

APPENDIX 6

Damaged Bridge Survey Record Managed by Western Railway

Bridge Survey Record (1/6)

Date & Time: 07 Jun,2016 12:30

Bridge No.	Ser.No.1	Division	Mumbai
Bridge Name	Ferere ROB	Year of Construction	1921
GPS Data	N 18 ° 57 ' 43"	Station	Grant Road Station
	E 72 ° 48 ' 55 "		-

Bridge Length	25.36m	Span Arrangement	Number 1
Bridge Width	19.50m	Type of Substructure	Stone Masonry Abutment
Type of Superstructure	2 Main Steel I-Girder with cross girders		

Overview of the Bridge

Side View



Up View



Bridge Survey Record (2/6) Right Side

Date & Time: 07 Jun,2016 12:30

Bridge No.	Ser.No.1	Station	Grant Road Station
Bridge Name	Ferere ROB		-
Photoes			
Photo R1	Photo R2		
Photo R5	Photo R8		
Photo R10	Photo R		

Bridge Survey Record (3/6) Left Side

Date & Time: 07 Jun,2016 12:30

Bridge No.	Ser.No.1	Station	Mumbai
Bridge Name	Ferere ROB		1921
Photoes			



Bridge Survey Record (4/6)

Date & Time: 07 Jun,2016 12:30

Bridge No.	Ser.No.1	Division	Mumbai
Bridge Name	Ferere ROB	Year of Construction	1921
GPS Data	N 18 °57 ' 43"	Station	Grant Road Station
	E 72°48 ' 55 "		-

General Description of Damages

Member	Kind of the Damage
	Ex. Concrete : Cracking, Spalling, etc. Steel : Cracking, Rusting, Fracture, etc.
1. Superstructure	
(1) Concrete Member	N/A
- Girder	
- Cross Beam	
- Slab	
(2) Steel Member	
- Girder	Rusting (slightly)
- Vertical Girder (stringer)	N/A
- Cross Beam	Rusting (slightly)
- Sway Bracing	N/A
(3) Bearing Shoe	No Check
(4) Drainage Pipe	N/A
(5) Others	-
2. Substructure	
- Pier	N/A
- Abutment	Good
- Wing Wall	N/A
- Approach Road Condition	Good
- Obstruction	-
- Scouring	N/A
4.Evaluation	

Bridge Survey Record (5/6)

Date & Time: 07 Jun,2016 12:30

Bridge No.	Ser.No.1	Division	Mumbai
Bridge Name	Ferere ROB	Year of Construction	1921
GPS Data	N 18 °57 ' 43"	Station	Grant Road Station
	E 72°48 ' 55 "		-

Detailed Description of Damages

Object Member	
Kind of Damage	Good Condition
Sketch or Photo	



Bridge Survey Record (6/6)

Date & Time: 07 Jun,2016 12:30

Bridge No.	Ser.No.1	Location (State)	Mumbai
Bridge Name	Ferere ROB	Year of Construction	1921
GPS Data	N 18 °57 ' 43"	Station	Grant Road Station
	E 72°48 ' 55 "		-

Evaluation index

1	Cosistency with the upper plan, verification og Indian Railway priority bridges	Yes No
2	Application of Japanese advanced technology	See below
3	Confirmation of other projects by Japanese ODA	Yes No
4	Confirmation of other donor's projects and local project	Yes No
5	Impact on the surrounding society and economy	Much Less
6	Access to the bridge sites	Good Not Good
7	Collecting information from japanese companies, and estimation of project effects	See below

2 Application of Japanese advanced technology



7 Collecting information from japanese companies, and estimation of project effects

Bridge Survey Record (1/6)

Date & Time: 07 Jun,2016 12:00

Bridge No.	Ser.No.2	Division	Mumbai
Bridge Name	Belasis ROB	Year of Construction	1893
GPS Data	N 18 ° 58 ' 08"	Station	Mumbai central
	E 72° 49 ' 06 "		-

Bridge Length	31.50m	Span Arrangement	Number 5
Bridge Width	19.50m	Type of Substructure	Stone Masonry Abutment and Steel Pier Column
Type of Superstructure	Steel I-Girder (15 girders)		

Overview of the Bridge	Side View
	
Up View	
	

Bridge Survey Record (2/6) Right Side

Date & Time: 07 Jun,2016 12:00

Bridge No.	Ser.No.2	Station	Mumbai central
Bridge Name	Belasis ROB		-
Photoes			

Photo R1



Photo R2



Photo R4



Photo R5



Photo R8



Photo R9



Bridge Survey Record (3/6) Left Side

Date & Time: 07 Jun,2016 12:00

Bridge No.	Ser.No.2	Station	Mumbai
Bridge Name	Belasis ROB		1893
Photoes			

Photo L2



Photo L5



Photo L6



Photo L8



Photo L



Photo L



Bridge Survey Record (4/6)

Date & Time: 07 Jun,2016 12:00

Bridge No.	Ser.No.2	Division	Mumbai
Bridge Name	Belasis ROB	Year of Construction	1893
GPS Data	N 18 °58 ' 08"	Station	Mumbai central
	E 72°49 ' 06 "		-

General Description of Damages

Member	Kind of the Damage
	Ex. Concrete : Cracking, Spalling, etc. Steel : Cracking, Rusting, Fracture, etc.
1. Superstructure	
(1) Concrete Member	N/A
- Girder	
- Cross Beam	
- Slab	
(2) Steel Member	
- Girder	Rusting (slightly)
- Vertical Girder (stringer)	N/A
- Cross Beam	Rusting (slightly)
- Sway Bracing	N/A
(3) Bearing Shoe	No Check
(4) Drainage Pipe	N/A
(5) Others	-
2. Substructure	
- Pier	Good
- Abutment	Good
- Wing Wall	N/A
3. Miscellaneous	
- Approach Road Condition	Good
- Obstruction	-
- Scouring	N/A
4. Evaluation	

Bridge Survey Record (5/6)

Date & Time: 07 Jun,2016 12:00

Bridge No.	Ser.No.2	Division	Mumbai
Bridge Name	Belasis ROB	Year of Construction	1893
GPS Data	N 18 °58 ' 08"	Station	Mumbai central
	E 72°49 ' 06 "		-

Detailed Description of Damages

Object Member	Steel I-Girder
Kind of Damage	Rusting
Sketch or Photo	



Bridge Survey Record (6/6)

Date & Time: 07 Jun,2016 12:00

Bridge No.	Ser.No.2	Location (State)	Mumbai
Bridge Name	Belasis ROB	Year of Construction	1893
GPS Data	N 18 °58 ' 08"	Station	Mumbai central
	E 72°49 ' 06 "		-

Evaluation index

1	Cosistency with the upper plan, verification og Indian Railway priority bridges	Yes	No
2	Application of Japanese advanced technology	See below	
3	Confirmation of other projects by Japanese ODA	Yes	No
4	Confirmation of other donor's projects and local project	Yes	No
5	Impact on the surrounding society and economy	Much	Less
6	Access to the bridge sites	Good	Not Good
7	Collecting information from japanese companies, and estimation of project effects	See below	

2 Application of Japanese advanced technology


7 Collecting information from japanese companies, and estimation of project effects

Bridge Survey Record (1/6)

Date & Time: 07 Jun,2016 12:00

Bridge No.	Ser.No.3	Division	Mumbai
Bridge Name	Mahalaxmi ROB	Year of Construction	1920
GPS Data	N 18 ° 58 ' 56"	Station	Mahalaxmi
	E 72 ° 49 ' 27 "		-

Bridge Length	77.00m	Span Arrangement	Number 5
Bridge Width	25.00m	Type of Substructure	Stone Masonry Abutment and Steel Pier Column
Type of Superstructu	Steel I-Girder (15 girders)		

Overview of the Bridge	Side View
	
Up View	
	

Bridge Survey Record (2/6) Right Side

Date & Time: 07 Jun,2016 12:00

Bridge No.	Ser.No.3	Station	Mahalaxmi
Bridge Name	Mahalaxmi ROB		-
Photoes			

Photo R2



Photo R3



Photo R5



Photo R6



Photo R7



Photo R10



Bridge Survey Record (3/6) Left Side

Date & Time: 07 Jun,2016 12:00

Bridge No.	Ser.No.3	Station	Mumbai
Bridge Name	Mahalaxmi ROB		1920
Photos			
Photo L5			
Photo L6			
Photo L			
Photo L			

Bridge Survey Record (4/6)

Date & Time: 07 Jun,2016 12:00

Bridge No.	Ser.No.3	Division	Mumbai
Bridge Name	Mahalaxmi ROB	Year of Construction	1920
GPS Data	N 18 °58 ' 56"	Station	Mahalaxmi
	E 72°49 ' 27 "		-

General Description of Damages

Member	Kind of the Damage
	Ex. Concrete : Cracking, Spalling, etc. Steel : Cracking, Rusting, Fracture, etc.
1. Superstructure	
(1) Concrete Member	N/A
- Girder	
- Cross Beam	
- Slab	
(2) Steel Member	
- Girder	Rusting
- Vertical Girder (stringer)	N/A
- Cross Beam	Rusting
- Sway Bracing	N/A
(3) Bearing Shoe	No Check
(4) Drainage Pipe	N/A
(5) Others	-
2. Substructure	
- Pier	Good
- Abutment	Good
- Wing Wall	N/A
3. Miscellaneous	
- Approach Road Condition	Good
- Obstruction	-
- Scouring	N/A
4. Evaluation	

Bridge Survey Record (5/6)

Date & Time: 07 Jun,2016 12:00

Bridge No.	Ser.No.3	Division	Mumbai
Bridge Name	Mahalaxmi ROB	Year of Construction	1920
GPS Data	N 18 °58 ' 56"	Station	Mahalaxmi
	E 72°49 ' 27 "		-

Detailed Description of Damages

Object Member	
Kind of Damage	Good Condition
Sketch or Photo	



Bridge Survey Record (6/6)

Date & Time: 07 Jun,2016 12:00

Bridge No.	Ser.No.3	Location (State)	Mumbai
Bridge Name	Mahalaxmi ROB	Year of Construction	1920
GPS Data	N 18 °58 ' 56"	Station	Mahalaxmi
	E 72°49 ' 27 "		-

Evaluation index

1	Cosistency with the upper plan, verification og Indian Railway priority bridges	Yes No
2	Application of Japanese advanced technology	See below
3	Confirmation of other projects by Japanese ODA	Yes No
4	Confirmation of other donor's projects and local project	Yes No
5	Impact on the surrounding society and economy	Much Less
6	Access to the bridge sites	Good Not Good
7	Collecting information from japanese companies, and estimation of project effects	See below

2 Application of Japanese advanced technology

7 Collecting information from japanese companies, and estimation of project effects

Bridge Survey Record (1/6)

Date & Time: 07 Jun,2016 11:00

Bridge No.	Ser.No.4	Division	Mumbai
Bridge Name	Delise ROB	Year of Construction	1921
GPS Data	N 18 ° 59 ' 51"	Station	Lower Parel
	E 72 ° 49 ' 53 "		-

Bridge Length	63.20m	Span Arrangement	Number 3
Bridge Width	24.80m	Type of Substructure	Stone Masonry Abutment and Steel Pier Column
Type of Superstructure	2 Main Steel I-Girder with cross girders		

Overview of the Bridge

Side View



Up View



Bridge Survey Record (2/6) Right Side

Date & Time: 07 Jun,2016 11:00

Bridge No.	Ser.No.4	Station	Lower Parel
Bridge Name	Delise ROB		-
Photoes	<p>The diagram shows a bridge structure with two main spans. On the left span, points R1 through R10 are marked with blue arrows indicating the direction of the survey. On the right span, points L1 through L10 are marked with blue arrows. Dashed lines connect R1-R2, R2-R3, R3-R4, R4-R5, R5-R6, R6-R7, R7-R8, R8-R9, and R9-R10. Similarly, dashed lines connect L1-L2, L2-L3, L3-L4, L4-L5, L5-L6, L6-L7, L7-L8, L8-L9, and L9-L10. The bridge is supported by several piers, and the tracks are visible below.</p>		
Photo R5	<p>Photo R5 shows a close-up view of the bridge's concrete structure, including the deck and the supporting pier. The tracks are visible in the foreground.</p>		
Photo R6	<p>Photo R6 shows the underside of the bridge structure, highlighting the steel truss and the concrete deck. The tracks are visible in the foreground.</p>		
Photo R	<p>Photo R shows a view of the bridge structure from the right side, with a train passing on the tracks below. The bridge's concrete structure and the tracks are clearly visible.</p>		
Photo R	<p>Photo R shows a view of the bridge structure from the right side, with a train passing on the tracks below. The bridge's concrete structure and the tracks are clearly visible.</p>		

Bridge Survey Record (3/6) Left Side

Date & Time: 07 Jun,2016 11:00

Bridge No.	Ser.No.4	Station	Mumbai
Bridge Name	Delise ROB		1921
Photos			

Photo L2



Photo L3



Photo L5



Photo L6



Photo 8



Photo L10



Bridge Survey Record (4/6)

Date & Time: 07 Jun,2016 11:00

Bridge No.	Ser.No.4	Division	Mumbai
Bridge Name	Delise ROB	Year of Construction	1921
GPS Data	N 18 °59 ' 51"	Station	Lower Parel
	E 72°49 ' 53 "		-

General Description of Damages

Member	Kind of the Damage
	Ex. Concrete : Cracking, Spalling, etc. Steel : Cracking, Rusting, Fracture, etc.
1. Superstructure	
(1) Concrete Member	
- Girder	N/A
- Cross Beam	N/A
- Slab	Crecking and Spalling
(2) Steel Member	
- Girder	Rusting
- Vertical Girder (stringer)	N/A
- Cross Beam	Rusting
- Sway Bracing	N/A
(3) Bearing Shoe	No Check
(4) Drainage Pipe	N/A
(5) Others	-
2. Substructure	
- Pier	Good
- Abutment	Stone Masonary
- Wing Wall	N/A
3. Miscellaneous	
- Approach Road Condition	Good
- Obstruction	-
- Scouring	N/A
4.Evaluation	

Bridge Survey Record (5/6)

Date & Time: 07 Jun,2016 11:00

Bridge No.	Ser.No.4	Division	Mumbai
Bridge Name	Delise ROB	Year of Construction	1921
GPS Data	N 18 °59 ' 51"	Station	Lower Parel
	E 72°49 ' 53 "		-

Detailed Description of Damages

Object Member	RC Slub
Kind of Damage	Spalling and exposed Rebar
Sketch or Photo	



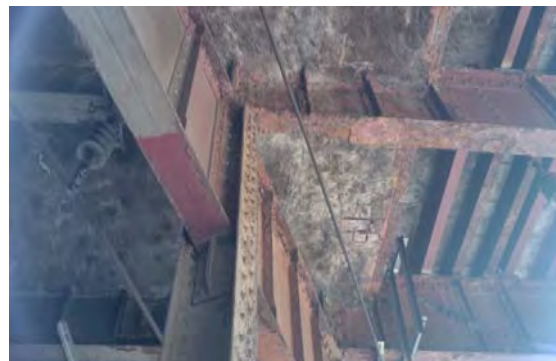
Bridge Survey Record (5/6)

Date & Time: 07 Jun,2016 11:00

Bridge No.	Ser.No.4	Division	Mumbai
Bridge Name	Delise ROB	Year of Construction	1921
GPS Data	N 18 °59 ' 51"	Station	Lower Parel
	E 72°49 ' 53 "		-

Detailed Description of Damages

Object Member	Concrete Base
Kind of Damage	Cracking and spalling
Sketch or Photo	



Bridge Survey Record (5/6)

Date & Time: 07 Jun,2016 11:00

Bridge No.	Ser.No.4	Division	Mumbai
Bridge Name	Delise ROB	Year of Construction	1921
GPS Data	N 18 °59 ' 51"	Station	Lower Parel
	E 72°49 ' 53 "		-

Detailed Description of Damages

Object Member	Cross Bream
Kind of Damage	Runsting
Sketch or Photo	



Bridge Survey Record (6/6)

Date & Time: 07 Jun,2016 11:00

Bridge No.	Ser.No.4	Location (State)	Mumbai
Bridge Name	Delise ROB	Year of Construction	1921
GPS Data	N 18 °59 ' 51"	Station	Lower Parel
	E 72°49 ' 53 "		-

Evaluation index

1	Cosistency with the upper plan, verification og Indian Railway priority bridges	Yes	No
2	Application of Japanese advanced technology	See below	
3	Confirmation of other projects by Japanese ODA	Yes	No
4	Confirmation of other donor's projects and local project	Yes	No
5	Impact on the surrounding society and economy	Much	Less
6	Access to the bridge sites	Good	Not Good
7	Collecting information from japanese companies, and estimation of project effects	See below	

2 Application of Japanese advanced technology

7 Collecting information from japanese companies, and estimation of project effects

Bridge Survey Record (1/6)

Date & Time: 08 Jun,2016 10:30

Bridge No.	Ser.No.5	Division	Mumbai
Bridge Name	Tilak ROB	Year of Construction	1925
GPS Data	N 19° 01' 13"	Station	Dadar
	E 72° 50' 38"		-

Bridge Length	226.20m	Span Arrangement	Number 3
Bridge Width	20.00m	Type of Substructure	Stone Masonry Abutment and Steel Pier Column
Type of Superstructure	2 Main Steel I-Girder with cross girders		

Overview of the Bridge

Side View



Up View



Bridge Survey Record (2/6) Right Side

Date & Time: 08 Jun,2016 10:30

Bridge No.	Ser.No.5	Station	Dadar
Bridge Name	Tilak ROB		-
Photoes			

Photo R2



Photo R6



Photo R4



Photo R7



Photo R8

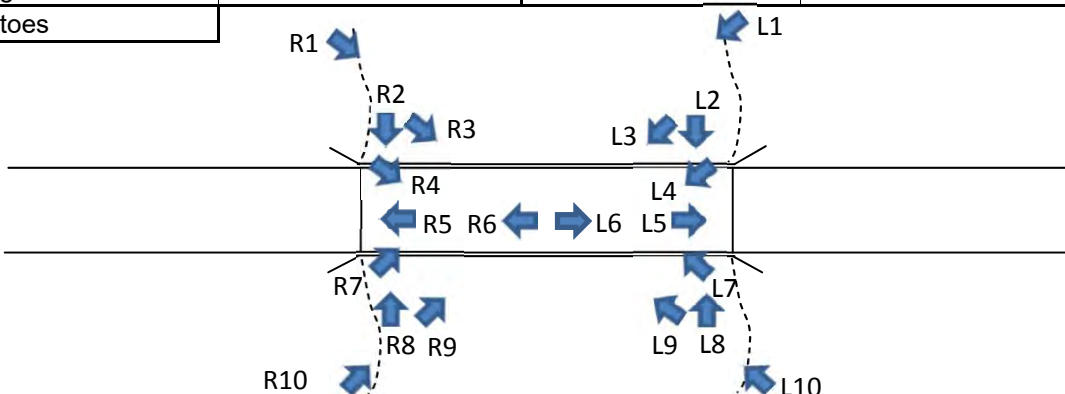






Photo R9



Bridge Survey Record (3/6) Left Side

Date & Time: 08 Jun,2016 10:30

Bridge No.	Ser.No.5	Station	Mumbai
Bridge Name	Tilak ROB		1925
Photos			
Photo L3			
Photo L6			
Photo L8			
Photo L9			
Photo L	<div style="height: 150px;"></div>		
Photo L	<div style="height: 150px;"></div>		

Bridge Survey Record (4/6)

Date & Time: 08 Jun,2016 10:30

Bridge No.	Ser.No.5	Division	Mumbai
Bridge Name	Tilak ROB	Year of Construction	1925
GPS Data	N 19 °01 ' 13"	Station	Dadar
	E 72°50 ' 38 "		-

General Description of Damages

Member	Kind of the Damage
	Ex. Concrete : Cracking, Spalling, etc. Steel : Cracking, Rusting, Fracture, etc.
1. Superstructure	
(1) Concrete Member	N/A
- Girder	
- Cross Beam	
- Slab	
(2) Steel Member	Good
- Girder	
- Vertical Girder (stringer)	
- Cross Beam	
- Sway Bracing	
(3) Bearing Shoe	No check
(4) Drainage Pipe	No check
(5) Others	-
2. Substructure	
- Pier	N/A
- Abutment	Good
- Wing Wall	Good
3. Miscellaneous	
- Approach Road Condition	
- Obstruction	
- Scouring	N/A
4. Evaluation	

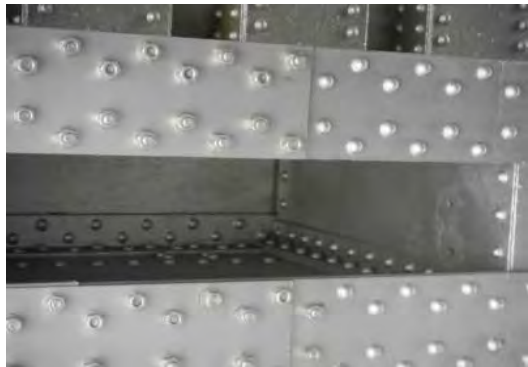
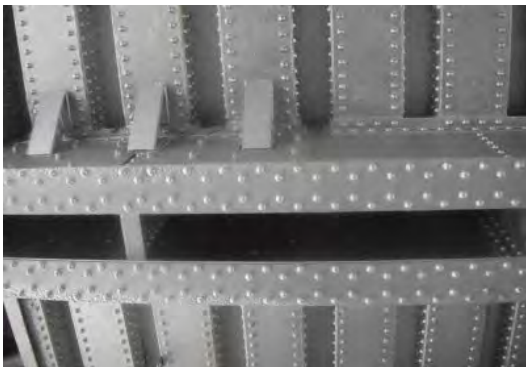
Bridge Survey Record (5/6)

Date & Time: 08 Jun,2016 10:30

Bridge No.	Ser.No.5	Division	Mumbai
Bridge Name	Tilak ROB	Year of Construction	1925
GPS Data	N 19 °01 ' 13"	Station	Dadar
	E 72°50 ' 38 "		-

Detailed Description of Damages

Object Member	
Kind of Damage	Good Condition
Sketch or Photo	



Bridge Survey Record (6/6)

Date & Time: 08 Jun,2016 10:30

Bridge No.	Ser.No.5	Location (State)	Mumbai
Bridge Name	Tilak ROB	Year of Construction	1925
GPS Data	N 19 °01 ' 13"	Station	Dadar
	E 72°50 ' 38 "		-

Evaluation index

1	Cosistency with the upper plan, verification og Indian Railway priority bridges	Yes	No
2	Application of Japanese advanced technology	See below	
3	Confirmation of other projects by Japanese ODA	Yes	No
4	Confirmation of other donor's projects and local project	Yes	No
5	Impact on the surrounding society and economy	Much	Less
6	Access to the bridge sites	Good	Not Good
7	Collecting information from japanese companies, and estimation of project effects	See below	

2 Application of Japanese advanced technology

7 Collecting information from japanese companies, and estimation of project effects

Bridge Survey Record (1/6)

Date & Time: 08 Jun,2016 11:40

Bridge No.	Ser.No.6	Division	Mumbai
Bridge Name	Mahim ROB	Year of Construction	1993
GPS Data	N 19° 02' 41"	Station	Mahim Junction
	E 72° 50' 41"		-

Bridge Length	80.00m	Span Arrangement	Number 3
Bridge Width	28.30m	Type of Substructure	RC Abutment and RC Pier Column
Type of Superstructure	PC I-Shaped Girder		

Overview of the Bridge Side View



Up View



Bridge Survey Record (2/6) Right Side

Date & Time: 08 Jun,2016 11:40

Bridge No.	Ser.No.6	Station	Mahim Junction
Bridge Name	Mahim ROB		-
Photoes			
Photo R3	Photo R6		
Photo R4	Photo R7		
Photo R8	Photo R10		

Bridge Survey Record (3/6) Left Side

Date & Time: 08 Jun,2016 11:40

Bridge No.	Ser.No.6	Station	Mumbai
Bridge Name	Mahim ROB		1993
Photos			
Photo L3			
Photo L5			
Photo L7			
Photo L9			
Photo L			
Photo L			

Bridge Survey Record (4/6)

Date & Time: 08 Jun,2016 11:40

Bridge No.	Ser.No.6	Division	Mumbai
Bridge Name	Mahim ROB	Year of Construction	1993
GPS Data	N 19 °02 ' 41"	Station	Mahim Junction
	E 72°50 ' 41 "		-

General Description of Damages

Member	Kind of the Damage
	Ex. Concrete : Cracking, Spalling, etc. Steel : Cracking, Rusting, Fracture, etc.
1. Superstructure	
(1) Concrete Member	
- Girder	Spalling
- Cross Beam	Spalling
- Slab	Spalling
(2) Steel Member	N/A
- Girder	
- Vertical Girder (stringer)	
- Cross Beam	
- Sway Bracing	
(3) Bearing Shoe	No Check
(4) Drainage Pipe	None
(5) Others	
2. Substructure	
- Pier	Cracking and Spalling
- Abutment	Good
- Wing Wall	N/A
3. Miscellaneous	
- Approach Road Condition	
- Obstruction	
- Scouring	N/A
4. Evaluation	

Bridge Survey Record (5/6)

Date & Time: 08 Jun,2016 11:40

Bridge No.	Ser.No.6	Division	Mumbai
Bridge Name	Mahim ROB	Year of Construction	1993
GPS Data	N 19 °02 ' 41"	Station	Mahim Junction
	E 72°50 ' 41 "		-

Detailed Description of Damages

Object Member	PC I-Girder and RC slab
Kind of Damage	Spalling
Sketch or Photo	



Bridge Survey Record (5/6)

Date & Time: 08 Jun,2016 11:40

Bridge No.	Ser.No.6	Division	Mumbai
Bridge Name	Mahim ROB	Year of Construction	1993
GPS Data	N 19 °02 ' 41"	Station	Mahim Junction
	E 72°50 ' 41 "		-

Detailed Description of Damages

Object Member	PC cable
Kind of Damage	Fracture
Sketch or Photo	







Bridge Survey Record (5/6)

Date & Time: 08 Jun,2016 11:40

Bridge No.	Ser.No.6	Division	Mumbai
Bridge Name	Mahim ROB	Year of Construction	1993
GPS Data	N 19 °02 ' 41"	Station	Mahim Junction
	E 72°50 ' 41 "		-

Detailed Description of Damages

Object Member	RC Pier
Kind of Damage	Cracking and Spalling
Sketch or Photo	<div style="display: flex; flex-wrap: wrap; justify-content: space-around;"> <div style="width: 45%; text-align: center;">  </div> <div style="width: 45%; text-align: center;">  </div> <div style="width: 45%; text-align: center;">  </div> <div style="width: 45%; text-align: center;">  </div> </div>

Bridge Survey Record (6/6)

Date & Time: 08 Jun,2016 11:40

Bridge No.	Ser.No.6	Location (State)	Mumbai
Bridge Name	Mahim ROB	Year of Construction	1993
GPS Data	N 19 °02 ' 41"	Station	Mahim Junction
	E 72°50 ' 41 "		-

Evaluation index

1	Cosistency with the upper plan, verification og Indian Railway priority bridges	Yes	No
2	Application of Japanese advanced technology	See below	
3	Confirmation of other projects by Japanese ODA	Yes	No
4	Confirmation of other donor's projects and local project	Yes	No
5	Impact on the surrounding society and economy	Much	Less
6	Access to the bridge sites	Good	Not Good
7	Collecting information from japanese companies, and estimation of project effects	See below	

2 Application of Japanese advanced technology

7 Collecting information from japanese companies, and estimation of project effects

Bridge Survey Record (1/6)

Date & Time: 08 Jun,2016 15:10

Bridge No.	Ser.No.7	Division	Mumbai
Bridge Name	Goregaon ROB	Year of Construction	1993
GPS Data	N 19 ° 10 ' 26"	Station	Goregaon
	E 72 ° 50 ' 56 "		Malad

Bridge Length	79.00m	Span Arrangement	Number 2
Bridge Width	27.50m	Type of Substructure	RC Abutment and RC Pier Column
Type of Superstructu	PC I-Shaped Girder		

Overview of the Bridge Side View



Up View



Bridge Survey Record (2/6) Right Side

Date & Time: 08 Jun,2016 15:10

Bridge No.	Ser.No.7	Station	Goregaon
Bridge Name	Goregaon ROB		Malad
Photos			
Photo R1			
Photo R6			
Photo R8			
Photo R9			
Photo R			
Photo R			

Bridge Survey Record (3/6) Left Side

Date & Time: 08 Jun,2016 15:10

Bridge No.	Ser.No.7	Station	Mumbai
Bridge Name	Goregaon ROB		1993
Photos			
Photo L5			
Photo L7			
Photo L8			
Photo L			
Photo L			
Photo L			

Bridge Survey Record (4/6)

Date & Time: 08 Jun,2016 15:10

Bridge No.	Ser.No.7	Division	Mumbai
Bridge Name	Goregaon ROB	Year of Construction	1993
GPS Data	N 19 °10 ' 26"	Station	Goregaon
	E 72° 50 ' 56 "		Malad

General Description of Damages

Member	Kind of the Damage
	Ex. Concrete : Cracking, Spalling, etc. Steel : Cracking, Rusting, Fracture, etc.
1. Superstructure	
(1) Concrete Member	Good
- Girder	
- Cross Beam	
- Slab	
(2) Steel Member	N/A
- Girder	
- Vertical Girder (stringer)	
- Cross Beam	
- Sway Bracing	
(3) Bearing Shoe	No Check
(4) Drainage Pipe	N/A
(5) Others	
2. Substructure	
- Pier	Good
- Abutment	Good
- Wing Wall	N/A
3. Miscellaneous	
- Approach Road Condition	Bad
- Obstruction	
- Scouring	N/A
4. Evaluation	

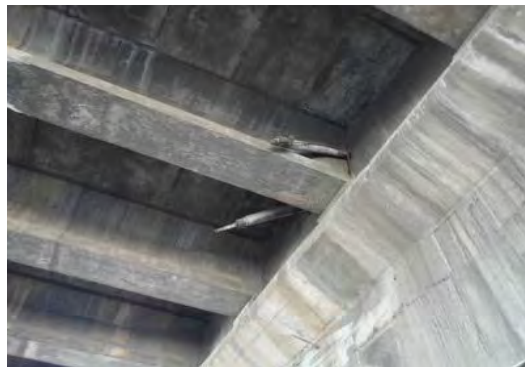
Bridge Survey Record (5/6)

Date & Time: 08 Jun,2016 15:10

Bridge No.	Ser.No.7	Division	Mumbai
Bridge Name	Goregaon ROB	Year of Construction	1993
GPS Data	N 19 °10 ' 26"	Station	Goregaon
	E 72° 50 ' 56 "		Malad

Detailed Description of Damages

Object Member	
Kind of Damage	Good Condition
Sketch or Photo	



Bridge Survey Record (6/6)

Date & Time: 08 Jun,2016 15:10

Bridge No.	Ser.No.7	Location (State)	Mumbai
Bridge Name	Goregaon ROB	Year of Construction	1993
GPS Data	N 19 °10 ' 26"	Station	Goregaon
	E 72° 50 ' 56 "		Malad

Evaluation index

1	Cosistency with the upper plan, verification og Indian Railway priority bridges	Yes No
2	Application of Japanese advanced technology	See below
3	Confirmation of other projects by Japanese ODA	Yes No
4	Confirmation of other donor's projects and local project	Yes No
5	Impact on the surrounding society and economy	Much Less
6	Access to the bridge sites	Good Not Good
7	Collecting information from japanese companies, and estimation of project effects	See below

2 Application of Japanese advanced technology

7 Collecting information from japanese companies, and estimation of project effects

Bridge Survey Record (1/6)

Date & Time: 13 Jun,2016 12:30

Bridge No.	Ser.No.8	Division	Vadodara
Bridge Name	LC No.5/A	Year of Construction	2011-2012
GPS Data	N 21 ° 42 ' 20"	Station	Bharuch
	E 72 ° 57 ' 59 "		Sami

Bridge Length	85.00m	Span Arrangement	Number 2
Bridge Width	27.50m	Type of Substructure	RC Abutment and RC Pier Column
Type of Superstructu	PSC Box Type		

Overview of the Bridge

Side View



Up View



Bridge Survey Record (2/6) Right Side

Date & Time: 13 Jun,2016 12:30

Bridge No.	Ser.No.8	Station	Bharuch
Bridge Name	LC No.5/A		Sami
Photoes			
Photo R3	Photo R6		
Photo R	Photo R		
Photo R	Photo R		

Bridge Survey Record (3/6) Left Side

Date & Time: 13 Jun,2016 12:30

Bridge No.	Ser.No.8	Station	Vadodara
Bridge Name	LC No.5/A		2011-2012
Photos			



Bridge Survey Record (4/6)

Date & Time: 13 Jun,2016 12:30

Bridge No.	Ser.No.8	Division	Vadodara
Bridge Name	LC No.5/A	Year of Construction	2011-2012
GPS Data	N 21 °42 ' 20"	Station	Bharuch
	E 72° 57 ' 59 "		Sami

General Description of Damages

Member	Kind of the Damage
	Ex. Concrete : Cracking, Spalling, etc. Steel : Cracking, Rusting, Fracture, etc.
1. Superstructure	
(1) Concrete Member	
- Girder	N/A
- Cross Beam	N/A
- Slab	Cracking
(2) Steel Member	N/A
- Girder	
- Vertical Girder (stringer)	
- Cross Beam	
- Sway Bracing	
(3) Bearing Shoe	No Check
(4) Drainage Pipe	No Check
(5) Others	
2. Substructure	
- Pier	Good
- Abutment	N/A
- Wing Wall	N/A
3. Miscellaneous	
- Approach Road Condition	Good
- Obstruction	
- Scouring	N/A
4.Evaluation	

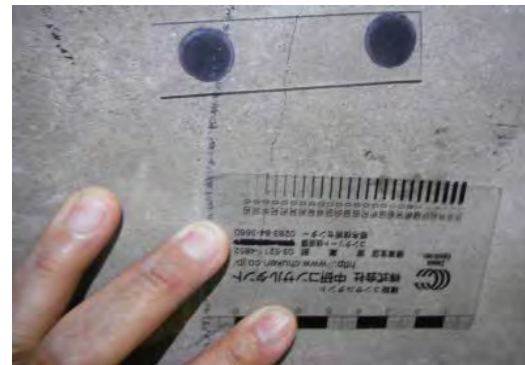
Bridge Survey Record (5/6)

Date & Time: 13 Jun,2016 12:30

Bridge No.	Ser.No.8	Division	Vadodara
Bridge Name	LC No.5/A	Year of Construction	2011-2012
GPS Data	N 21 °42 ' 20"	Station	Bharuch
	E 72° 57 ' 59 "		Sami

Detailed Description of Damages

Object Member	PSC Box
Kind of Damage	Cracking
Sketch or Photo	



Bridge Survey Record (6/6)

Date & Time: 13 Jun,2016 12:30

Bridge No.	Ser.No.8	Location (State)	Vadodara
Bridge Name	LC No.5/A	Year of Construction	2011-2012
GPS Data	N 21 °42 ' 20"	Station	Bharuch
	E 72° 57 ' 59 "		Sami

Evaluation index

1	Cosistency with the upper plan, verification og Indian Railway priority bridges	Yes	No
2	Application of Japanese advanced technology	See below	
3	Confirmation of other projects by Japanese ODA	Yes	No
4	Confirmation of other donor's projects and local project	Yes	No
5	Impact on the surrounding society and economy	Much	Less
6	Access to the bridge sites	Good	Not Good
7	Collecting information from japanese companies, and estimation of project effects	See below	

2 Application of Japanese advanced technology

7 Collecting information from japanese companies, and estimation of project effects

Bridge Survey Record (1/6)

Date & Time: 13 Jun,2016 09:30

Bridge No.	Ser.No.9	Division	Vadodara
Bridge Name	LC No.2/X (North)	Year of Construction	2008
GPS Data	N 22 ° 03 ' 22"	Station	Miyagam
	E 73 ° 07 ' 46 "		Daboi-Malsar

Bridge Length	35.08m	Span Arrangement	Number 1
Bridge Width	6.35m	Type of Superstructu	RC Abutment and RC Pier Column
Type of Substructure	PSC Box Type	Type of Substructure	



Bridge Survey Record (2/6) Right Side

Date & Time: 13 Jun,2016 09:30

Bridge No.	Ser.No.9	Station	Miyagam
Bridge Name	LC No.2/X (North)		Daboi-Malsar
Photos			
Photo R2		Photo R3	
Photo R5		Photo R6	
Photo R8		Photo R	

Bridge Survey Record (3/6) Left Side

Date & Time: 13 Jun,2016 09:30

Bridge No.	Ser.No.9	Station	Vadodara
Bridge Name	LC No.2/X (North)		2008
Photos			



Bridge Survey Record (4/6)

Date & Time: 13 Jun,2016 09:30

Bridge No.	Ser.No.9	Division	Vadodara
Bridge Name	LC No.2/X (North)	Year of Construction	2008
GPS Data	N 22 °03 ' 22"	Station	Miyagam
	E 73° 07 ' 46 "		Daboi-Malsar

General Description of Damages

Member	Kind of the Damage
	Ex. Concrete : Cracking, Spalling, etc. Steel : Cracking, Rusting, Fracture, etc.
1. Superstructure	
(1) Concrete Member	
- Girder	N/A
- Cross Beam	N/A
- Slab	Repair for Cracking
(2) Steel Member	N/A
- Girder	
- Vertical Girder (stringer)	
- Cross Beam	
- Sway Bracing	
(3) Bearing Shoe	No Check
(4) Drainage Pipe	N/A
(5) Others	
2. Substructure	
- Pier	No Check
- Abutment	Good
- Wing Wall	Good
3. Miscellaneous	
- Approach Road Condition	Bad
- Obstruction	
- Scouring	N/A
4. Evaluation	

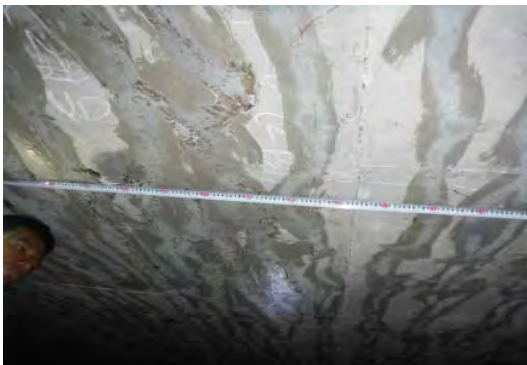
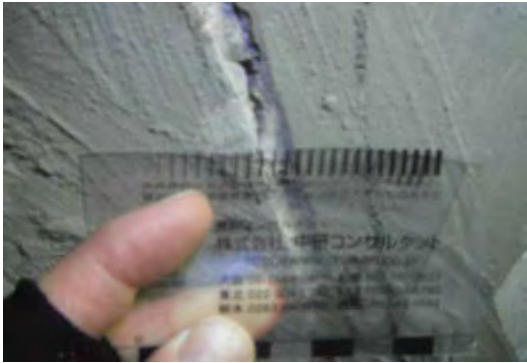
Bridge Survey Record (5/6)

Date & Time: 13 Jun,2016 09:30

Bridge No.	Ser.No.9	Division	Vadodara
Bridge Name	LC No.2/X (North)	Year of Construction	2008
GPS Data	N 22 °03 ' 22"	Station	Miyagam
	E 73° 07 ' 46 "		Daboi-Malsar

Detailed Description of Damages

Object Member	Deck Slab
Kind of Damage	Repair Work for Cracking
Sketch or Photo	



Bridge Survey Record (6/6)

Date & Time: 13 Jun,2016 09:30

Bridge No.	Ser.No.9	Location (State)	Vadodara
Bridge Name	LC No.2/X (North)	Year of Construction	2008
GPS Data	N 22 °03 ' 22"	Station	Miyagam
	E 73° 07 ' 46 "		Daboi-Malsar

Evaluation index

1	Cosistency with the upper plan, verification og Indian Railway priority bridges	Yes No
2	Application of Japanese advanced technology	See below
3	Confirmation of other projects by Japanese ODA	Yes No
4	Confirmation of other donor's projects and local project	Yes No
5	Impact on the surrounding society and economy	Much Less
6	Access to the bridge sites	Good Not Good
7	Collecting information from japanese companies, and estimation of project effects	See below

2 Application of Japanese advanced technology

7 Collecting information from japanese companies, and estimation of project effects

Bridge Survey Record (1/6)

Date & Time: 13 Jun,2016 09:30

Bridge No.	Ser.No.9	Division	Vadodara
Bridge Name	LC No.2/X (South)	Year of Construction	2008
GPS Data	N 22 ° 02 ' 14 "	Station	Miyagam
	E 73 ° 07 ' 24 "		Daboi-Malsar

Bridge Length	35.08m	Span Arrangement	Number 1
Bridge Width	6.35m	Type of Superstructure	PSC Box Type
Type of Substructure	RC Abutment and RC Pier Column		

Overview of the Bridge

Side View

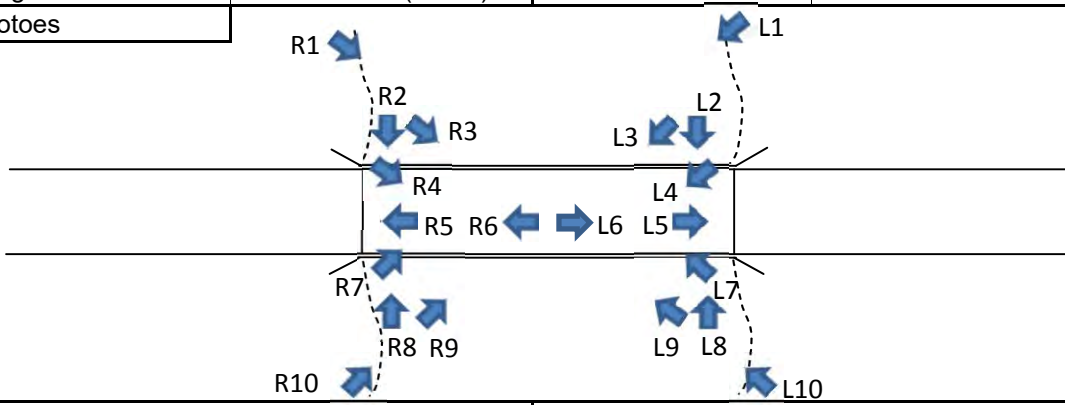








Up View



Bridge Survey Record (2/6) Right Side

Date & Time: 13 Jun,2016 09:30

Bridge No.	Ser.No.9	Station	Miyagam
Bridge Name	LC No.2/X (South)		Daboi-Malsar
Photoes			
Photo R2	Photo R5		
			
Photo R6	Photo R8		
			
Photo R10	Photo R		
			

Bridge Survey Record (3/6) Left Side

Date & Time: 13 Jun,2016 09:30

Bridge No.	Ser.No.9	Station	Vadodara
Bridge Name	LC No.2/X (South)		2008
Photos			



Bridge Survey Record (4/6)

Date & Time: 13 Jun,2016 09:30

Bridge No.	Ser.No.9	Division	Vadodara
Bridge Name	LC No.2/X (South)	Year of Construction	2008
GPS Data	N 22 °02 ' 14"	Station	Miyagam
	E 73° 07 ' 24 "		Daboi-Malsar

General Description of Damages

Member	Kind of the Damage
	Ex. Concrete : Cracking, Spalling, etc. Steel : Cracking, Rusting, Fracture, etc.
1. Superstructure	
(1) Concrete Member	
- Girder	N/A
- Cross Beam	N/A
- Slab	Cracking
(2) Steel Member	N/A
- Girder	
- Vertical Girder (stringer)	
- Cross Beam	
- Sway Bracing	
(3) Bearing Shoe	No Check
(4) Drainage Pipe	N/A
(5) Others	-
2. Substructure	
- Pier	No Check
- Abutment	Good
- Wing Wall	Good
3. Miscellaneous	
- Approach Road Condition	Good
- Obstruction	-
- Scouring	N/A
4.Evaluation	

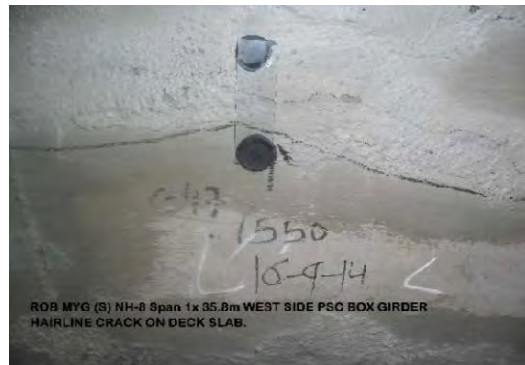
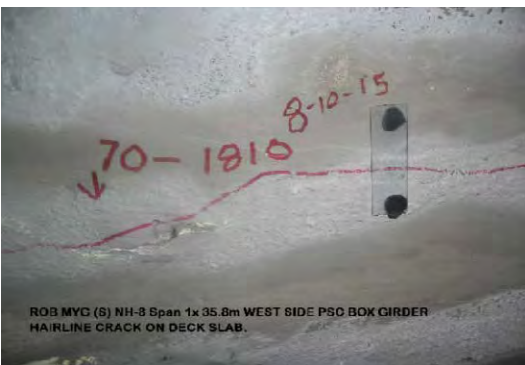
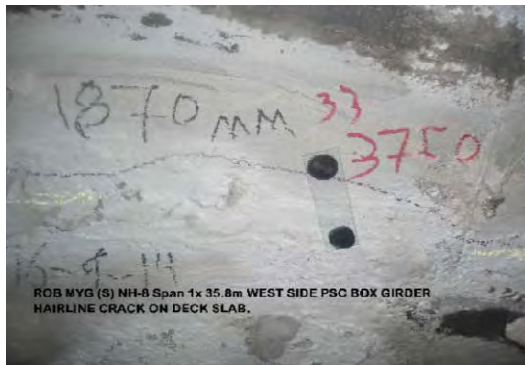
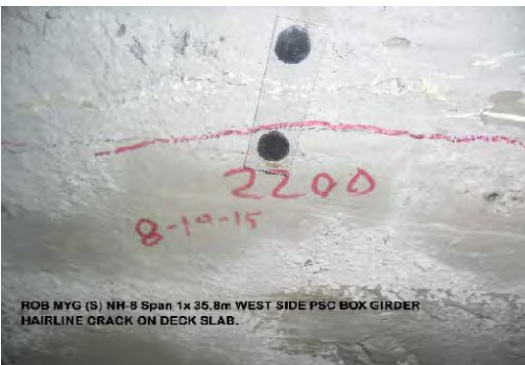
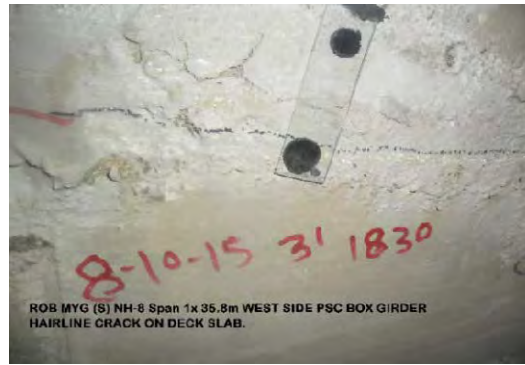
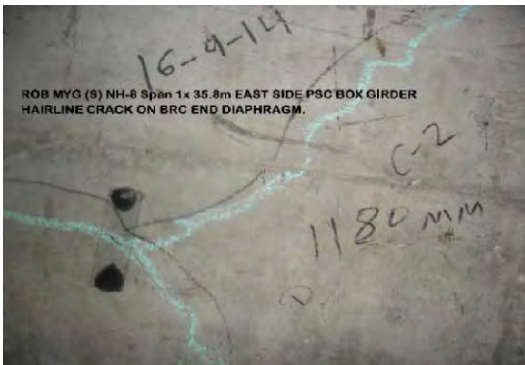
Bridge Survey Record (5/6)

Date & Time: 13 Jun,2016 09:30

Bridge No.	Ser.No.9	Division	Vadodara
Bridge Name	LC No.2/X (South)	Year of Construction	2008
GPS Data	N 22 °02 ' 14"	Station	Miyagam
	E 73° 07 ' 24 "		Daboi-Malsar

Detailed Description of Damages

Object Member	Deck Slab
Kind of Damage	Cracking
Sketch or Photo	



Bridge Survey Record (6/6)

Date & Time: 13 Jun,2016 09:30

Bridge No.	Ser.No.9	Location (State)	Vadodara
Bridge Name	LC No.2/X (South)	Year of Construction	2008
GPS Data	N 22 °02 ' 14"	Station	Miyagam
	E 73° 07 ' 24 "		Daboi-Malsar

Evaluation index

1	Cosistency with the upper plan, verification og Indian Railway priority bridges	Yes	No
2	Application of Japanese advanced technology	See below	
3	Confirmation of other projects by Japanese ODA	Yes	No
4	Confirmation of other donor's projects and local project	Yes	No
5	Impact on the surrounding society and economy	Much	Less
6	Access to the bridge sites	Good	Not Good
7	Collecting information from japanese companies, and estimation of project effects	See below	

2 Application of Japanese advanced technology

7 Collecting information from japanese companies, and estimation of project effects

Bridge Survey Record (1/6)

Date & Time: 09 Jun,2016 11:00

Bridge No.	73	Division	Mumbai
Bridge Name	-	Year of Construction	1993
GPS Data	N 19° 19' 20"	Station	Bhayandar
	E 72° 59' 08 "		Naigaon

Bridge Length	1450m	Span Arrangement	Number 29
Bridge Width	6.7 m		
Type of Superstructu	PC Box Girder	Type of Substructure	RC Abutment and RC Pier Column



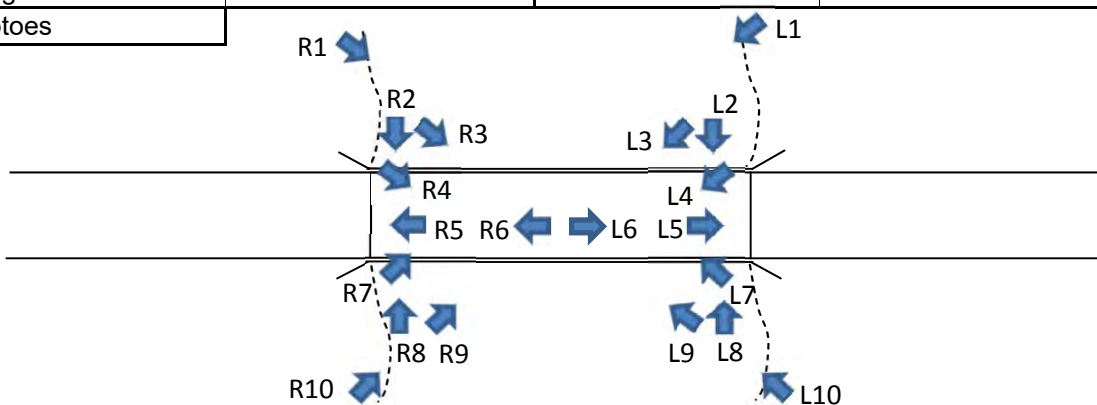
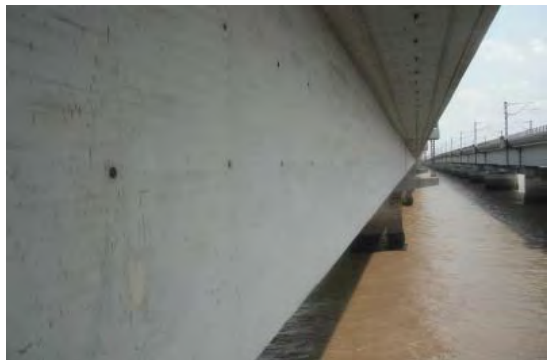





Bridge Survey Record (2/6) Right Side

Date & Time: 09 Jun,2016 11:00

Bridge No.	73	Station	Bhayandar
Bridge Name	-		Naigaon
Photoes			
Photo R			
Photo R			
Photo R			
Photo R			

Bridge Survey Record (3/6) Left Side

Date & Time: 09 Jun,2016 11:00

Bridge No.	73	Station	Mumbai
Bridge Name	-		1993
Photoes			
Photo L3			
Photo L5			
Photo L9			
Photo L6			
Photo L7			
Photo L			

Bridge Survey Record (4/6)

Date & Time: 09 Jun,2016 11:00

Bridge No.	73	Division	Mumbai
Bridge Name	-	Year of Construction	1993
GPS Data	N 19 °19 ' 20"	Station	Bhayandar
	E 72°59 ' 08 "		Naigaon

General Description of Damages

Member	Kind of the Damage
	Ex. Concrete : Cracking, Spalling, etc. Steel : Cracking, Rusting, Fracture, etc.
1. Superstructure	
(1) Concrete Member	
- Girder	Cracking
- Cross Beam	N/A
- Slab	Good
(2) Steel Member	N/A
- Girder	
- Vertical Girder (stringer)	
- Cross Beam	
- Sway Bracing	
(3) Bearing Shoe	No Check
(4) Drainage Pipe	N/A
(5) Others	-
2. Substructure	
- Pier	No Check
- Abutment	Good
- Wing Wall	N/A
3. Miscellaneous	
- Approach Road Condition	Good
- Obstruction	-
- Scouring	
4. Evaluation	

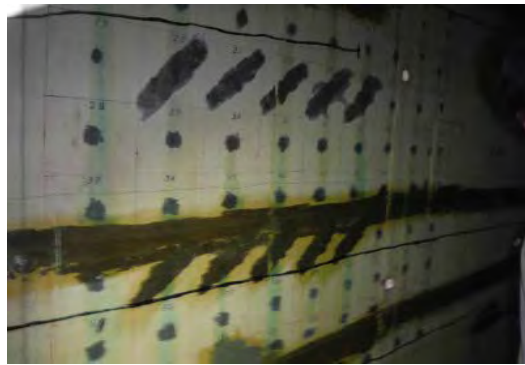
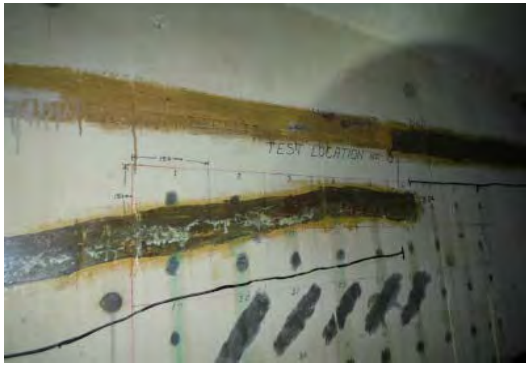
Bridge Survey Record (5/6)

Date & Time: 09 Jun,2016 11:00

Bridge No.	73	Division	Mumbai
Bridge Name	-	Year of Construction	1993
GPS Data	N 19 °19 ' 20"	Station	Bhayandar
	E 72°59 ' 08 "		Naigaon

Detailed Description of Damages

Object Member	PSC Box Girder
Kind of Damage	Horizontal and Inclined Cracks in Web
Sketch or Photo	



Bridge Survey Record (6/6)

Date & Time: 09 Jun,2016 11:00

Bridge No.	73	Location (State)	Mumbai
Bridge Name	-	Year of Construction	1993
GPS Data	N 19 °19 ' 20"	Station	Bhayandar
	E 72°59 ' 08 "		Naigaon

Evaluation index

1	Cosistency with the upper plan, verification og Indian Railway priority bridges	Yes	No
2	Application of Japanese advanced technology	See below	
3	Confirmation of other projects by Japanese ODA	Yes	No
4	Confirmation of other donor's projects and local project	Yes	No
5	Impact on the surrounding society and economy	Much	Less
6	Access to the bridge sites	Good	Not Good
7	Collecting information from japanese companies, and estimation of project effects	See below	

2 Application of Japanese advanced technology

7 Collecting information from japanese companies, and estimation of project effects

Bridge Survey Record (1/6)

Date & Time: 09 Jun,2016

Bridge No.	75	Division	Mumbai
Bridge Name	-	Year of Construction	1993
GPS Data	N 19 °20 ' 24"	Station	Bhayandar
	E 72°51 ' 01 "		Natgaon

Bridge Length	550m	Span Arrangement	Number 11
Bridge Width	- m		
Type of Superstructure	PC Box Girder	Type of Substructure	RC Abutment and RC Pier Column

Overview of the Bridge	Side View
Up View	

Bridge Survey Record (2/6) Right Side

Date & Time: 09 Jun,2016

Bridge No.	75	Station	Bhayandar
Bridge Name	-		Natgaon
Photoes			
Photo R2	Photo R3		
Photo R5	Photo R		
Photo R	Photo R		

Bridge Survey Record (3/6) Left Side

Date & Time: 09 Jun,2016

Bridge No.	75	Station	Mumbai
Bridge Name	-		1993
Photos			
Photo L2	Photo L5		
Photo L6	Photo L8		
Photo L	Photo L		

Bridge Survey Record (4/6)

Date & Time: 09 Jun,2016

Bridge No.	75	Division	Mumbai
Bridge Name	-	Year of Construction	1993
GPS Data	N 19 °20 ' 24"	Station	Bhayandar
	E 72°51 ' 01 "		Natgaon

General Description of Damages

Member	Kind of the Damage
	Ex. Concrete : Cracking, Spalling, etc. Steel : Cracking, Rusting, Fracture, etc.
1. Superstructure	
(1) Concrete Member	
- Girder	
- Cross Beam	
- Slab	
(2) Steel Member	
- Girder	
- Vertical Girder (stringer)	
- Cross Beam	
- Sway Bracing	
(3) Bearing Shoe	
(4) Drainage Pipe	
(5) Others	
2. Substructure	
- Pier	
- Abutment	
- Wing Wall	
3. Miscellaneous	
- Approach Road Condition	
- Obstruction	
- Scouring	
4. Evaluation	

Bridge Survey Record (5/6)

Date & Time: 09 Jun,2016

Bridge No.	75	Division	Mumbai
Bridge Name	-	Year of Construction	1993
GPS Data	N 19 °20 ' 24"	Station	Bhayandar
	E 72°51 ' 01 "		Natgaon

Detailed Description of Damages

Object Member	
Kind of Damage	
Sketch or Photo	

Bridge Survey Record (6/6)

Date & Time: 09 Jun,2016

Bridge No.	75	Location (State)	Mumbai
Bridge Name	-	Year of Construction	1993
GPS Data	N 19 °20 ' 24"	Station	Bhayandar
	E 72°51 ' 01 "		Natgaon

Evaluation index

1	Cosistency with the upper plan, verification og Indian Railway priority bridges	Yes	No
2	Application of Japanese advanced technology	See below	
3	Confirmation of other projects by Japanese ODA	Yes	No
4	Confirmation of other donor's projects and local project	Yes	No
5	Impact on the surrounding society and economy	Much	Less
6	Access to the bridge sites	Good	Not Good
7	Collecting information from japanese companies, and estimation of project effects	See below	

2 Application of Japanese advanced technology

7 Collecting information from japanese companies, and estimation of project effects

Bridge Survey Record (1/6)

Date & Time: 09 Jun,2016 13:30

Bridge No.	92	Division	Mumbai
Bridge Name	-	Year of Construction	1963
GPS Data	N 19° 31' 28"	Station	Vaitama
	E 72° 51' 02"		Saphale

Bridge Length	380m	Span Arrangement	Number 20
Bridge Width	-m		
Type of Superstructure	Type: Steel I-Girder	Type of Substructure Abutment RC Abutment and RC Pier Column	

Overview of the Bridge Side View



Up View



Bridge Survey Record (2/6) Right Side

Date & Time: 09 Jun,2016 13:30

Bridge No.	92	Station	Vaitama
Bridge Name	-		Saphale
Photoes			

Photo R2



Photo R3



Photo R5



Photo R



Photo R



Photo R



Bridge Survey Record (3/6) Left Side

Date & Time: 09 Jun,2016 13:30

Bridge No.	92	Station	Mumbai
Bridge Name	-		1963
Photos			
Photo R			
Photo L5			
Photo L6			
Photo L8			
Photo L			
Photo L			

Bridge Survey Record (4/6)

Date & Time: 09 Jun,2016 13:30

Bridge No.	92	Division	Mumbai
Bridge Name	-	Year of Construction	1963
GPS Data	N 19 °31 ' 28"	Station	Vaitama
	E 72°51 ' 02 "		Saphale

General Description of Damages

Member	Kind of the Damage
	Ex. Concrete : Cracking, Spalling, etc. Steel : Cracking, Rusting, Fracture, etc.
1. Superstructure	
(1) Concrete Member	N/A
- Girder	
- Cross Beam	
- Slab	
(2) Steel Member	
- Girder	Good
- Vertical Girder (stringer)	N/A
- Cross Beam	N/A
- Sway Bracing	N/A
(3) Bearing Shoe	No Check
(4) Drainage Pipe	N/A
(5) Others	-
2. Substructure	
- Pier	Cracking
- Abutment	Good
- Wing Wall	Good Condition
3. Miscellaneous	
- Approach Road Condition	Good
- Obstruction	-
- Scouring	No Check
4. Evaluation	

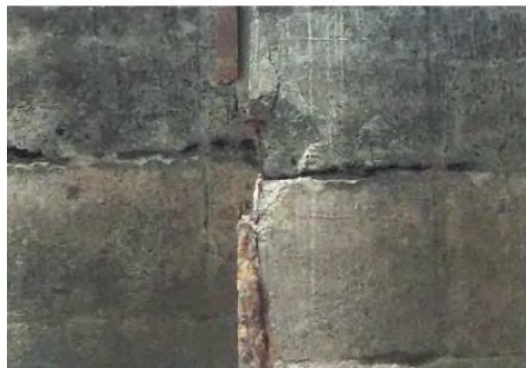
Bridge Survey Record (5/6)

Date & Time: 09 Jun,2016 13:30

Bridge No.	92	Division	Mumbai
Bridge Name	-	Year of Construction	1963
GPS Data	N 19 °31 ' 28"	Station	Vaitama
	E 72°51 ' 02 "		Saphale

Detailed Description of Damages

Object Member	Pier
Kind of Damage	Cracking
Sketch or Photo	



Bridge Survey Record (6/6)

Date & Time: 09 Jun,2016 13:30

Bridge No.	92	Location (State)	Mumbai
Bridge Name	-	Year of Construction	1963
GPS Data	N 19 °31 ' 28"	Station	Vaitama
	E 72°51 ' 02 "		Saphale

Evaluation index

1	Cosistency with the upper plan, verification og Indian Railway priority bridges	Yes	No
2	Application of Japanese advanced technology	See below	
3	Confirmation of other projects by Japanese ODA	Yes	No
4	Confirmation of other donor's projects and local project	Yes	No
5	Impact on the surrounding society and economy	Much	Less
6	Access to the bridge sites	Good	Not Good
7	Collecting information from japanese companies, and estimation of project effects	See below	

2 Application of Japanese advanced technology

7 Collecting information from japanese companies, and estimation of project effects

Bridge Survey Record (1/6)

Date & Time: 09 Jun,2016

Bridge No.	93	Division	Mumbai
Bridge Name	-	Year of Construction	1963
GPS Data	N 19 °32 ' 20"	Station	Vaitama
	E 72°51 ' 05 "		Saphale

Bridge Length	410 m	Span Arrangement	Number 22
Bridge Width	-m		
Type of Superstructure	Type: Steel I-Girder	Type of Substructure	AbutmentRC Abutment and RC Pier Column

Overview of the Bridge	Side View
Up View	

Bridge Survey Record (2/6) Right Side

Date & Time: 09 Jun,2016

Bridge No.	93	Station	Vaitama
Bridge Name	-		Saphale
Photoes			
Photo R1	Photo R2		
Photo R5	Photo R8		
Photo R10	Photo R		

Bridge Survey Record (3/6) Left Side

Date & Time: 09 Jun,2016

Bridge No.	93	Station	Mumbai
Bridge Name	-		1963
Photos			
Photo L5	Photo L7		
Photo L8	Photo L		
Photo L	Photo L		

Bridge Survey Record (4/6)

Date & Time: 09 Jun,2016

Bridge No.	93	Division	Mumbai
Bridge Name	-	Year of Construction	1963
GPS Data	N 19 °32 ' 20"	Station	Vaitama
	E 72°51 ' 05 "		Saphale

General Description of Damages

Member	Kind of the Damage
	Ex. Concrete : Cracking, Spalling, etc. Steel : Cracking, Rusting, Fracture, etc.
1. Superstructure	
(1) Concrete Member	
- Girder	
- Cross Beam	
- Slab	
(2) Steel Member	
- Girder	
- Vertical Girder (stringer)	
- Cross Beam	
- Sway Bracing	
(3) Bearing Shoe	
(4) Drainage Pipe	
(5) Others	
2. Substructure	
- Pier	
- Abutment	
- Wing Wall	
3. Miscellaneous	
- Approach Road Condition	
- Obstruction	
- Scouring	
4. Evaluation	

Bridge Survey Record (5/6)

Date & Time: 09 Jun,2016

Bridge No.	93	Division	Mumbai
Bridge Name	-	Year of Construction	1963
GPS Data	N 19 °32 ' 20"	Station	Vaitama
	E 72°51 ' 05 "		Saphale

Detailed Description of Damages

Object Member	
Kind of Damage	
Sketch or Photo	



Bridge Survey Record (6/6)

Date & Time: 09 Jun,2016

Bridge No.	93	Location (State)	Mumbai
Bridge Name	-	Year of Construction	1963
GPS Data	N 19 °32 ' 20"	Station	Vaitama
	E 72°51 ' 05 "		Saphale

Evaluation index

1	Cosistency with the upper plan, verification og Indian Railway priority bridges	Yes	No
2	Application of Japanese advanced technology	See below	
3	Confirmation of other projects by Japanese ODA	Yes	No
4	Confirmation of other donor's projects and local project	Yes	No
5	Impact on the surrounding society and economy	Much	Less
6	Access to the bridge sites	Good	Not Good
7	Collecting information from japanese companies, and estimation of project effects	See below	

2 Application of Japanese advanced technology

7 Collecting information from japanese companies, and estimation of project effects

Bridge Survey Record (1/6)

Date & Time: 14 Jun,2016 12:20

Bridge No.	114	Division	Ratlam
Bridge Name	-	Year of Construction	1958-60
GPS Data	N 22 ° 50 ' 46" 06	Station	Dahod
	E 74 ° 17 ' 30 "		Dhamarda

Bridge Length	80.00m	Span Arrangement	Number 4
Bridge Width	4.30m		
Type of Superstructure	PSC I-Girder	Type of Substructure	Stone Masonry Abutment

Overview of the Bridge Side View



Up View



Bridge Survey Record (2/6) Right Side

Date & Time: 14 Jun,2016 12:20

Bridge No.	114	Station	Dahod
Bridge Name	-		Dhamarda
Photoes			
Photo R	Photo R		
Photo R	Photo R		
Photo R10	Photo R		

Bridge Survey Record (3/6) Left Side

Date & Time: 14 Jun,2016 12:20

Bridge No.	114	Station	Ratlam
Bridge Name	-		1958-60
Photos			

Photo L1



Photo L2



Photo L5



Photo L6



Photo L8



Photo L



Bridge Survey Record (4/6)

Date & Time: 14 Jun,2016 12:20

Bridge No.	114	Division	Ratlam
Bridge Name	-	Year of Construction	1958-60
GPS Data	N 22 °50 ' 46" 06	Station	Dahod
	E 74°17 ' 30 "		Dhamarda

General Description of Damages

Member	Kind of the Damage
	Ex. Concrete : Cracking, Spalling, etc. Steel : Cracking, Rusting, Fracture, etc.
1. Superstructure	
(1) Concrete Member	Good
- Girder	
- Cross Beam	
- Slab	
(2) Steel Member	N/A
- Girder	
- Vertical Girder (stringer)	
- Cross Beam	
- Sway Bracing	
(3) Bearing Shoe	No Check
(4) Drainage Pipe	N/A
(5) Others	-
2. Substructure	
- Pier	No Check
- Abutment	Good
- Wing Wall	Good
3. Miscellaneous	
- Approach Road Condition	Good
- Obstruction	-
- Scouring	N/A
4. Evaluation	

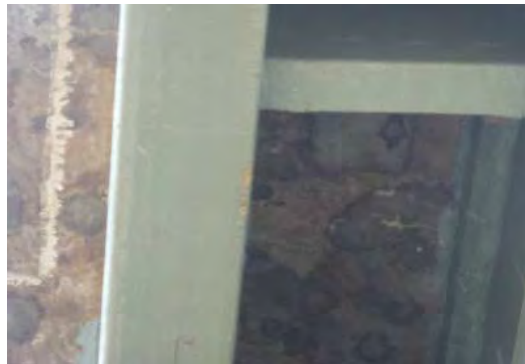
Bridge Survey Record (5/6)

Date & Time: 14 Jun,2016 12:20

Bridge No.	114	Division	Ratlam
Bridge Name	-	Year of Construction	1958-60
GPS Data	N 22 °50 ' 46" 06	Station	Dahod
	E 74°17 ' 30 "		Dhamarda

Detailed Description of Damages

Object Member	Prestressed I-Girder
Kind of Damage	After Repairing CFRP, Now in Good Condition
Sketch or Photo	



Bridge Survey Record (6/6)

Date & Time: 14 Jun,2016 12:20

Bridge No.	114	Location (State)	Ratlam
Bridge Name	-	Year of Construction	1958-60
GPS Data	N 22 °50 ' 46" 06	Station	Dahod
	E 74°17 ' 30 "		Dhamarda

Evaluation index

1	Cosistency with the upper plan, verification og Indian Railway priority bridges	Yes	No
2	Application of Japanese advanced technology	See below	
3	Confirmation of other projects by Japanese ODA	Yes	No
4	Confirmation of other donor's projects and local project	Yes	No
5	Impact on the surrounding society and economy	Much	Less
6	Access to the bridge sites	Good	Not Good
7	Collecting information from japanese companies, and estimation of project effects	See below	

2 Application of Japanese advanced technology

7 Collecting information from japanese companies, and estimation of project effects

Bridge Survey Record (1/6)

Date & Time: 14 Jun,2016 11:40

Bridge No.	129	Division	Ratlam
Bridge Name	-	Year of Construction	1958-60
GPS Data	N 22 °51 ' 54"	Station	Bordi
	E 74°22 ' 32 "		Anas

Bridge Length	60.00m	Span Arrangement	Number 3
Bridge Width	4.30m	Type of Substructure	Stone Masonry Abutment
Type of Superstructure	PSC I-Girder		

Overview of the Bridge Side View



Up View



Bridge Survey Record (2/6) Right Side

Date & Time: 14 Jun,2016 11:40

Bridge No.	129	Station	Bordi
Bridge Name	-		Anas
Photoes			
Photo R			
Photo R			
Photo R			
Photo R			
Photo R			

Bridge Survey Record (3/6) Left Side

Date & Time: 14 Jun,2016 11:40

Bridge No.	129	Station	Ratlam
Bridge Name	-		1958-60
Photos			



Bridge Survey Record (4/6)

Date & Time: 14 Jun,2016 11:40

Bridge No.	129	Division	Ratlam
Bridge Name	-	Year of Construction	1958-60
GPS Data	N 22 °51 ' 54"	Station	Bordi
	E 74°22 ' 32 "		Anas

General Description of Damages

Member	Kind of the Damage
	Ex. Concrete : Cracking, Spalling, etc. Steel : Cracking, Rusting, Fracture, etc.
1. Superstructure	
(1) Concrete Member	Good
- Girder	
- Cross Beam	
- Slab	
(2) Steel Member	N/A
- Girder	
- Vertical Girder (stringer)	
- Cross Beam	
- Sway Bracing	
(3) Bearing Shoe	No Check
(4) Drainage Pipe	N/A
(5) Others	-
2. Substructure	
- Pier	N/A
- Abutment	Good
- Wing Wall	Good
3. Miscellaneous	
- Approach Road Condition	Good
- Obstruction	-
- Scouring	N/A
4. Evaluation	

Bridge Survey Record (5/6)

Date & Time: 14 Jun,2016 11:40

Bridge No.	129	Division	Ratlam
Bridge Name	-	Year of Construction	1958-60
GPS Data	N 22 °51 ' 54"	Station	Bordi
	E 74°22 ' 32 "		Anas

Detailed Description of Damages

Object Member	Prestressed I-Girders
Kind of Damage	After Repairing CFRP, Now in Good Condition
Sketch or Photo	



Bridge Survey Record (6/6)

Date & Time: 14 Jun,2016 11:40

Bridge No.	129	Location (State)	Ratlam
Bridge Name	-	Year of Construction	1958-60
GPS Data	N 22 °51 ' 54"	Station	Bordi
	E 74°22 ' 32 "		Anas

Evaluation index

1	Cosistency with the upper plan, verification og Indian Railway priority bridges	Yes	No
2	Application of Japanese advanced technology	See below	
3	Confirmation of other projects by Japanese ODA	Yes	No
4	Confirmation of other donor's projects and local project	Yes	No
5	Impact on the surrounding society and economy	Much	Less
6	Access to the bridge sites	Good	Not Good
7	Collecting information from japanese companies, and estimation of project effects	See below	

2 Application of Japanese advanced technology

7 Collecting information from japanese companies, and estimation of project effects

Bridge Survey Record (1/6)

Date & Time: 14 Jun,2016 10:40

Bridge No.	132	Division	Ratlam
Bridge Name	-	Year of Construction	1958-60
GPS Data	N 22 °52 ' 06"	Station	Bordi
	E 74°23 ' 35 "		Anas

Bridge Length	20.00m	Span Arrangement	Number 1
Bridge Width	4.30m		
Type of Superstructure	PSC I-Girder	Type of Substructure	Stone Masonry Abutment

Overview of the Bridge Side View









Up View



Bridge Survey Record (2/6) Right Side

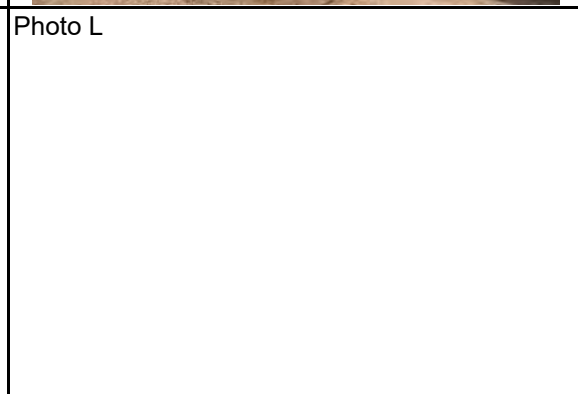
Date & Time: 14 Jun,2016 10:40

Bridge No.	132	Station	Bordi
Bridge Name	-		Anas
Photoes			
Photo R1	Photo R2		
			
Photo R3	Photo R5		
			
Photo R8	Photo R10		
			

Bridge Survey Record (3/6) Left Side

Date & Time: 14 Jun,2016 10:40

Bridge No.	132	Station	Ratlam
Bridge Name	-		1958-60
Photos			



Bridge Survey Record (4/6)

Date & Time: 14 Jun,2016 10:40

Bridge No.	132	Division	Ratlam
Bridge Name	-	Year of Construction	1958-60
GPS Data	N 22 °52 ' 06"	Station	Bordi
	E 74°23 ' 35 "		Anas

General Description of Damages

Member	Kind of the Damage
	Ex. Concrete : Cracking, Spalling, etc. Steel : Cracking, Rusting, Fracture, etc.
1. Superstructure	
(1) Concrete Member	Good
- Girder	
- Cross Beam	
- Slab	
(2) Steel Member	N/A
- Girder	
- Vertical Girder (stringer)	
- Cross Beam	
- Sway Bracing	
(3) Bearing Shoe	No Check
(4) Drainage Pipe	N/A
(5) Others	-
2. Substructure	
- Pier	N/A
- Abutment	Good
- Wing Wall	Good
3. Miscellaneous	
- Approach Road Condition	Good
- Obstruction	-
- Scouring	N/A
4. Evaluation	

Bridge Survey Record (5/6)

Date & Time: 14 Jun,2016 10:40

Bridge No.	132	Division	Ratlam
Bridge Name	-	Year of Construction	1958-60
GPS Data	N 22 °52 ' 06"	Station	Bordi
	E 74°23 ' 35 "		Anas

Detailed Description of Damages

Object Member	Prestressed I-Girders
Kind of Damage	After Repairing CFRP, Now in Good Condition
Sketch or Photo	



Bridge Survey Record (6/6)

Date & Time: 14 Jun,2016 10:40

Bridge No.	132	Location (State)	Ratlam
Bridge Name	-	Year of Construction	1958-60
GPS Data	N 22 °52 ' 06"	Station	Bordi
	E 74°23 ' 35 "		Anas

Evaluation index

1	Cosistency with the upper plan, verification og Indian Railway priority bridges	Yes	No
2	Application of Japanese advanced technology	See below	
3	Confirmation of other projects by Japanese ODA	Yes	No
4	Confirmation of other donor's projects and local project	Yes	No
5	Impact on the surrounding society and economy	Much	Less
6	Access to the bridge sites	Good	Not Good
7	Collecting information from japanese companies, and estimation of project effects	See below	

2 Application of Japanese advanced technology

7 Collecting information from japanese companies, and estimation of project effects

Bridge Survey Record (1/6)

Date & Time: 15 Jun,2016 10:40

Bridge No.	R5	Division	Ratlam
Bridge Name	-	Year of Construction	1958-60
GPS Data	N 22° 49' 18"	Station	Limkheda
	E 74° 02' 38"		Mangal Mahudi

Bridge Length	20.00m	Span Arrangement	Number 1
Bridge Width	4.30m		
Type of Superstructu	PSC I-Girder	Type of Substructure	Stone Masonry Abutment

Overview of the Bridge

Side View

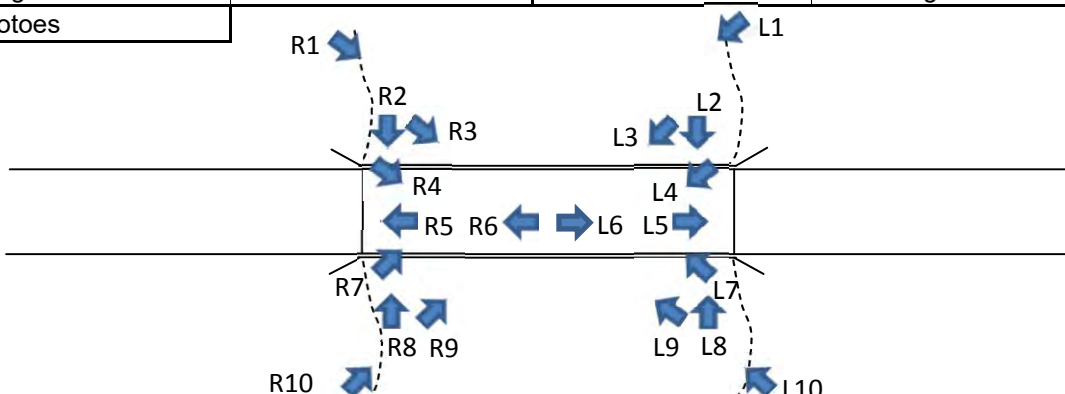







Up View



Bridge Survey Record (2/6) Right Side

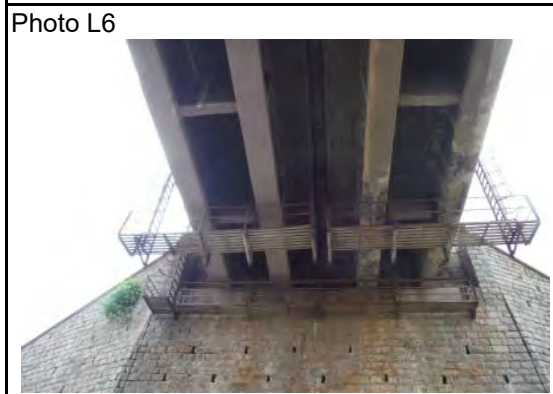
Date & Time: 15 Jun,2016 10:40

Bridge No.	R5	Station	Limkheda
Bridge Name	-		Mangal Mahudi
Photoes			
Photo R2			
Photo R5			
Photo R6			
Photo R7			
Photo R10			
Photo R			

Bridge Survey Record (3/6) Left Side

Date & Time: 15 Jun,2016 10:40

Bridge No.	R5	Station	Ratlam
Bridge Name	-		1958-60
Photos			



Bridge Survey Record (4/6)

Date & Time: 15 Jun,2016 10:40

Bridge No.	R5	Division	Ratlam
Bridge Name	-	Year of Construction	1958-60
GPS Data	N 22 °49 ' 18"	Station	Limkheda
	E 74°02 ' 38 "		Mangal Mahudi

General Description of Damages





Member	Kind of the Damage
	Ex. Concrete : Cracking, Spalling, etc. Steel : Cracking, Rusting, Fracture, etc.
1. Superstructure	
(1) Concrete Member	
- Girder	Cracking
- Cross Beam	Good
- Slab	Cracking , Reinforcement Bar Exposed
(2) Steel Member	N/A
- Girder	
- Vertical Girder (stringer)	
- Cross Beam	
- Sway Bracing	
(3) Bearing Shoe	No Check
(4) Drainage Pipe	N/A
(5) Others	-
2. Substructure	
- Pier	N/A
- Abutment	Good
- Wing Wall	Good
3. Miscellaneous	
- Approach Road Condition	Good
- Obstruction	-
- Scouring	N/A
4. Evaluation	

Bridge Survey Record (5/6)

Date & Time: 15 Jun,2016 10:40

Bridge No.	R5	Division	Ratlam
Bridge Name	-	Year of Construction	1958-60
GPS Data	N 22 °49 ' 18"	Station	Limkheda
	E 74°02 ' 38 "		Mangal Mahudi

Detailed Description of Damages

Object Member	Prestressed I-Girders
Kind of Damage	Cracking
Sketch or Photo	<div style="display: flex; flex-wrap: wrap; justify-content: space-around;">   </div> <div style="display: flex; flex-wrap: wrap; justify-content: space-around;">   </div>

Bridge Survey Record (6/6)

Date & Time: 15 Jun,2016 10:40

Bridge No.	R5	Location (State)	Ratlam
Bridge Name	-	Year of Construction	1958-60
GPS Data	N 22 °49 ' 18"	Station	Limkheda
	E 74°02 ' 38 "		Mangal Mahudi

Evaluation index

1	Cosistency with the upper plan, verification og Indian Railway priority bridges	Yes	No
2	Application of Japanese advanced technology	See below	
3	Confirmation of other projects by Japanese ODA	Yes	No
4	Confirmation of other donor's projects and local project	Yes	No
5	Impact on the surrounding society and economy	Much	Less
6	Access to the bridge sites	Good	Not Good
7	Collecting information from japanese companies, and estimation of project effects	See below	

2 Application of Japanese advanced technology

7 Collecting information from japanese companies, and estimation of project effects

Bridge Survey Record (1/6)

Date & Time: 15 Jun,2016 11:40

Bridge No.	R8	Division	Ratlam
Bridge Name	-	Year of Construction	1958-60
GPS Data	N 22 °49 ' 40"	Station	Limkheda
	E 74°03 ' 20 "		Mangal Mahudi

Bridge Length	20.00m	Span Arrangement	Number 1
Bridge Width	4.30m		
Type of Superstructure	PSC I-Girder	Type of Substructure	Stone Masonry Abutment

Overview of the Bridge Side View



Up View



Bridge Survey Record (2/6) Right Side

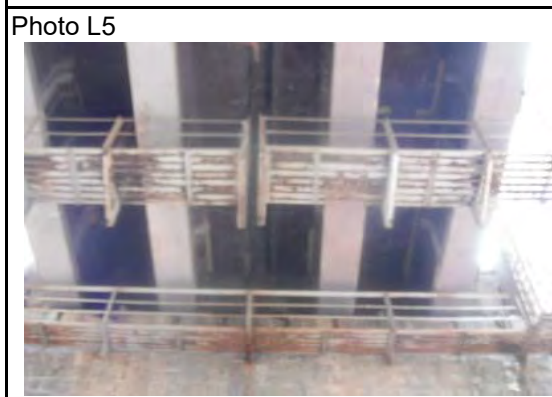
Date & Time: 15 Jun,2016 11:40

Bridge No.	R8	Station	Limkheda
Bridge Name	-		Mangal Mahudi
Photoes			
Photo R1			
Photo R2			
Photo R5			
Photo R6			
Photo R8			
Photo R10			

Bridge Survey Record (3/6) Left Side

Date & Time: 15 Jun,2016 11:40

Bridge No.	R8	Station	Ratlam
Bridge Name	-		1958-60
Photos			



Bridge Survey Record (4/6)

Date & Time: 15 Jun,2016 11:40

Bridge No.	R8	Division	Ratlam
Bridge Name	-	Year of Construction	1958-60
GPS Data	N 22 °49 ' 40"	Station	Limkheda
	E 74°03 ' 20 "		Mangal Mahudi

General Description of Damages





Member	Kind of the Damage
	Ex. Concrete : Cracking, Spalling, etc. Steel : Cracking, Rusting, Fracture, etc.
1. Superstructure	
(1) Concrete Member	
- Girder	Cracking
- Cross Beam	Good
- Slab	Cracking , Reinforcement Bar Exposed
(2) Steel Member	N/A
- Girder	
- Vertical Girder (stringer)	
- Cross Beam	
- Sway Bracing	
(3) Bearing Shoe	No Check
(4) Drainage Pipe	N/A
(5) Others	-
2. Substructure	
- Pier	N/A
- Abutment	Good
- Wing Wall	Good
3. Miscellaneous	
- Approach Road Condition	Good
- Obstruction	-
- Scouring	N/A
4. Evaluation	

Bridge Survey Record (5/6)

Date & Time: 15 Jun,2016 11:40

Bridge No.	R8	Division	Ratlam
Bridge Name	-	Year of Construction	1958-60
GPS Data	N 22 °49 ' 40"	Station	Limkheda
	E 74°03 ' 20 "		Mangal Mahudi

Detailed Description of Damages

Object Member	Prestressed I-Girders
Kind of Damage	Cracking
Sketch or Photo	<div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="width: 45%;">  <p>A photograph showing the side view of a bridge structure. Several vertical metal ladders or scaffolding are attached to the concrete girders. The bridge is supported by a stone masonry abutment on the right side.</p> </div> <div style="width: 45%;">  <p>A close-up photograph of a concrete surface, likely a prestressed I-girder. A distinct, slightly curved crack is visible on the surface, extending from the top edge towards the center.</p> </div> </div> <div style="display: flex; justify-content: space-around; align-items: flex-start; margin-top: 20px;"> <div style="width: 45%;">  <p>A close-up photograph of a concrete surface, showing a vertical crack. The surface appears dark and possibly wet or stained. A wooden beam is visible in the foreground.</p> </div> <div style="width: 45%;">  <p>A photograph showing a bridge structure with a metal ladder or scaffolding. The bridge is supported by a stone masonry abutment. The background shows a clear sky.</p> </div> </div>

Bridge Survey Record (6/6)

Date & Time: 15 Jun,2016 11:40

Bridge No.	R8	Location (State)	Ratlam
Bridge Name	-	Year of Construction	1958-60
GPS Data	N 22 °49 ' 40"	Station	Limkheda
	E 74°03 ' 20 "		Mangal Mahudi

Evaluation index

1	Cosistency with the upper plan, verification of Indian Railway priority bridges	Yes	No
2	Application of Japanese advanced technology	See below	
3	Confirmation of other projects by Japanese ODA	Yes	No
4	Confirmation of other donor's projects and local project	Yes	No
5	Impact on the surrounding society and economy	Much	Less
6	Access to the bridge sites	Good	Not Good
7	Collecting information from japanese companies, and estimation of project effects	See below	

2 Application of Japanese advanced technology

7 Collecting information from japanese companies, and estimation of project effects