

Topics

- **Recent Changes to Sources**
- **e - Central Sources Damping Ring**
- **e+ Undulator**
- **e + Central Sources Damping Ring**

BDS-DR-SOURCES Integration @ Valencia ?



Recent Mandated Changes to Sources

October 7

**CCR#18 BCD Parameter-Layout Section
Central Source Damping Ring**

October 9-12

**Cal-Tech CFS 20% (goal) Size-Cost Reduction
Tunnel, Cavern & Shaft Reductions**

October 28

CCB CCR#18 BCD Approval



Recent Mandated Changes to Sources Overall Impact

**Relocated e- e+ system areas to central BDS-DR areas.
Added adjacent service tunnel space to e- e+ beam tunnels.
Combined RTML & sources beams into same tunnels.
All source system locations changed except undulator.**

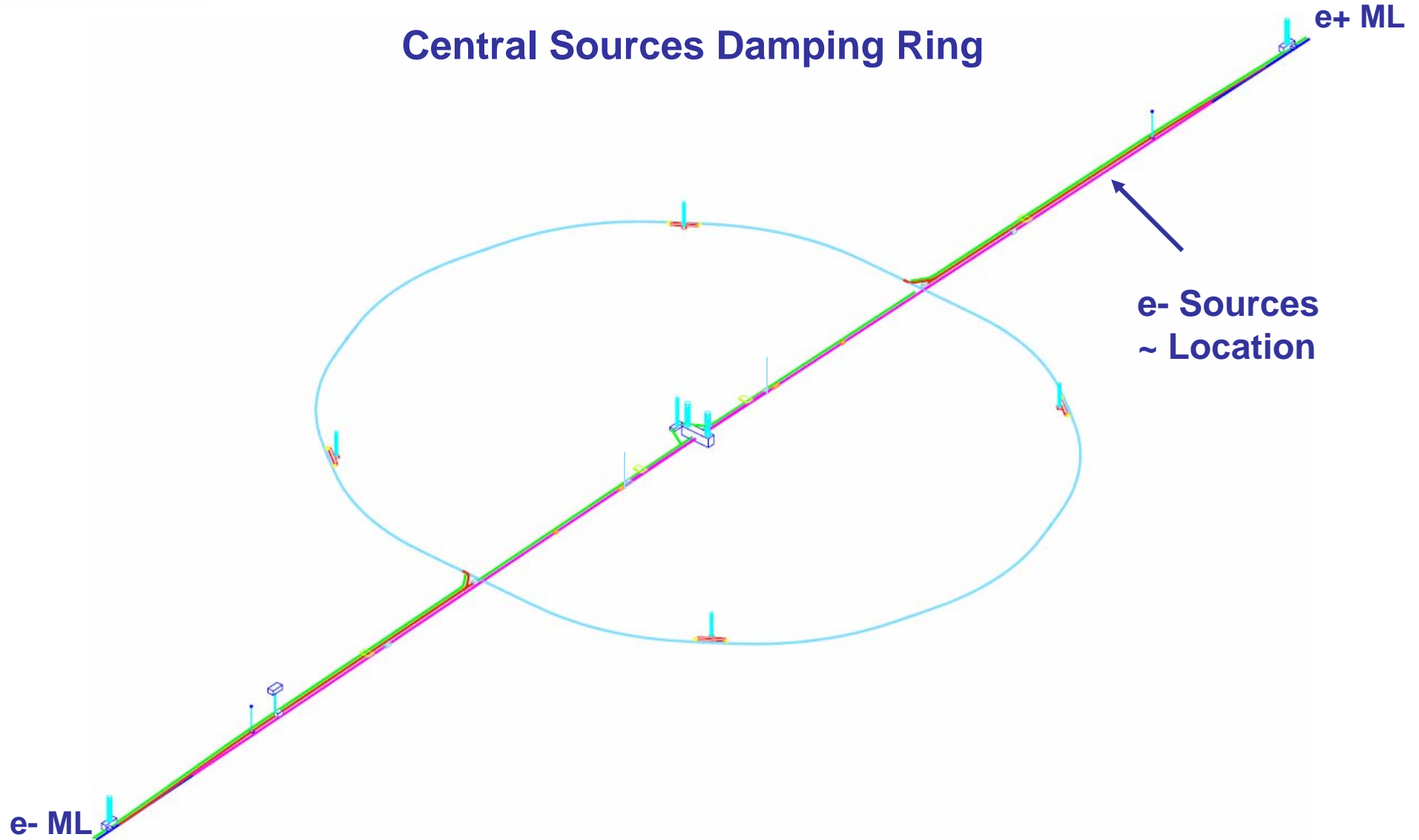
**Reduced caverns to as much as one-third original size.
Relocated prior cavern space to surface building space.
Added laser and radioactive material transfer shafts.
Tunnel bump-outs (widening) added in some locations.**

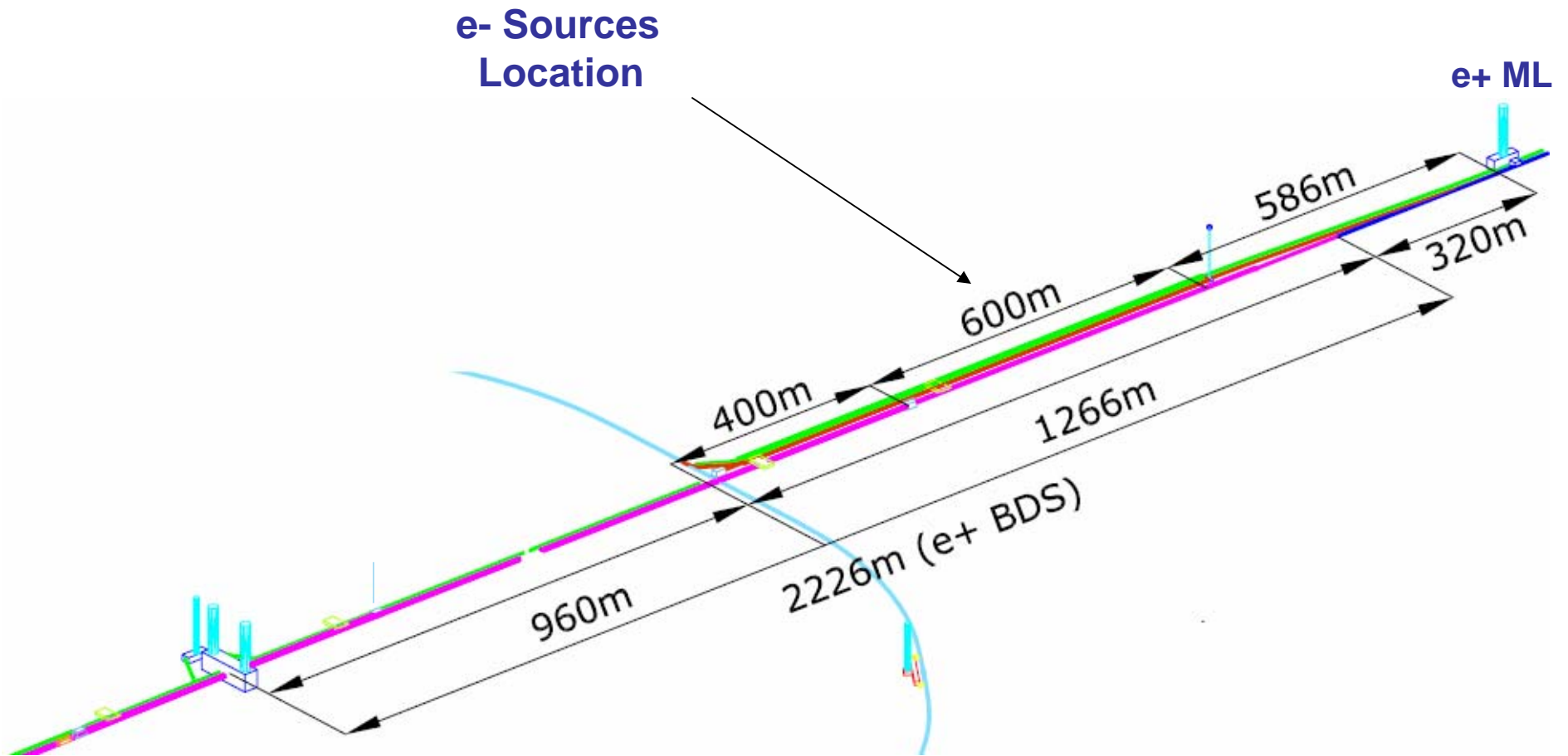
Topics

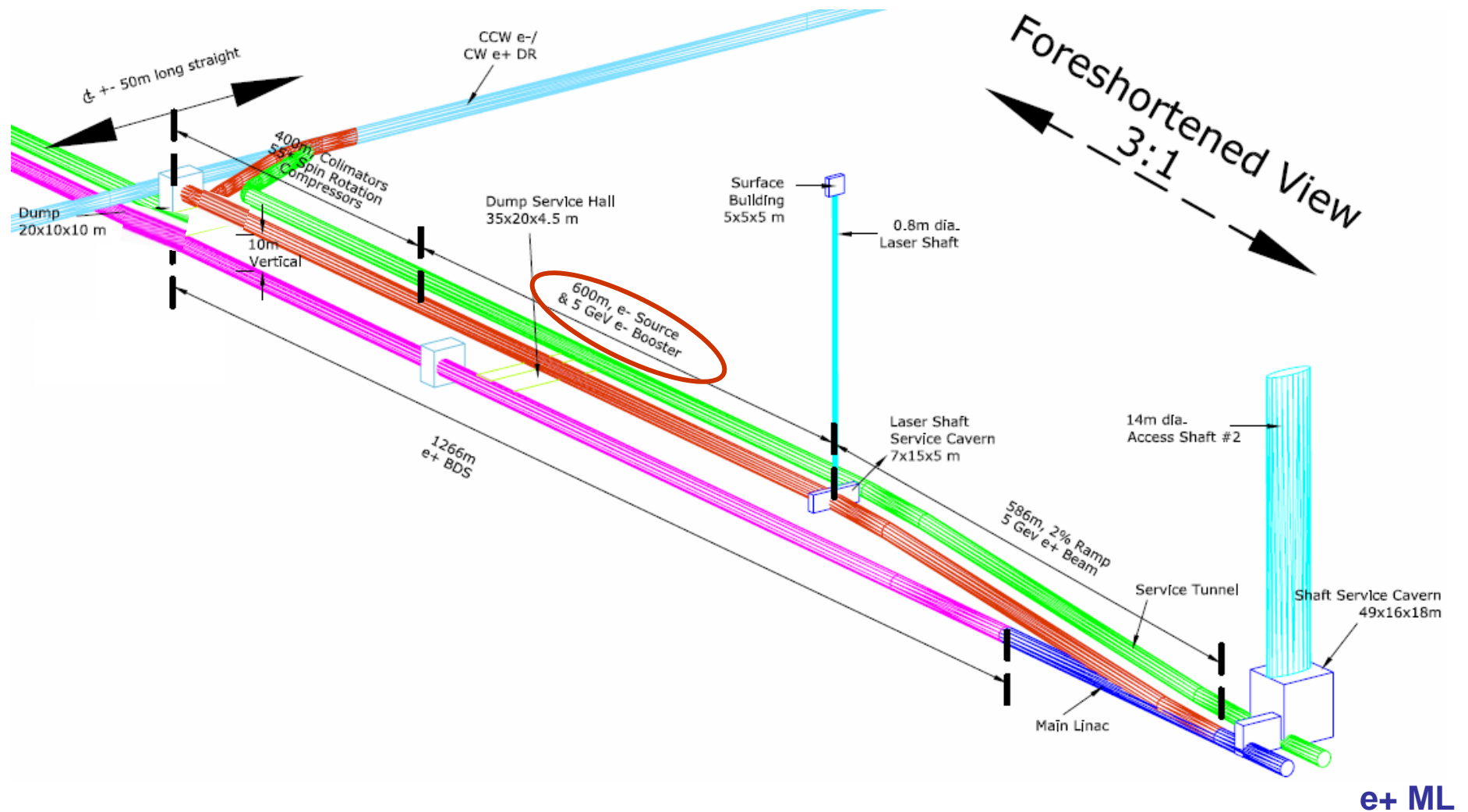
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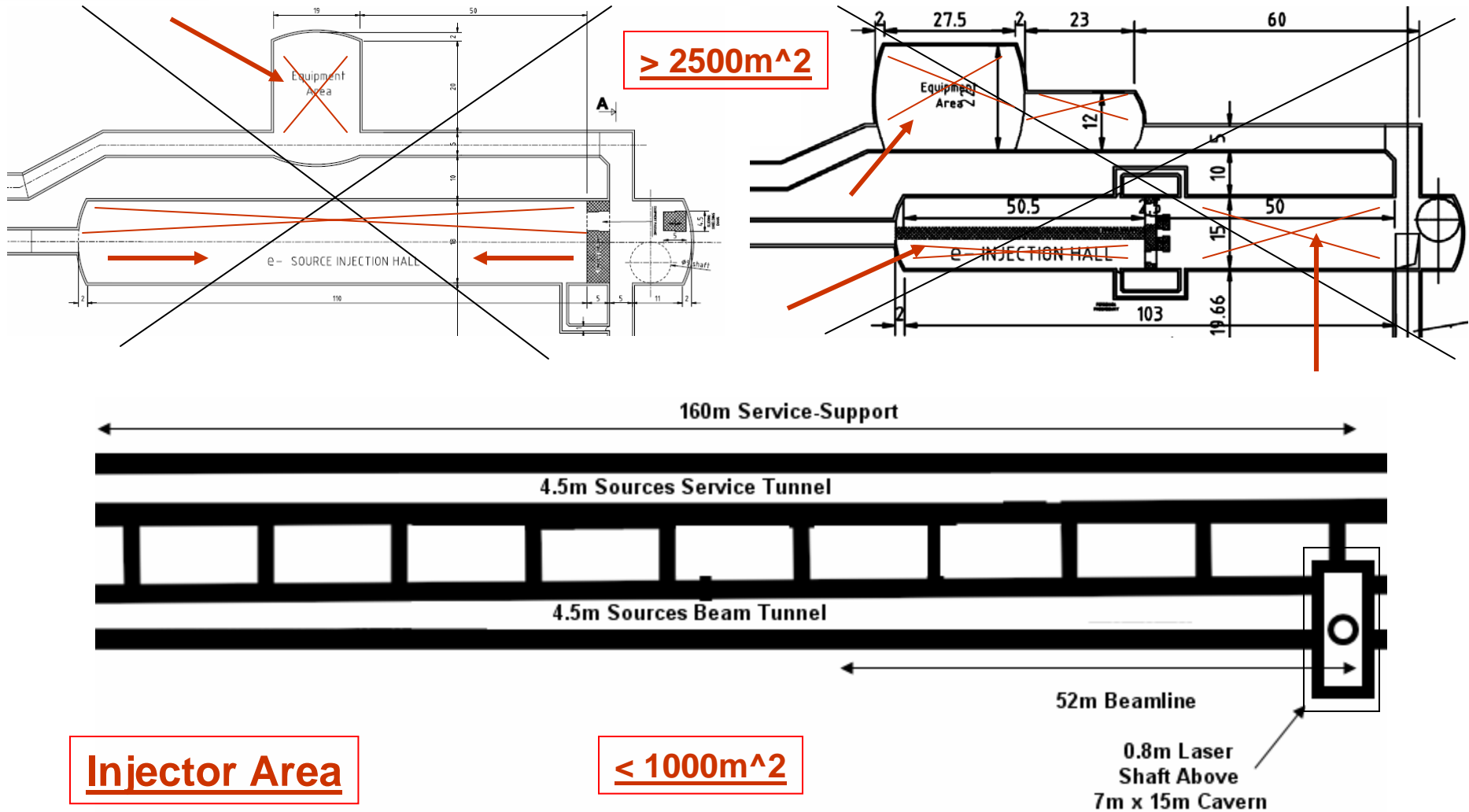
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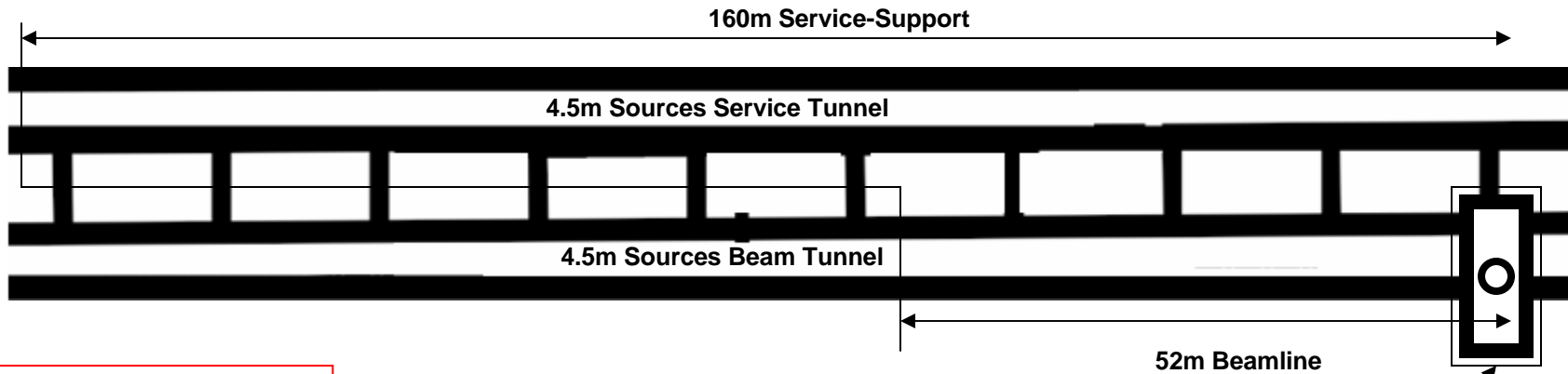
Central Sources Damping Ring











Injector Area

Service-to-Beam Housings @ ~3:1

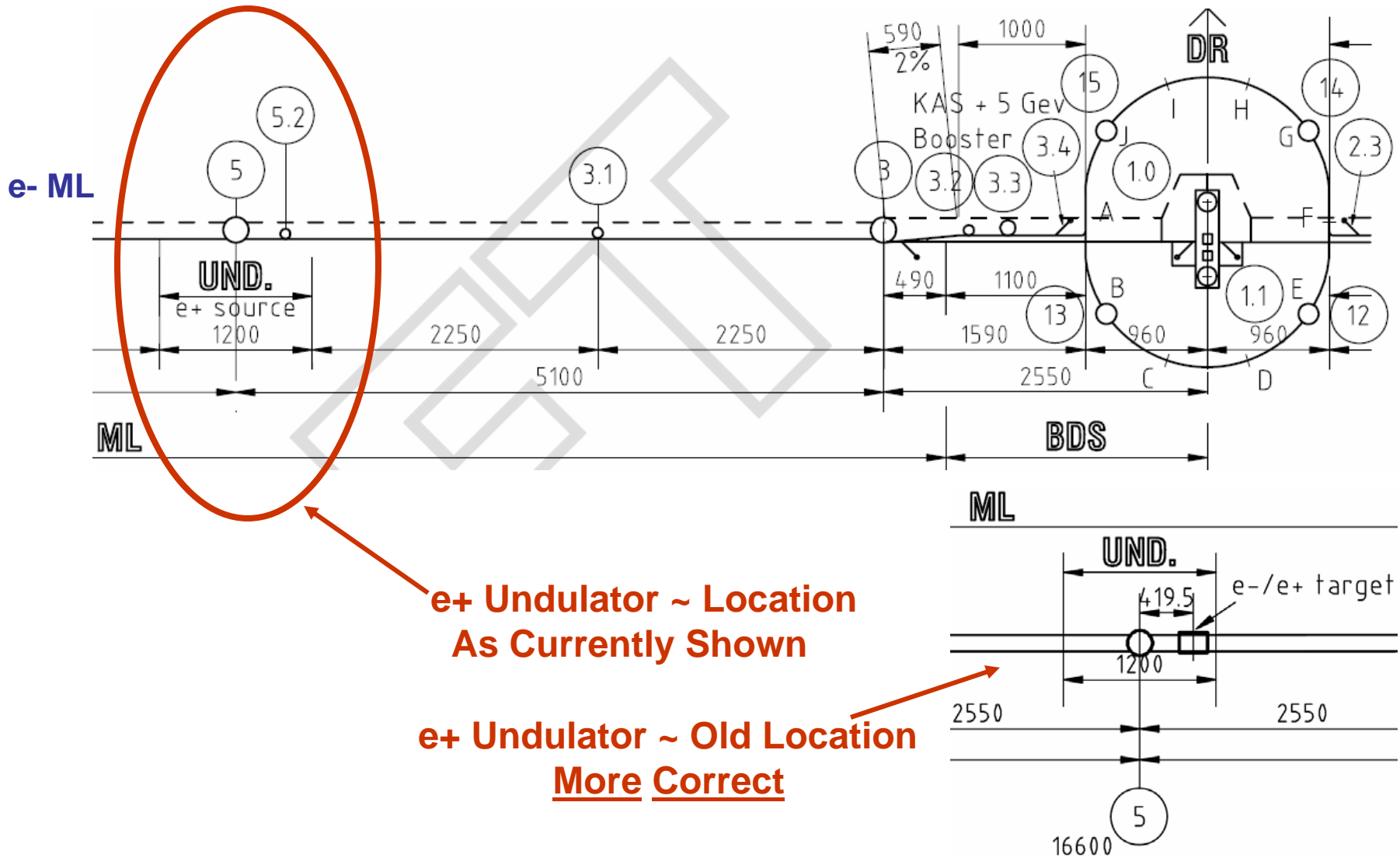
e- Injector		Housing-Cavern Area			
		Beam	Meter	Meter	Meter ²
		Service	L (Z)	W (X)	L*W (Z*X)
4.5m Dia. ID Tunnel w/ 3.6m Floor			Varies	3.6	
4.5m Dia. ID Tunnel w/ 3.6m Floor					
e- Pre-Gun 1 & 2	10m High	Cavern	7	15	105
e- Gun 1 & 2 Drive Laser		Beam	8	3.6	29
		Service	8	3.6	29
e- 12 MeV Bunching		Beam	9	3.6	32
	1+1 Spr Klystrons	Service	42	3.6	151
e- 70 MeV Pre-Accel		Beam	10	3.6	36
	2+2 Spr Klystrons	Service	85	3.6	306
e- Chicane & Dump		Beam	25	3.6	90
		Service	25	3.6	90

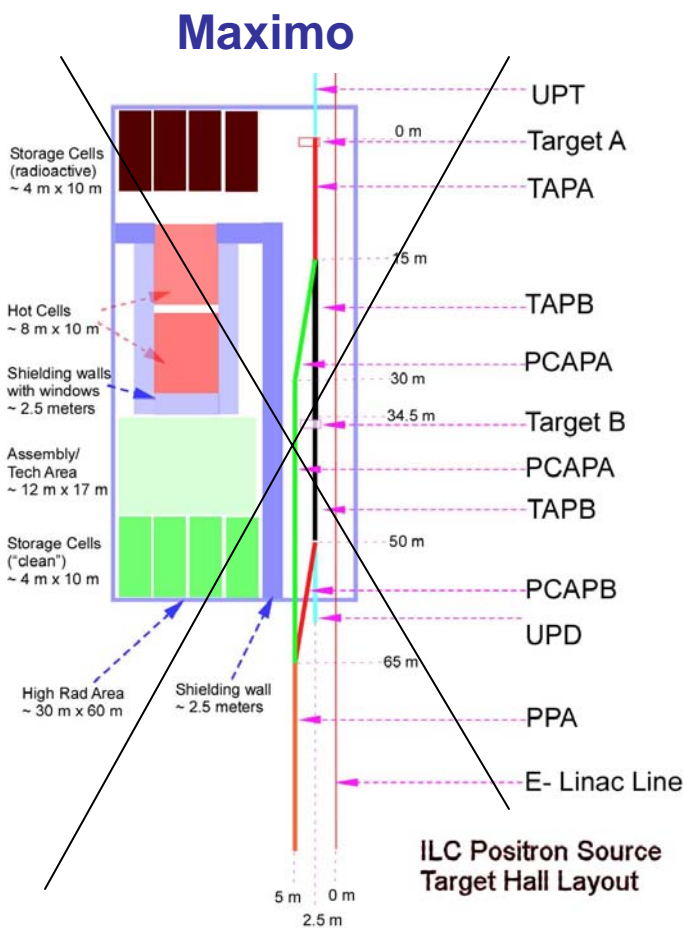
Total Beam Housing Z = 52m
 Total Service Housing Z = 160m
 Total Cavern Z = 7m
 Total Area = 868 m²

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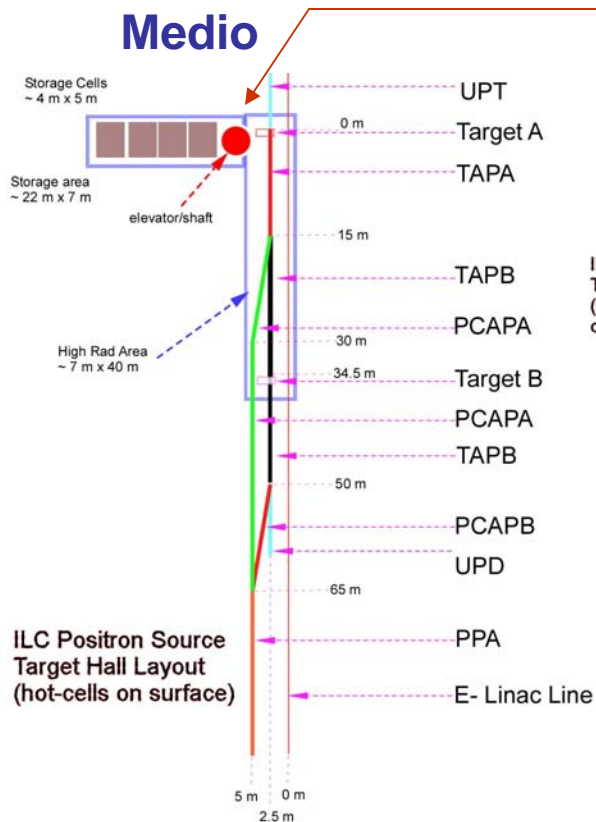
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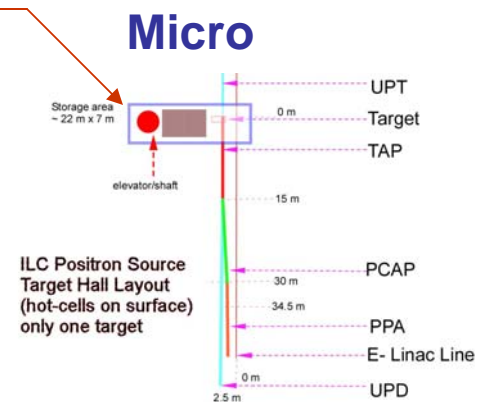




~1800 m²
2 Targets

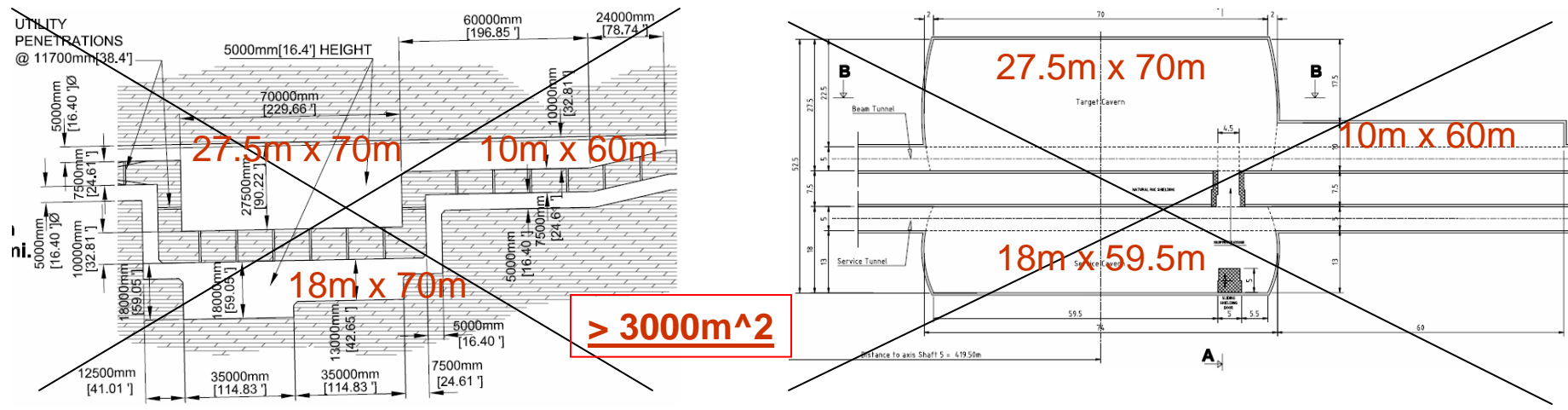


~434 m²
2 Targets

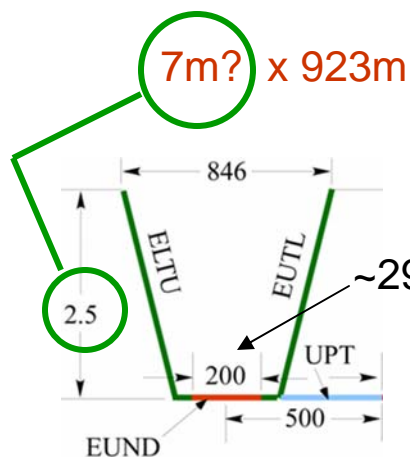


~154 m²
1 Target

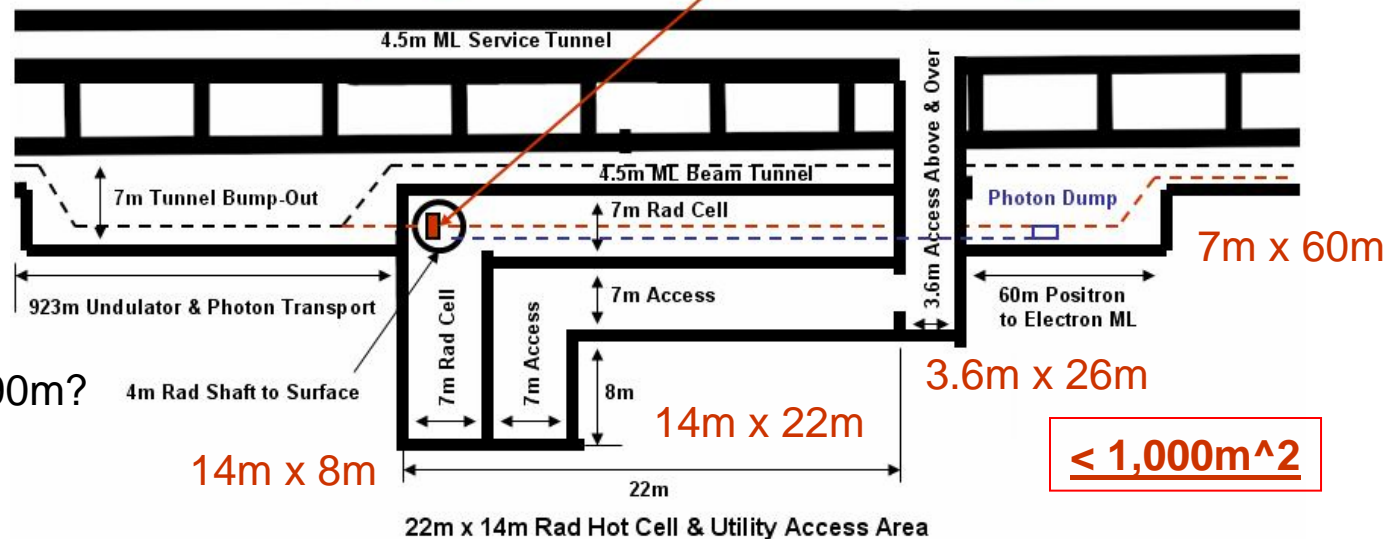
Tres e+ Undulator Targets



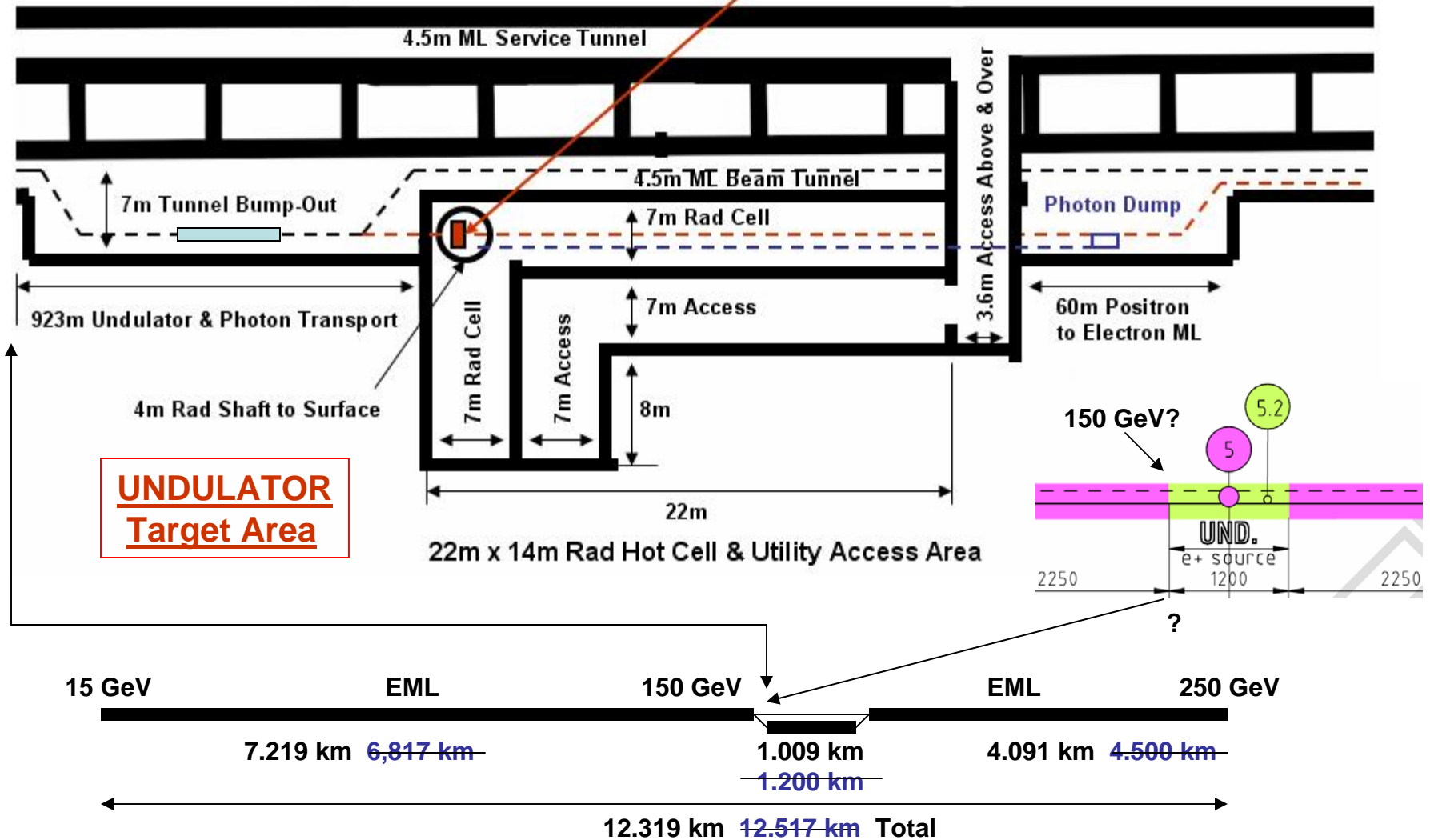
UNDULATOR Target Area



Single Target Undulator Positron Source with 22m x 14m Target Area



Single Target Undulator Positron Source with 22m x 14m Target Area

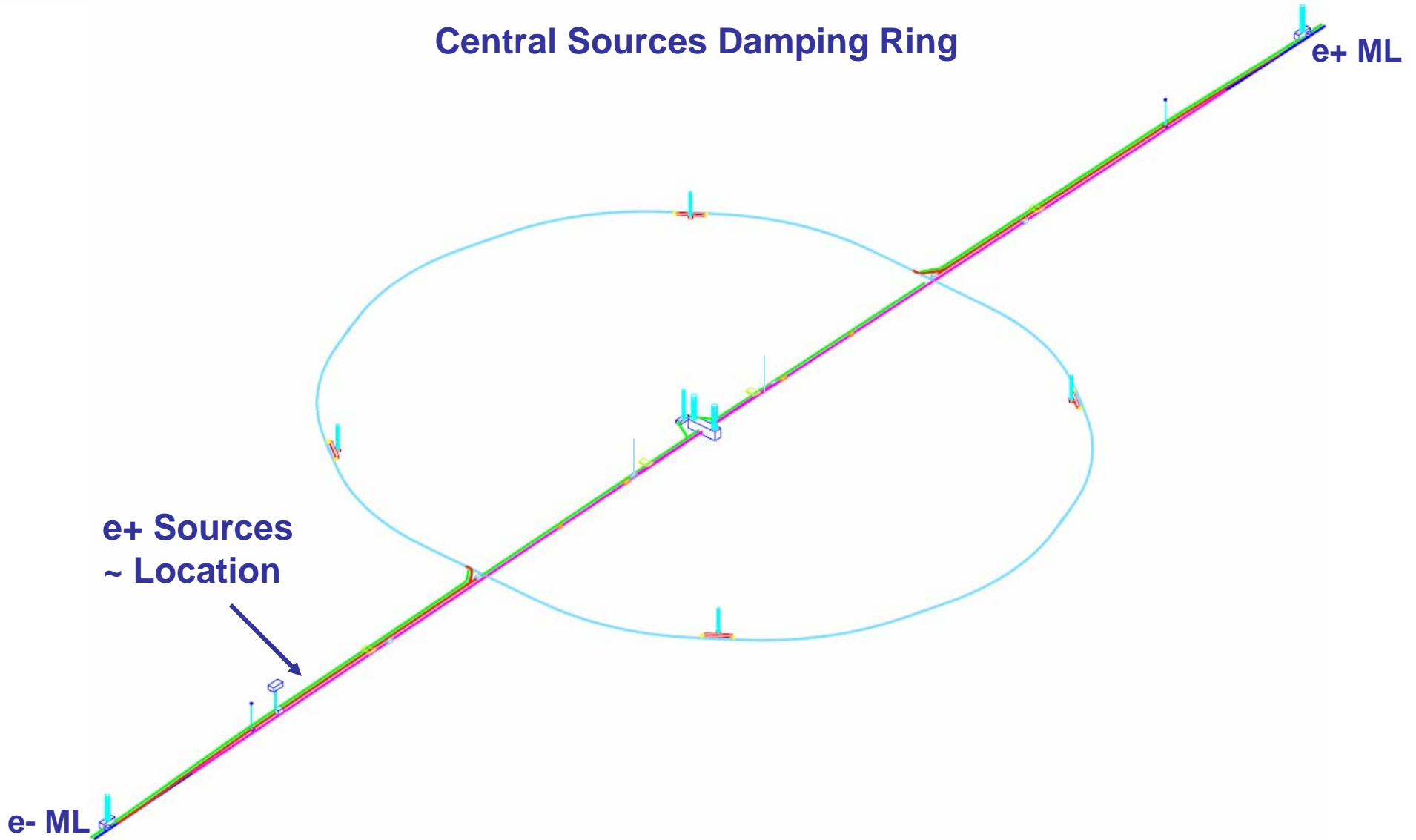


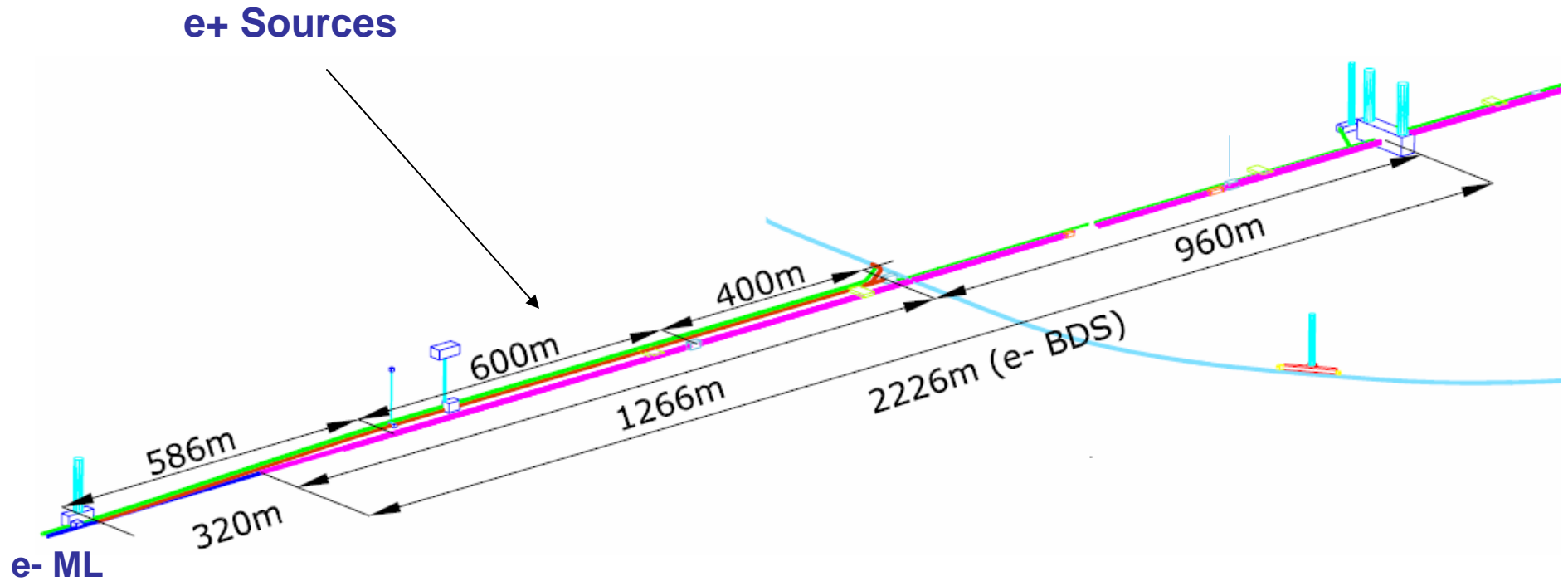
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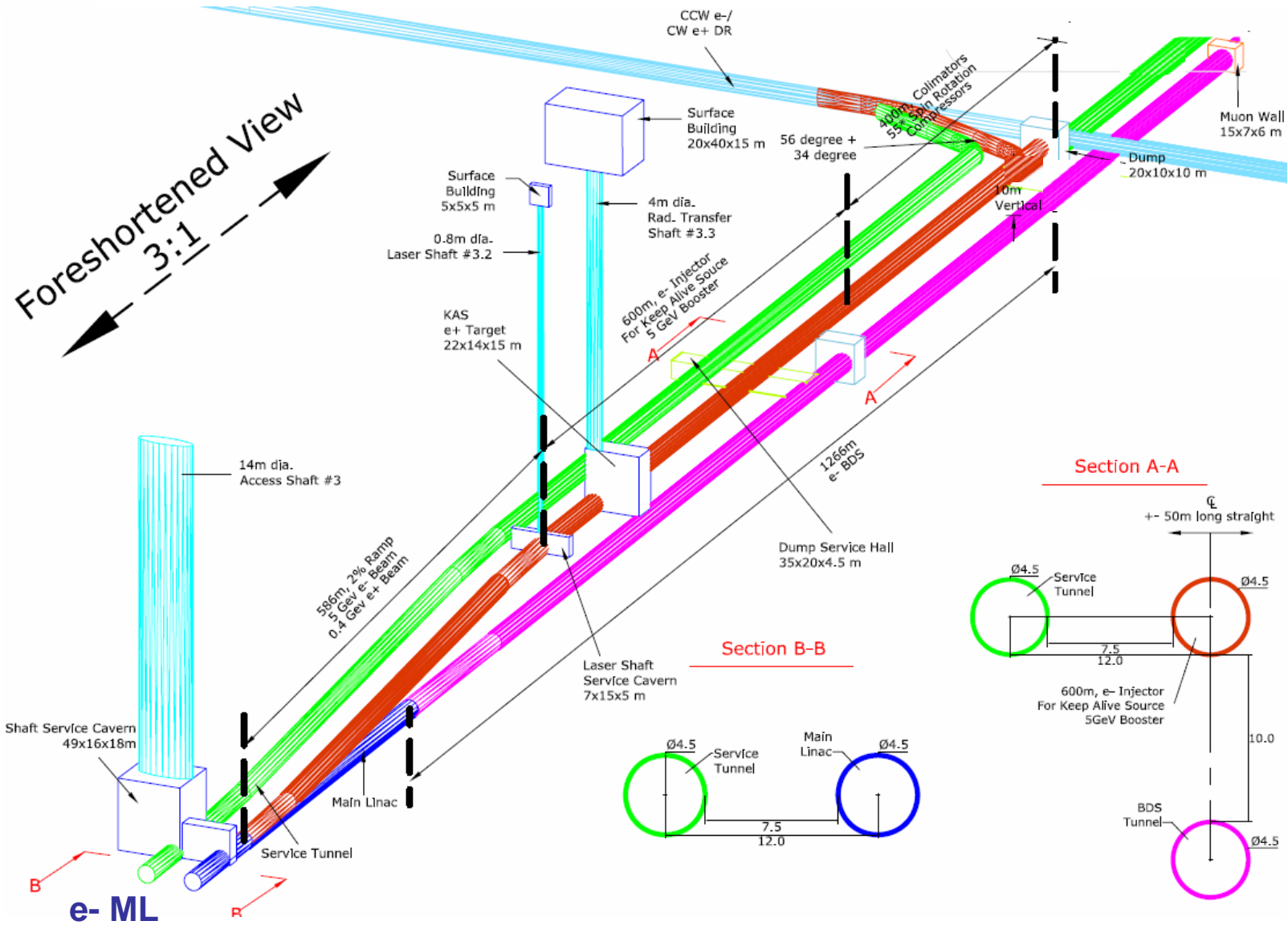
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Central Sources Damping Ring

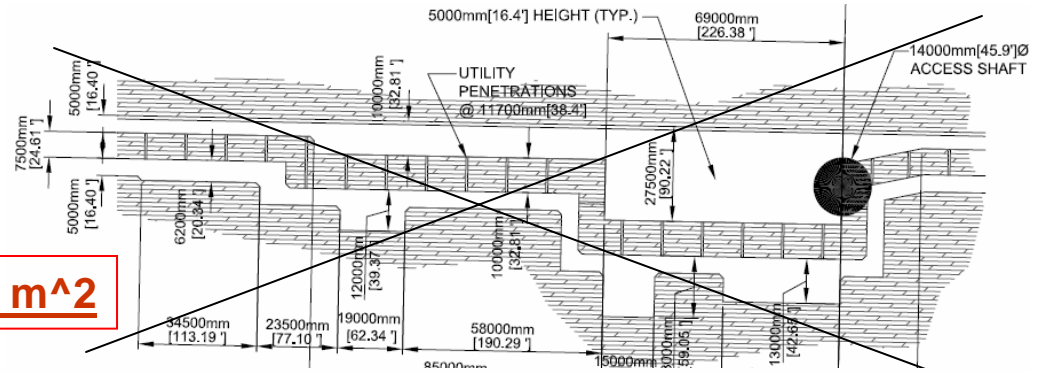




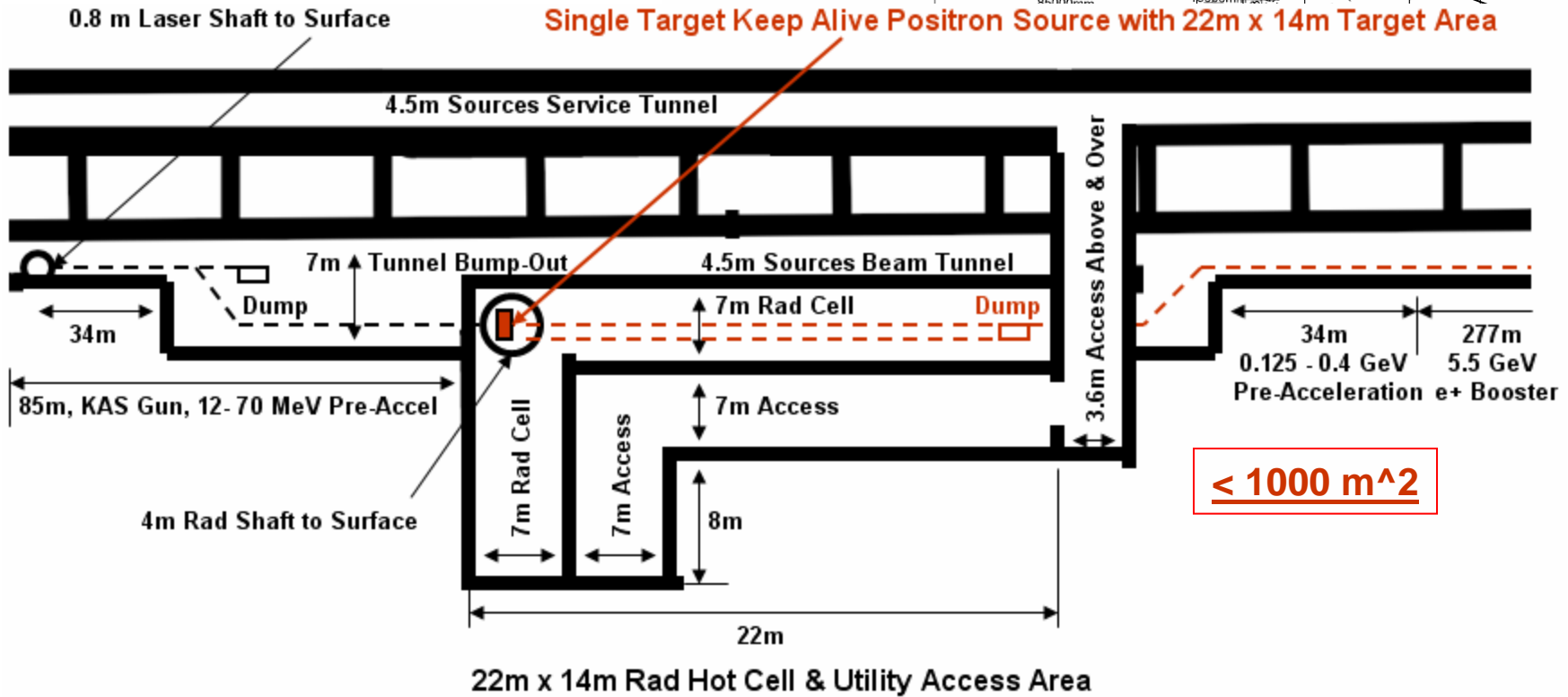


**Keep Alive Source
Target Area**

> 3000 m²



Single Target Keep Alive Positron Source with 22m x 14m Target Area



< 1000 m²

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