Appendix-8: Detailed Investigation

- 8.1 Repair case study by Degradation prediction of Carbonation
- 8.2 Repair case study by Degradation prediction of Chloride attack
- 8.3 Non-destructive test for concrete structure
- 8.4 Minute destructive test for concrete structure
- 8.5 Physical investigation for concrete structure
- 8.6 Detail investigation of a steel structure

Appendix 8.1 Repair case study by Degradation prediction of Carbonation

To estimate carbonation depth in concrete, formula (1) is presented here as follows.

 $y=b\sqrt{t}$ ----formula (1)

y: estimated carbonation depth (mm)

b : coefficient of carbonation speed (mm/√year)

t: time (year)

Concrete standard specification "The Maintenance Volume" defines the difference between the cover of rebar and carbonation depth as "carbonation rest". This carbonation rest is set not to be more than 10 mm in the general environment. Because in the case of example presented here, corrosion was caused by very little more than 10 mm of carbonation rest. According to JSCE, Carbonation speed coefficient is decided from measured carbonation depths and formula (1).

Measured carbonation depths and the carbonation speed coefficients of the overhang slab are shown in Table 1.

In this overhang slab, some parts have carbonation rest less than 10 mm at present (2013). In this rate, after 10 years (2023) more part will have carbonation rest less than 10 mm; even in some part carbonation depth will be beyond the cover of rebar.

Therefore deterioration phenomenon of carbonation is in progress for the overhang slab. It's predicted that corrosion and consequent spalling (detachment of reinforcement) due to carbonation will also occur from now on.

Therefore surface protection is needed to reduce the rate and damage of carbonation.

Table 1 Measured carbonation depth and carbonation speed coefficient

Complet	tion year	1971	Inv	estiga	tion year	2013	Pass	sed years	42 Year			
		Present(201	.3)			5 years lat	ter(2018)	10 years la	ter(2023)	20 years la	ter(2033)	
	1) Cover of rebar	2) The depth of carbonation y ₀	carbo	ı	of carbonati on speed (b)	3) The depth	The rest of carbonation (1-3)	of carponation	The rest of carbonation (1-4)	5) The depth of carbonation 20 years later y ₂₀ =y ₀ +b*√20	carbonation	Allowable rest of carbonation
	mm	mm	m	m	mm/√year	mm	mm	mm	mm	mm	mm	mm
1	57.0	25.8	31.2	OK	3.981	34.7	22.3 OK	38.4	18.6 OK	43.6	13.4 OK	
2	57.0	25.8	31.2	OK	3.981	34.7	22.3 OK	38.4	18.6 OK	43.6	13.4 OK	
3	28.0	21.6	6.4	OUT	3.333	29.1	-1.1 OUT	32.1	-4.1 OUT	36.5	-8.5 OUT	10.0
4	28.0	21.6	6.4	OUT	3.333	29.1	-1.1 OUT	32.1	-4.1 OUT	36.5	-8.5 OUT	10.0
5	43.0	23.2	19.8	OK	3.580	31.2	11.8 OK	34.5	8.5 OUT	39.2	3.8 OUT	
6	43.0	23.2	19.8	OK	3.580	31.2	11.8 OK	34.5	8.5 OUT	39.2	3.8 OUT	
Average	42.7	23.5			3.631		•	•				

Illustration of Example presented in Table-1.

$$\begin{array}{lll} 25.8 = b\sqrt{(42)} & y_{2018} = y_{2013} + b*\sqrt{5} & y_{2023} = y_{2013} + b*\sqrt{10} \\ => b = 25.8/(\sqrt{42}) & => y_{2018} = 25.8 + 3.981*\sqrt{5} & => y_{2023} = 25.8 + 3.981*\sqrt{10} \\ => b = 3.981 & => y_{2018} = 34.7019 & => y_{2023} = 38.38903 \end{array}$$

Appendix 8.2 Repair case study by Degradation prediction of Chloride attack

Chloride ion concentration is calculated from the following formula. Details of the formula are described in chapter 6.

$$Ci(x,t) = C_0 \left(1 - erf\left(\frac{x}{\sqrt{4Dt}}\right) \right)$$

D: Diffusivity constant; Ci(x,t):Chloride ion concentration at 'x' location(kg/m³); t: Time(Year); C₀: Chloride ion concentration at x=0 (concrete surface) (kg/m³); x: Distance coordinate (cm); erf(x): Error function

Measured chloride ion concentration of the structure in different depth is shown in Table 2. According the Fick's formula, we get C_o on surface and diffusivity constants (Table 3).

The spread of chloride ion concentration in future is predicted in according to Fick's formula with C_o and diffusivity constant. If no surface protection is applied to the structure, the spread of predicted chloride ion concentration is shown in Table 4. If chloride ion concentration in the PC tendon location exceeds the concentration limit, PC tendon corrodes. In this case, PC Tendon will be corroded in 1 or 3 years later (Tendon is located at 4 cm depth from the surface).

Repair is required to save PC tendon from chloride damage.

Even if surface protection is applied, chloride ion infiltrates through; Chloride ion concentration prediction of infiltration through the surface protection is shown in Table 5. Chloride ion concentration at the PC tendon location won't be less than the concentration limit at which PC tendon corrodes regardless of surface protection; is shown in Table 5.

Assumed method of repair for chloride ion concentration is Taken out the concrete of the structure up to 40 mm depth from the surface and then refilling and applying surface protection (hereinafter called "taken out and refill 40 mm + surface protection"). Chloride ion concentration prediction of infiltration of "taken out and refill 40mm + surface protection" is shown in Table 6. In this method, even after 100 years chloride ion concentration at PC tendon location will be below the concentration limit at which PC Tendon corrodes; is shown in Table 6.

The steps of repair measure are as follows.

- (1) Taken out 40mm + section restoration
- (2) Applying surface protection

Table 2 Measured chloride ion concentration

Depth from the surface	Measured chloride ion
(cm)	concentration (kg/m³)
0.0-2.0	4.465
2.0-4.0	2.820
4.0-6.0	0.705
6.0-8.0	0.470

Table 3 Presumed surface and inner chloride ion concentration and diffusivity constant

	Existing concrete						
Curre	28.0						
Surface chlo	oride ion concentra	tion (kg/m ³)	6.000				
Inner chlor	ride ion concentrati	on (kg/m³)	0.300				
Dif	fusivity constant, D)1=	0.200				
	Measured		Estimated				
Depth from the	chloride ion	Depth from the	Chloride ion				
surface (cm)	concentration	surface (cm)	concentration				
	(kg/m³)						
1.0	4.465	0.0	6.000				
3.0	2.820	1.0	4.661				
5.0	0.705	2.0	3.436				
7.0	0.470	3.0	2.409				
		4.0	1.622				
		5.0	1.070				
	6.0						
		7.0	0.508				
		8.0	0.396				

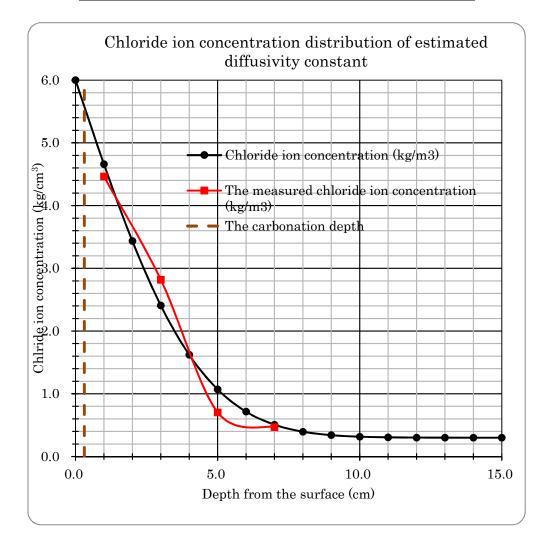


Table 4 Spread of predicted chloride ion concentration (without surface protection)

Depth	Period (year)								
(om)	nragant	1 year	3 years	5 years	10 years	20 years	30 years	50 years	100 years
(cm)	present	later	later	later	later	later	later	later	later
0	6.000	6.000	6.000	6.000	6.000	6.000	6.000	6.000	6.000
1	4.661	4.683	4.725	4.763	4.844	4.969	5.061	5.189	5.366
2	3.436	3.475	3.548	3.615	3.762	3.990	4.161	4.403	4.743
3	2.409	2.456	2.546	2.629	2.814	3.109	3.336	3.666	4.145
4	1.622	1.669	1.758	1.842	2.035	2.355	2.611	2.997	3.581
5	1.070	1.110	1.187	1.261	1.436	1.744	2.002	2.409	3.060
6	0.716	0.745	0.804	0.862	1.005	1.272	1.511	1.908	2.587
7	0.508	0.527	0.567	0.608	0.714	0.927	1.132	1.495	2.167
8	0.396	0.407	0.432	0.458	0.530	0.687	0.851	1.165	1.800
9	0.341	0.347	0.361	0.376	0.420	0.529	0.652	0.910	1.486
10	0.316	0.319	0.326	0.334	0.360	0.429	0.517	0.719	1.224

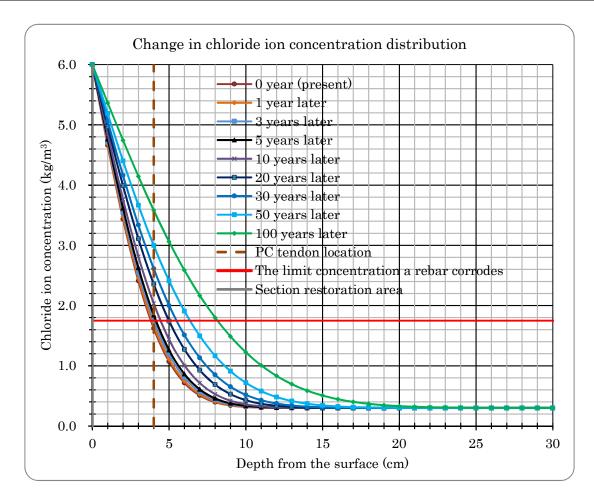


Table 5 Prediction of Infiltration of Chloride ion Concentration (with surface protection)

Depth		Period (year)							
(cm)	present	1 year	3 years	5 years	10 years	20 years	30 years	50 years	100 years
(CIII)	present	later	later	later	later	later	later	later	later
0	6.000	5.754	5.378	5.094	4.587	3.958	3.555	3.042	2.391
1	4.661	4.664	4.586	4.470	4.176	3.716	3.388	2.943	2.348
2	3.436	3.474	3.526	3.542	3.491	3.283	3.079	2.756	2.263
3	2.409	2.456	2.543	2.614	2.719	2.742	2.676	2.501	2.143
4	1.622	1.669	1.758	1.840	2.006	2.181	2.233	2.202	1.995
5	1.070	1.110	1.187	1.261	1.429	1.667	1.797	1.887	1.826
6	0.716	0.745	0.804	0.862	1.003	1.242	1.407	1.578	1.646
7	0.508	0.527	0.567	0.608	0.714	0.916	1.082	1.294	1.462
8	0.396	0.407	0.432	0.458	0.530	0.683	0.829	1.048	1.283
9	0.341	0.347	0.361	0.376	0.420	0.528	0.643	0.844	1.115
10	0.316	0.319	0.326	0.334	0.360	0.429	0.513	0.683	0.962

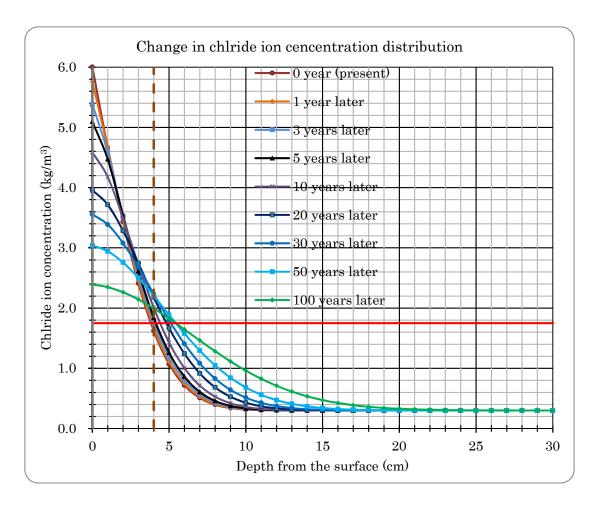
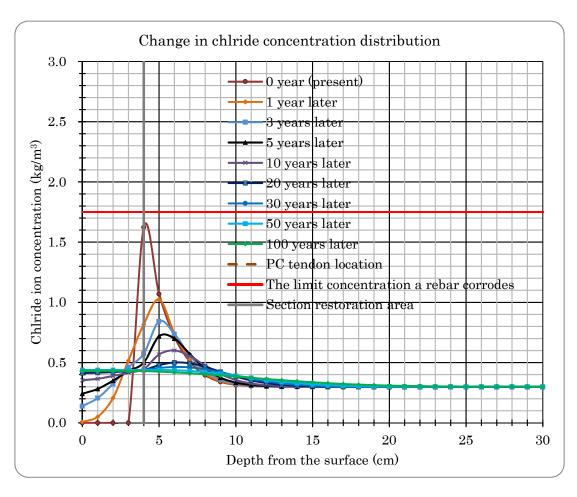


Table 6 Prediction of Infiltration of Chloride ion Concentration (taken out 40mm and refill + surface protection)

Depth	Period (year)								
(om)	nragant	1 year	3 years	5 years	10 years	20 years	30 years	50 years	100 years
(cm)	present	later	later	later	later	later	later	later	later
0	0.000	0.007	0.139	0.242	0.353	0.414	0.431	0.439	0.432
1	0.000	0.051	0.206	0.282	0.366	0.416	0.432	0.439	0.432
2	0.000	0.208	0.325	0.351	0.389	0.422	0.434	0.439	0.432
3	0.000	0.517	0.462	0.430	0.417	0.429	0.437	0.439	0.431
4	1.622	0.818	0.574	0.500	0.446	0.438	0.440	0.439	0.430
5	1.070	1.024	0.842	0.719	0.568	0.479	0.455	0.439	0.425
6	0.716	0.741	0.738	0.700	0.601	0.501	0.464	0.437	0.419
7	0.508	0.527	0.558	0.571	0.554	0.494	0.460	0.431	0.412
8	0.396	0.407	0.431	0.452	0.476	0.465	0.444	0.421	0.403
9	0.341	0.347	0.361	0.375	0.405	0.424	0.420	0.407	0.394
10	0.316	0.319	0.326	0.334	0.356	0.384	0.392	0.391	0.384



Appendix 8.3 Non-destructive tests for concrete structure

Instruments for non-destructive tests of a concrete structure are shown in Table 7. The instruments of Table 7 are generally used for Detailed Investigation.

Table 7 Instruments for non-destructive test

Concrete	Investigation item	Investigation method (principle)	Name of the inspection machine	Picture
Non- destructive test	Compressive strength	Repulsion hardness method	Rebound hammer (Ex. Schmidt rebound hammer)	
Non- destructive test	Crack width	Crack scale	Crack scale	1 2 3 4 5 6 7 8 We shared analyse Hands 1 2 3 4 5 6 7 8 We shared analyse Hands 1 2 3 4 5 6 7 8 We shared analyse Hands 1 2 3 4 5 6 7 8 We shared analyse Hands 1 2 3 4 5 6 7 8 We shared analyse Hands 1 2 3 4 5 6 7 8 We shared analyse Hands 1 2 3 4 5 6 7 8 We shared analyse Hands 1 2 3 4 5 6 7 8 We shared analyse Hands 1 2 3 4 5 6 7 8 We shared analyse Hands 1 2 3 4 5 6 7 8 We shared analyse Hands 1 2 3 4 5 6 7 8 We shared analyse Hands 1 2 3 4 5 6 7 8 We shared analyse Hands 2 3 4 5 6 7 8 We shared analyse Hands 2 3 4 5 6 7 8 We shared analyse Hands 2 3 4 5 6 7 8 We shared analyse Hands 2 3 4 5 6 7 8 We shared analyse Hands 2 3 4 5 6 7 8 We shared analyse Hands 2 3 4 5 6 7 8 We shared analyse Hands 2 3 4 5 6 7 8 We shared analyse Hands 2 3 4 5 6 7 8 We shared analyse Hands 2 3 4 5 6 7 8 We shared analyse Hands 2 3 4 5 6 7 8 We shared analyse Hands 2 3 4 5 6 7 8 We shared analyse Hands 2 3 4 5 6 7 8 We shared analyse Hands 2 3 4 5 6 7 8 We shared analyse Hands 3 4 5 6 7 8 We shared analyse Hands 3 5 6 7 8 We shared analyse Hands 3 5 7 8 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
Non- destructive test	Confirmation of the damage situation	Digital photographic image	Robot camera	Inspection Connect Con
Non- destructive test	Crack width	Digital photographic image	Digital camera	
Non- destructive test	Rebar investigation	Electromagnetic wave	Rebar detector (Ex. RC radar)	
Non- destructive test	Rebar investigation	Electromagnetic induction	Rebar detector (Ex. Prophometer)	o metal
Non- destructive test	Interior hollow and Internal flaw	Tapping inspection	Test hanmer	

Appendix 8.4 Minute destructive tests for concrete structure

Instruments for minute-destructive test of a concrete structure are shown in Table 8, Table 9. The instruments of Table 8, Table 9 are generally used for Detailed Investigation.

Table 8 Instruments for minute destructive tests (1)

Concrete	Investigation item	Investigation method (principle)	Name of the inspection machine	Picture
Minute destructive test	Core extraction	Core extraction	Core machine	
Minute destructive test	Compressive strength	Strength test by core extraction	Compression test machine	
Minute destructive test	Carbonation depth	Phenolphthalein method by core extraction	Phenolphthalein method	
Minute destructive test	Carbonation depth	Phenolphthalein method by drilling	Phenolphthalein method	
Minute destructive test	Carbonation depth	Phenolphthalein method by taken out rebar	Phenolphthalein method	
Minute destructive test	Chloride ion concentration analysis	Core extraction	Potentiometric Titration Device	

Table 9 Instruments for minute destructive tests (2)

Concrete	Investigation item	Investigation method (principle)	Name of the inspection machine	Picture
Minute destructive test	Chloride ion concentration analysis	Concrete powder by drilling	Potentiometric Titration Device	新方式の
Minute destructive test	Rebar corrosion	Exposed reber	Visual observation	
Minute destructive test	Thickness of member	Boring by drilling		

Appendix 8.5 Physical investigation for concrete structure

In a physical investigation, Displacement, Strain and Vibration are measured. From the measured values, state and special dynamic properties of the structure are grasped and the cause of the damage is specified.

It is not possible to specify the cause of damage directly from measured data (displacement, strain and vibration etc.) in a physical investigation.

Field measurement is compared with the damage analysis model prepared based on measured data from a dynamics investigation. It's possible to specify the cause of the damage from comparative examination of analysis model and measurement.

Measurements of a physical investigation include static loading test, dynamic loading test, frequency measurement and vibration measurement etc.

Table 10 Test method of a Physical investigation

T	,	
Test	Method	
Static loading test	A static loading test applies the load statically in a structure of measurement objects and consequent displacement, strain etc. are measured. Loading is done by the weight vehicles of known loads such as heavy truck, laughter crane, etc.	
Dynamic loading test	A dynamic loading test applies the load dynamically in a structure of measurement objects and consequent displacement, strain, etc. are measured. Loading is done by driving a weight vehicle of known load such as heavy truck, laughter crane, etc. on the target area of the bridge.	
Frequency measurement	Frequency measurement measures the displacement, strain, amplitude of vibration and their frequency (the number of times) for some periods (as example- 3 days, 1 week etc.).	38 75 11.1 St 150 re 188 88 225 (N 263) m² 300 y 338 376 0 500 1000 1500 2000 250 Frequency (times)
Vibration measurement	Vibration measurement test installs accelerometers on the target points of the structure and measures Frequency. A natural frequency, a vibration mode are analyzed by a vibration wave pattern.	13± Natural frequency 150± 85± 00 3 6 9 12 15 18 Frequency (Hz)

Table 11 Instruments for Physical investigation

Physical investigation	Outline	Measurement method	Meast	uring device
Dead-load stress	A slit is cut in the target point of concrete structure. The release strain is measured by device of full-field measurement.	The slit stress relief technique using optical full-field measurement method	Device of optical full- field measurement (Flat scanner)	
		Static or dynamic loading test	Strain gauge	-
	A strain gauge is installed in	Static loading test	The switch box	SELECTION OF SELEC
Stress due to loading	the measurement point of a structure. The structure is loaded statically or dynamically.	Static loading test	Data logger	105 030
	The strain (stress) by the loading is measured.	Dynamic loading test	Dynamic strain amplifier	
		Dynamic loading test	Data recorder	
Displacement when loading	A displacement pick-up is installed in the measurement point of a structure. The structure is loaded statically or dynamically. The displacement by the loading is measured.	Static or dynamic loading test	Displacement pick-up	
Stress frequency The displaced frequency	The frequency (the number of times) of the strain or the displacement amplitude of vibration by the vehicle is measured in an optional period (3 days, 1 weeks, etc.).	Frequency measurement	Device of frequency measurement	
Vibration measurement	Accelerometers are installed on the target structure and measures vibration. The natural frequency and vibration mode, etc. are obtained from vibration	Vibration measurement	Accelerometer	

Appendix 8.6 Detailed investigation of a steel structure

Instruments for Detailed Investigation of steel structures are shown in Table 12.

Table 12 Instrument for Detailed Investigation of Steel structures

	Investigation item	Investigation method (principle)	Name of the inspection machine	Picture figures
Non- destructive test	Plate thickness	Ultrasonic	Ultrasonic Thickness Gauge	7.31
Non- destructive test	Coating film thickness	Electromagnetic induction	Device for Measureing Film Thickness	
Non- destructive test	Crak investigation (Surface crack)	Magnetic particle inspection	A magnetic particle including the luminous paint and light of ultraviolet rays	Crack Light of litraviolet rays
Non- destructive test	Crak investigation (Interrior crack)	Ultrasonic	Ultrasonic Testing Device	
Minute destructive test	Plate thickness	Drilling		

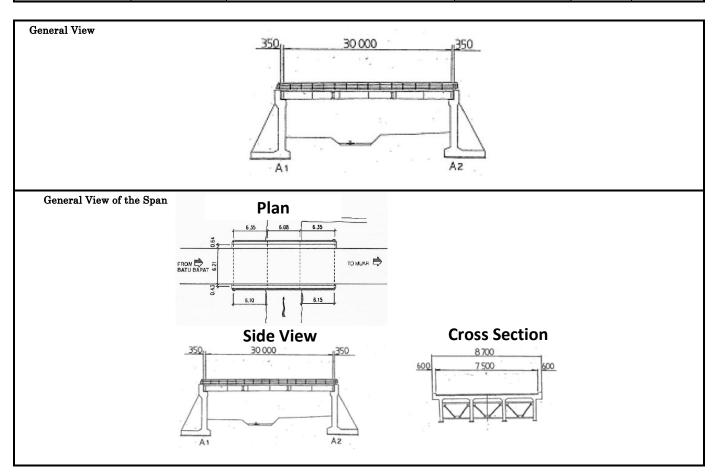
Appendix-9: Recording Report Forms

- 9.1 Bridge Inventory Form
- 9.2 Routine Inspection Report Form
- 9.3 Periodic inspection Report Form
- 9.4 Bridge Evaluation Report Form
- 9.5 Periodic Inspection/Evaluation Report Form (Sample)

9.1 Bridge Inventory Form

Bridge Inventory Form (Sample)

																		$\overline{}$
File Nu	mber	N1, 8b]	Date		
Zone		Dhaka			Circle Dhaka			Division		on	Narayangnj-1		Sub	-Divisio	Narayang	mj-1		
District					Upazilla					Union					Village			
Road No) .	N1	Road Na	ne	Dhaka(Jatrabari)-(Comilla-Chittagong-Taknaf			aknaf	LRP	8b		GPS	Lat	23d-42'-7	
Bridge l	Name	Kanch p	ur Bridge). Э.				LRP+0	Offset (m)	5+397	Name 6				Long inage	90d-30'-5 8.976	7.3"
Year of Constru		•		Design Standard					Design Load	1		Load Ristric			(km)		(to	n)
		River					Owner				Public		telepho	ne line		Owne	ľ	
Feature Intersec		Road					Owner				Utiliti	es	water			Owne	ier	
		Railway					Owner				Carrie	Carried						
Bridge I	Length	394	.225	No. of Spa	pans 8 Span Arrang			gement 42.17+42.80+4			42.25+42.42+54.83+72.33+54.		.33+54.0	00 Skew degre		Angle 70		
					Туре			Material					Тур	Гуре		Material		
Superst	ructure	•		PC Girde	ler Bridge			Concrete			Deck Slab RC		RC			Concrete		
Substru		Abutmen	ment Gravity t			уре			Concrete			Foundation (Abutment)						
Substru		Pier		Wall type			Concrete				Foundation (Pier)		Piled foundations		ons		Concrete	
Other		Pavement		Asphalt						Bearings		Rubber						
Element	ts	Expansio	n Joint	Steel							Railing		Others					
Total V Width		Width	10.4	m Whee			Sidew	alk-L Carriag		_	Median		Carriage I	•	Side	ewalk-R	Whee Guard	
	Effecti	ve Width	7.4	m		m	1.2	m	2.0	m	1.0	m	2.0 m		1.5	2 m		m
Traffic Conditions		ong	Census (year)	20)14						Heavy Vehicle Traffic Rate (%)			0~10 10~20		20~30	·30~
		OIIO	Traffic V	Volume 10,500			Vehicles (Daytime 12			me 12	2 hours) Condition Category for Entire Bridge			85		D		



Front View



Location Map

Side View



Under the Bridge



Work History

	Date	Туре		Element	Content	Bridge Rated	Remarks
1	YY/MM/DD	Ι	Periodic Inspection	Entire bridge	Evaluated:D: G1Girder, Railing	D	
2		R	Rehabilitation	Main Girder : G2			
3							
4							
5							
6							
7							
8							
9							
10							

REFERENCE Types of Bridge Elements

Superstructure

Superstructure					
crete Bridge					
RC Slab Bridge					
RC Girder Bridge					
PC Girder Bridge					
PC Box Girder Bridge					
Concrete Arch Bridge					
Balanced Cantilever Bridge					
Rigid Frame Bridge					
Cable-Stayed Bridge					
9 Small Slab Bridge (Former"Slab Culvert")					
l Bridge					
Steel Girder Bridge					
Steel Box Girder Bridge					
Steel Arch Bridge					
Truss Bridge with Steel Deck					
Truss Bridge with RC Slab					
Truss Bridge with Timber Deck					
Portable Steel Bridge with Steel Deck					
Portable Steel Bridge with Timber Deck					
onry					
Masonry Arch Bridge					
rert					
Box Culvert					

Deck	Deck Slab						
1	RC						
2	PC						
3	Steel						

Substrcture

Abutment								
1	Gravity Type							
2	Semi-Gravity Type							
3	Invrted T-type							
4	Counterforted (Buttressed)							
5	Rigid FrameType							
6	Pier type							
7	Other type							
Piers								
1	Wall Type							
2	Rigid Frame Type							
3	T-shaped Column Type							
4	Column Type							
5	Pile Bent Type							
6	Other type							
Found	Foundations							
1	Strip footings							
2	Piled foundations							

Pavement

1	Asphalt					
2	Concrete					
3	Others					
4	None					

Expansion Joint

1	Steel
1	Steel
2	Rubber
3	Others
4	None

Bearings

1	Steel
2	Rubber
3	None

Railing

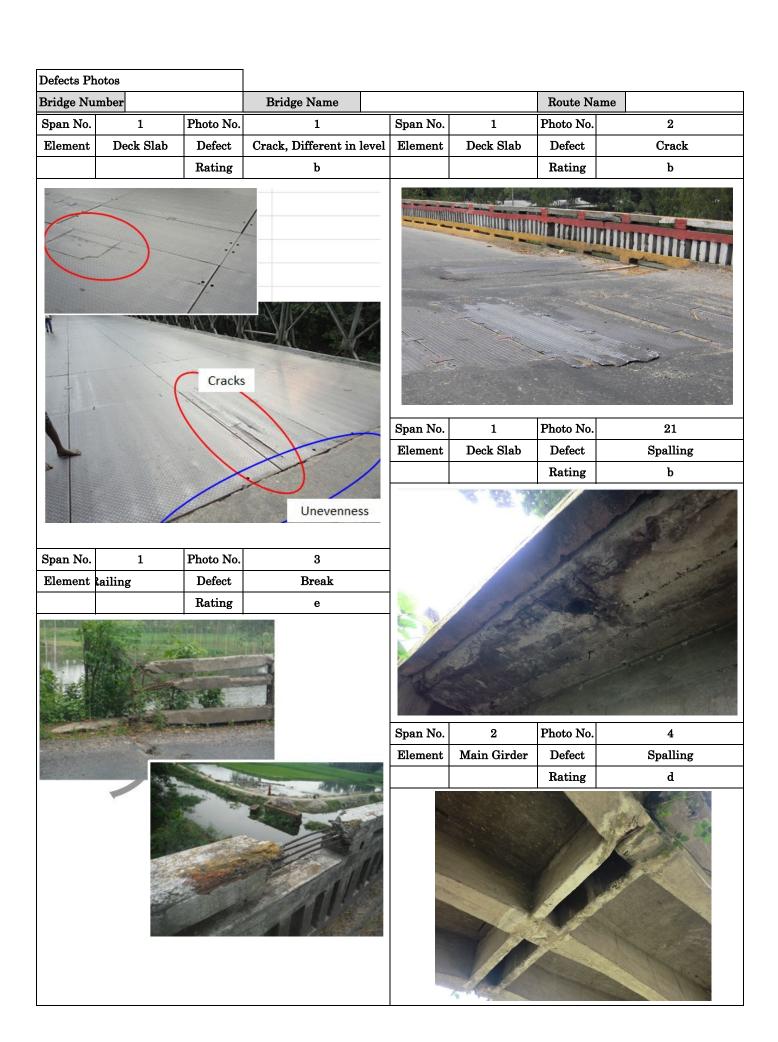
1	Steel
2	Concrete
3	Others

9.2	? Ro	utine	Inspection	Report	Form
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Routine Inspection Report Form (Sample)

	Routi	ne 1	nspe	ection 1	керо	rt Form	(Sar	nple)			
File Number	N-1, 8b			Inspector					Date			
Zone	Dhaka	Circle		Dhaka]	Division	Naraya	angnj-0	Sub-Di	vision	Naraya	
Road No.	N-1	Road 1	Name	Dhaka(Jat	rabari)	-Comilla-Chi	ttagong-	Taknaf	GPS	Lat Long	23d-42 90d-30	
Bridge Name	Kanch pur Bri	dge.			J	LRP+Offset	5+3976	3	Chaina		8.976	01.0
Routine Inspection	1		Progr	ammed			Excep					
Date of Inspection						Date of Next					1	
Inspection Ele	ements		olem	T	,	a ,	Rect	ified		enance		ection
(*Refer to botton		Y	ck) N			Comments e activity)	Y	N	Y	uired N	Kequ Y	ired N
Deck Surface						Ť						
Pavement, Bridge Appr Difference in leve		√										
Abnormal bitumi			✓									
Accumulation of	debris											
Expansion Joints Material defects	*											
 Abnormal spacin 	g											
Differnce in levelWater leakage /p		✓	√									
 water leakage /p Deformation/brea 			•									
Abnormal noise/v	ibration											
Railing, Curb Material defects	*-concrete	✓										
Differnce in level		,										
 Deformation/brea 	•	✓										
Abnormal spacin Substructure (include	g Jing gulyont w	in <i>a</i> wa	1100)									
Material Defects*	ing curvert w	liig wa	liias)									
Piers												
AbutmentFoundations												
General												
 Water leakage /p 												
Deformation/breaSettlement/Tilt/N												
Scour	dovement											
<u>Bearings</u>												
 Material Defects Abnormal spacin 												
Functional disord												
 Water leakage 												
Abnormal noiseDeformation/brea	ale.											
Accumulation of	-											
Superstructure												
Material Defects* i Girders (includin												
Cross girders	g tasteners)											
■ Deck slab			✓									
General Water leakage												
■ Abnormal noise												
• Accumulation of												
Abnormal anchorAbnormal deflect												
■ Deformation /bre												
Drainage System												
 Material Defects Water leakage 	*											
 water leakage Deformation /bre 	ak											
 Accumulation of 									<u> </u>			

Material *	Defects description
Concrete	Crack, spalling/exposed rebar, waterleakage/efflorescense, delamination
Steel	Corrosion, crack in steel, loose or missing bolt, fracture, deterioration of paint system
General Comments	



9.3	Periodic	inspection	Report	Form
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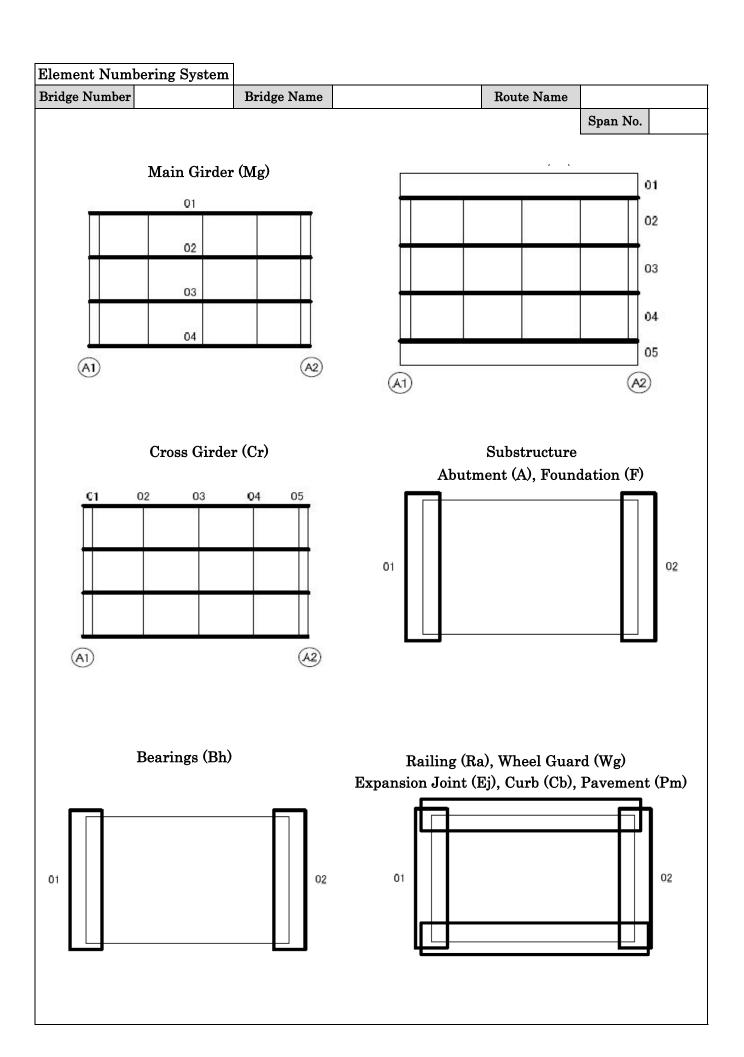
Periodic Inspection/Evaluation Report Form

					_													
File Num	nber										Inspec	tor				Date		
Zone					Circle	е				Divisio	on				Sub-D	ivision		
District					Upaz	illa				Union					Villa	ge		
Road No.			Road Na	me								LRP Name			GPS	Lat Long		
Bridge N	ame							LRP+0	Offset (m)		210220			Chair (km))		
Year of Construc	tion	1	972	Design Standard					Design Load	1			li i	Load Ristrict				(ton)
		River		•			Owner				Public					Owner		
Feature Intersect	ed.	Road					Owner				Utiliti	es				Owner		
IIIocisco	cu	Railwa	ay				Owner	,			Carrie	d						
Bridge L	ength			No. of Spa	ns		Span Arrang	ement								Skew A		
					Туј	ре		I	Materia	ıl				Тур	е		Mat	erial
Superstr	ucture										Deck S	Slab						
a		Abutm	ent								Found (Abuti							
Substruc	ture	Pier									Found (Pier)							
Other		Pavem	ent								Bearin	ıgs						
Elements	3	Expans	sion Joint								Railin	g						
Width	Total			m		heel ard-L	Sidew	valk-L		riage y-L	Ме	dian	Carri way	_	Side	walk-R	Wh Gua	
WIGH	Effect Width			m		m		m		m		m		m		m		m
Traffic C	onditio		Census	(year)								Rate (%			0~10) 10~2	0 •20~8	io ·30~
Traine C	onund		Traffic V	olume			V	ehicles	(Dayti	ime h	ours)		ion Categ ire Bridg					

General View			
General View of the Span			
	Plan		
	Side View		Cross Section
		Aug 2010	Dago No 262 of 221

General Draw	ings		ī			
Bridge Number		Bridge Name			Route Name	
Genera	ıl View					
					_	
Side Vi	lew				Plan	
						220
(A1)		(P1)		(A1)		PI
					G G	
					Cross Section	1

Overall View Photo				
Bridge Number	Bridge Name	Route Name		
			Viewpoint	
			Date	
			Viewpoint	
			Date	
			Viewpoint	
			Date	
			l	



Defect Sketch						
Bridge Number	Bridge Name]	Route N	lame		
				Crack		1
			-	Delaminat	ion	
			-		xposed Rebar	
			-		age/Efflorescence	£
			-		kage/Puddle	11110
			3	Deformatio	on/Break	
				Corrosion		all D
				Other Defe	ect	
			Γ	5557 16551		
			-	Crack		1
			1	Delaminati		
				Delaminati Spalling/E	xposed Rebar	
			:	Delaminati Spalling/E Water leak	xposed Rebar age/Efflorescence	Emma Maria
			:	Delaminati Spalling/E Water leak	xposed Rebar age/Efflorescence xage/Puddle	
			,	Delaminati Spalling/E Water leak Water Leak	xposed Rebar age/Efflorescence xage/Puddle	
			,	Delaminati Spalling /E Water leak Water Leak Deformatio	xposed Rebar age/Efflorescence xage/Puddle on/Break	
			,	Delaminati Spalling /E Water leak Water Leak Deformation	xposed Rebar age/Efflorescence xage/Puddle on/Break	
			,	Delaminati Spalling /E Water leak Water Leak Deformation	xposed Rebar age/Efflorescence xage/Puddle on/Break	
			,	Delaminati Spalling /E Water leak Water Leak Deformation	xposed Rebar age/Efflorescence xage/Puddle on/Break	
			,	Delaminati Spalling /E Water leak Water Leak Deformation	xposed Rebar age/Efflorescence xage/Puddle on/Break	
			,	Delaminati Spalling /E Water leak Water Leak Deformation	xposed Rebar age/Efflorescence xage/Puddle on/Break	
			,	Delaminati Spalling /E Water leak Water Leak Deformation	xposed Rebar age/Efflorescence xage/Puddle on/Break	
			,	Delaminati Spalling /E Water leak Water Leak Deformation	xposed Rebar age/Efflorescence xage/Puddle on/Break	
			,	Delaminati Spalling /E Water leak Water Leak Deformation	xposed Rebar age/Efflorescence xage/Puddle on/Break	
			,	Delaminati Spalling /E Water leak Water Leak Deformation	xposed Rebar age/Efflorescence xage/Puddle on/Break	
			,	Delaminati Spalling /E Water leak Water Leak Deformation	xposed Rebar age/Efflorescence xage/Puddle on/Break	
			,	Delaminati Spalling /E Water leak Water Leak Deformation	xposed Rebar age/Efflorescence xage/Puddle on/Break	
			,	Delaminati Spalling /E Water leak Water Leak Deformation	xposed Rebar age/Efflorescence xage/Puddle on/Break	
			,	Delaminati Spalling /E Water leak Water Leak Deformation	xposed Rebar age/Efflorescence xage/Puddle on/Break	
			,	Delaminati Spalling /E Water leak Water Leak Deformation	xposed Rebar age/Efflorescence xage/Puddle on/Break	
			,	Delaminati Spalling /E Water leak Water Leak Deformation	xposed Rebar age/Efflorescence xage/Puddle on/Break	

Defect P	hotos					
Bridge Nu	mber	Bridge Name		Rot	ute Name	
Span No.	Phot	to No.	Span No.		Photo No.	
Element	De	efect	Element		Defect	
	Ra	ting			Rating	
Span No.	Phot	to No.	Span No.		Photo No.	
Element		efect	Element		Defect	
		ting			Rating	
Span No.	Phot	to No.	Span No.		Photo No.	
Element		efect	Element		Defect	
	Rat	ting			Rating	

0.Concrete Bridge

0.Concrete Bridge														Ins	pect	or								Dat	te			
File Number				Br	idge	Na	me							Sup	erst	ruc	ture									Υe	ar	
Zone					C	Circl	е							Divi	sion	ı						Su	ıb-D	ivis	ion			
Inspection Result																		Sp	an I	Leng	ŗth			m	Sr	an l	Vo.	1/2
		S	tee]	Ma	teria	al	(onc	rete	Ma	teri	al		О	the	rs						Con	ımoı	n				
Items of Defects		Corrosion	Crack	Loose or Missing Bolts	Fracture	Deterioration of Paint System	Cracking	Spalling/Exposed Rebar	Water Leakage/Eflorescence	Fallen-out of Deck Slab	Crack of Deck Slab	Delamination	Abnormal Spacing	Difference in Level	Pavement Crack	Functional disorder of Bearings	Others	Defects of Reinforced Materials	Abnormal Anchorage	Discoloration/deterioration	Water Leakage /Puddle	Abnormal Noise/Vibration	Abnormal Deflection	Deformation/Break	Accumulation of Debris	Settlement/Tilt/Movement	Scour	Remarks
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	
Main Girder	01	4	\leq	/		/,				/	/			/	/	/									/	\angle	/	
Cross Beam	01	4	Κ,	/,	\angle	/,					/		4	/,	/,	/,							/,		/,	/,	/	
Deck Slab (RC)	01	Ζ,	/	/,	/	/_	4						4	/	/_	/_						/,	/,	-	/,	/_	/	
Deck Slab (PC)	01	Κ,	/	/		_							4	_	4	4						/	Κ,	_	/	/	_	
Abutment / Pier (RC)	01	_	/							/	/		4	/	/	/			/			/	/		/	/	/	
Abutment / Pier (Steel)	01	_							4	/	Κ,	Κ,	4	4	/	/			/	4			4		Κ,			
Foundation (RC)	01	_	_	<i>Y</i>	\mathbb{Z}	_			_	/	Κ,	Κ,	4	_	/	/		4	/	_	_	Κ,	/	/	Κ,			
Foundation (Steel)	01			/						/	Κ,		4	_	/	/			/		/	Κ,	/	_	/			
Retaining Wall	01	_	_	_						/ ,	Κ,		_	\leftarrow	\leftarrow	_			\leftarrow			_	/	_	_			
Bearing	01								4	/	Κ,			4	/			4	-	4			/	-			<	
Bearing	02								_	/	Κ,			_	/			4	\angle	_			/	-			<	
Bearing (hinge)	03								_	/	/			_	/			4	-	_			/	-			<	
Bearing (hinge)	04								_	\leftarrow	Κ,	_			/			4	-	_			/	-			<	
Expansion Joint (Rubber)	01	_	/				\leftarrow	-	-	-	\sim	$\overline{}$			-	-		\leftarrow	-	-			/			$^{\prime}$	-	
Expansion Joint (Steel)	01 01																	\leftarrow						-				
Railing (Steel) Railing (Concrete)	01									/			\leftarrow	/	/	/		\leftarrow	/		/		/	_	/		/	
Wheel Gurad	01											-						$\overline{}$						-				
Drainage System	01			/									$\overline{}$					$\overline{}$					/	-				
Pavement	01								/			/													<u> </u>			
Bridge Approaches	01	\leftarrow		/		$\overline{}$	$\overline{}$		$\overline{}$			/	$\overline{}$					$\overline{}$		$\overline{}$	$\overline{}$		/	/				
Lighting Facility	01	_					-		$\overline{}$			/	$\overline{}$					-	/		$\overline{}$		/					
Road Sign	01		-									/			/									 				
Inspection Facility	01											/			/								/	1				
Utility Pipe	01																					 	/					
Summary			<u> </u>		I							<u> </u>					l					<u> </u>						
Recommendation																												

0.Steel Bridge

														Ins	pect	or								Dat	e			
File Number				Br	idge	Na	me							Sur	erst	ruct	ure									Ye	ear	
Zone					(Circl	е							Divi	sion			_				Su	ıb-D	ivisi	ion			
Inspection Result																		Sp	an I	eng	gth			m	Sr	an l	No.	1/2
-		Ģ	teel	Ma	teri	al	(onc	rete	Mar	teri	al		C	the	rs						Com	mor	1	_			
Items of Defects		Corrosion	Crack	Loose or Missing Bolts	Fracture	Deterioration of Paint System	Cracking	Spalling/Exposed Rebar	Water Leakage/Eflorescence	Fallen-out of Deck Slab	Crack of Deck Slab	Delamination	Abnormal Spacing	Difference in Level	Pavement Crack	Functional disorder of Bearings	Others	Defects of Reinforced Materials	Abnormal Anchorage	Discoloration/deterioration	Water Leakage /Puddle	Abnormal Noise/Vibration	Abnormal Deflection	Deformation/Break	Accumulation of Debris	Settlement/Tilt/Movement	Scour	Remarks
15 : G: 1 /m	0.1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	
Main Girder (Truss)	01						4	/	/	/	/	/		/	/	/			/	/		<u> </u>			/	/	/	
Stringer	01						/,	//	//	/	/	/	Κ,	/	//	/			/	/	/				/,	/	//	
Cross Beam	01						/,	//	//	/	/	/	Κ,	/	/	/			/	/	/		/		/,	/	//	
Lateral Bracing	01						Ζ,					/	K,	Ζ,	/,	/			/,			Ζ,	/_		/,	Ζ,	/,	
Deck Slab (RC)	01	Ζ,	Ζ,	Ζ,	Ζ,	Ζ,	Ζ,						K,	Ζ,	Ζ,	Ζ,						Ζ,	Ζ,		Ζ,	Ζ,	Ζ,	
Deck Slab (PC)	01	\angle					4					_	Ζ,	4	Ζ,	/,						/,	/_		/,	4	Ζ,	
Deck Slab (Steel)	01	L_	_	_						4	Ζ,	_	K,	Ζ,	4	4			4			Ζ,	4		Ζ,	Ζ,	Ζ,	
Abutment / Pier (RC)	01	\angle			_	\angle				Ζ,	4	L,	Z,	Ζ,	Ζ,	Ζ,			Ζ,			/	Ζ,		Ζ,	Ζ,	Ζ,	
Abutment / Pier (Steel)	01			,			\angle		Ζ,	Ζ,	Ζ,	Z,	Z,	Ζ,	Ζ,	Ζ,			Ζ,	Ζ,		L,	Ζ,		Ζ,	_		
Foundation (RC)	01	\angle		Ζ,	Ζ,		L		Ζ,	Ζ,	Ζ,	Ζ,	K,	Ζ,	Ζ,	Ζ,		Ζ,	Ζ,	Ζ,	Ζ,	Ζ,	Ζ,	Ζ,	Ζ,			
Foundation (Steel)	01	L,	Ι,	Ζ,	4					Ζ,	Ζ,		Z,	Ζ,	Ζ,	Ζ,			Ζ,		Ζ,	Ζ,	Ζ,		Ζ,			
Retaining Wall	01										_		\angle	\angle									\angle					
Bearing	01								\angle	Ζ,	Ζ,			Ζ,	Ζ,			\angle	\angle	_			/				Ζ,	
Bearing	02								Ζ,	Ζ,	Ζ,			Ζ,	Ζ,			\angle	Ζ,	Ζ,			Ζ,				Ζ,	
Bearing (hinge)	03									/	/			/	\angle			\angle	\angle				\angle				/	
Bearing (hinge)	04											L															\angle	
Expansion Joint (Rubber)	01	\angle										\angle															\angle	
Expansion Joint (Steel)	01																											
Railing (Steel)	01						\angle																				\angle	
Railing (Concrete)	01																											
Wheel Gurad	01				/						/	L.		/														
Drainage System	01		/	\mathbb{Z}						/	/	\mathbb{Z}	\mathbb{Z}	/				\angle				/				/	\mathbb{Z}	
Pavement	01											\overline{Z}												/			/	
Bridge Approaches	01											\overline{Z}															/	
Lighting Facility	01													/											/			
Road Sign	01																											
Inspection Facility	01																											
Utility Pipe	01																											
Summary																												
Recommendation																												

1.Small Slab Bridge

														Ins	pect	or								Dat	te			
File Number				Br	idge	Na	me							Sup	erst	ruct	ure									Ye	ar	
Zone				•	0	Circl	е							Divi	sion	1						Su	ıb-D	ivis	ion			
Inspection Result																		Sp	an I	Leng	gth			m	Sp	an l	Vo.	1/2
		S	teel	Ma	teria	al	C	onc	rete	Ma	teria	al		0	the	rs						Com	mor	ı				
Items of Defects		Corrosion	Crack	Loose or Missing Bolts	Fracture	Deterioration of Paint System	Cracking	Spalling/Exposed Rebar	Water Leakage/Eflorescence	Fallen-out of Deck Slab	Crack of Deck Slab	Delamination	Abnormal Spacing	Difference in Level	Pavement Crack	Functional disorder of Bearings	Others	Defects of Reinforced Materials	Abnormal Anchorage	Discoloration/deterioration	Water Leakage /Puddle	Abnormal Noise/Vibration	Abnormal Deflection	Deformation/Break	Accumulation of Debris	Settlement/Tilt/Movement	Scour	Remarks
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	
Main Girder	01	$\overline{}$		$\overline{}$		/																						
Deck Slab (RC)	01	\setminus			\setminus		\setminus						\setminus									$\overline{}$						
Abutment / Pier (RC)	01	$\overline{}$		$\overline{}$		/																$\overline{}$						
Abutment / Pier (Steel)	01																											
Foundation (RC)	01			$\overline{\ \ }$									\setminus									$\overline{\ \ }$		$\overline{}$				
Foundation (Steel)	01			/	/						/	/	/								/							
Retaining Wall	01	\setminus			\setminus								\setminus								$\overline{}$	$\overline{}$						
Bearing	01																						$\overline{}$				/	
Bearing	02																						$\overline{}$					
Bearing (hinge)	03																										/	
Bearing (hinge)	04																											
Railing (Steel)	01																				$\overline{}$	$\overline{}$						
Railing (Concrete)	01	$\overline{}$								$\overline{}$											$\overline{}$	$\overline{}$					$\overline{}$	
Wheel Gurad	01	$\overline{}$								$\overline{}$									$\overline{}$		$\overline{}$	$\overline{}$					$\overline{}$	
Drainage System	01																											
Pavement	01	/				/				$\overline{}$	$\overline{}$	$\overline{}$									/	$\overline{}$					$\overline{}$	
Bridge Approaches	01	$\overline{}$		$\overline{}$			$\overline{}$	$\overline{}$		$\overline{}$		$\overline{}$	$\overline{}$								$\overline{}$	$\overline{}$		$\overline{}$			$\overline{}$	
Lighting Facility	01																											
Road Sign	01									/		/										/						
Inspection Facility	01									/																		
Utility Pipe	01																								/			
Summary Recommendation																												
recommendation																												

2.RC Slab Bridge

														Ins	pect	or								Dat	te			
File Number				Br	idge	Na	me							Sup	erst	ruct	ure									Ye	ear	
Zone					(Circl	.e							Divi	sion	ı						Su	ıb-D	ivis	ion			
Inspection Result																		Sp	an I	Leng	gth			m	Sı	oan l	No.	1/2
		S	teel	l Ma	teria	al	C	onc	rete	Ma	teria	al		0	the	rs					(Com	mor	1				
Items of Defects		Corrosion	Crack	Loose or Missing Bolts	Fracture	Deterioration of Paint System	Cracking	Spalling/Exposed Rebar	Water Leakage/Eflorescence	Fallen-out of Deck Slab	Crack of Deck Slab	Delamination	Abnormal Spacing	Difference in Level	Pavement Crack	Functional disorder of Bearings	Others	Defects of Reinforced Materials	Abnormal Anchorage	Discoloration/deterioration	Water Leakage /Puddle	Abnormal Noise/Vibration	Abnormal Deflection	Deformation/Break	Accumulation of Debris	Settlement/Tilt/Movement	Scour	Remarks
15 : C: 1	0.5	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	
Main Girder	01	/	/	/	/	/								/	/				/						/	/	/	
Deck Slab (RC)	01	Κ,	/	/	\leq	/_							/	$^{\prime}$	$\langle \cdot \rangle$	$\langle \ \rangle$			$\overline{}$			_	/		/	/	/	
Abutment / Pier (RC)	01									/	/		/	/	/	/			/				/		/	/	/,	
Abutment / Pier (Steel)	01								/	/	/	/	/	/	/	/			/	/			/		/			
Foundation (RC)	01			/	/				/	/	/	/_	\angle	/	/	/		/	/	/	/_	/	/	/	/	_		
Foundation (Steel)	01			/	/					/	/				/	/					/	/	/		/			
Retaining Wall	01	_	/							\prec	4			$\overline{}$	/				\leq			/	/	_	/			
Bearing	01			-					/,	/	/			/	/			/	/	/			/			-	/	
Bearing	02			-					/,	/,	/,			/	/,			/	/	/,			/,	-		-	/,	
Bearing (hinge)	03			-					/	/	/				/			/	/	/			/			-	/	
Bearing (hinge)	04								/	/	/				/			/	/	/			/				//	
Expansion Joint (Rubber)	01						/	/	/	/	/	//			/			/		/			/			/	/	
Expansion Joint (Steel)	01						\leftarrow	/	/	\leftarrow	/	/_			\leq	$^{\prime}$		\leq	$\overline{}$	_			/			/	/	
Railing (Steel)	01									/	/		/	/	/	/		\angle	4		/	/	/		/	/	/	
Railing (Concrete)	01	4	/	/	/	/				/	/		/	/	/	/		/	/		/	/	/		/	/	/	
Wheel Gurad	01		/	/						/	/		/	/	/	/		/	/			/	/		/	/	//	
Drainage System	01		/	//			//		//	/	/	//				//		$^{\prime}$				//	/			/	//	
Pavement	01	/	/	//	/	//	$^{\prime}$		/	//	/	//						$^{\prime}$		//	//	//	/	/	-	/	//	
Bridge Approaches	01						$\overline{}$		/	/	/	/									//	/	/			/	/	
Lighting Facility	01 01			<u> </u>			\leftarrow	/	/		/	/	/	//	/			-	/		/	/	/		/	/	/	
Road Sign	01						$\overline{}$		/	/	/	/			/						//		/	-	/	/		
Inspection Facility	01			-			-		-			/			$\overline{}$				$\overline{}$	//	-		/			/		
Utility Pipe	ΔŢ																							<u> </u>				
Summary																												
Recommendation																												

Periodic Inspection Report Form
3.RC Girder Bridge / 7.Cantilever Bridge with Hinge (RC) / 8.Rigid Frame Bridge (RC)
Inspector

3.RC Girder Bridge		- -					5 ~				,				pect					, ·	,			Dat	te			
File Number				Br	idge	Na	me							Sup	erst	ruc	ture									Υe	ar	
Zone					(Circl	е							Divi	sion	ı						Su	ıb-D	ivis	ion			
Inspection Result																		Sp	an I	Leng	gth			m	Sr	an l	Vo.	1/2
		5	teel	Мя	teria	al I	(onc	rete	Ma	teri	al		C	the	rs						Com	mor	1				
Items of Defects		Corrosion	Crack	Loose or Missing Bolts	Fracture 1	Deterioration of Paint System	Cracking	Spalling/Exposed Rebar	Water Leakage/Eflorescence	Fallen-out of Deck Slab	Crack of Deck Slab	Delamination	Abnormal Spacing	Difference in Level	Pavement Crack	Functional disorder of Bearings	Others	Defects of Reinforced Materials	Abnormal Anchorage	Discoloration/deterioration	Water Leakage /Puddle	Abnormal Noise/Vibration	Abnormal Deflection	Deformation/Break	Accumulation of Debris	Settlement/Tilt/Movement	Scour	Remarks
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	
Main Girder	01			\angle																								
Cross Beam	01			\angle																								
Deck Slab (RC)	01	/											/									/						
Deck Slab (PC)	01	/											/															
Abutment / Pier (RC)	01		/	$\overline{}$							/												/		/			
Abutment / Pier (Steel)	01						/						${}$	/	/	/			/	/								
Foundation (RC)	01			$\overline{\ \ }$					$\overline{\ \ }$	$\overline{\ \ }$		$\overline{\ \ }$	$\overline{\ \ }$	$\overline{}$		$\overline{}$					$\overline{\ \ }$			$\overline{\ \ }$				
Foundation (Steel)	01			/								$\overline{}$	$\overline{\ }$										$\overline{}$					
Retaining Wall	01																				$\overline{}$							
Bearing	01																										$\overline{}$	
Bearing	02								$\overline{}$	$\overline{}$				$\overline{}$						$\overline{}$							$\overline{}$	
Bearing (hinge)	03									$\overline{}$																	$\overline{}$	
Bearing (hinge)	04									$\overline{}$										$\overline{}$							$\overline{}$	
Expansion Joint (Rubber)	01	/	/	/					$\overline{}$	$\overline{}$		/				/				$\overline{}$							$\overline{}$	
Expansion Joint (Steel)	01							$\overline{}$																				
Railing (Steel)	01												/								/				/			
Railing (Concrete)	01	7	/	/		/							7															
Wheel Gurad	01	7											/															
Drainage System	01	ĺ		/					/			/	/											1				
Pavement	01			7						7			/								/							
Bridge Approaches	01	7		7						7			/								7			7				
Lighting Facility	01												/	/														
Road Sign	01								/	/		/	/										/					
Inspection Facility	01											/	/								/		/		/			
Utility Pipe	01									/		/	/	/		/					/		/					
Summary	<u> </u>		I	1	ı							<u>/ </u>	<u>/ </u>				ı		/									
Recommendation																												

Periodic Inspection Report Form
4.PC Girder Bridge / 5.PC Box Girder Bridge / 7.Cantilever Bridge with Hinge (PC) /8.Rigid Frame Bridge (PC)

Inspector Date

														Ins	pect	or								Dat	e			
File Number				Br	idge	Na	me							Sup	erst	ruct	ure									Ye	ar	
Zone				-	0	Circl	е							Divi	sion	ı	•					Su	ıb-D	ivisi	ion			
Inspection Result																		Sp	an I	Leng	ŗth			m	Sp	an l	No.	1/2
		S	steel	Ma	teria	al	C	onc	rete	Mat	teria	al		0	thei	rs						Com	mon	ı				
Items of Defects		Corrosion	Crack	Loose or Missing Bolts	Fracture	Deterioration of Paint System	Cracking	Spalling/Exposed Rebar	Water Leakage/Eflorescence	Fallen-out of Deck Slab	Crack of Deck Slab	Delamination	Abnormal Spacing	Difference in Level	Pavement Crack	Functional disorder of Bearings	Others	Defects of Reinforced Materials	Abnormal Anchorage	Discoloration/deterioration	Water Leakage /Puddle	Abnormal Noise/Vibration	Abnormal Deflection	Deformation/Break	Accumulation of Debris	Settlement/Tilt/Movement	Scour	Remarks
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	
Main Girder	01	4	/	/	4	/				\angle	/		Щ	\angle	\angle	\angle									/,	/	\angle	
Cross Beam	01	Ζ,	Ζ,	Ζ,	Ζ,	Ζ,							\angle	\angle	\angle	/,							Ζ,		Ζ,	Z,	Ζ,	
Deck Slab (RC)	01	Ζ,	Ζ,	Ζ,	Ζ,	Ζ,	Ζ,						\angle	\angle	Ζ,	/,						Ζ,	Ζ,		Ζ,	Z,	Z,	
Deck Slab (PC)	01	\angle	_	\angle		_							\angle	\angle	\angle								\angle		_		/	
Abutment / Pier (RC)	01	/								\angle	/,		\angle	\angle	\angle	\angle			\angle				\angle		Ζ,	Z,	\angle	
Abutment / Pier (Steel)	01		L,	L,					\angle	\angle	Ζ,	Ζ,	\angle	\angle	\angle	/,			4	Ζ,			Ζ,		Ζ,			
Foundation (RC)	01	/		Ζ,	Ζ,				4	4	Ζ,	Ζ,	Ζ,	\angle	Ζ,	Ζ,		Z,	4	Ζ,	Ζ,	Ζ,	Ζ,	Ζ,	Ζ,			
Foundation (Steel)	01	L_,	L,	Ζ,	Ζ,					4	Ζ,		Ζ,	\angle	Ζ,	/,		\angle	Ζ,		Ζ,	Ζ,	Ζ,		Ζ,			
Retaining Wall	01										_			\angle	\angle				\angle				\angle					
Bearing	01								\angle	\angle	_			\angle	\angle			\angle	\angle	\angle			\angle				/	
Bearing	02								\angle	_	Ζ,			\angle	Ζ,			\angle	4	Ζ,			Ζ,				Ζ,	
Bearing (hinge)	03								_	_	<u>/</u>			\angle	Ζ,			\angle	_	Ζ,			Ζ,				Ζ,	
Bearing (hinge)	04		L,	L.,					\angle	\angle	\angle				\angle			\angle	\angle	\angle			\angle				Ζ,	
Expansion Joint (Rubber)	01	/					Ζ,	\angle	4	4	Ζ,	Ζ,			\angle	/,		Z,	4	\angle			Ζ,			Ζ,	Z,	
Expansion Joint (Steel)	01						\angle	\angle	_	_	_	Ζ,			\angle	_		\angle	_	\angle			\angle			_	4	
Railing (Steel)	01		L,	L,						\angle	/,		\angle	\angle	\angle	/,		\angle	\angle		Ζ,	\angle	\angle		Ζ,	/	\angle	
Railing (Concrete)	01	Ζ,	Ζ,	Ζ,	Ζ,	Ζ,				4	Ζ,		Ζ,	\angle	Ζ,	/,		\angle	4		Ζ,	Ζ,	Ζ,		Ζ,	Ζ,	Ζ,	
Wheel Gurad	01	\angle	/,	/,						/	/,	,	\angle	/	\angle	/,		/,	/			/	\angle			/	/,	
Drainage System	01	L,	Ζ,	4			/,	\angle	_	_	/,	/,	Ζ,			/,		/,	_			/,	/,			Ζ,	Ζ,	
Pavement	01	Ζ,	4	4	/,	/,	/,	/	/	/	/,	/,	\angle			/,		/,	/	/,	/,	/,	\angle	/,		4	/,	
Bridge Approaches	01	/					/				/	/,	\angle			/		\angle			/		\angle			Ζ,	/	
Lighting Facility	01						\angle		4	/	/,	/,	\angle	/	\angle	/,		\angle	/		/,	\angle	\angle		Ζ,	Z,	/,	
Road Sign	01						/,	/	/	/	/,	/,	\angle	/	/	/,		/,	/		/,		\angle		Ζ,	Z,	/,	
Inspection Facility	01										/	/	\angle								/				/,	/,	/	
Utility Pipe	01												\angle															
Summary																												
Recommendation																												

9. Cable Stayed Bridge

														Ins	pect	or								Dat	te			
File Number				Br	idge	Na	me							Sup	erst	ruct	ture									Ye	ear	
Zone					C	Circl	е							Divi	sion	ı						Su	ıb-D	ivisi	ion			
Inspection Result																		Sp	an I	Leng	th			m	Sr	an l	No.	1/2
		S	teel	Ma	teria	al		onc	rete	Mat	teria	al		0	the	rs						Com	mon	<u> </u>				
Items of Defects		Corrosion	Crack	Loose or Missing Bolts	Fracture	Deterioration of Paint System	Cracking	Spalling/Exposed Rebar	Water Leakage/Eflorescence	Fallen-out of Deck Slab	Crack of Deck Slab	Delamination	Abnormal Spacing	Difference in Level	Pavement Crack	Functional disorder of Bearings	Others	Defects of Reinforced Materials	Abnormal Anchorage	Discoloration/deterioration	Water Leakage /Puddle	Abnormal Noise/Vibration	Abnormal Deflection	Deformation/Break	Accumulation of Debris	Settlement/Tilt/Movement	Scour	Remarks
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	
Main Girder	01	4	/	/	\angle	/				4	/			\leq	/	<									/	/	/	
Cross Beam	01			/						-	-		\leftarrow	$\overline{}$	$^{\prime}$	//					-		//		/	$^{\prime}$	/	
Outer Cable Main Tower	01 01			-			_			-	-		\leftarrow	\leftarrow	-	$\overline{}$					-		$\overline{}$		$^{\prime}$	\sim	$\overline{}$	
Deck Slab (RC)	01	$\overline{}$	$\overline{}$			$\overline{}$							$\overline{}$	$\overline{}$	$\overline{}$	$\overline{}$			$\overline{}$			$\overline{}$	$\overline{}$		$^{\prime}$		$\overline{}$	
Deck Slab (PC)	01					$\overline{}$							$\overline{}$	$\overline{}$	$\overline{}$	$\overline{}$							$\overline{}$				$\overline{}$	
Abutment / Pier (RC)	01					$\overline{}$																						
Abutment / Pier (Steel)	01	_					/			$\overline{}$			$\overline{}$	$\overline{}$														
Foundation (RC)	01	/		/					$\overline{}$	$\overline{}$			$\overline{}$															
Foundation (Steel)	01									$\overline{}$											$\overline{}$							
Retaining Wall	01																				$\overline{}$							
Bearing	01																										/	
Bearing	02																											
Bearing (hinge)	03									\angle																	\angle	
Bearing (hinge)	04				L,		L,		Ζ,	Ζ,	Ζ,	L			Ζ,			\angle	\angle	\angle			\angle			L,	Ζ,	
Expansion Joint (Rubber)	01						Ζ,	Ζ,	_	Ζ,	Ζ,	/			Ζ,	\angle		\angle	\angle	4			Ζ,			/,	Ζ,	
Expansion Joint (Steel)	01						4	4	4	4	4	4	L		4	4		4	4	4			4			4	Ζ,	
Railing (Steel)	01						/			4	4		4	4	/,	4		\angle	4		4	/,	/,		/,	/	Ζ,	
Railing (Concrete)	01	Ζ,	/	/,	/,	4				۷	/_		4	\leq	/,	/,		4	\leq		4	/	/,		/,	Κ,	/,	
Wheel Gurad	01		/	/						_	/		4	\leq	/	//		\angle	\leq			/	/			/,	/,	
Drainage System	01		/	-			4	$^{\prime}$	/	-	\leftarrow	/	\leftarrow			/		\angle	\leq			-	/			/	/	
Pavement	01	/	/	/			4	/	//	-	/		4					$\langle \cdot \rangle$			-	/		/			/	
Bridge Approaches Lighting Facility	01 01						\leftarrow		//	/			\leftarrow					$\overline{}$	$\overline{}$		$\overline{}$						/	
Road Sign	01							/			/	/								-							/	
Inspection Facility	01						/			/	/										/						/	
Utility Pipe	01																										/	
Summary Recommendation	- -																											

10.Steel Girder Bridge / 11.Steel Box Girder Bridge

														Ins	pect	or								Dat	e			
File Number				Br	idge	Na	me							Sup	erst	ruct	ure									Ye	ar	
Zone					(Circl	e							Divi	sion	L						Su	ıb-D	ivisi	on			
Inspection Result																		Sp	an I	eng	ŗth			m	Sp	an l	Vo.	1/2
		S	steel	Ma	teria	al	(onc	rete	Ma	teria	al		O	the	rs						Com	mon	1				
Items of Defects		Corrosion	Crack	Loose or Missing Bolts	Fracture	Deterioration of Paint System	Cracking	Spalling/Exposed Rebar	Water Leakage/Eflorescence	Fallen-out of Deck Slab	Crack of Deck Slab	Delamination	Abnormal Spacing	Difference in Level	Pavement Crack	Functional disorder of Bearings	Others	Defects of Reinforced Materials	Abnormal Anchorage	Discoloration/deterioration	Water Leakage /Puddle	Abnormal Noise/Vibration	Abnormal Deflection	Deformation/Break	Accumulation of Debris	Settlement/Tilt/Movement	Scour	Remarks
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	
Main Girder	01						4	/,	\angle	4	/,	/	L,	\angle	/,	/,			4	4					/	/	/	
Stringer	01						4	/,	/,	/,	/,	/,	K,	/	/,	/,			/	/	/,				/,	/	/,	
Cross Beam	01						4	4	/,	4	/,	/_	K,	/,	Ζ,	Ζ,			4	4	4		\angle		4	Ζ,	Ζ,	
Lateral Bracing	01	_					4				/		Κ,	/,	Ζ,	Ζ,			4			Ζ,	\angle		4	Ζ,	Ζ,	
Deck Slab (RC)	01	4	Ζ,	Ζ,	Ζ,	/,	4						Ζ,	/,	Ζ,	Ζ,						Ζ,	\angle		4	Ζ,	Ζ,	
Deck Slab (PC)	01	_					4						Κ,	/,	/	/						/,	\angle		/_	/_	Ζ,	
Deck Slab (Steel)	01						\angle			4	_		Κ,	/	4	4		-	\leq			Ζ,	\leq		Ζ,	Κ,	Κ,	
Abutment / Pier (RC)	01									_	/		Κ,	/	/	/			$\langle \ \ \rangle$				//		/	/	//	
Abutment / Pier (Steel)	01								$^{\prime}$	_	_	/	K,	/	/	/			\leq	\angle			$^{\prime}$		/			
Foundation (RC)	01			/	/				$^{\prime}$	_	/_	/	Κ,	/	/	/		\angle	\leq	\leq	\angle	/_	$^{\prime}$	/_	/			
Foundation (Steel)	01			$^{\prime}$	-		_			-	_		\vee	$^{\prime}$	/	$\overline{}$			\leftarrow		//	/	/		-			
Retaining Wall	01	_	_	_						\leftarrow	/		_	\sim	\leftarrow				$\overline{}$			_			_			-
Bearing	01								\leq	-	/			//	$\overline{}$			\angle	\leq	\leq			//				/	
Bearing	02								$\overline{}$	\leftarrow	-			$\overline{}$	-			\leftarrow	\leftarrow	\leftarrow							$\overline{}$	
Bearing (hinge)	04								$\overline{}$	-	-			$^{\prime}$	$\overline{}$			\leftarrow	$\overline{}$	\leftarrow			$\overline{}$				/	
Bearing (hinge) Expansion Joint (Rubber)	01									-	$\overline{}$				$\overline{}$			\leftarrow	$\overline{}$	$\overline{}$							$\overline{}$	
Expansion Joint (Steel)	01	_					$\overline{}$	$\overline{}$	$\overline{}$	$\overline{}$	$\overline{}$				$\overline{}$	$\overline{}$		$\overline{}$	$\overline{}$	$\overline{}$								
Railing (Steel)	01						1	$\overline{}$		$\overline{}$	$\overline{}$																	
Railing (Concrete)	01									/	/		/		/							/			/	/	/	
Wheel Gurad	01	7	/	/							/		/									/			/		/	
Drainage System	01		/	/						/	/		/									/					/	
Pavement	01		/	/			7				/		/									/				/	/	
Bridge Approaches	01	/	/	/			/				/		/											/				
Lighting Facility	01						7				/		/									/			/			
Road Sign	01						7						/															
Inspection Facility	01						7						/															
Utility Pipe	01																											
Summary																												
Recommendation																					_	_						

12. Steel Arch Bridge

														Ins	pect	or								Dat	e			
File Number				Br	idge	Na	me							Sup	erst	ruct	ure									Ye	ear	
Zone					(Circl	e							Divi	sion	L						Su	ıb-D	ivisi	ion			
Inspection Result																		Sp	an I	eng	gth			m	Sr	an l	No.	1/2
		s	teel	Ma	teria	al	(onc	rete	Ma	teria	al		С	the	rs						Com	mor	1				
Items of Defects		Corrosion	Crack	Loose or Missing Bolts	Fracture	Deterioration of Paint System	Cracking	Spalling/Exposed Rebar	Water Leakage/Eflorescence	Fallen-out of Deck Slab	Crack of Deck Slab	Delamination E	Abnormal Spacing	Difference in Level	Pavement Crack	Functional disorder of Bearings	Others	Defects of Reinforced Materials	Abnormal Anchorage	Discoloration/deterioration	Water Leakage /Puddle	Abnormal Noise/Vibration	Abnormal Deflection	Deformation/Break	Accumulation of Debris	Settlement/Tilt/Movement	Scour	Remarks
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	
Main Arch	01						Ζ,		/	_	\angle	/		/	\angle				\angle	/					/	/	/	
Stringer	01						Ζ,	\angle	\angle	_	\angle	\angle	\angle	\angle	\angle	\angle			\angle	\angle	\angle				\angle	\angle	\angle	
Cross Beam	01						\angle	\angle	\angle	_	\angle	\angle	\angle	\angle	\angle	\angle			\angle	\angle	\angle		\angle		\angle	\angle	\angle	
Lateral Bracing	01	L.,	L,	L,	L,		Ζ,			/			Ζ,	Ζ,	Ζ,	Ζ,			_			<u>Z</u> ,	\angle		/	\angle	\angle	
Deck Slab (RC)	01	Ζ,	Z,	Z,	Z,	Ζ,	Ζ,						Ζ,	Ζ,	Ζ,	Ζ,						Ζ,	Ζ,		Ζ,	\angle	Z,	
Deck Slab (PC)	01	/					Ζ,						\angle	\angle	\angle	\angle						_	\angle		\angle	\angle	\angle	
Deck Slab (Steel)	01						\angle			_	\angle		\angle	\angle	\angle	\angle			\angle			_				_	\angle	
Abutment / Pier (RC)	01																									/	\angle	
Abutment / Pier (Steel)	01																										\angle	
Foundation (RC)	01	\setminus								/	\setminus	\setminus	\setminus	\setminus	\setminus	\setminus		\setminus			\setminus	/						
Foundation (Steel)	01						$\overline{}$			/	\setminus	\setminus	\setminus	\setminus	\setminus	\setminus		\setminus			\setminus	/						
Retaining Wall	01	\setminus								$\overline{}$			\setminus	\setminus		\setminus												
Bearing	01									$\overline{}$				$\overline{}$													$\overline{}$	
Bearing	02									$\overline{\ \ }$				$\overline{\ \ }$														
Expansion Joint (Rubber)	01	/				/	/			$\overline{\ \ }$		/														$\overline{\ \ }$	$\overline{}$	
Expansion Joint (Steel)	01									$\overline{}$								\setminus								/		
Railing (Steel)	01						/			$\overline{}$			/	/								$\overline{}$						
Railing (Concrete)	01	/								/	/		/	/	/	/					/	/					$\overline{}$	
Wheel Gurad	01	\setminus									\setminus		$\overline{}$	\setminus	$\overline{}$	\setminus		\setminus			\setminus							
Drainage System	01		/	/			\angle			\overline{Z}			\angle	/				\angle				/						
Pavement	01	/					/			/			/					/				/						
Bridge Approaches	01	/					\mathbb{Z}			/			/									/						
Lighting Facility	01									$\overline{}$				/								$\overline{/}$			/			
Road Sign	01						$\overline{\ \ }$			/			/	$\overline{}$								$\overline{\ \ }$						
Inspection Facility	01																											
Utility Pipe	01									/				/											/	\angle	/	
Summary Recommendation																												

13/14/15.Truss Bridge / 16/17.Portable Steel Bridge

														Ins	pect	or								Dat	e			
File Number				Br	idge	Na	me							Sup	erst	ruct	ure									Ye	ear	
Zone					(Circl	e							Divi	sion	L						Su	ıb-D	ivisi	ion			
Inspection Result													•					Sp	an I	Leng	gth			m	Sr	an l	No.	1/2
		s	teel	Ma	teria	al	(onc	rete	Ma	teria	al		С	the	rs						Com	mor	ı				
Items of Defects		Corrosion	Crack	Loose or Missing Bolts	Fracture	Deterioration of Paint System	Cracking	Spalling/Exposed Rebar	Water Leakage/Efforescence	Fallen-out of Deck Slab	Crack of Deck Slab	Delamination E	Abnormal Spacing	Difference in Level	Pavement Crack	Functional disorder of Bearings	Others	Defects of Reinforced Materials	Abnormal Anchorage	Discoloration/deterioration	Water Leakage /Puddle	Abnormal Noise/Vibration	Abnormal Deflection	Deformation/Break	Accumulation of Debris	Settlement/Tilt/Movement	Scour	Remarks
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	
Main Truss	01						Ζ,	\angle	\angle	<u>/</u>	\angle	/		Ζ,	\angle	\angle			/	\angle					/,	\angle	Z,	
Stringer	01						Ζ,	\angle	Ζ,	Ζ,	Ζ,	Ζ,	Ζ,	Ζ,	Ζ,	Ζ,			Ζ,	Ζ,	Ζ,				Ζ,	Ζ,	Z,	
Cross Beam	01						Ζ,	Ζ,	Ζ,	Ζ,	Ζ,	Ζ,	Ζ,	Ζ,	Ζ,	Ζ,			Ζ,	Ζ,	Ζ,		Ζ,		Ζ,	Ζ,	Z,	
Lateral Bracing	01	L,		L,	,		Ζ,						Ζ,	Ζ,	Ζ,	Ζ,			Ζ,			Ζ,	Ζ,		Ζ,	Ζ,	Z,	
Deck Slab (RC)	01	Ζ,	Ζ,	Ζ,	Ζ,	Ζ,	Ζ,						4	Ζ,	Ζ,	Ζ,						Ζ,	Ζ,		Ζ,	Ζ,	Z,	
Deck Slab (PC)	01	\angle					Ζ,						Ζ,	Ζ,	Ζ,	Ζ,						Ζ,	Ζ,		Ζ,	Ζ,	Z,	
Deck Slab (Steel)	01	Ц,		L			\angle			<u>/</u>	_		Ζ,	Ζ,	Ζ,	Ζ,			_			4	Ζ,		_	_	Ζ,	
Abutment / Pier (RC)	01	/					L,			Ζ,	\angle		Ζ,	Ζ,	Ζ,	\angle			Ζ,				Ζ,		Ζ,	Ζ,	Z,	
Abutment / Pier (Steel)	01	L,		L,			\angle		Ζ,	Ζ,	Ζ,	Ζ,	Ζ,	Ζ,	Ζ,	Ζ,			Ζ,	Ζ,			Ζ,		Ζ,			
Foundation (RC)	01	\angle		Ζ,	Ζ,		L,		Ζ,	Ζ,	Ζ,	Ζ,	Ζ,	Ζ,	Ζ,	Ζ,		Ζ,	Ζ,	Ζ,	Ζ,	Ζ,	Ζ,	Ζ,	Ζ,			
Foundation (Steel)	01	L,	,	Ζ,	Ζ,		\angle			<u>/</u>	Ζ,		Ζ,	Ζ,	Ζ,	Ζ,		\angle	Ζ,		Ζ,	Ζ,	Ζ,		Ζ,			
Retaining Wall	01									_				\angle									\angle					
Bearing	01								\angle	<u>/</u>	Ζ,			Ζ,	Ζ,			\angle	<u>/</u>	_			/				Ζ,	
Bearing	02								\angle	_	\angle				\angle			\angle	\angle	\angle			\angle				Ζ,	
Expansion Joint (Rubber)	01	\angle					Ζ,	Ζ,	Ζ,	<u>/</u>	Ζ,	Ζ,			Ζ,	Ζ,		Ζ,	Ζ,	Ζ,			Ζ,			Ζ,	Z,	
Expansion Joint (Steel)	01						\angle			_		\angle							\angle	\angle						_	\angle	
Railing (Steel)	01	L.,		L,			\angle			_	\angle		4	Ζ,	\angle	\angle		\angle	\angle		\angle	_	\angle		\angle	\angle	\angle	
Railing (Concrete)	01	Ζ,	Ζ,	Z,	Ζ,	Ζ,				<u>Z</u> ,	Ζ,		Ζ,	Ζ,	Ζ,	Ζ,		Ζ,	_		\angle	Ζ,	\angle		\angle	\angle	Z,	
Wheel Gurad	01	\angle	Ζ,	Z,			L.,			<u>Z</u> ,	Ζ,		Ζ,	Ζ,	Ζ,	Ζ,		\angle	_			Ζ,	\angle			\angle	Z,	
Drainage System	01		Ζ,	Z,			Ζ,	Ζ,	\angle	<u>/</u> ,	\angle	Ζ,	Ζ,			Ζ,		\angle	_			Ζ,	\angle			\angle	Z,	
Pavement	01	\angle					\angle						\angle														\angle	
Bridge Approaches	01	\angle					\angle						\angle															
Lighting Facility	01																											
Road Sign	01						\angle						\angle															
Inspection Facility	01						\angle						\angle															
Utility Pipe	01									/				/					/	/								
Summary Recommendation																												

18.Masonry Arch Bridge

														Ins	pect	or								Dat	e			
File Number				Br	idge	Na	me							Sup	erst	ruct	ture									Ye	ear	
Zone					(Circl	.e							Divi	sion	1						Su	ıb-D	ivisi	on.			
Inspection Result	ı																	Sp	an l	eng	th			m	Sr	an l	No.	1/1
-		8	Steel	Ma	teria	al	(onc	rete	Ma	teri	al		C	the	rs					_	Com	mor	1				
Items of Defects		Corrosion	Crack	Loose or Missing Bolts	Fracture	Deterioration of Paint System	Cracking	Spalling/Exposed Rebar	Water Leakage/Eflorescence	Fallen-out of Deck Slab	Crack of Deck Slab	Delamination	Abnormal Spacing	Difference in Level	Pavement Crack	Functional disorder of Bearings	Others	Defects of Reinforced Materials	Abnormal Anchorage	Discoloration/deterioration	Water Leakage /Puddle	Abnormal Noise/Vibration	Abnormal Deflection	Deformation/Break	Accumulation of Debris	Settlement/Tilt/Movement	Scour	Remarks
	ı	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	
Arch Rib	01	Ζ,	/,	Ζ,	4	/				/,	/,		Ζ,	4	/	/			Ζ,				/		Ζ,	/,	/,	
Parapet Wall	01	Ζ,	4	Ζ,	Ζ,	Ζ,				Ζ,	Ζ,		Ζ,	Ζ,	_	_			_						<u>/</u> ,	<u>/</u> ,	Ζ,	
Abutment	01	4	/,	Ζ,	4	/,				4	4		4	Ζ,	Ζ,	Ζ,			۷		/,	Ζ,			Ζ,	_		
Retaining Wall	01	\angle	/							Ζ,	<u>/</u>	L	Ζ,	Ζ,	_	_		Щ	<u>/</u> ,		_	Ζ,	_		<u>/</u> ,	L,		
Railing (Steel)	01	L,	L,				\angle			4	Ζ,		Ζ,	Ζ,	Ζ,	Ζ,		4	Ζ,		Ζ,	Ζ,	Ζ,		Ζ,	Ζ,	Z,	
Railing (Concrete)	01	Ζ,	Ζ,	Ζ,	Ζ,	Ζ,				Ζ,	Ζ,		Ζ,	Ζ,	Ζ,	Ζ,		Ζ,	Ζ,		Ζ,	Ζ,	Ζ,		Ζ,	Ζ,	Z,	
Wheel Gurad	01	\angle	Ζ,	Ζ,			L			Ζ,	Ζ,	L,	Ζ,	Ζ,	Ζ,	Ζ,		Ζ,	Ζ,			Ζ,	Ζ,			Ζ,	Z,	
Drainage System	01		_	Ζ,	,		Ζ,	Ζ,	Ζ,	Ζ,	Ζ,	Z,	Ζ,			Ζ,		Ζ,	Ζ,			Ζ,	Ζ,			Ζ,	Z,	
Pavement	01	Ζ,	\angle	Ζ,	Ζ,	Ζ,	Ζ,	Ζ,	Ζ,	Ζ,	Z,	Z,	Ζ,			Ζ,		Ζ,	Ζ,	Ζ,	Ζ,	Ζ,	Ζ,	\angle		Ζ,	Z,	
Bridge Approaches	01	\angle					\angle	\angle	Ζ,	Ζ,	Z,	Z,	Ζ,			\angle		Ζ,	<u>Z</u> ,		\angle	Ζ,	\angle			Ζ,	Z,	
Lighting Facility	01						\angle	\angle	Ζ,	Ζ,	\angle	\angle	\angle	\angle	\angle	\angle		\angle	_		\angle	\angle	\angle		_	\angle	Z,	
Road Sign	01												\angle														\angle	
Utility Pipe	01						\angle						\angle					\angle	/						/			
Summary Recommendation																												

19.Box Culvert

														Ins	pect	or								Dat	e			
File Number				Br	idge	Na	me							Sup	erst	ruct	ture									Ye	ar	
Zone					(Circl	.e							Divi	sion	1						Su	ıb-D	ivisi	on			
Inspection Result																		Sp	an l	eng	th			m	Sr	an l	No.	1/1
		5	t-pol	Ma	tori	a l		onc	rata	Ma	tario	a 1			the	ra		•				Com	mor	`				
Items of Defects		Corrosion	Crack	Loose or Missing Bolts	Fracture	Deterioration of Paint System	Cracking	Spalling/Exposed Rebar	Water Leakage/Eflorescence	Fallen-out of Deck Slab	Crack of Deck Slab	Delamination	Abnormal Spacing	Difference in Level	Pavement Crack	Functional disorder of Bearings	Others	Defects of Reinforced Materials	Abnormal Anchorage	Discoloration/deterioration	Water Leakage /Puddle	Abnormal Noise/Vibration	Abnormal Deflection	Deformation/Break	Accumulation of Debris	Settlement/Tilt/Movement	Scour	Remarks
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	
Top Slab	01	Ζ,	Ζ,	Ζ,	Ζ,	Ζ,				Ζ,	Ζ,		Ζ,	Ζ,	Ζ,	Ζ,			Ζ,				Ζ,		Ζ,	Ζ,	Ζ,	
Side Wall	01	Ζ,	Ζ,	Ζ,	Ζ,	Ζ,				Ζ,	Z,	L	Ζ,	Ζ,	Ζ,	Ζ,			Ζ,				Ζ,		Ζ,			
Footing	01	Ζ,	Ζ,	Ζ,	Ζ,	Ζ,				Ζ,	Ζ,		Ζ,	Ζ,	Ζ,	Ζ,			Ζ,		Ζ,	Ζ,	Ζ,		Ζ,			
Retaining Wall	01									_	_		\angle	_	_				_		\angle	\angle						
Railing (Steel)	01	L.,		Ĺ,	,		\angle			Ζ,	Ζ,		Ζ,	Ζ,	Ζ,	Ζ,		Ζ,	Ζ,		Ζ,	Ζ,	Ζ,		_	Ζ,	Ζ,	
Railing (Concrete)	01	Ζ,	Ζ,	Ζ,	Ζ,	Ζ,				Ζ,	Ζ,		Ζ,	Ζ,	Ζ,	Ζ,		Ζ,	Ζ,		Ζ,	Ζ,	Ζ,		Ζ,	Ζ,	Ζ,	
Wheel Gurad	01	\angle	\angle	Ζ,						Ζ,	Ζ,	L,	Ζ,	Ζ,	Ζ,	Ζ,		Ζ,	Ζ,			Ζ,	Ζ,			Ζ,	Ζ,	
Drainage System	01		\angle	Ζ,	,	L,	Ζ,	Ζ,	Ζ,	Ζ,	Ζ,	Z,	Ζ,			Ζ,		Ζ,	<u>Z</u> ,			_	Ζ,			Ζ,	Ζ,	
Pavement	01	Ζ,	\angle	Ζ,	Ζ,	Z,	Ζ,	Ζ,	Ζ,	Ζ,	Ζ,	Z,	Ζ,			\angle		\angle	<u>Z</u> ,	Ζ,	_	_	\angle	\angle		Ζ,	Ζ,	
Bridge Approaches	01	/					\angle	\angle	\angle	\angle	Ζ.	\angle	\angle			\angle		\angle	_		\angle	\angle	\angle			\angle	Ζ,	
Lighting Facility	01						\angle	\angle	\angle	\angle	\angle	\angle	\angle	\angle	\angle	\angle		\angle	_		\angle	\angle	\angle		\angle	\angle	Ζ,	
Road Sign	01												\angle															
Utility Pipe	01																	\angle										
Summary Recommendation																												

9.	4	Bridge	Evaluation	Report	Form
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Eile Noorboom	Dui-I-	o Names		Evaluator				Date		
File Number Zone	Bridg	e Name Circle		uperstructure Division	•		Sub D	Yea ivision	r I	
Evaluation Res	sult	Circie		DIVISION	Snai	ı No.	อนม-ม		e No.	1/3
Lvaluation ites	suit			At	Bt	Ct	Dt		Detailed	
Component	Element Type	Material	Type of Defects	No Repair	Minor Repair	Major Repair	Emer- gency	Public Safety	investi- gation	
			1.Corrosion							
			2.Crack in Steel							
		Steel	3.Loose or Missing Bolts							
	Main Girder		4.Fracture							
	Main Truss		5.Deterioration of Paint Syste6.Crack	em						
	<u>iviaiii 11uss</u>		7.Spalling / Exposed Rebar							
	Main Arch	Concrete	8.Water leakage /Efflorescen	nce						
	Outer Cable		11.Delamination							
		044	12.Abnormal Spacing							
	Main Tower	Others	16.Other Types of Defects							
	Arch Rib		17.Defects of Reinforcing ma	aterial						
	T Ol-h		18.Abnornal Anchorage							
	Top Slab		19.Discolorlation / Deteriorat	ion						
		Common	20.Water Leakage / Puddle							
			21.Abnormal Noise / Vibratio	n						
	* Daine and all and and		22.Abnormal Deflection							
•	* Primary element		23.Deformation / Break							
			Corrosion Crack in Steel							
		Steel	3.Loose or Missing Bolts							
		Oteci	4.Fracture							
			5.Deterioration of Paint Syste	em						
			6.Crack							
	Cross Beam	0 1 -	7.Spalling / Exposed Rebar							
		Concrete	8.Water leakage /Efflorescen	ice						
	<u>Stringer</u>		11.Delamination							
		Others	16.Other Types of Defects							
			17.Defects of Reinforcing ma	aterial						
Superstructure			18.Abnornal Anchorage							
		Common	19.Discolorlation / Deteriorat							
			21.Abnormal Noise / Vibratio22.Abnormal Deflection	on						
	* Primary element		23.Deformation / Break							
ľ	1 mary cicinent		1.Corrosion							
			2.Crack in Steel							
		Steel	3.Loose or Missing Bolts							
	Lateral Bracing		4.Fracture							
	Lateral Bracing		5.Deterioration of Paint Syste	em						
		Others	16.Other Types of Defects							
			17.Defects of Reinforcing ma							
	Casandani alamant	Common	21.Abnormal Noise / Vibratio	on						
ŀ	- Secondary element		23.Deformation / Break 1.Corrosion							
			2.Crack in Steel							
		Steel	3.Loose or Missing Bolts							
		0.00.	4.Fracture							
			5.Deterioration of Paint Syste	em				1		
			7.Spalling / Exposed Rebar							
			8.Water leakage /Efflorescen	nce						
	Deck Slab	Concrete	9.Fallen out of Deck Slab							
			10.Crack of Deck Slab							
			11.Delamination					<u> </u>		
		Others	16.Other Types of Defects	ete viel				<u> </u>		
		ĺ	17.Defects of Reinforcing ma	ateriai		1		 		
			10 Abnornal Anabaraga							
		Common	18.Abnornal Anchorage 19 Discolorlation / Deteriorat	ion						
		Common	18.Abnornal Anchorage 19.Discolorlation / Deteriorat 20.Water Leakage / Puddle	ion						

				Evaluat		1			Date		
File Number	Bridg	e Name		Superst				0.4.0	Yea	r	
Zone Evaluation Re	oult	Circle		Divis	sion	Spar	. No	Sub-D	ivision	e No.	2/3
Evaluation Re	Suit				At	Bt	Ct	Dt		Detailed	2/3
Component	Element Type	Material	Type of Defects	8	No Repair	Minor Repair	Major Repair	Emer- gency	Public Safety	investi- gation	Remarks
			1.Corrosion								
			2.Crack in Steel								
		Steel	3.Loose or Missing Bolts								
			4.Fracture								
	<u>Abutment</u>		5.Deterioration of Paint S	ystem							
	<u>Pier</u>		6.Crack								
		Concrete	7.Spalling / Exposed Reb								
	Side Wall		8.Water leakage /Efflores 11.Delamination	cence							
	Parapet Wall	Others	16.Other Types of Defect								
		Others	17.Defects of Reinforcing								
			19.Discolorlation / Deterior								
		Common	20.Water Leakage / Pudo								
			21.Abnormal Noise / Vibr								
	* Primary element		23.Deformation / Break	u							
	.,		1.Corrosion								-
Substructure		Steel	2.Crack in Steel								
	Foundation		5.Deterioration of Paint S	ystem							
	<u>Foundation</u>		6.Crack	-							
	<u>Footing</u>	Concrete	7.Spalling / Exposed Reb	ar							
		Others	16.Other Types of Defect	S							
		C	25.Settelment / Tilt / Mov	ement							
	* Primary element	Common	26.Scouring								
			6.Crack								
		Concrete	7.Spalling / Exposed Reb	ar							
		Control	8.Water leakage /Efflores	cence							
			11.Delamination								
	Retaining Wall	Others	16.Other Types of Defect	S							
			17.Defects of Reinforcing								
			19.Discolorlation / Deterior	oration							
		Common	23.Deformation / Break								
			25.Settelment / Tilt / Mov	ement							
	- Secondary element		26.Scour								
			1.Corrosion								
		Steel	2.Crack in Steel								
		(Rubber)	3.Loose or Missing Bolts								
			4.Fracture5.Deterioration of Paint S	votom							
	Bearing Main Body		12.Abnormal Spacing	ystem							
	Anchor Bolts	Others	15.Function Disorder of E	Rearings							
			16.Other Types of Defect								
			20.Water Leakage / Pudo								
Bearings			21.Abnormal Noise / Vibr								
		Common	23.Deformation / Break								
			24.Accumulation of Debr	s							
	* Primary element		25.Settelment / Tilt / Mov	ement							
			6.Crack								
	Bearing Seat Mortal	Concrete	7.Spalling / Exposed Reb	ar							
			11.Delamination								
	Bearing Bed concrete	Others	16.Other Types of Defect	s							
		Common	20.Water Leakage / Pudo	dle							
	* Primary element	Common	23.Deformation / Break	-		-					

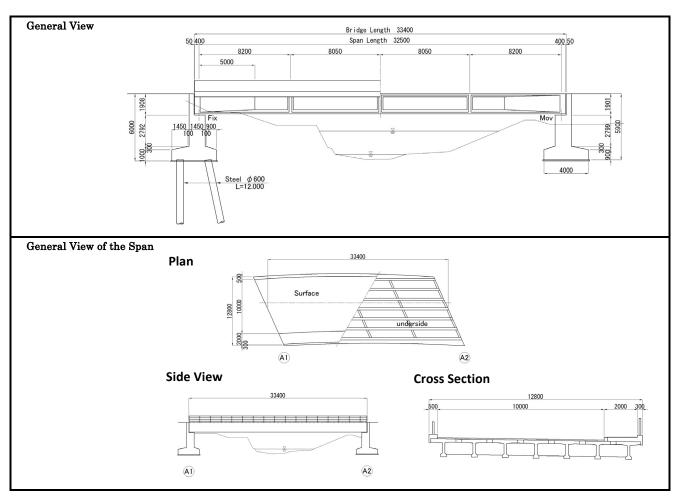
		Evalua					Date		
	Bridge Name		ructure				Yea	r	
Zone	Circle	Divi	sion			Sub-D	ivision	<u> </u>	I
Evaluation Result			Λ.	Spar		D#	Page	e No.	3/3
Element Type	Material	Type of Defects	At No	Bt Minor	Ct Major	Dt Emer-	Public	Detailed	Remarks
Element Type	ivialeriai	Type of Defects	Repair	Repair	Repair	gency	Safety	gation	Remarks
		13.Differnce in Level				,		gamen	
<u>Pavement</u>	Others	14.Abnormal Bituminous Pavement							
		16.Other Types of Defects							
- Secondary element	Common	24.Accumulation of Debris							
·		13.Differnce in Level							
Bridge Approaches	Others	14.Abnormal Bituminous Pavement							
		16.Other Types of Defects							
- Secondary element	Common	24.Accumulation of Debris							
		1.Corrosion							
		2.Crack in Steel							
	Steel	3.Loose or Missing Bolts							
	(Rubber)	4.Fracture							
		5.Deterioration of Paint System							
For an along Jainta (Buddhan (0(1)	6.Crack							
Expansion Joints (Rubber / : > Including	Concrete	11.Delamination							
- elements of post-cast con	crete	12.Abnormal Spacing							
•	Others								
	Others	13.Differnce in Level							
		16.Other Types of Defects							
		20.Water Leakage / Puddle							
	Common	21.Abnormal Noise / Vibration							
		23.Deformation / Break							
- Secondary element		24.Accumulation of Debris							
		1.Corrosion							
		2.Crack in Steel							
	Steel	3.Loose or Missing Bolts							
Railing (Steel / Concrete)		4.Fracture							
Wheel Guard (Concrete)		5.Deterioration of Paint System							
IncludingGuard Fence		6.Crack							
- Guard Ferice - Median		7.Spalling / Exposed Rebar							
- Curb	Concrete	8.Water leakage /Efflorescence							
		11.Delamination							
	Others	16.Other Types of Defects							
		19 Discolorlation / Deterioration							
- Secondary element	Common	23.Deformation / Break							
Coolinary Comon		1.Corrosion							
	Steel	4.Fracture							
Drainage System	Polyvinyl	5.Deterioration of Paint System							
> Including	Others	16.Other Types of Defects							
- Catch-Basin	Others	19.Discolorlation / Deterioration							
- Drainage Pipe									
	Common	20.Water Leakage / Puddle							
Casandami alamant		23.Deformation / Break							
- Secondary element		24 Accumulation of Debris							
		1.Corrosion							
		2.Crack in Steel							
Lighting Facility	Steel	3.Loose or Missing Bolts							
Road Sign Facility		4.Fracture							
		5.Deterioration of Paint System							
	Others	16.Other Types of Defects	ļ						ļ
	Common	19.Discolorlation / Deterioration							
- Secondary element	2 2	23.Deformation / Break							
	 	1.Corrosion							
	1	2.Crack in Steel							
landar = 200	Steel	3.Loose or Missing Bolts							
Inspection Facility Utilitiy Pipe	1	4.Fracture							
<u>ounuy ripe</u>	J	5.Deterioration of Paint System							
	Others	16.Other Types of Defects						1	Ì
		21.Abnormal Noise / Vibration	1						l
- Secondary element	Common	23.Deformation / Break							
Coolinary element		20.Deloimation / Dieak	I	l	l	l		1	

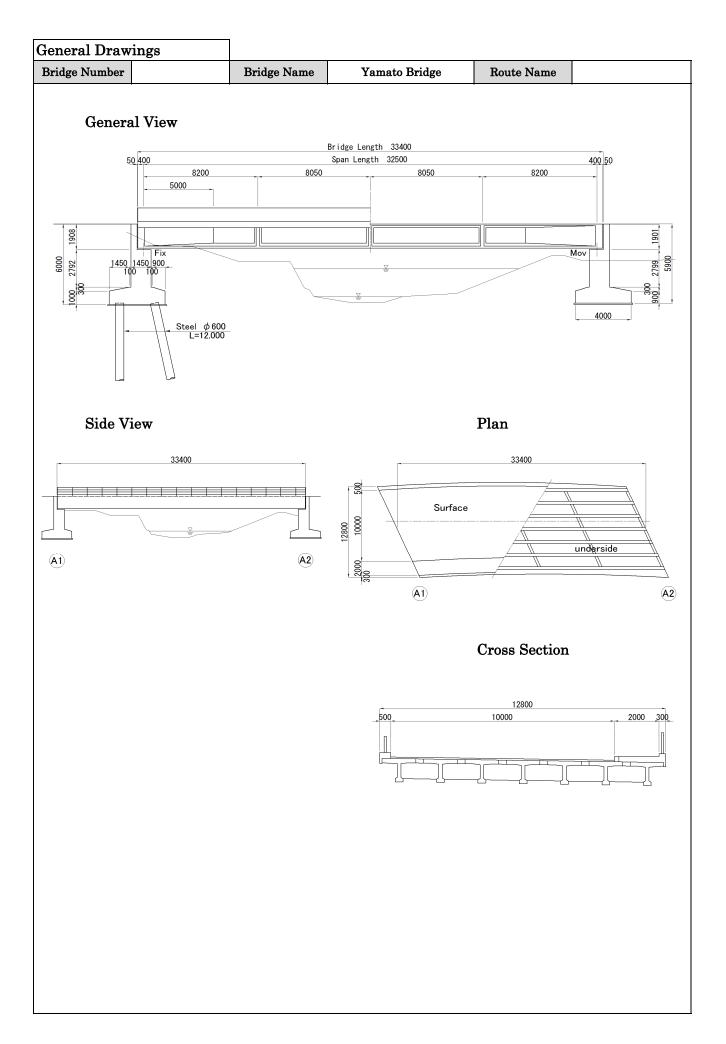
- 9.5 Periodic Inspection/Evaluation Report Form (Sample)
 - 1. Sample (1) PC Bridge
 - 2. Sample (2) Portable Steel Bridge
 - 3. Sample (3) Box Culvert -1
 - 4. Sample (4) Box Culvert -2

1. Sample (1) PC Bridge

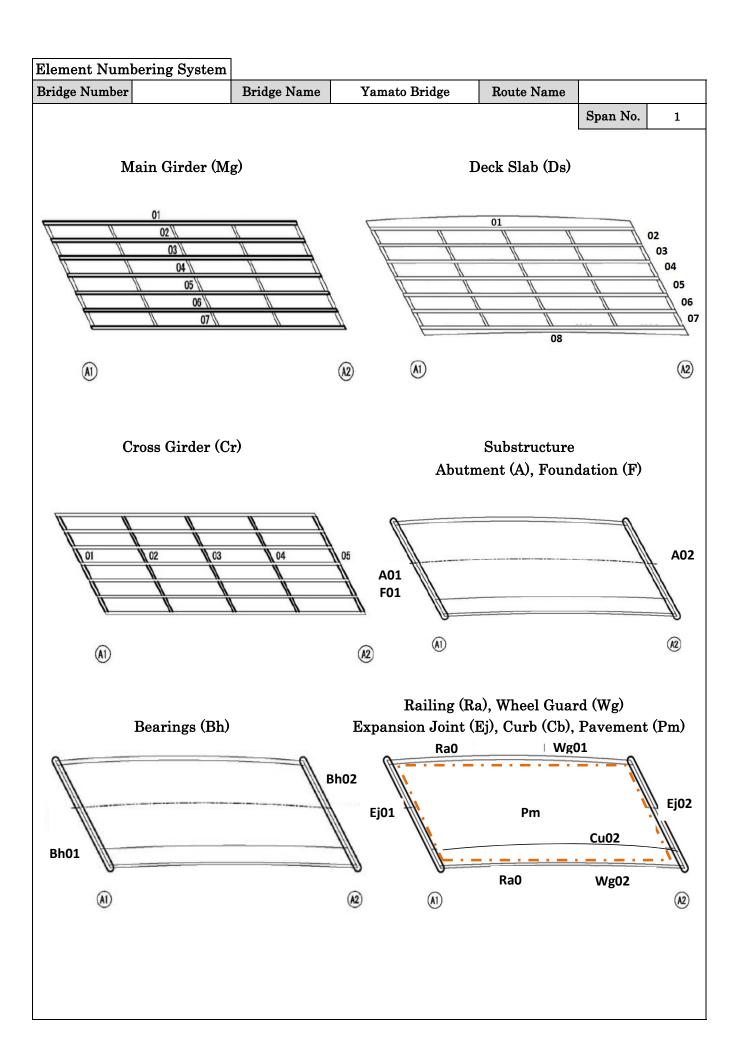
Periodic Inspection/Evaluation Report Form (Sample)

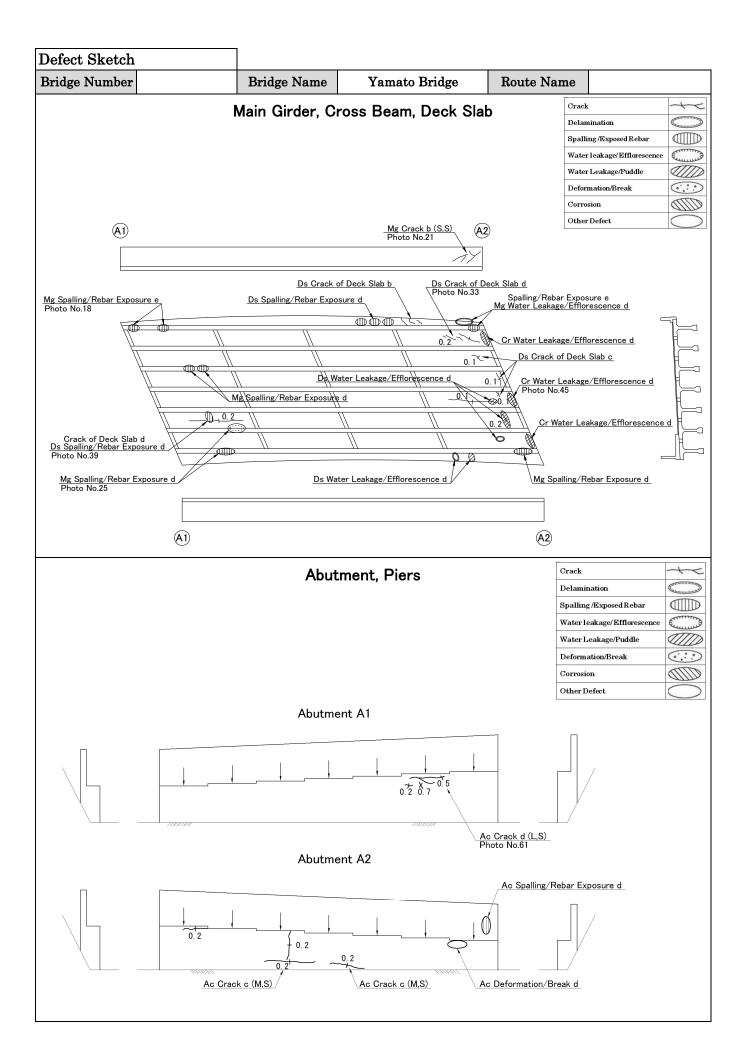
File Num	ber	N1, 8b)								Inspec	etor			Date		
Zone		Dhaka	l		Circle		Dhaka	ì		Divisi	on	Naray	angnj-1	Su	ıb-Divisio	Naray	angnj-1
District					Upazi	lla				Union				Vi	illage		
Road No.		N1	Road Na	me	Dhaka	a(Jatra	abari)-C	omilla	-Chitta	gong-T	aknaf	LRP Name	8b	G	PS Lat	23d-4	2'-7.5" 0'-57.3"
Bridge Na	ame	Yamat	o Bridge		l			LRP+0	Offset (m)	5+397	76			hainage m)	8.976	0 01.0
Year of Construc	tion	1	972	Design Standard					Design Load	1		TL-20	Load Ristr		1		(ton)
		River					Owner				Public	•	telephone lin	ıe	Owne	91	
Feature Intersecte	ed	Road					Owner				Utiliti Carrie	es	water		Own	er	
		Railwa	ay				Owner				Carrie	ea					
Bridge Le	ength	3	3.4	No. of Spa	ans	1	Span Arrang	ement	33.4						Skew (degr	Angle ee)	85
					Тур	е		I	Materia	1			T;	ype		Ma	terial
Superstru	ucture			PC Girde	r Br			Concr	ete		Deck S	Slab	RC			Concr	ete
Substruct	4	Abutm	ent	Semi-Gra	avity t	уре		Concr	ete		Found (Abuti		Pile Foundat	tion		Steel	
Substruct		Pier									Found (Pier)	lation	-				
Other		Pavem	ent	Asphalt							Bearir	ngs	Rubber				
Elements	3	Expans	sion Joint	Steel							Railin	g	Others				
777; J+h	Total		12.8	m	Wh Gua	ieel rd-L	Sidew	alk-L	Carr wa	_	Ме	dian	Carriage way-R	s	idewalk-I	?	heel ard-R
	Effect: Width	ive	12.0	m	0.5	m	0.0	m	5.5	m	4.5	m		m 0).3 n	0.0	m
Traffic Co	onditio	na	Census ((year)		2014						Rate (%	•	(0.	~10-10~	20 -20~	·30 ·30~
Tranic Co	onunio	113	Traffic V	olume	1	10,500	V	ehicles	(Dayti	me 12	hours)		ion Category tire Bridge		85		D











Defect P								
Bridge Nu		T		Yama	ato Bridge		Route Na	
Span No.	1	Photo No.	18		Span No.	1	Photo No.	21
Element	Main Girder	Defect	Spalling/Rebar Expos	sure	Element	Main Girder	Defect	Crack
		Rating	е				Rating	Ъ
Span No.	1	Photo No.	25		Span No.	1	Photo No.	45
Element	Main Girder	Defect	Spalling/Rebar Expos	sure	Element	Cross Beam	Defect	Leakage/Efflorescence
		Rating	d				Rating	d
/)	1		80x20) x 0
Span No.	1	Photo No.	33		Span No.	1	Photo No.	39
Element	Deck Slab	Defect	Crack of Deck Slab	b	Element	Deck Slab	Defect	Spalling/Rebar Exposure
		Rating	d				Rating	d

														Ins	pect	or								Dat	e	ı		
File Number				Br	idge	Na	me	Yar	nato	Bri	dge			Sup	persi	ruct	ture	.PC	Gir	der l	Brid	ge				Ye	ear	1972
Zone					(Circl	е							Div	ision	1						Su	ıb-D	ivisi	ion			
Survey Result											No	o. of	Hir	ıge		0		Sp	an I	Leng	gth	3	3.4 1	m	$\mathbf{s}_{\mathbf{I}}$	an l	No.	1
		S	teel	Ma	teria	al		Conc	rete	Ma	teria	al		C	the	rs					(Com	mor	1				
Items of Defects		Corrosion	Crack	Loose or Missing Bolts	Fracture	Deterioration of Paint System	Crack	Spalling/Exposed Rebar	Water Leakage/Eflorescence	Fallen-out of Deck Slab	Crack of Deck Slab	Delamination	Abnormal Spacing	Difference in Level	Pavement Crack	Functional disorder of Bearings	Others	Defects of Reinforced Materials	Abnormal Anchorage	Discoloration/deterioration	Water Leakage /Puddle	Abnormal Noise/Vibration	Abnormal Deflection	Deformation/Break	Accumulation of Debris	Settlement/Tilt/Movement	Scour	Remarks
Main Girder	01	1	2	3	4	5	6 b	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	
Main Girder Main Girder	01	/					מ	е	C					/	/												/	
Main Girder Main Girder	02	/		/	/	/	-	d		/			-	/	/	/	1	-							/	/	/	
	03	/	$^{\prime}$	-	$^{\prime}$	$^{\prime}$		a		$\overline{}$	$\overline{}$			/	$^{\prime}$	-									$^{\prime}$	\leftarrow	\leftarrow	
Main Girder Main Girder	04	/		/										/	/												//	
		/	$\overline{}$	-	/	$^{\prime}$	_			$\overline{}$	$\overline{}$			/	$^{\prime}$	-									/	$^{\prime}$	\leftarrow	
Main Girder Main Girder	06 07	-	$\overline{}$	-	-	/	b	d	d	-	$\overline{}$			/	$^{\prime}$	-									-	-	\leftarrow	
		-	\sim	-	\sim	$\overline{}$		α		\sim	\sim			\leftarrow	\leftarrow	$\overline{}$									\sim	\sim	\leftarrow	
Cross Beam	01	/	$^{\prime}$	/	/	/			d	/	/		/	$^{\prime}$	//	$^{\prime}$					$^{\prime}$		-		/	/	//	
Cross Beam	02	/	$^{\prime}$	_	/	$^{\prime}$				-	$^{\prime}$		$^{\prime}$	$^{\prime}$	/	-					$^{\prime}$		-		/	/	\leftarrow	
Cross Beam	03	/	/	/	/	/				/	/		$\prime \prime$	/	//	/					$^{\prime}$		/		/	/	//	
Cross Beam	04	/	/	/	/	/			d	/	/		/	/	//	$^{\prime}$					$^{\prime}$		/		/	/	//	
Cross Beam	05	/	$^{\prime}$	_	/	/			-	/	/		Κ,	$^{\prime}$	//	-					$^{\prime}$		/		/	/	//	
Cross Beam	06	/	\sim	_	/	/		,	d		/		Υ,	\leftarrow	/-	$\overline{}$							$\overline{}$		/	/	/-	
Deck Slab (RC)	01	/,	/	/,	/,	/,	/,	d			b		Κ,	/,	/,	/			/,			/,	/		/,	/,	//	
Deck Slab (RC)	02	Ζ,	/,	Ζ,	/,	/,	Ζ,				d		Ζ,	/,	/,	/			/,			_	/		/,	/,	//	
Deck Slab (RC)	03	Ζ,	/,	Ζ,	/,	/,	Ζ,				C		Ζ,	/,	Ζ,	/,			Ζ,			Ζ,	/,		/,	Ζ,	Ζ,	
Deck Slab (RC)	04	Ζ,	/,	۷	/,	/_	4		_		C		Ζ,	Ζ,	Ζ,	/,			/,			/,	/,		/,	Ζ,	Ζ,	
Deck Slab (RC)	05	Ζ,	/,	Ζ,	Ζ,	/,	Ζ,		d		C		Ζ,	Ζ,	/,	/,			/,			_	/,		/,	Ζ,	/,	
Deck Slab (RC)	06	Ζ,	/,	Ζ,	Ζ,	/,	Ζ,	d	d		d		Ζ,	Ζ,	/,	/,			Ζ,			Ζ,	Ζ,		/,	Ζ,	/,	
Deck Slab (RC)	07	Ζ,	Ζ,	Ζ,	Ζ,	Ζ,	Ζ,		d				Z,	Z,	Ζ,	Ζ,			Ζ,			Ζ,	Ζ,		Ζ,	Ζ,	/,	
Deck Slab (RC)	08	Ζ,	/,	Ζ,	Ζ,	/,			d				4	/	Ζ,	4			Ζ,			4	4		Ζ,	Ζ,	/,	
Abutment	01	Ζ,	/,	Ζ,	/,	/,	d	d		/,	/,		/,	/,	Ζ,	/,			/,			/,	/,		/,	/,	Ζ,	
Abutment	02	/,	/,	/,	/	/,	C			/,	/,		4	/	/,	/,		_,	/	L,		/,	/,	c	/			
Foundation (RC)	01	/,	/,	/,	/	/,			/,	/,	/,	/,	K,	/	/,	/,		Ζ,	/	/,	/,	/,	/,	/,	/		-	
Foundation (RC)	02	/							/,	/,	/,			/,	/,		ļ	/,	/,	/,			/,		/	ļ	,	
Bearing	01	d							/,	/,	/			/	/,			/,	/,	/,	е		/				/,	
Bearing	02	d							/,	/	/		 		/			/	/	/	е		/,				/,	
Expansion Joint (Rubber)	01	/		/	/		4	/	_	4	/	_			/	4		Κ,	Κ,	/	е		4			/	/	
Railing (Steel)	01	,					/			/	/		\prec	/	/	/,	ļ	/	/		/	/,	/,		/	/	/,	
Wheel Gurad	01		/,	/,						/,	/		Κ,	/	/,	/,		/	/			/,	/,	C		/	/,	
Drainage System	01	C	/	/,			/,	/	/,	/,	/	/	/			/		/,	/,			/	/		е	/,	/,	
Pavement	01	/,	/	/,	/	/,	/,	/	/,	/,	/	/,	K,	е		/,		/	/	/,	/,	/,	/,	/,		/	/,	
Bridge Approaches	01	/	/	/	/	/	4	/	/	/	/	/_	Κ,	_		/	-	Κ,	/	/	/	/	/	/		/	/	
Bridge Approaches	02						/,	/	/,	/,	/	/,	Κ,			/,	-	/,	/,	/,	/,		/,			/,	/,	
Lighting Facility	01						/	/	/	/	/	//	/	/	/	/	<u> </u>	/,	/	/	/		/		/	/	//	
Utility Pipe	01				<u> </u>												<u> </u>	/						C				
Summary and Recommendation																												

Eile Number Bride		o None	Vomete Bridge	Evalua		BO (linder D	ides	Date		1072
File Number	Bridg	je Name	Yamato Bridge		tructure	PC (Sirder Br		Yea	r	1972
Zone Evaluation Re	oult	Circle		Divis	sion	Snor	. No		ivision	e No.	4/0
Evaluation Re	Suit	1			At	Bt	No.	1 Dt		Detailed	1/3
Component	Element Type	Material	Type of Defects	8	No Repair	Minor Repair	Major Repair	Emer- gency	Public Safety	investi- gation	
			1.Corrosion								
			2.Crack in Steel								
		Steel	3.Loose or Missing Bolts								
	Main Girder		4.Fracture	atom							
	Main Truss		5.Deterioration of Paint S6.Crack	ystem	✓						
			7.Spalling / Exposed Reb	ar	•		~				
	Main Arch	Concrete	8.Water leakage /Efflores			~	<u> </u>				
	Outer Cable		11.Delamination		~						
		Othere	12.Abnormal Spacing		~						
	Main Tower	Others	16.Other Types of Defect	S	~						
	Arch Rib		17.Defects of Reinforcing	material	~						
	Tan Clah		18.Abnornal Anchorage		~						
	<u>Top Slab</u>		19.Discolorlation / Deterior		~						
		Common	20.Water Leakage / Pudd		~						
			21.Abnormal Noise / Vibra	ation	~						
	* Drimary alament		22.Abnormal Deflection		<i>'</i>						
	* Primary element		23.Deformation / Break 1.Corrosion		~						
			2.Crack in Steel								
		Steel	3.Loose or Missing Bolts								
		0.00.	4.Fracture								
			5.Deterioration of Paint S	ystem							
			6.Crack		~						
	Cross Beam	Conoroto	7.Spalling / Exposed Reb	ar	~						
		Concrete	8.Water leakage /Efflores	cence		~					
	<u>Stringer</u>		11.Delamination		~						
		Others	16.Other Types of Defect		~						
			17.Defects of Reinforcing	material							
<u>Superstructure</u>			18.Abnornal Anchorage		~						
		Common	19.Discolorlation / Deterio		<i>V</i>						
			21.Abnormal Noise / Vibra 22.Abnormal Deflection	ation	~						
	* Primary element		23.Deformation / Break		~						
	1 milary cicinicit		1.Corrosion		-						
			2.Crack in Steel								
		Steel	3.Loose or Missing Bolts								
	Lateral Dresins		4.Fracture								
	Lateral Bracing		5.Deterioration of Paint S	ystem							
		Others	16.Other Types of Defect	S							
			17.Defects of Reinforcing								
		Common	21.Abnormal Noise / Vibra	ation							
	- Secondary element		23.Deformation / Break								
			1.Corrosion								
		Stool	2.Crack in Steel								
		Steel	3.Loose or Missing Bolts 4.Fracture						 		-
			5.Deterioration of Paint S	vstem							
			7.Spalling / Exposed Reb			~					
			8.Water leakage /Efflores			~					
	Deck Slab	Concrete	9.Fallen out of Deck Slab		~						
			10.Crack of Deck Slab				V				
			11.Delamination		~						
		Others	16.Other Types of Defect	s	~						
			17.Defects of Reinforcing	material							
	Common 1	18.Abnornal Anchorage		~						<u> </u>	
				~						<u> </u>	
	+D:		20.Water Leakage / Pudd	le	~						<u> </u>
	* Primary element		23.Deformation / Break		~						

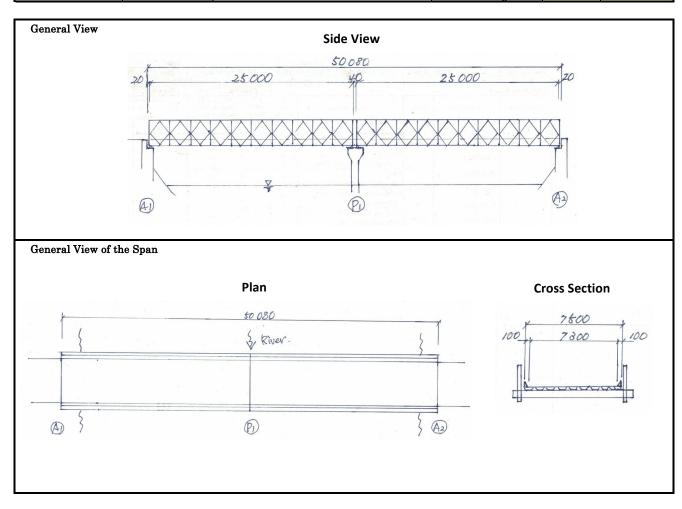
Eila Niess 1	D.:	a Maria		omoto Dulatera	Evaluat		D0 1	Ninal are 🗖	lalar -	Date		4070
File Number	Bridg	e Name		amato Bridge	Superst		PC C	Sirder Br		Yea	r	1972
Zone Evaluation Re	out l	Circle			Divis	sion	Snor	. No		ivision	No.	0/0
Evaluation Re	Suit					At	Spar Bt	Ct	1 Dt		e No.	2/3
Component	Element Type	Material		Type of Defects	i .	No Repair	Minor Repair	Major Repair	Emer- gency	Public Safety		Remarks
			1.Con	rosion								
			2.Cra	ck in Steel								
		Steel	3.Loos	se or Missing Bolts								
			4.Frac	cture								
	Abouton		5.Dete	erioration of Paint Sy	/stem							
	<u>Abutment</u>		6.Crad					~				
	<u>Pier</u>		7.Spa	Iling / Exposed Reb	ar		~					
	Side Wall	Concrete	8.Wat	er leakage /Efflores	cence	~						
				lamination		~						
	Parapet Wall	Others	16.Otl	her Types of Defects	S	~						
				fects of Reinforcing								
			19.Dis	scolorlation / Deterio	ration	~						
		Common	20.Wa	ater Leakage / Pudd	le	~						
				normal Noise / Vibra								
	* Primary element		23.De	formation / Break		~						
	,			rosion		-						
Substructure		Steel	2.Cra	ck in Steel								
	Farradation		5.Dete	erioration of Paint Sy	/stem							
	<u>Foundation</u>		6.Crad		,	~						
	<u>Footing</u>	Concrete		Iling / Exposed Reb	ar	~						
		Others	-	her Types of Defects		~						
				ttelment / Tilt / Move		~						
	* Primary element	Common		ouring		~						
	,		6.Crad	-		-						
			7.Spa	Iling / Exposed Reb	ar							
		Concrete	8.Wat	er leakage /Efflores	cence							
				lamination								
	Retaining Wall	Others	16.Otl	her Types of Defects	S							
				fects of Reinforcing								
			19.Dis	scolorlation / Deterio	ration							
		Common		formation / Break								
			25.Se	ttelment / Tilt / Move	ement							
	- Secondary element		26.Sc	our								
	,		1.Com	rosion				~				
			2.Cra	ck in Steel		~						
		Steel (Rubber)	3.Loo:	se or Missing Bolts		~						
		(Rubbei)	4.Frac	cture		~						
			5.Dete	erioration of Paint Sy	ystem	~						
	Bearing Main Body		12.Ab	normal Spacing		~						
	Anchor Bolts	Others	15.Fu	nction Disorder of B	earings	~						
			16.Otl	her Types of Defects	3	~						
				ater Leakage / Pudd		V						
<u>Bearings</u>				normal Noise / Vibra		V						
~		Common	23.De	formation / Break		~						
				cumulation of Debri	S	~						
	* Primary element			ttelment / Tilt / Move		V						
			6.Crac		-	~				 		1
	Pooring Cook Mandal	Concrete		lling / Exposed Reb	ar	~						
	Bearing Seat Mortal			lamination		· ·						
	Bearing Bed concrete	Others		her Types of Defects	S	<i>'</i>						
				ater Leakage / Pudd			~					
		Common			*		-	Ì	1		Ì	I

File Number Bridg		je Name	V	amato Bridge	Evaluat Superst		DC C	irder Br	idae	Date Yea	r	1972
	Bridg			amato bridge	Divis		PU	aruer br		ivision		1972
Zone Evaluation Res	ult	Circle			DIVIS	SION	Spar	. No	3ub-D		e No.	3/3
Evaluation Res	uit					At	Bt	Ct	Dt		Detailed	3/3
Eleme	ent Type	Material		Type of Defects	;	No Repair	Minor Repair	Major Repair	Emer- gency	Public Safety		Remarks
			13.Dit	ffernce in Level				~				
<u>Pavement</u>		Others	14.Ab	normal Bituminous	Pavement	~						
			16.Ot	her Types of Defects	3	~						
- Seconda	ary element	Common	24.Ac	cumulation of Debri	S	~						
			13.Dif	fernce in Level		~						
Bridge Approa	aches	Others	14.Ab	normal Bituminous	Pavement	~						
			16.Ot	her Types of Defects	3	~						
- Seconda	ary element	Common	24.Ac	cumulation of Debri	S	~						
			1.Con	rosion		~						
		Steel	2.Cra	ck in Steel		~						
		(Rubber)	3.Loo	se or Missing Bolts		~						
			4.Frad	cture		~						
			5.Det	erioration of Paint Sy	ystem	V						
	oints (Rubber / Steel)	Concrete	6.Cra	ck								
> Including	of post-cast concrete		11.De	elamination								
- elements (or post-cast concrete			normal Spacing		~						
		Others		ffernce in Level		~						
				her Types of Defects		~						
				ater Leakage / Pudd			~					
		Common		normal Noise / Vibra	ation	~						
				formation / Break		~						
- Seconda	ary element			cumulation of Debri	S	~						
				rosion		~						
				ck in Steel		~						
		Steel		se or Missing Bolts		~						
Railing (Stee Wheel Guard			4.Frad			~						
> Including	<u>a (Concrete)</u>			erioration of Paint Sy	/stem	~						
- Guard Fer	nce		6.Cra	-								
- Median - Curb		Concrete		Illing / Exposed Reb								
- Curb				ter leakage /Efflores	cence							
		Othoro		elamination								
		Others		her Types of Defects scolorlation / Deterion		V	V					
Second	ary element	Common		eformation / Break	oration	V	V					
Occond	ary cicinent			rosion			V					
		Steel	4.Frac			V						
Drainage Sys	stem	Polyvinyl		erioration of Paint Sy	ıstem	~						
> Including		Others		her Types of Defects		~						
- Catch-Bas		Others		scolorlation / Deterio		~						
- Drainage I	ı ıhe			ater Leakage / Pudd		~						
		Common		eformation / Break		<i>V</i>						
- Seconda	ary element			cumulation of Debris	S	_	~					
	•			rosion	-	~	-					
				ck in Steel		~						l
		Steel		se or Missing Bolts		~						l
Lighting Faci			4.Frac			~						
Road Sign F	<u>acilly</u>			erioration of Paint Sy	/stem	~						
		Others		her Types of Defects		~						
				scolorlation / Deterio		~						i e
- Seconda	ary element	Common	23.De	formation / Break		~						
			1.Cor	rosion		~						
			2.Cra	ck in Steel		~						
		Steel	3.Loo	se or Missing Bolts		V						
Inspection Fa Utilitiy Pipe	acility		4.Frad	cture		~						
Juliay Fipe			5.Det	erioration of Paint Sy	ystem	~						
		Others	16.Ot	her Types of Defects	S	V						
		Common	21.Ab	normal Noise / Vibra	ation	~						
- Seconda	ary element	COMMINION	23.De	formation / Break			>					

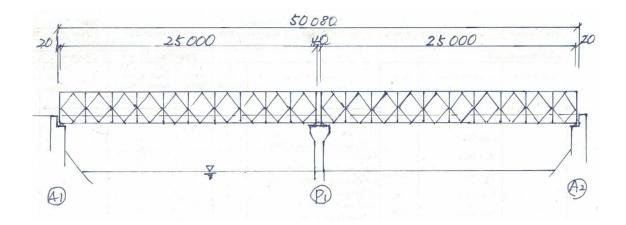
2. Sample (2) Portable Steel Bridge

Periodic Inspection/Evaluation Report Form (Sample)

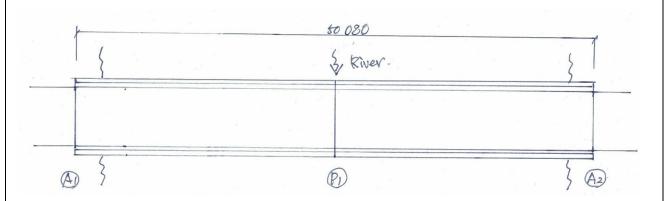
File Num	ber										Inspec	tor				Date					
Zone		Rajsha	ahi		Circle		Pabna			Divisio	on	Sirajga	anj		Sub-D	ivision	Sirajgaı	nj-1			
District					Upazil	lla				Union					Villa	ge					
Road No.		R451	Road Na	me	Nalka	-Sira	jganj R	oad				LRP Name	LRP0	01	GPS	Lat	24d-25'-				
Bridge Na	ame	Naiori	Bridge					LRP+0	Offset (1	m)		Ivame			Chair (km)	Long nage	89d-36'- 0.907	4"			
Year of Construct	tion	1	uxn	Design Standard				Design Load					Load Ristriction				((ton)			
		River						wner			Public		telephon		Owner	1					
Feature Intersecte	ed	Road			Owner			ŀ			Utilities		water		Own		Owner				
		Railwa	ay					Owner			•			Carried							
Bridge Le	ngth	5	0.08	No. of Spa	ans	2	Span Arrang	ement	25+25							Skew . (degre		90			
					Туре			ľ	A ateria	1				Туре	е		Mate	rial			
Superstru	ıcture			Portable S Steel Dec		teel Bridge with		Steel			Deck S	Slab	Steel				Steel				
Substruct		Abutm	ent	Inverted	T-type	ре		Concrete			Found (Abuti										
Substruct		Pier		Wall Typ	е			Concrete			Foundation (Pier)		Piled								
Other		Pavem	ent	None							Bearin	ıgs	Steel			S					
Elements		Expans	sion Joint	None							Railin	g	None								
Width		Width	7.50	m	Wh Guai		Sidew	alk-L	Carr way	_	Ме	dian	Carria way-	_	Side	walk-R	Who Guar				
	Effect Width		6.05	m	0.1	m	0.0	m	7.30	m		m	0.0	m	0.1	m	0.0	m			
Traffic Co	nditi-		Census ((year)								Heavy V Rate (%	Vehicle Trai	ffic	0~10) •10~2	20 -20~3	0 •30~			
Traine Co	martic)IIS	Traffic V	olume			V	ehicles	(Dayti	me 12	e 12 hours) Condition Category for Entire Bridge		•	;	35	В					



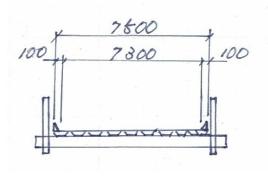
General View



Plan



Cross Section



Overall View Photo

Bridge Number Bridge Name Naiori Bridge Route Name



Viewpoint	Side View
Date	23.08.15



Viewpoint	Front View
Date	23.08.15



Viewpoint	Under Bridge
Date	23.08.15

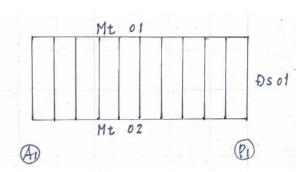
Element Numbering System

Bridge Number	Bridge Name	Naiori Bridge	Route Name	

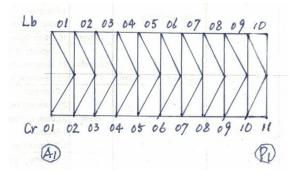
Span No.

1

Main Truss (Mt)
Deck Slab (Ds)

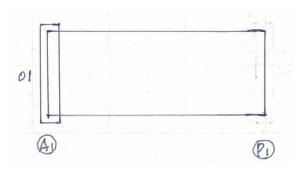


Cross Beam (Cb), Lateral Bracing (Rb)

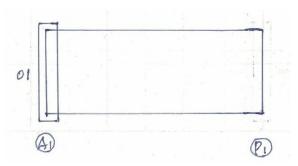


Substructure

Abutment(A), Foundation(F)

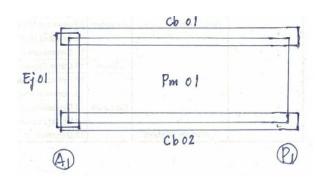


Bearing(Br)



Curb(Cb)

Expansion Joint (Ej), Pavement (Pm)

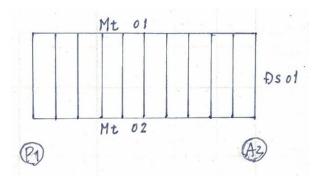


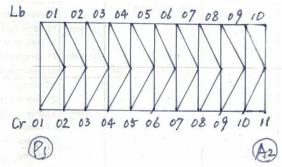
Element Numbering System

Bridge Number	Bridge Name	Naiori Bridge	Route Name		
				Span No.	2

Main Truss (Mt)
Deck Slab (Ds)



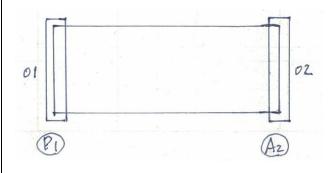


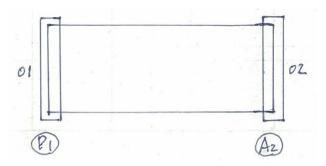


Substructure

Abutment(A), Pire(P), Foundation(F)

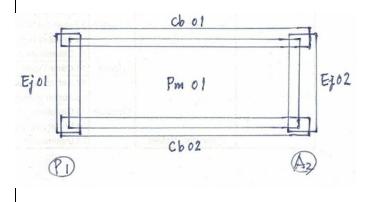
Bearing(Br)

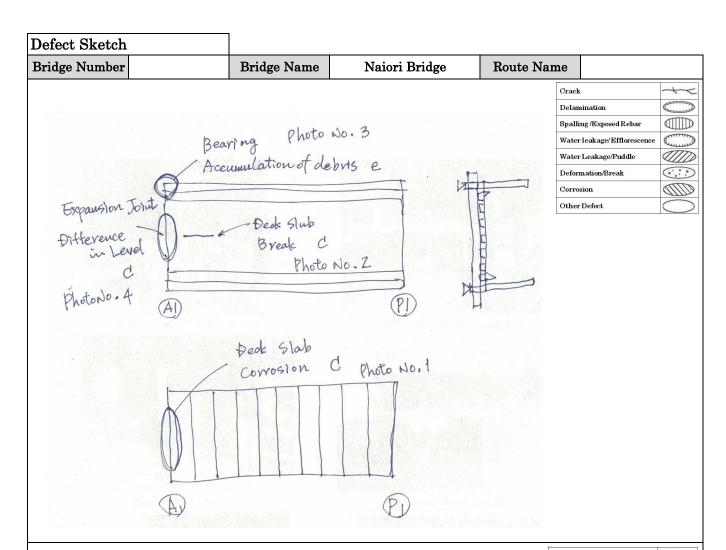




Curb(Cb)

Expansion Joint (Ej), Pavement (Pm)





Crack	4
Delamination	
Spalling/Exposed Rebar	
Water leakage/Efflorescence	Curry.
Water Leakage/Puddle	1111
Deformation/Break	·::
Corrosion	ATTD.
Other Defect	

Bridge Number Bridge Name Naiori Bridge Route Name Span No. 1 Photo No. 1 Span No. 1 Photo No. 2 Element Deck Slab Defect Corrosion Element Deck Slab Defect Breal Rating C Rating C Span No. 1 Photo No. 3 Span No. 1 Photo No. 4 Element Bearing Defect Accumulation of debris Element Expansion Joint Defect Difference i Rating e Rating C Rating C Rating C Span No. 1 Photo No. 4 Element Bearing Defect Accumulation of debris Element Expansion Joint Defect Difference i Rating C Rating C Rating C Rating	
Element Deck Slab Defect Corrosion Element Deck Slab Defect Breat Rating C Span No. 1 Photo No. 3 Span No. 1 Photo No. 4 Element Bearing Defect Accumulation of debris Element Expansion Joint Rating C	
Span No. 1 Photo No. 3 Span No. 1 Photo No. 4 Element Bearing Defect Accumulation of debris Element Expansion Joint Defect Difference in Rating C	
Span No. 1 Photo No. 3 Span No. 1 Photo No. 4 Element Bearing Defect Accumulation of debris Element Expansion Join Defect Difference is Rating C	k
Element Bearing Defect Accumulation of debris Element Expansion Joint Defect Difference in Rating C	
Element Bearing Defect Accumulation of debris Element Expansion Joint Defect Difference in Rating C	
Element Bearing Defect Accumulation of debris Element Expansion Joint Defect Difference in Rating C	
Element Bearing Defect Accumulation of debris Element Expansion Joint Defect Difference in Rating C	
Rating e Rating C	in Level
Span No. Photo No. Span No. Photo No.	
Element Defect Element Defect	
Rating Rating	

														Ins	pect	or		HA	RAZ	AKI	, Ik	uo		Dat	е	23.	08.1	5
File Number				Br	idge	Na	me	Nai	ori l	Brid	ge			Sup	erst	ruct	ture	PSE	3 wit	h St	eel 1	Deck				Ye	ear	1980
Zone	Rajs	hah	i		(Circl	.e	Pab	na					Divi	sion	ı	Sira	ajgai	nj			Su	b-Di	ivisi	on	Sira	ajgaı	aj-1
Survey Result											No	o. of	Hin	ıge		0		Sp	an I	eng	th		25.0		Sp	an l	No.	1
		S	teel	Ma	teria	al	(onc	rete	Ma	teria	al		С	the	rs					(Com	mon	1				
Items of Defects		Corrosion	Crack	ω Loose or Missing Bolts	4 Fracture	ന Deterioration of Paint System	9 Crack	Spalling/Exposed Rebar	ω Water Leakage/Eflorescence	φ Fallen-out of Deck Slab	Crack of Deck Slab	Delamination	Abnormal Spacing	Difference in Level	Abnomal Bituminous Pavement	Functional disorder of Bearings	Others	Defects of Reinforced Materials	Abnormal Anchorage	Discoloration/deterioration	Water Leakage /Puddle	Abnormal Noise/Vibration	Abnormal Deflection	Deformation/Break	Accumulation of Debris	Settlement/Tilt/Movement	Zeonr Scour	Remarks
Main Truss	01	Ė		Ü	-	Ü	プ		Ž	Ž	7	<u> </u>	12	7	7	7	10	1.		7	20	21	22	20		/	7	
Main Truss	02								/							/												
Cross Beam	01						7		$\overline{}$				7			$\overline{}$					/							
Cross Beam	02						7		$\overline{}$				7			$\overline{}$												
Cross Beam	03						7		$\overline{}$				7			$\overline{}$												
Cross Beam	04						$\overline{}$		$\overline{}$				$\overline{}$			$\overline{}$												
Cross Beam	05						7		$\overline{}$				$\overline{}$			$\overline{}$												
Cross Beam	06						$\overline{}$		$\overline{}$				$\overline{}$			$\overline{}$												
Cross Beam	07																											
Cross Beam	08								$\overline{}$							$\overline{}$												
Cross Beam	09								/		/		\setminus			/												
Cross Beam	10						\backslash						\backslash													\backslash		
Cross Beam	11																											
Lateral Bracing	01						\angle		/	\angle	\angle	\angle	\angle	\angle		_			\angle		\angle				\angle	\angle	\angle	
Lateral Bracing	01						\angle		_	\angle	\angle	\angle	\angle	\angle		_					\angle				\angle	\angle	\angle	
Lateral Bracing	02						\angle	\angle	_	\angle	\angle	\angle	\angle	\angle	\angle	_			\angle	\angle	\angle				\angle	\angle	\angle	
Lateral Bracing	03						Ζ,	Ζ,	<u>/</u> ,	\angle	Ζ,	Ζ,	Ζ,	\angle	_	<u>/</u> ,			\angle	\angle	_	\angle	\angle		_	_	\angle	
Lateral Bracing	04						Ζ,	Ζ,	<u>/</u> ,	Ζ,	Ζ,	Ζ,	Ζ,	Ζ,		<u>/</u> ,			\angle	\angle	<u>/</u>	\angle	\angle		<u>/</u>	Ζ,	\angle	
Lateral Bracing	05						Ζ,	\angle	<u>/</u> ,	Ζ,	Ζ,	Ζ,	Ζ,	Ζ,	/	<u>/</u> ,			\angle	\angle	_	\angle	/		_	Ζ,	\angle	
Lateral Bracing	06						Ζ,	Ζ,	Ζ,	4	Ζ,	Ζ,	4	Ζ,	Ζ,	Ζ,			4	4	Ζ,	Ζ,	/		Ζ,	Ζ,	\angle	
Lateral Bracing	07						4	Ζ,	Ζ,	4	Ζ,	Ζ,	Ζ,	Ζ,	Ζ,	Ζ,			4	4	4	/,	/		4	Ζ,	\angle	
Lateral Bracing	08						Ζ,	/,	/,	/,	Ζ,	/,	Ζ,	/,	/,	/,			4	4	_	/,	/		_	Ζ,	\angle	
Lateral Bracing	09						4	/,	۷	Ζ,	/_	/_	4	Ζ,	/,	۷			4	4	4	/	/		4	4	\angle	
Lateral Bracing	10	_					4	/	/,	/	/,	/_	4	/,	/	/,			\angle	\angle		/	/	_	_	/,	\angle	
Deck Slab (Steel)	01	C					/			/	/		\leftarrow	/	$\overline{}$	/							$\overline{}$	C	_	/	/	
Abutment / Pier (RC) Foundation (RC)	01	/	/	/	/	/				/	/		/	/	/	/			$\overline{}$			//	$\overline{}$		-			
	01 01	4	-	\leftarrow	/	-			_	/	\leftarrow		4	/	-	-			$\overline{}$		-	-	$\langle \ \ \rangle$		-			
Retaining Wall Bearing	01	_								$\overline{}$	\leftarrow		_	$\overline{}$	$\overline{}$				$\overline{}$				$\overline{}$		_			
Expansion Joint (Steel)	01								-		$\overline{}$			C	$\overline{}$			$\overline{}$	$\overline{}$	$\overline{}$					е		$\overline{}$	
Curb	01										/					/												
Pavement	01	1	/	/						/	/		1			/					-					/		
Bridge Approaches	01								/							/												
Summary	01													<u> </u>														
Recommendation																												

			Evalua	tor	KONISHI	, Toshiyι	ıki	Date	23.0	8.15
File Number		e Name	Naiori Bridge Supers	tructure	PSB w	ith Stee	l Deck	Yea	r	1980
Zone	Rajshahi	Circle	Pabna Divi	sion		ganj	Sub-D	ivision		ganj-1
Evaluation Res	sult					No.	1	Page	e No.	1/3
Component	Element Type	Material	Type of Defects	At No	Bt Minor	Ct Major	Dt Emer-	Public	Detailed investi-	Demarks
Component	Liement Type	iviaterial	Type of Defects	Repair	Repair	Repair	gency	Safety	gation	Remarks
			1.Corrosion	V						
			2.Crack in Steel	✓						
		Steel	3.Loose or Missing Bolts	*						
	Main Girder		4.Fracture	~						
			5.Deterioration of Paint System	~						
	Main Truss		6.Crack							
	Main Arch	Concrete	7.Spalling / Exposed Rebar							
			8.Water leakage /Efflorescence							
	Outer Cable		11.Delamination							
	Main Tower	Others	12.Abnormal Spacing	<i>'</i>						
	A 1 D"		16.Other Types of Defects 17.Defects of Reinforcing material	V						
	Arch Rib		18.Abnornal Anchorage	_						
	Top Slab		19.Discolorlation / Deterioration							
		Common	20.Water Leakage / Puddle	V						
			21.Abnormal Noise / Vibration	~						
			22.Abnormal Deflection	~						
	* Primary element		23.Deformation / Break	V						
ļ	,		1.Corrosion	~						
			2.Crack in Steel	~						
		Steel	3.Loose or Missing Bolts	~						
			4.Fracture	~						
			5.Deterioration of Paint System	~						
			6.Crack							
	<u>Cross Beam</u> <u>Stringer</u>	Concrete	7.Spalling / Exposed Rebar							
		Control	8.Water leakage /Efflorescence							
			11.Delamination							
		Others	16.Other Types of Defects	V						
0			17.Defects of Reinforcing material	~						
<u>Superstructure</u>			18.Abnornal Anchorage							
		Common	19.Discolorlation / Deterioration							
		2 3	21.Abnormal Noise / Vibration	✓						
	* Primary element		22.Abnormal Deflection 23.Deformation / Break	V						
	1 milary ciement		1.Corrosion	✓						
			2.Crack in Steel	~						
		Steel	3.Loose or Missing Bolts	*						
			4.Fracture	~						
	Lateral Bracing		5.Deterioration of Paint System	•						
		Others	16.Other Types of Defects	~						
			17.Defects of Reinforcing material	~						
		Common	21.Abnormal Noise / Vibration	~						
	- Secondary element		23.Deformation / Break	~						
Ī			1.Corrosion		✓					
			2.Crack in Steel	~						
ļ		Steel	3.Loose or Missing Bolts	*						
			4.Fracture	~						
			5.Deterioration of Paint System	~						
			7.Spalling / Exposed Rebar							
J	Developed to	0.00	8.Water leakage /Efflorescence							
	Deck Slab	Concrete	9.Fallen out of Deck Slab							
			10.Crack of Deck Slab							
				Ī	1	Ī			1	
		Ott.	11.Delamination	-						
		Others	16.Other Types of Defects	V						
		Others	16.Other Types of Defects 17.Defects of Reinforcing material	✓ ✓						
			16.Other Types of Defects 17.Defects of Reinforcing material 18.Abnornal Anchorage							
			16.Other Types of Defects 17.Defects of Reinforcing material							

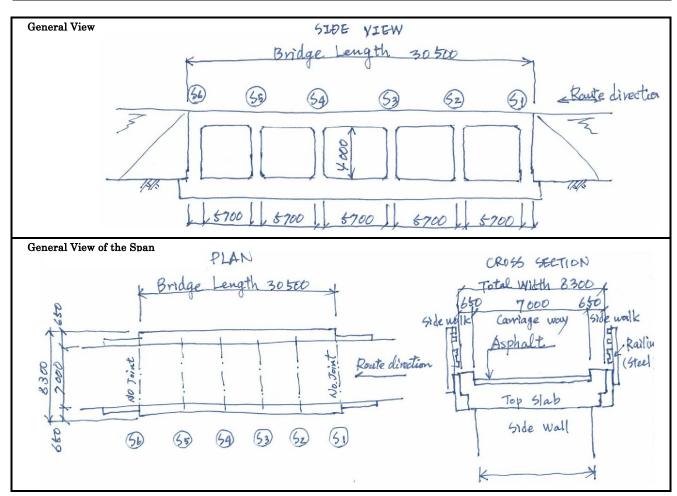
				Evaluat	or	KONISHI	. Toshivu	ki	Date	23.0	8.15
File Number	Bridg	e Name	Naiori Bridge	Superst			ith Stee		Yea		1980
Zone	Rajshahi	Circle		Divis		Sira	ganj	Sub-D	ivision	Siraj	ganj-1
Evaluation Re	sult					Spar		1	Page	e No.	2/3
Commonant	Flore and Time	Matarial	Time of Defeate		At	Bt	Ct	Dt	Public	Detailed	D
Component	Element Type	Material	Type of Defects		No Repair	Minor Repair	Major Repair	Emer- gency	Safety	investi- gation	Remarks
			1.Corrosion								
			2.Crack in Steel								
		Steel	3.Loose or Missing Bolts								
			4.Fracture								
	Abutment		5.Deterioration of Paint Sy	/stem							
			6.Crack								
	<u>Pier</u>	Concrete	7.Spalling / Exposed Reb	ar							
	Side Wall	Concrete	8.Water leakage /Efflores	cence							
	Doronot Woll		11.Delamination								
	Parapet Wall	Others	16.Other Types of Defects	5							
			17.Defects of Reinforcing	material							
			19.Discolorlation / Deterio	ration							
		Common	20.Water Leakage / Pudd	le							
			21.Abnormal Noise / Vibra	ation							
	* Primary element		23.Deformation / Break								
			1.Corrosion								
<u>Substructure</u>		Steel	2.Crack in Steel								
	<u>Foundation</u>		5.Deterioration of Paint Sy	/stem							
		Concrete	6.Crack								
	<u>Footing</u>		7.Spalling / Exposed Reb	ar							
		Others	16.Other Types of Defects	3							
×		Common	25.Settelment / Tilt / Move	ement							
	* Primary element	Common	26.Scouring								
		Concrete	6.Crack								
			7.Spalling / Exposed Reb	ar							
		Concrete	8.Water leakage /Efflores	cence							
			11.Delamination								
	Retaining Wall	Others	16.Other Types of Defects	3							
			17.Defects of Reinforcing	material							
			19.Discolorlation / Deterio	ration							
		Common	23.Deformation / Break								
			25.Settelment / Tilt / Move	ement							
	- Secondary element		26.Scour								
			1.Corrosion		V						
		0, 1	2.Crack in Steel		V						
		Steel (Rubber)	3.Loose or Missing Bolts		V						
		,	4.Fracture		~						
	Bearing Main Body		5.Deterioration of Paint Sy	/stem	V						
	Bearing Wain Body		12.Abnormal Spacing		~						
	Anchor Bolts	Others	15.Function Disorder of B	earings	V						
			16.Other Types of Defects	5	✓						
			20.Water Leakage / Pudd	le	✓						
<u>Bearings</u>			21.Abnormal Noise / Vibra	ation	V						
		Common	23.Deformation / Break	V							
			24.Accumulation of Debri	<u> </u>		V					
	* Primary element		25.Settelment / Tilt / Move	ement	✓						
			6.Crack		V						
	Bearing Seat Mortal	Concrete	7.Spalling / Exposed Reb	ar	V						
			11.Delamination		V						
	Bearing Bed concrete	Others	16.Other Types of Defects		V						
			20.Water Leakage / Pudd	le	~						
		Common	3								

Pavement Type Material Type of Defects No Repair Repair Repair Genery Safety Repair Repai	1980 Sirajganj-1 O. 3/3 Italied vestiation
Evaluation Result	o. 3/3 stailed vesti- Remarks
Pavement Type Material Type of Defects Al St. Ct. Dt. No. Millor Repair Repair Repair Re	tailed vesti- Remarks
Pavement Pavement Type of Defects No Repair Repair Repair gency Safety Public Safety Pavement Type of Defects Repair Repair gency Repair	vesti- Remarks
Pavement	
Pavement	
Pavement	
16.0ther Types of Defects	
Secondary element	
13.Differnce in Level	
Secondary element	
- Secondary element	
- Secondary element	
1.Corrosion 2.Crack in Steel 3.Lose or Missing Bolts 4.Fracture 5.Deterioration of Paint System 6.Crack 7.Deterioration of Paint System 7.Corrosion 7.Co	
Crack in Steel Crack in Steel Concrete Concrete Concrete Common Common Concrete Concrete Common Concrete Concrete Common Concrete Common Common Concrete Concrete Common Concrete Common Common Common Common Common Common Concrete Common	
Steel (Rubber) 3.Loose or Missing Bolts 4.Fracture 5.Deterioration of Paint System 6.Crack 6.Crack 7.Crack 7	
A-Fracture S-Deterioration of Paint System S-Deterioration S-Deteriora	
S.Deterioration of Paint System S.Deterioration S.De	
Expansion Joints (Rubber / Steel)	
Concrete	
- elements of post-cast concrete Others Others 12.Abnormal Spacing V	
Common 13.Differnce in Level	
16.Other Types of Defects	
Common C	
Common Common 21.Abnormal Noise / Vibration 23.Deformation / Break 24.Accumulation of Debris	
- Secondary element	
23.Deformation / Break 24.Accumulation of Debris 25.Crack in Steel 3.Loose or Missing Bolts 4.Fracture 25.Deterioration of Paint System 25.Deterioration of Paint System 25.Deterioration of Paint System 25.Deterioration 25.Dete	
Steel Concrete	
Steel Steel Steel Steel	
Steel Steel A.Fracture	
Railing (Steel / Concrete) Wheel Guard (Concrete)	
Neel Guard (Concrete) S.Deterioration of Paint System S.Deterioratio	
Section of Factors Section	
- Guard Fence - Median - Curb Concrete - Median - Curb Concrete - Concrete	
- Median - Curb - Concrete - R. Water leakage /Efflorescence - I1. Delamination - Others - Secondary element - Secondary element - Seconda	
- Curb S.Water leakage /Efflorescence	
11.Delamination	
Others 16.0ther Types of Defects	
Common 19.Discolorlation / Deterioration	-
- Secondary element	
Steel Polyvinyl 1. Corrosion	
Steel Polyvinyl 4. Fracture	
Drainage System > Including - Catch-Basin PolyViriy 5.Deterioration of Paint System Others 16.Other Types of Defects	
> Including - Catch-Basin Others 16.Other Types of Defects	
- Calcii-basiii	
- Drainage Pine 19.Discolorlation / Deterioration	
Drainage ripe	-+-
Common 23 Defermation / Percel	-+-
23.Deformation / Break	
- Secondary element 24.Accumulation of Debris	
1.Corrosion	
2.Crack in Steel	
Steel 3.Loose or Missing Bolts	
Road Sign Facility 4.Fracture	
5.Deterioration of Paint System	
Others 16.Other Types of Defects	
Common 19.Discolorlation / Deterioration	
- Secondary element 23.Deformation / Break	$-\!$
1.Corrosion	-
2.Crack in Steel	I
Steel 3.Loose or Missing Bolts	
Inspection Facility Utilitiy Pipe 4.Fracture	
5.Deterioration of Paint System	
Others 16.Other Types of Defects	
Common 21.Abnormal Noise / Vibration	
- Secondary element Common 23.Deformation / Break	

3. Sample (3) Box Culvert -1

Periodic Inspection/Evaluation Report Form (Sample)

File Num	File Number N5-LRP0360001113										Inspec	tor			Date		
Zone		Dhaka	ı		Circle	•	Dhaka	ì		Divisi	on	Manik	ganj	Sub	Division	Naya	rhat
District		-			Upazi	lla	-			Union		-		Vill	age	-	
Road No.		N5	Road Na	me	Dhak	a(Mir	pur)-U	tholi-P	aturia			LRP Name	LRP036	GP	Lat		23.91889 90.12111
Bridge N	ame	Sreera	ımpur Bo	x Culvert	<u> </u> ;			LRP+Offset (m)				- 10.220	0.67	9 Cha	inage	36.67	
Year of Construc	tion	1	.998	Design Standard		-			Design Load	1		-	Load Ristric			-	(ton)
		River					Owner				Public		telephone line)	Owne	1	
Feature Intersected Road							Owner				Utiliti	es	water		Owne	r	
Railway		ay				Owner				Carrie	ea						
Bridge Le	ength	30).500	No. of Spa	ans	5	Span Arrang	5.700+5.700+			-5.700+	5.700+8	5.700		Skew (degre	Angle ee)	90
					Тур	е		ľ	Materia	1			Ту	ре		M	aterial
Superstr	ucture			Box Culve	ert			Concr	ete		Deck S	Slab	RC			Conc	rete
Substruc	4	Abutm	ent					Concr	ete		Found (Abuti		Piled			Conc	rete
Substruc		Pier		Wall				Concr	ete		Found (Pier)	lation	Piled			Conc	rete
Other		Pavem	ent	Asphalt							Bearir	ngs	None				
Elements	3	Expan	sion Joint	None							Railin	g	Steel				
Width	Total	Width	8.30	m	Wh Gua	ieel rd-L	Sidew	alk-L	Carr wa	iage y-L	Ме	dian	Carriage way-R	Sid	ewalk-R		Vheel ıard-R
Width	Effect Width		7.00	m	0.0	m	0.65	m	7.00	m	0.0	m	0.65	n 0.0	n	0.0) m
Traffic C	onditio	me	Census	(year)								Rate (%	•	0~	10 -10~	20 -20	~30 -30~
Traine O	onunu	.113	Traffic V	olume			V	ehicles	(Dayti	me 12	hours)		ion Category tire Bridge				



Overall View Photo

Bridge Number	Bridge Name	Sreerampur BoxCulvert	Route Name	
---------------	-------------	-----------------------	------------	--



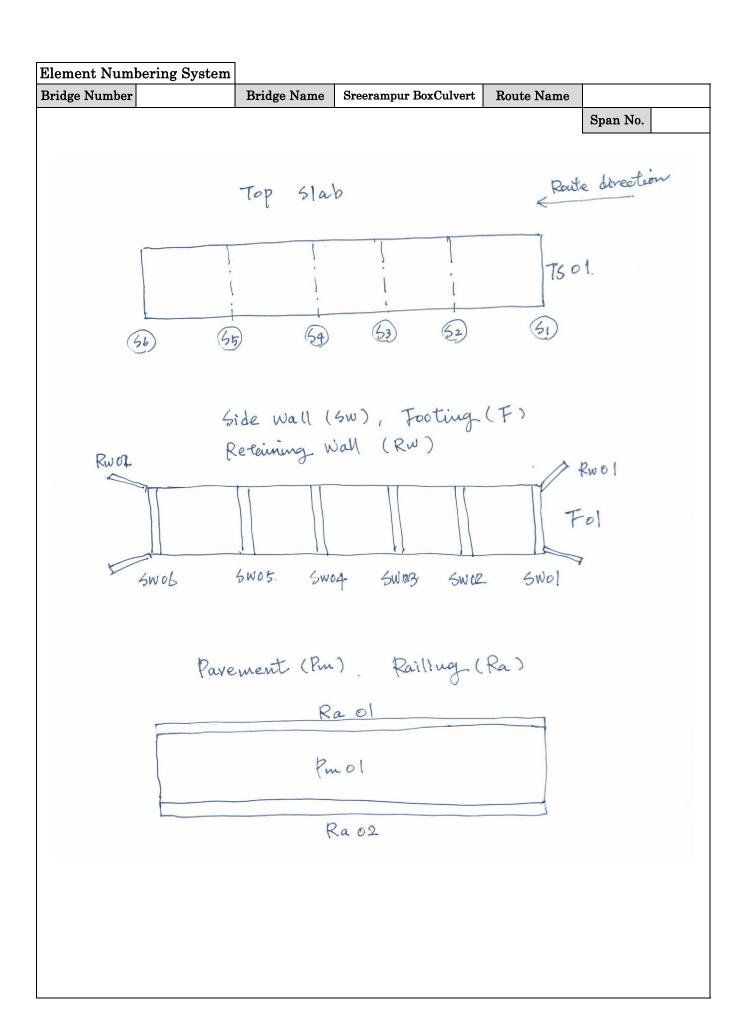
Viewpoint	Side View
Date	19/07/17

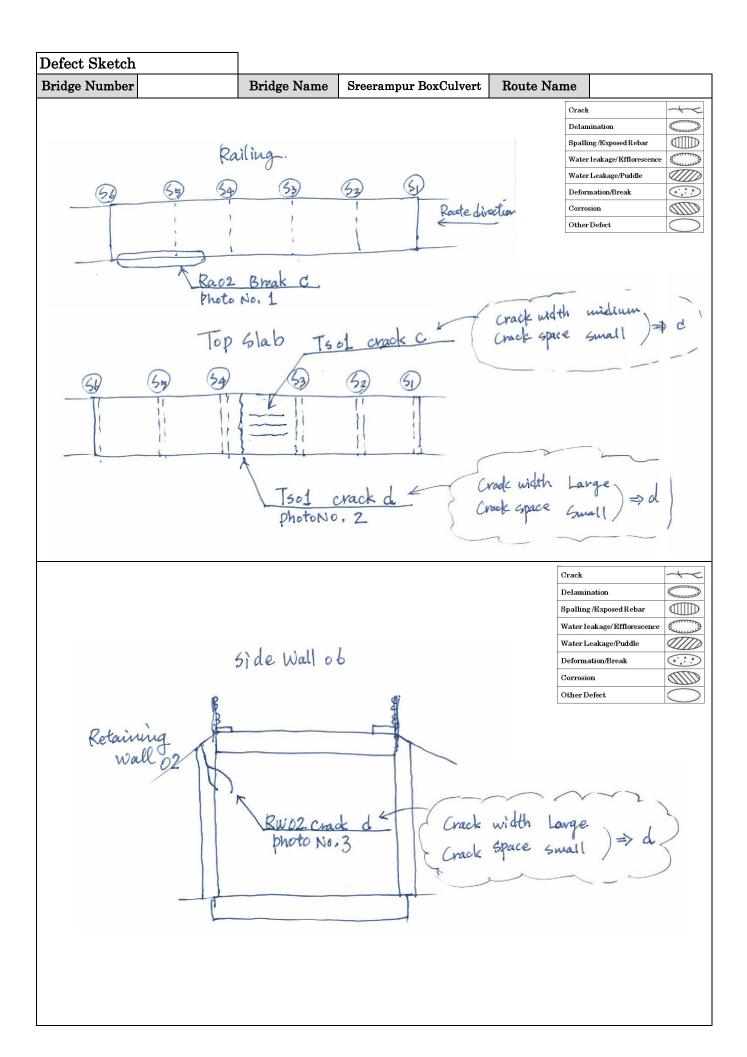


Viewpoint	Front View
Date	19/07/17



Viewpoint	Under Bridge
Date	19/07/17



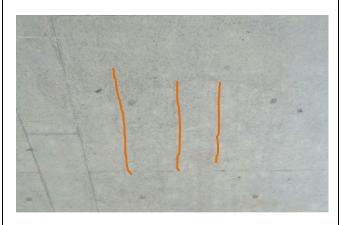


Defects 3	Photos							
Bridge Nu	mber		Bridge Name	Sreera	mpur Box	Culvert	Route Na	ame
Span No.	6	Photo No.	1		Span No.		Photo No.	
Element	Railing	Defect	Break		Element		Defect	
		Rating	c				Rating	



Span No.	3	Photo No.	2	Span No.	3	Photo No.	
Element	Top Slub	Defect	Crack	Element	Top Slub	Defect	Crack
		Rating	d			Rating	С





Span No.	6	Photo No.	3	Span No.	Photo No.	
Element	Retaining Wall	Defect	Crack	Element	Defect	
		Rating	d		Rating	



Periodic Inspection Report Form

								_						Ins	pect	or								Dat	e		19/0	7/17
File Number				Br	idge	Na	me	Sre	eran	npur	Воз	Cul	vert	Sup	erst	truc	ture	Box	Cul	vert						Υe	ear	1998
Zone	Dha	ka			(Circl	.e	Dha	aka					Divi	sion	ì	Ma	nikg	anj			Su	ıb-D	ivisi	on.	Nay	yarha	t
Survey Result											No	o. of	Hin	ge		0		Sp	an l	Leng	th		5.70	,	Sr	oan l	No.	
		S	steel	Ma	teria	al		Conc	rete	Ma	teria	al		C	the	rs						Com	mor	<u> </u>				
Items of Defects		Corrosion	Crack	Loose or Missing Bolts	Fracture	Deterioration of Paint System	Crack	Spalling/Exposed Rebar	Water Leakage/Eflorescence	Fallen-out of Deck Slab	Crack of Deck Slab	Delamination	Abnormal Spacing	Difference in Level	Abnomal Bituminous Pavement	Functional disorder of Bearings	Others	Defects of Reinforced Materials	Abnormal Anchorage	Discoloration/deterioration	Water Leakage /Puddle	Abnormal Noise/Vibration	Abnormal Deflection	Deformation/Break	Accumulation of Debris	Settlement/Tilt/Movement	Scour	
Ton Clab	01	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	
Top Slab Side Wall	01	\leftarrow	$\overline{}$	$^{\prime}$	$\overline{}$	$\overline{}$	d			-	$\overline{}$		-	-	-	\leftarrow			-				$^{\prime}$		-	$^{\prime}$		
Side Wall	02			$^{\prime}$									$^{\prime}$		$\overline{}$				$\overline{}$				/		-	$^{\prime}$		
Footing	01			$\overline{}$															$\overline{}$						$\overline{}$			
Retaining Wall	01	/							_										$\overline{}$		$\overline{}$	$\overline{}$			$\overline{}$			
Retaining Wall	02						d																					
Railing (Steel)	01							/																				
Railing (Steel)	02								/															С				
Pavement	01																											
Summary Recommendation																												

				or				Date		7/17		
File Number	Bridg	e Name	Nagamachi Bridge	Superst		В	ox Culve		Yea	r	1938	
Zone		Circle		Divis	sion	0	. N	Sub-D	ivision	 - N-	4/2	
Evaluation Re	sult	1			At	Spar Bt	No.	Dt		No.	1/3	
Component	Element Type	Material	Type of Defects		No Repair	Minor Repair	Major Repair	Emer- gency	Public Safety	investi- gation	Remarks	
			1.Corrosion									
			2.Crack in Steel									
		Steel	3.Loose or Missing Bolts									
	Main Girder		4.Fracture 5.Deterioration of Paint Sy	nata ma								
	Main Truss		6.Crack	Sterri		_	1				<u> </u>	
			7.Spalling / Exposed Reba	ır			1					
	Main Arch	Concrete	8.Water leakage /Effloreso			-	1	Supe	wstruct	ne 1)		
	Outer Cable		11.Delamination			/	Crack	pater.		ae		
	Main Tower	Others	12.Abnormal Spacing				Crack	Width	Lau	de		
	<u>Iviairi Tower</u>	Others	16.Other Types of Defects				Crack			Te		
	Arch Rib		17.Defects of Reinforcing	material				1				
	Top Slab		18.Abnornal Anchorage			1		\Rightarrow	Ct	_/		
		Common	19.Discolorlation / Deterio20.Water Leakage / Puddl									
		Common	21.Abnormal Noise / Vibra					-				
			22.Abnormal Deflection	ition								
	* Primary element		23.Deformation / Break									
			1.Corrosion									
			2.Crack in Steel									
		Steel	3.Loose or Missing Bolts									
	Cross Beam		4.Fracture									
			5.Deterioration of Paint Sy	stem								
			6.Crack7.Spalling / Exposed Reba	ır								
		Concrete	8.Water leakage /Effloresc									
	Stringer		11.Delamination									
		Others	16.Other Types of Defects	;								
			17.Defects of Reinforcing	material								
<u>Superstructure</u>			18.Abnornal Anchorage									
		Common	19.Discolorlation / Deterio									
			21.Abnormal Noise / Vibra22.Abnormal Deflection	ition								
	* Primary element		23.Deformation / Break									
	· ······any cromons		1.Corrosion									
			2.Crack in Steel									
		Steel	3.Loose or Missing Bolts									
	Lateral Bracing		4.Fracture									
		011	5.Deterioration of Paint Sy									
		Others	16.Other Types of Defects17.Defects of Reinforcing									
		Common	21.Abnormal Noise / Vibra									
	- Secondary element		23.Deformation / Break									
			1.Corrosion									
			2.Crack in Steel									
		Steel	3.Loose or Missing Bolts									
			4.Fracture									
			5.Deterioration of Paint Sy7.Spalling / Exposed Reba						\vdash			
			8.Water leakage /Effloresc									
	Deck Slab	Concrete	9.Fallen out of Deck Slab									
			10.Crack of Deck Slab									
			11.Delamination									
		Others	16.Other Types of Defects									
			17.Defects of Reinforcing	material								
		Common	18.Abnornal Anchorage	ration								
		Common	19.Discolorlation / Deterio 20.Water Leakage / Puddl						1			
	* Primary element		23.Deformation / Break	-								
	2, 2.0		Diodit				<u> </u>	<u> </u>		1		

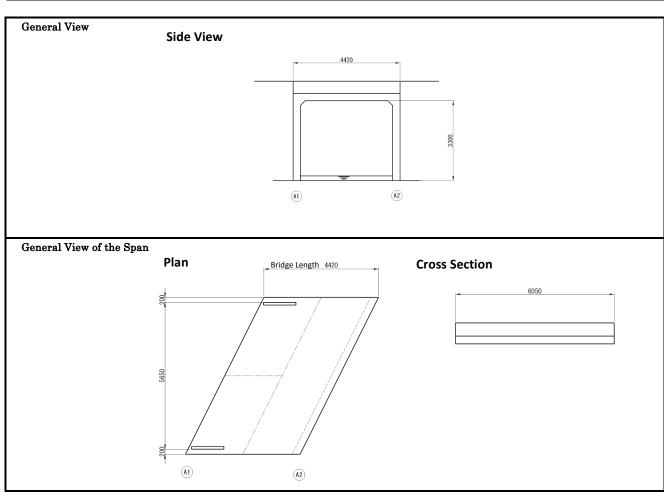
			Evaluat				1			Date		7/17	
File Number	Bridg	je Name		jamachi Bridge	Superst		В	ox Culve		Yea	r	1938	
Zone		Circle			Divis	sion	0		Sub-D	ivision			
Evaluation Re	suit	I	1			At	Spar Bt	No.	Dt		Po.	2/3	
Component	Element Type	Material		Type of Defects		No Repair	Minor Repair	Major Repair	Emer- gency	Public Safety	investi- gation	Remarks	
			1.Corr	osion									
			2.Crad	ck in Steel									
		Steel	3.Loos	se or Missing Bolts									
			4.Frac	ture									
	<u>Abutment</u>			5.Deterioration of Paint Sys									
	Dior		6.Crad										
	<u>Pier</u>	Concrete	-	lling / Exposed Reba									
	Side Wall			er leakage /Effloreso	cence								
	Parapet Wall	011		lamination									
		Others		ner Types of Defects									
				fects of Reinforcing									
		Common		scolorlation / Deterio									
		Common		normal Noise / Vibra									
	* Primary element			formation / Break	illOH								
	1 minary element		1.Corr										
Substructure		Steel		ck in Steel									
<u> </u>		0.00.		erioration of Paint Sy	stem								
	<u>Foundation</u>		6.Crad		Otom								
	<u>Footing</u>	Concrete		lling / Exposed Reba	ır								
		Others		ner Types of Defects									
				ttelment / Tilt / Move									
	* Primary element	Common	26.Sc	ouring									
			6.Crad	ck			V		Supa	tructi	re 1)	1	
		Concrete	7.Spa	lling / Exposed Reba	ır		(/	Crac		tem	Swall		
		Concrete	8.Wat	er leakage /Effloreso	cence		V	wad	curt	h	large		
			11.De	lamination				Cynel		ce	Gual		
	Retaining Wall	Others	16.Oth	ner Types of Defects	;				1			/	
			17.De	fects of Reinforcing	material		\		=>	Bt			
			19.Dis	colorlation / Deterio	ration								
		Common	23.De	formation / Break									
				ttelment / Tilt / Move	ment								
	- Secondary element		26.Sc										
			1.Corr										
		Steel		ck in Steel									
		(Rubber)		se or Missing Bolts									
			4.Frac		-4								
	Bearing Main Body			erioration of Paint Sy normal Spacing	stem								
	Anchor Bolts	Others		nction Disorder of B	paringe								
		Others		ner Types of Defects									
				ater Leakage / Puddl									
<u>Bearings</u>				normal Noise / Vibra									
		Common		formation / Break									
				cumulation of Debris	3								
	* Primary element			ttelment / Tilt / Move									
			6.Crad										
	Regring Soot Mortal	Concrete		lling / Exposed Reba	ır							1	
	Bearing Seat Mortal		-	lamination									
	Bearing Bed concrete	Others		ner Types of Defects	1								
				ater Leakage / Puddl									
	* Primary element	Common		formation / Break								l	

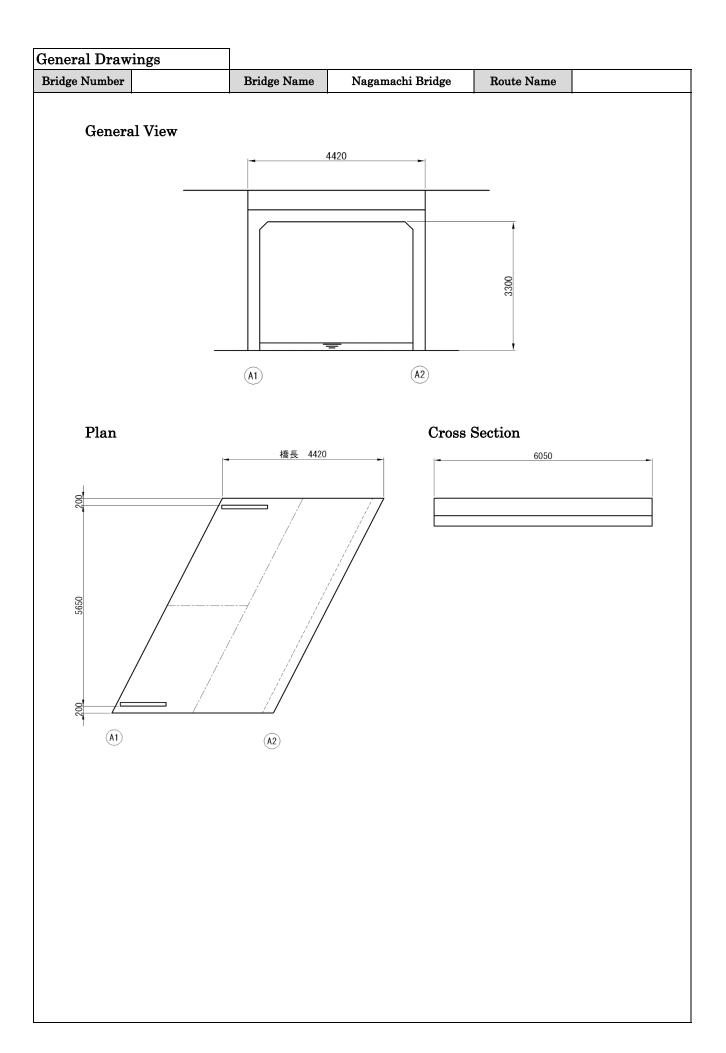
				Evaluat					Date		7/17
File Number	Bride	ge Name	Nagamachi Bridge	Superst		В	ox Culve		Yea	r	1938
Zone	-14	Circle		Divi	sion	0	- N-	Sub-D	ivision	N-	0/0
Evaluation Res	ult	1			۸ŧ	Spar Bt	No.	Dt	Page	No.	3/3
Eleme	ent Type	Material	Type of Defects		At No	Minor	Major	Emer-	Public	Detailed investi-	Remarks
			. , , , , ,		Repair	Repair	Repair	gency	Safety	gation	
			13.Differnce in Level								
Pavement		Others	14.Abnormal Bituminous I	Pavement							
			16.Other Types of Defects	;							
- Seconda	ary element	Common	24.Accumulation of Debris	3							
			13.Differnce in Level								
Bridge Approa	aches	Others	14.Abnormal Bituminous F	Pavement							
			16.Other Types of Defects	;							
- Seconda	ary element	Common	24.Accumulation of Debris	<u> </u>							
			1.Corrosion								
			2.Crack in Steel								
		Steel	3.Loose or Missing Bolts								
		(Rubber)	4.Fracture								
			5.Deterioration of Paint Sy	stem							
Exmansion Is	ointo (Dubbor / Stool)		6.Crack								
Expansion 30 > Including	oints (Rubber / Steel)	Concrete	11.Delamination								
- elements of post-cast concrete			12.Abnormal Spacing				 		1		
		Others	13.Differnce in Level								
		Juicis	16.Other Types of Defects	<u> </u>			<u> </u>				
			20.Water Leakage / Puddl				-				
			21.Abnormal Noise / Vibra								
		Common	23.Deformation / Break	luori							
- Secondary element											
- Seconda	ary element		24.Accumulation of Debris	5							
			1.Corrosion								
		o	2.Crack in Steel								
		Steel	3.Loose or Missing Bolts								
Railing (Stee			4.Fracture								
Wheel Guard > Including	1 (Concrete)		5.Deterioration of Paint Sy	stem							
- Guard Fer	nce		6.Crack								
- Median		Concrete	7.Spalling / Exposed Reba								
- Curb			8.Water leakage /Efflores	cence							
			11.Delamination								
		Others	16.Other Types of Defects	5							
		Common	19.Discolorlation / Deterio	ration							
- Seconda	ary element	00	23.Deformation / Break			V					
		Steel	1.Corrosion			V					
		Polyvinyl	4.Fracture				Ing	rection	~ rati	a C	
Drainage Sys	<u>stem</u>	, ,	Deterioration of Paint Sy	stem							
> Including - Catch-Bas	sin	Others	16.Other Types of Defects	;					R	10 -)
- Drainage I	Pipe		19.Discolorlation / Deterio	ration						DU	
		Common	20.Water Leakage / Pudd	е			1	-		5	
		Common	23.Deformation / Break								
- Seconda	ary element		24.Accumulation of Debris	5			(C) (C)				
			1.Corrosion								
			2.Crack in Steel								
		Steel	3.Loose or Missing Bolts								
Lighting Faci Road Sign Fa			4.Fracture								
rtoad olgiri i	<u>acinty</u>		5.Deterioration of Paint Sy	stem							
		Others	16.Other Types of Defects	;							
		0	19.Discolorlation / Deterio								
- Seconda	ary element	Common	23.Deformation / Break								
		ĺ	1.Corrosion								
		1	2.Crack in Steel								
	Steel	3.Loose or Missing Bolts									
	Inspection Facility	1	4.Fracture				<u> </u>		1		
<u>Utilitiy Pipe</u>			5.Deterioration of Paint Sy	stem			 				
		Others	16.Other Types of Defects								
		Outers	21. Abnormal Noise / Vibra				 				
Coord	ary alamant	Common		IUUI1			<u> </u>				
- Secondary element		<u> </u>	23.Deformation / Break				1				

4. Sample (4) Box Culvert -2

Periodic Inspection/Evaluation Report Form (Sample)

File Num	ber	N1, 8b)								Inspec	etor			Date		
Zone		Dhaka	l		Circle		Dhaka	l		Divisi	on	Naray	angnj-1	Su	b-Division	Naray	angnj-1
District					Upazil	la		Union					Vi	llage			
Road No.		N1	Road Na	me	Dhaka	(Jatra	abari)-C	Comilla-Chittagong-Ta			aknaf	LRP Name	8b		PS Lat	23d-42 90d-30	
Bridge N	ame	Nagan	nachi Bri	dge				LRP+Offset (m)			5+397	76			nainage m)	8.976	01.0
Year of Construct	tion	1	938	Design Standard					Design Load	1		TL-20	Load Ristri	ction	1	6	(ton)
	River						Owner				Public		telephone lin	е	Owne	1	
Feature Intersected Road						Owner				Utiliti Carrie	es	water		Owne	r		
Railway						Owner	•			Carrie	ea						
Bridge Length 4.420 N			No. of Spa	ans	1	Span Arrang	agement 4.420							Skew (degr	Angle ee)	63	
					Туре	•		Material					Ty	ре		Mat	erial
Superstru	ucture			Box Culve	ert			Concrete			Deck 8	Slab	RC			Concre	ete
Substruct		Abutm	ent							(Abu		lation ment)				Steel	
Substruct		Pier									Found (Pier)	lation	-				
Other		Pavem	ent	Asphalt							Bearir	ngs	None				
Elements	١	Expans	sion Joint	None							Railin	g	Steel				
Width	Total '		6.05	m	Who Guar		Sidew	alk-L	Carr way	_	Ме	dian	Carriage way-R	Si	idewalk-R		neel ird-R
	Effect: Width	ive	6.05	m	0.2	m	0.0	m	5.65	m	0.0	m	•••	m 0	.2 m	0.0	m
Troffic C	onditio	na	Census ((year)								Rate (%	•	0.	~10 ·10~	20 -20~	30 -30~
TIAILLE CO	raffic Conditions Tra		Traffic V	olume			Vehicles (D			me 12	hours)		ion Category tire Bridge				В





Overall View Photo

Bridge Number Bridge Name Nagamachi Bridge Route Name



Viewpoint	Side View
Date	



Viewpoint	Front View
Date	

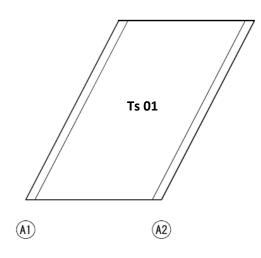


Viewpoint	Under Bridge
Date	

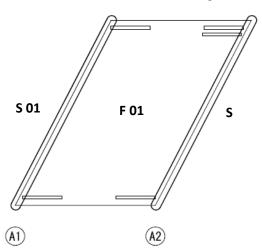
Element Numbering System

Bridge Number	Bridge Name	Nagamachi Bridge	Route Name		
				Span No	1

Top Slab (Ts)

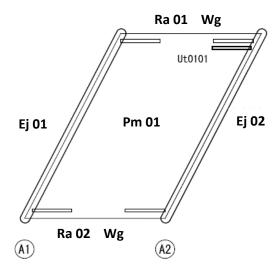


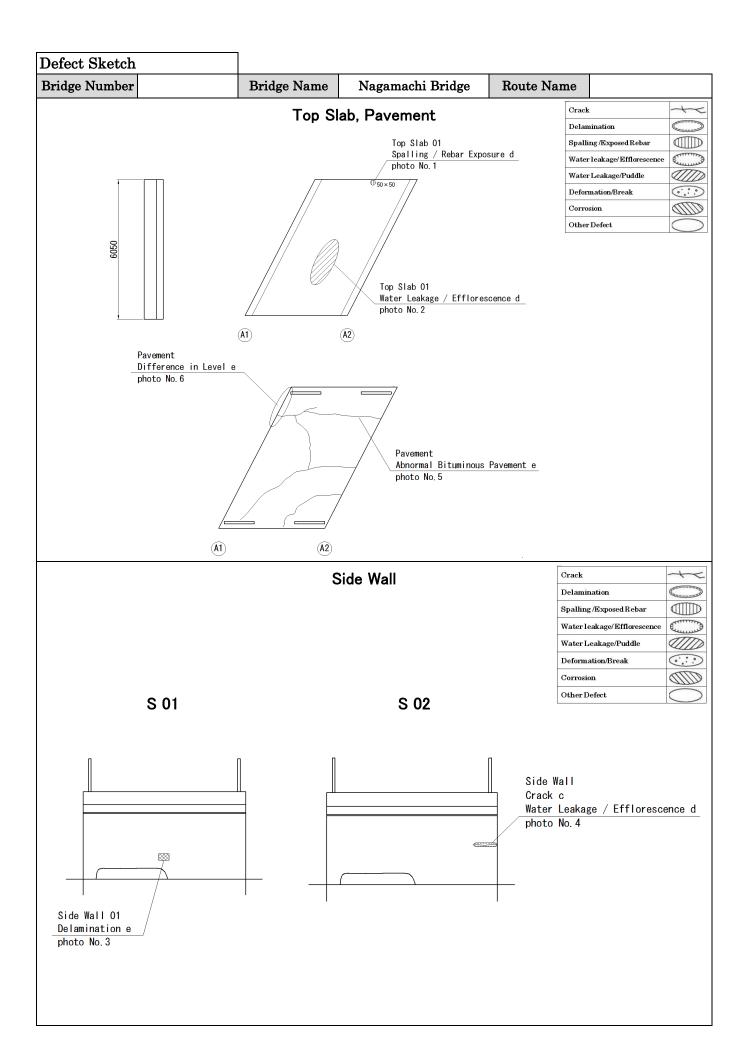
Side Wall (S), Footing (F)



Railing (Ra), Wheel Gurad(Wg)

Expansion Joint (Ej), Pavement (Pm)





Defect P	Photos							
Bridge Nu	mber		Bridge Name	Naga	machi Brid		Route Na	ame
Span No.	1	Photo No.	1		Span No.	1	Photo No.	2
Element	Top Slab	Defect	Spalling/Rebar Expo	sure	Element	Top Slab	Defect	Water Leakage / Puddle
	Rating		d				Rating	е





Span No.	1	Photo No.	3	Span No.	1	Photo No.	4
Element	Side Wall	Defect	Delamination	Element	Side Wall	Defect	Leakage/Efflorescence
		Rating	е			Rating	d





Span No.	1	Photo No.	5	Span No.	1	Photo No.	6
Element	Pavement	Defect	Abnomal Bituminous	Element	Pavement	Defect	Diffrence in Level
		Rating	e			Rating	е





Periodic Inspection Report Form

														Ins	pect	or								Dat	e			
File Number				Br	idge	Na	me	Nga	ıma	chi l	Brid	ge		Sur	erst	ruci	ture	Box	Cul	vert						Ye	ar	1938
Zone					(Circl	le							Divi	sion	1						Su	ıb-D	ivisi	on			
Survey Result								No. of			Hinge 0			Span Length			ŗth	4	.42ı	n	Sr	an l	No.	1				
		s	steel	Ma	teria	al	(Concrete Material			Others							Com	mor	1								
Items of Defects		Corrosion	Crack	Loose or Missing Bolts	Fracture	Deterioration of Paint System	Crack	Spalling/Exposed Rebar	Water Leakage/Eflorescence	Fallen-out of Deck Slab	Crack of Deck Slab	Delamination	Abnormal Spacing	Difference in Level	Abnomal Bituminous Pavement	Functional disorder of Bearings	Others	Defects of Reinforced Materials	Abnormal Anchorage	Discoloration/deterioration	Water Leakage /Puddle	Abnormal Noise/Vibration	Abnormal Deflection	Deformation/Break	Accumulation of Debris	Settlement/Tilt/Movement	Scour	Remarks
Top Slab	01	1	2	3	4	5	6	7 d	8	9	10	11	$\frac{12}{2}$	13	14	15	16	17	18	19	20	21	22	23	24	25	26	
Side Wall	01	$\overline{}$	$\overline{}$	$\overline{}$	$\overline{}$	$\overline{}$	c	u	e d	/	$^{\prime}$	е	\leftarrow	$^{\prime}$	$\overline{}$	$\overline{}$			-				$\overline{}$		$\overline{}$	$^{\prime}$	/	
Footing	01	$\overline{}$					۲		7				$\overline{}$		$\overline{}$				$\overline{}$									
Retaining Wall	01	$\overline{}$											7						$\overline{}$		$\overline{}$							
Railing (Steel)	01							/	/			/	7							/								
Wheel Gurad	01	/	/	/	/	/							$\overline{}$			$\overline{}$							$\overline{}$					
Drainage System	01																											
Pavement	01					/		$\overline{}$						е	е													
Bridge Approaches	01	\backslash				$\overline{}$			/				\backslash			\backslash							\backslash	\backslash				
Lighting Facility	01								/				\backslash			\backslash							\backslash		\setminus			
Road Sign	01							\angle		\angle	\angle	\angle	\angle	\angle		\angle			\angle				\angle		\angle	\angle		
Utility Pipe	01						/		/	/										/								
Summary Recommendation																												

Eile Neuelter	D. J. J.	o Non-	NI	omooki Brider	Evalua			ov Code		Date	-	1020
File Number	Bridg	je Name		amachi Bridge		ructure	В	ox Culve		Yea	r	1938
Zone		Circle	1		Divi	sion	0	. N.		ivision	 - N-	1 4/0
Evaluation Re	Suit	1	1			At	Spar Bt	Ct	1 Dt		e No.	1/3
Component	Element Type	Material		Type of Defects	i	No Repair	Minor Repair	Major Repair	Emer- gency	Public Safety	investi- gation	
			1.Corr									
				k in Steel								
		Steel		se or Missing Bolts								
	Main Girder		4.Frac	rioration of Paint Sy	/etem							
	Main Truss		6.Crac		/5(6111	✓						
				ling / Exposed Reb	ar	·	V					
	Main Arch	Concrete		er leakage /Efflores			'					
	Outer Cable		11.Del	lamination		✓						
	Main Tower	Others		normal Spacing		✓						
	Wall Towel			ner Types of Defects		~						
	Arch Rib			fects of Reinforcing	material							
	Top Slab			nornal Anchorage colorlation / Deterio	ration	✓						
		Common		iter Leakage / Pudd		~						
				normal Noise / Vibra		~						
			22.Abr	normal Deflection								
	* Primary element		23.Def	formation / Break		✓						
			1.Corr	osion								
				k in Steel								
		Steel		se or Missing Bolts								
			4.Frac									
			6.Crac	erioration of Paint Sy	/stem							
	Crass Boom			ling / Exposed Reb	ar							
	Cross Beam	Concrete		er leakage /Efflores								
	<u>Stringer</u>			lamination								
		Others	16.Oth	ner Types of Defects	6							
				fects of Reinforcing	material							
Superstructure				nornal Anchorage								
		Common		colorlation / Deterio								
				normal Noise / Vibra normal Deflection	ation							
	* Primary element			formation / Break								
	i iiiiai y oloilloit		1.Corr									
			2.Crac	k in Steel								
		Steel	3.Loos	se or Missing Bolts								
	Lateral Bracing		4.Frac	ture								
	<u> </u>			erioration of Paint Sy								
		Others		ner Types of Defects								
		Common		fects of Reinforcing normal Noise / Vibra								
	- Secondary element	Common		formation / Break	ation							
	Cocondary cloment		1.Corr									
				k in Steel								
		Steel	3.Loos	se or Missing Bolts								
			4.Frac	ture								
				erioration of Paint Sy								
				ling / Exposed Reb								
	Dook Slah	Conorata		er leakage /Efflores	cence							
	Deck Slab	Concrete		en out of Deck Slab ack of Deck Slab								
				lamination								
		Others		ner Types of Defects	3							
				fects of Reinforcing								
				nornal Anchorage								
		Common	19.Dis	colorlation / Deterio	ration							
				iter Leakage / Pudd	le							
	* Primary element		23.Det	formation / Break								

Cile Number	Prido	o Nomo	No	romochi Bridgo	Evalua		D	ov Cube	ur4	Date		1020
File Number	Bridg	e Name		gamachi Bridge	Superst		В	ox Culve		Yea ivision	r I	1938
Zone Evaluation Re	eult	Circle			Divi	sion	Snai	ı No.	ี 5นb-ม 1		e No.	2/3
Lvaidation ite	Suit					At	Bt	Ct	Dt		Detailed	
Component	Element Type	Material		Type of Defects	i	No Repair	Minor Repair	Major Repair	Emer- gency	Public Safety	investi- gation	Remarks
			1.Cor	rosion								
			2.Cra	ck in Steel								
		Steel	3.Loose or Missing Bolts									
			4.Frad	ture								
	Abutment		5.Det	erioration of Paint Sy	/stem							
	ributilient		6.Cra	ck			~					
	<u>Pier</u>	Concrete	7.Spa	lling / Exposed Reb	ar	~						
	Side Wall	Concrete	8.Wat	er leakage /Efflores	cence		~					
	Danagat Mall		11.De	lamination			>					
	Parapet Wall	Others	16.Ot	her Types of Defects	3	>						
			17.De	fects of Reinforcing	material	~						
			19.Di	scolorlation / Deterio	ration	>						
		Common	20.W	ater Leakage / Pudd	le	✓						
			21.Ab	normal Noise / Vibra	ation	>						
	* Primary element		23.De	formation / Break		>						
			1.Cor	rosion								
<u>Substructure</u>		Steel	2.Cra	ck in Steel								
	<u>Foundation</u>		5.Det	erioration of Paint Sy	/stem							
		Concrete	6.Cra	ck								
	<u>Footing</u>	Concrete	7.Spa	lling / Exposed Reb	ar							
		Others	16.Ot	her Types of Defects	3							
		Common	25.Se	ttelment / Tilt / Move	ement							
	* Primary element	Common	26.Sc	ouring								
			6.Cra	ck								
		Concrete	7.Spa	lling / Exposed Reb	ar							
		Concrete	8.Wat	er leakage /Efflores	cence							
			11.De	lamination								
	Retaining Wall	Others	16.Ot	her Types of Defects	8							
			17.De	fects of Reinforcing	material							
			19.Di	scolorlation / Deterio	ration							
		Common	23.De	formation / Break								
			25.Se	ttelment / Tilt / Move	ement							
	- Secondary element		26.Sc	our								
			1.Cor	rosion								
		Steel	2.Cra	ck in Steel								
		(Rubber)	3.Loo	se or Missing Bolts								
			4.Frac									
	Bearing Main Body			erioration of Paint Sy	/stem							
				normal Spacing								
	Anchor Bolts	Others		nction Disorder of B								
				her Types of Defects								
				ater Leakage / Pudd								
<u>Bearings</u>				normal Noise / Vibra	ation							
		Common		formation / Break								
				cumulation of Debri								
	* Primary element			ttelment / Tilt / Move	ement							<u> </u>
			6.Cra									
	Bearing Seat Mortal	Concrete		lling / Exposed Reb	ar							
	Regring Pod concrete			lamination								<u> </u>
	Bearing Bed concrete	Others		her Types of Defects								
		Common		ater Leakage / Pudd	le							
	* Primary element		23.De	formation / Break				1				

File Number	Bride	je Name	Nac	gamachi Bridge	Evaluat Superst		P.	ox Culve	rt	Date Yea	r	1938
Zone	Бпад	Circle		Jamaciii Bridge	Divis		В	DX Cuive		ivision		1930
Evaluation Res		Circle			DIVIS	SION	Spar	. No	3ub-D		e No.	3/3
Evaluation Res	uit	1				At	Bt	Ct	Dt		Detailed	3/3
Eleme	ent Type	Material		Type of Defects	3	No Repair	Minor Repair	Major Repair	Emer- gency	Public Safety		Remarks
			13.Dit	ffernce in Level		✓		✓				
<u>Pavement</u>		Others	14.Ab	normal Bituminous	Pavement		✓					
			16.Ot	her Types of Defects	S	✓						
- Seconda	ary element	Common	24.Ac	cumulation of Debri	s	✓						
			13.Dif	ffernce in Level								
Bridge Approa	aches	Others	14.Ab	normal Bituminous	Pavement							
			16.Ot	her Types of Defect	S							
- Seconda	ary element	Common	24.Ac	cumulation of Debri	s							
			1.Cor	rosion								
			2.Cra	ck in Steel								
			3.Loo	se or Missing Bolts								
			4.Frad	cture								
				erioration of Paint S	ystem							
	oints (Rubber / Steel)	Concrete	6.Cra	ck								
> Including	of post-cast concrete		11.De	elamination								
- elements c	or post-cast concrete			normal Spacing								
		Others		ffernce in Level								
				her Types of Defect								
				ater Leakage / Pudd								
		Common		normal Noise / Vibra	ation							
				eformation / Break								
- Seconda	ary element			cumulation of Debri	S							
				rosion								
		041		ck in Steel								
		I		se or Missing Bolts								
Railing (Stee Wheel Guard			4.Frac									
> Including	<u>r (concrete)</u>			erioration of Paint S	ystem							
- Guard Fer	nce		6.Cra									
- Median - Curb		Concrete		illing / Exposed Reb ter leakage /Efflores								
Ourb				elamination	cence							
		Others		her Types of Defects	•							
		Officis		scolorlation / Deterio								
- Seconda	ary element	Common		eformation / Break	nation							
00001140	ary diditiont		-	rosion								
		Steel	4.Frac									l
Drainage Sys	stem_	Polyvinyl		erioration of Paint S	vstem							
> Including		Others		her Types of Defects								
 Catch-Bas Drainage F 				scolorlation / Deterio								
Z.aage .	.,00		20.W	ater Leakage / Pudd	le							
		Common		eformation / Break								
- Seconda	ary element		24.Ac	cumulation of Debri	s							
			1.Cor	rosion								
			2.Cra	ck in Steel								
=	19	Steel	3.Loo	se or Missing Bolts								
Lighting Faci Road Sign Faci			4.Frad	cture								
Noau Sigii Fe	<u>aomty</u>		5.Det	erioration of Paint S	ystem							
		Others	16.Ot	her Types of Defects	s							
		Common	19.Di	scolorlation / Deterio	ration							
- Seconda	ary element	Common	23.De	eformation / Break								
<u></u>			1.Cor	rosion								
			2.Cra	ck in Steel								
Inconcetion F	ocility	Steel	3.Loo	se or Missing Bolts								
Utilitiy Pipe	Inspection Facility Utilitiv Pipe		4.Frad									
			5.Det	erioration of Paint S	ystem							
		Others	16.Ot	her Types of Defects	S							
		Common		normal Noise / Vibra	ation							
- Seconda	3 3	23.De	eformation / Break									

