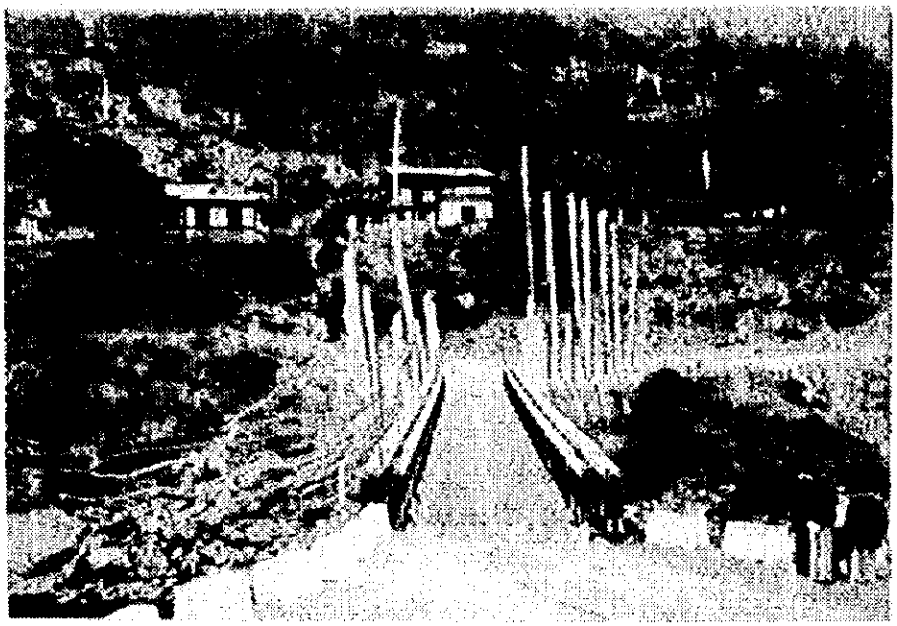
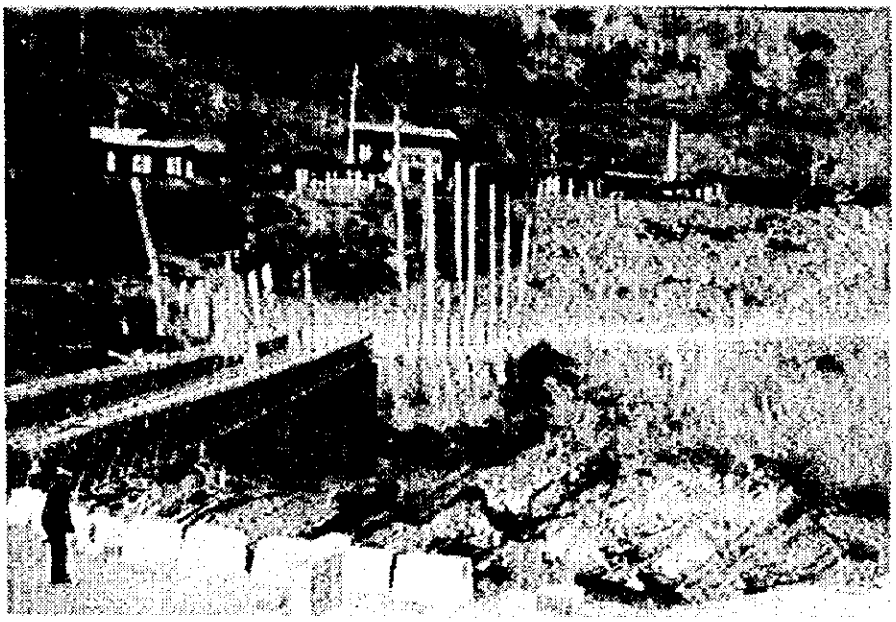
Appendix-B

Photographs of Site Conditions (5 Bridges)

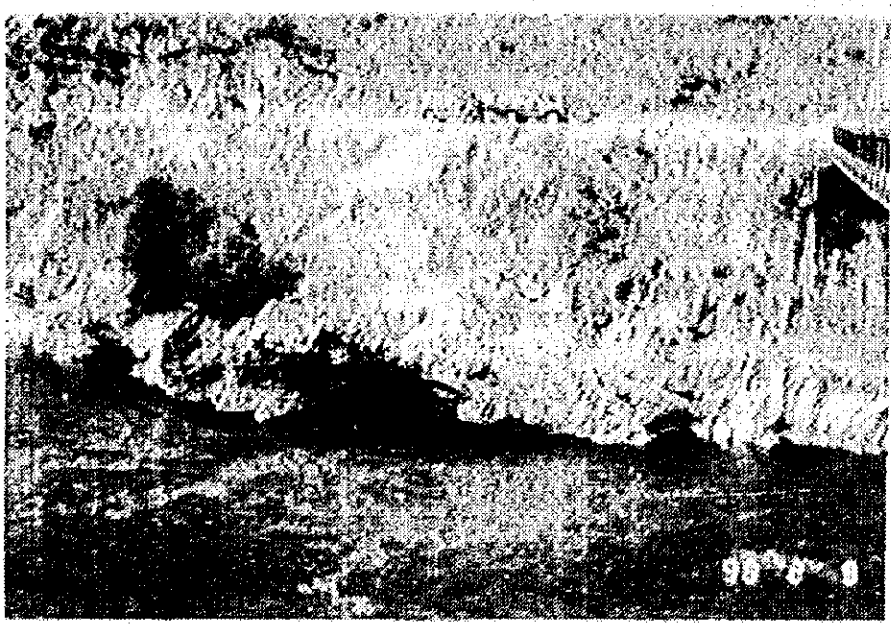
BR.NO.1 KURIZAMPA BRIDGE



Whole bridge (looking from right bank)

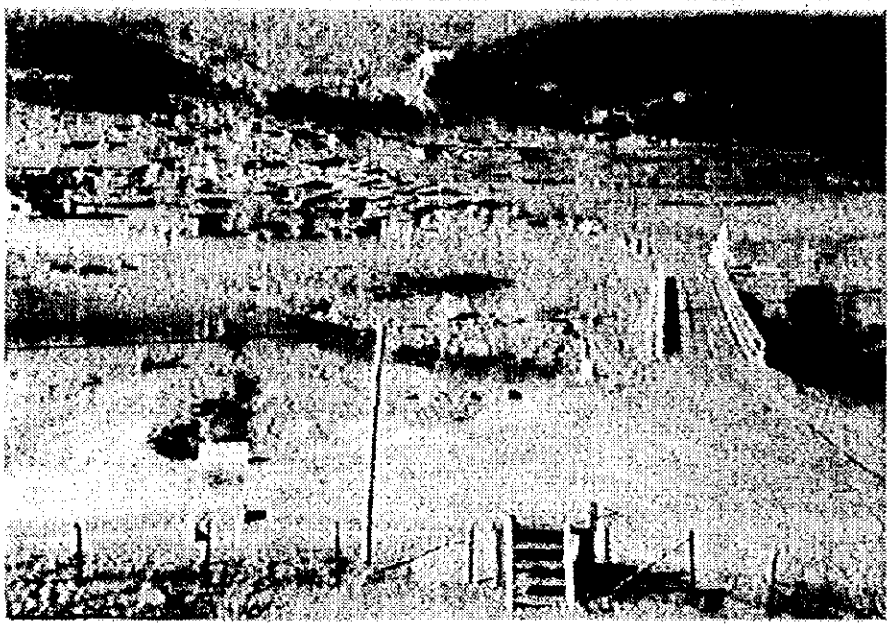


Left bank
Rock is outcropping.

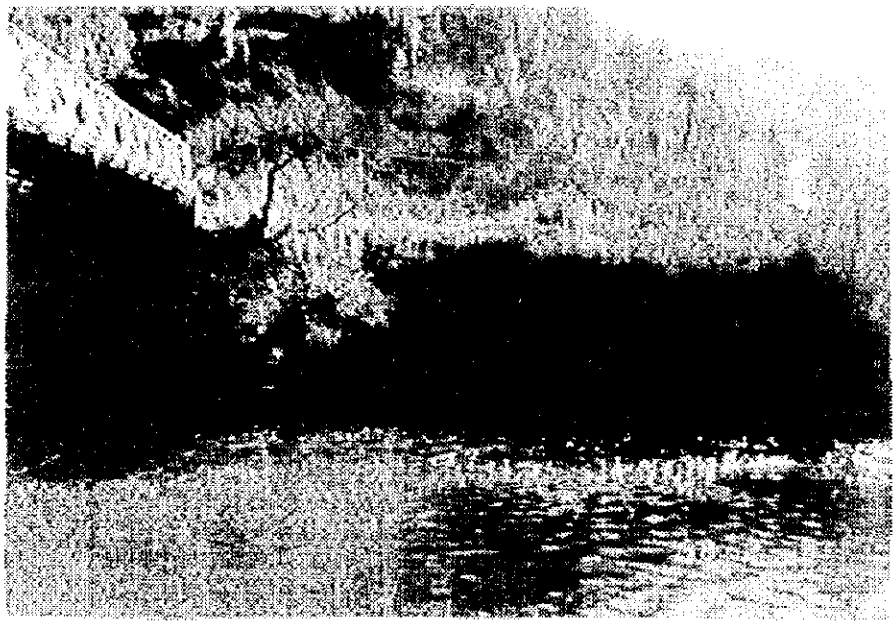


Right bank
Rock was scored at lower part.

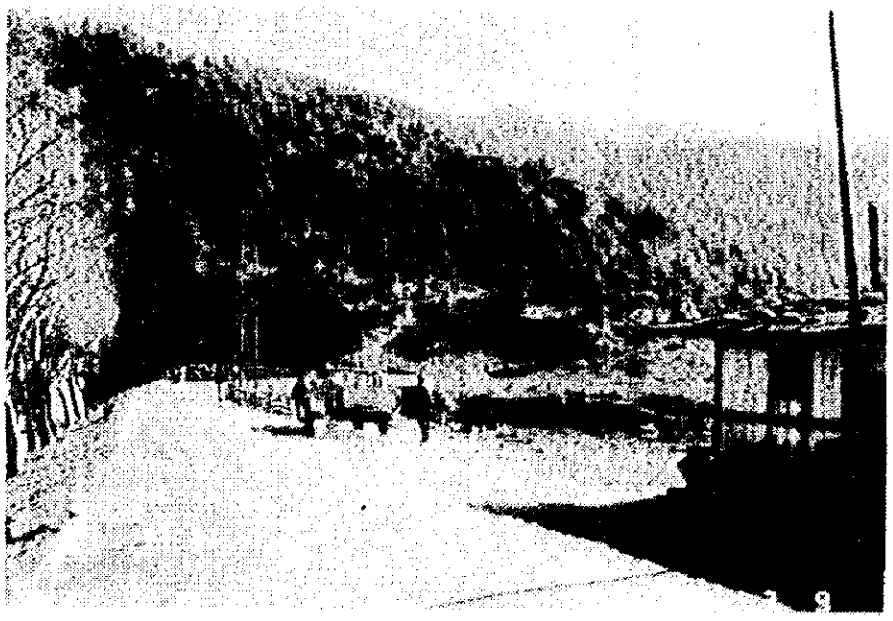
BR.NO.2 CHAMKAR ZAM BRIDGE



Whole bridge and right bank (looking from left bank)

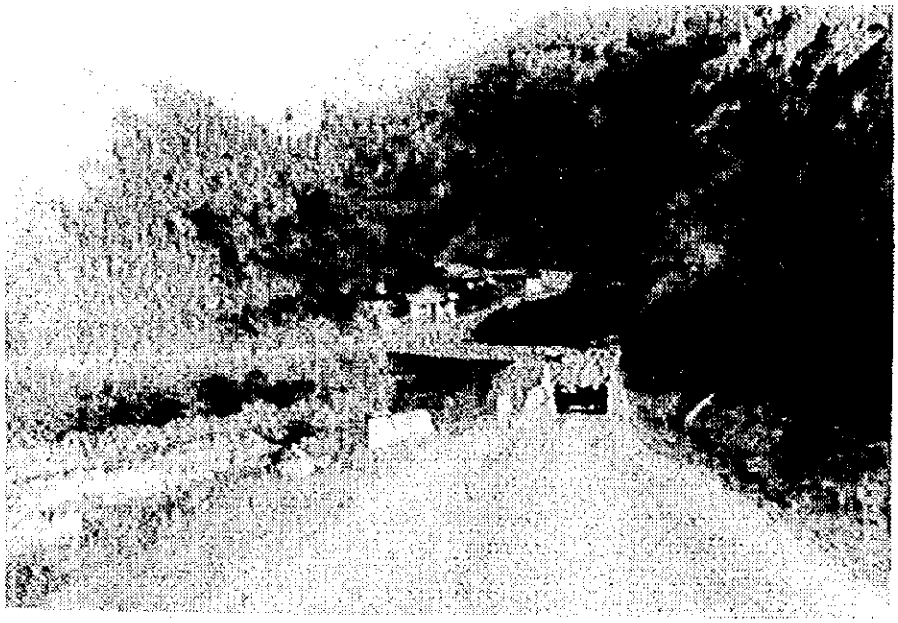


Left bank Rock is outcropping.

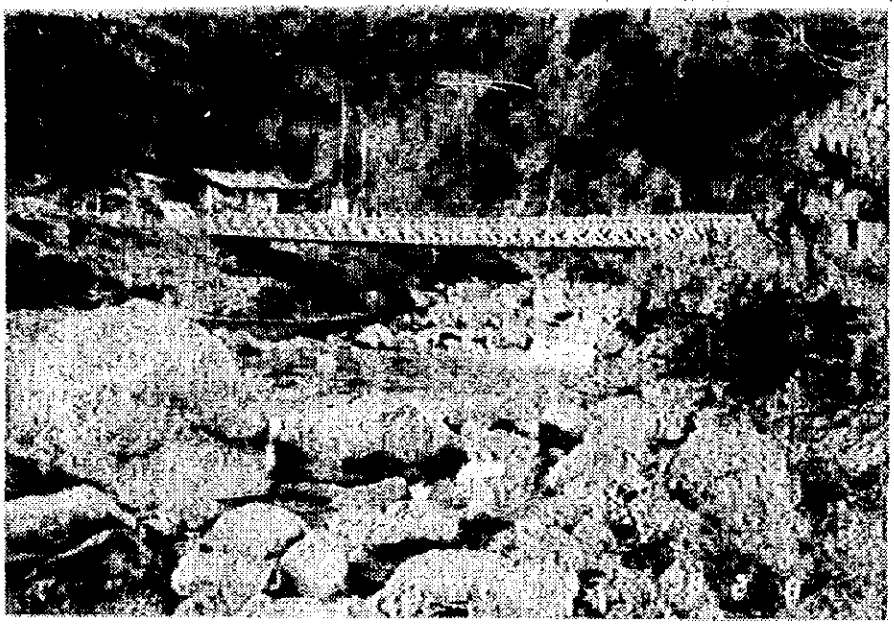


Approach road on right bank (Jakar side)

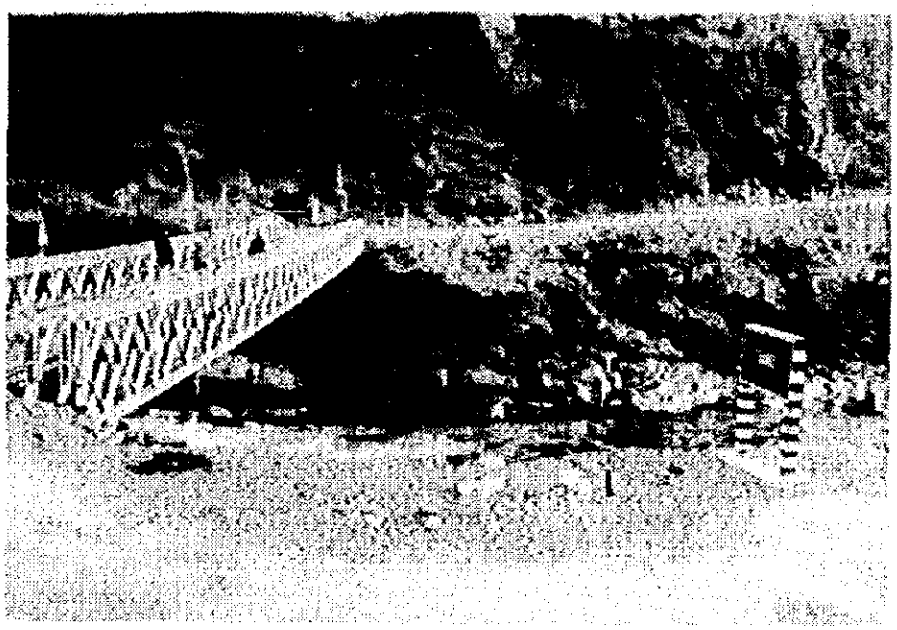
BR.NO.3 BJEE BRIDGE



Whole bridge (Looking from approach road on left bank from Trongsa side)



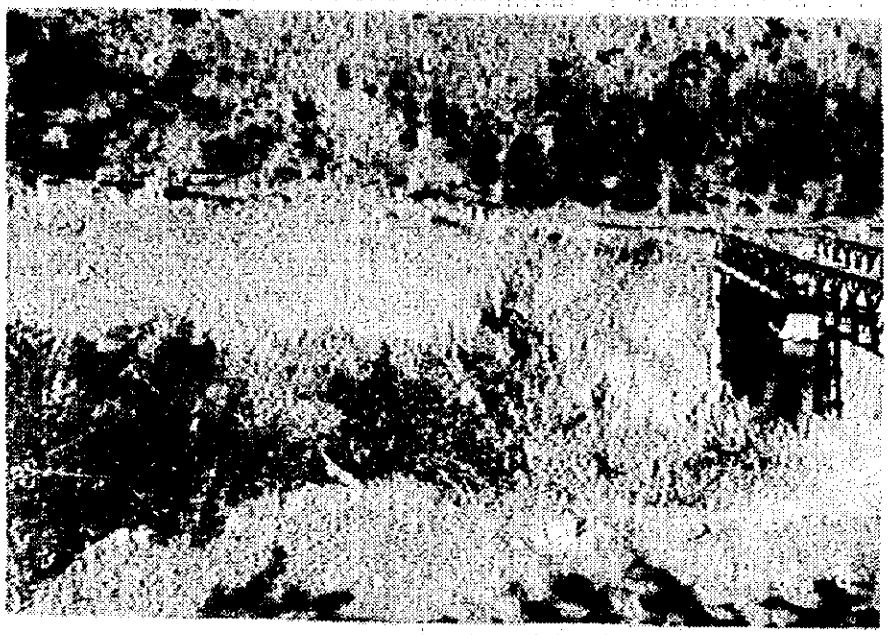
Whole bridge and right bank (looking from left bank)



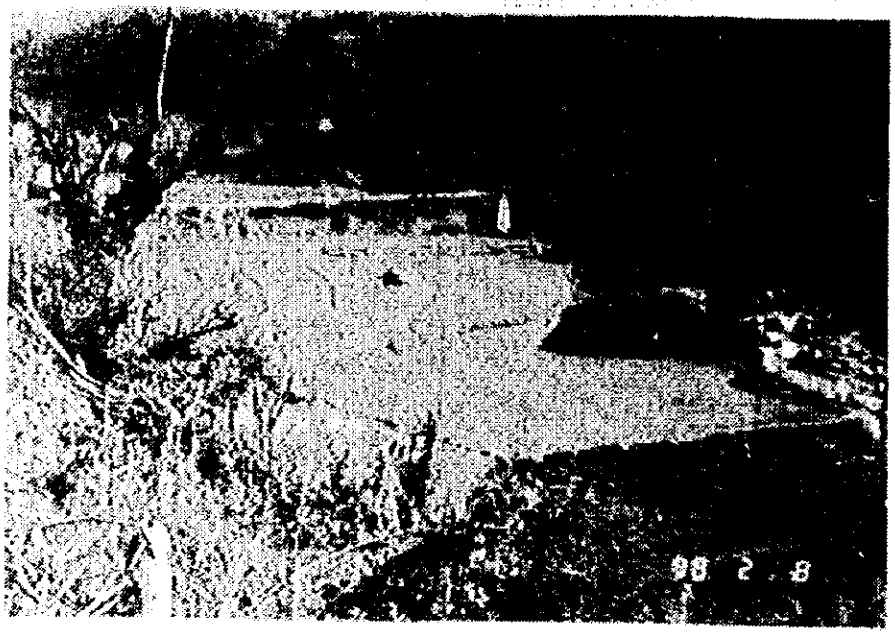
Left bank Rock is outcropping.

BR.NO.4 WACHY ZAM BRIDGE

Whole bridge (Looking from upstream, Trongsa side)



Right bank

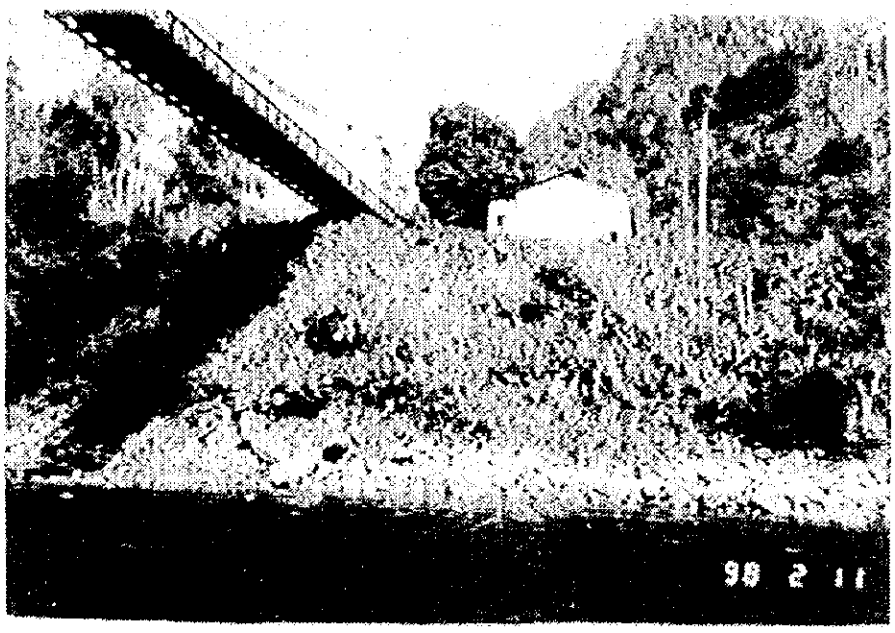


Approach road on right bank (Looking from Wangdue side)

BR.NO.5 MANGDICHU BRIDGE

Whole bridge (Looking from downstream, right bank)

Rock on right bank (cave and fracture)



Left bank

Appendix-C

Bridges Survey Results (22 Bridges)

Bridge Inventory

SER No. 1 116 Km

NAME OF BRIDGE	CLASS OF ROAD	CROSSING: NAME OF RIVER OR ROAD	COMPLETED	MAINTENANCE BY
Kuriampa	N.H. Rt. No. 1	Kuriclu	1971	

Design Information	Yes	No	Manufacture	Date of Preparation	Prepared by
				13/9/99 & 26/5/99	[illegible]

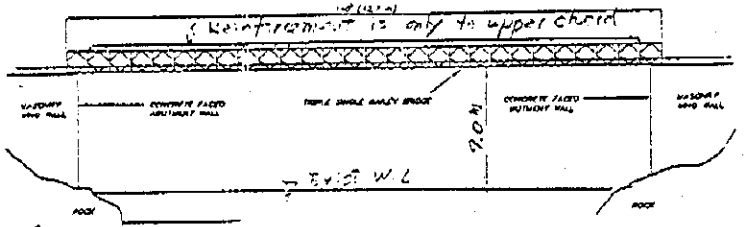
Type of Bridge				Design Loading	Load limitation	
	Superstructure	Baily TSR	Deck Timber	18t	No	Yes 54
	Substructure	Abutment: Masonry		Design Standard	BS	
		Pier: —		Skew of Bridge	Square ✓	Skew — RL deg. Rt

Length of Bridge	Span	Condition of Crossing	Road	Width m	Clearance m	Skew deg.
42.7 m	42.5		No			

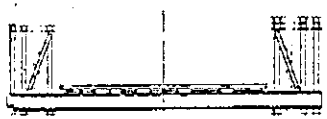
Width of Bridge	Overall	Carriageway	Pedestrianway	River	Width of River	Depth	Free Board	Design Quantity
	5.44 m	3.36 m	None	✓	m Unknown	m 9.0	m	/ m3/sec

Affixed Articles								
Traffic Volume	(year)	Ratio of Heavy Vehicle %	(year)	Others	Repair etc.			
Final Record of Repair	Pavement	Deck Slab	Main Beam	Painting	Expansion Joint	Bearing	Drainage	Rating	Curb	Affixed Articles
	Others				Substructure					

Elevation

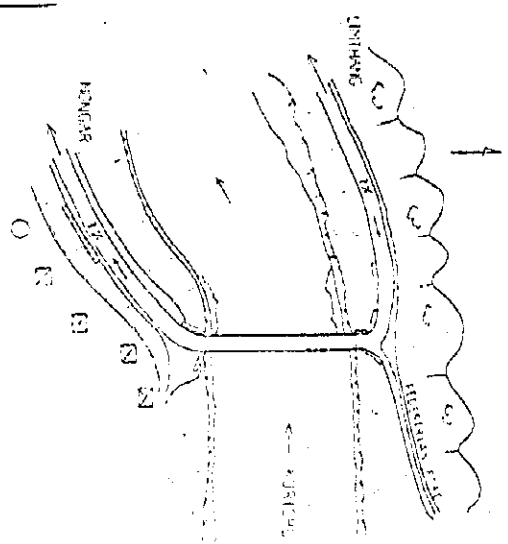


Cross Section



1. Sag of main girder is 17cm.
2. Lateral displacement is 4cm.
3. Kuriclu hydro power project is on going at down stream about 10 Km. Maximum Reservior Level: 534 m Above Existing bridge deck level: 580m. No influence.

Plan



Surrounding C

Result of Visual Inspection		Date of Inspection			
Pavement & slab	3	Bearing	3	Abutment	2
Curb	1	Expansion Joint	—	Pier	—
Railing	3	Drainage	—	Wing Wall	2
Deck Trafft	3	Affixed Articles	—	River Bank	—
Main Beam	3			Approaches	—
	—				
Others	—	Others	—	Others	—
Superstructure	3.0	Bridge Accessary	2.4	Substructure	2.0
Br. Damage Rating	3.0				

Rating
1. No damage detected on the basis of the inspection results.
2. Damage has been detected and a follow-up survey is required.
3. There is significant damage and a detailed survey needs to be carried out to establish whether repair work is to be carried out or not.
4. There is significant damage and urgent repair is required or the bridge has to be closed to traffic or restriction on vehicle weight have to be imposed.

Comment
1. Manner of painting is not good. To remove soil, moss prior to repainting.
2. Repainted on 26/5/99.
3. Urgent replacement required.
4. 43 m of TSR is just limit.

C-1

Bridge Inspection Form

SER No. 2

NAME OF BRIDGE	CLASS OF ROAD	CROSSING NAME OF RIVER OR ROAD	COMPLETED	DATE OF INSPECTION	MAINTENANCE BY
Kurizampa	N.H.				

	Component	Condition of Damage	Rating
Bridge Surface	Pavement	Type Steel plate / Condition Old. / Good, Waving, Rutting, Crack, Pot hole, Others	
	Curb	Type Steel plate / Condition Ditto / Good, Scaling, Cracking, Spalling, Exposure and corrosion of reinforcement, Wear of surfaces	
	Railing	Type Bailey girder / Condition Fair / Good, Scaling, Cracking, Spalling, Exposure and corrosion of reinforcement, Wear of surfaces	
Superstructure	Deck Slab	Type Steel plate or stringers / Condition Old / Good / 1 direction / 2 direction / Hairing / Rebar exposed / Others / 1. Minor 2. Intermediate 3. Major	
	Main Beam / Main Structure	Type Bailey / Condition Old / Good, Rust, Corrosion, Buckling, Excessive deformation, Rivet off, Others	
	Diaphragm, Sway Bracing, Lateral Bracing	Type / Condition Old / Good, Rust, Corrosion, Buckling, Excessive deformation, Rivet off, Others	
	Painting	Condition Very poor	
Accessory	Expansion Joint	Type / Condition / Invisible, Existed, Good, Abnormal sound, Clogged, Deformation, Gap, Others	
	Bearing	Type / Condition: Sliding, Function of rotation Not clamed / Invisible, Existed, Good, Broken, Anchor bolt, Abnormal displacement	
	Drainage	Condition / Clogged, Broken, Water leakage, Support broken, Pipe broken, Others	
Substructure	Abutment A1	Type Masonry or rock / Condition: Leaning, Settlement, Sliding Good / Body broken (Scaling, Cracking, Spalling, Exposure and corrosion of reinforcement, wear of surfaces), Others	
	Abutment A2	Type Ditto / Condition: Leaning, Settlement, Sliding Ditto / Body broken (Scaling, Cracking, Spalling, Exposure and corrosion of reinforcement, wear of surfaces), Others	
	Pier	Type / Condition: Leaning, Settlement, Sliding / Body broken (Scaling, Cracking, Spalling, Exposure and corrosion of reinforcement, wear of surfaces), Others	
	Pier	Type / Condition: Leaning, Settlement, Sliding / Body broken (Scaling, Cracking, Spalling, Exposure and corrosion of reinforcement, wear of surfaces), Others	
	Foundation	Type / Condition / Settlement, Leaning, Moving, Crack, Scouring, Others	
	Wing Wall	Type Masonry / Condition / Good, Scaling, Cracking, Spalling, Exposure and corrosion of reinforcement, Wear of surfaces	
	Embankment	River Bank Good / Side Bank / Back Filling / Others	
Others	Affixed Article		
	Traffic Sign		
	Approaches		
	Others		

Sketch and Comments on major damage

Manner of repainting is very poor.

Comments on rehabilitation method

Under-side frames are very rusty.

Components of photographs taken

0 Black Board (Name of Bridge)	5 Main Beam	10 Abutment	15 Main Damage	20
1 Front	6 Sway Bracing	11 Abutment	16 Main Damage	21
2 Road Surface	7 Drainage	12 Pier	17 Main Damage	22
3 Expansion Joint	8 Bearing	13 Pier	18	23
4 Deck Slab (Underface)	9 Elevation	14 Pier	19	24

Note: Further inspection shall be carried out on the "major damage" detected in this inspection.

Rating

1. No damage detected on the basis of the inspection results.
2. Damage has been detected and a follow-up survey is required.
3. There is significant damage and a detailed survey needs to be carried out to establish whether repair work is to be carried out or not.
4. There is significant damage and urgent repair is required or the bridge has to be closed to traffic or restriction on vehicle weight to be imposed.

Photographs

NAME OF BRIDGE Kurizono	SER No. 1	Date of Inspection

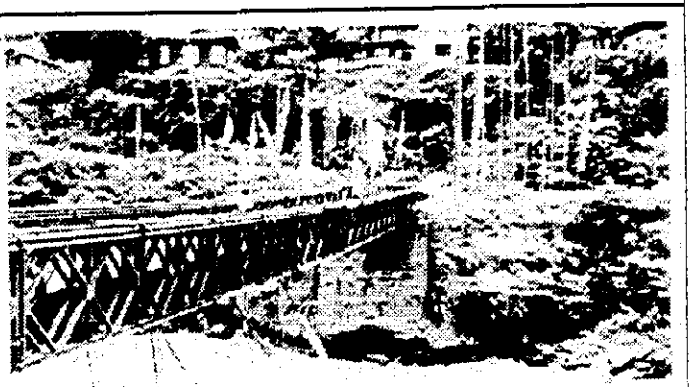
Front

Photo Album No.

Front View

Photo Album No.

Side View from down stream side



Elevation

Photo Album No.

Photographs

NAME OF BRIDGE Kurizawa	SER No. 2	Date of Inspection

Front

Photo Album No. (3)

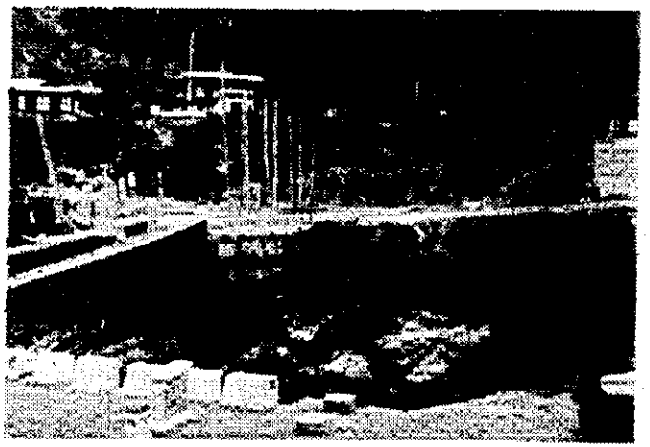
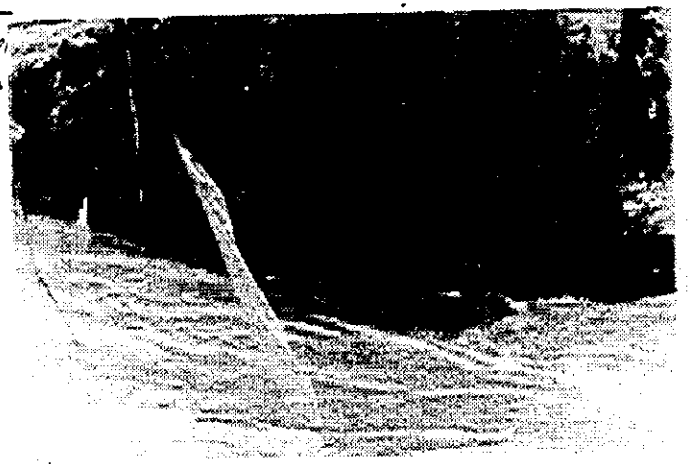


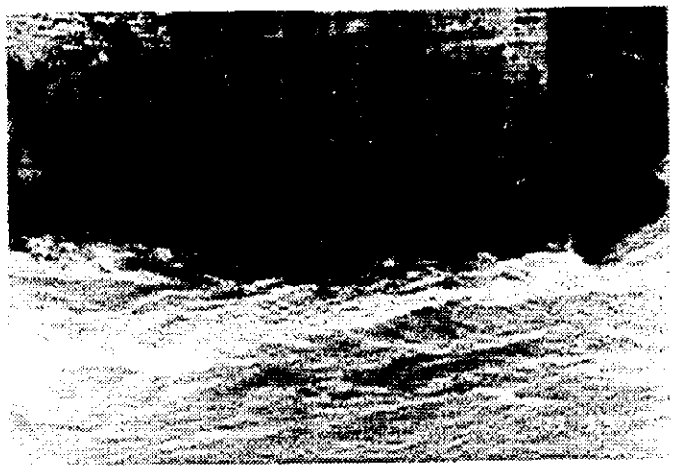
Photo Album No.

No seem. however,
it may be scoured.



Elevation

Photo Album No.



Bridge Inventory

SER No. 2 283.5 km Next to Jakar Town

NAME OF BRIDGE	CLASS OF ROAD	CROSSING: NAME OF RIVER OR ROAD	COMPLETED	MAINTENANCE BY
Chankor Zam	N.H. Rt. No. 1	Chamkachu	1993	

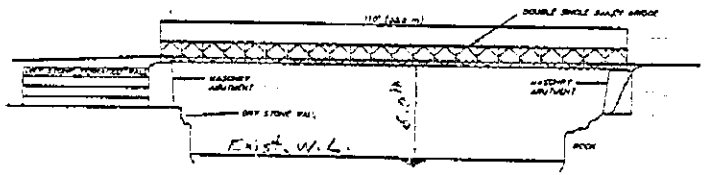
Design Information	Yes	No	Manufacture	Date of Preparation	Prepared by
				12/9/97 & 26/9/97	

Type of Bridge				Design Loading	Load limitation
	Superstructure	Bailey DS	Deck Timber	18t	No / Yes 5t
	Substructure	Abutment: Masonry		Design Standard: BS	
		Pier: —		Skew of Bridge: Square / Skew / RL / deg. Rem	

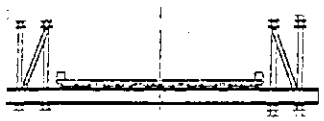
Length of Bridge	33.7 m	Span	33.5	Condition of Crossing	Road	Width m	Clearance m	Skew deg.
Width of Bridge	Overall 5.0 m	Carriageway 3.22 m	Pedestrianway — m		River	Width of River m	Depth m	Free Board m / Design Quantity m³/sec
Affixed Articles								
Traffic Volume	(year)	Ratio of Heavy Vehicle %	(year)	Others	Repair etc.			

Final Record of Repair	Pavement	Deck Slab	Main Beam	Painting	Expansion Joint	Bearing	Drainage	Railing	Curb	Affixed Articles
				12/9/97						
	Others				Substructure					

Elevation

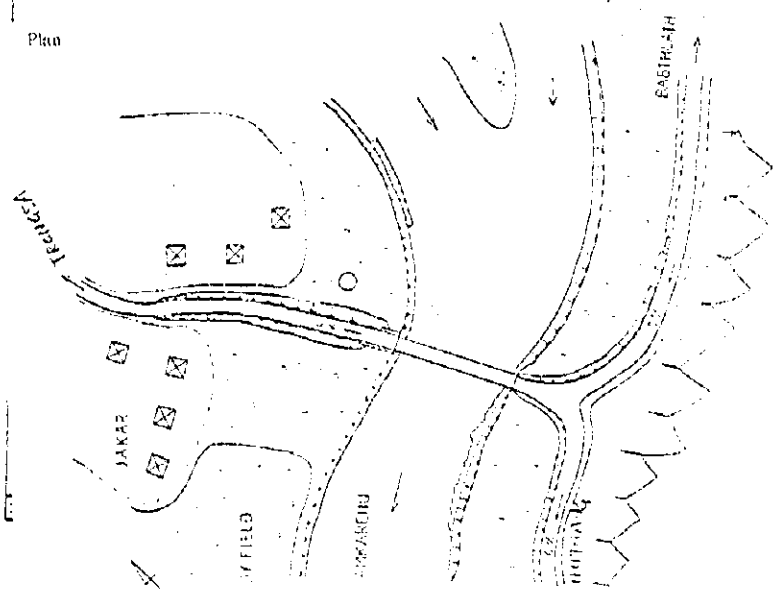


Cross Section



1. Sag of main girder 12 cm at span centre.
2. Lateral displacement 0 cm
3. Members were bent at 4 locations.
4. Maintenance on bearings are not satisfactory.

Plan



Result of Visual Inspection	Date of Inspection				
Pavement	2	Bearing	3	Abutment	1
Curb	1	Expansion Joint	—	Pier	—
Railing	1	Drainage	—	Wing Wall	1
Deck Slab	2	Affixed Articles	—	River Bank	—
Main Beam	4			Approaches	1
	—				
Others	—	Others	—	Others	—
Superstructure	3.3	Bridge Accessary	3.0	Substructure	1.0
Overall Rating	3.3				

Rating

1. No damage detected on the basis of the inspection results.
2. Damage has been detected and a follow-up survey is required.
3. There is significant damage and a detailed survey needs to be carried out to establish whether repair work is to be carried out or not.
4. There is significant damage and urgent repair is required or the bridge has to be closed to traffic or restriction on vehicle weight have to be imposed.

Comment

1. Both abutments good.
2. Void is found in masonry abutments.
3. On right bank, abutment was scoured, and gabion installed.

Bridge Inspection Form

SER No 2

NAME OF BRIDGE	CLASS OF ROAD	CROSSING NAME OF RIVER OR ROAD	COMPLETED	DATE OF INSPECTION	MAINTENANCE BY
Chamkar Ram					

	Component	Condition of Damage						Rating	Sketch and Comments on major damage
Bridge Surface	Pavement	Type Timber + Asphalt	Condition Good						Members were bent at 5 Curatio -5
		Good, Waving, Rutting, Crack, Pot hole, Others							
	Curb	Type Timber	Condition Good						
		Good, Scaling, Cracking, Spalling, Exposure and corrosion of reinforcement, Wear of surfaces							
	Railing	Type Bailey	Condition Not good not bad						
		Good, Scaling, Cracking, Spalling, Exposure and corrosion of reinforcement, Wear of surfaces							
Superstructure	Deck Slab	Type Timber on stringers	Condition So so					1. Minor 2. Intermediate 3. Major	
		Good	1 direction	2 direction	Plating	Rebar exposed	Others		
	Main Beam	Type Bailey	Condition So so						
	Main Structure	Good, Rust, Corrosion, Buckling, Excessive deformation, Rivet off, Others							
	Diaphragm, Sway Bracing, Lateral Bracing	Type	Condition Poor						
		Good, Rust, Corrosion, Buckling, Excessive deformation, Rivet off, Others							
	Painting	Condition Repaint on wet moss and other material, No good							
Accessory	Expansion Joint	Type	Condition						
		Invisible, Exsited, Good, Abnormal sound, Clogged, Deformation, Gap, Others							
	Bearing	Type	Condition: Sliding, Function of rotation Not to slide						
		Invisible, Exsited, Good, Broken, Anchor bolt, Abnormal displacement							
	Drainage	Condition							
		Clogged, Broken, Water leakage, Support broken, Pipe broken, Others							
Substructure	Abutment A1	Type Masonry on rock	Condition: Leaning, Settlement, Sliding Good						
		Body broken (Scaling, Cracking, Spalling, Exposure and corrosion of reinforcement, wear of surfaces), Others							
	Abutment A2	Type Ditto	Condition: Leaning, Settlement, Sliding Ditto						
		Body broken (Scaling, Cracking, Spalling, Exposure and corrosion of reinforcement, wear of surfaces), Others							
	Pier	Type	Condition: Leaning, Settlement, Sliding						
		Body broken (Scaling, Cracking, Spalling, Exposure and corrosion of reinforcement, wear of surfaces), Others							
	Pier	Type	Condition: Leaning, Settlement, Sliding						
		Body broken (Scaling, Cracking, Spalling, Exposure and corrosion of reinforcement, wear of surfaces), Others							
	Foundation	Type	Condition						
		Settlement, Leaning, Moving, Crack, Scouring, Others							
	Wing Wall	Type Masonry	Condition Good						
		Good, Scaling, Cracking, Spalling, Exposure and corrosion of reinforcement, Wear of surfaces							
	Embankment	River Bank	Side Bank						
		Back Filling	Others						
Others	Affixed Article								
	Traffic Sign								
	Approaches								
	Others								

Comments on rehabilitation method

Sofit is very rust

Components of photographs taken				
0 Black Board (Name of Bridge)	5 Main Beam	10 Abutment	15 Main Damage	20
1 Front	6 Sway Bracing	11 Abutment	16 Main Damage	21
2 Road Surface	7 Drainage	12 Pier	17 Main Damage	22
3 Expansion Joint	8 Bearing	13 Pier	18	23
4 Deck Slab (Underface)	9 Elevation	14 Pier	19	24

Note: Further inspection shall be carried out on the "major damage" detected in this inspection.

Rating

1 No damage detected on the basis of the inspection results.
2 Damage has been detected and a follow-up survey is required.
3 There is significant damage and a detailed survey needs to be carried out to establish whether repair work is to be carried out or not.
4 There is significant damage and urgent repair is required or the bridge has to be closed to traffic or restriction on vehicle weight to be imposed.

9 - 3

Photographs

NAME OF BRIDGE Chowkar Zam	SER No. 2	Date of Inspection

Front

Photo Album No.

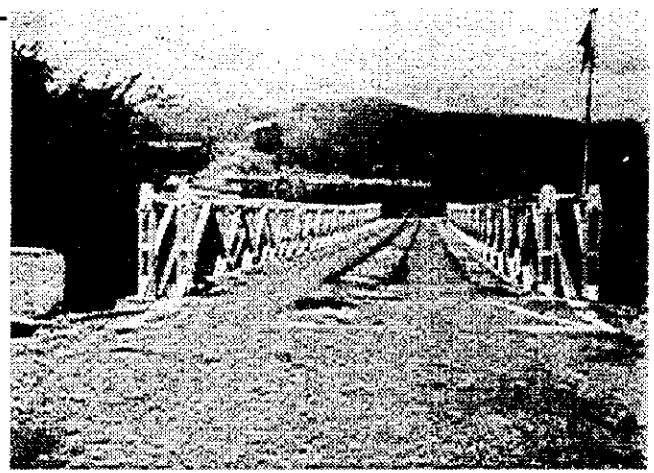
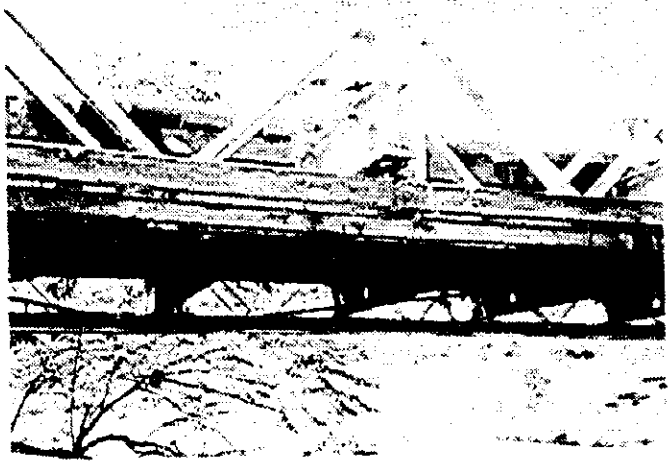
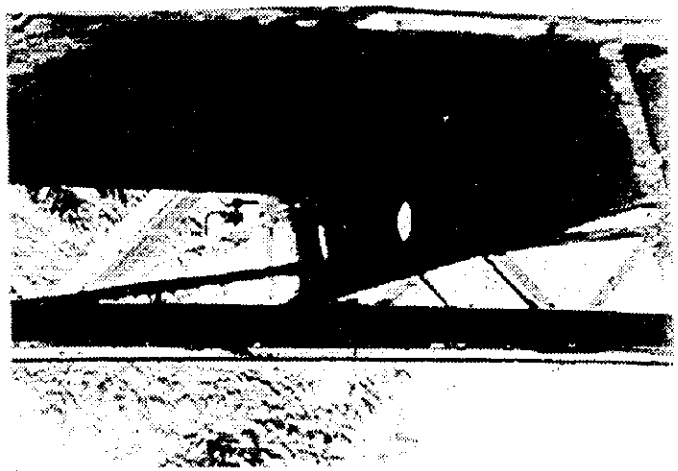


Photo Album No.

Elevation

Photo Album No.





Photographs

NAME OF BRIDGE	Chamkar Ram	SER No.	2	Date of Inspection	

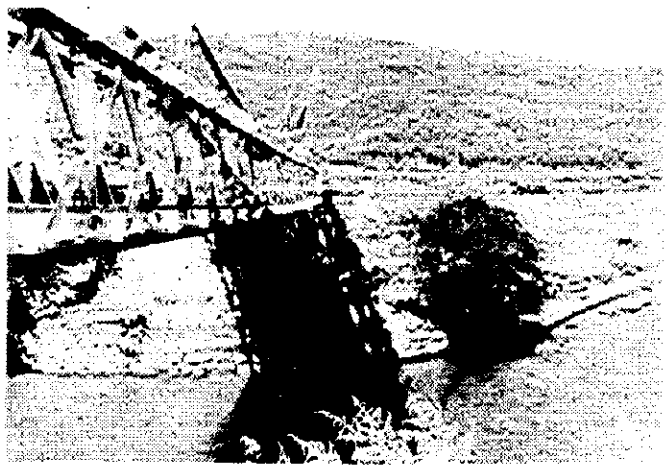
Front

Photo Album No.

Photo Album No.

Elevation

Photo Album No.



Photographs

NAME OF BRIDGE Chankar Bari	SER No. 2	Date of Inspection

Front

Photo Album No.

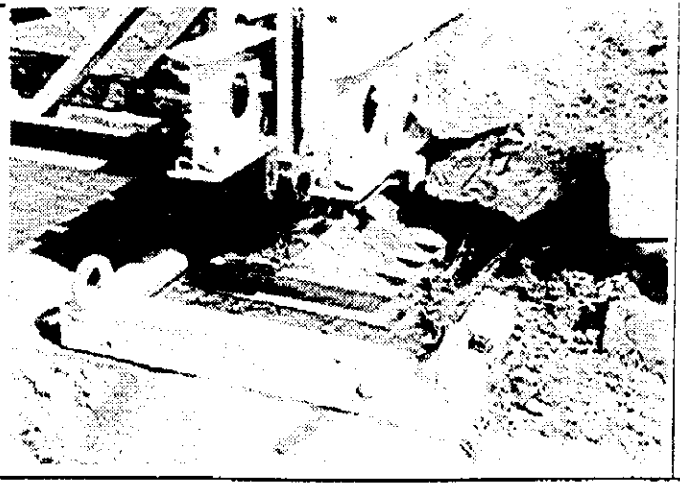
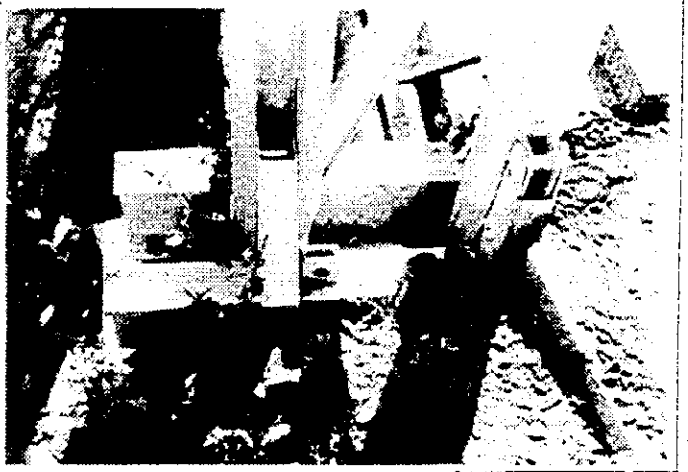


Photo Album No.



Elevation

Photo Album No.

Bridge Inventory

SER No. 3 358.6 km

NAME OF BRIDGE	CLASS OF ROAD	CROSSING: NAME OF RIVER OR ROAD	COMPLETED	MAINTENANCE BY
Bijee	N.H. Rt. No. 2	Mangdichu	1969	

Design Information	Yes	No	Manufacture	Date of Preparation	Prepared by
				11/9/97 & 25/9/97	[illegible]

Type of Bridge				Design Loading	Load limitation	
	Superstructure	Bailey TSR	Deck Timber	18t	No	Yes 9t
	Substructure	Abutment: Masonry		Design Standard	BS	
		Pier: —		Skew of Bridge	Square ✓	Skew: Rt. deg. Rt.

Length of Bridge		Span	Condition of Crossing	Road	Width m	Clearance m	Skew deg.
	42.7 m	42.5					

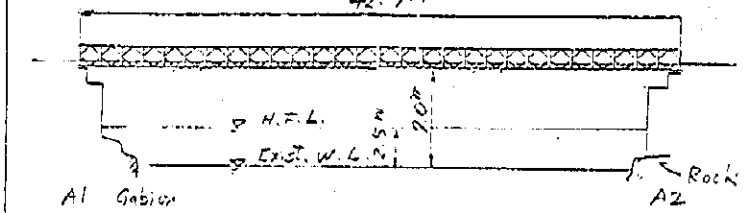
Width of Bridge	Overall	Carriageway m	Pedestrianway m	River	Width of River	Depth	Free Board	Design Quantity
	5.44 m	3.36	None		m	m	m	m³/sec

Affixed Articles					

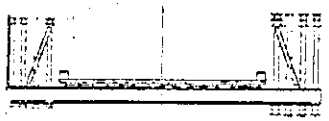
Traffic Volume	(year)	Ratio of Heavy Vehicle %	(year)	Others	Repair etc.

Final Record of Repair	Pavement	Deck Slab	Main Beam	Painting	Expansion Joint	Bearing	Drainage	Railing	Curb	Affixed Articles
	Others				Substructure					

Elevation

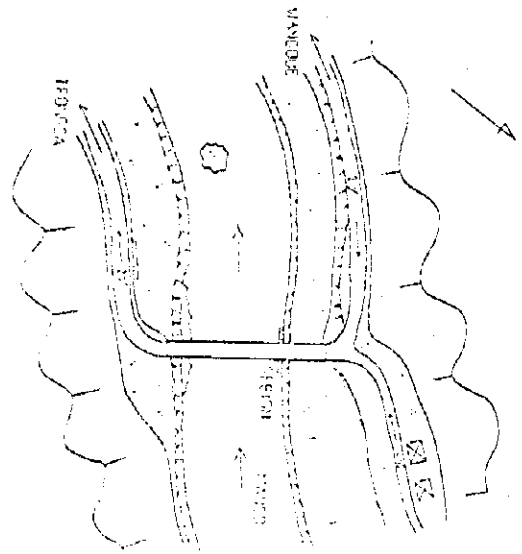


Cross Section



1. Sag of main girder is 17cm.
2. Lateral displacement is 3cm.
3. Members were crushed and bent at 24 locations.
4. Sway bracing was damaged at 1.
5. Repainting manner was poor.
6. Maintenance of bearings are poor.

Plan



Surrounding C

Result of Visual Inspection	Date of Inspection				
Pavement	2	Bearing	3	Abutment	1
Curb	2	Expansion Joint	—	Pier	—
Railing	3	Drainage	—	Wing Wall	1
Deck Slab	4	Affixed Articles	—	River Bank	1
Main Beam	4			Approaches	1
	—				
Others	—	Others	—	Others	—
Superstructure	4.0	Bridge Accessary	2.6	Substructure	1.0
Overall Rating	4.0				

Rating

1. No damage detected on the basis of the inspection results.
2. Damage has been detected and a follow-up survey is required.
3. There is significant damage and a detailed survey needs to be carried out to establish whether repair work is to be carried out or not.
4. There is significant damage and urgent repair is required or the bridge has to be closed to traffic or restriction on vehicle weight have to be imposed.

Comment

1. Reinforcement bars attached in 1991.
2. Bearing is to be cleaned.
3. Steel girder bent due to crash. (24 points)
4. 28 years old. To be replaced.
5. Repainting done on wood, other materials

Bridge Inspection Form

SER No. 3

NAME OF BRIDGE	CLASS OF ROAD	CROSSING NAME OF RIVER OR ROAD	COMPLETED	DATE OF INSPECTION	MAINTENANCE BY
Bjee					

	Component	Condition of Damage	Rating	Sketch and Comments on major damage
Bridge Surface	Pavement	Type Timber with asphalt — Condition so so Good, Waving, Rutting, Crack, Pot hole, Others		Turn buckle buckle was broken. doesn't work.
	Curb	Type Timber — Condition So so Good, Scaling, Cracking, Spalling, Exposure and corrosion of reinforcement, Wear of surfaces		
	Railing	Type Bailey. — Condition Very bad Good, Scaling, Cracking, Spalling, Exposure and corrosion of reinforcement, Wear of surfaces		
Superstructure	Deck Slab	Type Timber — Condition Good ✓ / 1 direction / 2 direction / Plating / Rebar exposed / Others 1. Minor 2. Intermediate 3. Major		
	Main Beam	Type Bailey — Condition Very old and bad Main Structure: Good, Rust, Corrosion, Buckling, Excessive deformation, Rivet off, Others		
	Diaphragm, Sway Bracing, Lateral Bracing	Type Bailey — Condition Ditto Good, Rust, Corrosion, Buckling, Excessive deformation, Rivet off, Others Very bad		
	Painting	Condition Dont		
Accessory	Expansion Joint	Type — Condition Invisible, Existed, Good, Abnormal sound, Clogged, Deformation, Gap, Others		Comments on rehabi
	Bearing	Type — Condition: Sliding, Function of rotation Very bad Invisible, Existed, Good, Broken, Anchor bolt, Abnormal displacement No cleaning		Masonry was crushed.
	Drainage	Condition Clogged, Broken, Water leakage, Support broken, Pipe broken, Others		
Substructure	Abutment A1	Type Masonry on rock — Condition: Leaning, Settlement, Sliding Good Body broken (Scaling, Cracking, Spalling, Exposure and corrosion of reinforcement, wear of surfaces), Others		
	Abutment A2	Type " — Condition: Leaning, Settlement, Sliding " Body broken (Scaling, Cracking, Spalling, Exposure and corrosion of reinforcement, wear of surfaces), Others		
	Pier	Type — Condition: Leaning, Settlement, Sliding Body broken (Scaling, Cracking, Spalling, Exposure and corrosion of reinforcement, wear of surfaces), Others		
	Pier	Type — Condition: Leaning, Settlement, Sliding Body broken (Scaling, Cracking, Spalling, Exposure and corrosion of reinforcement, wear of surfaces), Others		
	Foundation	Type — Condition Settlement, Leaning, Moving, Crack, Scouring, Others		
	Wing Wall	Type — Condition Good Good, Scaling, Cracking, Spalling, Exposure and corrosion of reinforcement, Wear of surfaces		
	Embankment	River Bank — Side Bank Good Back Filling — Others		
Others	Affixed Article			
	Traffic Sign			
	Approaches			
	Others			

Rating	
1	No damage detected on the basis of the inspection results.
2	Damage has been detected and a follow-up survey is required.
3	There is significant damage and a detailed survey needs to be carried out to establish whether repair work is to be carried out or not.
4	There is significant damage and urgent repair is required or the bridge has to be closed to traffic or restriction on vehicle weight to be imposed.

Components of photographs taken				
0 Black Board (Name of Bridge)	5 Main Beam	10 Abutment	15 Main Damage	20
1 Front	6 Sway Bracing	11 Abutment	16 Main Damage	21
2 Road Surface	7 Drainage	12 Pier	17 Main Damage	22
3 Expansion Joint	8 Bearing	13 Pier	18	23
4 Deck Slab (Underface)	9 Elevation	14 Pier	19	24

Note: Further inspection shall be carried out on the "major damage" detected in this inspection.

Photographs

NAME OF BRIDGE Bjee	SER No. 3	Date of Inspection

Front

Photo Album No.

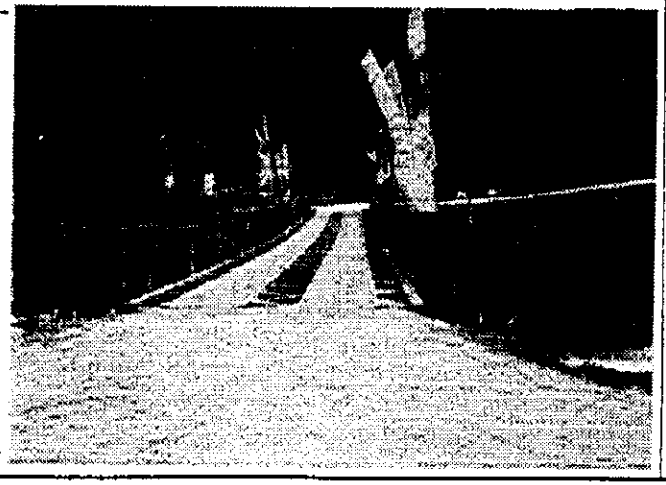
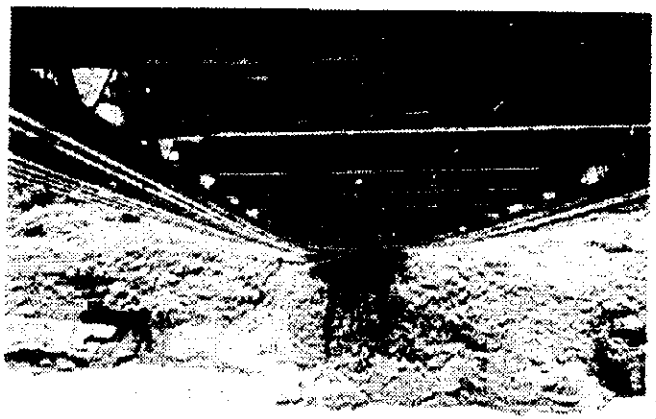


Photo Album No.

Elevation

Photo Album No.



Photographs

NAME OF BRIDGE Bilec | ISER No. 3 | Date of

Front

Photo Album No.

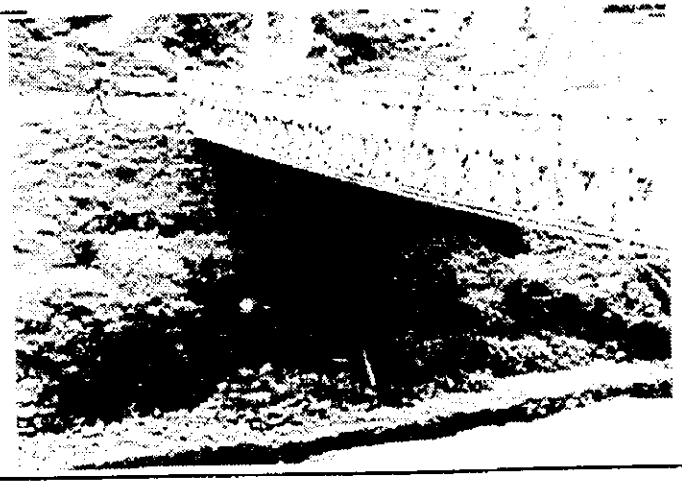
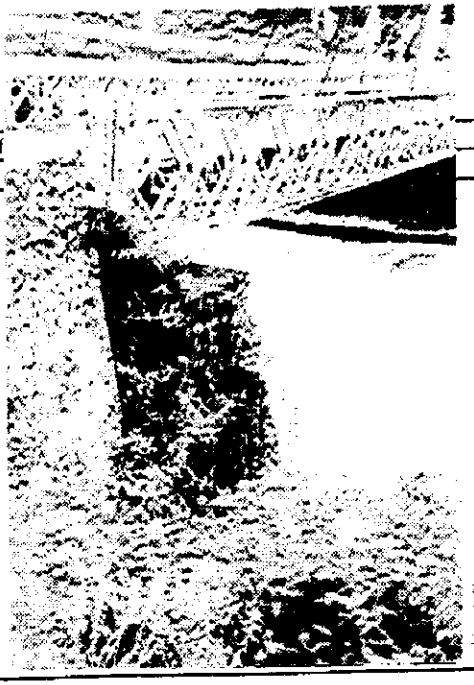


Photo Album No.



Elevation

Photo Album No.

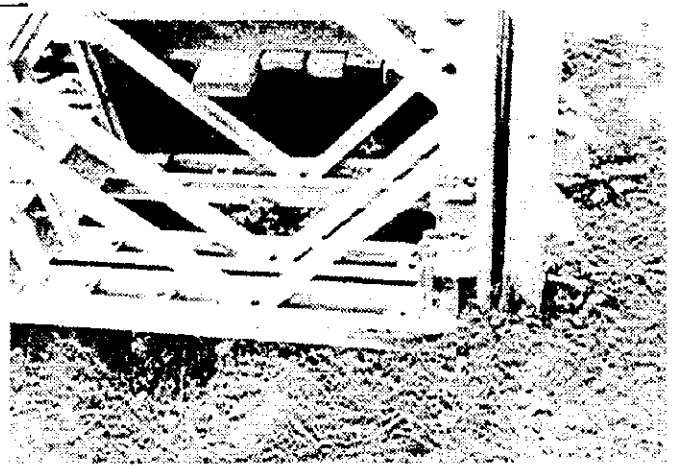
Photographs

NAME OF BRIDGE Bjee	SER No. 3	Date of Inspection

Front

Photo Album No.

Poor maintenance on bearings.



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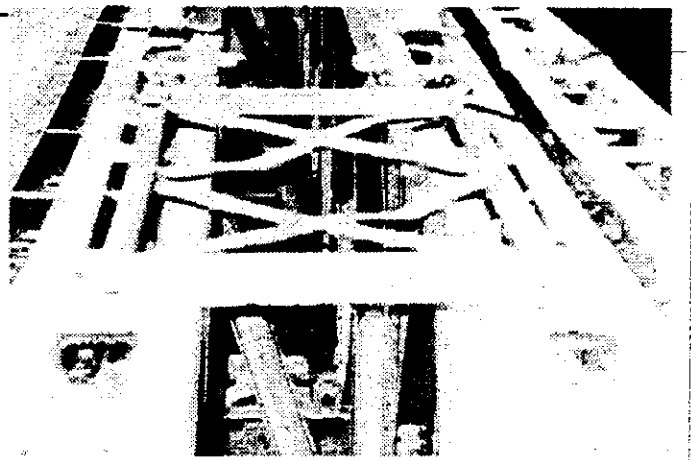
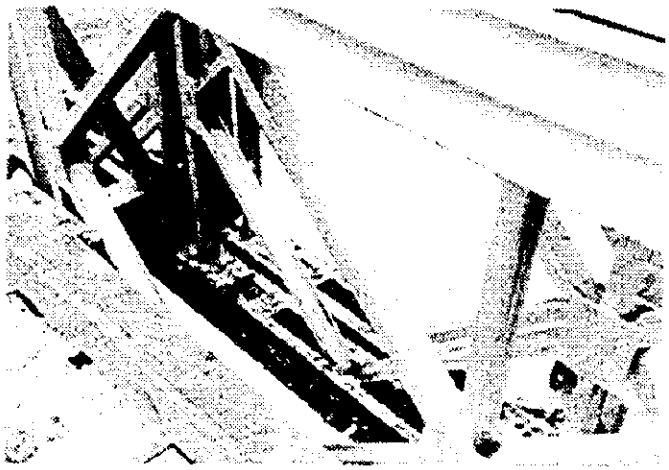


Elevation

Photo Album No.



Bridge Inventory

SER No. 4 469 Cm

NAME OF BRIDGE	CLASS OF ROAD	CROSSING: NAME OF RIVER OR ROAD	COMPLETED	MAINTENANCE BY
Wochey Zam	N.H.R.N.O.2	Damchu	1969	

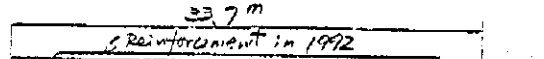
Design Information	Yes	No	Manufacture	Date of Preparation	Prepared by
			C	11/9/97, 22/9/97 & 25/9/97	U.N.D. & E.

Type of Bridge			Design Loading	Load limitation
Superstructure	Bailey DSR	Deck Timber	18t	No / Yes
Substructure	Abutment: Masonry		Design Standard	BS
	Pier		Skew of Bridge	Square / Skew / Kk / deg. R=

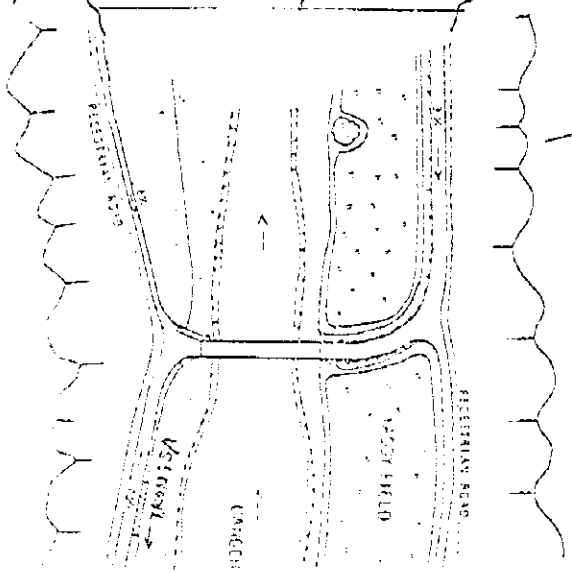
Length of Bridge	33.7 m	Span	33.5	Condition of Crossing	Road	Width m / Clearance m / Skew deg.
Width of Bridge	Overall 5.0 m	Carriageway 3.15 m	Pedestrianway — m		River	Width of River m / Depth m / Free Board m / Design Quantity m3/sec
Affixed Articles						
Traffic Volume	(year)	Ratio of Heavy Vehicle (year) %		Others	Repair etc.	

Final Record of Repair	Pavement	Deck Slab	Main Beam	Panning	Expansion Joint	Bearing	Drainage	Railing	Curb	Affixed Articles
	11/9/97	11/9/97								
	Others				Substructure					

Elevation

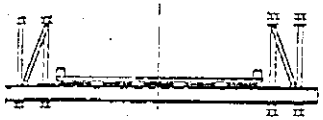


Plan



Surrounding Con

Cross Section



1. Sag of main girder is 16cm. ← 1/11/97.
2. Lateral displacement is 4.0cm.
3. Main Beam was crushed and bent at 1 location.
4. End post was damaged.
5. River training is not stable.
6. Bearing has no space to move.

Result of Visual Inspection			Date of Inspection		
Pavement	1	Bearing	3	Abutment	1
Curb	1	Expansion Joint	—	Pier	—
Railing	4	Drainage	—	Wing Wall	1
Deck Slab	4	Affixed Articles	—	River Bank	1
Main Beam	4			Approaches	1
	—				
Others	—	Others	—	Others	—
Superstructure	4.0	Bridge Accessary	2.4	Substructure	1.0
Overall Rating	4.0				

Rating

1. No damage detected on the basis of the inspection results.
2. Damage has been detected and a follow-up survey is required.
3. There is significant damage and a detailed survey needs to be carried out to establish whether repair work is to be carried out or not.
4. There is significant damage and urgent repair is required or the bridge has to be closed to traffic or restriction on vehicle weight have to be imposed.

Comment

1. No scouring of abutments.
2. Steel has much rust.
3. Deck timber and asphalt pave. are new. Done on 11/9/97

- H.W.L Exist. -2.0 m

Bridge Inspection Form

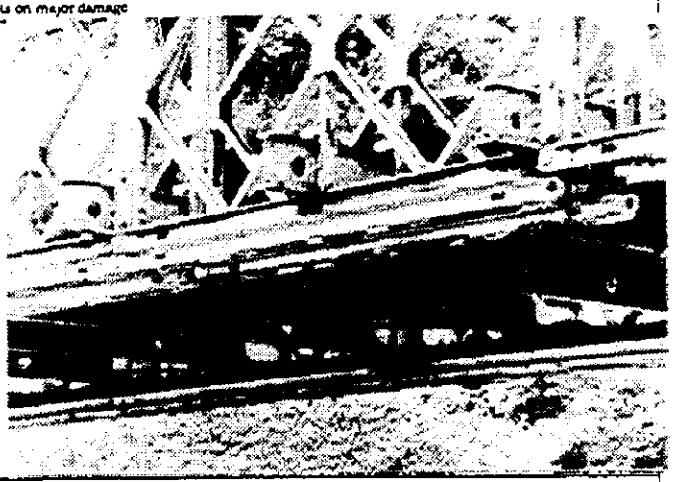
SER No. 2

NAME OF BRIDGE	CLASS OF ROAD	CROSSING NAME OF RIVER OR ROAD	COMPLETED	DATE OF INSPECTION	MAINTENANCE BY
Wachi Zaw	11 D				

	Component	Condition of Damage		Rating
Bridge Surface	Pavement	Type Timber with asphalt	Condition Good	
		Good, Waving, Rutting, Crack, Pot hole, Others		
	Curb	Type Timber	Condition	
		Good, Scaling, Cracking, Spalling, Exposure and corrosion of reinforcement, Wear of surfaces		
	Railing	Type Railway	Condition	
		Good, Scaling, Cracking, Spalling, Exposure and corrosion of reinforcement, Wear of surfaces		
Superstructure	Deck Slab	Type Timber on stringers	Condition	1. Minor 2. Intermediate 3. Major
		Good / 1 direction / 2 direction	Flaking / Rebar exposed / Others	
	Main Beam	Type	Condition Rating 3	
	Main Structure	Good, Rust, Corrosion, Buckling, Excessive deformation, Rivet off, Others		
	Diaphragm, Sway Bracing, Lateral Bracing	Type	Condition Ditto	
		Good, Rust, Corrosion, Buckling, Excessive deformation, Rivet off, Others		
	Painting	Condition very poor		
Accessory	Expansion Joint	Type	Condition	
		Invisible, Existed, Good, Abnormal sound, Clogged, Deformation, Gap, Others		
	Bearing	Type	Condition: Sliding, Function of rotation Not clear	
		Invisible, Existed, Good, Broken, Anchor bolt, Abnormal displacement		
	Drainage	Condition		
		Clogged, Broken, Water leakage, Support broken, Pipe broken, Others		
Substructure	Abutment A1	Type Masonry on rock	Condition: Leaning, Settlement, Sliding Good	
		Body broken (Scaling, Cracking, Spalling, Exposure and corrosion of reinforcement, wear of surfaces), Others		
	Abutment A2	Type "	Condition: Leaning, Settlement, Sliding Good	
		Body broken (Scaling, Cracking, Spalling, Exposure and corrosion of reinforcement, wear of surfaces), Others		
	Pier	Type	Condition: Leaning, Settlement, Sliding	
		Body broken (Scaling, Cracking, Spalling, Exposure and corrosion of reinforcement, wear of surfaces), Others		
	Pier	Type	Condition: Leaning, Settlement, Sliding	
		Body broken (Scaling, Cracking, Spalling, Exposure and corrosion of reinforcement, wear of surfaces), Others		
	Foundation	Type	Condition	
		Settlement, Leaning, Moving, Crack, Scouring, Others		
	Wing Wall	Type	Condition Good	
		Good, Scaling, Cracking, Spalling, Exposure and corrosion of reinforcement, Wear of surfaces		
	Embankment	River Bank Natural rock, Good	Side Bank	
		Back Filling	Others	
Others	Affixed Article			
	Traffic Sign			
	Approaches			
	Others			

Sketch and Comments on major damage

Steels are very rusty.



Comments on rehabilitation method

Turn buckle doesn't work.

Underside especially very rusty.

Rating

1. No damage detected on the basis of the inspection results.
2. Damage has been detected and a follow-up survey is required.
3. There is significant damage and a detailed survey needs to be carried out to establish whether repair work is to be carried out or not.
4. There is significant damage and urgent repair is required or the bridge has to be closed to traffic or restriction on vehicle weight to be imposed.

Components of photographs taken

0 Black Board (Name of Bridge)	5 Main Beam	10 Abutment	15 Main Damage	20
1 Front	6 Sway Bracing	11 Abutment	16 Main Damage	21
2 Road Surface	7 Drainage	12 Pier	17 Main Damage	22
3 Expansion Joint	8 Bearing	13 Pier	18	23
4 Deck Slab (Underface)	9 Elevation	14 Pier	19	24

Note: Further inspection shall be carried out on the "major damage" detected in this inspection.

Photographs

NAME OF BRIDGE Wachy Zam	SER No. 4	Date of Inspection

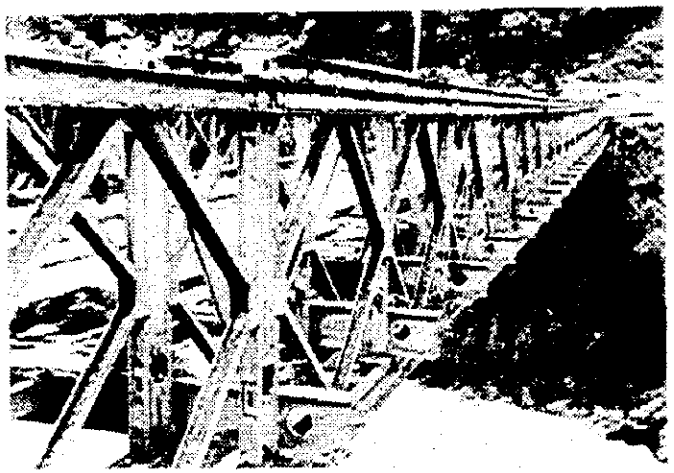
Front

Photo Album No.

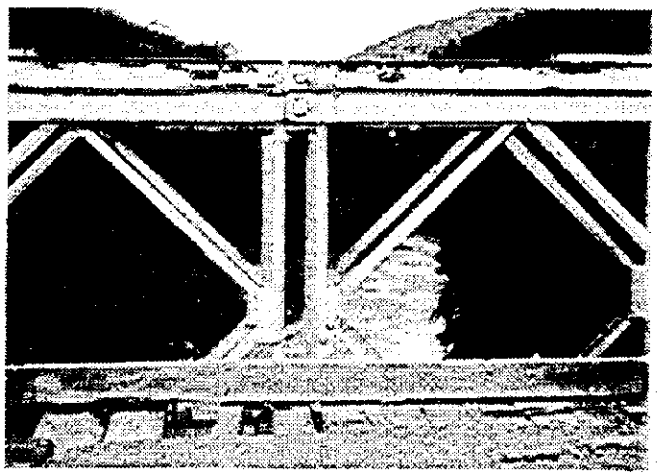
Photo Album No.

Elevation

Photo Album No.



Rust



Photographs

NAME OF BRIDGE	Wesley Ram	SER No.	4	Date of Inspection	

Front

Photo Album No.

A2 Abutment

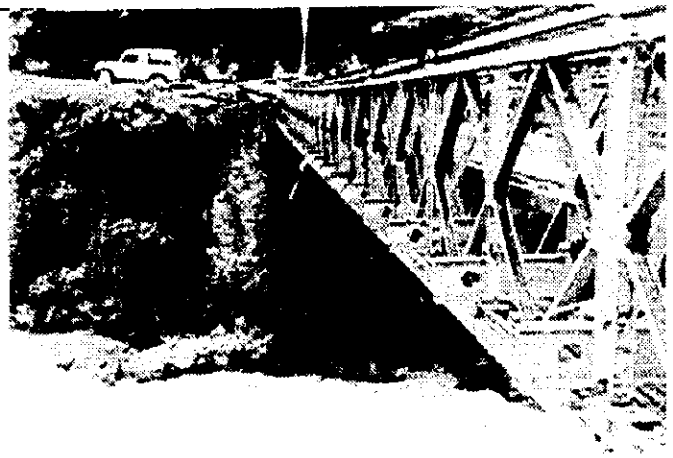


Photo Album No.

Detail

Elevation

Photo Album No.

A1 Abutment

Detail

Photographs

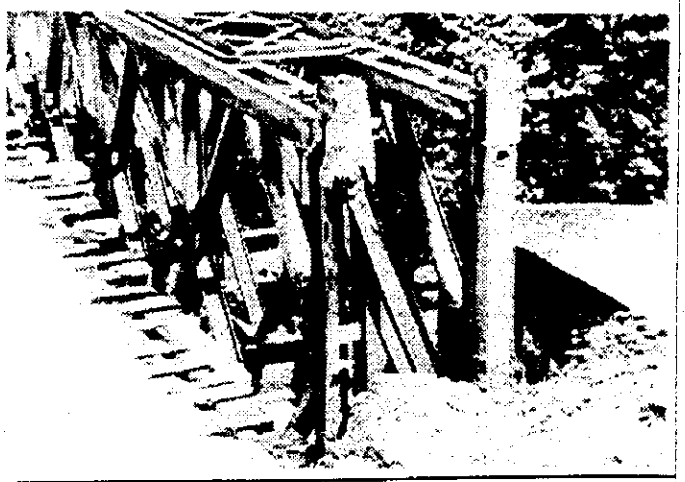
NAME OF BRIDGE	Wachy Zam	SER No.	4	Date of Inspection	

From:

Photo Album No.

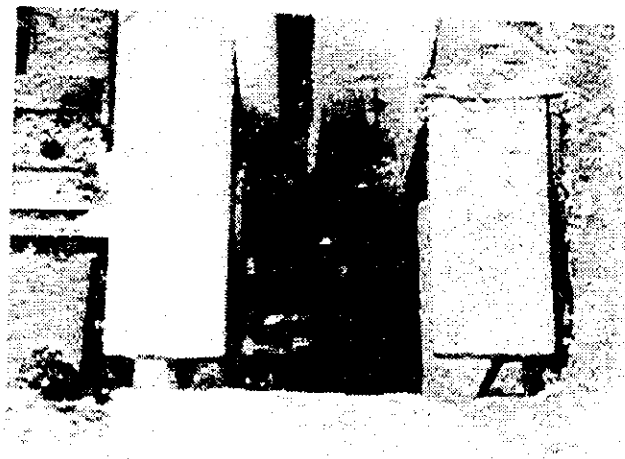
Photo Album No.

End post was crushed.



Elevation

Photo Album No.

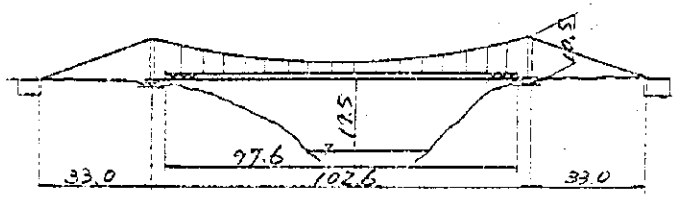


Bridge Inventory

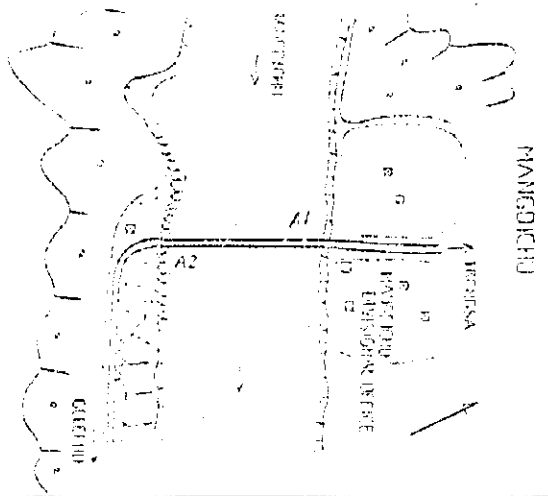
SER No. 5 98 km

NAME OF BRIDGE: Mangdichu	CLASS OF ROAD: N.H. Rt. No 4	CROSSING: NAME OF RIVER OR ROAD: Mangdichu			COMPLETED: 1965	MAINTENANCE BY			
Design Information: Yes	No	Manufacture			Date of Preparation: 15/9/97 & 4/10/97	Prepared by			
Type of Bridge: Superstructure: Bailey Suspension Deck: Timber			Design Loading		12t	Load Limitation	No C	Ton 4t	
Substructure: Abutment: Mason			Design Standard		BS				
Pier			Skew of Bridge	Square	Skew	RL	deg. R=		
Length of Bridge: 97.6 m	Span: 97.4		Condition of Crossing	Road	Width m	Clearance m	Skew deg.		
Width of Bridge: Overall: 4.02 m	Carriageway: 3.2 m	Pedestrianway: — m		River	Width of River m	Depth m	Free Board m	Design Quantity m3/sec	
Affixed Articles									
Traffic Volume (year)	Ratio of Heavy Vehicle (year) %		Others	Repair etc.					
Final Record of Repair: Pavement	Deck Slab	Main Beam	Painting	Expansion Joint	Bearing	Drainage	Railing	Curb	Affixed Articles
Others				Substructure					

Elevation

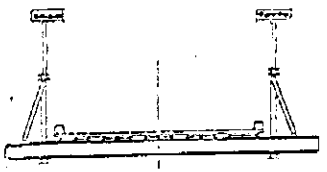


Plan



Surrounding Cc

Cross Section



1. Sag of main girder is 51cm.
2. Lateral displacement is 2 cm.
3. Bearing plate is slicking properly.
4. Bailey girder is not of good sag, because of hanger adjustment is not proper.
5. Some wires of main cable were cut.

Result of Visual Inspection	Date of Inspection				
Pavement	1	Bearing	1	Abutment	1
Curb	1	Expansion Joint	—	Pier	—
Railing	1	Drainage	—	Wing Wall	1
Deck Slab	3	Affixed Articles	—	River Bank	1
Main Beam / Cable / Tower	4			Approaches	1
Others	—	Others	—	Others	—
Superstructure	3.7	Bridge Accessary	2.8	Substructure	1.0
Overall Rating	3.7				

Rating

1. No damage detected on the basis of the inspection results.
2. Damage has been detected and a follow-up survey is required.
3. There is significant damage and a detailed survey needs to be carried out to establish whether repair work is to be carried out or not.
4. There is significant damage and urgent repair is required or the bridge has to be closed to traffic or restriction on vehicle weight have to be imposed.

Comment

1. Anchorage is not readjusted for main wire stress.
2. Bottleneck of N.H. Rt. No 5 due to only 4t capacity

Bridge Inspection Form

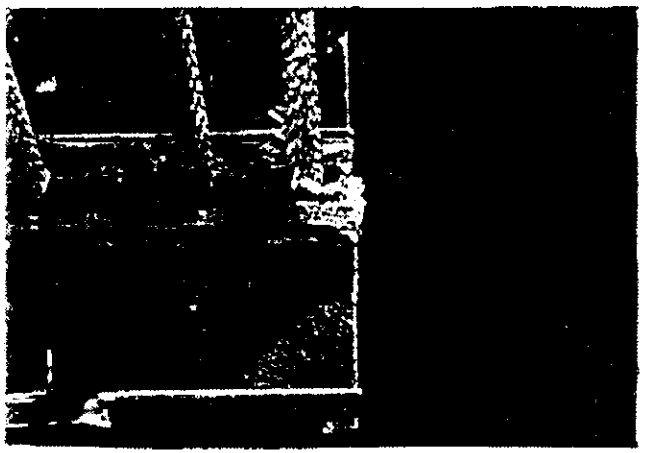
SER No. 5

NAME OF BRIDGE	CLASS OF ROAD	CROSSING NAME OF RIVER OR ROAD	COMPLETED	DATE OF INSPECTION	MAINTENANCE BY
Mawdiew					

	Component	Condition of Damage					Rating	Sketch and Comments on major damage
Bridge Surface	Pavement	Type Timber	Condition Fair					Some wires were cut.
		Good, Waving, Rutting, Crack, Pot hole, Others						
	Curb	Type Timber	Condition Fair					
		Good, Scaling, Cracking, Spalling, Exposure and corrosion of reinforcement, Wear of surfaces						
	Railing	Type Bailey	Condition Fair					
		Good, Scaling, Cracking, Spalling, Exposure and corrosion of reinforcement, Wear of surfaces						
Superstructure	Deck Slab	Type Timber on stringers	Condition Fair			1. Minor		
		Good	1 direction	2 direction	Flaking	Rebar exposed	Others	2. Intermediate
								3. Major
	Main Beam	Type Bailey	Condition					
	Main Structure	Good, Rust, Corrosion, Buckling, Excessive deformation, Rivet off, Others Post Hurricane cables damage						
	Diaphragm,	Type ∞	Condition					
	Sway Bracing,	Good, Rust, Corrosion, Buckling, Excessive deformation, Rivet off, Others						
	Lateral Bracing							
	Painting	Condition Good except under side						
Accessory	Expansion Joint	Type	Condition					
		Invisible, Existed, Good, Abnormal sound, Clogged, Deformation, Gap, Others						
	Bearing	Type	Condition: Sliding, Function of rotation Good					
		Invisible, Existed, Good, Broken, Anchor bolt, Abnormal displacement						
	Drainage	Condition						
		Clogged, Broken, Water leakage, Support broken, Pipe broken, Others						
Substructure	Abutment A1	Type	Condition: Leaning, Settlement, Sliding Good					
		Body broken (Scaling, Cracking, Spalling, Exposure and corrosion of reinforcement, wear of surfaces), Others						
	Abutment A2	Type	Condition: Leaning, Settlement, Sliding Good					
		Body broken (Scaling, Cracking, Spalling, Exposure and corrosion of reinforcement, wear of surfaces), Others						
	Pier	Type	Condition: Leaning, Settlement, Sliding					
		Body broken (Scaling, Cracking, Spalling, Exposure and corrosion of reinforcement, wear of surfaces), Others						
	Pier	Type	Condition: Leaning, Settlement, Sliding					
		Body broken (Scaling, Cracking, Spalling, Exposure and corrosion of reinforcement, wear of surfaces), Others						
	Foundation	Type	Condition					
		Settlement, Leaning, Moving, Crack, Scouring, Others						
	Wing Wall	Type	Condition					
		Good, Scaling, Cracking, Spalling, Exposure and corrosion of reinforcement, Wear of surfaces						
	Embankment	River Bank Good	Side Bank					
		Back Filling	Others					
Others	Affixed Article							
	Traffic Sign							
	Approaches							
	Others	Main cables, tower and anchorage O/K. Hangers are not straight down.						

Comments on rehabilitation method

Ditto



Components of photographs taken				
0 Black Board (Name of Bridge)	5 Main Beam	10 Abutment	15 Main Damage	20
1 Front	6 Sway Bracing	11 Abutment	16 Main Damage	21
2 Road Surface	7 Drainage	12 Pier	17 Main Damage	22
3 Expansion Joint	8 Bearing	13 Pier	18	23
4 Deck Slab (Underface)	9 Elevation	14 Pier	19	24

Note: Further inspection shall be carried out on the "major damage" detected in this inspection.

Rating

1. No damage detected on the basis of the inspection results.
2. Damage has been detected and a follow-up survey is required.
3. There is significant damage and a detailed survey needs to be carried out to establish whether repair work is to be carried out or not.
4. There is significant damage and urgent repair is required or the bridge has to be closed to traffic or restriction on vehicle weight to be imposed.

Photographs

NAME OF BRIDGE Mangalicha	SER No. 5	Date of Inspection

Front

Photo Album No.

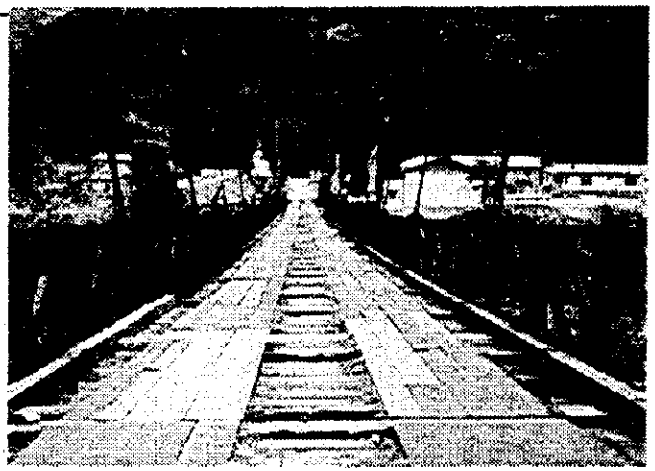
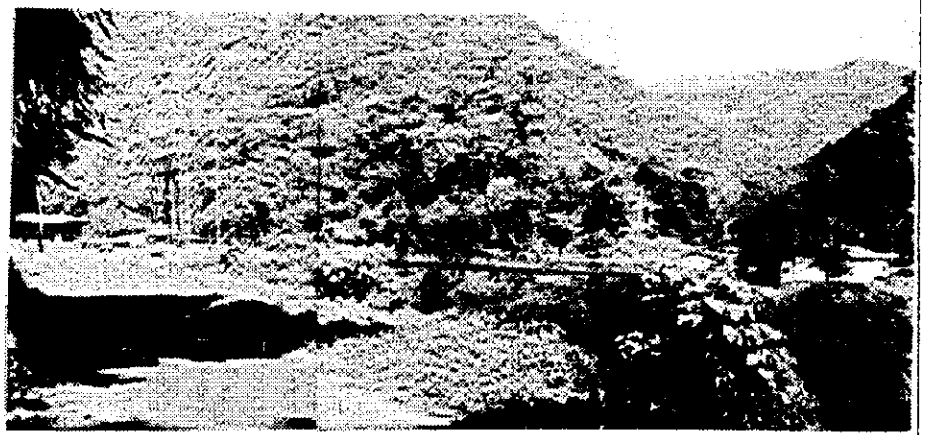
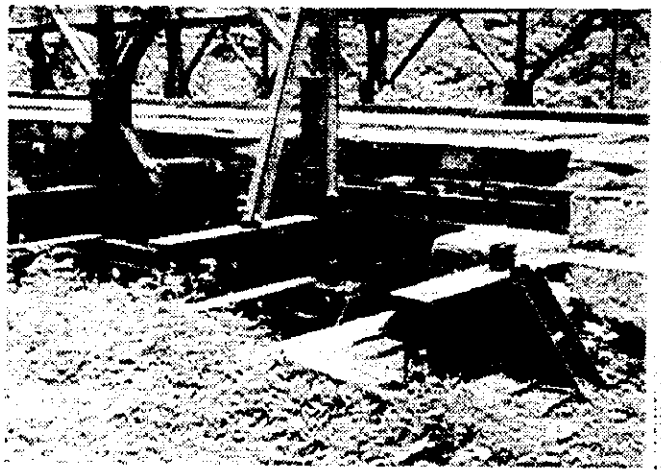


Photo Album No.



Elevation

Photo Album No.



Bearings are moving properly.

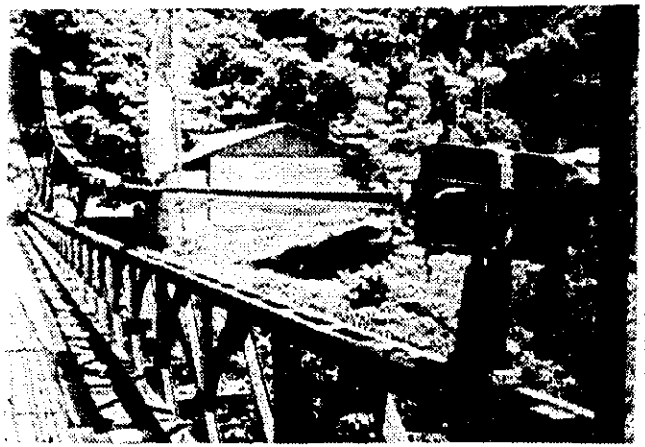
Hanger ropes are not vertical

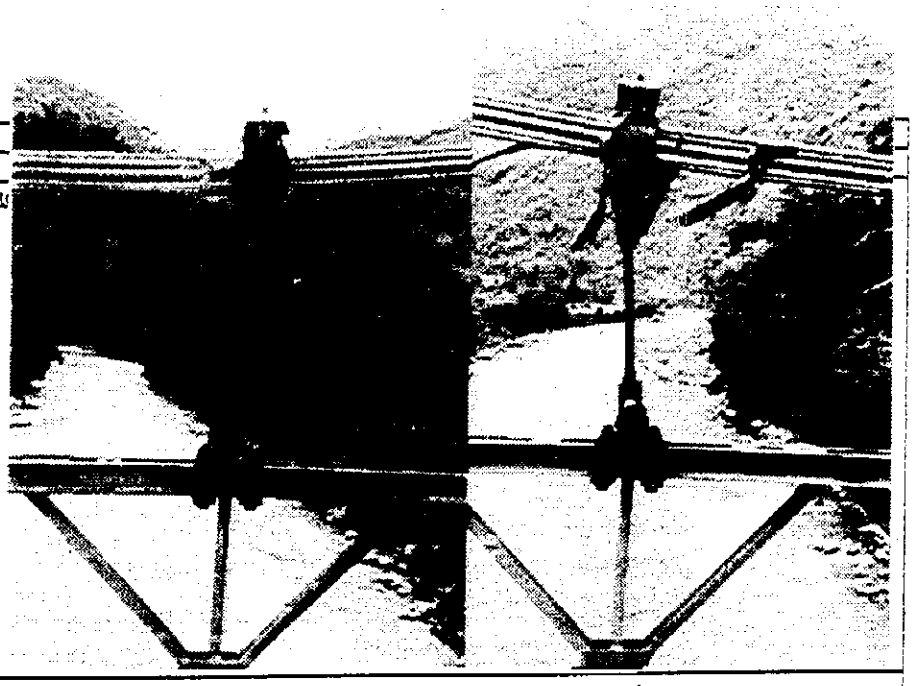
Photographs

NAME OF BRIDGE Mangdichhu ISER No. 5

Front

Photo Album No. 0



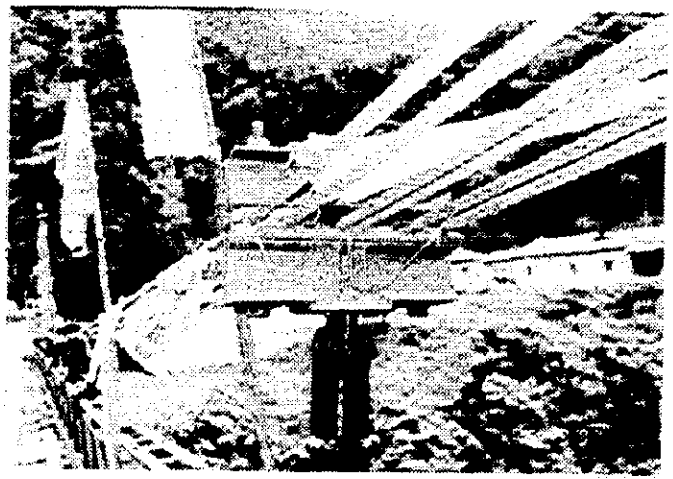


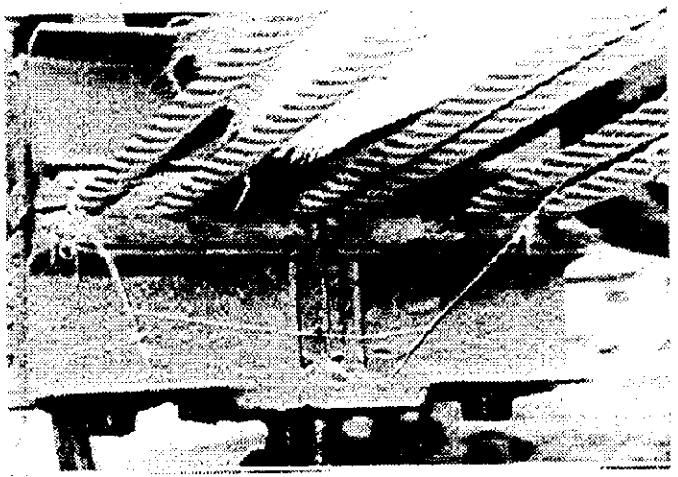
Elevation

Photo Album No.

Main rope

T-25 mm x 6 x 2





Photographs

NAME OF BRIDGE Mayodicho	SER No. 5	Date of Inspection

Front

Photo Album No. (6)

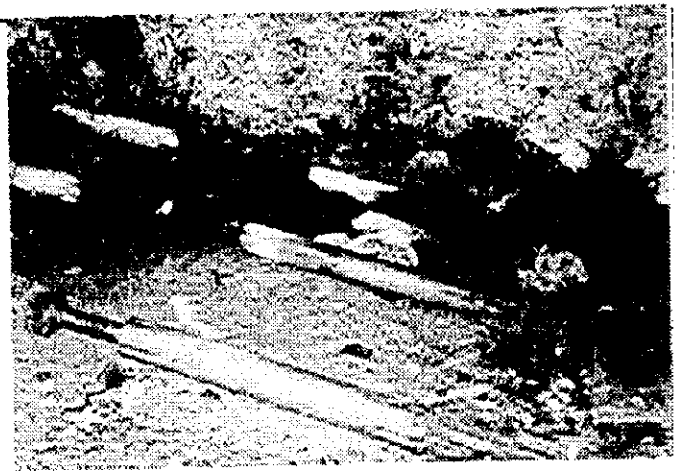
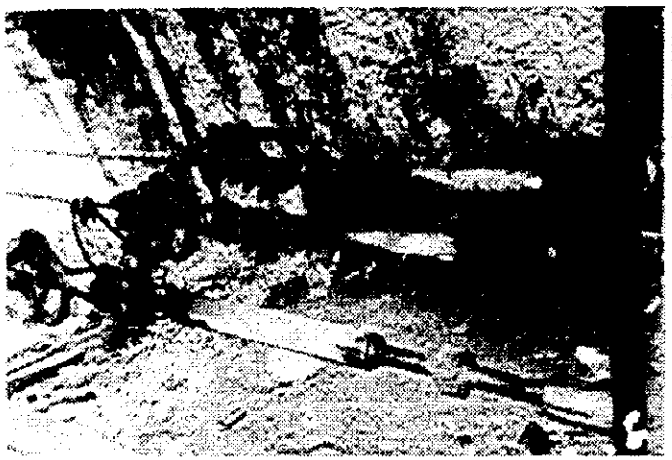
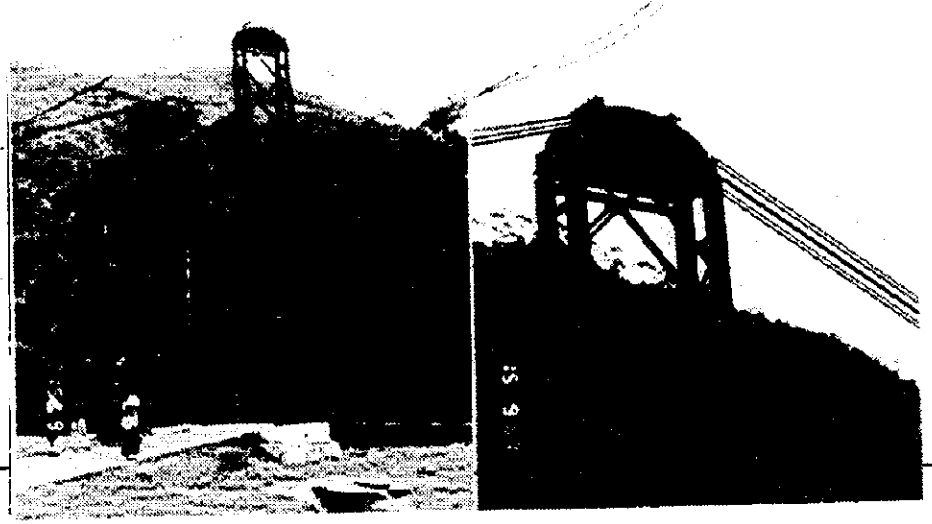


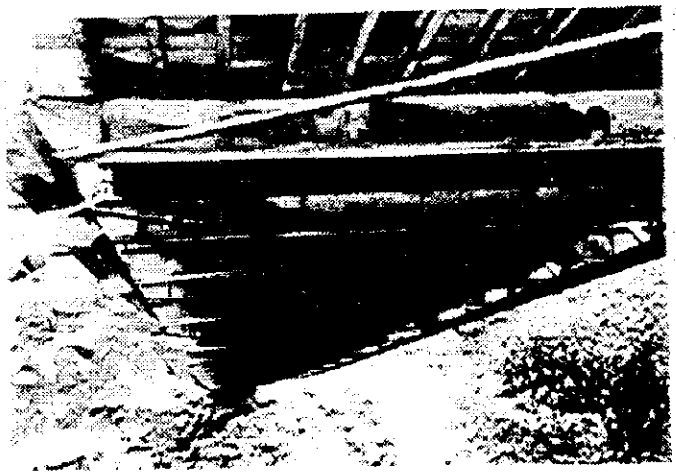
Photo Album No.



Elevation

Ph





Photographs

NAME OF BRIDGE Mandichu	SER No. 5	Date of Inspection

Front

Photo Album No.

Abutment A2

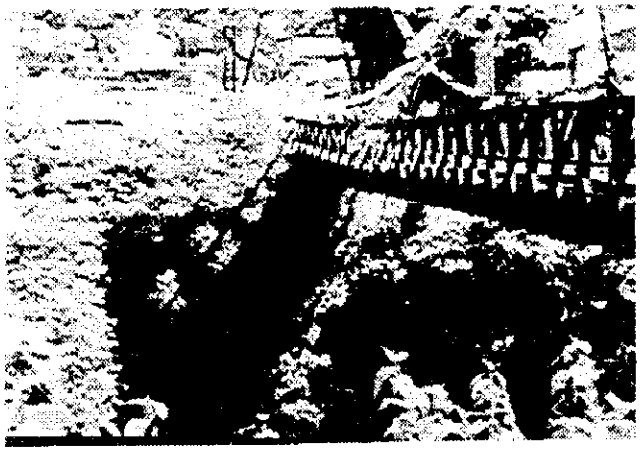
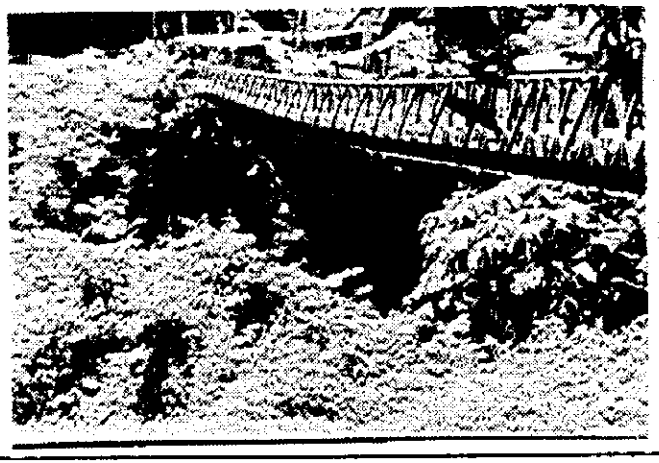


Photo Album No.

Abutment A1



Elevation

Photo Album No.

Anchor block 3m W x 6m long x 3 m deep.