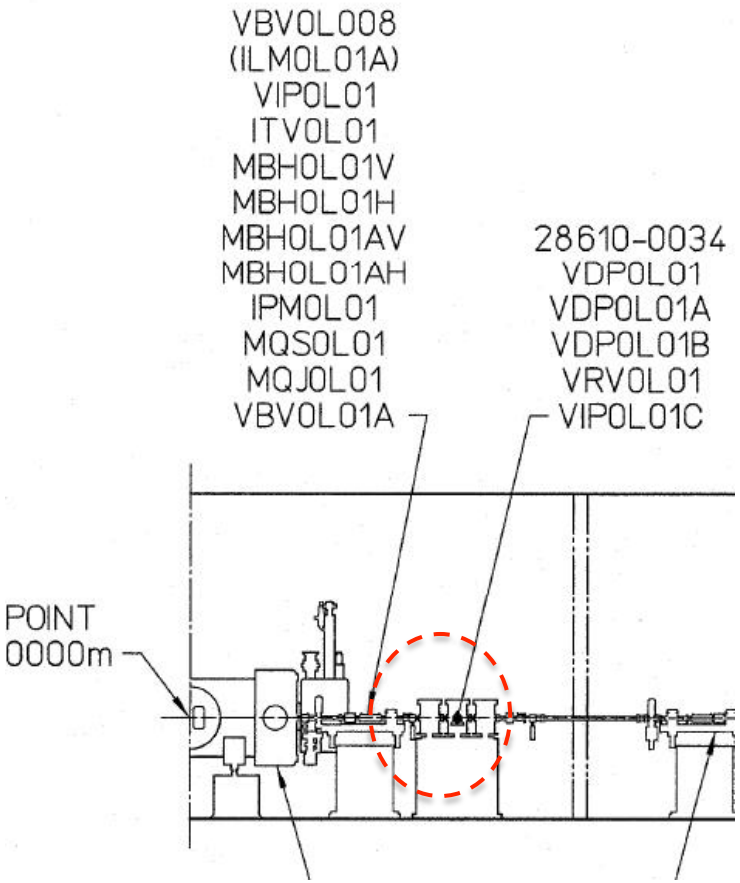
Dump (radiator) similar to Faraday cup

- 6mm Cu wall brazed to SS nipple
- LCW cooled
- Ceramic joint allow current monitoring

New fast valve downstream of cryounit

http://opsweb.acc.jlab.org/CSUEApps/atlis/task/14130

Vacuum (Heckman) + ICN (Kortze) + PSS



Timeline

June

- Final drawings and nomenclature
- Fabricate & purchase (pedestals, girders, vacuum components)
- Decommission 5D line components (viewer, magnets)
- Vacuum work to claim components for new beam line
- Fast valve install ???

July

- Complete fabrication
- Assemble and align new girders in Test Lab
- Points for new girders + Bubble Chamber
- Test new Hall probe in tunnel, new picoammeter in ISB
- Pull any cables
- Fast valve controls ???

August

- Receive + measure new dipole magnet
- Move girders to tunnel, vacuum hookup + alignment
- Controls hookup, testing
- Receive, install, align Bubble Chamber from ANL, date TBD

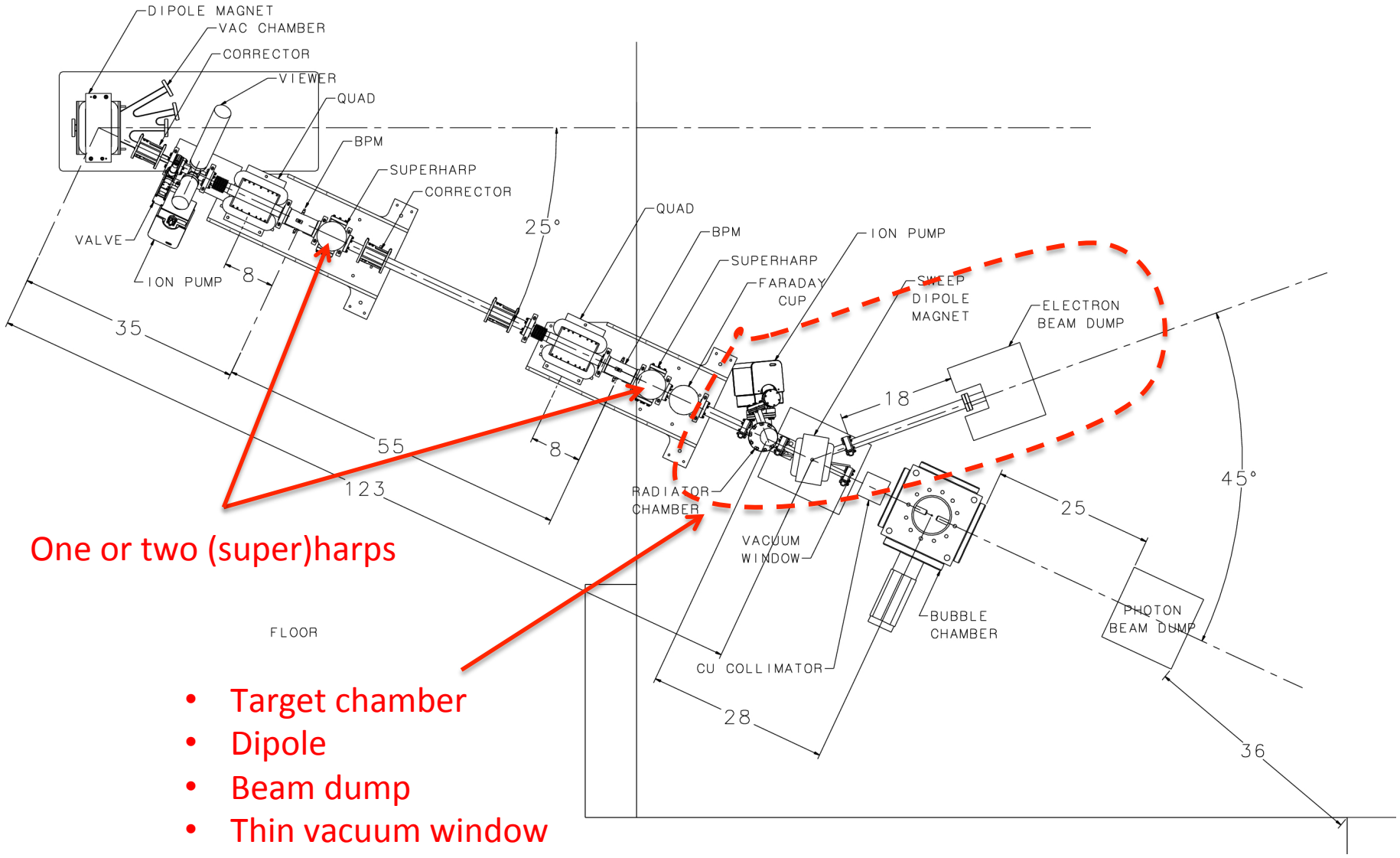
Charge Codes

Labor on fast valve or new 5 MeV dipole = ACCCIS / RSRSRC

Labor on Bubble Chamber beam line = ACCCIS / ARDSRC

Procurements already rather well defined and largely complete, so accompany any unanticipated REQ's w/ e-mail to poelker@jlab.org and grames@jlab.org

Final Experiment Configuration (TBD): Winter SAD?



- One or two (super)harps

- Target chamber
- Dipole
- Beam dump
- Thin vacuum window