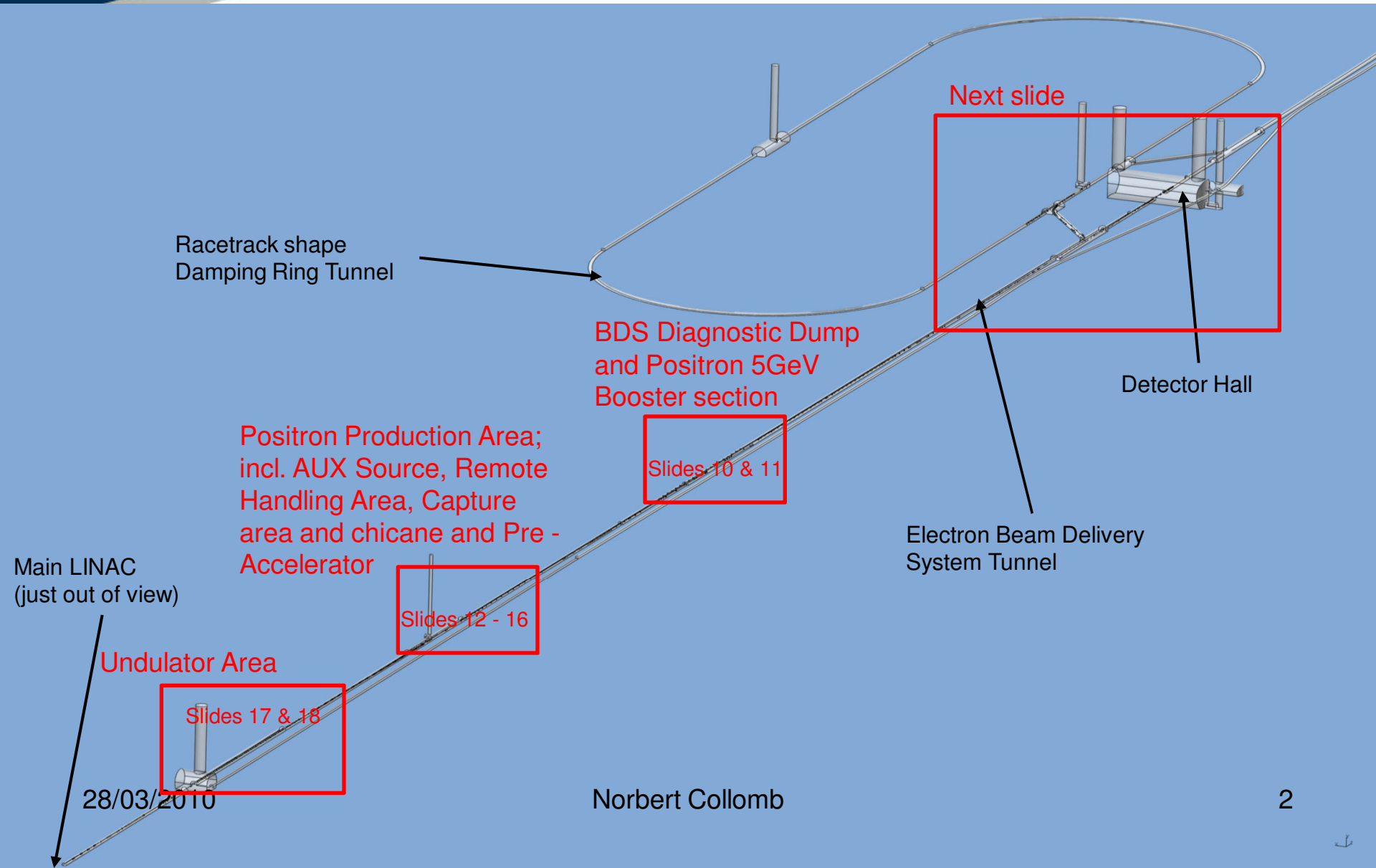


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Interpretation of available data into CAD 3D virtual model to serve as true scale graphical representation.

by N.Collomb

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Racetrack shape
Damping Ring Tunnel

Next slide

BDS Diagnostic Dump
and Positron 5GeV
Booster section

Detector Hall

Positron Production Area;
incl. AUX Source, Remote
Handling Area, Capture
area and chicane and Pre -
Accelerator

Slides 10 & 11

Electron Beam Delivery
System Tunnel

Main LINAC
(just out of view)

Slides 12 - 16

Undulator Area

Slides 17 & 18

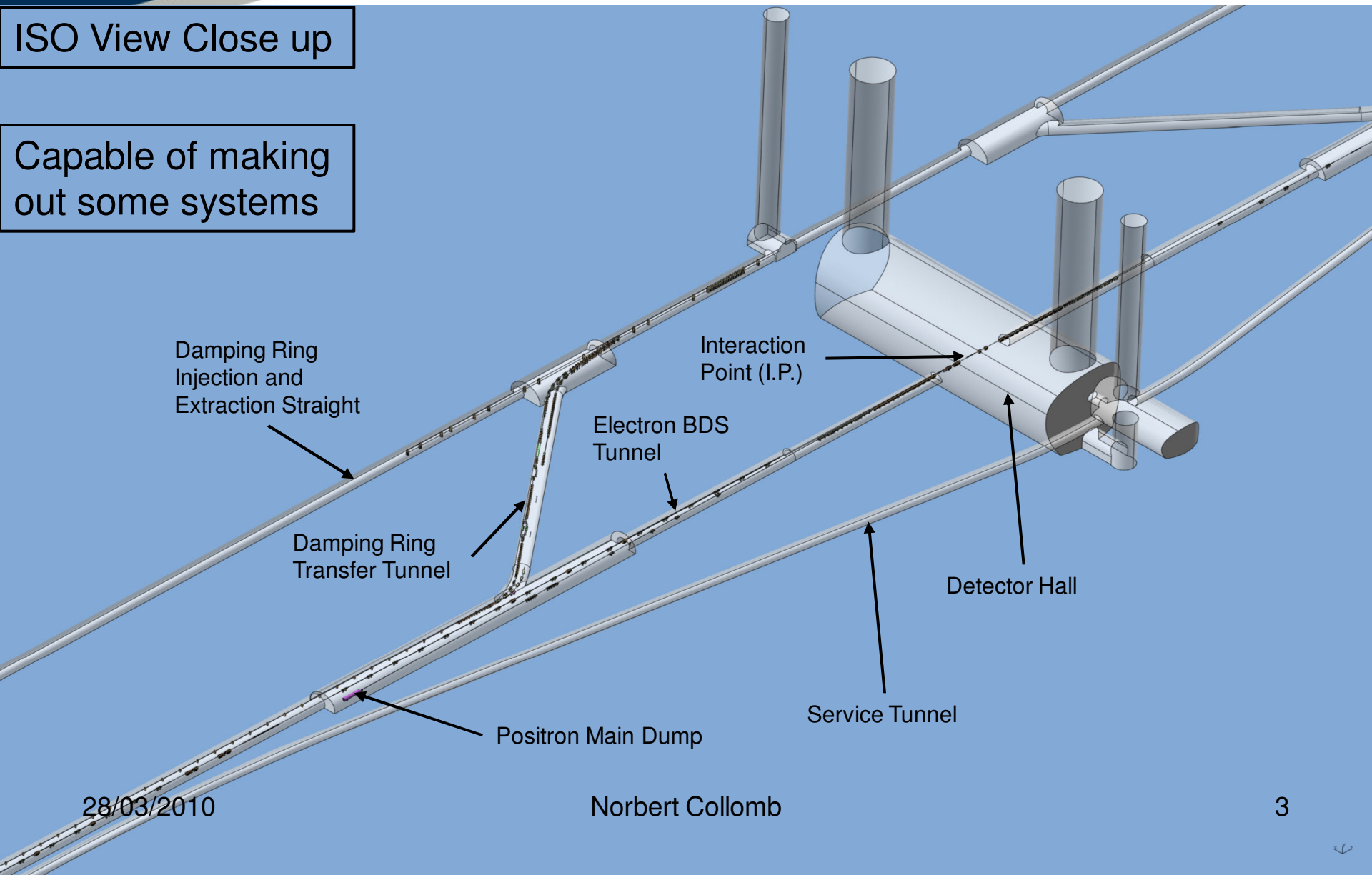
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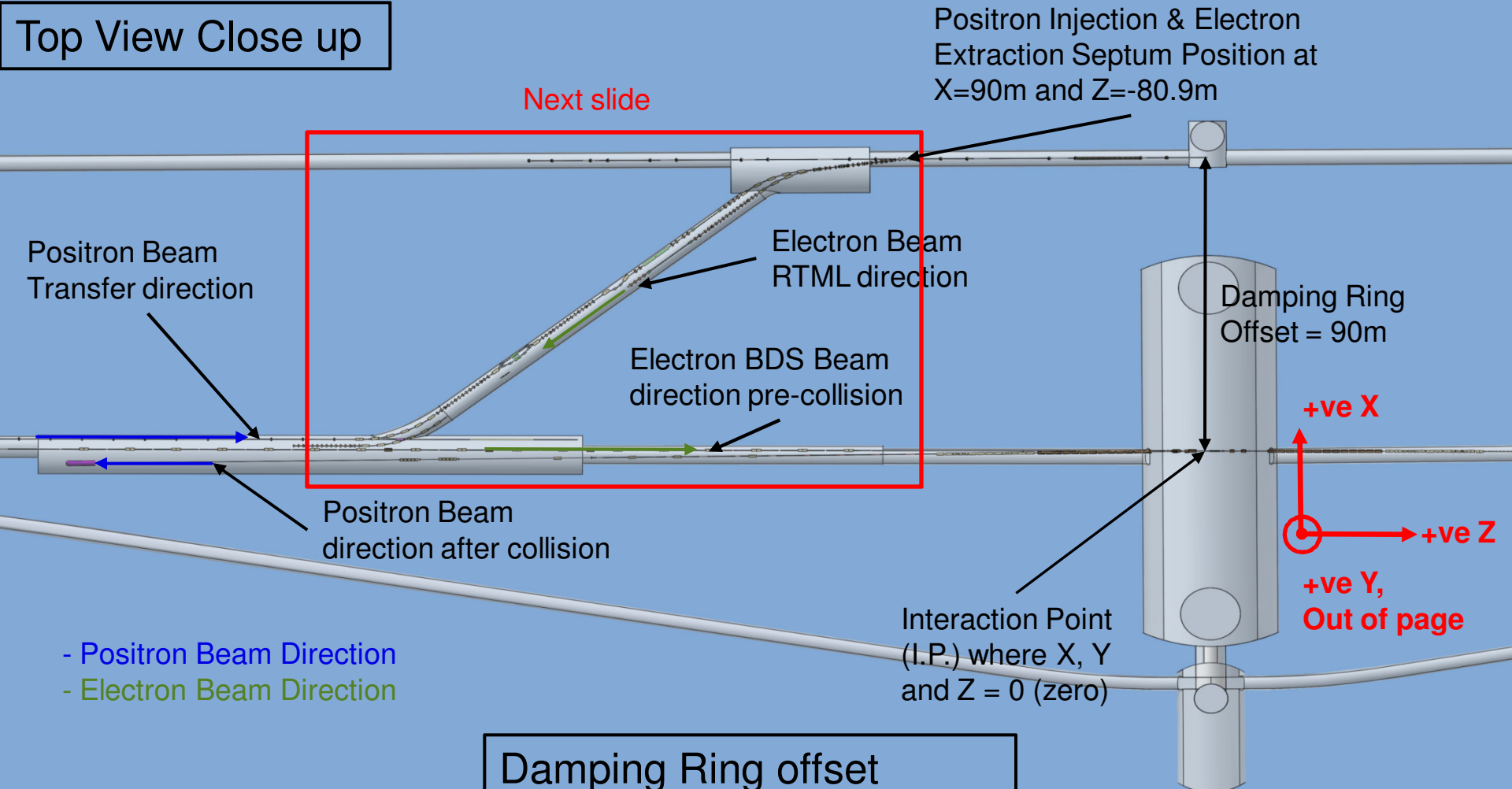
ISO View Close up

Capable of making out some systems



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Top View Close up



Damping Ring offset
change since Albuquerque

- Positron Beam Direction
- Electron Beam Direction

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Quite a bit of guess work going on at this moment. There are 9 Beam Dumps in the Transfer Tunnel?

Positron Elevator
($Y = 0\text{m}$ to 1.3m)

Positron Energy compression
(best guess)

$R=30\text{m}$, all Arcs,
with Dipoles at
 7.9316° spacing

Positron Spin Rotation relocated.
(400MeV version shown, 5GeV
requires larger Solenoids and
Dipole magnets, will NOT change
tunnel arrangement)

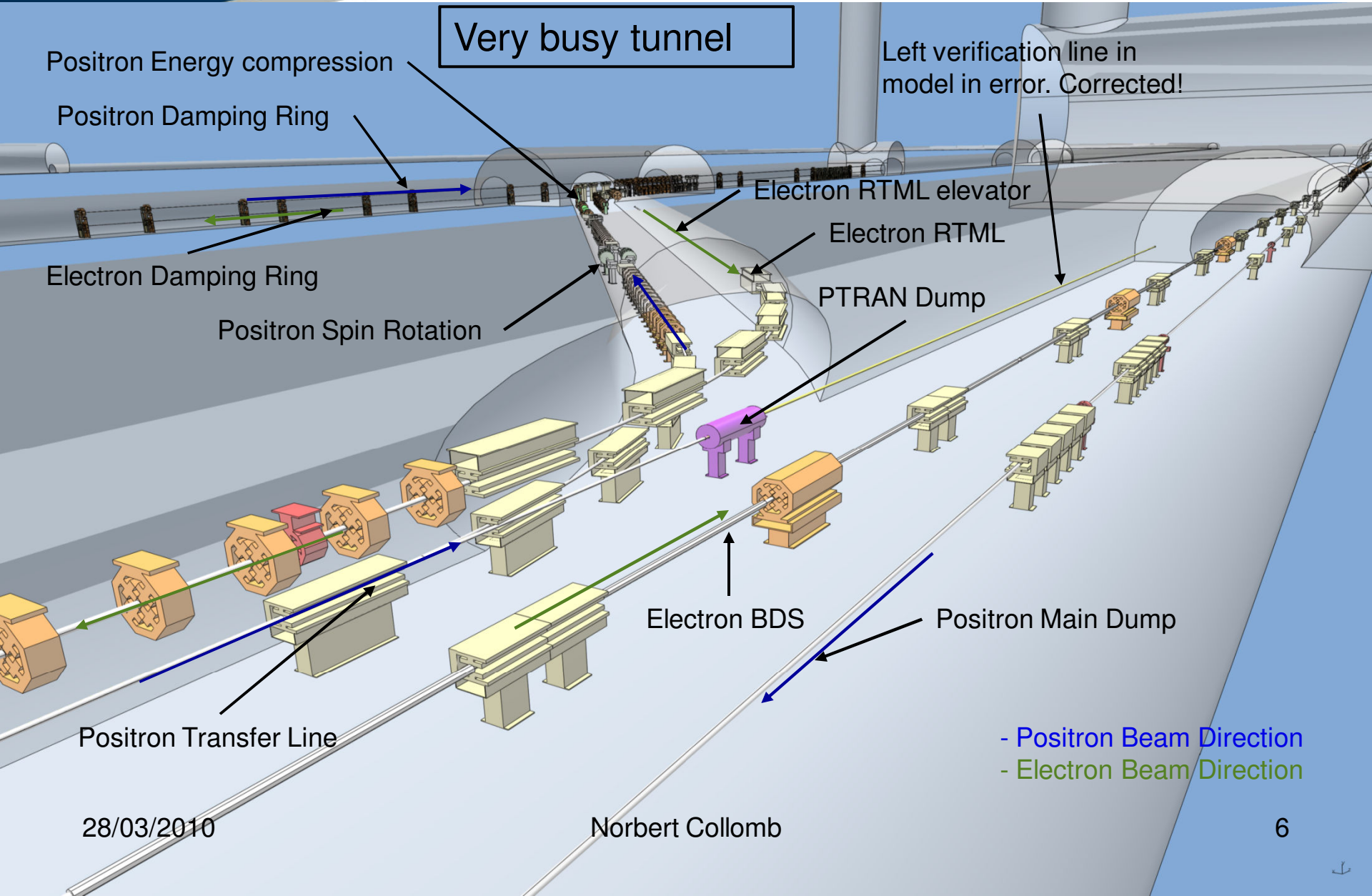
110 m between Dipoles

Electron Elevator
($Y = 0\text{m}$ to 2m)

Damping Ring offset
change since Albuquerque

- Positron Beam Direction
- Electron Beam Direction

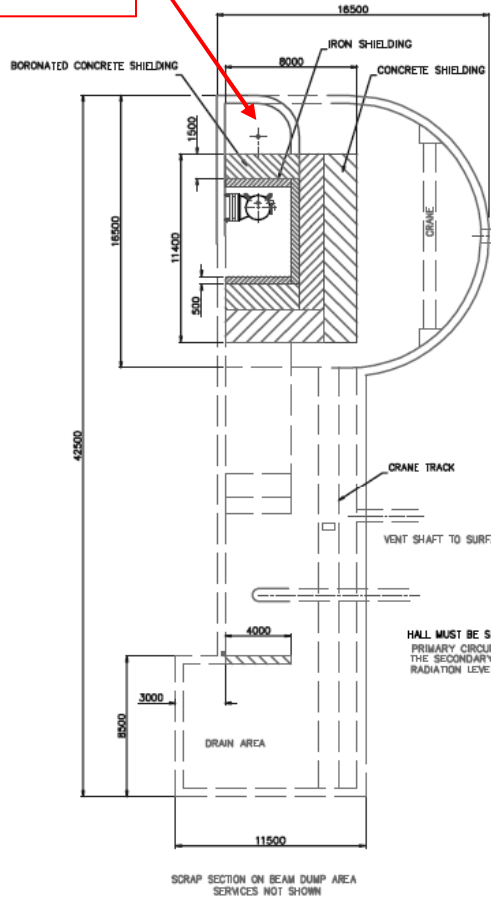
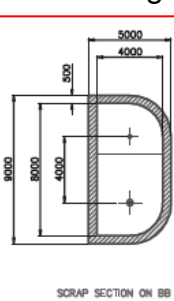
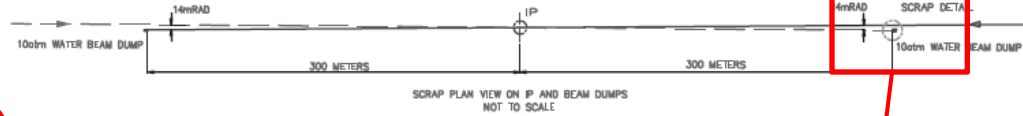
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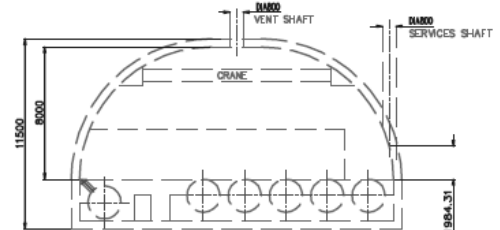
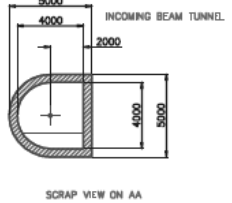
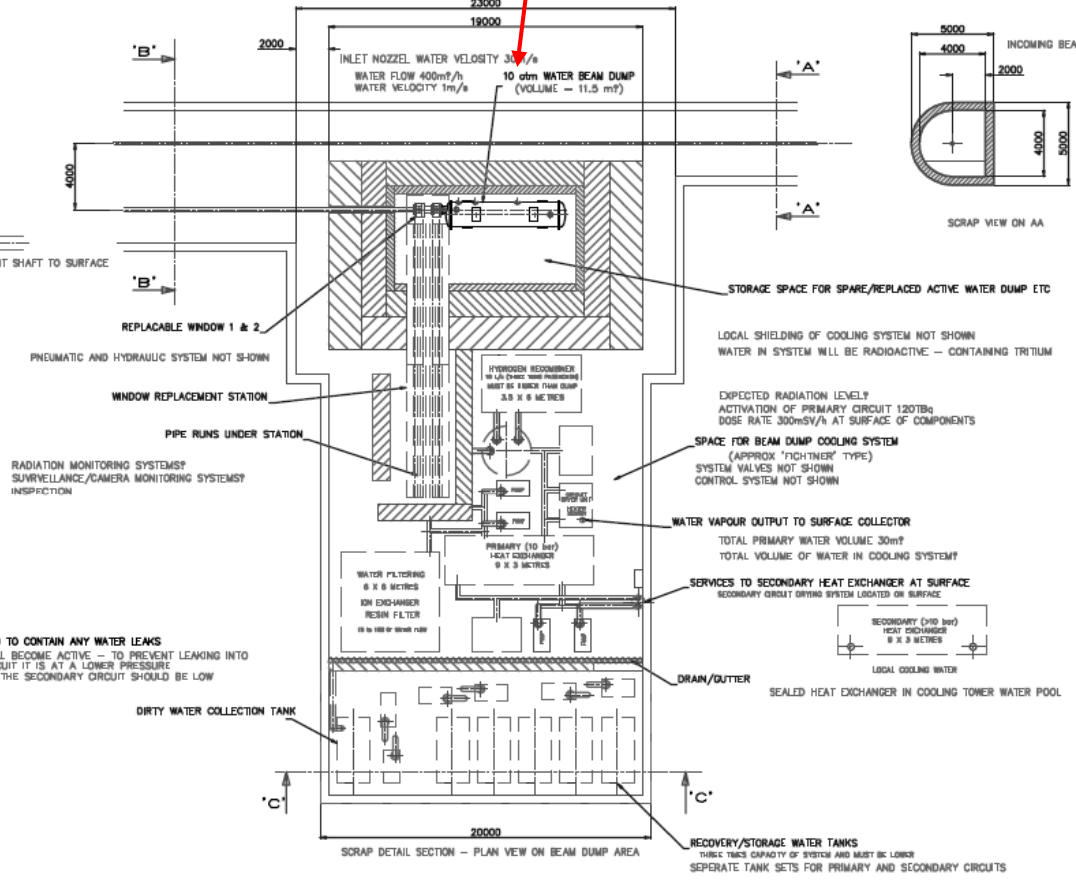
Positron Main Dump.
Tunnel arrangement has been
investigated previously. Next slide.

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Additional Electron Transfer line and e+ RTML to go in here



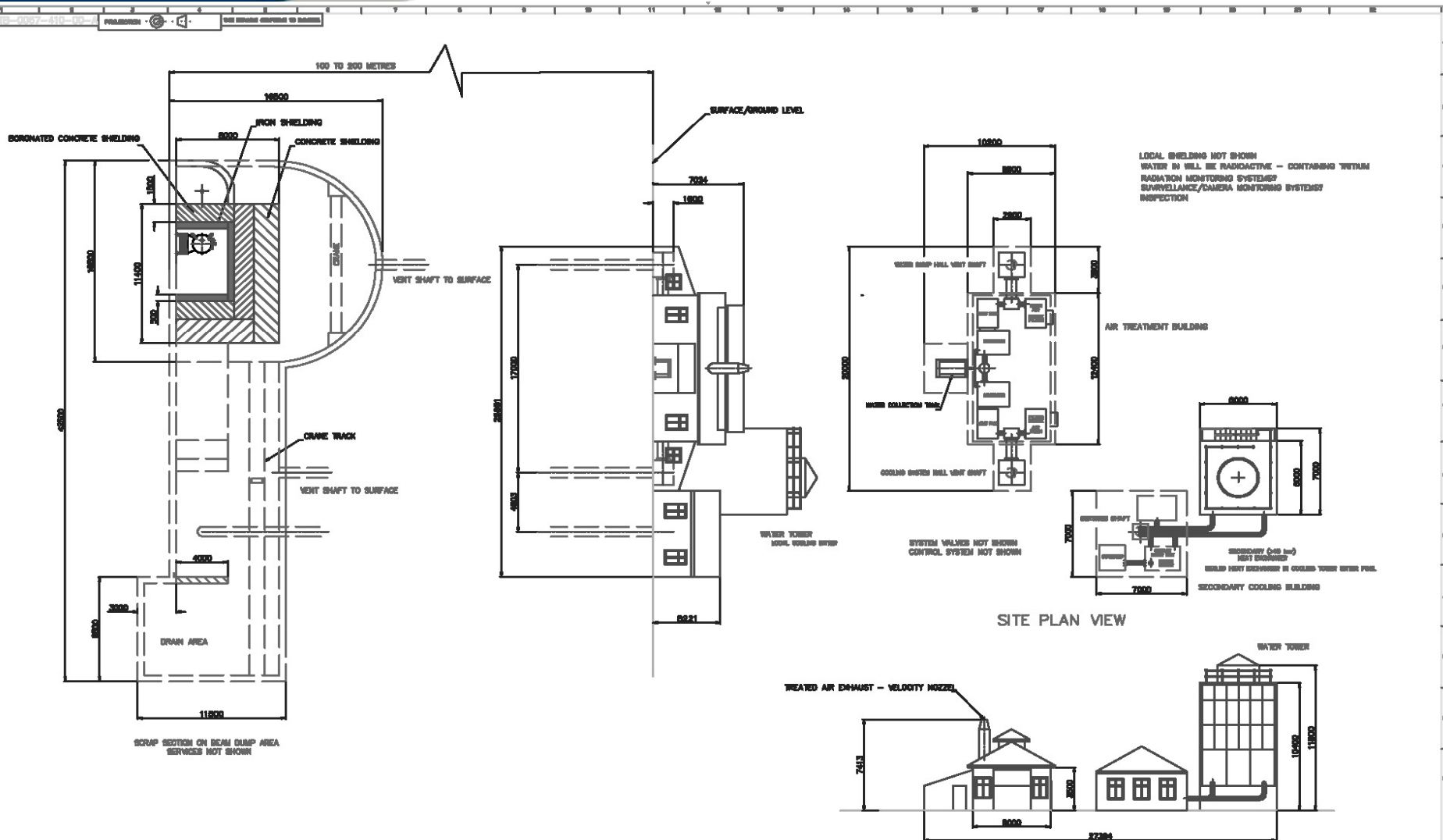
HALL MUST BE SEALED TO CONTAIN ANY WATER LEAKS
PRIMARY CIRCUIT WILL BECOME ACTIVE - TO PREVENT LEAKING INTO THE SECONDARY CIRCUIT IT IS AT A LOWER PRESSURE
RADIATION LEVEL OF THE SECONDARY CIRCUIT SHOULD BE LOW



Previous study investigated the shielding requirement and cavern design of main Beam Dumps (Electron Main Dump shown).

NO.	REV.	DATE	BY	CHKD.	APP'D.	STATUS
1	1	2009-05-10	...	...	...	...

DO NOT SCALE
UNLESS STATED
© ILLRC 2009
THE CENTRAL LABORATORY OF THE RESEARCH COUNCILS UNDER THE AUSTRIAN GOVERNMENT

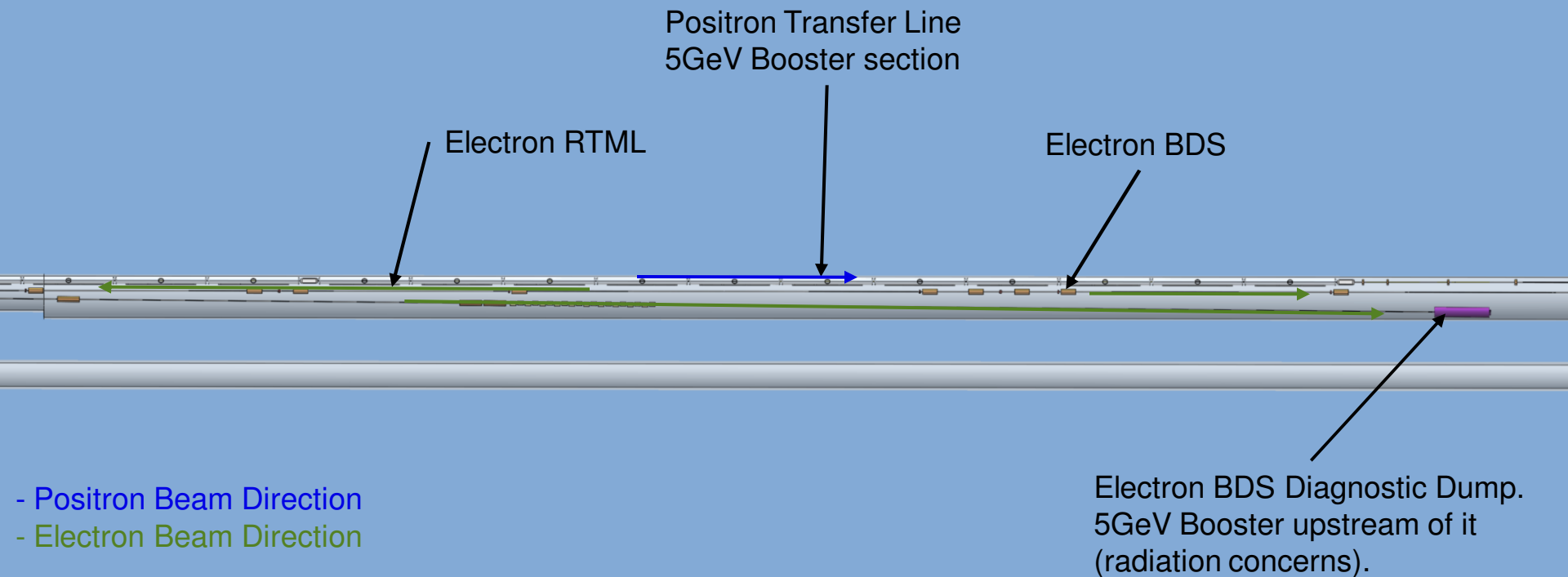


The study included the surface building requirements (Electron Main Dump shown).

NO.	DATE	BY	CHKD BY	APPV. BY	REVISION
1	2009-08-10	...	...	...	...
2	2009-08-10	...	...	...	...

TITLE: WATER BEAM DUMP SURFACE SITE SCHEME
 PROJECT: ILC - BEAM DUMP COST PLANNING
 DRAWING NO: SB-008-010-001

No changes here since Albuquerque



No changes here since Albuquerque

- Positron Beam Direction
- Electron Beam Direction

Positron Transfer Line
5GeV Booster section

Electron BDS
Diagnostic Dump

Electron RTML

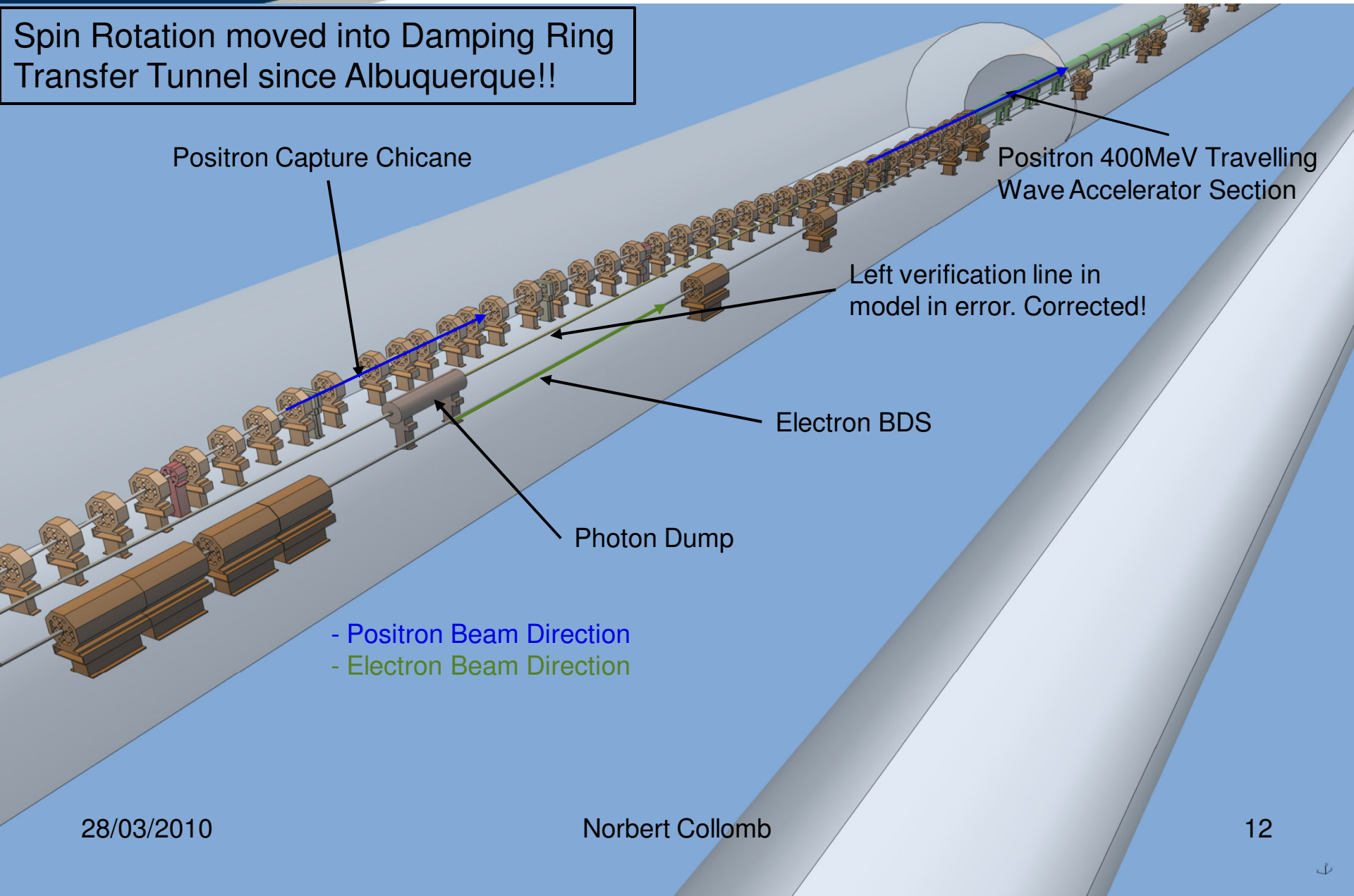
Electron BDS

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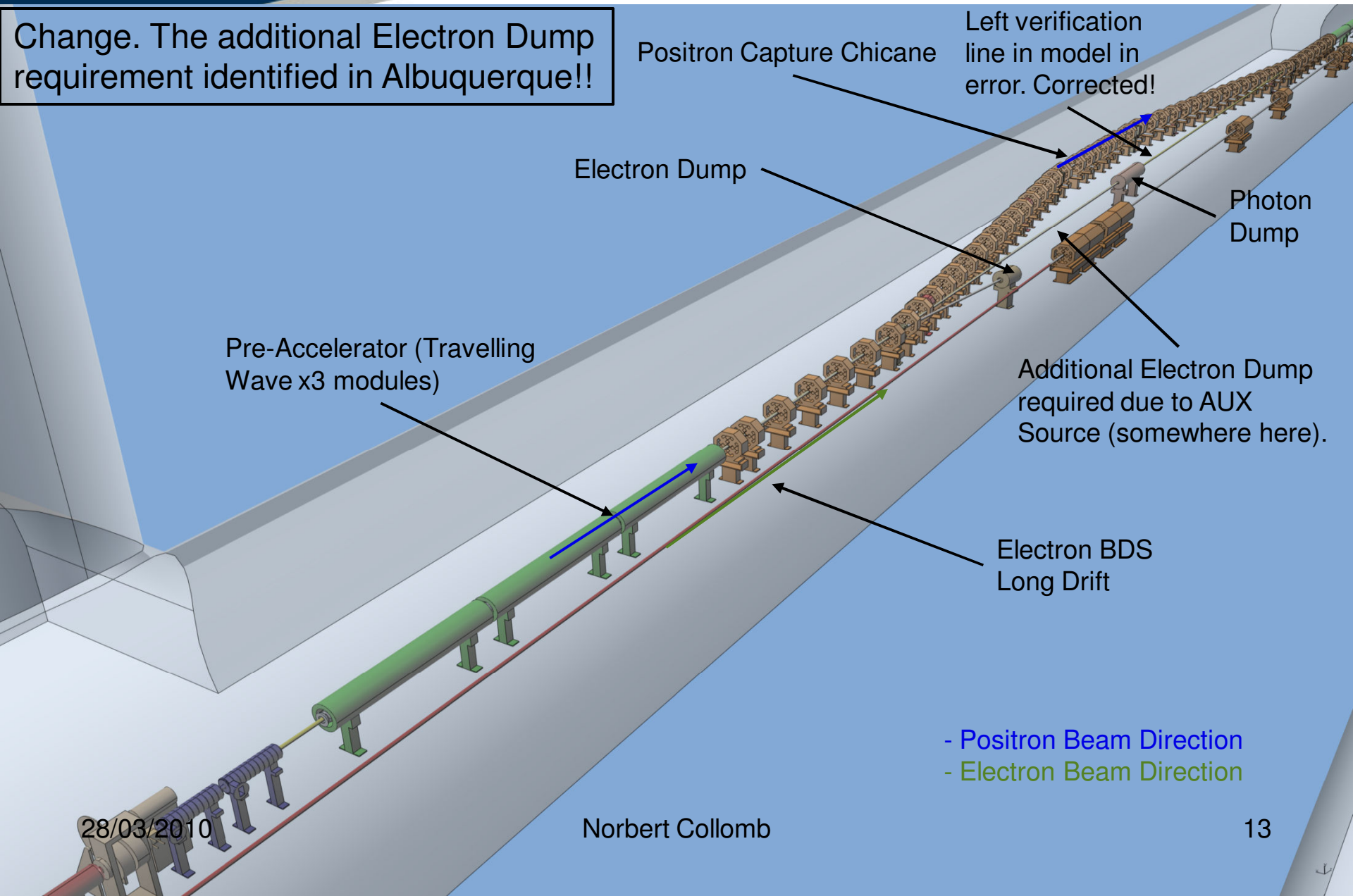


Spin Rotation moved into Damping Ring
Transfer Tunnel since Albuquerque!!

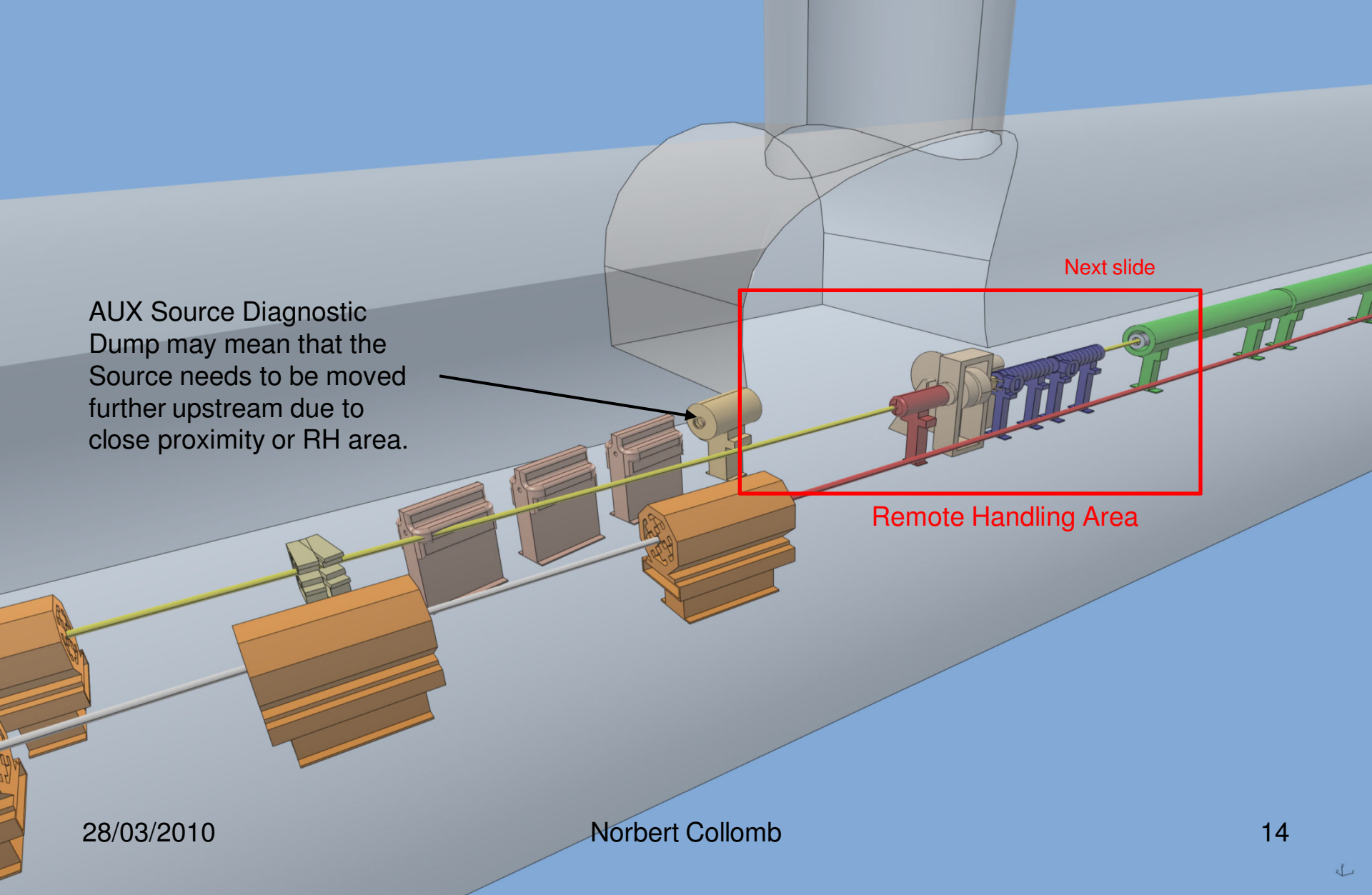


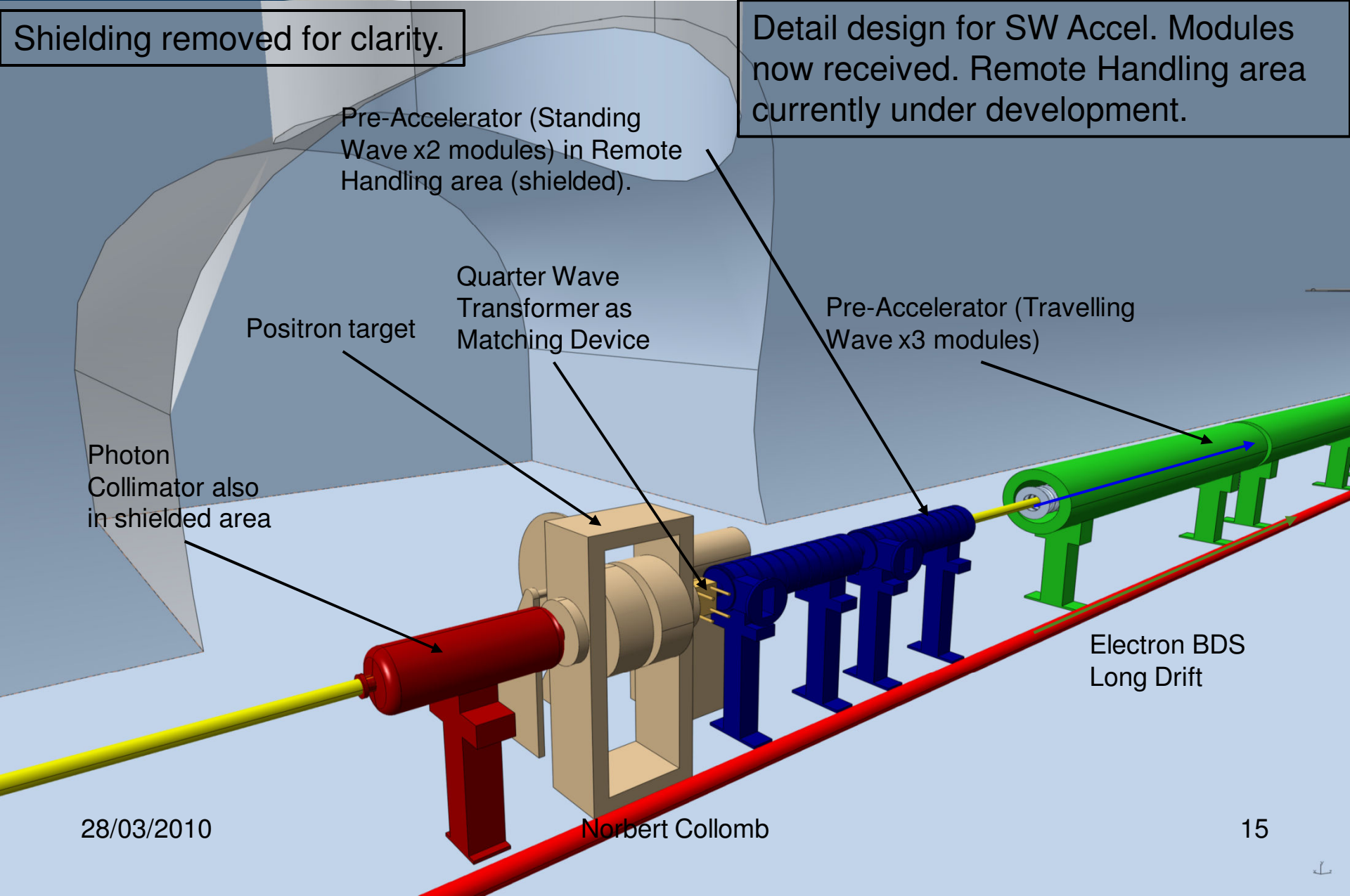
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Change. The additional Electron Dump requirement identified in Albuquerque!!



AUX Source Diagnostic
Dump may mean that the
Source needs to be moved
further upstream due to
close proximity or RH area.





AUX Source Diagnostic Dump may mean that the Source needs to be moved further upstream due to close proximity or RH area.

Additional Electron Dump required due to AUX Source (somewhere here).

AUX Source utilising Photon Beam pipe

Photon Beam pipe

Electron BDS 'Dogleg'

- Positron Beam Direction
- Electron Beam Direction
- Photon Beam Direction



‘Big’ change since Albuquerque.
3 additional Undulator modules + 1
Quadrupole magnet due to ‘Low Energy
requirement’.

Fast Abort Dump

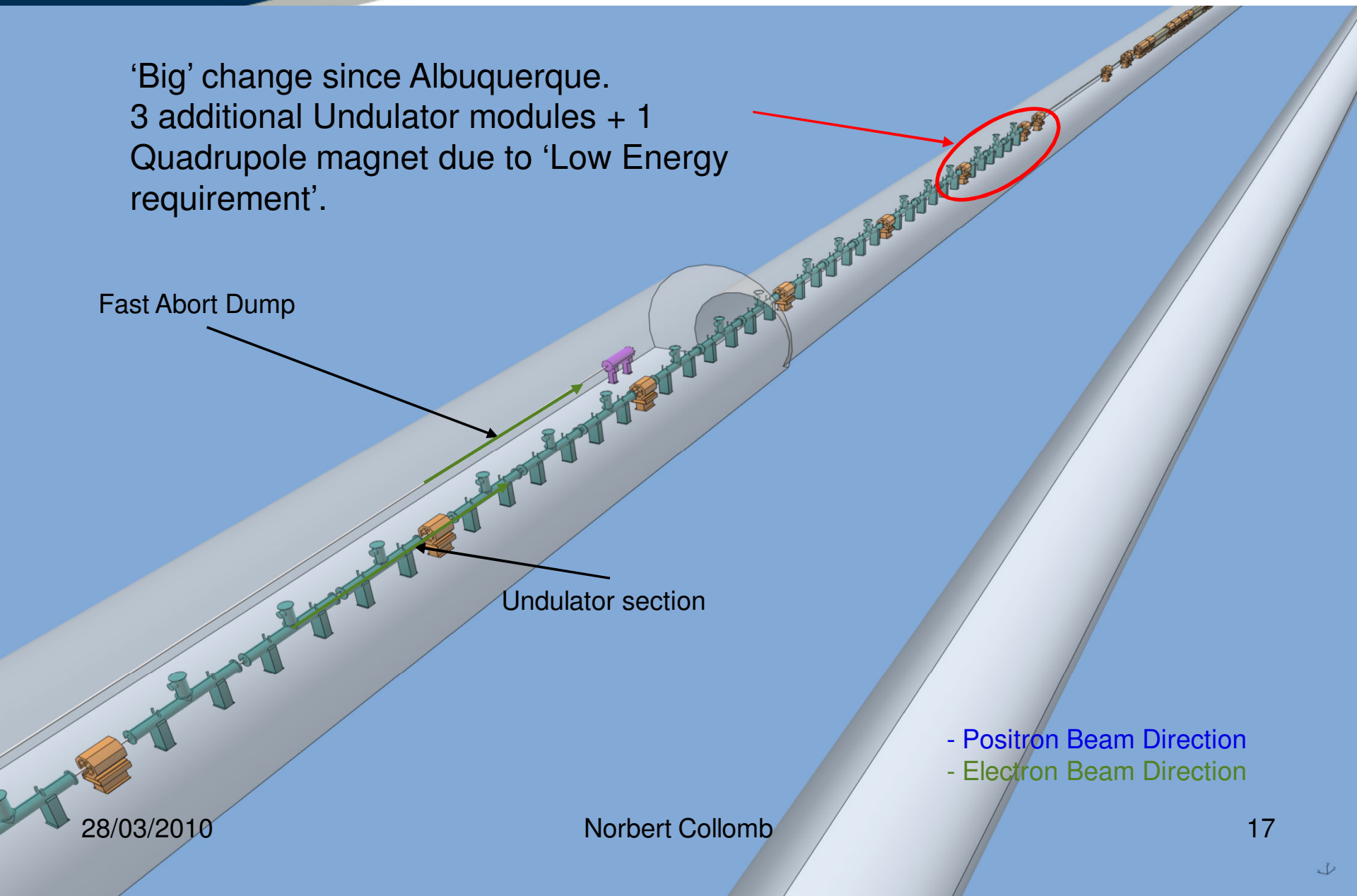
Undulator section

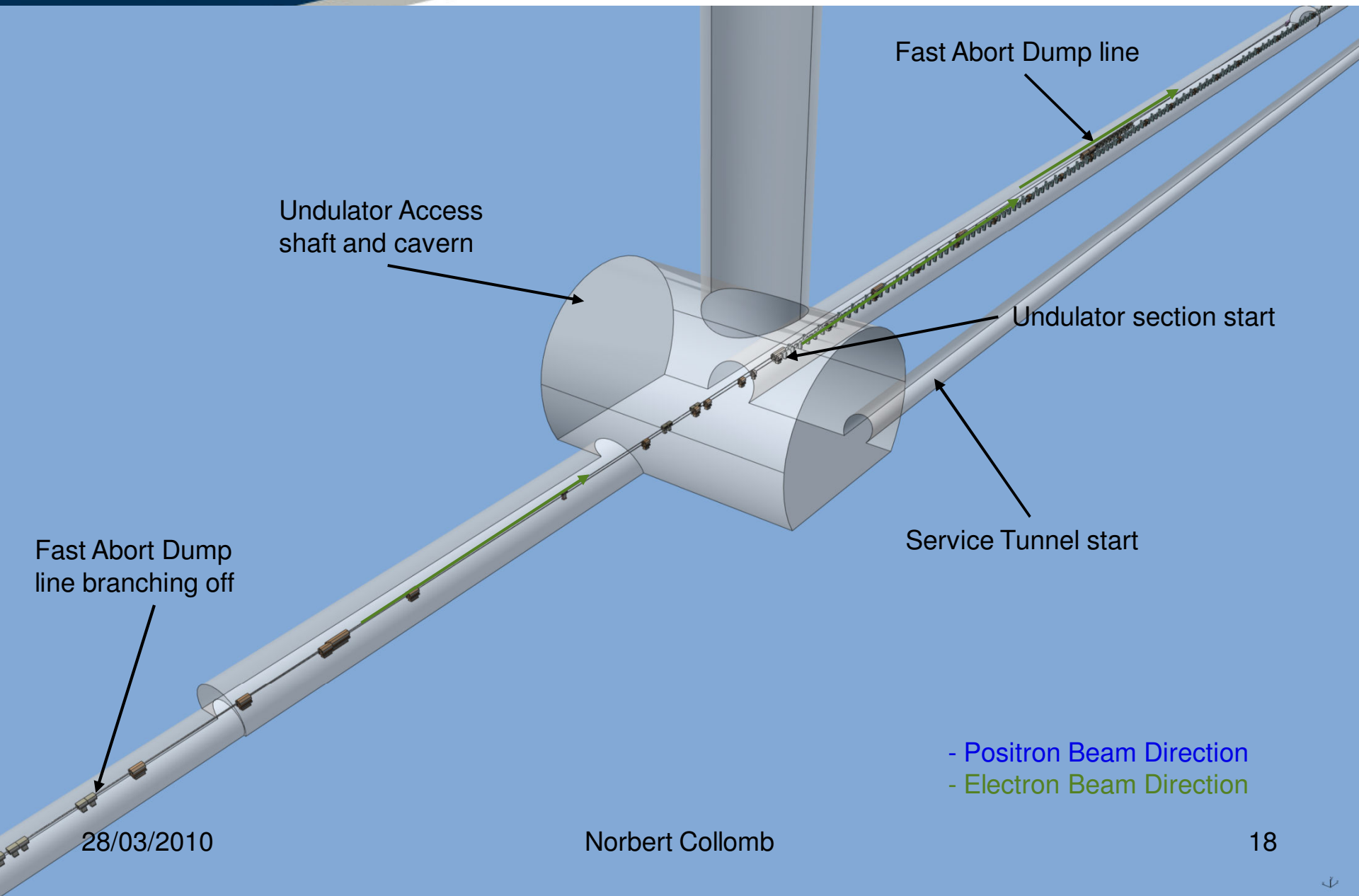
- Positron Beam Direction
- Electron Beam Direction

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Summary:

- Relatively small changes since Albuquerque and Pre-AAP meeting at DESY in Dec. 2009.
- To get model and layout done some guess work had to be made especially in the Damping Ring Transfer Tunnel (but these are based on conversations with WG leaders). Components there are mainly place-holders awaiting confirmation.
- RTML requests have been taken into consideration. Length of elevator straight needs to be revised.
- No concerns from CF&S with regards to Damping Ring Tunnel being too close to Target Hall (yet?).
- Next level of detail can commence if all agree the solution presented is viable (Area System representatives) and the Undulator remains at the end of the Main LINAC (still uncertain at time of writing this).

Many thanks to all who contributed or aided otherwise.

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Positron Source and Beam Delivery System acknowledgements:

Jim Clarke, Deepa Angal-Kalinin, James Jones and Andrei Seryi

Damping Ring acknowledgements:

Andy Wolski, Susanna Guiducci, Maxim Korostelev

RTML acknowledgements:

Nikolay Solyak

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Thomas Lackowski and Vic Kuchler**