Minutes 11 10 2015 meeting

Joe Tuozzolo, Cliff Brutus, Mike Mapes, John Halinski, David Gassner, Scott Seberg, Gary McIntyre, Chong-Jer Liaw, Jorg Kewisch, Zhi Zhao

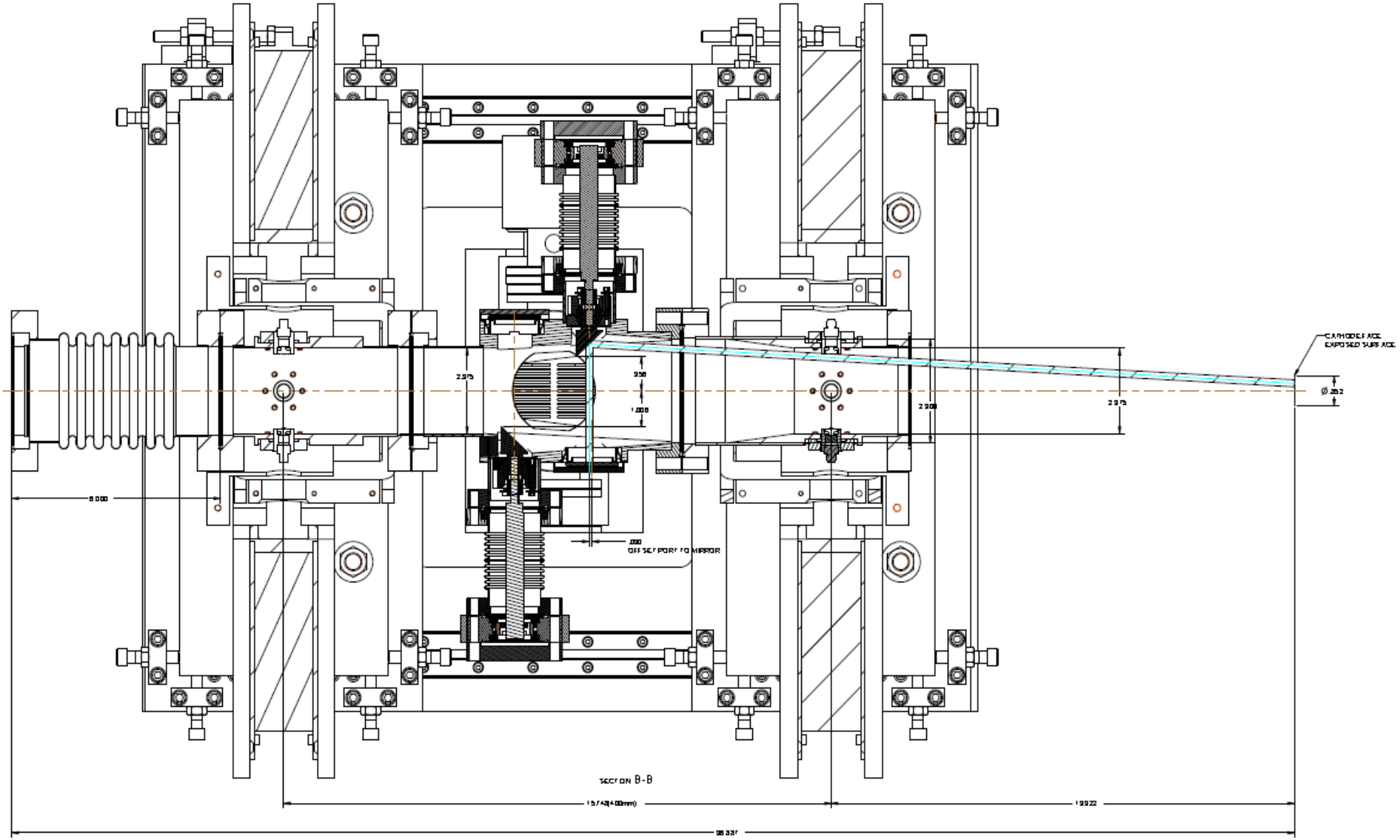
One of the outcomes of last weeks DOE review is a desire by us and the reviews to install the Cornell DC gun during the 2016 shutdown and make it operational with beam ASAP thereafter. The gun should be fully commissioned with high intensity beam by June 2017.

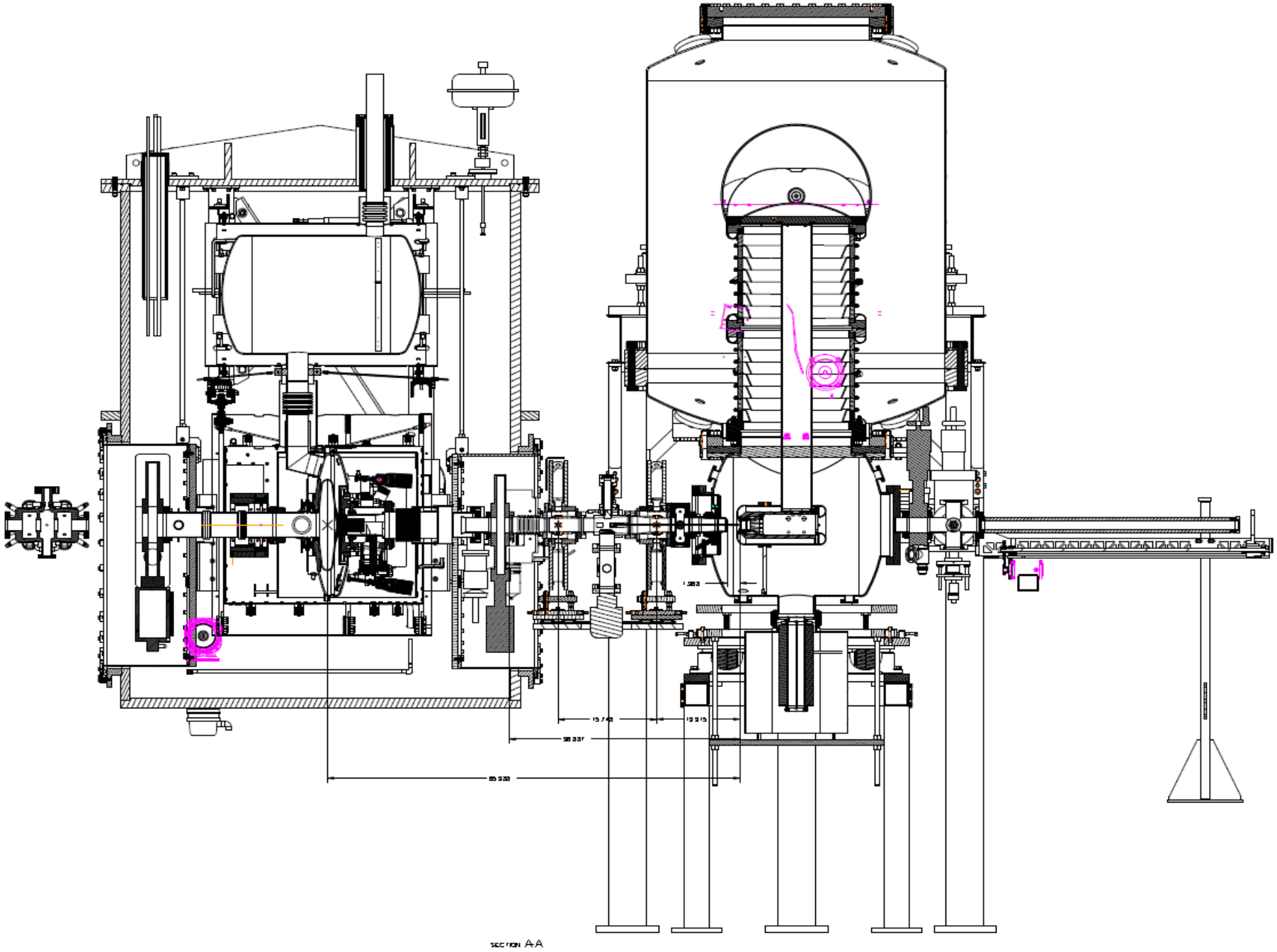
To achieve this the DC Gun to Booster cavity beamline needs to be design, fabricated, and installed during the 2016 shutdown and a beam dump installed (possibly the CeC copper beam dump).

John Halinski has updated the beamline layout which was presented at the meeting. Items noted:

- For now the design will continue to use the ERL BPM buttons. Dave Gassner will investigate whether those buttons are appropriate or new buttons need to be developed.
- The BPM buttons need to be moved out so they are flush with the inner diameter of the vacuum chamber (John Halinski).
- The beam tube is shown in 4 vacuum sections with conflat flanged interfaces. It was agreed that this was the best approach if possible to access the flange bolts.
- There was discussion on chain clamps; but, it was noted that the dipole correctors are removable allowing access to the bolts so bolted flanges are still favored.
- The first chamber to the beamline is hard bolted to the DC gun RF shielded vacuum valve. John and Sumanta will investigate putting a short (3 to 4 convolution) shielded bellows at the flange that is bolted to the valve. This will allow angular alignment. Jorge Kewisch noted that the beam does not need to be centered in the beam tube. The BPM's can be "off center" as well as long at survey indicates where they are.
- Jorge Kewisch also agreed that the first BPM buttons can be moved downstream slightly to provide space for the bellows.
- Jorge Kewisch will provide specifications for the dipole correctors so they can be designed.
- The solenoid magnets will be copies of the Cornell solenoid magnets. According to Cornell, they need to have remote positioning capability including skew in both planes. While the BPM's can be moved downstream, the solenoids need to stay in there position.
- Zhi Zhao stated that the Cornell laser optics table near the DC gun was about 4 foot x 4 foot and it should be as close to the window as possible. It can not be vertical. This will have to be redesigned because of space contraints from the booster cavity cryostat.

Preliminary Beamline Shown at Meeting

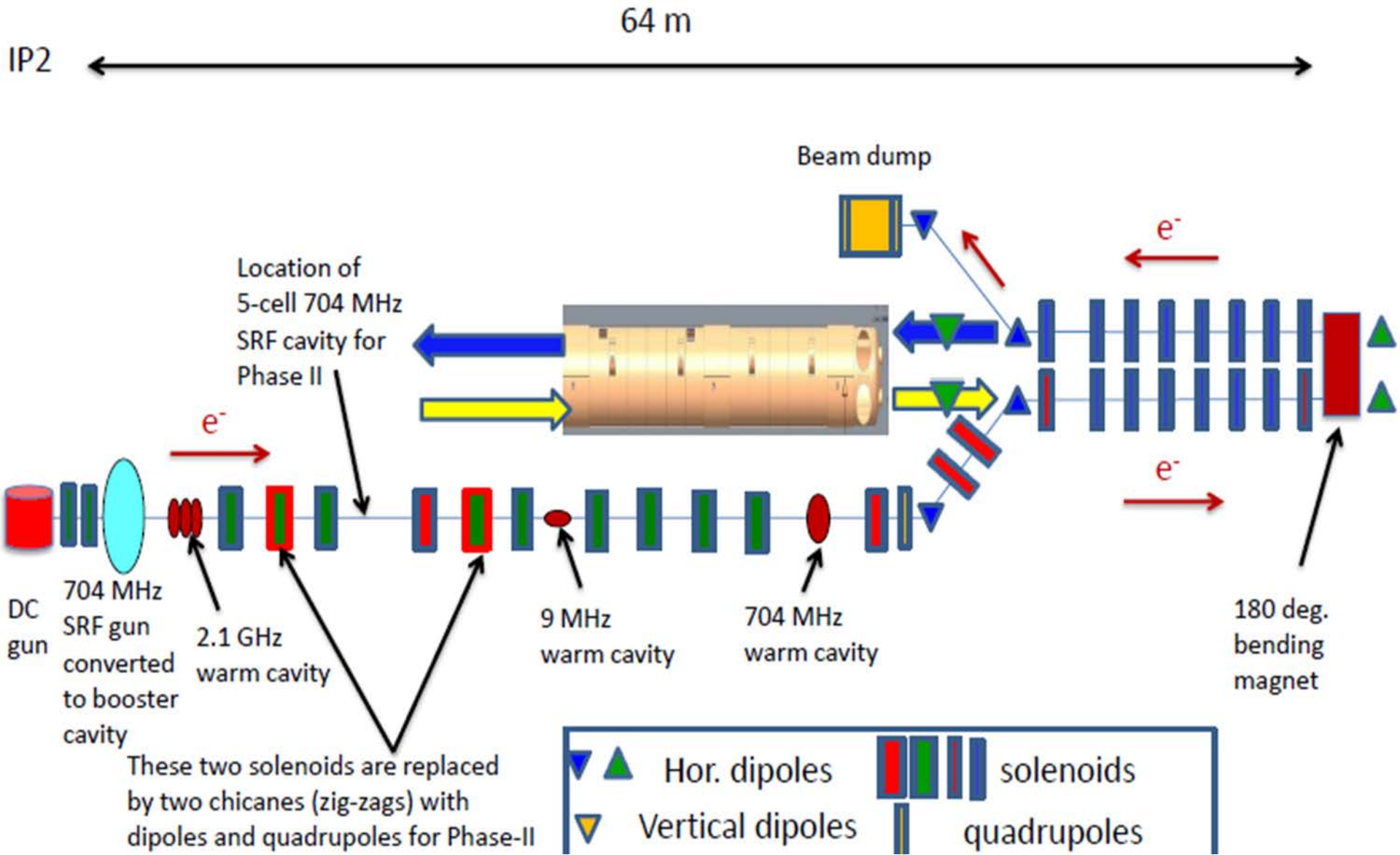




SECTION A-A

LEReC Phase-I (electron beam energies 1.6-2MeV): Gun-to-dump mode

July 8, 2015

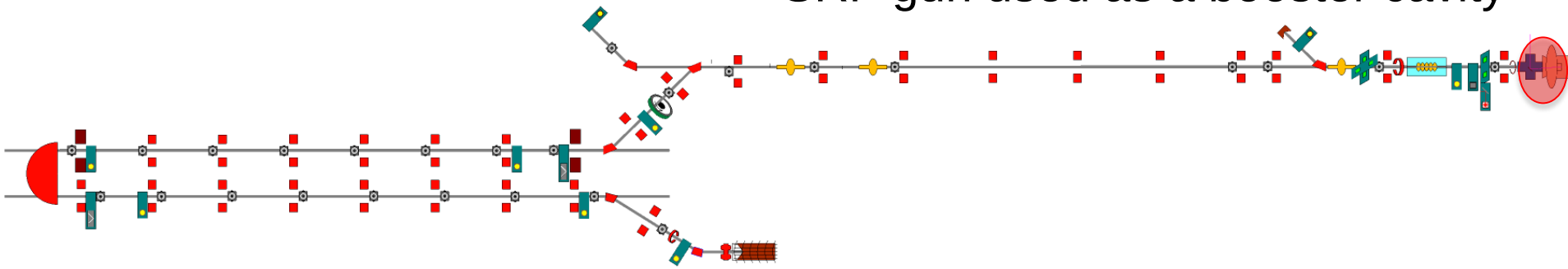


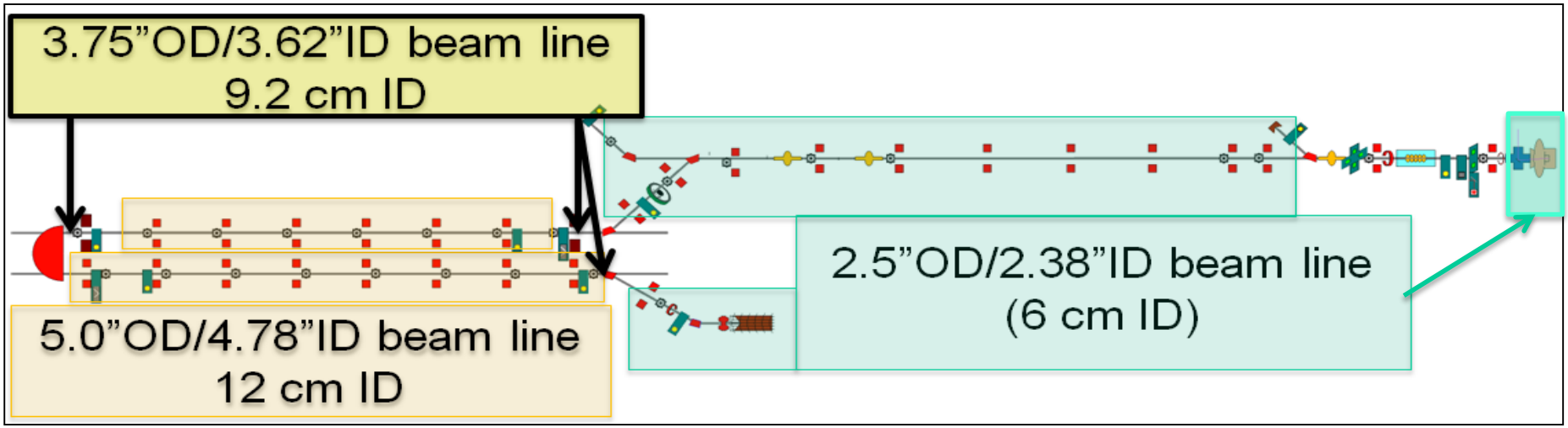
Overall Layout

64 m

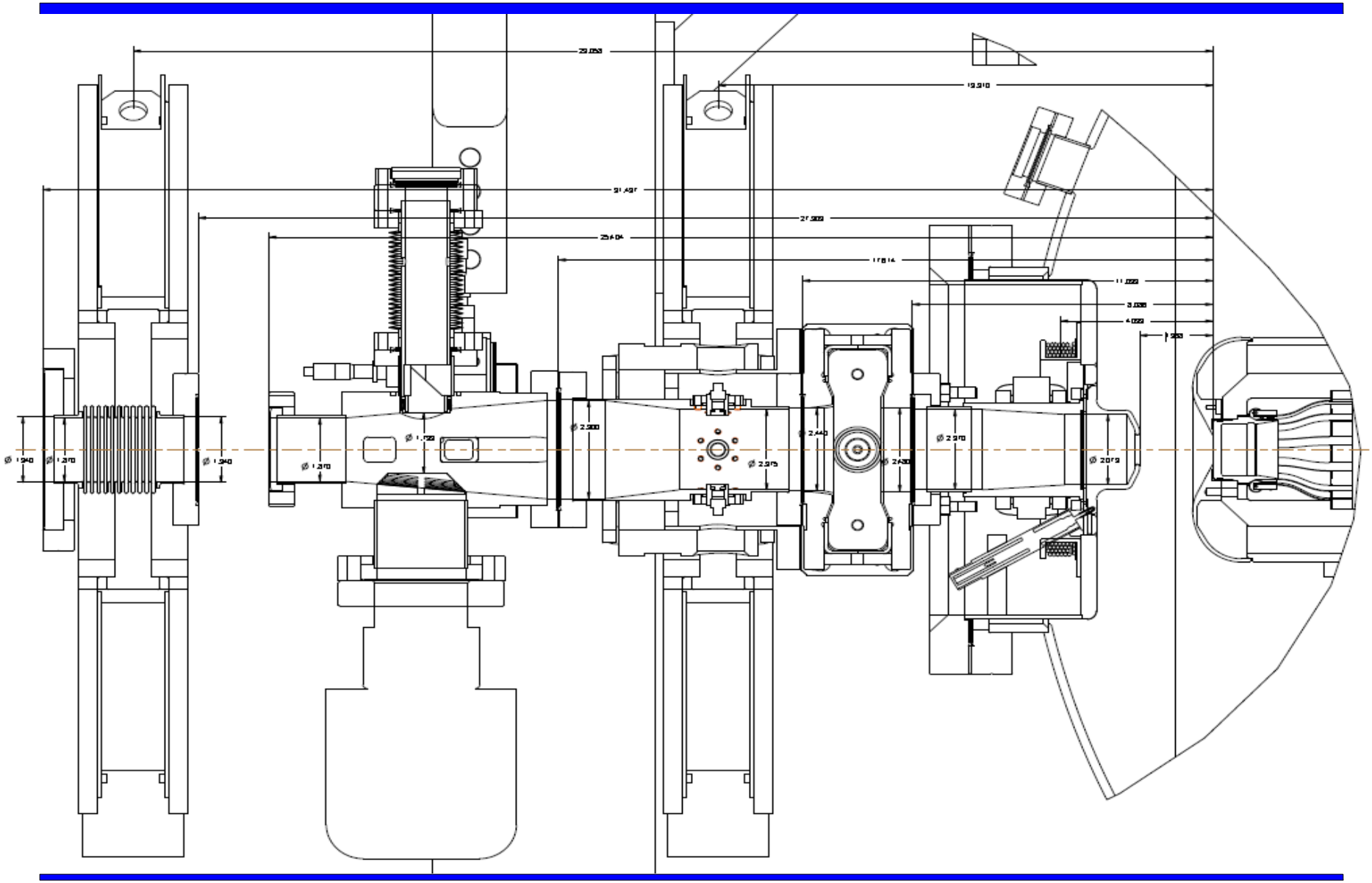
IP2

LEReC-I (1.6-2MeV): Gun to dump
SRF gun used as a booster cavity

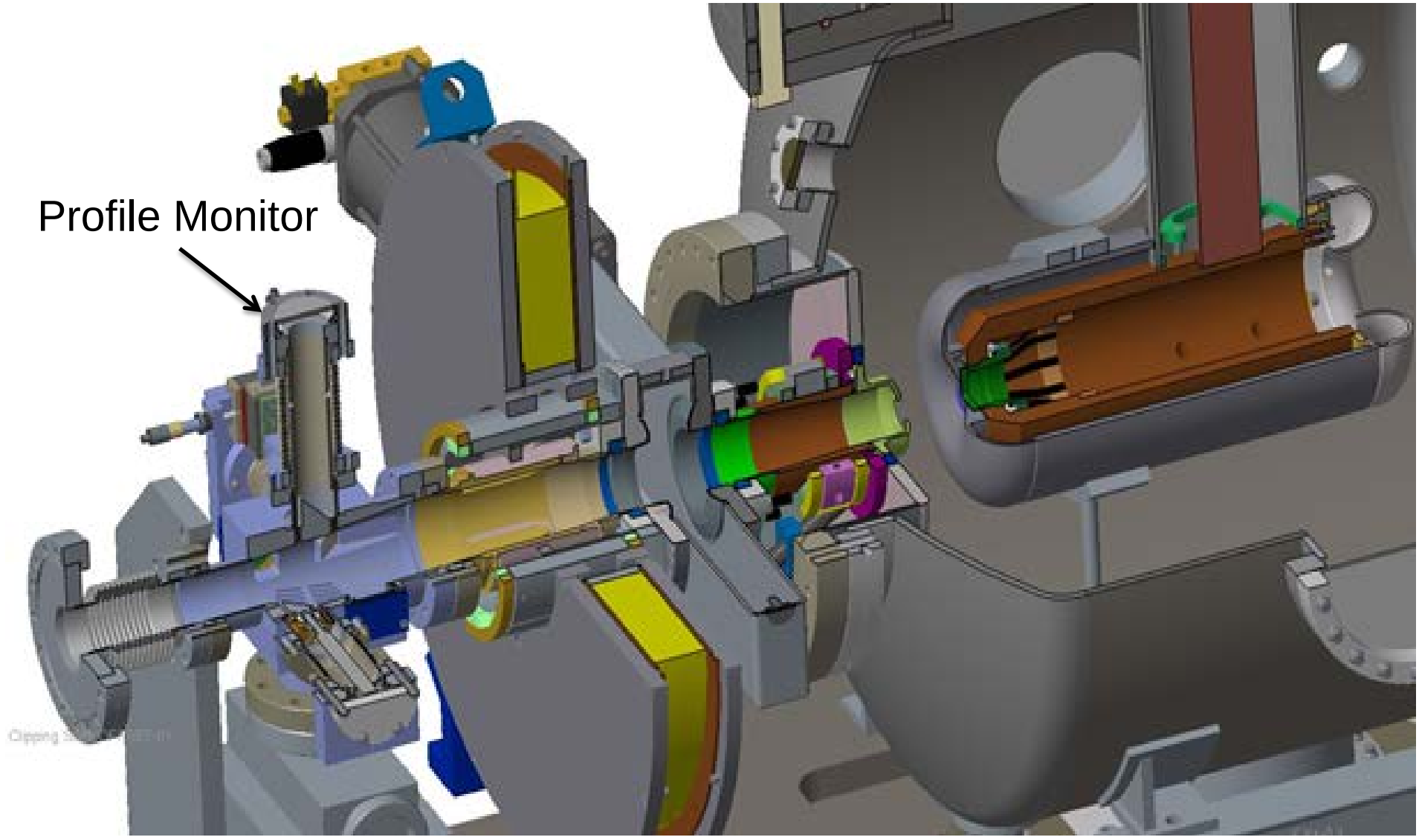




Preliminary Layout



Preliminary Preliminary Layout



Present Assignments

				Engineering		Design		
System	**Device**	**Group**	**Scientific**	**Mechanical**	**Electrical**			
DC Gun	**DC Gun Coordination**	**Cornell**	**Dunham**	**Liaw**	**Bruno**	**Halinski**		
DC Gun	Cathode Production	Instr. Division	Rao	Liaw		Jackson	Martin	
DC Gun	Cathode Insertion	Beam Ins/Comp		Liaw		DeMonte		
DC Gun	Power Supply	Cornell		Liaw	Bruno	Halinski		
DC Gun	Water cooling	Water	Scaduto	Liaw		Halinski		
DC Gun	Vacuum	Vacuum		Mapes		Halinski		
DC Gun Anode Assembly	Small Solenoid Magnet	ESF	Meng	Liaw	Bruno	Halinski		
DC Gun Anode Assembly	H & V Dipole Correctors	Cornell	Meng	Liaw	Bruno	Halinski		
DC Gun Anode Assembly	Vacuum Chamber	Cornell	Kewish	Nayak	Smart	Halinski		
DC Gun Anode Assembly	500 V Power Suppy	PS			Bruno			
Gun to SCRF Booster Cavity	**Beam Line Coordination**		**Kewish**	**Nayak**		**Halinski**		
Gun to SCRF Booster Cavity	Vacuum Beam Line Chambers, Bellows, Valves	Vacuum	Kewish	Nayak	Smart	Halinski		
Gun to SCRF Booster Cavity	Vacuum pumps and guages	Vacuum		Nayak	Smart	Halinski		
Gun to SCRF Booster Cavity	Beam Line Solenoid	Beam I & C	Meng	Mahler	Bruno	Hamdi		
Gun to SCRF Booster Cavity	Beam Line H&V Correctors	Beam I & C	Meng	Mahler	Bruno	Hamdi		
Gun to SCRF Booster Cavity	Beam Line Q&SQ Correctors	Beam I & C	Meng	Mahler	Bruno	Hamdi		
Gun to SCRF Booster Cavity	Laser Room Optics Table	Beam I & C	Sheehy/Zhao	Bellavia	Zhao	Halinski		
Gun to SCRF Booster Cavity	Laser Light Transport	Beam I & C	Sheehy/Zhao	Bellavia	Zhao	Halinski		
Gun to SCRF Booster Cavity	Laser Vacuum Chamber - Mirror Drives		Sheehy/Zhao	Bellavia	Zhao	Halinski		
Gun to SCRF Booster Cavity	Laser Vacuum Chamber - Laser Optics Table		Sheehy/Zhao	Bellavia	Zhao	Halinski		
Gun to SCRF Booster Cavity	Laser Vacuum Chamber - Profile Monitor		Theiberger	Bellavia	Miller	Halinski		
Gun to SCRF Booster Cavity	Laser Vacuum Chamber and Vacuum Pumps			Nayak	Smart	Halinski		
Gun to SCRF Booster Cavity	Beam Position Monitors	Beam I & C	Theiberger	Nayak	Gassner	Halinski		
SCRF Booster Cavity	**Cavity Modification Coordination**	**RHIC Mech**	**W. Xu**	**McIntyre**	**Smith**	**Seberg**	**Meier**	
SCRF Booster Cavity	Upstream beam pipe modifications	RHIC Mech	W. Xu	McIntyre		Seberg	Meier	
SCRF Booster Cavity	Vacuum valves	Vacuum		Nayak	Smart			
SCRF Booster Cavity	FPC modification	RHIC Mech	Smith	McIntyre		Seberg		
SCRF Booster Cavity	Cryogenic installation	Cryo	Than	Orfin	Tallerico	Meier		
SCRF Booster Cavity	Solenoid repair	RHIC Mech	Smith	McIntyre		Seberg		
SCRF Booster Cavity	Cavity BCP	RHIC Mech	Smith	McIntyre		Seberg		
SCRF Booster Cavity	RF Power Supply	RF	Smith		Zaltsman			
SCRF Booster Cavity	LLRF	RF	Smith		Smith			
SCRF Booster Cavity	RF Wave Guide &/or Coax	RF	Zaltsman	Brutus	Zaltsman	TBD		