

Name of the Project	:	VISUAL INSPECTION OF ROB - 251
Location	:	NEAR GODAVARI RAILWAY STATION
Location Co-ordinates	:	17°00'57.04"N 81°77'47.55"E
Date of Inspection	:	2nd DECEMBER, 2019



Summary:

- a) Cracks has been observed at Abutments and pier cap.
- b) Reinforcement exposure has been observed at deck slab in both spans of ROB.
- c) Spalling has been observed in Abutment 1 & 2.
- d) Leaching observed on deck slab.
- e) Water seepage is observed at abutment 2

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.
- g) Tests for Carbonation, pH and Chloride Content to determine the extent of chemical attack on concrete.

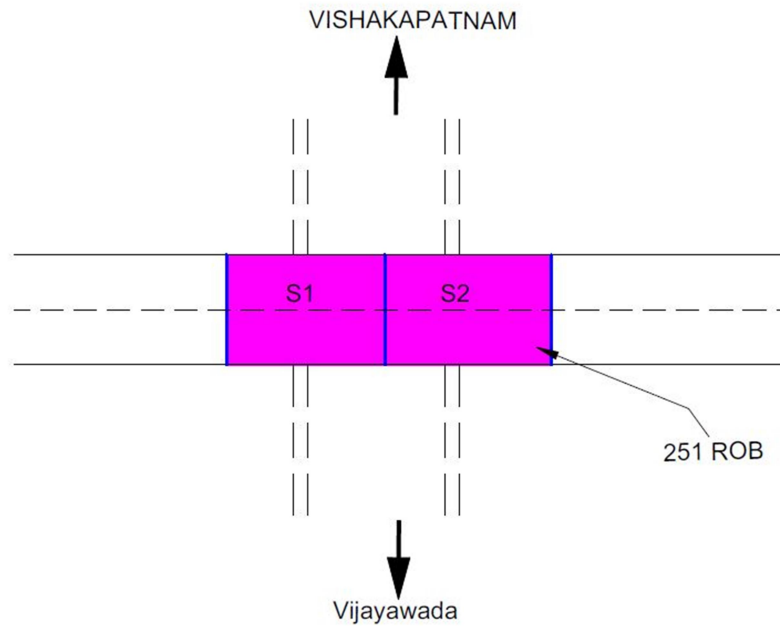
VISUAL INSPECTION OF ROAD OVER BRIDGE

Name of the Project	Visual inspection of ROB 251
Location	Near Rajahmundry Railway station
Date of Inspection	2 nd December, 2019.

PART 1 GENERAL INFORMATION AND OBSERVATION

1.1	Name of the Bridge	ROB 251
1.2	Location Location co-ordinates	Near Rajahmundry Railway station 17°00'20.4"N, 81°46'29.1"E
1.3	Type of Bridge	RCC Slab
1.4	Year of Construction	Data Not Available
1.5	Grade of Concrete (Slab)	Data Not Available
1.6	Design Load	Data Not Available
1.7	Carriageway Width	7.35 m
1.8	Overall Deck Width	10.36 m
1.9	Average Skew	Not in skew
1.10	Span arrangement (no x Span in meters)	2 x 5.15 m
1.11	No of Railway Lines Crossings	2 tracks
1.12	Vertical Clearance (from rail top to girder bottom)	5.7 m
1.13	Horizontal Clearance (Pole to Rail track)	2.1m
1.14	History of Repair/ Maintenance	Yes , Patch works observed
1.15	Original Structural Drawings	Not available

1.16 Key Plan



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	RCC Wall	
	Maximum height of Abutment from Ground level	5.8 m	
	Abutment width along the Track	10.9 m	
	Abutment thickness	0.75 m	
	Condition (Crack, Settlement, Scour, Tilting, Steel Corrosion, Strains and other damages etc...)	Distresses Found	Shrinkage Cracks and Leaching is observed Water seepage is observed at abutments due to the flow of drain over ROB (Refer Fig- 4, 15),
	Efficiency of drainage of backfill Behind Abutments (Check functioning of weep holes, evidence of moisture on Abutment faces, etc.)	Good	Proper functioning of weep holes observed.
2.3	Pier		

	Type (Shape)	Wall	Leaching, patch work and cracks observed.
	Material	RCC	
	No. of Piers in a row/column	1	
	Maximum Height of Pier	5.6 m	
	Pier Diameter/Dimension	8.5 x 0.5 m	
	Pier Cap Material	RCC	
	Pier Cap Condition	Crack observed	
	Pier Condition (Crack, Settlement, Scour, Tilting, Steel Corrosion, Strains and other Damages etc...)	Distresses Found	

2.4	Bearing & Pedestal		
	Type of Bearings	Not present	
	General condition (Check Corrosion, cleanliness, seizing of plates silting, accumulations of dirt in case of		
	Type/ shape of Pedestal		
	General condition (Check Corrosion, cleanliness, seizing of plates silting)		
2.5	Super Structure (Concrete Girder)		
	Type/Shape of Girder (I-beam, box-	Not applicable	Slab type
	Material of Girder		
	No of Girder		
	Dimensions of Girder		
	Structural System of Girder		
	Condition of Girder		
2.6	Slab		
	Material of Slab	RCC	
	Thickness of Slab	Not accessible	
	Condition of Slab from Bottom	Distresses Found	Reinforcement exposure (Refer Fig-7), Spalling (Refer Fig-8) and cracks (Refer Fig-5) Observed.
	Condition of Slab from Top		Not visible, as covered with wearing coat (Refer Fig-3)
	Condition of Flooring/Wearing Coat		Minor Potholes observed
	Parapet wall/Railing		
	Type of Parapet wall/Railing	Parapet wall	
	Height	1.8 m	
	Condition of Wall/Railing		cracks are observed on Parapet wall. (Refer Fig-3)

PART 3 SURVEY OF SIGNS OF DISTRESS, DEFORMATION IN BRIDGES			
	Defects	Location	Notes
	Cracking in RCC components	Abutment & Pier	Cracks are observed at Abutments & Pier
	Water seepage	Abutments	Water seepage is observed near Abutments
	Spalling	Slab & Abutment	Spalling is observed at Slab & Abutment-1
	Reinforcement Exposure	Slabs	Reinforcement Exposure is observed in Slabs



Fig: 1 Front View of ROB



Fig: 2 Abutments (A1 and A2)



Fig: 3 Cracks observed on parapet wall



Fig: 4 Water seepage at abutment



Fig: 5 Cracks observed at Abutment 1



Fig:6 Patch work & Leaching observed at Abutment-1



Fig 7: Vegetation growth observed at Abutment-1

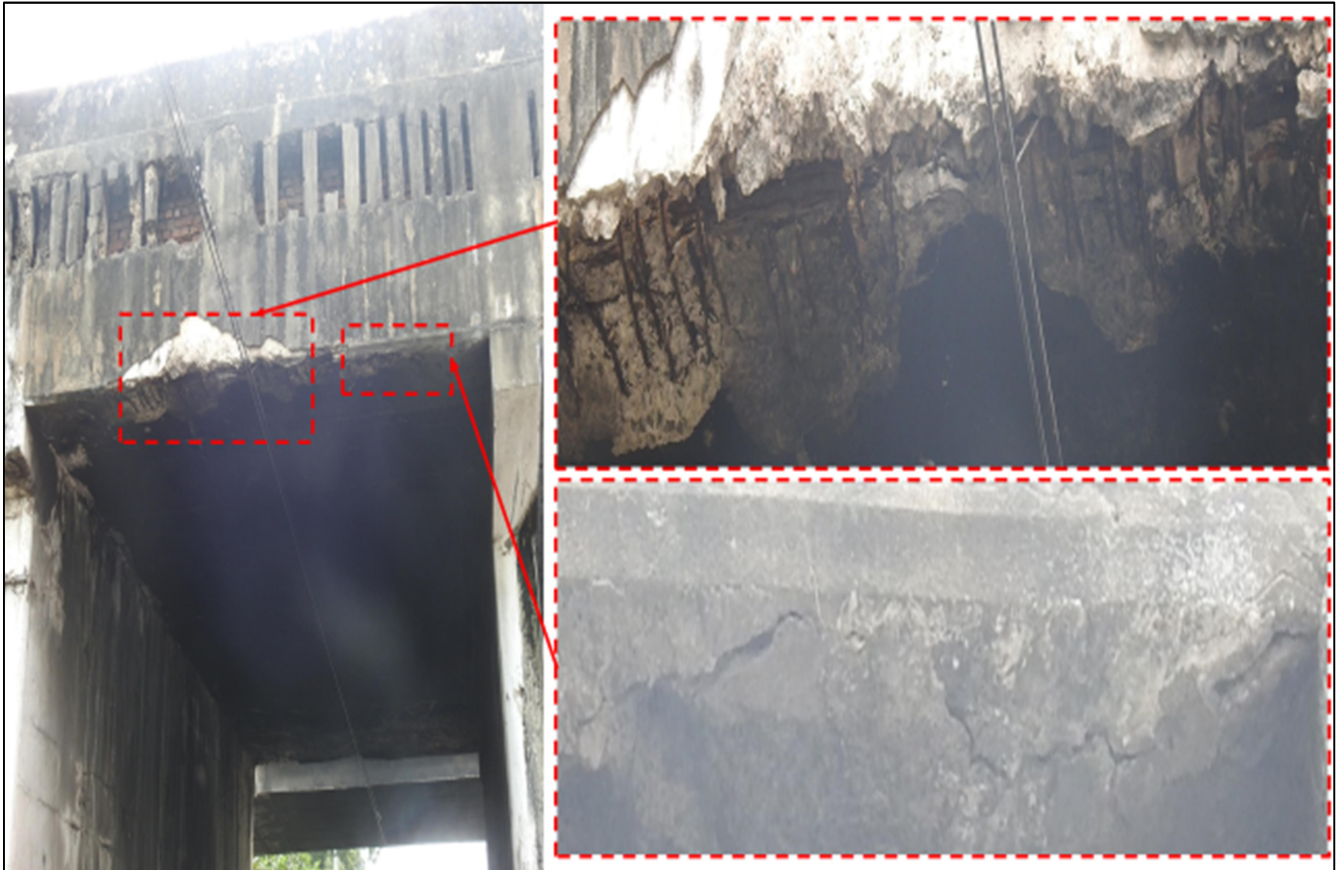


Fig 8: Reinforcement exposure & Spalling observed at Span-1



Fig 9: Leaching observed on Slab – 1 & Slab-2



Fig 10: Cracks & Spalling observed at Pier



Fig 11: Reinforcement exposure observed at Span-2



Fig 12: Spalling observed at both Abutment Pier caps



Fig 13: Shrinkage cracks observed on A1 & A2 Abutments



Fig 14: Algae observed on Abutment-2



Fig 15: Road surface and drain on ROB