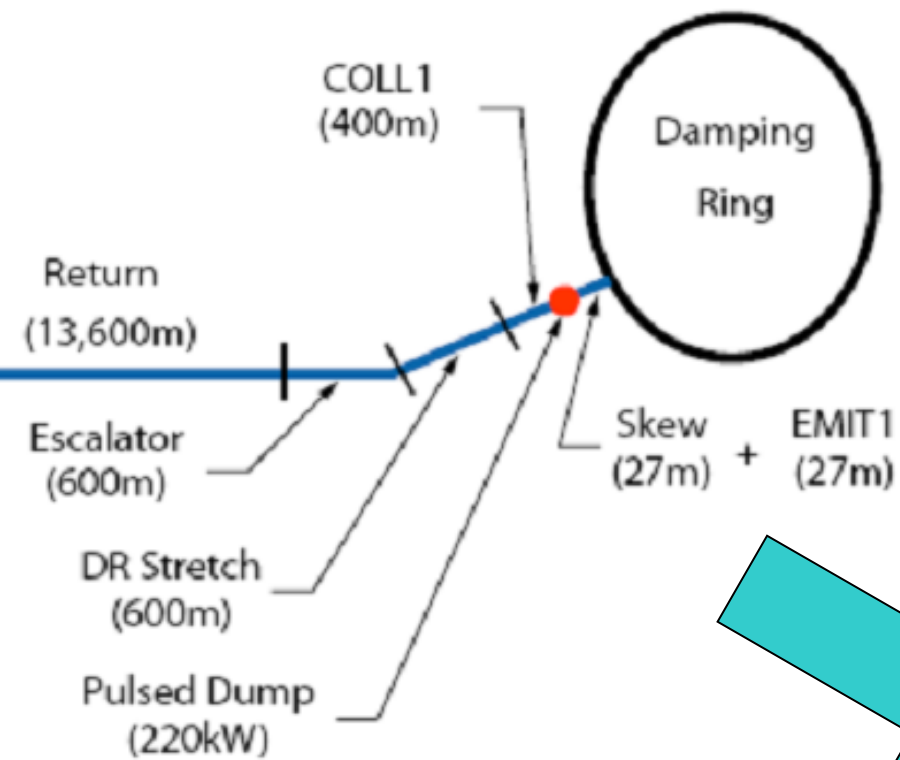


# New design of ILC RTML in central integration region (“Ecentral” beamline)

Nikolay Solyak, Valery Kapin  
Andreas Latina\*, Yuri Alexahin  
FERMILAB

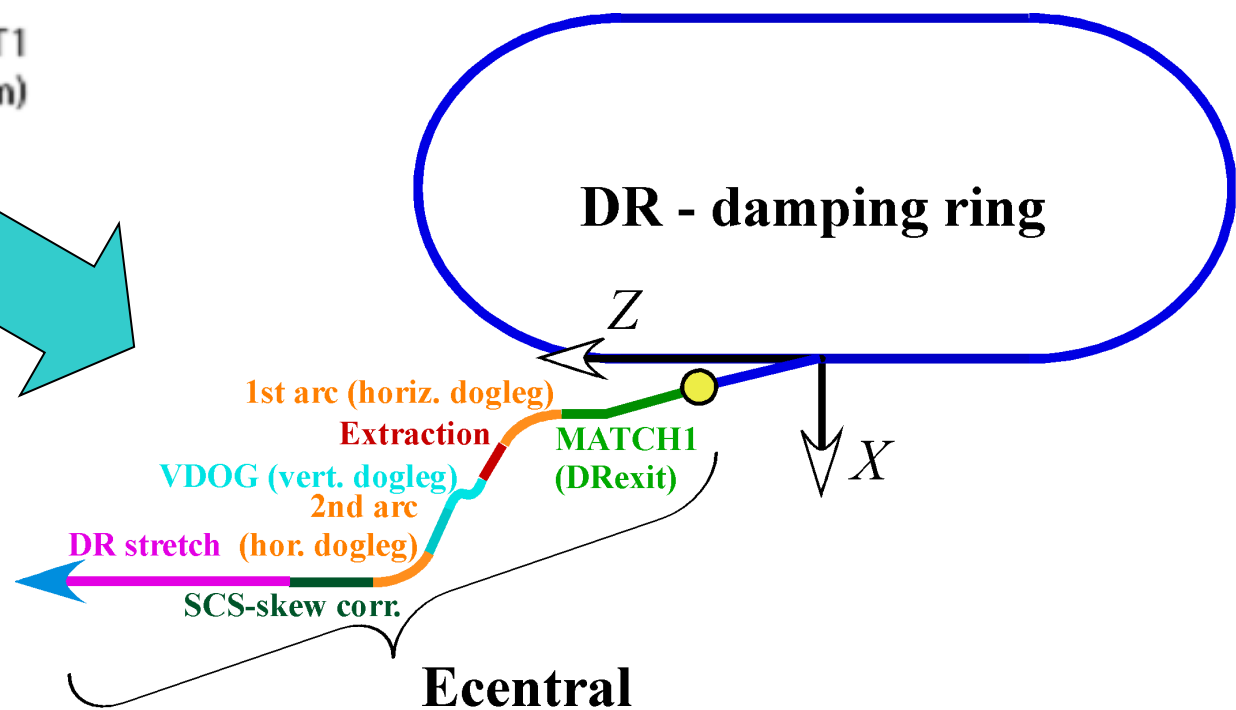
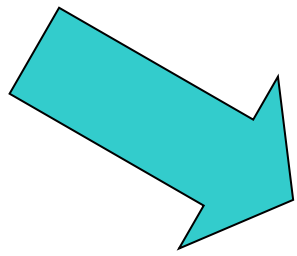
\* CERN

# Changes of RTML lattice in central area



SB2009 baseline proposal:

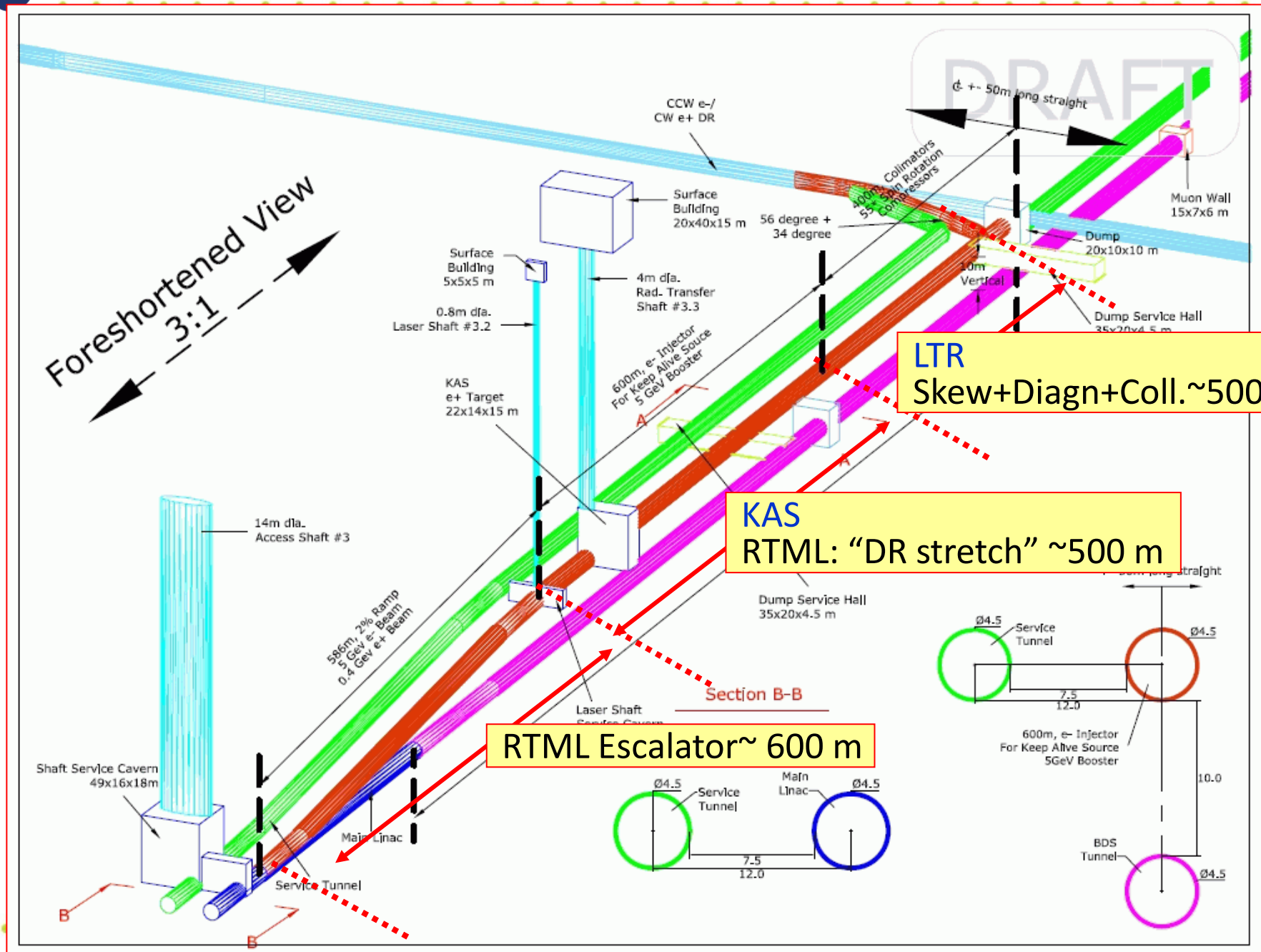
- New configuration of the DR
- DR has same elevation as ML



**Ecentral**

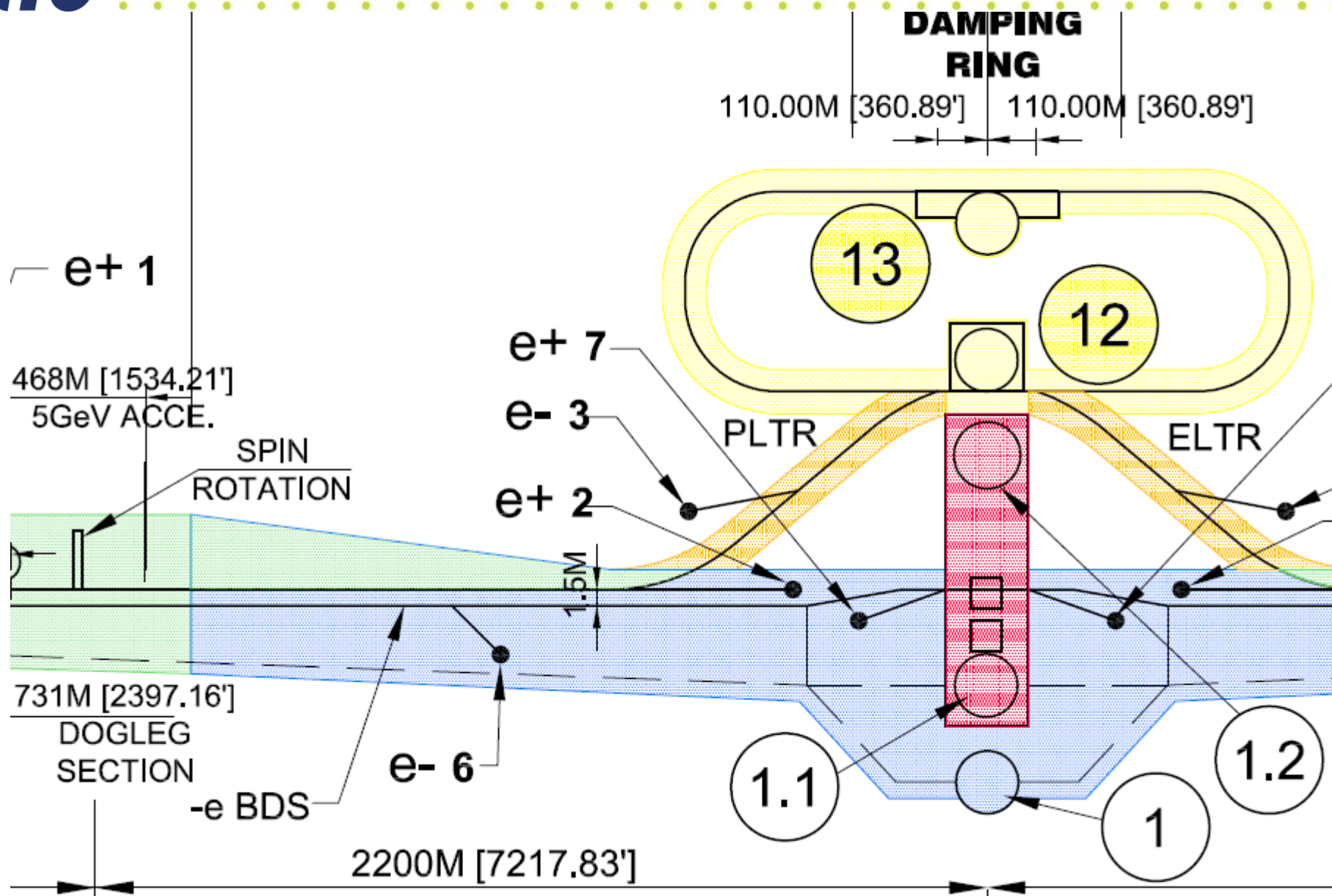


# DR-to-RTML connection (RDR)





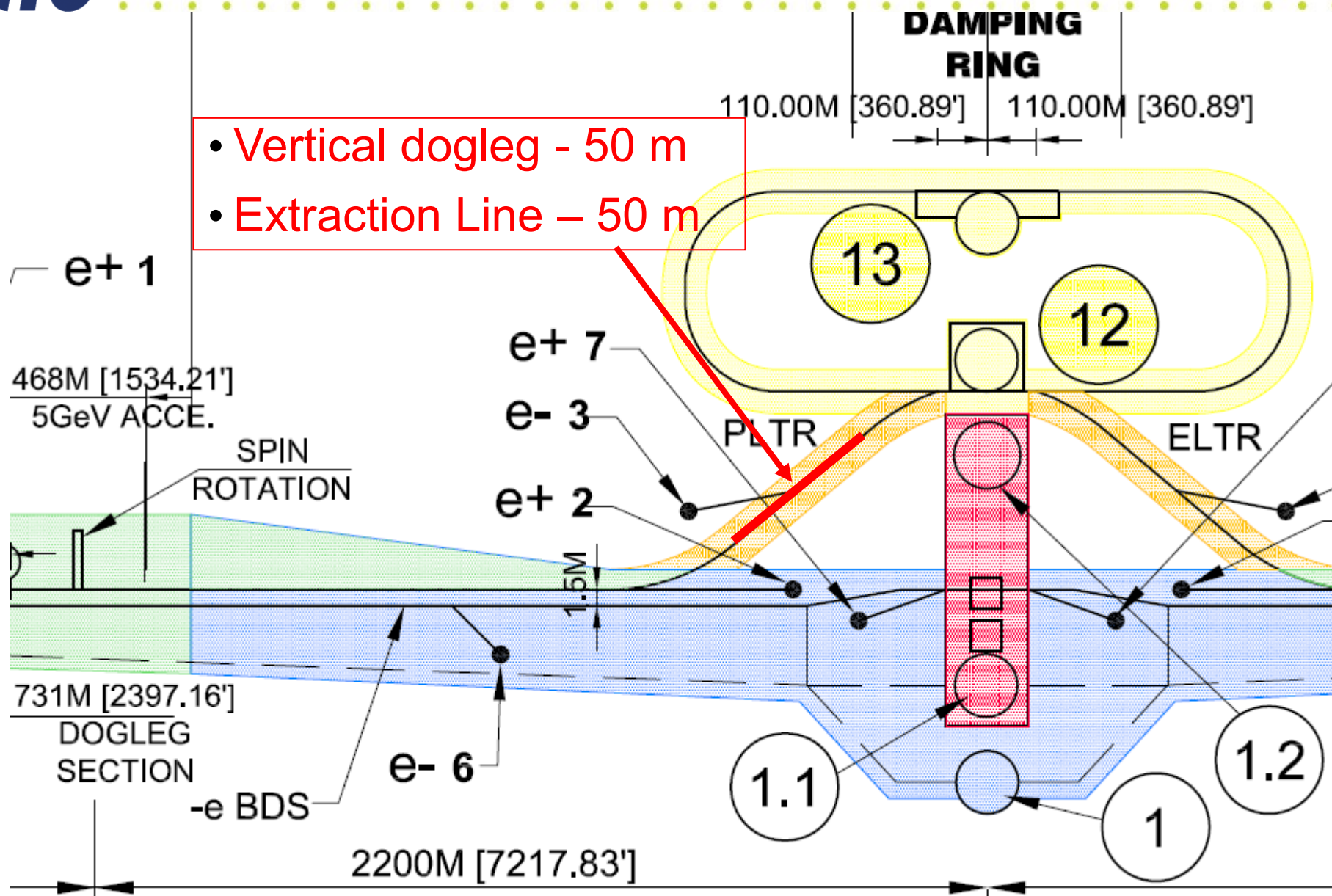
# RTML configuration in Central Area

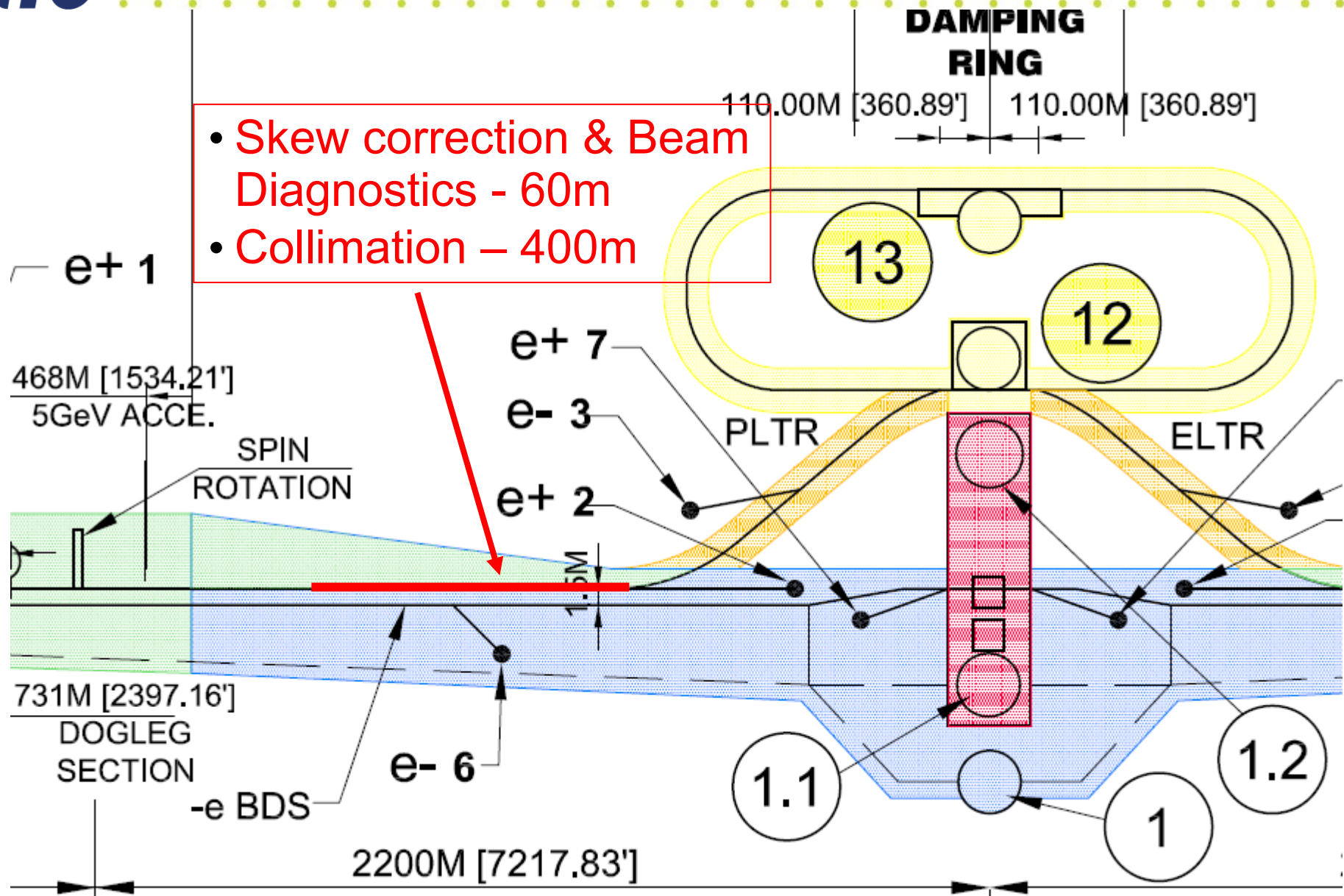






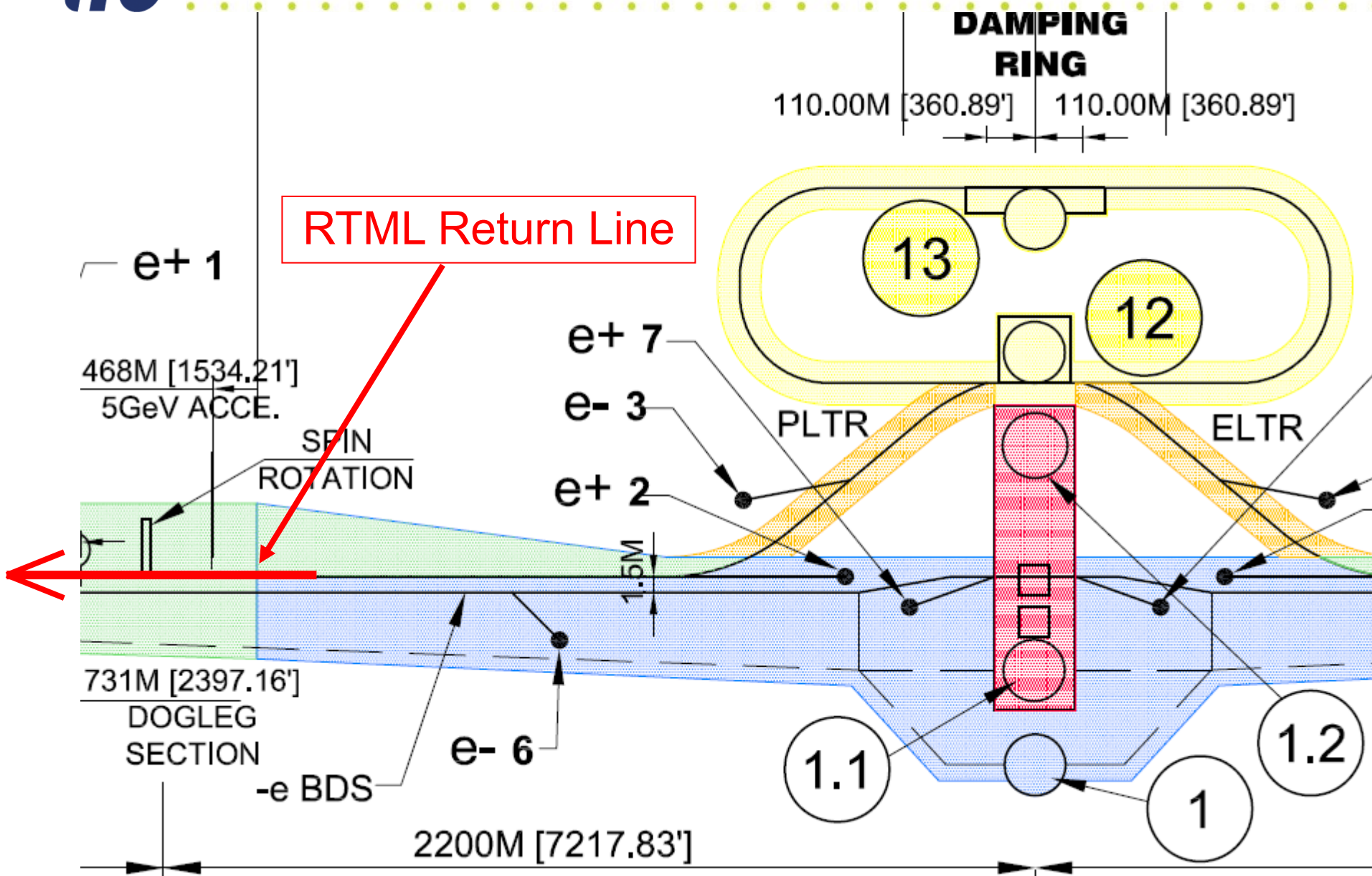
# RTML configuration in Central Area







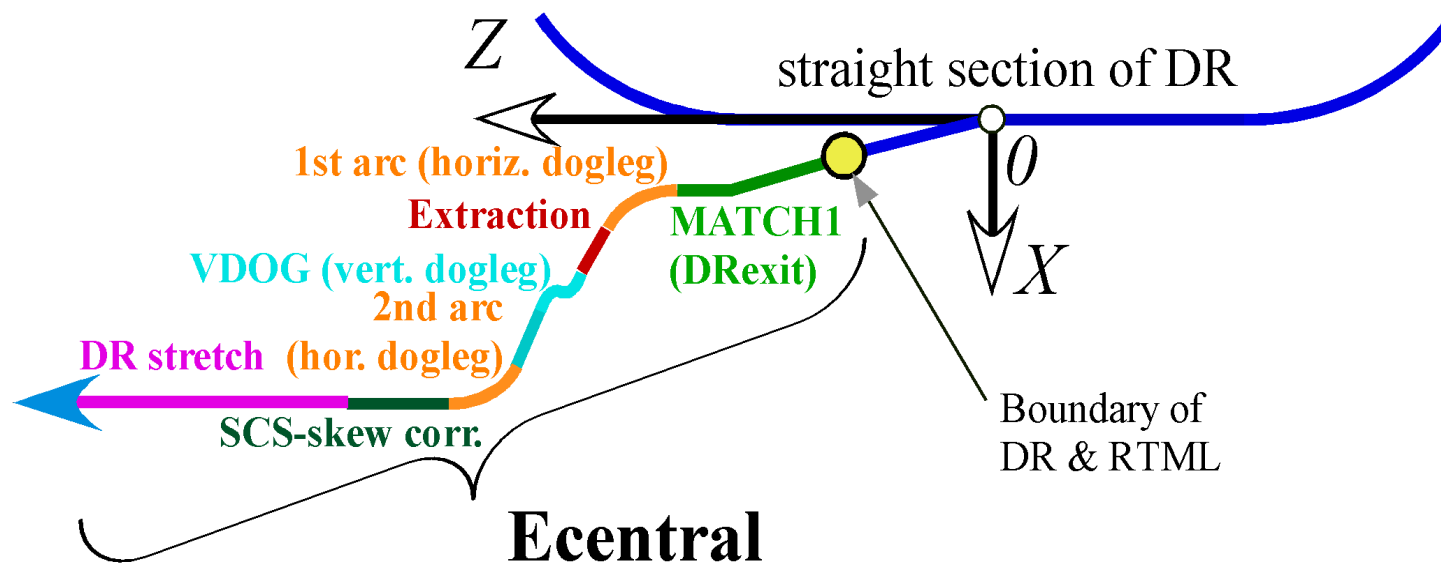
# RTML configuration in Central Area







# DR exit & global coordinate system



DR-end: MAD8 file:

“EXT\_RTML: S=87.90;

$\beta_x=73.77$ ;  $\alpha_x=-0.1132$ ;

$DX=-0.49$ ;  $DPX=0.20E-02$ ;

$\beta_y=17.18$ ;  $\alpha_y=-1.33$ ;

$DX=-0$ ;  $DPX=0$ .

$X=508.8\text{mm}$ ;  $PX=54\text{ mrad}$

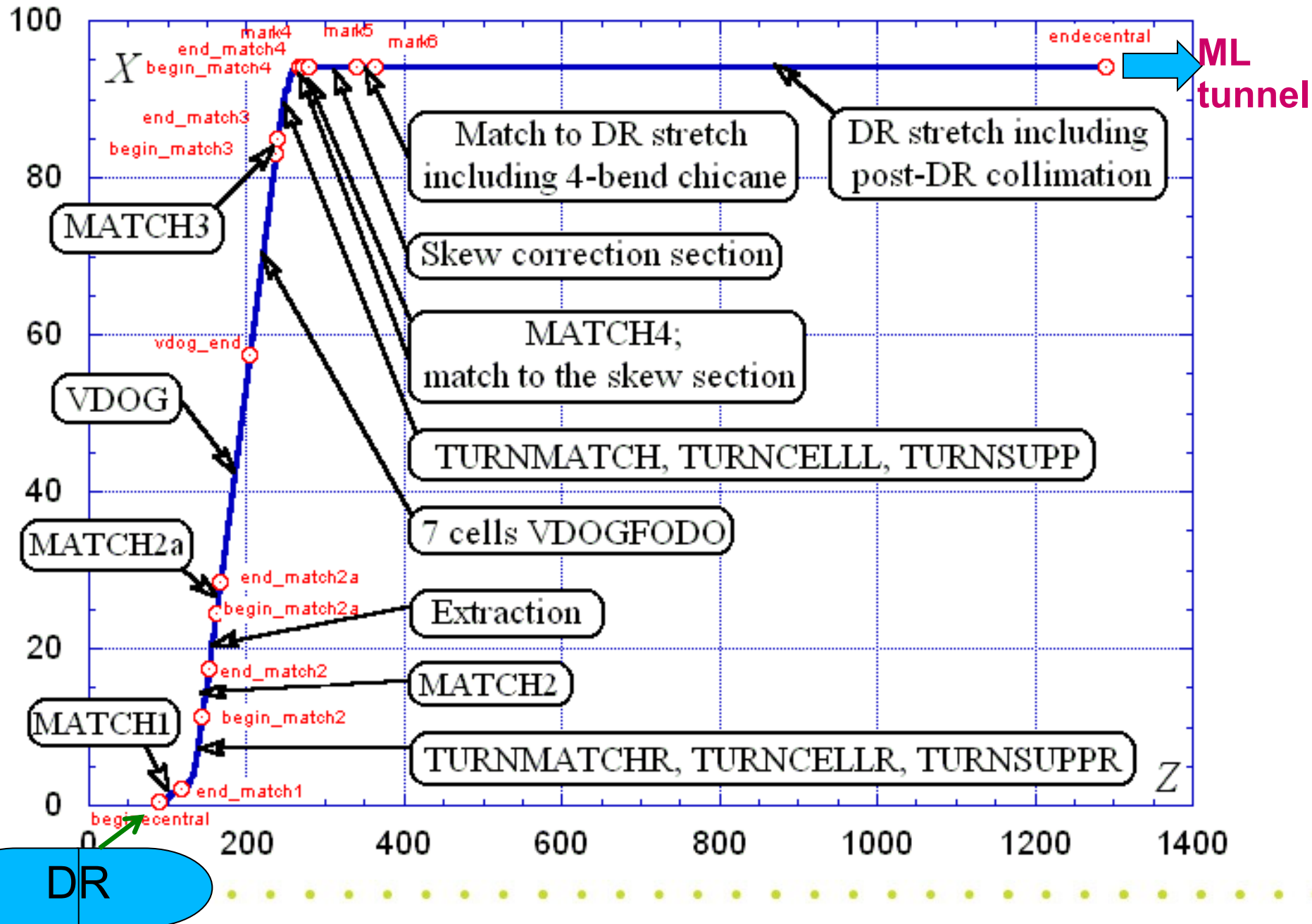
- S.Guiducci, Sept. 2010: Boundary DR & RTML should be relocated to the exit of the extraction septa.
- Global coord. origin -> center of DR straight section
- “DR-exit” with  $D_x$  compensation are included in RTML
- RTML start (in MAD8 conventions):

$$\{X, Y, Z\} = (0.508; 0; 87.9); \quad \{\Theta_{xz}; \Phi_{yz}; \Psi_{xy}\} = \{0.054; 0; 0\}$$



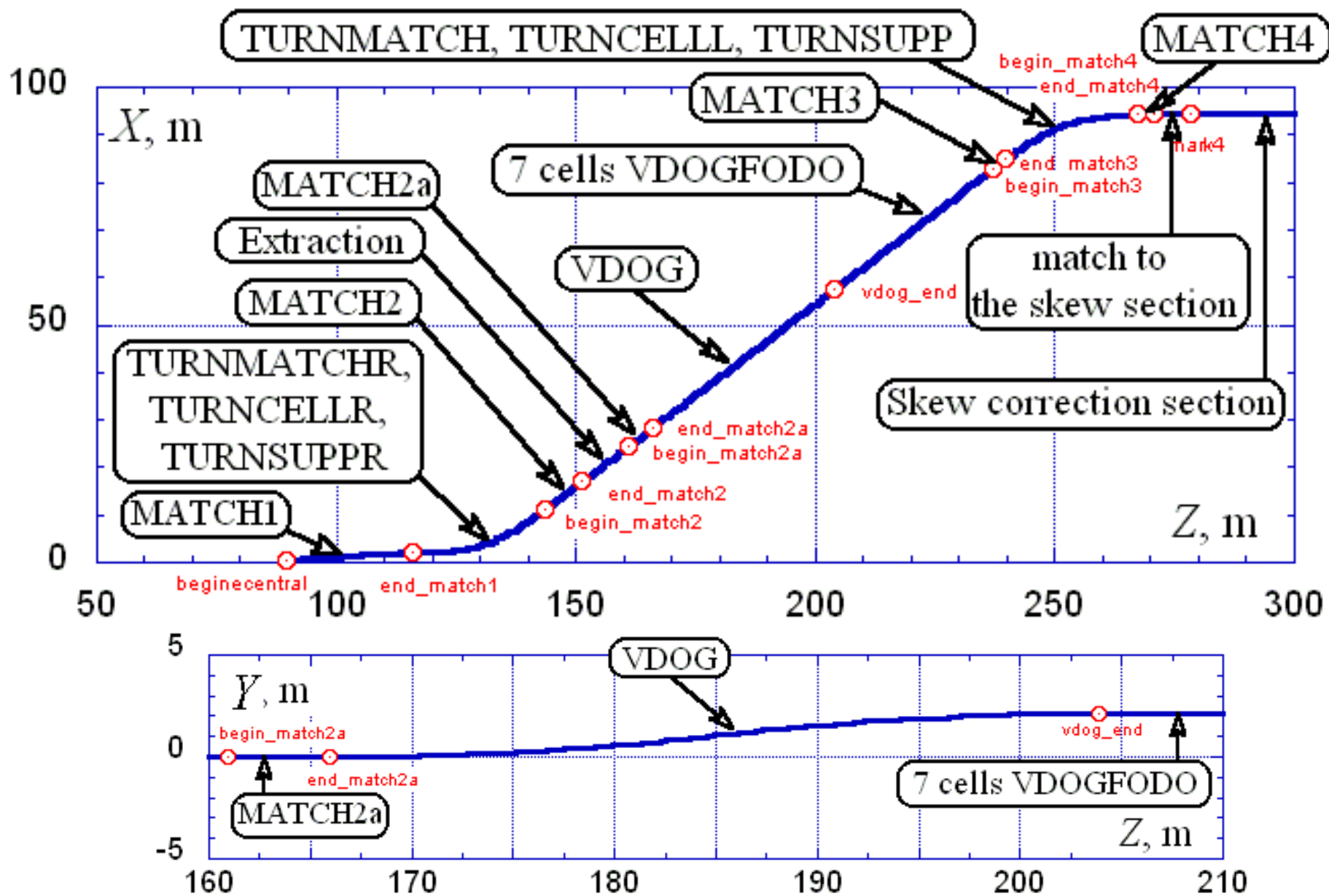


# “ecentral” layout (via MAD-8 survey)



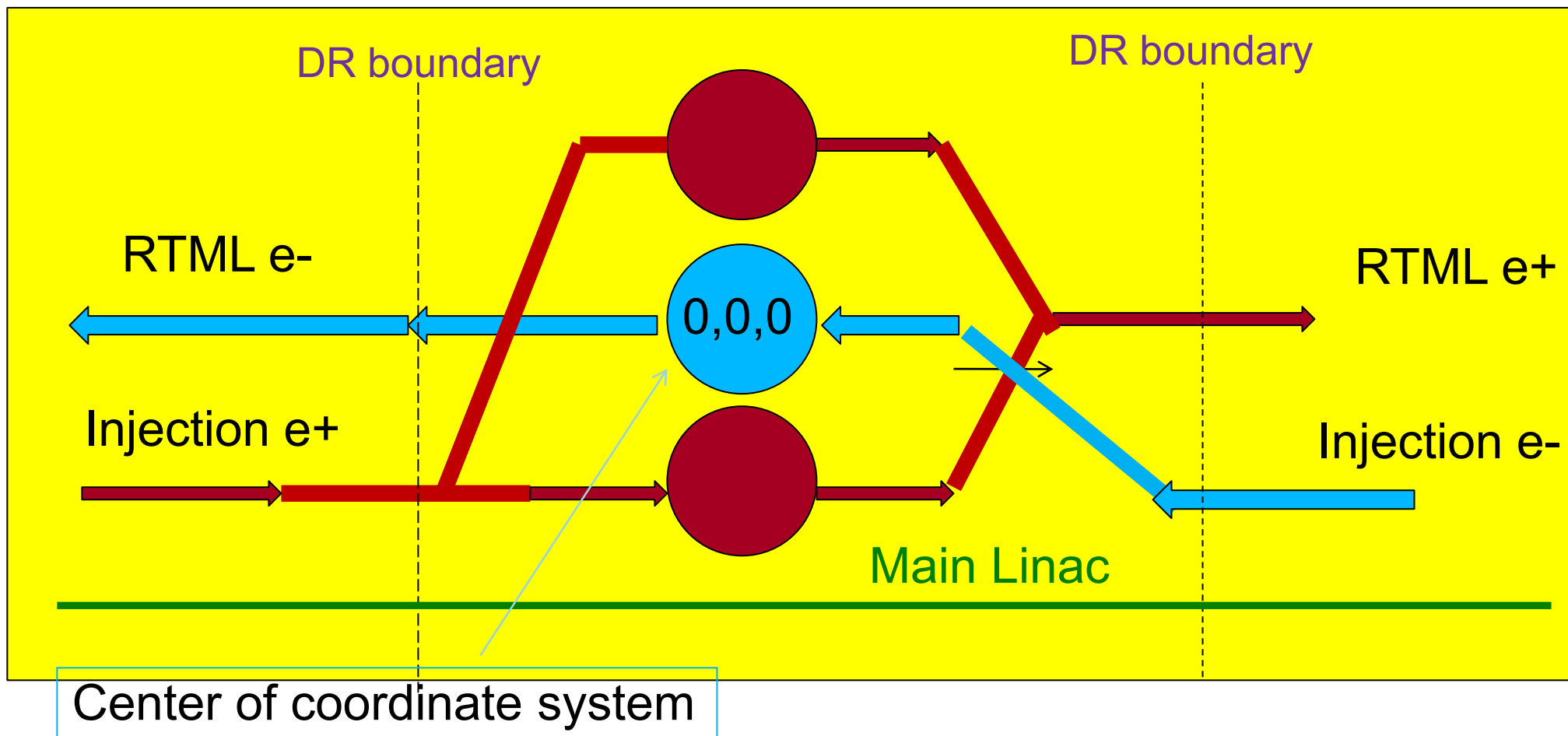


# “ecentral” layouts in details



# Proposed Layout

- Vertical locations of the electron and positron DR's
- Positron/ electron sources files (both sides)



- DR
  - DR sketch of the extraction/injection lines inside DR tunnel up-to boundaries with subsystems (Mark/Susanna)
  - Lattice design and 3D drawings
- Sources
  - Rough Design of the lines in transfer tunnel (with W.Gai, and Norbert)