



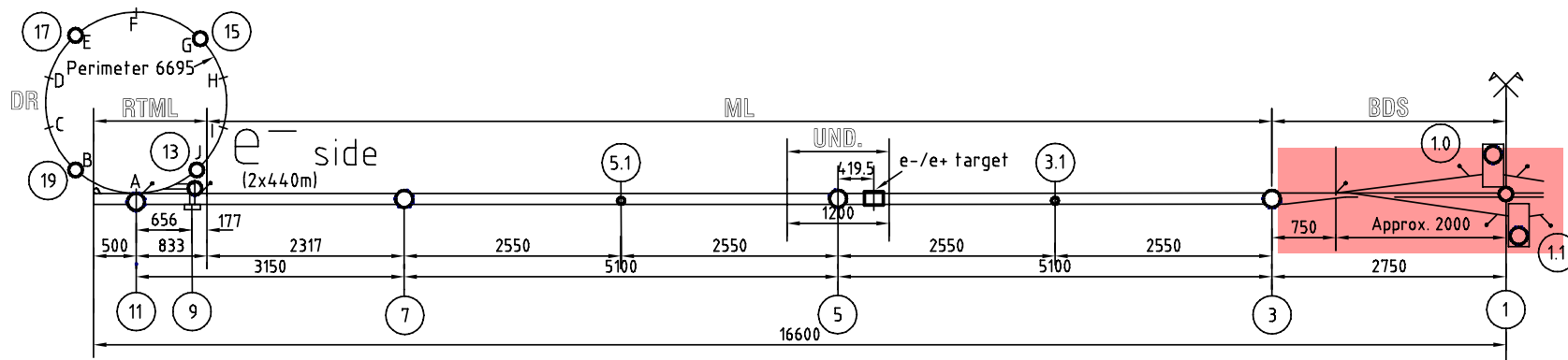
# CFS Global group

BDS Area System



# BDS Area System

- Two alternatives considered for design :
  - **Alternative A : according to BDS proposals (one service cavern in common to e<sup>+</sup> bypass and Detectors, e<sup>+</sup> and service tunnel above Detectors halls).**
  - **Alternative B : proposal from CFS Europe (dedicated service shafts and caverns for each Detector, service tunnel same level as beam tunnel).**
- CFS Europe strongly recommends Detectors assembling and testing at surface and lowering of ready-to-connect elements in underground halls. Saving in time ~ 2 years.
- Costing carried out according to alt. A layout and to CFS Europe recommendation (temporary 1000 t. Gantry crane above assembly building).
- Main beam dumps expensive as require to increase diameter of beam tunnel on more than 2 km, plus shielded cavern and dump.

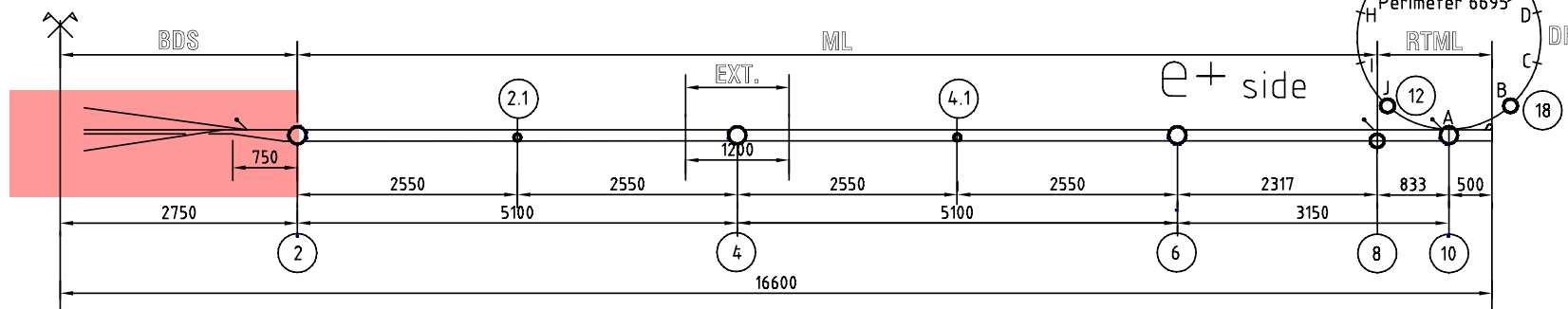


SITE / TUNNEL LENGTHS (m)

e <sup>-</sup> side	e <sup>+</sup> side	TOTAL
16 600 / 45 000	16 600 / 43 900	33 200 / 88 900

TUNNELS

Area	e-s beam + serv	DR e <sup>-</sup>	DR e <sup>+</sup>	RTML beam + serv	ML beam + serv	BDS beam	BDS e+ bypass
φm	5.0	4.0	4.0	5.0	5.0	5.0	4.0



SHAFTS

Point	1	1.0	1.1	2	3	4	5	6	7	8	9	10	11	12/J	13/J	14/G	15/G	16/E	17/E	18/B	19/B
φm	9	15	15	14	14	14	14	14	14	9	9	14	14	9	9	9	9	9	9	9	9

SURVEY BORINGS

Point	2.1, 3.1, 4.1, 5.1
φm	0.80

SHAFT BASE CAVERNS

Point	2, 3, 4, 5, 6, 7, 10, 11	8, 9(RTML)
(LxWxH) m	54 x 16 x 18 + 3 storeys	38 x 16 x 18 + 3 storeys

DR ALCOVES

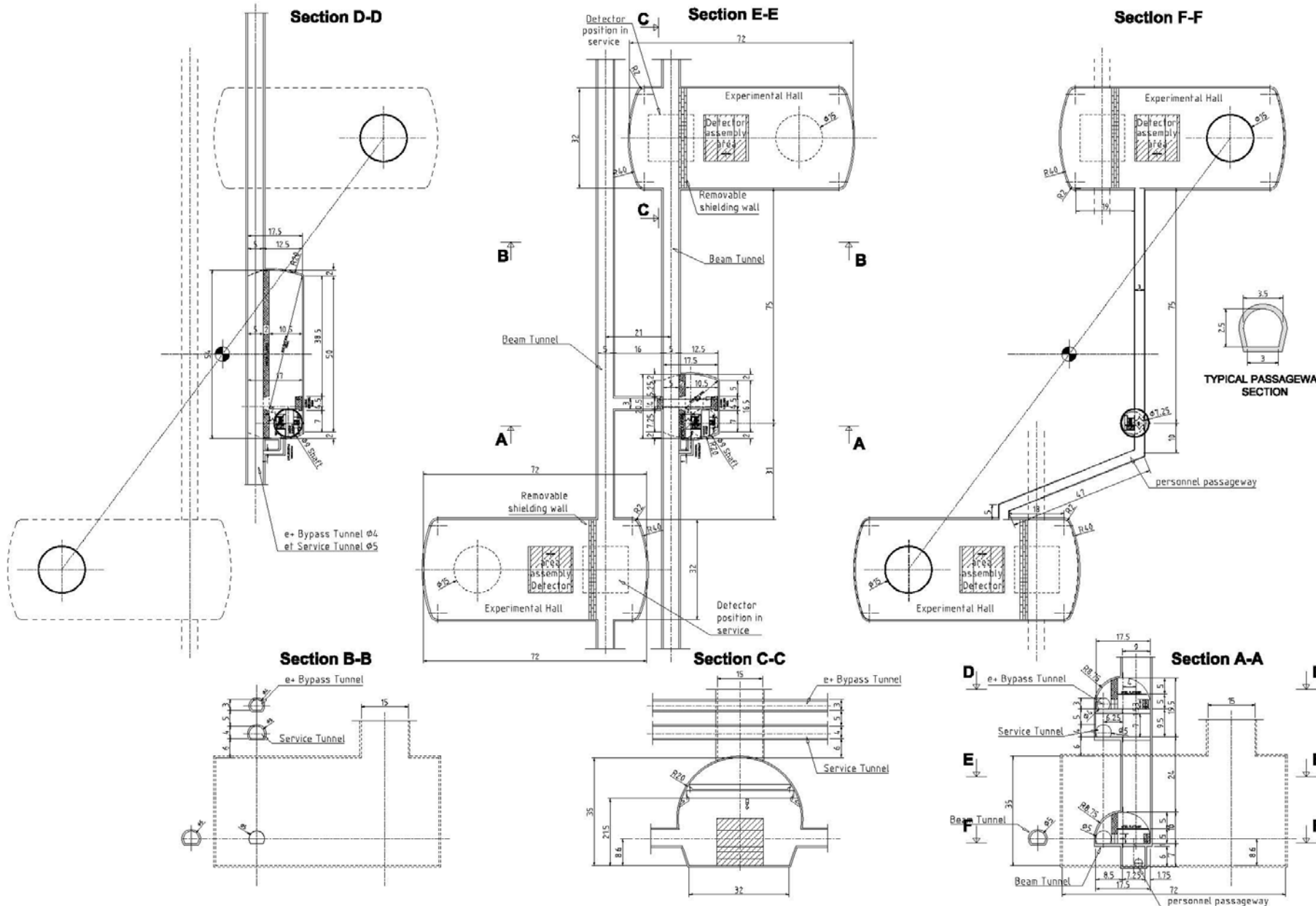
Point	A, D, F, H	12, 14, 16, 18	13, 15, 17, 19
(LxWxH) m	18 x 8 x 8	51 x 10.5 x 10 + 1 storey	31 x 10.5 x 10 + 1 storey

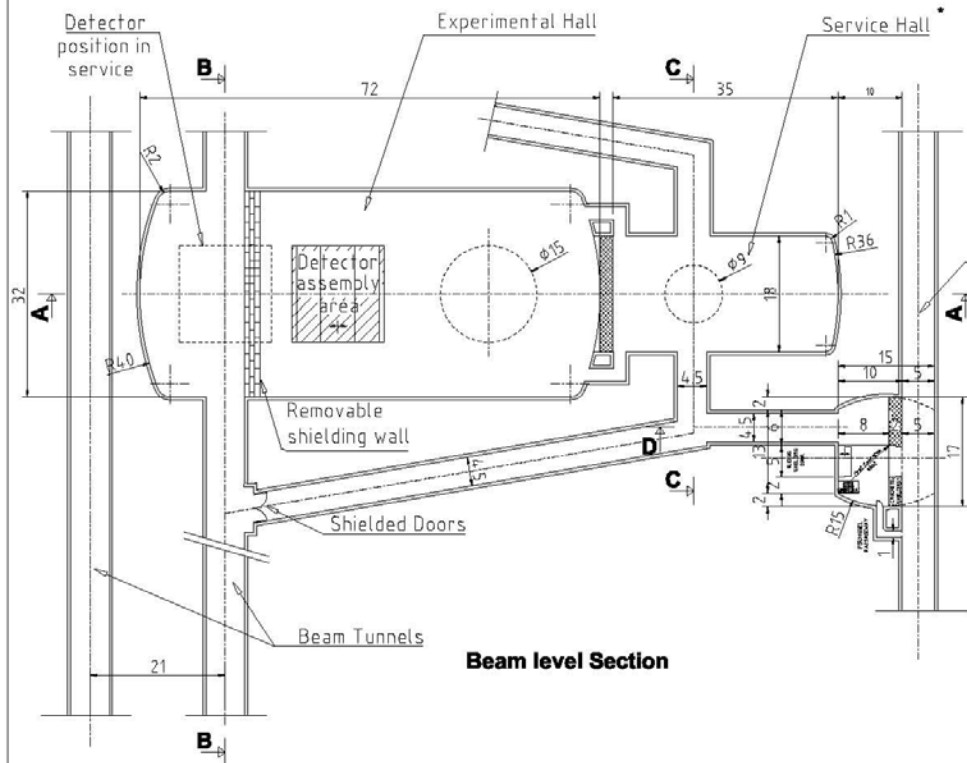
EXP. HALLS

Point	1.0, 1.1
(LxWxH) m	defector 72 x 32 x 35

BEAM DUMPS

Point	1.0, 1.1, 8, 9, 10, 11
(2x)	26 x 13 x 15 + 1 storey

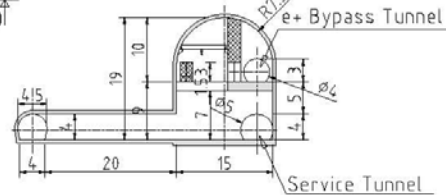




**Beam level Section**

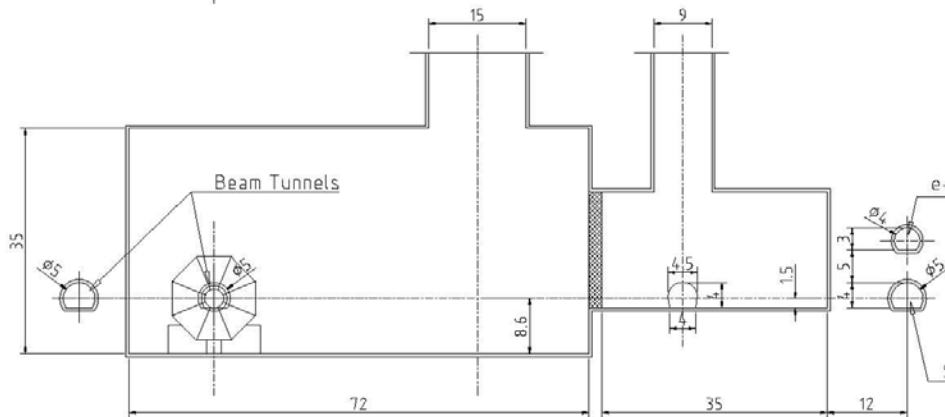
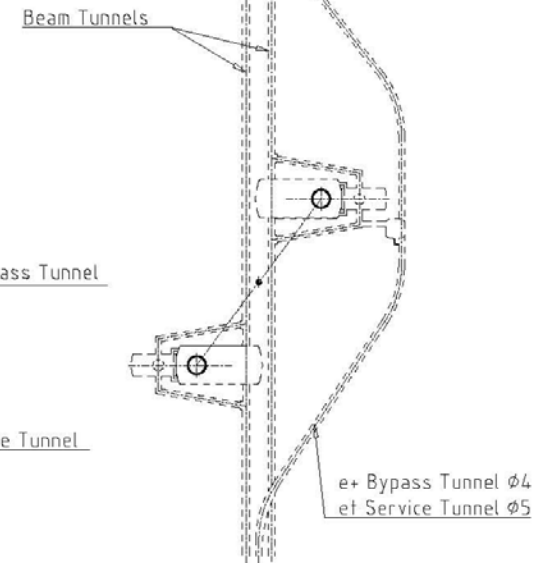
- Cooling and Ventilation
- Gas Room
- Data Acquisition Racks
- Electrical Distribution
- Cryogenic Equipment
- Safety, Toilets...

e+ Bypass Tunnel φ4  
et Service Tunnel φ5

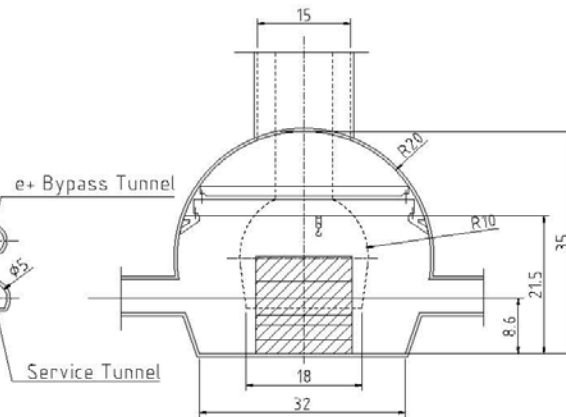


**Section D-D**

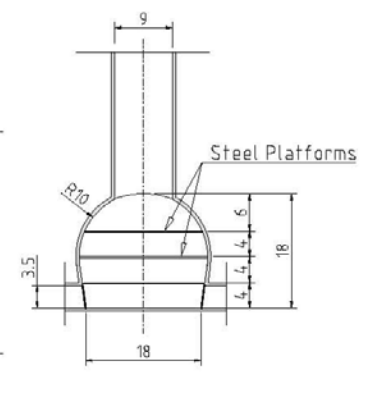
**Diagram of BDS Central Area**



**Section A-A**

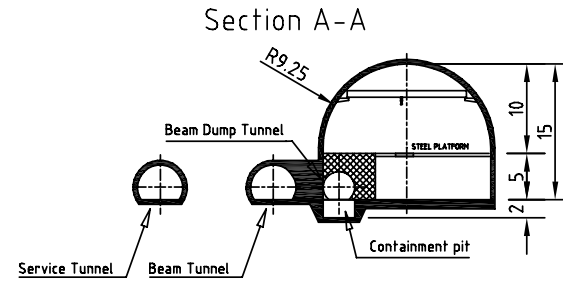
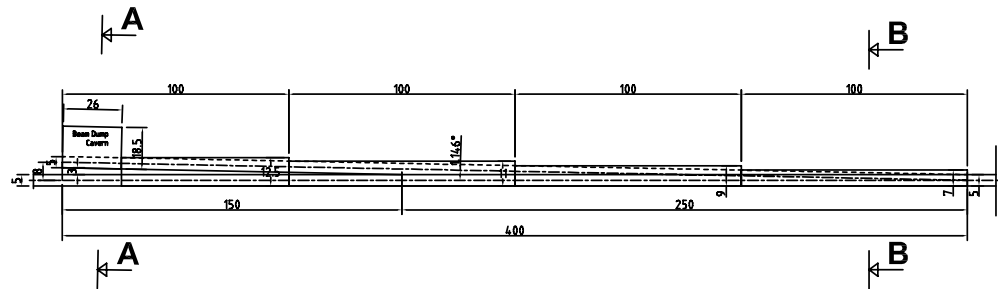


**Section B-B**

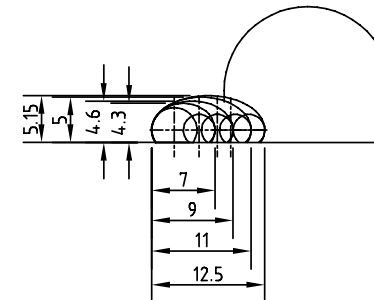


**Section C-C**

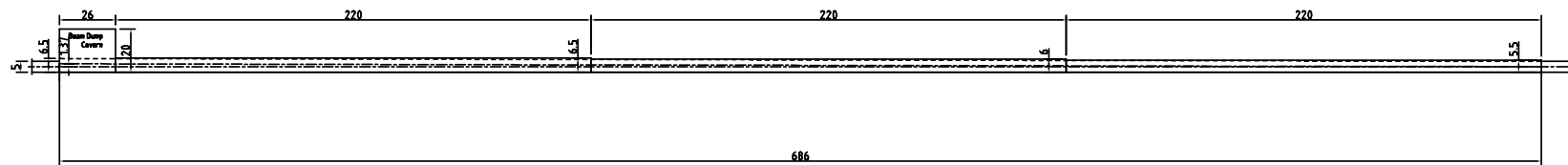
ILC -BDS 20mrad BEAM DUMP SCHEMATIC LAYOUT (2 UNITS)

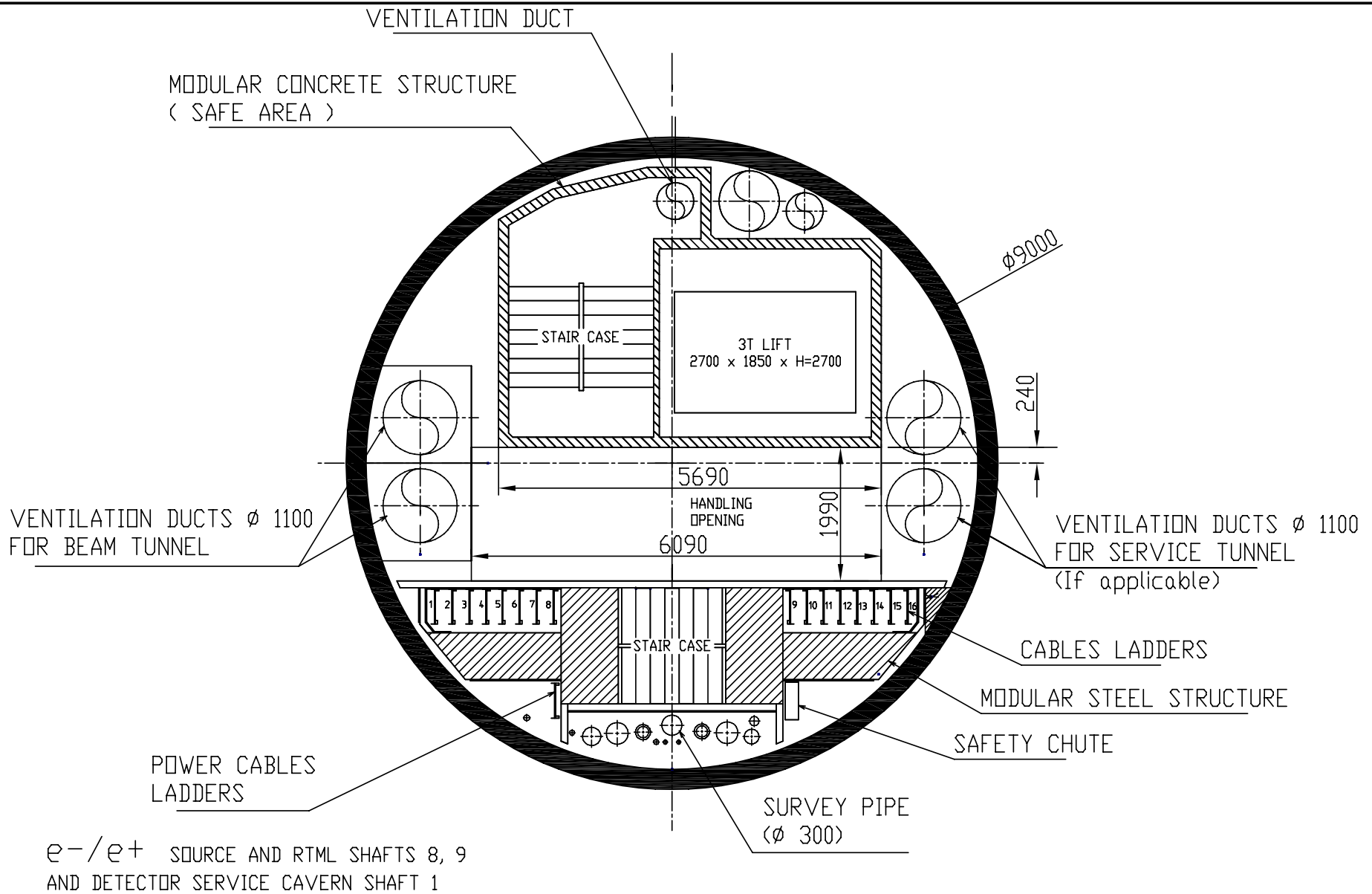


Section B-B



ILC -BDS 2mrad BEAM DUMP SCHEMATIC LAYOUT (2 UNITS)





ILC -SHAFT 9m-3t LIFT LAYOUT

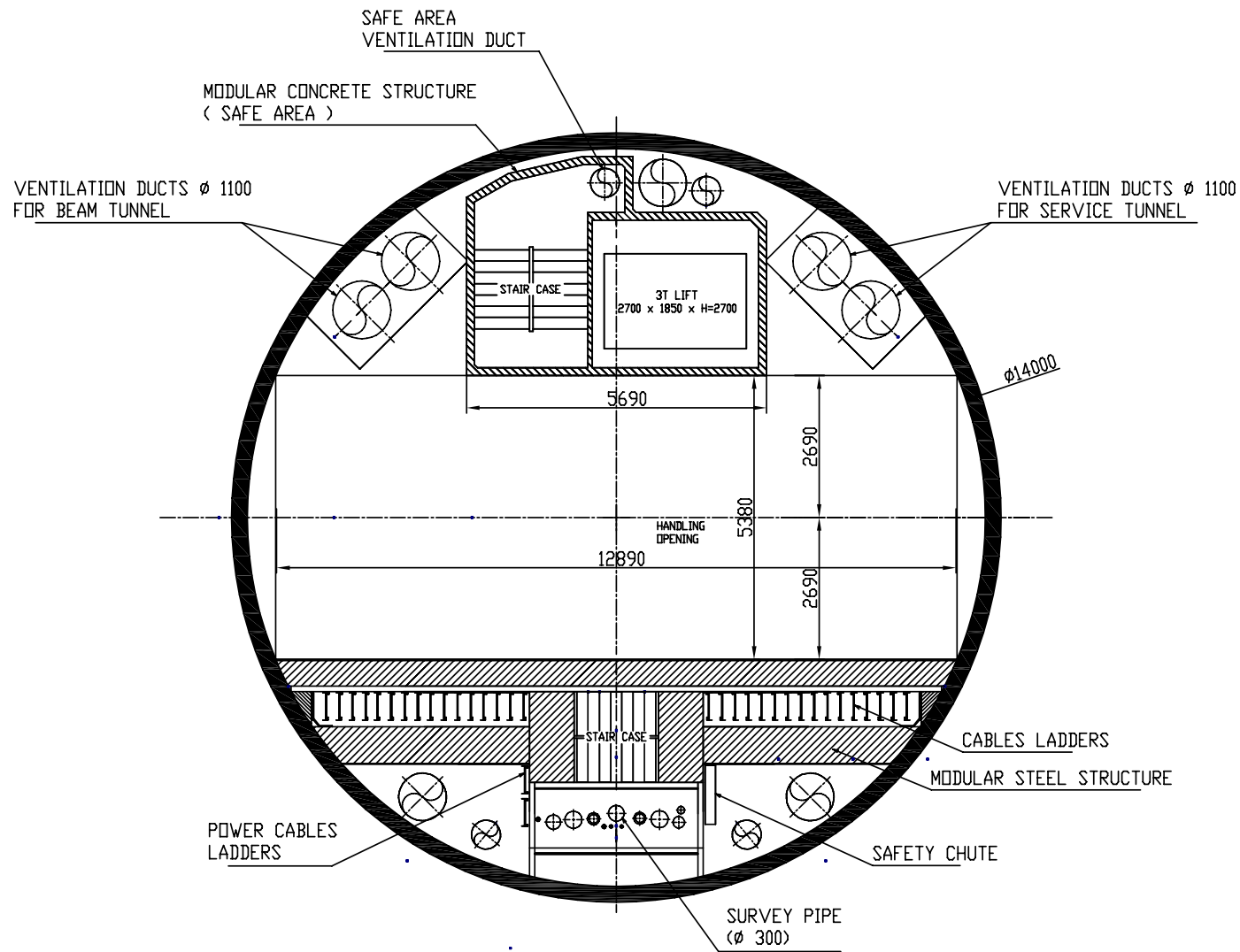
EUROPEAN REGION



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

SCALE : 1/50(A3\_FORMAT) DATE : 17 JULY 2006

ILC-.CE-1.1640.0002 3 -



ML SHAFTS 2, 3, 4, 5, 6, 7  
AND RTML SHAFTS 10, 11

ILC-SHAFT (14M3t) LAYOUT

EUROPEAN REGION



GROUP : TS-CE  
CIVIL ENGINEERING  
SUPERVISEUR : JL.BALDY  
DESIGNER : N.BADDAMS

SCALE : 1/75(A3\_FORMAT) DATE : 17\_JULY\_2006

ILC-.CE-1.1610.0002 3 -



