

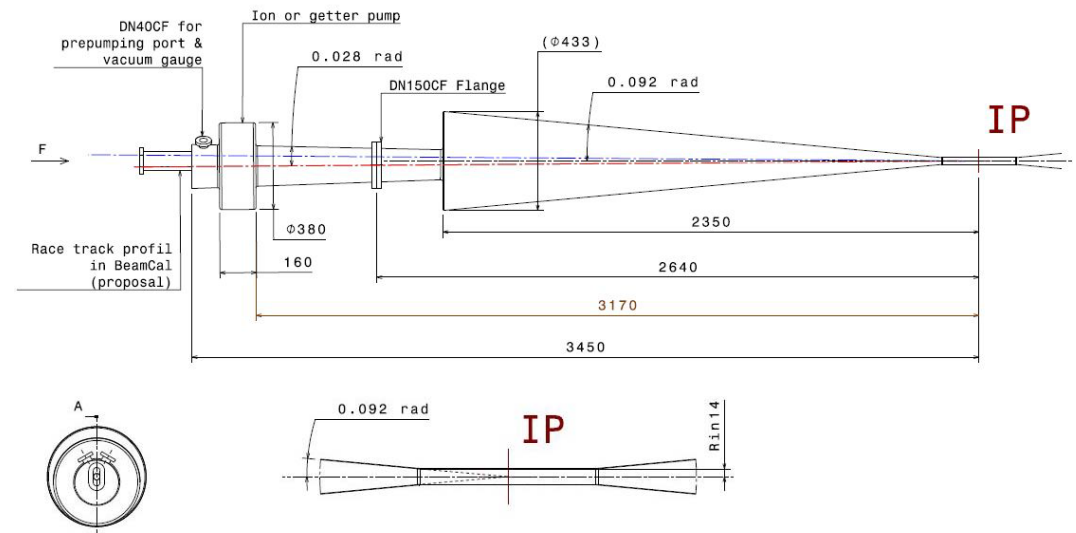
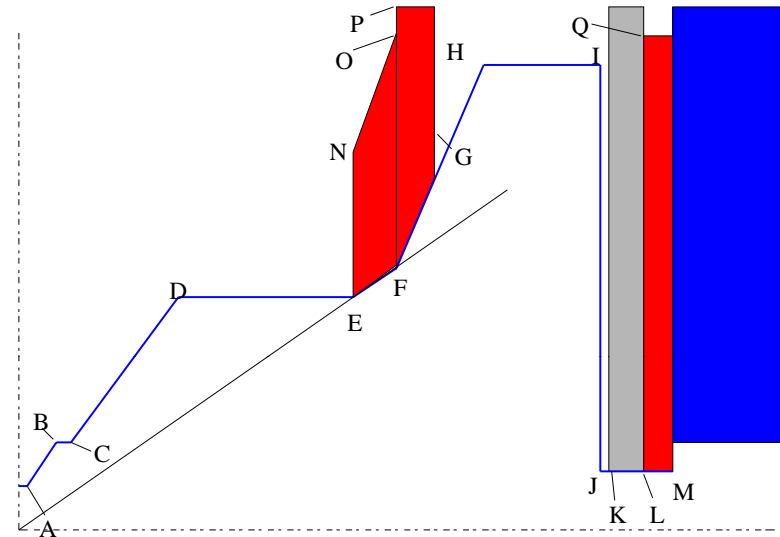
A proposal of beam pipe geometry for ILD_G2

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Beam pipe for GLD/LDC

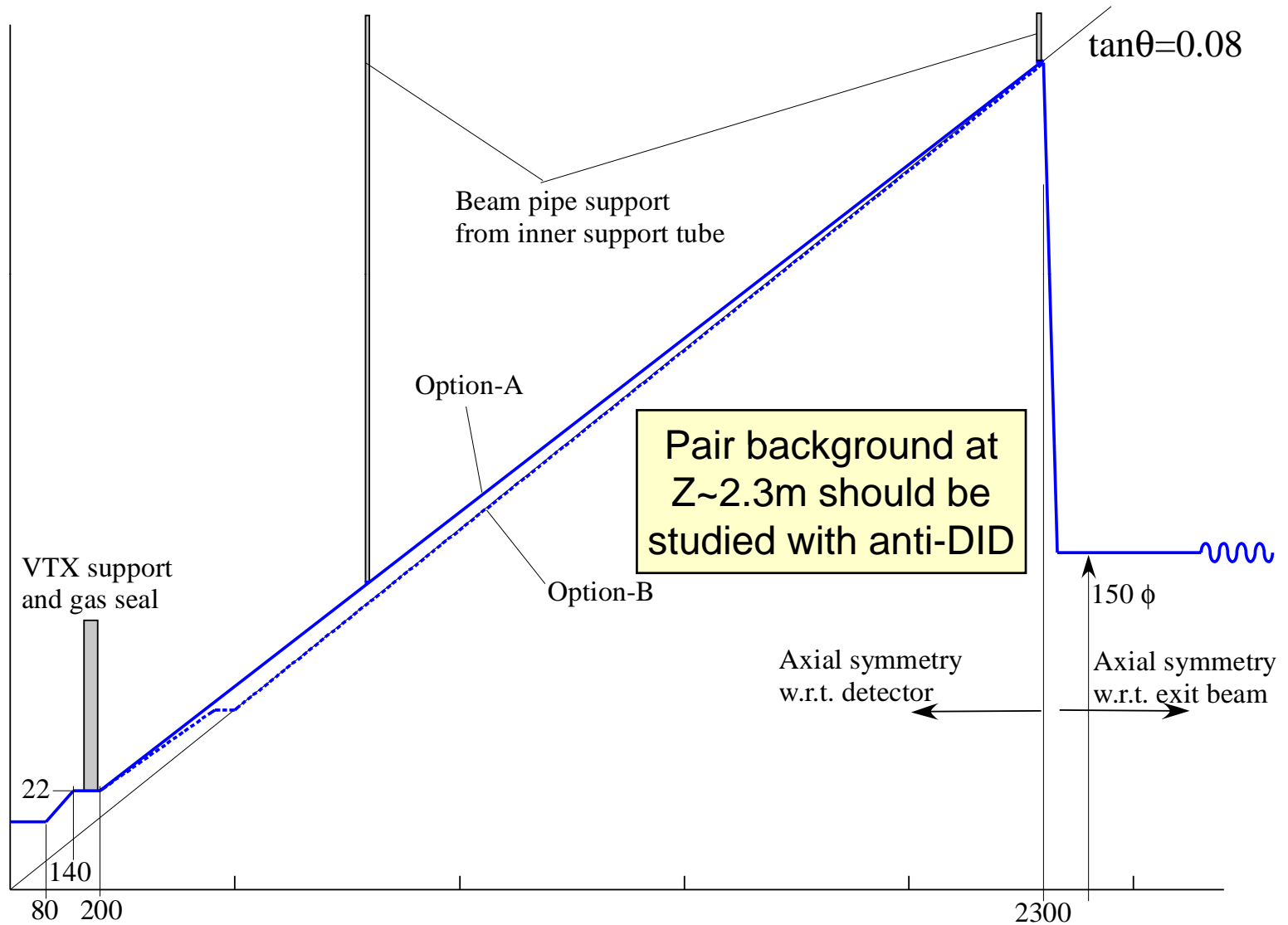
- GLD
 - Cylindrical shape beam pipe has a difficulty in estimating material budget in front of FCAL (=cables and cooling pipes between D and E)
- LDC
 - Simple conical shape in LDC has a problem of hit by pair-background
 - Heavy conical parts connected by very thin Be beam pipe at IP is very fragile



Beam pipe for ILD_G2

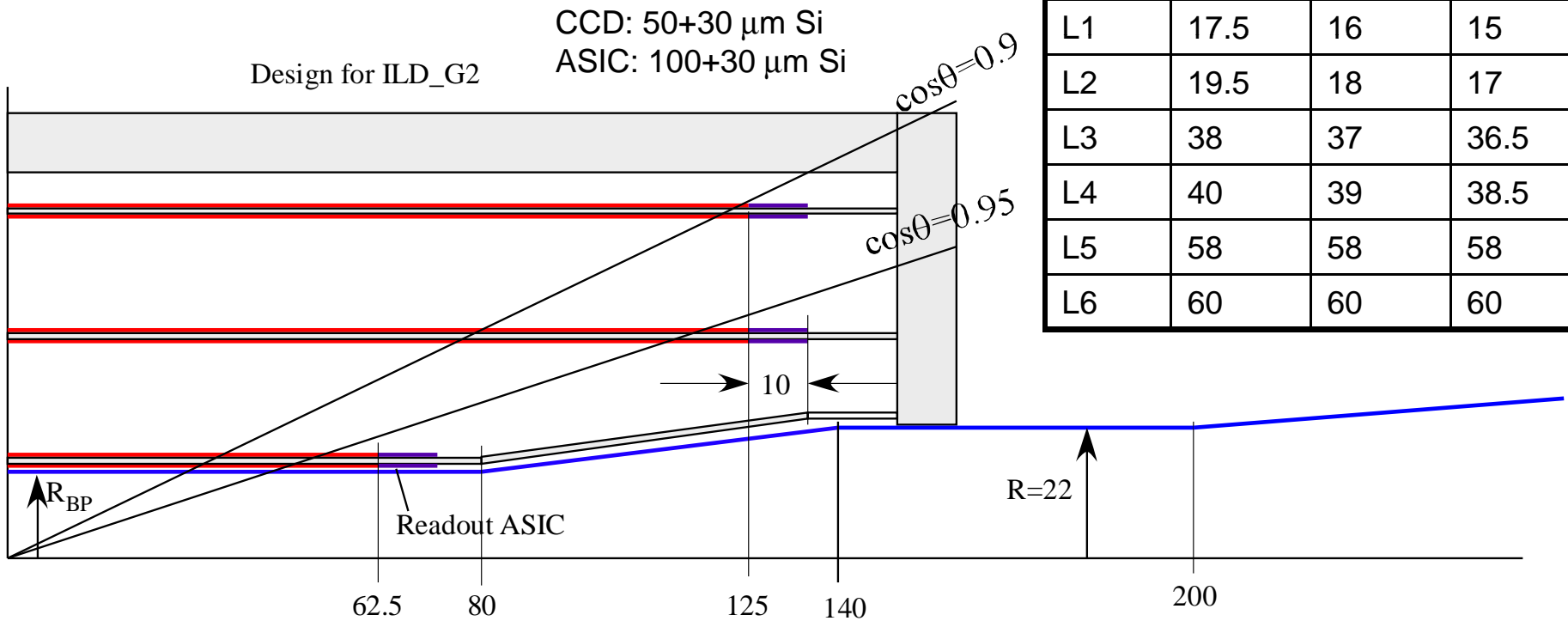
- Proposal of a modified conical shape beam pipe option
 - Two (or three) step conical parts
 - Minimal opening angle to minimize the weight
 - Beam pipe is supported from (embedded in) an inner support cylinder (CFRP?) which also supports Si inner/forward tracker
 - The inner support cylinder is supported from TPC
 - VTX is supported from the beam pipe

Beam pipe for ILD_G2



VTX for ILD_G2

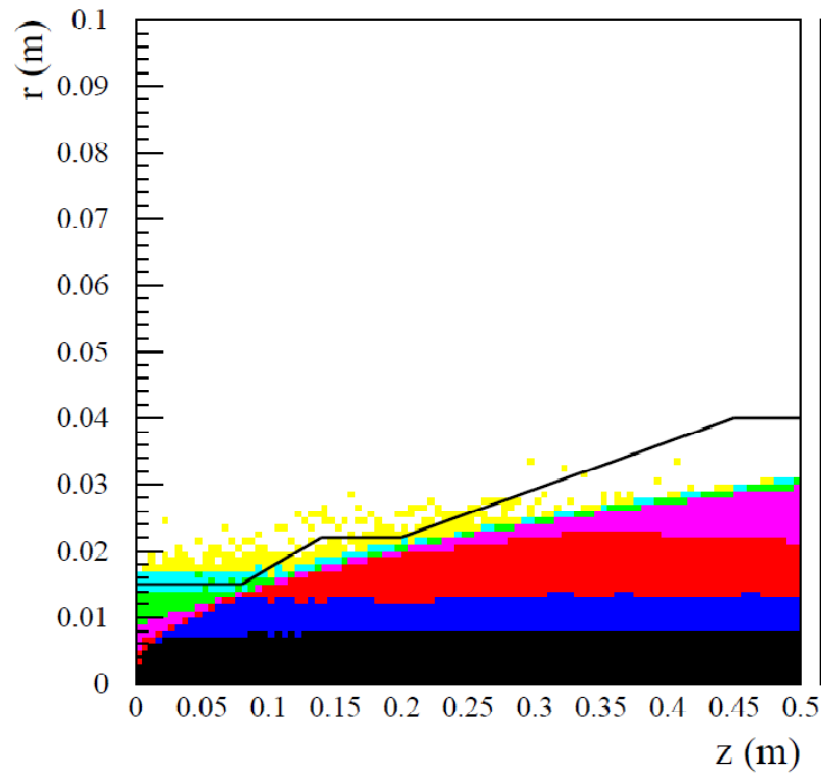
Layer	R (mm) 3T	R (mm) 3.5T	R (mm) 4T
BP	15	14	13
L1	17.5	16	15
L2	19.5	18	17
L3	38	37	36.5
L4	40	39	38.5
L5	58	58	58
L6	60	60	60



R_{BP}=13/14/15 mm for 4/3.5/3 T

Background clearance

Nominal 500GeV 3T 14mrad



Nominal 500GeV 3.5T 14mrad

