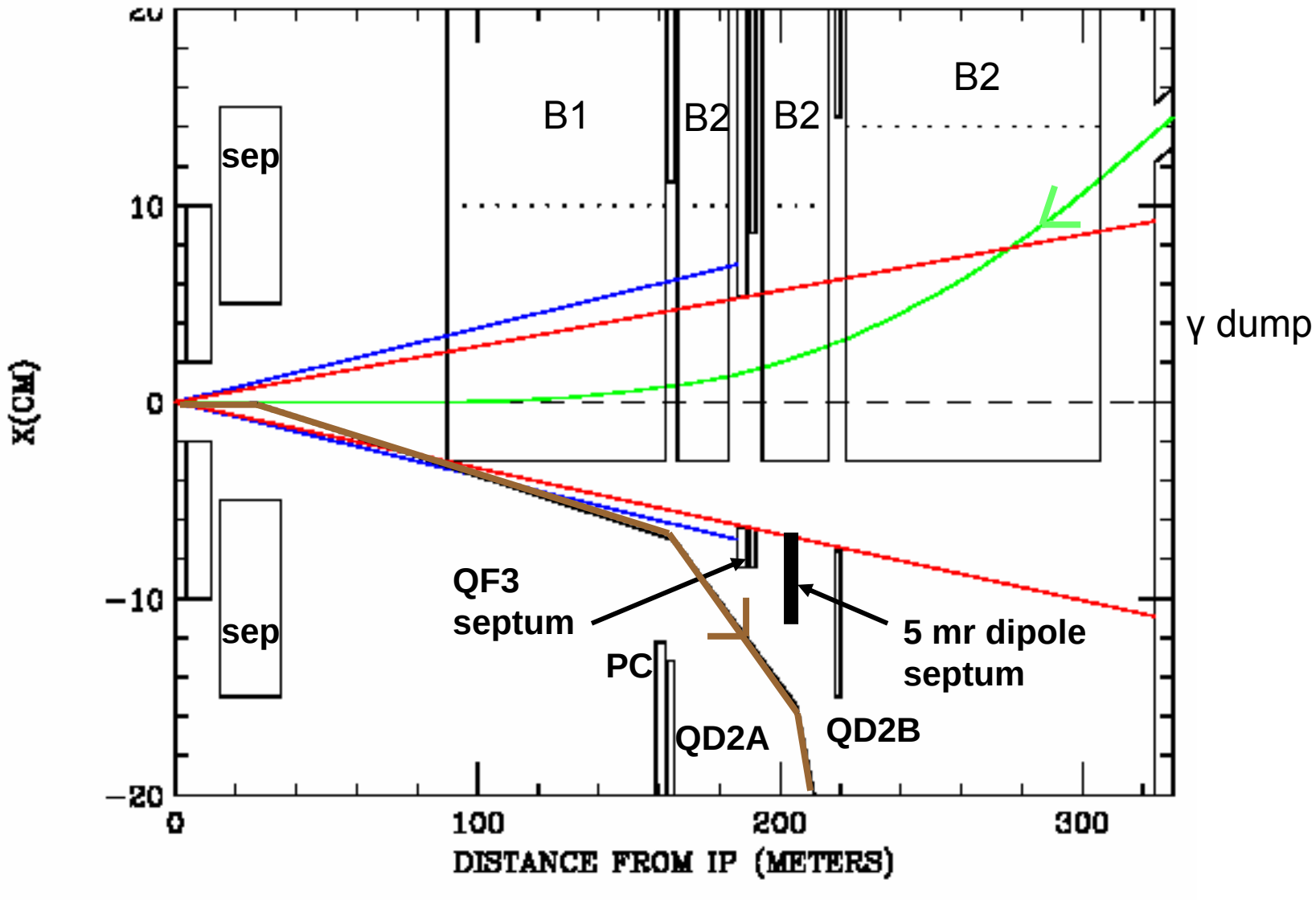
Spatial Parameters for Beam Loss Estimates

17 May '06

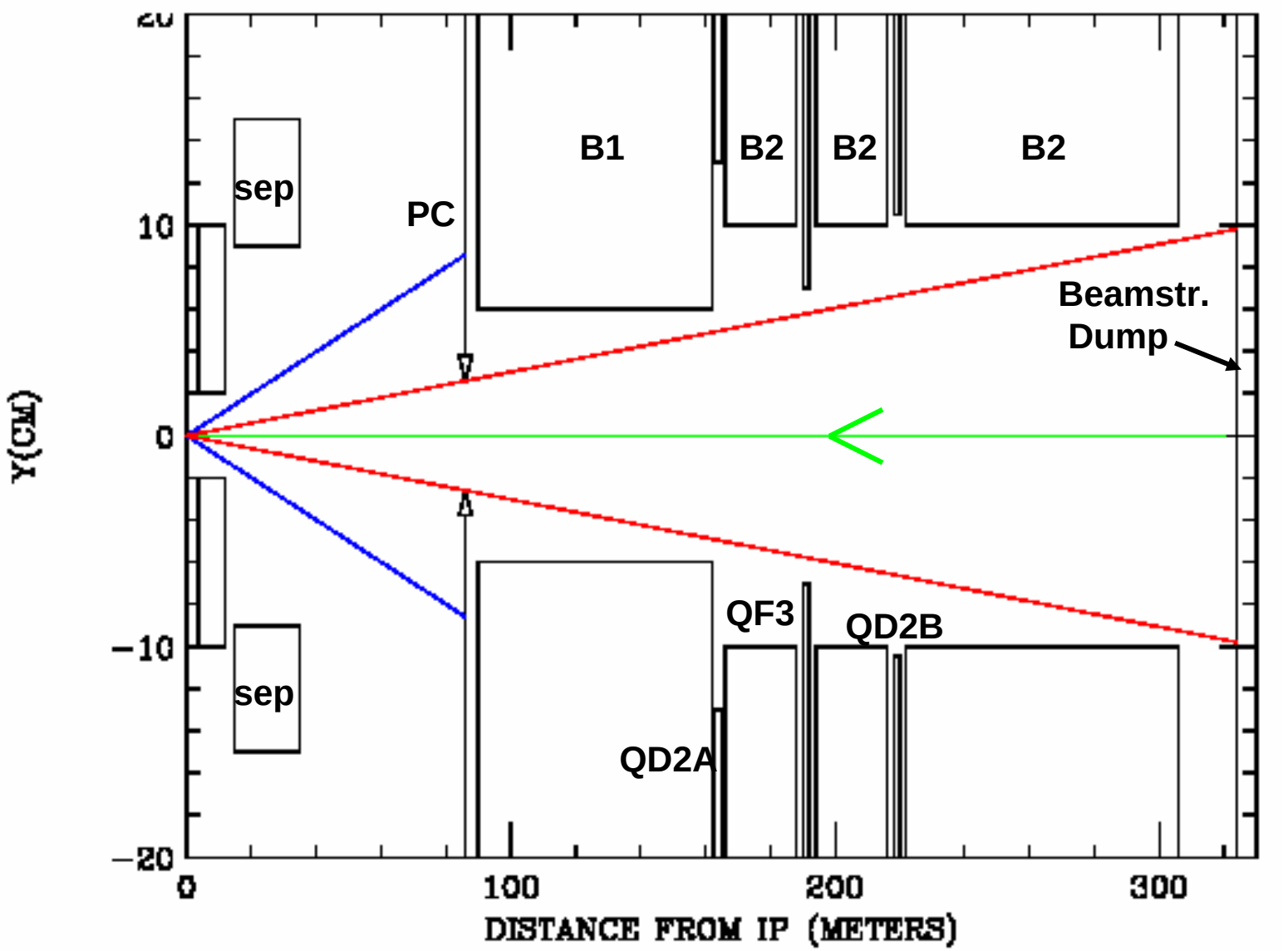
Dimensions CM

Element	Ext. Beam Axis	Aperture X^-	Aperture X^+	Quad Center	Poletip Radius
Separator plates	0.0 to -0.62	- 6.0	+4.0		
QD2A	-7.04	-13.04 (low energy side)	-	+ 0.82	13.86
QF3	-13.03	-8.4 to -6.4 (septum)	+5.4	+1.6	7.2
5 mrad dipole	-15.8	-35.8 (low energy side)	-10.8 to -6.8 (septum)		

Plan View of Zero Degree Extraction Showing Beamstrahlung Collimation



Elevation View of Zero Degree Extraction Showing Beamstrahlung Collimation



Power Lost, Nominal Parameter Set, 500 GeV CM (kW)

Loss Point	Head On		Worst Case Vertical Offset		Radiative Bhabha's
	Charged	Beam-strahlung	Charged	Beam-strahlung	Charged
QD0/SD0	0	0	0	0	0.000016
QF1/SF1	0	0	0	0	0.000014
Synch. Mask	0	0	0	0	0.00014
Separator Plates	0.0002	0	0	0	0.00026
PC–86 (B1)	0.002	0	16	3.3	0.0002
PC–163 (QD2A)	13	—	5.4	—	0.0065
QF3 horiz. (+X)	—	0.4	—	0.24	—
QF3 top/bot	—	0	—	11.4	—
QF3 septum	0.5	0.004	0.01	0	0.00006
5 mr dipole sept	0.1	—	1	—	0.000005
5 mr dipole low E	0.1	—	1	—	0.0013
Beamstrahlung dump	—	264	—	361	—
Charged dump	11,285	—	11,285	—	—

Power Lost, Low P Parameter Set, 500 GeV CM (kW)

Loss Point	Head On		Worst Case Vertical Offset	
	Charged	Beam-strahlung	Charged	Beam-strahlung
QD0/SD0	0.0001	0	0.0002	0
QF1/SF1	0.00005	0	0	0
Synch. Mask	0.0006	0	0.0002	0
Separator Plates	0.41	0	1.4	0
PC–86 (B1)	0.5	0	114	3.3
PC–163 (QD2A)	110	0	47	0
QF3 horiz. (+X)	—	18	—	10
QF3 top/bot	—	0.05	—	39
QF3 septum	13	8.3	5.5	0.6
5 mr dipole sept	1.9	—	1	—
5 mr dipole low E	1.5	—	1	—
Beamstrahlung dump	—	308	—	346
Charged dump	11,170	—	5,175	—

Separator breakdown during the bunch train:
(dipole remains on)

Outgoing bunches: **0.5 mrad bend becomes 0.25 mrad bend. Bunches go backward through the incoming beamline and hit the beamstrahlung dump.**

Incoming bunches: 0 mrad bend becomes 0.25 mrad bend. Bunches pass through the IP region within 1 cm of the beam axis, go backward through the incoming beamline and hit the beamstrahlung dump.