

Installation of Crab cavity

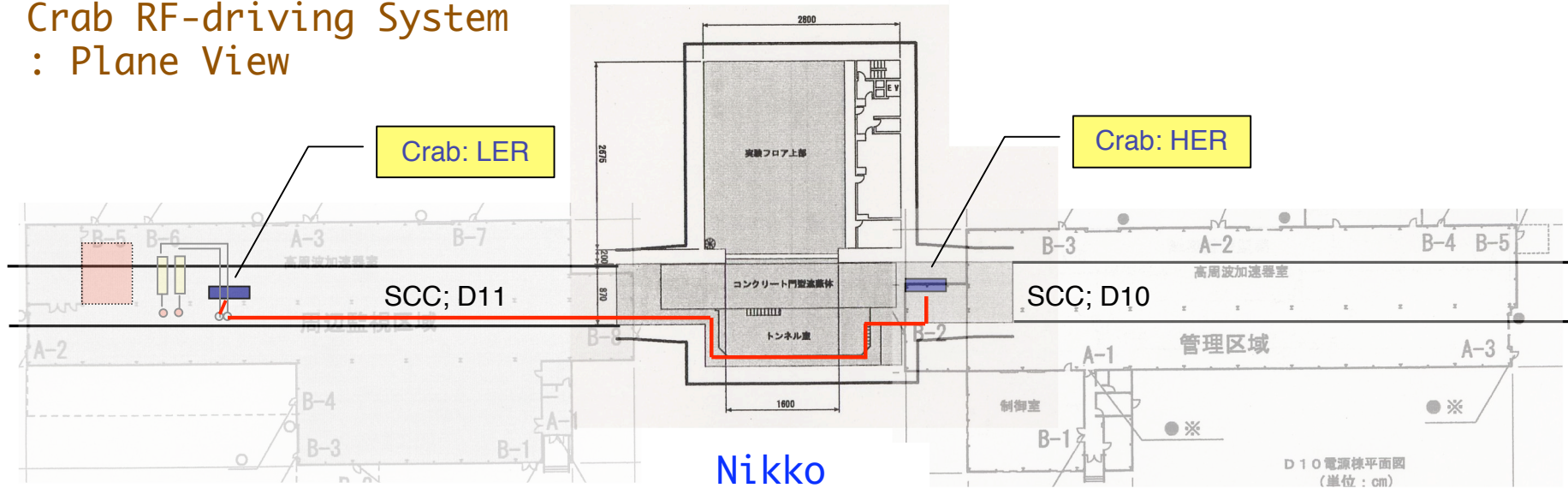
KEK M. Ono

Present Status of Tunnel
; Nikko Straight Section

Preparation for Installation

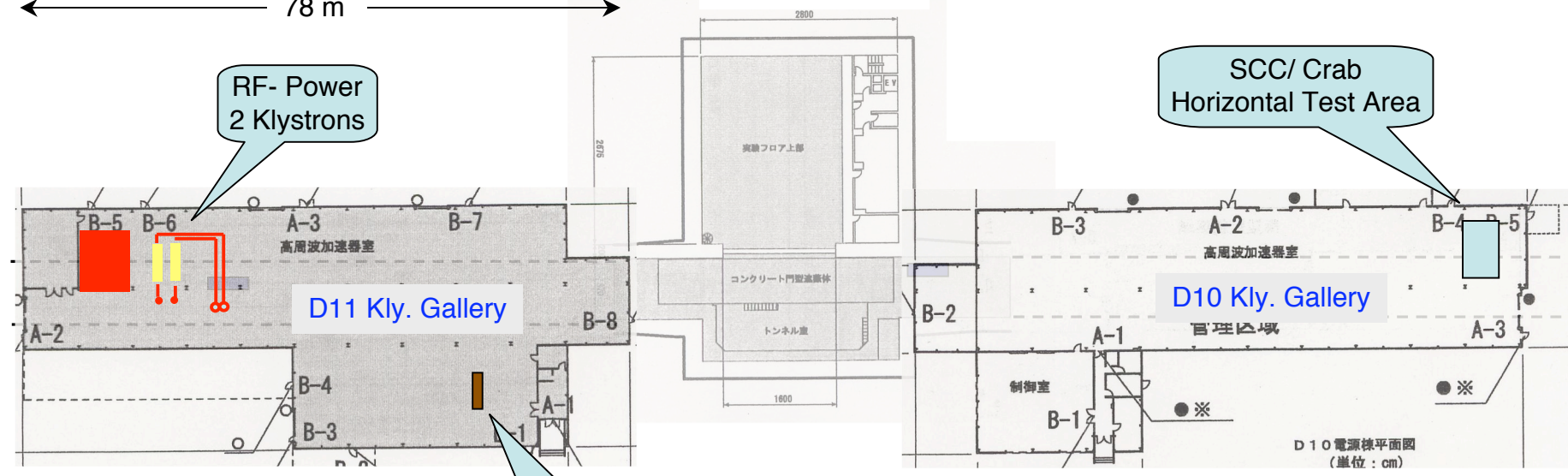
Schedule

Crab RF-driving System : Plane View

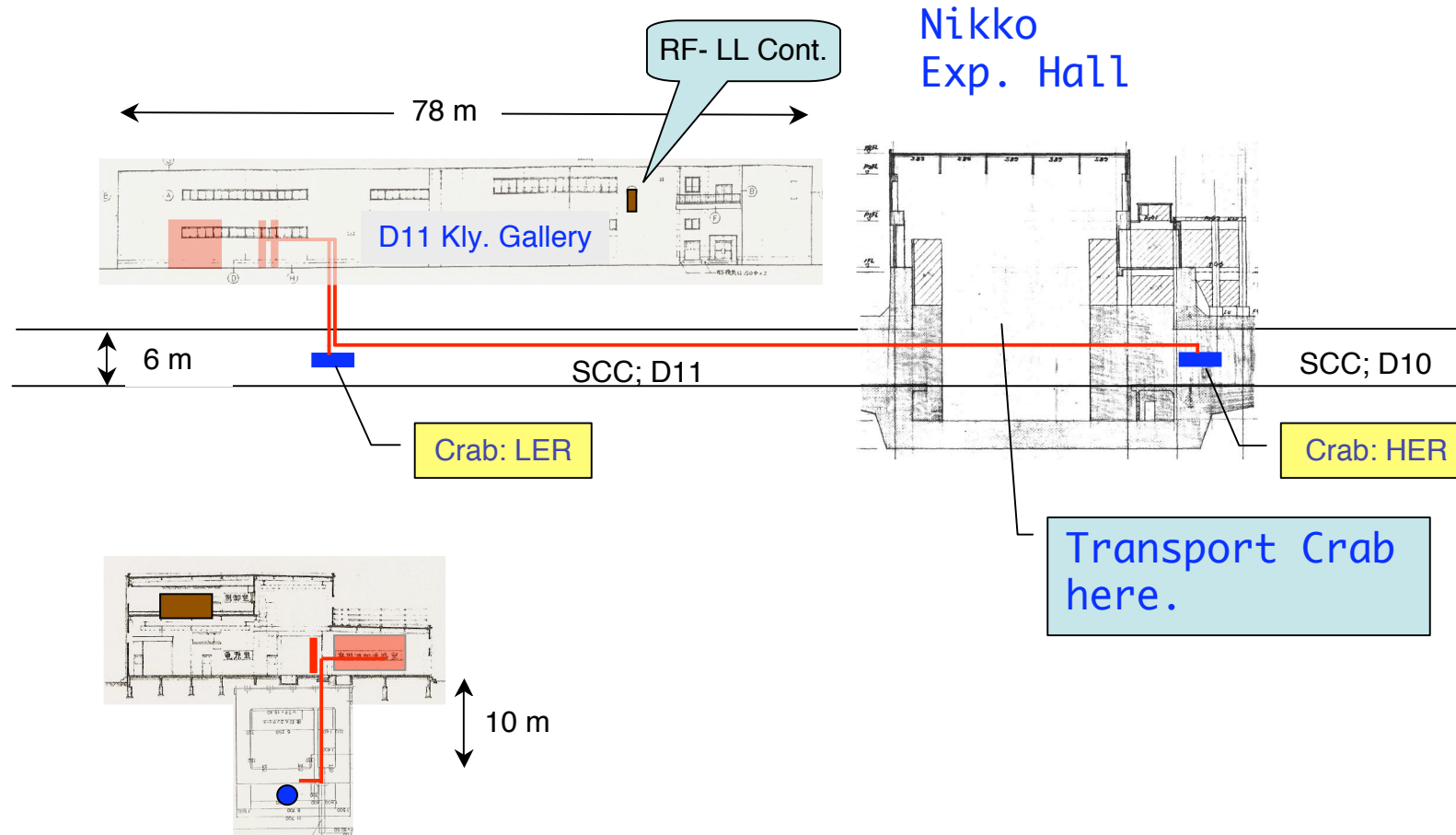


Nikko
Exp. Hall

← 78 m →



Crab RF-driving System : Side View



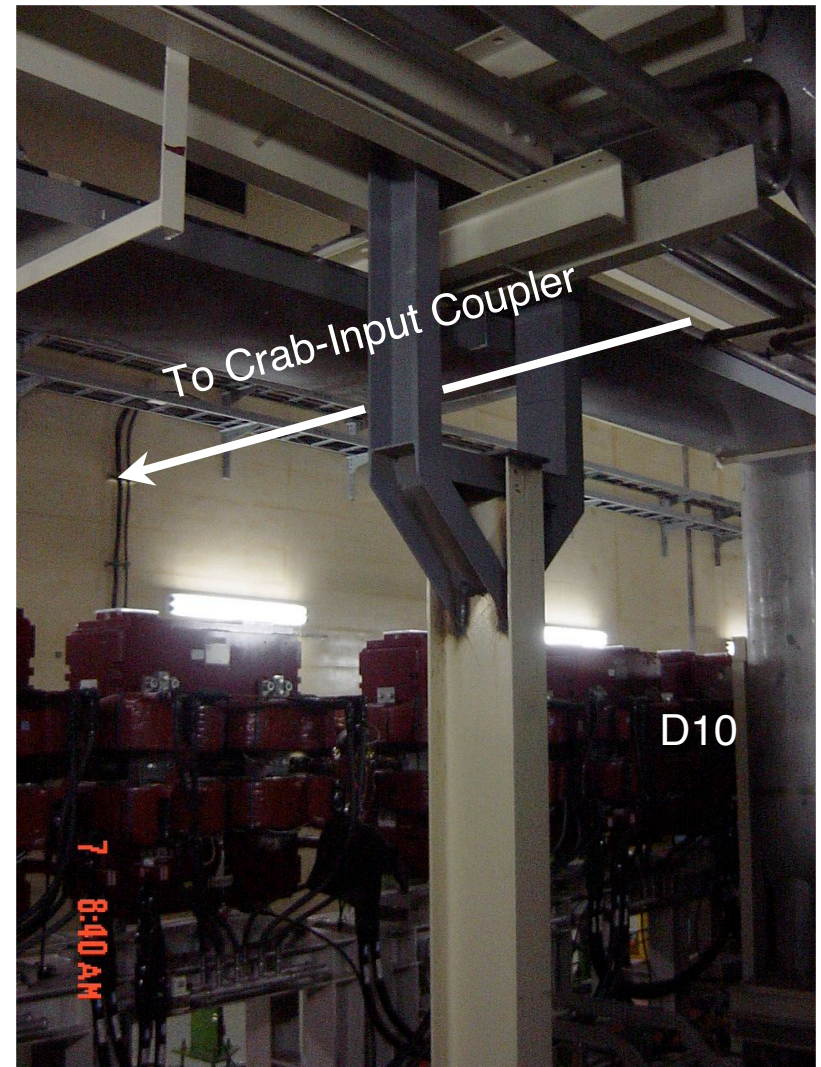
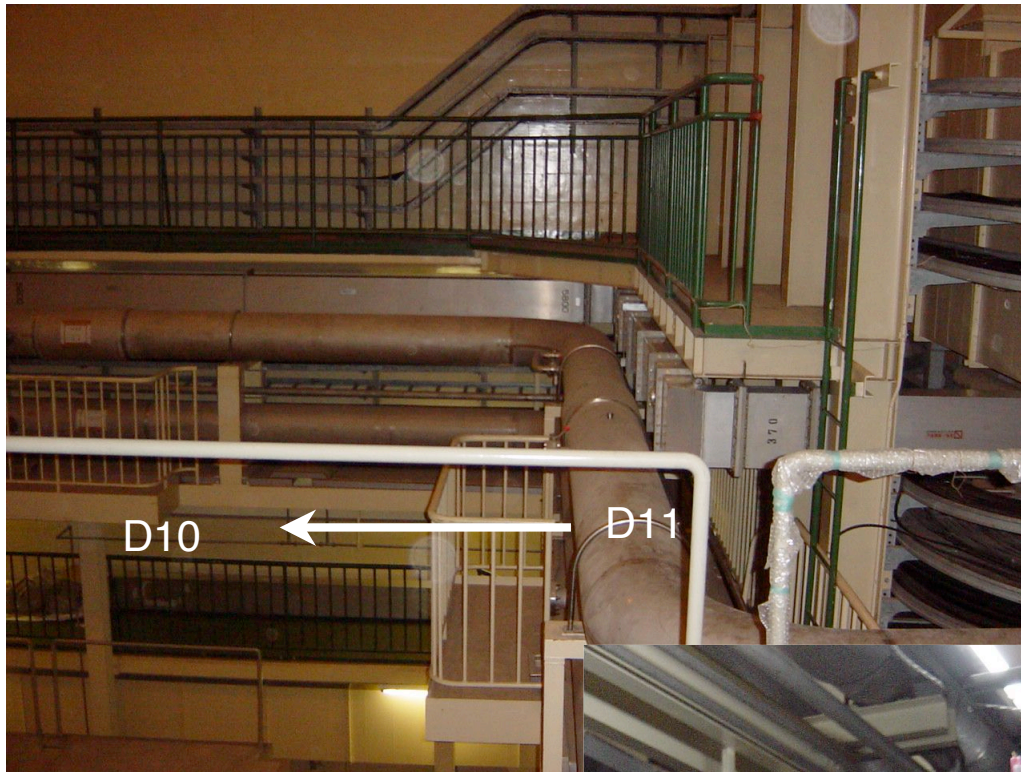


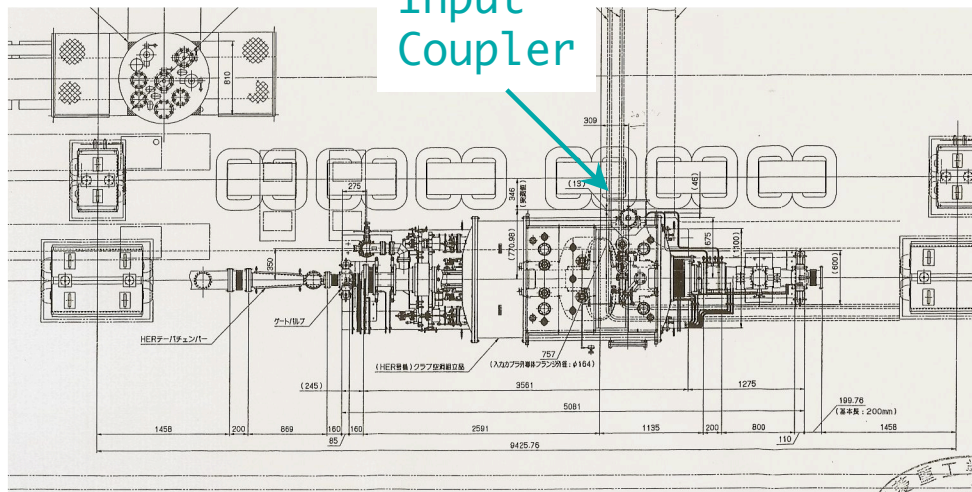
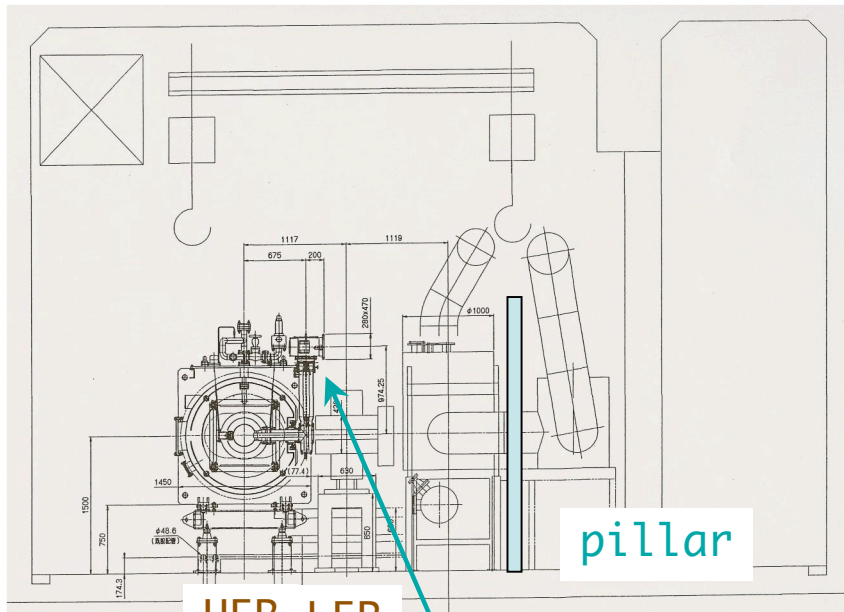
Crab RF-driving System
: High Power Station
: D11-EF
: 2-Klystrons
: ~1MW in total; -90kV/20A



13 5:30 PM

Crab RF-driving System
: Wave Guide at the tunnel





Crab Installation
: D10

Crab ; HER; D10

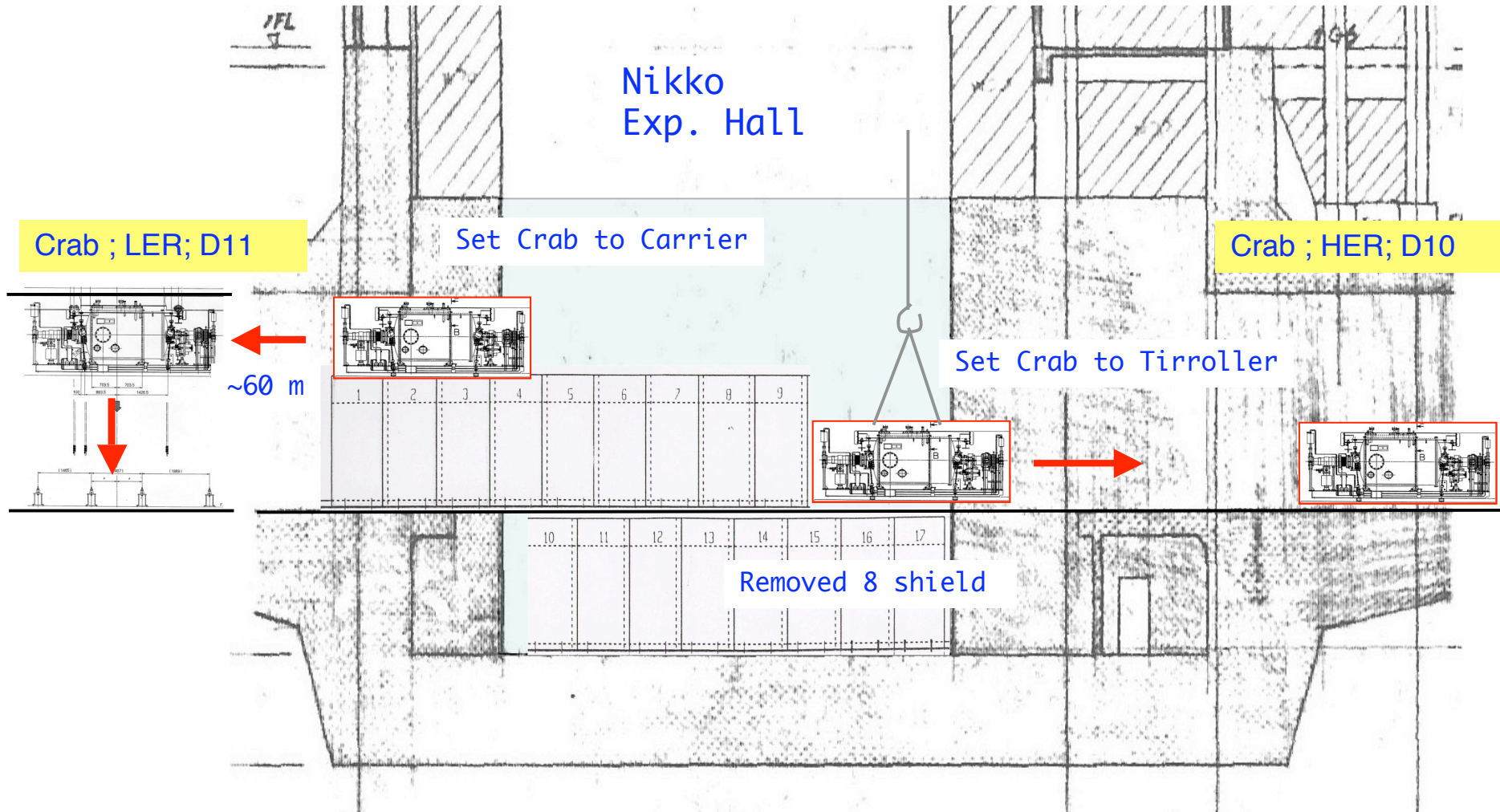
Narrow Passage
Crane : Low Lifting Height
: Limited access

Install the Crab with using
the Tirroller. when the
Concrete Shields are
Removed.

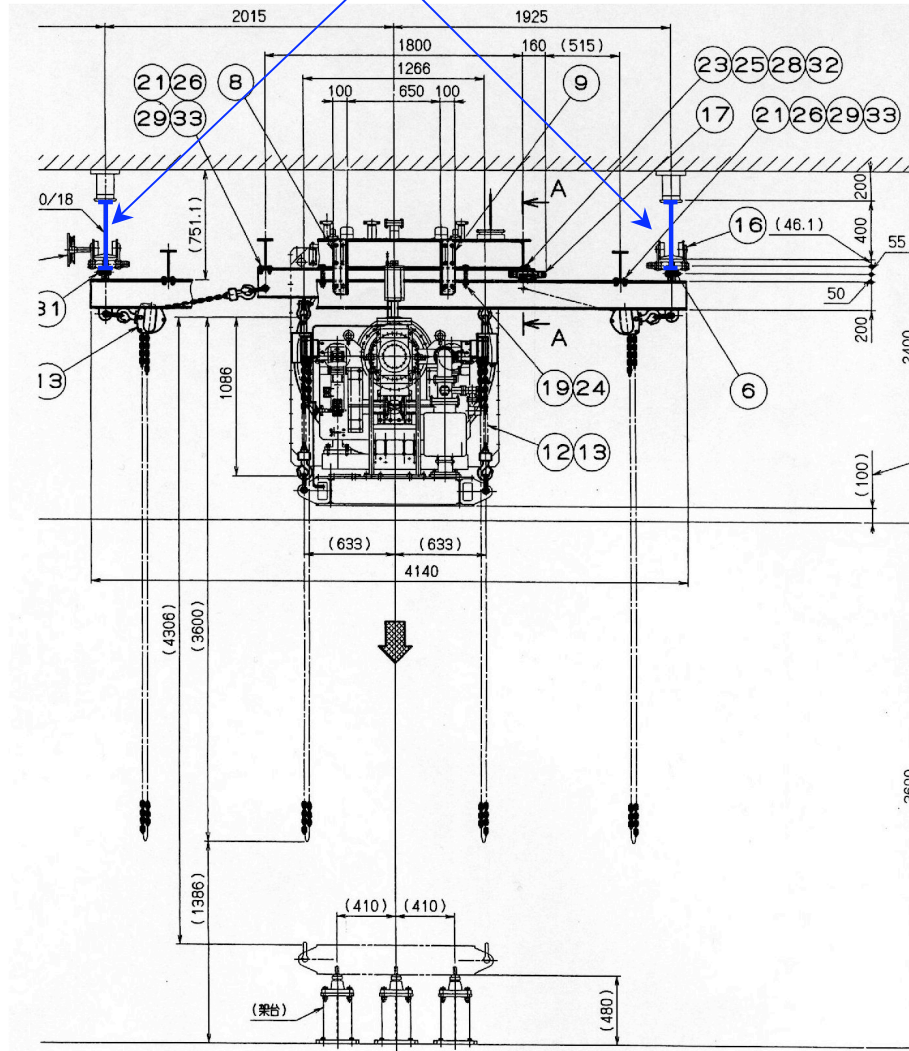
Installation Area is Near to
Nikko Exp. Hall



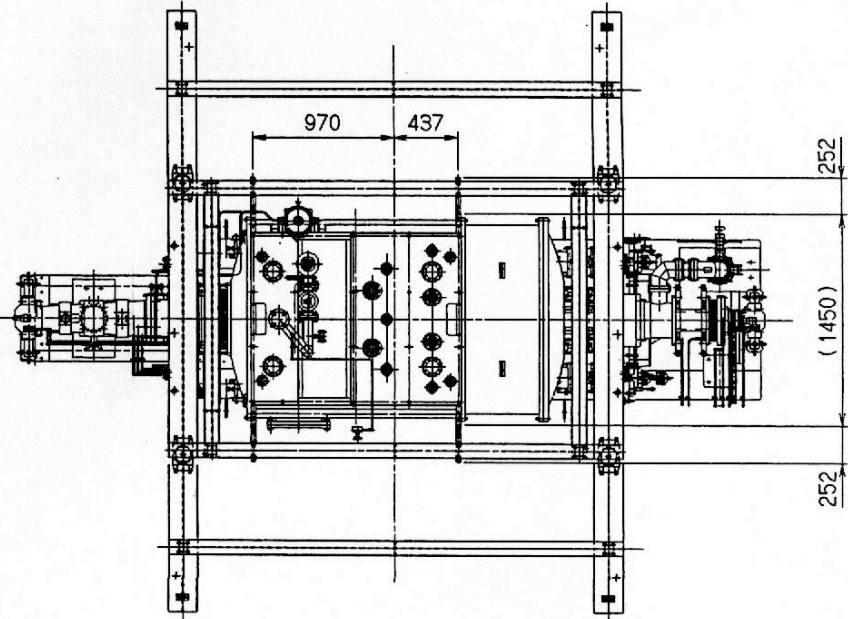
Crab Installation : How to



Crane Rail



Crab Installation : Carrying Tool



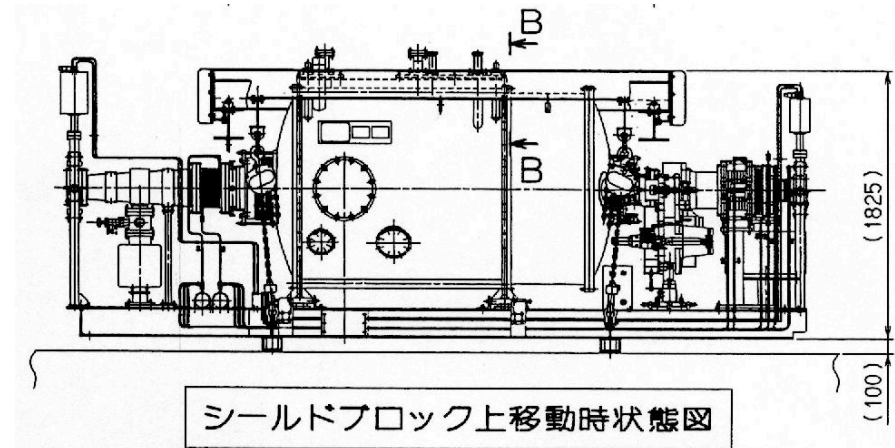
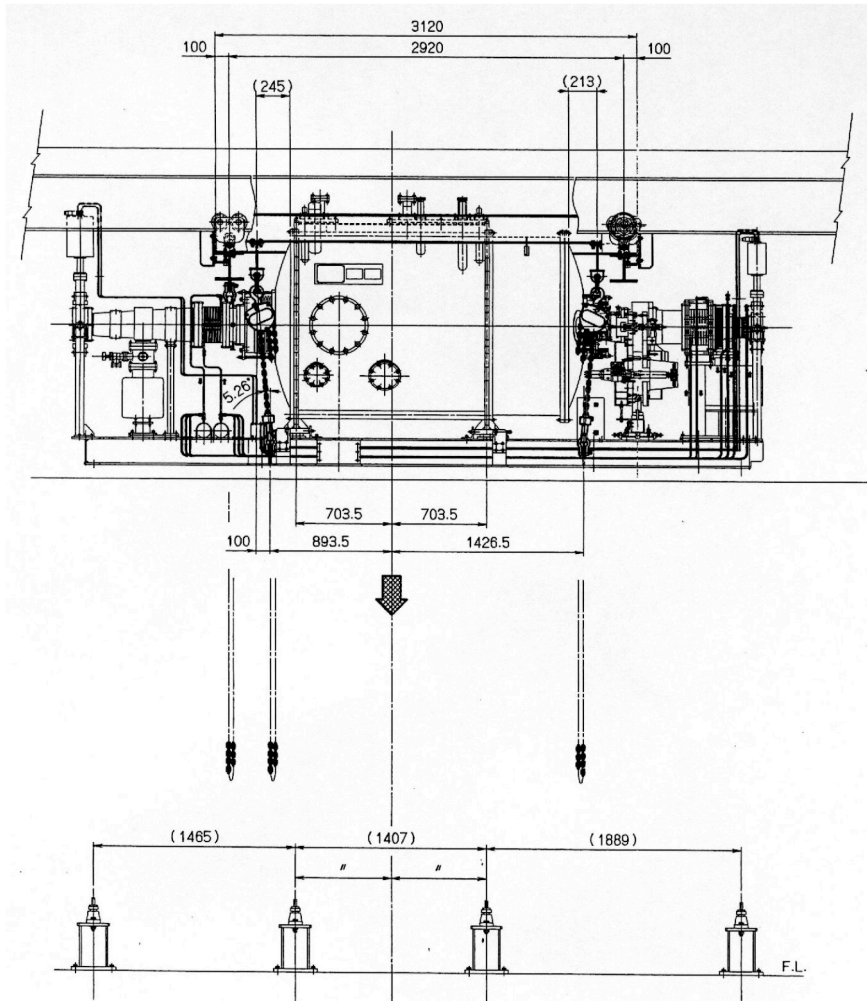
The Carrier ; hanging to the existing **Crane Rail**.

Moving along the rail and perpendicular to it.

Crab Installation : Carrying Tool

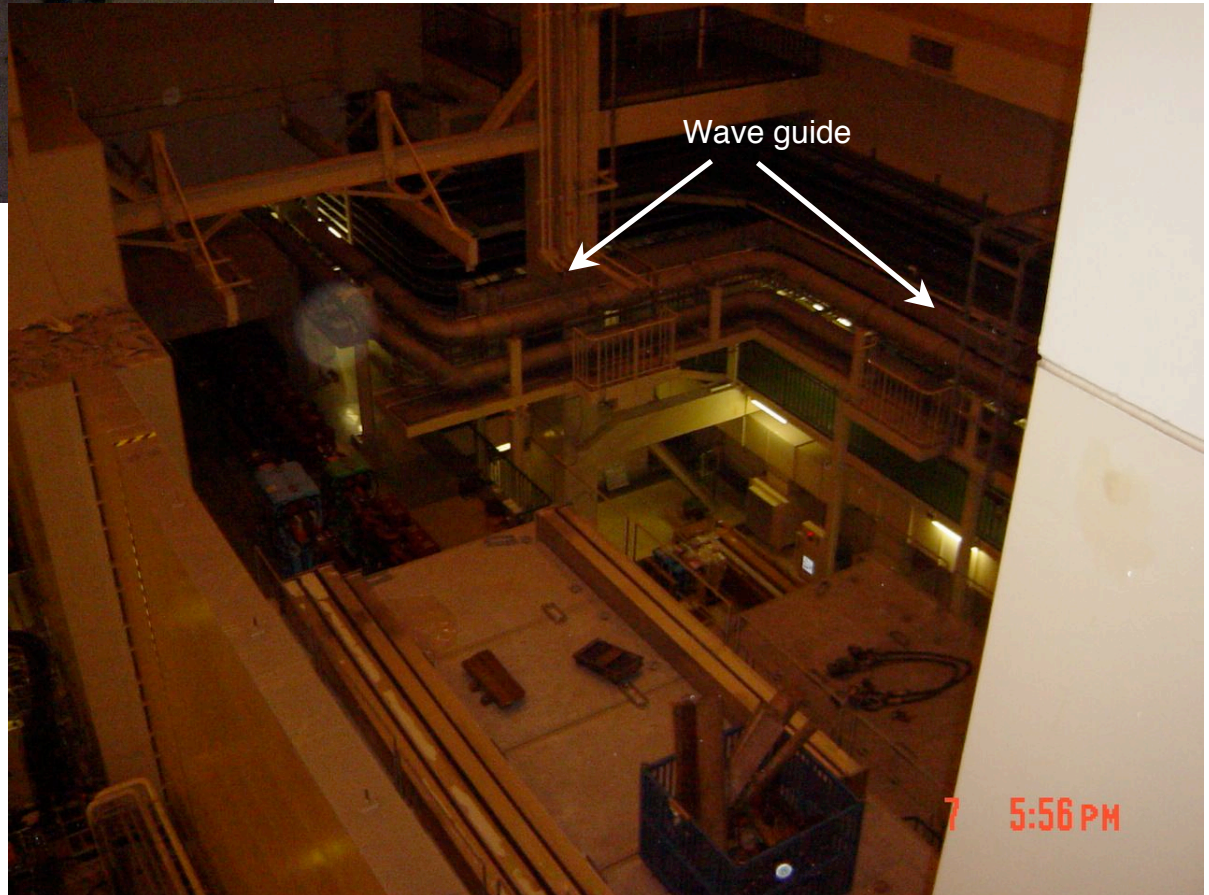
Move to the installation area, then hang down
; using chain block(pulley).

Setting the Crab to the carrier;
Carried out on the Concrete Shield.





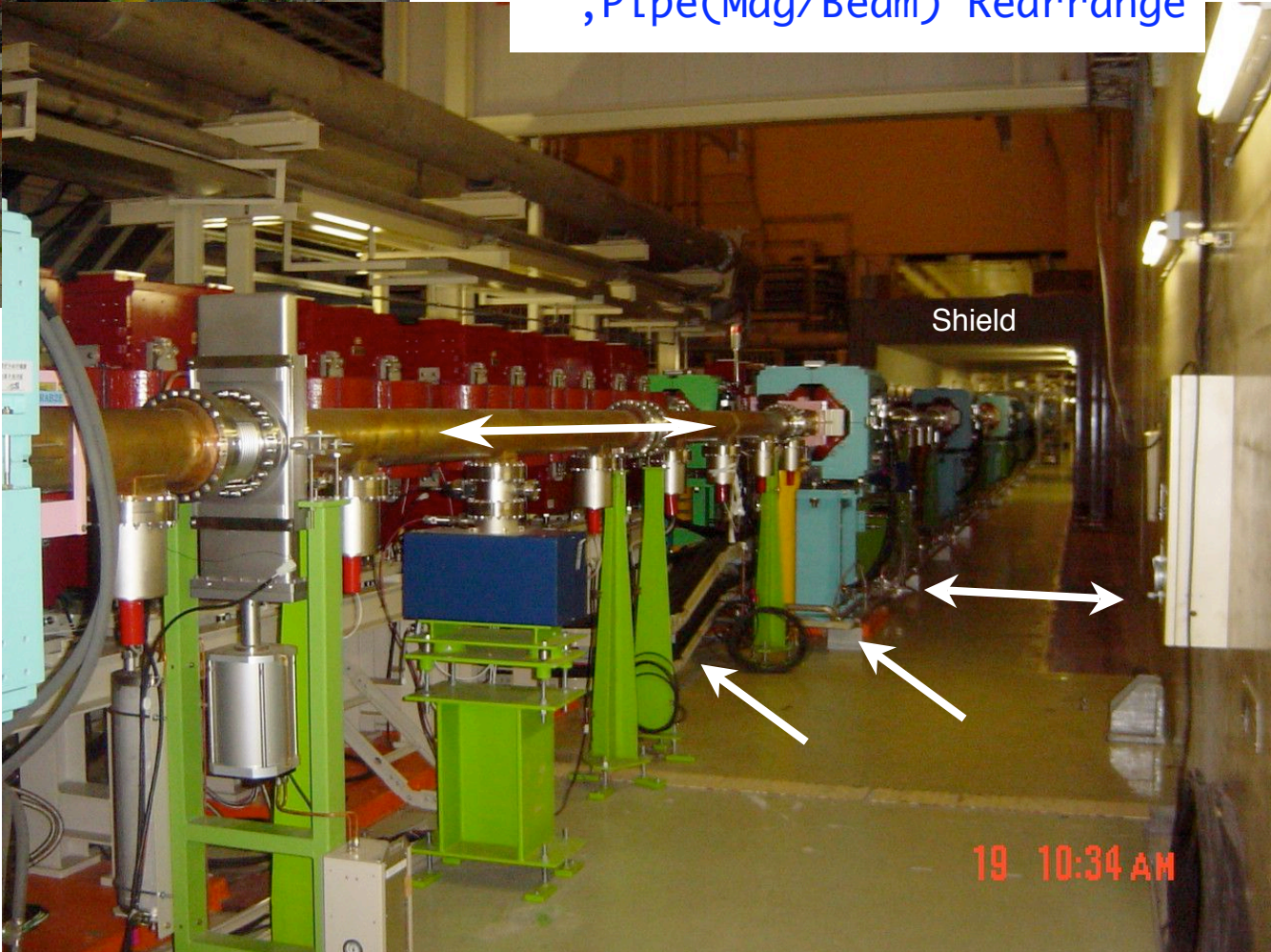
- Crab Installation
- : Present Status
- : D10 Area
- : Remove 8 Shields
- : Wave Guide can be seen





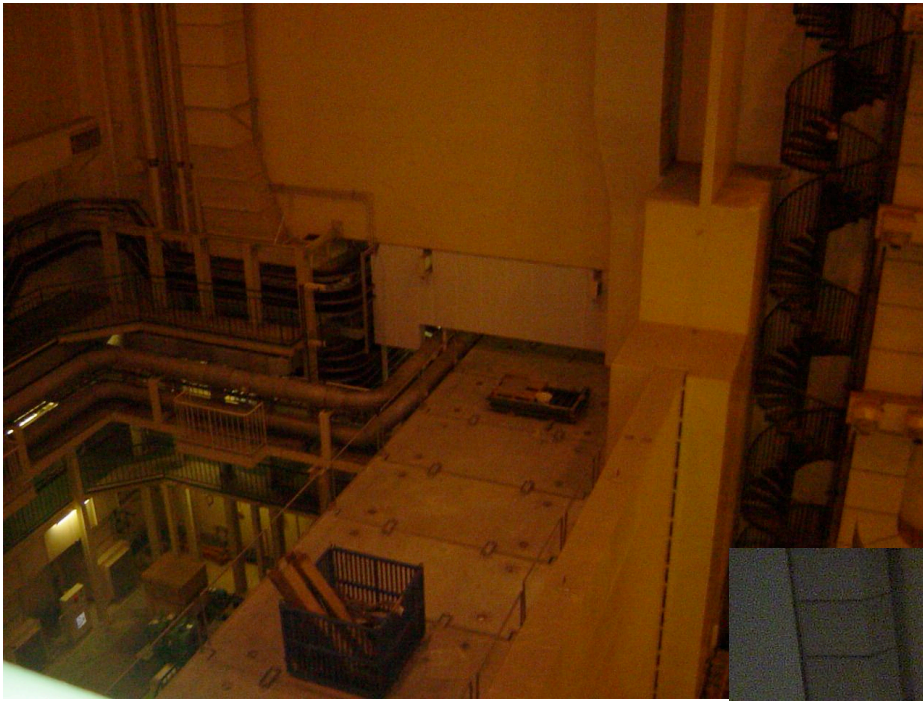
Crab Installation

- : Present Status
- : D10 Area
- : Remove 8 Shields
- : Avoid Interference
;Crab-base and cable rack
;Pipe(Mag/Beam) Rearrange



Crab Installation
: Present Status
: D10 Area
: Remove 8 Shields
: Crab be set on
Tirroller





Crab Installation
: Present Status
: D11 Area
: Break the Wall

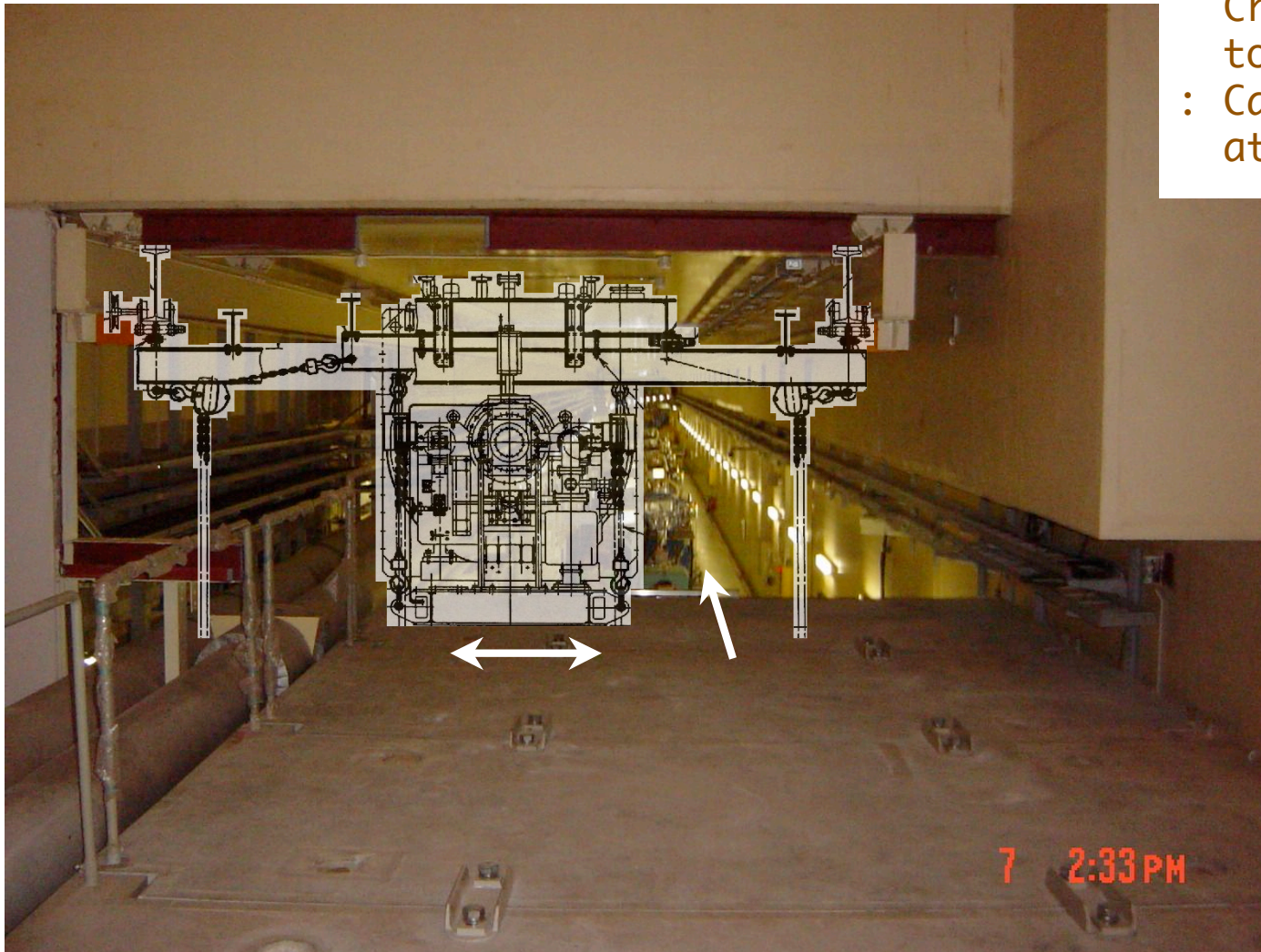




Crab Installation
: Present Status
: D11 Area
: Break the Wall
: Recover it when
restart KEKB



Crab Installation
: Present Status
: D11 Area
: Break the Wall
: On the Shield,
Crab will be set
to the carrier
: Carrier will arrive
at KEK 3/24

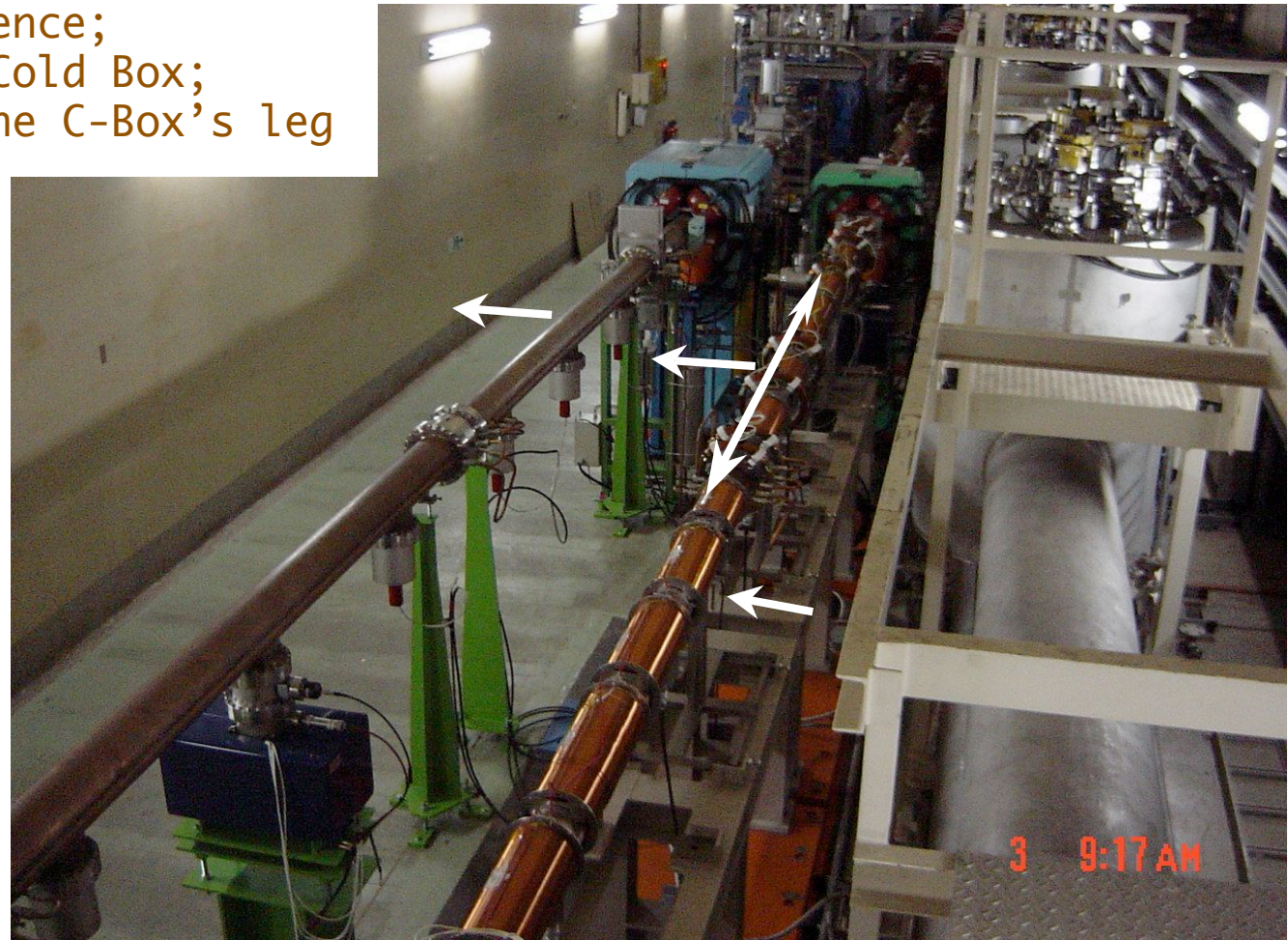


Crab Installation
: Present Status
: D11 Area
: Carrier will arrive
at KEK 3/24
: Actual simulation
at 3/27~



Crab Installation

- : Present Status
- : D11 Area
- : Far from Exp.Hall ; ~60m
- : Remove Tables
- : Remove Both Beam Pipes (H/L)
- : Avoid interference;
Crab-base and Cold Box;
cut/paste of one C-Box's leg



Strategy / Schedule

(0)3/1: KEKB shutdown, 5/1: Crab Start : *almost bankrupt*
Pair Crab Operation.

(1)Resume KEKB at May : *Favorable*

Continue effort to set up of Crab,
and Preparations; Crab Control system, Carrying tool,
Area arranging...

Single Crab may be installed, if Horizontal Test is OK.

Can get valuable information; *beam-Crab interaction*, etc.

Feedback to improvement of Crab performance.

(2)Resume KEKB at April : *Acceptable*

Quit Preparation soon.

Recover the machine to be running.

Installation will be postponed until July / or...,

without Feedback.

Strategy / Schedule ; cont.

(3)Both Crab Install; Resume KEKB at June?: *Possible*

Suppose, we take the scheme (1) and,

At mid of April, IF first Crab show good performance at H-Test, and IF second Crab can be available within one month more.

Can test crabbing mode,

and get many information for Improving the Crab.

Time Table of Crab installation

- (1) Crab Assembly ; ~3 weeks
; if technical issues are settled.
- (2) Horizontal Test ; 3 weeks (+ 2days)
; 1w(cool down) + 1w(test) + 1w(warm up)
(+ High Power aging at room temp.)
- (3) Crab setting in the tunnel ; ~3-4days
; if Area Preparations are finished.
- (4) Piping/Cabling/Checking ; ~7-10 days
; after setting.
- (5) Get Permission to operate ; 7-10 days
; (hope) reduce to couple of days(2-3 days).
- (6) Cool down ; 1 week