

## QC Manager Certification Report for Wayside Kavach

Report Number: 5 xx xx xxxx <Stn Code>

Date:

### 1. PROJECT DETAILS

|                  |                                  |
|------------------|----------------------------------|
| Railway Zone:    | Division:                        |
| Section:         | Station Name:                    |
| Project Manager: | Date of Installation Completion: |

### 2. SCOPE OF CERTIFICATION

This certification covers verification of installation, wiring, earthing, OFC, RFID, PCCL, SAT and documentation completeness for SASC and PCSTE sanction.

### 3. SITE VERIFICATION SUMMARY:

All installation /site activities have been inspected and verified as per the Installation procedure, the same recorded in the QC report, details of summary given below;

| #   | Activity  | Open Points | Remarks |
|-----|---|-------------|---------|
| 1)  | Civil Work – Building   |             |         |
| 2)  | Civil Work – Tower Foundation   |             |         |
| 3)  | OFC Laying & OTDR Test  |             |         |
| 4)  | Stationary KAVACH Installation  |             |         |
| 5)  | DC-DC/ PDU/ IPS Installation  |             |         |
| 6)  | GPS/GSM Antenna   |             |         |
| 7)  | RIU Installation  |             |         |
| 8)  | SMOCIP Installation & Testing   |             |         |
| 9)  | Relay Rack & EI Interface   |             |         |
| 10) | Identification/ ferules implementation                                    |             |         |
| 11) | Networking & OFC Rack   |             |         |
| 12) | RTU/RF Antenna Installation   |             |         |
| 13) | RFID Tag installation, placement/ Tag to Tag Distance & data verification |             |         |
| 14) | Indoor Cabling  |             |         |
| 15) | Outdoor Cabling   |             |         |
|     | Total Open Points   |             |         |

**QC Manager Certification Report for Wayside Kavach****4. DOCUMENTATION VERIFICATION**

All site-specific documents required for PCSTE sanction and SASC have been verified as per Table–1 of SOP EG-QC-WI-702.

| #   | Check Points   | Yes                      | No                       | NA                       | Remarks |
|-----|--|--------------------------|--------------------------|--------------------------|---------|
| 1)  | Contact Analysis Charts  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |         |
| 2)  | RFID Tag Data Validation Report                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |         |
| 3)  | RFID Tag Placement Verification Report                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |         |
| 4)  | Station PCCL (RDSO format SIF:0577 Ver 2.1)                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |         |
| 5)  | RIU PCCL (RDSO format SIF:0577 Ver 2.0)                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |         |
| 6)  | SAT Report (RDSO format SIF:0593 Ver 1.0)                        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |         |
| 7)  | Stationary Kavach Datalogger Validation Report for Kavach Relays | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |         |
| 8)  | Floor Plan   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |         |
| 9)  | Cable Route Plan   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |         |
| 10) | PSD and Load Calculation   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |         |
| 11) | Bell Test Report   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |         |
| 12) | Installation Report  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |         |
| 13) | Loco Simulation Test Report                                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |         |
| 14) | Station Analyser Test Report                                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |         |
| 15) | OFC Ring Protecting Testing as per Network diagram               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |         |
| 16) | Datalogger Validation Report for Kavach Relays                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |         |
| 17) | OTDR details of Cable from Kavach to OFC hut                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |         |
| 18) | OTDR details of Cable from Kavach to SM room for SMOCIP          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |         |
| 19) | OTDR details of Cable from Kavach to RIUs                        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |         |
| 20) | Towers Approved Cable route plan from Kavach to Tower location   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |         |
| 21) | Meggaring and OTDR details of cables from Kavach to Tower        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |         |
| 22) | Tower Location Approval Plan                                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |         |

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| #   | Check Points   | Yes                      | No                       | NA                       | Remarks |
|-----|--|--------------------------|--------------------------|--------------------------|---------|
| 23) | Tower Soil investigation reports and recommendation for type of foundation                                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |         |
| 24) | Tower details of the approved tower foundation and structural drawing  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |         |
| 25) | Towers Approved Quality Assurance Plan (QAP) for tower fabrication for 3rd party Inspection (structural audit) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |         |
| 26) | Towers 3rd party Inspection Certificate for Tower fabrication (RITES Inspection)                               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |         |
| 27) | Towers Test reports for Cement, Sand, Aggregate M20, Steel and Cube test pertaining to tower foundations       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |         |
| 28) | Towers Stage-wise field inspection report for Tower foundation   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |         |
| 29) | Towers Tower Verticality Test Report   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |         |
| 30) | Towers Typical Earthing Plan for Kavach Tower  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |         |
| 31) | Towers Approved Tower fencing diagram  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |         |
| 32) | Third Party Inspection Certificate copy  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |         |
| 33) | Tower Audit Report (Stride)  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |         |
| 34) | Tower Measurement Report (Stride)  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |         |
| 35) | Measuring instruments calibration records  | <input type="checkbox"/> | <input type="checkbox"/> |                          |         |

\*\*NA: Not Applicable for this project

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### 5. NON-CONFORMITY / DEVIATION STATUS

| # | Description of Non-Conformity | Corrective Action Taken | Verified By | Status (Open/Closed) |
|---|-------------------------------|-------------------------|-------------|----------------------|
|   |                               |                         |             |                      |
|   |                               |                         |             |                      |
|   |                               |                         |             |                      |

### 6. FINAL RECOMMENDATION

All activities at the above site have been verified and found satisfactory, and all relevant reports have been uploaded in WFMS.

| Name | Designation     | Signature | Date |
|------|-----------------|-----------|------|
|      | Project Manager |           |      |
|      | QC Manager      |           |      |