

Name of the Project	:	VISUAL INSPECTION OF FOB AT MUGAT RAILWAY STATION
Location	:	MUGAT RAILWAY STATION
Location Co-ordinates	:	19°10'29.4"N 77°25'39.7"E
Date of Inspection	:	22nd NOVEMBER 2019



Summary:

- a) Rusting is observed at base plate of stanchion, stanchion column tie members, floor beams, bottom chord members, bracings and gusset plate of Span-1 column bracing, knee bracing, bottom chord, Top & bottom chord.
- b) Rusting is observed at Stringer beam, mid-landing of Staircase-1 and trestle tie beam of Staircase-1 and 2.
- c) Corrosion observed at Stringer beam joint and main landing tie beams and Floor beam of span-1.
- d) Deformation is observed at column of Trestle 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)

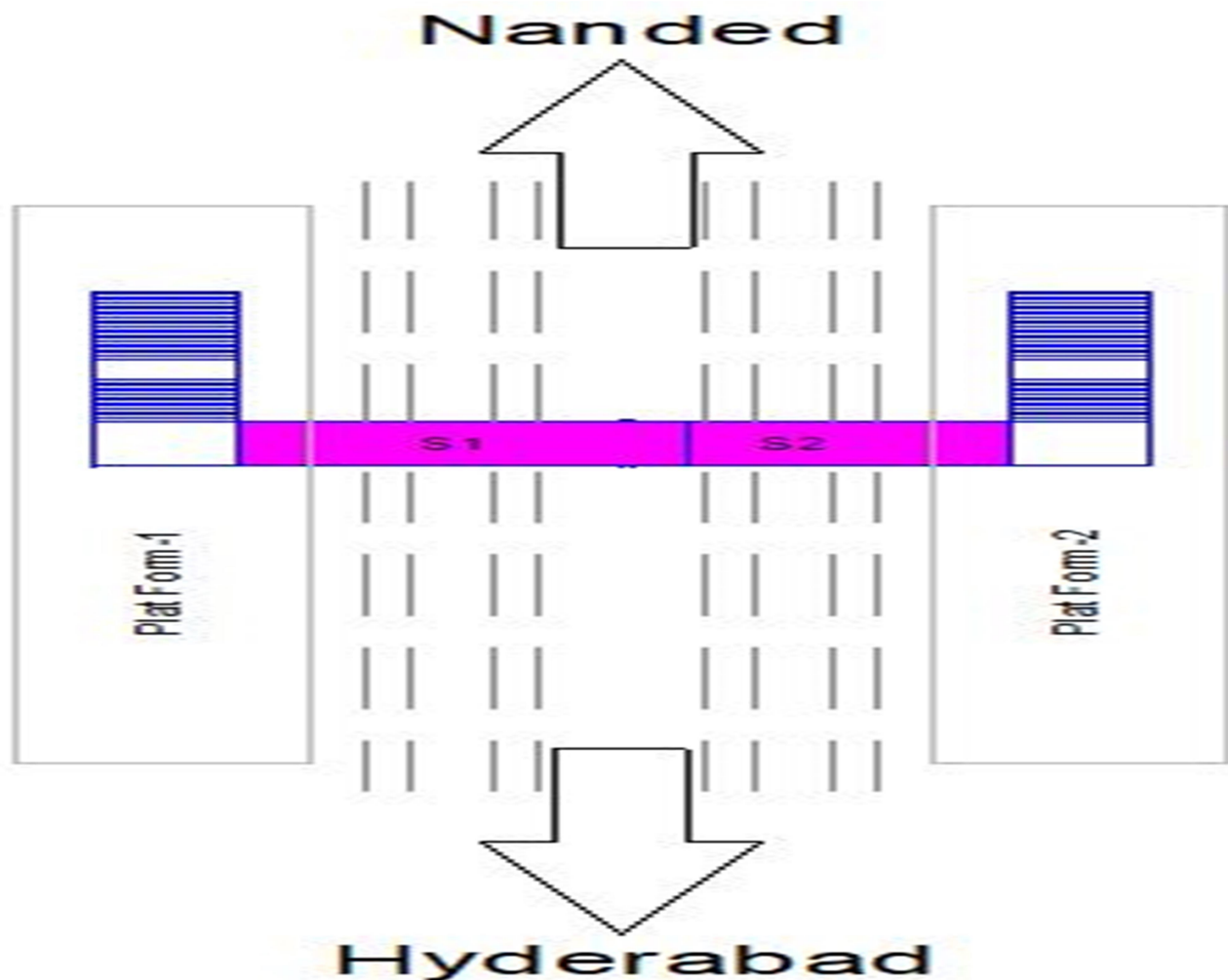
VISUAL INSPECTION OF STEEL FOOT OVER BRIDGE

Name of the Project	Visual inspection of FOB at Mugat railway station
Location	Mugat Railway Station
Date of Inspection	22-11-2019

PART 1 GENERAL INFORMATION AND OBSERVATION

1.1	Name of the Bridge	MUGAT FOB
1.2	Location Location co-ordinates	Mugat Railway Station 19°10'29.4"N 77°25'39.7"E
1.3	Type of truss Structure	Pratt Truss (N - Type)
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. Structural Steel (Truss, frame), b. Cast in-situ RCC Slab panels (Floor slab, Staircase steps)
1.7	Width of the Pathway (m)	2.7m
1.8	Length of the Pathway (m)	37.1 m
1.9	No of Railway Lines Crossings	4 No. of tracks Span 1 = 2 Span 2 = 2
1.10	Span arrangement (no x Span in meters)	1 x 15.2 m + 1 x 15.5 m = 30.7 m
1.11	Vertical Clearance (from rail top to girder bottom)	6.217 m
1.12	Head Room	2.6 m
1.13	Damages due to accidental hitting, Grazing Marks	No Visible signs appear
1.14	History of Repair/ Maintenance	No Patch works observed
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	No	
	b) Cables	No	
	c) Roof Truss	No	a) Cables are protected with 1inch dia HDPE Pipes supported on truss
	d) Roof Sheet	No	b) 50mm GI pipes are acting as additional loads on FOB.
	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	Chequered tiles is used as Flooring (Refer fig :2)
	b) Provision of protective screen for passengers	No	Railing is provided with MS plates. (Refer fig :4)

	c) Type of Material used for mesh	No	
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PART 3 STRUCTURAL SYSTEM OF THE BRIDGE			
			Notes
3.1	Foundation details		
3.2	Pedestals		
	Trestles Connection Details	bolted	
	No. of HD Bolts and size	6 nos of 24 mm dia	
	Thickness of Base Plate	25mm	
3.3	Roof Truss		
	Element of roof truss section		No Roof truss is provided, Top bracings are provided
	Size of roof truss		
	Connection of Roof elements		
3.4	Steel Truss		
	Type /Shape of Truss Section	Angle section	a) Top and Bottom chord members are 100 x 100 x 10 Double angle sections. (Refer fig: 1(a), 1(b)) b) 75 x 75 x 8 mm Double Angle sections are used as diagonal bracing members. c) 150 x 150 x 12 mm Double Angle sections are used as floor beams with Knee bracings 75 x 75 x 8 mm Double Angle section. d) Bottom bracings of 75 x 75 x 8 Angle sections are used.
	Height of Girder/Truss (H)	2.76m	
	Truss Support Condition	Rigid Connection	
	Type/Shape of Floor beam /Bracings	angle section	
	No of Floor beams/bracings per span	7, 7	
	Arrangement of Bracings	Cross bracing	
	Type of Beam-Column Joint (shape of gusset plate if any)	Seat Angle	
3.5	COLUMN		
	Type/Shape of Column section	ISMB Sections	a. FOB is supported on vertical columns of ISMB 350 with bracings of 65 x 65 x 8 mm angle sections. b. Trestles 1 and 3 have 4 columns whereas Trestles 2 is two legged. c. Stanchion columns are of ISMB 350 with bracings of 65 x 65 x 8 mm angle section. d. Staircase landing is supported by section of ISMB 250, with bracings of 65 x 65 x 8 Angle section
	No of Columns/ support	4, 2	
	Dimensions of Column	ISMB 350	
	BEAM-Column joint (bolted, welded, riveted)	Bolted	
3.6	Floor of the Pathway		

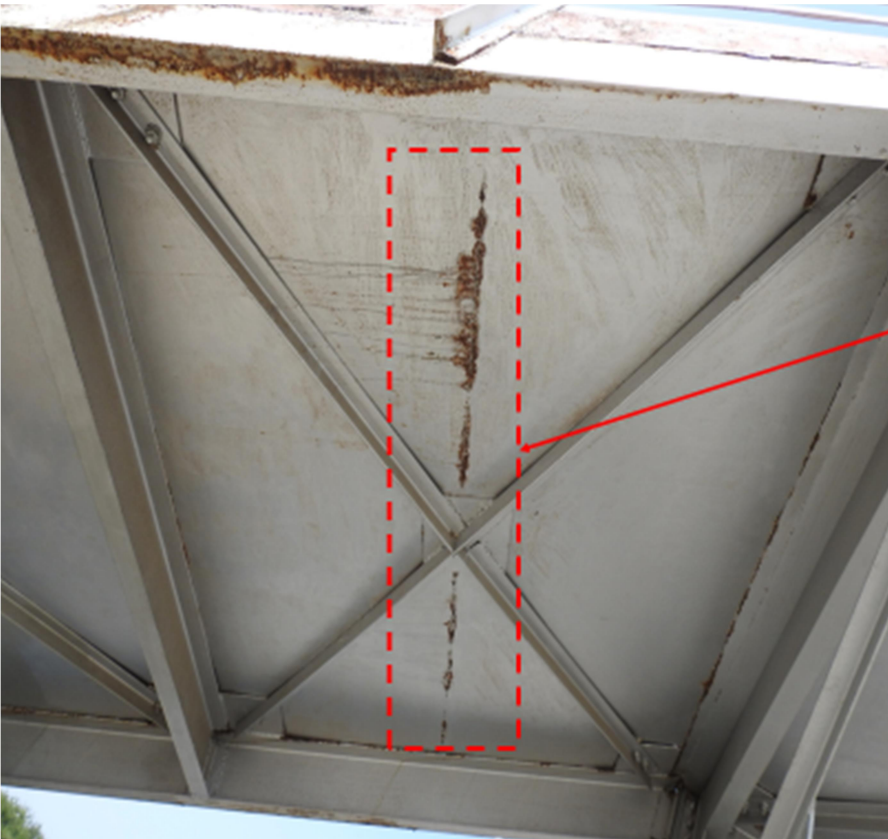
	Material of Slab	Cast in-situ RCC	Cast in-situ Reinforced concrete slab panels are used for floor slab of 100 mm thick, RCC slab panels are resting on Floor beams and Bottom chord. (Refer fig: 2)
	Thickness of Slab	100 mm	
	Condition of Slab from Bottom	Not Visible, Covered with Sacrificial Plate	
	Condition of Slab from Top	Not Visible, Covered with Chequered tiles	
3.7	Staircase Details		
	Number of Staircase	2 No's	Staircase is observed as RCC cast in-situ Slab panels supported on ISMB 300 Stringer beam on both sides of stair case.
	Number of Steps from Platform– 1	40 No's	
	Number of Steps from Platform– 2	39 No's	
	Material used for steps	RCC cast in-situ	
3.8	Staircase Railing		
	Type of Parapet Railing	Steel Railing	Staircase is provided with railing on both sides using 32 mm dia. and 50X8 mm M.S Flats are used. (Refer fig: 4)
	Height of Railing	1.1 m	

PART 4 SURVEY OF SIGNS OF DISTRESS, DEFORMATION IN BRIDGES

- | | |
|-----|---|
| 4.1 | ✓ Rusting is observed at top & bottom chord floor beam, bracings, Stringer beam, column and base plates |
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a) Rusting observed at Stringer beam of Staircase-1



b) Rusting observed at landing of Staircase-1



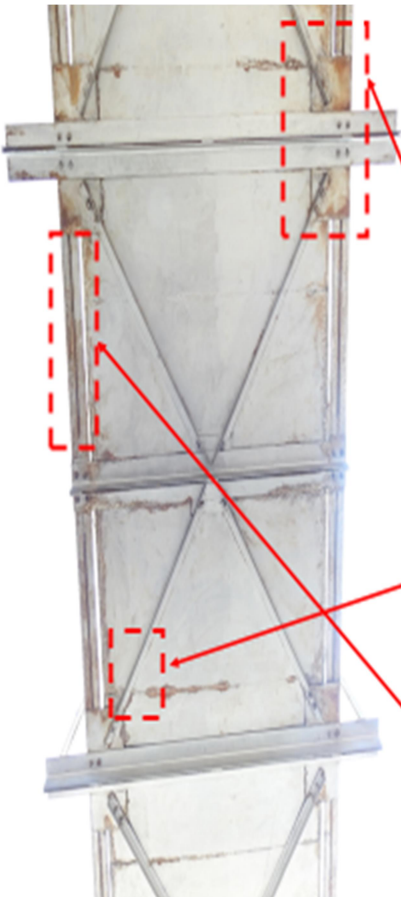
c) Rusting observed at landing of Staircase-1



d) Rusting observed at base plate of stanchion



e) Rusting observed at stanchion column tie members



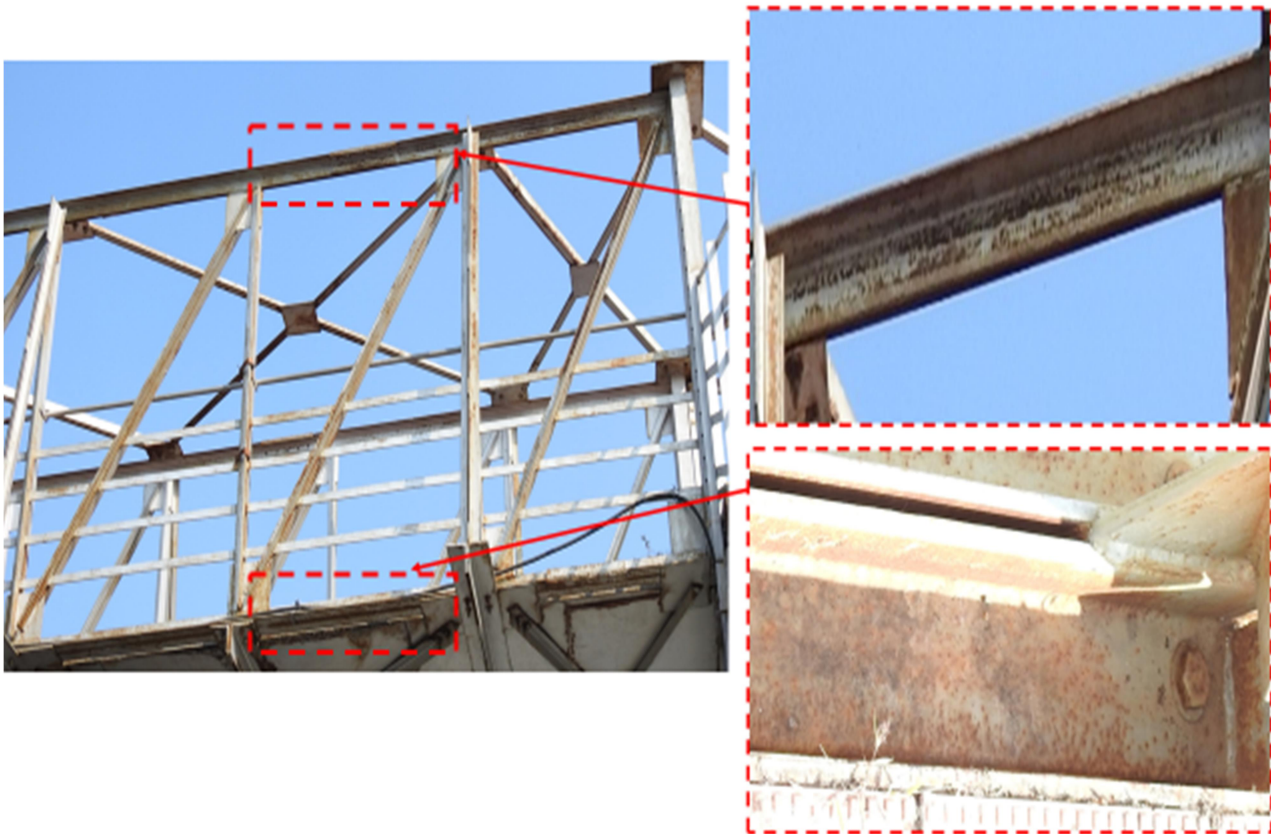
f) Rusting observed at bottom chord members, bracings and gusset plate of Span-1



h) Rusting observed at stringer beam and landing in trestle-2



i) Rusting observed at knee bracing, bottom chord of Span-2



j) Rusting observed at top and bottom chord of span-2



k) Rusting observed at top bracing of Span-2

4.2	✓ Corrosion observed at Stringer beam joint and floor beams
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a) Corrosion observed at Stringer beam joint of Span-1



b) Corrosion observed at Main landing of floor beam in Span-1



c) Corrosion observed at floor beam of Span-1

4.3	a) Deformation is observed at Trestle 2 and Missing bolts are observed at at Span-1
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a) Missing bolts are observed at floor beam of Span-1

b)



b) Deformation observed at Trestle 2

PART 4 SURVEY OF SIGNS OF DISTRESS, DEFORMATION IN BRIDGES			
	Defects	Location	Notes
	Cracking in Steel Members		Cracks are not observed in steel during visual inspection.
	Cracking in RCC components		No Cracks are observed in slab panels of stair case & Main Slab.
	Water seepage		No water seepage is observed during visual inspection.
	Spalling		No Spalling is observed.
	Rust straining		Rusting is observed at diagonal, knee, vertical, bottom chord, top chord members. (Refer Part 4.1)
	Corrosion in Gusset plate	Floor level	Corrosion is observed in Gusset plates.
	Deformations		Deformations are observed at column of Trestle 2
	Corrosion at steel-Concrete joint		corrosion is observed at steel concrete joint at Stair case-1.
	Condition of Painting of steel structure		Painting condition is average



Fig 1(a): Front & Bottom view of FOB span 1



Fig 1(b): Front & Bottom view of FOB span 2



Fig 2: Pathway of FOB



Fig 3: Stanchion Details



Fig 4: Staircase Details