# VISUAL INSPECTION REPORT

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|---|---|---|
| **Name of the Project** | : | VISUAL INSPECTION OF FOB AT KACHEGUDA RAILWAY STATION |
| **Location** | : | KACHEGUDA RAILWAY STATION |
| **Location Co-ordinates** | : | 17°23'23.5"N 78°30'00.6"E |
| **Date of Inspection** | : | 3rd March 2020. |



**Summary:**

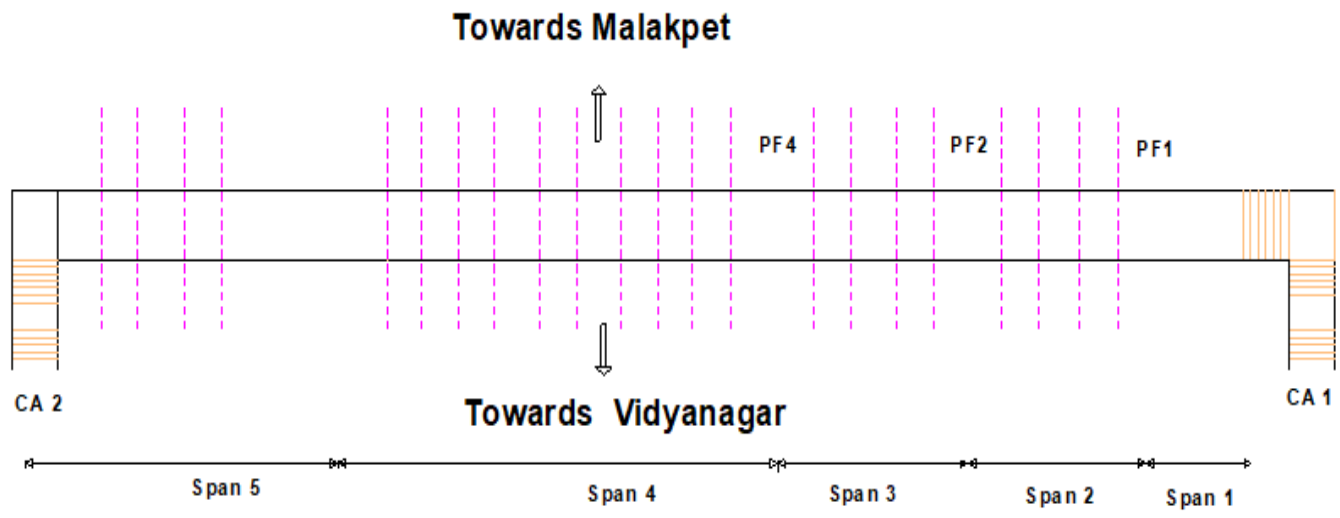
**a)** Spalling and reinforcement exposure is observed at slab panels of Span 1, 3, 4 and at floor slab and steel joint along the length of FOB

**b)** Corrosion is observed at floor beams and bottom chord joints.

**c)** Rusting is observed at Stringer beam and Concrete joints of Staircase

| PART 1.1 GENERAL INFORMATION AND OBSERVATION | | |
|---|---|---|
| a. | Name of the Bridge | Kacheguda FOB |
| b. | Location of Bridge | Kacheguda 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, Pre cast Slab panels. |
| g. | Width of the pathway (m) | 1.7 m |
| h. | Length of the pathway (m) | 122.7m |
| i. | No of Railway Lines Crossings | 11 no's tracks<br>Span 1 = -<br>Span 2 = 2<br>Span 3 = 2<br>Span 4 = 5<br>Span 5 = 2 |
| j. | Span arrangement (no x Span in meters) | 1x21 + 1x24 +1x20.4 + 1x30.4 + 1x27.3m = 123.1m **(Clear span)** |
| k. | Vertical Clearance (from rail top to girder bottom) | 6.584 m |
| l. | Head Room | Open to sky |
| 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 | | Cables are protected with 1-inch and 1.5-inch dia HDPE pipe. and 1-inch PVC pipes supported on top and bottom chord of span 1 and 2- inch GI pipe supported on top chord. (Refer ***fig :1)*** |
| | c) Roof Truss | No | |
| | d) Roof Sheet | No | |
| | e) load of advertising hoarding | Yes | Advertising boards are provided at Trestle 1 (Refer ***fig :9)*** |
| | 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 | |

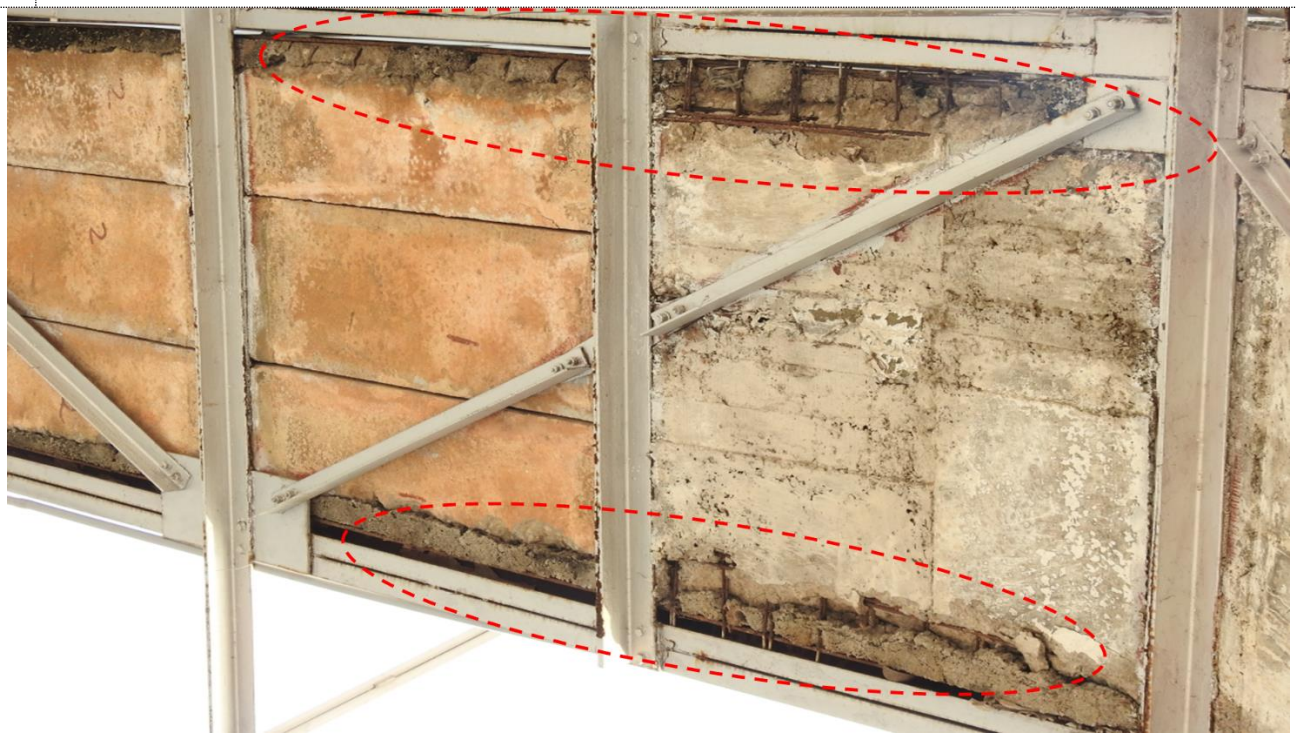
| | PART 1.3 STRUCTURAL SYSTEM OF THE BRIDGE | | |
|---|---|---|---|
| | | | **Photo ID** |
| a. | **Foundation Details** | | Not visible at site |
| b. | **Trestles details** | | |
| | Trestles Connection Details | | Size of base plate is 300 x 430 x 20mm at Trestle1, Trestle 2 is Covered with concrete encasement. |
| | a) No of Bolts and size | 4 no of 20 dia. bolts | |
| | b) Thickness of Base Plate | 20mm | |
| | | | |
| c. | **Roof Truss** | | |
| | Element of roof truss section | | No Roof truss is provided. |
| | Size of roof truss | | |
| | Connection of Roof elements | | |
| | | | |
| d. | **Steel Truss** | | |
| | Shape of Truss Section | Double Channel and Double angle sections | Span 1:<br>a. Top and bottom chord members ISMC 150 Double channel sections.<br>b. 65 x 65 x 8 mm double angle sections are used as bracing members<br>c. 100 x100 x10mm of double angle sections are used as Floor beams supported by 75 x 75 x 8 mm angle sections to transfer load from slab to roof truss.(Refer ***fig :3***)<br><br>Span 2,3,4,5:<br>d. Top and bottom chord members 100x100x10 double angle sections.<br>e. 65 x 65 x 8 mm double angle sections are used as bracing members.<br>f. 100 x100 x10mm of double angle sections are used as Floor beams supported by 75 x 75 x 8 mm angle sections to transfer load from slab to roof truss. |
| | Height of Truss (H) | 2.65 m | |
| | Girder/Truss Support Condition | Ridged connection | |
| | Type/Shape of Secondary Girder /Bracings | Double angle sections | |
| | No of Secondary Girders/bracings for span | 9, 15, 12, 18, 16 no's | |
| | Arrangement of Bracings | Zig-zag | |
| | 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 ISMB 300 with bracings of 65 x 65 x 8mm double angle sections. (Refer ***fig :2***) |
| | No of Columns/support | 4, 2 | |
| | Dimensions of Column | ISMB 300 | |
| | BEAM-Column joint (bolted, welded, riveted) | Bolted connection | |
| | | | |

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| f. | **FLOOR SLAB OF THE PATHWAY** | | |
| | Material of Slab | pre cast panels | Pre cast RCC slab panels are 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 | |
| | Condition of Slab from Top | Not visible as covered with chequered tiles | |
| | | | |
| g. | **Staircase Details** | | |
| | Number of Staircase | 2 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 :8***) |
| | Number of Steps from C.A 1 | 29 no's | |
| | Number of Steps from C.A 2 | 49 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 1.25m height using 65 x 65 x 8 mm angle sections and 50 x 6 mm MS flats are used. (Refer ***fig :8***) |
| | Height of Railing | 1.25 m | |
| | | | |

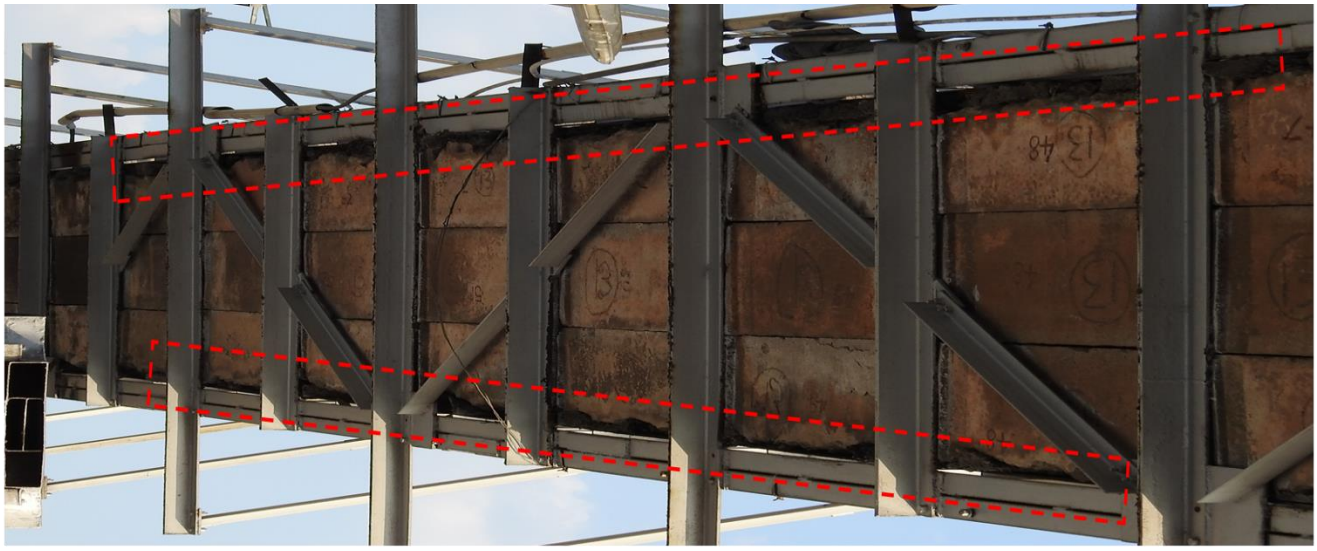
## PART 1.4 SURVEY OF SIGNS OF DISTRESS, DEFORMATION IN BRIDGES

a.

✓ Spalling and Reinforcement exposure of Pre cast slab panels and at Junctions connecting Bottom chord and floor slab



Spalling and reinforcement exposure in span 1





Spalling at bottom chord and slab panels connecting joint along the length of FOB

b. ✓ Corrosion is observed floor beams , bottom chord members, joints and base plate of trestle.



Corrosion of Floor beams at span 1



Corrosion of Base plate at Trestle 1



Corrosion of floor beams and Bottom chord members

| 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 | Slab panels | cracks are observed at slab panels Refer ***Part 1.4 – 1.4(a)***) |
| | Spalling | Slab panels | spalling and exposed reinforcement is observed at the bottom of slab in span 1,3,4 and Slab and Bottom chord joints (Refer ***Part 1.4 – 1.4(a)***) |
| | Rust straining | Stair case | Slight srusting is observed Stringer beams of stair case |
| | Extent of Corrosion | Floor beams | corrosion is observed at floor beams and joints (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, 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:*** Front view and bottom view of span 4



***Fig 7:*** Front view and bottom view of span 5



***Fig 8:*** Staircase details




***Fig 9:*** Advertise hoardings at Trestle 1



***Fig 10:*** Inspection team at kacheguda FOB