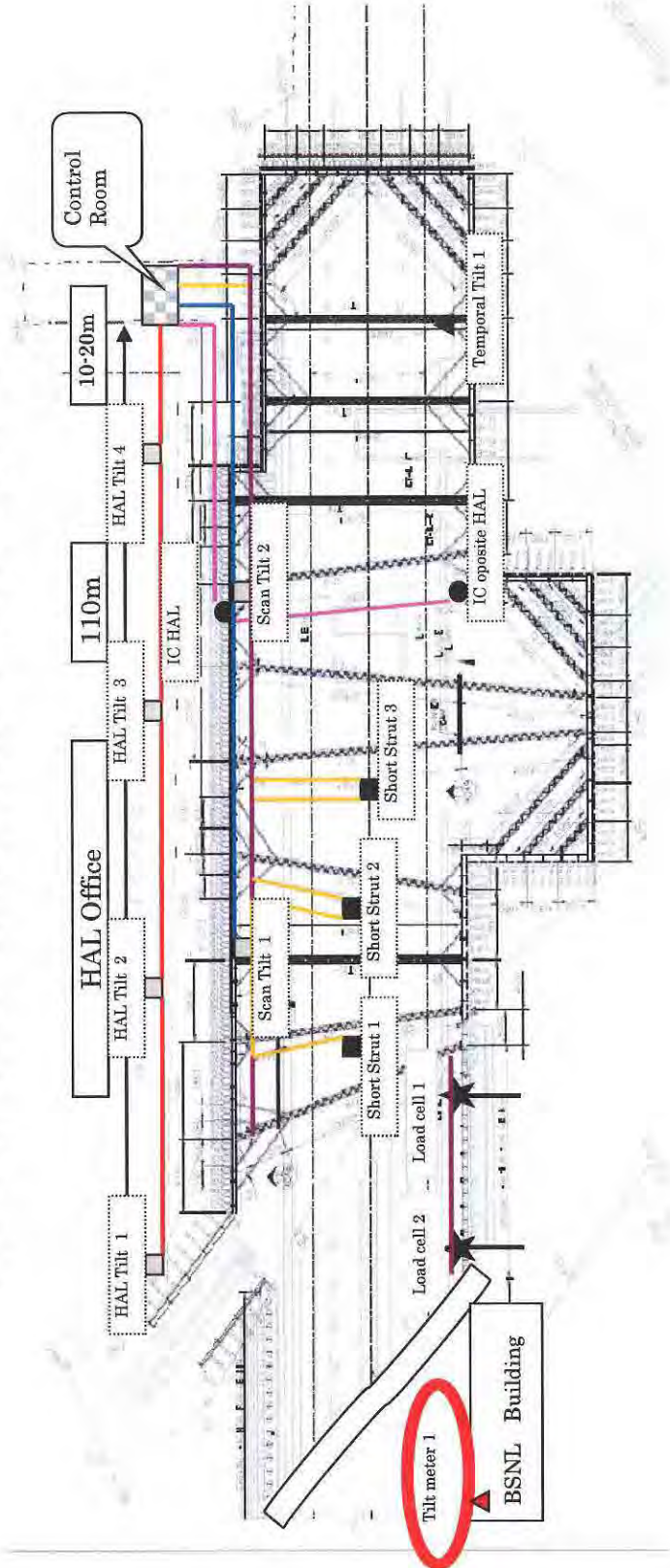


ANNEX

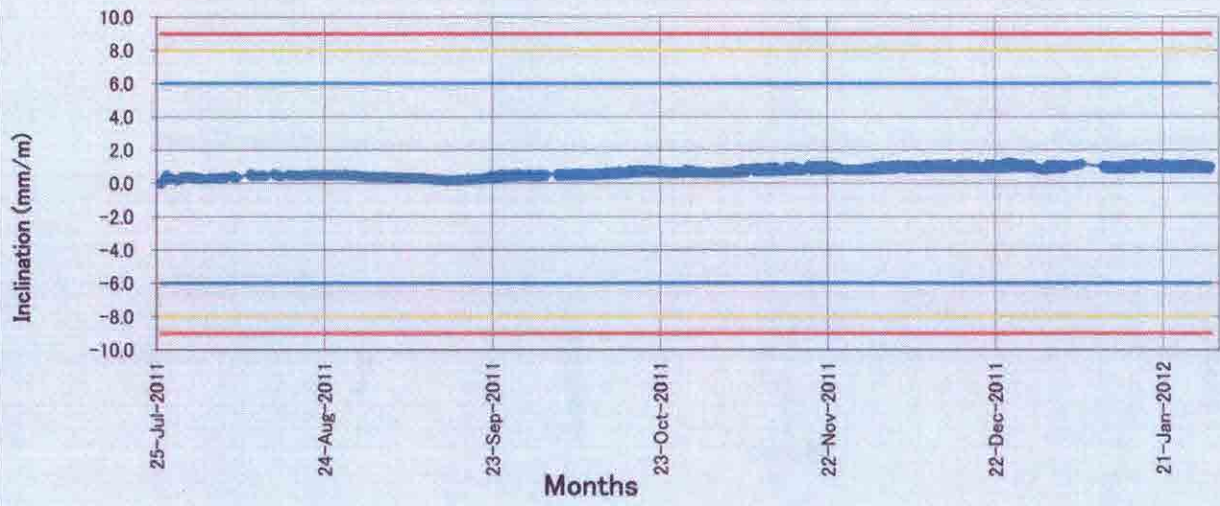
ANNEX 1-1

OSV Monitoring Data
at Cricket Stadium Station
&
Central College Station

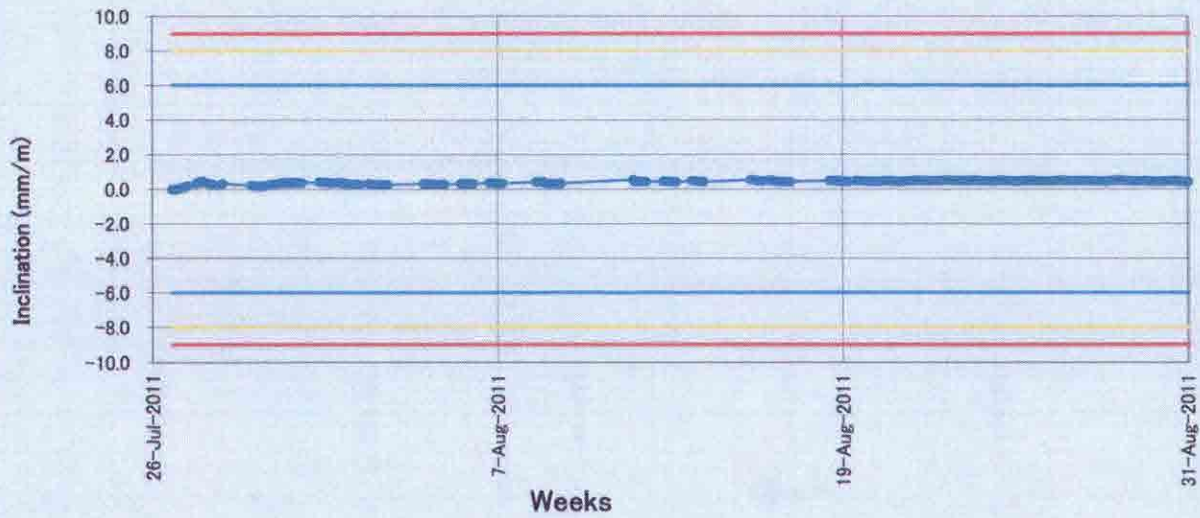
Tilt meter 1 for BSNL Building at Cricket Stadium Station, UG2



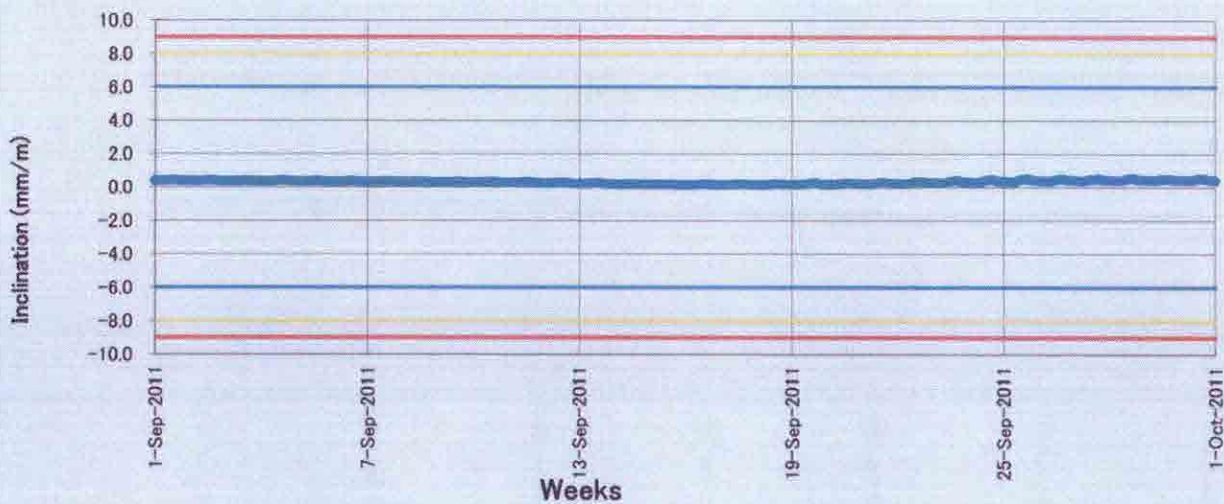
BSNL Building Tilt-1



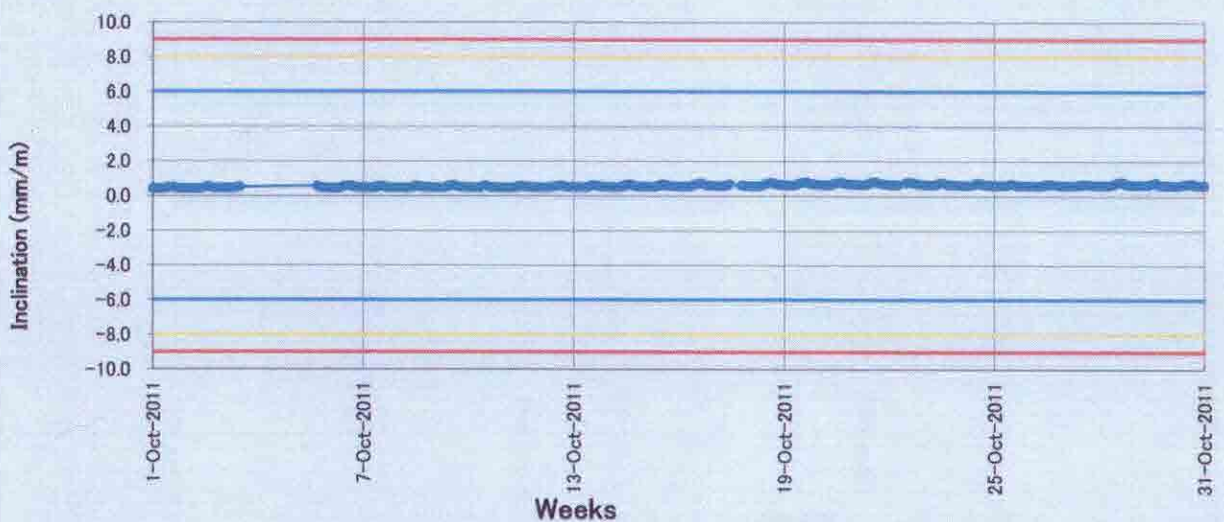
BSNL Building Tilt-1



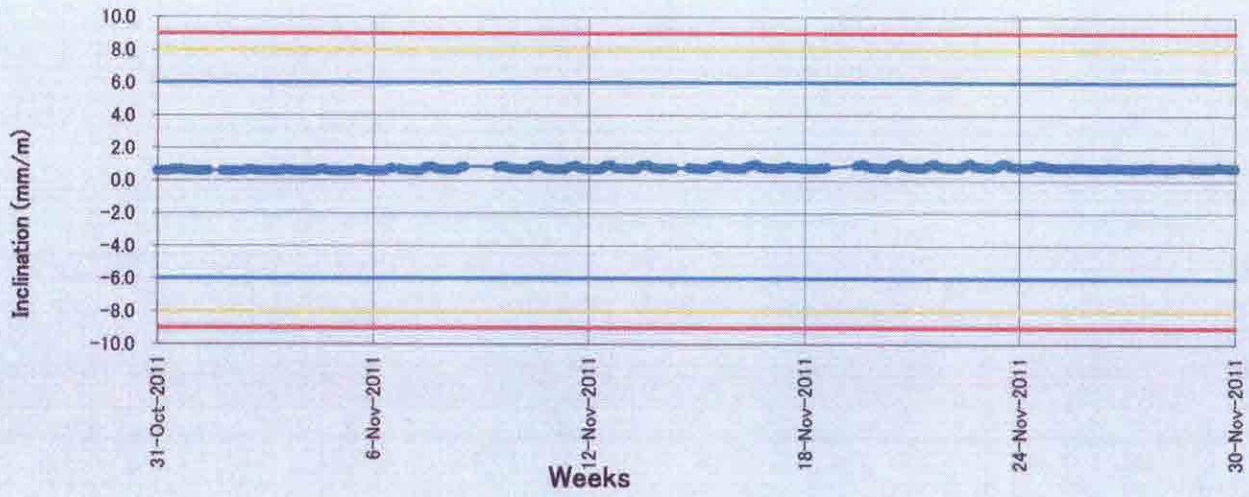
BSNL Building Tilt-1



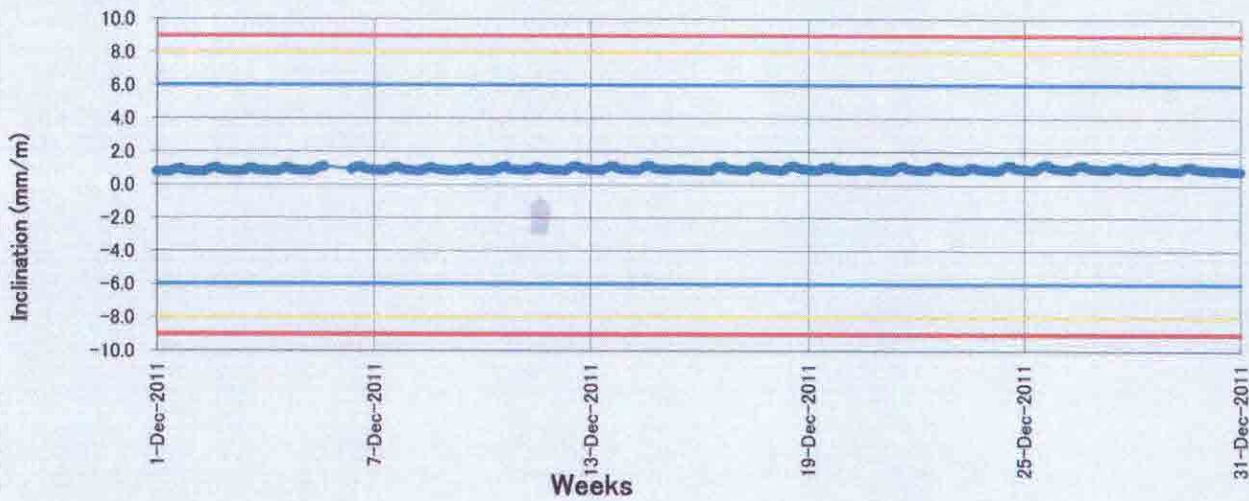
BSNL Building Tilt-1



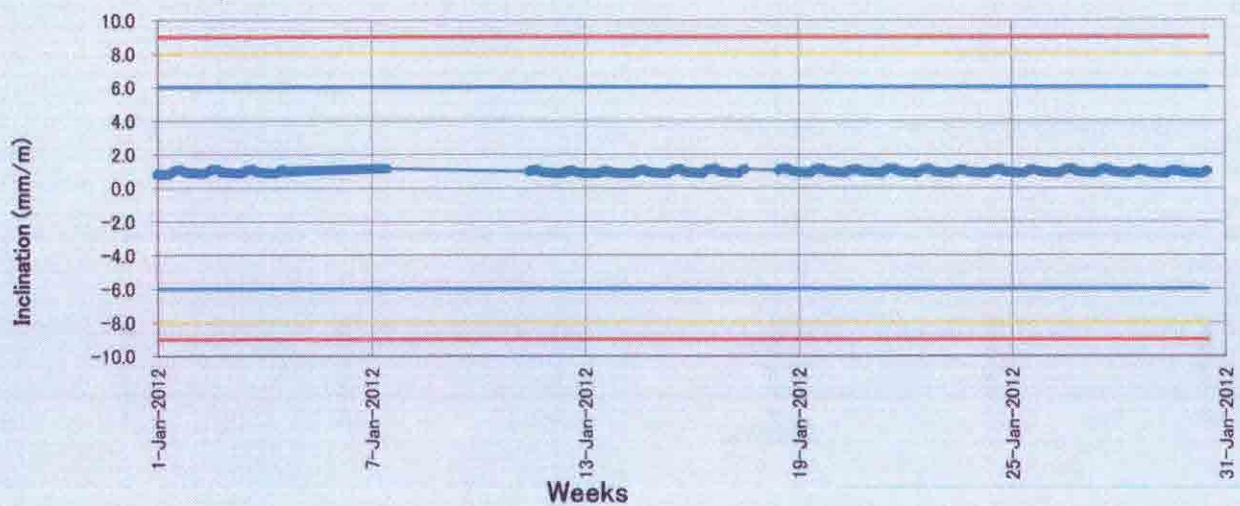
BSNL Building Tilt-1



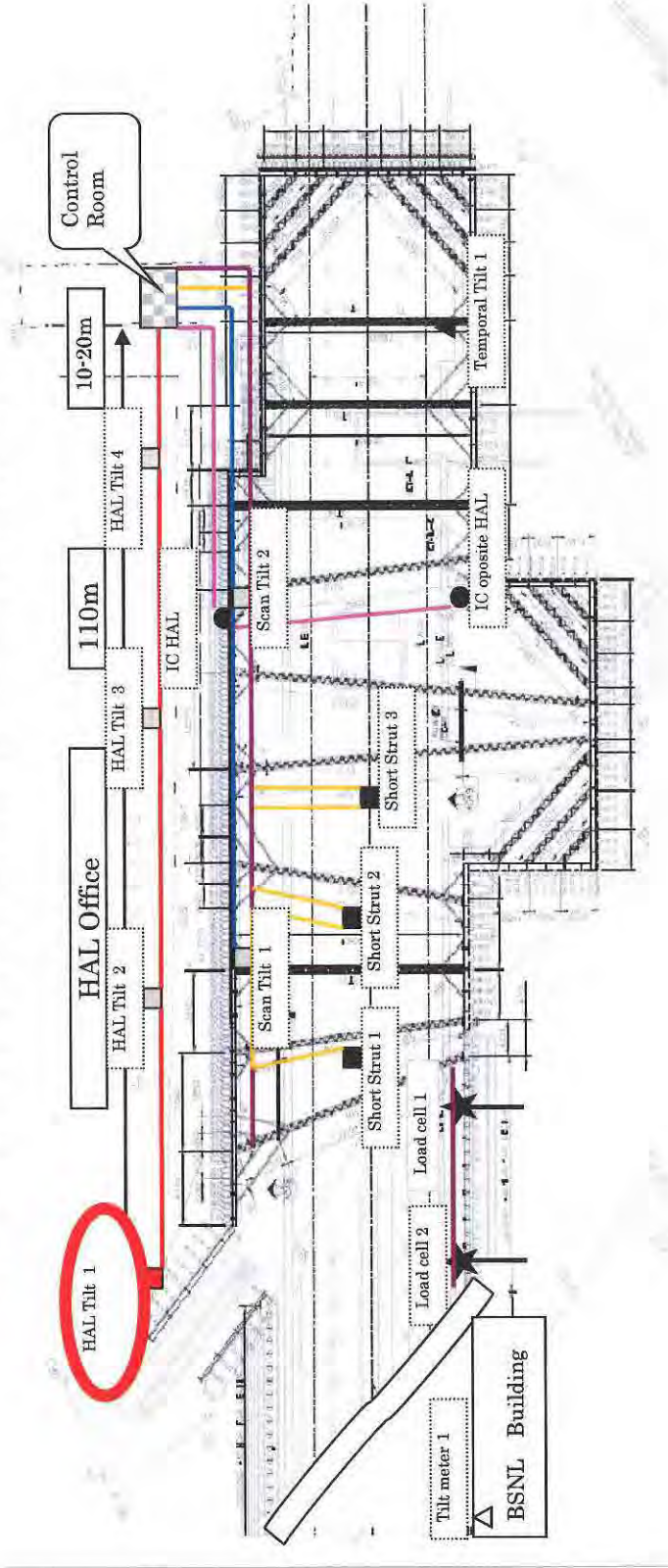
BSNL Building Tilt-1



BSNL Building Tilt-1



Tilt meter for HAL Building 1 at Cricket Stadium Station, UG2



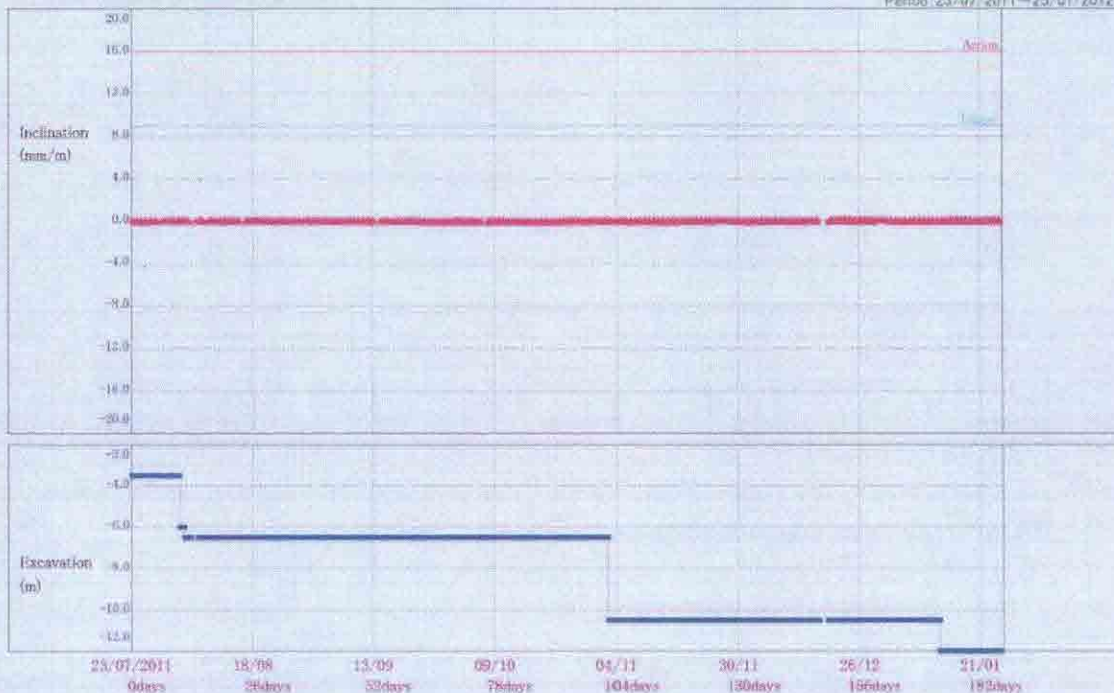
Bangalore Subway Construction

Tilt meter for HAL Building
Measurement Temporal-Change Chart

[HAL Building-1]

+: Excavation Side, -: Back Side

Period: 23/07/2011-25/01/2012



2

Bangalore Subway Construction

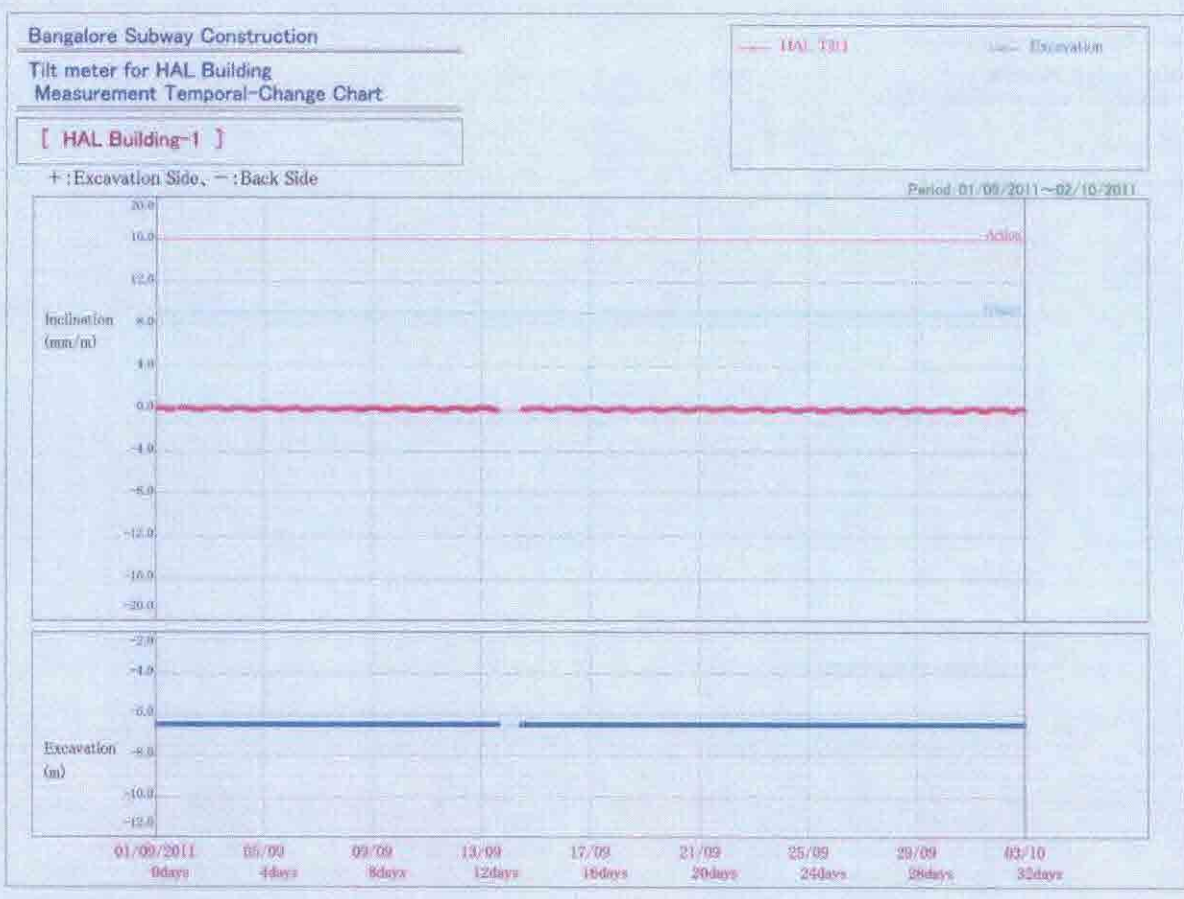
Tilt meter for HAL Building
Measurement Temporal-Change Chart

[HAL Building-1]

+: Excavation Side, -: Back Side

Period: 23/07/2011-23/08/2011





Bangalore Subway Construction

Tilt meter for HAL Building
Measurement Temporal-Change Chart

[HAL Building-1]

+ :Excavation Side, - :Back Side

Period: 01/10/2011~02/11/2011



Bangalore Subway Construction

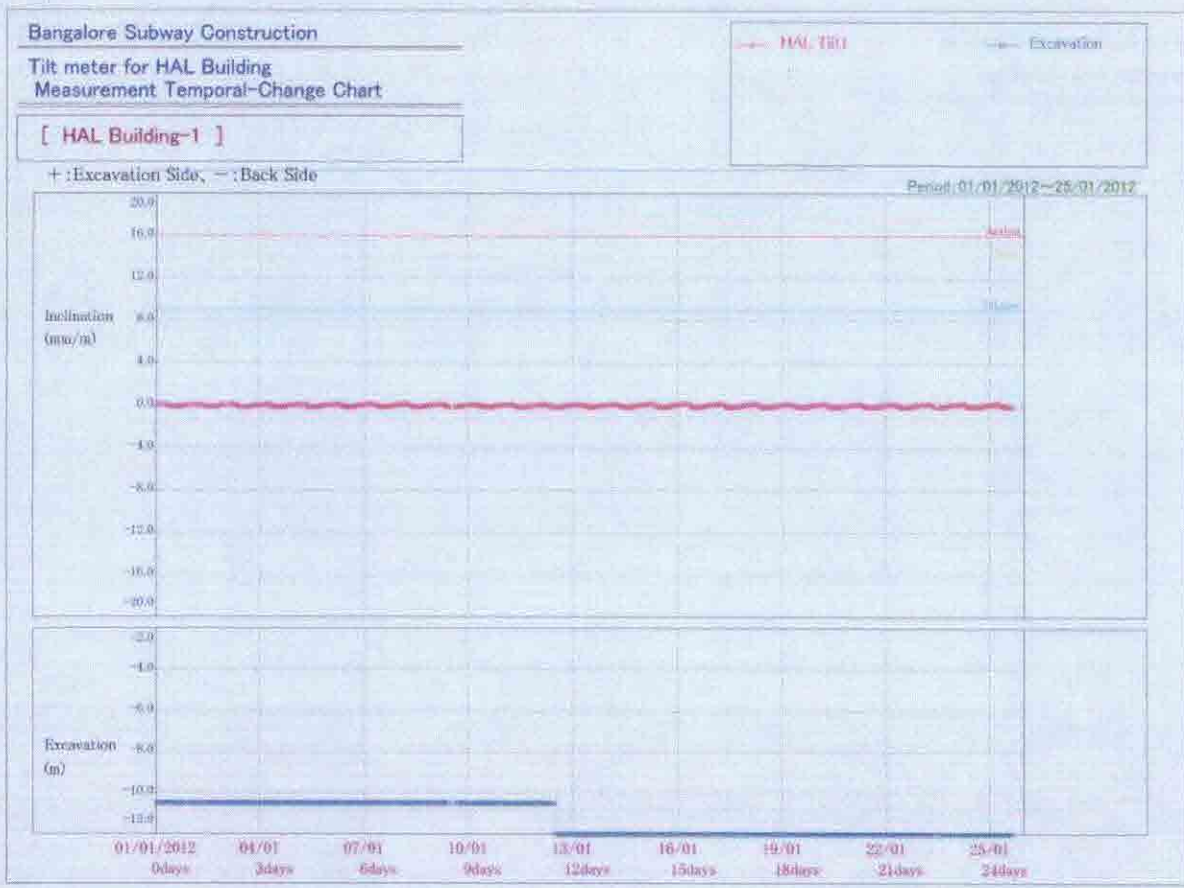
Tilt meter for HAL Building
Measurement Temporal-Change Chart

[HAL Building-1]

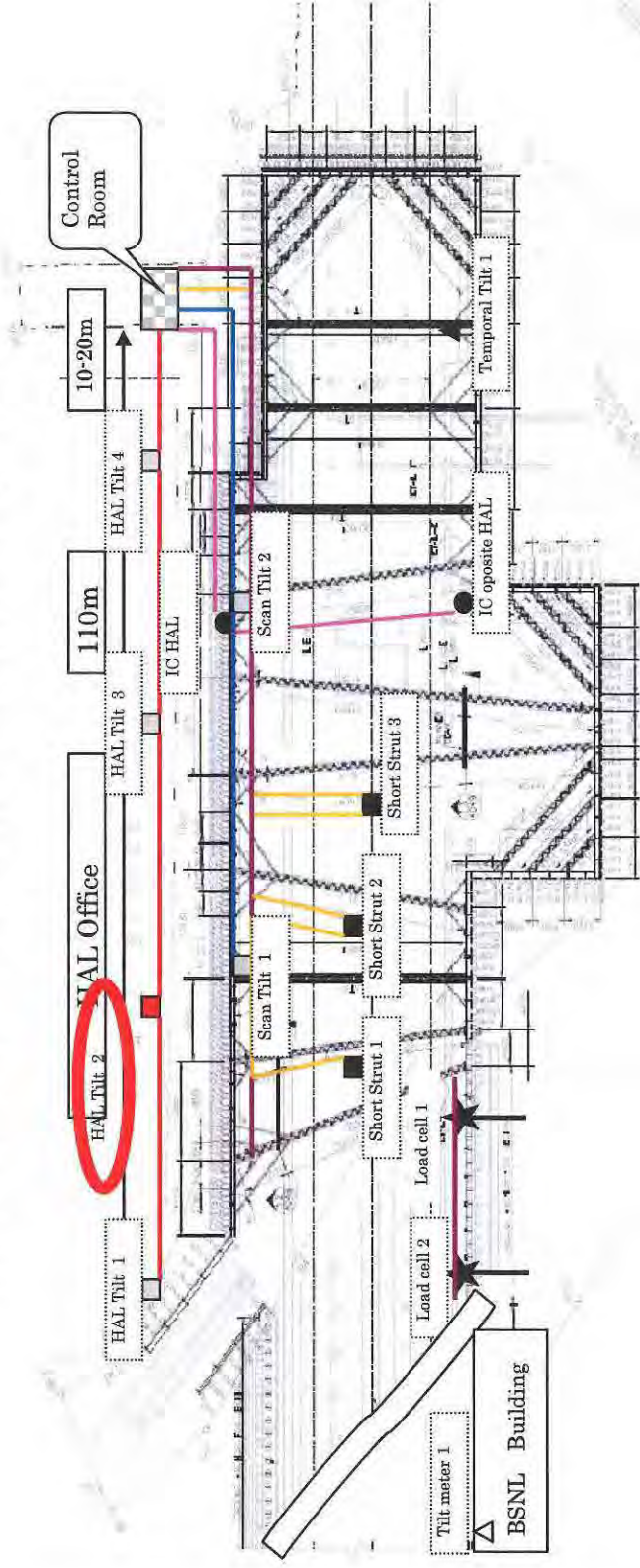
+ :Excavation Side, - :Back Side

Period: 01/11/2011~02/12/2011





Tilt meter for HAL Building 2 at Cricket Stadium Station, UG2



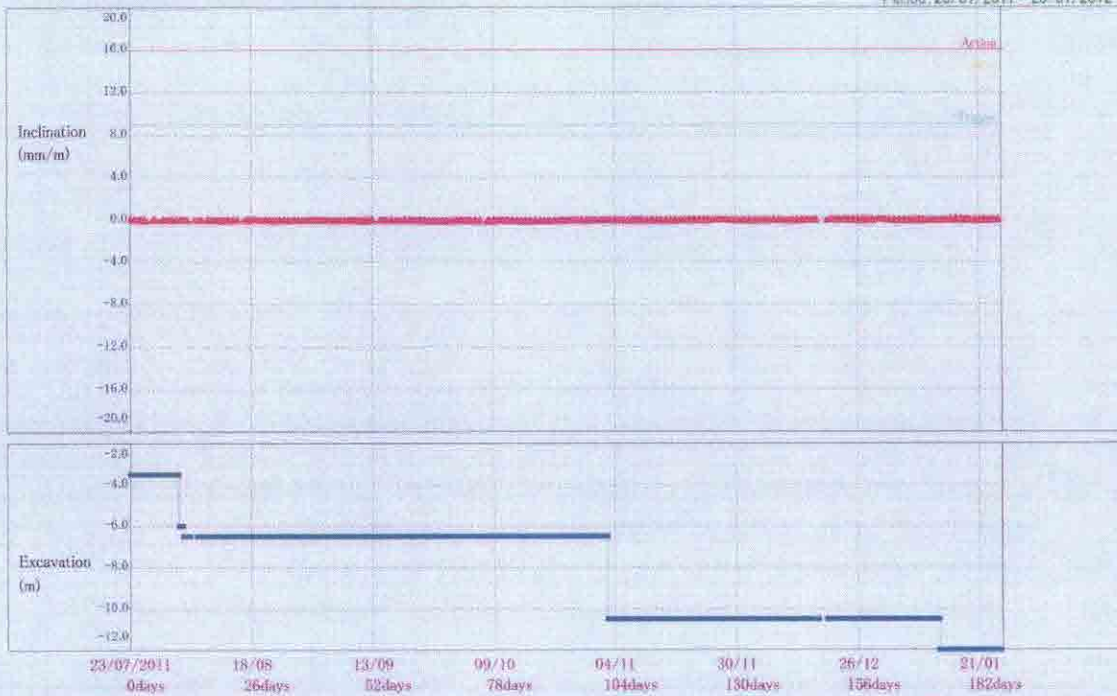
Bangalore Subway Construction

Tilt meter for HAL Building
Measurement Temporal-Change Chart

[HAL Building-2]

+ :Excavation Side, - :Back Side

Period: 23/07/2011 ~ 25/01/2012



Bangalore Subway Construction

Tilt meter for HAL Building
Measurement Temporal-Change Chart

[HAL Building-2]

+ :Excavation Side, - :Back Side

Period: 23/07/2011 ~ 23/05/2011



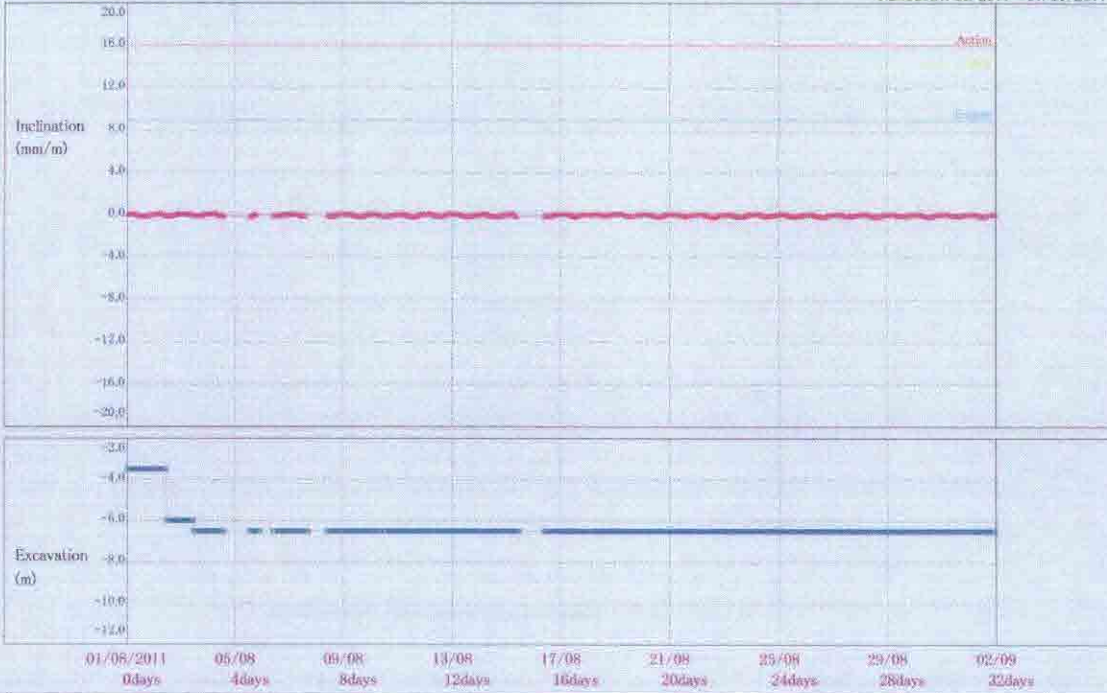
Bangalore Subway Construction

Tilt meter for HAL Building
Measurement Temporal-Change Chart

[HAL Building-2]

+ :Excavation Side, - :Back Side

Period: 01/08/2011 ~ 01/09/2011



Bangalore Subway Construction

Tilt meter for HAL Building
Measurement Temporal-Change Chart

[HAL Building-2]

+ :Excavation Side, - :Back Side

Period: 01/09/2011 ~ 02/10/2011

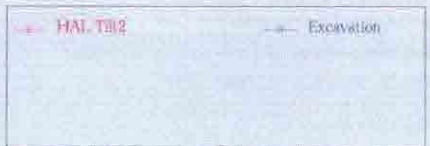


Bangalore Subway Construction

Tilt meter for HAL Building
Measurement Temporal-Change Chart

[HAL Building-2]

+ :Excavation Side, - :Back Side



Period: 01/10/2011~02/11/2011



Bangalore Subway Construction

Tilt meter for HAL Building
Measurement Temporal-Change Chart

[HAL Building-2]

+ :Excavation Side, - :Back Side



Period: 01/11/2011~02/12/2011

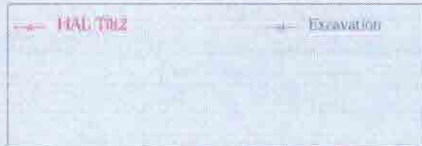


Bangalore Subway Construction

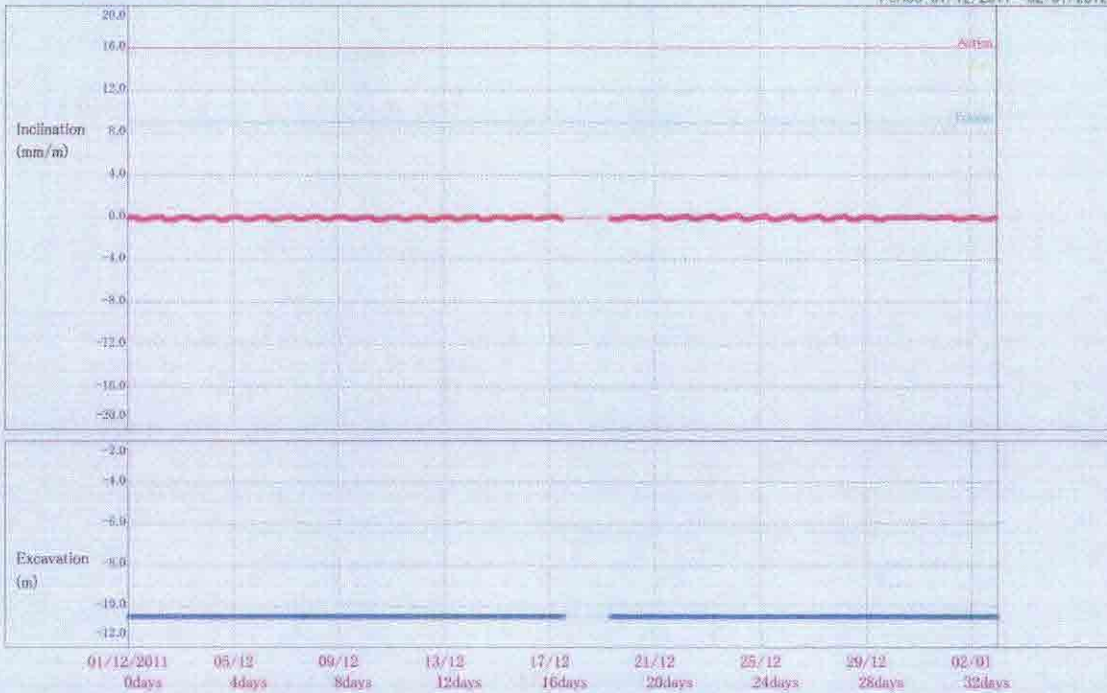
Tilt meter for HAL Building
Measurement Temporal-Change Chart

[HAL Building-2]

+ :Excavation Side, - :Back Side



Period: 01/12/2011~02/01/2012



Bangalore Subway Construction

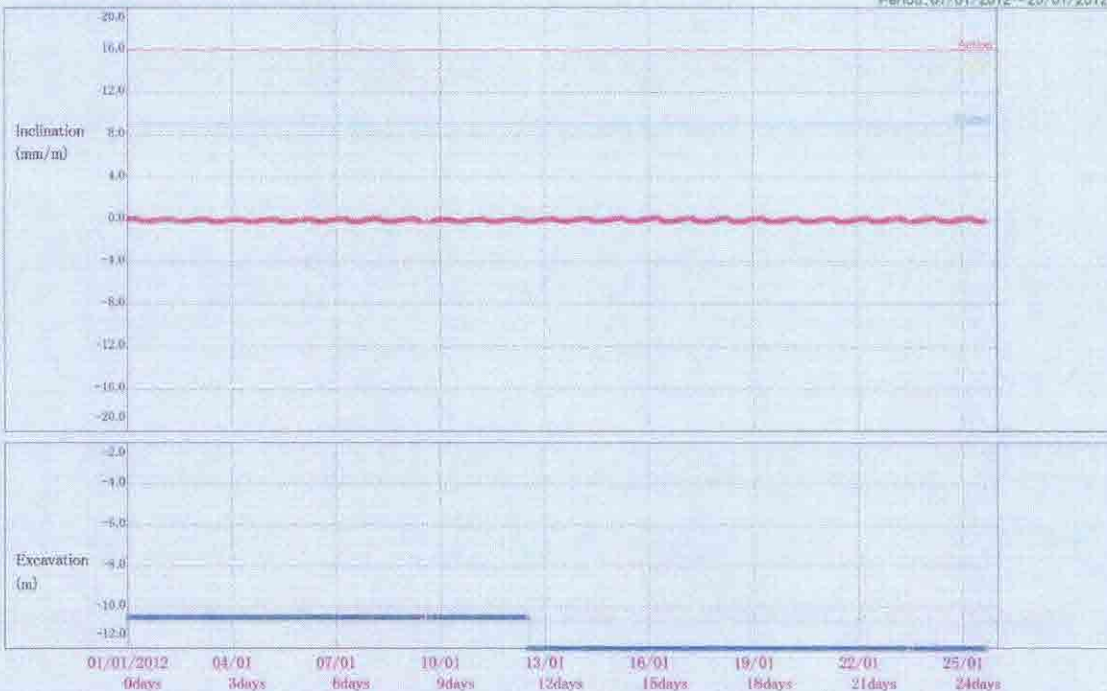
Tilt meter for HAL Building
Measurement Temporal-Change Chart

[HAL Building-2]

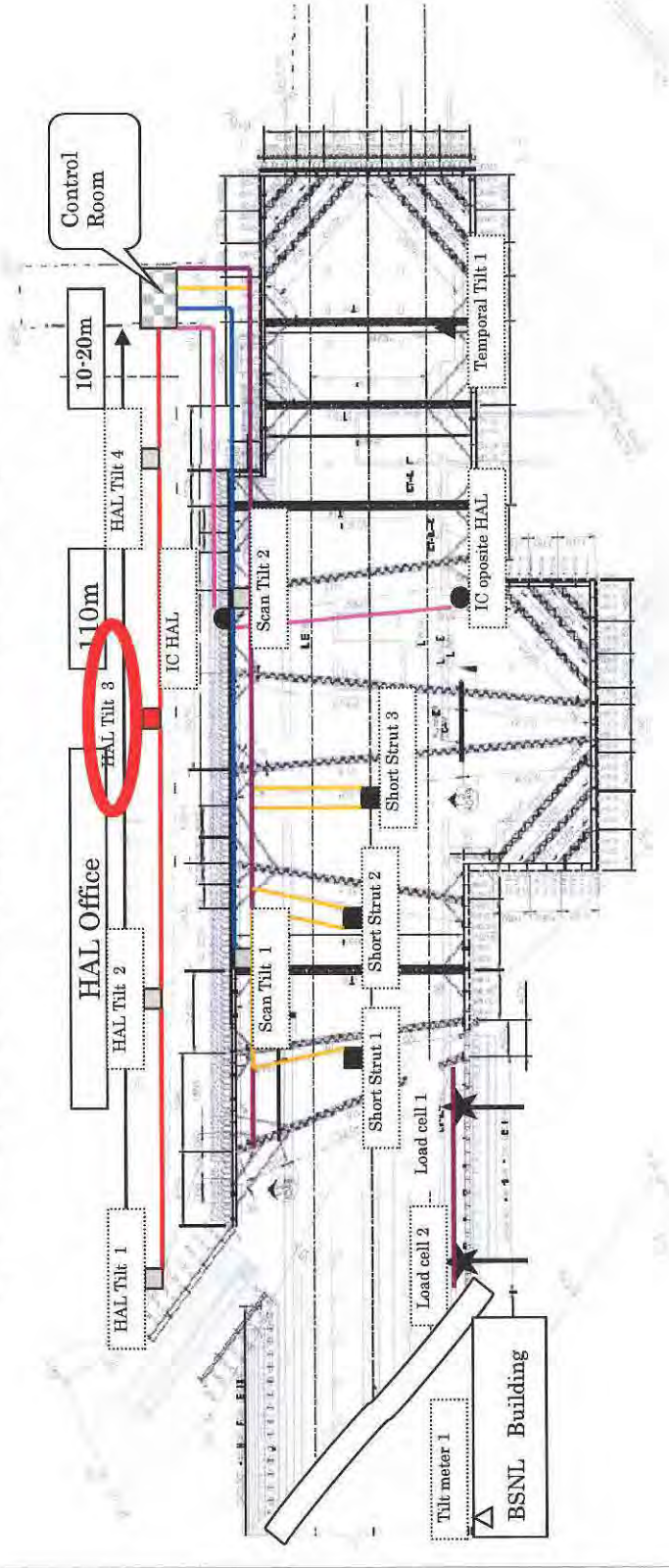
+ :Excavation Side, - :Back Side



Period: 01/01/2012~25/01/2012



Tilt meter for HAL Building 3 at Cricket Stadium Station, UG2



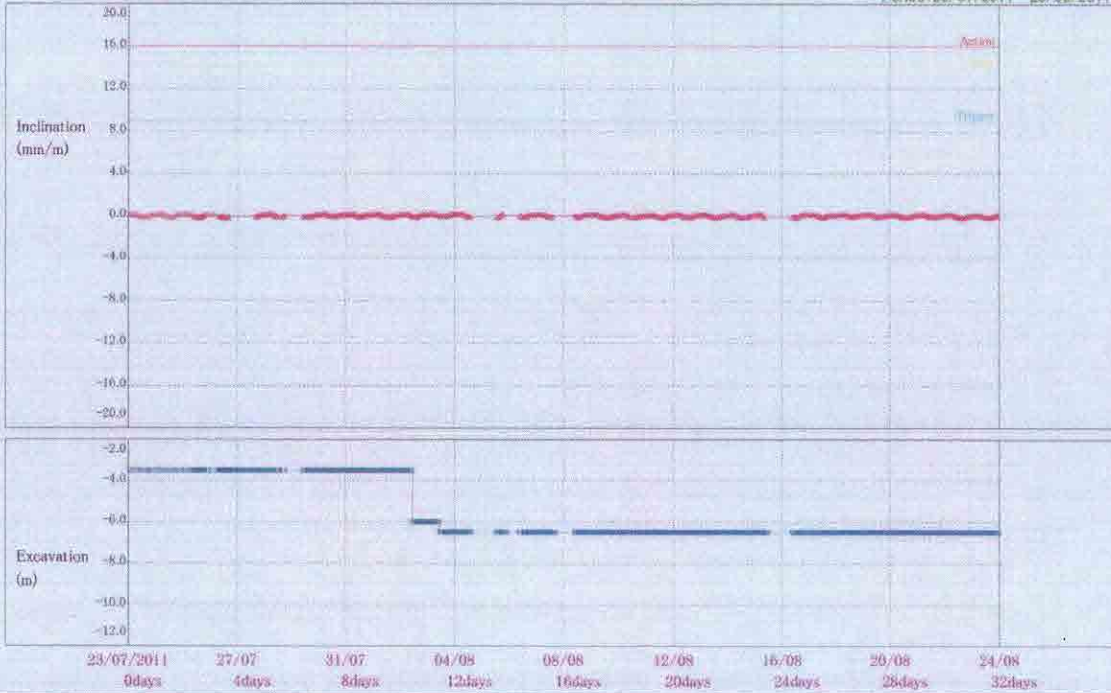
Bangalore Subway Construction

Tilt meter for HAL Building
Measurement Temporal-Change Chart

[HAL Building-3]

+ :Excavation Side, - :Back Side

Period: 23/07/2011~23/08/2011



Bangalore Subway Construction

Tilt meter for HAL Building
Measurement Temporal-Change Chart

[HAL Building-3]

+ :Excavation Side, - :Back Side

Period: 01/08/2011~01/09/2011



Bangalore Subway Construction

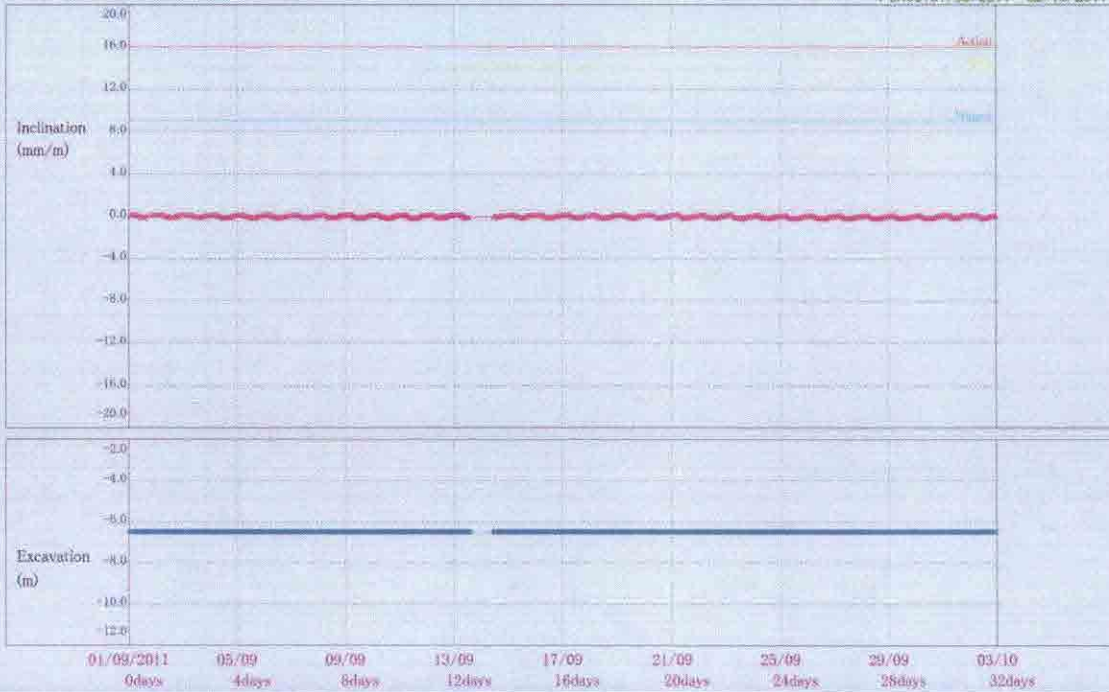
Tilt meter for HAL Building
Measurement Temporal-Change Chart

[HAL Building-3]

+ :Excavation Side, - :Back Side



Period: 01/09/2011 ~ 02/10/2011



Bangalore Subway Construction

Tilt meter for HAL Building
Measurement Temporal-Change Chart

[HAL Building-3]

+ :Excavation Side, - :Back Side



Period: 01/10/2011 ~ 02/11/2011



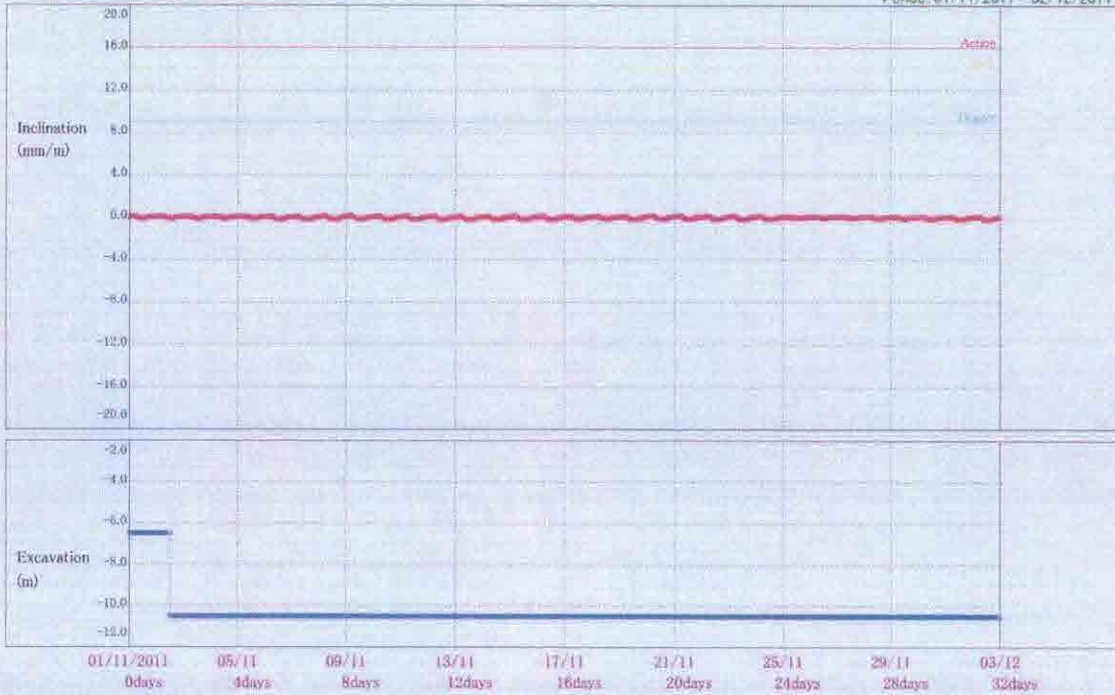
Bangalore Subway Construction

Tilt meter for HAL Building
Measurement Temporal-Change Chart

[HAL Building-3]

+: Excavation Side, -: Back Side

Period: 01/11/2011~02/12/2011



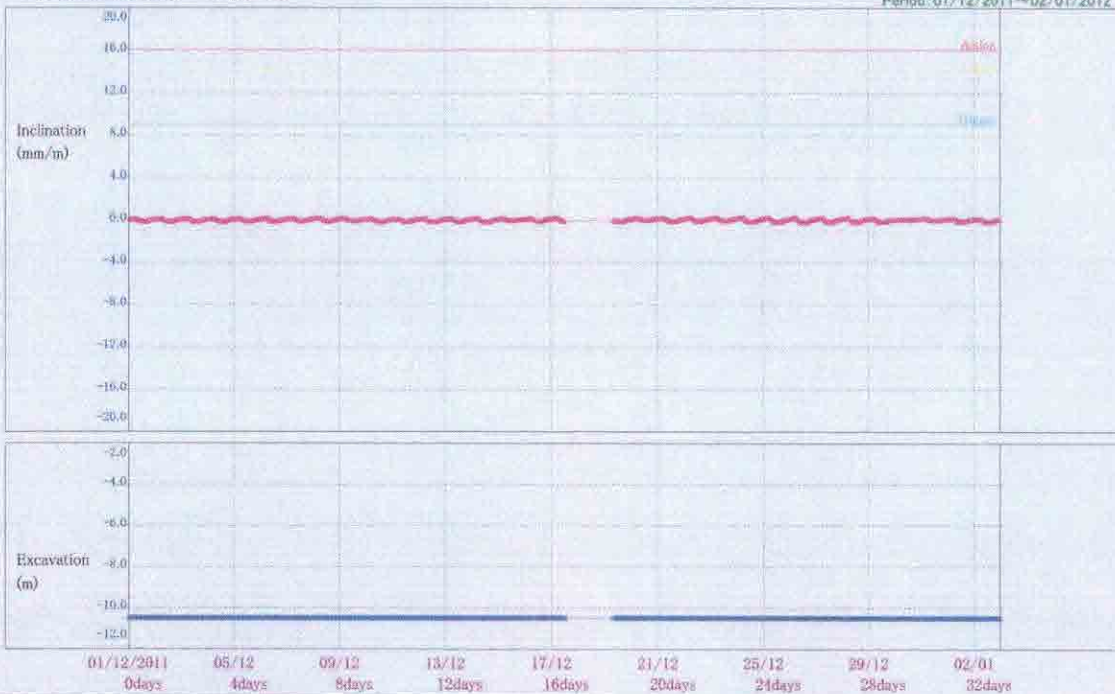
Bangalore Subway Construction

Tilt meter for HAL Building
Measurement Temporal-Change Chart

[HAL Building-3]

+: Excavation Side, -: Back Side

Period: 01/12/2011~02/01/2012



Bangalore Subway Construction

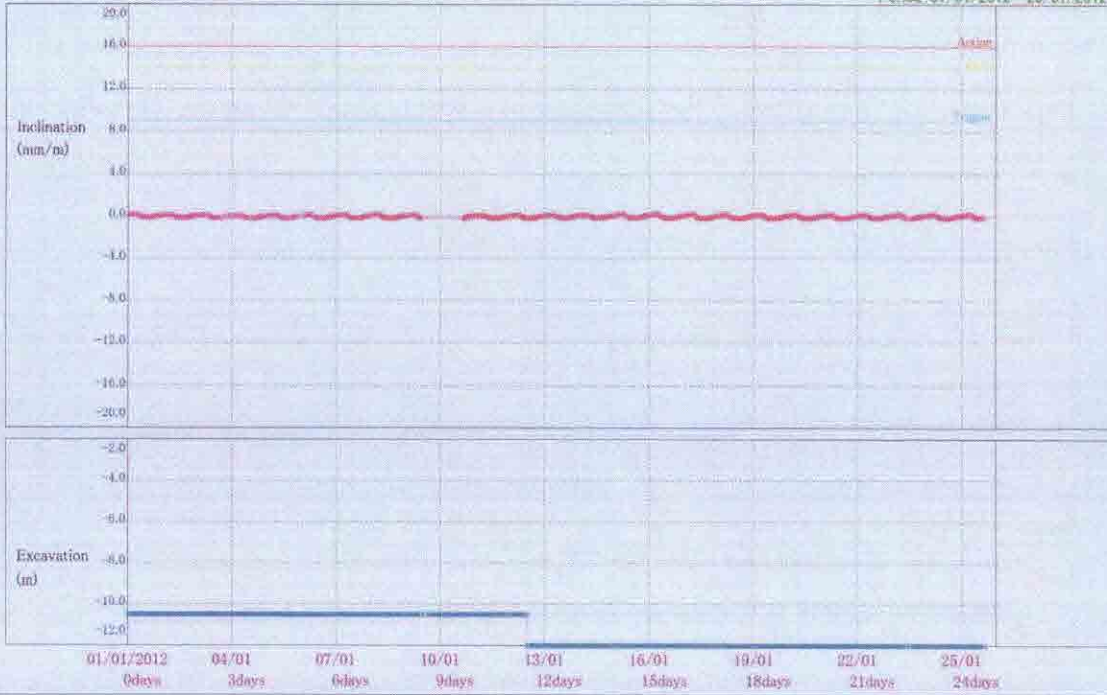
Tilt meter for HAL Building
Measurement Temporal-Change Chart

[HAL Building-3]

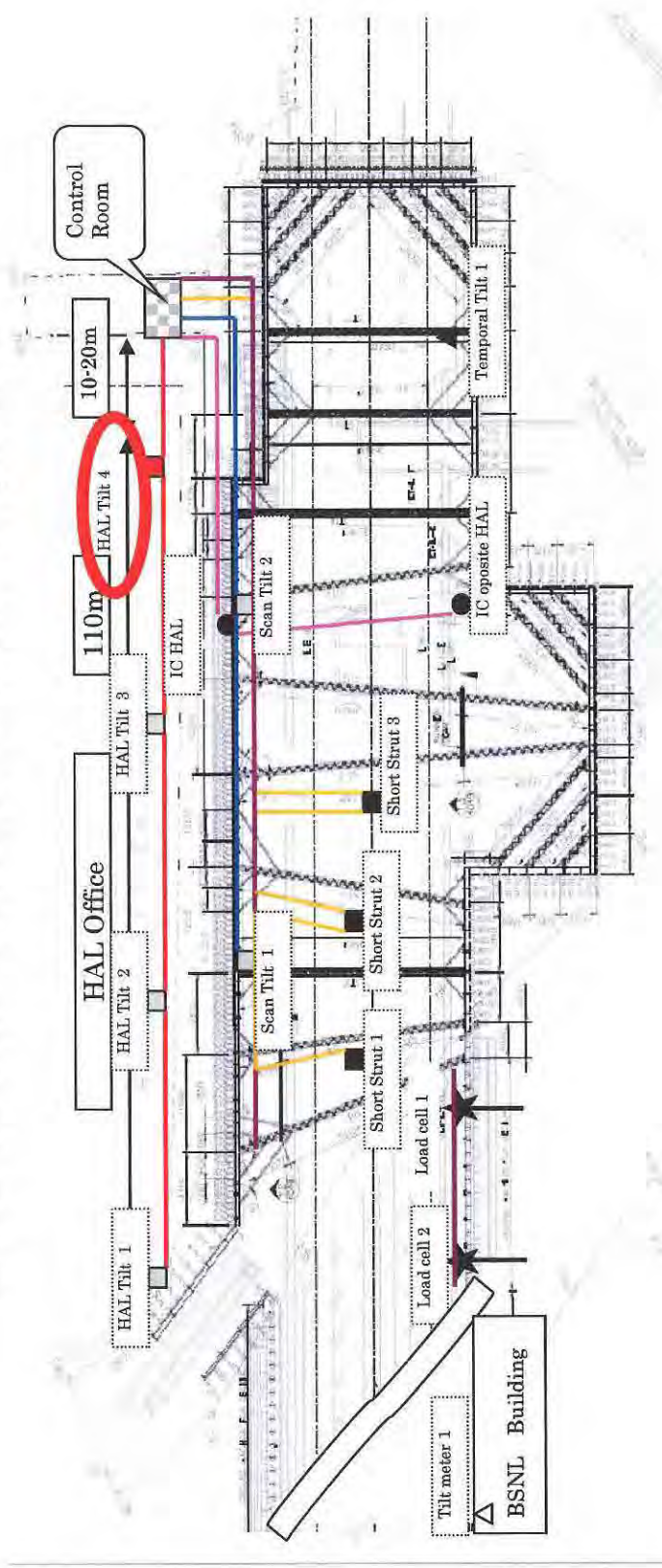
+ : Excavation Side, - : Back Side



Period: 01/01/2012 ~ 25/01/2012



Tilt meter for HAL Building 4 at Cricket Stadium Station, UG2



Bangalore Subway Construction

Tilt meter for HAL Building
Measurement Temporal-Change Chart

[HAL Building-4]

+ :Excavation Side, - :Back Side

Period: 23/07/2011~25/01/2012



Bangalore Subway Construction

Tilt meter for HAL Building
Measurement Temporal-Change Chart

[HAL Building-4]

+ :Excavation Side, - :Back Side

Period: 23/07/2011~23/08/2011



Bangalore Subway Construction

Tilt meter for HAL Building
Measurement Temporal-Change Chart

[HAL Building-4]

+ :Excavation Side, - :Back Side



Period: 01/08/2011 ~ 01/09/2011



Bangalore Subway Construction

Tilt meter for HAL Building
Measurement Temporal-Change Chart

[HAL Building-4]

+ :Excavation Side, - :Back Side



Period: 01/09/2011 ~ 02/10/2011



Bangalore Subway Construction

Tilt meter for HAL Building
Measurement Temporal-Change Chart

[HAL Building-4]

+:Excavation Side, -:Back Side

Period: 01/10/2011~02/11/2011



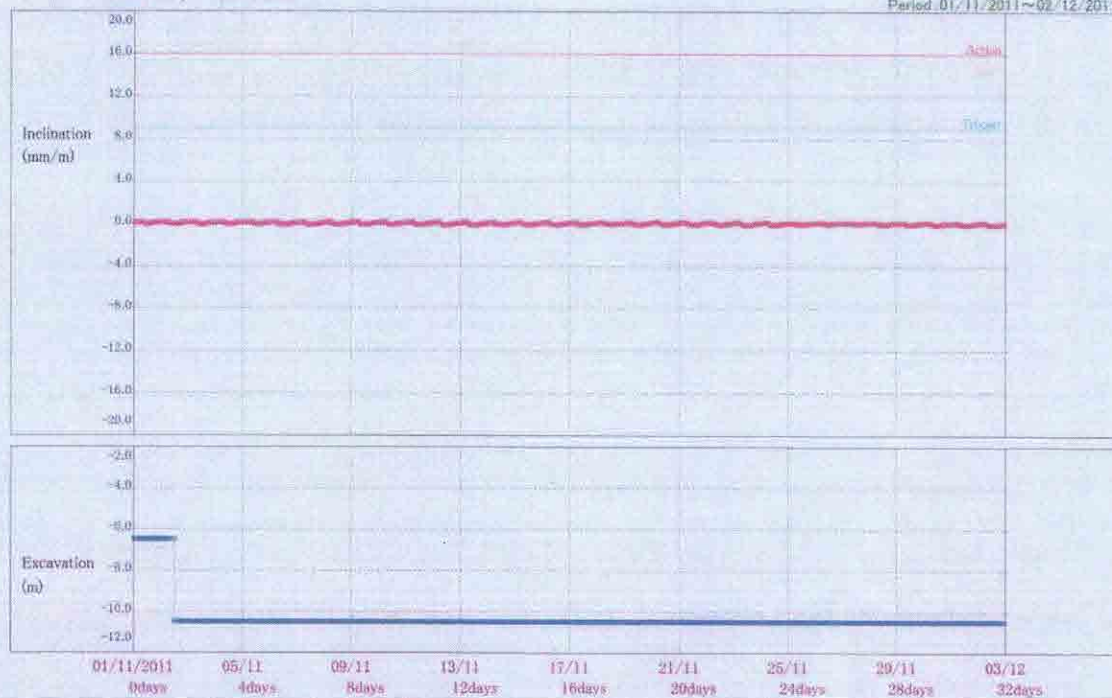
Bangalore Subway Construction

Tilt meter for HAL Building
Measurement Temporal-Change Chart

[HAL Building-4]

+:Excavation Side, -:Back Side

Period: 01/11/2011~02/12/2011



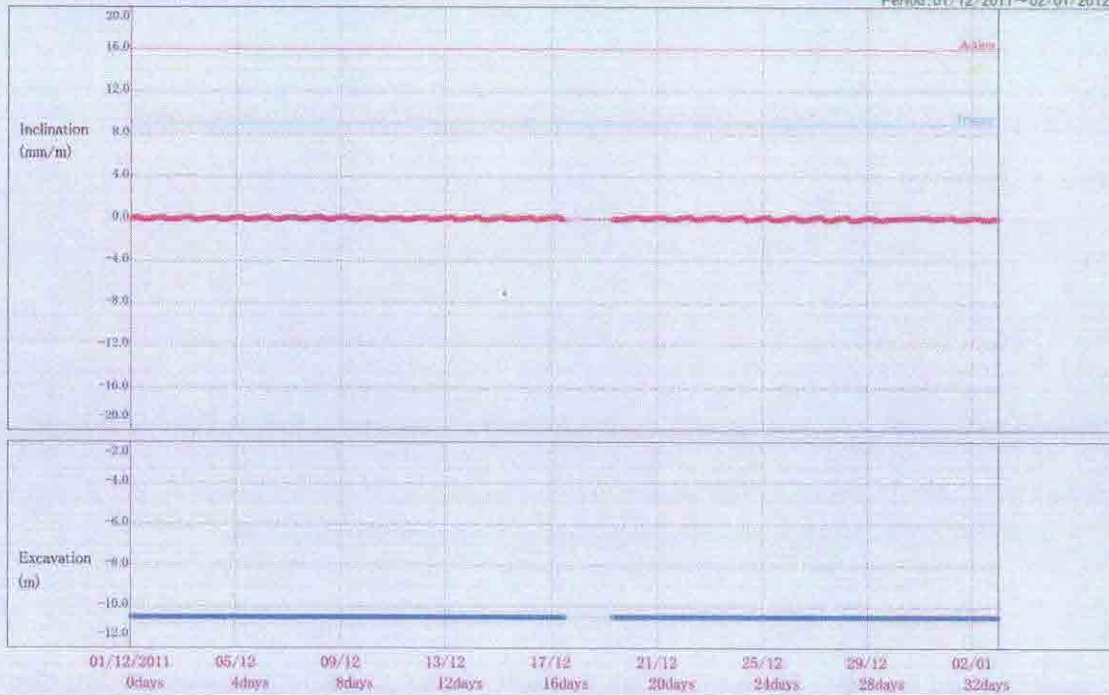
Bangalore Subway Construction

Tilt meter for HAL Building
Measurement Temporal-Change Chart

[HAL Building-4]

+ :Excavation Side, - :Back Side

Period: 01/12/2011 ~ 02/01/2012



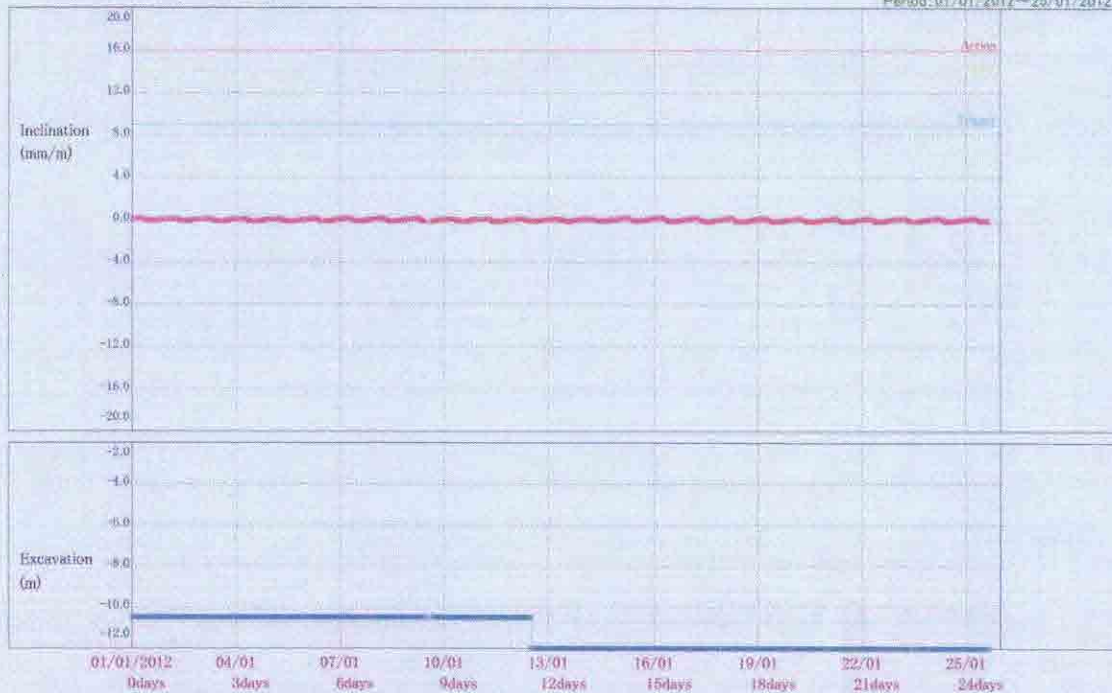
Bangalore Subway Construction

Tilt meter for HAL Building
Measurement Temporal-Change Chart

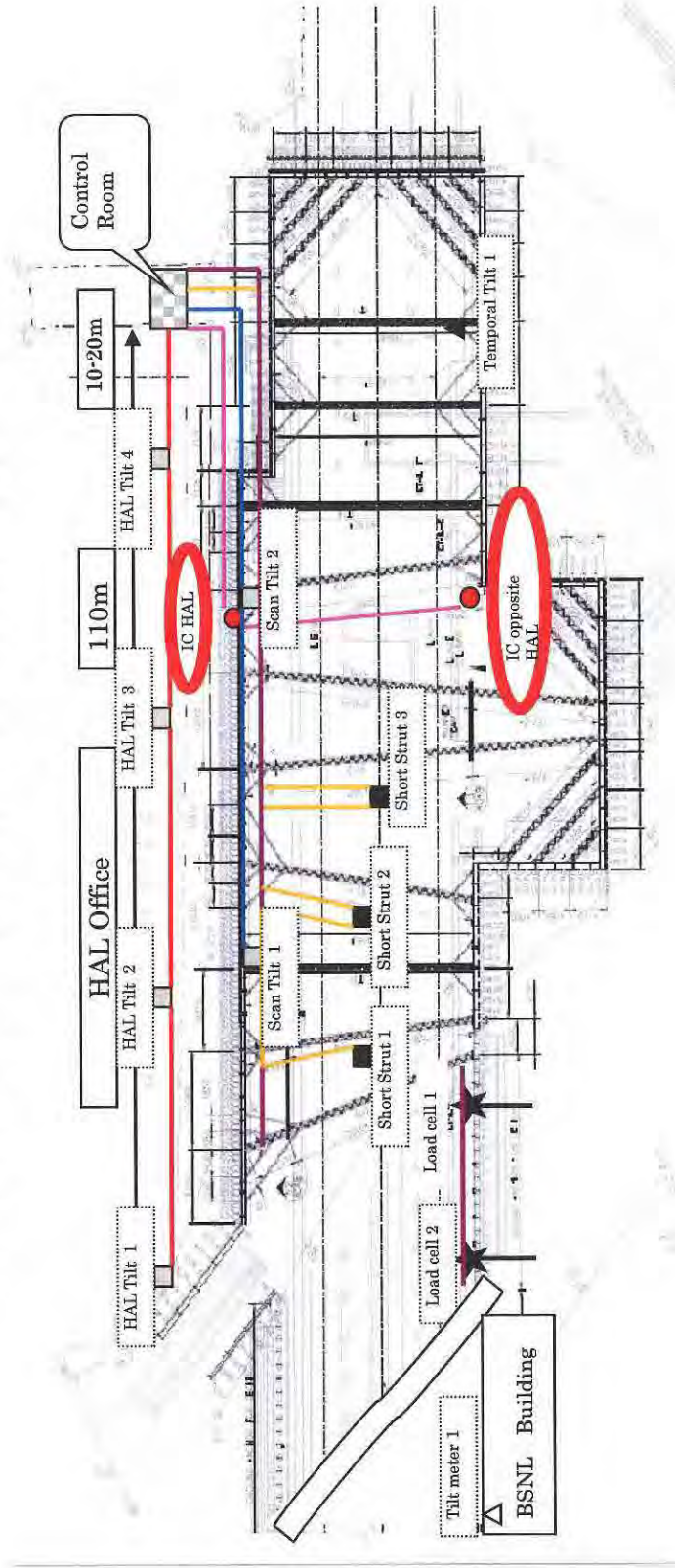
[HAL Building-4]

+ :Excavation Side, - :Back Side

Period: 01/01/2012 ~ 25/01/2012



Inclinometer for ground movement at Cricket Stadium Station, UG2



Bangalore Subway Construction

Deformation of retaining Wall
Measurement Distribution Chart

[Cumulative deformation]

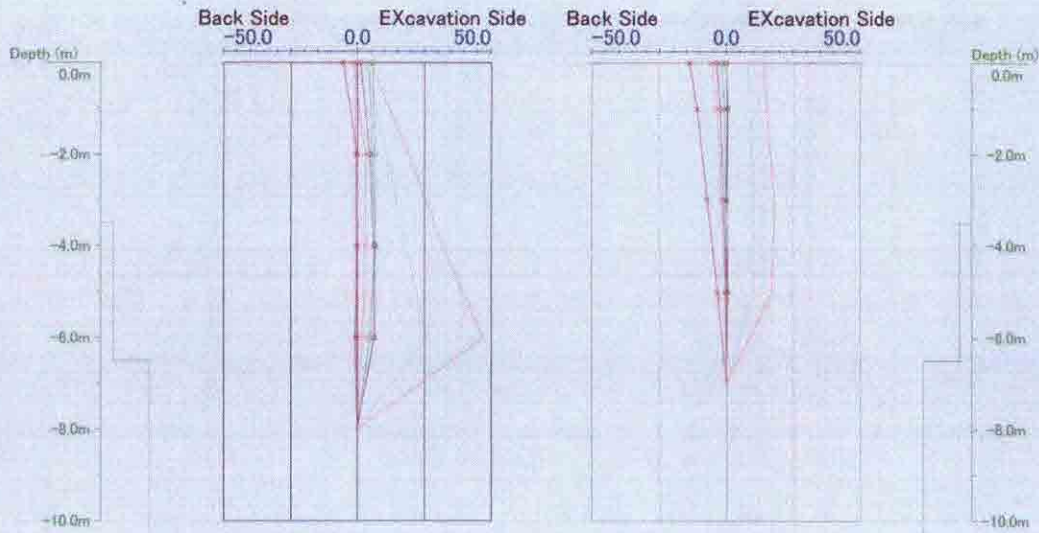
Unit : mm

Legend

- 2011/08/01 00:30:00 — Action
- 2011/09/01 01:00:00 — Trigger
- 2011/10/01 00:30:00 — Trigger
- 2011/11/01 00:30:00 — Trigger
- 2011/12/01 00:30:00 — Trigger
- 2012/01/31 12:30:00 — Trigger

IC opposite HAL

IC HAL



Bangalore Subway Construction

Deformation of retaining Wall
Measurement Distribution Chart

[Cumulative deformation]

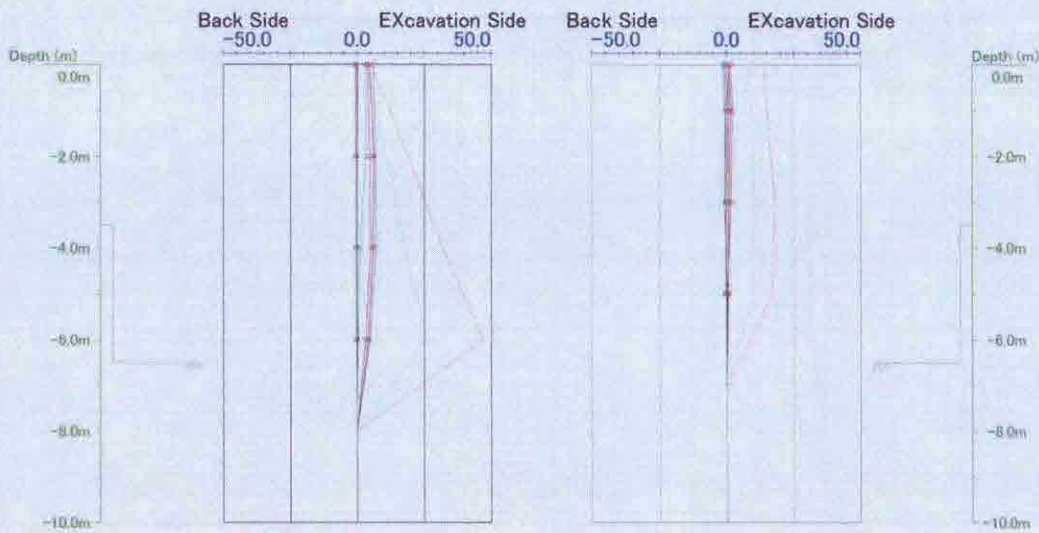
Unit : mm

Legend

- 2011/08/01 00:30:00 — Action
- 2011/08/05 13:00:00 — Trigger
- 2011/08/10 23:30:00 — Trigger
- 2011/08/15 00:30:00 — Trigger
- 2011/08/20 00:30:00 — Trigger
- 2011/08/25 00:30:00 — Trigger
- 2011/08/31 23:30:00 — Trigger

IC opposite HAL

IC HAL



Bangalore Subway Construction

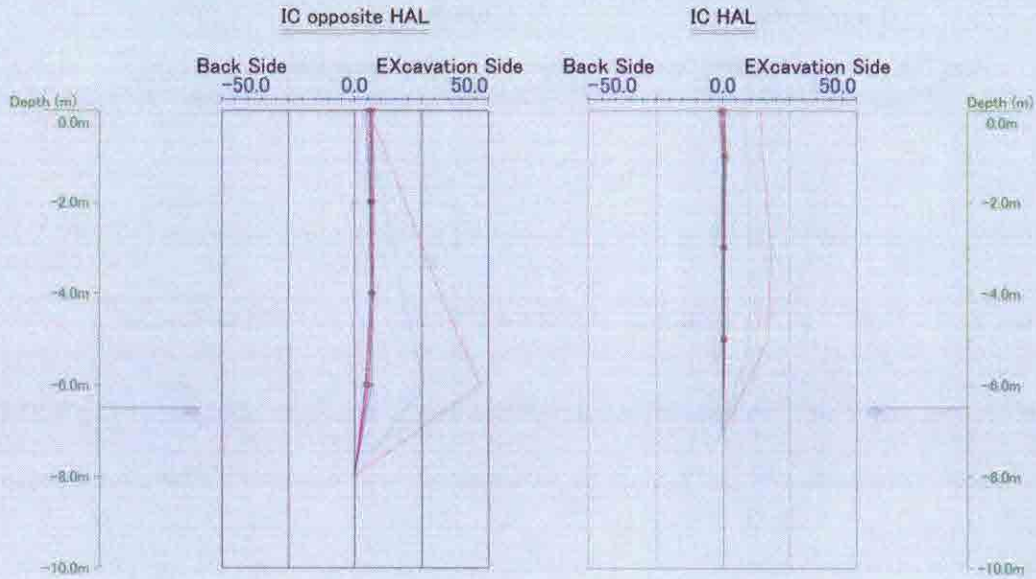
Deformation of retaining Wall
Measurement Distribution Chart

[Cumulative deformation]

Unit : mm

Legend

- 2011/09/01 01:00:00
- 2011/09/05 00:30:00
- 2011/09/10 00:25:00
- 2011/09/15 00:30:00
- 2011/09/20 00:30:00
- 2011/09/25 00:30:00
- 2011/09/30 23:30:00
- Action
- Trigger



Bangalore Subway Construction

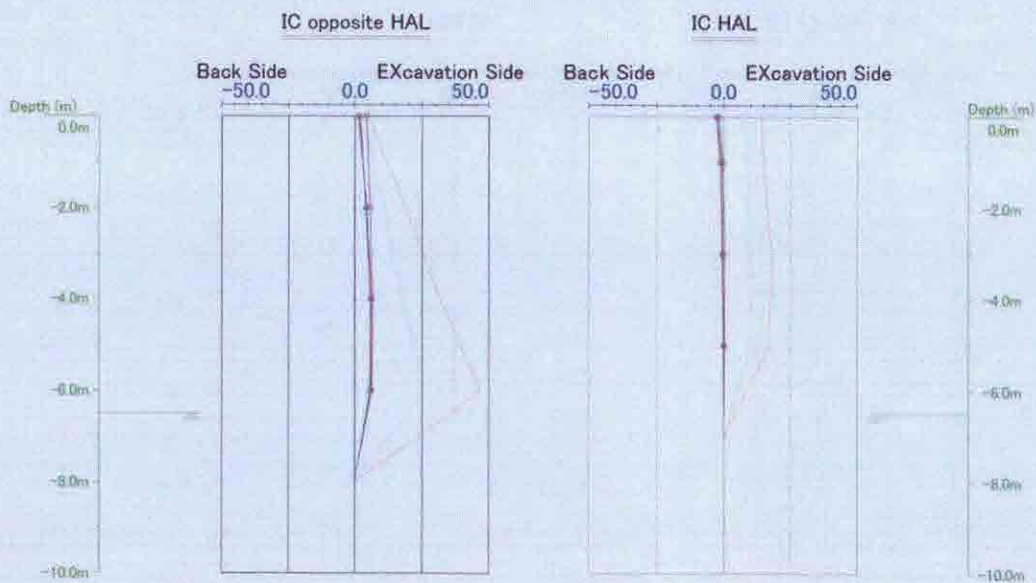
Deformation of retaining Wall
Measurement Distribution Chart

[Cumulative deformation]

Unit : mm

Legend

- 2011/10/01 00:30:00
- 2011/10/05 00:30:00
- 2011/10/10 00:10:00
- 2011/10/15 00:00:00
- 2011/10/20 00:00:00
- 2011/10/25 00:30:00
- 2011/10/31 23:30:00
- Action
- Trigger



Bangalore Subway Construction

Deformation of retaining Wall
Measurement Distribution Chart

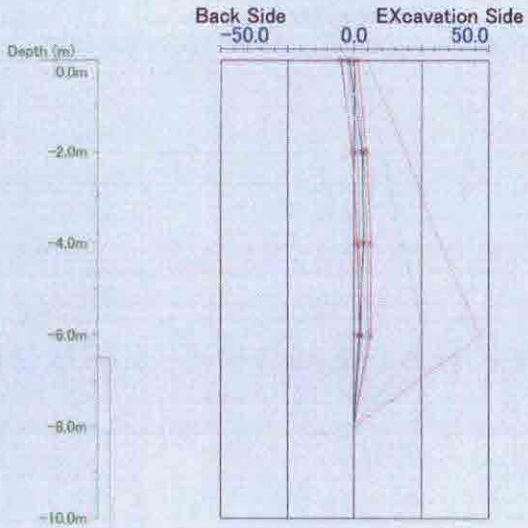
[Cumulative deformation]

Unit : mm

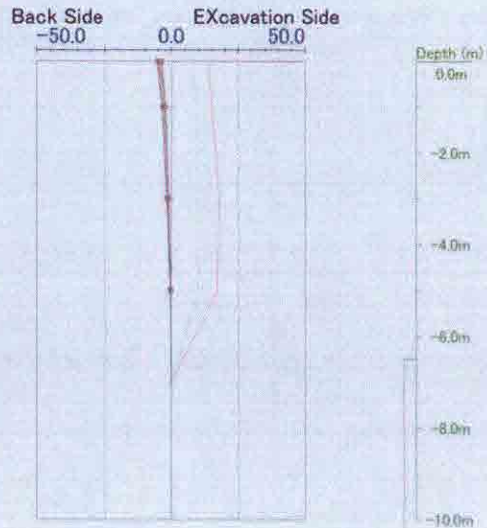
Legend

- 2011/11/01 00:30:00
 - 2011/11/05 00:30:00
 - 2011/11/10 00:30:00
 - 2011/11/15 00:30:00
 - 2011/11/20 00:30:00
 - 2011/11/25 00:30:00
 - 2011/11/30 23:30:00
- Action
Trigger

IC opposite HAL



IC HAL



Bangalore Subway Construction

Deformation of retaining Wall
Measurement Distribution Chart

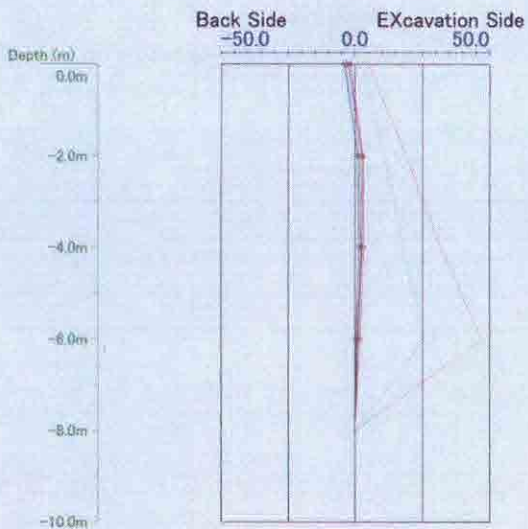
[Cumulative deformation]

Unit : mm

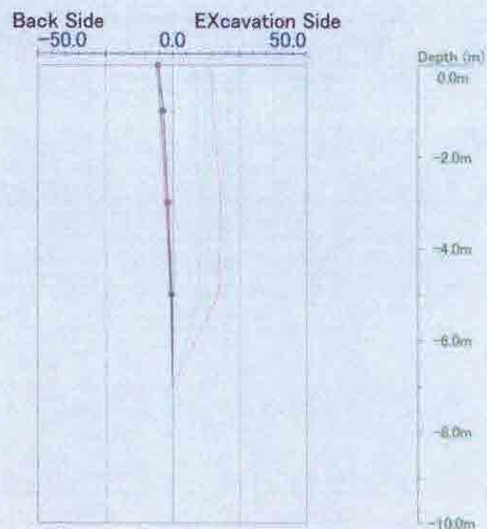
Legend

- 2011/12/01 00:30:00
 - 2011/12/05 00:30:00
 - 2011/12/10 23:30:00
 - 2011/12/15 00:30:00
 - 2011/12/20 00:30:00
 - 2011/12/25 00:30:00
 - 2011/12/31 23:30:00
- Action
Trigger

IC opposite HAL



IC HAL



Bangalore Subway Construction

Deformation of retaining Wall
Measurement Distribution Chart

[Cumulative deformation]

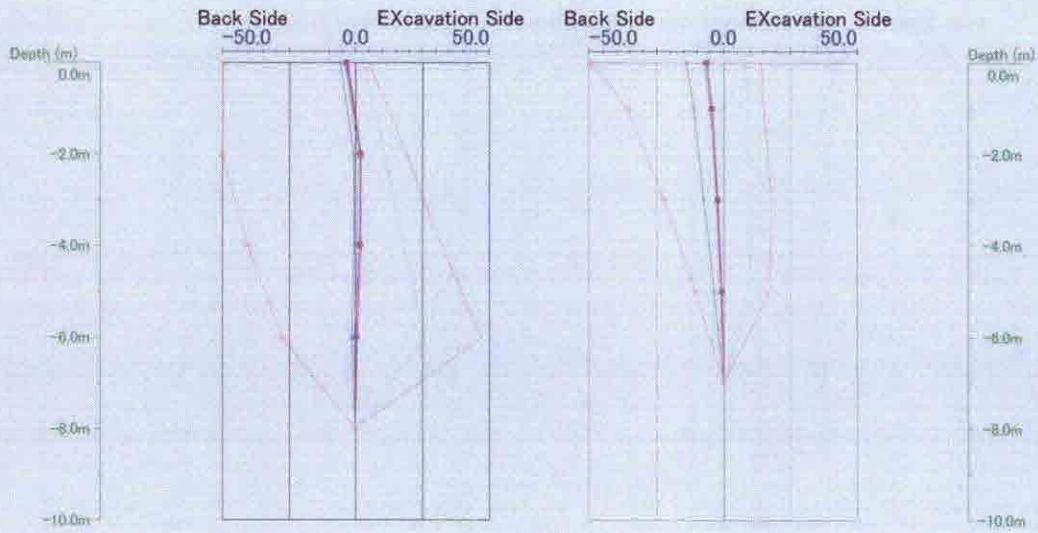
Unit : mm

Legend

- 2012/01/01 00:30:00 Action
- 2012/01/05 00:30:00 Trigger
- 2012/01/10 00:30:00 Trigger
- 2012/01/15 00:30:00 Trigger
- 2012/01/20 00:30:00 Trigger
- 2012/01/25 00:30:00 Trigger
- 2012/01/31 13:00:00 Trigger

IC opposite HAL

IC HAL



Bangalore Subway Construction

Deformation of retaining Wall
Measurement Distribution Chart

[Cumulative deformation]

Unit : mm

Legend

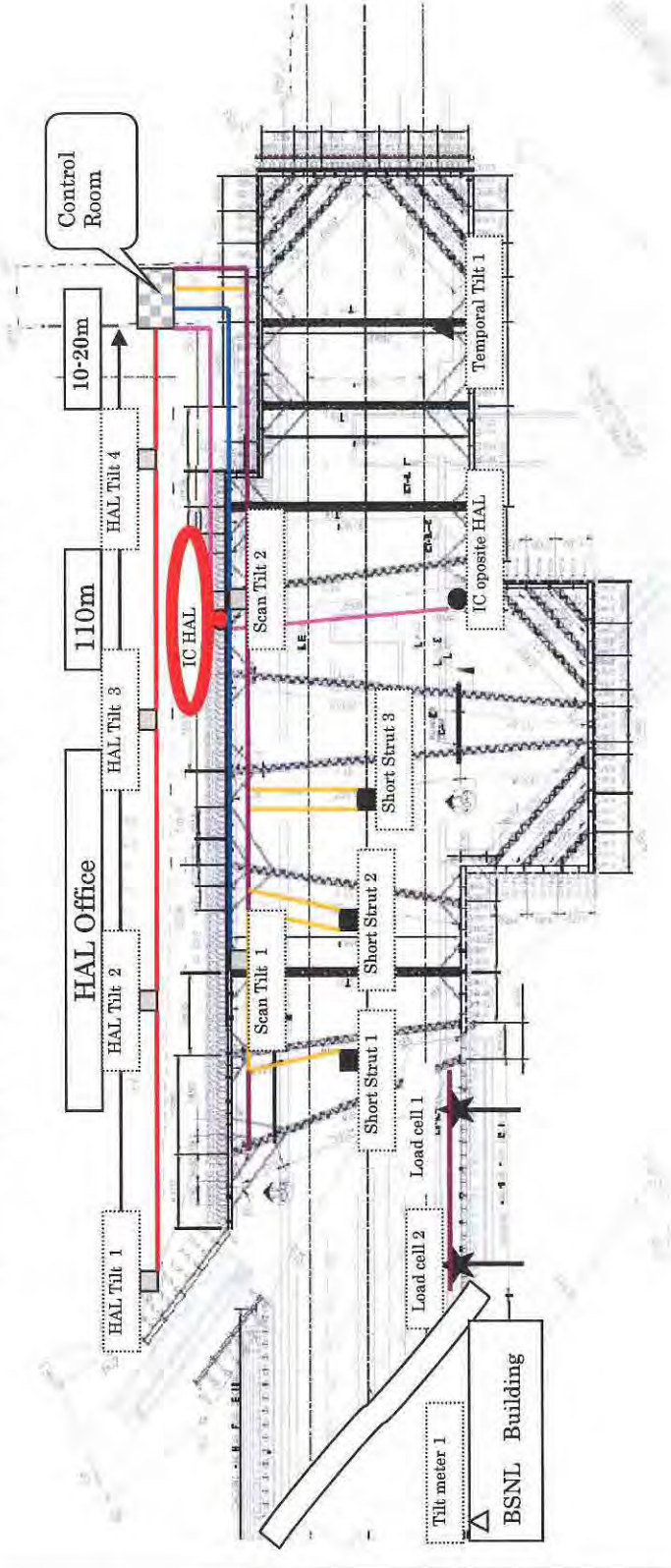
- 2012/01/01 00:30:00 Action
- 2012/01/05 00:30:00 Trigger
- 2012/01/10 00:30:00 Trigger
- 2012/01/15 00:30:00 Trigger
- 2012/01/20 00:30:00 Trigger
- 2012/01/25 00:30:00 Trigger
- 2012/01/31 13:00:00 Trigger

IC opposite HAL

IC HAL



Inclinometer for ground movement (HAL) at Cricket Stadium Station, UG2



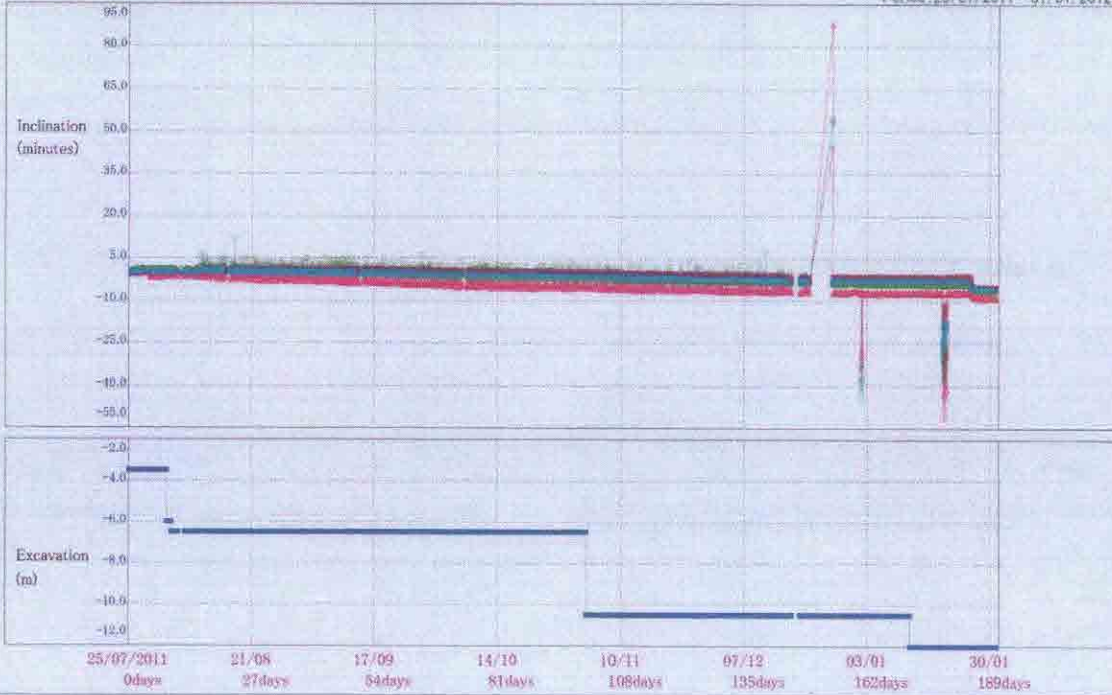
Bangalore Subway Construction

Inclination of retaining Wall
Measurement Temporal-Change Chart

[IC HAL]

+ :Excavation Side, - :Back Side

Period: 25/07/2011 ~ 31/01/2012



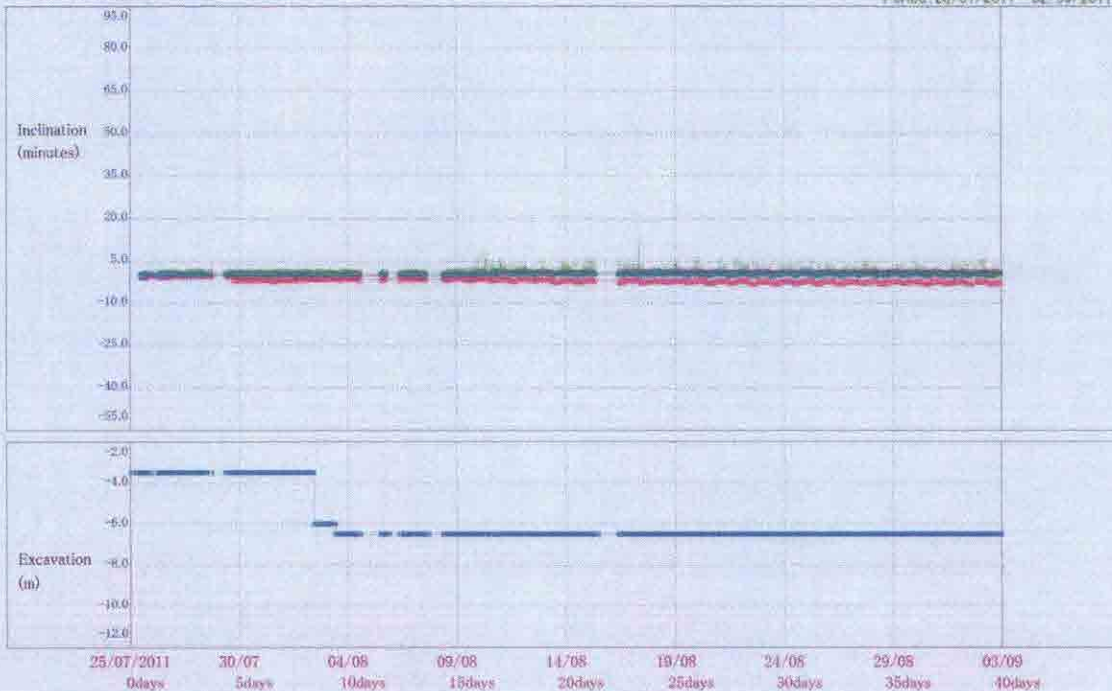
Bangalore Subway Construction

Inclination of retaining Wall
Measurement Temporal-Change Chart

[IC HAL]

+ :Excavation Side, - :Back Side

Period: 25/07/2011 ~ 02/09/2011

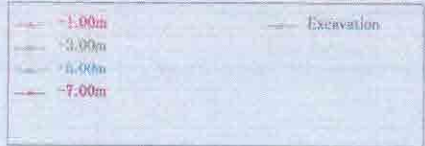


Bangalore Subway Construction

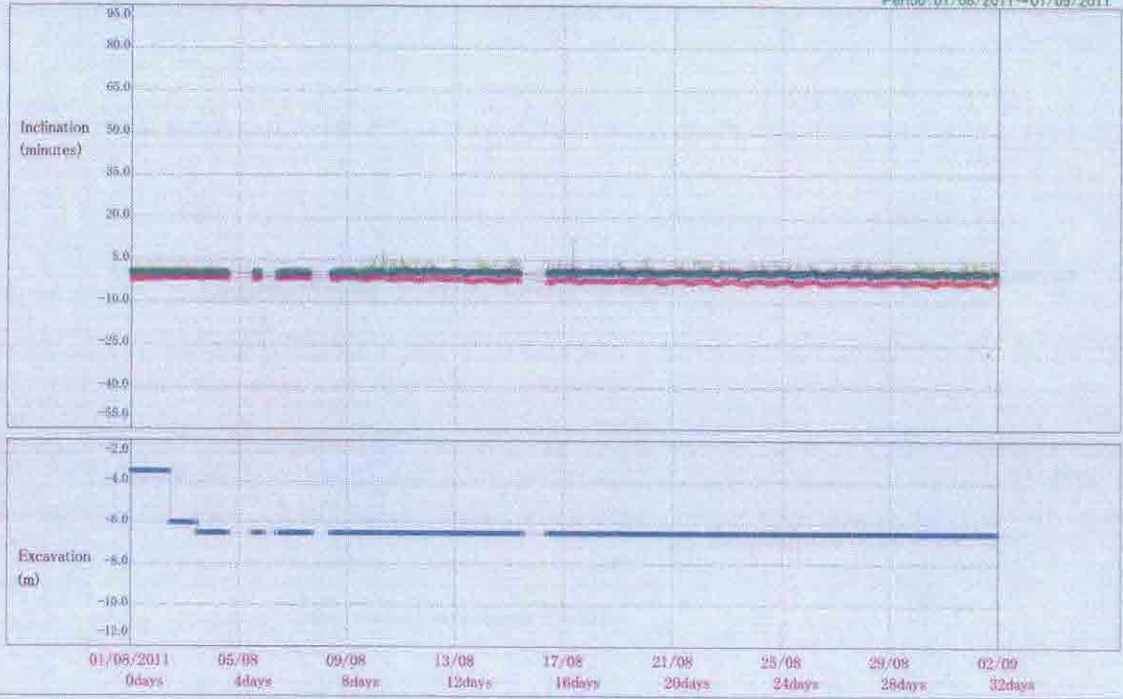
Inclination of retaining Wall
Measurement Temporal-Change Chart

[IC HAL]

+ :Excavation Side, - :Back Side



Period: 01/08/2011~01/09/2011



Bangalore Subway Construction

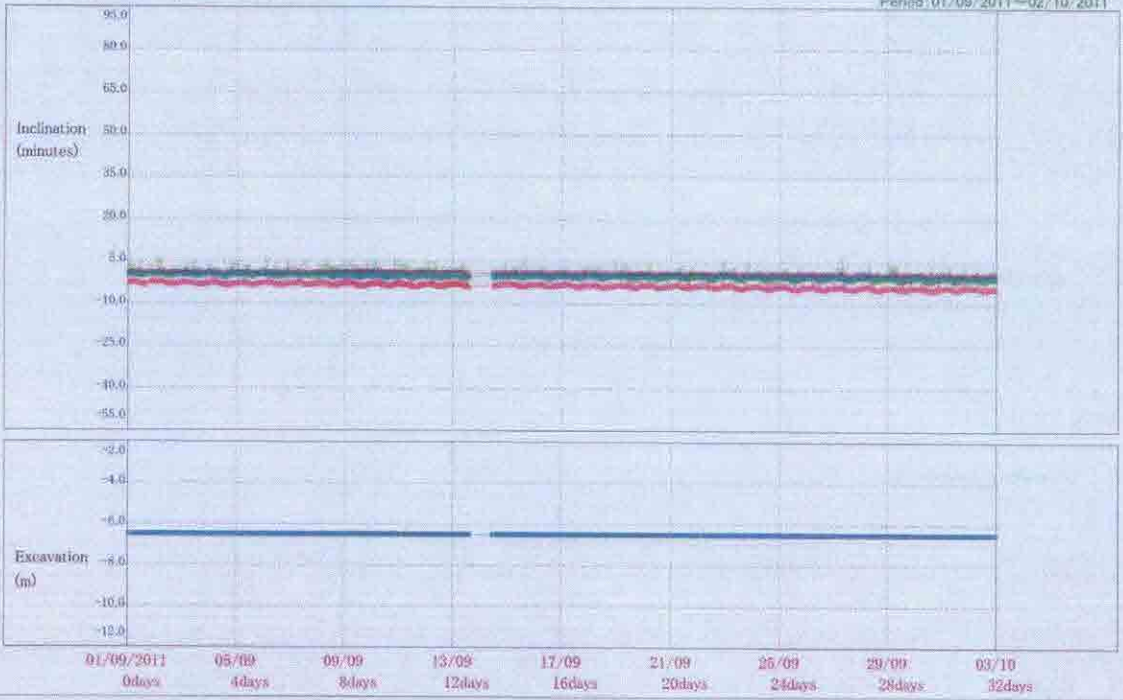
Inclination of retaining Wall
Measurement Temporal-Change Chart

[IC HAL]

+ :Excavation Side, - :Back Side



Period: 01/09/2011~02/10/2011



Bangalore Subway Construction

Inclination of retaining Wall
Measurement Temporal-Change Chart

[IC HAL]

+ :Excavation Side, - :Back Side



Period: 01/10/2011~02/11/2011

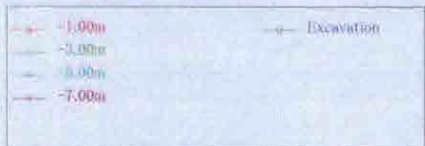


Bangalore Subway Construction

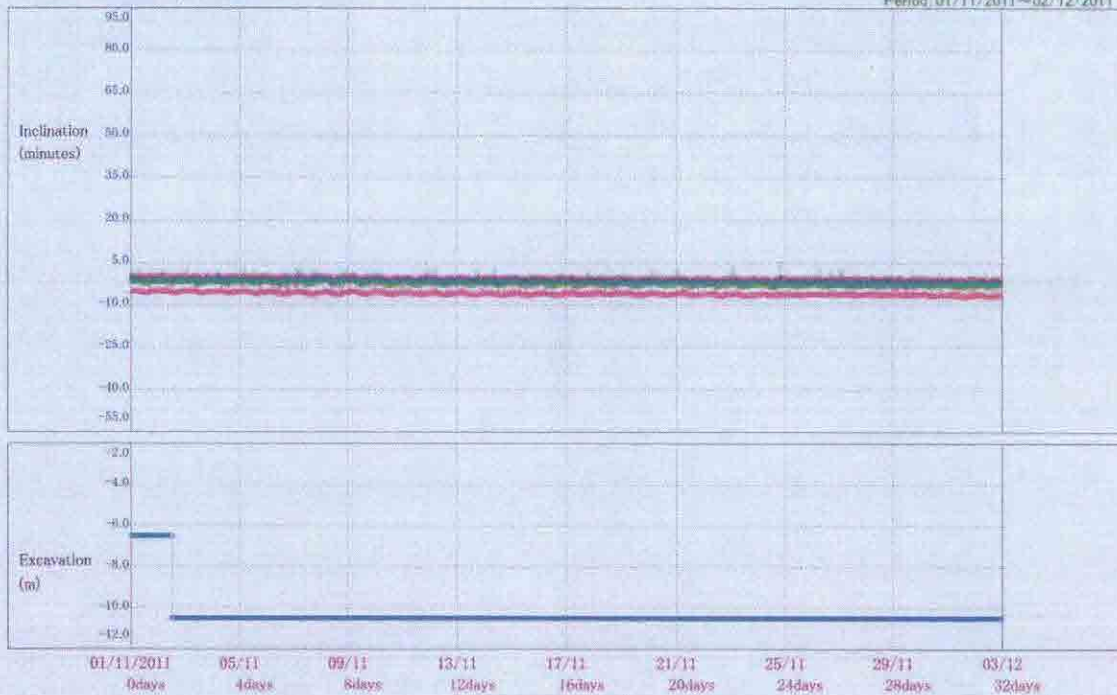
Inclination of retaining Wall
Measurement Temporal-Change Chart

[IC HAL]

+ :Excavation Side, - :Back Side



Period: 01/11/2011~02/12/2011



Bangalore Subway Construction

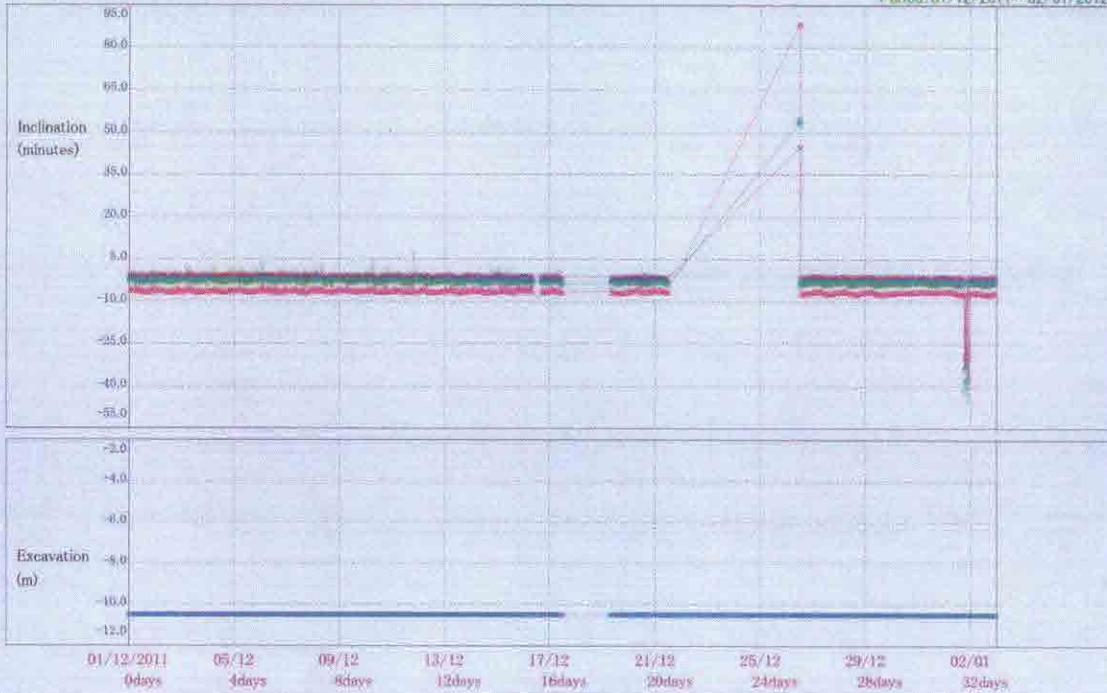
Inclination of retaining Wall
Measurement Temporal-Change Chart

[IC HAL]

+ :Excavation Side, - :Back Side



Period: 01/12/2011~02/01/2012

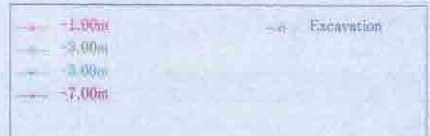


Bangalore Subway Construction

Inclination of retaining Wall
Measurement Temporal-Change Chart

[IC HAL]

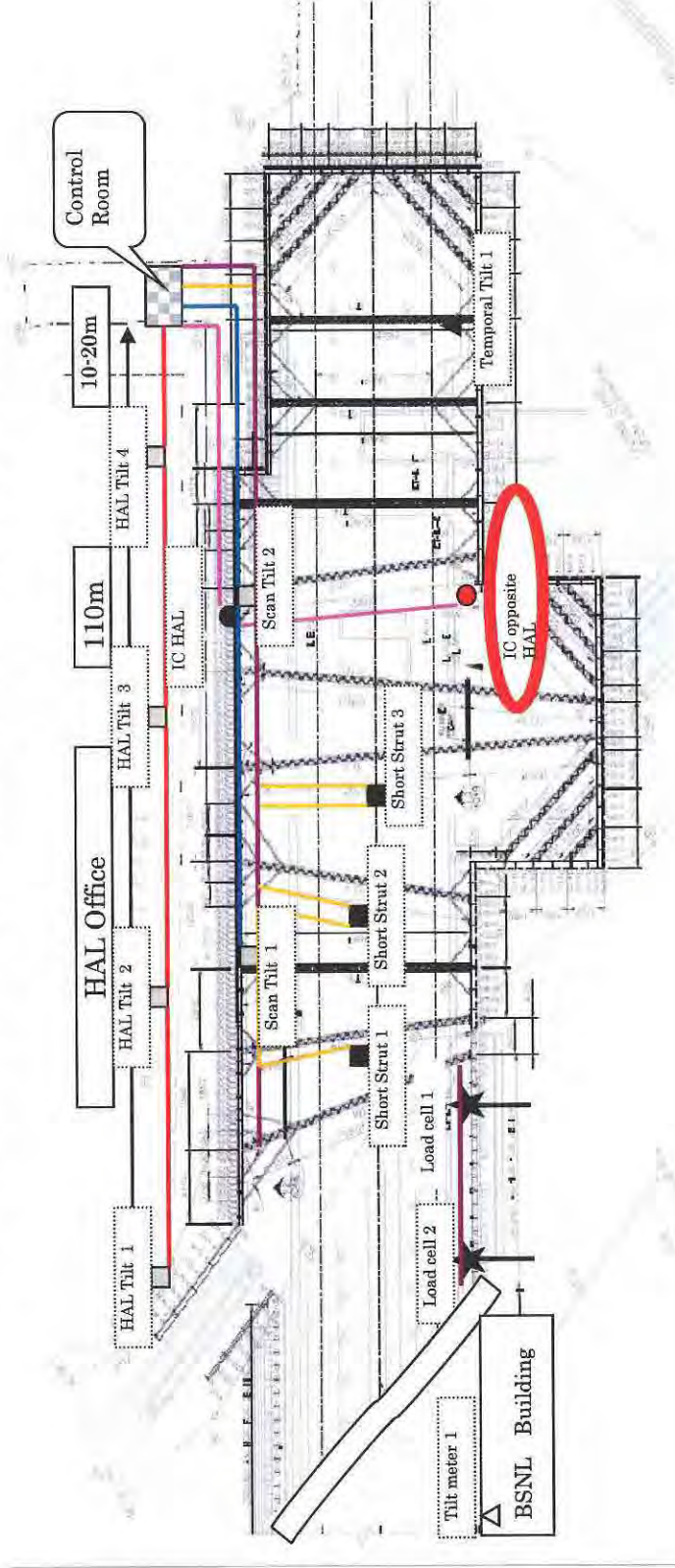
+ :Excavation Side, - :Back Side



Period: 01/01/2012~01/02/2012



Inclinometer for ground movement(opposite HAL) at Cricket Stadium Station, UG2

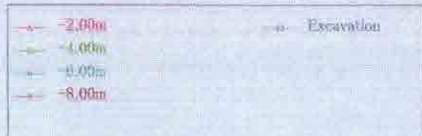


Bangalore Subway Construction

Inclination of retaining Wall
Measurement Temporal-Change Chart

[IC opposite HAL]

+ : Excavation Side, - : Back Side



Period: 25/07/2011~31/01/2012



Bangalore Subway Construction

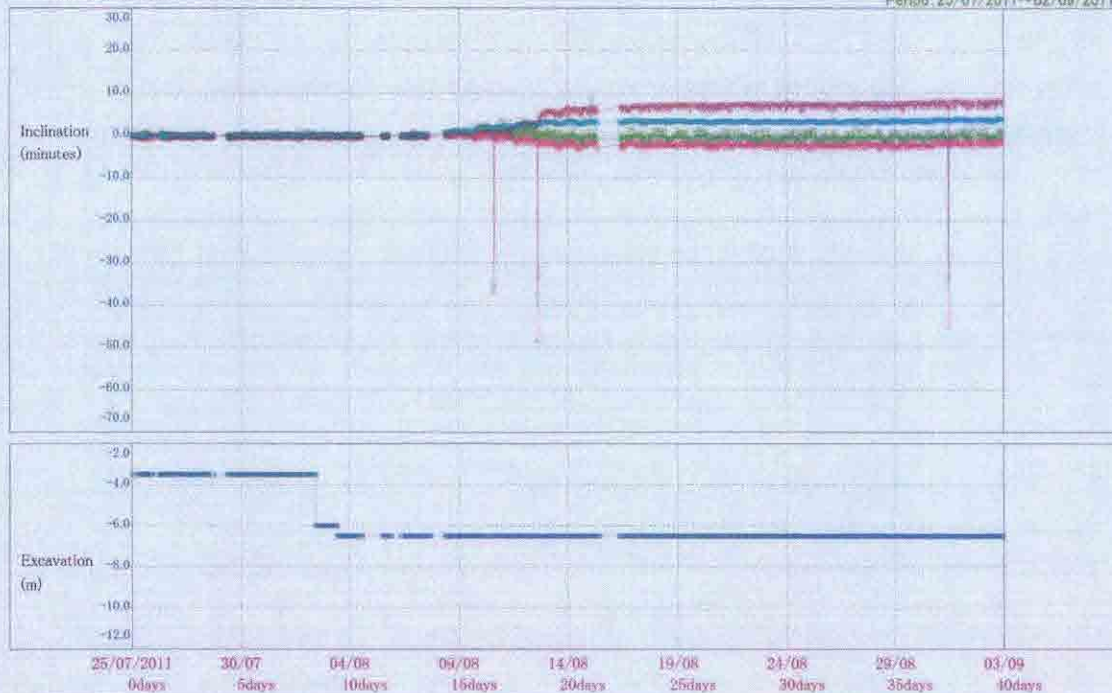
Inclination of retaining Wall
Measurement Temporal-Change Chart

[IC opposite HAL]

+ : Excavation Side, - : Back Side



Period: 25/07/2011~02/09/2011

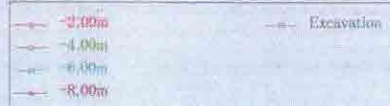


Bangalore Subway Construction

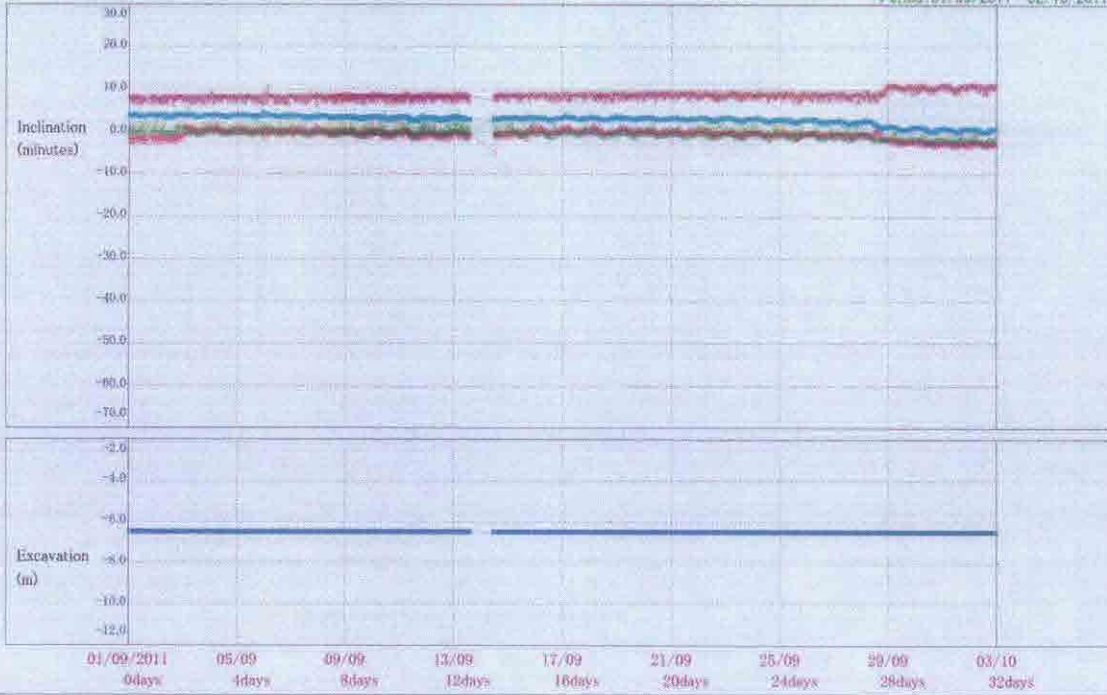
Inclination of retaining Wall
Measurement Temporal-Change Chart

[IC opposite HAL]

+:Excavation Side, -:Back Side



Period: 01/09/2011~02/10/2011



Bangalore Subway Construction

Inclination of retaining Wall
Measurement Temporal-Change Chart

[IC opposite HAL]

+:Excavation Side, -:Back Side



Period: 01/10/2011~02/11/2011



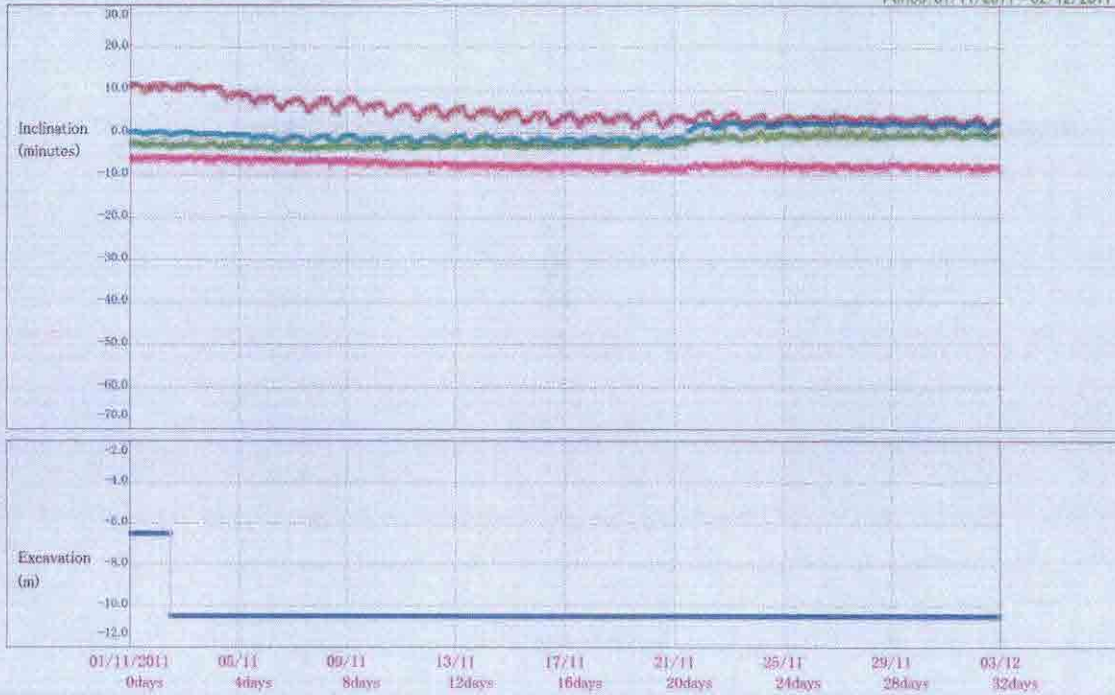
Bangalore Subway Construction

Inclination of retaining Wall
Measurement Temporal-Change Chart

[IC opposite HAL]

+:Excavation Side, -:Back Side

Period: 01/11/2011~02/12/2011



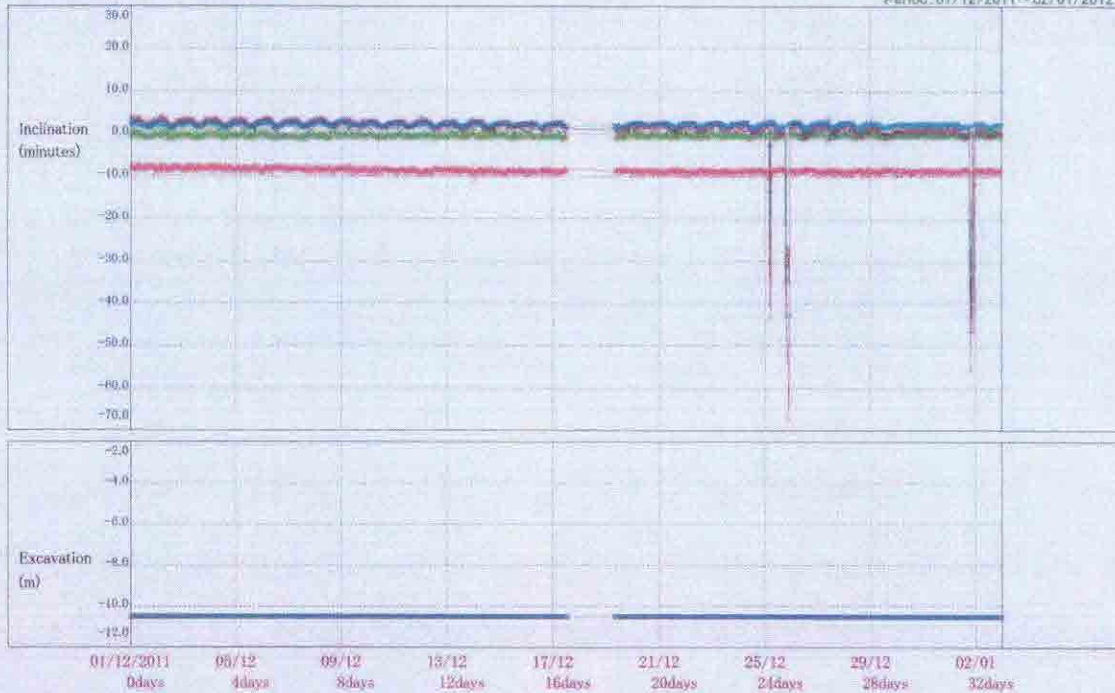
Bangalore Subway Construction

Inclination of retaining Wall
Measurement Temporal-Change Chart

[IC opposite HAL]

+:Excavation Side, -:Back Side

Period: 01/12/2011~02/01/2012



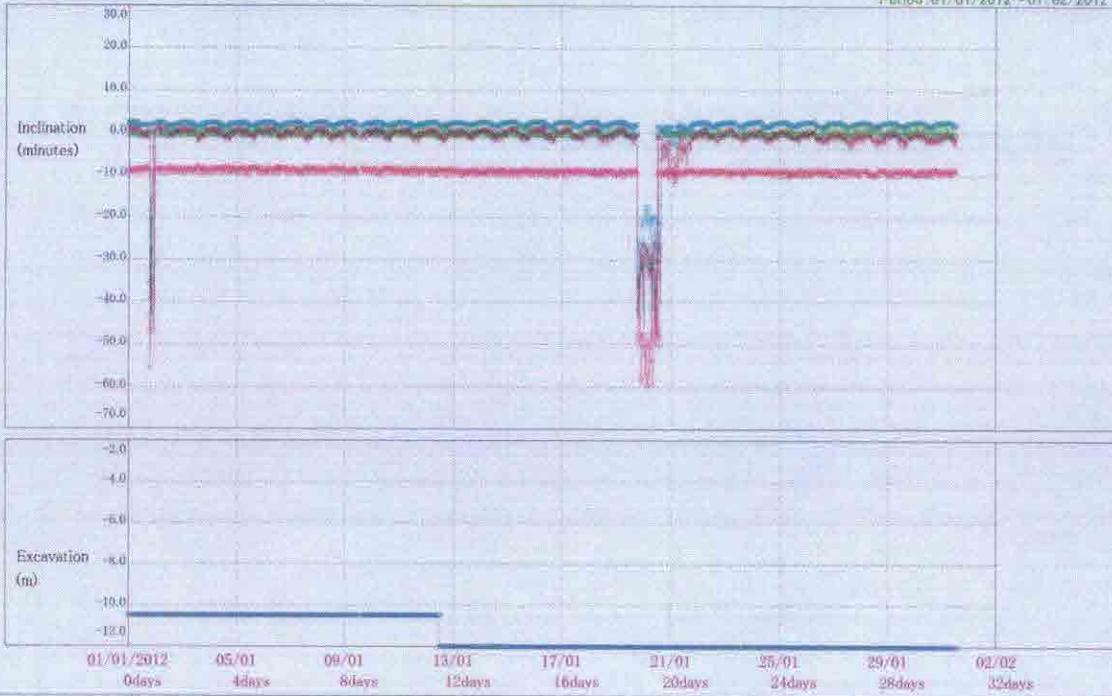
Bangalore Subway Construction

Inclination of retaining Wall
Measurement Temporal-Change Chart

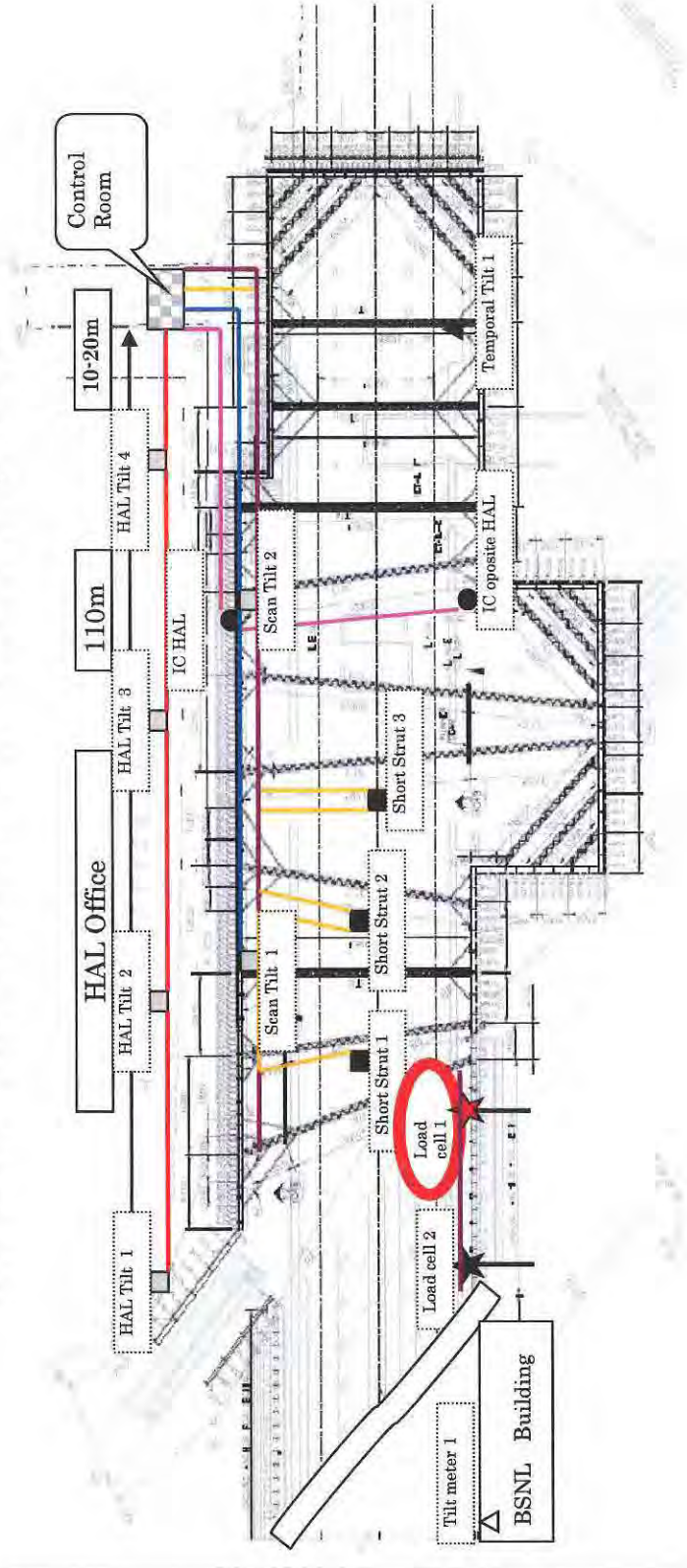
[IC opposite HAL]

+ :Excavation Side, - :Back Side

Period: 01/01/2012~01/02/2012



Load Cell for ground anchor 1 at Cricket Stadium Station, UG2



Bangalore Subway Construction

Axial Stress of ground anchor
Measurement Temporal-Change Chart

Legend: Ground Anchor1 (red line), Excavation (blue line)

[Ground Anchor1]

+ : Compression - : Pull

Period: 04/10/2011 ~ 26/01/2012



Bangalore Subway Construction

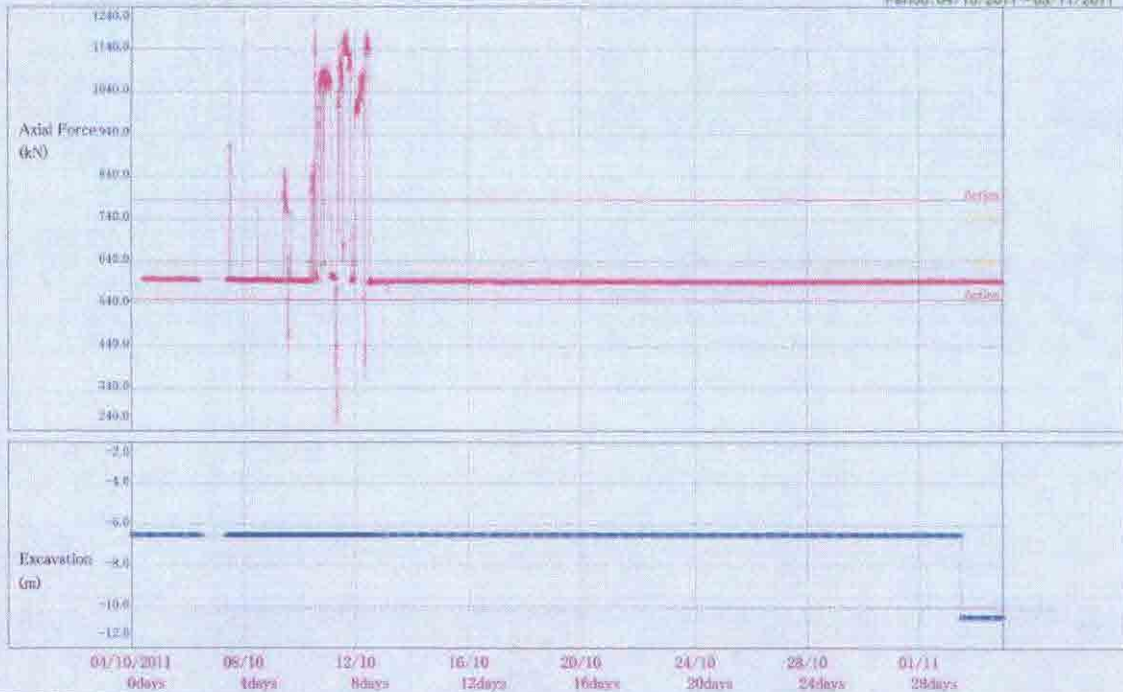
Axial Stress of ground anchor
Measurement Temporal-Change Chart

Legend: Ground Anchor1 (red line), Excavation (blue line)

[Ground Anchor1]

+ : Compression - : Pull

Period: 04/10/2011 ~ 03/11/2011



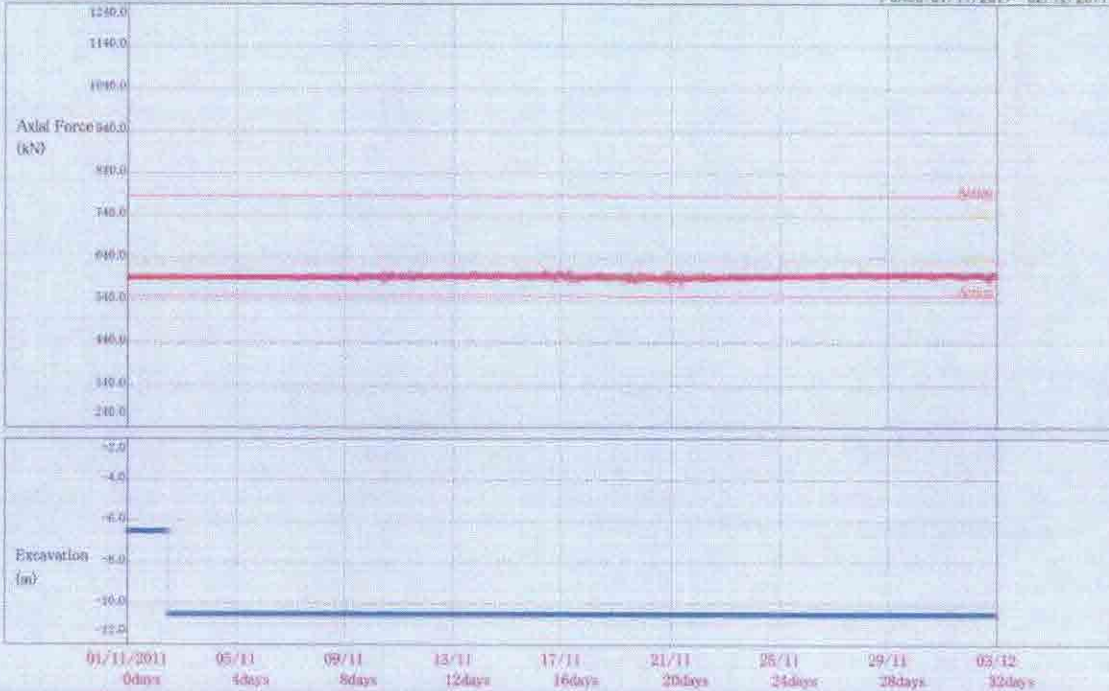
Bangalore Subway Construction

Axial Stress of ground anchor
Measurement Temporal-Change Chart

[Ground Anchor1]

+: Compression - : Pull

Period: 01/11/2011~02/12/2011



Bangalore Subway Construction

Axial Stress of ground anchor
Measurement Temporal-Change Chart

[Ground Anchor1]

+: Compression - : Pull

Period: 01/12/2011~01/01/2012



Bangalore Subway Construction

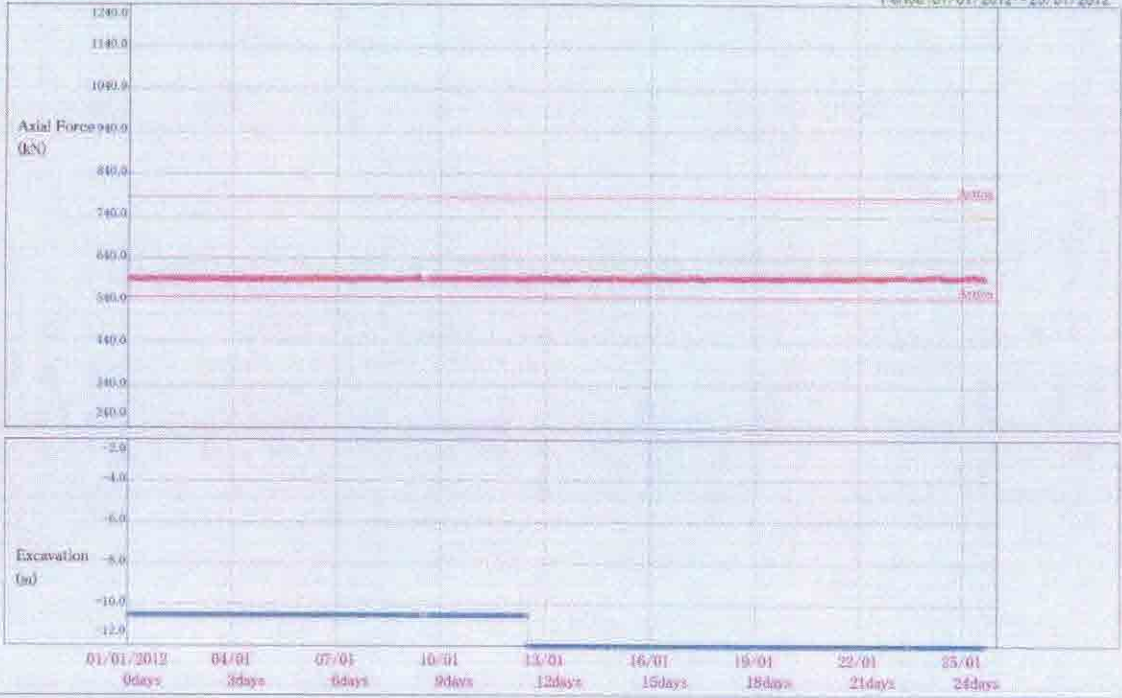
Axial Stress of ground anchor
Measurement Temporal-Change Chart



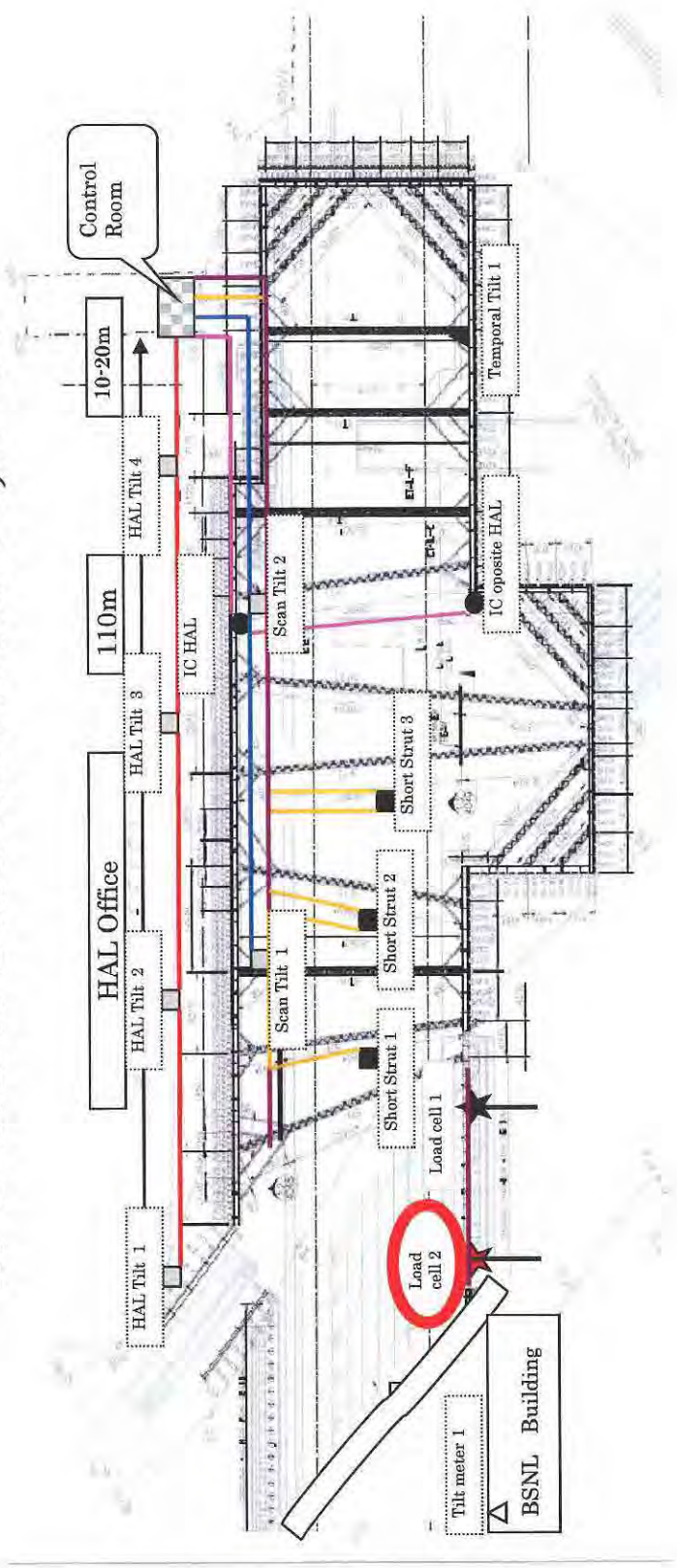
[Ground Anchor1]

+ : Compression - : Pull

Period : 01/01/2012 ~ 25/01/2012



Load Cell for ground anchor 2 at Cricket Stadium Station, UG2



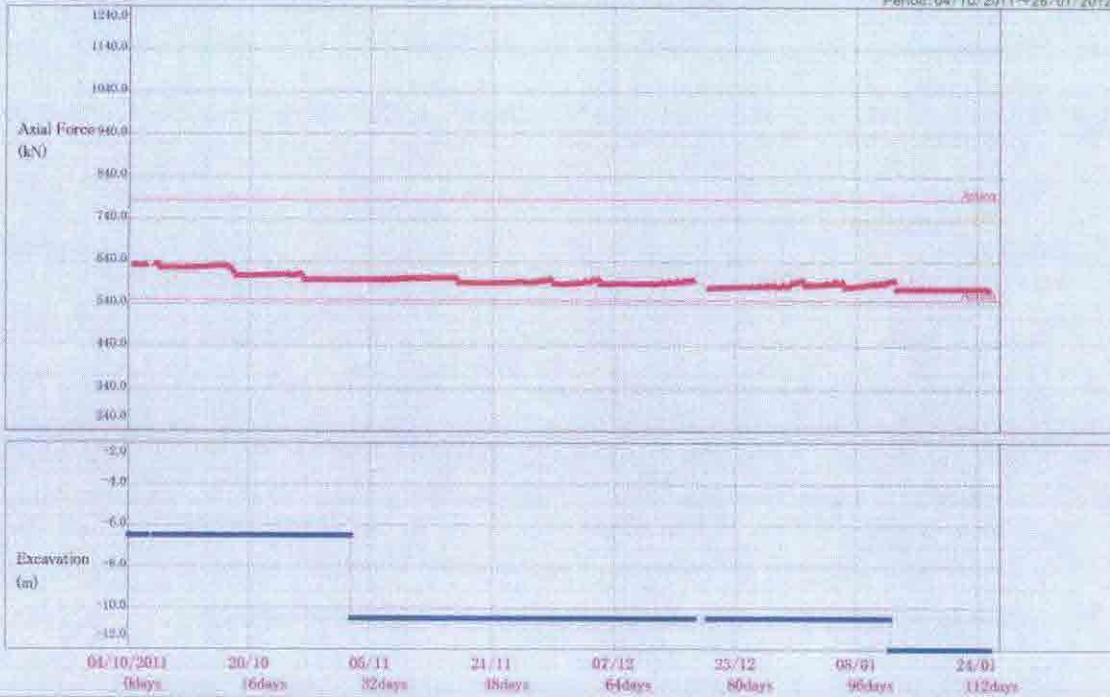
Bangalore Subway Construction

Axial Stress of ground anchor
Measurement Temporal-Change Chart

[Ground Anchor2]

+ : Compression - : Pull

Period: 04/10/2011~26/01/2012



Bangalore Subway Construction

Axial Stress of ground anchor
Measurement Temporal-Change Chart

[Ground Anchor2]

+ : Compression - : Pull

Period: 04/10/2011~03/11/2011



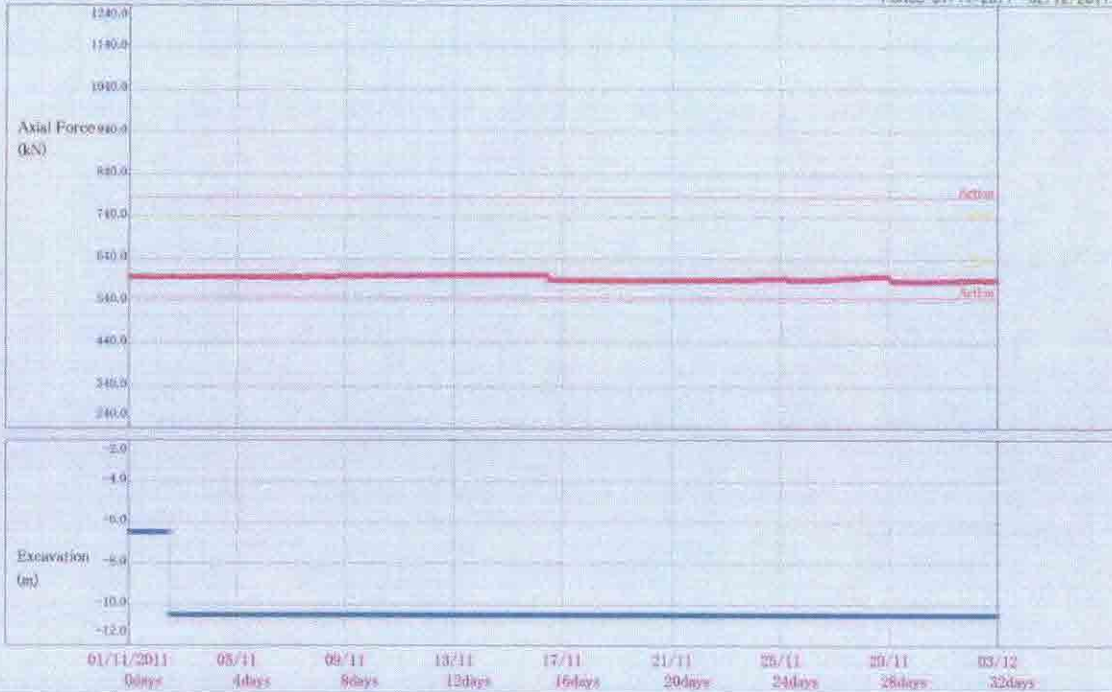
Bangalore Subway Construction

Axial Stress of ground anchor
Measurement Temporal-Change Chart

[Ground Anchor2]

+ : Compression - : Pull

Period: 01/11/2011~02/12/2011



Bangalore Subway Construction

Axial Stress of ground anchor
Measurement Temporal-Change Chart

[Ground Anchor2]

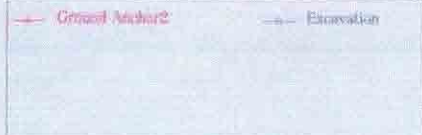
+ : Compression - : Pull

Period: 01/12/2011~01/01/2012



Bangalore Subway Construction

Axial Stress of ground anchor
Measurement Temporal-Change Chart



[Ground Anchor2]

+ : Compression - : Pull

Period: 01/01/2012~25/01/2012

