



CLIC Tunnel Layout and Cross-Section

J.Osborne CERN TS-CE

On behalf of CES Working Group (which includes **ILC** members)

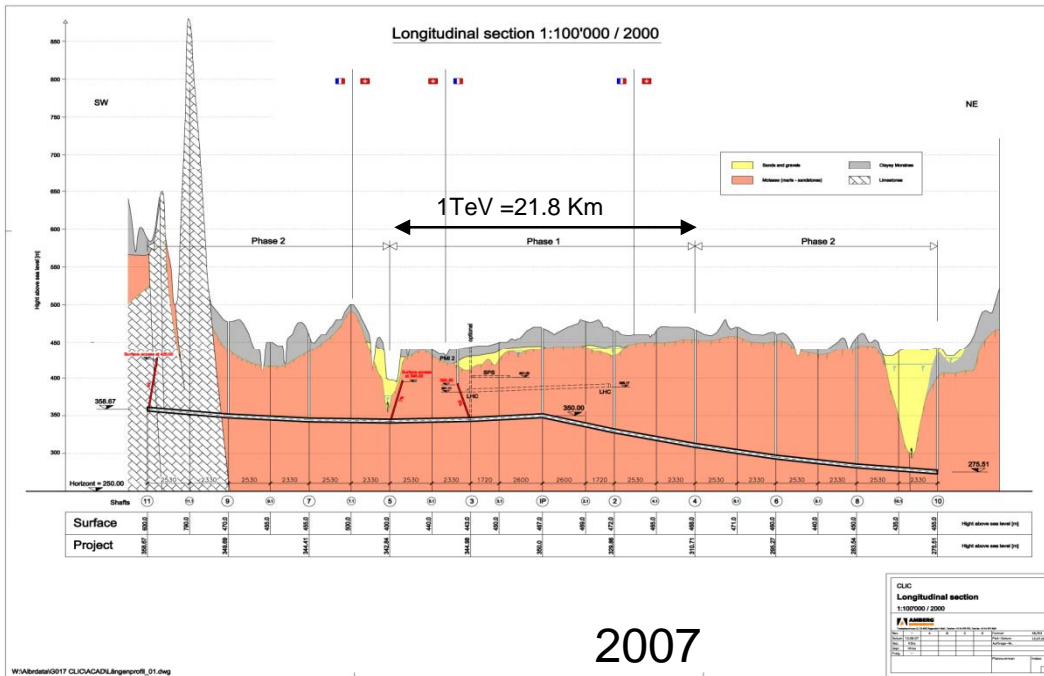
CLIC08 Workshop – 15 October 2008

Main modifications / progress to civil engineering layouts in 2008:

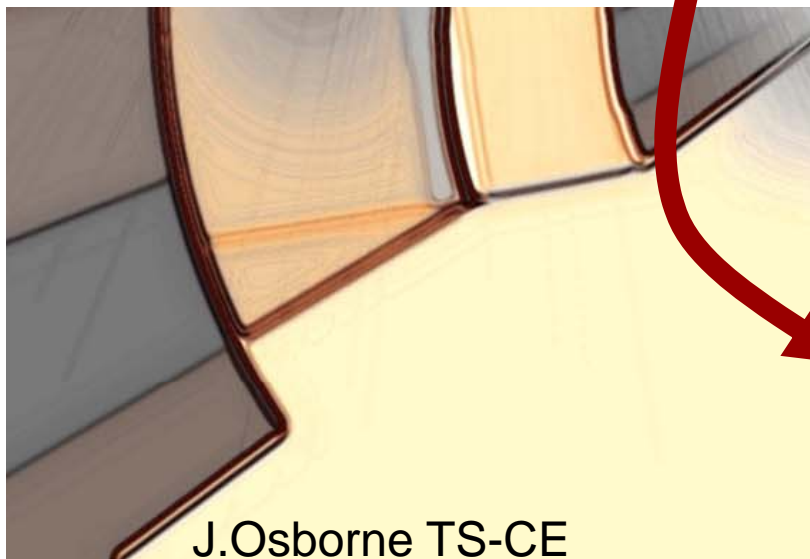
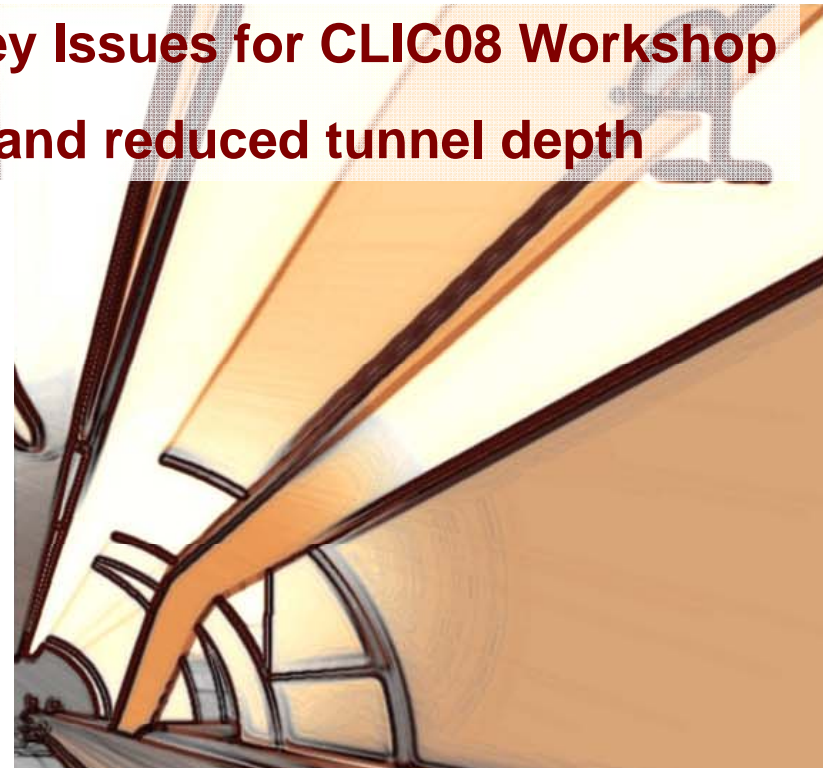
- 500 GeV phase introduced
- New Longitudinal Section – reduced depth
- New Layout – Beam dumps at variable positions
- 3d modelling for turnarounds
- Cross section studies

Civil Engineering and Services (CES) : Key Issues for CLIC08 Workshop

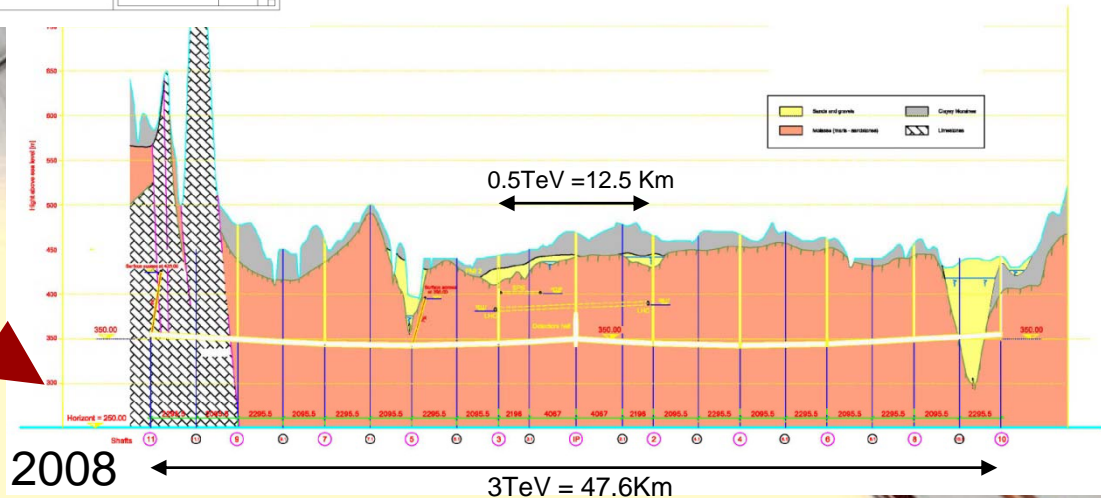
New Long Profile with 0.5TeV phase and reduced tunnel depth



2007



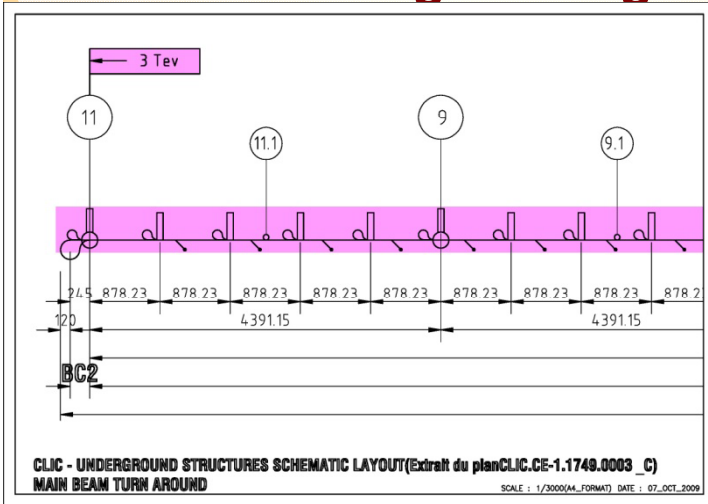
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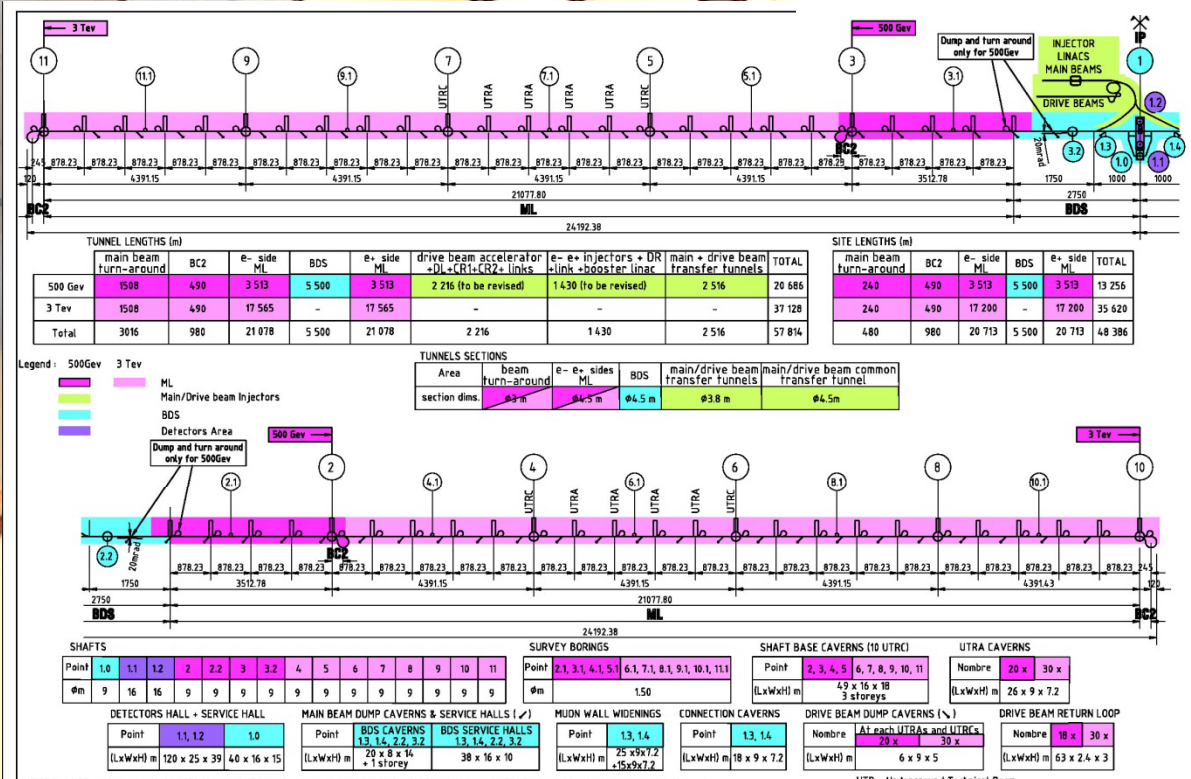
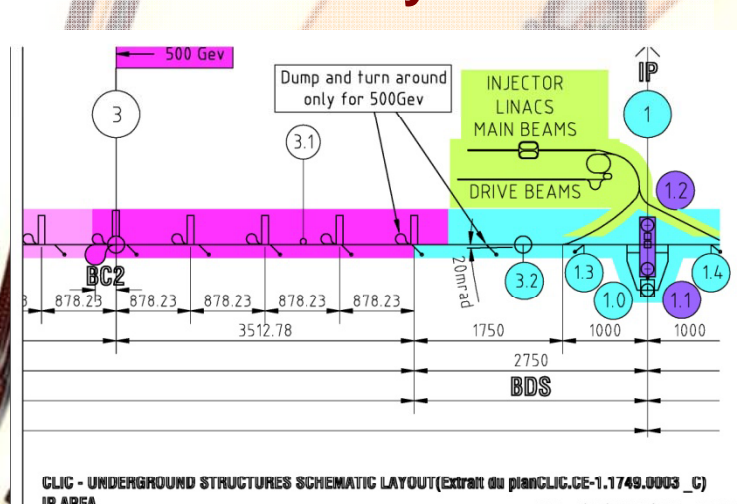
2008

3TeV = 47.6Km

Civil Engineering and Services (CES) : New Tunnel Layout



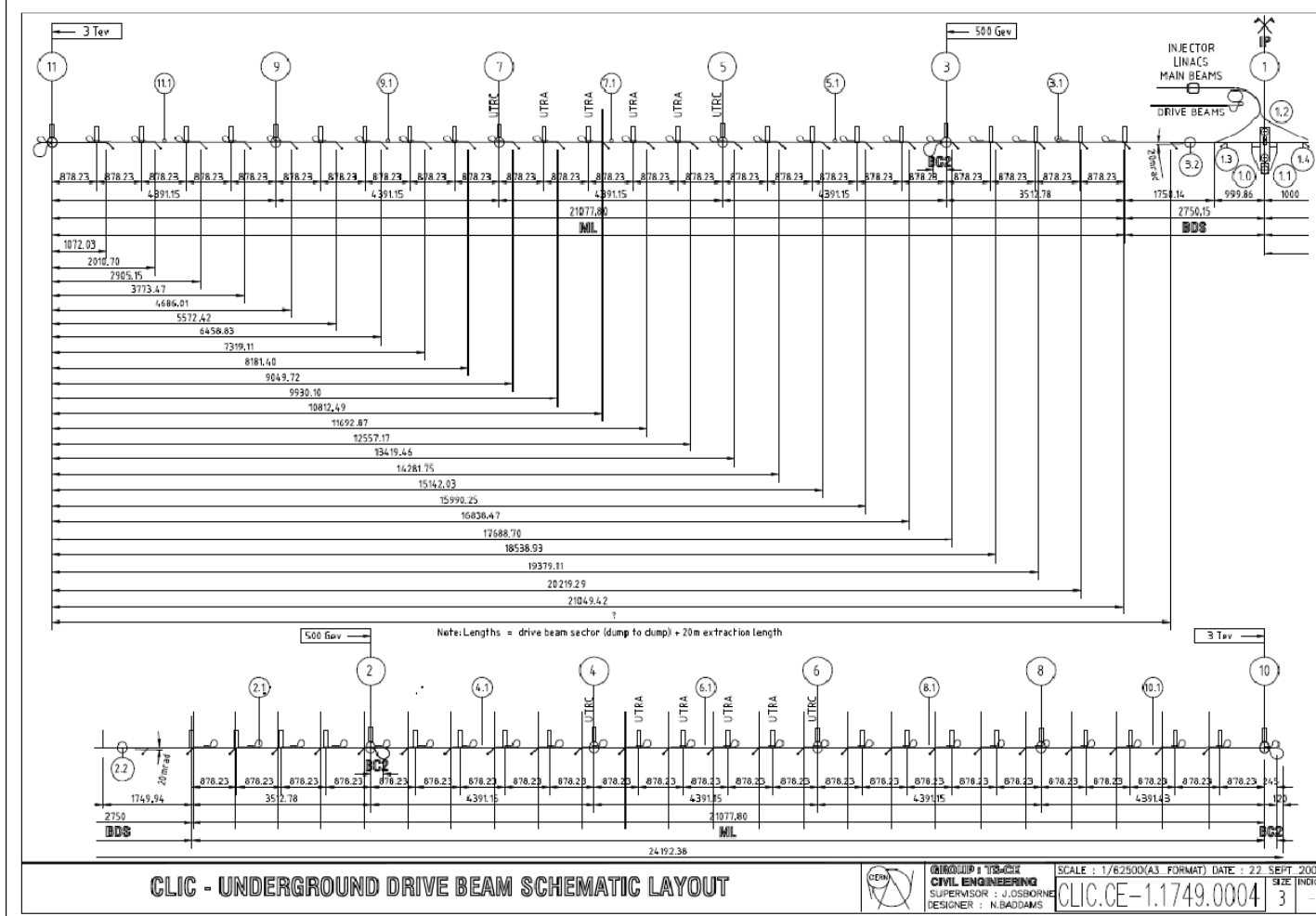
3TeV and 500Gev Phases



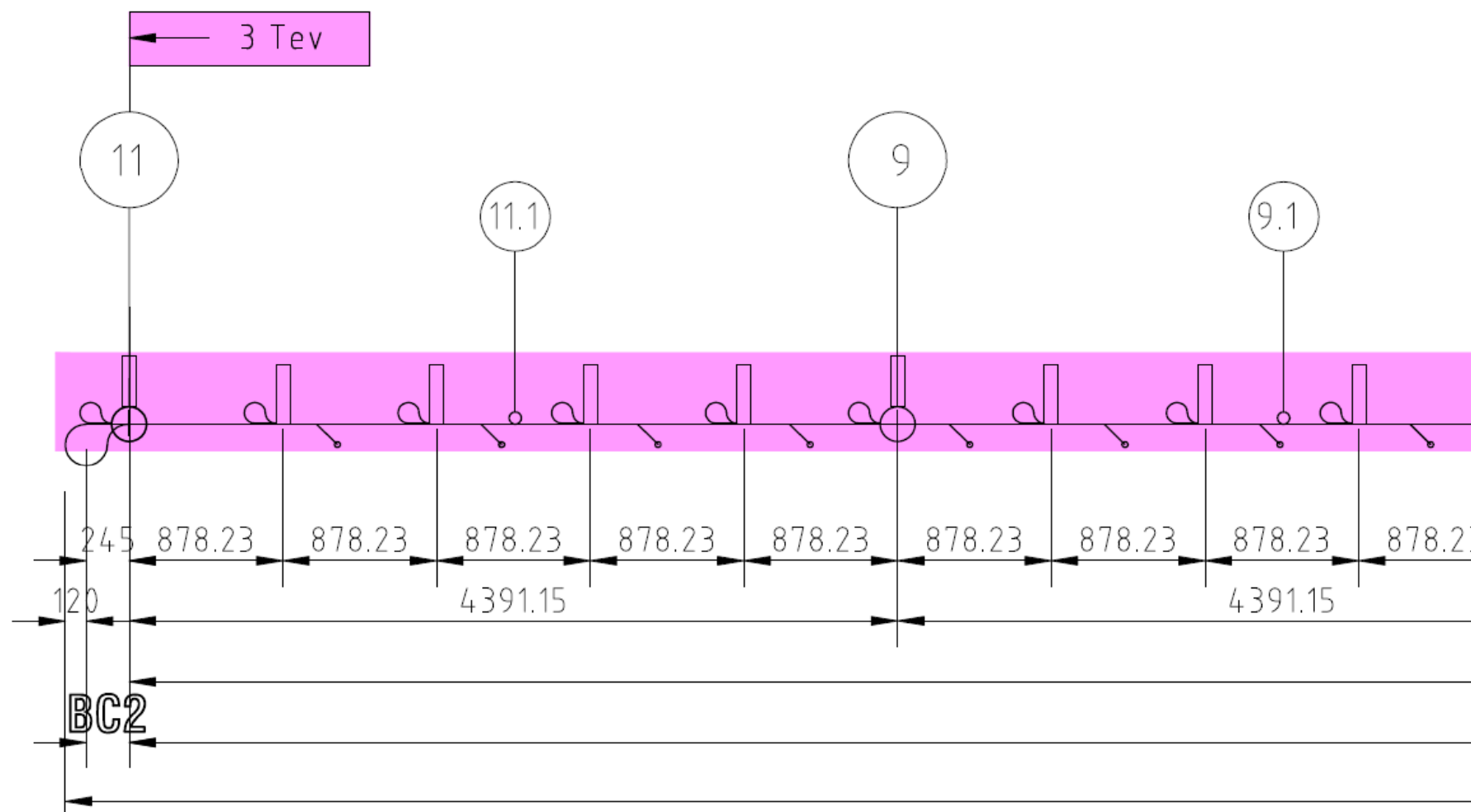
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Sector #	Drive Beam sector (dump to dump) [m]	TL sector (Turn-around to turn-around) [m]	Delay [m]	Drive Beam sector (dump to dump) [m]	TL sector (Turn-around to turn-around) [m]
0	0.8	0	0.8	0.8	0
1	1052.03	878.23	173.8	1051.23	878.23
2	1990.7	1756.46	234.24	1938.67	878.23
3	2885.15	2634.69	250.46	2894.45	878.23
4	3753.47	3512.92	240.55	3668.32	878.23
5	4666.01	4391.15	274.86	4512.54	878.23
6	5552.42	5269.38	283.04	5386.41	878.23
7	6438.83	6147.61	291.22	6260.28	878.23
8	7299.11	7025.84	273.27	7062.29	878.23
9	8161.4	7904.07	257.33	7922.9	878.23
10	9029.72	8782.3	247.42	8782.3	878.23
11	9910.1	9660.53	249.57	9660.53	878.23
12	10792.49	10538.76	253.73	10538.76	878.23
13	11672.87	11416.99	255.88	11416.99	878.23
14	12537.17	12295.22	241.95	12295.22	878.23
15	13399.46	13173.45	226.01	13173.45	878.23
16	14261.75	14051.68	210.07	14051.68	878.23
17	15122.03	14929.91	192.12	14929.91	878.23
18	15970.25	15808.14	162.11	15808.14	878.23
19	16818.47	16686.37	132.1	16686.37	878.23
20	17668.7	17564.6	104.1	17564.6	878.23
21	18518.93	18442.83	76.1	18442.83	878.23
22	19359.11	19321.06	38.05	19321.06	878.23
23	20199.29	20199.29	0	20199.29	878.23
24	21029.42	21029.42	0	21029.42	878.23
Total =	4668.78			21029.42	20199.29

**Extract from CLIC
 Technical Committee :
 G. Riddone, D. Schulte,
 2008.007.14**

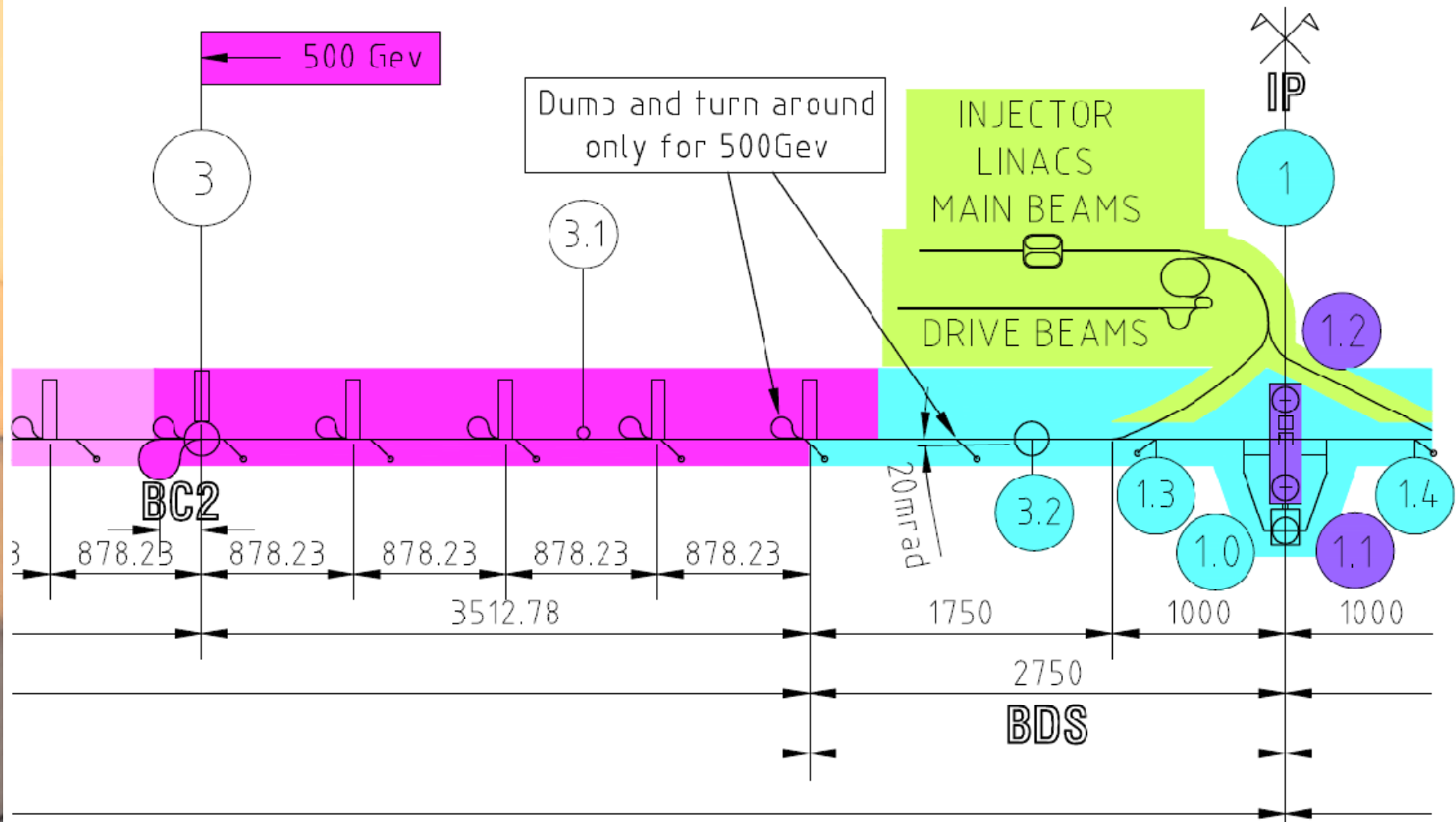


CLIC - UNDERGROUND DRIVE BEAM SCHEMATIC LAYOUT



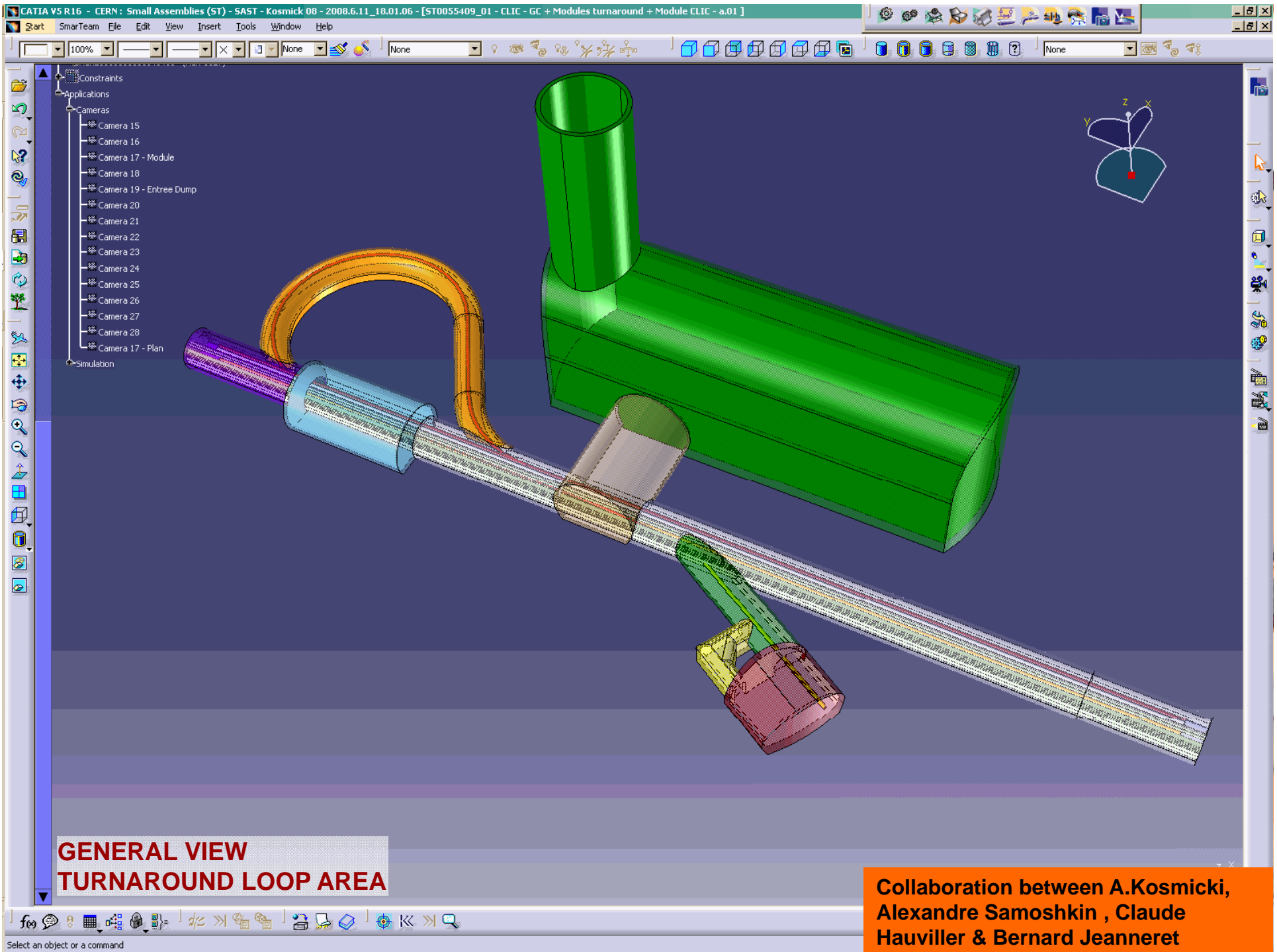
CLIC - UNDERGROUND STRUCTURES SCHEMATIC LAYOUT(Extrait du planCLIC.CE-1.1749.0003 _B)
 MAIN BEAM TURN AROUND

SCALE : 1/3000(A4_FORMAT) DATE : 22_SEPT_2009



CLIC - UNDERGROUND STRUCTURES SCHEMATIC LAYOUT (Extrait du plan CLIC.CE-1.1749.0003_B)
IP AREA

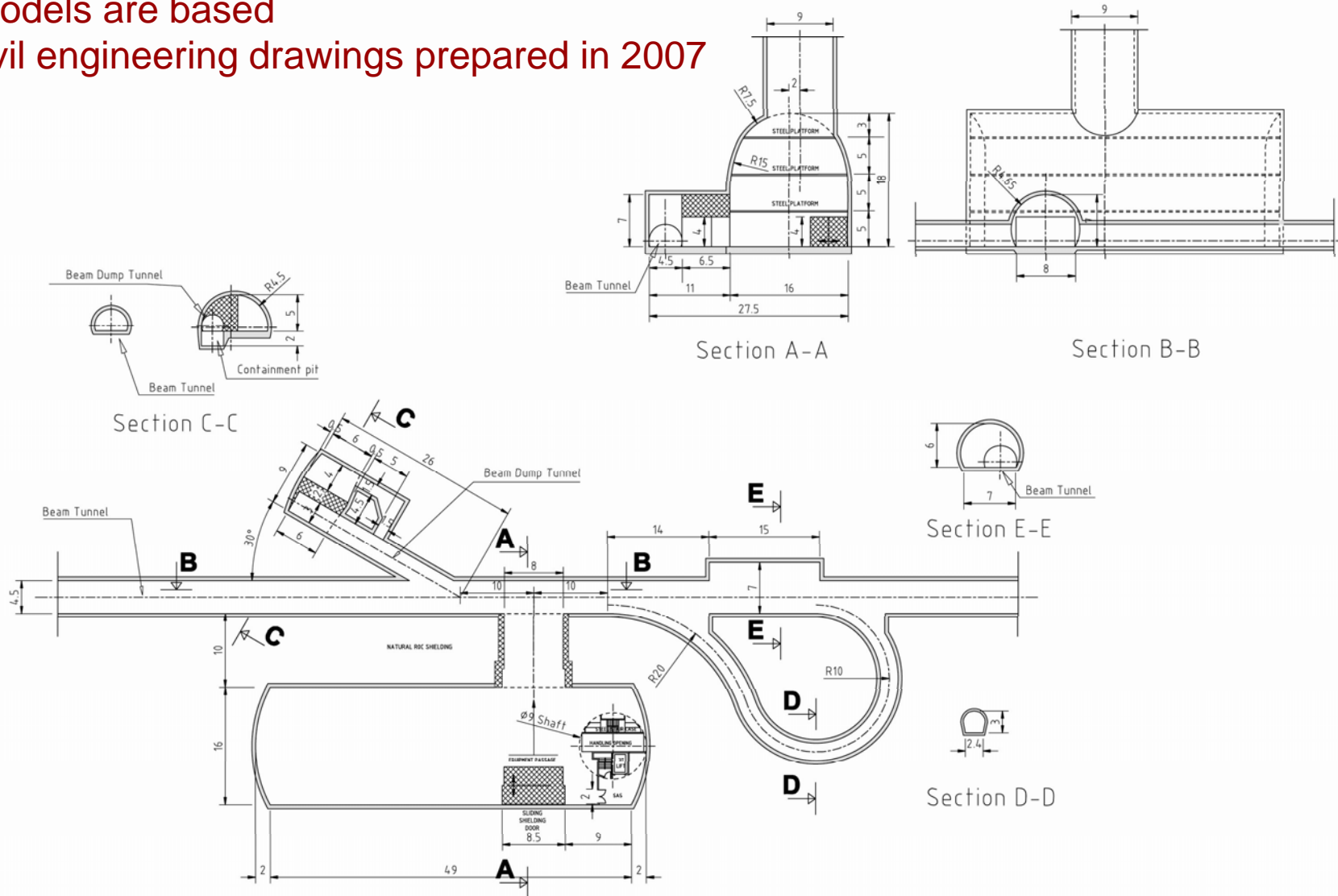
SCALE : 1/3000(A4_FORMAT) DATE : 22_SEPT_2009



**GENERAL VIEW
TURNAROUND LOOP AREA**

**Collaboration between A.Kosmicki,
Alexandre Samoshkin , Claude
Hauviller & Bernard Jeanneret**

3D models are based
on civil engineering drawings prepared in 2007



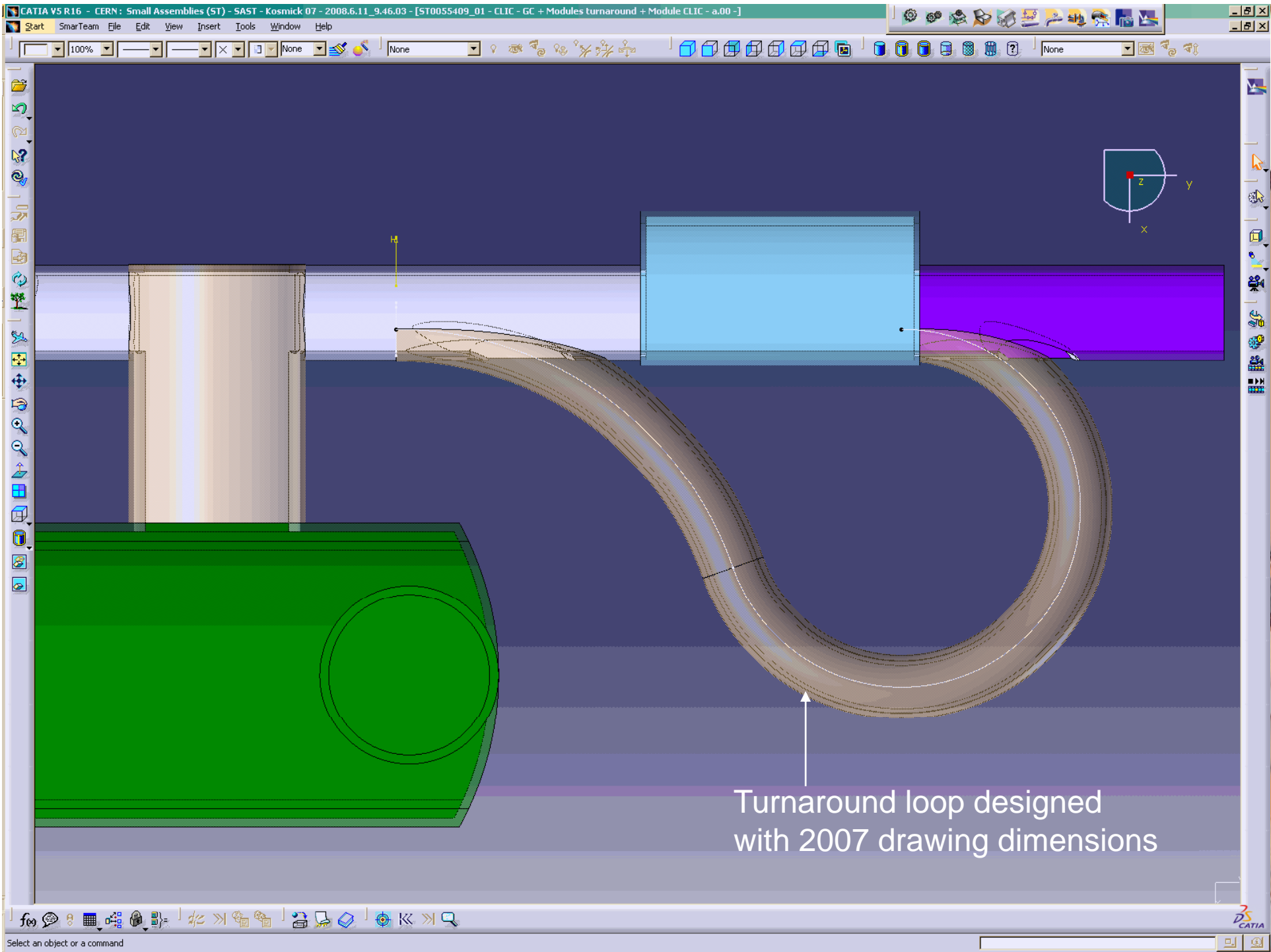
CLIC - UTRC CAVERN, DRIVE BEAM LOOP AND BEAM DUMP



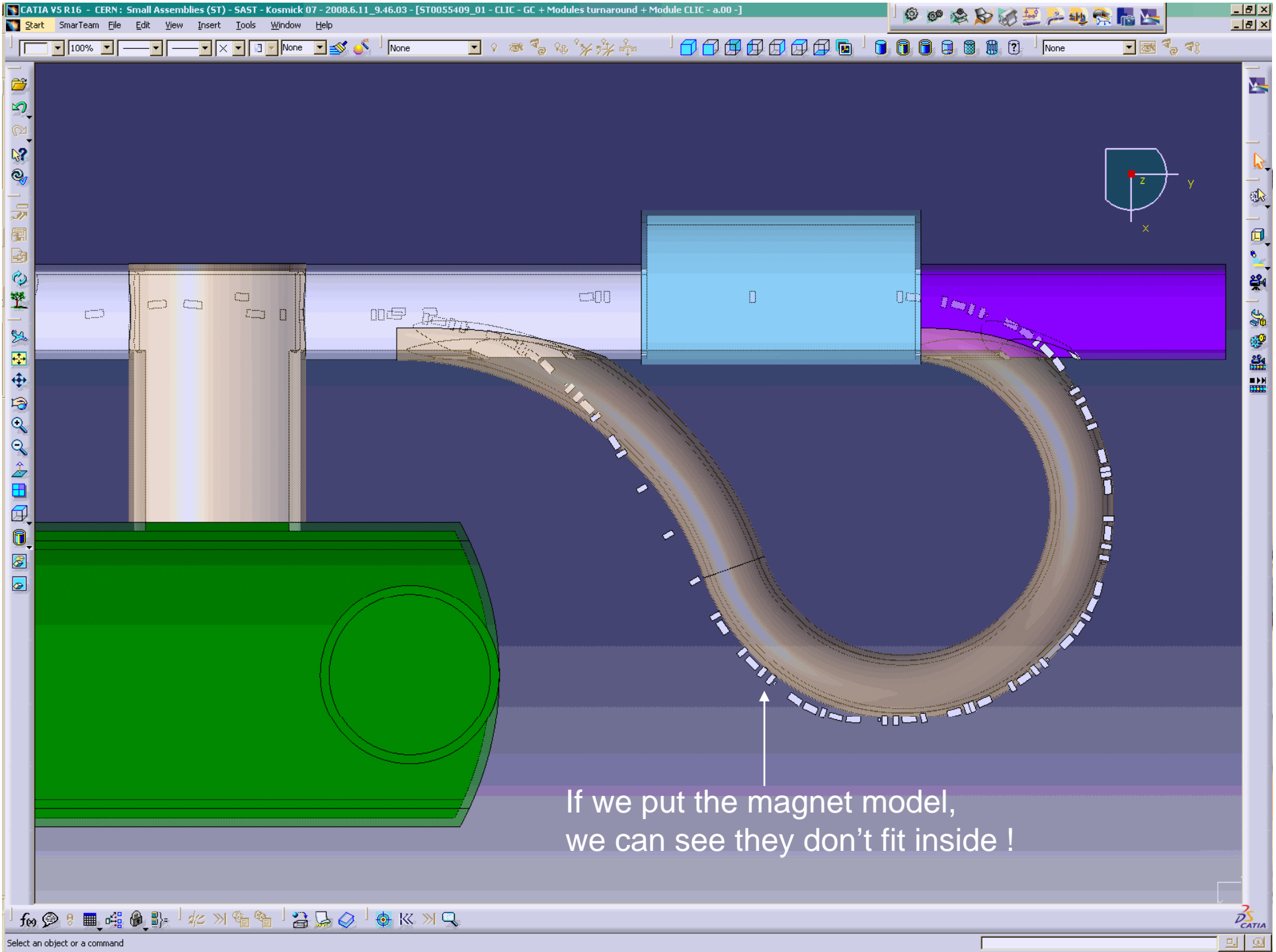
GROUP : TS-GE
CIVIL ENGINEERING
SUPERVISOR : J.L.BALDY
DESIGNER : N.BADDAMS

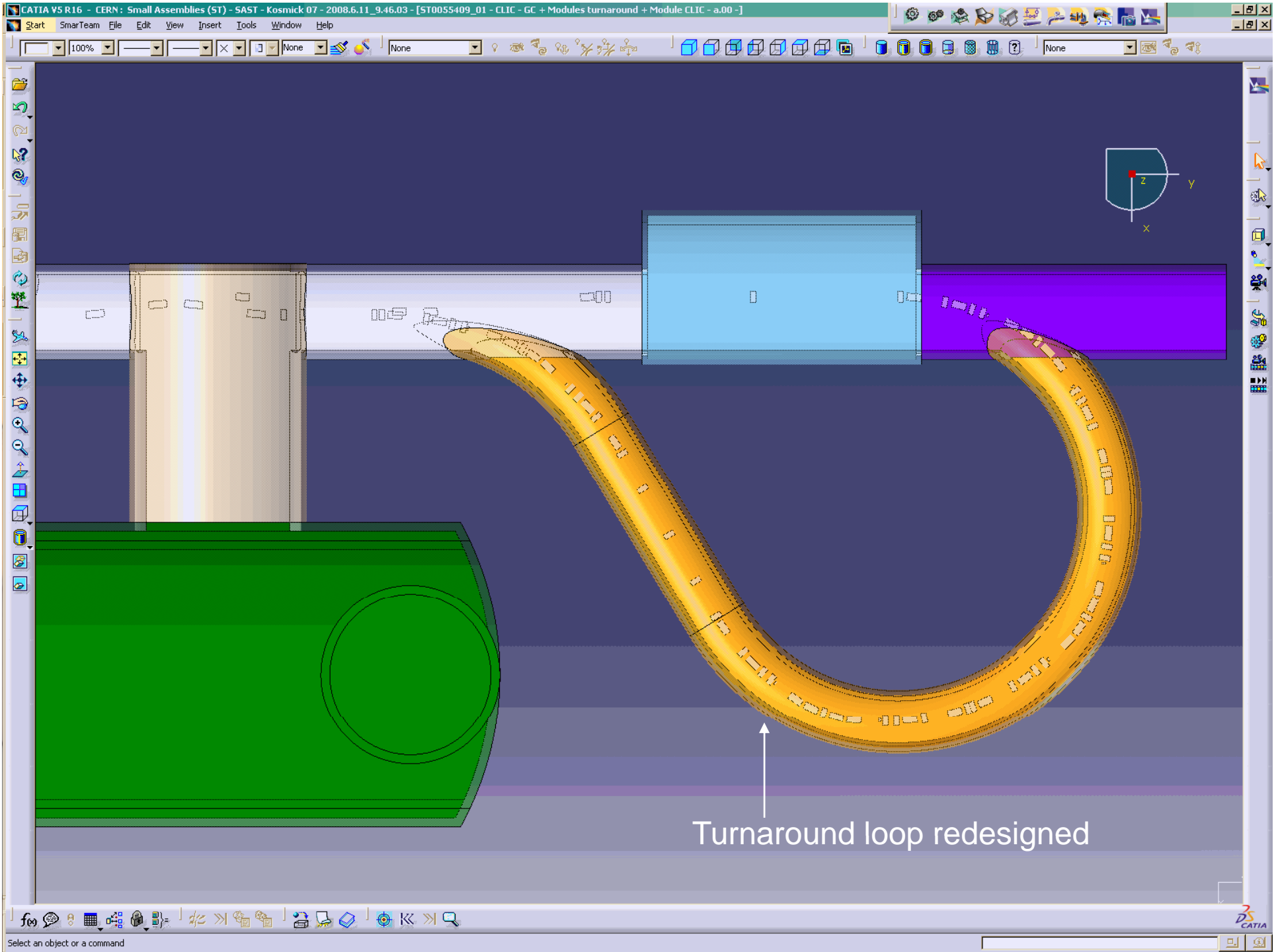
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CLIC-UTRC-1.1/10.0001 3 A

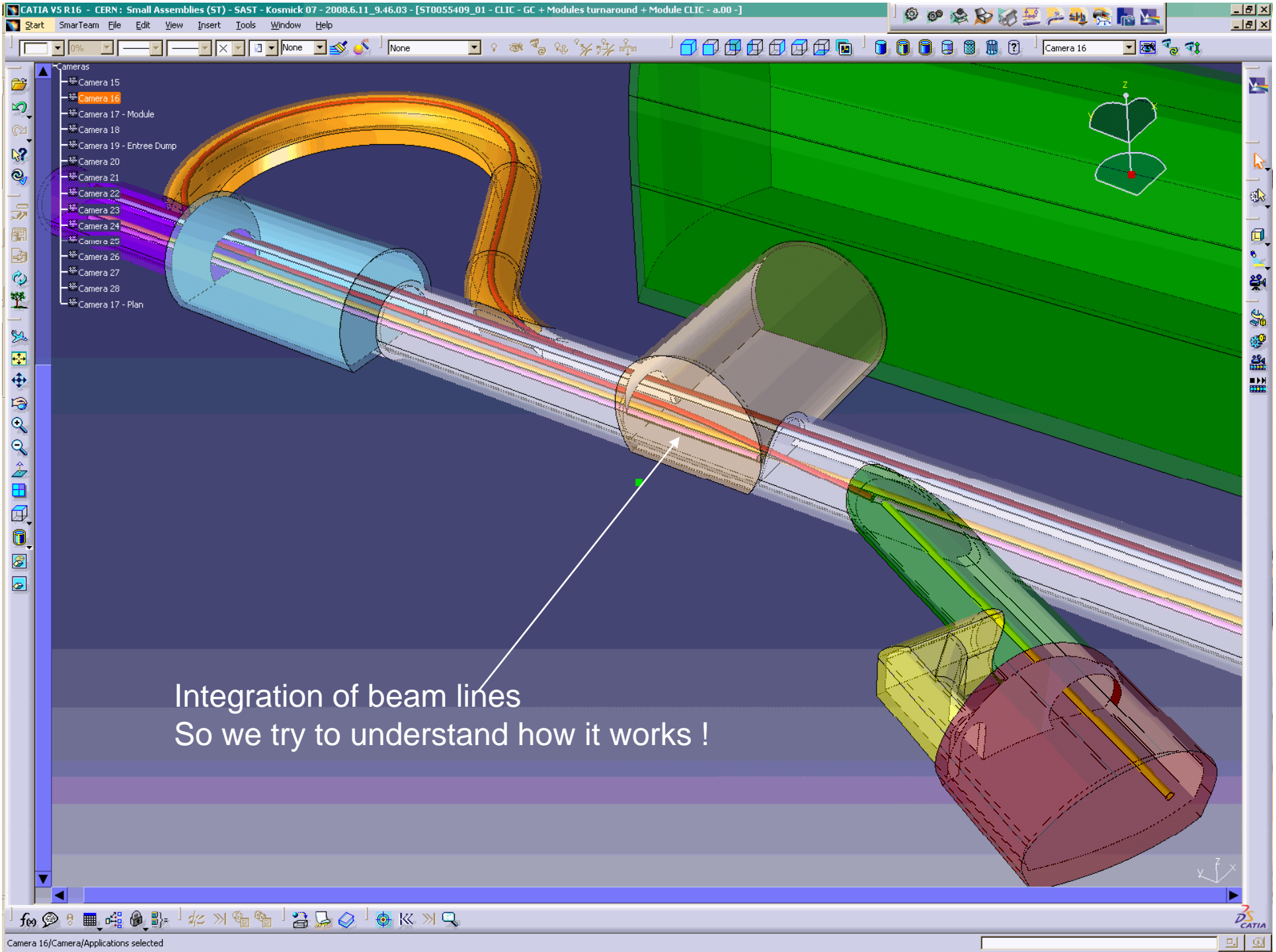


Turnaround loop designed with 2007 drawing dimensions





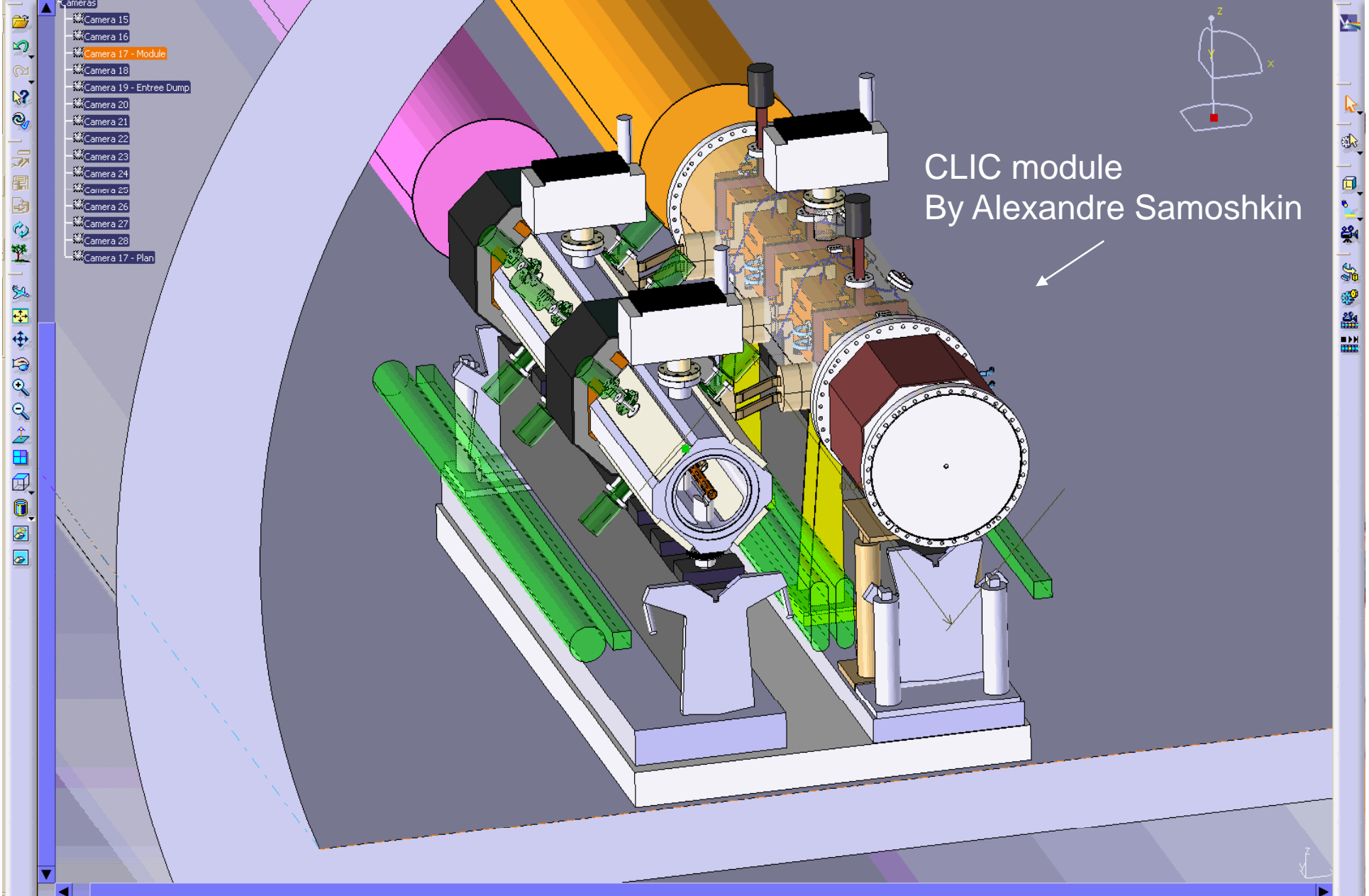
Turnaround loop redesigned



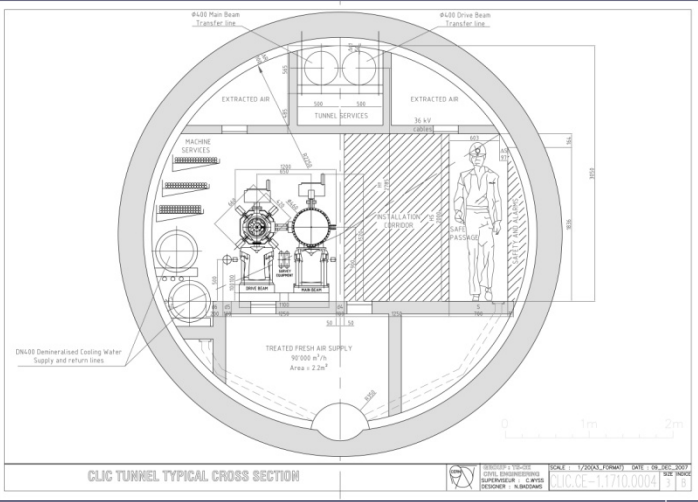
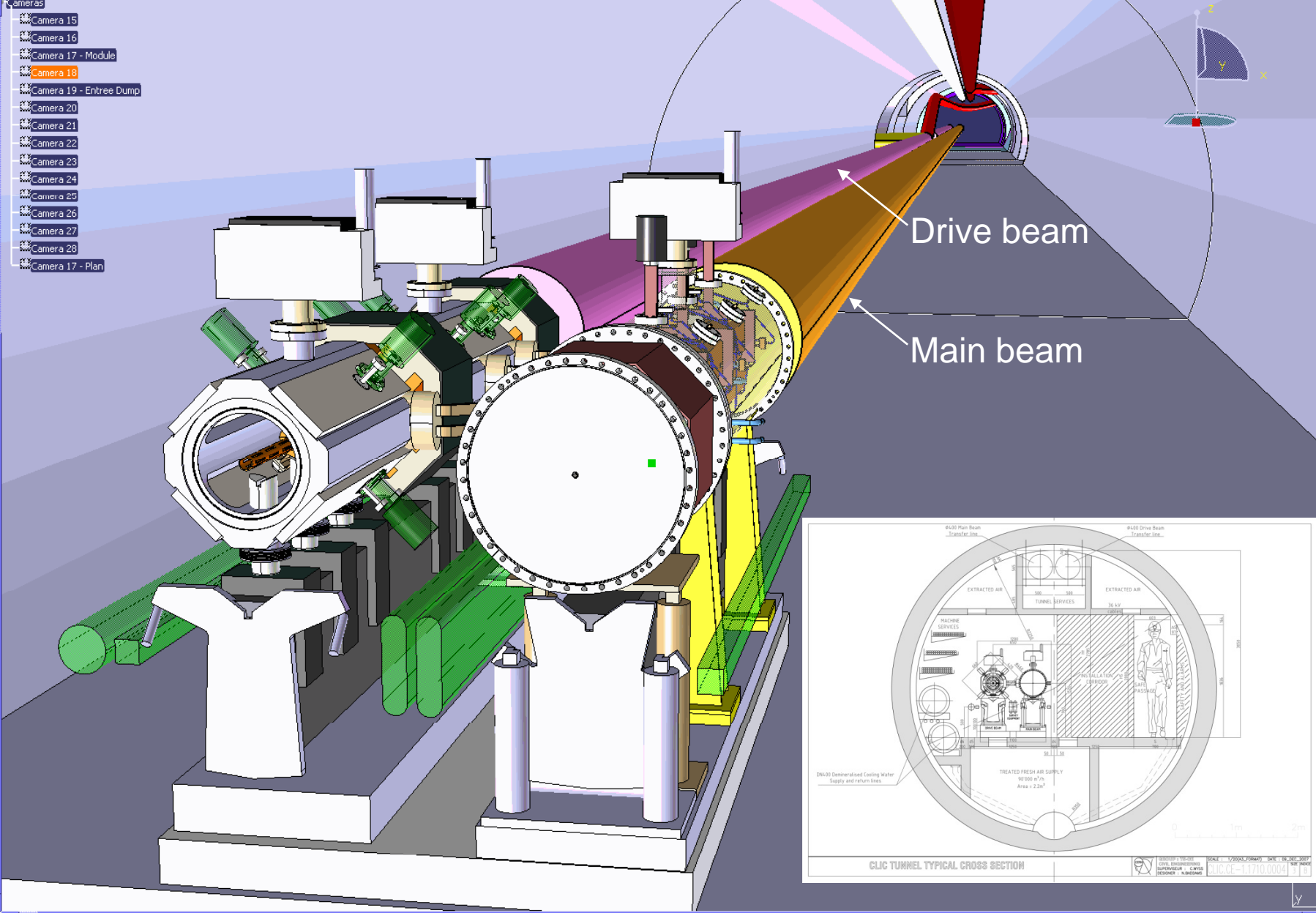
Integration of beam lines
So we try to understand how it works !

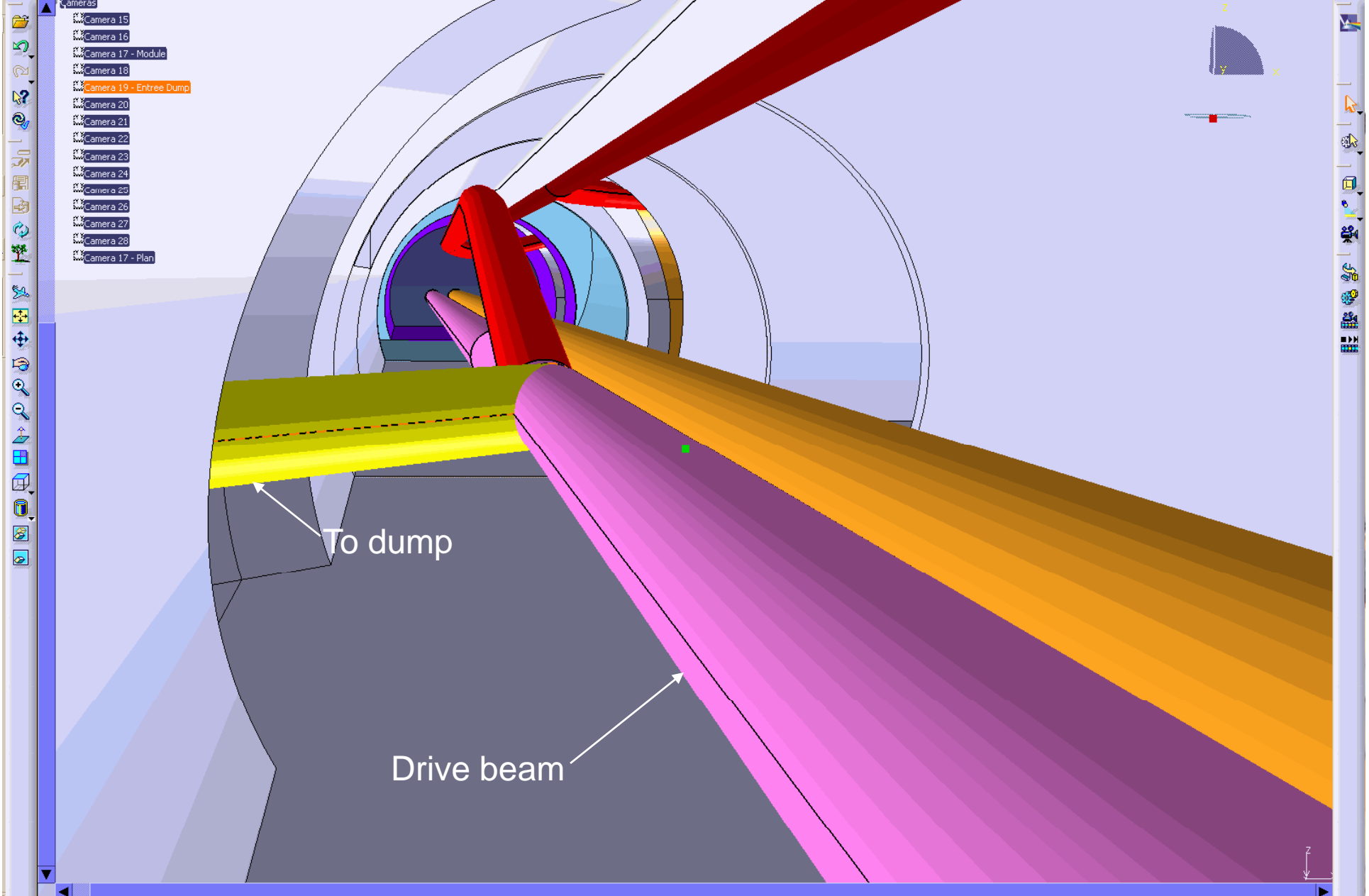
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- Camera 15
- Camera 16
- Camera 17 - Module
- Camera 18
- Camera 19 - Entree Dump
- Camera 20
- Camera 21
- Camera 22
- Camera 23
- Camera 24
- Camera 25
- Camera 26
- Camera 27
- Camera 28
- Camera 17 - Plan

CLIC module
By Alexandre Samoshkin



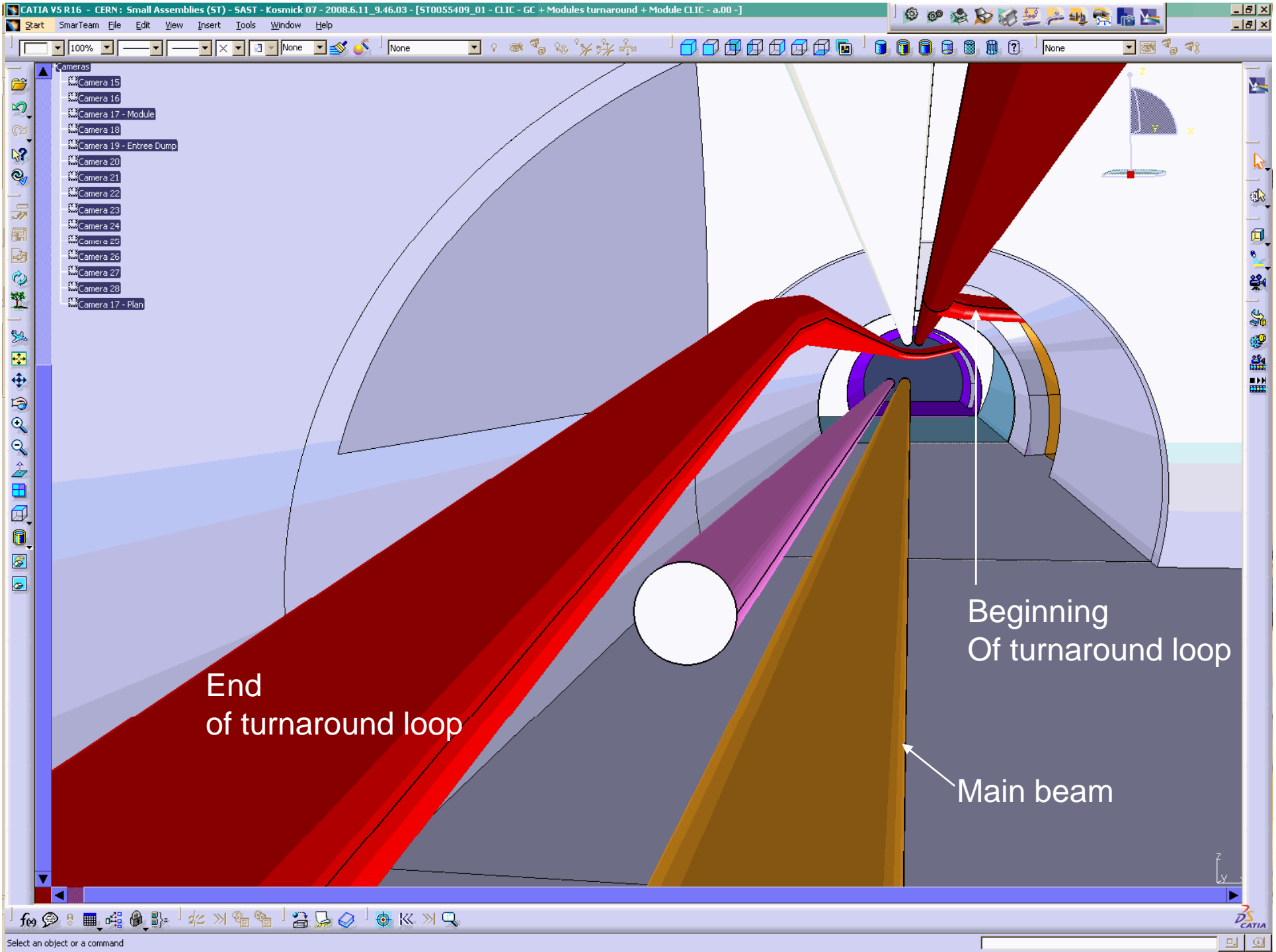
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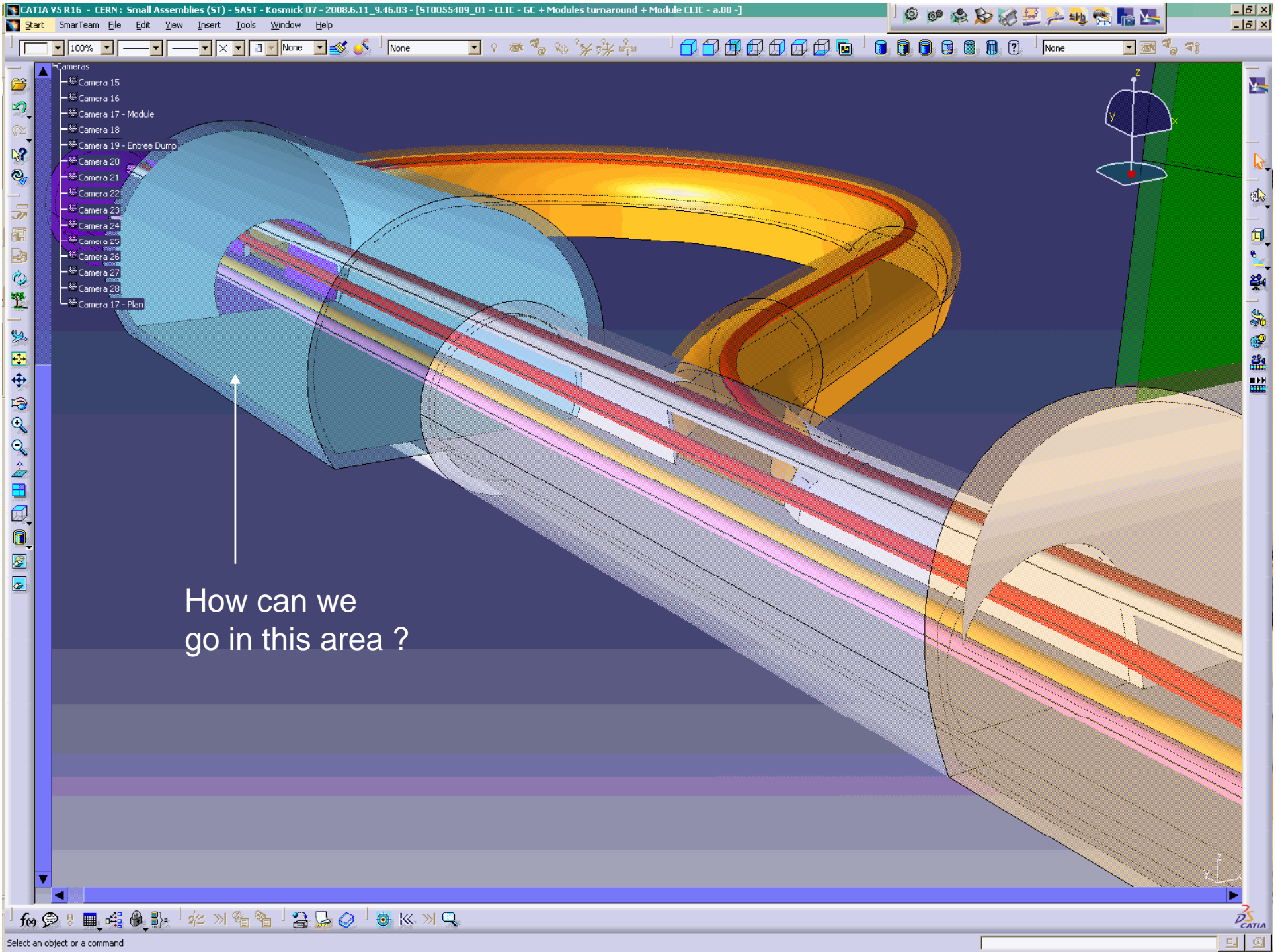




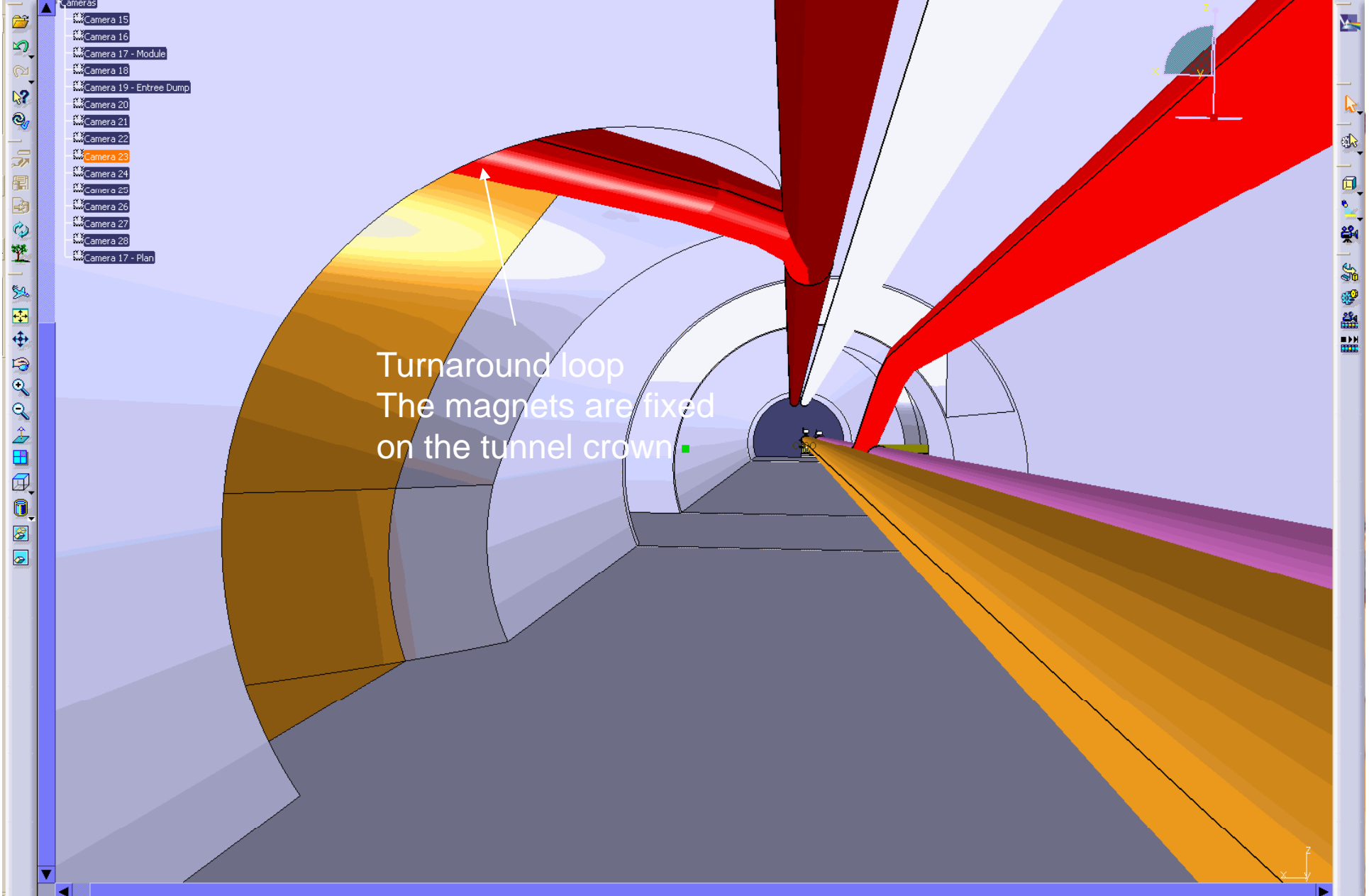
To dump

Drive beam



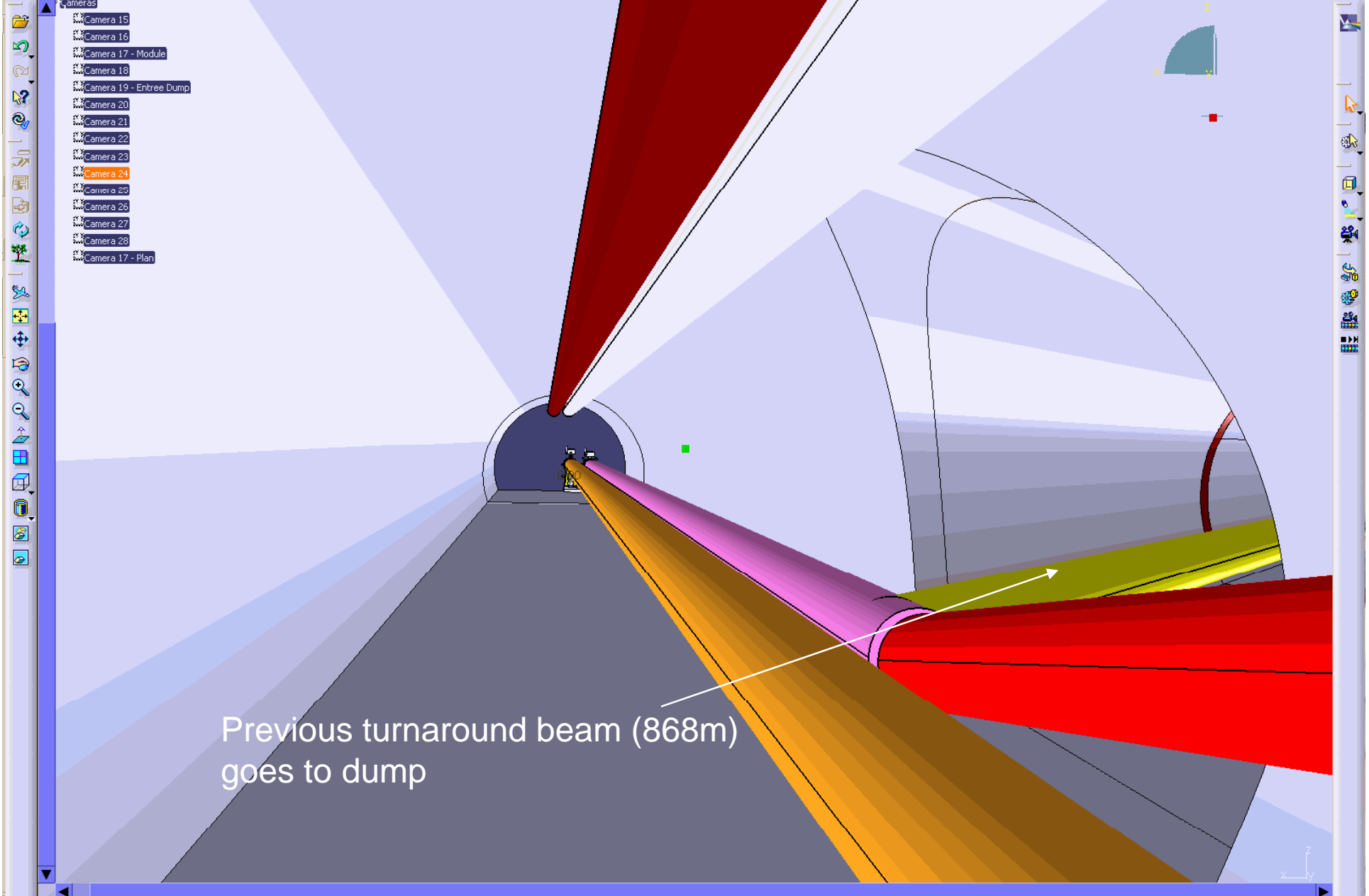


How can we go in this area ?



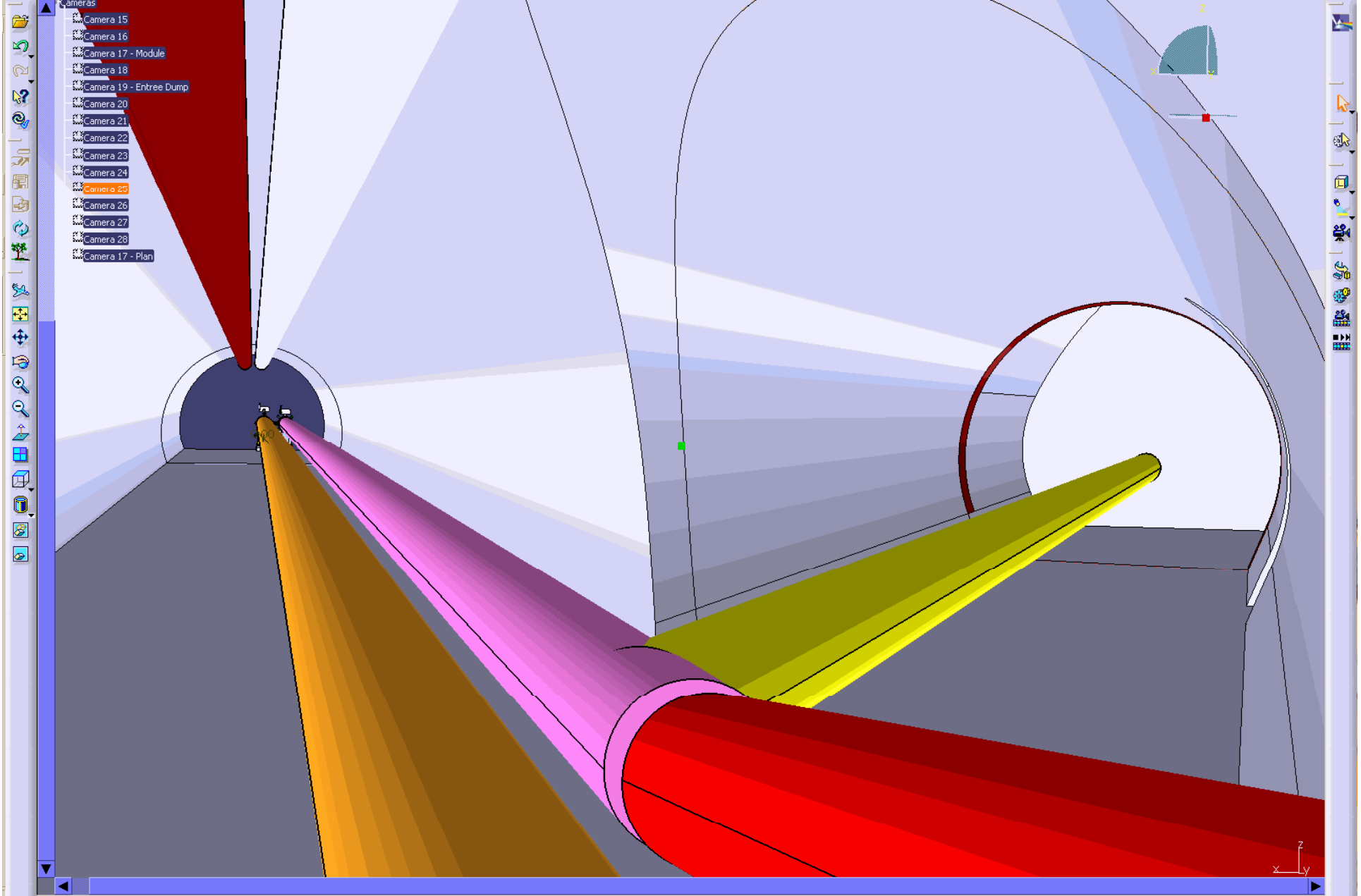
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Turnaround loop
The magnets are fixed
on the tunnel crown.

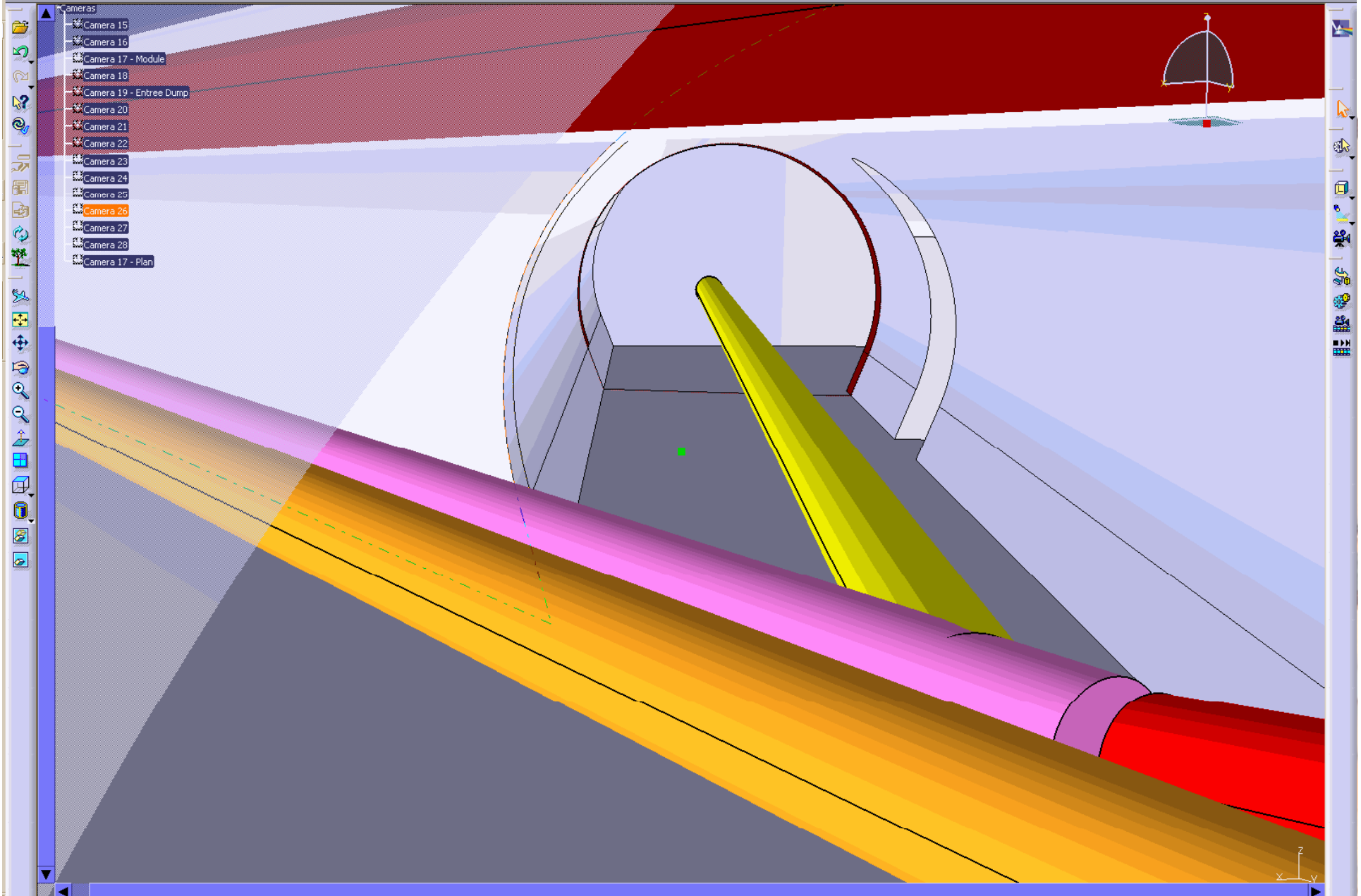


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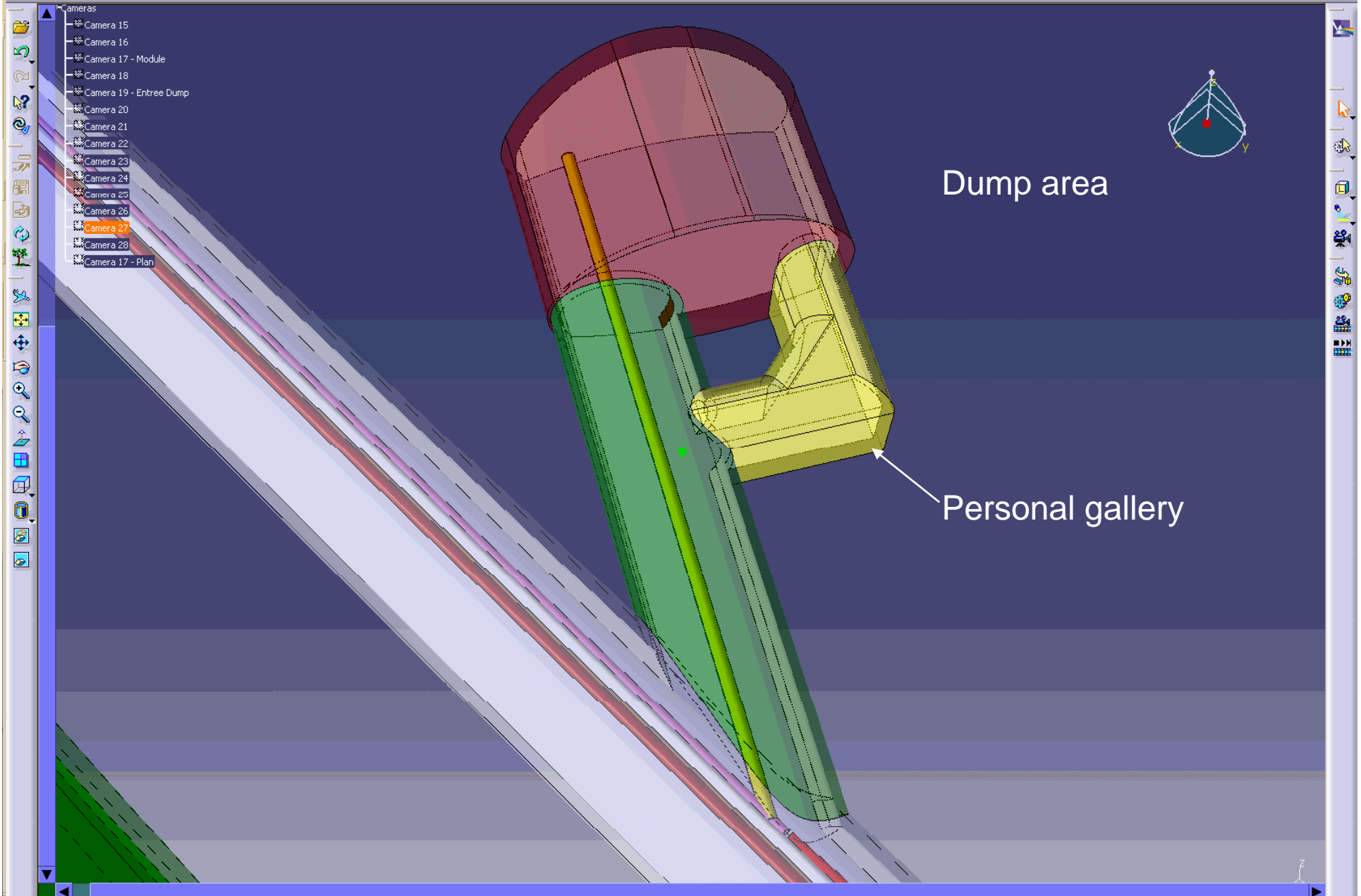
Previous turnaround beam (868m) goes to dump

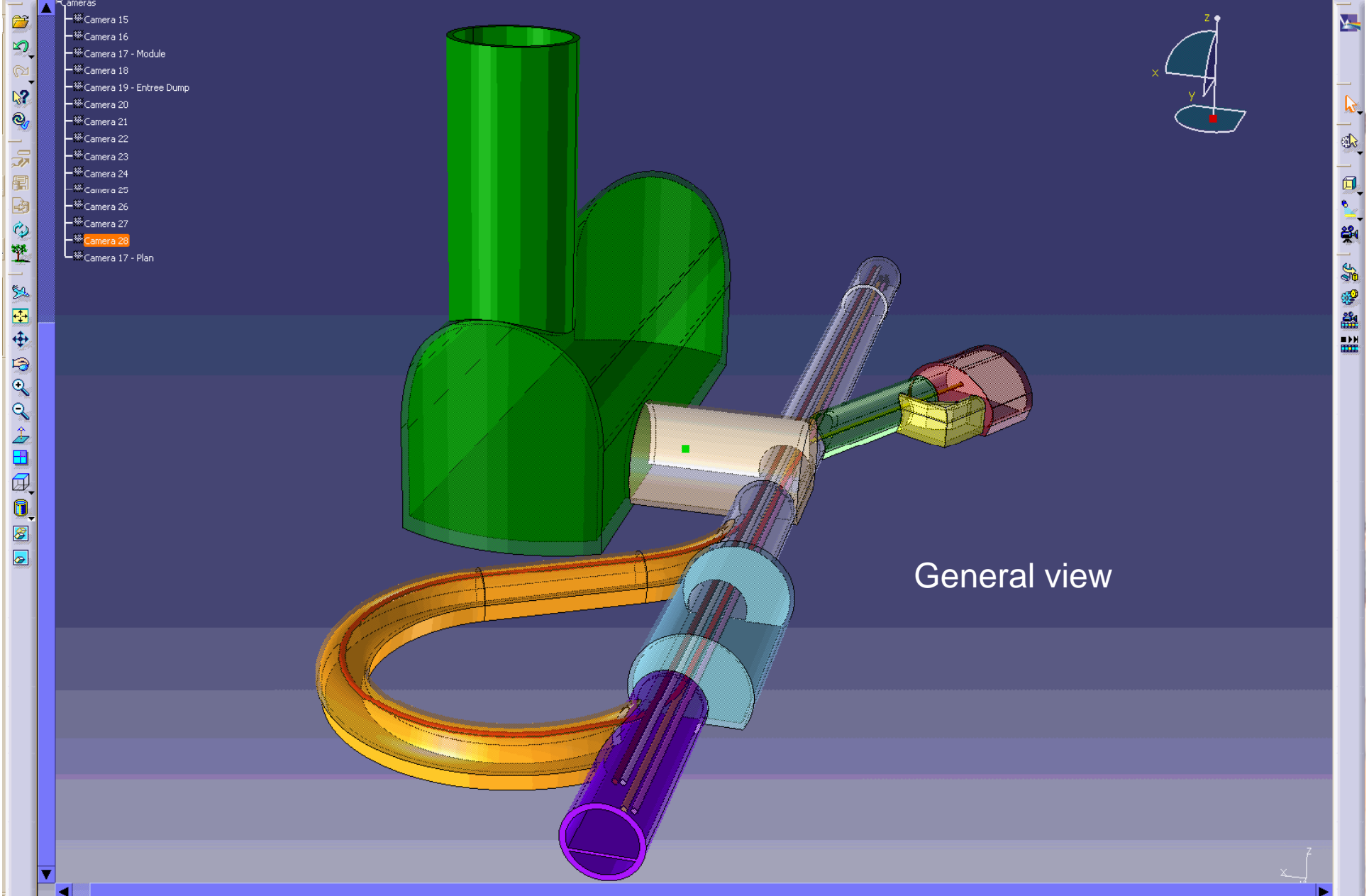


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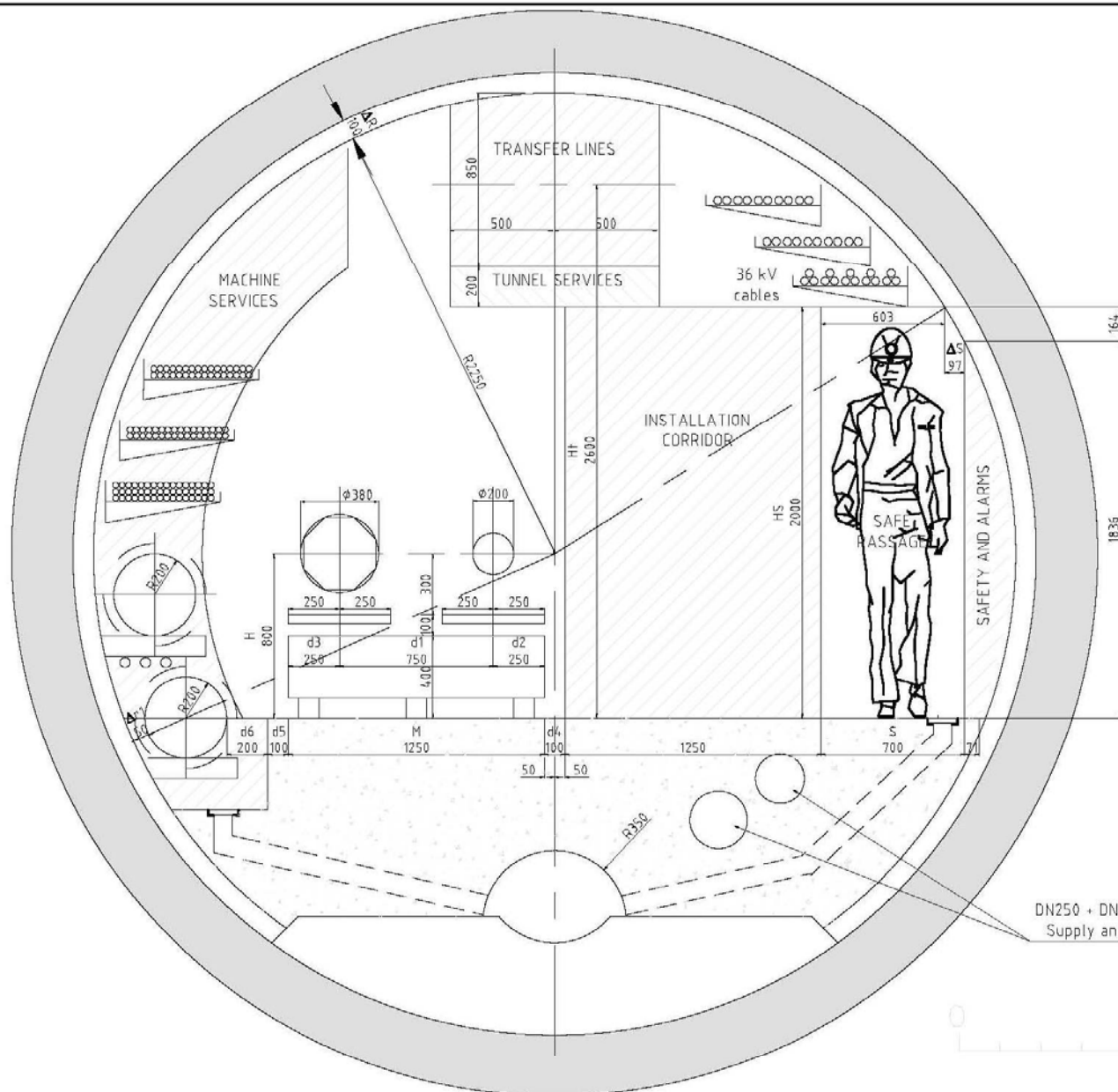


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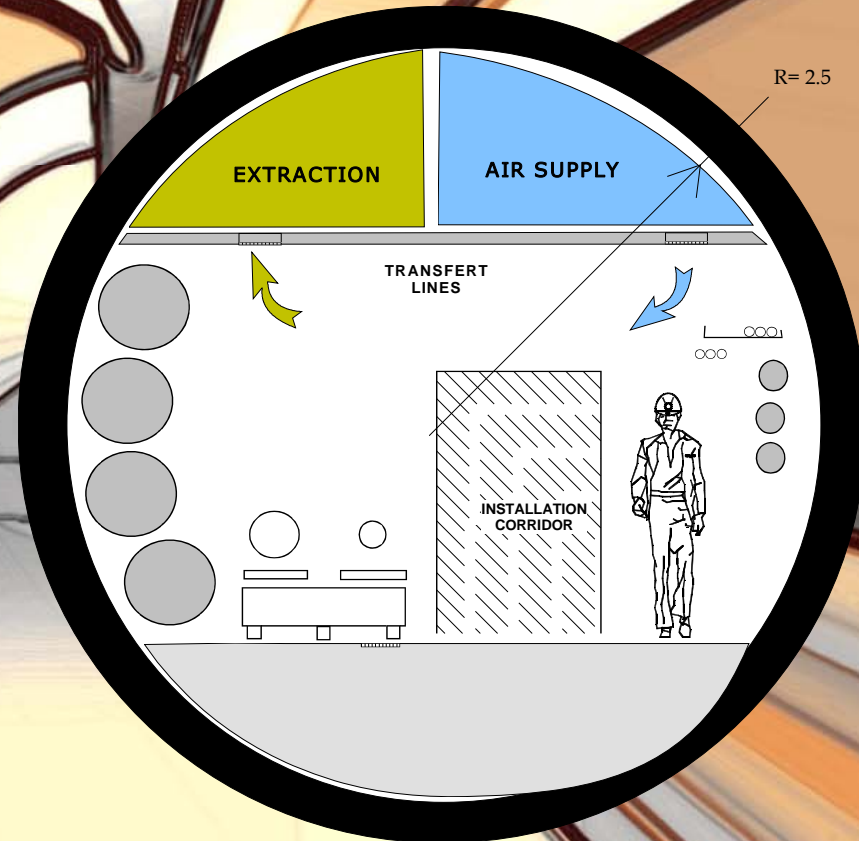
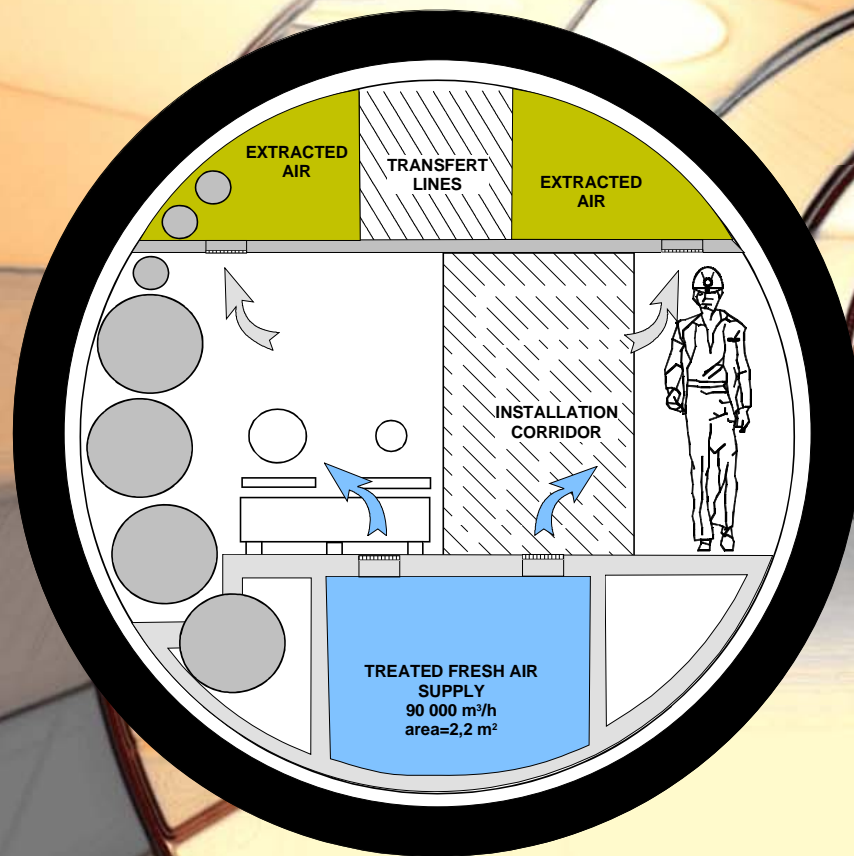
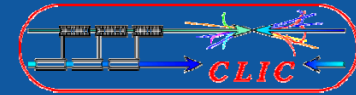
DN250 + DN200 Raw Water Supply and return lines

CLIC TUNNEL TYPICAL CROSS SECTION

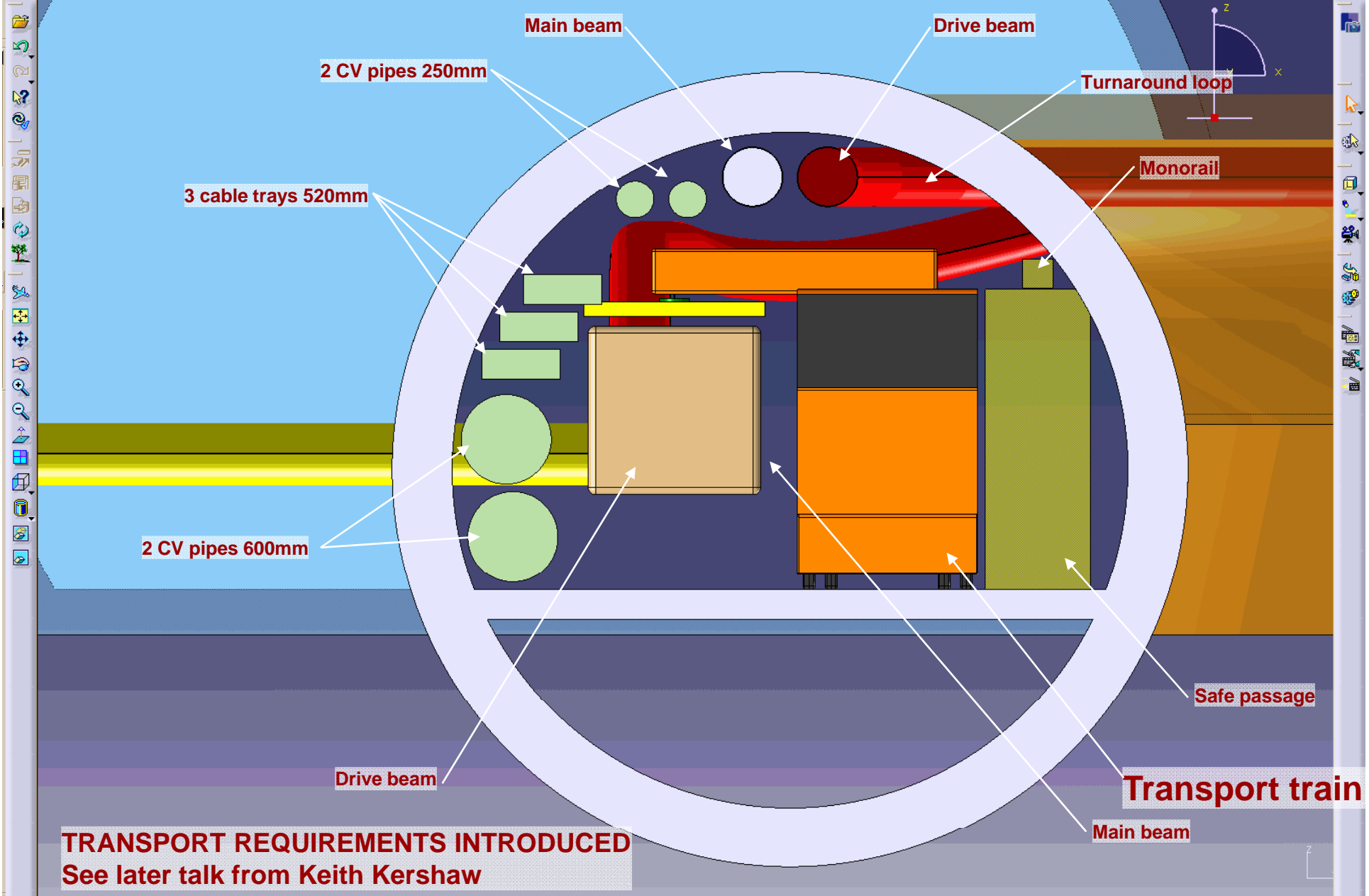


GROUP TS-CE
CIVIL ENGINEERING
 SUPERVISEUR : C.WYSS
 DESIGNER : N.BADDAMS

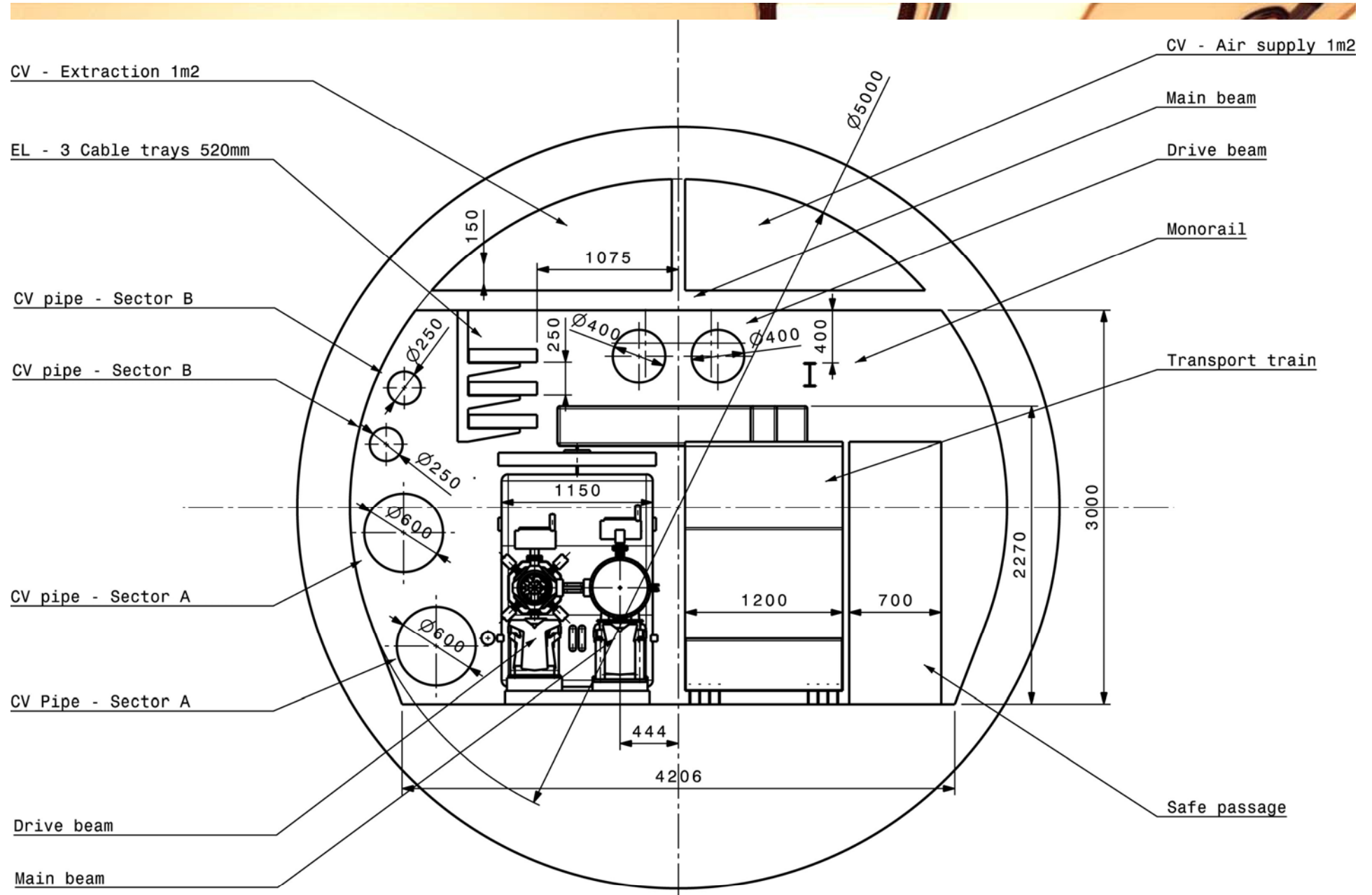
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**Cooling and Ventilation requirements being studied
See later talks from Joaquin Inigo-Golfin, Christophe Martel and Fabio Corsanego**



TRANSPORT REQUIREMENTS INTRODUCED
See later talk from Keith Kershaw



This cross section is for study purposes only
 Approved CLIC tunnel Diameter is currently 4.5m