

LHeC

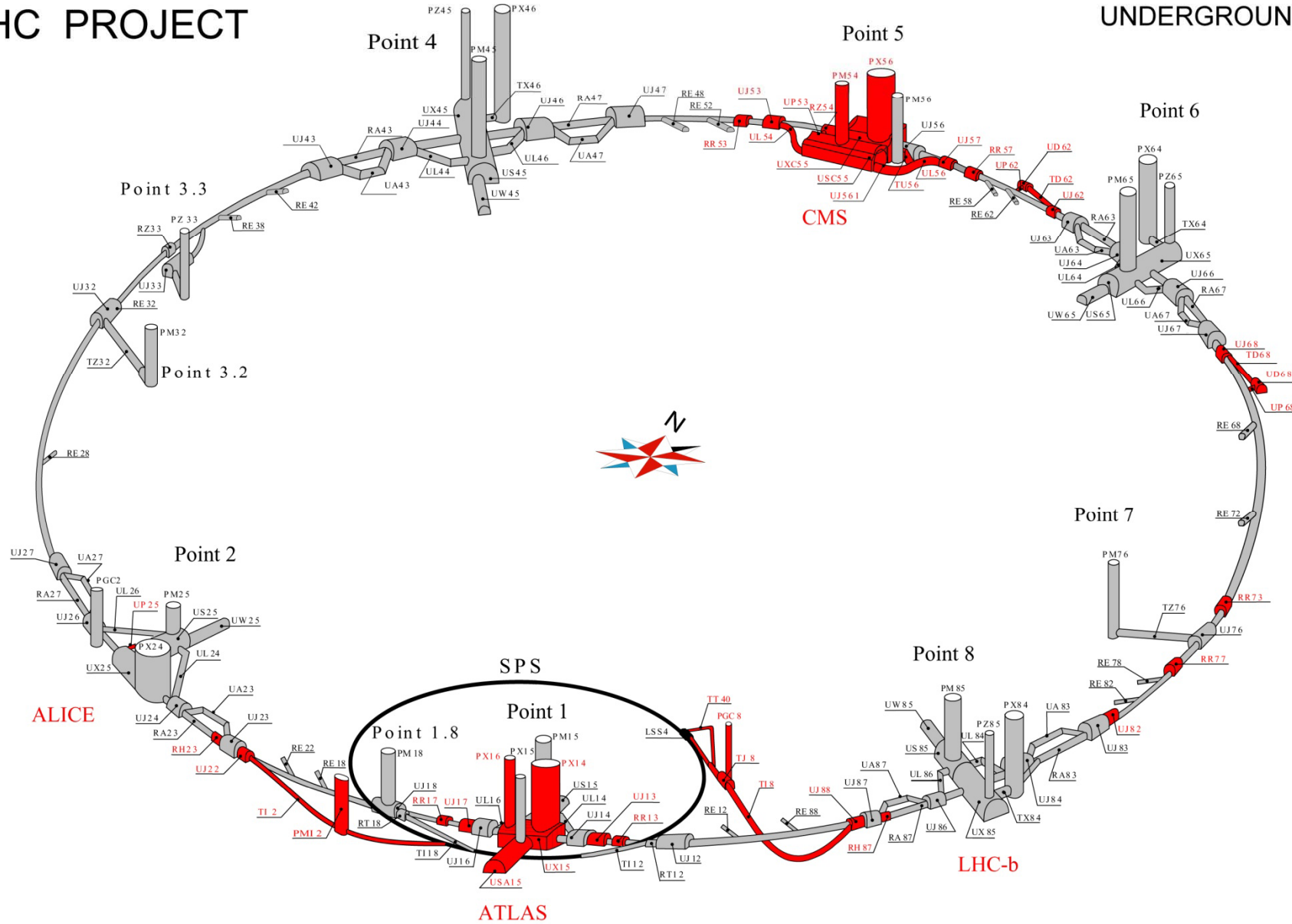
Civil engineering works

- Ring-Ring Layouts for civil works
- New Injector possibilities

These **brainstorming ideas** are further to various meetings with M.Klein, S.Myers, O.Bruning, F.Zimmermann, H. Burkhardt, T.Linnecar, B. Holzer.....
Drawings by A.Kosmicki and N.Baddems Civil Engineering Group..

LHC PROJECT

UNDERGROUND WORKS

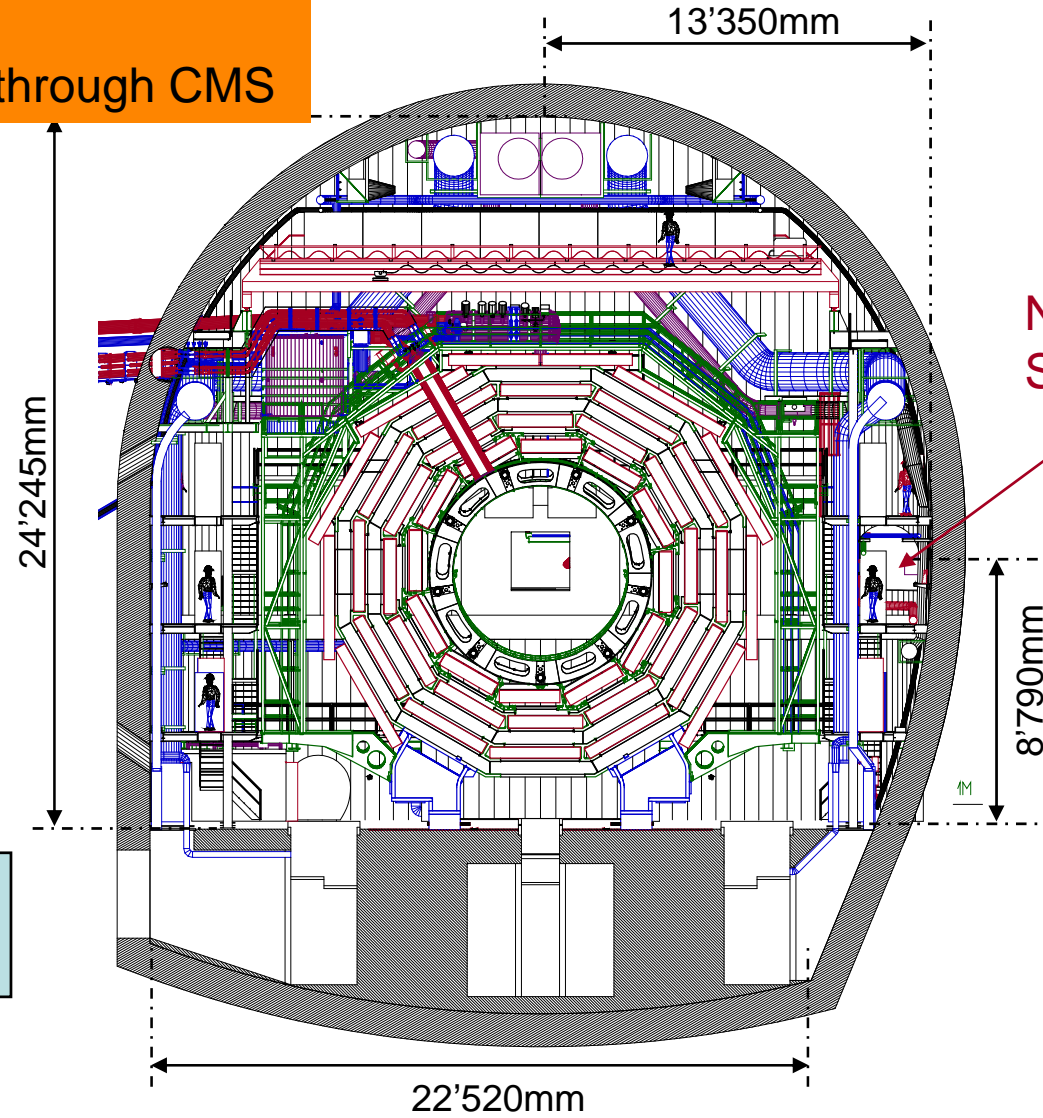


ST-CE
18/04/2003

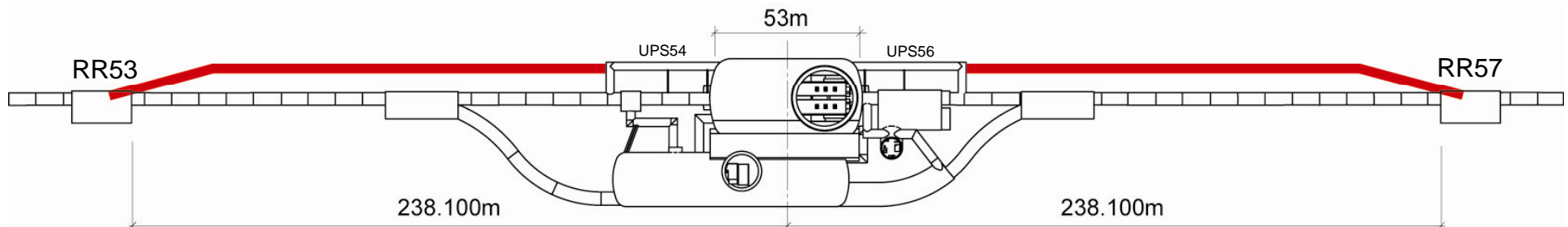
**Ring-Ring Option
By-passing ATLAS & CMS**

Existing Structures
LHC Project Structures

LHeC
Typical Cross Section through CMS



By-passes around Points 1 and Point 5



LHeC
UPS 54 Survey Gallery

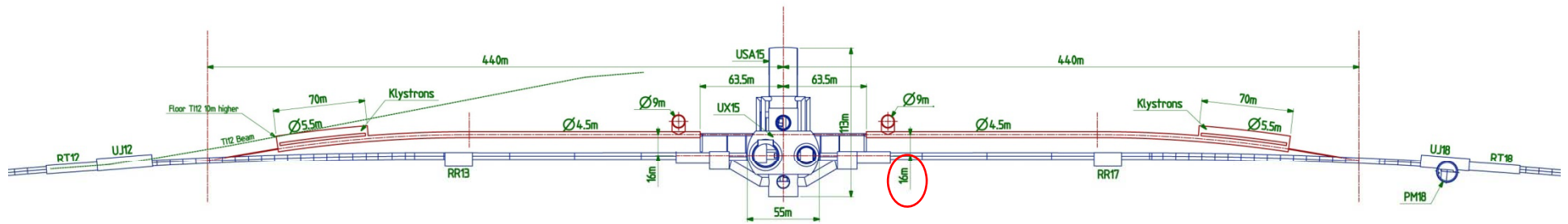


LHeC

View from UPS54 Survey Gallery into CMS Cavern on Walkways

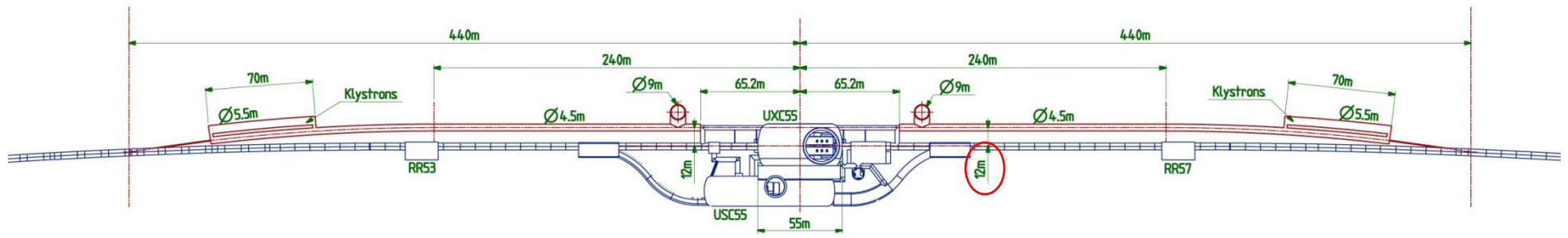


Point 1



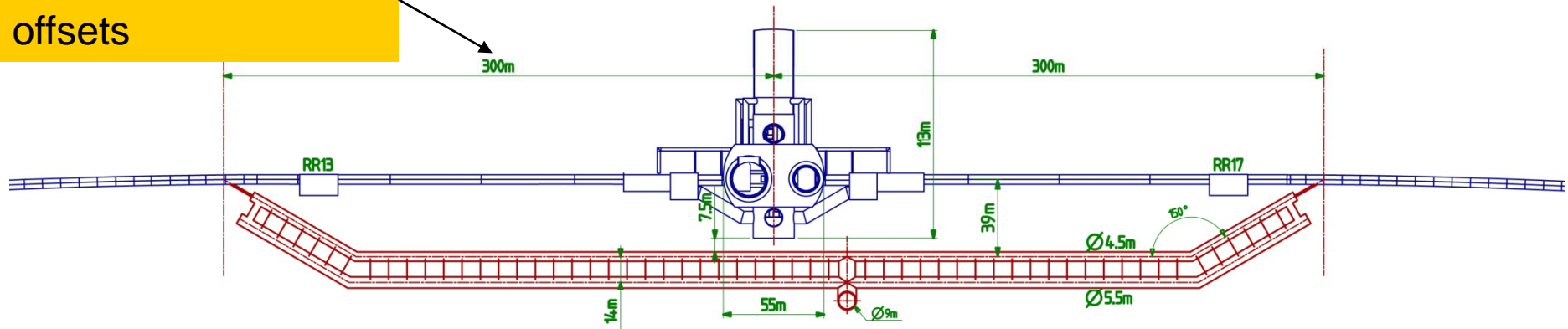
By-passes around Points 1 and Point 5

Point 5



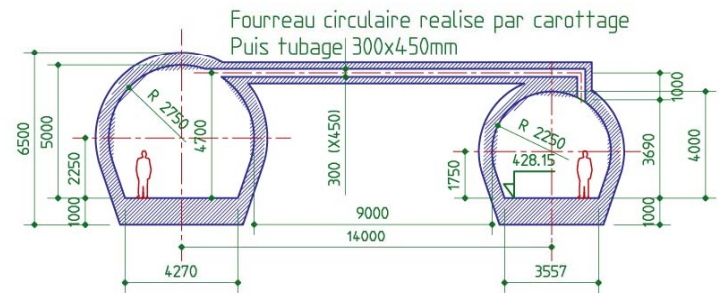
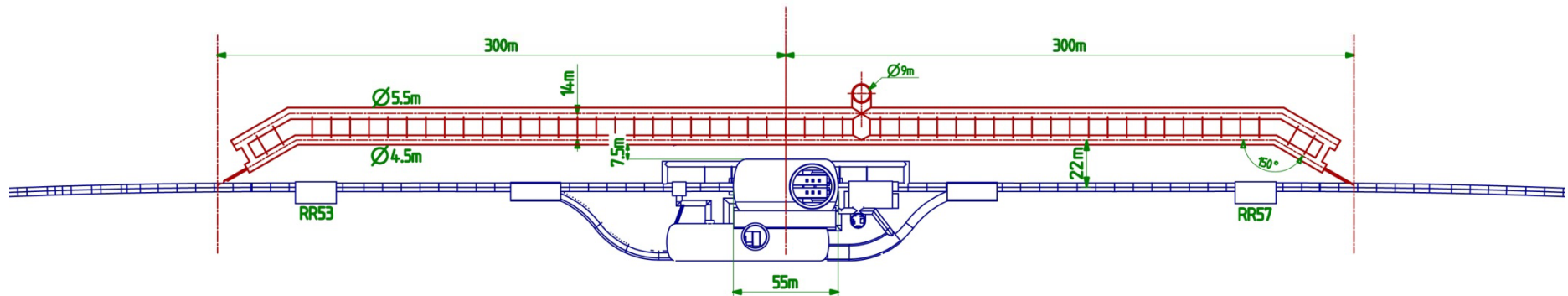
Tunnel lengths would need to be increased for these offsets

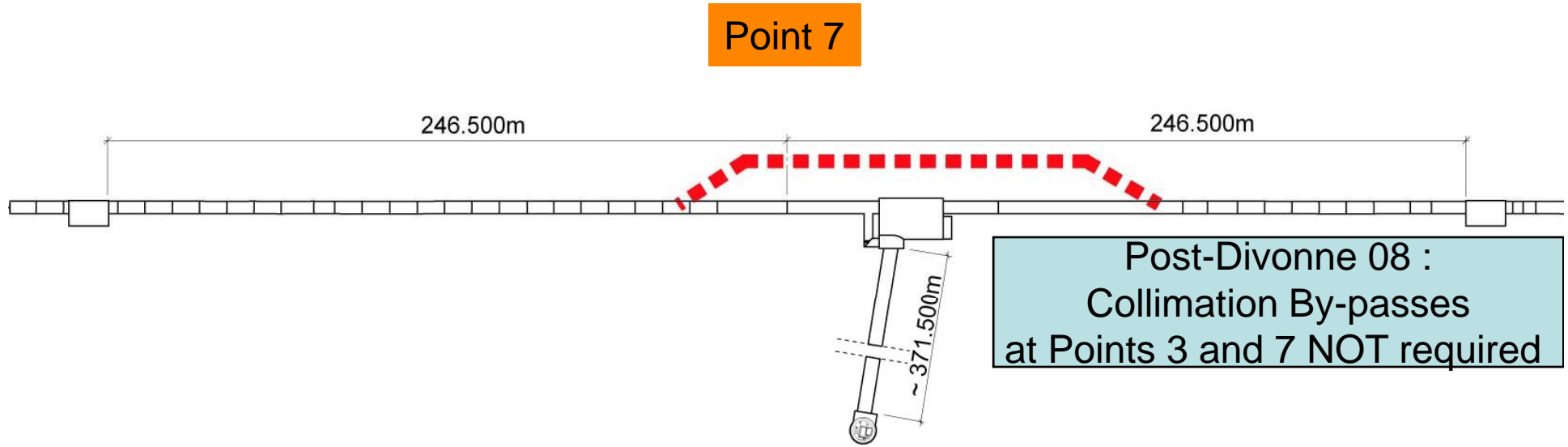
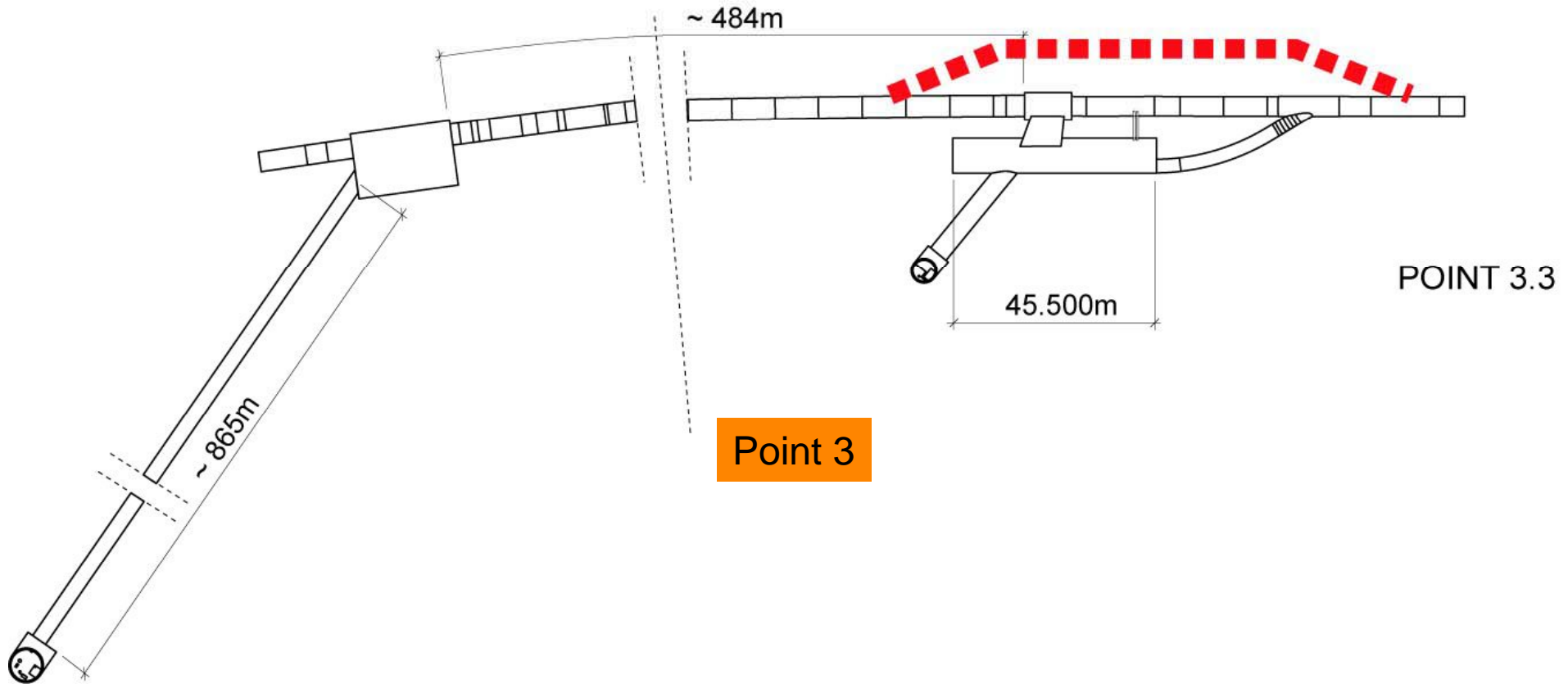
Point 1

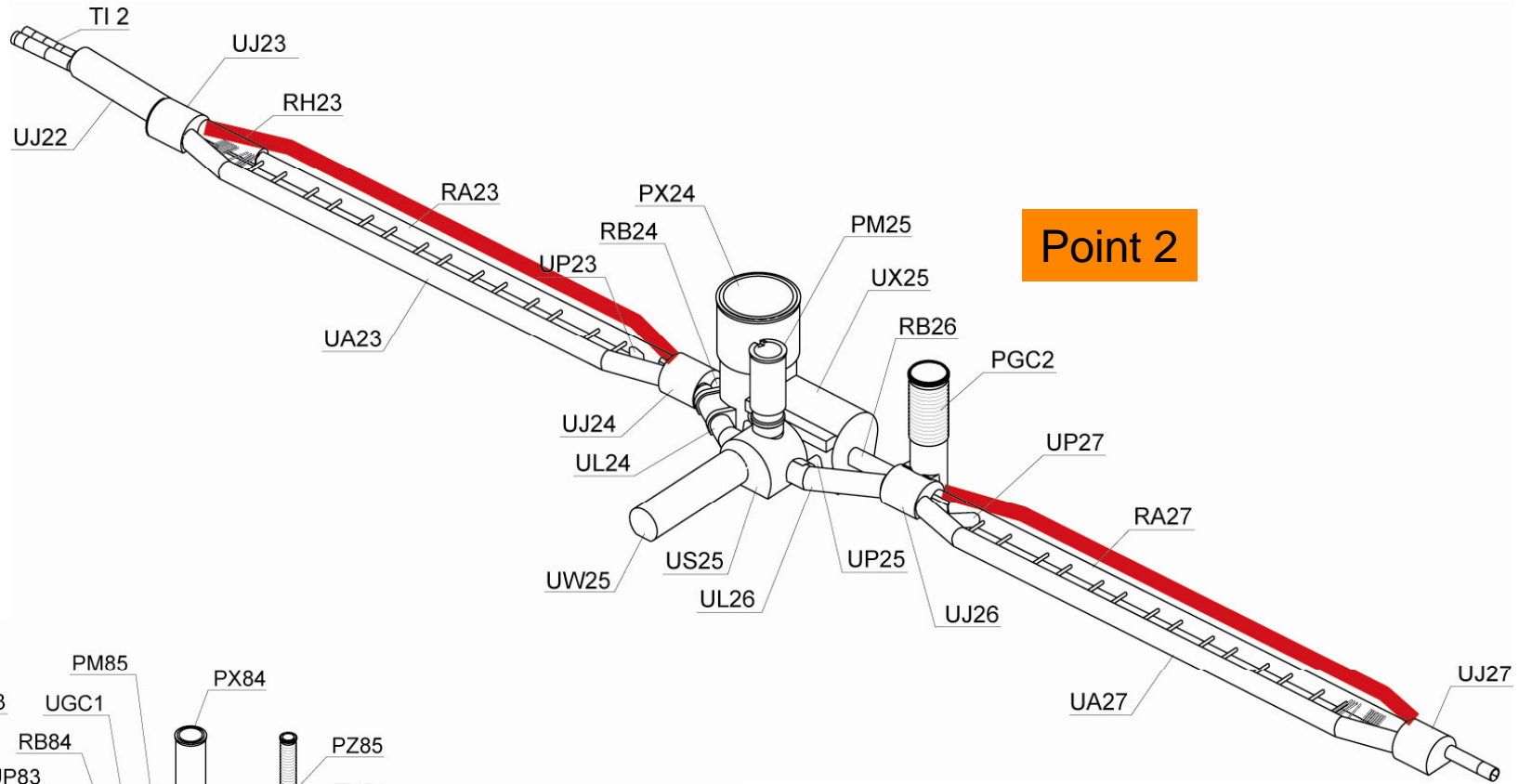


By-passes around Points 1 and Point 5

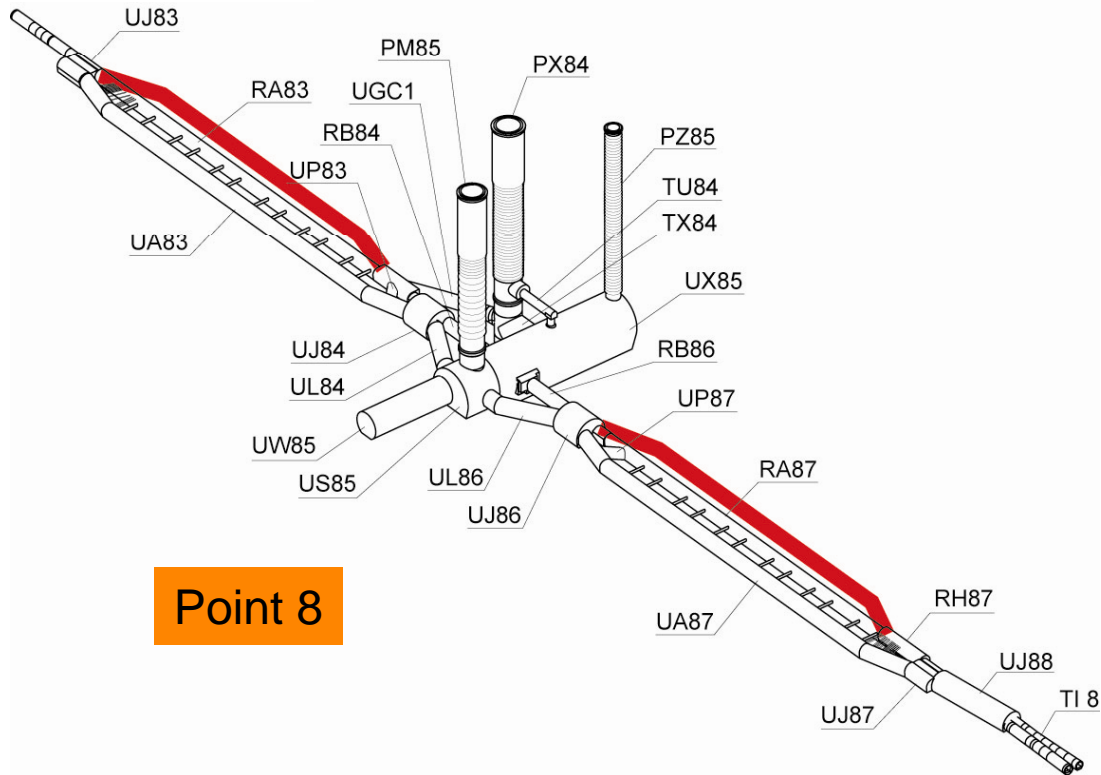
Point 5





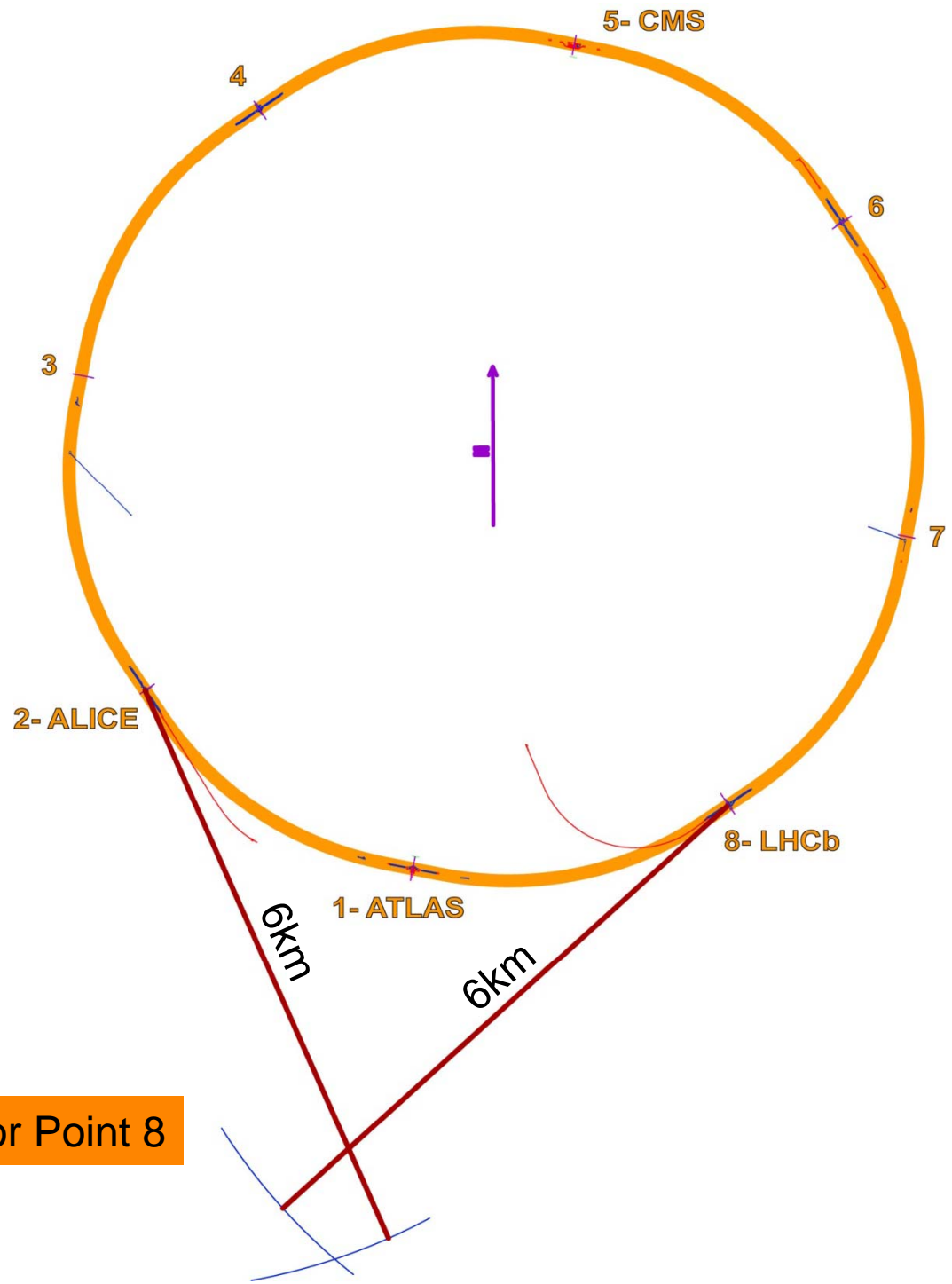


Point 2



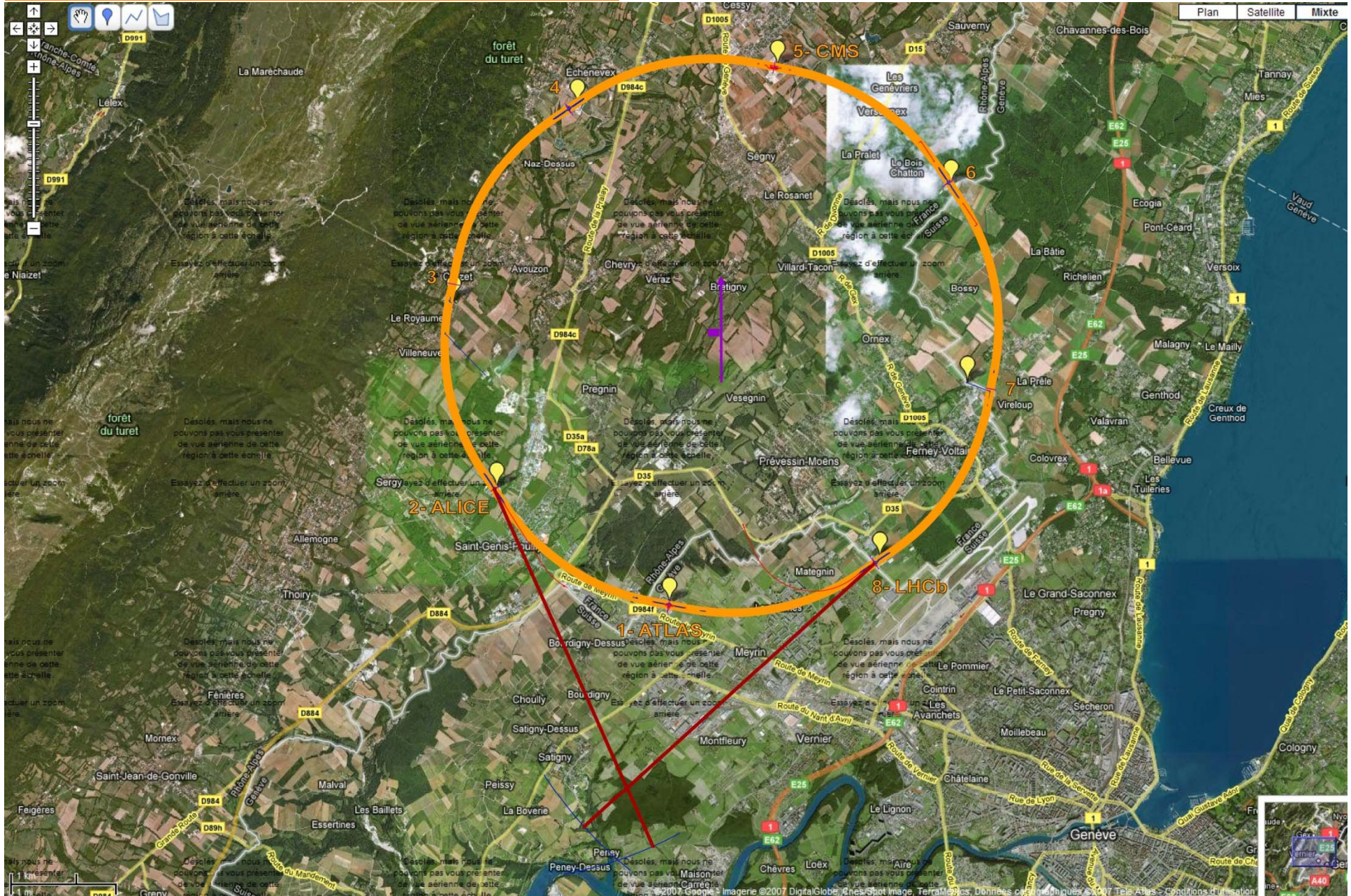
Point 8

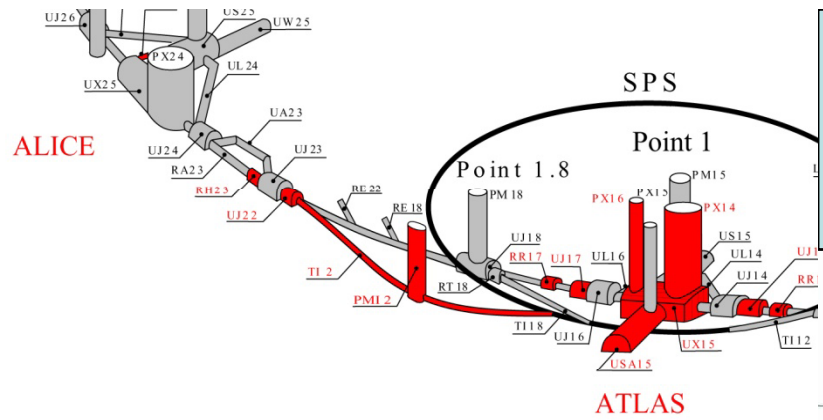
RF bypasses at Points 2 and 8 replaced by enlarged tunnels around Points 1 and 5 ?



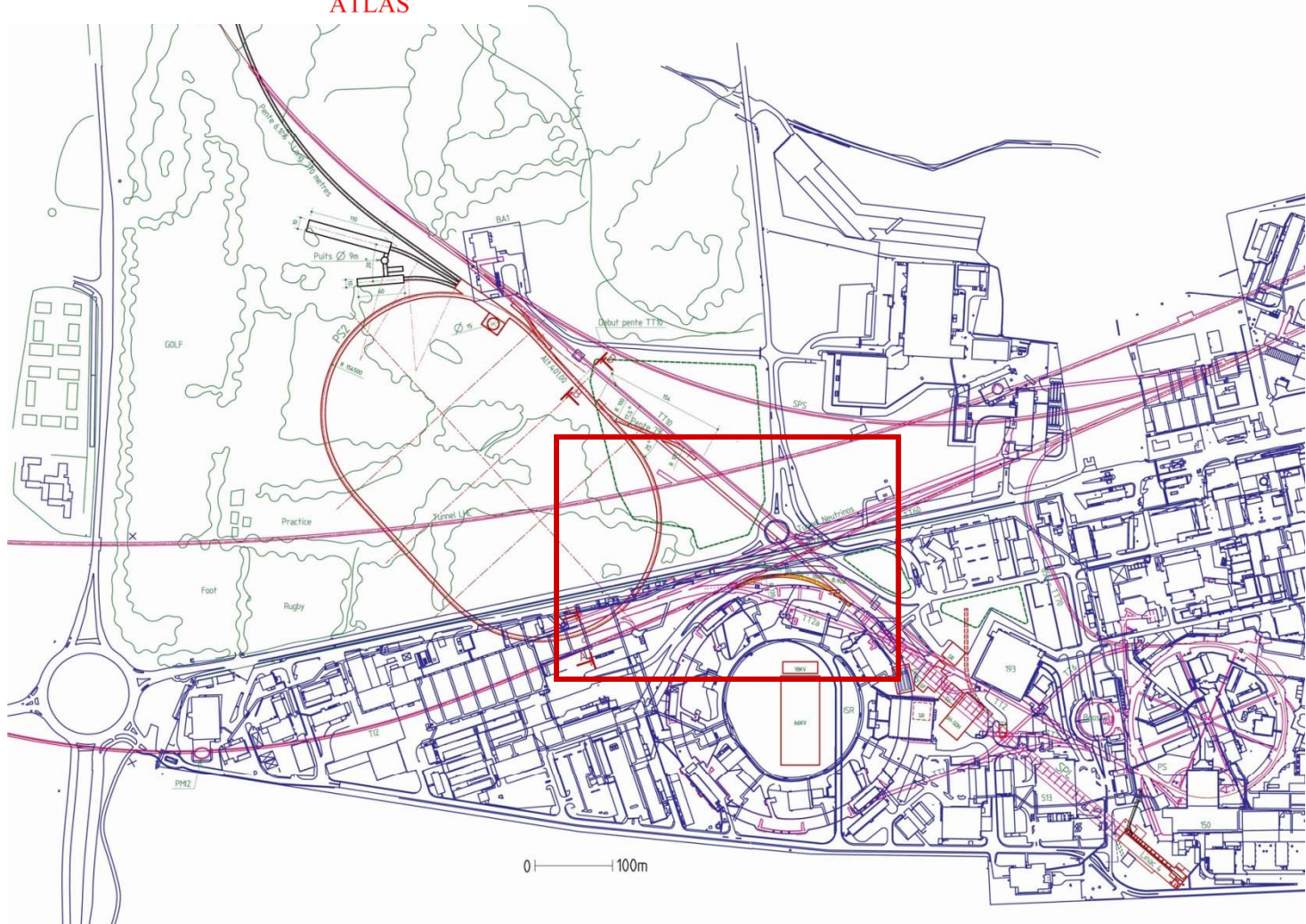
New 6km injector into Point 2 or Point 8

New 6km injector into Point 2 or Point 8

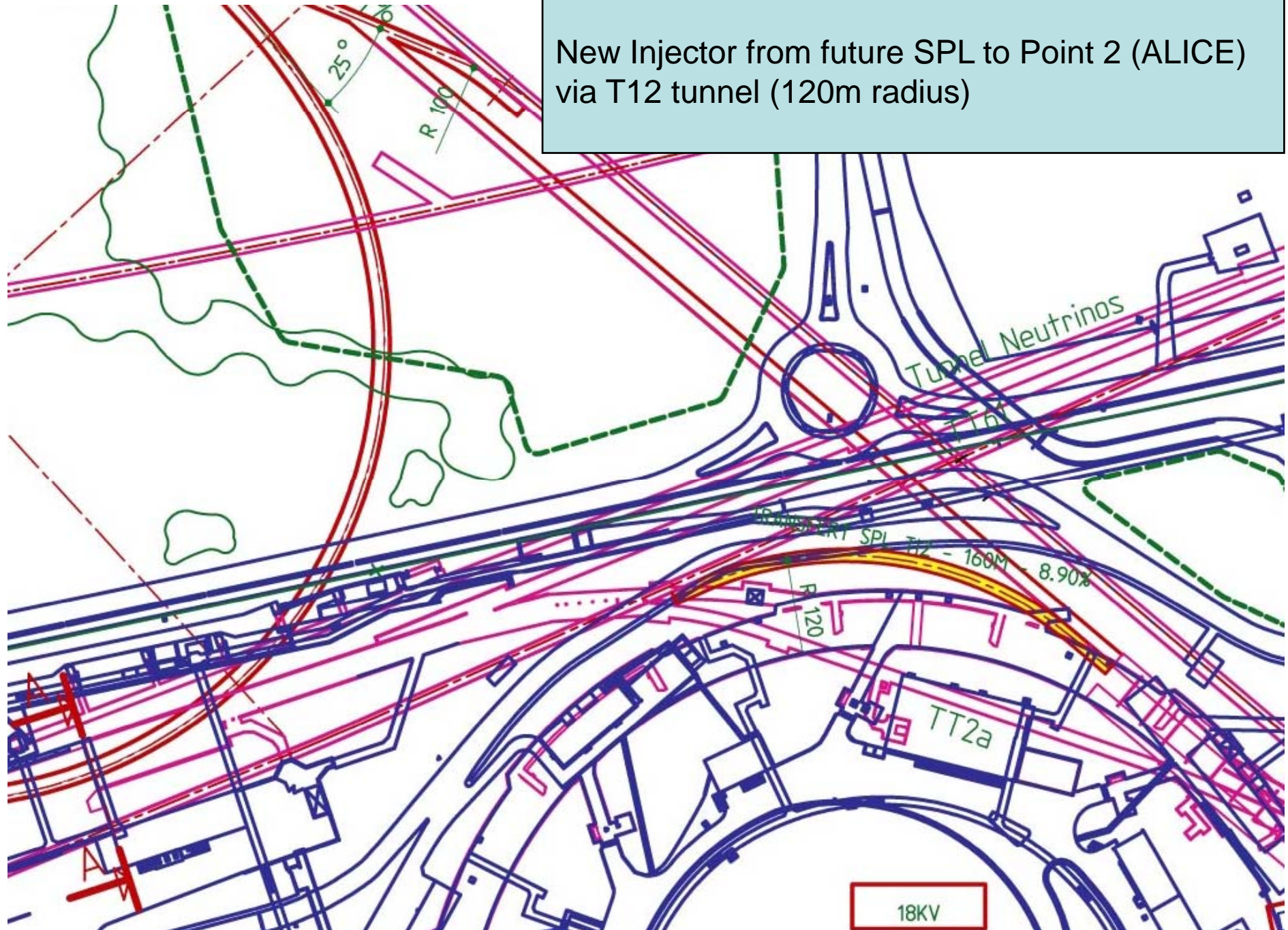




New Injector from future SPL to Point 2 (ALICE) via T12 tunnel (120m radius)

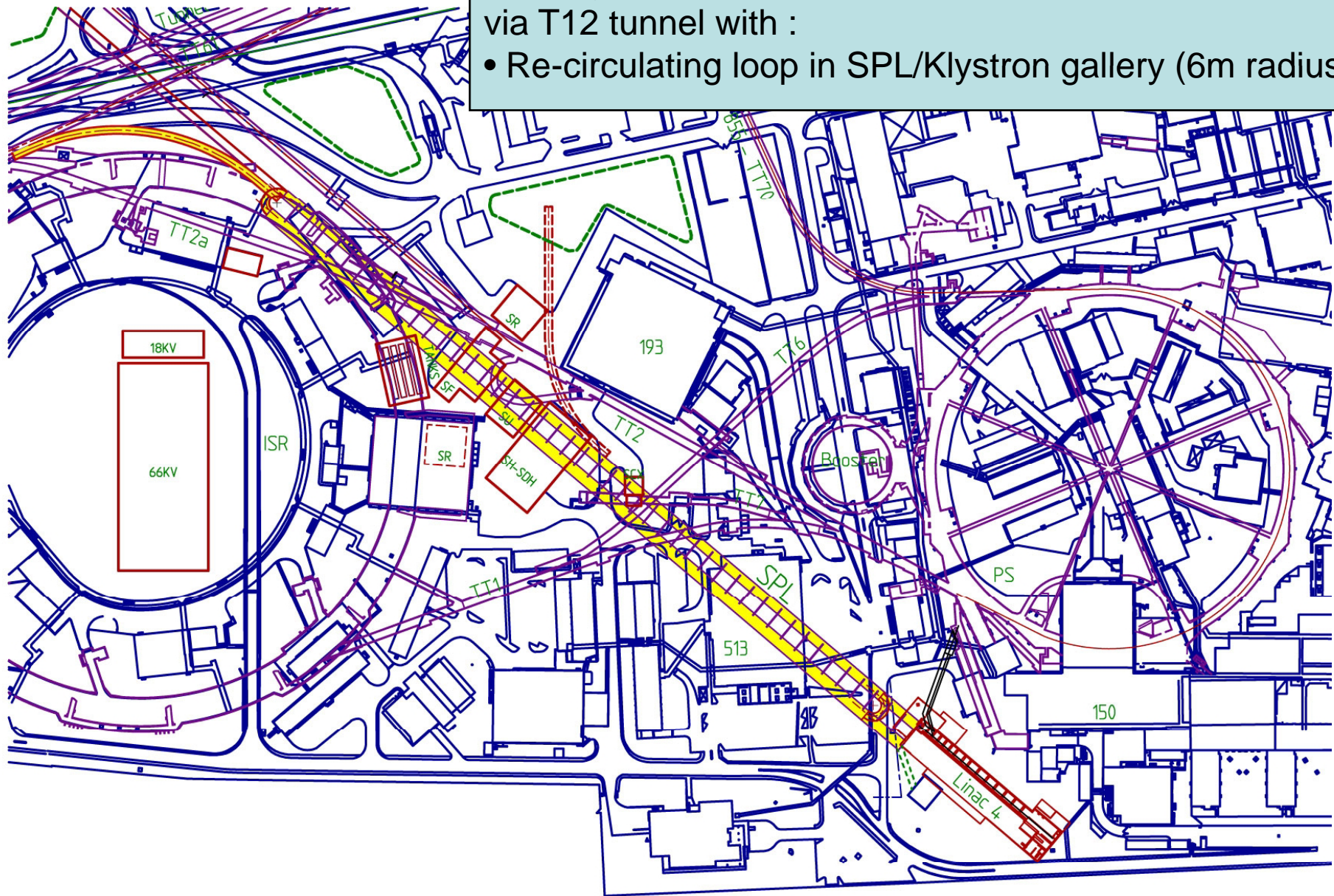


New Injector from future SPL to Point 2 (ALICE) via T12 tunnel (120m radius)



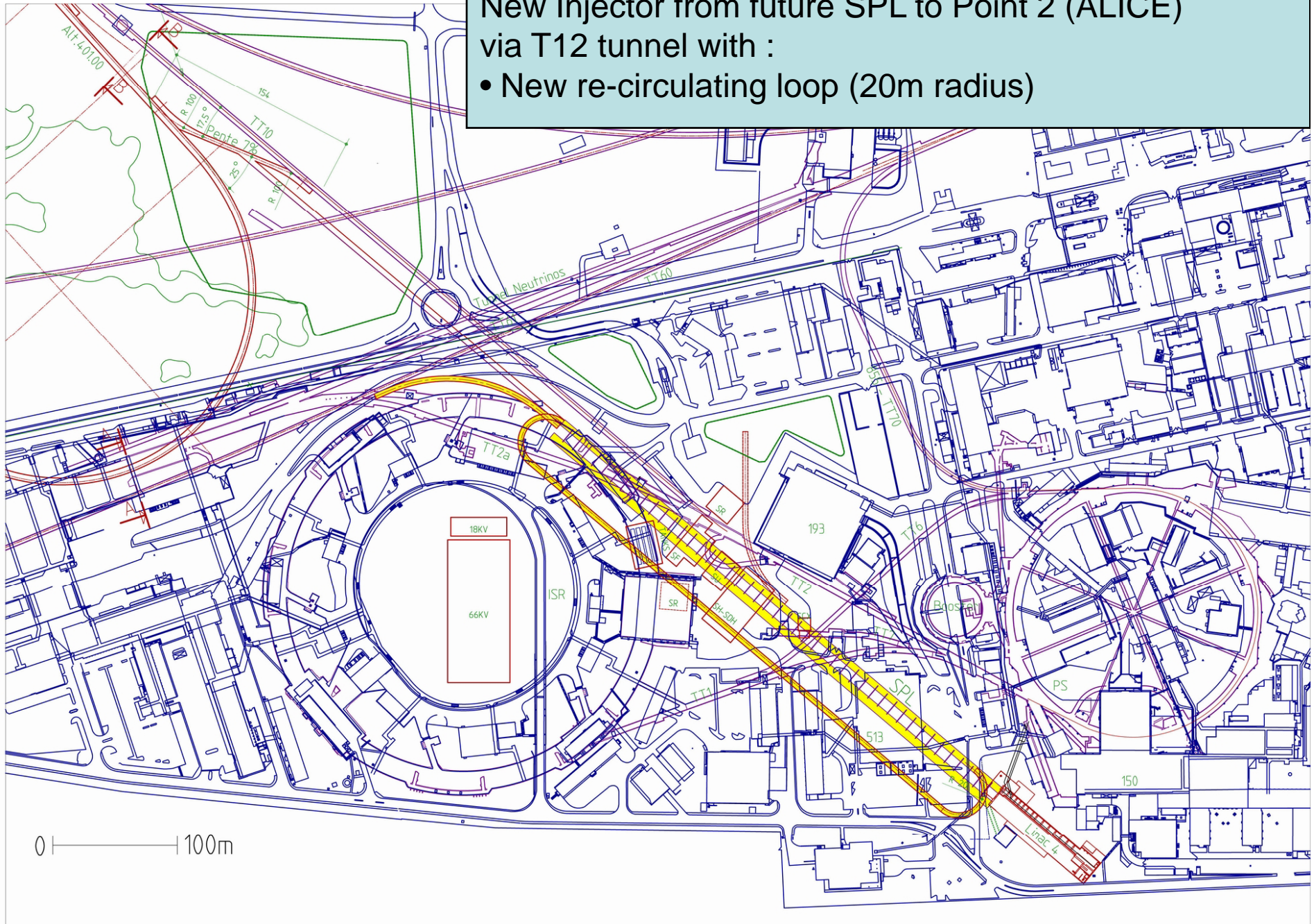
New Injector from future SPL to Point 2 (ALICE) via T12 tunnel with :

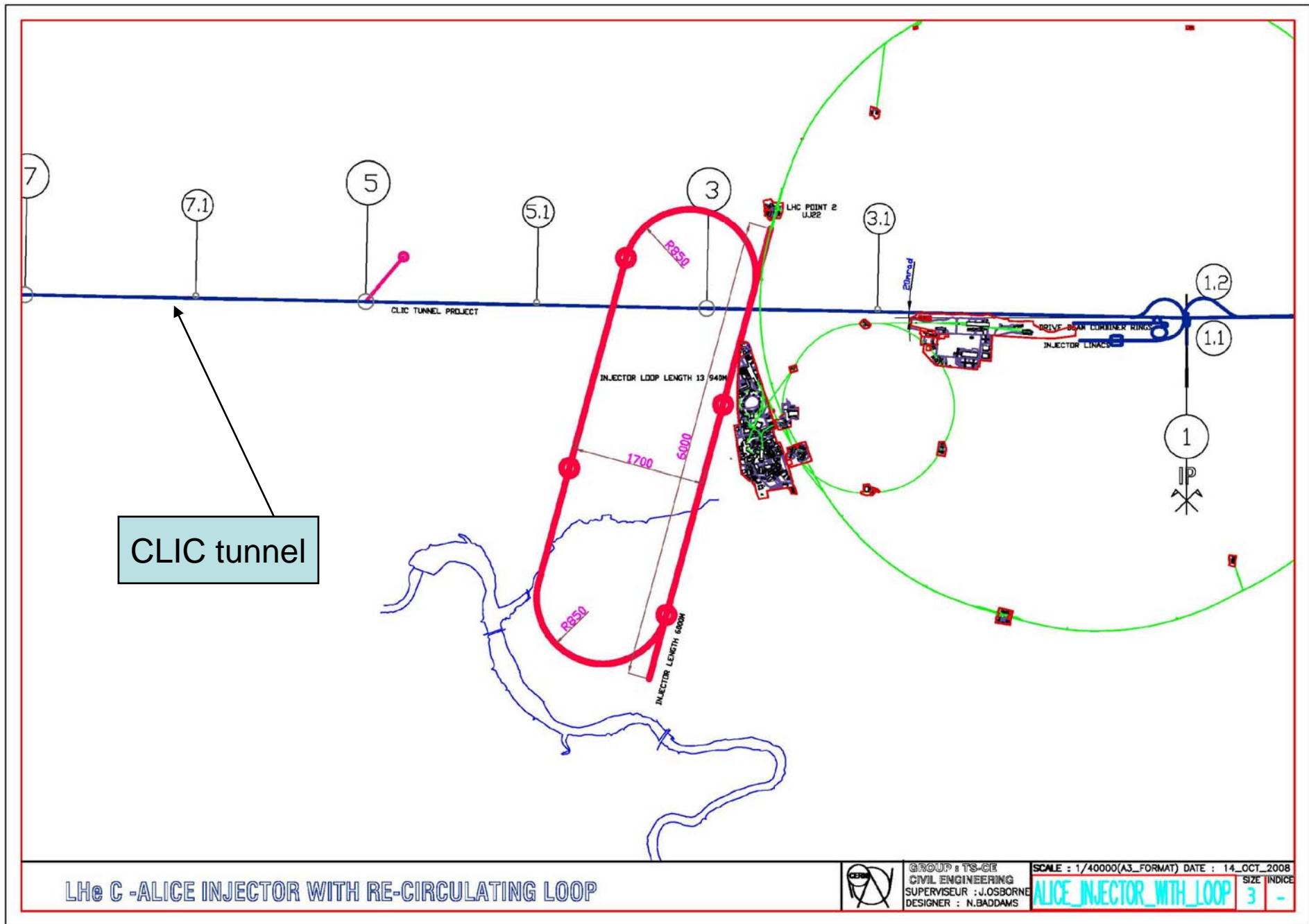
- Re-circulating loop in SPL/Klystron gallery (6m radius)



New Injector from future SPL to Point 2 (ALICE) via T12 tunnel with :

- New re-circulating loop (20m radius)





CLIC tunnel

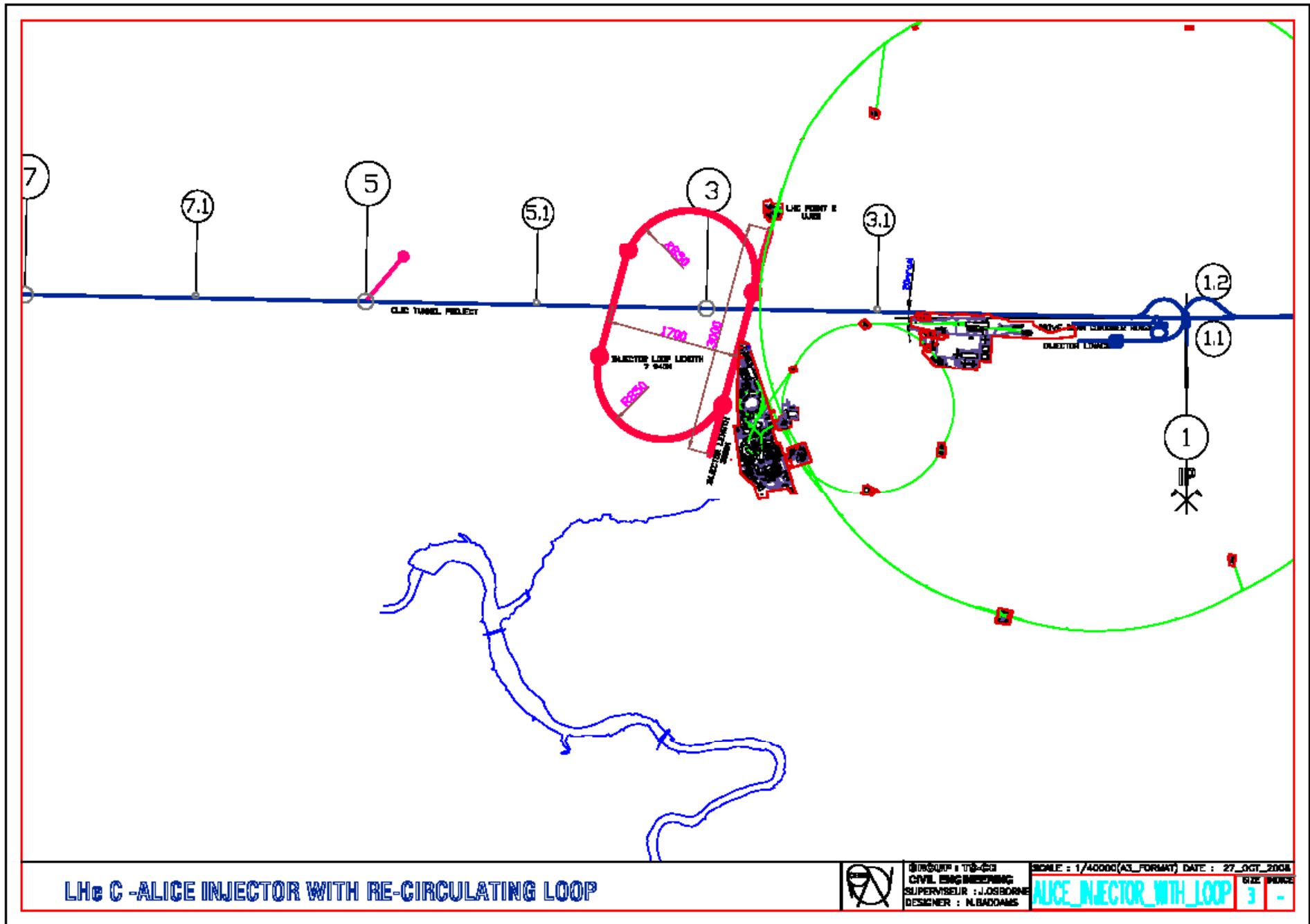
LHC C -ALICE INJECTOR WITH RE-CIRCULATING LOOP

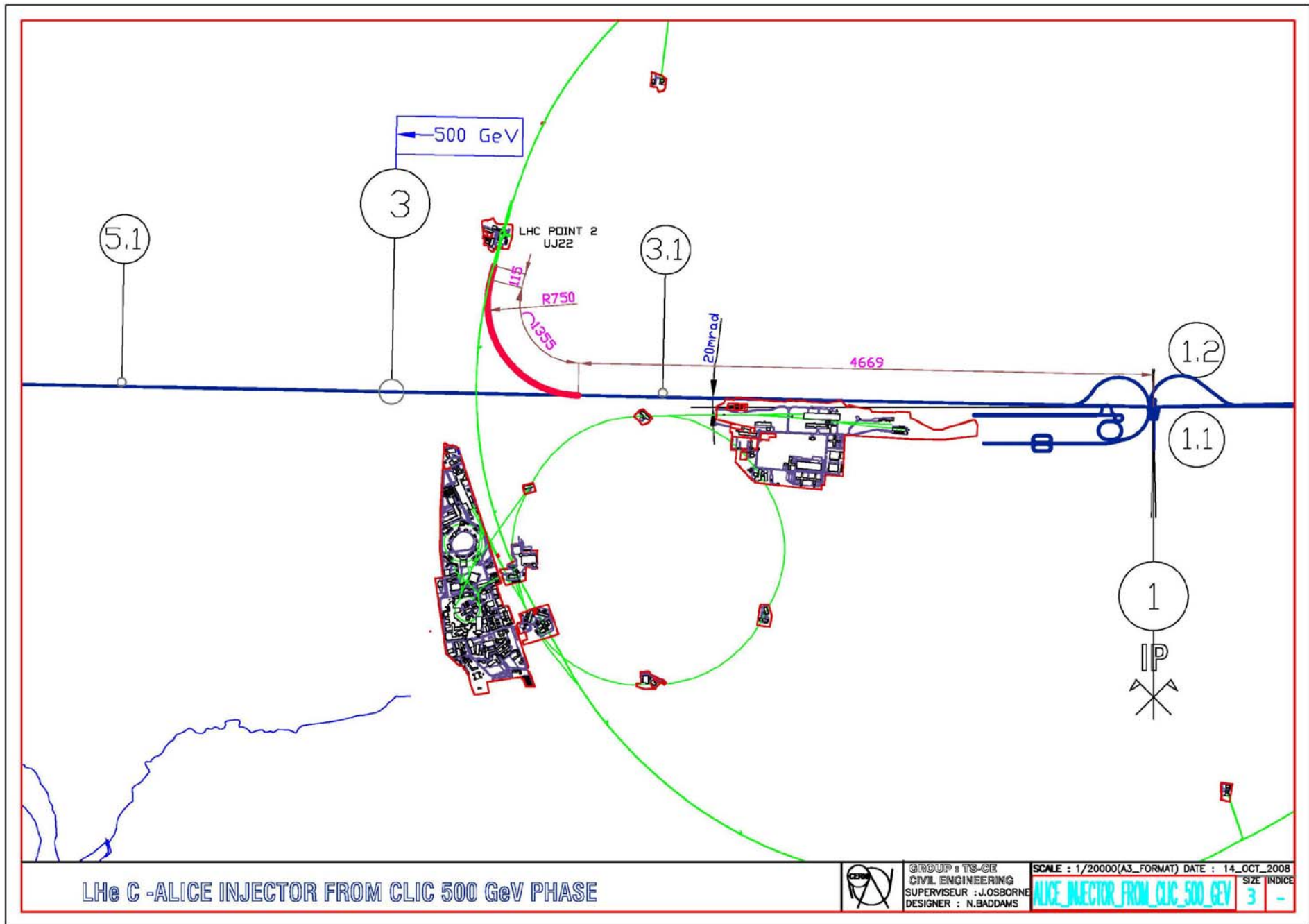


GROUP : TS-GE
 CIVIL ENGINEERING
 SUPERVISEUR : J.OSBORNE
 DESIGNER : N.BADDAMS

SCALE : 1/40000(A3_FORMAT) DATE : 14_OCT_2008

ALICE_INJECTOR_WITH_LOOP 3 -





LHe C -ALICE INJECTOR FROM CLIC 500 GeV PHASE



GROUP : TS-CF
 CIVIL ENGINEERING
 SUPERVISEUR : J.OSBORNE
 DESIGNER : N.BADDAMS

SCALE : 1/20000(A3_FORMAT) DATE : 14_OCT_2008
 ALICE_INJECTOR_FROM_CLIC_500_GEV SIZE INDICE 3 -

