

Name of the Project	:	VISUAL INSPECTION OF FOB AT PASIVEDALA RAILWAY STATION
Location	:	PASIVEDALA RAILWAY STATION
Location Co-ordinates	:	16°59'38.4"N, 81°42'05.3"E
Date of Inspection	:	9th NOVEMBER, 2019



Summary:

- a) Cracks and Spalling observed at RCC slab panels of Flights & Landings of Staircases.
- b) Corrosion is observed in Floor Beams.
- c) Corrosion is observed in Gusset Plates of Spans & Staircases.
- d) Reinforcement exposure observed in Flights & Landings of Staircases.
- e) Corrosion is observed in Bottom chords, Trestles & Stanchion.

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)

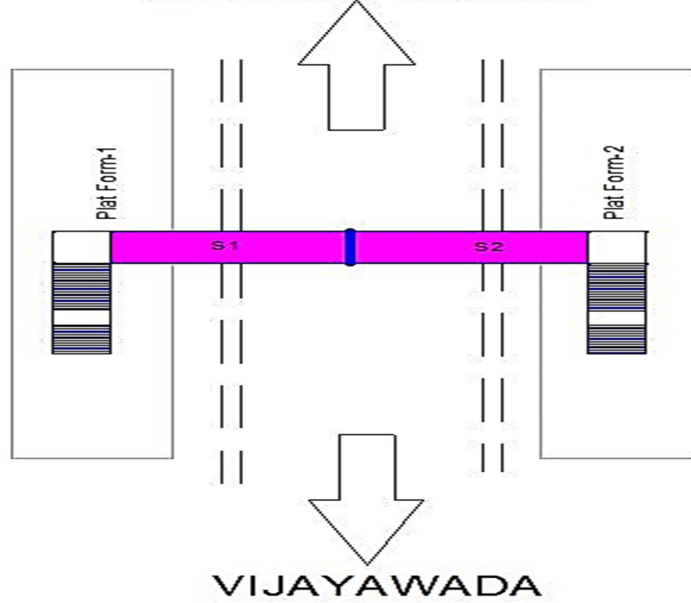
VISUAL INSPECTION OF STEEL FOOT OVER BRIDGE

Name of the Project	Visual inspection of FOB at Pasivedala Railway Station
Location	Pasivedala Railway Station
Date of Inspection	09-11-2019

PART 1 GENERAL INFORMATION AND OBSERVATION

1.1	Name of the Bridge	FOB
1.2	Location Location co-ordinates	Pasivedala Railway Station 16°59'38.4"N, 81°42'05.3"E
1.3	Type of truss Structure	Warren Truss with Verticals (fabricated with NG rails)
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	a. NG Rail b. Pre-cast RCC Slab panels (Staircase) c. MS steel plate for deck pathway
1.7	Width of the Pathway (m)	1.8 m
1.8	Length of the Pathway (m)	20.1 m
1.9	No of Railway Lines Crossings	2 tracks Span 1 = 1 Span 2 = 1
1.10	Span arrangement (no x Span in meters)	1 x 7.8 m + 1 x 7.95 m
1.11	Vertical Clearance (from rail top to girder bottom)	6.363 m
1.12	Head Room	No Roof Truss
1.13	Damages due to accidental hitting, Grazing Marks	No Visible signs appear
1.14	History of Repair/ Maintenance	Not Observed
1.15	Original Structural Drawings	Not available
1.16	Key Plan	

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PART 2 IDENTIFICATION OF LOADS ON BRIDGE

		Yes/No	Notes
	Dead Loads at Roof level		
2.1	a) Pipeline - Utilities	No	
	b) Cables	No	
	c) Roof Truss	No	
	d) Roof Sheet	No	No Roof Truss is provided.
	e) load of advertising hoarding	No	
	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	Yes	Steel Plate provided as floor (Refer fig :2)
	b) Provision of protective screen for passengers	Yes	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 passengers Protection.
	c) Type of Material used for mesh	GI wire mesh	(Refer fig :2)

PART 3 STRUCTURAL SYSTEM OF THE BRIDGE

		Notes
3.1	Foundation details	Not visible at site
3.2	Pedestals	
	Trestles Connection Details	Not visible at site
	No. of Bolts and size	Not visible at site
	Thickness of Base Plate	Not visible at site
3.3	Roof Truss	
	Element of roof truss section	
	Size of roof truss	No Roof truss as FOB is Open to Sky.
	Connection of Roof elements	

3.4	Steel Truss		
	Type /Shape of Truss Section	NG Rail sections	a) Top Chord & Bottom Chord members are 45 x 85 x 85 (Head x Height x Base) Rail sections. b) 45 x 85 x 85 (Head x Height x Base) Rail sections are used as vertical members. c) 45 x 85 x 85 (Head x Height x Base) Rail sections and ISMC 150 are used as Floor beams. d) 45 x 85 x 85 (Head x Height x Base) Rail sections are used as Bracings.(Refer fig : 6)
	Height of Girder/Truss (H)	1.85 m	
	Truss Support Condition	Rigid Connection	
	Type/Shape of Floor beam /Bracings	Rail Section	
	No of Floor beams/bracings	Span 1 = 9 No's Span 2 = 9 No's	
	Arrangement of Bracings	Zigzag bracings	
	Type of Beam-Column Joint (shape of gusset plate if any)	Cleat Angle	
3.5	COLUMN		
	Type/Shape of Column section	Bull headed Rail Sections	a. Trestles & Stanchion Columns are 2/ 65 x 135 x 135 (Head x Height x Base) Rail sections. b. Cross Bracings in Trestles & Stanchions are 65 x 65 x 8 mm Angle are used. (Refer fig : 3)
	No of Columns/ support	4/2	
	Dimensions of Column		
	BEAM-Column joint (bolted, welded, riveted)	Bolted	
3.6	Floor of the Pathway		
	Material of Slab	MS steel plate for gangway and RCC Pre-cast panels for staircase steps	Steel plate of 8 mm thickness is used in the spans as deck floor. (Refer fig : 2, 4)
	Thickness of MS steel plate	8 mm	
	Condition of Slab from Bottom	Slight rusting near joints	
	Condition of Slab from Top	Rusting of MS Steel plate	
3.7	Staircase Details		
	Number of Staircase	2 No's	Staircase is observed as Pre cast RCC Slab panels supported on 45 x 80 x 80 (Head x Height x Base) Rail Stringer Beams on both sides. (Refer fig :5)
	Number of Steps from Circulating Area – 1	34	
	Number of Steps from Circulating Area – 2	39	
	Material used for Staircase Slab	Pre-cast RCC Slab Panel	
3.8	Staircase Railing		
	Type of Parapet Railing	Steel Railing	Staircases are provided with railing on both sides using 45 x 80 x 80 (Head x Height x Base) Rail sections. (Refer fig :5)
	Height of Railing	1.4 m	

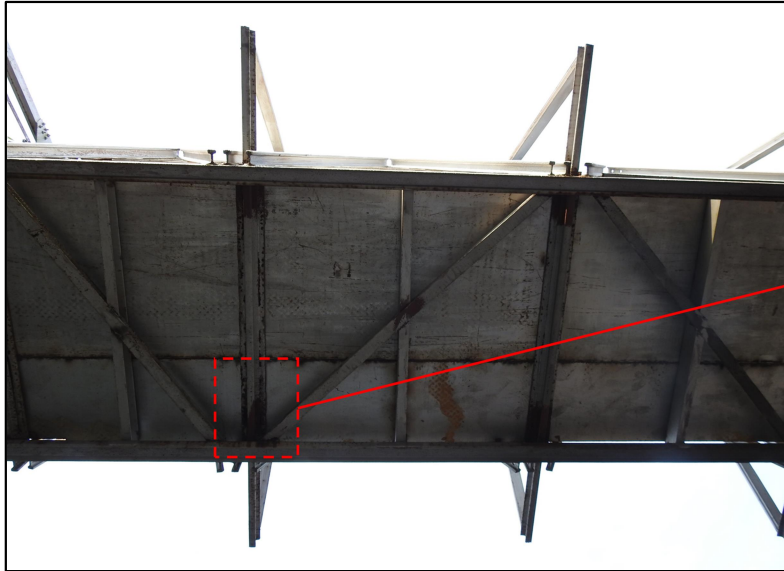
PART 4 SURVEY OF SIGNS OF DISTRESS, DEFORMATION IN BRIDGES

4.1

✓ Corrosion observed in floor beams all over the FOB.







Corrosion of Floor beams

4.2	✓ Exposed reinforcement and corrosion in staircase landing on both ends of FOB.
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a) Exposed reinforcement and spalling in staircase-2 landing



b) Exposed reinforcement and spalling in staircase-1 landing



c) Exposed Reinforcement in staircase

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	Staircase landing	Cracks are observed in Pre-cast RCC slab panels of Staircase & Main Slab. (Refer: Part 4.2, Fig- a, b).
	Water seepage	-	Seepage not observed
	Spalling	Staircase landing	Spalling is observed in staircase-pre-cast panels. (Refer: Part 4.2, Fig- a, b).
	Rust straining	Floor Beams	Corrosion is observed at all the joints & floor beams of FOB. (Refer: Part 4.1).
	Corrosion in Gusset plate	Gusset plates	corrosion is observed in Gusset Plates (Refer fig :7)
	Condition of Painting of steel structure		Painting is in fair condition



Fig 1: Front view of FOB



Fig 2: MS Sheet pathway, protective screen



Fig 3: Stanchion column details



Fig 4: Bottom view of FOB



Fig 5: Details of staircase



Fig 6: Arrangement of Truss



Fig 7: Corroded gusset plate coated with red oxide paint