

Name of the Project	:	VISUAL INSPECTION OF FOB AT REPALLE RAILWAY STATION
Location	:	REPALLE RAILWAY STATION
Location Co-ordinates	:	16°01'08.4"N 80°49'44.2"E
Date of Inspection	:	09th NOVEMBER,2019



Summary:

- a) Corrosion is observed at Stringer beams of Staircase.
- b) Rusting is Observed at bracings of Staircase Flight
- c) Corrosion is observed at Floor beams of FOB.
- d) Corrosion is observed at Cleat angles connecting Stanchion and Staircase and Gusset plates.
- e) All the Corroded parts of the FOB are painted but the Element size is reduced at corroded locations.

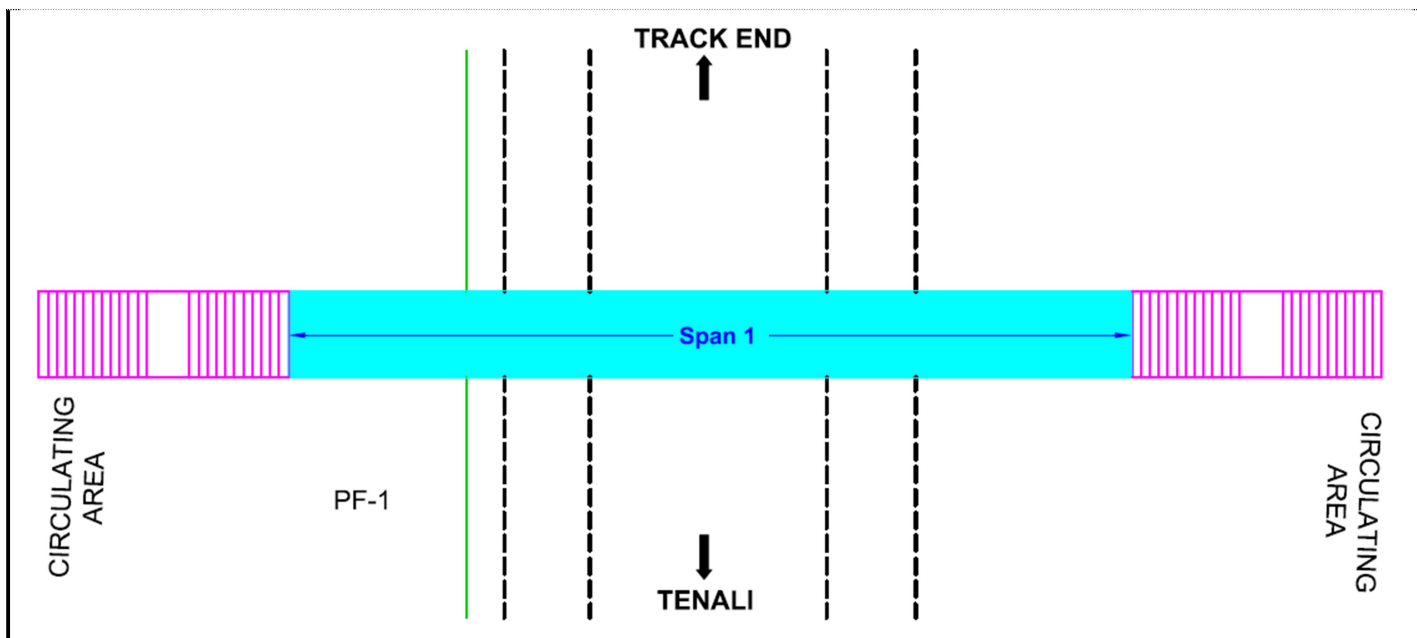
Tests to be conducted:

- 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 FOOT OVER BRIDGE

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

PART-1 GENERAL INFORMATION AND OBSERVATION		
1.1	Name of the Bridge	FOB/ PF-1 – Circulating area
1.2	Location Location co-ordinates	Repalle Railway Station 16°01'08.4"N 80°49'44.2"E
1.3	Type of truss Structure	Plate Girder Bridge
1.4	Year of Construction	-
1.5	Description of the main use of the bridge	Pedestrians Crossing
1.6	Major Materials used in different parts of bridge	a. Structural Steel (Frame), b. RCC Cast In-situ Slab (Floor slab)
1.7	Width of the Pathway (m)	1.95 m
1.8	Length of the Pathway (m)	13.45 m
1.9	No of Railway Lines Crossings	2 tracks
1.10	Span arrangement (no x Span in meters)	12.611m (clear span)
1.11	Vertical Clearance (from rail top to girder bottom)	5.673 m
1.12	Head Room	2.51 m
1.13	Damages due to accidental hitting, Grazing Marks	-
1.14	History of Repair/ Maintenance	Painting has been done.
1.15	Original Structural Drawings	Not available
1.16	Key Plan	



PART 2 IDENTIFICATION OF LOADS ON BRIDGE

		Yes/No	Notes
	Dead Loads at Roof level		
2.1	a) Pipeline - Utilities	Yes	a. 1" & 2" GI pipes and 1" HDPE pipe - 3 Nos are supported along the length of girder and 1.5" GI pipe is supported on Stanchions and Mid landing. (Refer fig :3) b. King post Trusses are used for Roof truss(Refer fig :9) c. Insulated Electrical Lines are supported on Roof Truss. (Refer fig :9) d. Corrugated Metal Sheet is used for Roofing (Refer fig : 1)
	b) Cables	Yes	
	c) Roof Truss	Yes	
	d) Roof Sheet	Yes	
	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	CC Flooring(Refer fig :2)
	b) Provision of protective screen for passengers	No	Steel Railing is provided with 65 x 50 x 8 angle section and 45 x 10mm MS flat, supported on Composite Girder

PART 3 STRUCTURAL SYSTEM OF THE BRIDGE

		Notes
3.1	Foundation details	Not visible at site
3.2	Pedestals	Not visible at site

	Trestles Connection Details		Concrete Encasement is provided
	No. of Bolts and size		
	Thickness of Base Plate	Not visible at site	
3.3	Roof Truss		
	Element of roof truss section	Angle section	King post Truss of 75 x 75 x 8 mm Angles are used as Roof truss supported with bracings of 65 x 65 x 8 mm Angle section(Refer fig: 9)
	Size of roof truss	2.00 x 0.60 m	
	Connection of Roof elements	Welded	
3.4	Steel Truss		
	Type /Shape of Truss Section	Plate Girder	a) Built-up Plate girder of 850 x 350mm (Height x Flange)I-section with 16mm thick plate supported by 75 x 75 x 10mm Angle stiffeners with Riveted joint. (Refer fig : 5) b) ISMC 150 mm Channel sections are used as Floor beams. c) Bottom Lateral Bracings 75x75x8mm Angle section in Zig-zag pattern are used
	Height of Girder/Truss (H)	0.85 m	
	Truss Support Condition	Rigid connection	
	Type/Shape of Floor beam /Bracings	Channel section	
	No of Floor beams/bracings	6	
	Arrangement of Bracings	Zig-Zag bracing	
	Type of Beam-Column Joint (shape of gusset plate if any)	Gusset	
3.5	COLUMN		
	Type/Shape of Column section	Built up Section with Channels	a. FOB is supported on vertical column of Built-up Channel section 300 x 200, with bracings of 50 x 65 x 8 Angle section. b. Stanchion 1 and 2 column has built up section of Two channels of ISMC 300 mm with Single lacing system of 65 x 14mm M.S flat. (Refer fig : 4) c. Staircase Mid landing is supported by Rail section of 65 x 130 x 65mm, with bracings of 50 x 65 x 10 angle section and 64 x 14 M.S flat (Refer fig : 7)
	No of Columns/ support	2	
	Dimensions of Column	300x200 mm	
	BEAM-Column joint (bolted, welded, riveted)	Riveted	
3.6	Floor of the Pathway		
	Material of Slab	RCC	a. Cast in-situ Reinforced concrete slab is used for floor slab of 200 mm thick, on Sacrificial Plate. b. CC flooring is laid on the top of the Floor slab.(Refer fig : 2)
	Thickness of Slab	200 mm	
	Condition of Slab from Bottom	RCC slab is not visible, due to Sacrificial plate	
	Condition of Slab from Top	RCC slab is not visible, due to CC	

		flooring	
3.7	Staircase Details		
	Number of Staircase	2 No's	Staircase is observed as Cast in-situ RCC Slab supported on Stringer beam of ISMC 200 mm Channel section and cross bracings of 75 x 75 x 8mm angle section.(Refer fig : 6)
	Number of Steps from Circulating area 1	36 no's	
	Number of Steps from Circulating area 1	40 no's	
	Material used for steps	Cast In-situ RCC Slab	
3.8	Staircase Railing		
	Type of Parapet Railing	Steel Railing	Staircase is provided with railing on both sides using 65 x 50 x 10 angle section and 45 x 10 mm M.S flats are used.(Refer fig : 6)
	Height of Railing	1.35	



a) Corrosion observed at Staircase 1 Stringer beam



b) Corrosion observed at Staircase 2 Stringer beam and Rusting of cross bracing

4.2	✓ Corrosion observed at floor beams of FOB
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a) Corrosion observed at floor beams of FOB



b) Corrosion observed at cleat angle connecting Stanchion and Stair and Gusset plates Joints

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 observed
	Water seepage		No visual signs appear.
	Spalling		No spalling is observed.
	Rust straining		Rusting is observed at Cross bracing Supporting Staircase Flight. (Refer Part 4.1 b)
	Corrosion	Floor level	Corrosion is observed at the Floor Beams of FOB. (Refer Part 4.2)
	Corrosion at steel-Concrete joint		Corrosion is observed at Stringer beams of Stair case and at cleat angles connecting Stanchion and Stair case (Refer Part 4.1 & Part 4.2 b)
	Condition of Painting of steel structure		Painting is affected at distressed places.



Fig 1(a): Front view of FOB



b) Bottom view of FOB



Fig 2: Pathway, Steel Railing of FOB



Fig 3: Additional loads of HDPE, GI pipes



Fig 4: Stanchions column details and additional GI pipe Connected.



Fig 5: Plate Girder



Fig 6: Railing Details



Fig 7: Staircase Mid-landing Rail Section Details



Fig 8: Staircase Bottom view



Fig 9: Insulated Electrical lines on Roof truss