

Name of the Project : **VISUAL INSPECTION OF ROB No. 459A
NEAR KAZIPET RAILWAY STATION**

Location : **Near Kazipet Railway Station**

Location Co-ordinates : **17°58'57.5"N, 79°31'09.1"E**

Date of Inspection : **28th NOVEMBER, 2019**



Summary:

- a) Spalling and Reinforcement exposed at Girders and deck slab of Span 1, 2 & 4
- b) Cracks are observed at Main girder and Secondary girders Span 1, 2 & 4
- c) Spalling and cracks are observed at pier cap of Span 1 and 2
- d) Corrosion is observed at Metallic bearings.
- e) Patch work has been done at Main & Secondary Girders.
- f) Vegetation growth is observed at span 3

Tests to be conducted:

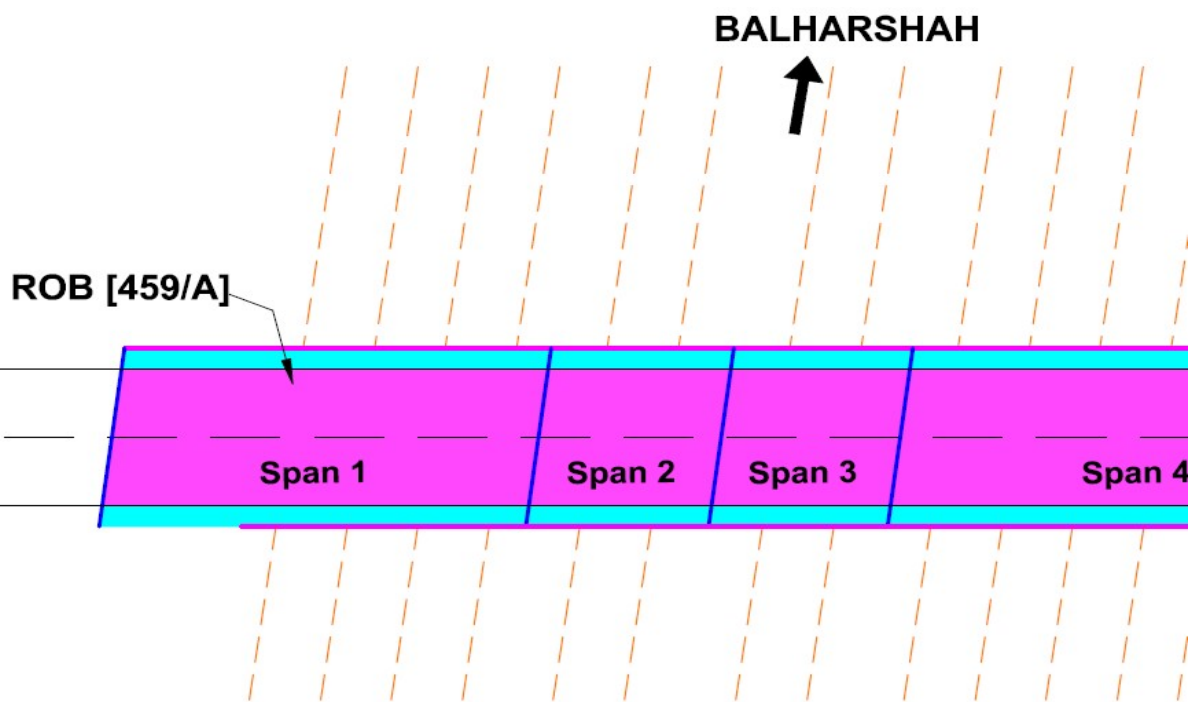
- a) Rebound Hammer test to measure surface strength of the concrete.
- b) Ultrasonic Pulse Velocity (UPV) Test to determine the Quality of concrete, such as uniformity and homogeneity of concrete, location of internal defects in concrete, porosity.
- c) Profometer Test for the concrete cover and diameter of rebar.
- d) Half-cell Potential Meter to measure the probability of corrosion.
- e) Micrometer/card comparator is to determine the Crack width and depth.
- f) Core Drilling Method is to evaluate the exact compressive strength of concrete
- g) Tests for Carbonation, pH and Chloride Content to determine the extent of chemical attack on concrete

VISUAL INSPECTION OF ROAD OVER BRIDGE

Name of the Project	Visual inspection of ROB near Kazipet Railway Station
Location	Near Kaziper Railway station
Date of Inspection	28 th November 2019.

PART 1 GENERAL INFORMATION AND OBSERVATION

1.1	Name of the Bridge	ROB (459A)
1.2	Location Location co-ordinates	Near Kazipet Railway Station 17°58'57.5"N, 79°31'09.1"E
1.3	Type of Bridge	RCC Bridge
1.4	Year of Construction	Not Available
1.5	Grade of Concrete	Not Available
1.6	Design Load	Not Available
1.7	Roadway Width	7.5m
1.8	Overall Deck Width	10.85 m
1.9	Average Skew	18°
1.10	Span arrangement (no x Span in meters)	1 x 21.2m + 1 x 13.81m + 1 x 13.25m + 1 x 21.2m (Railways concerned)
1.11	No of Railway Lines Crossings	7 tracks
1.12	Vertical Clearance (from rail top to girder bottom)	5.6 m
1.13	History of Repair/ Maintenance	Patch work observed
1.14	Original Structural Drawings	Not available



PART 2 STRUCTURAL SYSTEM OF THE BRIDGE			
			Notes
2.1	Foundation details		Not visible at site
	Type of foundation		
	Foundation Details (if available...)		
	Foundation Status (Check Settlement, abnormal Scour and Tilting, if any etc...)		
	Type Of Damage (Check cracking, disintegration, decay, erosion, Cavitation's etc..)		
2.2	Abutment (A1 & A2)		
	Type	NA	
	Maximum height of Abutment from Ground level		
	Abutment width along the Track		
	Abutment thickness		
	Condition (Crack, Settlement, Scour, Tilting, Steel Corrosion, Strains and other damages etc...)		
	Efficiency of drainage of backfill behind Abutments (Check functioning of weep holes, evidence of moisture on Abutment faces, etc..)		
2.3	Pier		
	Type (Shape)	Wall type	Spalling and reinforcement exposure is observed at pier cap (Refer Fig.7)
	Material	RCC	
	No. of Piers in a row/column	05	
	Maximum Height of Pier	5.8 m	
	Pier Diameter/Dimension	12.45 m	
	Pier Cap Material	RCC	
	Pier Cap Condition	Spalling observed	
	Pier Condition (Crack, Settlement, Scour, Tilting, Steel Corrosion, Strains and other damages etc...)	Minor spalling observed	

2.4	Bearing & Pedestal		
	Type of Bearings	Metallic plate & Elastomeric pad	1) Metallic plate bearings are observed in span 1 and 4
	General condition (Check Corrosion, cleanliness, seizing of plates silting, accumulations of dirt in case of submersible bridges)	Corrosion observed	2) Elastomeric bearings are observed at span 2 and 3 3) Metallic plate bearings are corroded (Refer Fig-3, 4)
	Type/ shape of Pedestal		No Pedestals are provided
	General condition (Check Corrosion,		
2.5	Super Structure (Concrete Girder)		
	Type/Shape of Girder (I-beam, box-	T-Girder	
	Material of Girder	RCC	
	No of Girder	6, 3 Nos.	Span 1 & 4 have 6 girders, Span 2 & 3 have 3 girders
	Dimensions of Girder	1.7 x 0.7 m	
	Structural System of Girder	Simply Supported	
	Condition of Girder		Spalling and cracks and Reinforcement exposed (Refer Fig-5,8,9)
	Type/Shape of Secondary Girder	Rectangular	
	Material of Secondary Girder	RCC	
	No of Secondary Girders	5, 3 Nos.	Span 1 & 4 have 5 secondary girders, Span 2 & 3 have 3 secondary girders
	Condition of Secondary Girder		Cracks and patch work has been observed (Refer Fig-4)
2.6	Slab		
	Material of Slab	RCC	
	Thickness of Slab	-	Not Accessible
	Condition of Slab from Bottom		Spalling & Reinforcement exposure has been observed. (Refer Fig-6,8)
	Condition of Slab from Top		Not visible, as covered with wearing coat
	Condition of Flooring/Wearing Coat		Expansion Joint has been filled with Bitumen
	Parapet wall/Railing		
	Type of Parapet wall/Railing	Parapet wall	(Refer Fig.16)
	Height	1.5 m	
	Condition of Wall/Railing		No hitting damages observed.

PART 4 SURVEY OF SIGNS OF DISTRESS, DEFORMATION IN BRIDGES			
	Defects	Location	Notes
	Cracking in RCC components	girder	cracks are observed in main girder, secondary girder and pier cap
	Water seepage		No water seepage is observed
	Spalling	Slab	Spalling is observed at girders and slab
	Reinforcement Exposure	Slab	Reinforcement Exposure is observed at Girders and slab
	Distress	Bearings	Corrosion is observed at metallic plate bearings



Fig.1: Front view of ROB



Fig.2 : Spans



Fig.3 : Metallic plate Bearings corrosion observed at span 1 and 4



Fig.4 : Elastomeric Bearings observed at span 2 & 3



Fig.5 : Patch work, Reinforcement exposed and Structural Cracks at Span-1



Fig.6 : Spalling, Cracks, leaching and Reinforcement exposed is observed at Main girder of span-1 and overhanging portion of slab.



Fig.7 : Reinforcement exposed and Spalling is observed at pier cap and main girder of Span 1.



Fig.8 : Reinforcement exposed and Spalling is observed at overhang slab portion and Main girder of Span-2.



Fig.9 : Cracks, patch work and Spalling is observed at main girder and overhang slab of Span-2.



Fig.10 : Spalling and vegetation observed in span 3 .



Fig.11 : Reinforcement exposed, spalling and cracks observed at pair-3 .



Fig.12 : Reinforced exposed, cracks and vegetation observed at overhang slab portion of span-4 .



Fig.13 : Spalling , cracks and Reinforcement exposed observed at Pier cap and girder joint of Pier-4 .



Fig.14 : Spalling and Reinforcement exposed observed at span-4 overhang slab portion .



Fig.15 : Reinforcement exposed , Spalling , leaching and patch work observed at main & Secondary girders of span-4 .



Fig.16 : Road surface, Parapet wall