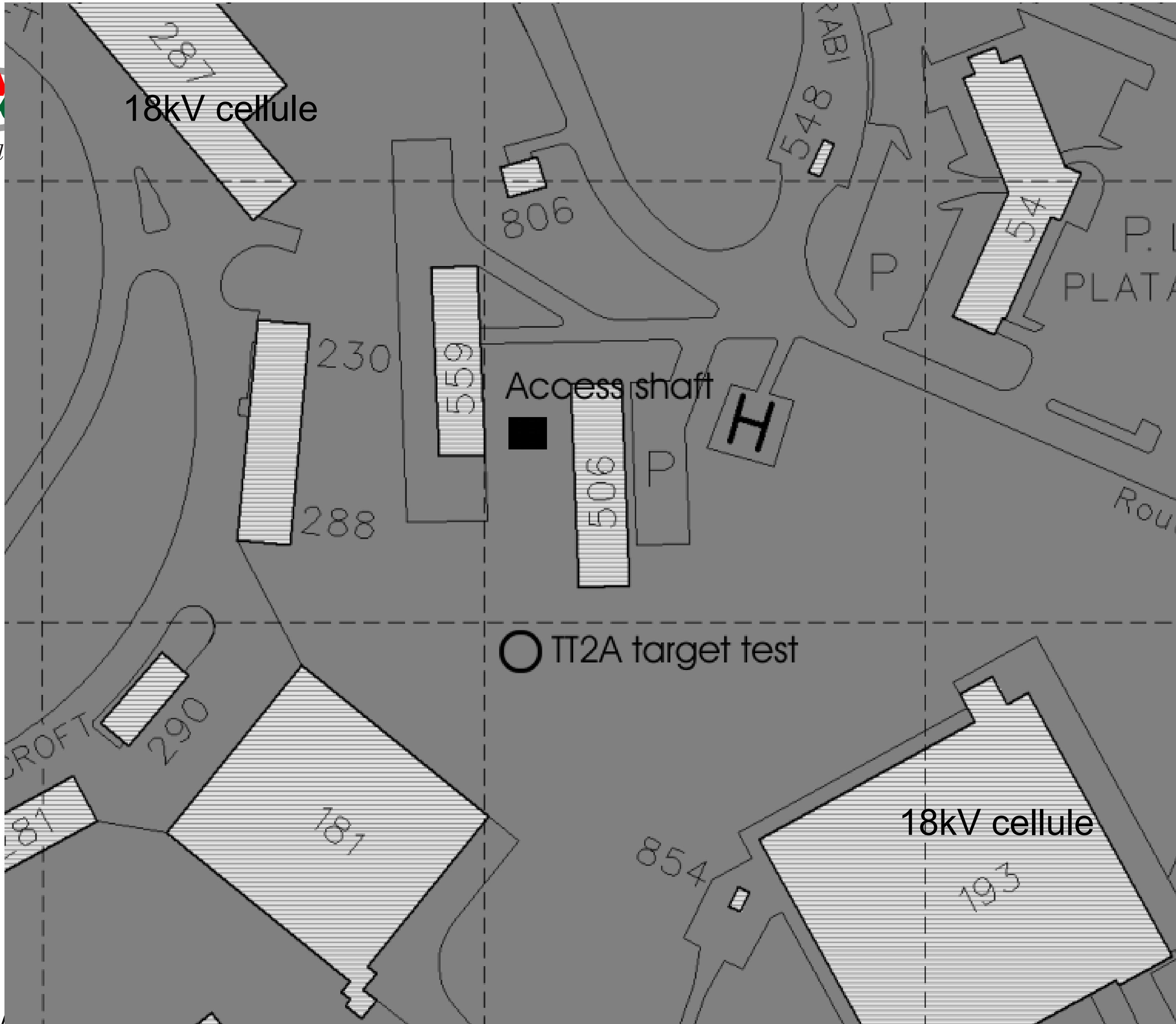
Technical drawings of TT2A and adjacent galleries

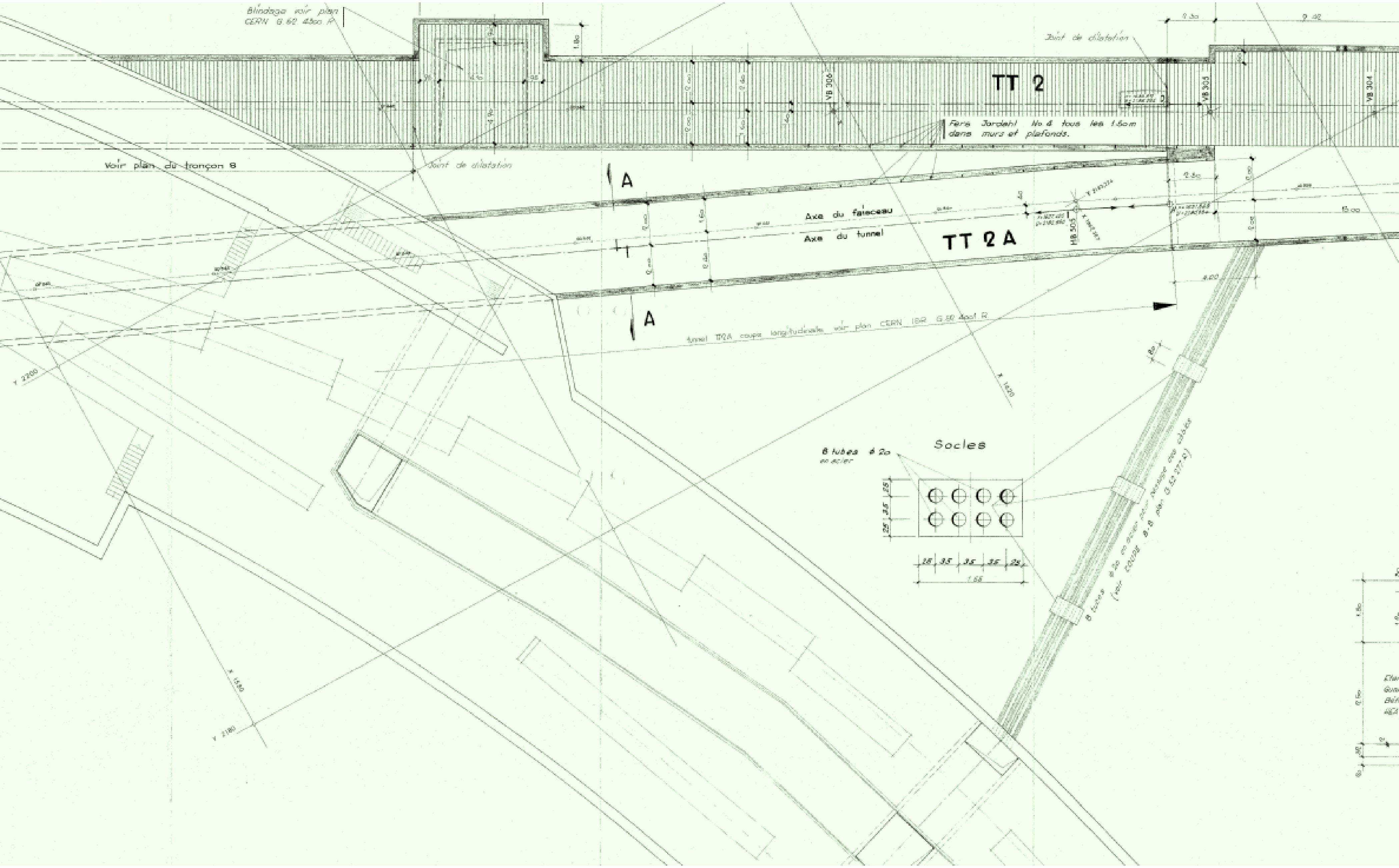
Detail – CDD number

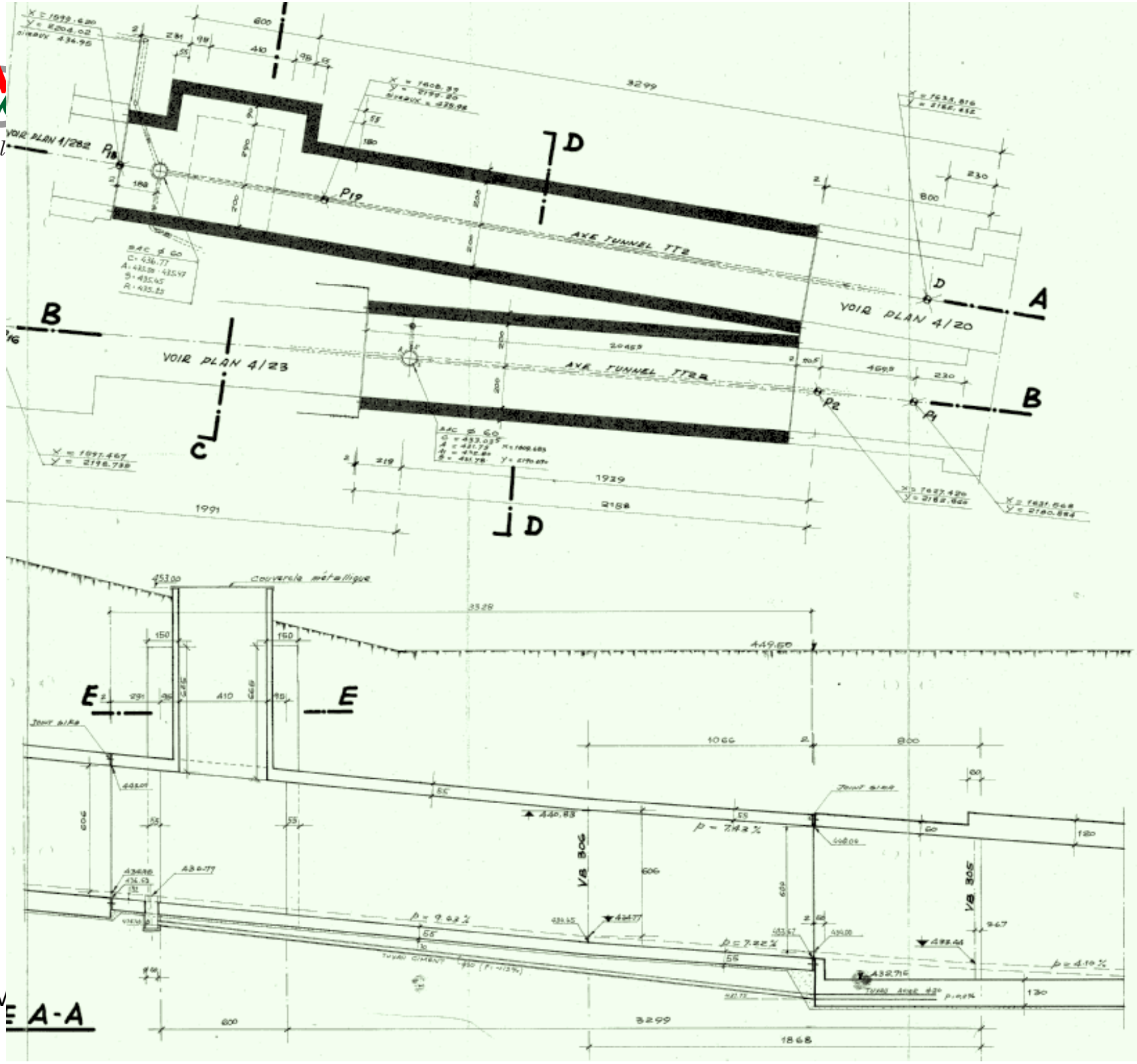
Overview surface, ----PDP111990001

Overview TT2/TT2A/ISR, ----ES-108020022

TT2A deflection chamber, ----SOG108010006


18kV cellule
Access shaft
TT2A target test
18kV cellule
287
548
806
54
P
230
559
288
506
H
290
181
854
193


TT 2
TT 2A
Axe du faisceau
Axe du tunnel
Voir plan du tronçon 8
Joint de dilatation
Socles
A
A



About 60 m from target place to surface

Alternative: Dump D3

- Placed just upstream of TT2A in TT2
  - On the other side of the wall
- Interference with SPS running on access
- Longer distance to surface
  - esp. difficult for LN2 supply

Kept in mind, but not strongly considered!

Power Supply

for the TT2A target experiment

Contact person/credits: Carlos DE ALMEIDA MARTINS, AB/PO

Concentrates on evaluating a solution “available” at CERN:

power supply Alice/LHCb

- 950 V, 6000 A
- size: ~10 m x 4 m x 3m, 15 tons
- installed in six pieces
- transformer (TRASFOR, IT), EDMS 315101 (http://edms.cern.ch)
- converter (Schneider Elec., FR), EDMS 311284
- price/piece: 400 kChF (100 kChf+300 kChF)

1 Euro = 1 US-$ = 1.5 ChF

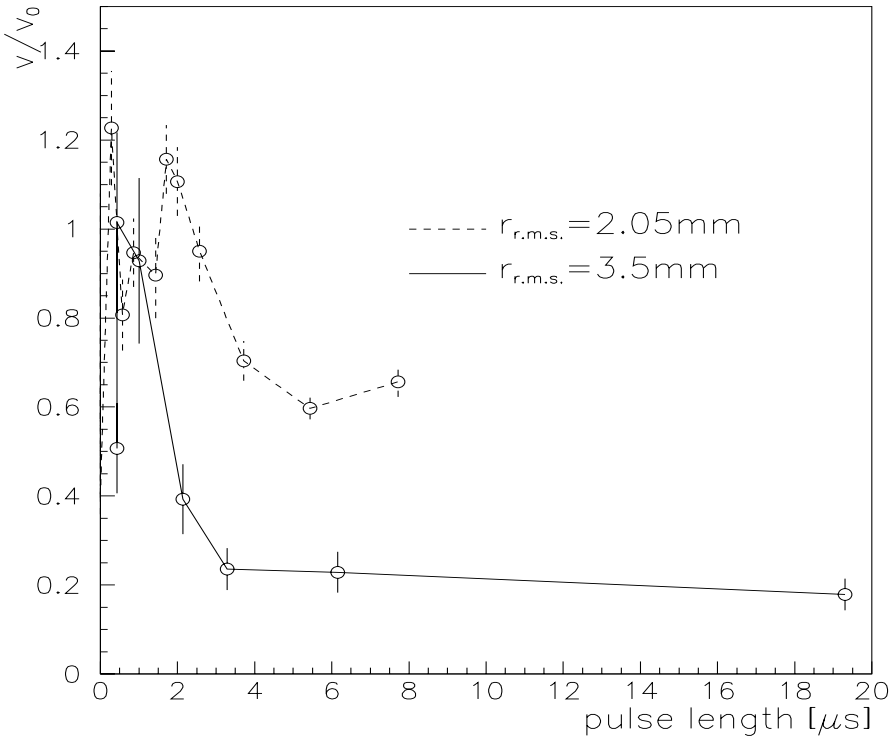
- Available cellules (=expensive to install): currently investigated
  - Free cell available in building 269
  - Still to be verified: building 193 & 287

  18kV-peak current would be 154 A. Cables are not the major investment, but installation is. The low voltage line designed for about 2kA.

- One spare transformer is available and could be used. Another one and the converters have to be purchased or rented from Alice/LHCb (to be verified).

Cavitation in Liquid targets

- Cavitation was already “observed” at ISOLDE
  - Unfortunately only indirect observation by splash velocity
- Does it reduce the secondary particle yield?
  - Most probable not an issue for American design, but for facilities using “long” pulses
- Very simple and unique!



- N.Tahir, GSI Darmstadt, Germany
- 2D-simulation of heavy ion beam in solid targets → creation of voids
  - predicts creation of voids of beam size within ~100 ns!

Interaction Efficiency

- measure interaction efficiency either by
  - Radiation monitors
  - Disappearance of primaries
    - Pick-up monitor downstream of target
  - Appearance of secondaries
    - total particle yield within
    - Partly coverage of solid production angle sufficient
    - Off-axis
    - Detector
      - Simple, e.g. scintillator
      - radiation hard or installed far

Tasks for proposal

- List of radio-isotopes (S.Gilardoni)
- Personal radiation plan
- nToF: contact and receiving O.K. needed

- question: waste management of batteries?

  15 m^3 = 35 tons of hazardous waste!!!

Pulse list

- Which parameters to vary and how?
  - Magnetic field (0-15, 3 T)
  - Pulse intensity (1-20, 4 TP)
  - Pulse length (0.5-20, 0.5 μs)
  - Spot size
  - Beam position (±5, 1 mm)

- Get a realistic number of pulses needed!?