

**Name of the Project** : VISUAL INSPECTION OF ROB-117/A  
**Location** : NEAR RAGHAVAPURAM  
**Location Co-ordinates** : 18°44'20.8"N 79°25'48.9"E  
**Date of Inspection** : 29<sup>th</sup> NOVEMBER, 2019



**Summary:**

- a) Minor spalling and Reinforcement exposed at overhang portion of slab
- b) Minor spalling is observed at Main girder, secondary girder and abutment.
- c) Cracks are observed at main girder resting location.
- d) Shrinkage cracks are observed at girders and abutments.
- e) Leaching and is observed at Abutments and deck slab.
- f) Vegetation growth is observed at Abutment and at drainage spouts

**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.

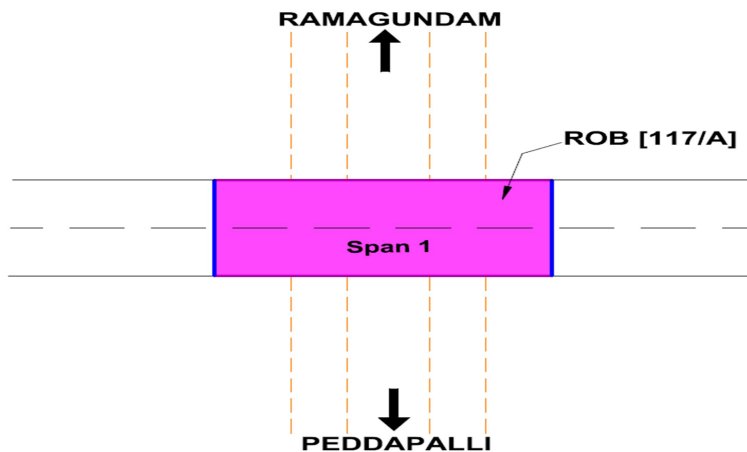
### VISUAL INSPECTION OF ROAD OVER BRIDGE

|                     |                                  |
|---------------------|----------------------------------|
| Name of the Project | Visual inspection of ROB 177/A   |
| Location            | Near Raghavapuram                |
| Date of Inspection  | 29 <sup>th</sup> November, 2019. |

#### PART 1 GENERAL INFORMATION AND OBSERVATION

|      |                                                     |                           |
|------|-----------------------------------------------------|---------------------------|
| 1.1  | Name of the Bridge                                  | ROB 117/A                 |
| 1.2  | Location                                            | Near Raghavapuram         |
|      | Location co-ordinates                               | 18°44'20.8"N 79°25'48.9"E |
| 1.3  | Type of Bridge                                      | RCC Bridge                |
| 1.4  | Year of Construction                                | 1981                      |
| 1.5  | Grade of Concrete (Slab)                            | Data Not Available        |
| 1.6  | Design Load                                         | Data Not Available        |
| 1.7  | Carriageway Width                                   | 7.1 m                     |
| 1.8  | Overall Deck Width                                  | 8.35 m                    |
| 1.9  | Average Skew                                        | Not in skew               |
| 1.10 | Span arrangement (no x Span in meters)              | 1 x 12.2 m                |
| 1.11 | No of Railway Lines Crossings                       | 2 tracks                  |
| 1.12 | Vertical Clearance (from rail top to girder bottom) | 5.8 m                     |
| 1.13 | Horizontal Clearance (Pole to Rail track)           | 1.5 m                     |
| 1.14 | History of Repair/ Maintenance                      | Not visible               |
| 1.15 | Original Structural Drawings                        | Not available             |

1.16 Key Plan



| PART 2 STRUCTURAL SYSTEM OF THE BRIDGE |                                                                                                                                     |          |                                                      |
|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|----------|------------------------------------------------------|
|                                        |                                                                                                                                     |          | Notes                                                |
| <b>2.1</b>                             | <b>Foundation details</b>                                                                                                           |          | Not visible at site                                  |
|                                        | Type of foundation                                                                                                                  |          |                                                      |
|                                        | Foundation Details (if available...)                                                                                                |          |                                                      |
|                                        | Foundation Status<br>(Check Settlement, abnormal Scour and Tilting, if any etc....)                                                 |          |                                                      |
|                                        | Type Of Damage (Check cracking, disintegration, decay, erosion, Cavitation's etc.,)                                                 |          |                                                      |
| <b>2.2</b>                             | <b>Abutment (A1 &amp; A2)</b>                                                                                                       |          |                                                      |
|                                        | Type                                                                                                                                | Concrete |                                                      |
|                                        | Maximum height of Abutment from Ground level                                                                                        | 6.4 m    |                                                      |
|                                        | Abutment width along the Track                                                                                                      | 12 m     |                                                      |
|                                        | Abutment thickness                                                                                                                  | 1.8 m    |                                                      |
|                                        | Condition (Crack, Settlement, Scour, Tilting, Steel Corrosion, Strains and other damages etc...)                                    |          | Minor spalling and Shrinkage cracks observed         |
|                                        | Efficiency of drainage of backfill Behind Abutments (Check functioning of weep holes, evidence of moisture on Abutment faces, etc.) | Good     | Weep holes are functioning properly.                 |
| <b>2.3</b>                             | <b>Pier</b>                                                                                                                         |          |                                                      |
|                                        | Type (Shape)                                                                                                                        |          | There is no Pier, as bridge is having only one span. |
|                                        | Material                                                                                                                            |          |                                                      |
|                                        | No. of Piers in a row/column                                                                                                        |          |                                                      |
|                                        | Maximum Height of Pier                                                                                                              |          |                                                      |
|                                        | Pier Diameter/Dimension                                                                                                             |          |                                                      |
|                                        | Pier Cap Material                                                                                                                   |          |                                                      |
|                                        | Pier Cap Condition                                                                                                                  |          |                                                      |
|                                        | Pier Condition (Crack, Settlement, Scour, Tilting, Steel Corrosion, Strains and other Damages etc...)                               |          |                                                      |
|                                        |                                                                                                                                     |          |                                                      |
|                                        |                                                                                                                                     |          |                                                      |

|            |                                                                                                                                   |                  |                                                         |
|------------|-----------------------------------------------------------------------------------------------------------------------------------|------------------|---------------------------------------------------------|
| <b>2.4</b> | <b>Bearing &amp; Pedestal</b>                                                                                                     |                  |                                                         |
|            | Type of Bearings                                                                                                                  |                  | Bearings are covered with mortar (Refer Fig-4,5)        |
|            | General condition (Check Corrosion, cleanliness, seizing of plates silting, accumulations of dirt in case of submersible bridges) |                  |                                                         |
|            | Type/ shape of Pedestal                                                                                                           |                  | No pedestal observed                                    |
|            | General condition (Check Corrosion, cleanliness, seizing of plates silting)                                                       |                  |                                                         |
| <b>2.5</b> | <b>Super Structure (Concrete Girder)</b>                                                                                          |                  |                                                         |
|            | Type/Shape of Girder (I-beam, box-                                                                                                | T-Girder         |                                                         |
|            | Material of Girder                                                                                                                | RCC              |                                                         |
|            | No of Girder                                                                                                                      | 03 Nos.          |                                                         |
|            | Dimensions of Girder                                                                                                              | 1.32 x 0.56m     |                                                         |
|            | Structural System of Girder                                                                                                       | Simply Supported |                                                         |
|            | Condition of Girder                                                                                                               |                  | Spalling and cracks observed                            |
|            | Type/Shape of Secondary Girder                                                                                                    | Rectangular      |                                                         |
|            | Material of Secondary Girder                                                                                                      | RCC              |                                                         |
|            | No of Secondary Girders                                                                                                           | 3 Nos.           |                                                         |
|            | Condition of Secondary Girder                                                                                                     |                  | Minor spalling observed. (Refer Fig-7)                  |
| <b>2.6</b> | <b>Slab</b>                                                                                                                       |                  |                                                         |
|            | Material of Slab                                                                                                                  | RCC              |                                                         |
|            | Thickness of Slab                                                                                                                 | 200mm            |                                                         |
|            | Condition of Slab from Bottom                                                                                                     |                  | Leaching and vegetation growth observed. (Refer Fig-3,) |
|            | Condition of Slab from Top                                                                                                        |                  | Not visible, as covered with wearing coat               |
|            | Condition of Flooring/Wearing Coat                                                                                                |                  | Good condition (Refer Fig-13)                           |
|            | Parapet wall/Railing                                                                                                              |                  |                                                         |
|            | Type of Parapet wall/Railing                                                                                                      | RCC wall         |                                                         |
|            | Height                                                                                                                            | 1.2 m            |                                                         |

|                           |                                                             |
|---------------------------|-------------------------------------------------------------|
| Condition of Wall/Railing | No Accidental hit marks are observed on wall (Refer Fig-13) |
|---------------------------|-------------------------------------------------------------|

| PART 3 SURVEY OF SIGNS OF DISTRESS, DEFORMATION IN BRIDGES |                            |                   |                                                         |
|------------------------------------------------------------|----------------------------|-------------------|---------------------------------------------------------|
|                                                            | Defects                    | Location          | Notes                                                   |
|                                                            | Cracking in RCC components | Girder, abutments | Shrinkage cracks are observed on abutments.             |
|                                                            | Water seepage              |                   | No water seepage is observed during visual inspection.  |
|                                                            | Leaching                   | Slab, Abutment    | Leaching is observed                                    |
|                                                            | Spalling                   |                   | Minor spalling is observed at abutments and main girder |
|                                                            | Reinforcement Exposure     | Slab              | Minor Reinforcement Exposure is observed.               |



**Fig: 1** Front View of ROB



**Fig: 2** Abutments (A1 and A2)



**Fig: 3** Bottom view, Leaching observed



**Fig 4:** Bearings at Abutment 1



**Fig 5:** Bearings at Abutment 2



**Fig 6:** Spalling and crack at main girder resting location



**Fig 7:** Minor Spalling, leaching at Abutment



**Fig 8:** shrinkage cracks at main girders

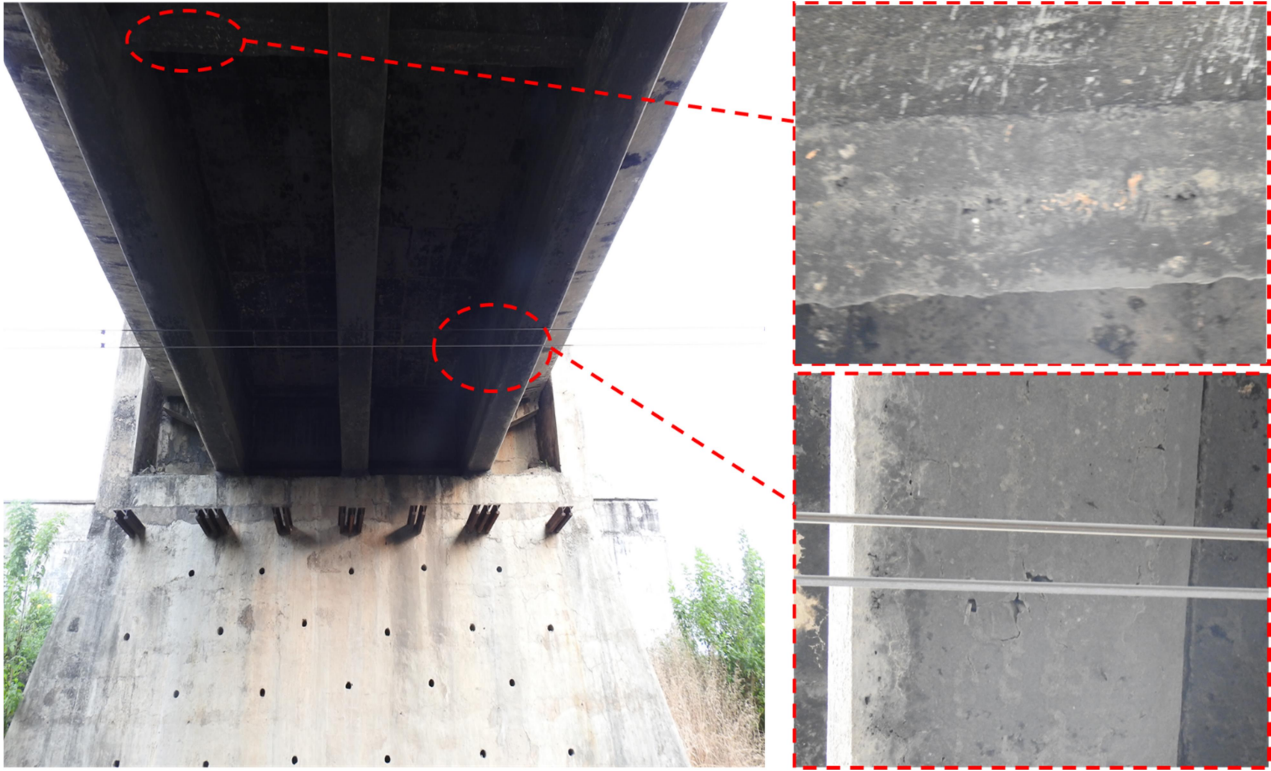


**Fig 9:** Minor spalling at secondary and main girder



**Fig 10:** Spalling at Overhang Slab portion



**Fig 11: Shrinkage cracks and minor spalling at Abutment 1**



**Fig 12: Vegetation observed at abutment and Drainage spouts**



***Fig 13: Road surface & Parapet wall***