Inspection sheet of visual survey

添付資料

Bridge No. 16

Photo No. (～)

Bridge name	RAMA III Bridge	Route name	-	Authority	DRR	Code of authority	-
						No.	-
Place from	Khet Thon Buri	Distance from	km+ 0			Survey date	2009/10/23
Place to	Khet Bang Kho Leam	Distance to	km+ 0				

Bridge properties

Bridge type(1)	main road ・ side road ・ ramp
Bridge type(2)	bridge ・ viaduct ・ plank pass
Bridge type(3)	3-span continuous PC box girder
Total length	476.00 (m)
Span	125 + 226 + 125 (m)
Nos. of span	3 span
Width	23.00 (m) ／ (m)
Completion	2000

Road information

Horizontal	Straight ・ incli.(θ＝ °) ・ Curve (R m)
Gradient	One way (↗ ・ ↘) parabo (凸 ・ 凹)
Nearby tunnel	yes ・ no (m)
Nearby crossing	yes ・ no (m)
Traffic	Much ・ Medium ・ Little
Commercial traffi	Much ・ Medium ・ Little

Environment

1. Urban	2. Suburbs	3. Mountain	4. Seaside
5. Industrial	6. Harbor	7. Residential	8. Bussiness
9. Salty	10. Cold and snow	11. Heavy snow	12. Others

Under brid

1. Shinkanser	2. Railway	3. Highway	4. Road
5. River	6. Lake	7. Ravine	8. Valley
9. Waterway	10. Parking	11. Bike parkin	12. Park
13. Vacant	14. Harbor	Name (Chao Phraya)	

Access method

Superstructure	1. Inspection car 2. Falsework 3. On ground 4. Ladder 5. Lift car 6. On boat 7. Special camera 8. Others( )
Substructure	1. Inspection car 2. Falsework 3. On ground 4. Ladder 5. Lift car 6. On boat 7. Special camera 8. Others( )
Reason	・All bridge section is on the water ・If inspection car is not available, false work will be required

Survey result

Camber deform	yes ・ no
Difference in glade	yes ・ no
Continuous of barrie	yes ・ no
Continuous of curve	yes ・ no
Noise	yes ・ no
Joint: Space change	yes ・ no
Joint: difference grade	yes ・ no
Joint: draining damage	yes ・ no
Blocked drainage	yes ・ no
Crack of pavement	yes ・ no
Damage of lighting	yes ・ no
Damage of sign	—
Damage of handrail	yes ・ no
Possibility of scour	yes ・ no

Inspection way

Walkway yes ・ no

Vehicle yes ・ no

Height of girde about 34m

Diagnosis

◆ Deterioration of bridge ◆

deficient ・ fair ・ good

◆ Noticeable point ◆

・Survey from boat

Outline of damage

Item	Type	State
Main girder	PC-Box	Generally healthy
Cross beam	-	-
Stringer	-	-
Cross frame	-	-
Lateral brace	-	-
Slab		-
Abutment	-	-
Pier	Rectangular	-
Bearing	-	-
Barrier	-	-
Railing	-	-
Curb	-	-
Pavement	asphalt ・ concrete	Generally healthy
Joint	drained ・ undrained	-
Drainage	yes ・ no	-

Impressions

・Hole for fixing of formwork of pier was not filled by mortar

・New bridge

History of repair ; Repaint ; — yy — mm

Surveyor ; Mr, Chujo, Mr. Kudo

添付-187

Present state （ 1 / 2 ）

Authority	DRR	Address	Bangkok	Data	31-Oct-09
Bridge	Rama 3				

Picture No.	1
Span	1
Member	Side view

Picture No.	2
Span	1
Member	View under girder

Picture No.	3
Span	1
Member	View of pier

Present state （ 2 / 2 ）

Authority	DRR	Address	Bangkok	Data	31-Oct-09
Bridge	Rama 3				

Picture No.	4
Span	1
Member	Pier

Unfilled hole

Picture No.	5
Span	1
Member	Girder

Unfilled hole

Picture No.	6
Span	1
Member	

Inspection sheet of visual survey

添付資料

Bridge No. 17

Photo No. (～)

Bridge name	Krung Thep Bridge	Route name	-	Authority	DRR	Code of authority	-
						No.	-
Place from	Khet Thon Buri	Distance from	km+ 0			Survey date	2009/10/23
Place to	Khet Bang Kho Leam	Distance to	km+ 0				

添付-190

Bridge properties

Bridge type(1)	main road ・ side road ・ ramp
Bridge type(2)	bridge ・ viaduct ・ plank pass
Bridge type(3)	5-span steel truss
Total length	316.00 (m)
Span	64 + 64 + 60 + 64 + 64 (m)
Nos. of span	5 span
Width	12.00 (m) ／ (m)
Completion	1959

Road information

Horizontal	Straight ・ incli.(θ = 1.7 %) (R m)
Gradient	One way (↗ ・ ↘) parabol (凸 ・ 3.45%)
Nearby tunnel	yes ・ no (m)
Nearby crossing	yes ・ no (m)
Traffic	Much ・ Medium ・ Little
Commercial traffi	Much ・ Medium ・ Little

Environment

1. Urban 2. Suburbs 3. Mountain 4. Seaside
5. Industrial 6. Harbor 7. Residential 8. Bussiness
9. Salty 10. Cold and snow 11. Heavy snow 12. Others

Under brid

1. Shinkanser 2. Railway 3. Highway 4. Road
5. River 6. Lake 7. Ravine 8. Valley
9. Waterway 10. Parking 11. Bike parkin 12. Park
13. Vacant 14. Harbor Name (Chao Phraya)

Access method

Superstructure	1. Inspection car 2. Falsework 3. On ground 4. Ladder 5. Lift car 6. On boat 7. Special camera 8. Others( )
Substructure	1. Inspection car 2. Falsework 3. On ground 4. Ladder 5. Lift car 6. On boat 7. Special camera 8. Others( )
Reason	・All bridge section is on the water ・If inspection car is not available, false work will be required

Survey result

Camber deform	yes ・ no
Difference in glade	yes ・ no
Continuous of barrie	yes ・ no
Continuous of curve	yes ・ no
Noise	yes ・ no
Joint: Space change	yes ・ no
Joint: difference grade	yes ・ no
Joint: draining damage	yes ・ no
Blocked drainage	yes ・ no
Crack of pavement	yes ・ no
Damage of lighting	yes ・ no
Damage of sign	—
Damage of handrail	yes ・ no
Possibility of scour	yes ・ no

Inspection way

Walkway yes ・ no

Vehicle yes ・ no

Height of girde about 7.5m

Diagnosis

◆ Deterioration of bridge ◆

deficient ・ fair ・ good

◆ Noticeable point ◆

・Corrosion of vertical membe

・Breaking of slab

Outline of damage

Item	Type	State
Main girder	Truss	Deterioration of proofing, Reduce of thickness at center sp
Cross beam	I section steel	-
Stringer	I section steel	-
Cross frame	T section steel	-
Lateral brace	—	-
Slab		Fructure of botom side of walkway, Crack of walkway,free li
Abutment	-	-
Pier	Oval	Crack under bearing (approach bridge)
Bearing	Pin bearing	Deterioration of proofing
Barrier	**Trapezoidal**	**Generally healthy**
Railing	Steel	Generally healthy
Curb	-	-
Pavement	asphalt ・concrete	Generally healthy
Joint	drained undrained	Partly leakage
Drainage	yes ・ no	Blocked

Impressions

・Painting is renewd. But Reduction of steel thickness was seen at connection part bet and concrete slab.

・Rust was seen over paint, it might insufficinet of scraping before paint.

・Crack(0.8mm on top) and flacture of concrete was seen on slab of walkway

History of repair ; ・Countermesure was planed by ODA at 1982

Repaint ; — yy — mm

Surveyor ; Mr.Chujo, Mr.Kudo

Present state （ 1 / 16）

Authority	DRR	Address	Bangkok	Data	23-Oct-09
Bridge	Krung Thep Bridge				

Picture No.	1
Span	1
Member	Side view

Picture No.	2
Span	3
Member	View on road

Picture No.	3
Span	1
Member	View under girder

Present state （ 2 / 16）

Authority	DRR	Address	Bangkok	Data	23-Oct-09
Bridge	Krung Thep Bridge				

Picture No.	4
Span	1
Member	Side view of side span

Picture No.	5
Span	1
Member	Side view of center sp

Picture No.	6
Span	1
Member	View of walkway

Present state （ 3 / 16）

Authority	DRR	Address	Bangkok	Data	23-Oct-09
Bridge	Krung Thep Bridge				

Picture No.	7
Span	1
Member	Approach bridge

Limit vehicle height 2.3m

Picture No.	8
Span	1
Member	Expansion joint

Picture No.	9
Span	1
Member	Expansion joint

Deterioration of drainage functio

Present state （ 4 / 16）

Authority	DRR	Address	Bangkok	Data	23-Oct-09
Bridge	Krung Thep Bridge				

Picture No.	10
Span	1
Member	Expansion joint

Height adjustment around joint

Picture No.	11
Span	1
Member	Bearing

Locker bearing, Approach bridge

Picture No.	12
Span	1
Member	Expansion joint

Fracture of concrete edge of locker bearing

Falling of water proofing materia

Present state （ 5 / 16）

Authority	DRR	Address	Bangkok	Data	23-Oct-09
Bridge	Krung Thep Bridge				

Picture No.	13
Span	1
Member	Water supply

Water supply was removed

Picture No.	14
Span	1
Member	Center span

Rotation center of drawbridge

Picture No.	15
Span	1
Member	Center span

Hinge part

Continuous vibration

It is important to check fatigue crack around rotation center.

Present state （ 6 / 16）

Authority	DRR	Address	Bangkok	Data	23-Oct-09
Bridge	Krung Thep Bridge				

Picture No.	16
Span	1
Member	Stay cable

Hinge of drawbridge

Mechanical parts is replaced ever 2 years.

Picture No.	17
Span	1
Member	Vertical member

Mount up around vertical member to prevent remaining water.

Picture No.	18
Span	1
Member	Vertical member

Deterioration of calking in gap

Present state （ 7 / 16）

Authority	DRR	Address	Bangkok	Data	23-Oct-09
Bridge	Krung Thep Bridge				

Picture No.	19
Span	1
Member	Vertical member

Deterioration of calking.

Picture No.	20
Span	1
Member	Chord member

Mark of repaired (bottom of pictu
repair by bolt.

Picture No.	21
Span	1
Member	slab

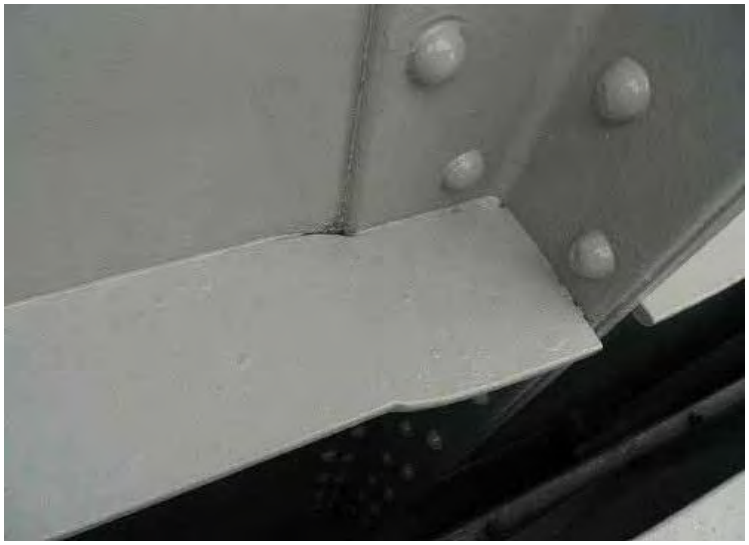
Fracture of mortar for height
adjustment

Present state （ 8 / 16）

Authority	DRR	Address	Bangkok	Data	23-Oct-09
Bridge	Krung Thep Bridge				

Picture No.	22
Span	1
Member	Center span

Fracture of mortar for height adjustment



Picture No.	23
Span	1
Member	Center span

Manufactured by plasticity deform

Picture No.	24
Span	1
Member	Center span

Continuous vibration

Painting is not

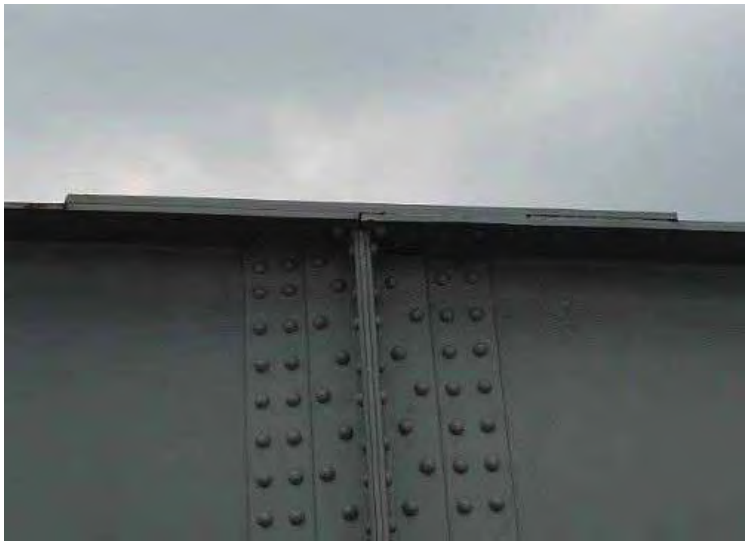
塗装が完全ではない

Present state （ 9 / 16）

Authority	DRR	Address	Bangkok	Data	23-Oct-09
Bridge	Krung Thep Bridge				

Picture No.	25
Span	1
Member	Center span

Over coating is not painted lower side of flange.



Picture No.	26
Span	1
Member	Center span

Middle splice plate is divided in 2 plate.

Picture No.	27
Span	1
Member	Center span

Reduction of plate thickness of steel plate.

Present state （10/16）

Authority	DRR	Address	Bangkok	Data	23-Oct-09
Bridge	Krung Thep Bridge				

Picture No.	28
Span	1
Member	Center span

Reduction of plate thickness of steel plate.

There is no remaining water

Picture No.	29
Span	1
Member	Center span

Dirt line is seen at bottom of we

Possibility of remaining water an soil

Picture No.	30
Span	1
Member	Center span

Difference at center joint

Present state （11／16）

Authority	DRR	Address	Bangkok	Data	23-Oct-09
Bridge	Krung Thep Bridge				

Picture No.	31
Span	1
Member	Center span

Manhole

Lost of bolt

No key

Picture No.	32
Span	1
Member	Center span

Door to access to center joint

Picture No.	33
Span	1
Member	Center span

Rust from painting part

Possibility of insuficient
of scraping before painting

Present state （12／16）

Authority	DRR	Address	Bangkok	Data	23-Oct-09
Bridge	Krung Thep Bridge				

Picture No.	34
Span	1
Member	Center span

Around center joint

Change from revet to bolt

Mark of remarkable corrosion

Rust from painting part

Possibility of insuficient of scraping before painting

Picture No.	35
Span	1
Member	Center span

Deflection between vertical member?

Picture No.	36
Span	1
Member	Center span

Inclination of locker bearing Bangkok side

Present state （13／16）

Authority	DRR	Address	Bangkok	Data	23-Oct-09
Bridge	Krung Thep Bridge				

Picture No.	37
Span	1
Member	Vertical member

Reinforcement by additional plate

Picture No.	38
Span	1
Member	Approach bridge

Exfoliation

Picture No.	39
Span	1
Member	Approach bridge

Remaining water at shoe

Present state （14／16）

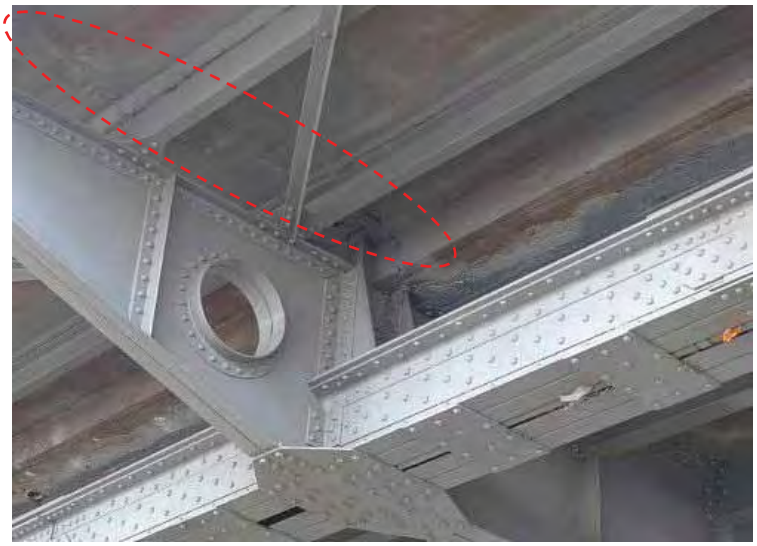
Authority	DRR	Address	Bangkok	Data	23-Oct-09
Bridge	Krung Thep Bridge				

Picture No.	40
Span	1
Member	Approach bridge

Crack under bearing

Deterioration of load capacity

Picture No.	41
Span	1
Member	Drainage



Picture No.	42
Span	1
Member	

Crack above bracket

Survey on board, 31-oct

Present state （15／16）

Authority	DRR	Address	Bangkok	Data	23-Oct-09
Bridge	Krung Thep Bridge				

Picture No.	43
Span	1
Member	Slab

Fracture of slab on bracket

*Survey on board, 31-oct

Picture No.	44
Span	4
Member	Slab

Crack

Free lime

*Survey on board, 31-oct

Picture No.	45
Span	3
Member	Slab

Center span

*Survey on board, 31-oct

Present state （16／16）

Authority	DRR	Address	Bangkok	Data	23-Oct-09
Bridge	Krung Thep Bridge				

Picture No.	46
Span	1
Member	Bearing
Deterioration of corrosion proofi	
Survey on board, 31-oct	

Picture No.	47
Span	1
Member	

Picture No.	48
Span	1
Member	

Inspection sheet of visual survey

Bridge No. 18

Photo No. (～)

添付資料

Bridge name	RAMA IX Bridge	Route name	-	Authority	EXAT	Code of authority	-
						No.	-
Place from	Khet Rat Burana	Distance from	km+ 0		Mr.Pittaya, Mr.Yadpong	Survey date	26-Oct-2009
Place to	Khet Yan Nawa	Distance to	km+ 0				

Bridge properties

Bridge type(1)	main road ・ side road ・ ramp
Bridge type(2)	bridge ・ viaduct ・ plank pass
Bridge type(3)	7-span steel box girder cable stayed bridge
Total length	781.20 (m)
Span	8 + 57.6 + 61.2 + 450 + 61.2 + 57.6 + 46.8 (m)
Nos. of span	7 span
Width	33.00 (m) ／ (m)
Completion	1987

Road information

Horizontal	Straight ・ incli(θ = 2.5 %) ・ Curve (R m)
Gradient	One way (↗ ・ ↘) parabo (凸 ・ 凹)
Nearby tunnel	yes ・ no (m)
Nearby crossing	yes ・ no ( )
Traffic	Much ・ Medium ・ Little
Commercial traffi	Much ・ Medium ・ Little

Environment

1.Urban	2.Suburbs	3.Mountain	4.Seaside
5.Industria	6.Harbor	7.Residential	8.Bussiness
9.Salty	10.Cold and snow	11.Heavy snow	12.Others

Under brid

1.Shinkanser	2.Railway	3.Highway	4.Road
5.River	6.Lake	7.Ravine	8.Valley
9.Waterway	10.Parking	11.Bike parkin	12.Park
13.Vacant	14.Harbor	Name (Chao Phraya)	

Access method

Superstructure	1.Inspection car 2.Falsework 3.On ground 4.Ladder 5.Lift car 6.On boat 7.Special camera 8.Others(Inspection vehicle)
Substructure	1.Inspection car 2.Falsework 3.On ground 4.Ladder 5.Lift car 6.On boat 7.Special camera 8.Others(Inspection vehicle)
Reason	・False work might be prepared for pylon ・Inspection vehicle is set on center and side span

Survey result

Camber deform	yes ・ no
Difference in glade	yes ・ no
Continuous of barrie	yes ・ no
Continuous of curve	yes ・ no
Noise	yes ・ no
Joint: Space change	yes ・ no
Joint: difference grade	yes ・ no
Joint: draining damage	yes ・ no
Blocked drainage	yes ・ no
Crack of pavement	yes ・ no
Damage of lighting	yes ・ no
Damage of sign	—
Damage of handrail	yes ・ no
Possibility of scour	yes ・ no

Inspection way

Walkway	yes ・ no
Vehicle	yes ・ no
Height of girde	about 45m

Diagnosis

◆ Deterioration of bridge ◆

deficient ・ fair ・ good

◆ Noticeable point ◆

・Under repairing work from 2005

Outline of damage

Item	Type	State
Main girder	Steel box girderr	Under reinforcement of U-rib
Cross beam	truss	Mark of MT
Stringer	-	-
Cross frame	-	-
Lateral brace	-	-
Slab	-	-
Abutment	-	-
Pier	Rectangular	Generally healthy
Bearing	Link bearing	-
Barrier	**Steel**	**Generally healthy**
Railing	Steel	Generally healthy
Curb	-	-
Pavement	asphalt ・concrete	-
Joint	drained undrained	Just replaced
Drainage	yes ・ no	

Impressions

・10year inspection was completed on 2003
・Evaluation program by Chulalongkorn Univ. Jan2005 to Mar.2009.
・Cable and pylon was repainted and girder is repainting using inspection vehicle
・Reinforcement of U-rib by CFRT
・Replace of expansion joint
・Pavement was replaced to 'jonmix' tested by institute of DOH at 2005

History of repair	Repaint ; — yy — mm
Surveyor ;	Mr,Chujo, Mr.Kudo

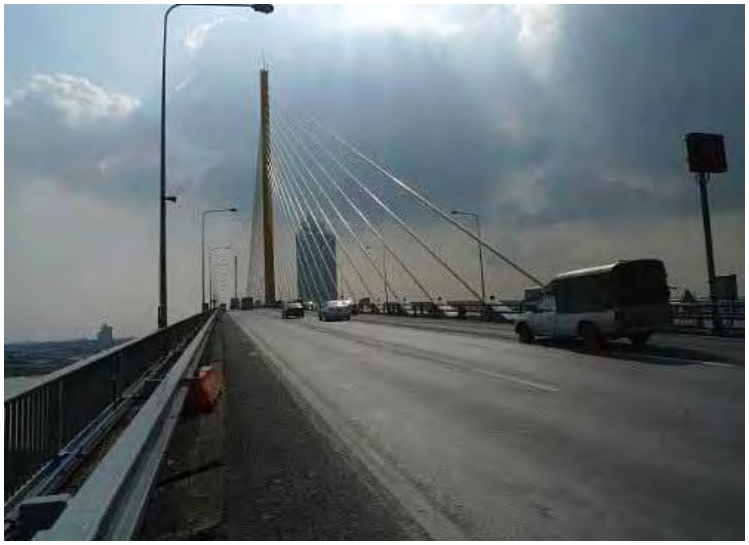
添付-207

Present state （ 1 / 9 ）

Authority	EXAT	Address	Bangkok	Data	26-Oct-09
Bridge	RAMA IX Bridge				

Picture No.	1
Span	1
Member	Side view

*Survey on board, 31-oct



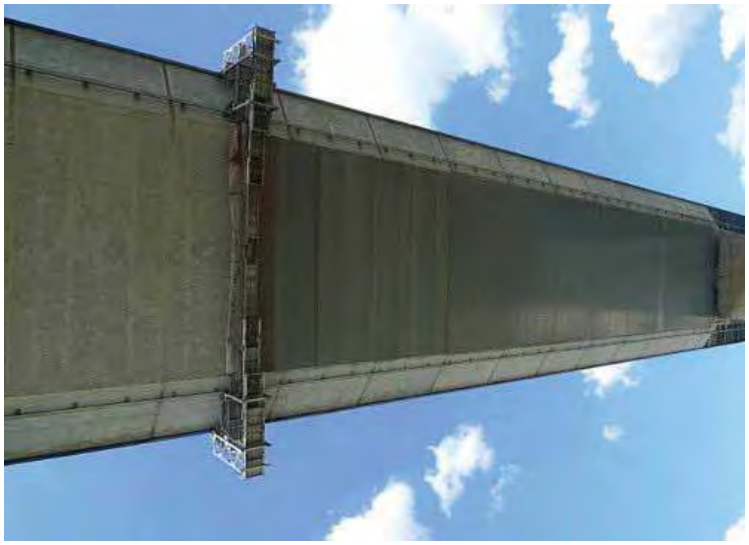
Picture No.	2
Span	1
Member	View on road

Picture No.	3
Span	1
Member	View of connection gir

*Survey on board, 31-oct

Present state （ 2 / 9 ）

Authority	EXAT	Address	Bangkok	Data	26-Oct-09
Bridge	RAMA IX Bridge				



Picture No.	4
Span	1
Member	View under bridge

Under repainting using inspection vehicle

Survey on board, 31-oct

Picture No.	5
Span	1
Member	Inspection way

Picture No.	6
Span	1
Member	View of pier

1 inspection vehicle apply for all side span.

Numbers of vehicles are 3.

Present state （ 3 / 9 ）

Authority	EXAT	Address	Bangkok	Data	26-Oct-09
Bridge	RAMA IX Bridge				

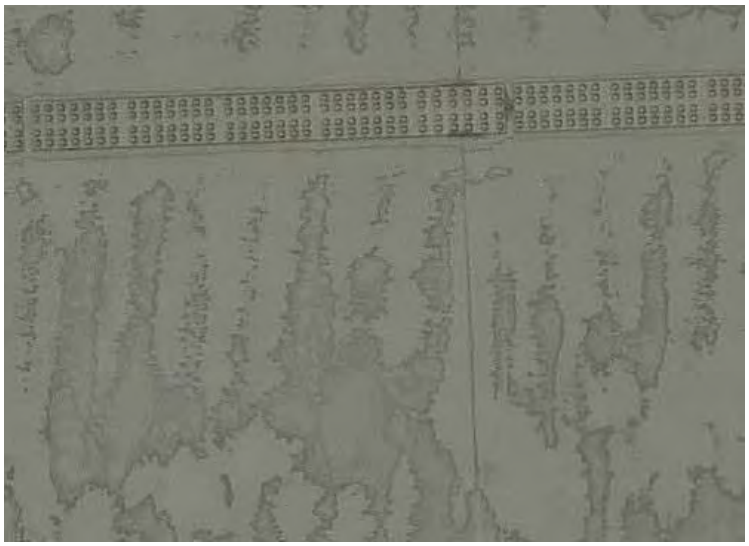
Picture No.	7
Span	1
Member	Inspection vehicle

Preparing work for painting?

Picture No.	8
Span	1
Member	Pylon

Bottom flange is repainted.

Shirinkage crack is seen in pier.

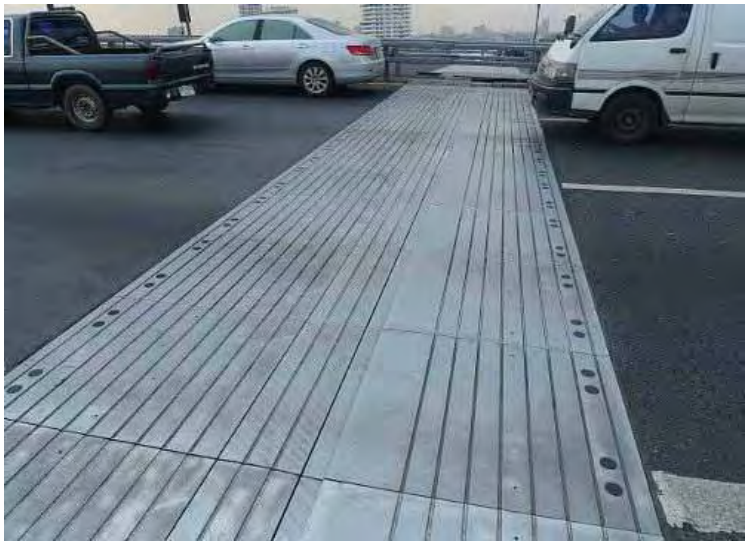


Picture No.	9
Span	1
Member	Bottom flange

Deterioration of corrosion proofi

Present state （ 4 / 9 ）

Authority	EXAT	Address	Bangkok	Data	26-Oct-09
Bridge	RAMA IX Bridge				



Picture No.	10
Span	1
Member	Expansion joint

Replaced on Oct-2009

Only surface plate was replaced

Picture No.	11
Span	1
Member	Cable

Rocked coil cable.

Outside was repainted.

Picture No.	12
Span	1
Member	Cable damper

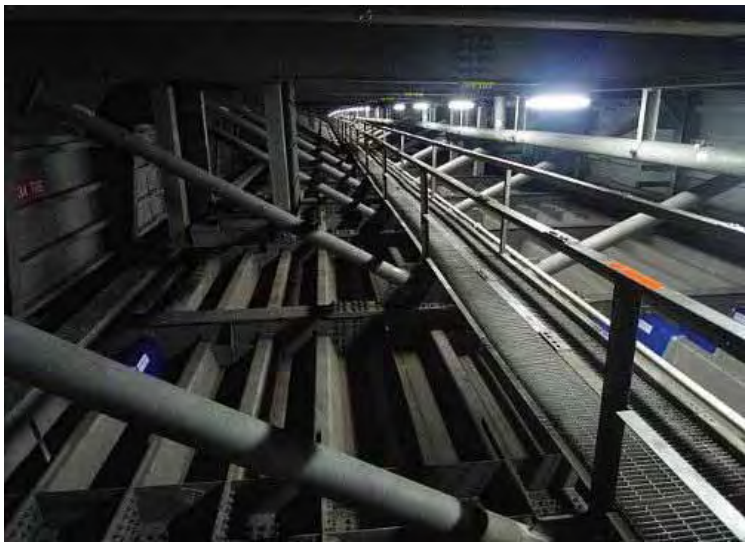
Present state （ 5 / 9 ）

Authority	EXAT	Address	Bangkok	Data	26-Oct-09
Bridge	RAMA IX Bridge				

Picture No.	7
Span	1
Member	Drainage

Guide of rain water

Picture No.	8
Span	1
Member	Manhole



Picture No.	9
Span	1
Member	Walkway in girder

Present state （ 6 / 9 ）

Authority	EXAT	Address	Bangkok	Data	26-Oct-09
Bridge	RAMA IX Bridge				

Picture No.	10
Span	1
Member	Diaphragm

Mark of MT inspedction

Picture No.	11
Span	1
Member	Bottom flange

Reinforcement by CFRT

Picture No.	12
Span	1
Member	slab

Mark of deformation of member

Axial stress is small at span cen
Normaly, far from yield stress.
It's not clear the deformation
and reinforcement at this survey.

Present state （ 7 / 9 ）

Authority	EXAT	Address	Bangkok	Data	26-Oct-09
Bridge	RAMA IX Bridge				

Picture No.	13
Span	1
Member	Senser

Temperature sensor

Picture No.	14
Span	1
Member	Sensor

Strain gauge

Picture No.	15
Span	1
Member	Sensor

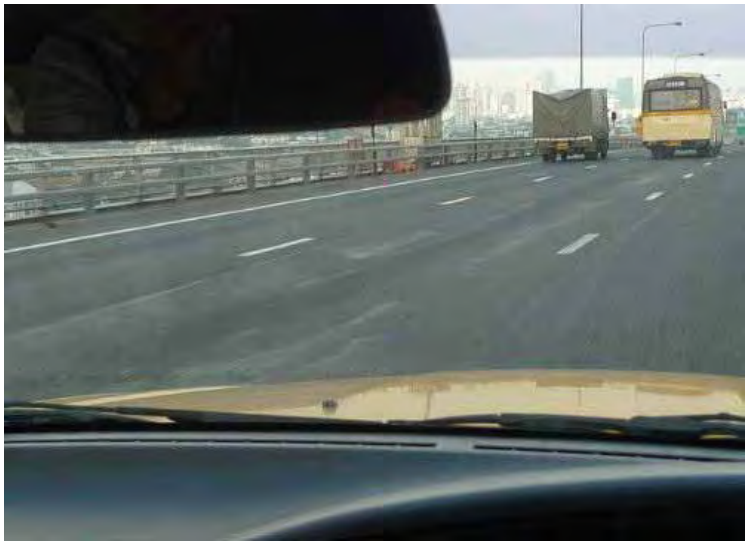
Accelerometer

Present state （ 8 / 9 ）

Authority	EXAT	Address	Bangkok	Data	26-Oct-09
Bridge	RAMA IX Bridge				

Picture No.	16
Span	1
Member	Girder damper

4-damper in girder



Picture No.	17
Span	1
Member	Pavement

All layer of pavement was replace at 2005

Picture No.	18
Span	1
Member	slab

Present state （ 9 / 9 ）

Authority	EXAT	Address	Bangkok	Data	26-Oct-09
Bridge	RAMA IX Bridge				

Picture No.	13
Span	1
Member	Meeting

Picture No.	14
Span	1
Member	

Picture No.	15
Span	1
Member	

Inspection sheet of visual survey

Bridge No. 19

Photo No. (～)

添付資料

Bridge name	Industrial Ring Road North Bridge	Route name	-	Authority	DRR	Code of authority	-
						No.	-
Place from	Ket Yan Nawa	Distance from	km+ 0			Survey date	22-Oct-2009
Place to	Amphoe Phra Pradaeng	Distance to	km+ 0				

Bridge properties

Bridge type(1)	main road ・ side road ・ ramp
Bridge type(2)	bridge ・ viaduct ・ plank pass
Bridge type(3)	5-span composite I girder cable stayed bridge
Total length	578.30 (m)
Span	50.6 + 74.5 + 326 + 74.5 + 50.6 (m)
Nos. of span	5 span
Width	35.9 - 55.2 (m) ／ (m)
Completion	2006

Road information

Horizontal	Straight ・ incli.(θ = 2.5 %) ・ Curve (R m)
Gradient	One way (↗ ・ ↘) parabo (凸 ・ 凹)
Nearby tunnel	yes ・ no (m)
Nearby crossing	yes ・ no (ramp way)
Traffic	Much ・ Medium ・ Little
Commercial traffi	Much ・ Medium ・ Little

Environment

1. Urban	2. Suburbs	3. Mountain	4. Seaside
5. Industria	6. Harbor	7. Residential	8. Bussiness
9. Salty	10. Cold and snow	11. Heavy snow	12. Others

Under brid

1. Shinkanser	2. Railway	3. Highway	4. Road
5. River	6. Lake	7. Ravine	8. Valley
9. Waterway	10. Parking	11. Bike parkin	12. Park
13. Vacant	14. Harbor	Name (Chao Phraya)	

Access method

Superstructure	1. Inspection car 2. Falsework 3. On ground 4. Ladder 5. Lift car 6. On boat 7. Special camera 8. Others(Inspection vehicle)
Substructure	1. Inspection car 2. Falsework 3. On ground 4. Ladder 5. Lift car 6. On boat 7. Special camera 8. Others(Inspection vehicle)
Reason	・False work should be prepared for side span and p

Survey result

Camber deform	yes ・ no
Difference in glade	yes ・ no
Continuous of barrie	yes ・ no
Continuous of curve	yes ・ no
Noise	yes ・ no
Joint: Space change	yes ・ no
Joint: difference grade	yes ・ no
Joint: draining damage	yes ・ no
Blocked drainage	yes ・ no
Crack of pavement	yes ・ no
Damage of lighting	yes ・ no
Damage of sign	—
Damage of handrail	yes ・ no
Possibility of scour	yes ・ no

Inspection way

Walkway	yes ・ no
Vehicle	yes ・ no
Height of girde	about 55m

Diagnosis

◆ Deterioration of bridge ◆

deficient ・ fair ・ good

◆ Noticeable point ◆

・Crack around pylon

・Crack around fixing structu

Outline of damage

Item	Type	State
Main girder	Composite I girder	-
Cross beam	I section steel	-
Stringer	-	-
Cross frame	-	-
Lateral brace	-	-
Slab		Crack around fixing structure, free lime
Abutment	-	-
Pier	Rectangular	Crack around cross beam
Bearing	Fix at pylon	-
Barrier	Trapezoidal, steel	Generally healthy
Railing	Stainless	Generally healthy
Curb	-	-
Pavement	asphalt ・concrete	-
Joint	drained undrained	Occurrence of sound of impact
Drainage	yes ・ no	

Impressions

・Occurrence of sound of impact and jumping by heavy vehicle at at expansion joint

・Crack is seen in pylon around cross beam end. It is required detailed investigation. especially in the case of increasing the defect after completion.

・Improvement around fixing structure is recommended.

History of repair ; Repaint ; — yy — mm

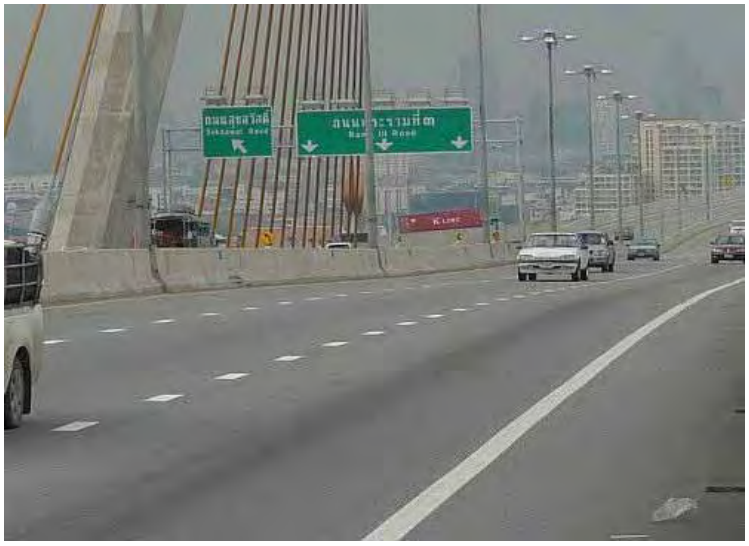
Surveyor ; Mr, Chujo, Mr. Kudo

Present state （ 1 / 14）

Authority	DRR	Address	Bangkok	Data	22-Oct-09
Bridge	Industrial Ring Road Bridge (North)				

Picture No.	1
Span	1
Member	Side view

*Survey on board, 31-oct



Picture No.	2
Span	2
Member	View on road

Picture No.	3
Span	1
Member	View of connection gir

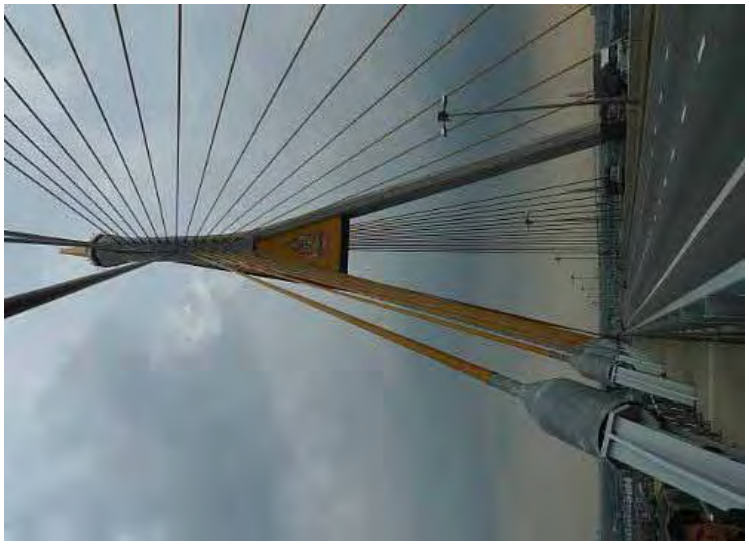
*Survey on board, 31-oct

Present state （ 2 / 14）

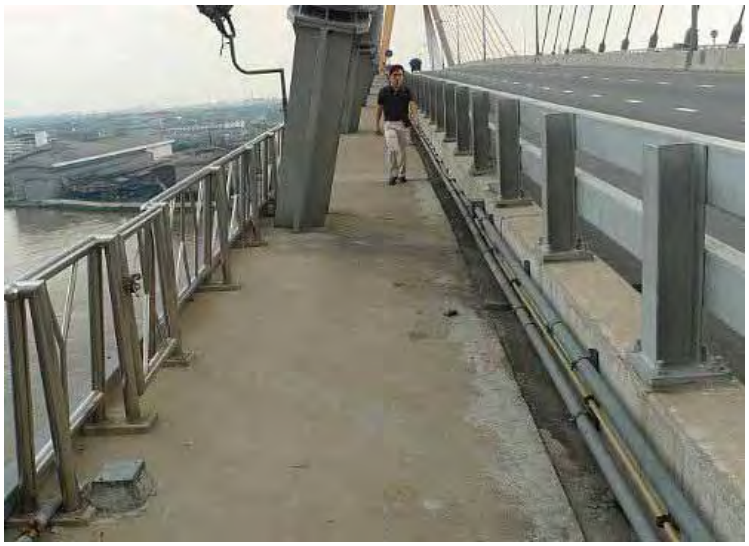
Authority	DRR	Address	Bangkok	Data	22-Oct-09
Bridge	Industrial Ring Road Bridge (North)				

Picture No.	4
Span	1
Member	View under bridge

*Survey on board, 31-oct



Picture No.	5
Span	1
Member	Pylon



Picture No.	6
Span	1
Member	Inspection way

Present state （ 3 / 14 ）

Authority	DRR	Address	Bangkok	Data	22-Oct-09
Bridge	Industrial Ring Road Bridge (North)				

Picture No.	7
Span	1
Member	Cable fixing part

Picture No.	8
Span	1
Member	Vertical alignment

Saged vertical alignment

Picture No.	9
Span	1
Member	Vertical alignment

Saged vertical alignment

Present state （ 4 / 14）

Authority	DRR	Address	Bangkok	Data	22-Oct-09
Bridge	Industrial Ring Road Bridge (North)				

Picture No.	10
Span	1
Member	Expansion joint

South side. Adjustment of differe
of grade

Picture No.	11
Span	1
Member	Expansion joint

North side.
Occurrence of sound of impact

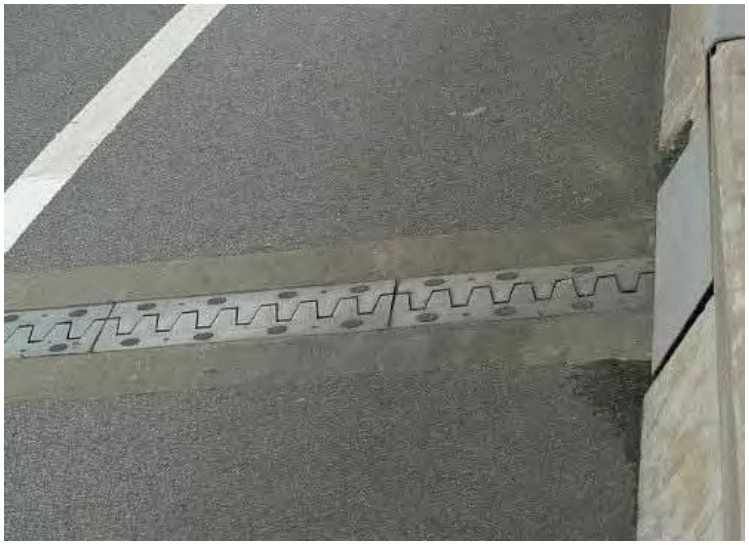
Jumping by heavy vehicle

Picture No.	12
Span	1
Member	Expansion joint

Looseness of bolt

Present state （ 5 / 14）

Authority	DRR	Address	Bangkok	Data	22-Oct-09
Bridge	Industrial Ring Road Bridge (North)				



Picture No.	7
Span	1
Member	Expansion joint

Connection between main bridge an ramp. No spacing

Picture No.	8
Span	1
Member	Stay cable

Picture No.	9
Span	1
Member	Stay cable

Peeling of projection material for cable vibration control

Present state （ 6 / 14）

Authority	DRR	Address	Bangkok	Data	22-Oct-09
Bridge	Industrial Ring Road Bridge (North)				

Picture No.	10
Span	1
Member	Stay cable

ooze out of grease

Picture No.	11
Span	1
Member	Inspection vehicle

Picture No.	12
Span	1
Member	slab

Crack from cable fixing structure

It is striking cables near pylon

Present state （ 7 / 14）

Authority	DRR	Address	Bangkok	Data	22-Oct-09
Bridge	Industrial Ring Road Bridge (North)				

Picture No.	13
Span	1
Member	slab
Crack from cable fixing structure	
0.1mm～0.2mm	

Picture No.	14
Span	1
Member	slab
Crack from cable fixing structure	

Picture No.	15
Span	1
Member	slab
Remaining water	

Present state （ 8 / 14）

Authority	DRR	Address	Bangkok	Data	22-Oct-09
Bridge	Industrial Ring Road Bridge (North)				

Picture No.	16
Span	1
Member	slab

Accumulaton soil at fixing struct

Picture No.	17
Span	1
Member	slab

Accumulaton soil at fixing struct

Picture No.	18
Span	1
Member	slab

Remaining water and
deterioration of corrosion proofi

Present state （ 9 / 14）

Authority	DRR	Address	Bangkok	Data	22-Oct-09
Bridge	Industrial Ring Road Bridge (North)				

Picture No.	13
Span	1
Member	slab

Crack from cable fixing structure

PC girder part

Picture No.	14
Span	1
Member	slab

Crack from cable fixing structure

0.1mm～0.15mm

PC girder part

Picture No.	15
Span	1
Member	slab

crack

PC girder part

Present state （10／14）

Authority	DRR	Address	Bangkok	Data	22-Oct-09
Bridge	Industrial Ring Road Bridge (North)				

Picture No.	16
Span	1
Member	slab

Peeling of concrete

Picture No.	17
Span	1
Member	slab

Fixing structure

Mold?

Picture No.	18
Span	1
Member	slab

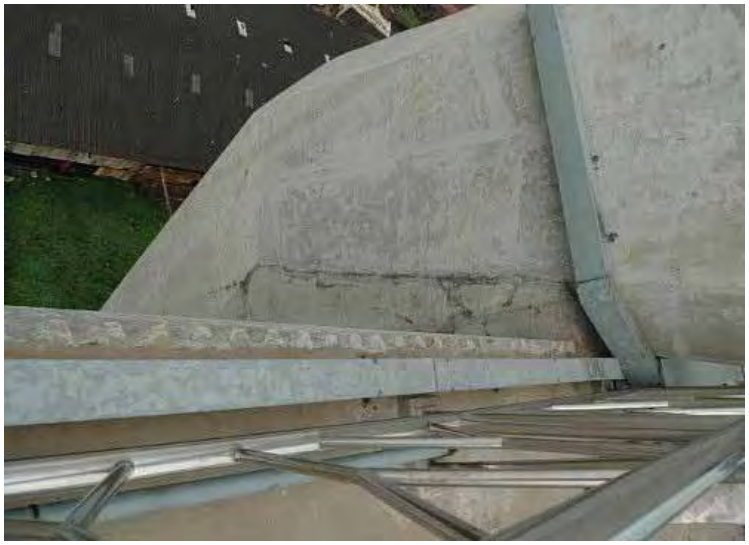
Remaining water

Present state （11／14）

Authority	DRR	Address	Bangkok	Data	22-Oct-09
Bridge	Industrial Ring Road Bridge (North)				

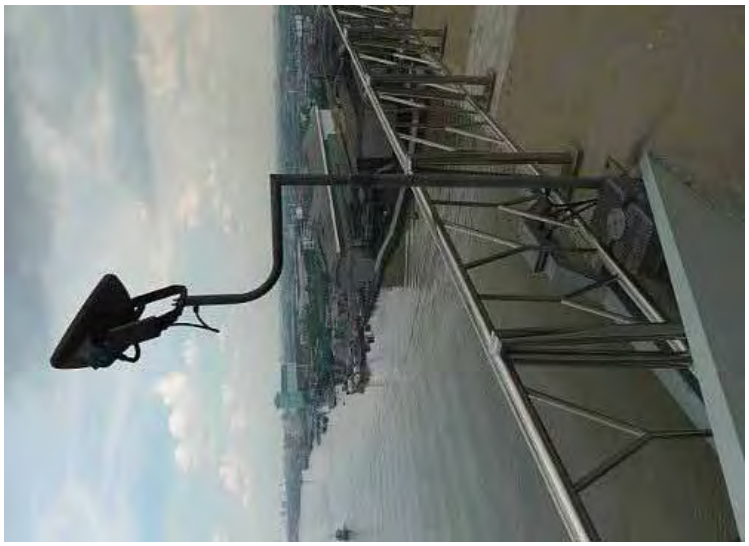
Picture No.	19
Span	1
Member	Pylon

crack around cross beam end



Picture No.	20
Span	1
Member	Pylon

crack around cross beam end



Picture No.	21
Span	1
Member	Lighting

Continuous vibration of pole

Possibility of fatigue crack

Present state （12／14）

Authority	DRR	Address	Bangkok	Data	22-Oct-09
Bridge	Industrial Ring Road Bridge (North)				

Picture No.	22
Span	1
Member	Electric wire

Picture No.	23
Span	1
Member	Lighting pole

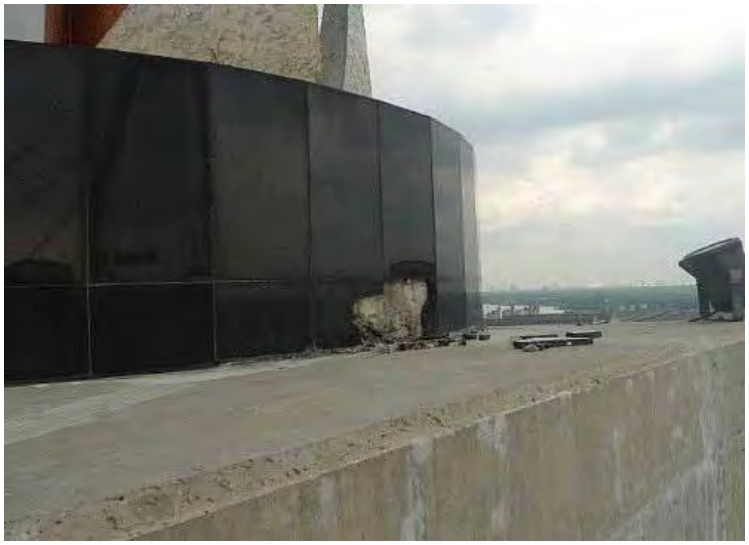
Gap between base plate and founda

Picture No.	24
Span	1
Member	Lighting pole

Gap between base plate and founda

Present state （13／14）

Authority	DRR	Address	Bangkok	Data	22-Oct-09
Bridge	Industrial Ring Road Bridge (North)				



Picture No.	25
Span	1
Member	Newel

Picture No.	26
Span	1
Member	Electric wire

Lost of cover and looseness of bo

Picture No.	27
Span	1
Member	Drainage

Present state （14／14）

Authority	DRR	Address	Bangkok	Data	22-Oct-09
Bridge	Industrial Ring Road Bridge (North)				

Picture No.	28
Span	1
Member	

North bridge- South pylon - cente

crack

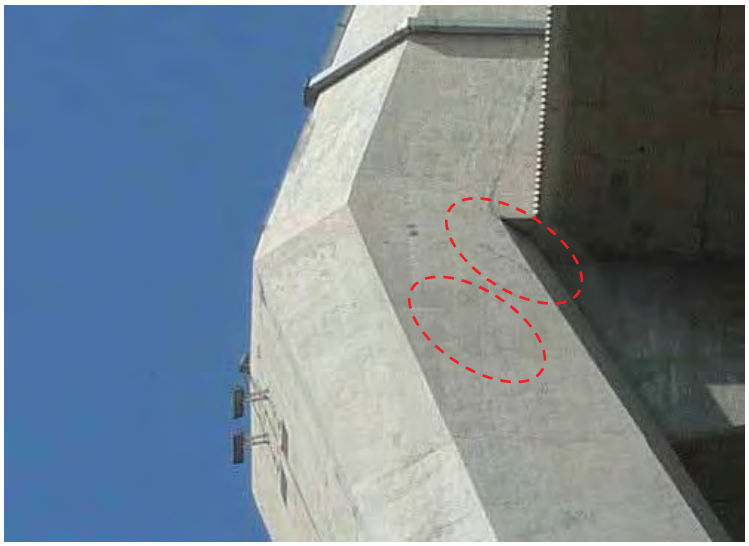
*Survey on board, 31-oct

Picture No.	29
Span	1
Member	

North bridge - North pylon - cent

crack

*Survey on board, 31-oct



Picture No.	30
Span	1
Member	

North bridge - North pylon - cent

crack

*Survey on board, 31-oct

Inspection sheet of visual survey

添付資料

Bridge No. 20

Photo No. (～)

Bridge name	Industrial Ring Road South Bridge	Route name	-	Authority	DRR	Code of authority	-
						No.	-
Place	from Bangkok	Distance	from km+ 0			Survey date	22-Oct-2009
	to		to km+ 0				

Bridge properties

Bridge type(1)	main road ・ side road ・ ramp
Bridge type(2)	bridge ・ viaduct ・ plank pass
Bridge type(3)	5-span composite I girder cable stayed bridge
Total length	702.30 (m)
Span	68.6 + 83.5 + 398 + 83.5 + 68.6 (m)
Nos. of span	5 span
Width	35.9 - 55.2 (m) ／ (m)
Completion	2006

Road information

Horizontal	Straight ・ incli(θ = 2.5 %) ・ Curve (R m)
Gradient	One way (↗ ・ ↘) parabo (凸 ・ 凹)
Nearby tunnel	yes ・ no (m)
Nearby crossing	yes ・ no (ramp way)
Traffic	Much ・ Medium ・ Little
Commercial traffi	Much ・ Medium ・ Little

Environment

1. Urban	2. Suburbs	3. Mountain	4. Seaside
5. Industria	6. Harbor	7. Residential	8. Bussiness
9. Salty	10. Cold and snow	11. Heavy snow	12. Others

Under brid

1. Shinkanser	2. Railway	3. Highway	4. Road
5. River	6. Lake	7. Ravine	8. Valley
9. Waterway	10. Parking	11. Bike parkin	12. Park
13. Vacant	14. Harbor	Name (Chao Phraya)	

Access method

Superstructure	1. Inspection car 2. Falsework 3. On ground 4. Ladder 5. Lift car 6. On boat 7. Special camera 8. Others(Inspection vehicle)
Substructure	1. Inspection car 2. Falsework 3. On ground 4. Ladder 5. Lift car 6. On boat 7. Special camera 8. Others(Inspection vehicle)
Reason	・False work should be prepared for side span and p

Survey result

Camber deform	yes ・ no
Difference in glade	yes ・ no
Continuous of barrie	yes ・ no
Continuous of curve	yes ・ no
Noise	yes ・ no
Joint: Space change	yes ・ no
Joint: difference grade	yes ・ no
Joint: draining damage	yes ・ no
Blocked drainage	yes ・ no
Crack of pavement	yes ・ no
Damage of lighting	yes ・ no
Damage of sign	—
Damage of handrail	yes ・ no
Possibility of scour	yes ・ no

Inspection way

Walkway	yes ・ no
Vehicle	yes ・ no
Height of girde	about 55m

Diagnosis

◆ Deterioration of bridge ◆

deficient ・ fair ・ good

◆ Noticeable point ◆

・Crack around pylon

・Crack around fixing structu

Outline of damage

Item	Type	State
Main girder	Composite I girder	-
Cross beam	I section steel	-
Stringer	-	-
Cross frame	-	-
Lateral brace	-	-
Slab		Crack around fixing structure, free lime
Abutment	-	-
Pier	Rectangular	Crack around cross beam
Bearing	Fix at pylon	-
Barrier	Trapezoidal, steel	Generally healthy
Railing	Stainless	Generally healthy
Curb	-	-
Pavement	asphalt ・concrete	-
Joint	drained undrained	-
Drainage	yes ・ no	

Impressions

・Crack is seen in pylon around cross beam end. It is required detailed investigation.

・Improvement around fixing structure is recommended.
especially in the case of increasing the defect after completion.

History of repair ; Repaint ; — yy — mm

Surveyor ; Mr, Chujo, Mr. Kudo

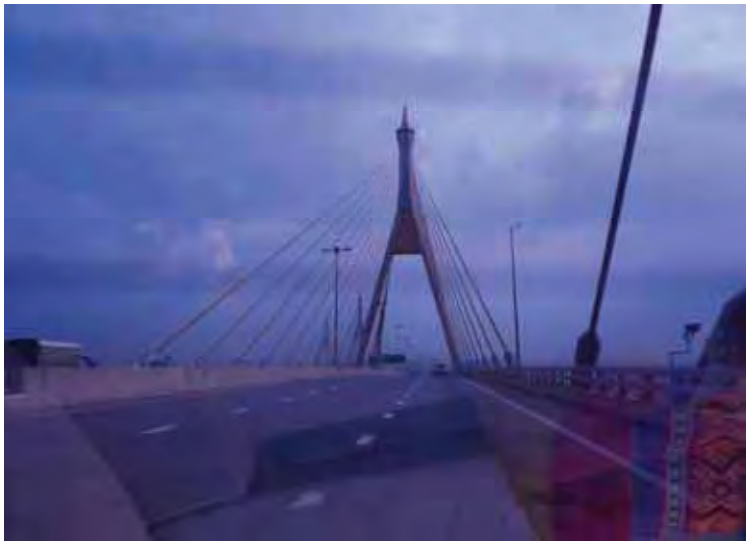
添付-232

Present state （ 1 / 5 ）

Authority	DRR	Address	Bangkok	Data	22-Oct-09
Bridge	Industrial Ring Road Bridge (South)				

Picture No.	1
Span	1
Member	Side view

*Survey on board, 31-oct



Picture No.	2
Span	1
Member	View on road

Picture No.	3
Span	1
Member	View under girder

Present state （ 2 / 5 ）

Authority	DRR	Address	Bangkok	Data	22-Oct-09
Bridge	Industrial Ring Road Bridge (South)				

Picture No.	4
Span	1
Member	Inspection way

Picture No.	5
Span	1
Member	Inspection vehicle

Picture No.	6
Span	1
Member	Inspection vehicle

Present state （ 3 / 5 ）

Authority	DRR	Address	Bangkok	Data	22-Oct-09
Bridge	Industrial Ring Road Bridge (South)				

Picture No.	7
Span	1
Member	slab bottom surface

Free lime from filled hole

Picture No.	8
Span	1
Member	slab

Crack from cable fixing structure

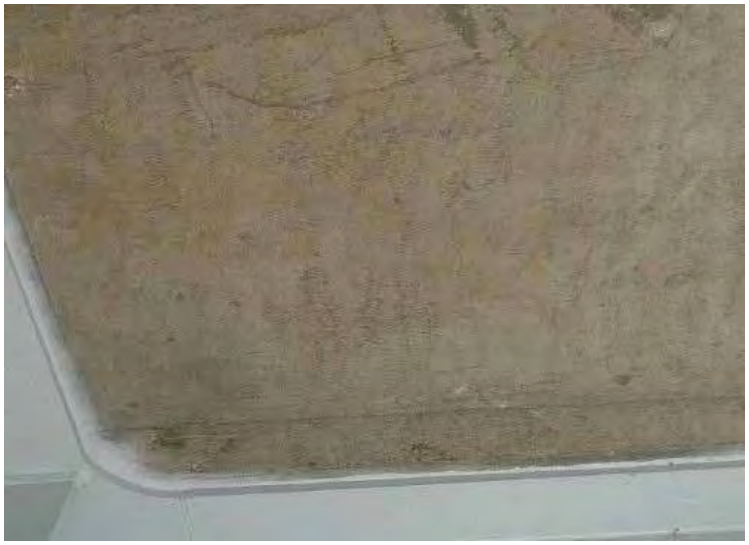
Picture No.	9
Span	1
Member	bottom slab

Crack from cable fixing structure

0.15mm - 0.3mm

Present state （ 4 / 5 ）

Authority	DRR	Address	Bangkok	Data	22-Oct-09
Bridge	Industrial Ring Road Bridge (South)				



Picture No.	10
Span	1
Member	bottom slab

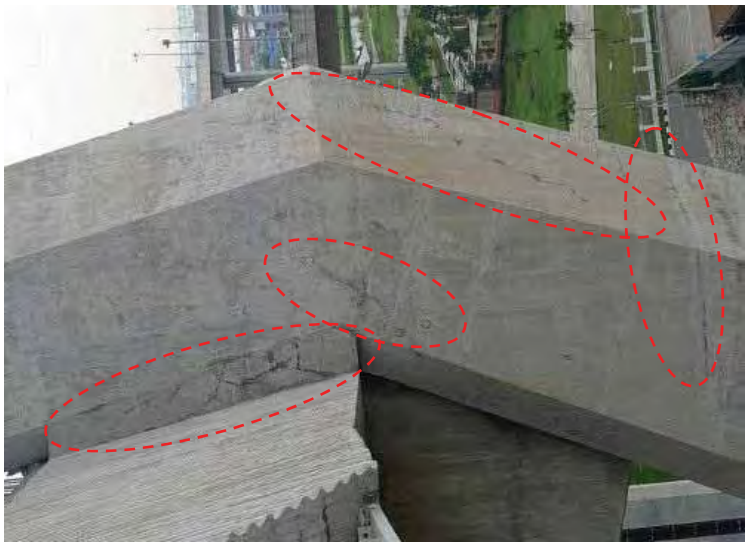
Back surface of crack around fixi

Crack cannot find from inspection vehicle (about 2m from eye height

Picture No.	11
Span	1
Member	Connection girder

Inside of connection girder

Harm of bird



Picture No.	12
Span	1
Member	Pylon

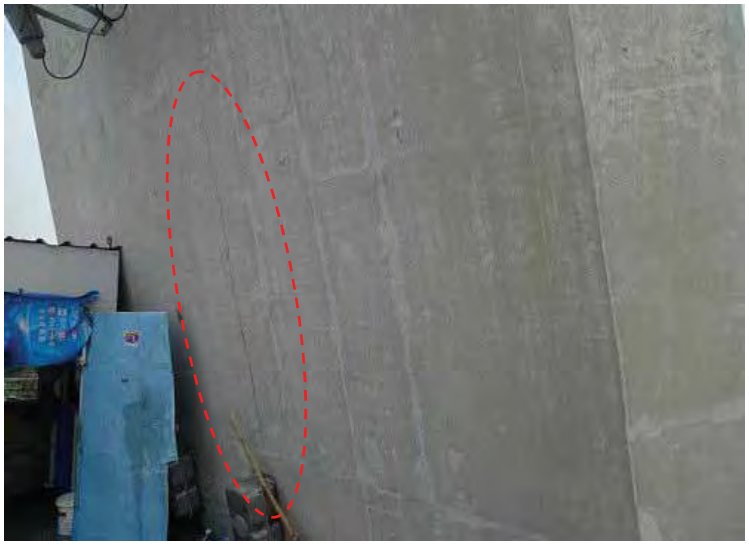
Vertical crack at cross beam end

Inclined crack of pylon shaft

Opening construction joint

Present state （ 5 / 5 ）

Authority	DRR	Address	Bangkok	Data	22-Oct-09
Bridge	Industrial Ring Road Bridge (South)				



Picture No.	7
Span	1
Member	Pylon

Vertical crack of pylon shaft

Possibility of shirincage crack during construction is high.

Picture No.	8
Span	1
Member	Pylon

Crack

Survey on board, 31-oct

Picture No.	9
Span	1
Member	PC girder

Survey on board, 31-oct