

Name of the Project	:	VISUAL INSPECTION OF FOB/ PF-1 - PF-2 AT LAKDIKAPUL RAILWAY STATION
Location	:	LAKDIKAPUL RAILWAY STATION
Location Co-ordinates	:	17°24'22.0"N 78°27'43.6"E
Date of Inspection	:	18 th September 2019



Summary:

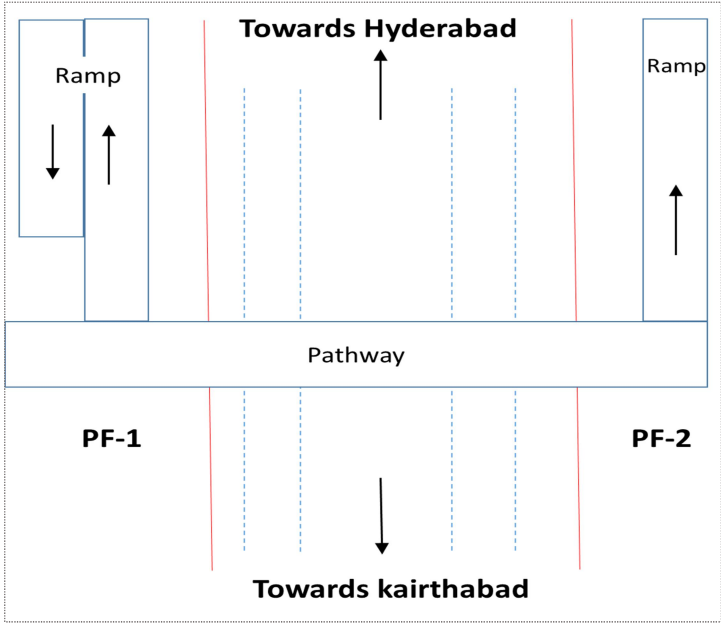
- a) From visual inspection, slight rusting is observed at bottom of sacrificial plate.
- b) Mild Corrosion is observed at Trestles (Double channel section) on PF-2.

Tests to be conducted:

- a) Ultrasonic Thickness gauge to measures local thickness of a solid element.
- b) Elcometer (Coating thickness Gauge) to measures dry film thickness on steel surfaces.
- c) Ultrasonic Flaw detector to detect hidden cracks, voids, porosity, and other internal discontinuities in metals.
- d) Fillet weld gauge to measures the size of the weld.
- e) Profometer Test for concrete cover and diameter of rebar.
- f) Rebound Hammer test surface strength of concrete (For Pre-cast slab panels and staircase)

FORMAT FOR VISUAL INSPECTION OF STEEL FOOT OVER BRIDGE

Name of the Project	Visual inspection of FOB/ PF-1 - PF-2 at Lakdikapul railway station
Location	Lakdikapul Railway Station
Date of Inspection	18-09-2019

PART 1 GENERAL INFORMATION AND OBSERVATION		
1.1	Name of the Bridge	FOB/ PF-1 - PF-2
1.2	Location of Bridge	Lakdikapul Railway Station
1.3	Type of truss Structure	Pratt Truss with cross bracing at center
1.4	Year of Construction	Not available
1.5	Description of the main use of the bridge	Pedestrians Crossing
1.6	Major Materials used in different parts of bridge	Structural Steel (truss, frame), RCC (Slab, Staircase)
1.7	Width of the pathway (m)	2.5 m
1.8	Length of the pathway (m)	18.6 m
1.9	No of Railway Lines Crossings	2 tracks
1.10	Span arrangement (no x Span in meters)	1x 18.6 m
1.11	Vertical Clearance (from rail top to girder bottom)	6.7 m
1.12	Head Room	Not available
1.13	Damages due to accidental hitting, Grazing Marks	No Visible signs appear
1.14	History of Repair/ maintenance	Not available
1.15	Original structural drawings	Not available
1.16	<p>Key Plan</p> 	

PART 2 IDENTIFICATION OF LOADS ON BRIDGE			
		Yes/No	Remarks
	Dead Loads at Roof level		
2.1	a) Pipeline - Utilities	No	Not observed at site
	b) Cables	Yes	1-inch Hollow circular sections are used (truss member)
	c) Roof Truss	Yes	(Refer <i>fig :1</i>)
	d) Roof Sheet	Yes	Steel Metal Sheet is used for Roof (Refer <i>fig :2</i>)
	e) load of advertising hoarding	No	No Advertising boards are provided
	f) load of train/coach display boards	No	No train coach display boards are provided
	g) Electrical equipment (OHE), signal	No	No electrical equipment and signal are provided
2.2	Dead Loads at Floor level		
	a) Additional wearing coat on Floor	No	Only Chequered tiles used for Flooring
	b) Provision of protective screen for passengers	Yes	Chain link fence made of Galvanized wire of 2 mm gauge and 2 mm Galvanized sheet is used above OHE Line on both side of pathway is used for Protection. Mesh frame is supported with angular and MS flats. (Refer <i>fig :1</i>)
	c) Type of Material used for mesh	Galvanized wire mesh	

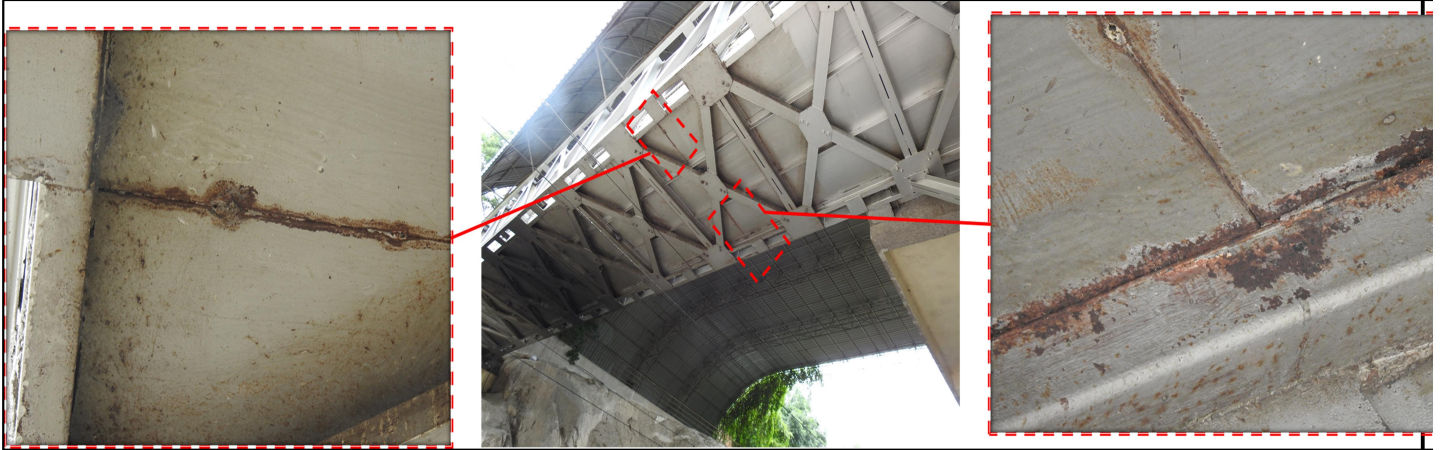
PART 3 STRUCTURAL SYSTEM OF THE BRIDGE			
			Photo ID
3.1	Foundation Details		Not visible at site
3.2	Trestles details		
	Type of Pedestal	Concrete	Concrete encasement is observed below vertical supports (Refer <i>fig :3</i>)
	Trestles Connection Details		
	a) No of Bolts and size	Not visible	
	b) Thickness of Base Plate	Not visible	
3.3	Roof Truss		
	Element of roof truss section	circular truss supported with hollow pipes	2-inch tubular truss with plate welded to top chord members on one side. (Refer <i>fig :2</i>)
	Size of roof truss		
	Connection of Roof elements	Welded	
3.4	Steel Truss		
	Shape of Truss Section	N- type truss, Double Channel sections	a. Top and bottom Chord members are ISMC 150 double channel section back to back
	Height of Truss (H)	1.85 m	b. Diagonal bracings and vertical bracings of ISMC 150 Double channel section.

	Girder/Truss Support Condition	Ridged connection	c. Secondary Girders are ISMC 150 Double channel section. (Refer fig :4)
	Type/Shape of Secondary Girder /Bracings	Double channel section	
	No of Secondary Girders/bracings for span	10 no's	
	Arrangement of Bracings	Diagonal	
	Type of Beam-Column Joint (shape of gusset plate if any)	Cleat angles	
3.5	COLUMN		
	Type/Shape of Column section	Channel Section	a. Truss supported on ISMC 250 double channel section b. Supported with angular bracings of 90x 90 x 8 mm c. 10 mm thick gusset plate is used. (Refer fig :3)
	No of Columns/support	4	
	Dimensions of Column	ISMC 250	
	BEAM-Column joint (bolted, welded, riveted)	Bolted connection	
3.6	FLOOR SLAB OF THE PATHWAY		
	Material of Slab	RCC	a. RCC slab casted in site supported on sacrificial plate. b. Chequered tiles of 25 mm thick are observed on FOB. c. RCC slab is supported by secondary girders of ISMC150 (Refer fig :5)
	Thickness of Slab	Not visible at site	
	Condition of Slab from Bottom	Slabs supported with Sacrificial plate	
	Condition of Slab from Top	RCC slab is not visible, Covered with Chequered tiles	
	Condition of sheeting – leaky roof	Not visible on site	
3.7	Ramp Details		
	Width of ramp	2.3 m	Ramp is supported on RCC columns for a length of 49.54 m at PF-1 and 60 m on rock at PF-2 (Refer fig :6)
	Material used for Ramp	RCC slab with Chequered tiles	
3.8	Ramp Railing		
	Type of Parapet Railing	Steel railing	Stair case is provided with Railing on both sides of one-meter height using Hollow Circular sections. (Refer fig :6)
	Height of Railing	1 m	

PART 4 SURVEY OF SIGNS OF DISTRESS, DEFORMATION IN BRIDGES

4.1

- ✓ Slight corrosion is observed between two sacrificial plate joints



Corrosion observed at sacrificial plates

4.2

- ✓ Mild Corrosion is observed at Trestles (Double channel section) at PF-2



Corrosion observed in Double channel section

PART 4 SURVEY OF SIGNS OF DISTRESS, DEFORMATION IN BRIDGES			
	Defects	Location	Notes
	Cracking in Steel Members		No cracks are observed in Steel during visual inspection
	Cracking in RCC components		No cracks are observed in RCC components
	Spalling		No Spalling is observed in RCC members.
	Rust straining	Sacrificial plate	Rusting is observed at bottom of FOB (Refer Part 4- 4.1)
	Extent of Corrosion		No Corrosion is observed along the span of FOB
	Corrosion in Gusset plate		No Rusting is observed in Gusset plates
	Condition of Painting of steel structure		Painting is affected at corroded places



Fig 1: Electrical Cables and Protective screening mesh for passengers



Fig 2: Roof Sheet and Roof truss



Fig 3: Trestles and their protection with concrete encasement



Fig 4: Top and bottom main chord members with vertical and diagonal bracings



Fig 5: Slab is supported with sacrificial plate

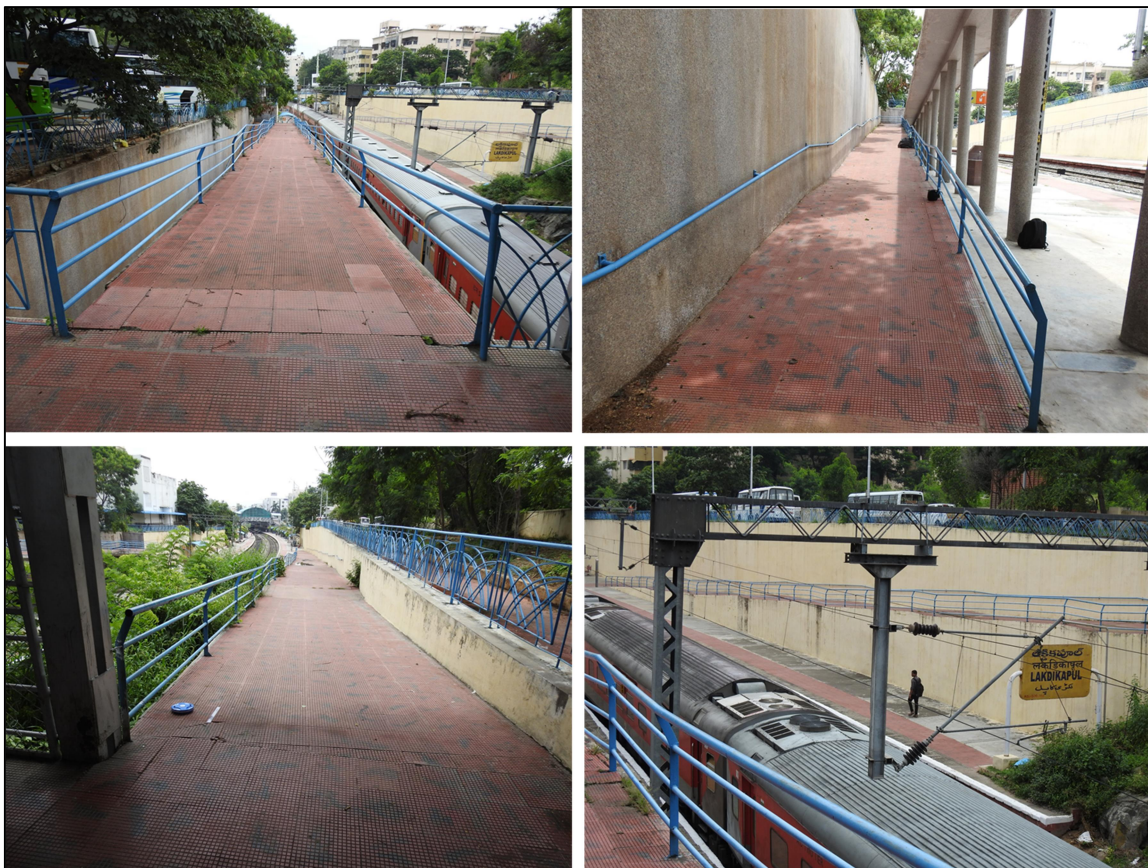


Fig 6: Ramp on PF-1 and PF-2