

GIF++

- **Beam**

- **Muon beam**

- 100GeV/c, $\sim 10^4$ p/spill,
10x10cm²

- **Electron beam**

- **Source**

- **Cs¹³⁷ (662 keV) 10TBq**
(GIF in West-area: 740MBq)

- **Movable filters**

- attenuation down to
 $F=10^5$

- **2nd irradiation facility
in area**

- 90° of beam axis +
separate collimators

- **Shielding**

- **Cs¹³⁷: 0.092mSv/hr @1m**

→ **10TBq: 1Sv/hr @1m**

- **Supervised area: <3μSv/h**

→ **need factor 10⁶**

- **Concrete shielding ($\rho=2.5$
g/cm³):**

- 1m for $F=10^6$
- 1.2m for $F=10^7$

- **Iron shielding:**

- 40cm (36.2cm) for $F=10^7$

- **Lead shielding:**

- 16.1cm for $F=10^7$

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- **Area**

- **Radiation area: $10 \times 7.5 \times 3 \text{m}^3$**

- **Area with shielding + access: $\sim 16 \times 15 \times 5 \text{m}^3$**

- Detectors: up to $3 \times 1.4 \times 0.5 \text{m}^3$
 - Fast and easy access
 - Access via crane
 - Shielded & movable roof??
 - Temperature controlled

- 2nd irradiation beam at 90 degree to main beam axis
 - Separate collimator and smaller area

- **Preparation area: $> 4 \times 4 \text{m}^2$**

- Used for commissioning with beam
 - Close to radiation area
 - Easy access
 - Beam available
 - Gas infrastructure available

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– **Storage area**

- 4x4m²
- Office cabinets

– **Barracks**

- Users
- Installation of electronics racks

• **Control System & Safety**

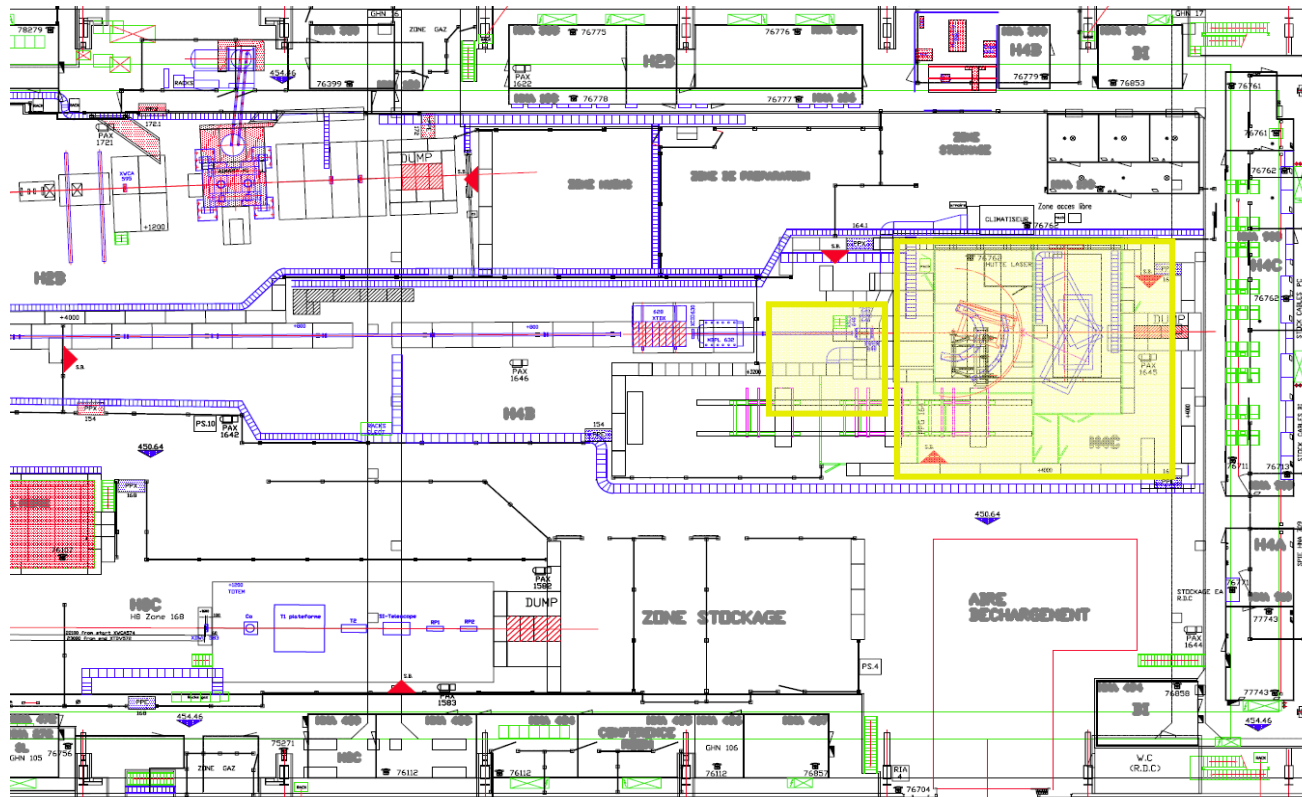
– **Control room Single console**

- Beam control
 - DAQ, Beam instrumentation
- Source control
- Gas supply/system control
- Safety control:
 - Camera, doors, radiation

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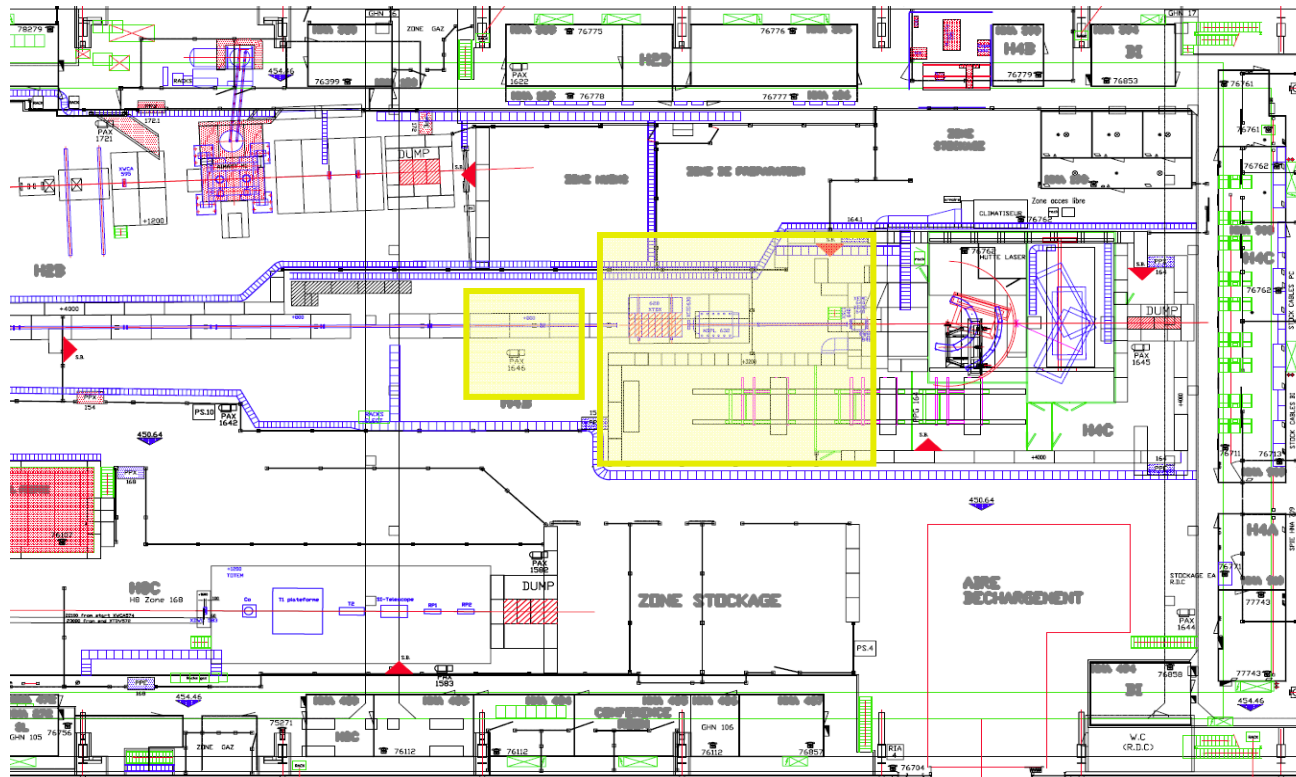
- **Gas system**
 - **Fenced gas supply zone**
 - Neutral gases (Ar, N₂, CO₂, He, Xe)
 - Flammable gases (iC₄H₁₀, CH₄, Ar/H₂)
 - Special gases (C₂H₂F₄, SF₆, CF₄)
 - **Gas rack area**
 - 15-20m²
 - As close as possible to radiation area
 - **Pipe Network**
 - **Gas detection heads**
- **Chilled water**
- **Compressed air**

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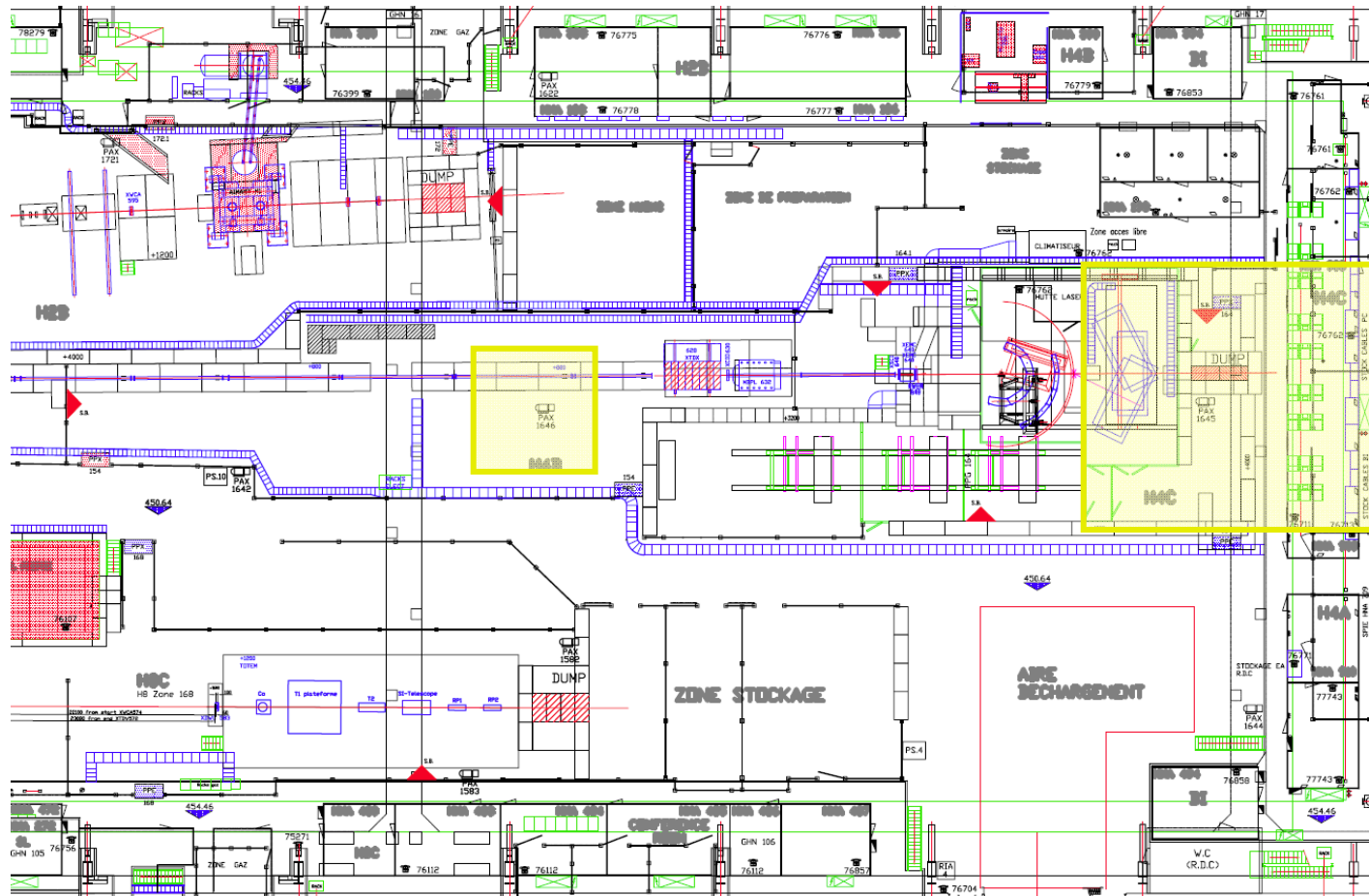
- **H4C**
 - Move CMS upstream → possible?

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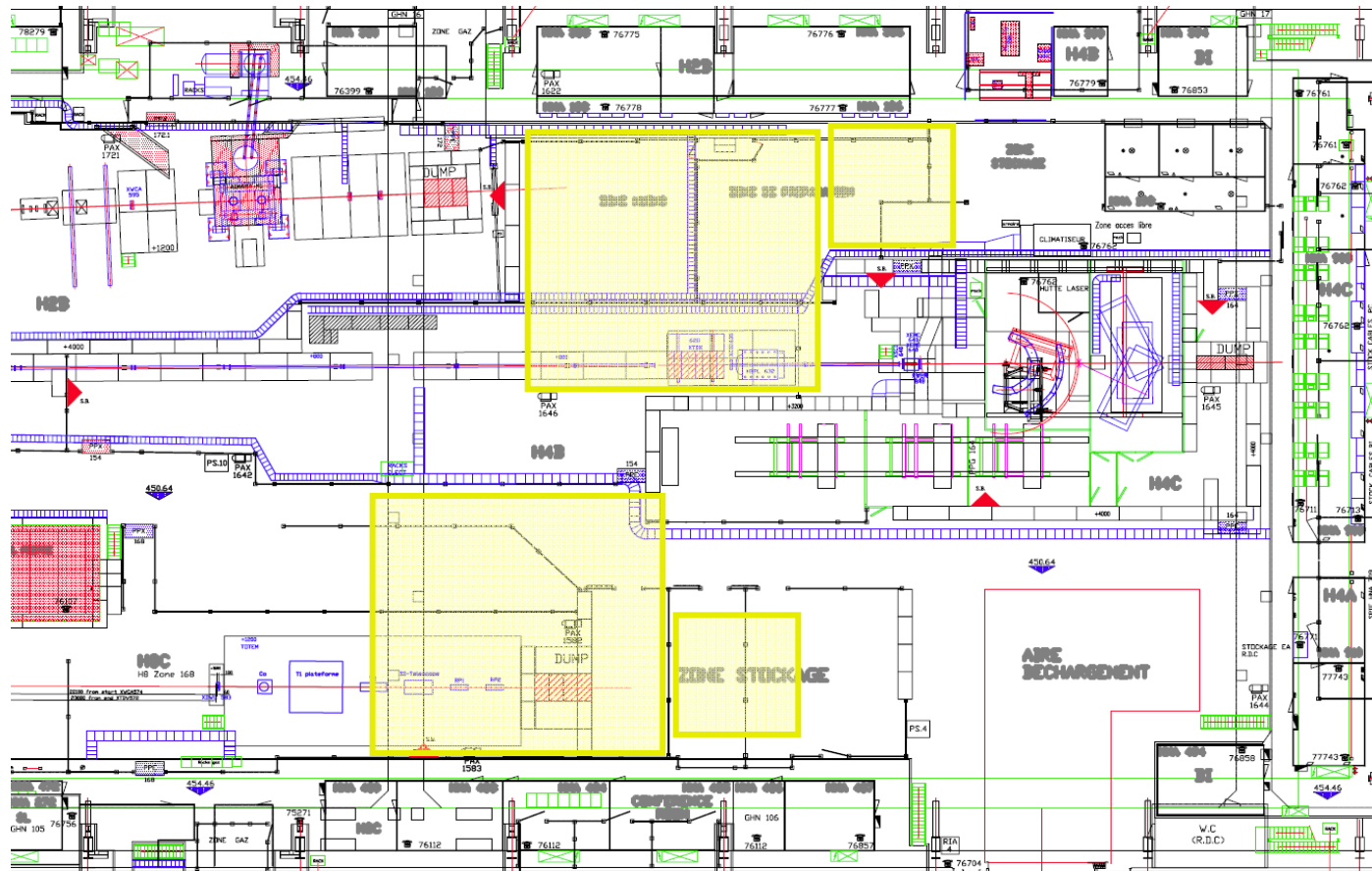
- **H4B**

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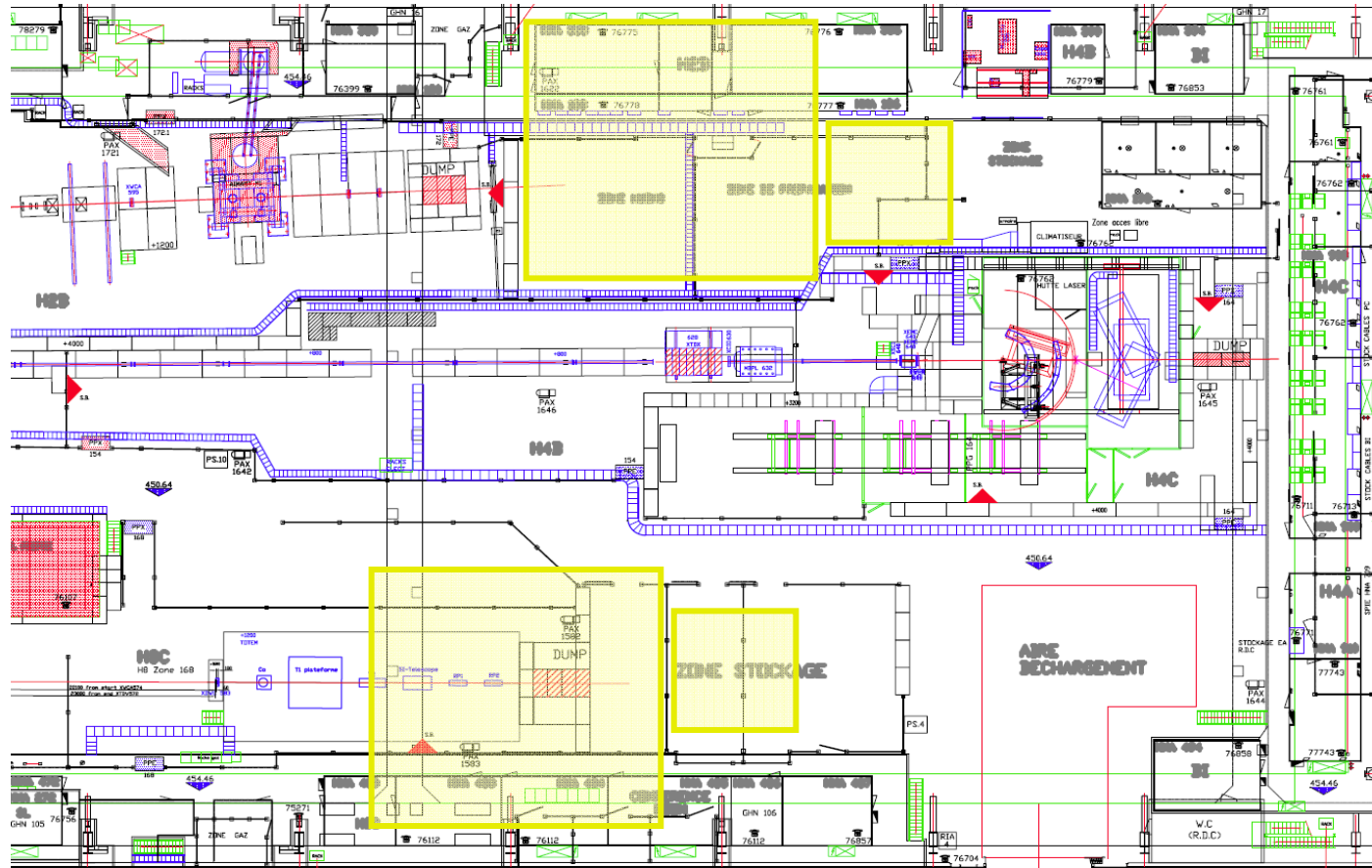
- Downstream H4C (CMS)

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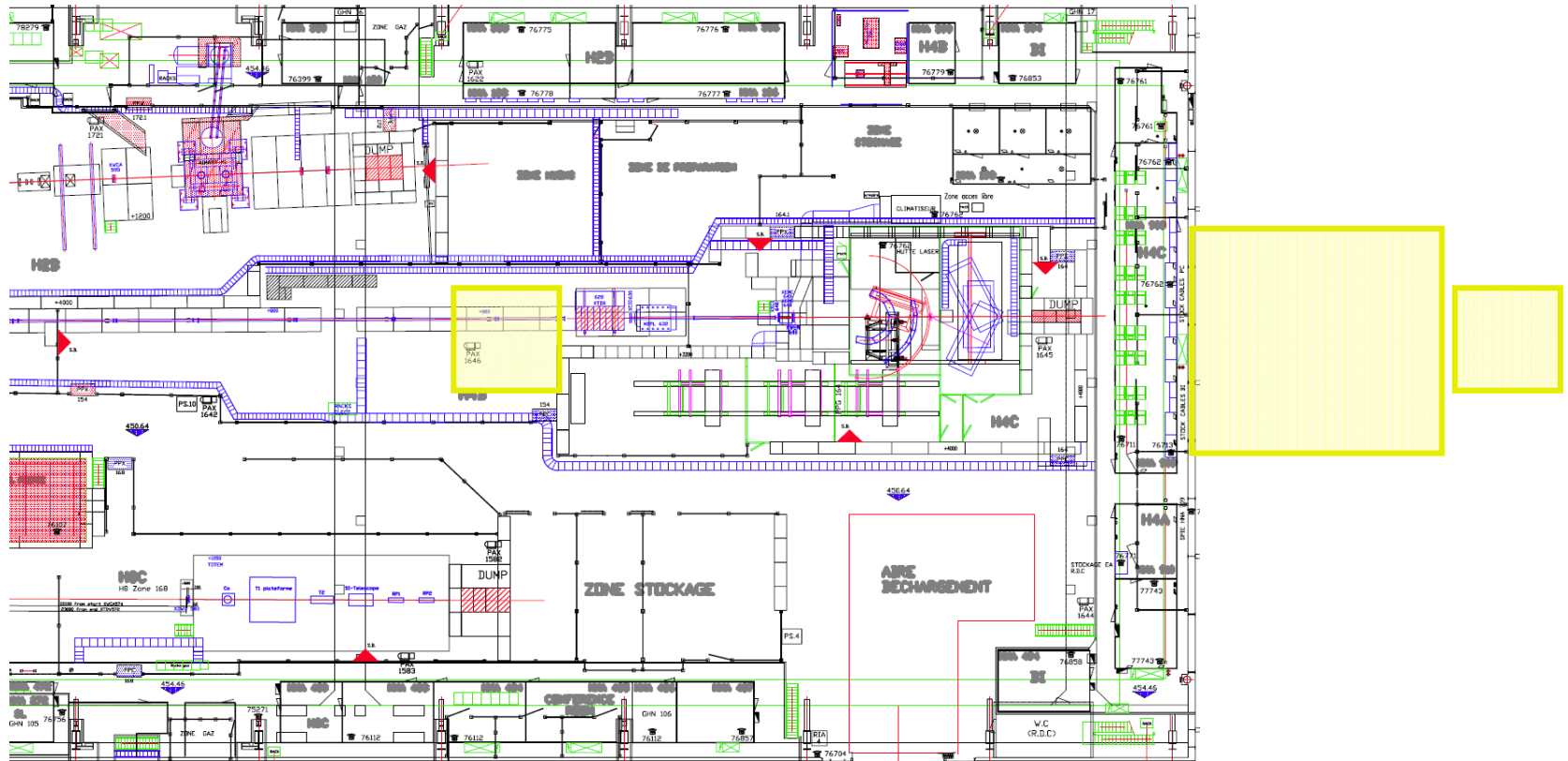
- **H2**
 - Space? Upstream users?
- **H6/8**
 - Space?

...GIF++ Where?



- **H2 or H6/8**
 - **Space**
 - **Upstream users**
 - **Remove barracks**

...GIF++ Where?



- **Extend EHN1**