

SKIF

Civil Engineering



Injector Building

Laboratory Building

Testing Stands Building

Energy Center

Грузовой и второй
противопожарный въезд

“Long” beamlines Buildings

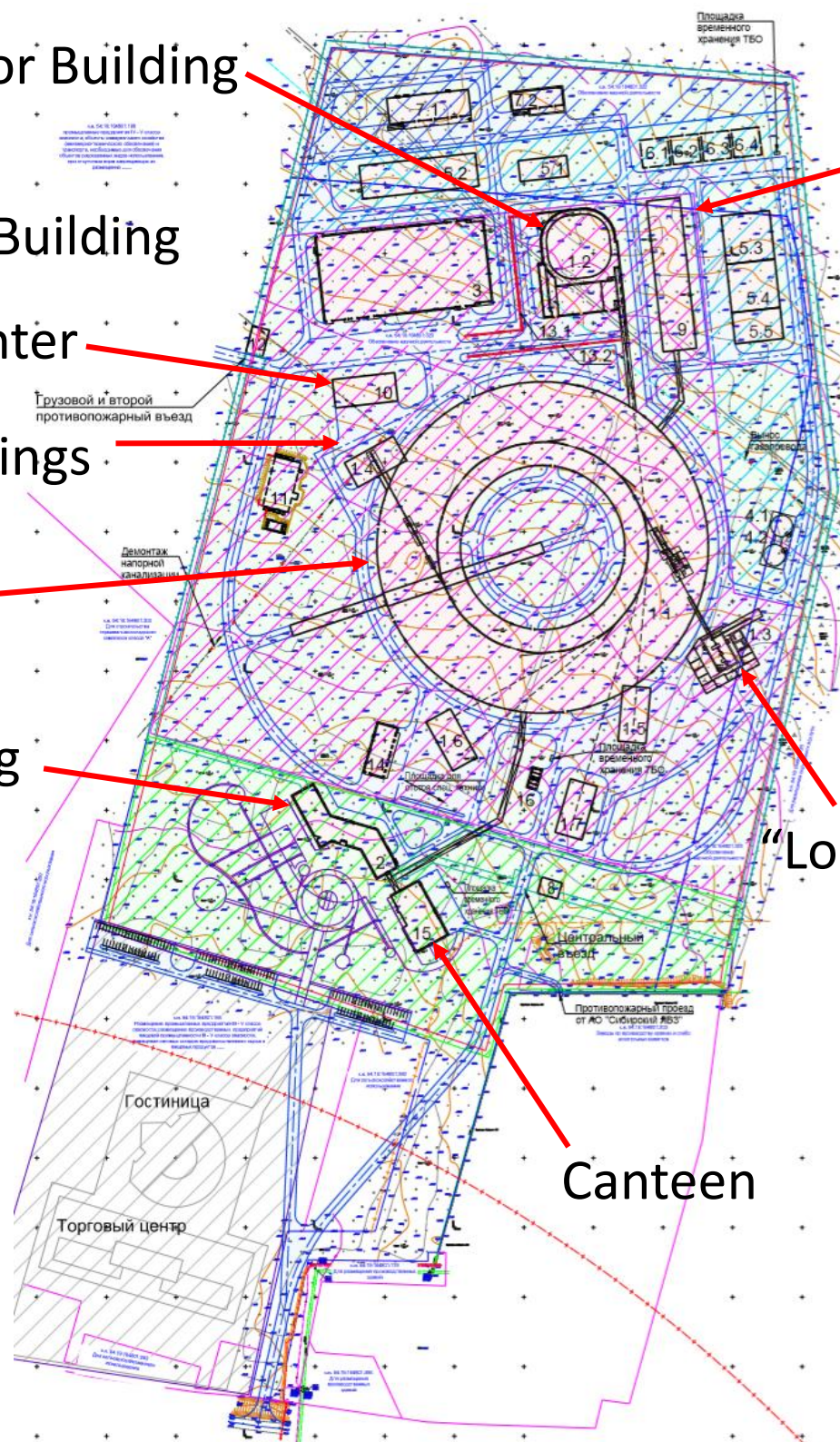
Main Building

Демонтаж
напорной
канализации

Administrative Building

“Long” beamlines Buildings

Canteen



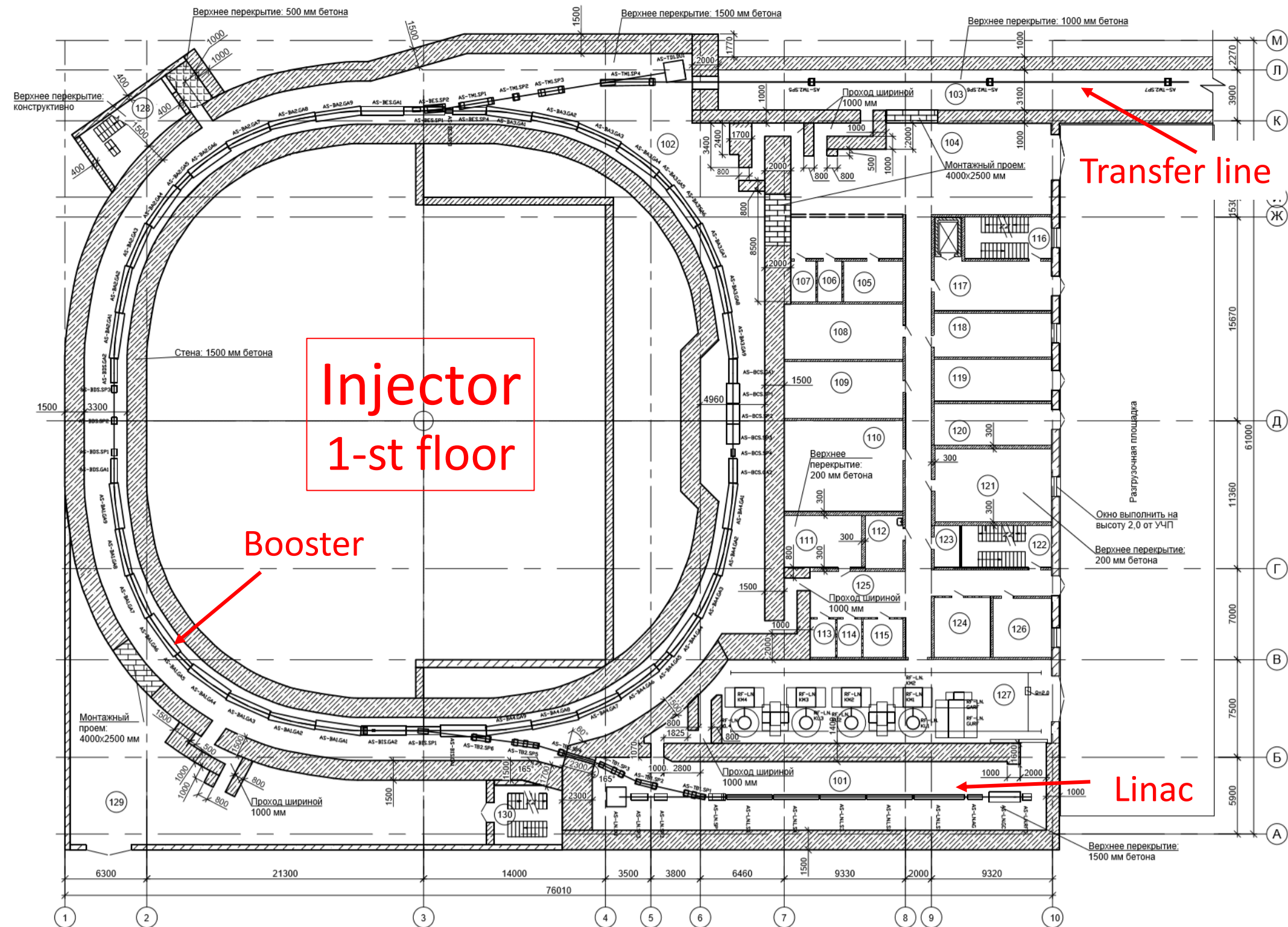






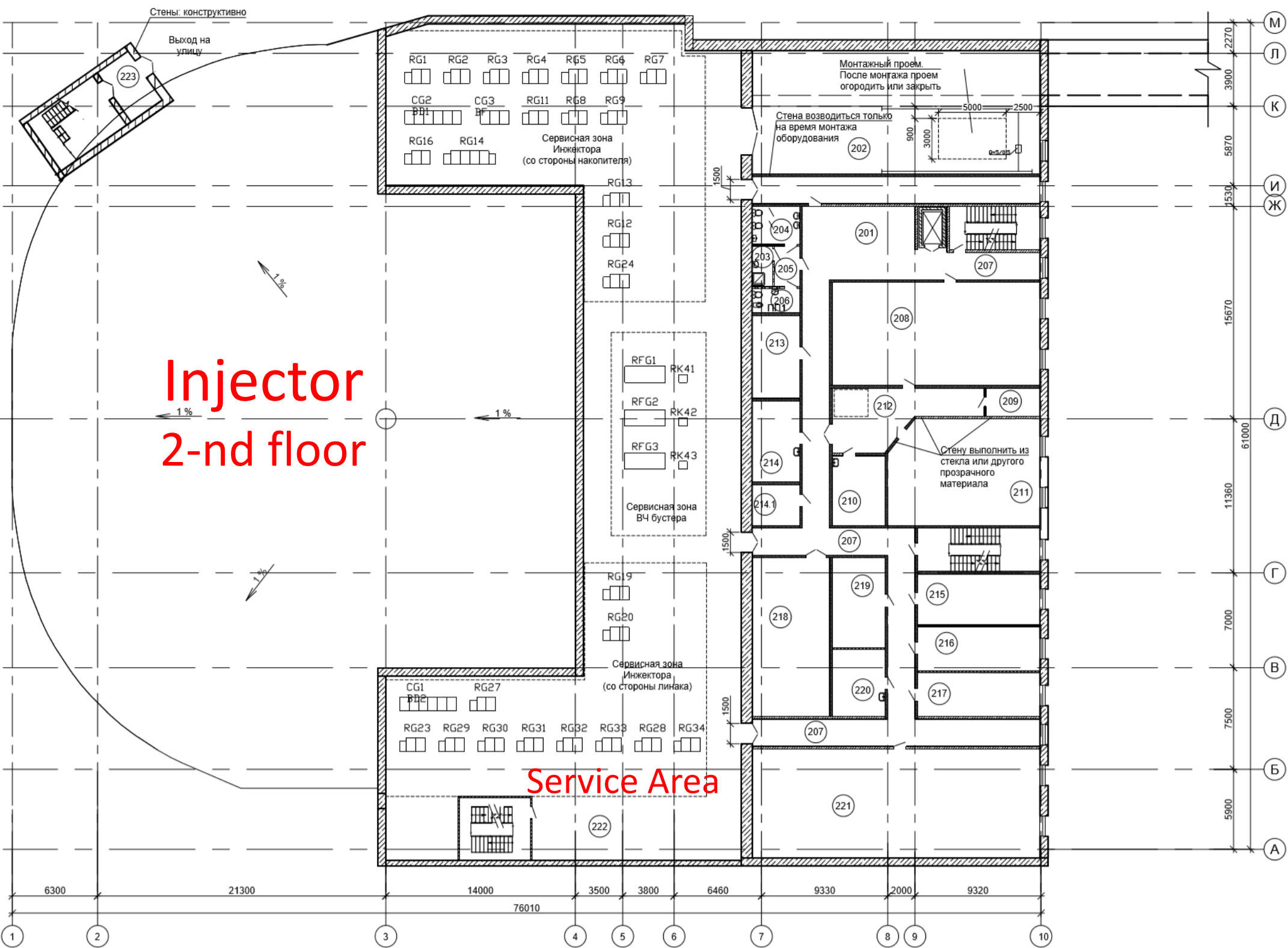


План первого этажа



Injector 2-nd floor

Service Area



Main Building

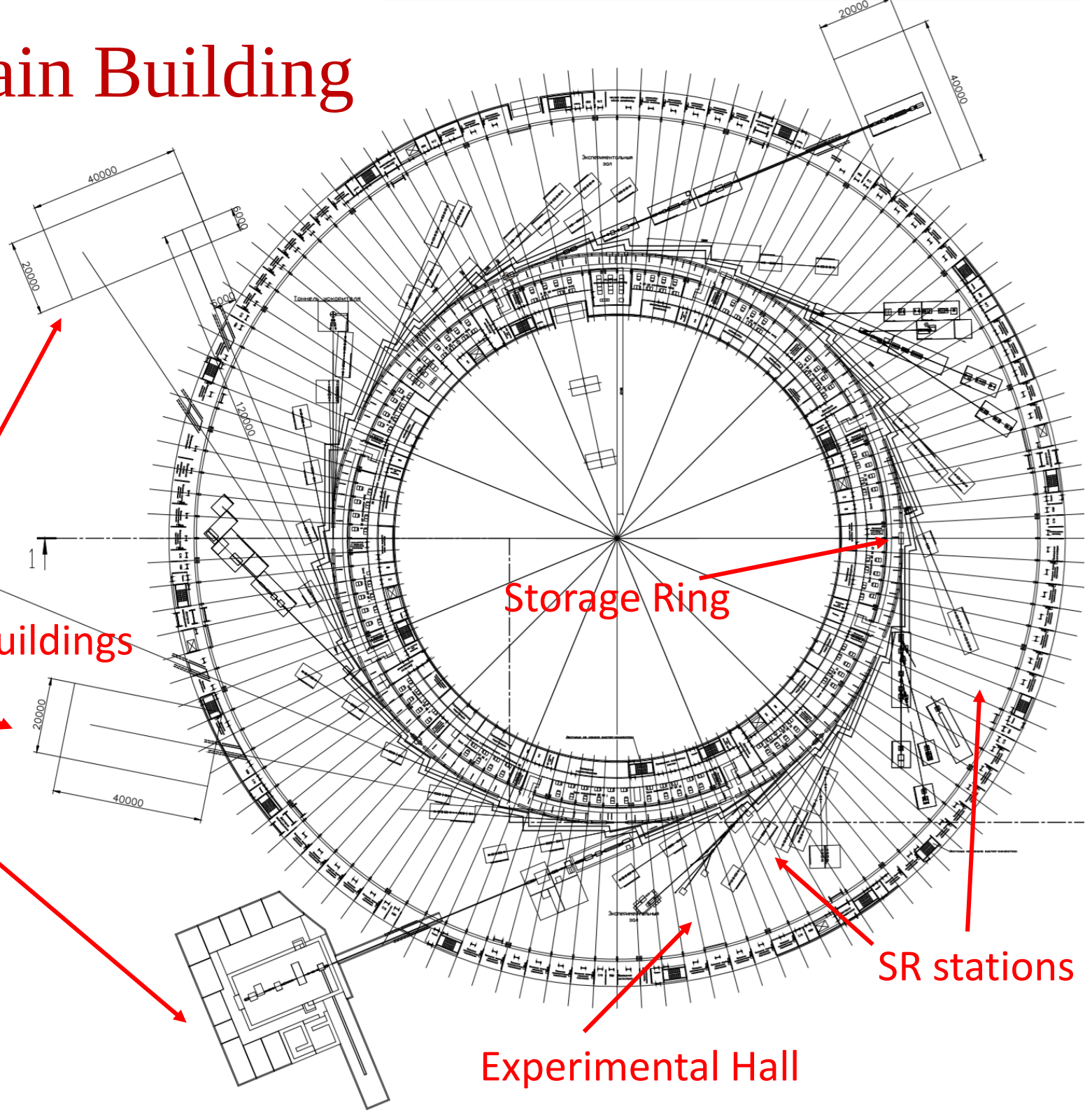
1-st floor

“Long” beamlines buildings

Storage Ring

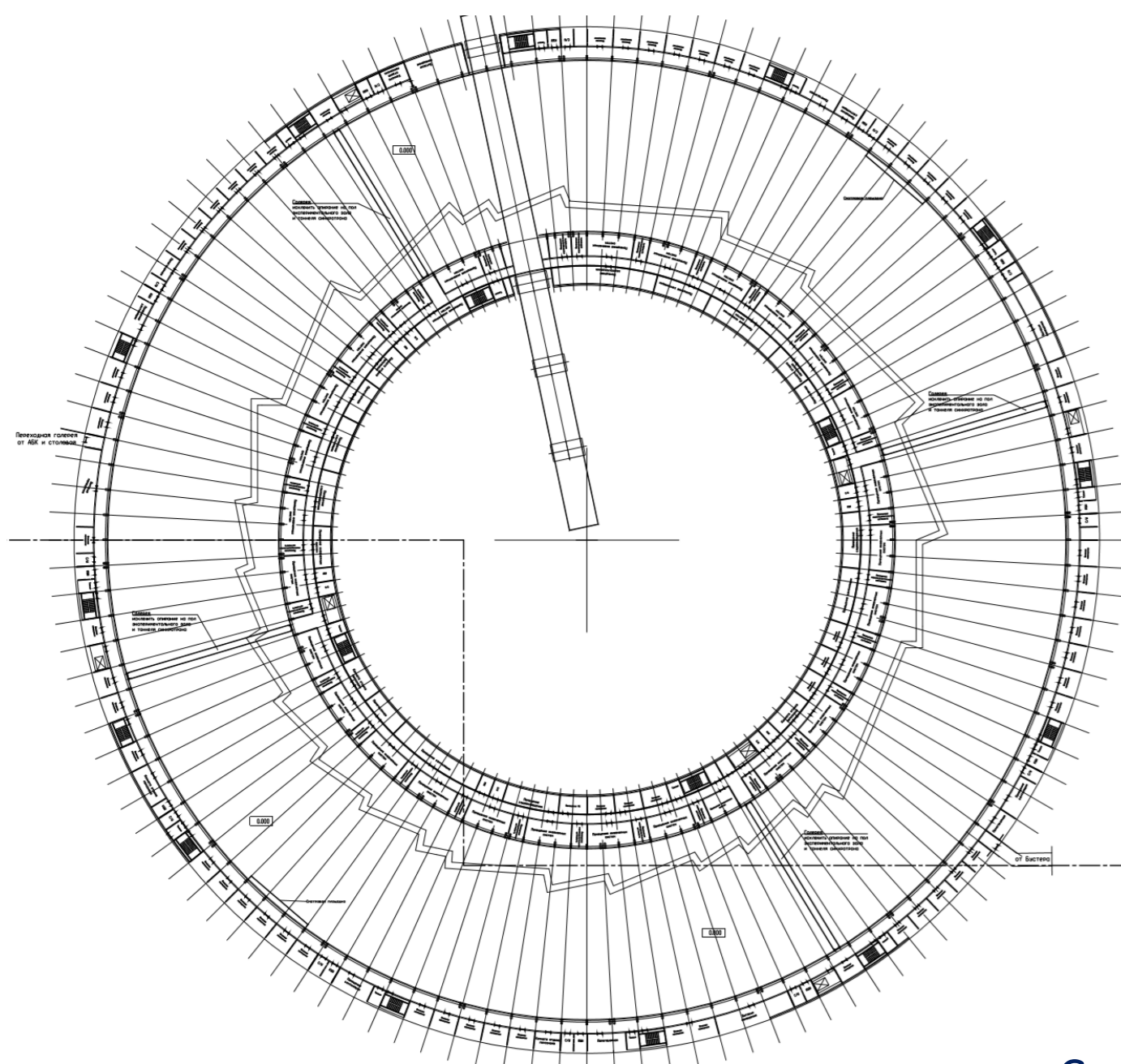
SR stations

Experimental Hall

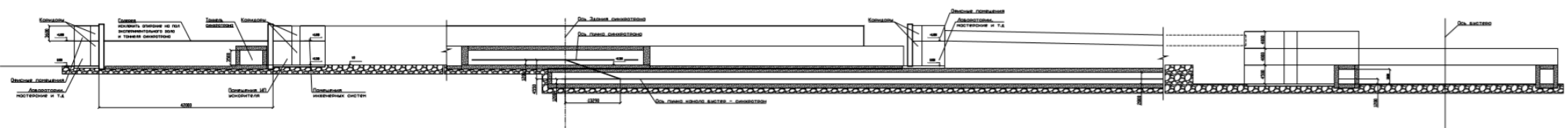


Main Building

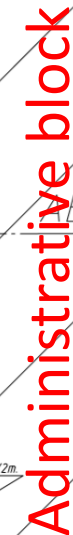
2-nd floor



Cross-section along e-beam



Vacuum stand



Girder assembly stand

Sources of Instabilities

Natural Sources

- Earthquakes.
- Wind.
- Barometric pressure.
- Seasonal changes

Cultural Sources

- Aircraft, helicopters
- Automobile Traffic
- Trains
- People
- Thermal sources
- Construction

Electrical Sources

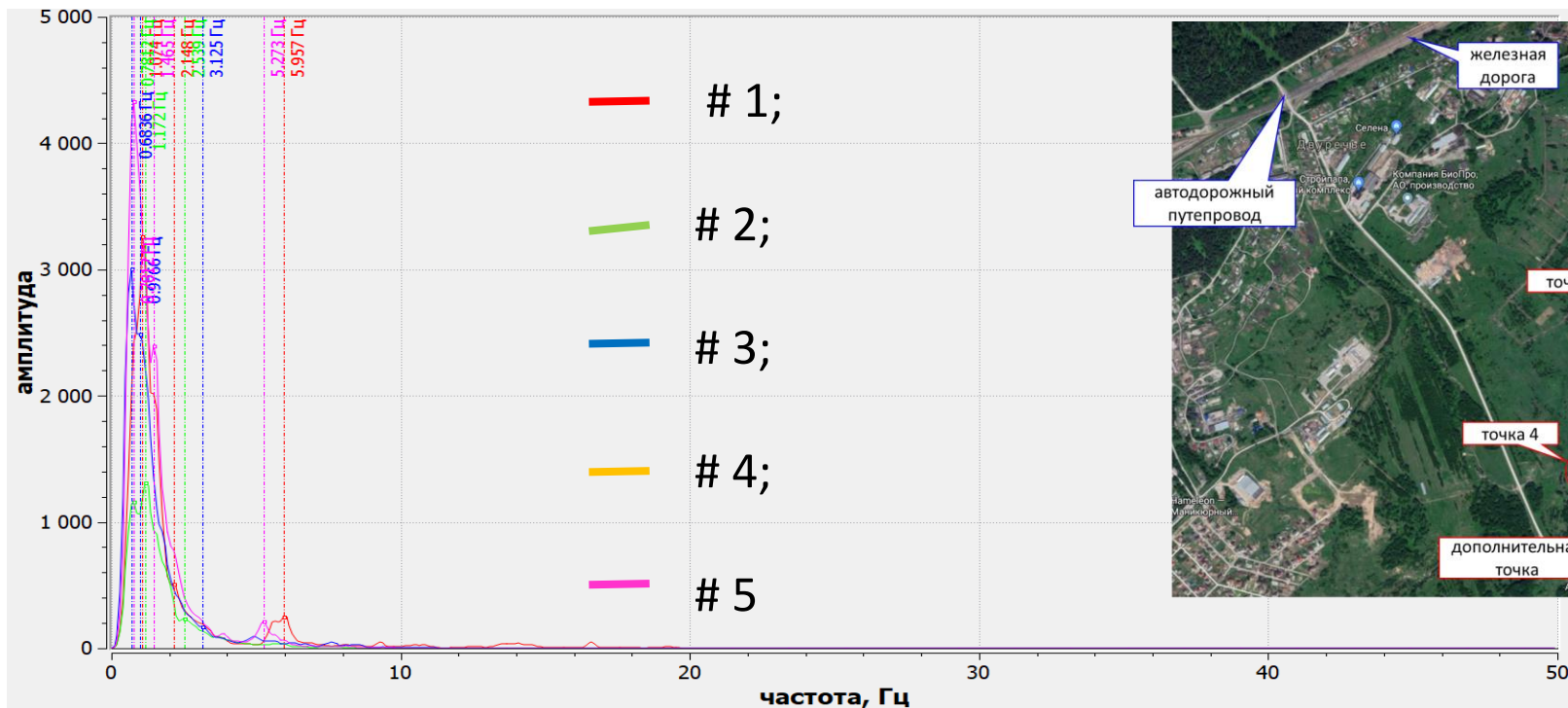
- Power supply ripple (and harmonics)
- 50 Hz noise
- Thermal sources – power supplies, etc

Mechanical Sources

- AC handlers
- Pump skids
- Water flow/Liquid helium induced vibrations
- Water chiller tower
- Vacuum pumps
- Air temperature fluctuations

Stability requirements

Places	RMS vibrations (for frequencies), nm	
	2 – 10 Hz	10 – 100 Hz
Storage Ring tunnel	≤ 50	≤ 20
Experimental Hall	N/A	≤ 30
Booster – SR transfer line	≤ 150	
Booster tunnel	≤ 150	
Linac	≤ 150	



5,2 Hz

Stability requirements

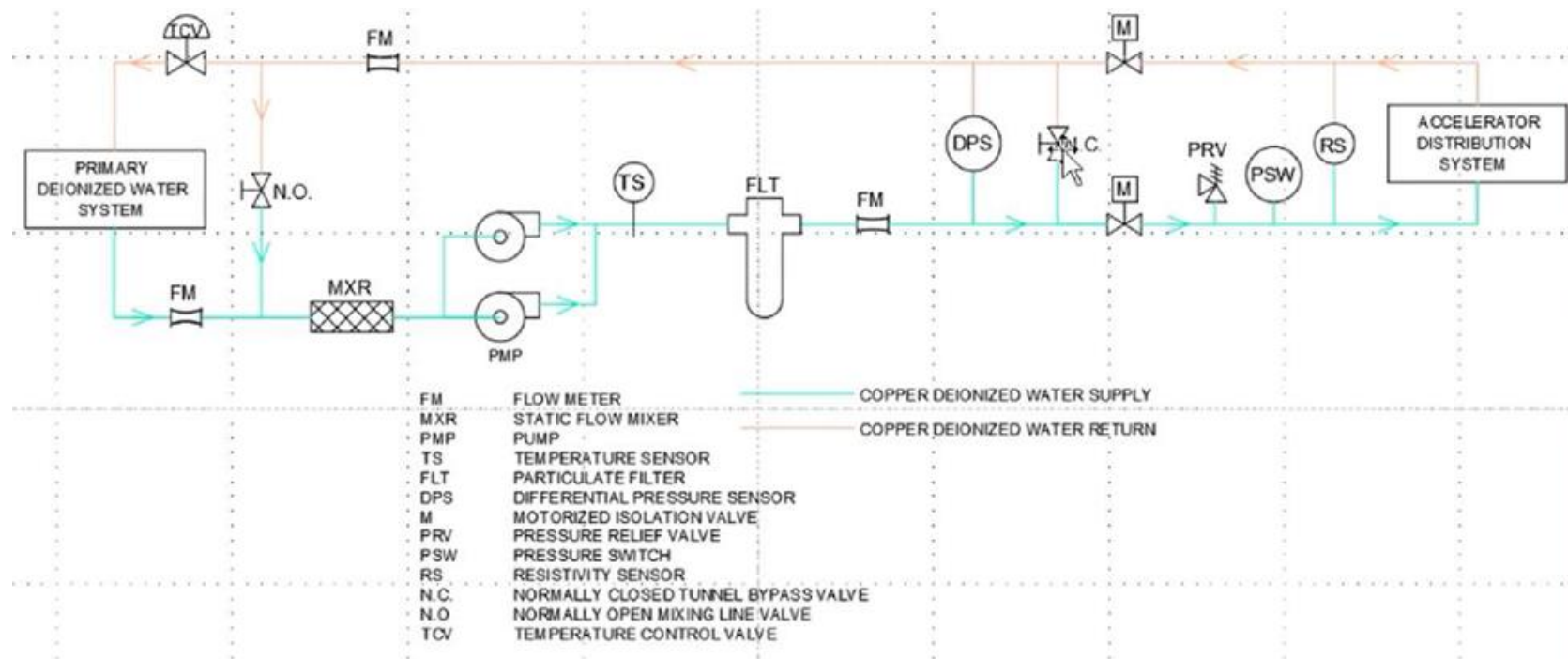
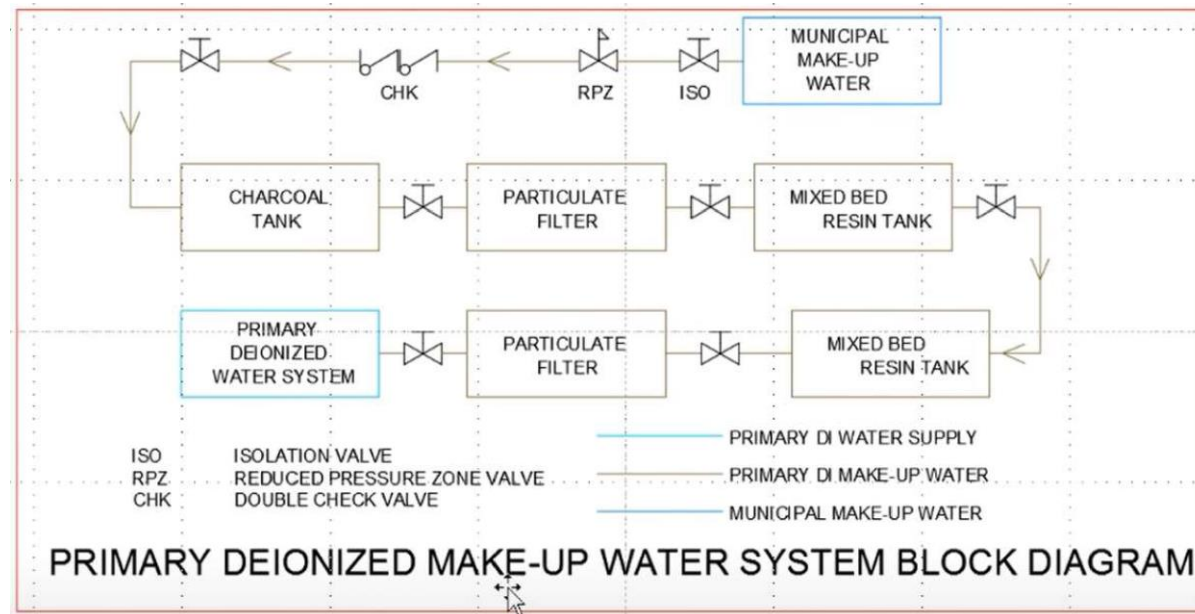
Places	Air Temperature Stability
Storage Ring tunnel	$\pm 0,1^{\circ}\text{C}$ (1 hour)
Experimental Hall	$\pm 1^{\circ}\text{C}$
Booster – SR transfer line	$\pm 1^{\circ}\text{C}$
Booster tunnel	$\pm 1^{\circ}\text{C}$
Linac	$\pm 1^{\circ}\text{C}$

Equipments in Places	Water Temperature Stability
Storage Ring tunnel	$\pm 0,1^{\circ}\text{C}$
Experimental Hall	$\pm 1^{\circ}\text{C}$
Booster – SR transfer line	$\pm 1^{\circ}\text{C}$
Booster tunnel	$\pm 1^{\circ}\text{C}$
Linac	$\pm 1^{\circ}\text{C}$

Stability requirements

Deionized water parameters

- Resistivity – 2-6 Mohm/cm
- pH = 7,5 -8
- O2 = 4-8 ppb





Summer 2020

SOON

