



DAMPING RING BASELINE TECHNICAL REVIEW

CONVENTIONAL FACILITIES AND SITING GROUP

Electrical Overview

R. Wielgos



Conventional Electrical Utilities

- Power Distribution to Support Facilities
- Power Distribution to Experiment Demarcation

Electrical Load for Damping Ring

Magnets and RF System (excluding Cryo, conv)

Based on Thermal Loading Given

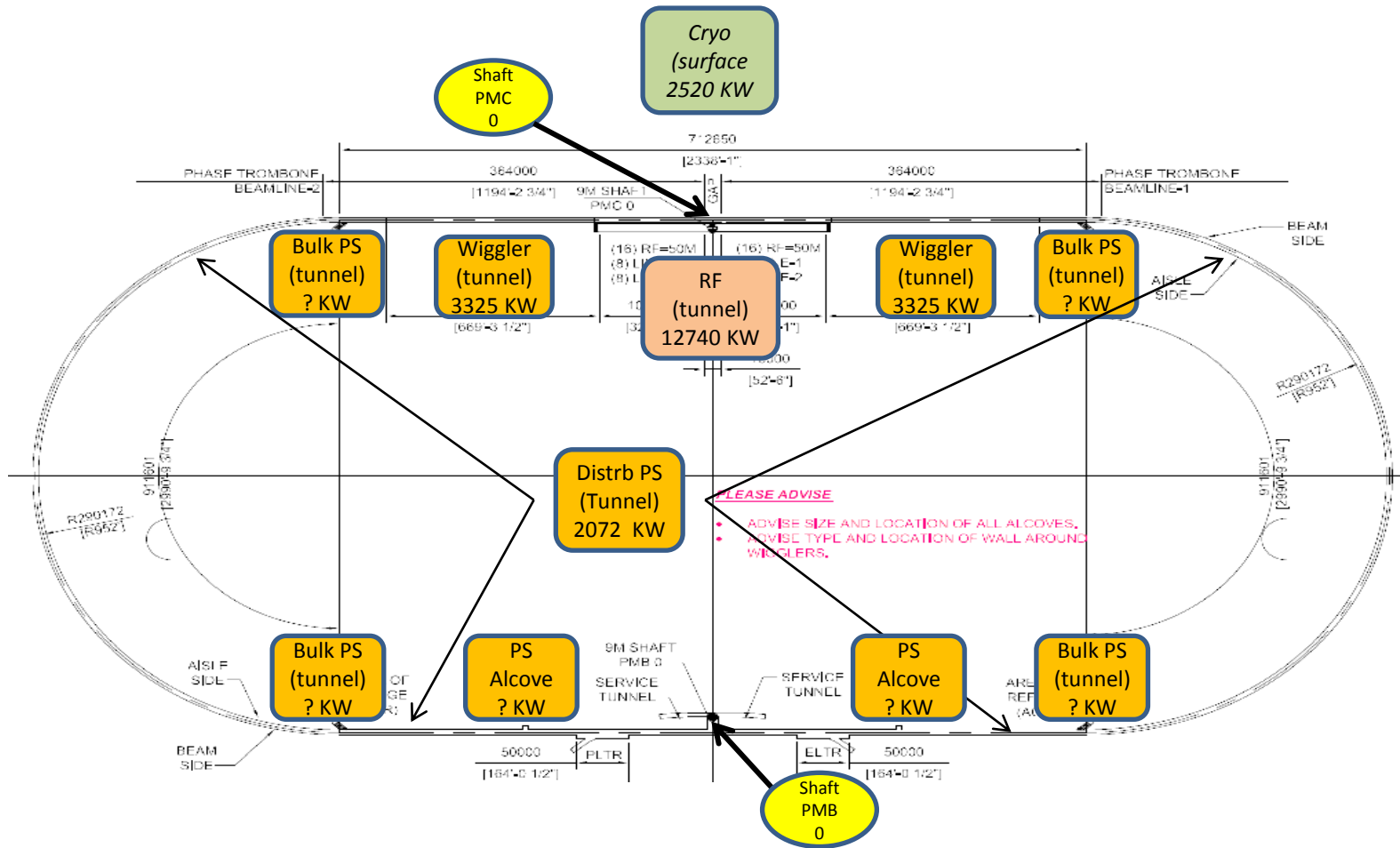
- 12.4MW (baseline 10Hz-2rings)
- 14.8MW (upgrade 5Hz-3rings)

Jan 05, 2011

	DR components table (MW)	Remarks
☑ LOW Power 5Hz 2rings	8.44	from Susana
☑ LOW Power 10Hz 2rings	12.44	Adjusted per PeterG
☑ FULL Power 5Hz 3rings	14.81	Adjusted per PeterG



Current Experimental Load Distribution (14.8 MW)



Current Experimental Load Distribution (14.8 MW Total)

- About 85% load from Shaft PMC-0 to Beamline Enclosure and Area of Refuge (Actual TBD)
 - RF System
 - Dipole Power Supplies
 - Quadrupole/Corrector Power Supplies
 - Wiggler Power Supplies



(Continued)

Current Experimental Load

Distribution (14.8 MW Total)

- 15% load from Shaft PMB-0 to Power Supply Alcoves & Area of Refuge (Actual TBD)
 - Injection/Extraction Elements
 - 132 HV Pulsed Power Supplies per Ring
 - Septa Power Supplies
 - 2 Inj. & 2 Extr. Per Ring



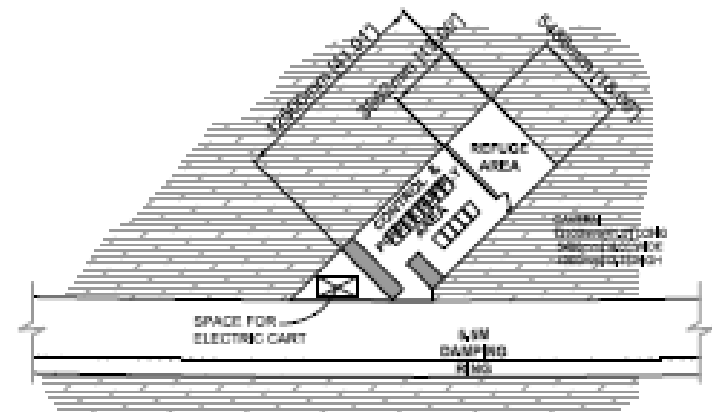
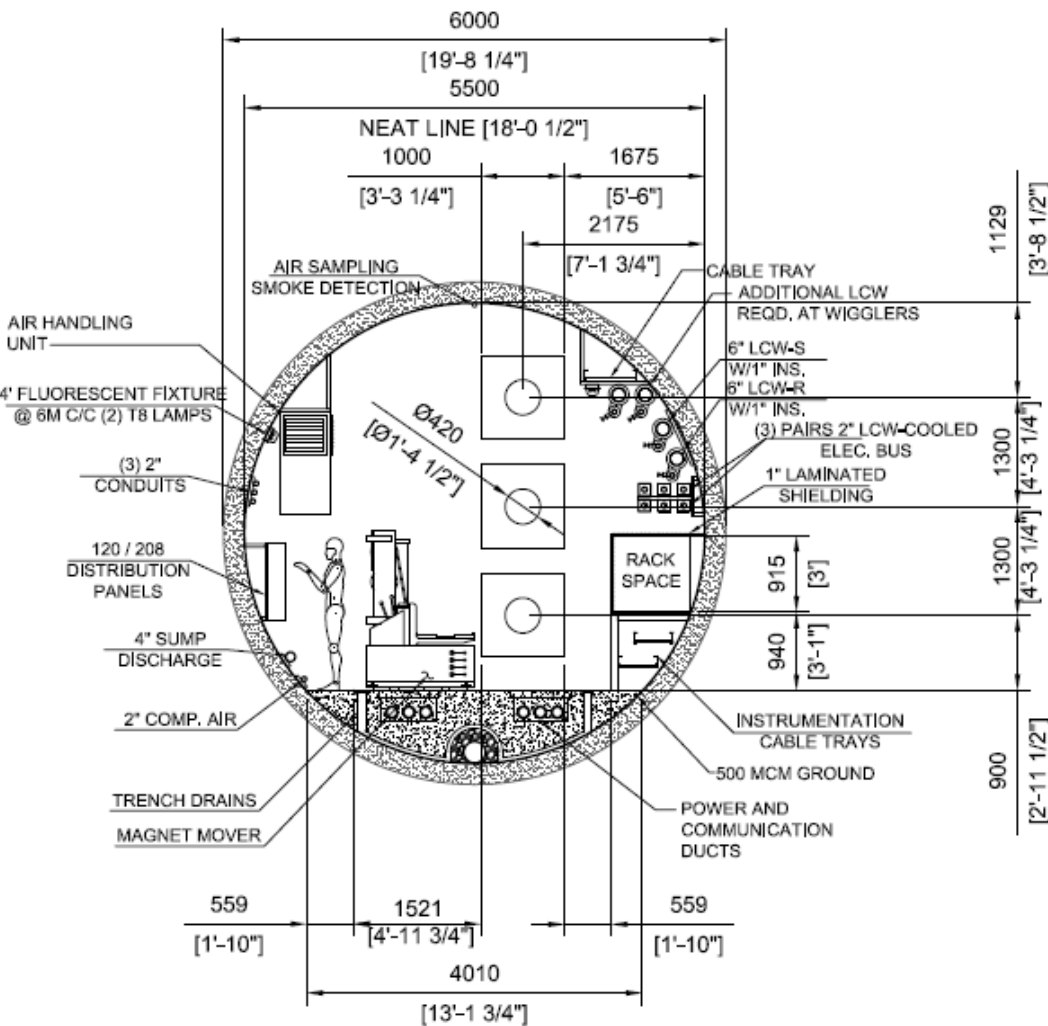
Outstanding (Electrical) Items

- Check LOADS (hopefully total still the same)
- Loads, Count, Locations of Components
- Finalize Demarcation Locations for Points of Connection to the Electrical Distribution System



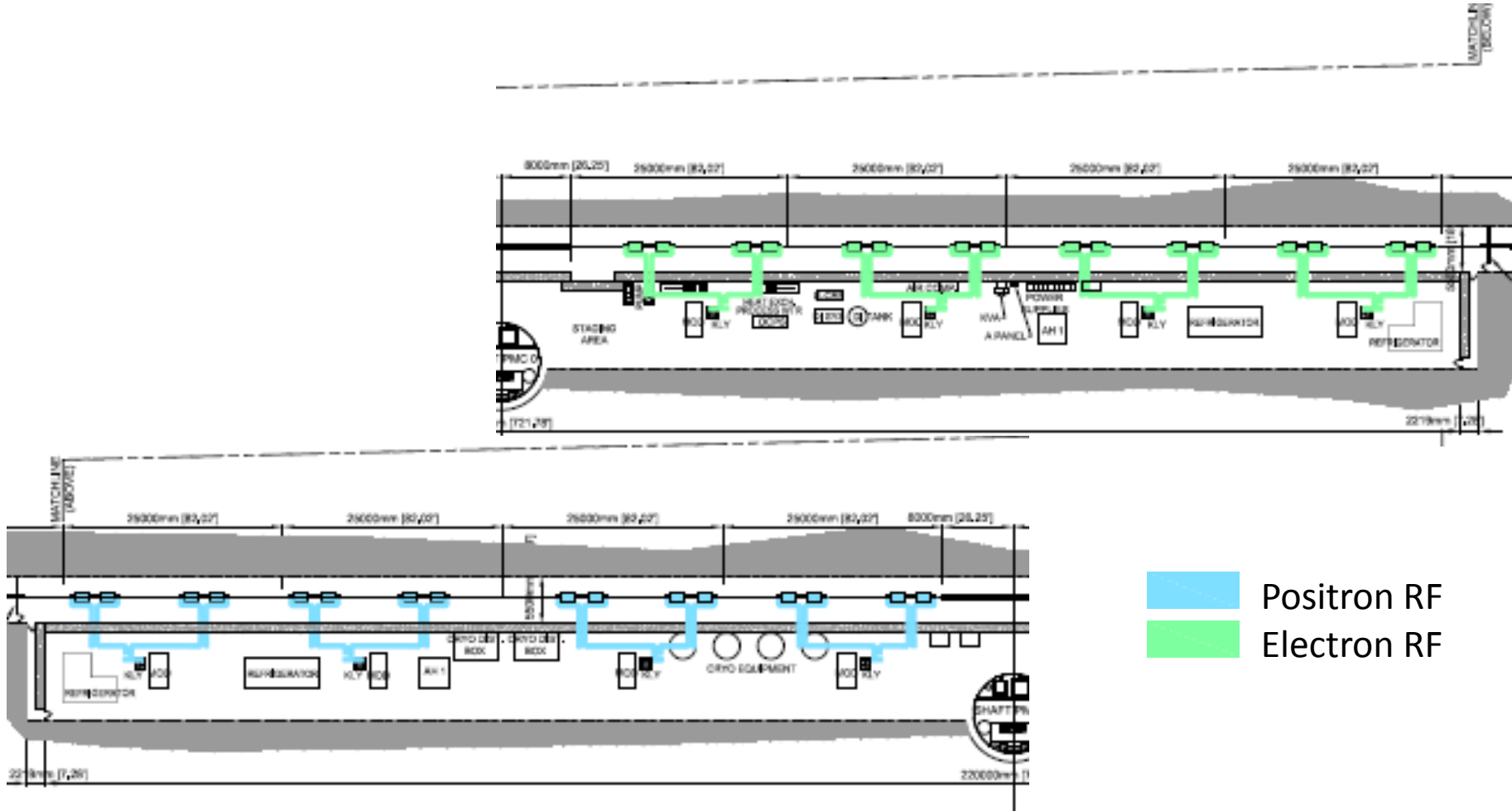
Electrical Systems Provided by CF&S

- Points of Connection for Experiment Power
 - Power Panel in Alcove & Service Tunnel
 - Disconnect Switch Local to Equipment
- Power to All CF&S Mechanical Systems
- Facilities Lighting
- Power Connections for Construction and Maintenance
- Power to Cryogenic Plant Distribution Panels
- Power for All Support Buildings and Facilities
- Standby and Emergency Power System
- 480 Volt Power Delivery



**PLAN - AREA OF REFUGE (AOR)
 4 - REQUIRED**

TUNNEL SECTION
 06/30/2011



PLAN – DAMPING RING CAVERN @ SHAFT PMC 0