

1. VISUAL INSPECTION REPORT

Name of the Project	:	VISUAL INSPECTION OF FOB AT FALAKNUMA RAILWAY STATION
Location	:	FALAKNUMA RAILWAY STATION
Location Co-ordinates	:	17.3327330 N, 78.4746585 E
Date of Inspection	:	3 rd March 2020



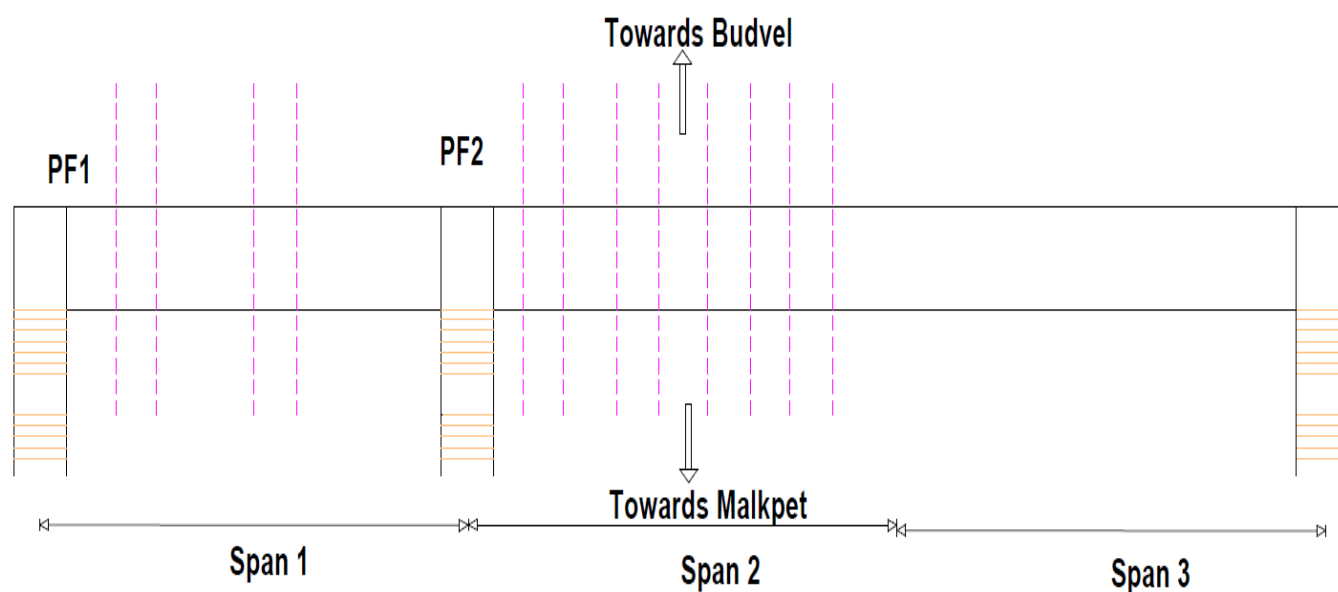
Summary:

- a) Spalling and reinforcement exposed observed in floor slab at slab and steel joint along the 1st span.
- b) Corrosion is observed at joints connecting Floor beams and bottom main chord member and slight rusting is observed at bottom chord member along the length of FOB.
- c) Slight corrosion is observed at stringer beams and concrete joint.

PART 1.1 GENERAL INFORMATION AND OBSERVATION

a.	Name of the Bridge	Falaknuma FOB
b.	Location of Bridge	Falaknuma Railway Station
c.	Type of truss Structure	N-Truss.
d.	Year of Construction	Not available
e.	Description of the main use of the bridge	Pedestrians Crossing
f.	Major Materials used in different parts of bridge	Structural Steel, RCC Slab
g.	Width of the pathway (m)	1.6 m
h.	Length of the pathway (m)	74.9 m
i.	No of Railway Lines Crossings	6 no's tracks Span 1 = 2 Span 2 = 4 Span 3 = -
j.	Span arrangement (no x Span in meters)	1x15.96 + 1x33.55 + 1x16.25 m = 65.76 m (Clear span)
k.	Vertical Clearance (from rail top to girder bottom)	6.78 m
l.	Head Room	3 m
m.	Damages due to accidental hitting, Grazing Marks	No Visible signs appear
n.	History of Repair/ maintenance	Not available
o.	Existing structural drawings	Not available

Key Plan



PART 1.2 IDENTIFICATION OF LOADS ON BRIDGE			
		Yes/No	Photo ID
a.	Dead Loads at Roof level		
	a) Pipeline - Utilities	No	Not observed at site
	b) Cables	Yes	Cables are protected with 1-inch and 2-inch dia HDPE pipe of 2 nos. and 1-inch PVC pipes of 6 nos and (Refer fig :1) King post supported with 65 x 65 x 8 mm angles are used (Refer fig: 1). Steel Metal Sheet is used for Roof (Refer fig :1)
	c) Roof Truss	Yes	
	d) Roof Sheet	Yes	
	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
b.	Dead Loads at Floor level		
	a) Additional wearing coat on Floor	Yes	Chequered tiles are used for flooring.
	b) Provision of protective screen for passengers	Yes	Chain link fence made of galvanized wire of 2 mm gauge and 2mm galvanized sheet is used above OHE line on both side of gangway is used for protection. (Refer fig :1)
	c) Type of Material used for mesh	Galvanized wire mesh	

PART 1.3 STRUCTURAL SYSTEM OF THE BRIDGE			
			Photo ID
a.	Foundation Details		Not visible at site
b.	Trestles details		
	Trestles Connection Details		
	a) No of Bolts and size	Not visible, filled with concrete	Trapezoidal Concrete encasement is observed below vertical supports (Refer fig :2)
	b) Thickness of Base Plate	Not visible, filled with concrete	
c.	Roof Truss		
	Element of roof truss section	Angle sections	Span of roof truss is supported with 65 x 65 x 8 mm double angle sections which are rested on Top chord members. (Refer fig :1)
	Size of roof truss	2.0 X 0.7m	
	Connection of Roof elements	Bolted	
d.	Steel Truss		
	Shape of Truss Section	Double angle sections	

	Height of Truss (H)	3 m	a. Top and bottom chord members 150 x150 x12 mm of double angle sections. b. 90 x 90 x 10 mm double angle sections are used as bracing members c. ISMC 150 Double Channels are used as Floor beams supported by 65 x 65 x 8 mm angle sections to transfer load from slab to roof truss.(Refer fig :3)
	Girder/Truss Support Condition	Ridged connection	
	Type/Shape of Secondary Girder /Bracings	Double Channel sections and angle sections	
	No of Secondary Girders/bracings for span	7, 13, 7 no's	
	Arrangement of Bracings	Diagonal	
	Type of Beam-Column Joint (shape of gusset plate if any)	Cleat angles	
e.	COLUMN		
	Type/Shape of Column section	I – Section	FOB is supported on vertical column of Four - ISMB 300. (Refer fig :2)
	No of Columns/support	4	
	Dimensions of Column	300x150 mm	
	BEAM-Column joint (bolted, welded, riveted)	Bolted connection	
f.	FLOOR SLAB OF THE PATHWAY		
	Material of Slab	RCC	RCC slab panels is used for floor slab of 125 mm thick, RCC slab panels is supported with Floor beams and bracings from bottom
	Thickness of Slab	125 mm	
	Condition of Slab from Bottom	Spalling and Reinforcement exposed slab panels	
	Condition of Slab from Top	Not visible as covered with chequered tiles	
g.	Staircase Details		
	Number of Staircase	3 no's	Staircase steps are observed as RCC slab, Steps are supported on stringer beams of ISMB 250 section, horizontal members of ISMB 150 and diagonal bracings with 65 x 65 x 8mm angle sections. (Refer fig :6)
	Number of Steps from PF – 1	31 no's	
	Number of Steps from PF – 2	31 no's	
	Number of Steps from CA	42 no's	
	Material used for steps	RCC	
h.	Staircase Railing		
	Type of Parapet Railing	Steel railing	Staircase is provided with railing on both sides of one-meter height using 65 x 65 x 8 mm double angle sections and 35 mm dia MS pipes are used. (Refer fig :6)
	Height of Railing	0.9 m	

PART 1.4 SURVEY OF SIGNS OF DISTRESS, DEFORMATION IN BRIDGES

- a. ✓ Spalling and Reinforcement exposure of RCC slab observed along the 1st span of FOB



Spalling and reinforcement exposure

- b. ✓ Corrosion is observed in joints of Floor beams and bottom main chord member and slight corrosion is observed at stringer beam joints



Corrosion observed in Floor beams joints of span 2



Corrosion of floor beam joints of span 3



Corrosion at mid landing beam column joint.



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
	Spalling	RCC slab	spalling and exposed reinforcement is observed at the bottom of slab in span 1 and at stair case slab. (Refer Part 1.4 – 1.4(a))
	Rust straining	Bottom chord members	Rusting is observed at all over the bottom chord members of FOB. (Refer Part 1.4 – 1.4(b), Fig 4)
	Extent of Corrosion	Joints	corrosion is observed at bolted joint connecting Floor beams, bracings and bottom chord members(Refer Part 1.4 – 1.4(b))

***Rust:** Rust is a part of corrosion and is a chemical process which results in the formation of red or orange coating on the surface of metals.

***Corrosion:** it is the process of deterioration of materials as a result of chemical, electrochemical or other reactions.



Fig 1: Cables, Roof truss, Flooring and Protective screen



Fig 2: Trestles details



Fig 3: Front view and bottom view of span 1



Fig 4: Front view and bottom view of span 2



Fig 5: Front view and bottom view of span 3



Fig 6: Staircase details



Fig 7: Inspection team at Falaknama FOB