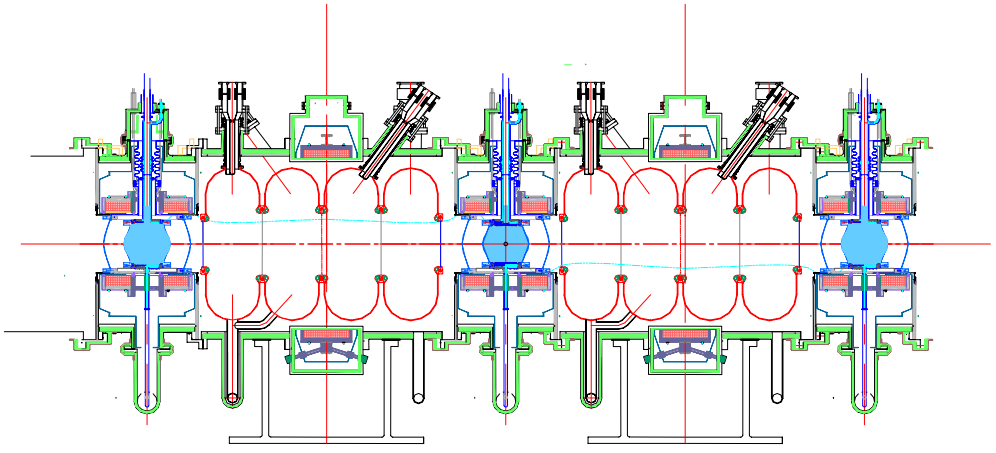


MICE MEETING AT CERN

Liquid Hydrogen Absorbers

March 27, 2003

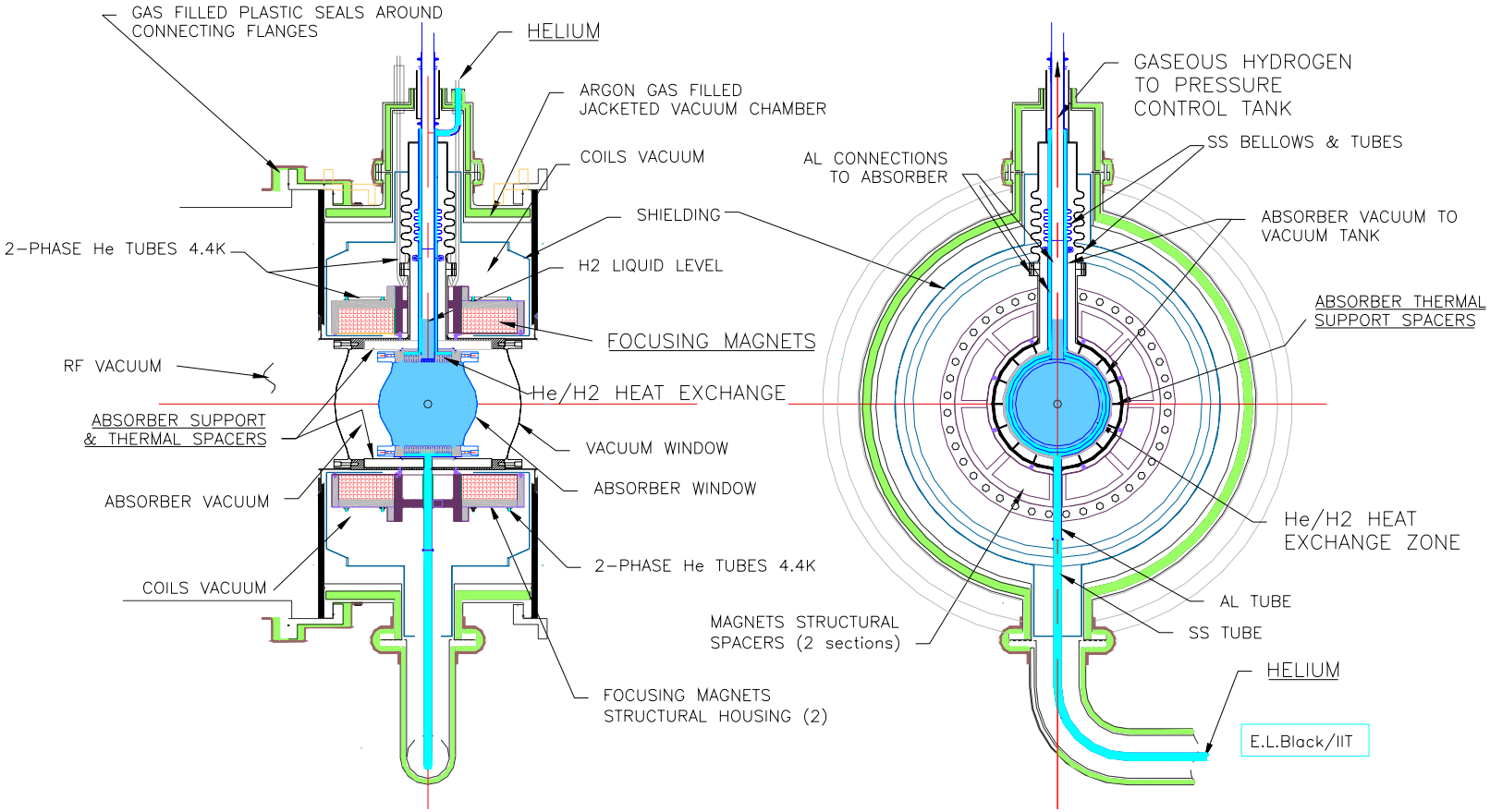
E. L. Black

IIT

Plans for assembling the complete system

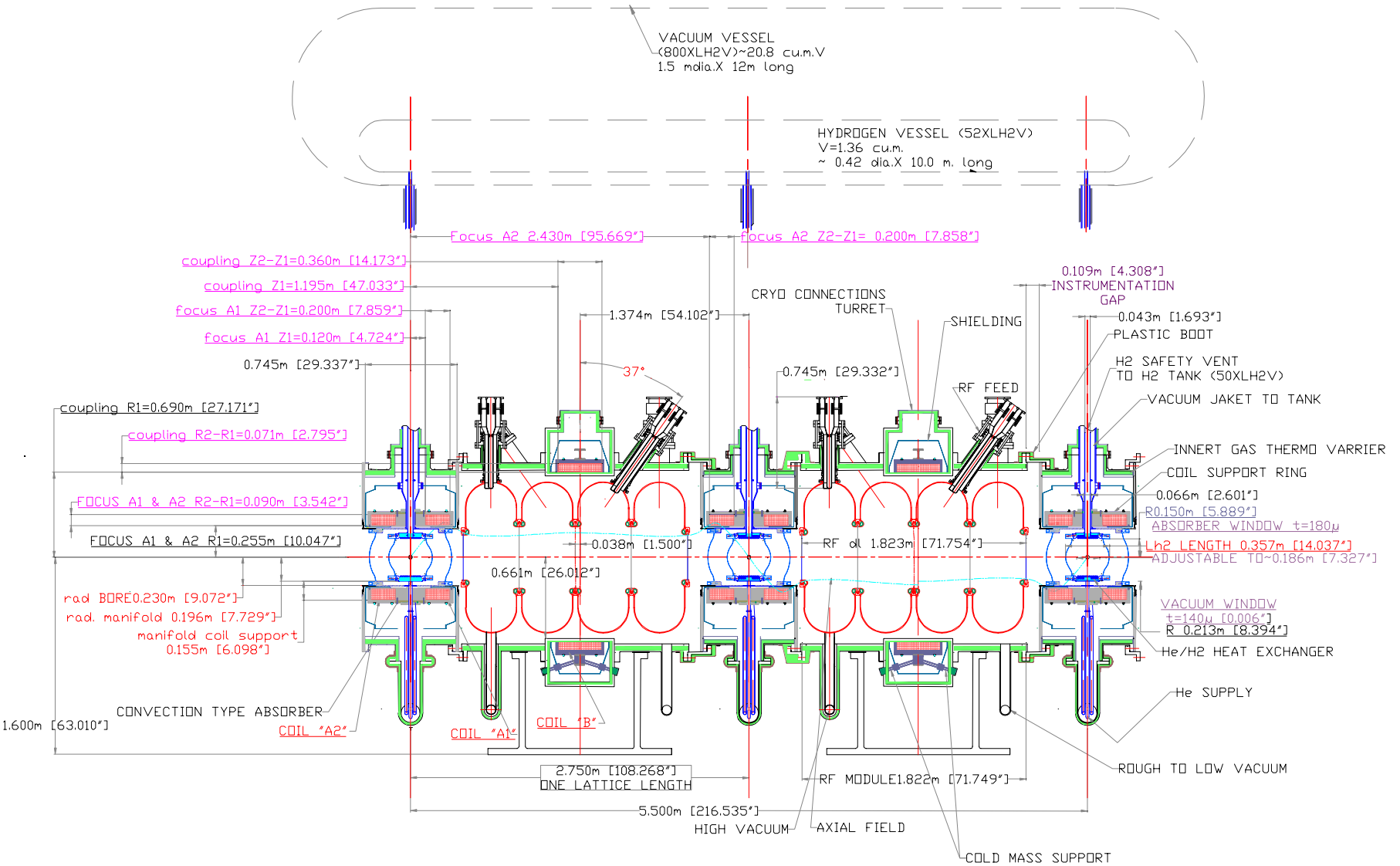
- Liquid hydrogen container (absorber)
- Vacuum containers for:
  - Hydrogen absorber
  - Focusing coils
  - Module double walled enclosure
- Hydrogen/helium flow system
- Vent Safety System
- Test facilities for QA,QC of components

The proposed system configuration



Consensus on The cooling channel design parameters

R.B. Palmer October 17, 2002

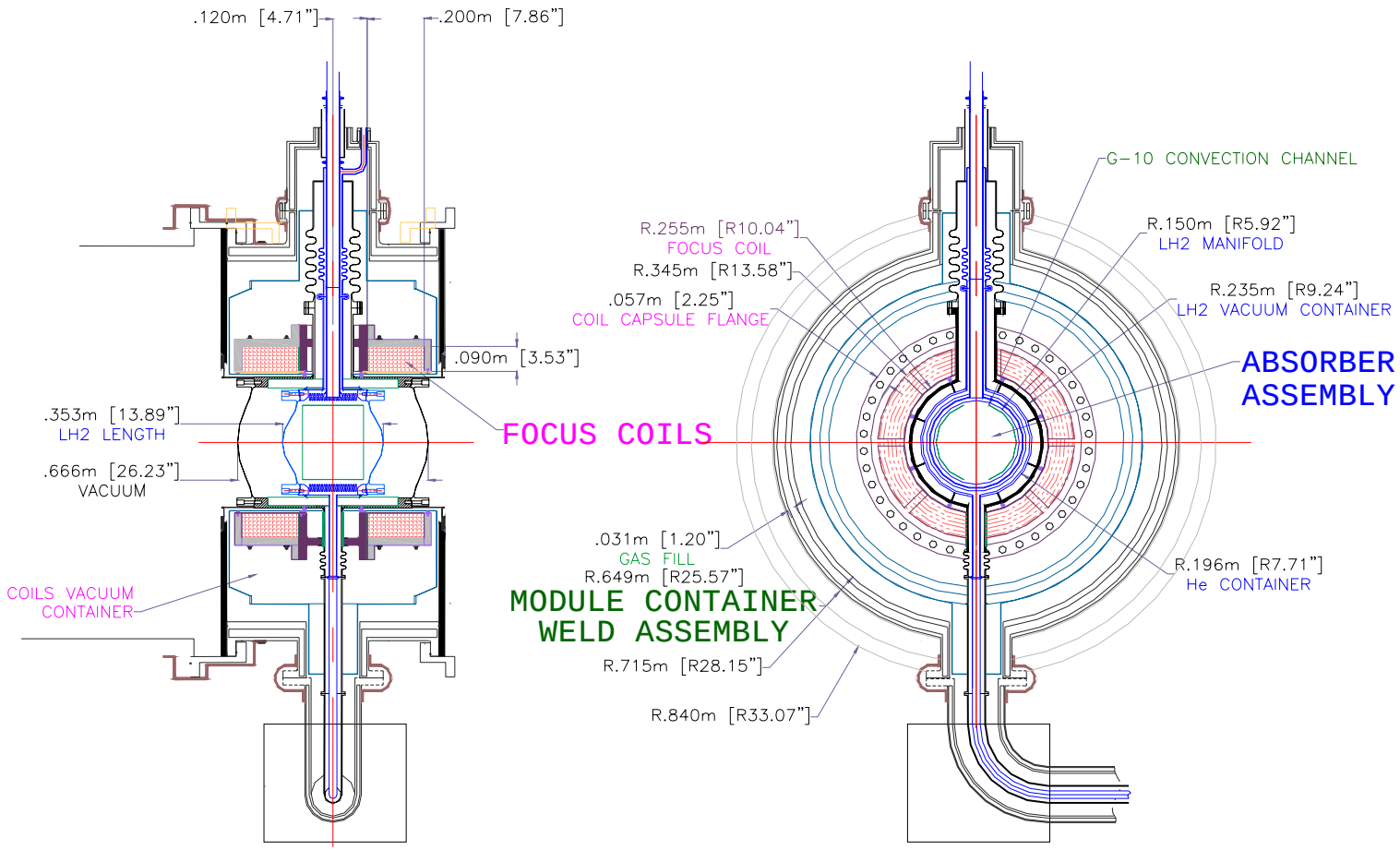


200 MHz MICE COOLING EXPERIMENT DESIGN

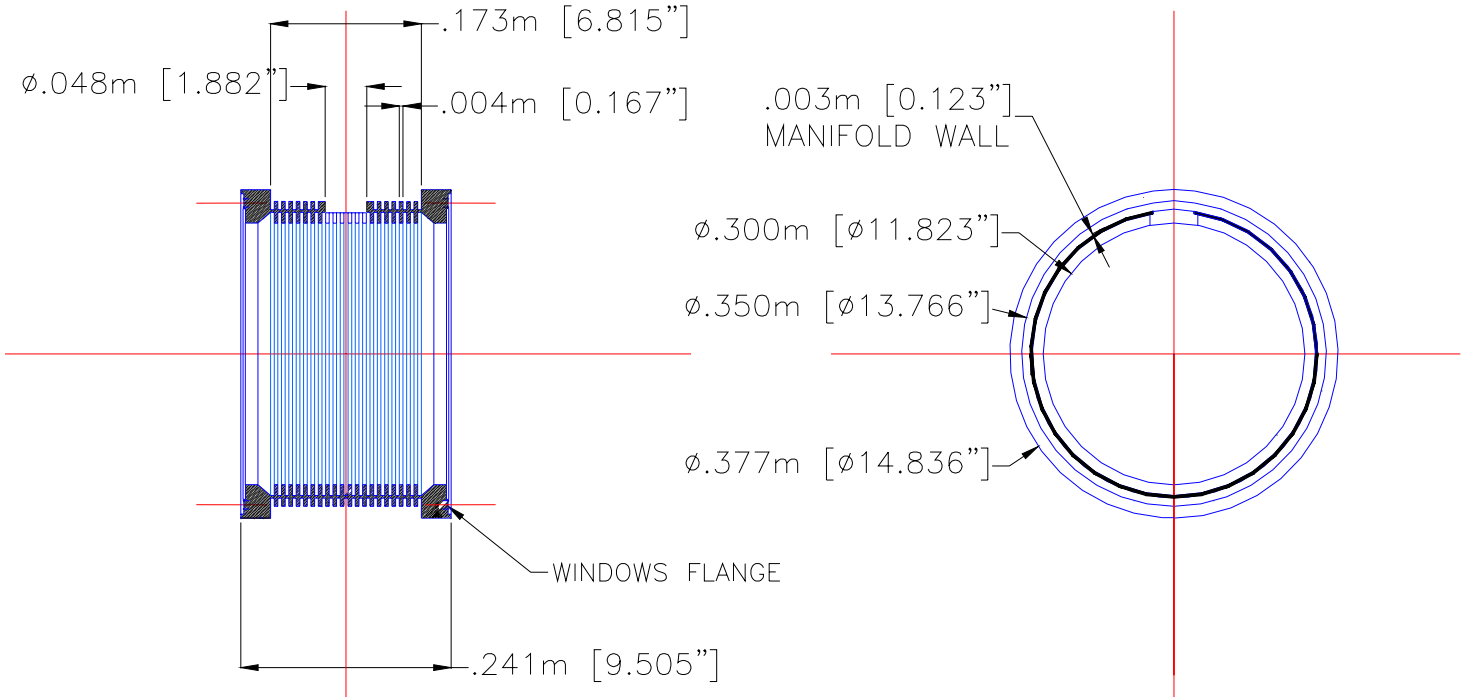
R. B. Palmer 10/17/02 Version

E.L.Black IIT
GEN. REV. 11/8/02

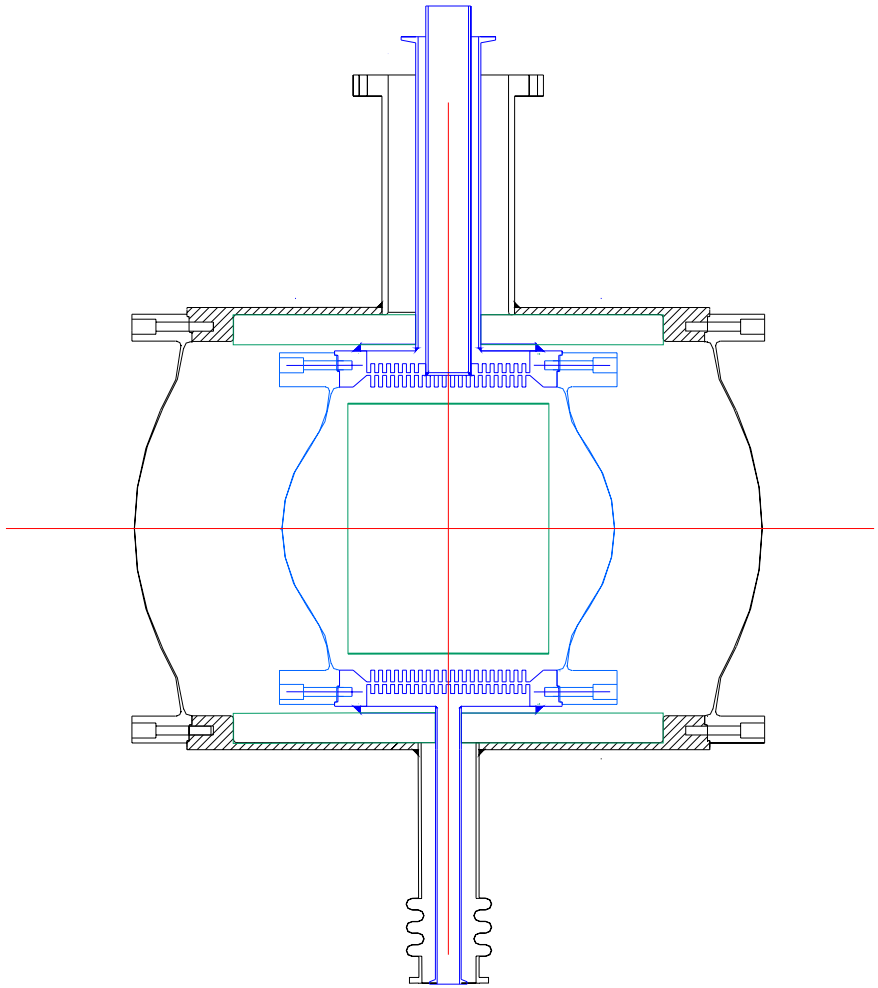
LH_2 absorber / Focusing coils Module parameters



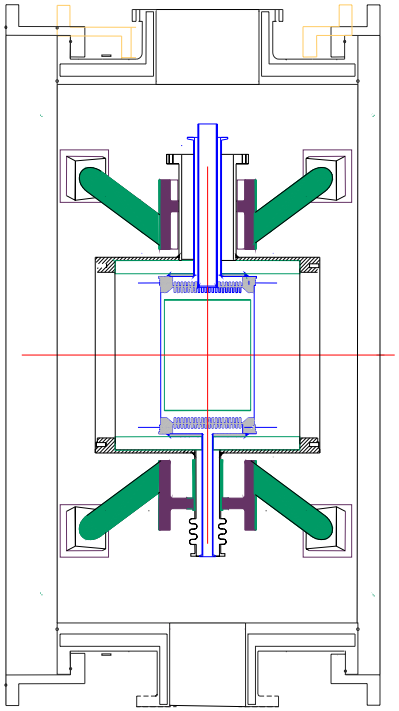
Lh2 Absorber Components



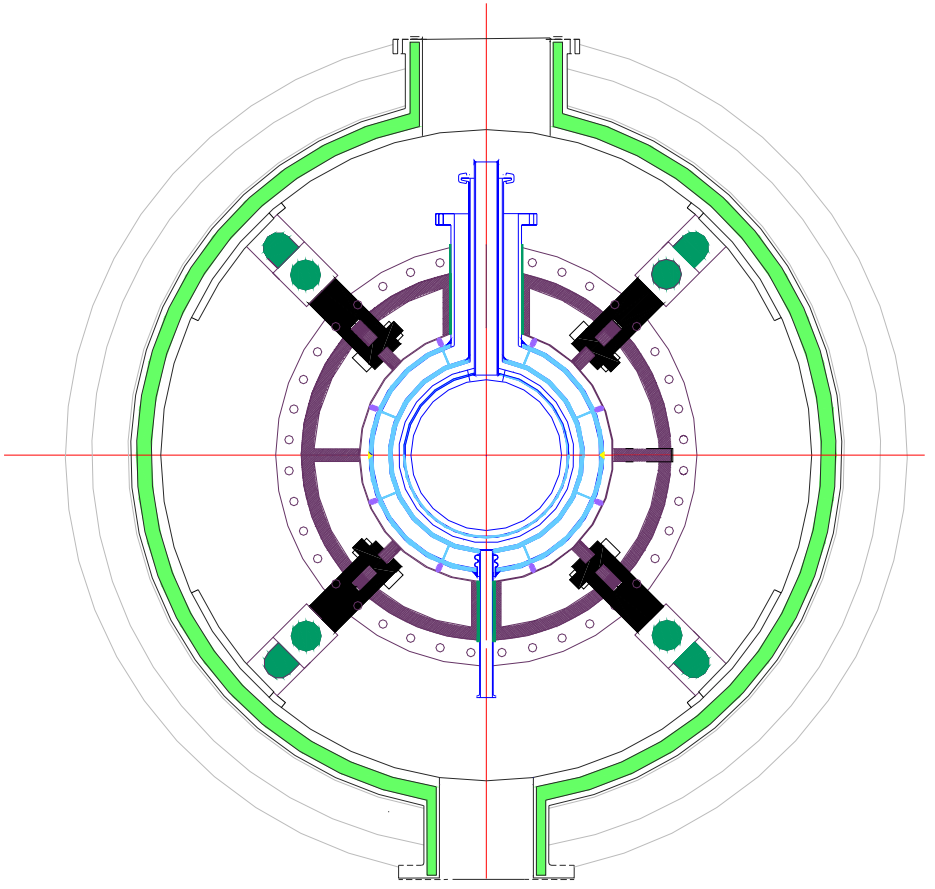
Lh2 Assembly



Module vacuum chamber absorber integration



Absorber module end view



Proposed fabrication & assembly logistics for the LH_2 Absorber

Composed of:

- Lh2 absorber H.Exch. Manifold (KEK)
- He shell weld-assembly (KEK)
- Absorber vacuum chamber (IIT/KEK/NIU
- Absorber assembly windows (IIT/OLMISS/NIU)
- Absorber vacuum chamber windows (IIT/OLMISS/NIU)
- Module Vacuum chamber (IIT/NIU)

- Design, design support & analysis (IIT/ KEK /OXFORD)

Specifications & Proc. (IIT/NIU/KEK)

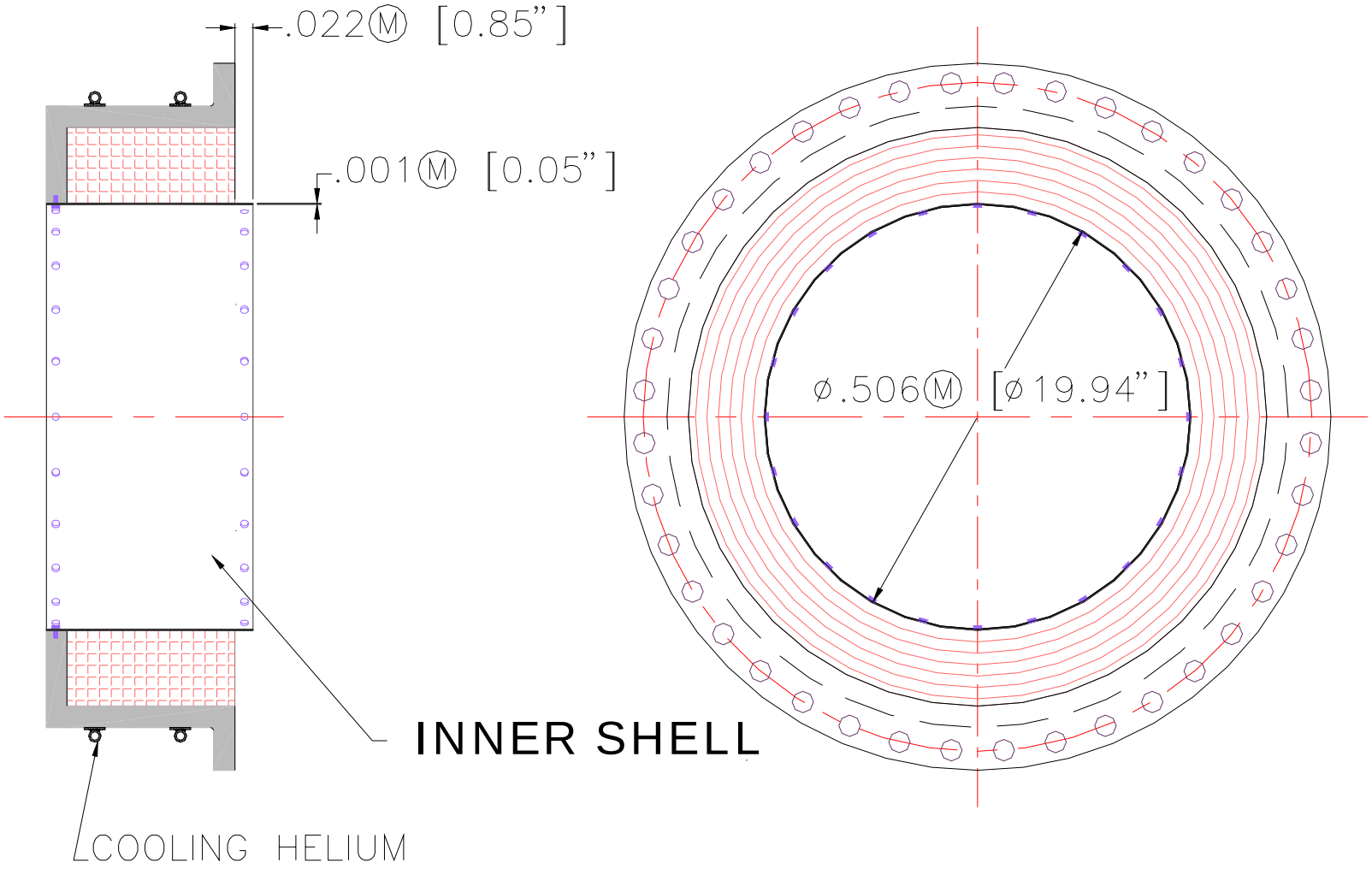
Fabrication locations (KEK/US)

Components, Assy. test locations (FNAL/NIU)

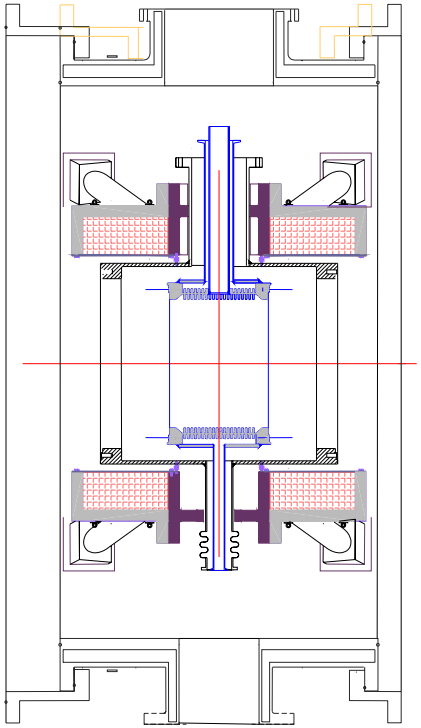
Lh2 fabrication and test location considerations

- Currently KEK has successfully completed the fabrication of the first convection absorber including the cryostat for test
- FNAL is completing the facility for this type of tests, the MuCool Test Area (MTA) reportedly ahead of schedule, we intent to perform this test in that area
- Preparations for this test are in progress which mostly consist on engineering design verification of compliance with the ASME and the FNAL safety requirements
- Mississippi Stale University successfully fabricates the first absorber window
- NIU and UOIC facilitated and developed the measurement and test of the windows characteristics

Focusing Coil parameters



Module/Coil integration



Proposed fabrication & assembly logistics for Focusing coils

Composed of:

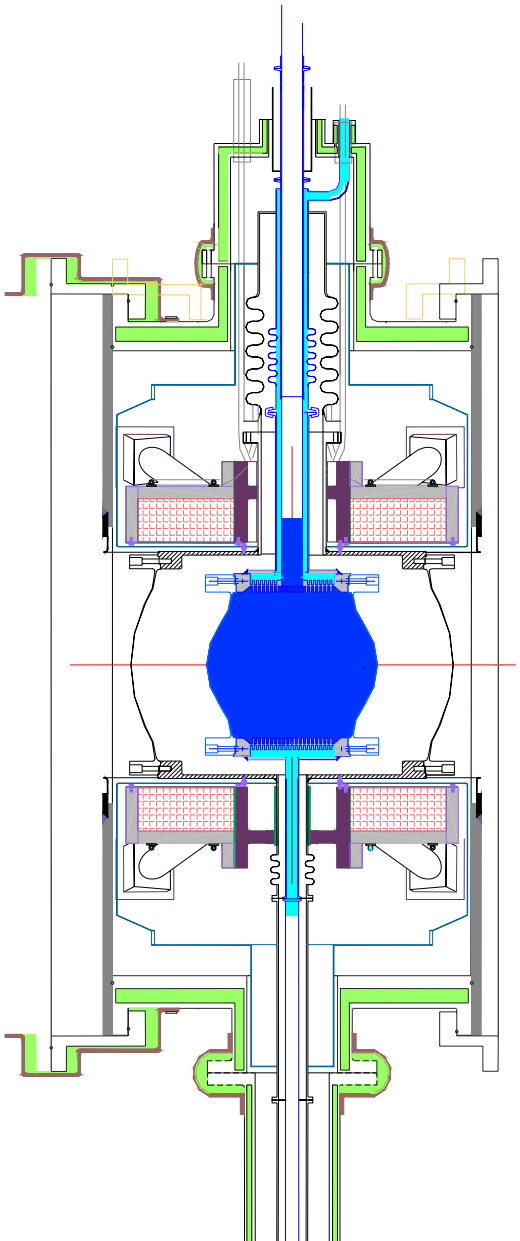
- Super conducting coils	2/module
- Coil containment casings	1/coil
- Coil casing assemblies	2/module
- Support structure assembly	1/module
- Coils/absorber cold mass support system	1/module
- Coils Vacuum enclosure	1/module
- Cryo cooling and electrical connections	AR

Design and specifications & Proc.	Oxford/LBNL/IIT
Fabrication locations	LBNL-OXFORD
Components Assy. & tests locations	FNAL - RAL

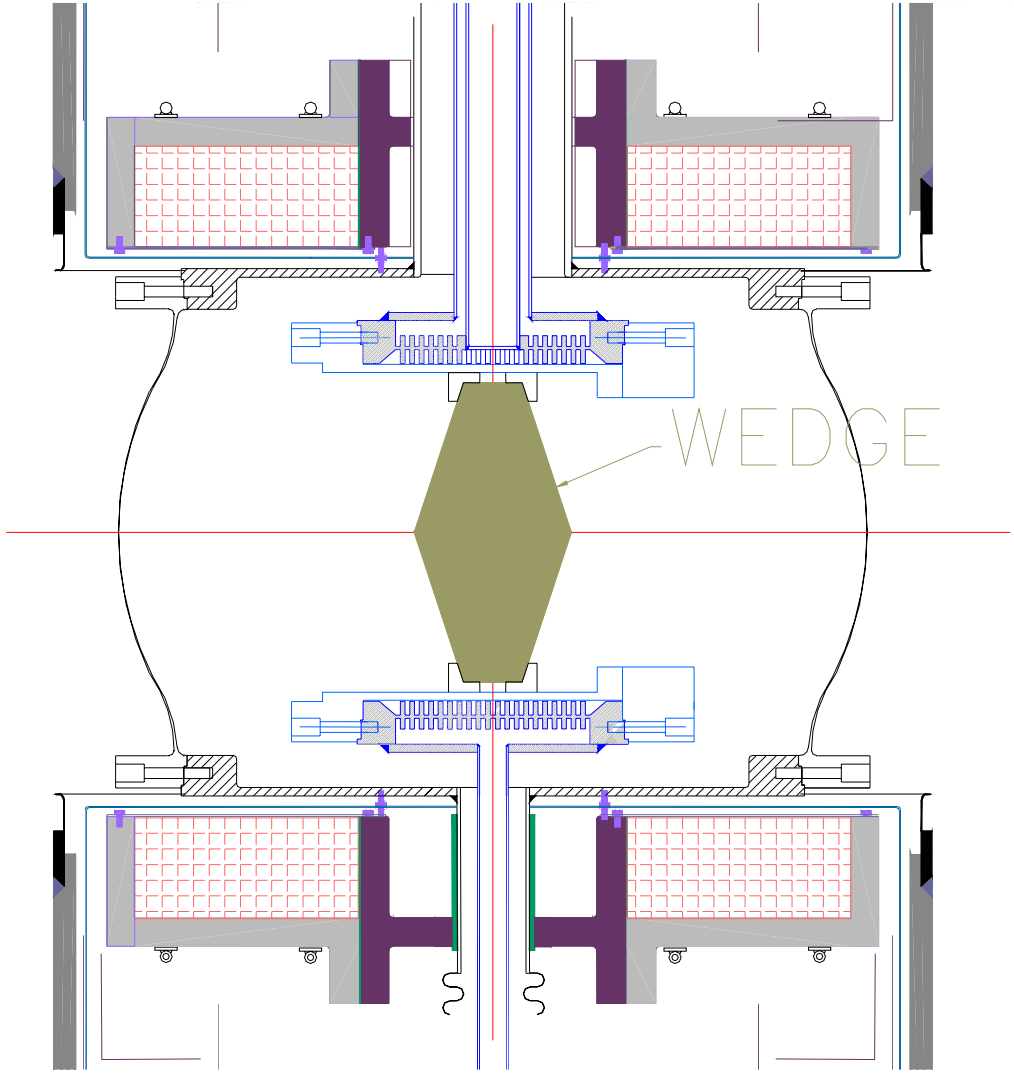
Focusing coils fabrication and test location considerations

- LBNL M. Green designed and procured the fabrication of the LN_2 superconductor magnet, now extensible used at the FNAL “lab G” in the R&D tests and development of the MuCool RF 400MHz design.
- The magnet was fabricated by a local magnet manufacturer in Berkeley California with the directions from M. Green expertise
- The MTA facility will provide all the electrical power, cryogenic system and instrumentation to perform test of the focusing magnets before and after final assembly in the LH_2 module

Lh2 module final integration



•Experiment requirements
hydrogen length sensibility



PROPOSED INTEGRATION WORK PLAN SCHEDULE CONSIDERATIONS

- MICE engineering planning for: the implementation of RAL infrastructure, construction of the cooling channel and detectors shall simultaneous converge within a common schedule ! ?
- Components fabrication locations national and international will affect schedule
- We need to establish criteria for procurement and fabrication
- All the experiment components sub assemblies and assemblies shall be tested prior to their installation at RAL
- Test locations will affect schedule, alternate locations shall be considered

END

FINAL