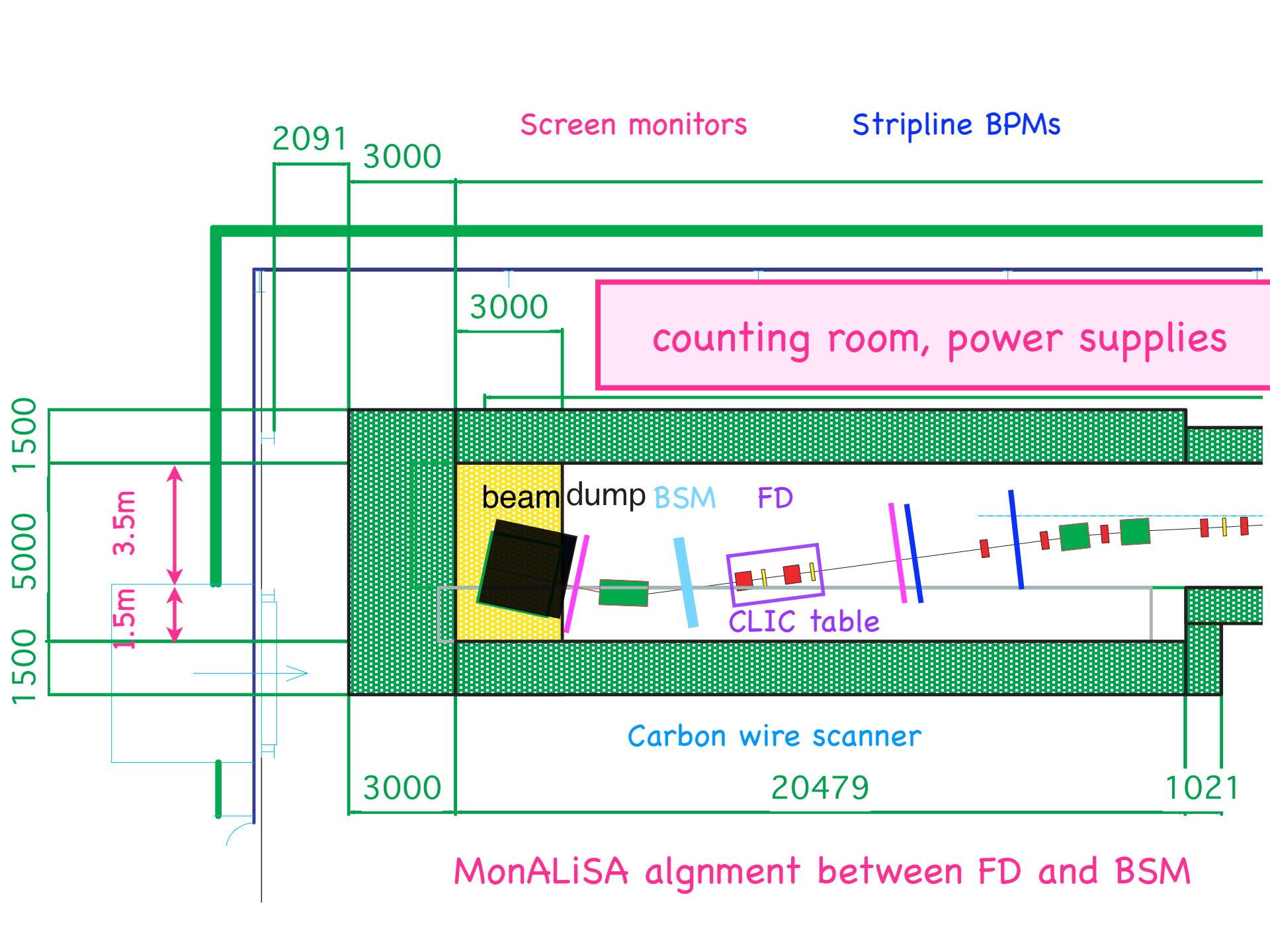
Status of general layout around IP

by T.Tauchi

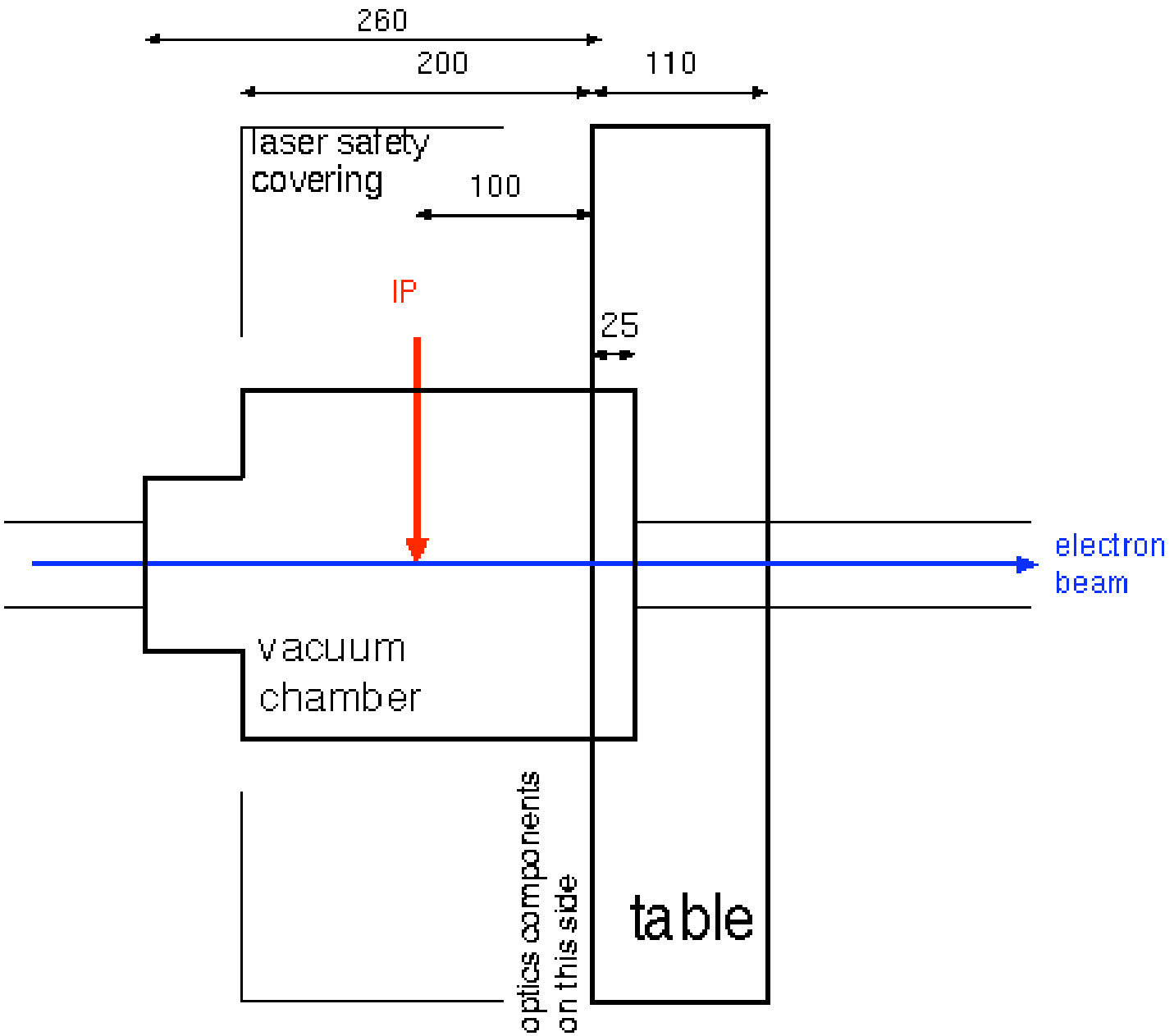
ATF2 Meeting, Annecy, 9 -11 October 2006


Screen monitors
Stripline BPMs
2091
3000
3000
counting room, power supplies
1500
5000
1500
3.5m
1.5m
beam dump
BSM
FD
CLIC table
Carbon wire scanner
3000
20479
1021
MonALiSA algnment between FD and BSM

Placement of MonALiSA monitoring system at ATF2, by D.Urner

- Easiest if we have direct line of sight between FF quadrupole and Shintake monitor.
  - Which is the crucial element of Shintake monitor do we have to monitor.
    - Are there several parts to monitor
    - Can we get optical access to the crucial element(s)
- We need room (30-50cm) above either the Shintake monitor or above the FF magnet
  - Probably easier to get above magnet.

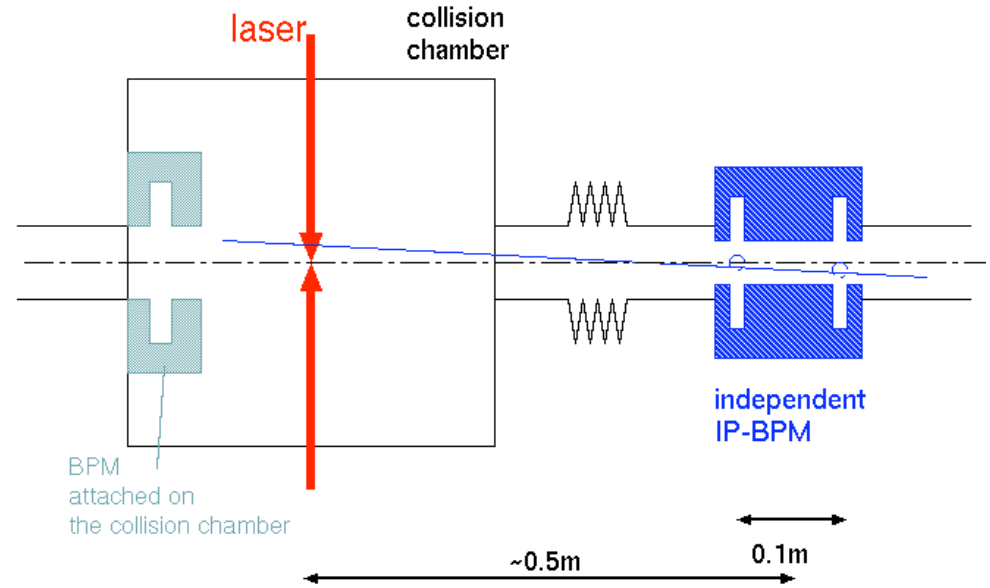
Longitudinal layout of Shintake monitor (BSM)

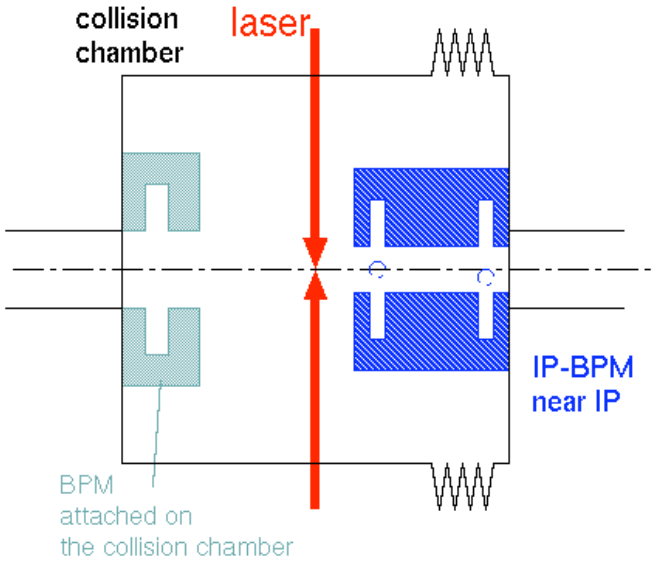


IP-BPM with IP-BSM

Y. Honda

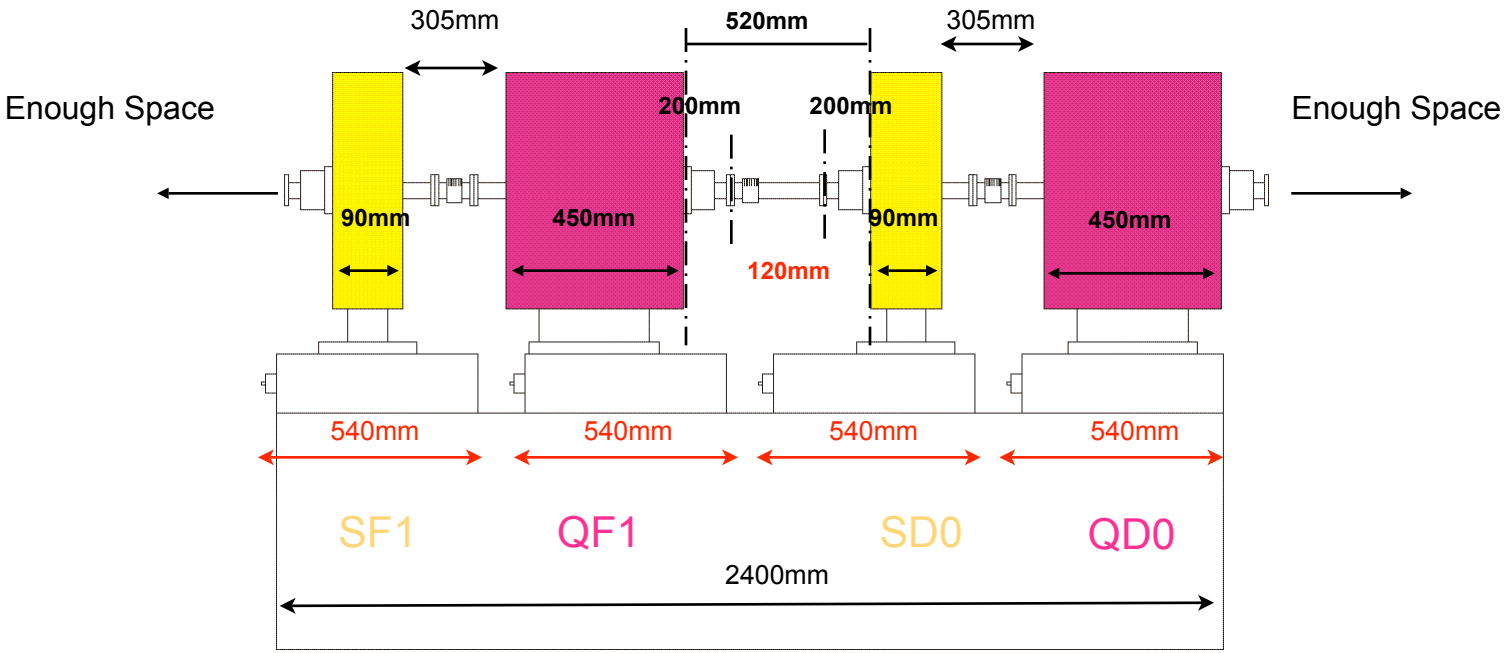
- Beam position monitoring during beam size measurement
  - In order to find beam-laser collision condition, BPM attached on the collision chamber seems useful.
  - To correct the beam jitter effect in the measurement, 10nm resolution is needed.
- To align IP-BPM on the beam center, a bellows chamber is needed between the collision chamber.
- IP-BPM has a distance from IP
  - extrapolation worsen the resolution
  - beam size at the IP-BPM have to be checked, (seems o.k.)
- IP-BPM inside the collision chamber is attractive, although the chamber needs to be modified

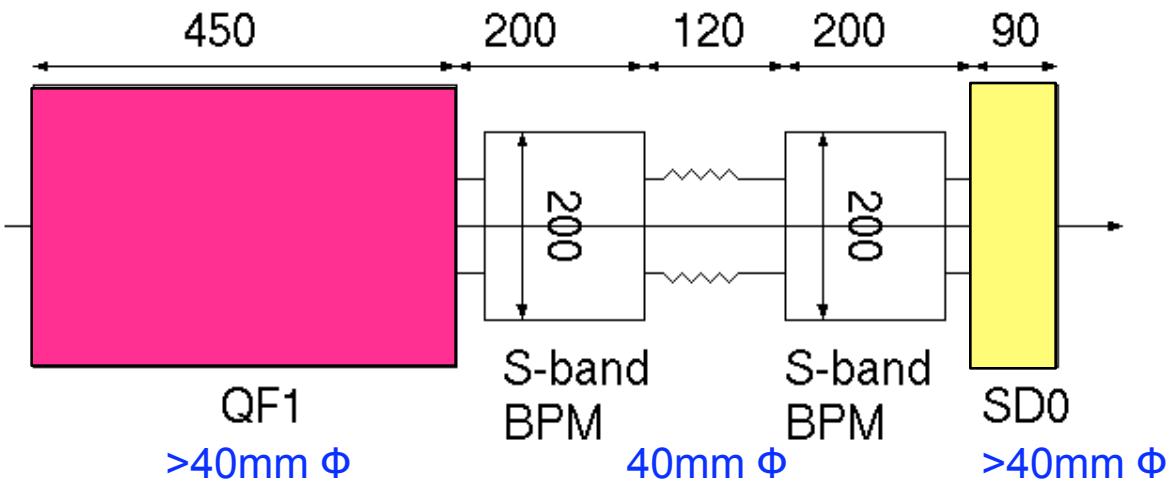




Around Final Doublet – Monitor Configuration

T.Okugi

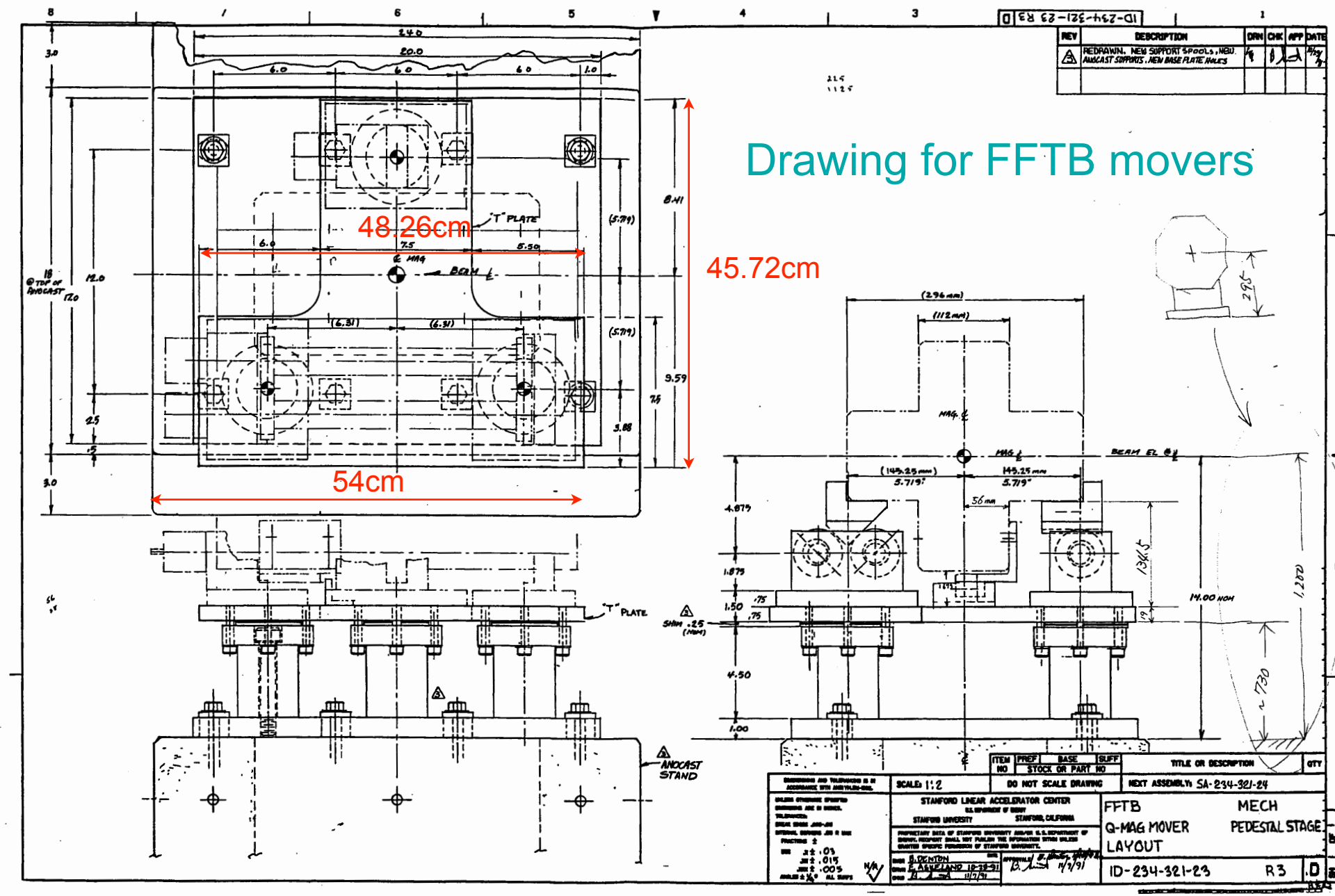




Y.Honda

S-band BPM is longer than SD0.

Drawing for FFTB movers

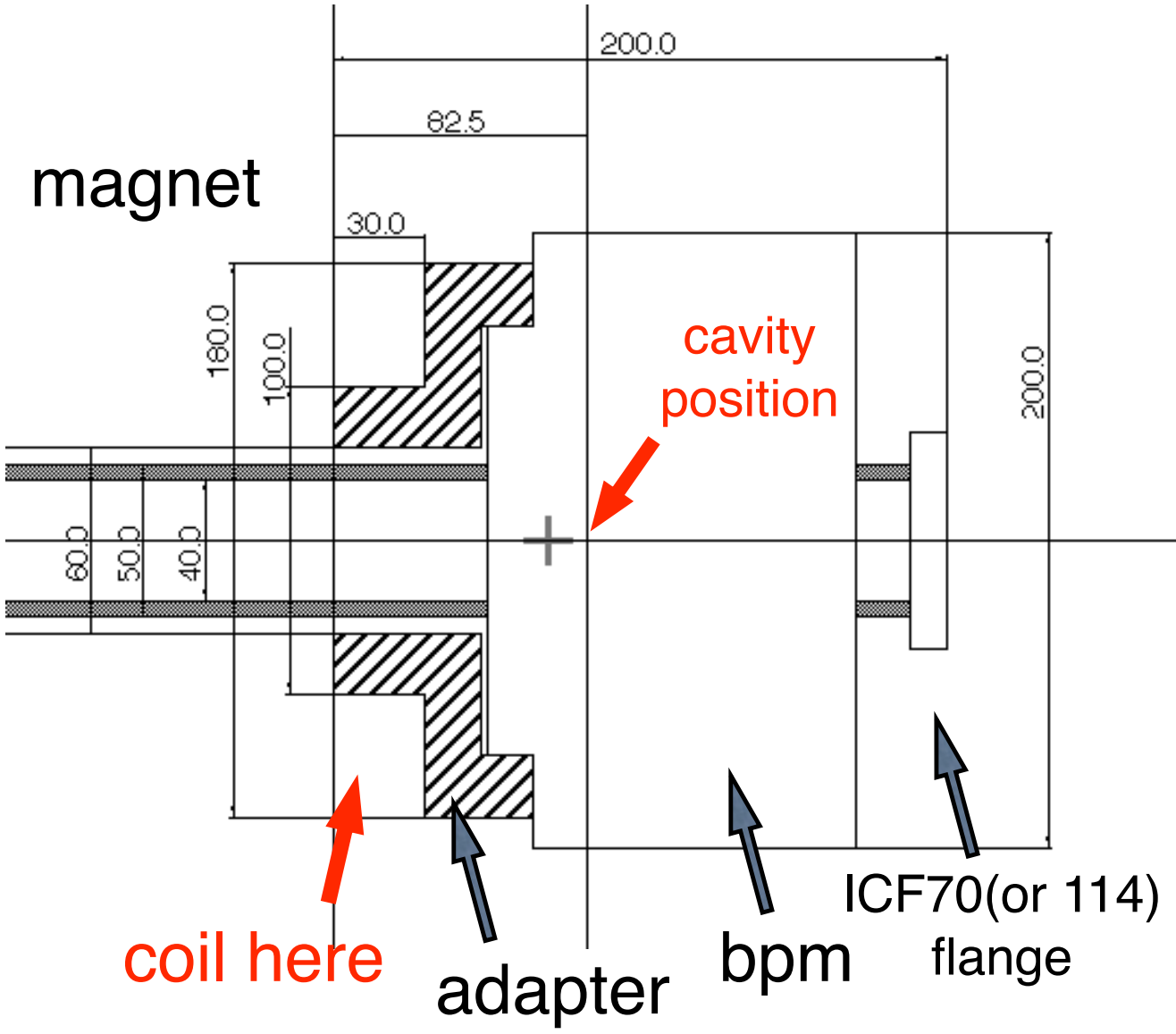


Length of FFTB mover is 54cm, which was measured with the sample in KEK.
In order to use the FFTB mover, the magnet separation should be 60cm. T.Okugi

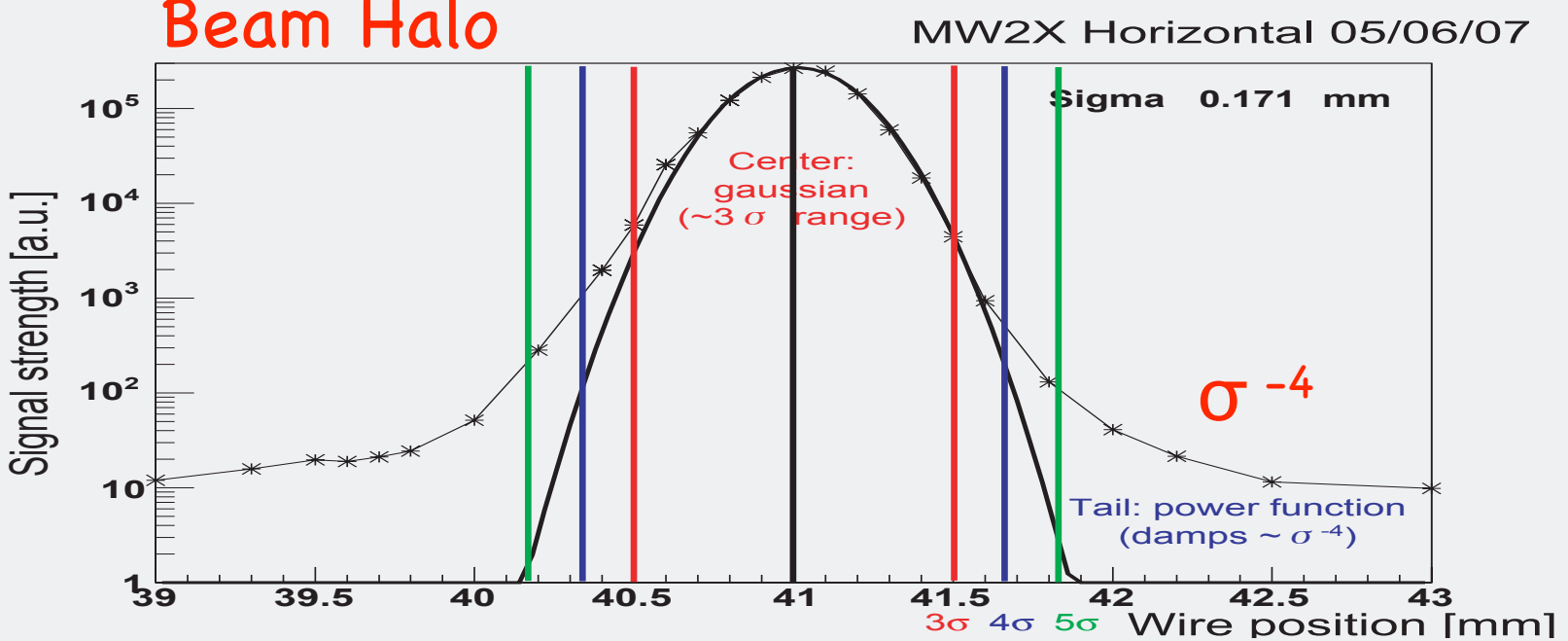
Y.Honda

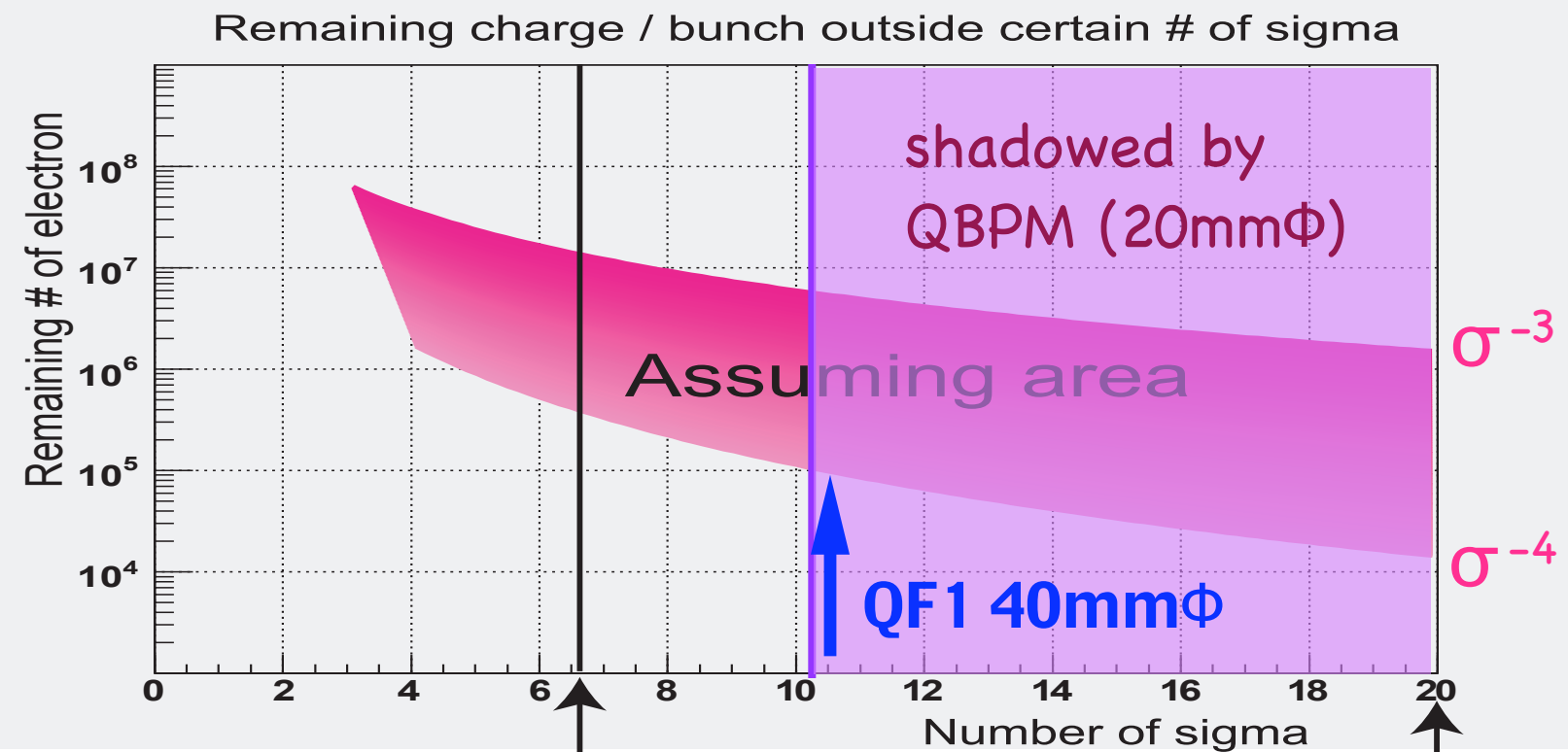
S-band BPM dimensions

- From Alexei Liapine's latest design, I came up with the outer shape of the S-band BPM
- Beam aperture was increased and longitudinal size was reduced in this model compared with ESA bpm.
- Longitudinal size from the magnet's surface to the flange end is 200mm.
- Transverse diameter at the cavity main body is 200mm.
- I tried to make a strange shaped adapter to avoid interference with the magnet's coil.
- Actual position to sense the beam position is 82.5mm from the magnet's surface



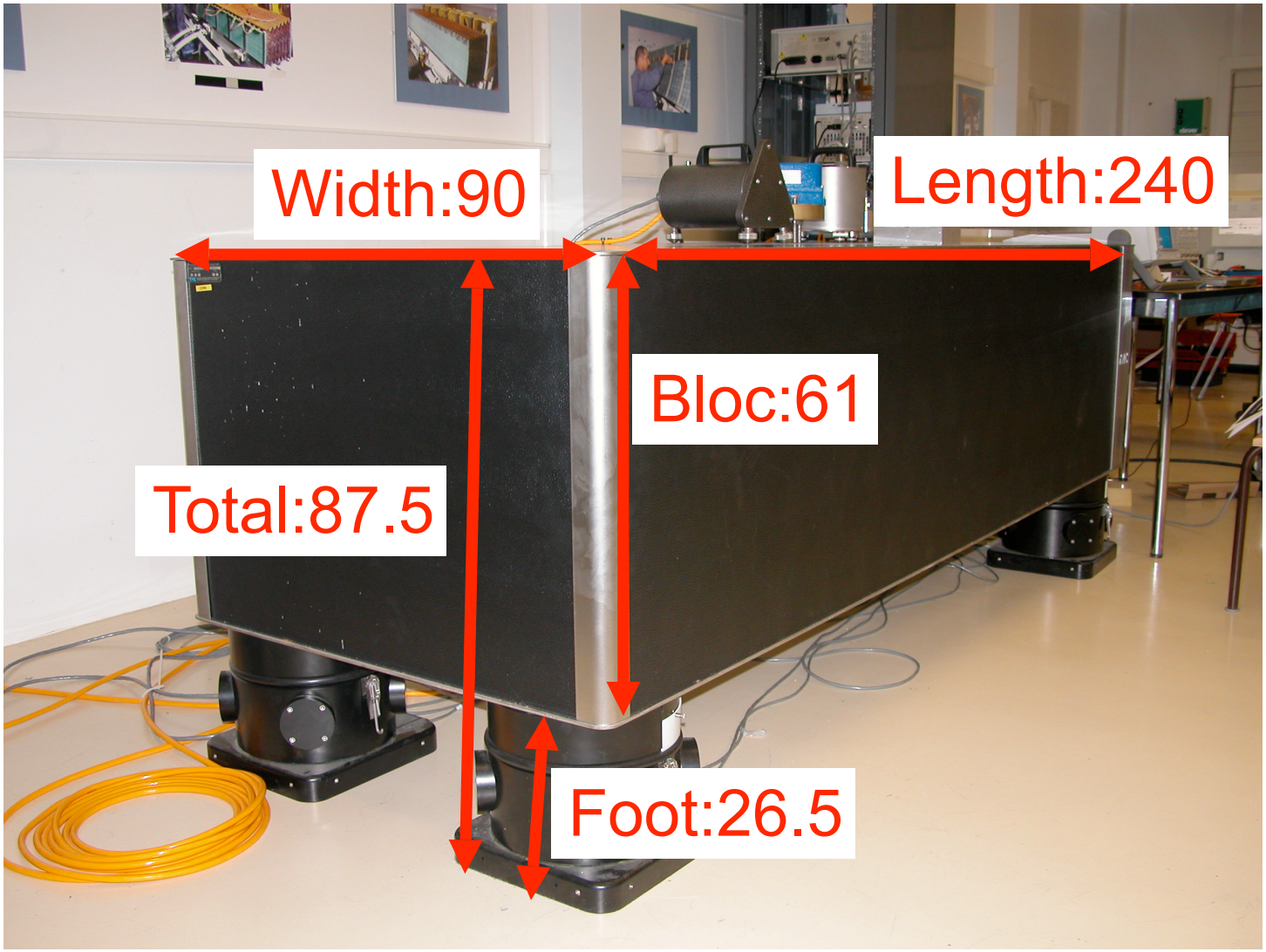
Beam Halo


MW2X Horizontal 05/06/07
Sigma 0.171 mm
Center:
gaussian
(~3 σ range)
σ -4
Tail: power function
(damps ~ σ -4)
Signal strength [a.u.]
Wire position [mm]
3σ 4σ 5σ


Remaining charge / bunch outside certain # of sigma
shadowed by
QBPM (20mmΦ)
Assuming area
σ -3
σ -4
QF1 40mmΦ
Remaining # of electron
Number of sigma

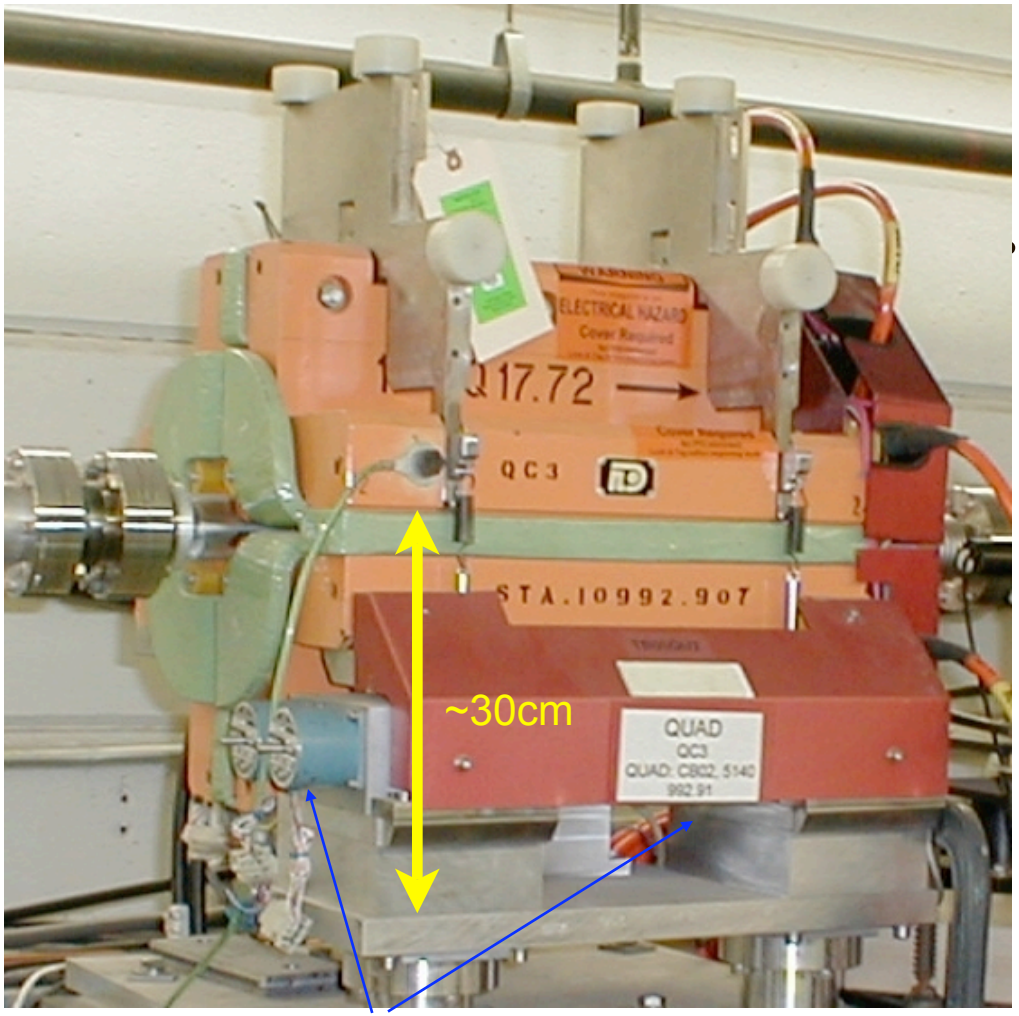
CERN Stacis 2000 table currently in Annecy, France.

A.Jeremie



Values are in cm and measured directly on the table with a tape-measure.
Static load capacity per foot (there a 4) 182 kg to 1590 kg.
Honeycomb bloc has a weight of 731kg.

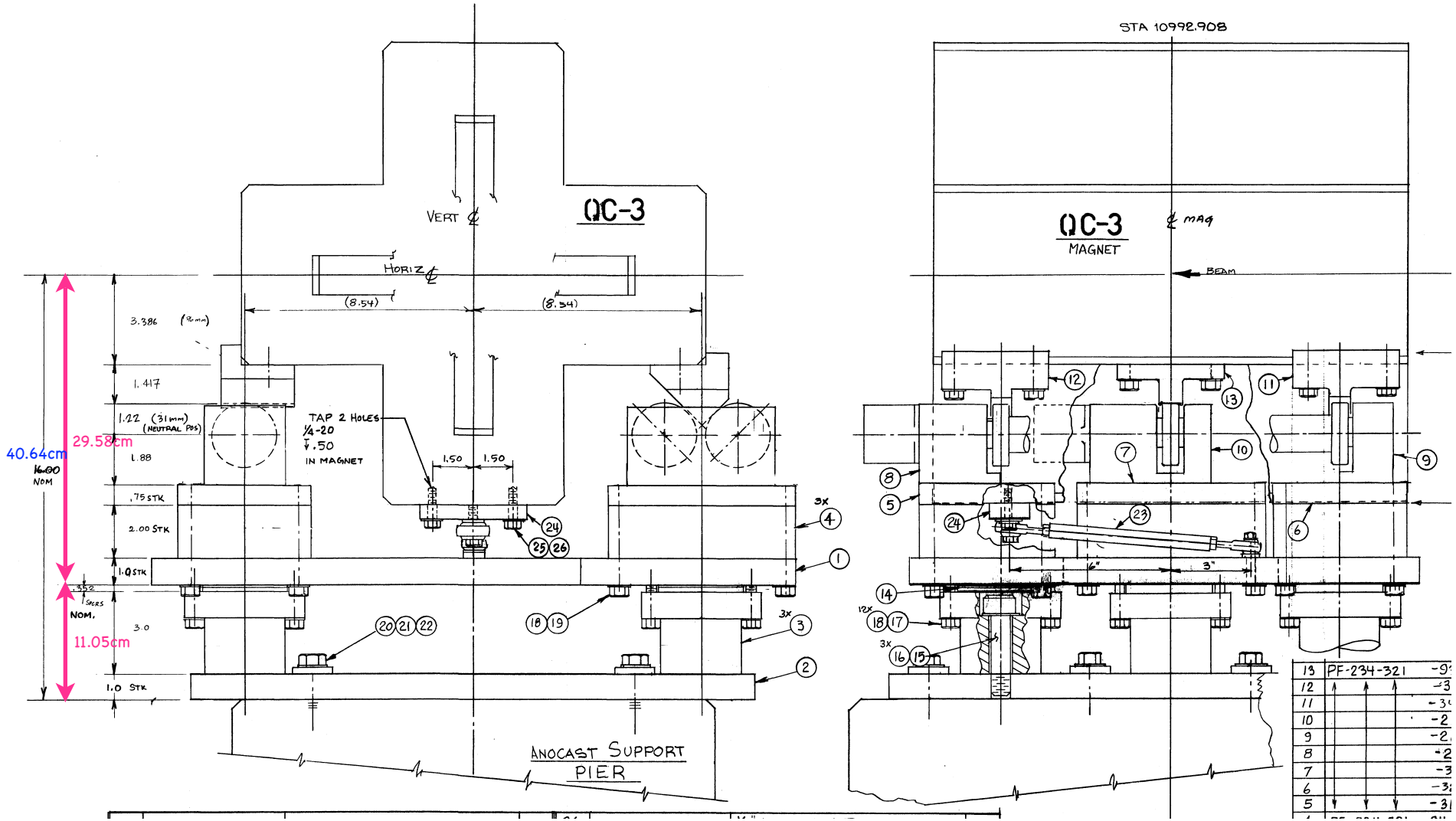
FFTB movers & design Suggestion for Final Doublet Quads

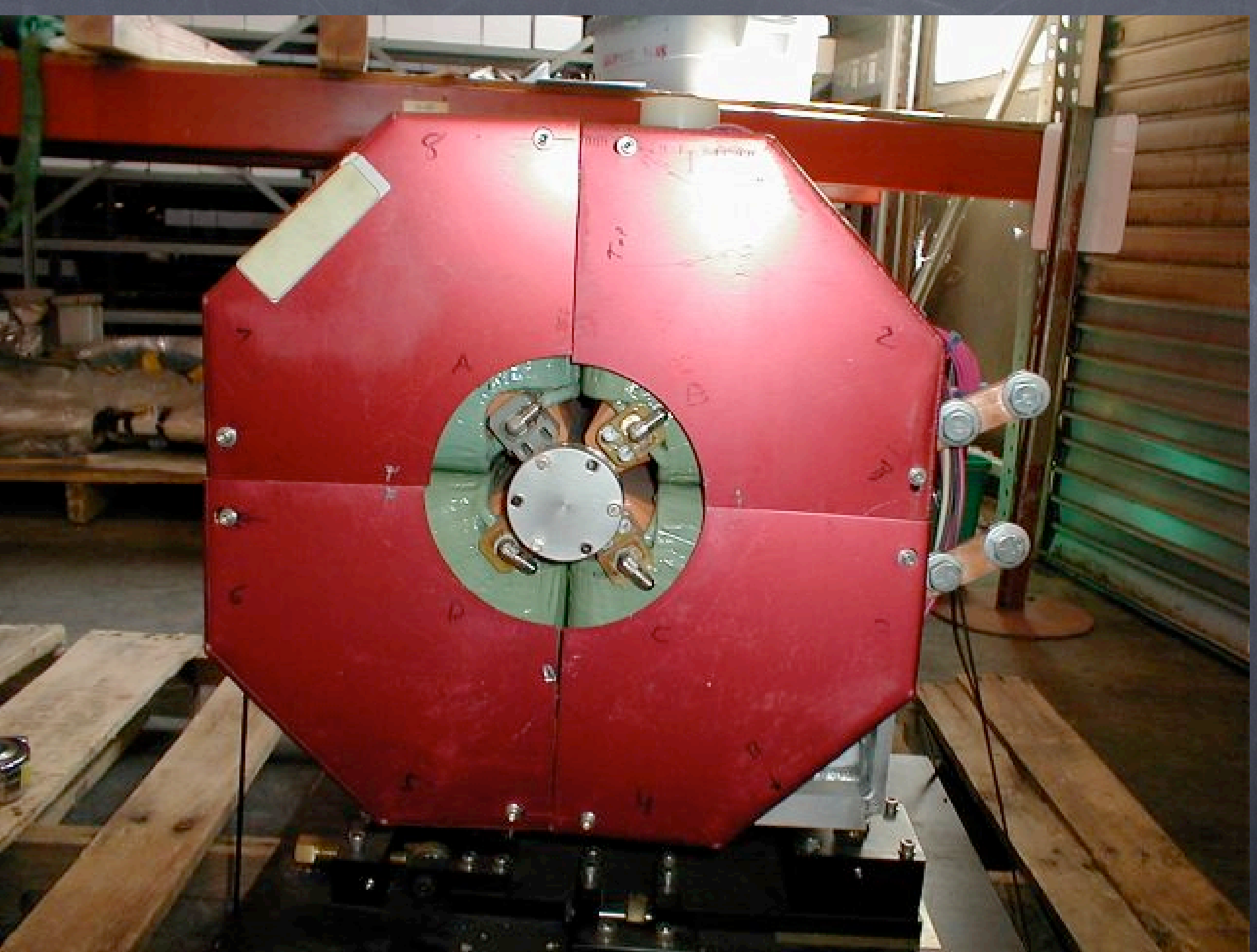


- FFTB movers to be dismantled in April and will be refurbished for ATF2
- Photo shows FFTB "QC3" in SLAC FFTB beamline which is one of the candidates for Final Doublet quad

Minimum Aperture
20mmΦ at QBPMs
27mm (y) at QD0
36mm (x) at QF1

→ 40mmΦ


QC-3
VERT ℄
HORIZ ℄
(8.54)
(8.54)
TAP 2 HOLES
½-20
↧.50
IN MAGNET
1.50
1.50
3.386 (86 mm)
1.417
1.22 (31 mm) (NEUTRAL POS)
1.88
.75 STK
2.00 STK
1.0 STK
.332
SHIMS
NOM.
3.0
1.0 STK
29.58cm
40.64cm
16.00
NOM
11.05cm
3X
4
1
3X
3
2
24
25 26
20 21 22
18 19
ANOCAST SUPPORT
PIER
STA 10992.908
QC-3
MAGNET
℄ mag
BEAM
12
13
11
7
10
9
8
5
24
23
6
4"
3"
14
12X
18 17
3X
16 15
13 PF-234-321 -9
12 -3
11 -3
10 -2
9 -2
8 -2
7 -3
6 -3
5 -3
60.96 cm
48.26 cm




WARNING
QSP1
CAL HAZARD
Required
1.38 Q
QSP1
TB05QU8
CAUTION
STA. 1034.442
QUAD: CB02, 6030
1034.44