

Name of the Project	:	VISUAL INSPECTION OF ROB 70C
Location	:	NEAR ANANTAPUR RAILWAY STATION
Location Co-ordinates	:	14°40'55.7"N 77°35'34.7"E
Date of Inspection	:	26th NOVEMBER, 2019



Summary:

- a) Severe spalling, Reinforcement exposure has been observed Pier cap & Columns.
- b) Cracks, Spalling, Reinforcement exposure has been observed at slab overhang portions of Span-1 & 3.
- c) Leaching observed in slab at drainage spout locations & girders.
- d) Cracks, Spalling & Reinforcement exposure is observed in Railings.
- e) Distresses observed in all the bearings of the bridge.
- f) Corrosion is observed at Reinforcement exposed locations.
- g) Patch work is observed.

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.

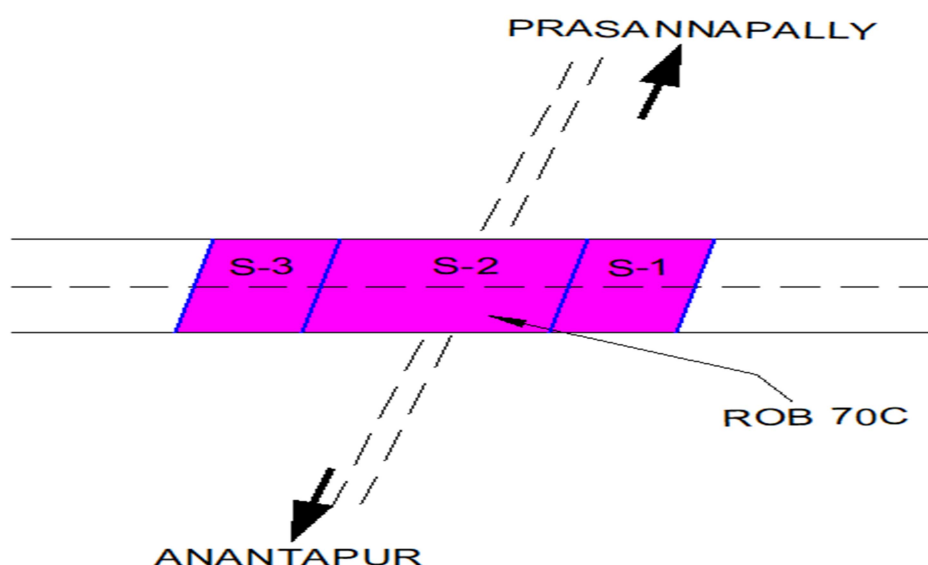
VISUAL INSPECTION OF ROAD OVER BRIDGE

Name of the Project	Visual inspection of ROB 70C
Location	Near Anantapur Railway station
Date of Inspection	26 th November, 2019.

PART 1 GENERAL INFORMATION AND OBSERVATION

1.1	Name of the Bridge	ROB 70C
1.2	Location Location co-ordinates	Near Anantapur Railway station 14°40'55.7"N 77°35'34.7"E
1.3	Type of Bridge	RCC Girder Bridge
1.4	Year of Construction	1965
1.5	Grade of Concrete (Slab)	Data Not Available
1.6	Design Load	Data Not Available
1.7	Carriageway Width	7.25 m
1.8	Overall Deck Width	10.85 m
1.9	Average Skew	10 ⁰
1.10	Span arrangement (no x Span in meters)	1x 7.35 + 1x 13.6 m + 1x 6.85 (Rly concerned)
1.11	No of Railway Lines Crossings	01 track
1.12	Vertical Clearance (from rail top to girder bottom)	6.0 m
1.13	History of Repair/ Maintenance	Yes , Patch works observed
1.14	Original Structural Drawings	Not available

1.15 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	-NA-	
	Maximum height of Abutment from Ground level	-NA-	
	Abutment width along the Track	-NA-	
	Abutment thickness	-NA-	
	Condition (Crack, Settlement, Scour, Tilting, Steel Corrosion, Strains and other damages etc...)	-NA-	
	Efficiency of drainage of backfill Behind Abutments (Check functioning of weep holes, evidence of moisture on Abutment faces, etc.)	-NA-	
2.3	Pier	04 Nos.	
	Type (Shape)	Wall & Portal	The Span 2 Piers are Portal type with 4 rectangular columns and remaining piers are wall type Severe cracks, Spalling, Reinforcement exposure has been observed on Pier. Corrosion is observed on exposed Reinforcement Patch repair works done on columns. (Refer Fig-5)
	Material	RCC	
	No. of Piers in a row/column	-	
	Maximum Height of Pier	4.6 m	
	Pier Diameter/Dimension	Column of 0.78m x 0.78m	
	Pier Cap Material	RCC	
	Pier Cap Condition	Distresses Found	
	Pier Condition (Crack, Settlement, Scour, Tilting, Steel Corrosion, Strains and other Damages etc...)	Distresses Found	

2.4	Bearing & Pedestal		
	Type of Bearings	Metal plate bearings	
	General condition (Check Corrosion, cleanliness, seizing of plates silting, accumulations of dirt in case of Type/ shape of Pedestal		Debris accumulated at all bearings and filled with Mortar (Refer Fig-4)
	General condition (Check Corrosion, cleanliness, seizing of plates silting)		There is no Pedestal
2.5	Super Structure (Concrete Girder)		
	Type/Shape of Girder (I-beam, box-	T-Girder	
	Material of Girder	RCC	
	No of Girder	05 Nos.	For other spans there are 03 longitudinal girders
	Dimensions of Girder		Girder Depth = 1.05 m Width of the bottom flange = 0.6 m
	Structural System of Girder		Simply Supported
	Condition of Girder	Distresses Found	Severe cracks, Spalling, Reinforcement exposure has been observed (Refer Fig-3)
	Type/Shape of Secondary Girder	Rectangular	
	Material of Secondary Girder	RCC	
	No of Secondary Girders	7 Nos.	
	Condition of Secondary Girder	Distresses Found	
2.6	Slab		
	Material of Slab	RCC	
	Thickness of Slab	-	
	Condition of Slab from Bottom	Distresses Found	Cracks, Spalling, Leaching has been Observed.
	Condition of Slab from Top		Not visible, as covered with wearing coat
	Condition of Flooring/Wearing Coat	Fair	Wearing coat is in fair condition (Refer Fig-7)
	Parapet wall/Railing		
	Type of Parapet wall/Railing	RCC Railing	
	Height	1.1 m	
	Condition of Wall/Railing	Distresses Found	Severe cracks, Spalling, Reinforcement exposure has been observed (Refer Fig-6)

PART 3 SURVEY OF SIGNS OF DISTRESS, DEFORMATION IN BRIDGES			
	Defects	Location	Notes
	Cracking in RCC components	Slab, Girders, Pier & Railing	Cracks are observed on Slab, Girders, Pier & Railing
	Water seepage	-	No Water seepage is observed
	Spalling	Slab, Girders, Pier & Railing	Spalling is observed on Slab, Girders, Pier & Railing
	Reinforcement Exposure	Slab, Girders, Pier & Railing	Reinforcement Exposure is observed on Slab, Girders, Pier & Railing
	Corrosion	Slab, Girders, Pier & Railing	Corrosion is observed on Slab, Girders, Pier & Railing Reinforcement Exposed location



Fig: 1 Front View of ROB



Fig: 2 Bottom view of the ROB



Fig 3: Cracks & Spalling observed in girders



Fig 4: Mortar Patching & Distresses observed at Bearings

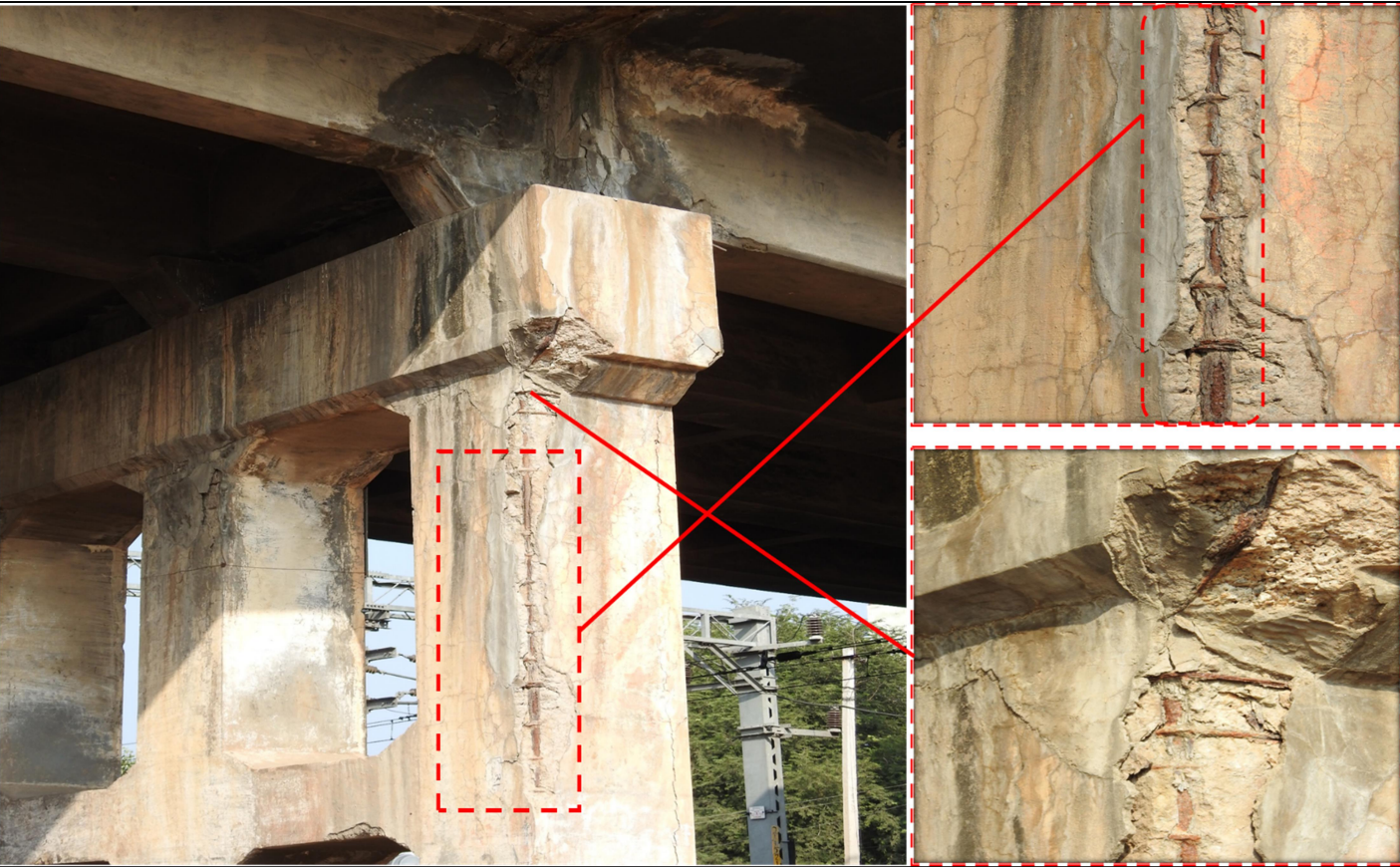


Fig 5(a): Spalling & Reinforcement exposure in column and cap of Pier

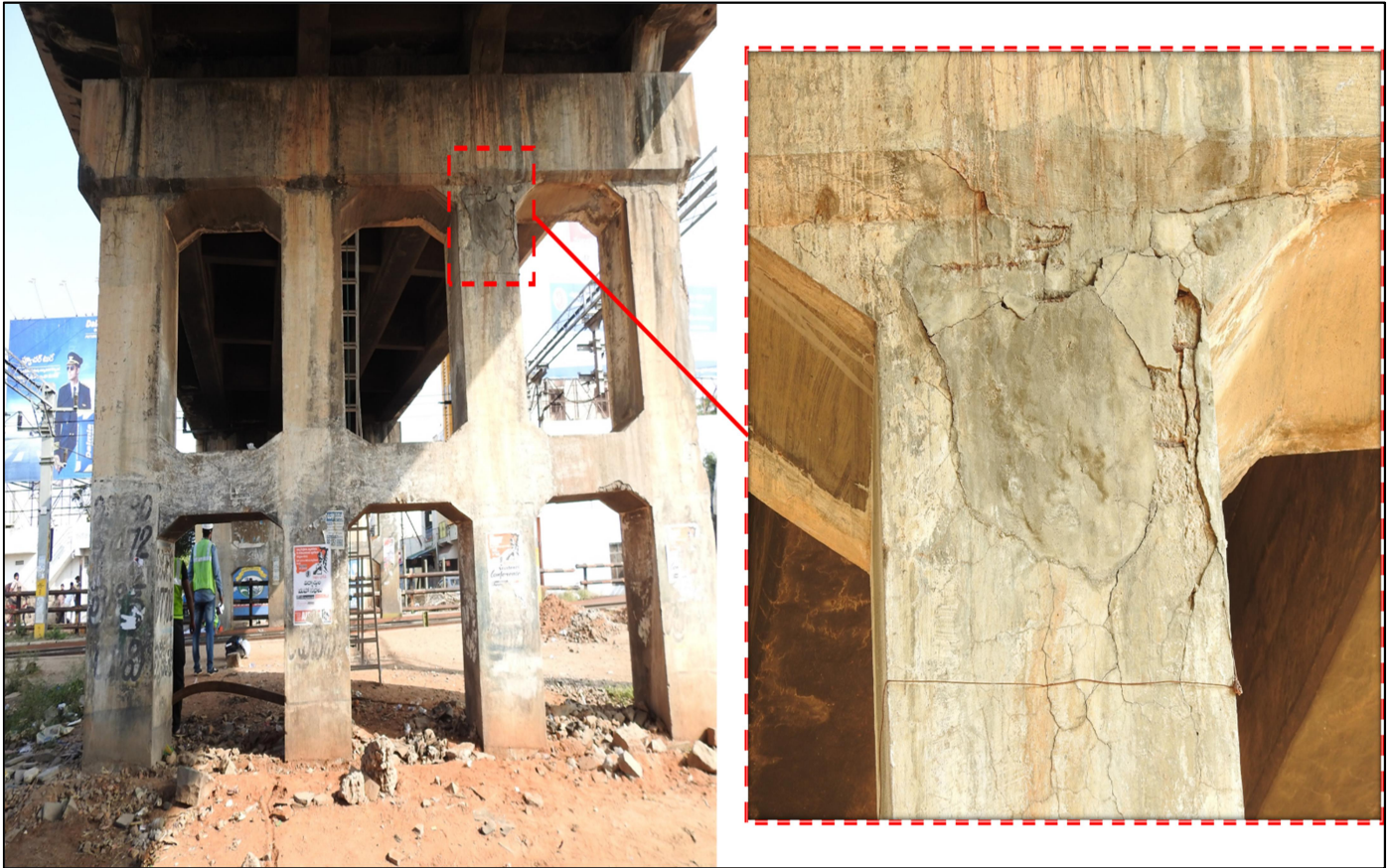


Fig 5(b): Cracks, Spalling & Patching works in column and cap of Pier



Fig 5(c): Damage & Reinforcement exposure on column and cap of Pier



Fig 5(d): Leaching at girder and Slab at drainage spout location



Fig 6: Distressed / Poor condition of Railing



Fig 7: Top View / Wearing coat of the Bridge



Fig 8: Spalling, Leaching & Reinforcement exposure on slab of Span-1



Fig 9: Cracks observed at girder seating location of Span-3.



Fig 9: Spalling & Reinforcement exposure at Slab of span-3.