Inspection sheet of visual survey

Bridge No. 10

Photo No. (~)

Bridge name	Krung Thon Bridge	Route name	-	Authority	DRR	Code of authority	-
						No.	-
Place from	Khat Bang Phlat	Distance from	km+ 0			Survey date	2009/10/24
Place to	Khet Dusit	Distance to	km+ 0				

Bridge properties

Bridge type(1)	main road • side road • ramp
Bridge type(2)	bridge • viaduct • plank pass
Bridge type(3)	6-span steel truss
Total length	360.00 (m)
Span	58 + 58 + 64 + 64 + 58 + 58 (m)
Nos. of span	6 span
Width	12.00 (m) ／ (m)
Completion	1958

Road information

Horizontal	Straight • incli(θ = 1.7 %) • Curve (R m)
Gradient	One way (↗ • ↘) parabo (凸 • 凹)
Nearby tunnel	yes • no (m)
Nearby crossing	yes • no (m)
Traffic	Much • Mediun • Little
Commercial traffi	Much • Mediun • Little

Environ

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
	difference grade	yes • no
	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 scou		yes • no

Inspection way

Walkway yes • no

Vehicle yes • no

Height of girde about 8.5m

Diagnosis

◆ Deterioration of bridge ◆

deficien • fair • good

◆ Noticeable point ◆

• Exfoliation of slab

• Reduce thickness by corrosi

Outline of damage

Item	Type	State
Main girder	Truss	Corrosion, Deterioration of proofing, deformation by collis
Cross beam	I section steel	-
Stringer	I section steel	Deterioration of proofing
Cross frame	T section steel	Expansion by corrosion
Lateral brace	—	-
Slab		Crack, free lime, Exfoliation
Abutment	-	-
Pier	Rectangular	-
Bearing	Pin bearing	Corrosion, accumulation of soil, flucture of locker bearing
Barrier	Trapezoidal	Flucture of edge
Railing	Steel	Generally healthy
Curb	-	-
Pavement	asphalt • concrete	Generally healthy
Joint	drained • undrained	Leakage
Drainage	yes • no	

Impressions

- scour (information from DRR)
- Remarkablecrack and exfoliation is found at bottom surface of walkway
- Some drainage pipe was drop off
- Condision of painting is not bad, but some plate thickness was reduced by corrosion Especially flange of bracket should be take care a strength.
- Deformation by ship collision was found at 1 center span.

History of repair ; • Detail survey was finished on Sep.2009

Repaint ; — yy — mm

Surveyor ; Mr,Chujo, Mr.Kudo

Present state (1 / 19)

Authority	DRR	Address	Bangkok	Data	24-Oct-09
Bridge	Krung Thon Bridge				

Picture No.	1
Span	1
Member	Side view

Picture No.	2
Span	1
Member	View on road

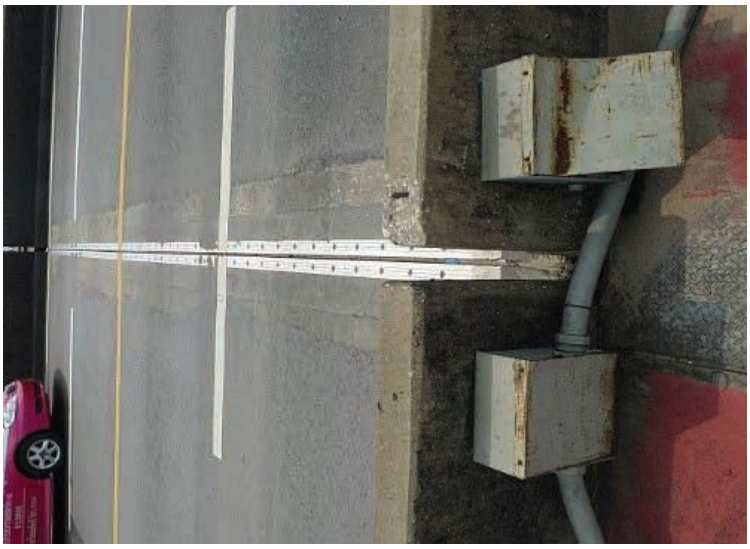
Picture No.	3
Span	1
Member	View under girder

Present state (2 / 19)

Authority	DRR	Address	Bangkok	Data	24-Oct-09
Bridge	Krung Thon Bridge				

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

Picture No.	5
Span	1
Member	View of walkway



Picture No.	6
Span	1
Member	Expansion joint

Between 1st and 2nd span
(Thon Buri side)

Present state (3 / 19)

Authority	DRR	Address	Bangkok	Data	24-Oct-09
Bridge	Krung Thon Bridge				

Picture No.	7
Span	1
Member	Expansion joint

Thon Buri end

Fracture of side barrier

Picture No.	8
Span	1
Member	Side barrier

Fracture of side barrier

Picture No.	9
Span	1
Member	Sign

Present state (4 / 19)

Authority	DRR	Address	Bangkok	Data	24-Oct-09
Bridge	Krung Thon Bridge				

Picture No.	10
Span	1
Member	Newel

Picture No.	11
Span	1
Member	Approach bridge

Limit of vehicle height2.6m
(Thon Buri side)

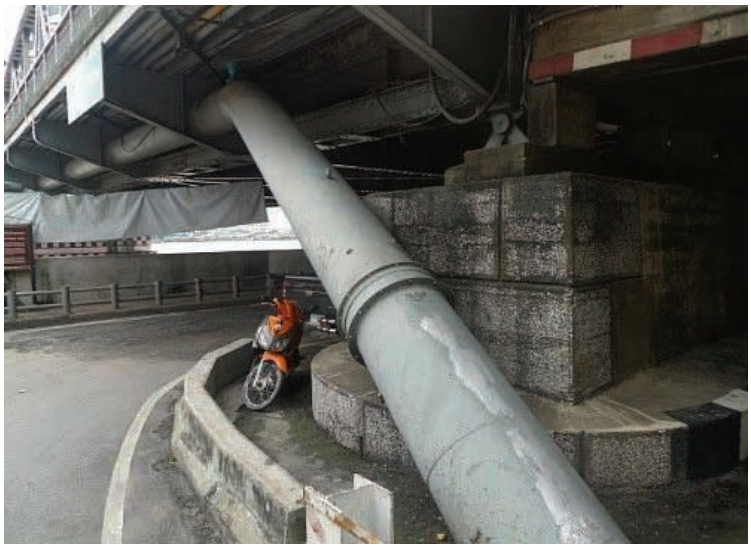
Many scratch

Picture No.	12
Span	1
Member	Approach bridge

Limit of vehicle height 3.2m
(Bangkok side)

Present state (5 / 19)

Authority	DRR	Address	Bangkok	Data	24-Oct-09
Bridge	Krung Thon Bridge				



Picture No.	13
Span	1
Member	Water supply

Picture No.	14
Span	1
Member	Bottom chord

Deformation by vehicle collision

Picture No.	15
Span	1
Member	Bottom chord

Scratch by vehicle collision

Present state (6 / 19)

Authority	DRR	Address	Bangkok	Data	24-Oct-09
Bridge	Krung Thon Bridge				

Picture No.	16
Span	1
Member	slab

Picture No.	17
Span	1
Member	Bearing

Approach bridge

Picture No.	18
Span	1
Member	Bearing

Deterioration of corrosion proofi

Approach bridge

Present state (7 / 19)

Authority	DRR	Address	Bangkok	Data	24-Oct-09
Bridge	Krung Thon Bridge				

Picture No.	19
Span	1
Member	Bearing

Deterioration of corrosion proofi

Fructure of edge

Approach bridge

Picture No.	20
Span	1
Member	Bearing

Bearing on cross beam between main girder

Approach bridge

Picture No.	21
Span	1
Member	Bearing

Deterioration of corrosion proofi

Present state (8 / 19)

Authority	DRR	Address	Bangkok	Data	24-Oct-09
Bridge	Krung Thon Bridge				

Picture No.	22
Span	1
Member	Bearing

Deformation of base plate

Picture No.	23
Span	1
Member	Bearing

Picture No.	24
Span	1
Member	Bearing

Deterioration of corrosion proofi

Present state (9 / 19)

Authority	DRR	Address	Bangkok	Data	24-Oct-09
Bridge	Krung Thon Bridge				

Picture No.	25
Span	1
Member	Bearing

Rivet at bottom side is replaced by bolt

It might be corroded before

Picture No.	26
Span	1
Member	Cross frame

Peeling of paint

Expansion of steel by corrosion

Picture No.	27
Span	1
Member	Bearing

Accumulation of soil

Present state (10 / 19)

Authority	DRR	Address	Bangkok	Data	24-Oct-09
Bridge	Krung Thon Bridge				

Picture No.	28
Span	1
Member	Bracket

Reduction of plate thickness

Picture No.	29
Span	1
Member	Bracket

Reduction of plate thickness

Picture No.	30
Span	1
Member	Chord member

It's not clear the concept of gap
Gap width is small.

Present state (11/19)

Authority	DRR	Address	Bangkok	Data	24-Oct-09
Bridge	Krung Thon Bridge				

Picture No.	31
Span	1
Member	Stringer

Peeling of paint

Picture No.	32
Span	1
Member	Chord member

Fracture of concrete

Picture No.	33
Span	1
Member	Chord member

Mount up to prevent remaining water

Possibility of corrosion inside c concrete slab

Present state (12 / 19)

Authority	DRR	Address	Bangkok	Data	24-Oct-09
Bridge	Krung Thon Bridge				

Picture No.	34
Span	1
Member	Chord member

Crack and mark of water

Picture No.	35
Span	1
Member	Chord member

Corrosion

Picture No.	36
Span	1
Member	Bottom chord

Deterioration of corrosion proofi

Present state (13 / 19)

Authority	DRR	Address	Bangkok	Data	24-Oct-09
Bridge	Krung Thon Bridge				

Picture No.	37
Span	1
Member	Upper chord

Deterioration of corrosion proofi

Picture No.	38
Span	1
Member	Vertical member

Reinforcement by additional plate

4-vertical member was reinforced

Picture No.	39
Span	1
Member	Cross frame

Deformation at the end of cross frame

Adjustment of height?

Present state (14 / 19)

Authority	DRR	Address	Bangkok	Data	24-Oct-09
Bridge	Krung Thon Bridge				

Picture No.	40
Span	1
Member	Chord member

Deformation by vehicle collision

Picture No.	41
Span	1
Member	slab

Replaced slab under roadway

Picture No.	42
Span	1
Member	Slab

Slab under walkway

Crack and free lime

Present state (15 / 19)

Authority	DRR	Address	Bangkok	Data	24-Oct-09
Bridge	Krung Thon Bridge				

Picture No.	43
Span	1
Member	Slab

Slab under walkway

Crack and free lime

Picture No.	44
Span	1
Member	Slab

Exposure of rebar

Crack above bracket

Picture No.	45
Span	1
Member	slab

Exposure of rebar

Present state (16 / 19)

Authority	DRR	Address	Bangkok	Data	24-Oct-09
Bridge	Krung Thon Bridge				

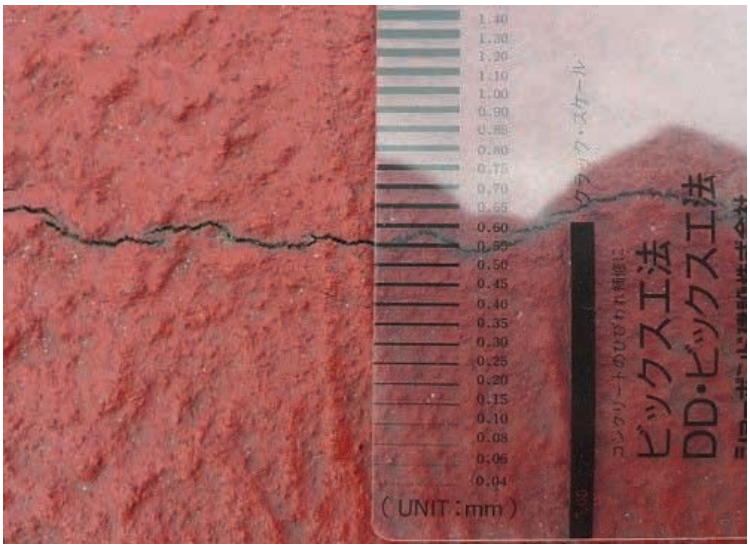
Picture No.	46
Span	1
Member	Slab

Exposure of rebar

Picture No.	47
Span	1
Member	slab

Crack on walkway

Crack spacing is 2-4m.



Picture No.	48
Span	1
Member	Slab

Walkway. Crack

0.4mm～0.75mm

Present state (17 / 19)

Authority	DRR	Address	Bangkok	Data	24-Oct-09
Bridge	Krung Thon Bridge				

Picture No.	49
Span	1
Member	Under bridge

Residence under bridge

Bangkok side

Picture No.	50
Span	1
Member	Slab

Signboard of inspection and repairing work

150days from 2009.Feb

Consultant is Norconsultant

Picture No.	51
Span	1
Member	Substructure

Survey on board, 31-oct

Present state (18 / 19)

Authority	DRR	Address	Bangkok	Data	24-Oct-09
Bridge	Krung Thon Bridge				

Picture No.	52
Span	1
Member	Slab

Falling of drainage pipe

*Survey on board, 31-oct

Picture No.	53
Span	1
Member	slab

Crack and free lime under walkway

*Survey on board, 31-oct

Picture No.	54
Span	1
Member	Slab

Crack and free lime under walkway

*Survey on board, 31-oct

Present state (19 / 19)

Authority	DRR	Address	Bangkok	Data	24-Oct-09
Bridge	Krung Thon Bridge				

Picture No.	55
Span	1
Member	Slab

Deformation by ship collision

Survey on board, 31-oct

Picture No.	56
Span	1
Member	Water supply

Deterioration of corrosion proofi

Survey on board, 31-oct

Picture No.	57
Span	1
Member	

Inspection sheet of visual survey

Bridge No. 11

Photo No. (~)

Bridge name	RAMA VIII Bridge	Route name	-	Authority	BMA	Code of authority	-
						No.	-
Place from	Khat Bang Phlat	Distance from	km+ 0			Survey date	23-Oct-2009
Place to	Khet Phra Nakhon	Distance to	km+ 0				

Bridge properties

Bridge type(1)	main road • side road • ramp
Bridge type(2)	bridge • viaduct • plank pass
Bridge type(3)	4-span composite 2 I girder cable stayed bridge
Total length	475.00 (m)
Span	75 + 50 + 50 + 300 (m)
Nos. of span	4 span
Width	29.20 (m) ／ (m)
Completion	2002

Road information

Horizontal	Straight • incli(θ = 2 %) • Curve (R m)
Gradient	One way (↗ • ↘) parabo (凸 • 凹)
Nearby tunnel	yes • no (m)
Nearby crossing	yes • no (ramp way)
Traffic	Much • Mediun • Little
Commercial traffi	Much • Mediun • Little

Environ

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(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	• Center span 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 scou	yes • no

Inspection way

Walkway yes • no

Vehicle yes • no

Height of girde about 10m

Diagnosis

◆ Deterioration of bridge ◆

deficien • fair • good

◆ Noticeable point ◆

• Leakage form cable

Outline of damage

Item	Type	State
Main girder	Composite I girder	-
Cross beam	I section steel	-
Stringer	-	-
Cross frame	-	-
Lateral brace	-	-
Slab	-	(cannot see from outside due to decorative plate)
Abutment	-	-
Pier	Rectangular	Free lime at cross beam
Bearing	Slide bearing	-
Barrier	Steel	Generally healthy
Railing	Steel	Generally healthy
Curb	-	-
Pavement	asphalt • concrete	Pot hole
Joint	drained • undrained	
Drainage	yes • no	

Impressions

History of repair ; Repaint ; — yy — mm

Surveyor ; Mr,Chujo, Mr.Kudo

Present state (1 / 8)

Authority	BMA	Address	Bangkok	Data	23-Oct-09
Bridge	RAMA VIII				

Picture No.	1
Span	1
Member	Side view

Survey on board, 31-oct

Picture No.	2
Span	1
Member	View on road

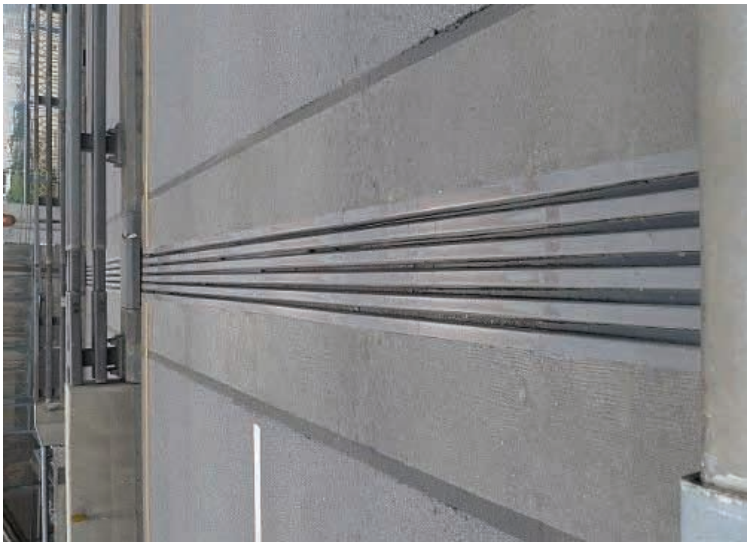
Picture No.	3
Span	1
Member	View under bridge

Present state (2 / 8)

Authority	BMA	Address	Bangkok	Data	23-Oct-09
Bridge	RAMA VIII				

Picture No.	4
Span	1
Member	Pylon

Survey on board, 31-oct



Picture No.	5
Span	1
Member	Expansion joint

Modular type

Picture No.	6
Span	1
Member	Expansion joint

Lack of bolt

Soil dump

Present state (3 / 8)

Authority	BMA	Address	Bangkok	Data	23-Oct-09
Bridge	RAMA VIII				

Picture No.	7
Span	1
Member	View of cable

Helical type wind resistance

Picture No.	8
Span	1
Member	Cable

Leakage from cable

Picture No.	9
Span	1
Member	Cable

Leakage from cable

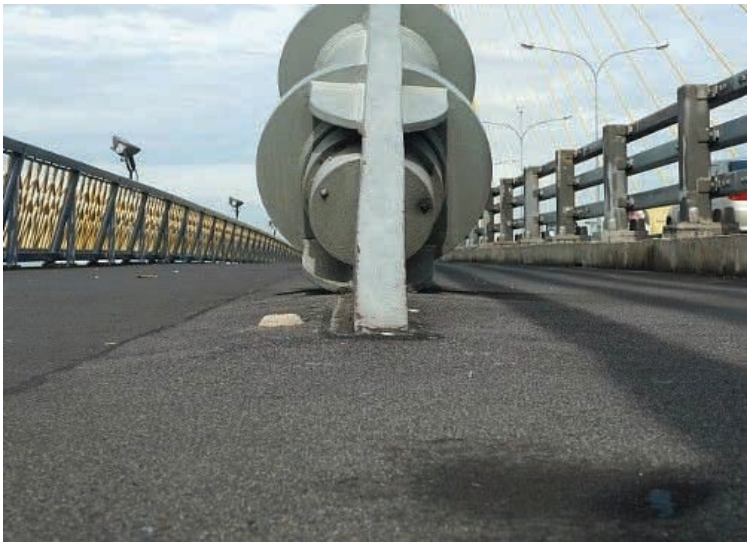
Opening under side of cable cover for drainage

Present state (4 / 8)

Authority	BMA	Address	Bangkok	Data	23-Oct-09
Bridge	RAMA VIII				

Picture No.	10
Span	1
Member	Cable fixing structure

Gap and calking between cable and slab. And mounted up around cable to prevent remaining water.



Picture No.	11
Span	1
Member	Cable fixing structure

slab. And mounted up around cable to prevent remaining water.

Picture No.	12
Span	1
Member	Cable fixing structure

Calking and name plate of cable

well maintained but aging

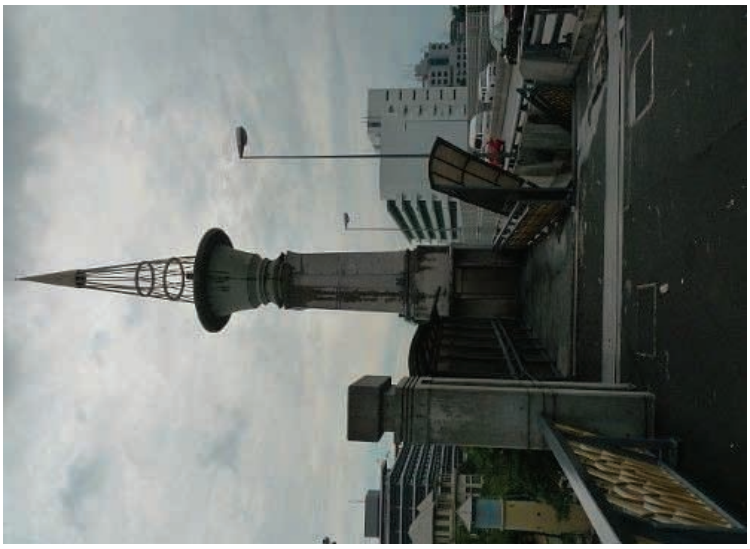
Present state (5 / 8)

Authority	BMA	Address	Bangkok	Data	23-Oct-09
Bridge	RAMA VIII				

Picture No.	7
Span	1
Member	Side span and approach

side span is 3+2 lane for ramp wa

Picture No.	8
Span	1
Member	Anchorage



Picture No.	9
Span	1
Member	Newel

Present state (6 / 8)

Authority	BMA	Address	Bangkok	Data	23-Oct-09
Bridge	RAMA VIII				

Picture No.	10
Span	1
Member	Pavement

Pot-hole

Picture No.	11
Span	1
Member	Drainage

Picture No.	12
Span	1
Member	Cross beam

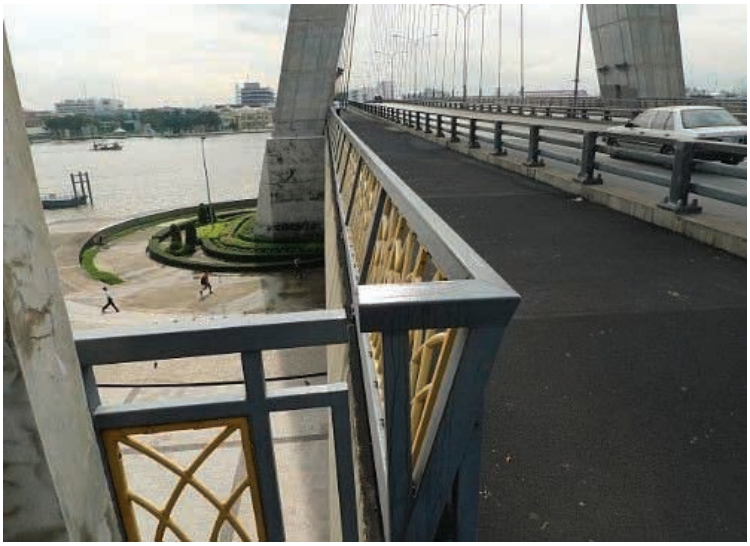
Leakage and small fructure of concrete surface

Present state (7 / 8)

Authority	BMA	Address	Bangkok	Data	23-Oct-09
Bridge	RAMA VIII				

Picture No.	7
Span	1
Member	Barrier

Lack of bolt cap



Picture No.	8
Span	1
Member	Hand rail of walkway

Picture No.	9
Span	1
Member	Cable fixing of pylon

Present state (8 / 8)

Authority	BMA	Address	Bangkok	Data	23-Oct-09
Bridge	RAMA VIII				

Picture No.	10
Span	1
Member	Decorative plate

leakage line

Picture No.	11
Span	1
Member	Bearing

Picture No.	12
Span	1
Member	

Inspection sheet of visual survey

Bridge No. 12

Photo No. (~)

Bridge name	Pinklao Bridge	Route name	-	Authority	DRR	Code of authority	-
						No.	-
Place from	Khat Bangkok Noi	Distance from	km+ 0			Survey date	2009/10/23
Place to	Khet Phra Nakhon	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	276.00 (m)
Span	83 + 110 + 83 (m)
Nos. of span	4 span
Width	32.21 (m) ／ (m)
Completion	1973

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
	difference grade	yes • no
	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 scou		yes • no

Inspection way

Walkway yes • no

Vehicle yes • no

Height of girde about 11.5m

Diagnosis

◆ Deterioration of bridge ◆

deficien • fair • good

◆ Noticeable point ◆

• Crack of pier of approach

• Leackage from manhole

Outline of damage

Item	Type	State
Main girder	PC-Box	Leakage from box girder
Cross beam	-	-
Stringer	-	-
Cross frame	-	-
Lateral brace	-	-
Slab		free lime
Abutment	-	-
Pier	Rectangular	-
Bearing	Slide bearing	-
Barrier	Steel	Generally healthy
Railing	Steel	Generally healthy
Curb	-	-
Pavement	asphalt • concrete	Generally healthy
Joint	drained • undrained	leakage
Drainage	yes • no	Blocked

Impressions

• Sever leakage from expansion joint

• Water flow in box girder may cause defect in box.

• Crack of pier of approach bridge

History of repair ; Repaint ; — yy — mm

Surveyor ; Mr,Chujo, Mr.Kudo

Present state (1 / 7)

Authority	DRR	Address	Bangkok	Data	23-Oct-09
Bridge	Phra Pin Klao Bridge				

Picture No.	1
Span	1
Member	Side view

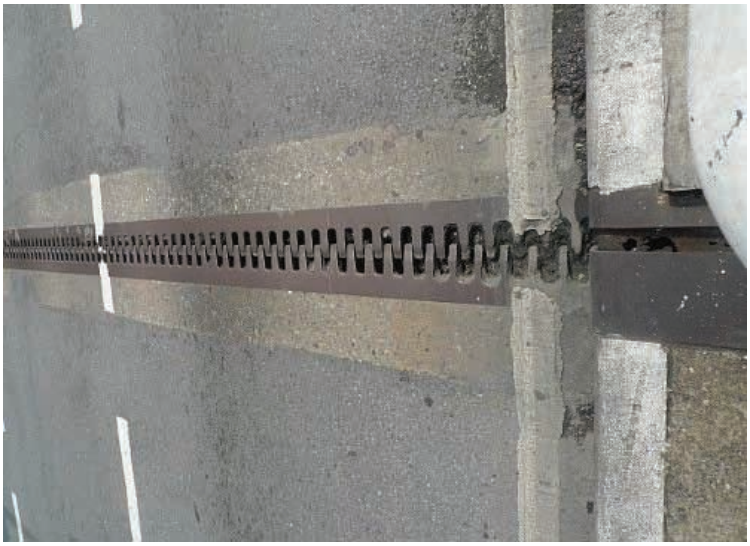
Picture No.	2
Span	1
Member	View on road

Picture No.	3
Span	1
Member	View under girder

Present state (2 / 7)

Authority	DRR	Address	Bangkok	Data	23-Oct-09
Bridge	Phra Pin Klao Bridge				

Picture No.	4
Span	1
Member	Hinge



Picture No.	5
Span	1
Member	Expansion joint

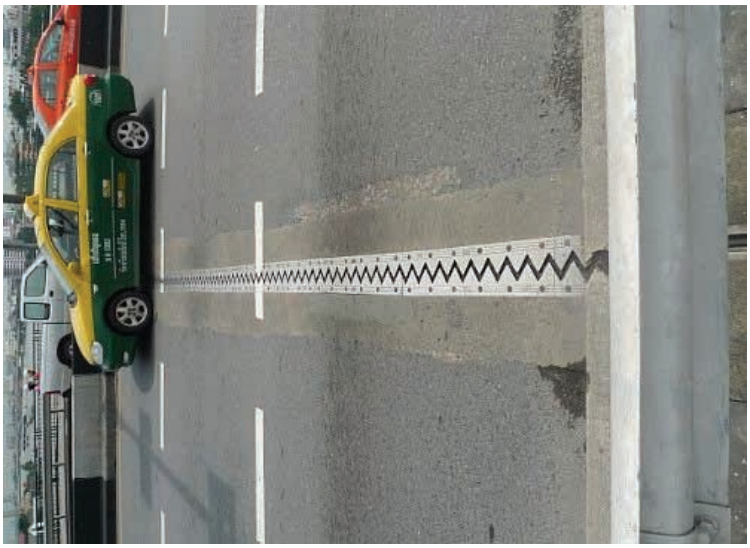
Corrosion at end

Picture No.	6
Span	1
Member	Expansion joint

Corrosion

Present state (3 / 7)

Authority	DRR	Address	Bangkok	Data	23-Oct-09
Bridge	Phra Pin Klao Bridge				



Picture No.	7
Span	1
Member	Expansion joint

Center hinge part

Picture No.	8
Span	1
Member	Expansion joint

Deterioration of drain function

Bangkok side

No door in manhole

Picture No.	9
Span	1
Member	bottom slab

Deterioration of drain function

Thon Buri side

Present state (4 / 7)

Authority	DRR	Address	Bangkok	Data	23-Oct-09
Bridge	Phra Pin Klao Bridge				

Picture No.	10
Span	1
Member	Approach bridge

Crack

Picture No.	11
Span	1
Member	Man hole

Leakage from manhole

Leakage from water supply?

Picture No.	12
Span	1
Member	Pylon

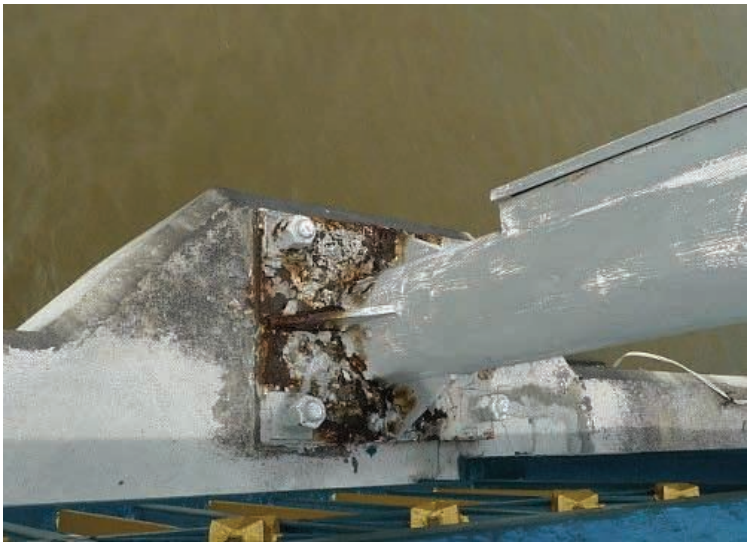
Mark of leakage from joint of barrier

Present state (5 / 7)

Authority	DRR	Address	Bangkok	Data	23-Oct-09
Bridge	Phra Pin Klao Bridge				

Picture No.	13
Span	1
Member	Drainage

Blocking



Picture No.	14
Span	1
Member	Lighting pole

Deterioration of corrosion proofi

Picture No.	15
Span	1
Member	Walkway

Graffiti

Fracture of decorative plate

Present state (6 / 7)

Authority	DRR	Address	Bangkok	Data	23-Oct-09
Bridge	Phra Pin Klao Bridge				

Picture No.	16
Span	1
Member	Slab

Free lime from construction joint

*Survey on board, 31-oct

Picture No.	17
Span	1
Member	Hinge

Leakage

*Survey on board, 31-oct

Picture No.	18
Span	1
Member	Slab

Nest harm

*Survey on board, 31-oct

Present state (7 / 7)

Authority	DRR	Address	Bangkok	Data	23-Oct-09
Bridge	Phra Pin Klao Bridge				

Picture No.	19
Span	1
Member	Substructure

Survey on board, 31-oct

Picture No.	20
Span	1
Member	

Picture No.	21
Span	1
Member	

Inspection sheet of visual survey

Bridge No. 13

Photo No. (~)

Bridge name	Memorial Bridge	Route name	-	Authority	DRR	Code of authority	-
						No.	-
Place from	Khat Thon Buri	Distance from	km+ 0			Survey date	2009/10/23
Place to	Khet Phra Nakhon	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 steel truss
Total length	234.00 (m)
Span	78 + 78 + 78 (m)
Nos. of span	3 span
Width	10.00 (m) ／ (m)
Completion	1932

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 • Mediun • Little
Commercial traffi	Much • Mediun • 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(Inspection vehicle)
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 for center 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 scou	yes • no

Inspection way

Walkway yes • no

Vehicle yes • no (center span)

Height of girde about 7.3m

Diagnosis

◆ Deterioration of bridge ◆

deficien • fair • good

◆ Noticeable point ◆

- Deformation by collision
- Corrosion of some member
- Crack under walkway

Outline of damage

Item	Type	State
Main girder	Truss	Corrosion, Deterioration of proofing, deformation by collis
Cross beam	I section steel	-
Stringer	I section steel	-
Cross frame	T section steel	Deformation by collision
Lateral brace	—	-
Slab		Crack (under and top of road, under walkway), free lime,
Abutment	-	-
Pier	Octagon	-
Bearing	Pin bearing	Deterioration of proofing of anchor bolt
Barrier	-	-
Railing	Steel	Generally healthy
Curb	-	-
Pavement	asphalt • concrete	Generally healthy
Joint	drained • undrained	Partly leakage
Drainage	yes • no	Blocked

Impressions

- Serious damage by ship collision and vehicle collision was seen.
- 1 cross frame of center span was dropped off
- Remaining water was found in chord member
- Longitudinal crack located between walkway and roadway might be caused by insufficie rigidity of support member of walkway. More detailed survey is recommended.
- Some rivet was lost

History of repair ; • Maintenance and repairing work was done by ODA at 1984

Repaint ; — yy — mm

Surveyor ; Mr,Chujo, Mr.Kudo

Present state (1 / 18)

Authority	DRR	Address	Bangkok	Data	23-Oct-09
Bridge	Memorial Bridge				

Picture No.	1
Span	1
Member	Side view

Picture No.	2
Span	1
Member	View on road

Picture No.	3
Span	1
Member	View under girder

Inspection vehicle of side span.

No inspection vehicle in center span

Present state (2 / 18)

Authority	DRR	Address	Bangkok	Data	23-Oct-09
Bridge	Memorial Bridge				

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

Picture No.	5
Span	2
Member	side view of center sp

Picture No.	6
Span	1
Member	View of walkway

Present state (3 / 18)

Authority	DRR	Address	Bangkok	Data	23-Oct-09
Bridge	Memorial Bridge				

Picture No.	7
Span	1
Member	material

The material made in England

It's seems that same fabricator provide material for repairing wo

Picture No.	8
Span	1
Member	Material

A325 (ASTM), NKYM

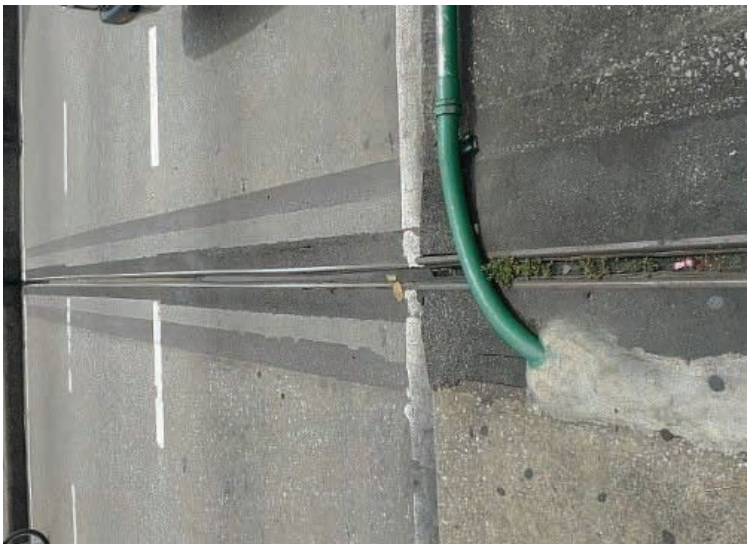
High tension bolt
produced MISUBOSHI

Picture No.	9
Span	1
Member	Inspection vehicle

Han powered inspection vehicle.

Present state (4 / 18)

Authority	DRR	Address	Bangkok	Data	23-Oct-09
Bridge	Memorial Bridge				



Picture No.	10
Span	1
Member	Expansion joint
Bangkok side	

Picture No.	11
Span	1
Member	Expansion joint
Bangkok side	
Deterioration of corrosion proofi	

Picture No.	12
Span	1
Member	Expansion joint
between side span and center span	
Peeling of surface layer	

Present state (5 / 18)

Authority	DRR	Address	Bangkok	Data	23-Oct-09
Bridge	Memorial Bridge				

Picture No.	7
Span	1
Member	Bearing

Deterioration of corrosion proofi

Picture No.	8
Span	1
Member	Bearing

Remaining water

Picture No.	9
Span	1
Member	Bearing

Mark of remarkable corrosion

There is no remaining water at survey. Improved?

Present state (6 / 18)

Authority	DRR	Address	Bangkok	Data	23-Oct-09
Bridge	Memorial Bridge				

Picture No.	10
Span	1
Member	Stay cable

Connection between steel and slab

It looks make gap around steel member from bottom side.

Picture No.	11
Span	1
Member	Inspection vehicle

Mounted up around steel member to prevent remaining water.

It looks no gap around steel memb from top side.

Picture No.	12
Span	1
Member	slab

It looks no gap around steel memb from top side.

Present state (7 / 18)

Authority	DRR	n	Bangkok	Data	23-Oct-09
Bridge	Memorial Bridge				

Picture No.	13
Span	1
Member	slab

Reinforcement by additional plate

Original structure is connected by rivet
Reinforcement structure is connected by high tension bolt.

Picture No.	14
Span	1
Member	slab

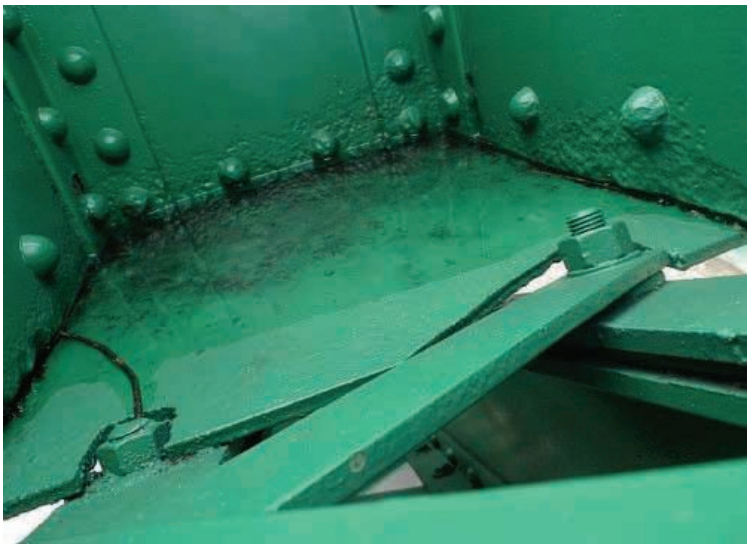
Reinforcement plate top and bottom of member

Picture No.	15
Span	1
Member	slab

Remaining water is seen inside of chord member

Present state (8 / 18)

Authority	DRR	Address	Bangkok	Data	23-Oct-09
Bridge	Memorial Bridge				



Picture No.	16
Span	1
Member	slab

Remaining water
It will make corrosion

Picture No.	17
Span	1
Member	slab

Remarkable reduced section

Picture No.	18
Span	1
Member	slab

Rivet is not changed to bolt.

Reinforcement plate was connected
only center by bolt.

Present state (9 / 18)

Authority	DRR	Address	Bangkok	Data	23-Oct-09
Bridge	Memorial Bridge				

Picture No.	13
Span	1
Member	slab

Deterioration of corrosion proofi

Picture No.	14
Span	1
Member	slab

Corrosion of diaphragm

Accumulation of soil

Picture No.	15
Span	1
Member	Lighting pole

Corrosion of diaphragm

Present state (10 / 18)

Authority	DRR	Address	Bangkok	Data	23-Oct-09
Bridge	Memorial Bridge				

Picture No.	16
Span	1
Member	Chord member

Repaired member

Picture No.	17
Span	1
Member	Bolt

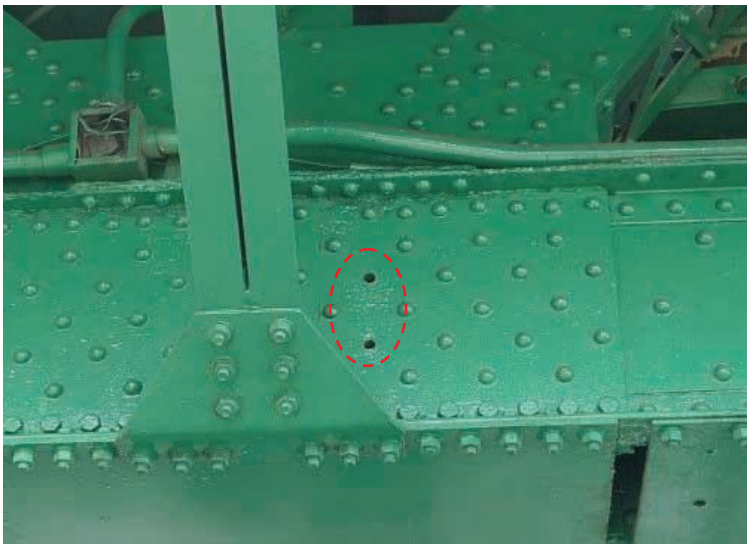
Rivet was replaced by bolt

Picture No.	18
Span	1
Member	Bolt

Looseness of bolt

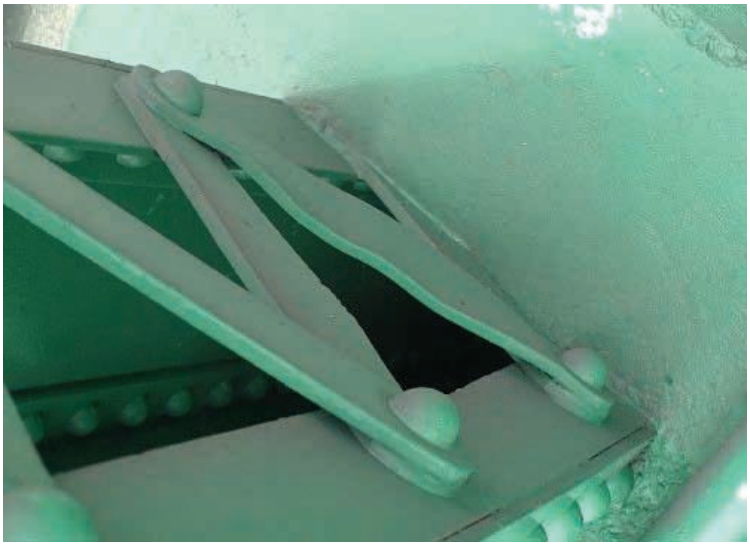
Present state (11 / 18)

Authority	DRR	Address	Bangkok	Data	23-Oct-09
Bridge	Memorial Bridge				



Picture No.	19
Span	1
Member	Bolt

Falling of rivet



Picture No.	20
Span	1
Member	Upper chord

Deformation

Picture No.	21
Span	1
Member	Lighting pole

Corrosion

Present state (12 / 18)

Authority	DRR	Address	Bangkok	Data	23-Oct-09
Bridge	Memorial Bridge				

Picture No.	22
Span	1
Member	Stringer

Stringer is connected by high tension bolt.

All stringer might be replaced at repairing work

Picture No.	23
Span	1
Member	Bottom chord

Deformation by vehicle collision

Limit of vehicle height is 3.5m

No warning frame is set before bridge at Thon Buri side

Picture No.	24
Span	1
Member	Bottom chord

Deformation by vehicle collision

Thon Buri side

Present state (13 / 18)

Authority	DRR	Address	Bangkok	Data	23-Oct-09
Bridge	Memorial Bridge				

Picture No.	25
Span	1
Member	Cross frame

Thon Buri side

Buckling by vehicle collision

Picture No.	26
Span	1
Member	End cross beam

Deformation

Picture No.	27
Span	1
Member	Bottom chord

Rupture of rivet by vehicle collision

Present state (14 / 18)

Authority	DRR	Address	Bangkok	Data	23-Oct-09
Bridge	Memorial Bridge				

Picture No.	28
Span	1
Member	Monitoring camera

Picture No.	29
Span	1
Member	Worning frame

There is warning frame at Bangkok side

Picture No.	30
Span	1
Member	slab

Crack on slab

Present state (15 / 18)

Authority	DRR	Address	Bangkok	Data	23-Oct-09
Bridge	Memorial Bridge				

Picture No.	31
Span	1
Member	slab

Replaced slab

Free lime is seen on slab of center span and walkway

Picture No.	32
Span	1
Member	slab

Crack and free lime

Picture No.	33
Span	1
Member	Drainage

Blocked

Present state (16 / 18)

Authority	DRR	Address	Bangkok	Data	23-Oct-09
Bridge	Memorial Bridge				

Picture No.	34
Span	1
Member	Slab

Longitudinal crack between road and walkway

Insufficiency of rigidity of bracket member of walkway?

Survey on board, 31-oct

Picture No.	35
Span	1
Member	Slab

Longitudinal crack between road and walkway

Survey on board, 31-oct

Picture No.	36
Span	1
Member	Slab

Longitudinal crack between road and walkway

Fracture of surface

Survey on board, 31-oct

Present state (17 / 18)

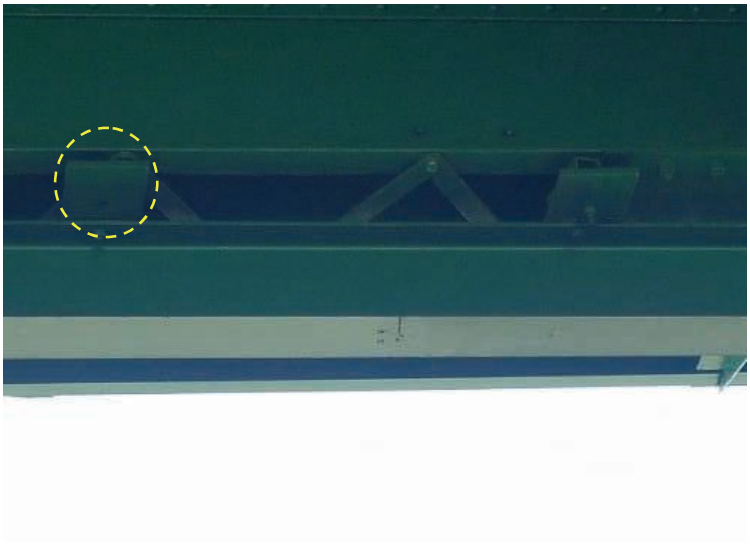
Authority	DRR	Address	Bangkok	Data	23-Oct-09
Bridge	Memorial Bridge				

Picture No.	37
Span	1
Member	slab

Crack and free lime on bottom surface of slab

Deformation of cross frame by ship collision

Survey on board, 31-oct



Picture No.	38
Span	1
Member	Inspection car rail

Lack of bolt

Survey on board, 31-oct

Picture No.	39
Span	1
Member	Cross frame

Drop off 1 member by ship collision

Survey on board, 31-oct

Present state (18 / 18)

Authority	DRR	Address	Bangkok	Data	23-Oct-09
Bridge	Memorial Bridge				

Picture No.	40
Span	1
Member	Gusset plate

Damage by ship collision

Survey on board, 31-oct

Picture No.	41
Span	1
Member	

Picture No.	42
Span	1
Member	

Inspection sheet of visual survey

Bridge No. 14

Photo No. (~)

Bridge name	Phra Pokklao Bridge	Route name	-	Authority	DRR	Code of authority	-
						No.	-
Place from	Khat Bangkok Noi	Distance from	km+ 0			Survey date	2009/10/23
Place to	Khet Phra Nakhon	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	212.00 (m)
Span	56 + 100 + 56 (m)
Nos. of span	3 span
Width	13.2 X 2 (m) ／ (m)
Completion	1984

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
	difference grade	yes • no
	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 scou		yes • no

Inspection way

Walkway yes • no

Vehicle yes • no

Height of girde about 8.9m

Diagnosis

◆ Deterioration of bridge ◆

deficien • fair • good

◆ Noticeable point ◆

Outline of damage

Item	Type	State
Main girder	PC-Box	free lime
Cross beam	-	-
Stringer	-	-
Cross frame	-	-
Lateral brace	-	-
Slab		free lime
Abutment	-	-
Pier	Rectangular	-
Bearing	Slide bearing	-
Barrier	Trapezoidal	Exfoliation
Railing	Steel	Generally healthy
Curb	-	-
Pavement	asphalt • concrete	Generally healthy
Joint	drained • undrained	leakage at end
Drainage	yes • no	Generally healthy

Impressions

History of repair ; Repaint ; — yy — mm

Surveyor ; Mr,Chujo, Mr.Kudo

Present state (1 / 4)

Authority	DRR	Address	Bangkok	Data	23-Oct-09
Bridge	Phra Pokklao Bridge				

Picture No.	1
Span	1
Member	Side view

Picture No.	2
Span	1
Member	View on road

Picture No.	3
Span	1
Member	View under girder

Present state (2 / 4)

Authority	DRR	Address	Bangkok	Data	23-Oct-09
Bridge	Phra Pokklao Bridge				

Picture No.	4
Span	1
Member	Approach bridge

Settlement around pier

Picture No.	5
Span	1
Member	Catch basin

Picture No.	6
Span	1
Member	Catch basin

Cross fall is parabola?

Catch basin is installed at both side

Present state (3 / 4)

Authority	DRR	Address	Bangkok	Data	23-Oct-09
Bridge	Phra Pokklao Bridge				

Picture No.	7
Span	1
Member	Side barrier

Exfoliation of concrete

Picture No.	8
Span	1
Member	Center barrier

Fracture of concrete surface

Picture No.	9
Span	1
Member	

Free lime

Deterioration of drain function

Survey on board, 31-oct

Present state (4 / 4)

Authority	DRR	Address	Bangkok	Data	23-Oct-09
Bridge	Phra Pokklao Bridge				

Picture No.	10
Span	1
Member	Drainage

Scratch by ship collision

Picture No.	11
Span	1
Member	Substructure

Picture No.	12
Span	1
Member	Pylon

Inspection sheet of visual survey

Bridge No. 15

Photo No. (~)

Bridge name	Taksin Bridge	Route name	-	Authority	DRR	Code of authority	-
						No.	-
Place from	Khet Khlong San	Distance from	km+ 0			Survey date	2009/10/27
Place to	Khet Sathoo	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	224.00 (m)
Span	66 + 92 + 66 (m)
Nos. of span	3 span
Width	12.85 x 2 (m) ／ (m)
Completion	1982

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 scou	yes • no

Inspection way

Walkway yes • no

Vehicle yes • no

Height of girde about 12m

Diagnosis

◆ Deterioration of bridge ◆

deficien • fair • good

◆ Noticeable point ◆

• Crack or cold joint on web

• Longitudinal move of girder

Outline of damage

Item	Type	State
Main girder	PC-Box	free lime, Suspicious of crack
Cross beam	-	-
Stringer	-	-
Cross frame	-	-
Lateral brace	-	-
Slab		free lime, leakage
Abutment	-	-
Pier	V shape	-
Bearing	Slide bearing	Deterioration of proofing
Barrier	Trapezoidal	Lack of cover at expansion joint, Exfoliation
Railing	Steel	Generally healthy
Curb	-	-
Pavement	asphalt • concrete	Unevenness
Joint	drained • undrained	leakage at end
Drainage	yes • no	Blocked

Impressions

• Suspicious of shear crack is found in Thonburi side span. It is recommended watching continuously

• Movement to center span was seen at Bangkok side bearing. It is recommended watching continuously.

• Cover of barrier and railing was disappear on expansion joint.

History of repair ; Repaint ; — yy — mm

Surveyor ; Mr,Chujo, Mr.Kudo

Present state (1 / 8)

Authority	DRR	Address	Bangkok	Data	27-Oct-09
Bridge	Taksin bridge				

Picture No.	1
Span	1
Member	Side view

Picture No.	2
Span	1
Member	View on road

Picture No.	3
Span	1
Member	View under girder

Present state (2 / 8)

Authority	DRR	Address	Bangkok	Data	27-Oct-09
Bridge	Taksin bridge				

Picture No.	4
Span	1
Member	Expansion Joint

Replaced expansion joint

Picture No.	5
Span	1
Member	Expansion joint

Spacing is wider than 3cm than other joint

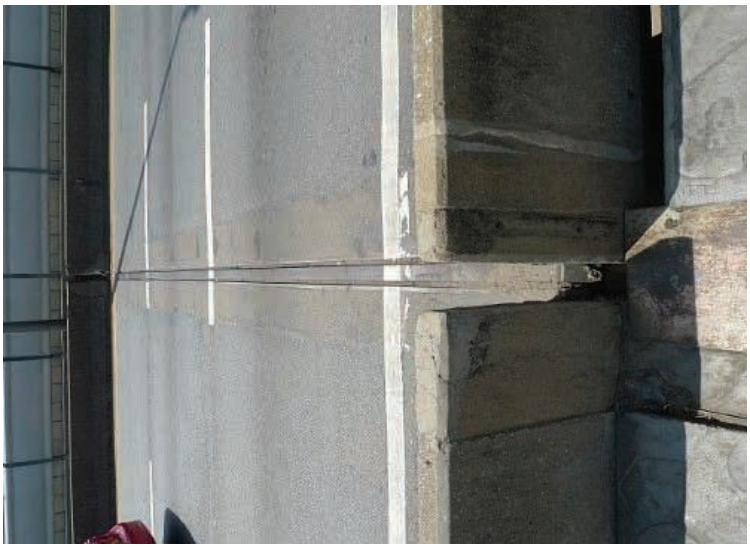
Bangkok side, down stream

Picture No.	6
Span	1
Member	Expansion joint

Lack of cover of barrier and curv

Present state (3 / 8)

Authority	DRR	Address	Bangkok	Data	27-Oct-09
Bridge	Taksin bridge				



Picture No.	7
Span	1
Member	Water supply

modular type is applied for the bridge of upstream

Lack of cover of barrier

Picture No.	8
Span	1
Member	Bearing

Movement of bearing.
Bangkok side

Already reach to end of sliding plate

Picture No.	9
Span	1
Member	Bearing

Movement of Thon Buri side is sma

Present state (4 / 8)

Authority	DRR	Address	Bangkok	Data	27-Oct-09
Bridge	Taksin bridge				

Picture No.	10
Span	1
Member	Expansion joint

Deterioration of drain fanction

Mark of leakage

Picture No.	11
Span	1
Member	Vertical alignment

Bent angle between main bridge and approach bridge

Picture No.	12
Span	1
Member	Slab

Free lime

Present state (5 / 8)

Authority	DRR	Address	Bangkok	Data	27-Oct-09
Bridge	Taksin bridge				

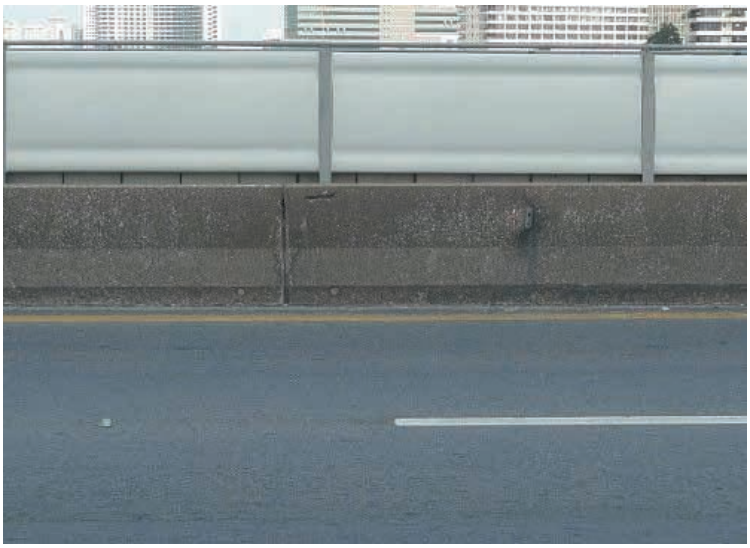
Picture No.	7
Span	1
Member	Box girder

Shear crack or severe cold joint
Detailed study is recommended

Free lime from filled hole
Without waterproofing?

Picture No.	8
Span	1
Member	Catch basin

Free lime from filled hole
Without waterproofing?



Picture No.	9
Span	1
Member	Barrior

Exposure of rebar

Present state (6 / 8)

Authority	DRR	Address	Bangkok	Data	27-Oct-09
Bridge	Taksin bridge				

Picture No.	10
Span	1
Member	Slab

Mark of repair

Picture No.	11
Span	1
Member	Bearing

Leakage from joint

Upstream, Thon Buri side

Picture No.	12
Span	1
Member	Lighting pole

Free lime (lower)
Crack (upper)

Upstream, Bangkok side

Present state (7 / 8)

Authority	DRR	Address	Bangkok	Data	27-Oct-09
Bridge	Taksin bridge				

Picture No.	7
Span	1
Member	Catch basin

Blocking

Picture No.	8
Span	1
Member	Pavement

Uneavenness of pavement

Upstream, Bangkok side

Picture No.	9
Span	1
Member	Walkway

Feeling uneasy due to wide gap

Present state (8 / 8)

Authority	DRR	Address	Bangkok	Data	27-Oct-09
Bridge	Taksin bridge				

Picture No.	10
Span	1
Member	Girder

Free lime from construction joint

Picture No.	11
Span	1
Member	Girder

Acumuration of soil

Picture No.	12
Span	1
Member	Pier

Test of carbonation is recommende

Inspection sheet of visual survey

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 scou	yes • no

Inspection way

Walkway yes • no

Vehicle yes • no

Height of girde about 34m

Diagnosis

◆ Deterioration of bridge ◆

deficien • 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

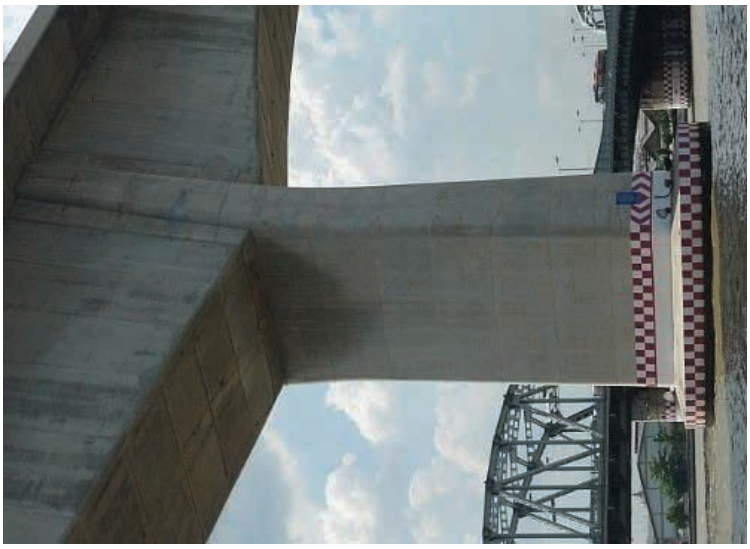
Surveyor ; Mr,Chujo, Mr.Kudo

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

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				

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 (↗ • ↘) parabo (凸 • 3.45%)
Nearby tunnel	yes • no (m)
Nearby crossing	yes • no (m)
Traffic	Much • Mediun • Little
Commercial traffi	Much • Mediun • 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
	difference grade	yes • no
	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 scou		yes • no

Inspection way

Walkway yes • no

Vehicle yes • no

Height of girde about 7.5m

Diagnosis

◆ Deterioration of bridge ◆

deficien • 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				

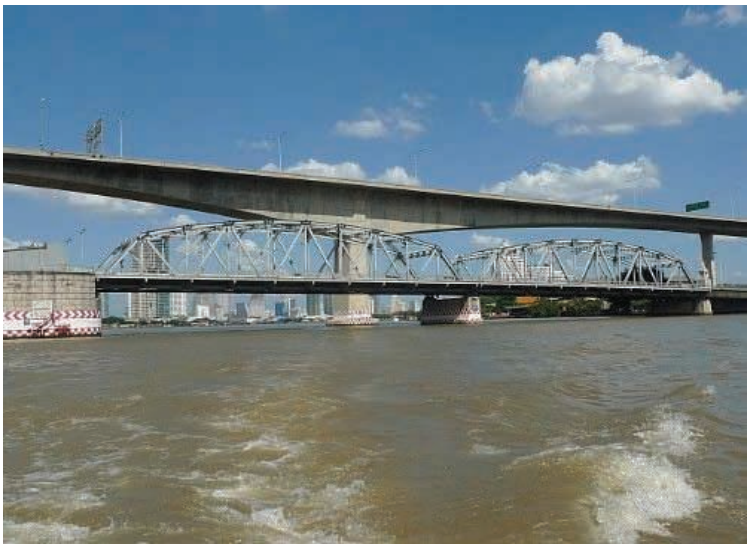
Picture No.	1
Span	1
Member	Side view

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 functic

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

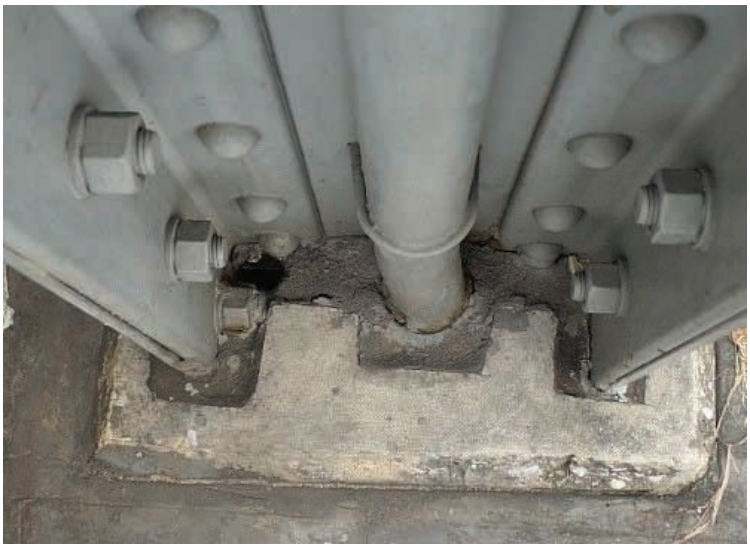
Deflection between vertical member?

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)

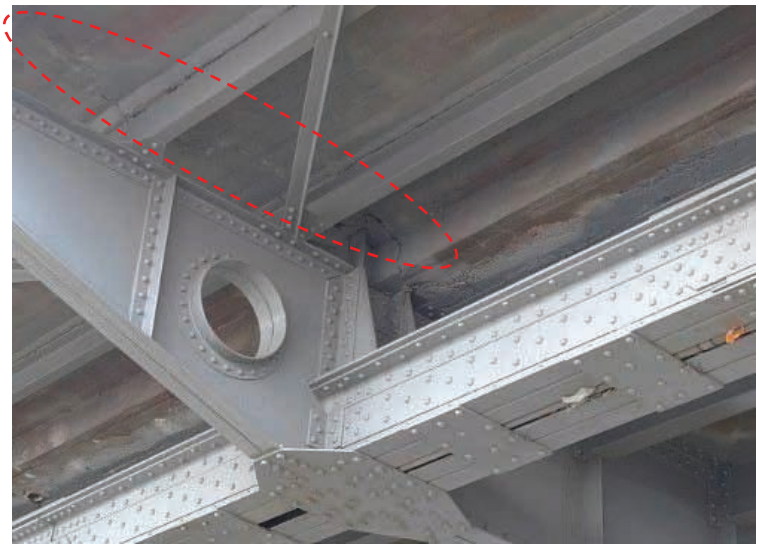
Authority	DRR	Address	Bangkok	Data	23-Oct-09
Bridge	Krung Thep Bridge				

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. (~)

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
	difference grade	yes • no
	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 scou		yes • no

Inspection way

Walkway yes • no

Vehicle yes • no

Height of girde about 45m

Diagnosis

◆ Deterioration of bridge ◆

deficien • 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

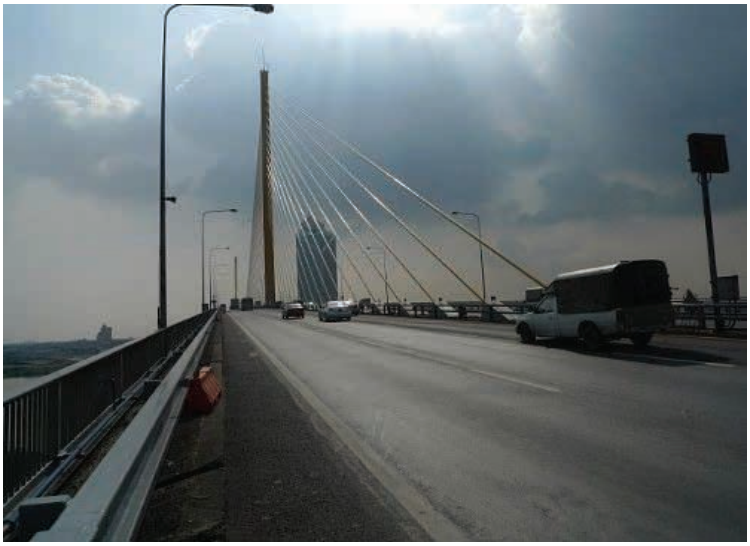
Surveyor ; Mr,Chujo, Mr.Kudo

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				

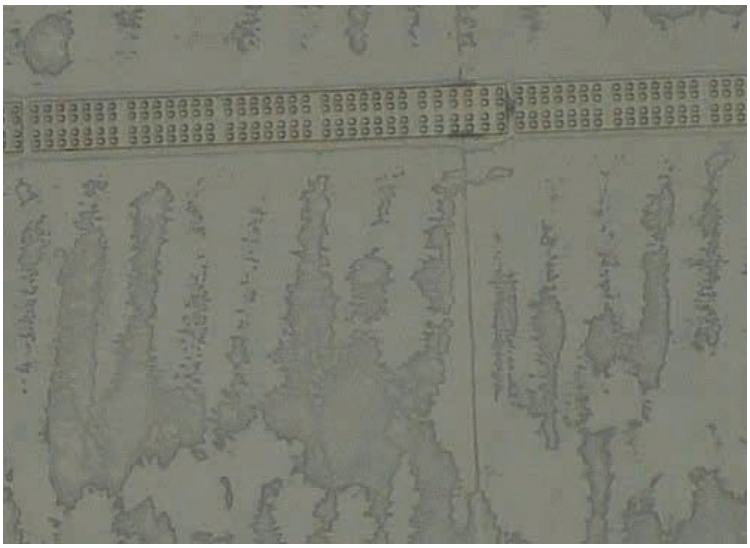
Picture No.	7
Span	1
Member	Inspection vehicle

Preparing work for painting?

Picture No.	8
Span	1
Member	Pylon

Bottom flange is repainted.

Shirinkage crack is seen in pier.

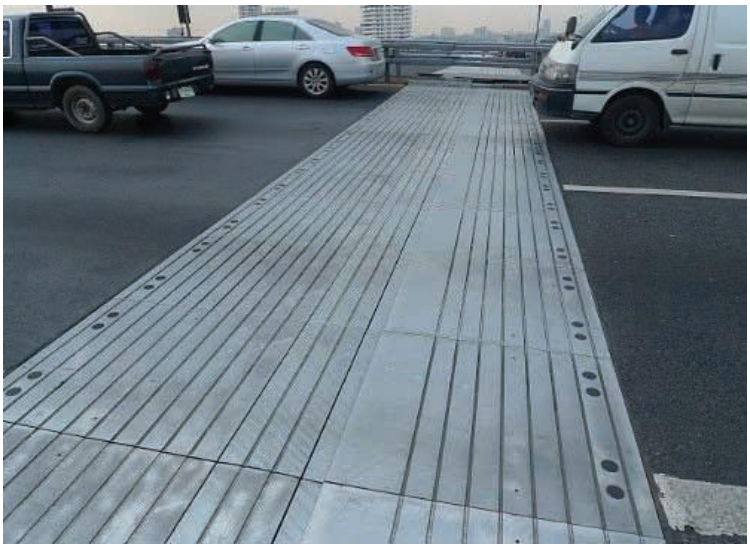


Picture No.	9
Span	1
Member	Bottom flange

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

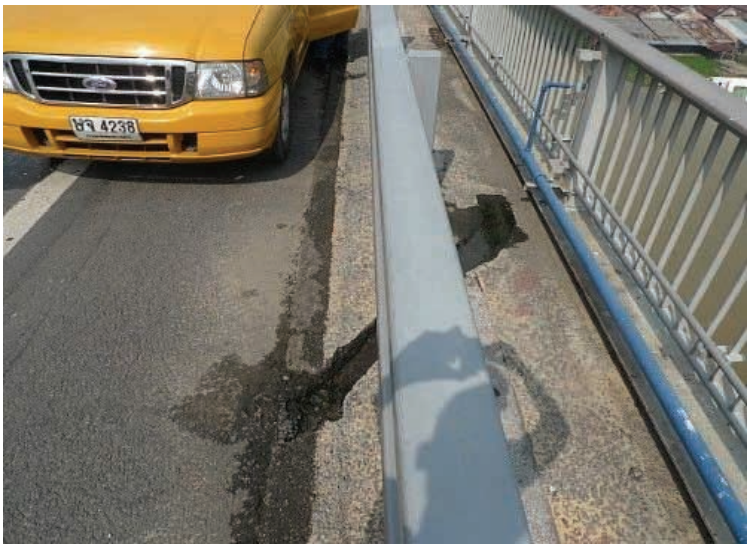
Rocked coil cable.

Outside was repainted.

Picture No.	12
Span	1
Member	Cable damper

Present state (5 / 9)

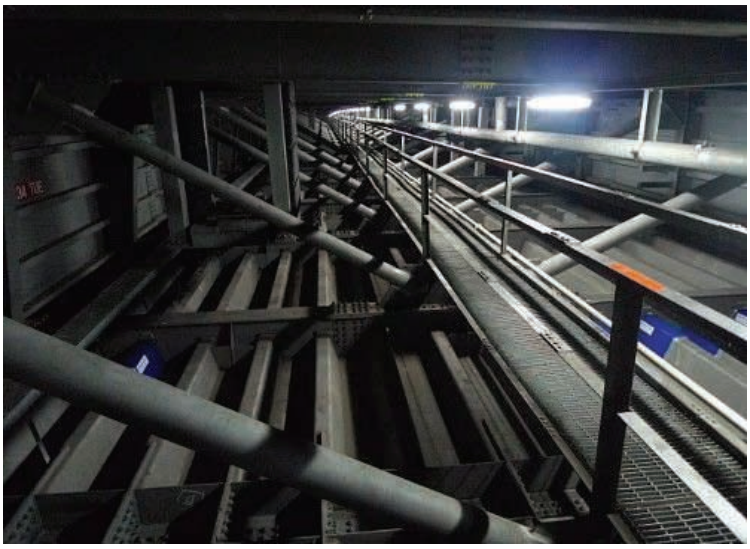
Authority	EXAT	Address	Bangkok	Data	26-Oct-09
Bridge	RAMA IX Bridge				



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

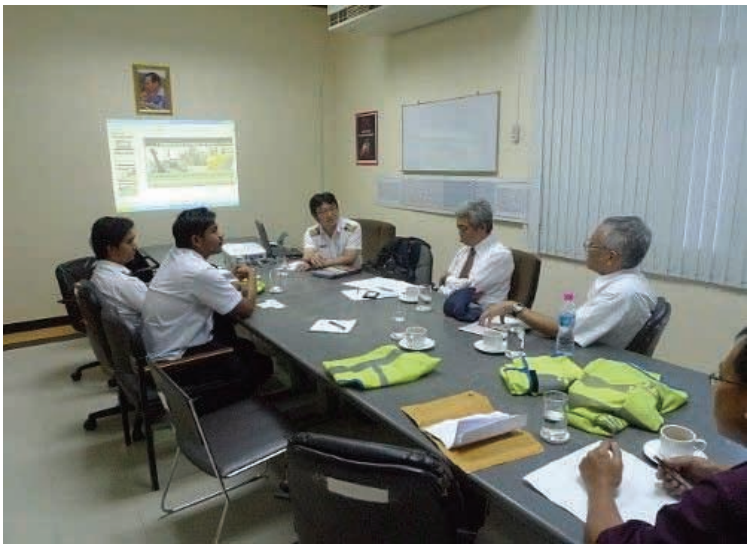
Picture No.	17
Span	1
Member	Pavement

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. (~)

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 • Mediun • Little
Commercial traffi	Much • Mediun • 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 ◆

deficien • 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

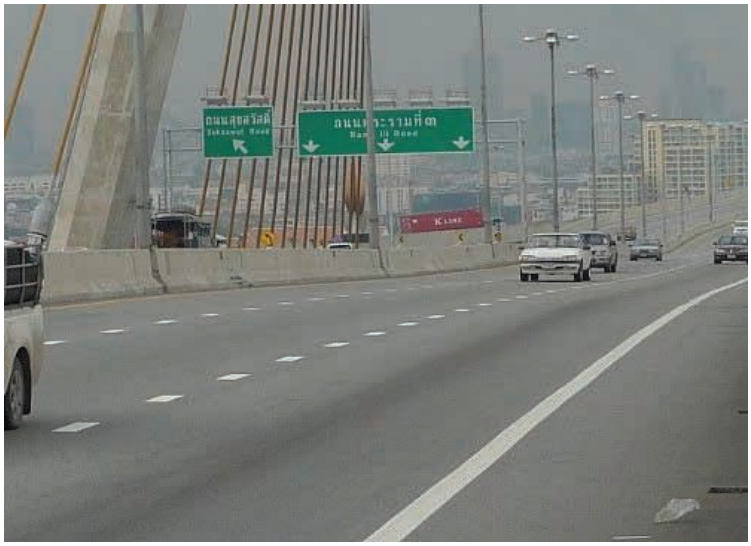
Surveyor ; Mr,Chujo, Mr.Kudo

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

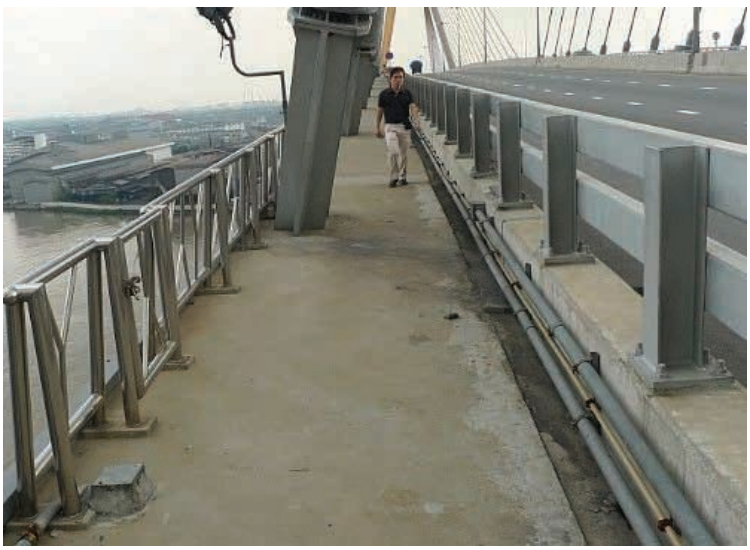
Present state (2 / 14)

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

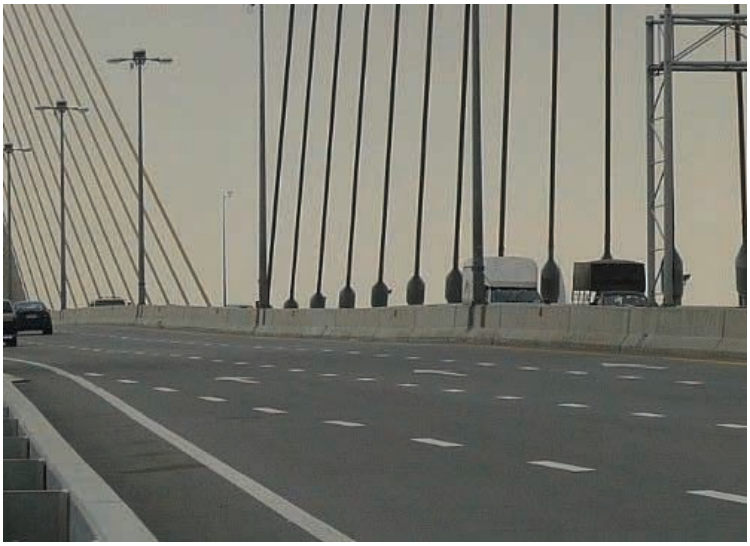


Picture No.	6
Span	1
Member	Inspection way

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

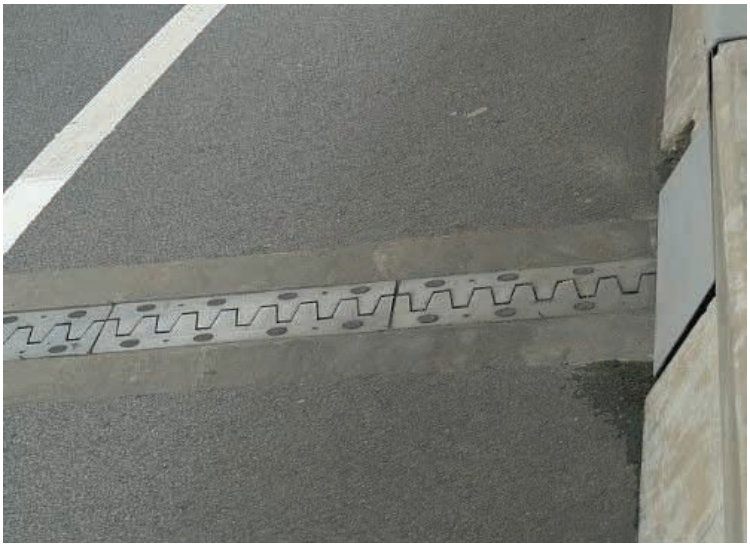
Jumping by heavy vehicle

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

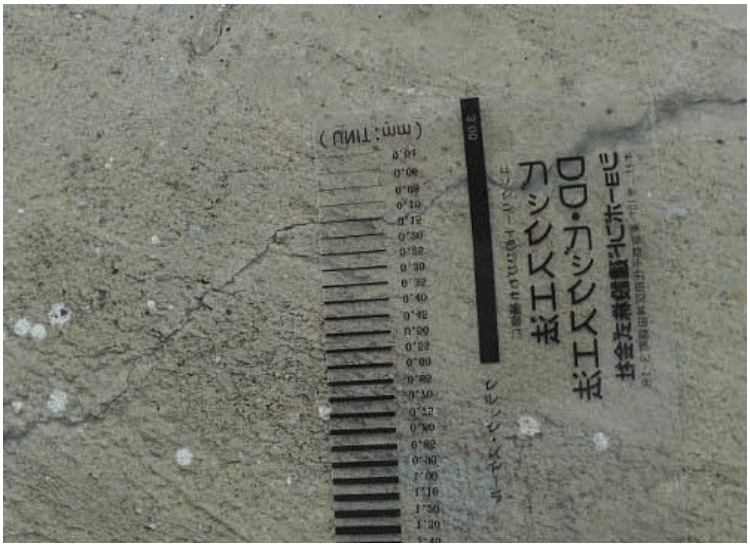
Picture No.	12
Span	1
Member	slab

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

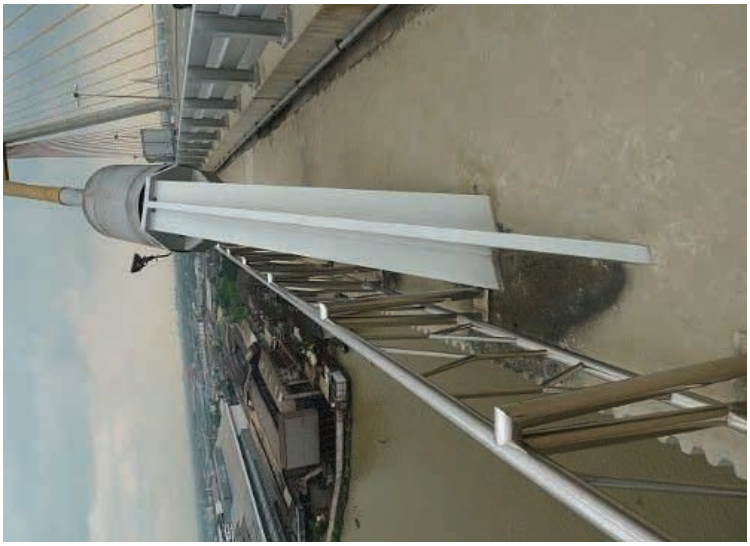
Remaining water

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)

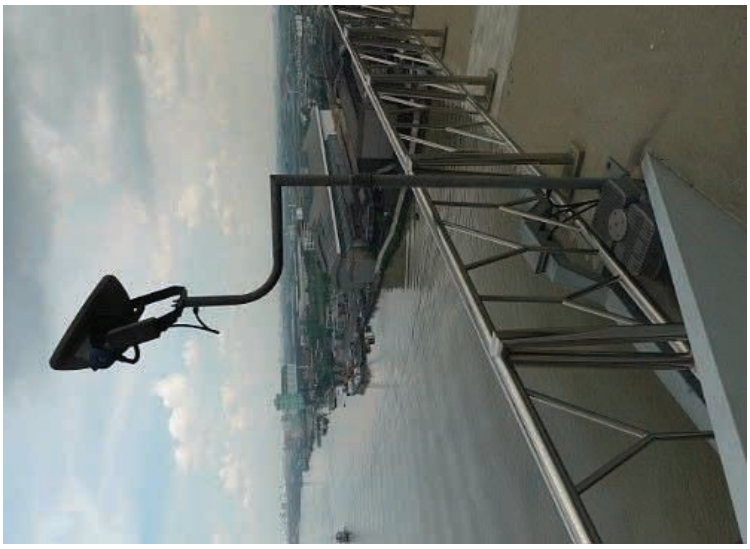
Authority	DRR	Address	Bangkok	Data	22-Oct-09
Bridge	Industrial Ring Road Bridge (North)				

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

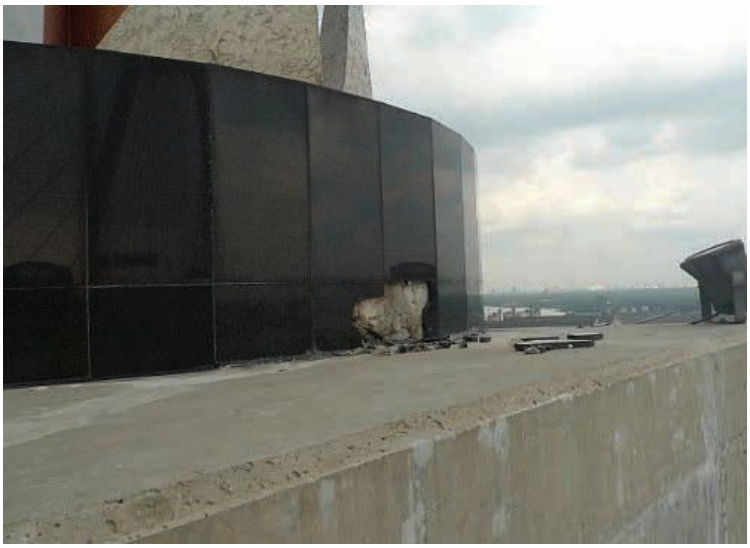
Gap between base plate and founda

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

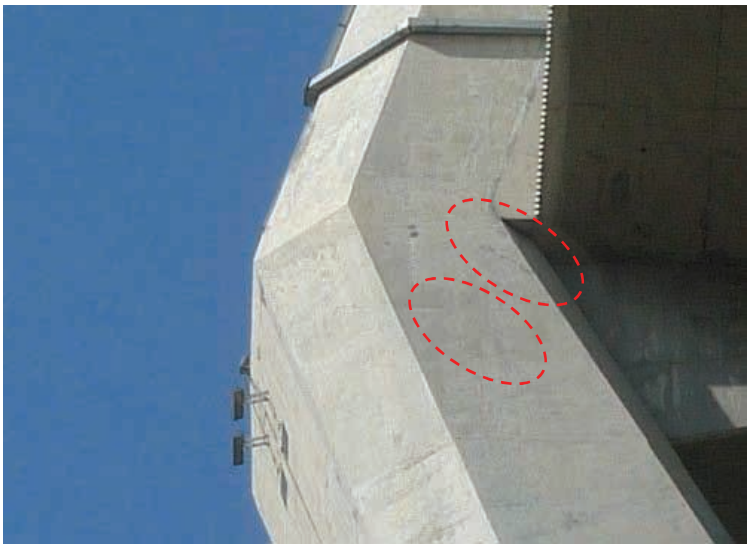
Survey on board, 31-oct

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

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
Place to		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	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 • Mediun • Little
Commercial traffi	Much • Mediun • Little

Environ

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 ◆

deficien • 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

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

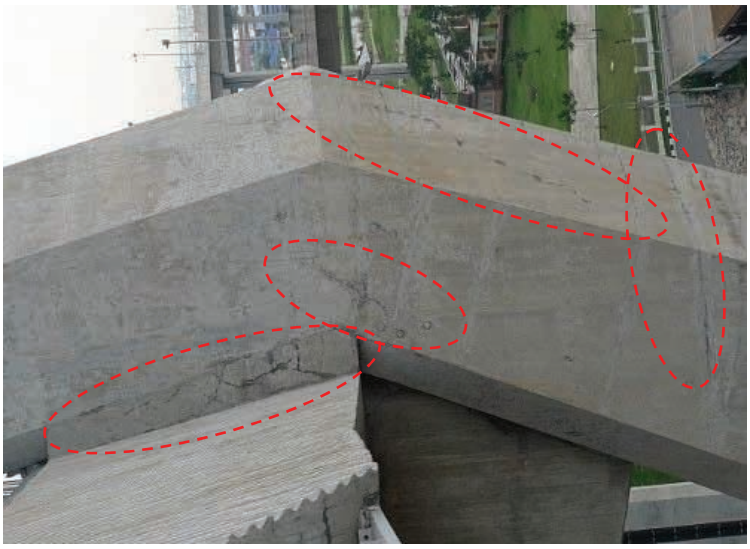
Back surface of crack around fixi

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

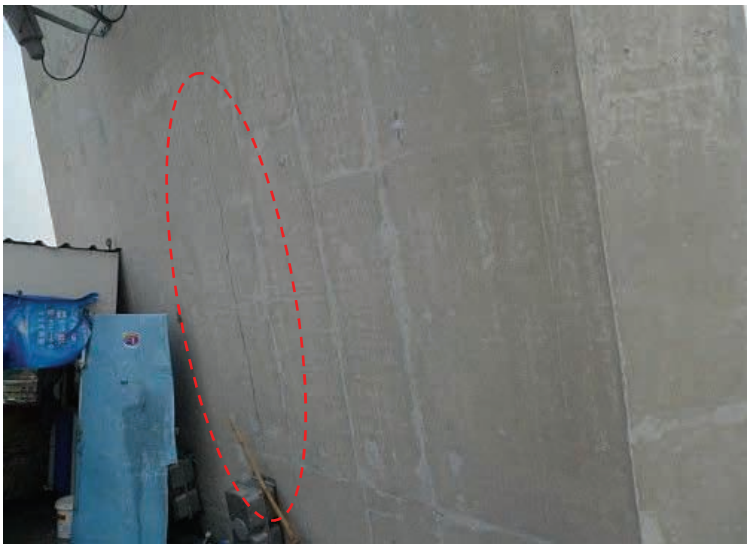
Verfical crack at cross beam end

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