

FLASH II

A combined proposal of HZB (BESSY) and DESY

Present coordinators:

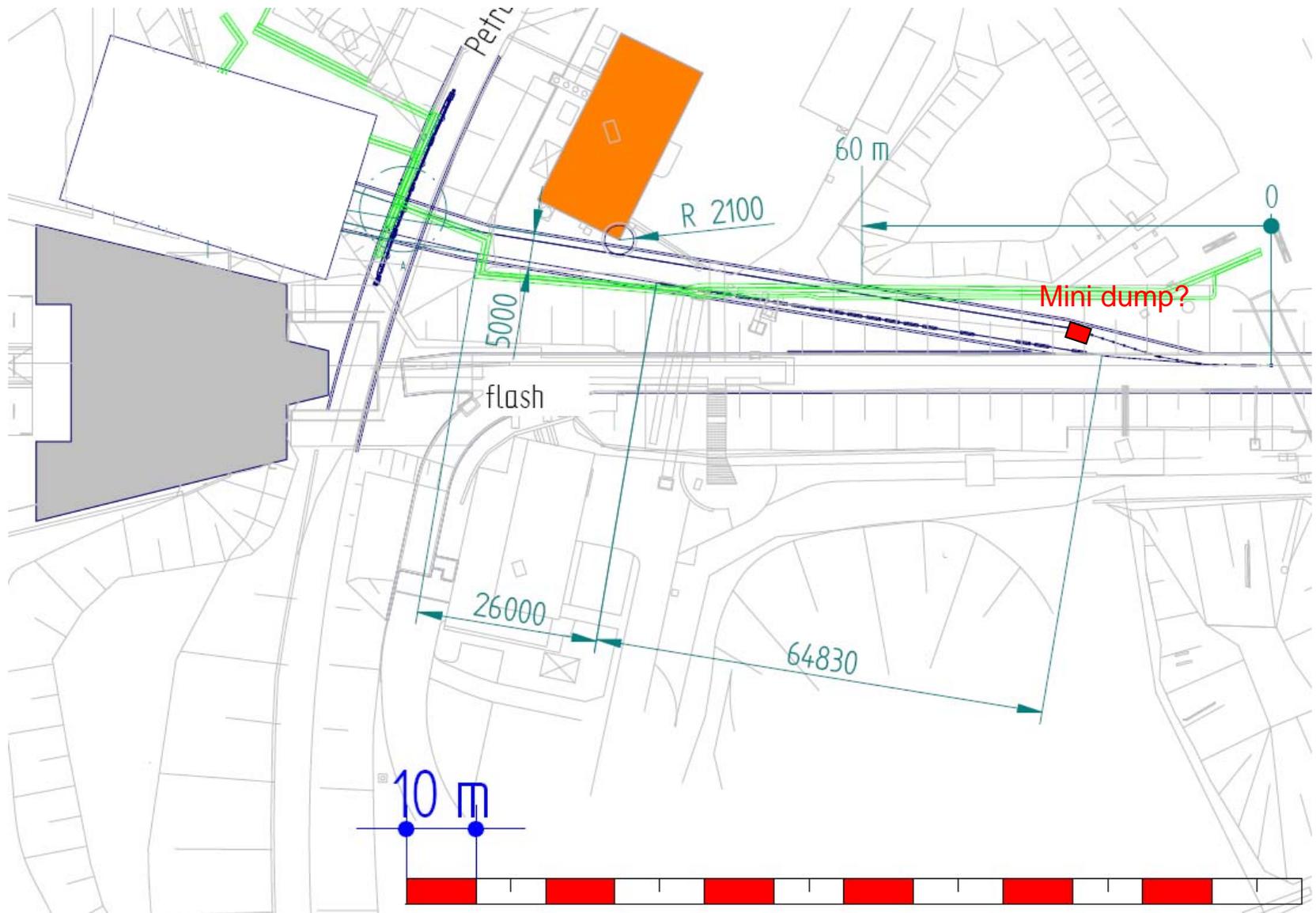
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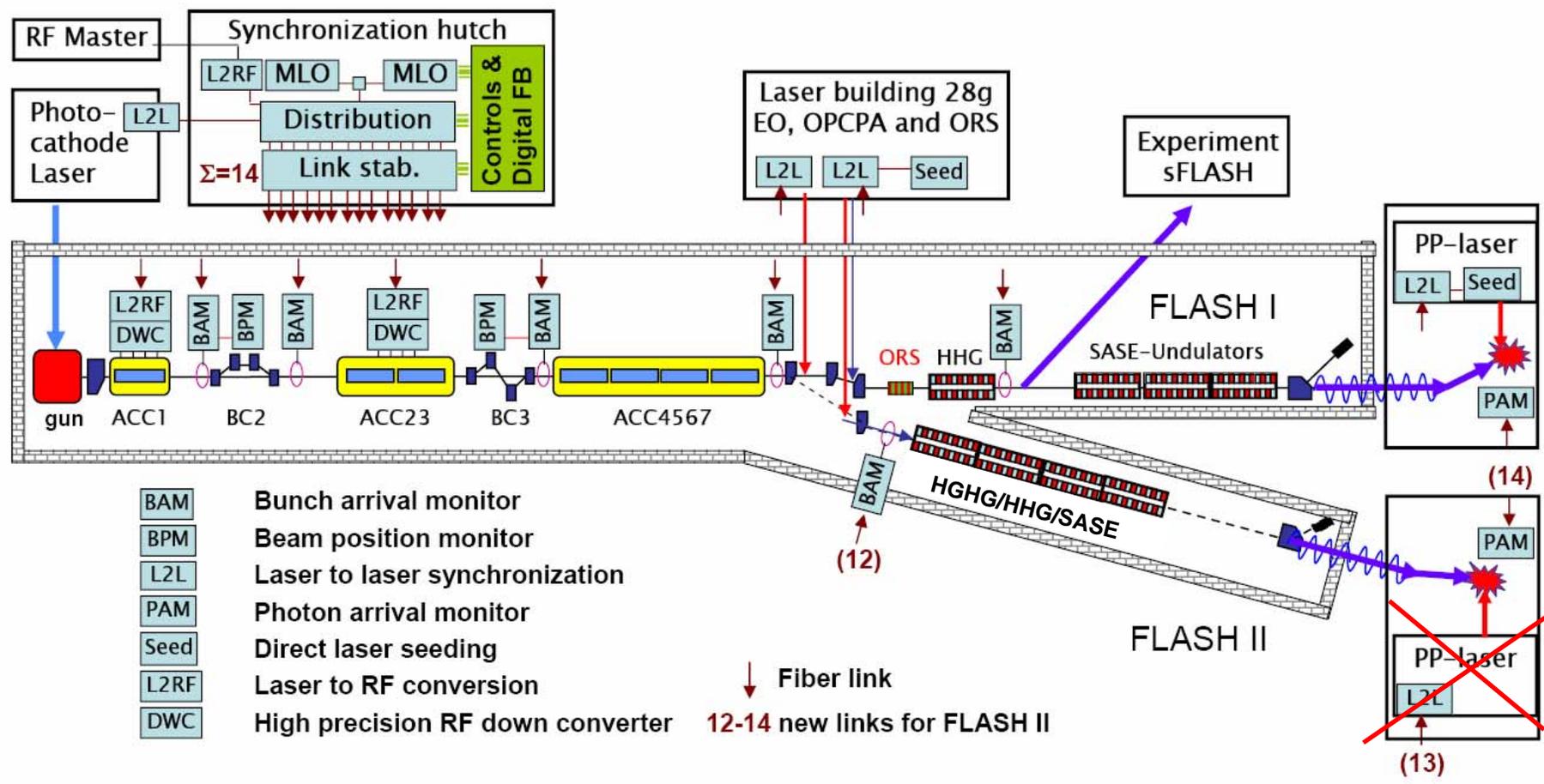
Main goals:

Extend user beam time

Further development of FEL technology (until 2013 seeding schemes HHG and HGHG)

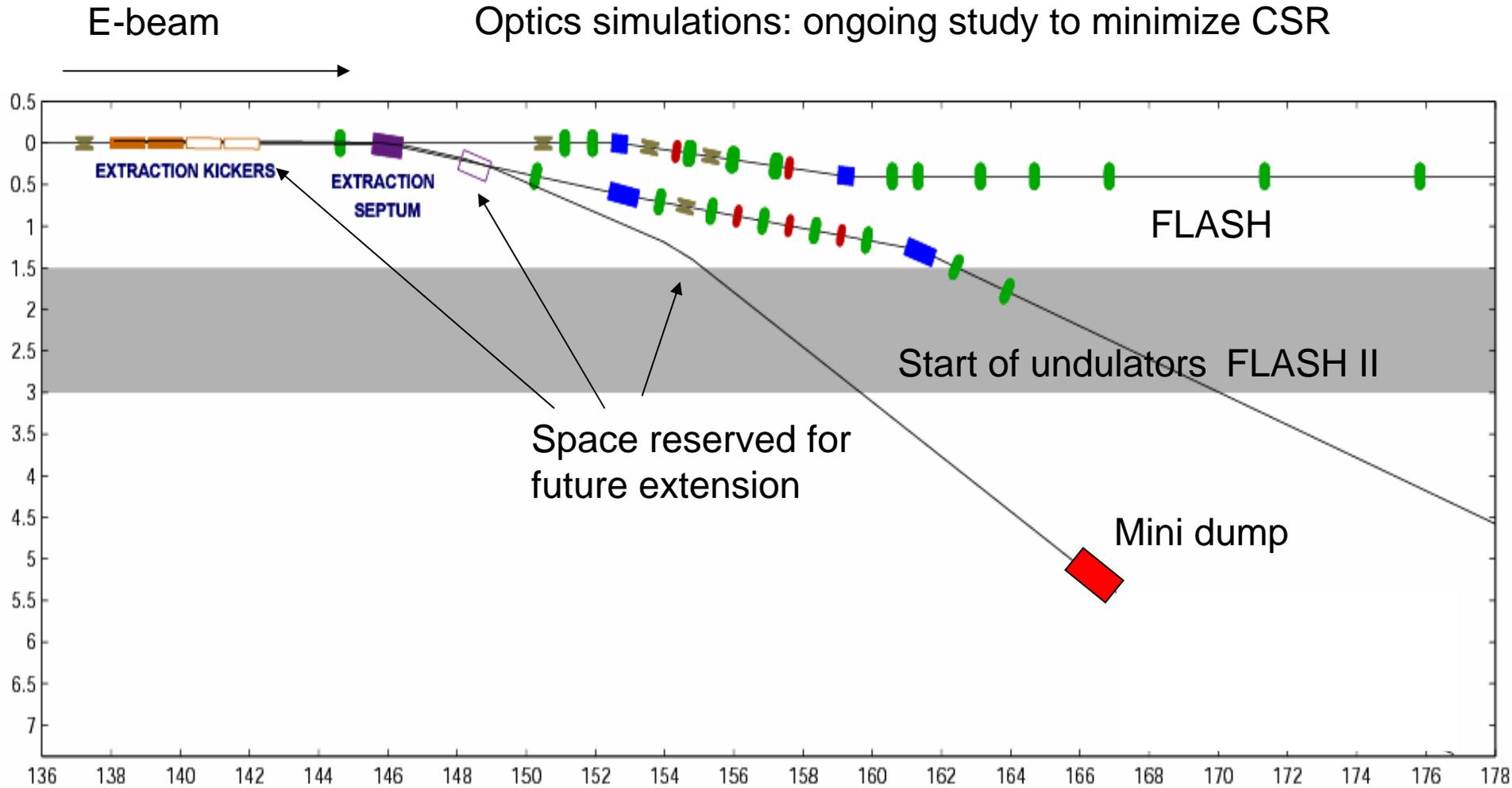


Synchronization

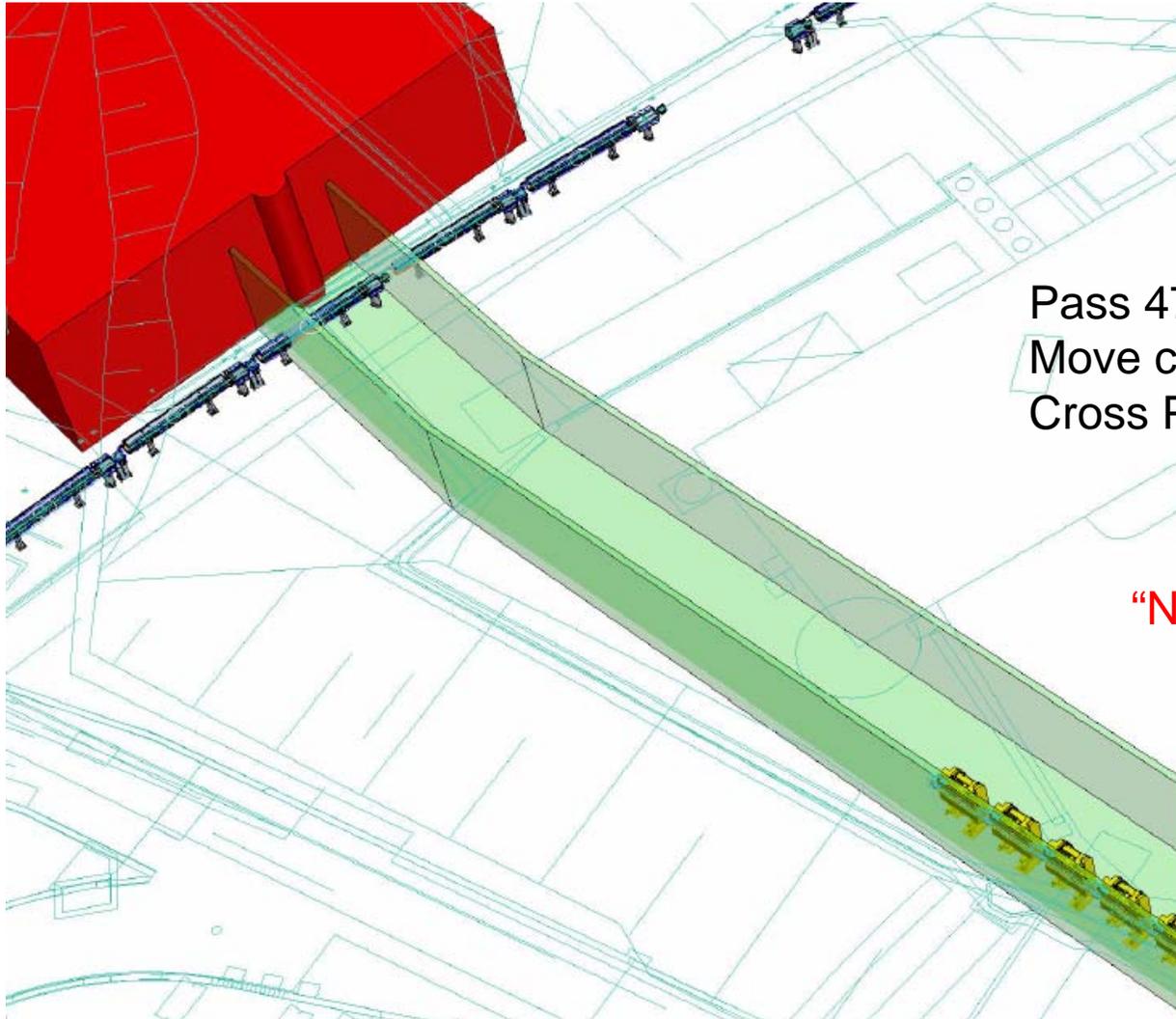


Courtesy H. Schlarb, DESY

Layout: separation



Crossing of PETRA

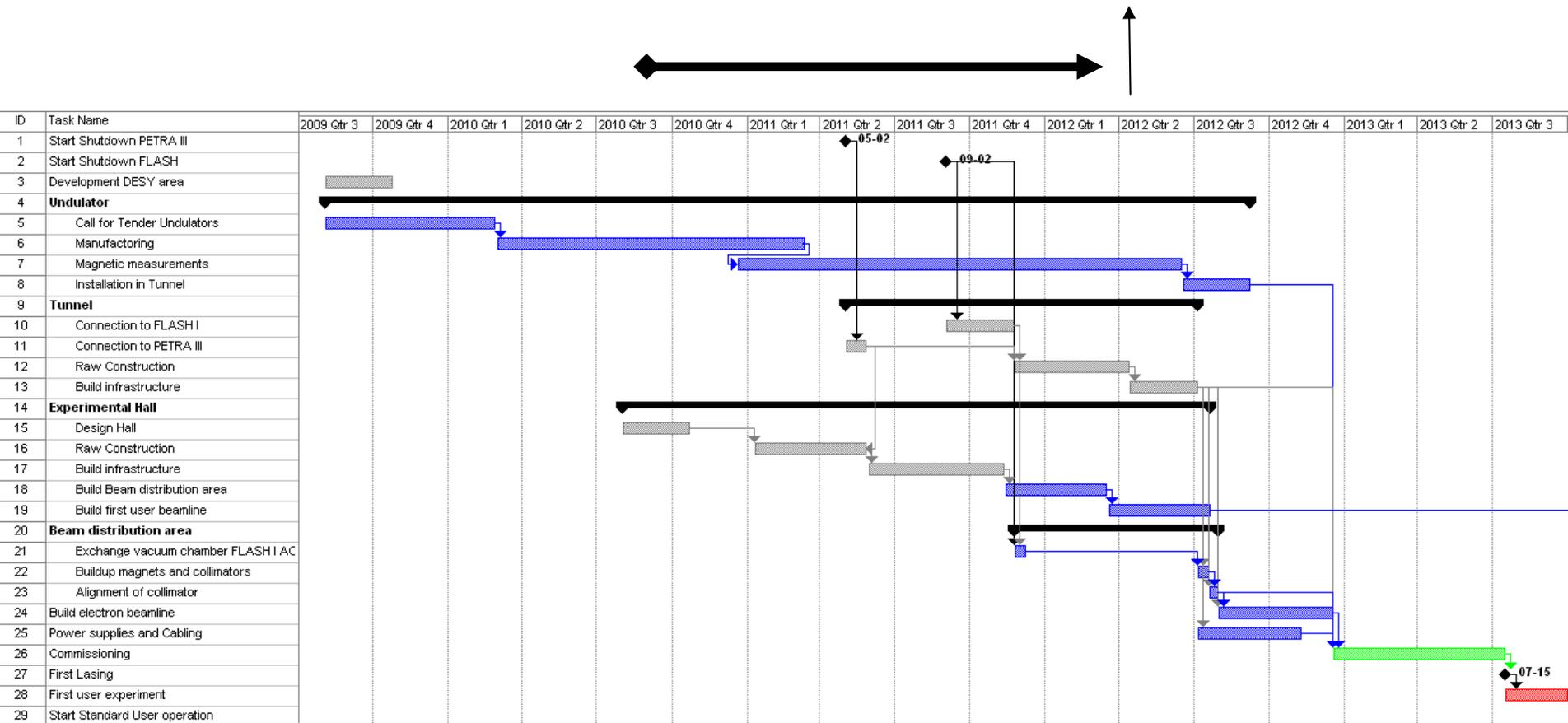


Pass 47A without interfering
Move cables along FLASH/PETRA
Cross PETRA between supports

“New” design of dump starting?

Starting point determined by “call for tender” undulators
Critical points are connection with PETRA and FLASH

Hardware in tunnel



FLASH 2011 shutdown (October?)

- Dismantle BYPASS (to be confirmed)
- Change ACC7/TCOL section for extraction

2012-2013

- Buildup beamline FLASH II up to dump
- Make connection to FLASH I
- Buildup temporary beamline to mini dump

Preparation starts in 2010, work until 2013 (~4 years)

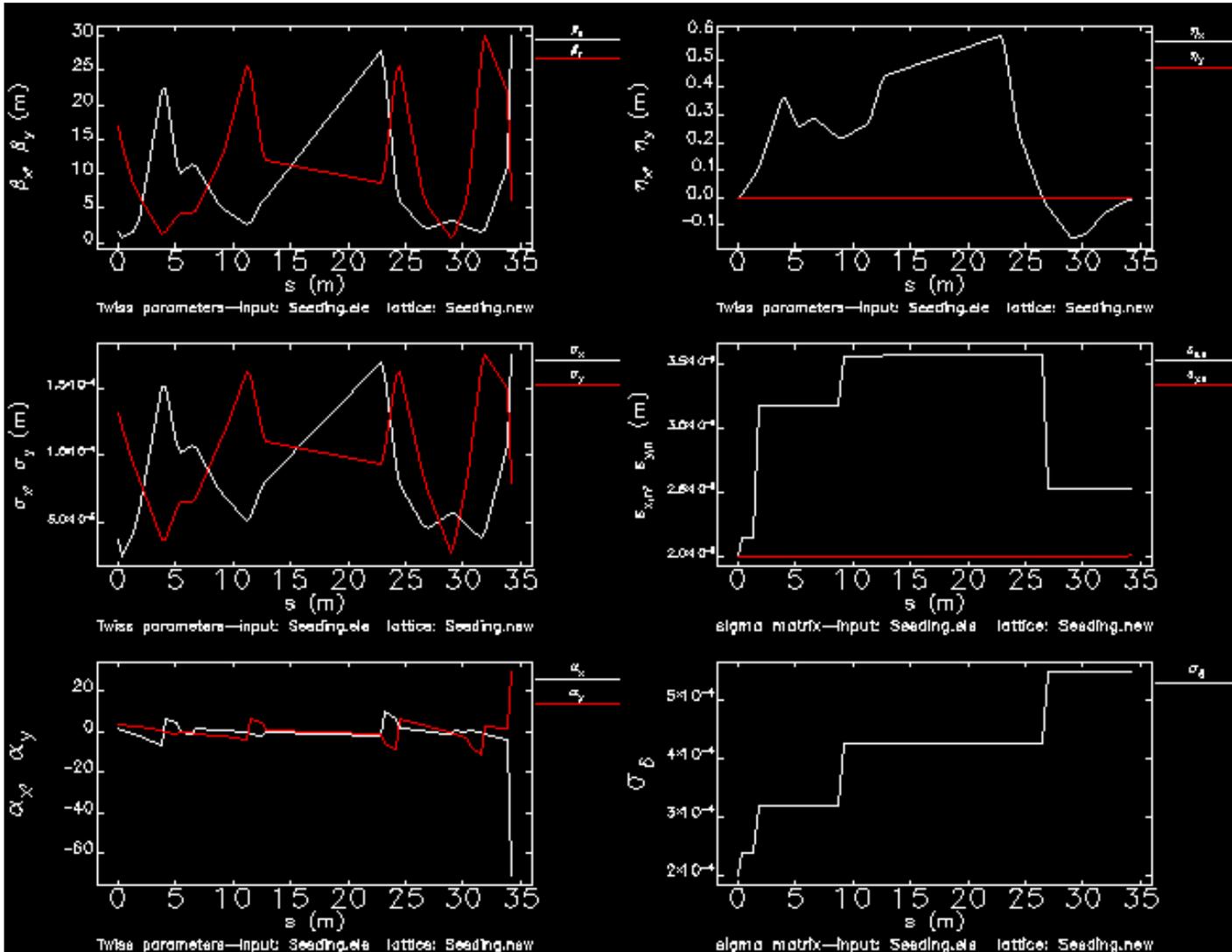
Original idea: separation in D7ECOL by switching from $-3.5 \rightarrow +3.5$ A
Sharing all collimators and some of the magnets
Angles are $+3.5, +3.5, \dots$

Beam dynamics simulation with CSR with extended dogleg

ONLY CHECKED SMALL EMITTANCE

Starting with D1ECOL position

At 1 GeV about $2 \rightarrow 2.5$ mm mrad emittance, $0.2 \rightarrow 0.5$ MeV energy spread



Beam dynamics simulation with CSR

Start with 2 dipoles with 3.5 degree angle, separated by 2 m

3rd dipole after another meter with -0.7 degr. (R56?)

4 quads

3.5 degree dipole (final angle about 10 degr.)

4 quads for matching

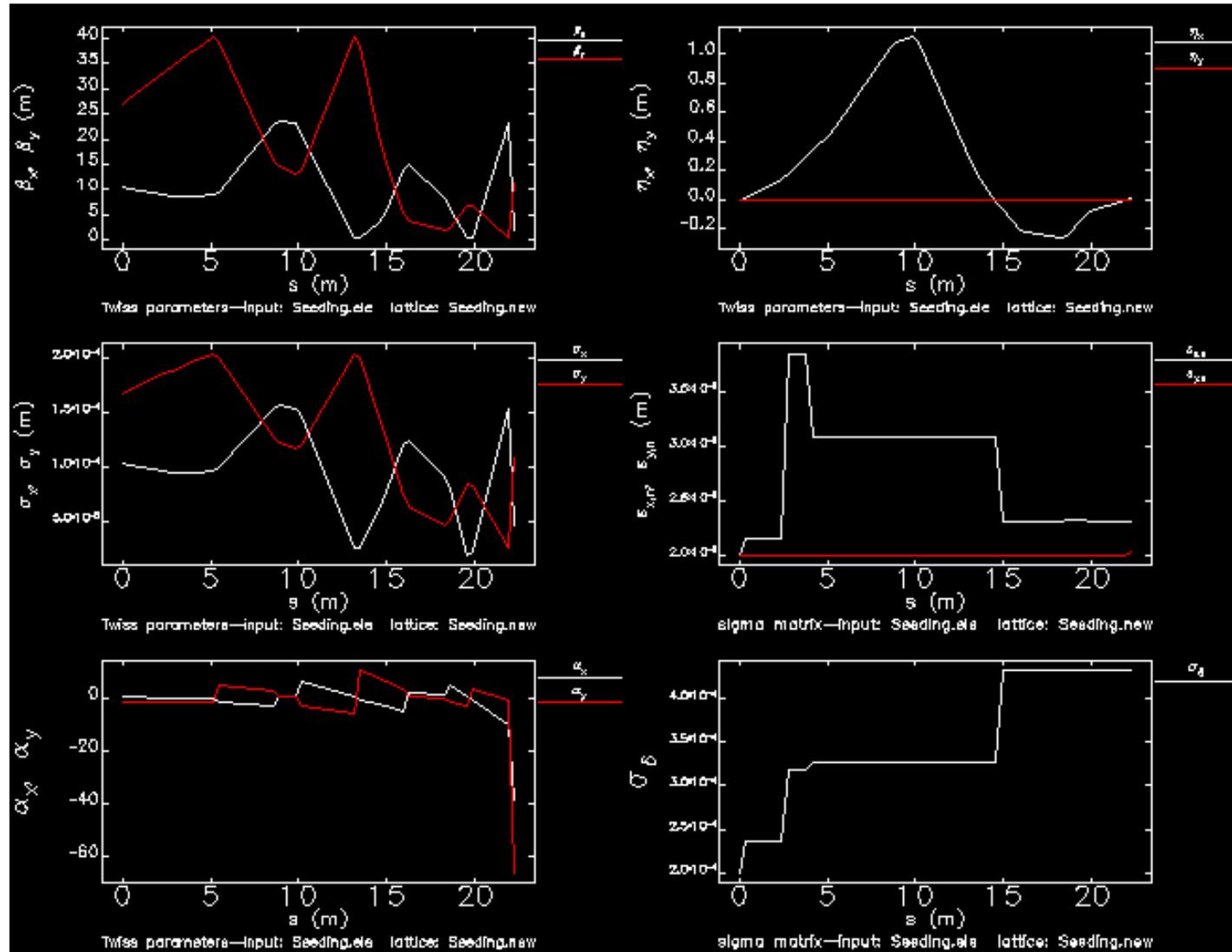
No sextupoles

No space (checked) for collimators

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Starting with D1BYP position

At 1 GeV about $2 \rightarrow 2.4$ mm mrad emittance, $0.2 \rightarrow 0.44$ MeV energy spread



Starting with ~D1BYP position

At 0.5 GeV about $2 \rightarrow 2.6$ mm mrad emittance, $0.2 \rightarrow 0.44$ MeV energy spread

