Istituto Nazionale di Fisica Nucleare
SEZIONE DI FERRARA

KLOE to SAND

Magnet Coil: dismantling and transport (WP5)

Review

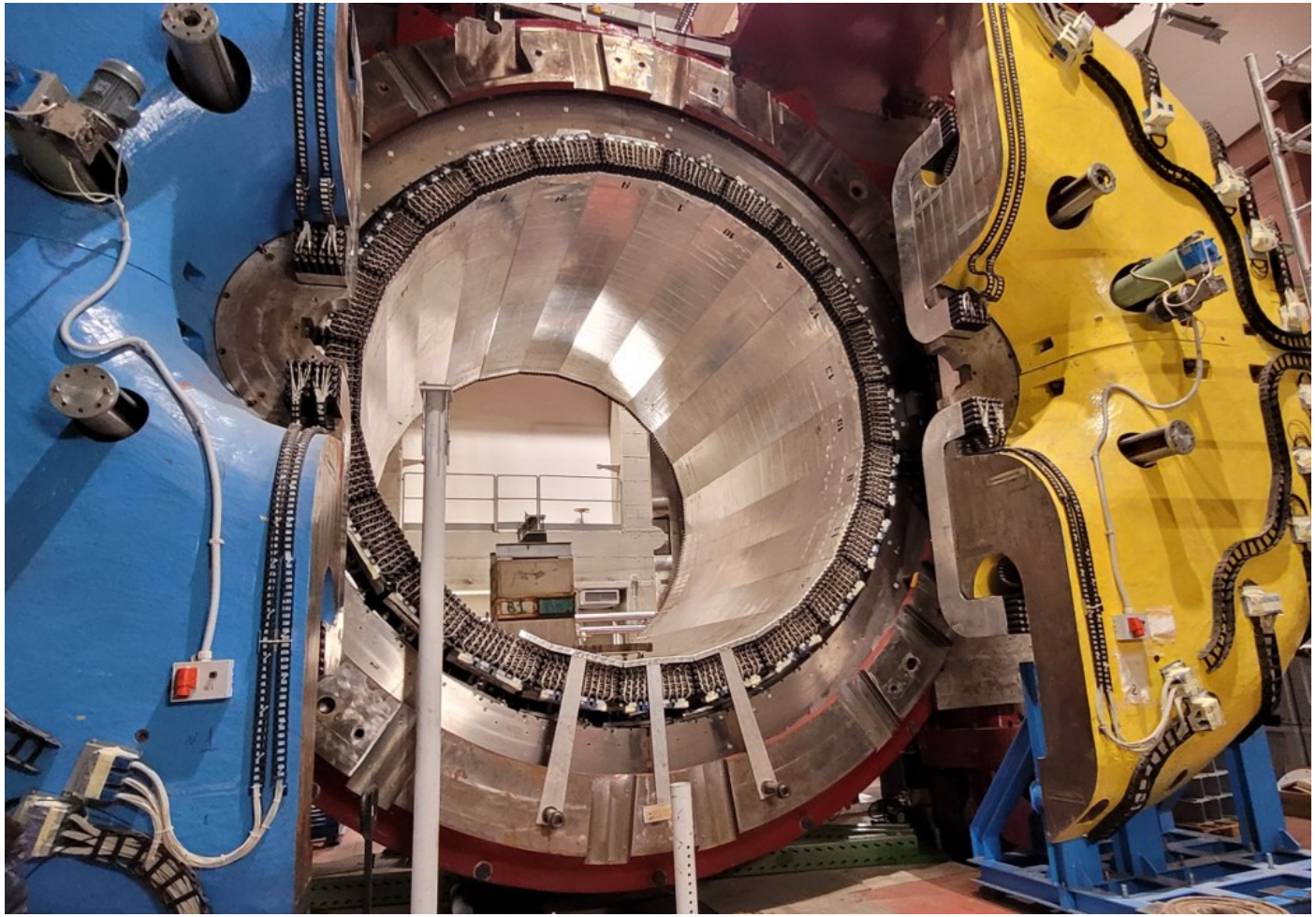
Alessandro Saputi – 11th July 2024

Overview

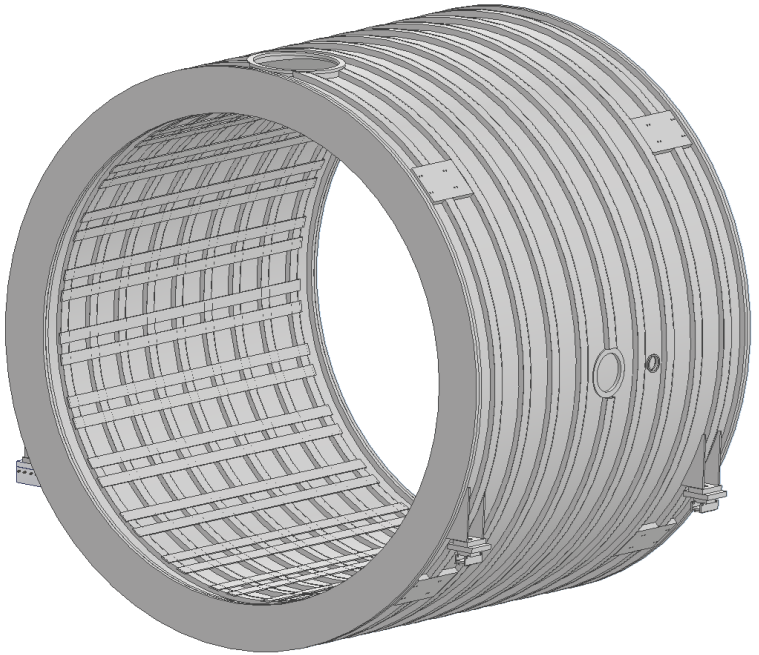
- Services, structures and tools
- Design Status
- Open points
- Working Procedure
- Organization

nil volentibus arduum

Cryostat and Magnet Coil: dimensions and weight



(Cryostat + Coil) dimensions: Φ = 5766 mm ; L= 4400 mm

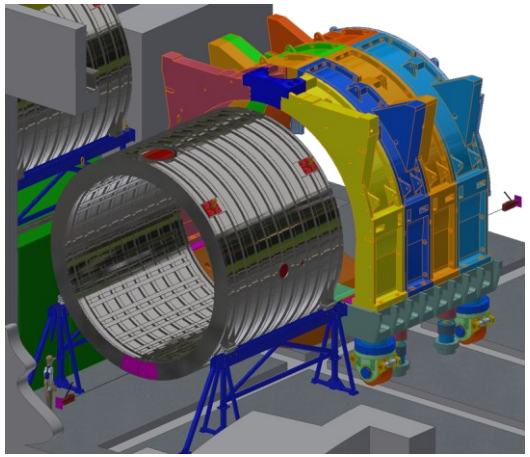


Cryostat + Coil ≈ 40 tons

20 x

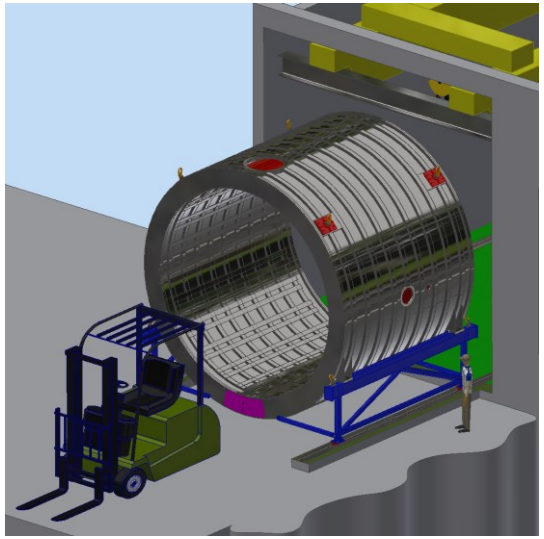
Main services, structures and tools: extraction

Crane = 22 t + 22 t



Extraction/Insertion Tool

Loading Dock



Trolley System

Cradle

Lugs

Main services, structures and tools: transport

Two cranes

Lifting Beam

nil volentibus arduum

Design Status

Design Status

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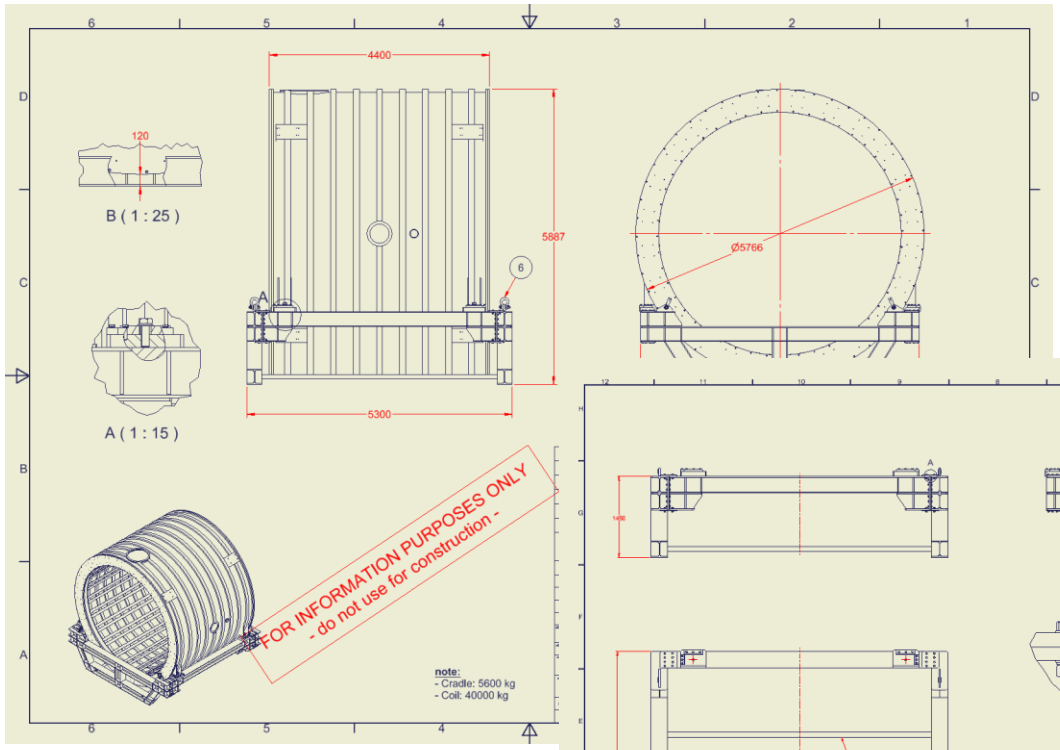
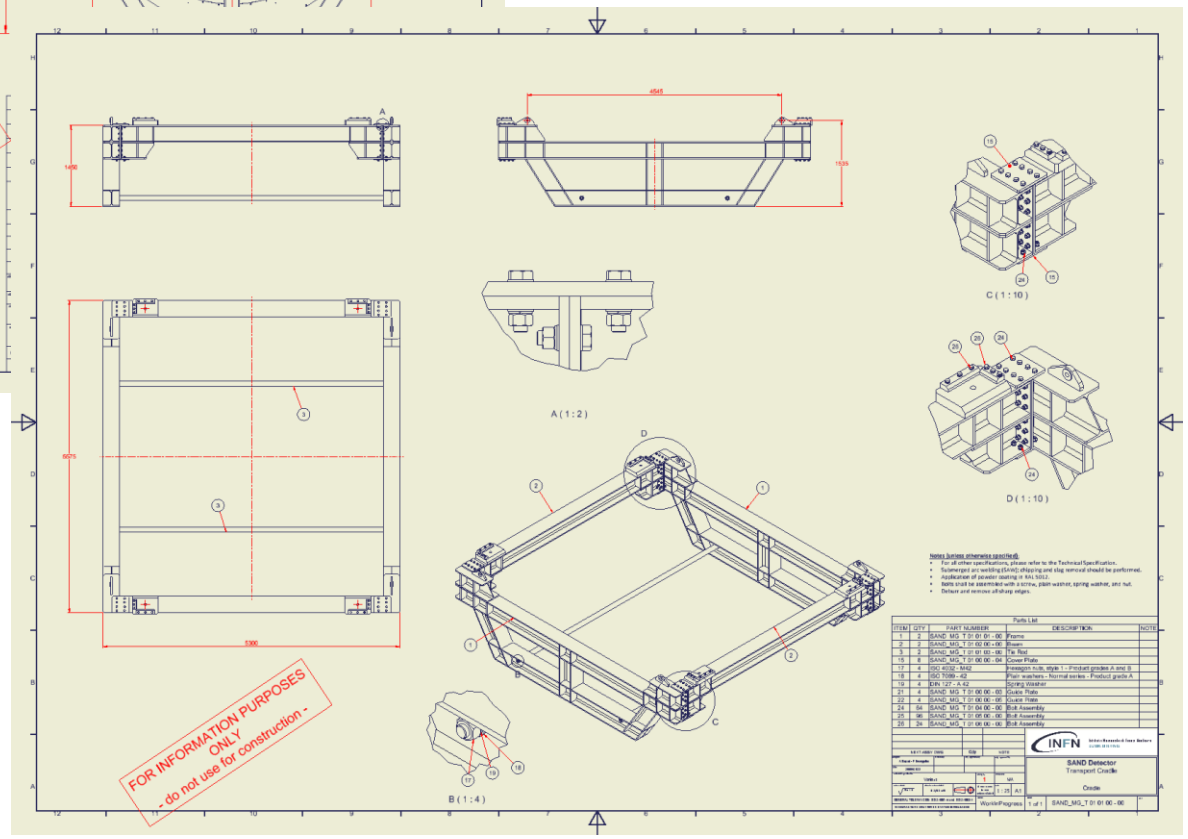
Tool	3D Model	Workshop Drawings	Sizing and verification calculations	Certification (CE and ASME)	Technical Specification for tender
Extraction and Insertion	Done	Done	Done	To be done	Done
Trolley System	Done	Done	Done	To be done	Done
Cradle	Done	Done	Done	To be done	Done
Lugs	Done	Done	Done	To be done	Done
Tirfort System	Done	Done	Done	To be done	Done

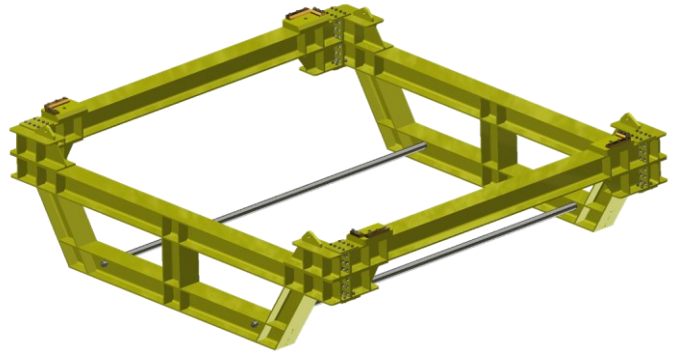
Other project documents	
Work Practices Plan (operating procedure)	Under review
Safety Plan	Under preparation

Design Status: transport cradle

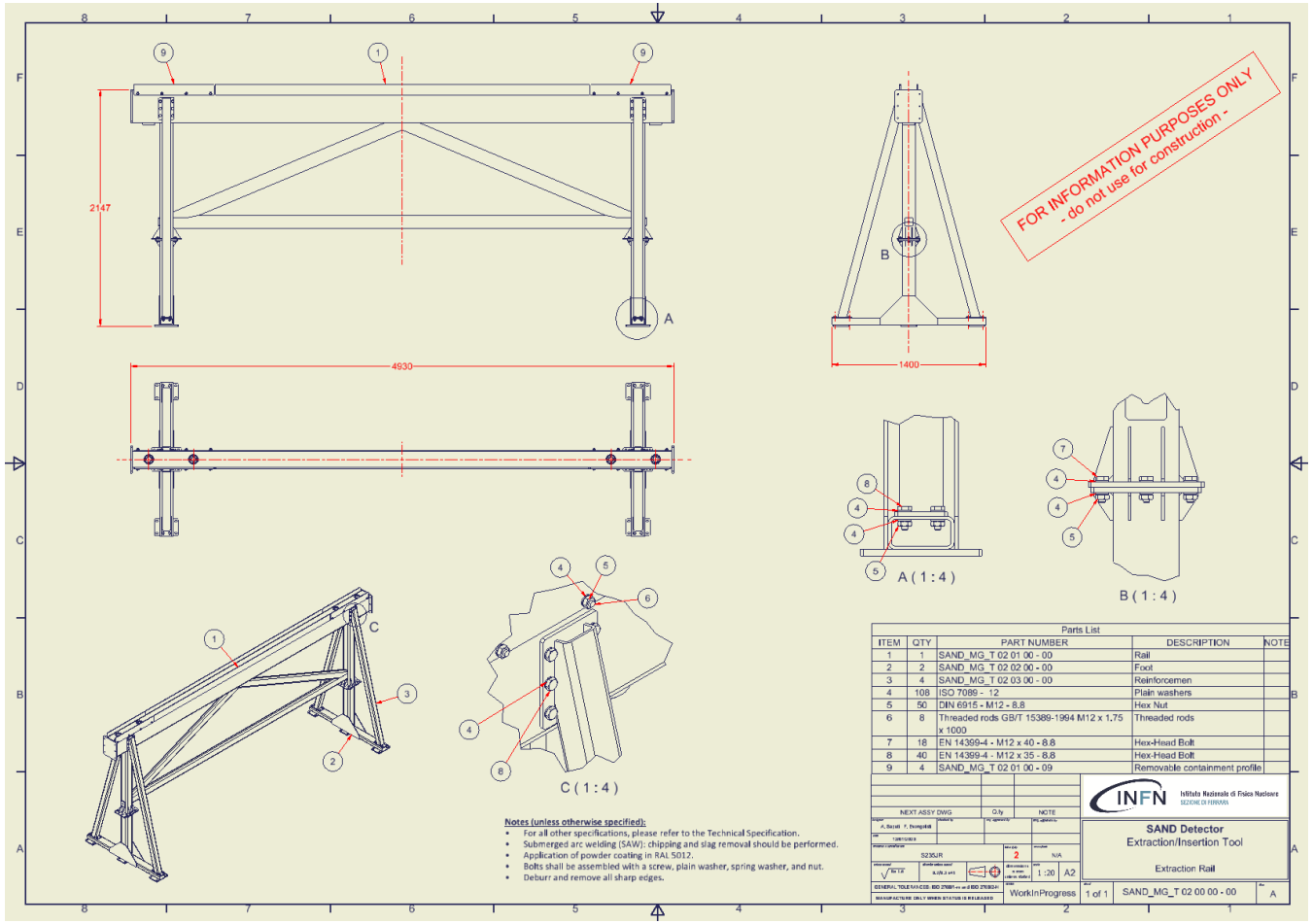




All workshop drawings are ready
Technical specification is ready



Design Status: extraction/insertion tool



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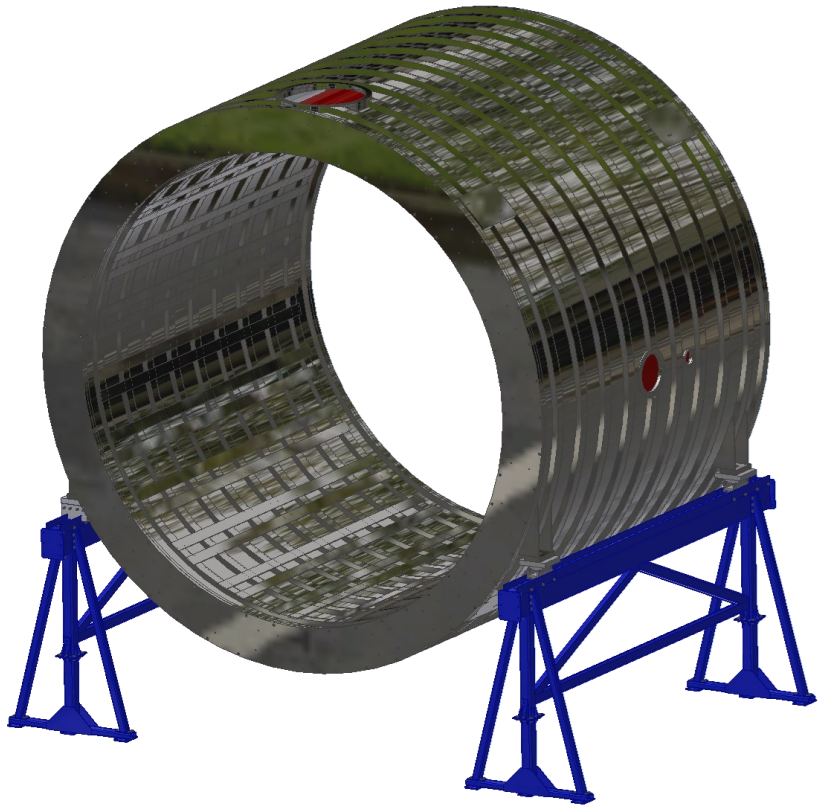
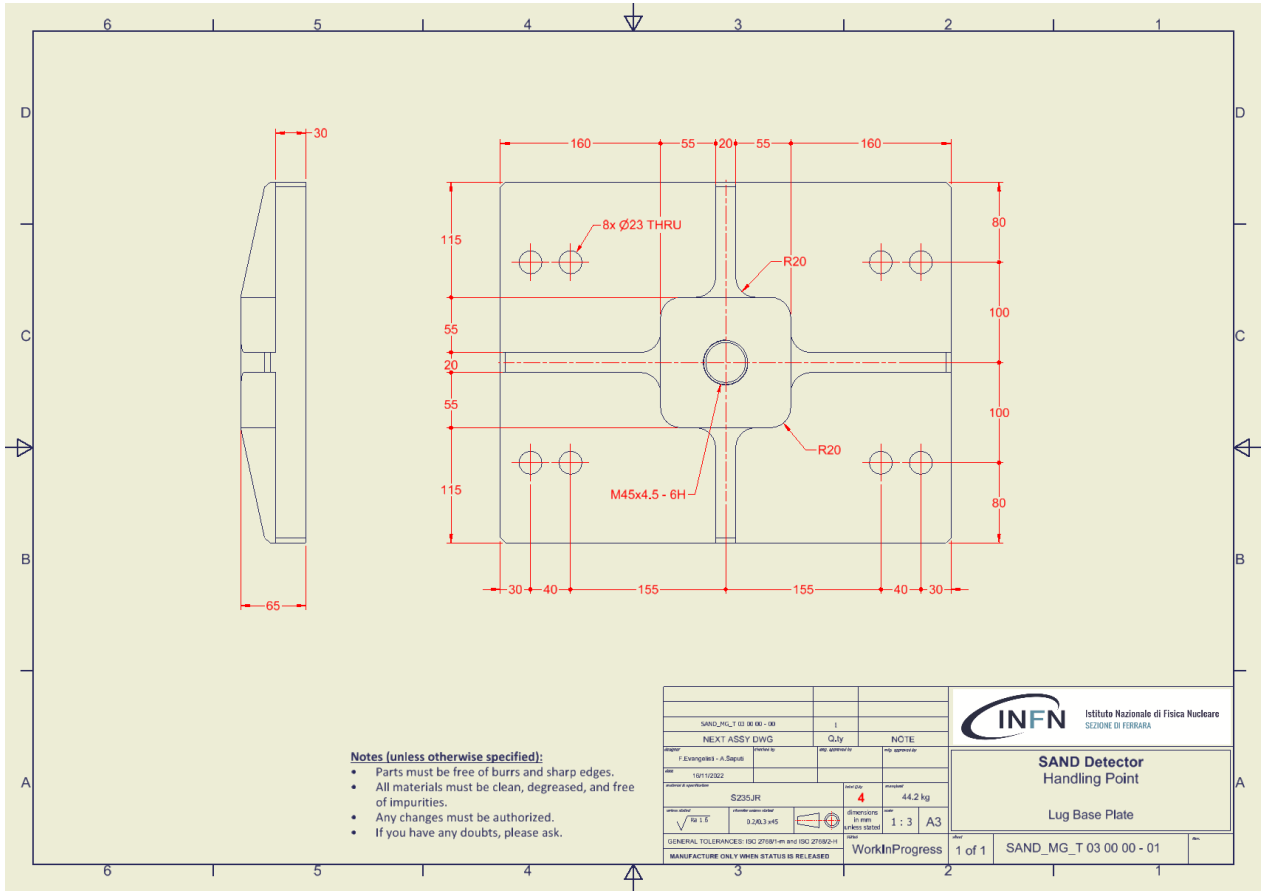


Design Status: lugs



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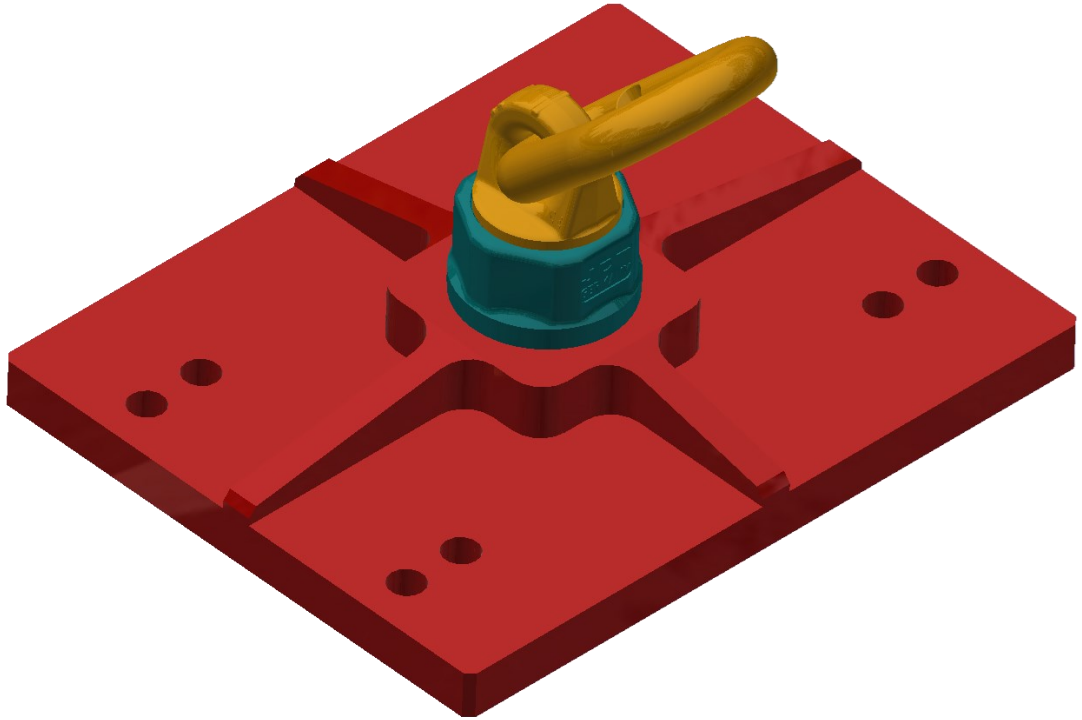
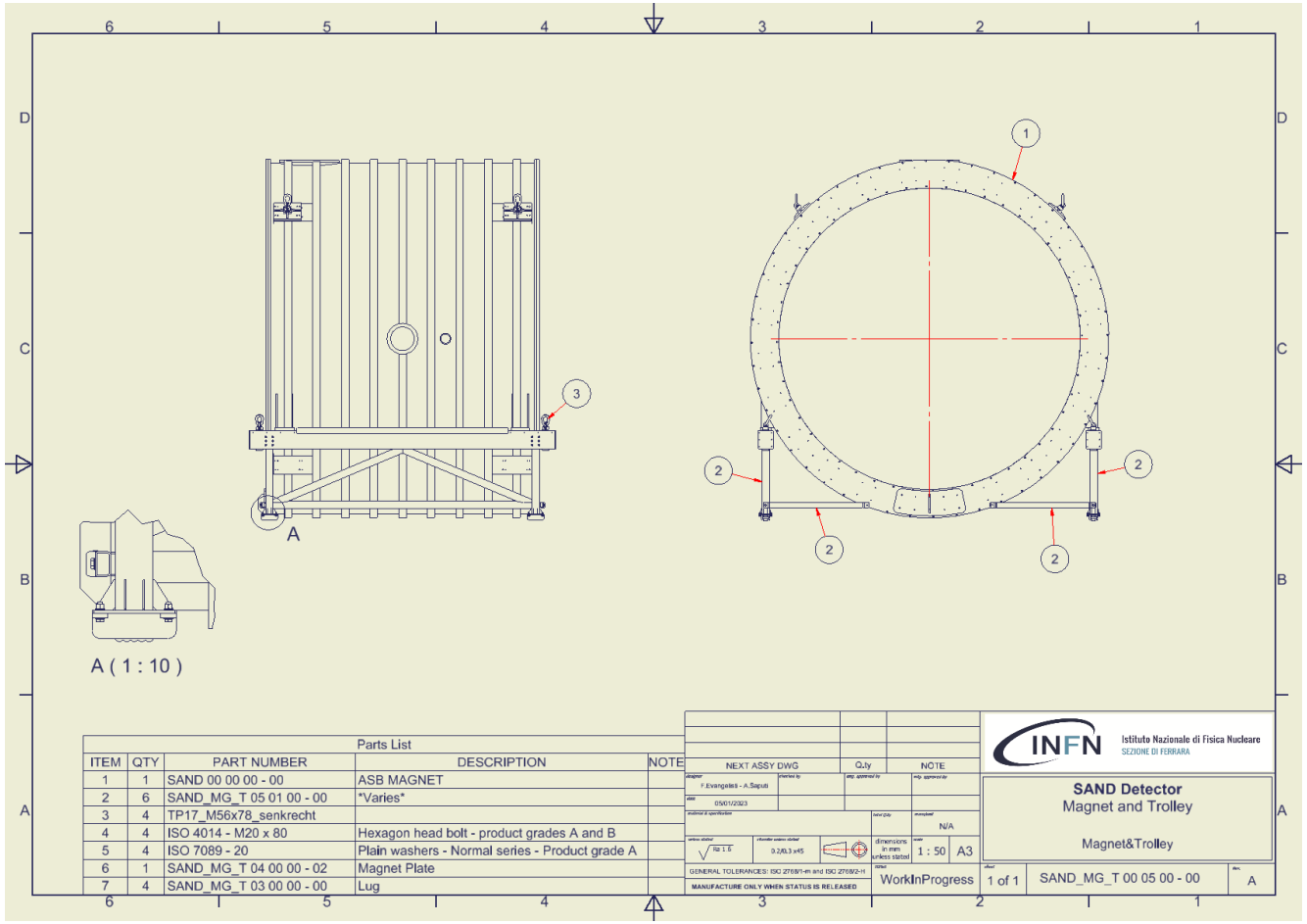
Technical specification is ready



Design Status: trolley system

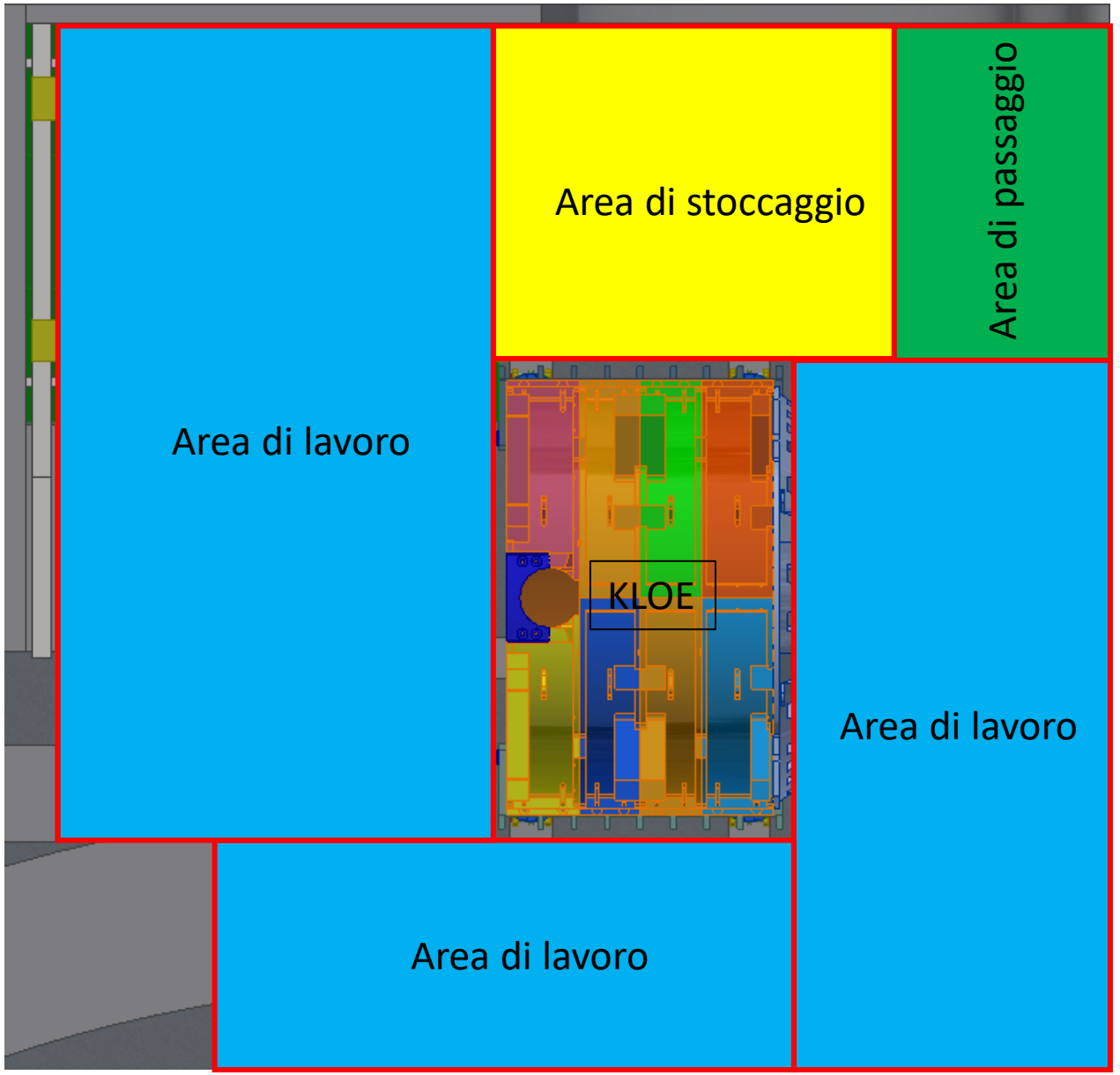


All workshop drawings are ready
Technical specification is ready

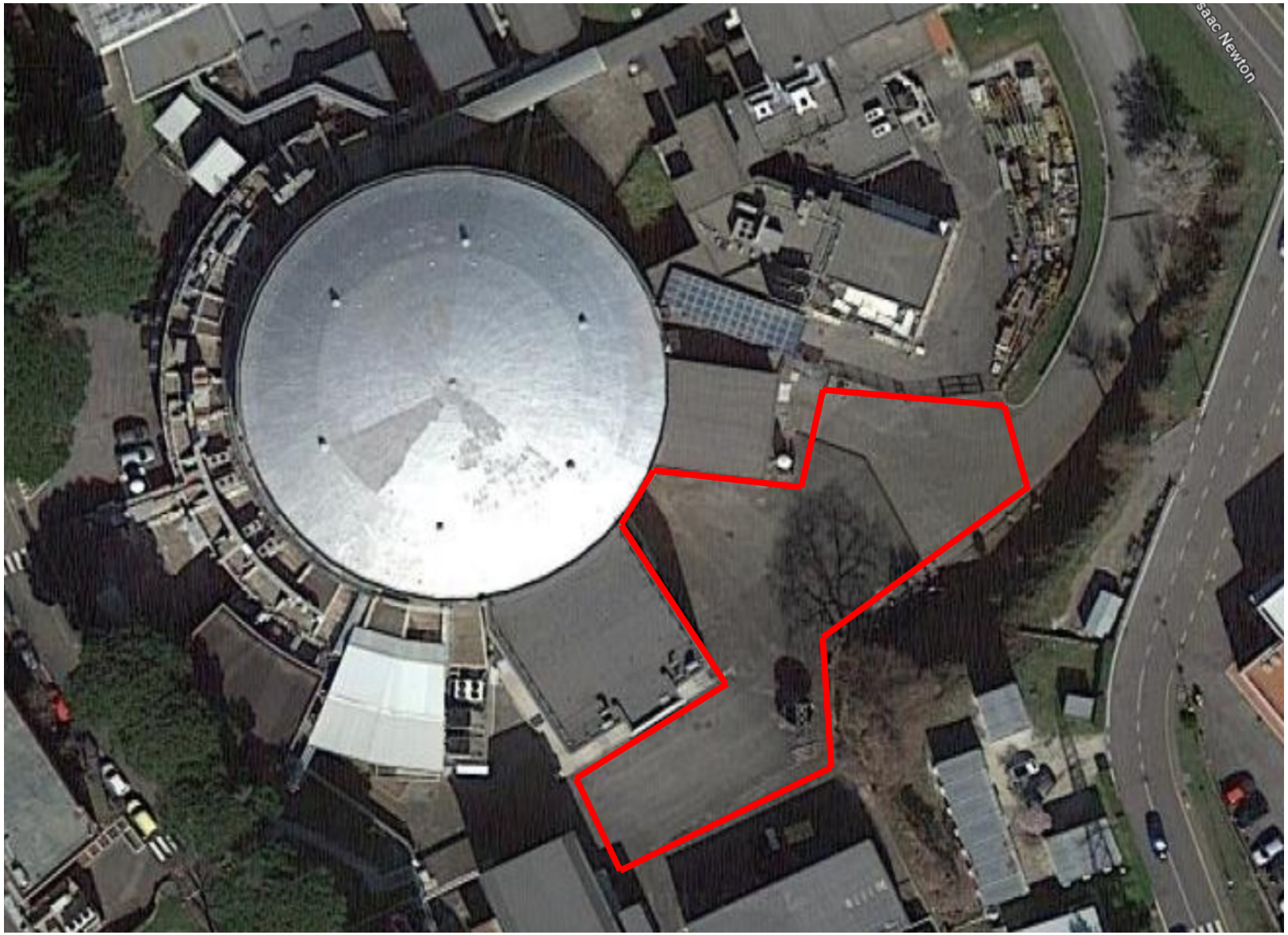
nil volentibus arduum

Working Procedure

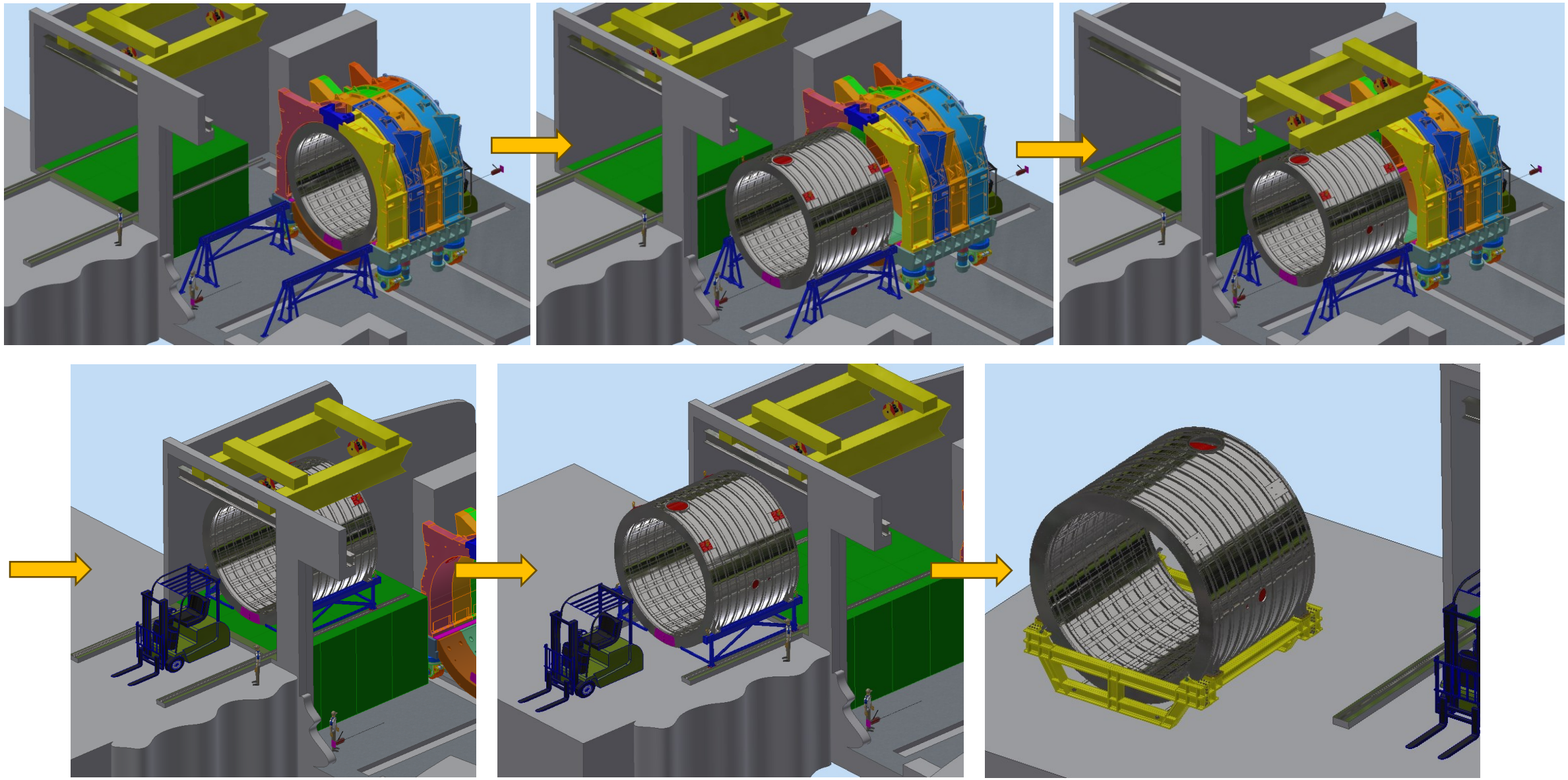
KLOE: outdoor area



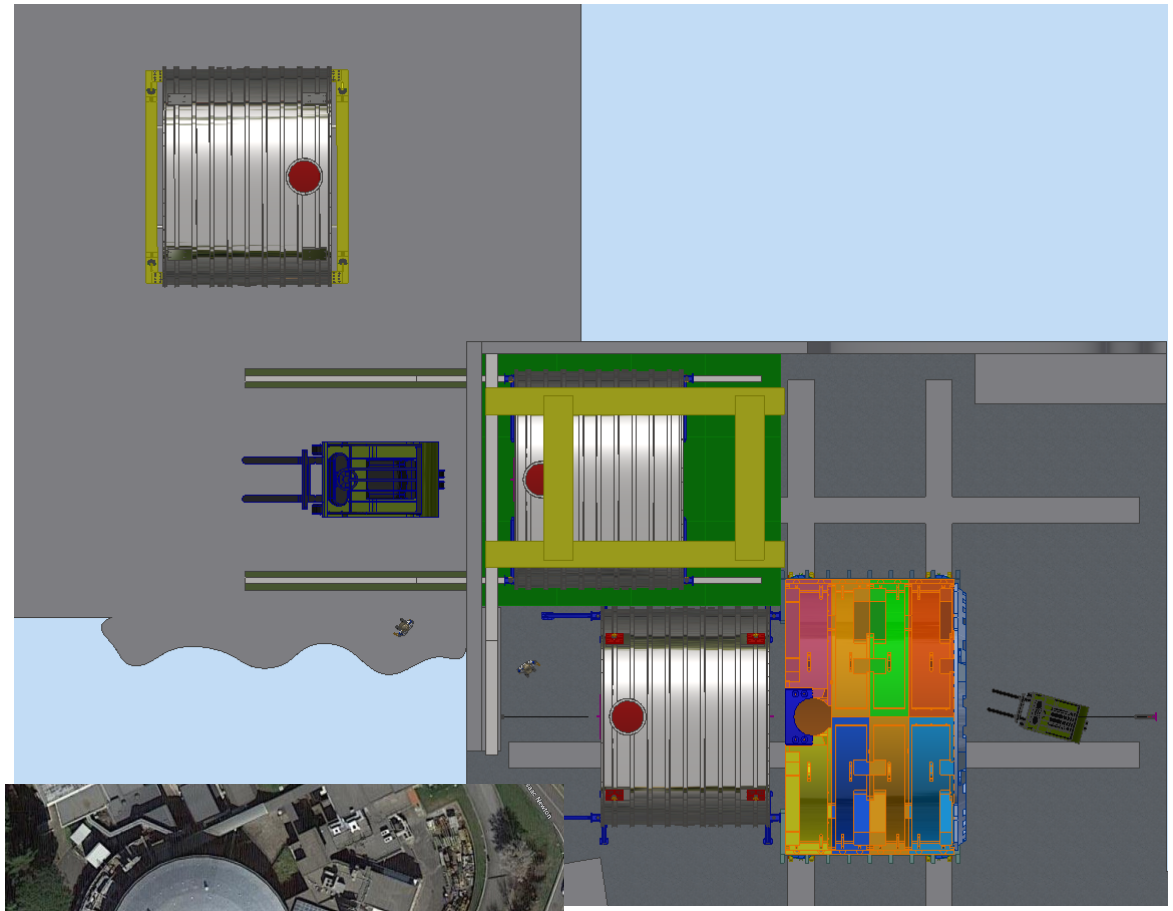
KLOE: outdoor area

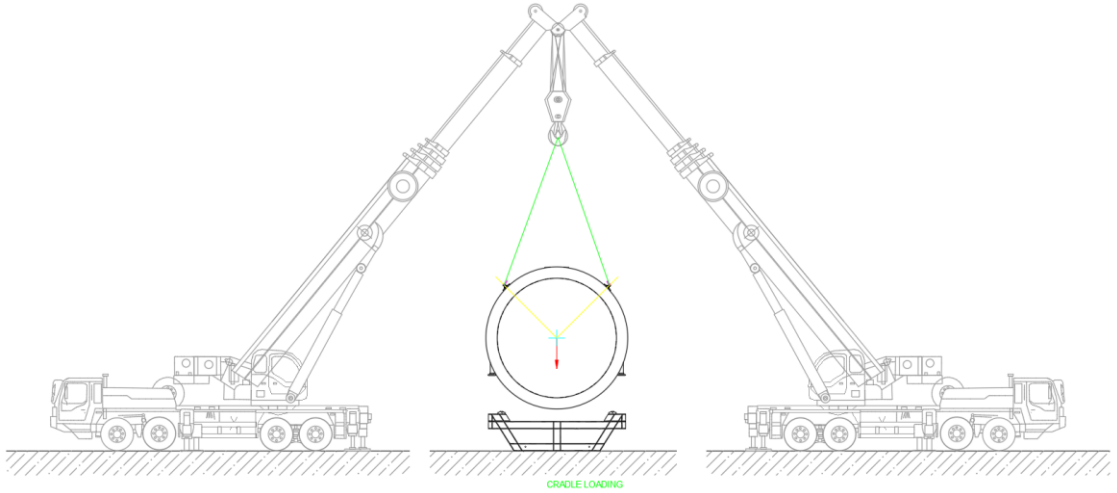


Magnet extraction: working procedure

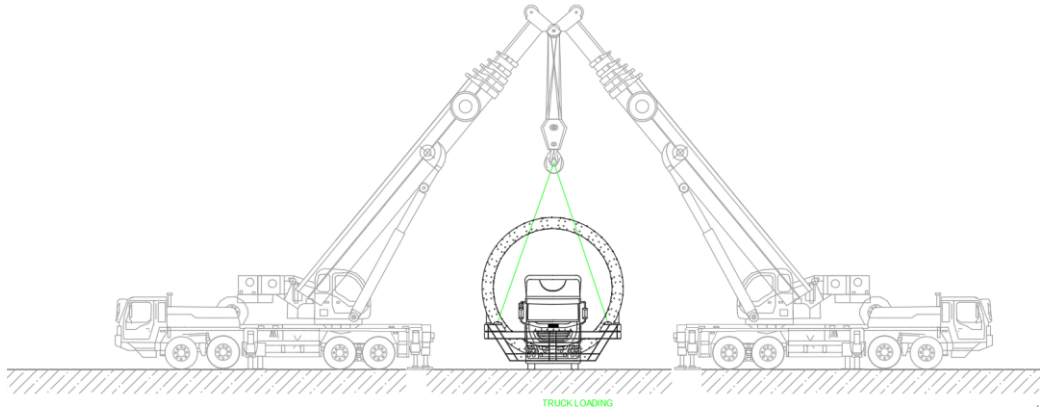


Magnet: preparation for transport





Handling



Magnet: temporary storage at LNF

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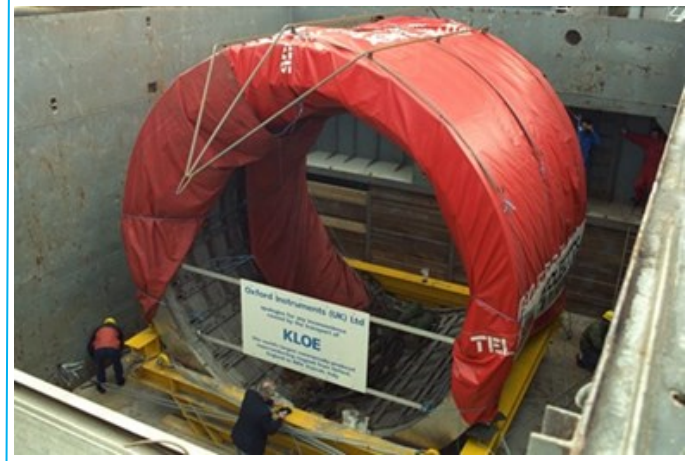
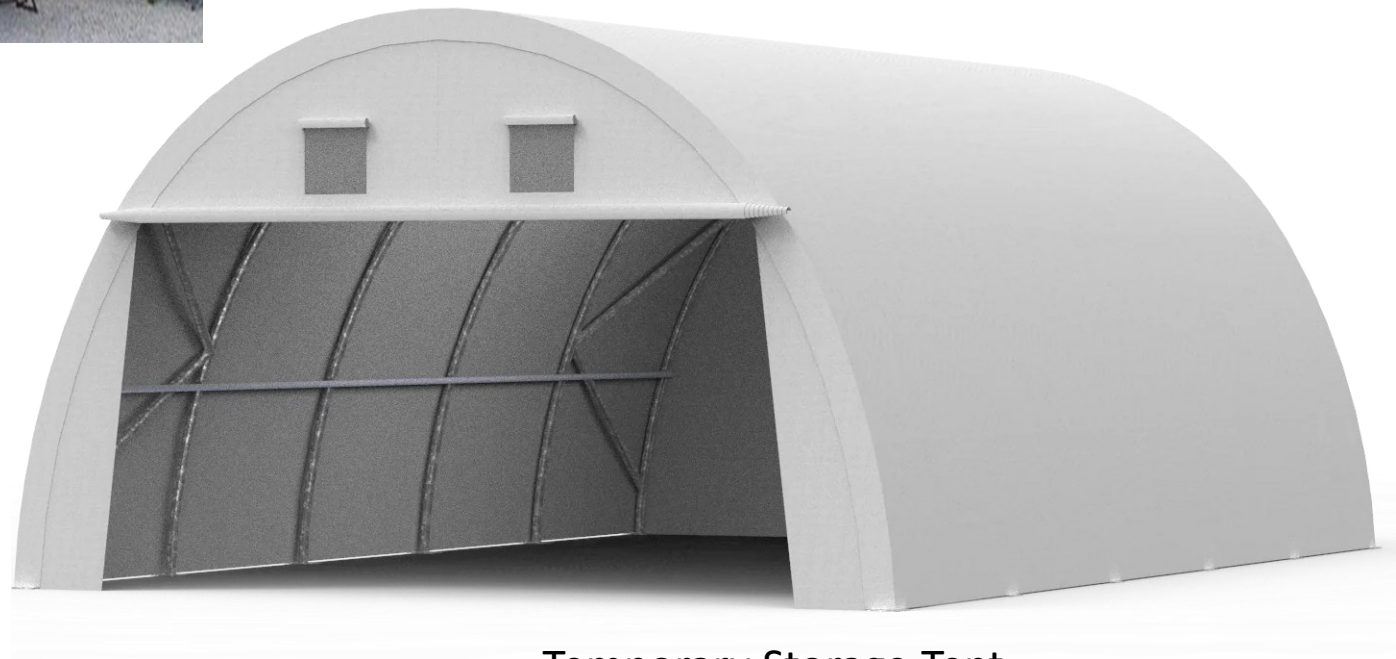


Protection Wrapping



Temporary Storage Tent

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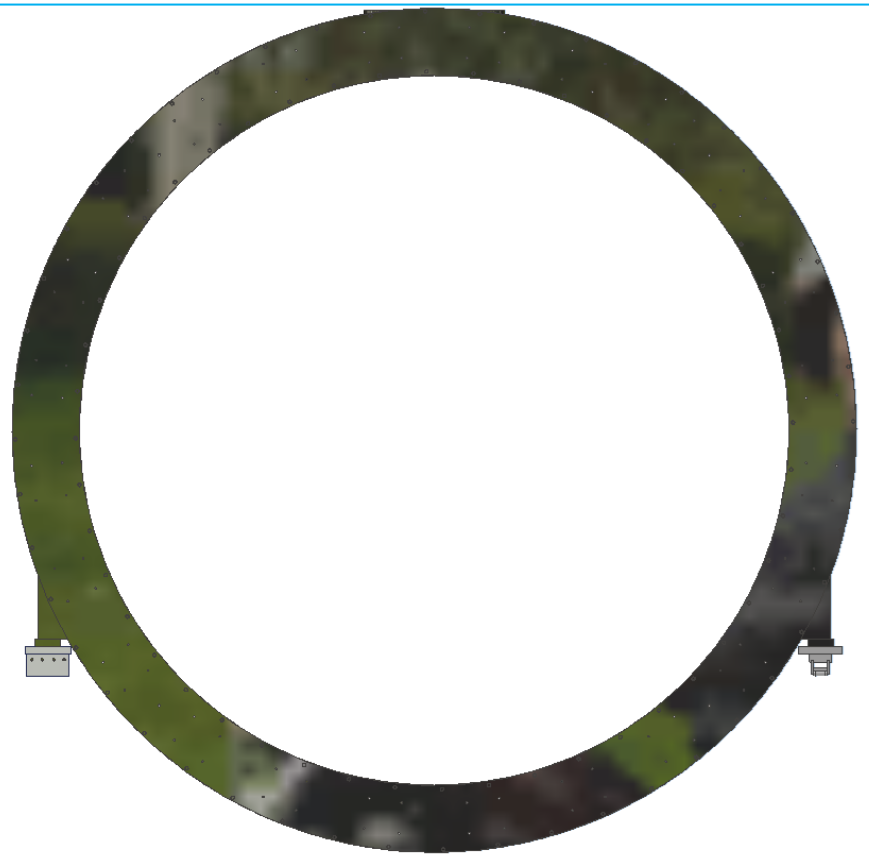
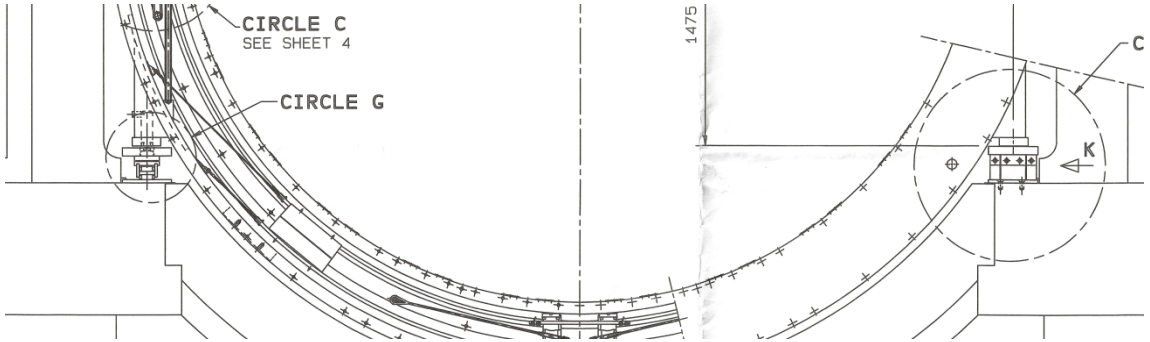
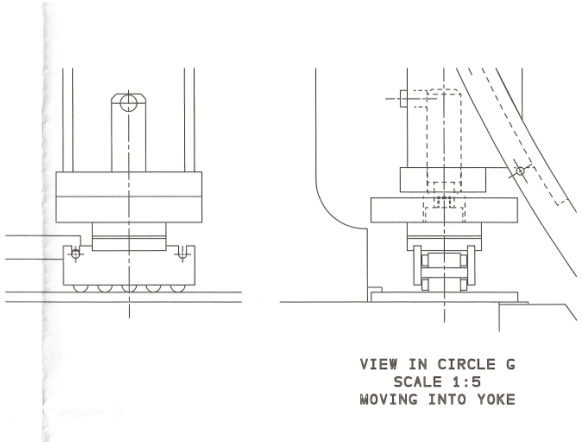
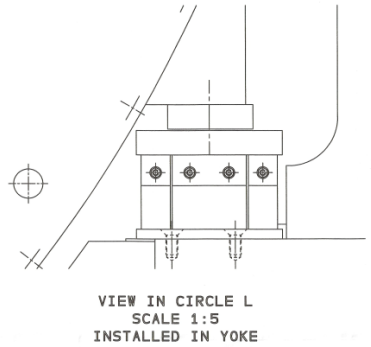
Open Points to be checked

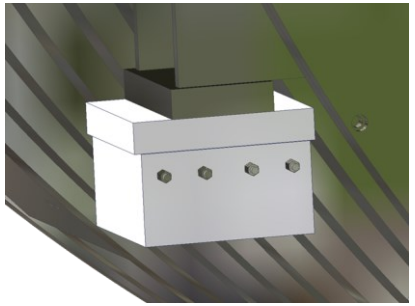
Cryostat: trolley and sliders checking











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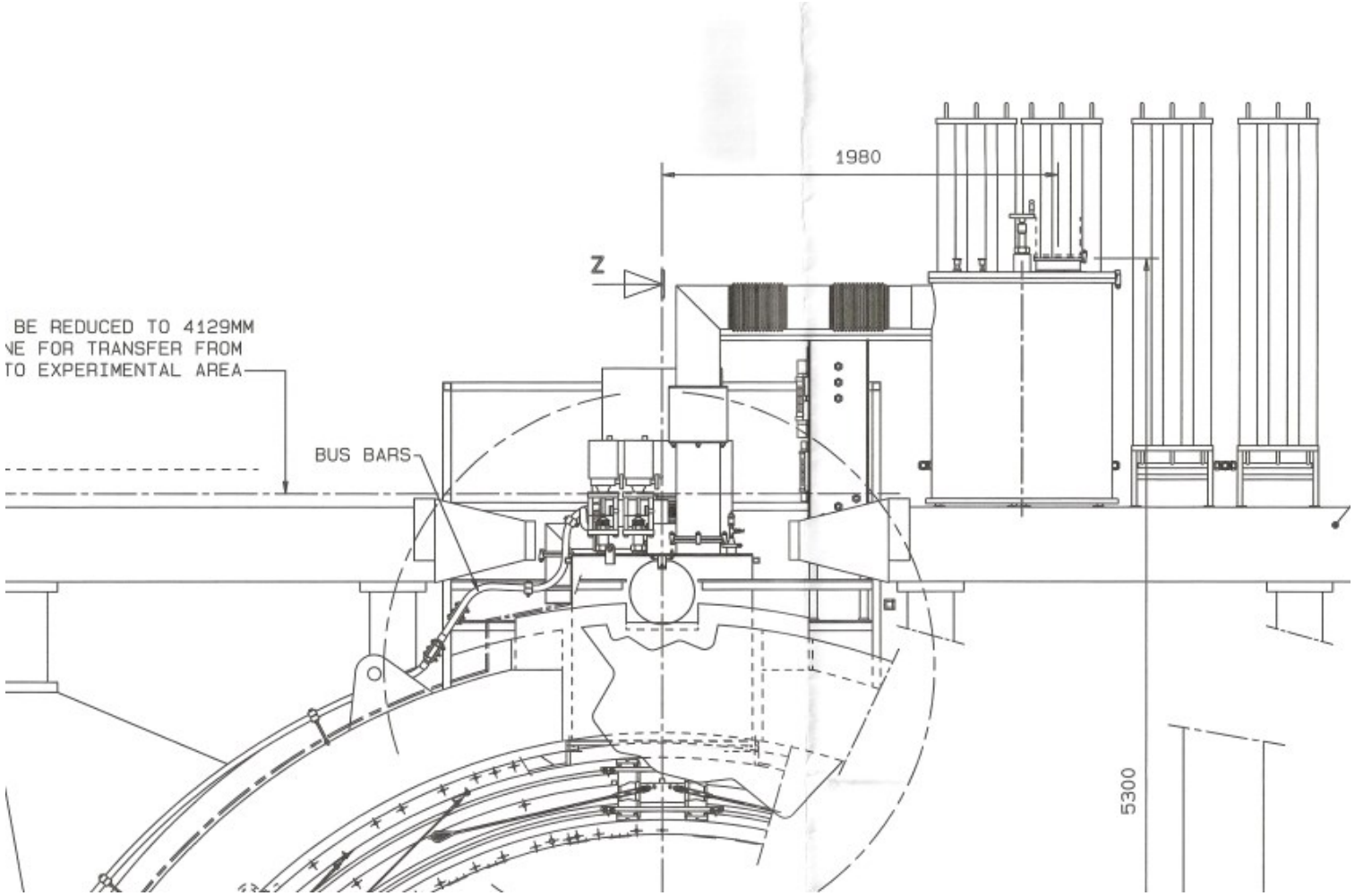
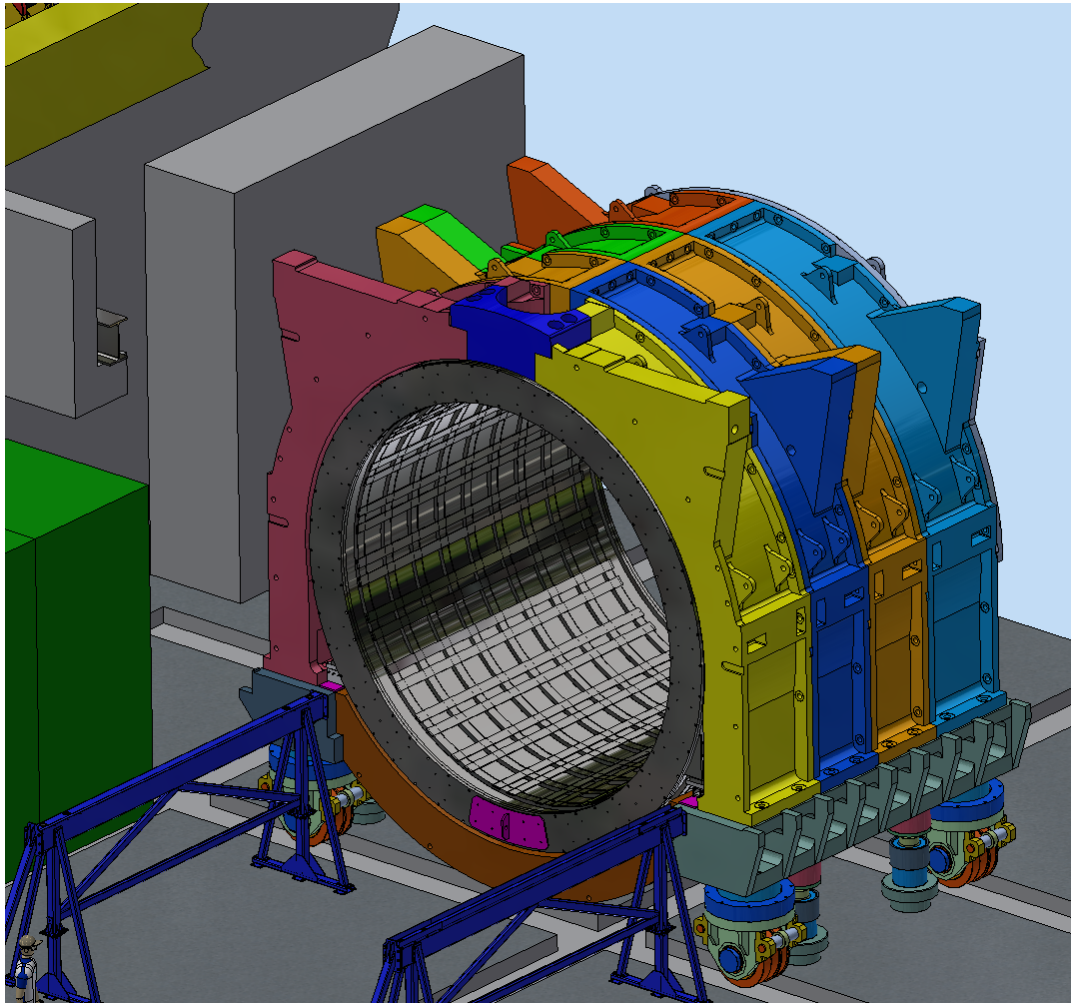
Preparatory work

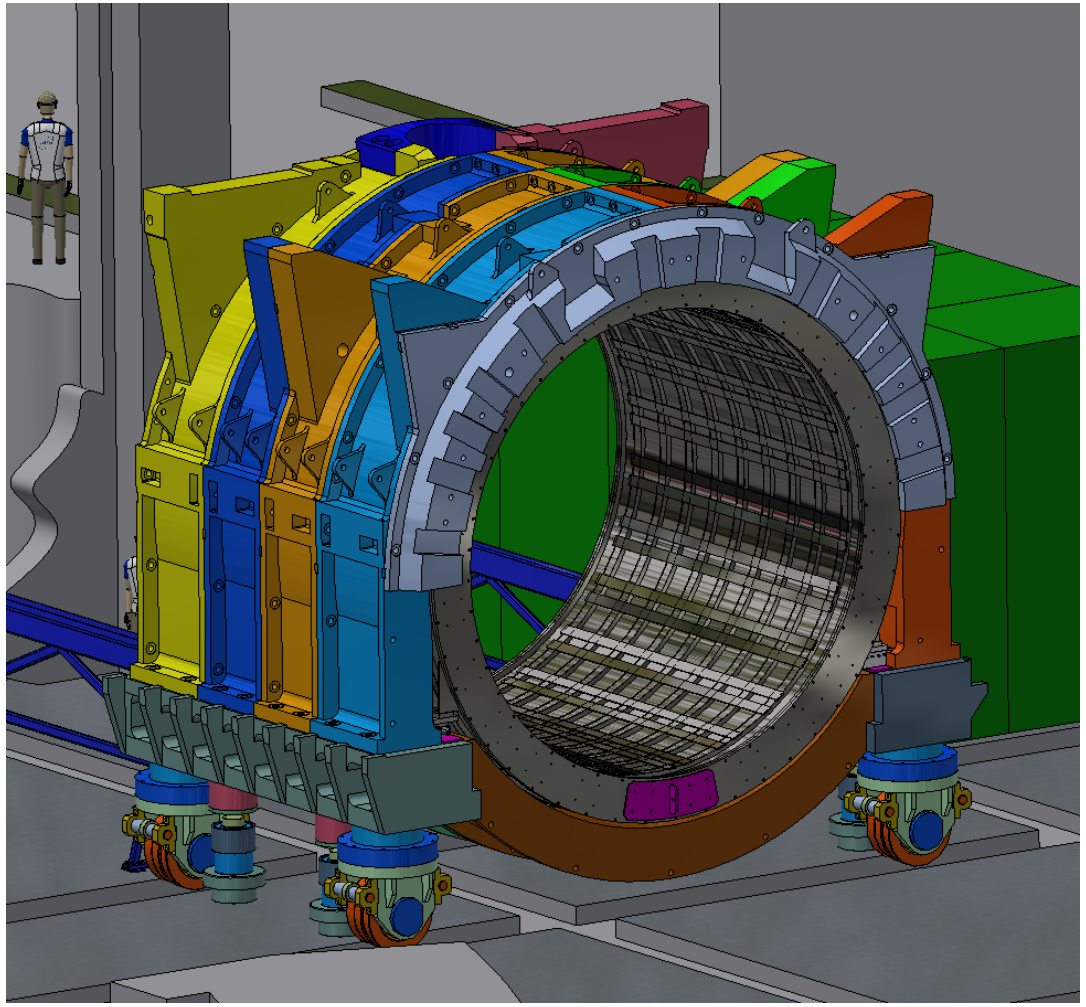
Service Turret: removal



Flanges: removal

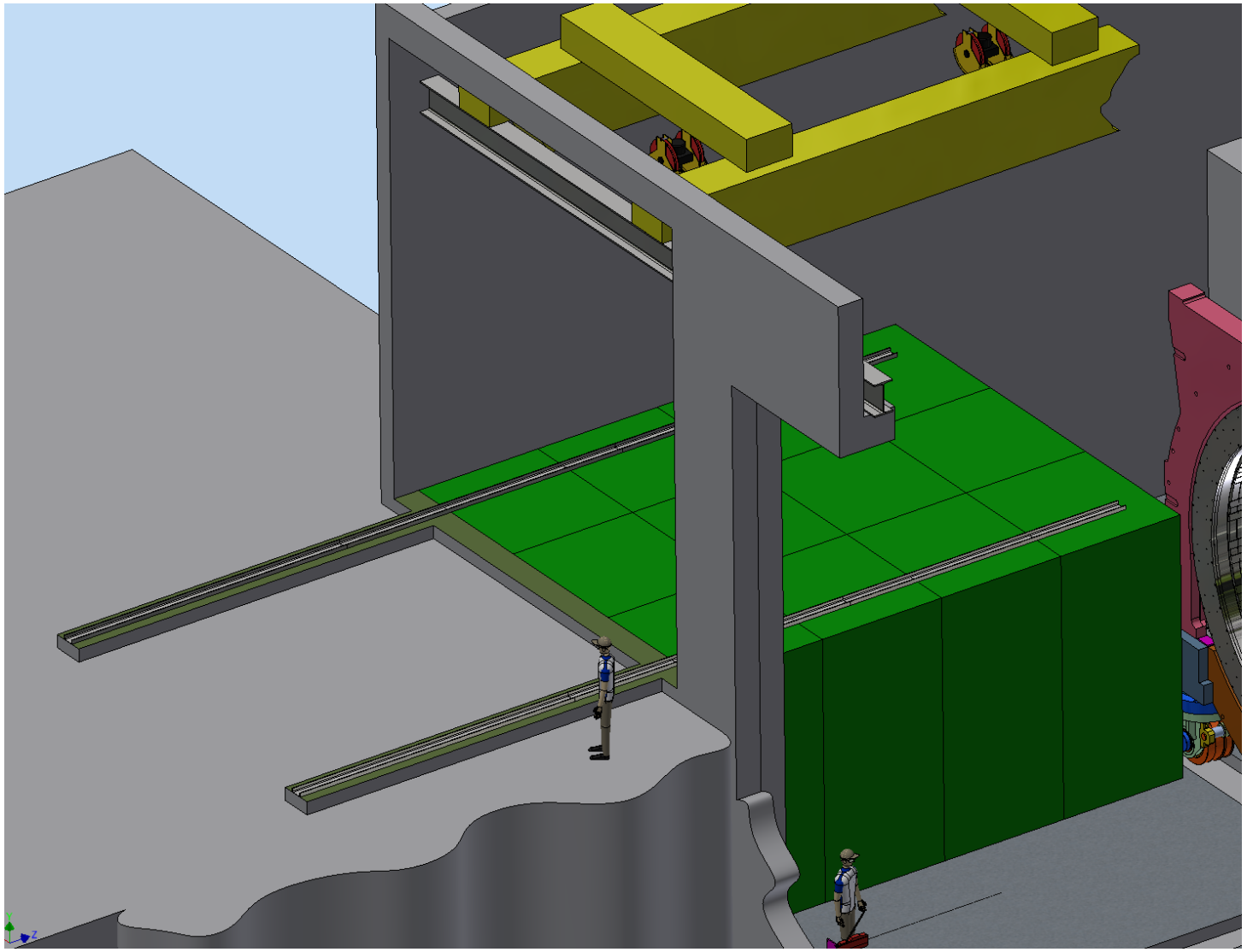


Front (parking side)



Back (DAFNE side)

Installation of loading dock and rails



The loading dock shall be extended to allow the magnet to be moved out of the assembly hall. The new design will include reinforced structures and appropriate safety measures to handle the weight and size of the magnet.

Two rails shall be installed to slide the magnet out of the assembly hall. The installation process will include precise alignment and secure anchoring of the rails to handle the weight and dimensions of the magnet.

nil volentibus arduum

Organization

Organization

SAND Group will put in place a number of hardware experts (engineers/technicians) sufficient to complete the operations in the time allocated in the planning.
The team involved on the dismantling will be composed by:

- Work Package Leader (technical responsible);
- Site Supervisor (Direttore dei lavori)
- Safety Coordinator (PSCe)
- GLIMOS
- Mechanical technicians (external staff): 3 technicians
- Technicians (INFN): 2 technicians
- Handling Team (external staff): 2 technicians

Name	Role	Organisation
Alessandro Saputi	Work Package Leader	INFN/FE
	Technical Coordinator and Site Supervisor	INFN/LNF
Sandro Vescovi	Safety coordinator	INFN/LNF
Francesco Noto	GLIMOS	INFN/LNS
Baldon (?)	Mechanical technicians	External Staff
?	Technicians	INFN
Ditta Polacchi	Handling team	External Staff

nil volentibus arduum

KLOE Magnet: on the way to LNF

On the boat

Unloading phase

On the way to LNF

KLOE Magnet: arrival in Frascati

Unloading phase

KLOE Magnet: insertion

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KLOE Magnet: handling

Non è consentito dalle attuali normative

KLOE Magnet: handling

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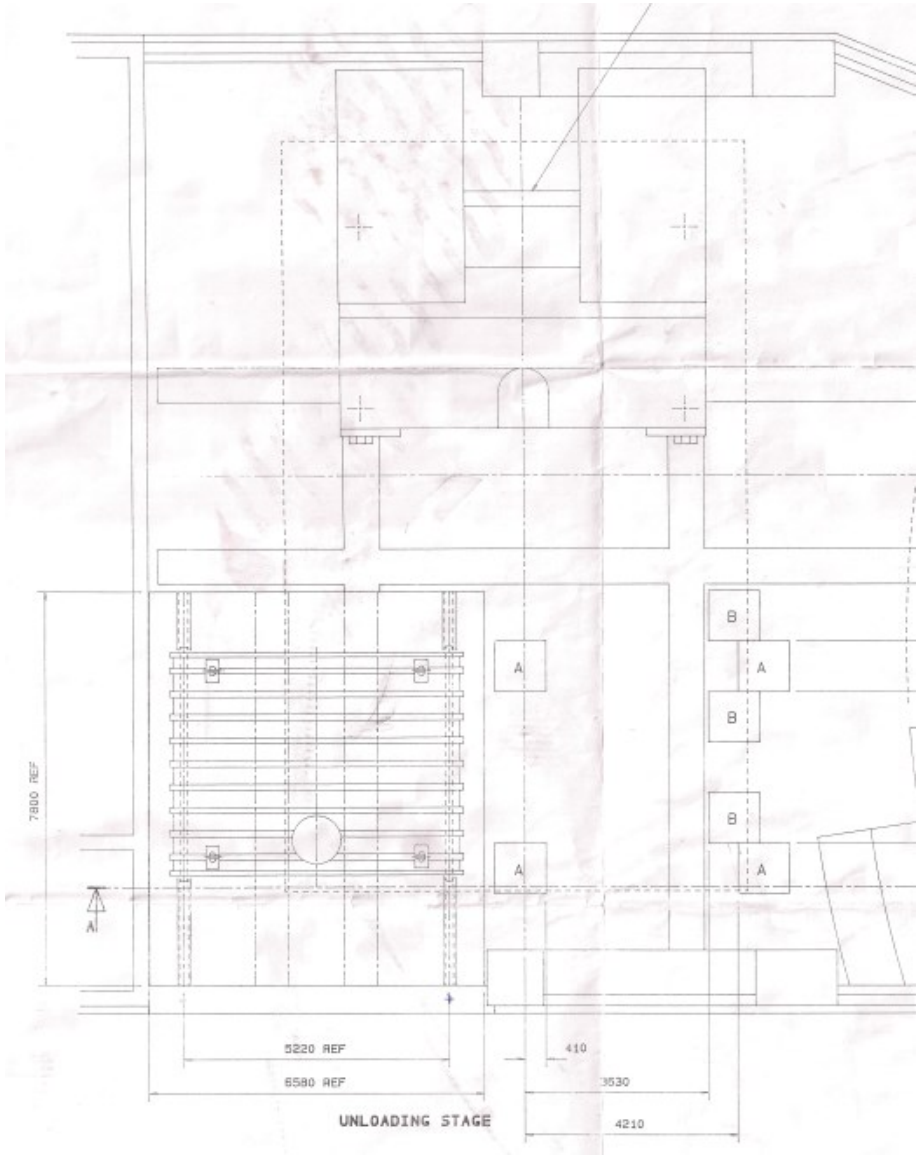

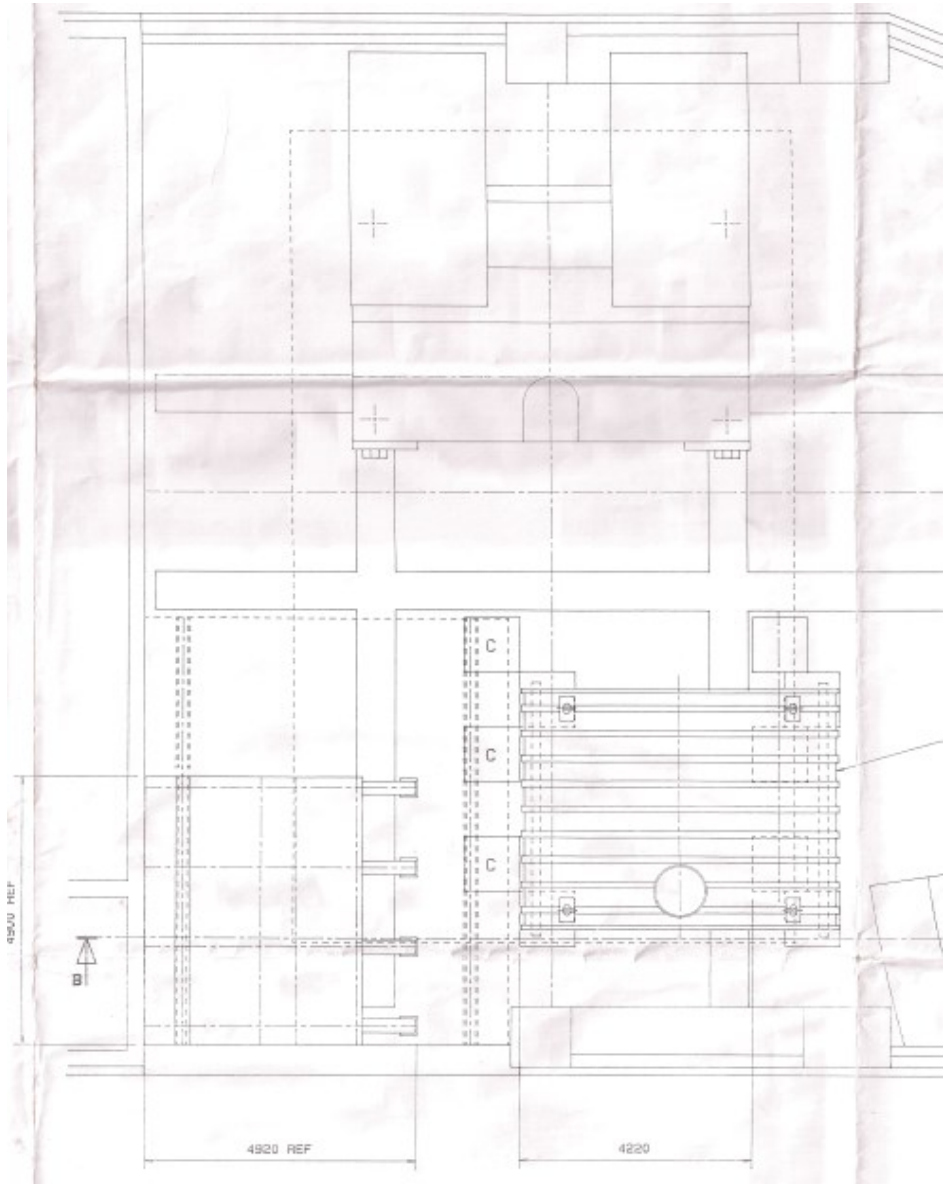

KLOE Magnet: insertion