



THE SOUTH AFRICAN NATIONAL ROADS AGENCY SOC LIMITED

SANRAL HO 1002/53000/2026/M-ST/SP

**FOR THE APPOINTMENT OF A TRAFFIC MONITORING MANAGING
SERVICE PROVIDER FOR THE PROVISION OF MANUAL AND SHORT-
TERM TRAFFIC COUNTS**

SPECIAL PROJECT SPECIFICATIONS

**VOLUME 3
BOOK 1**

SPECIAL PROJECT SPECIFICATIONS

Notes to Tenderer:

Volume 3 is issued at tender stage in electronic format which can be downloaded from the SANRAL website <https://www.nra.co.za/service-provider-zone/tenders/open-tenders/>. Search for “53000”.

The link contains the following files:

- The full Project Document in .pdf format
- SANRAL Data Verification Tests in PDF format
- The pricing data in Excel format
- Station Information List in Excel format
- Station Information Plate in PDF format
- New SANRAL Logo
- ITIS Desktop Project Information Module – User manual in PDF format

The project specification takes precedence over the specifications in the TMH 3 and TMH 14 documents.

SPECIAL PROJECT SPECIFICATIONS

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SPECIAL PROJECT SPECIFICATIONS

V3.1. GENERAL REQUIREMENTS AND PROVISIONS

V3.1.1 SCOPE

This section covers matters which relate to the contract as a whole. Definitions, phrases or wording which would otherwise require repetition in other sections of the specifications are also covered by clauses in this section. Matters covered by the general conditions of contract are not repeated in this section, except where necessary for providing more detailed information.

This section also provides the description of the project and the general requirements for executing the traffic monitoring work for Subcontractors. The work required is for Type M1 and C1 Traffic Monitoring Systems on SANRAL roads in all provinces of South Africa.

V3.1.2 DEFINITIONS

Unless inconsistent with the context, in these specifications, the following terms, words or expressions shall have the meanings hereby assigned to them.

1. CONCESSIONS

There are currently three routes operated by concessionaires. These are concessioned to the private sector on a Build, Operate and Transfer (BOT) basis. Each of these contracts comprise approximately 400 km of road, and at the end of the 30-year concession period these roads will be returned to SANRAL in the specified condition, without charge.

a) N3 Toll Concession (N3TC) (Not part of this tender)

N3 Toll Concession (RF) Proprietary Limited (N3TC) is responsible for the 417 km of road on the N3 between the Cedara I/C, near Hilton, in KwaZulu-Natal and the Heidelberg South I/C in Gauteng.

b) Bakwena Toll Concessionaires (Part of this tender)

The Platinum Toll Highway is managed by Bakwena and consist of a 95-km section of the N1 between Proefplaas I/C in Tshwane and the Warmbaths I/C in Bela-Bela and 290 km section of the N4 between the N1 and the Botswana Border.

c) Trans Africa Concessionaires (TRAC) (Part of this tender)

Trans African Concessions (TRAC) is responsible for the 570 km of the N4 TOLL ROUTE: Tshwane to Maputo between Solomon Mahlangu off-ramp in Tshwane and the Port of Maputo in Mozambique. Toll plazas operate on this stretch of the road, all of which are also managed by TRAC.

2. GIS

A geographic information system (GIS) is a system designed to capture, store, manipulate, analyse, manage, and present spatial or geographic data.

3. HEAVY AXLE

“Heavy axle” means an axle the wheels of which are fitted with tyres of a size (bead seat diameter) greater than 406,4 millimetres (16 inches), or an axle with more than two (2) wheels irrespective of tyre size, but excluding any axle of a motorcycle, a motor tricycle or a motor car.

4. HEAVY VEHICLE

“Heavy vehicle” means a motor vehicle with at least one heavy axle and/or any vehicle which is principally designed or adapted for the conveyance of persons exceeding sixteen (16) in number.

5. HOMOGENEOUS TRAFFIC SEGMENT

A section of a road over which the various traffic characteristics, such as traffic counts and axle loading are approximately the same over the length of the section.

6. I/C

I/C means Interchange and includes all on-ramps and off-ramps forming part of the interchange.

7. KML

KML is a file format used to display geographic data in an Earth browser such as Google Earth. KML is an international standard maintained by the Open Geospatial Consortium, Inc.

8. LOGGER

Electronic equipment that records all vehicles passing over the sensors.

9. INTERSECTION (I/S)

An intersection is an at-grade junction where two or more roads or streets meet or cross.

10. INTRUSIVE

Intrusive means the installation of sensors in the road pavement by means of cutting equipment. These sensors cannot be removed.

11. NON-INTRUSIVE

Non-intrusive means that sensors are placed on top of the road pavement and can be removed once the survey is completed.

12. PROVISIONAL SUM

PROVISIONAL SUM, for the purposes of this contract, shall mean the amount included by the Employer in the Schedule of Quantities, which is under the sole control of the Employer, and which shall be used in whole or in part in accordance with the Employer's instructions and the Contract Price shall be adjusted accordingly. The total sum paid to the Service Provider shall include only such amounts for the goods, supplies or services to which the Provisional Sum relates, as the Employer shall have instructed. Payment to the Service Provider shall include the actual amounts paid (or due to be paid) by the Service Provider, and where applicable, a sum for overheads and profit, calculated as a percentage rate (if any), stated in the applicable Schedule. If no such sum for overheads and profit is provided for, the Service Provider shall not be entitled to such sum for overheads and profit. The Employer shall be entitled to increase or decrease any provisional sum provided as may be deemed fit.

13. ROUTINE ROAD MAINTENANCE (RRM)

Routine road maintenance may be defined as those treatments that are applied to a pavement, in order to keep the pavement functioning properly. As such, routine maintenance is sometimes referred to as "reactive maintenance." This suggests that it is work that is performed as a reaction to a specific distress. Routine maintenance is performed on pavements as they begin to show signs of deterioration but is generally considered to be a wasted effort on pavements that are severely distressed.

Filling a pothole is an example of a routine maintenance activity: It cannot be scheduled before the pothole appears and it should not be left unattended once the pothole has developed. However, if there are too many potholes present, a more comprehensive repair may be needed. In addition to pothole repair, routine maintenance treatments applied to pavements include edge patching, crack sealing and filling, and shoulder repair. Routine maintenance works are divided into the following work types:

- **NON-PAVEMENT (N):** These include all the activities that are accomplished outside of the road surface, like clearing side drains & culverts, vegetation control, line-marking, road signs repair, guard rail repair, etc.
- **PAVEMENT (P):** These are works responding to minor pavement defects caused by a combination of traffic and environmental effects, for example, crack sealing, patching, edge repair; shoulders re-gravelling and grading.

14. SECONDARY STATION

When loop technology is implemented, intrusive loops placed at sites with traffic volumes unsuitable for non-intrusive sensors or where data collection periods of 14 days are required will be designated as secondary stations.

15. URBAN AREA

For the purposes of this specification, an urban area is an area which has been subdivided into erven, whether formal or informal. It includes formal and informal rural settlements of one hectare or less

16. SHAPEFILE

The shapefile format is a popular geospatial vector data format for geographic information system (GIS) software. It is developed and regulated by Esri as a (mostly) open specification for data interoperability among Esri and other GIS software products.

17. WORKS

The works is described in V3.20 of this document and is as defined in the Conditions of Contract and prescribed in Volumes 1, 2, 3 and D.

V3.1.3 PERSONNEL REQUIREMENTS

The Service Provider's key persons become a contractual commitment upon award. However, the Employer recognises that key persons may for some, or other reason not be available for the full duration of the project and any changes to those listed are, to all intents and purposes, a change or variation to the contract. Any proposed change should be handled formally by way of written request and approval but does not require a Works Authorisation to be submitted. Replacement personnel shall be of same or better competence and experience as those initially accepted.

The key persons required for this project are listed in the RFT document under Section 3, paragraph 3.4. Information provided by the Employer. The tenderer must list proposed candidates for the prescribed positions in the core team in **Form B3** of the RFT document.

V3.1.4 NOTICES, SIGNS AND ADVERTISEMENTS

The Service Provider shall not erect any signs, notices or advertisements on the sites without the written approval of the Employer.

The Employer shall have the right to have any sign, notice or advertisement moved to a better position or to have it removed from the site if it should in any way prove unsatisfactory, inconvenient or dangerous to the general public.

V3.1.5 WORKMANSHIP AND QUALITY CONTROL

The Service Provider shall implement a quality assurance system that replicates an ISO 9002 and appoint a quality manager who shall ensure that members of the Service Provider's staff comply with the requirements of the quality system. The quality system and the methods used to implement it shall be described in a quality plan produced by the Service Provider.

The Service Provider shall submit the quality assurance system he proposes using to the Employer, for his approval, within two weeks of the Commencement Date. The system shall record the lines and levels of responsibility and indicate the method by which testing procedures will be conducted. Once accepted by the Employer the Service Provider shall not deviate from it unless written notification of proposed changes has similarly been submitted and approved.

Where appropriate the Service Provider shall make use of the Employer's TMH manuals in preparing his quality assurance system. No monitoring activity shall commence before the Employer has approved the Service Provider's quality assurance system.

V3.1.6 SUBCONTRACTOR'S ACTIVITIES IN RESPECT OF PROPERTY OUTSIDE THE ROAD RESERVE AND OF SERVICES MOVED, DAMAGED OR ALTERED

The Subcontractor shall exercise any rights that maybe ceded to him by an authority in terms of any statutory provisions for purposes of executing the contract, on condition that;

- a) the Subcontractor complies strictly with the requirements of such statutory provisions, particularly in regard to the matters relating to serving notice on the owner or consultation with him,
- b) the Subcontractor shall put in writing all his agreements with owners of property outside the road reserve or of services inside or outside the road reserve in respect of the following matters:
- c) the supply of electricity and communications,
- d) the reinstatement of property occupied, used, damaged or destroyed, for whatever purpose, or compensation therefore in lieu of reinstatement,
- e) any similar matter directly related to the Subcontractor's activities on or in respect of private property or services,
- f) these agreements shall be signed by all the parties concerned and delivered to the Employer.
- g) where, in addition to any agreement with the owner of any property to be entered upon or temporarily occupied, it is understood or required that the Subcontractor shall serve notice on the owner immediately before actually entering upon or occupying the private property, and shall give proper notice thereof in writing, and the Employer shall be supplied with a copy of such notice, together with acknowledgement of receipt.

On completion of his operations, the Subcontractor shall obtain from the owner concerned, a written statement to the effect –

- a) that the Subcontractor has fulfilled his obligations under any written agreement, or, in the absence of a written agreement,
- b) that the owner has received all the compensation he is entitled to and is also satisfied that all property occupied, or used, has been properly restored and is in a satisfactory condition.

All such statements shall be signed, dated and delivered to the Employer.

V3.1.7 EXTENSION OF TIME RESULTING FROM ADVERSE CLIMATIC CONDITIONS

There will be no extensions of time on the completion of this contract due to adverse climatic conditions.

V3.1.8 WORK ON OR ADJACENT TO OTHER STATUTORY BODIES

All work carried out on or adjacent to the property of statutory authorities other than SANRAL shall be carried out strictly in accordance with the latest requirements of such authority.

V3.1.9 USE OF EXPLOSIVES

The use of explosives is not allowed.

V3.1.10 REIMBURSEMENT OF TOLL CHARGES

The Service Provider or Subcontractors will not be compensated separately for the costs of toll charges arising from the passage of own and Subcontractors' vehicles and equipment through toll plazas for the purposes of executing the works.

V3.1.11 ENVIRONMENTAL REQUIREMENTS

Trees and shrubs established in landscaped areas of interchanges and in the road reserve may under no circumstances be disturbed without specific instruction from the Employer for their removal. Trees and shrubs inadvertently destroyed by the Service Provider shall be replaced with the equivalent at the Service Provider's own cost.

Disposal of any bituminous-based material shall only be at an approved location and by means of an approved method, arranged beforehand with the Employer. Bituminous binders shall not be disposed of on the Site but shall be returned to the supplier for disposal.

All waste shall be disposed of in terms of the applicable legislation.

V3.1.12 PROCUREMENT OF SUB-SERVICES AND OMITTED RATES (SECOND TIER PROCUREMENT)

Second tier procurement include the procurement of any work where either the particulars of the work is not scheduled and priced, or where the process of procurement of the sub-service provider is specified elsewhere in the contract specification. It include the procurement of work where rates have been omitted or where

allowance for the work is made under a Provisional sum or Prime sum item or where allowance for the work is made under a Provisional sum or Prime sum item but the particulars of the work is not scheduled, or where work is instructed under clause 13[Variations and Adjustments] or where work is to be performed by Targeted Enterprises.

The following procurement methods is to be followed as appropriate:

Where the particulars of the work are not scheduled but existing rates for similar work exist in the contract and the work can therefore be executed by the contractor or his sub-contractor at the existing contract rates.

No separate procurement process is required. The work is to be quantified and scheduled utilising existing rates and approved through the Works Authorisation process.

- 1) Where the payment calculation is based on a formula specified in the contract document, or where the payment rate is pre-determined or fixed by the client.

No separate procurement process is required. The work is to be quantified and approved through the Works Authorisation process.

- 2) Where the supplier is not selected by the contractor and actual cost is reimbursable and no procurement process is possible.

No separate procurement process is required. The work is invoiced by supplier on completion and approved through the Works Authorisation process at the end of the contract.

- 3) Where there are omitted items as part of the existing scheduled scope of work and no existing rates for similar work exist in the contract, or where there are no existing rates for the materials to be supplied and suitable rates for material to be determined.

A proposal for a new rate shall be submitted by the contractor and evaluated by the employer, by comparing with either adjusted relevant rates in the contract, or by comparing with similar rates on similar contracts, or by comparing three informal quotes to substantiate the rate. The new agreed rate is approved through the Works Authorisation process.

- 4) Where the particulars of the work is not scheduled and the estimated cost of the work (including VAT and excluding Contract Price Adjustment) is equal or less than R500,000.00 and there are no existing rates for similar work and the contractor's proposal submitted in terms of FIDIC Variation 13.1 is not accepted and the work is to be performed by a sub-contractor.

A minimum of three quotations shall be obtained from Targeted Enterprises (as defined in PART D:). The following is the minimum requirements for this process:

- Prequalification for BEE level 1 or 2 and EME or QSE (Approval to deviate must be granted by the Employer, based on market research)
- Quotation to include form of quotation, CSD registration, CIDB (where applicable),

A Works Authorisation shall be approved prior to execution of the work.

- 5) Where the particulars of the work is not scheduled and the estimated cost of the work is more than R500,000.00 (including VAT and excluding Contract Price Adjustment) and there are no existing rates for similar work and the contractor's proposal submitted in terms of FIDIC Variation 13.1 is not accepted and the work is to be performed by a sub-contractor.

The work is to be procured through a tender process. The following is the minimum requirements for this process:

- Prequalification for BEE level 1 or 2 and EME or QSE (Approval to deviate must be granted by the Employer, based on market research)
- Tenders to close at the relevant site offices at a specific date and time
- Tender documents to include form of Offer, CSD registration, Tax compliance, CIDB (where applicable), and other forms according to SANRAL's SCM procurement policy.
- Tenders to be evaluated on price and preference
- Evaluation by contractor for review by employer

A Works Authorisation shall be approved prior to execution of the work.

Where the particulars of the work are identified by the contractor to be performed by subcontractors who are Targeted Enterprises to form part of the specified Contract Participation Goals for Targeted Enterprises.

The work is to be procured as per the process specified in Volume D paragraph D7.

Where the work is unforeseen, urgent and the relevant procurement method as indicated above will result in a delay to the contract and payment for a claim for extension of time and/or cost, or where the above procurement methods are not applicable or cannot fully be complied with.

The Employer will determine the most appropriate procurement process to be followed and approved through the Works Authorisation process."

V3.1.13 DRAWINGS PROVIDED BY THE SERVICE PROVIDER

Where the Service Provider is required to prepare any drawings for the purpose of this contract, they shall be prepared as specified below, and/or in accordance with any further requirements specified by the Employer.

Drawings shall be on A3, or A4 paper depending on the legibility of the finest detail on the drawings. Should the Employer so require, any drawing provided on A4 may be required to be resubmitted, resized to fill the page, on A3.

The drawings shall be compiled in the official language of the contract and comply in all respects with the requirements of the Employer.

Any accepted or approved drawings shall form an integral part of the contract documents, and any drawing not accepted and signed will serve no purpose regarding the contract. Notwithstanding the approval and/or acceptance and signing of the drawings, the Service Provider shall take full responsibility for all details, discrepancies, omissions, errors, etc., in respect of the said drawings as well as for the consequences thereof.

The Service Provider shall submit only fully completed drawings in accordance with this specification and shall not be entitled to claim for delays resulting from the submission of incomplete drawings. The Employer will require a period of fourteen calendar days, depending on circumstances, for reviewing the complete drawing(s).

No direct payment for design, preparation and submission of drawings will be made and all costs shall be included in the rates tendered for the relevant pay items as provided in the schedule of quantities.

V3.2. TRAFFIC MONITORING REQUIREMENTS AND PROVISIONS

V3.2.1 MANAGEMENT OF THE CONTRACT

SANRAL has its Head Office located in Pretoria and nine Provincial Offices located in Pretoria, Pietermaritzburg, Gqeberha, Cape Town, Kimberly, Nelspruit, Bloemfontein, Polokwane and Rustenburg. All contracts will be managed from its Head Office.

V3.2.2 TRAFFIC MONITORING LEVEL OF COMPETENCY

SANRAL has realised the importance of getting new entrants to the traffic monitoring market. Prequalification for future contracts will be dependent on the acquired competency level of a Service Provider.

This contract will be for Traffic Monitoring System Type M1 for Manual and C1 for Short-Term Traffic Monitoring. Please see Table 1 below for required Traffic Monitoring System types for future contracts.

Table 1:Traffic Monitoring Level of Competency

| Description | Required Traffic Monitoring System Type (TMH3) |
|-----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| Manual Traffic Monitoring | M2 (not applicable to this contract) |
| | M1 |
| Short-Term Traffic monitoring | Non-intrusive - C1* |
| | Intrusive – C1* |
| Long-Term Traffic Monitoring (Normal) | C1 |
| | C1 Freeway Management |
| | B2 |
| | B1 – Toll Traffic Monitoring |
| Long-Term Traffic Monitoring (WIM Integrated) | B2, Class II – Weigh-in-motion (WIM) |
| | B2, Class I – Weigh-in-motion (WIM) |
| HS/LS WIM Screener | Class I – Weigh-in-motion (WIM) |
| Speed Enforcement | Average Speed Over Distance (ASOD) according to NRCS interim specification: LM – RTLE-ASOD: 2019 |
| WIM Enforcement | Weigh-in-motion for Traffic Law Enforcement according to NRCS interim specification: LM-P-059-08-24_TLE-WIM_NormRef_2024-09-01. |

The objective is to improve the competency of Service Providers by awarding contracts for Manual Traffic Monitoring and Short-Term Traffic Monitoring with little or no barriers. Certification will eventually be the only requirement for future contracts. See section V3.16 for further information.

V3.2.3 OVERVIEW OF WORK TO BE CARRIED OUT

Traffic data is essential for the planning of road needs, the designing of new roads, the planning of maintenance activities, and the determining of upgrading and improvement projects. It is an important component of the management of road safety, the monitoring of road traffic and the planning of high traffic season campaigns. As a result, traffic data will be required to be furnished as per the submission requirements in TMH3.

This contract is divided into nine (9) managing packages one for each province. Every province will have a Traffic Monitoring Schedule, that will be subcontracted to Targeted Enterprises.

V3.2.4 STATIONS DAMAGED BY ROAD WORKS, MAINTENANCE, VANDALISM AND ROAD ACCIDENTS

Where any part of a station is damaged by road maintenance, vandalism or road accidents, the Subcontractor shall digitally photograph the damage, and photographs shall be a minimum resolution of 5 megapixels and shall have geo-referencing. All such photographs must be submitted to the Employer as proof for such events.

The Service Provider is required to maintain records of all such incidents and submit monthly reports to the Employer.

V3.2.5 RESTRICTION ON MONITORING ACTIVITIES

The Subcontractor is required to comply with the TMH 3 stipulation of not submitting data collected on abnormal days. Furthermore, station installation shall be prohibited on days experiencing increased traffic

volumes, such as school closure dates, long weekends, and public holidays. The Service Provider must incorporate these restrictions into their programme, and no extension of time or claims related to these circumstances will be entertained. Please see non-working hours/days in Contract data.

V3.2.6 FAILURE TO ACHIEVE OR MAINTAIN CERTIFICATION

The Subcontractors will not be allowed to proceed with the traffic counting program unless the certification process for his System Supplier as well as their own service provision certification have successfully been completed. The submission of the TMH 3 System Assessment spreadsheet showing that all the minimum requirements have been met and endorsed by the Certification Organisation, will constitute a successful certification. The Service Provider will then proceed to obtain the "Service Provider" certification. The Service Provider must take note of the certification timelines specified in V3.16.

The Subcontractor may only use accredited equipment and follow accredited procedures during the traffic monitoring program.

Failure to install and correctly operate equipment that has been certified by the Certification Organisation for the type of monitoring undertaken on the contract, shall be sufficient cause for the Employer, in his sole discretion, to order the Service Provider to cease work at that site, and to terminate the contract as provided for in the Conditions of Contract.

Should the Subcontractor's System Supplier, at any time during the contract, for any reason whatsoever, lose the certification of the Certification Organisation in respect of the supplier of its equipment, in respect of itself as a Service Provider, or in respect of any procedure followed or equipment used to collect data on the contract, the Employer shall be entitled to terminate the contract as provided for in the Conditions of Contract.

V3.2.7 PROBATIONARY PERIOD

This paragraph is mostly applicable to the Subcontractor.

Notwithstanding anything to the contrary in this Tender Document, the Subcontractor shall be appointed for a six (6) months' probationary period. During this period, the Subcontractor must satisfy the Employer that it can perform all the requirements set out in this Tender and show progress as tendered. The adjudication of whether the Subcontractor can perform the work, lies within the sole discretion of the Employer.

If, during the first six months the Employer is satisfied, in its sole discretion, that the Subcontractor is not meeting the expectations of this Tender, the Employer will have the right to terminate the agreement and the Subcontractor will not have any recourse against such cancellation except for the Subcontractor's rights to claim remuneration for work done and accepted by the Employer. For the measuring of the performance of the Subcontractor in terms of this clause, the Employer will take into consideration the following:

- a) The insurances and guarantees required for this contract must be in place;

- b) The proposed staff complement, and organisational structure must be in place within one month after commencement date of this contract;
- c) The Subcontractor should not have incurred more than R100 000-00 of all applicable penalties within the first six months after commencement;
- d) The Subcontractor should not have exceeded more than 14 days of any deadline set by the Employer in terms of the Specifications and the programme submitted by the Subcontractor for the first six months.
- e) If, after 6 (six) months after the commencement of the contract, the Subcontractor has not successfully obtained the certification through an approved Certification Organisation required for the kind of traffic monitoring being undertaken in terms of this contract, the Employer may, in its sole discretion, forthwith cancel the contract, in which case the Subcontractor shall not have any recourse against such cancellation except for the Subcontractor's rights to claim remuneration for work done. This Clause shall be inserted in any legal arrangement between the Subcontractor and his subcontractor.
- f) Should the failure to obtain certification be proven to be due to the performance of the certification organisation, the Employer may, in its sole discretion extend the period for certification.

V3.2.8 STORAGE OF DATA

The data collected on behalf of the Employer shall be safeguarded by the Service Provider in such a way that it is protected from all possible causes of unauthorised duplication, loss, damage or destruction. Submission of data to the Employer in no way absolves the Service Provider from any responsibility for the safekeeping of any data belonging to the Employer, in his care. A duplicate of the data must be kept in a separate, secure location and must be updated weekly. The data must be kept for 5 years after the completion of the contract.

V3.2.9 COMPLETION TIME OF SPECIFIED ACTIVITIES AND PENALTIES

Generally, the traffic monitoring activities covered by this contract will be on a continuous basis. However, certain specified activities are considered to be a priority or are critical, and it is a condition of contract that they shall be completed or responded to as specified, after receiving an instruction from the Employer.

Should the Service Provider fail to complete the specified activity or respond timeously, or comply with the specifications, he shall be liable for delay damages or a penalty as specified in Table 2.

DEFINITIONS:

1) Completion time:

Completion time is defined as that period from the date on which an instruction is received by the Service Provider from the Employer to the date of full completion.

Responding time:

Responding time is defined as that period from the time on which an instruction is received by the Service Provider from the Employer to the time of reporting at the place of the required activity, by the designated standby supervisor and team.

These activities, specified times, delay damages, and including penalties for work not complying with the specifications, are indicated in Table 2.

Notes:

- i) Indicated day means a calendar day.
- ii) There shall be no reduction of delay damages or penalty for partial completion of works.
- iii) Delay damages and penalties as specified in Table 2, as well as elsewhere in the Scope of Work shall be deducted from the amount Ac as defined in sub-clause 13.8 of the Particular Conditions of Contract, prior to multiplying the amount Ac by the Contract Price Adjustment Factor.
- iv) Payment of delay damages or a penalty shall not absolve the Service Provider of any claims or relieve the Service Provider of any of his duties, obligations or responsibilities under the contract.

Table 2: Specified Activity Periods, and Penalties

| Activity | Completion Time | Responding Time | Penalty for late Responding | Penalty for late Completion | Penalty for not to Specification |
|--------------------------------------------------------------------------------------|------------------------------------------------|-----------------------------|-----------------------------|-----------------------------|--------------------------------------------------------------------|
| PROJECT SPECIFICATION AMENDMENTS TO THE COTO STANDARD SPECIFICATIONS - TMH 3 | | | | | |
| System Supplier Certification (See Volume 2, paragraph 18.5) | 3 months after contract award | | | R 500/day | R 500/day |
| Service Provider Certification (See Volume 2, paragraph 18.5) | 6 months after contract award | | | R 500/day | R 500/day |
| 19.4 Data Authentication | 1 Hour from extraction | | | R 500/occurrence | |
| 19.5 Data Submission – Type C1 | Validated: 4 days after end of month | | | R 500/station/occurrence | R 500/station/occurrence |
| 19.5 Data Submission – Type M1 | Validated: 30 days survey | | | R 500/station/occurrence | R 500/station/occurrence |
| PROJECT SPECIFICATION AMENDMENTS TO THE COTO STANDARD SPECIFICATIONS - TMH 14 | | | | | |
| 9.3 Individual Vehicle Data | | | | | R 500/station/occurrence |
| 12.3 Counting station definition file | Compulsory with all data submission | 24 hours after notification | R 500/station/occurrence | R 500/station/occurrence | R 500/station/occurrence |
| 12.5 Counting station image files | Compulsory with all data submission | 24 hours after notification | R 500/station/occurrence | R 500/station/occurrence | R 500/station/occurrence |
| C3.3 SPECIAL PROJECT SPECIFICATIONS | | | | | |
| V3.3 Monthly ITIS Reporting | On submission of payment certificate | | | R 500/day | |
| V3.7 Accommodation of Traffic | | | R 200/hour | | R 2000 per observed occurrence, or failure to submit comprehensive |

| Activity | Completion Time | Responding Time | Penalty for late Responding | Penalty for late Completion | Penalty for not to Specification |
|-----------------------------------------------------------------------------------------------------------------------------|--------------------------------------|-----------------|-----------------------------|-----------------------------|-------------------------------------|
| | | | | | photographic records per occurrence |
| V3.10.3 Priority Counts | Within first year of Subcontract | | | | R 6 000/ station |
| V3.11.6 Submission of Manual Traffic Monitoring Data | | | R 500/day | R 500/day | R 500/day |
| V3.14.5 Non-intrusive loop removal | Compulsory with all data submissions | | | | R 500/station /occurrence |
| VOLUME D:STAKEHOLDER AND COMMUNITY LIAISON, AND TARGETED LABOUR AND TARGETED ENTERPRISES UTILISATION AND DEVELOPMENT | | | | | |
| D3.4 Contract Participation Targets | | | | | As per formula |
| D10 Contract Skills Development Goal | | | | | As per formula |

V3.2.10 LEGAL AND CONTRACTUAL REQUIREMENTS AND RESPONSIBILITIES TO THE PUBLIC

Volume D contains provisions that regulate the contractor's work methods for compliance with Small Contractor Development, Training and Community Liaison. No separate payment mechanism has been made available for the Service Provider to allow for his compliance with relevant black economic empowerment legislation. The Service Provider shall include such costs in the existing payment items under paragraph V3.5. However, non-compliance with the provisions of Section D may lead to the imposition of penalties.

V3.3. MONTHLY REPORTING

V3.3.1 SCOPE

This section covers monthly reports that must be produced by the Service Provider for monthly meetings. Payment will not be made separately for any work undertaken under this section, and all costs incurred by the Service Provider must be included in other items. An example of a report will be given to the successful tenderers. Please take note of Clause V3.5.3 for further reporting requirements.

V3.3.2 ATTENDANCE

The Service Provider must provide the reports detailed in this section for monthly contract meetings, where applicable to the contract awarded.

All meetings must be attended by the following personnel:

- Project Manager
- Traffic Engineer
- Targeted Enterprise Manager
- Technical Specialist from System Supplier

V3.3.3 SERVICE PROVIDER'S RESPONSIBILITY

Except for taking the minutes of meetings, which is a duty of the Project Manager or his representative, the Service Provider shall provide a secretariat function which includes, amongst others, the following:

- a) Schedule monthly progress meetings with Subcontractors;
- b) Compile meeting agendas;
- c) Compile a report pack each awarded package consisting of the following:
 - a. Traffic Monitoring Data Availability Reports
 - b. Expenditure Report
 - c. List of Project Level Counts and status
 - d. List of outstanding data validation problems
 - e. List of vandalism attempts with dates
 - f. List of stations that could not be counted due to road construction with dates when noticed.
- d) The requirements for some of the above-mentioned reports are specified below.
- e) Distribute minutes of meetings;
- f) Distribute written communication to and from the Employer;
- g) Keep records of all the above and any other documentation; and
- h) Provide any other reasonable secretariat function pertaining to the monthly meetings.

V3.3.3.1 TRAFFIC MONITORING DATA AVAILABILITY REPORTS

A bar chart, reflecting the number of stations counted per system type for the month concerned, and hence, also the time periods during which data is collected simultaneously by both or all stations, in the following format;

- a) On the X-axis, months,
- b) On the Y-axis, the number of stations counted during the specific month.
- c) A similar graph as described above showing the cumulative number of stations counted.

Examples of these reports can be given on request.

V3.3.3.2 EXPENDITURE REPORT

A line graph must be provided indicating the expenditure incurred on the contract, as well as the originally programmed expenditure, both exclusive of VAT. Expenditure in terms of modified programmes, once accepted by the Employer, must be indicated in addition to the original programme. Each line must be shown in a different colour, and the chart must be properly annotated and provided with a suitable legend.

A separate graph and table indicating monthly expenditure for CPI must also be provided.

V3.4. PAYMENT CERTIFICATES

SANRAL is developing an automated on-line payment certificate system and Service Providers will be expected to make use of this system once completed.

The following requirement must be followed when preparing payment certificates:

1. Payment certificates must be submitted on a monthly basis within the first seven (7) workdays of the month.
2. Certificates must be split into Toll and Non-Toll according to the location of the monitoring site. The Service Provider must confirm when in doubt.
3. The following documentation must be submitted with all certificates:
 - a) A tax invoice (if VAT is claimed) or invoice not older than 3 days from date of submission. The invoice must display the following:
 - i) Addressed to SANRAL showing the PO Box or physical address.
 - ii) Company VAT number
 - iii) SANRAL's VAT number (4220186250) – only if VAT is claimed
 - iv) Invoice Date
 - v) Invoice Number
 - vi) Banking Details
 - b) A Statement reflecting the applicable invoice
 - c) Supporting documentation for all claimed pay items
4. No payment can be made before the Service Provider is registered as a vendor on the Employer's system.

V3.5. ESTABLISHMENT AND TIME RELATED OBLIGATIONS

V3.5.1 SCOPE

This section covers the establishment of the Subcontractor's organisation and his general obligations. It also covers payment for certain general obligations, risks and liabilities and general items of cost not covered elsewhere.

V3.5.2 OFFICES, STORES, EQUIPMENT AND STAFF

The Service Provider shall establish and maintain offices, computer equipment and, staff suitable for the efficient mentoring and managing of the subcontractors.

The Service Provider shall provide, at his own cost, facilities for transferring data to the Employer or to the entity indicated by the Employer at the times and as specified elsewhere in this Specification. Payment of the Subcontractor's monthly claims may be delayed at the discretion of the Employer if outstanding data has not

been submitted in the manner prescribed, or a penalty for not adhering to timeliness requirements shall be imposed as described elsewhere in these Specifications.

V3.5.3 MONTHLY REPORTING

When submitting any information required and interim certificates for payment, the Service Provider and Subcontractor shall use the Employer's standard forms and formats.

The Service Provider shall submit and update on a monthly basis all the appendices to the site meeting minutes and a cash flow forecast for the works.

The Service Provider shall complete monthly reports regarding training, empowerment, capacity building, small contractor development, labour and staff returns and any such aspects on the Employer's Integrated Transportation Information System (ITIS) or any other format as required by the Employer. This information shall also be reported on monthly for all sub-contractors employed.

ITIS is an integrated approach to the sharing and inter-relating of technical performance information for the Employer and relies on people following procedures to populate system with data. ITIS currently consist of the following platforms:

- **ITIS Web** – Web enabled portal providing online access to various functions, workflows and reports.
- **ITIS Desktop** – Offline data capture tool enabling the capture of information offline, validation and then synchronisation of data with the ITIS database.
- **ITIS Mobile** – Application (Android 6 or later) that allows the in-field capture of information using a smart phone or tablet (must have camera and GPS), validation and then synchronisation of data with the ITIS database.

The Employer has several ITIS modules running on any of the above ITIS platforms which affect the Contractor, who will need to use these modules to perform certain procedures and to provide required information. The current module applicable to this contract is:

- **Project Information Module** – employment and training data.

The above information shall form part of supporting documentation required for making interim payments in terms of the General Conditions of Contract. No payment shall be made without this information submitted.

Allowance has been made for these requirements in the Pricing Schedule under pay item V3.5(c) Monthly Reporting. Failure to comply may result in payments being withheld.

User manuals for the various functions can be downloaded from <https://itis.nra.co.za/Portal/Account/Login?ReturnUrl=%2fportal%2fDefault%2fIndex>, Login, Modules myACCOUNT, User Manuals after the successful registration as a Public user.

V3.5.4 MEASUREMENT AND PAYMENT

ESTABLISHMENT FOR A DATA COLLECTION SERVICE

| ITEM | DESCRIPTION | UNIT |
|-------------|---------------------------------------------|----------|
| V3.5(a) | Establishment for a data collection service | Lump Sum |
| V3.5(b) | Time related obligations | |
| V3.5(b)(i) | Mobilisation period | Month |
| V3.5(b)(ii) | Execution of the works | Month |
| V3.5(c) | Monthly reporting cost | Month |
| V3.5(d) | Health and safety obligation | Month |
| V3.5(e) | Failure to provide ITIS Report on time | Sum |

Payment of the lump sum under V3.5(a) and the rate per month for V3.5(b) shall, for the two subitems together include full compensation for all the Service Provider's charges in respect of the following items, collectively termed the "Service Provider's general obligations"

- a) Setting up and maintaining his organization, personnel, accommodation, offices, stores, workshops, complete with all equipment and consumables, vehicles, equipment, testing and calibration facilities as well as all general office overheads, profit, financing costs, risks, legal and contractual responsibilities and other costs and obligations of a preliminary or general nature which are not specifically measured for payment under any other item of payment.
- b) Complying with the requirements of the general conditions of contract and Volume 3 of the specifications, including the effecting of insurances and providing the sureties required.
- c) Complying with the requirements and conditions of the additional specifications relating to Small Contractor Development, Training and Community Liaison.

Payment of the lump sum tendered under subitem V3.5(a) will be made in four (4) instalments, as follows:

1. The first instalment, 25% of the lump sum, will be paid with successful award of subcontractors for all applicable packages.
2. The second instalment, 25% of the lump sum, will be paid with successful completion of the Subcontractor's System Supplier Certification
3. The third instalment, 25% of the lump sum, will be paid after the successful completion of the Subcontractor's Service Provider Certifications.
4. The fourth instalment, 25% of the lump sum, will be paid after the successful completion of 95% of the required stations to be counted during the contract period.

The Service Provider will be required to furnish documentary proof of all certifications before instalments will be paid.

In the event that the Service Provider not being able to satisfy the Employer as to the completion of the different tasks, the Employer shall have the right to withhold parts of any payments to be made under this subitem, until the works have been completed.

The tendered rate per month for subitem V3.5(b) represents full compensation for that part of the Service Provider's general obligations which are mainly a function of the contract time. The tendered rate will be paid monthly, pro rata for parts of a month, for subitem V3.5(b)(i) from the Commencement Date in terms of clause 8.1 of the general conditions of contract, until the end of the Mobilisation Period and for subitem V3.5(b)(ii) from the end of the Mobilisation Period, until the end of the contract.

Payment of the rate per month for subitems V3.5(c) and V3.5(d) shall include full compensation for all the Service Provider's obligations relevant to its own as well as the Subcontractor's monthly reporting and managing the Subcontractor's health and safety obligations. Last mentioned will include, but is not limited to assistance with Health and Safety files as directed by OHS specialist, inspection of vehicles and safety equipment, OHS related training etc.

The tendered rates for subitems V3.5(c) and V3.5(d) shall apply in the same manner as pay subitem V3.5(b) but shall not form part of the calculation of the restrictions imposed by Form to tender B1: Contractor's Establishment on Site.

The rate tendered for subitem V3.5(c) shall include full compensation for registering on the Employer's project information module, compiling and capturing, monthly for the full duration of the Contract, the required information regarding training, empowerment, capacity building, targeted enterprise development, labour and staff returns, and attaching proof of monthly capturing to monthly payment certificates. It shall further include for all personnel and other costs, disbursements, overheads and profit.

Payment for subitem V3.5(e) will be as specified in paragraph V3.2.9.

A contractor who tenders zero for this pay item shall not be relieved of his statutory obligations. A nil rate offered shall be deemed not as an omission but as deliberate notice that costs have been included in the tendered rates for individual items of work or in the other preliminary and general pay items.

V3.6. SELECTION OF AND ACCESS TO SITES

V3.6.1 SCOPE

This section describes the process to be followed to select a new traffic monitoring site, to obtain a station number for the new site, and to obtain Section 48 permission to conduct station construction and perform work in the road reserve at the site.

V3.6.2 SITE SELECTION

Site selection shall be undertaken in full compliance with the TMH3 document.

The Traffic Monitoring station list have been provided with the tender documents. The number of lanes to be monitored at each will be determined during the course of the contract and will depend on the precise location of each site.

Please take note that the positions provided are only an indication of where the monitoring sites are located, and that final site selection will determine the sites' final positions. When this has been done, the number of lanes to be monitored at each site will be able to be finalised.

Due to final site selection taking place during the course of the contract, the locality and number of combination sites will emerge as the work progresses. It is important to note that all lanes must be covered at any given site, and that this may give rise to the establishment of two, or even more pieces of equipment being required to monitor the traffic at any particular site. The layout of any combination site is subject to the approval of the Employer. **It is of utmost importance that combination (partial) sites should operate concurrently. No payment will be made if one of the sites fail during the duration of the survey.**

The Service Provider is required to notify the Employer regarding the proposed locations for new secondary stations. Upon receiving this notification, the Employer will instruct the designated Service Provider under the Long-Term Traffic Monitoring contract to construct the station in accordance with the specified requirements and standards outlined in the contract. The nominated Service Provider will conduct the site selection and install the station according to the System Provider's specifications and provide a secure housing for the station. Once construction is complete, the Employer will inform the Service Provider. Subsequently, the Subcontractor may proceed to activate the station for the prescribed duration.

The Subcontractor is responsible for verifying the status of all secondary stations assigned to them within the initial six months of the contract. Any identified defects must be promptly reported by the Subcontractor to the Service Provider, who shall then submit a comprehensive report with the findings to the Employer.

All manual count locations are required to be verified by the Service Provider against the information supplied by the Employer prior to the Subcontractor commencing the survey. Additionally, no new manual count stations may be established without the Employer's approval.

V3.6.3 SITE ACCESS

The Traffic Summary Report is given as representation of the traffic segments on all the SANRAL roads as well as all the stations currently in use and historic stations. See section V3.20 for reference. The following rules will apply to the counting of traffic segments. Any transgression of these rules will result in no payment.

- a) Traffic segments where permanent stations are located may not be counted unless instructed by the Employer.

- b) Station numbers will be confirmed by the Employer and may only be changed as a result in the change in number of lanes. Subcontractors must notify the Employer if the number of lanes to be counted differ from the station information given. New station numbers will be allocated by the Employer in such cases.
- c) Any traffic segment in a province or region not awarded to the Subcontractor may not be counted. Traffic segments that span over two provinces will be allocated to the province in which the longest part of the segment is located. Confirmation must be obtained from the Employer when in doubt.
- d) Any road that does not fall under the jurisdiction of the Employer, may not be counted. The Employer will give specific instructions, should such roads be counted. If the station is located on a road owned or managed by an authority other than the Employer, such authority's approval shall also be obtained.
- e) GPS coordinates given are only an indication of the position where the station was last counted within a specific traffic segment. The Subcontractor may move the station to a more suitable location as long as it remains in the specific traffic segment. RSS files must be updated with the correct GPS coordinates every time a station is counted.
- f) The Employer will give the Service Provider access to a map portal as visual aid for site selections. The Employer will provide training in the functionality and understanding of the maps.
- g) If the Subcontractor decides to utilise two or more traffic counters to count a specific road, the count will only be accepted once all directions on the road has been counted successfully over the same time period. Partial counts will not be accepted.

V3.6.4 MEASUREMENT AND PAYMENT

| ITEM | DESCRIPTION | UNIT |
|-------------|-------------------------------------|-------------|
| V3.6(a) | Secondary station site verification | Number |
| V3.6(b) | Manual count site selection | Number |

The unit of measurement for site selection in terms of V3.6(a) shall be the number of secondary sites that must be verified including all costs of visits to any site. For each verified site, payment shall only be made once. Positions must be approved by the Employer.

The unit of measurement for site selection in terms of V3.6(b) shall be the number of manual monitoring sites where 12-hour intersection manual counts must be conducted and shall include all costs of visits to the site or desktop verification. Positions must be approved by the Employer.

V3.7. ACCOMMODATION OF TRAFFIC

V3.7.1 SCOPE

This section covers the traffic accommodation during the installation of temporary traffic monitoring station and the necessary temporary deviations and detours, barricades and signs, and everything necessary for the safe and easy passage of all public traffic during the installation periods, and also the obliteration of temporary

deviations as they become redundant. This section also covers the accommodation of traffic on existing roads without the deviation of traffic onto temporary deviations.

It is a requirement of this specification that traffic is accommodated taking into account the provisions of the latest edition of the South African Road Traffic Signs Manual (SARTSM). The latest version for use in the accommodation of traffic is volume 2, chapter 13 of the June 1999 edition. Copies of this publication are available from Government Printers –Tel: (012) 334 4507/8/9 or (012) 334 4510 Fax: (012) 323 9574.

V3.7.2 GENERAL REQUIREMENTS

The Subcontractor indemnifies the Employer against all claims, proceedings, actions, damages and costs which may arise from or are related to the absence, or inadequacy, or improper functioning, or placement of road traffic warning signs, barricades, traffic control facilities, channelling devices, warning devices and traffic markings.

The Subcontractor is required to submit, for the information and comment of the Employer, a Traffic Accommodation Drawing for every type of installation prior to commencing with any survey. These Drawings shall be prepared based on the requirements of the SARTSM for traffic accommodation at construction works.

The Subcontractor is required, at its own cost, to take digital photographs of every site at which it works in order to be able to prove the adequacy of the traffic accommodation measures taken. The photographs shall be geo-referenced and contain the date and time that the image was captured. This data must be recorded by the camera itself and be visible in either the frames of the images captured, or in the metadata of the images. The photographs must be stored by the Subcontractor for a period of at least six months.

V3.7.3 SHORT-TERM LANE CLOSURE

Short term lane closures shall typically be required during short-term traffic monitoring. The following conditions must be adhered to:

1. The approximate time periods for short term lane closures and construction of the works shall be as follows:
 - a) Day shifts: 07:30 – 16:30.
 - b) The above-mentioned time periods, especially the start of the lane closure, shall be determined at the start of each shift by the Traffic Engineer and may vary slightly from the times indicated.
2. The day prior to a long weekend the full road width shall be re-opened not later than 14:00.
3. A maximum of 1 lane can be closed at any time without approval from the Employer.
4. Delineators shall be used to demarcate the installation area.

V3.7.4 SAFETY

The Subcontractor shall within 2 (two) working days after receipt of a 3rd party claim acknowledge receipt to the claimant. The Employer shall be copied on all correspondence regarding 3rd party claims. The Subcontractor shall at the monthly site meeting report on the status and outcome of 3rd party claims.

The Subcontractor shall be fully responsible for all the traffic accommodation on site, including for work undertaken by sub-contractors.

No equipment or vehicles shall be stored or parked in the median or on the roadside during non-working hours except if protected or demarcated and only if approved by the Employer.

V3.7.5 TRAFFIC SAFETY OFFICER

The Subcontractor shall appoint at least one knowledgeable person as its traffic safety officer who shall be responsible for the arrangement and maintenance of all traffic accommodation measures for the duration of the contract. This person shall, at least:

- a) Be responsible for the upkeep of traffic accommodation standards,
- b) Compile and maintain a record of all traffic accommodation devices used and people employed, with flagmen specified separately, at each site for each work period,
- c) Inspect and keep a record of the condition, cleanliness and serviceability of all traffic accommodation devices on a regular basis,
- d) Exercise control over workmen and personnel, visitors and plant on site, including their wearing of high visibility clothing, the use of flickering lights and the cleanliness and display of all warning devices,
- e) Be responsible for keeping all signs, cones and devices clean and in good condition at all times, and the cleaning and replacing of signs and devices as necessary, to the satisfaction of the Employer.
- f) Maintain a record on his/her person of all emergency service contact details relative to the area in which the Subcontractor is working on the road.
- g) The traffic safety officer shall be equipped with a cellular telephone and shall have a traffic safety vehicle and sufficient labour at his disposal 24 hours a day, including all prescribed non-working days, and shall not be utilised for other duties. He shall be directly answerable to the contractor's site agent. The traffic safety officer shall have his own vehicle to carry out inspections and at least one assistant to accompany him full time.
- h) The traffic safety officer shall have a direct line of communication at all times with the police and traffic officers responsible for the area within limits of the contract.

V3.7.6 LOCAL AUTHORITIES

The Subcontractor shall comply with any requirements imposed by local road and/or traffic authorities in cases where installations are to be carried out on roads not falling under the jurisdiction of the Employer.

The Subcontractor shall, as far as it is practical to do so, seek the co-operation and assistance of the Traffic Authorities in order to ensure that work is carried out safely and with a minimum of disruption of traffic movement.

V3.7.7 WORKING CONDITIONS

No installation work shall be carried out in bad light, mist and fog, and during periods of high traffic volumes such as peak traffic hours, peak traffic during public holiday periods or during peaks in traffic over long weekends. No installation work shall be carried out at night unless prior written permission to do so has been obtained from the Employer.

V3.7.8 REQUIREMENTS FOR SIGNS

The Subcontractor shall be responsible for the protection and maintenance of all signs and shall, at his own cost, replace any signs that have been damaged, lost, or stolen.

1. Delineators

The Subcontractor must;

- a) comply with the manufacturing and reflective requirements of the SARTSM and the blades shall be reversible;
- b) have smooth and rounded edges and be mounted on a post and base. All components shall be of durable plastic material;
- c) have the lower edge of the reflective part of the delineator mounted not lower than 250 mm above the road surface;
- d) be capable of withstanding the movement of passing vehicles and gusting winds up to 60 km/h in typical working conditions without falling over. To achieve this, the base shall be at least 0.18 m² and be ballasted by its own weight or with sandbags filled with sand;

Together with its mounting be designed such that it will collapse in a safe manner under traffic impact.

Traffic cones manufactured in a fluorescent red-orange or red plastic material may be used only at short term lane deviations during daylight. Cones shall not be used unless delineators are also used. Cones shall be interspersed with delineators at a ratio not exceeding 3 cones to 1 delineator. Cones used on all deviations shall be 750 mm high. Lane closures which continue into the night-time shall be demarcated by delineators only.

V3.7.9 VEHICLES

All vehicles used on site shall be equipped, at the Subcontractor's cost, with a flickering amber light on the roof on the vehicle that is fully visible from all directions. This flickering light shall be switched on and functioning whenever the Subcontractor's vehicles are on site and are stationary or moving at a speed slower than the normal speed of the traffic on the road.

V3.7.10 FLAGMEN

Flagmen shall be provided where shown on the drawings or required by the specification. During the daytime, at least two flagmen shall be provided at each traffic control point in addition to the STOP/GO sign operator,

one flagman at the first speed reduction sign and a second roving flagman at least a 100 m behind the last vehicle in the queue to indicate to the traffic to stop. Where the shoulder of the road is closed to traffic, flagmen shall be provided at the leading ends of closures during daytime. These flagmen shall be provided at the first speed reduction sign to warn the traffic about the closure. No flagmen shall be on duty for a period of more than 10 hours per day.

Flagmen shall be adequately trained in the standard flagging techniques as described in the SARTSM (refer to figure 13.23 of detail 13.23.1) and be provided with conspicuous clothing such as safety jackets utilizing retro-reflective and/or fluorescent panels in red, yellow and/or white.

Flagmen shall have in their possession, at all times, certification that they have attended and passed an accredited course in flagging techniques before being allowed onto the construction site.

Flags shall be made from bright red or red-orange material and shall be square with a minimum side length of 600 mm. The flag shall be attached to a staff at least 1,0 m in length.

In terms of lateral clearance and safety, flagmen shall stand on the shoulder of the lane of traffic that is being controlled and under no circumstances shall flagmen be permitted to stand within the traffic lane. In order to obtain maximum visual impact for the travelling public, flagmen shall stand-alone.

V3.7.11 SITE PERSONNEL

The Subcontractor shall ensure that all his personnel are equipped with reflective safety jackets and that these are worn at all times when working on or near to the travelled way. Any person found not wearing a reflective jacket under these circumstances shall be removed from the site until such time as he is in possession of and wearing a reflective jacket. Reflective safety jackets shall be kept in good condition and any jackets that are, in the opinion of the engineer, ineffective shall be immediately replaced by the contractor.

V3.7.12 CROSSING THE MEDIAN OR CARRIAGEWAY CENTRELINE

No vehicle or item of equipment shall be allowed to cross the median of a dual carriageway road or the centreline of a single carriageway unless the traffic accommodation and signage specifically allows for this and is approved by the Employer as safe.

V3.7.13 PENALTY EVENTS

Whenever the following events occur, the Subcontractor shall be subjected to penalty conditions expressed in the Contract Data.

Failure or refusal on the part of the Subcontractor to take the necessary steps to ensure the safety and convenience of the travelling public, accommodation of traffic, plant and personnel in accordance with these specifications or as required by statutory authorities or ordered by the engineer, shall be sufficient cause for the engineer to apply penalties as follows:

A fixed penalty per occurrence at the rate provided in the Contract Data, shall be deducted for each and every occurrence of non-compliance with any of the requirements of this section.

In addition, a time-related penalty per hour at the rate provided in the Contract Data, over and above the fixed penalty, shall be deducted for non-compliance to rectify any defects in the accommodation of traffic within the allowable time after the engineer has given an instruction to this effect. The Employer's instruction shall state the allowable time, which shall be the time in hours for reinstatement of the defects. Should the Subcontractor fail to adhere to this instruction, the time-related penalty shall be applied from the time the instruction was given.

V3.7.14 MEASUREMENT AND PAYMENT

ACCOMMODATION OF TRAFFIC

| ITEM | DESCRIPTION | UNIT |
|-------------|----------------------------------------------------|-------------|
| V3.7(a) | Compliance with traffic accommodation requirements | Month |
| V3.7(b) | Penalty for non-compliance with SARTSM | Number |

The tendered rate per month under V3.7(a) shall include full compensation for all costs associated with the accommodation of traffic, including any cost associated with the procurement of traffic signs, the provision of flagmen, for the work undertaken by the Subcontractor himself. The tendered rate shall also include full compensation for the Traffic Safety Officer, all costs for transporting to site, erection and removal, and cleaning and maintenance. It shall also include the costs of the Subcontractor for the loss, theft or damage over and above normal wear and tear of the temporary traffic control facilities.

V3.8. INSTRUMENT HOUSINGS

V3.8.1 SCOPE

This section covers the provision by and use of instrument housings by the Subcontractor at traffic monitoring stations.

V3.8.2 DESCRIPTION

The provision and installation of instrument housings, where used by the Subcontractor, must comply with the clear distances as specified in the TMH3 Specifications.

The Employer will not allow the Subcontractor to use any instrument housing which, in the sole opinion of the Employer, may unreasonably constitute a traffic hazard.

All instrument housings must be provided at the Subcontractor's own cost and shall remain the property of the Subcontractor.

All instrument housings on temporary stations must be clearly marked with a sticker which displays all the information that are on the station information plate drawing (as described below) submitted with the tender document.

The Subcontractor must evaluate the traffic segments, which may be in high vandalism risk areas and make the necessary improvements to the housings to strengthen them against possible vandalism.

V3.8.3 MEASUREMENT AND PAYMENT

INSTRUMENT HOUSINGS

| ITEM | DESCRIPTION | UNIT |
|-------------|--------------------------------------------|-------------|
| V3.8(a) | Supply of vandal proof instrument housings | Number |

The unit of measurement for the supply of vandal proof instrument housings in terms of V3.8(a) shall be the number of housings that must be supplied including all costs related to the manufacturing and installation of each housing.

V3.9. STATION INFORMATION PLATES

V3.9.1 SCOPE

This section covers the provision of Station Information Plates.

V3.9.2 DESCRIPTION

The installation of station information plates shall be undertaken in accordance with the Subcontractor's quality management procedures for ensuring the correct placement, erection and finishing of station information plates, as well as for ensuring that high quality materials are used and that the correct information appears on the faces of the plates. All secondary traffic monitoring stations must be fitted with an information plate.

The nominated Service Provider of the Long-Term Traffic Monitoring contract shall provide and install station information plates at secondary stations, no further than 3 m from the concrete bases in accordance with the drawings. The poles shall be of sufficient length to be fully embedded in holes excavated to a depth of 600 mm, backfilled with properly compacted cement treated backfill. The faces of information plates shall be parallel to the direction of traffic.

The plate itself shall be a 1.6 mm galvanised sheet with accurately cut mounting holes. The information must be digitally printed onto polymeric vinyl with a life expectancy of at least 5 years. The plate must be cold laminated which is solvent resistant so that graffiti can be cleaned off with lacquer thinner. A drawing and example of an information plate as well as the latest SANRAL Logo are contained in the tender documents.

Station plate poles shall consist of galvanised round or square tube having a cross-sectional area of no less than 1600 square millimetres.

Where the Subcontractor desires to mount aerals on the station information plates, the Subcontractor shall provide the Employer with a drawing of his proposal for consideration and written approval.

The Subcontractor should notify the Service Provider if any station information plates should be replaced due to fading images or other damages. A geo-coded photograph must be taken of the old information plate as proof of the replacement and subsequent payment.

Station information plates damaged or lost due to vehicle strikes, veld fires, theft and vandalism shall be repaired or replaced at the cost of the Employer only when geocoded photographic evidence is provided.

The Subcontractor must make use of a clearly identifiable sticker on the housing of temporary traffic monitoring stations. The Subcontractor shall prove the Employer with a drawing of the proposed sticker for consideration and written approval.

V3.9.3 MEASUREMENT AND PAYMENT

SUPPLY AND INSTALLATION OF STATION INFORMATION PLATES

| ITEM | DESCRIPTION | UNIT |
|-------------|---------------------------------------------------------------|-------------|
| V3.9(a) | Supply of station information stickers for temporary housings | Number |

The unit of measurement for new station information plates shall be the number of station information plates provided and installed, complete with poles as shown on the drawings.

The supply and installation of replacement station information plates on existing poles shall include the removal from their poles and disposal of the old station information plates, and the manufacture and erection of new station information plates.

The supply and installation of station information stickers shall include the printing and installation of the stickers.

The rate for removing old station information plates, complete with poles shall be the number of plates, including their poles, dug out of the ground, removed from site and disposed of, including completely backfilling the hole, compaction of the backfill material and neatly finishing off the area.

V3.10. DATA COLLECTION AND PROCESSING

V3.10.1 SCOPE

This section covers manual traffic monitoring and electronic short-term traffic monitoring.

V3.10.2 GENERAL

Traffic Segments may only be counted once in a calendar year. Extra counts will only be allowed with written instruction from the Employer.

All traffic segments with counts older than 3 years must be prioritised in the counting program of the Subcontractor and must be counted within the first year of the contract. Failing to count these traffic segments in the required period, will result in a penalty. See Table 2 for reference.

V3.10.3 DATA SUBMISSION

Data collected during any month shall be submitted by the Subcontractor to the Service Provider for quality control checks and then by the Service Provider to the Employer in RSV format according to the requirements of TMH14 as well as TMH3. The following basic checks must be conducted by the Service Provider:

1. **Photos** – see list of required photos in paragraph V3.10.4.
 - a) All photos to be taken in landscape orientation.
 - b) Were all photos submitted?
 - c) Is the quality of the photos sufficient – photos taken during bad light is not allowed?
 - d) Are the size of the photo <10MB
 - e) Are all photos geotagged?
 - f) Is the accuracy of the geotagging acceptable?
 - g) Photos should not be taken more than 50m away from the RSV GPS coordinates unless it is a station with ramps.
 - h) Approaches must be clearly visible for Manual monitoring
 - i) No photos should be taken during insufficient lighting conditions.
2. **RSS File**
 - a) Install date inserted
 - b) Route format e.g. N004, R061, R573 (always 4 characters)
 - c) Section format – must include the route and direction e.g. N00121N, R06108E
 - d) Compare directions of RSS with RSV file.
 - e) Are the directions and names of existing stations the same as the info that was provided from the Employer. Special care must be taken for Manual Traffic Monitoring station information.
 - f) Directions for electronic short-term monitoring stations is according to the proclaimed directions.
 - g) Directions for manual traffic monitoring stations is according to geographic layout.
3. **RSV File**
 - a) Provide motivation if data was marked with QF records.

- b) Provide motivation if required duration could not be achieved due to reasons beyond the Subcontractor's control.

A penalty of as expressed in Table 2 will be imposed for each traffic monitoring station's data submitted late or if formats are not adhered to.

Where partial data submission of any station is made by the Subcontractor after the end of any month, all data for that station will be regarded as having been submitted late.

V3.10.4 STRUCTURE FOR SUBMISSION OF DATA

The required folder structure is as follows.

- a) Contract Number
- b) Subcontractor
- c) Package Number
- d) Month and year (May 2026).
- e) RSV Files as per file naming convention described in the TMH14 document.
- f) Photos
 - i. Removal of loops
 - ii. Station info photos according to Chapter 12 of TMH14. See the list below for required photos.
 - 1. All traffic streams showing the sensors. Only downstream photos required (D).
 - 2. Housing (H)
 - 3. Layout photos (L)
 - iii. Vandalism
 - iv. Roadworks
- g) RSS Files
- h) Diagram of turning movement on Manual Traffic counts. See the example in clause V3.11.5.

V3.10.5 TIMELINESS OF DATA SUBMISSION

Data collected during any month shall be submitted to the Employer as specified in the TMH3 document.

A penalty of as expressed in Table 2 will be imposed for each traffic monitoring station's data submitted late.

Where partial data submission of any station is made by the Subcontractor after the end of any month, all data for that station will be regarded as having been submitted late. This will apply to authenticated data as well as monthly data submissions as per Chapter 19 of TMH 3.

V3.11. MANUAL TRAFFIC MONITORING

V3.11.1 GENERAL

The Subcontractor shall undertake manual traffic counts on a road, at an intersection, or at an interchange according to the requirements specified in TMH3.

All traffic monitored by means of the manual monitoring method shall distinguish between the various traffic classes and turning movements (at intersections) indicated in the instruction issued by the Employer. Counts shall be undertaken, unless otherwise directed by the Employer, over a period the following periods:

- 12-hours commencing at 06h00 and ending at 18h00
- 18-hours commencing at 04h00 and ending at 20h00 (See note below).

Please take note of the following general rules and data requirements:

- All Traffic Monitoring Systems must log individual vehicle as specified in the TMH14 document and V3.14.3 below.
- No summaries may be included in the data.
- All videos must be made available on a storing device at the time of data submission and be stored at the Service provider for at least 2 years.
- Subcontractors will have 21 working days to process videos after a survey. Special permission must be obtained from the Employer should processing extensions be required.

The pricing schedule will only include 12-hour link counts for traffic segments with an ADT less than 250 vehicles per day. Segments with an ADT between 250 and 750 vehicles was historically counted as 18-hour counts. These will be converted to 24-hour electronic counts due to bad light in the winter and security concerns at night.

Exceptions: All SANRAL roads going through towns irrespective of the ADT, will also be included under these schedules. These segments will be clearly marked. 12-hour turning movement counts will be conducted at specific intersections which will be identified during the course of the contract and must be approved by the Employer.

V3.11.2 MONITORING TYPE

Manual Traffic Monitoring must comply with the requirements of Type M1 traffic monitoring.

V3.11.3 VEHICLE CATEGORISATION

The vehicle categorisation applicable to this contract are as follows:

- Vehicle Categorisation Scheme 1 = L2

- Vehicle Categorisation Scheme 2 = H1
- The Primary Vehicle Class Scheme to be used is Scheme 05: South African Length Based (Extended Light/Heavy) Classification. See TMH14 for vehicle length boundaries. It is acknowledged that that this classification scheme will be estimated since no length measurements are undertaken during manual monitoring. See the definitions under Clause V3.1.2 for heavy vehicles. The following guidance can be used:
 - Short heavy vehicles are heavy vehicles, as defined above, with two axles.
 - Medium heavy vehicles are heavy vehicles, as defined above, with three or four axles.
 - Long heavy vehicles are heavy vehicles, as defined above, with five or more axles.

V3.11.4 MONITORING DURATIONS

The following count durations are applicable to this contract.

Table 3: Manual Monitoring Count Durations

| Duration | 12-hour |
|------------------|------------------------------------|
| Frequency | 3-years |
| ADT Rural | <250 |
| ADT Urban | <10 000 |
| Special | All traffic segments through towns |

The Subcontractor may be requested to conduct manual traffic monitoring for project specific purposes by a consulting engineering firm. See clause V3.15

V3.11.5 INTERSECTION NEW SITE SELECTION AND SETUP

The Service Provider must assist the Subcontractor with the site selection of manual traffic monitoring stations. A diagram must be created showing the traffic streams as well as the turning movements. Directions must be selected according to the spatial layout of the intersection. If the layout of the stations is such that it is at a 45° angle, the leg closest to the Northern direction must be selected. The method of selecting the Northern leg is different from electronic monitoring direction selection and is not according to the proclaimed direction.



V3.11.6 MEASUREMENT AND PAYMENT

MANUAL TRAFFIC MONITORING

| ITEM | DESCRIPTION | UNIT |
|--------------|----------------------------------------|--------------|
| V3.11(a) | 12-Hour Manual with Turning Movements | |
| V3.11(a)(i) | 3 Leg Interchange | Number |
| V3.11(a)(ii) | 4 Leg Interchange | Number |
| V3.11(b) | 12-Hour Manual Link Counts | Number |
| V3.11(c) | Security Services | Station-Days |
| V3.11(d) | Verification Tests by Service Provider | Number |
| V3.11(e) | Penalties | Sum |

Payment for Manual Traffic Monitoring to distinguish between sites with different numbers of approaches (legs), as well as between different accuracy types.

The rate for Manual Traffic Monitoring shall include, but is not limited to, the provision of cameras, storing devices, enumerators, accommodation and travelling, as well as full compensation for all items incidental to manual monitoring for Type M1 monitoring. Please note that no payment will be made without the video being submitted by the Subcontractor.

The unit of measurement for Security Services shall be the number of station-days required to provide security services at high-risk areas. This rate will include transport to and from the site, accommodation, food, as well as full compensation for all items incidental to security services.

The rate for verification tests by Service Provider on behalf of the Employer shall include, but is not limited to, the provision of personnel, software, computers etc. required for the verification of at least 1% of the

Subcontractor's submitted manual monitoring videos for quality purposes. The unit of measurement shall be the number of videos per station verified. See TMH3 paragraph 15.6 for more information.

Penalties are as per Table 2.

V3.12. ORIGIN-DESTINATION SURVEYS/ROADSIDE INTERVIEWS

In a transportation study, it is often necessary to know the exact origin and destination of the trips. Information collected by origin-destination (O-D) surveys can be used to identify areas (land-use or zones) of the origin and destination of trips. Such surveys can also obtain additional trip-characteristic data including, vehicle type, vehicle occupancy, driver/household characteristics of the vehicle occupants, time of day when journeys are made, trip frequency, trip purpose and mode of travel and any other data related to the trip i.e. route choice and reasons, stops en-route etc.

The Subcontractor may be asked to conduct O-D surveys by a Consulting Engineering appointed on a SANRAL project or by the Employer. See the process that must be followed in clause V3.15. The Consulting Engineer will be responsible for giving the following information:

- a) Objective of the surveys
- b) Location of survey
- c) Number of surveys to be completed
- d) Provide questionnaire
- e) Provide Training
- f) The Subcontractor will be responsible for the following:
 - Safe site selection
 - Transporting the interviewers to the proposed location
 - Traffic Accommodation
 - Survey team supervision
 - Provide food and toilet facilities
 - Provide all stationery and clipboards
 - Provide safety jackets
 - Data capture into electronic format
 - Control counts – to be combined with either manual or automatic counts up- or down-stream of the survey site.
 - Coordinate with local law enforcement authorities for pulling off motorist
 - Capturing of data
- g) Output to be provided by the Subcontractor to the Consulting Engineer and/or Employer
 - Electronic files containing the captured data in Excel format
 - Survey report including the following information:
 - Survey description/purpose
 - Site location description and direction (with photographs)
 - Description of the survey teams

- Traffic volumes and direction
- Times of surveys
- Weather conditions
- Any incidents or reasons that may impact on the data (stoppages due to rain or other reason)
- At the request of the Consulting Engineer/Employer the Subcontractor must provide copies of completed questionnaires.

V3.12.1 FLOATING CAR DATA

Floating car data will be required for **traffic modelling** purposes. The following requirements apply:

- The data must be obtained from suitable vendors.
- The required accuracy is 10 m.
- The geographic areas and required durations will be provided for each request.
- Further support will be provided by the Traffic Modelling Team.

V3.12.2 MEASUREMENT AND PAYMENT

ORIGIN-DESTINATION SURVEYS

| ITEM | DESCRIPTION | UNIT |
|-------------|-----------------------------------------|-----------------|
| V3.12(a) | Site Selection | Number |
| V3.12(b) | Services by Law Enforcement authorities | Survey-Days |
| V3.12(c) | Origin-Destination Surveys | Person-Hours |
| V3.12(d) | Capturing of Data | Person-Hours |
| V3.12(e) | Partial OD Surveys using ANPR | Provisional Sum |
| V3.12(e)(i) | Subcontractor's mark-up | Percentage |
| V3.12(f) | Floating Car Data/Probe Data | Provisional Sum |
| V3.12(f)(i) | Subcontractor's mark-up | Percentage |

The unit of measurement for item V3.12(a) shall be the number of site selections made with the cooperation of the Consulting Engineer or Employer and shall include all costs relating to the selection of the site including, but not limited to, travel, subsistence and time spent on site.

The unit of measurement for item V3.12(b) shall be the number of survey-days for which the services of law enforcement authorities are required and shall include full compensation for all costs associated with the provision of this service.

The unit of measurement for item V3.12(c) shall be the number of persons per hour required to complete the survey. The rate shall include all costs related to the accommodation of traffic, supervision for the survey team, provision of food and toilet facilities, provision of all stationery and clipboards, provision of safety jackets

and training of surveyors. The measurement shall be the number of person-hours required to satisfactorily perform the survey and produce the minimum information described in V3.12 above.

The unit of measurement for item V3.12(d) shall be the number of persons per hour required to capture all the data listed in paragraph (g) above and the provision of a consolidated report.

The unit of measurement for item V3.12(e) shall be the cost of procuring services from a Service Provider that can provide ASOD cameras. Measurement and payment shall be in accordance with the provisions of the Conditions of Contract.

The unit of measurement for item V3.12(f) shall be the cost of procuring services from a Service Provider that can provide floating car data for traffic modelling purposes. Measurement and payment shall be in accordance with the provisions of the Conditions of Contract.

The tendered percentage is a percentage of the amount actually spent under subitem V3.12(e)(i) and V3.12(f)(i) which shall include full compensation for the overhead charges and profit of the Subcontractor.

V3.13. PEDESTRIAN COUNTS

The Subcontractor may be asked to conduct pedestrian counts by a Consulting Engineering appointed on a SANRAL project or by the Employer. The Consulting Engineer will provide the specifications for each survey to be conducted. See the process that must be followed in clause V3.15

Either the Scheme “N0” or “N1” for non-motorised traffic, depending on the consultant's requirement, must be used.

V3.13.1 MEASUREMENT AND PAYMENT

PEDESTRIAN COUNTS

| ITEM | DESCRIPTION | UNIT |
|----------|-------------------|-------------|
| V3.13(a) | Pedestrian Counts | Person-Days |

The rate for Pedestrian Counts shall include all work related to conducting a pedestrian count survey. The measurement shall be the number of person-days required to satisfactorily perform the counts and will include all cost related to conducting the pedestrian count.

V3.14. SHORT-TERM ELECTRONIC TRAFFIC MONITORING

V3.14.1 GENERAL

Please take note of the following general rules and data requirements:

- All Traffic Monitoring Systems must log individual vehicle as specified in the TMH14 document.
- No summaries may be included in the data.

The counts in the Pricing Schedules will include 24-Hour, 48-hour, 7-day and 14-day.

Exceptions: Roads with high traffic volumes that are not designated as a 14-day count, and which, according to the Subcontractor, may result in reduced sensor durability, may be changed to a secondary station subject to the Employer's approval.

V3.14.2 MONITORING TYPE

Automatic Short-Term Traffic Monitoring must comply with the requirements of Type C1 traffic monitoring systems.

V3.14.3 VEHICLE CATEGORISATION

The following vehicle categorisations are applicable to this contract are as follows:

- Vehicle Categorisation Scheme 1 = L0
- Vehicle Categorisation Scheme 2 = H0
- The Primary Vehicle Class Scheme to be used is Scheme 01: South African Light/Heavy Vehicle Classification.
- The Secondary Vehicle Class Scheme to be used is Scheme 05: South African Length Based (Extended Light/Heavy) Classification. See TMH14 for vehicle length boundaries.

V3.14.4 MONITORING DURATIONS

The following monitoring durations are applicable to this contract. Note that the trip purpose stratification method is used to classify traffic segments as rural or urban. Durations are strictly linked to these stratifications. Please see TMH8 paragraph 6.5 for more information.

Table 4: Short-Term monitoring durations and frequencies based on the AADT

| Duration | 24-hour | 48-hour | 7-day | 14-day |
|-------------------|----------------|----------------|--------------|---------------|
| Type | Temporary | Temporary | Temporary | Temporary |
| Frequency | 3-years | 3-years | 3-years | 3-years |
| ADT Rural | >250<750 | >750; <2 500 | >2500<7 500 | >7 500 |
| ADT Urban | N/A | N/A | <25 000 | >25 000 |
| ADT Gravel | >250<500 | >500 | N/A | N/A |

Monitoring periods can be shortened with the written approval of the Employer if the sensors fail for reasons beyond the Subcontractor's control. This may include vandalism, road construction or weather-related causes. Each case will be handled on merit.

V3.14.5 NON-INTRUSIVE/TEMPORARY SENSORS

Please take note that durations specified above must be undertaken over full 24-hour periods as specified in TMH3. The monitoring of partial days as part of the required count duration will result in no payment. Durations shorter than the required duration, will also result in no payment.

All non-intrusive sensors and feeder cables must be carefully removed from the pavement. The Employer should be notified should damage to the pavement occurred during the removal process. Failure to remove the loops will result in penalties. Photographic evidence of each traffic stream must be provided after the loops have been removed.

V3.14.6 INTRUSIVE SENSORS IN SECONDARY STATIONS

Secondary Traffic Monitoring stations must be installed at traffic segments with volumes specified in Table 4 or at locations as instructed by the Employer. The counting duration must be 14 days. Note that according to TMH3 it is allowed to recount specific days where the equipment might have failed within a 3-month period of the initial survey. Payment will only be done once 14 full days have been submitted.

All locations must be clearly marked with a station information plate. Subcontractors must ensure that they have traffic counting loggers that can accommodate at least 6 lanes. Subcontractors may subcontract these services to a certified Traffic Monitoring Service Provider should they not be able to handle stations with 6 lanes and more.

V3.14.7 MEASUREMENT AND PAYMENT

SHORT-TERM TRAFFIC MONITORING

| ITEM | DESCRIPTION | UNIT |
|---------------|----------------------------------|-------------|
| V3.14(a) | Type C1: 24-hour stations | Number |
| V3.14(a)(i) | Gravel Roads | Number |
| V3.14(a)(ii) | 1 – 2 Lanes | Number |
| V3.14(a)(iii) | 3 – 4 Lanes | Number |
| V3.14(b) | Type C1: 48-hour stations | Number |
| V3.14(b)(i) | Gavel Roads | |
| V3.14(b)(ii) | 1 – 2 Lanes | Number |
| V3.14(b)(iii) | 3 – 4 Lanes | Number |
| V3.14(b)(iv) | 5 – 6 Lanes | Number |
| V3.14(c) | Type C1: 7-day stations | |

| | | |
|---------------|-----------------------------------------|--------------|
| V3.14(c)(i) | 1 – 2 Lanes | Number |
| V3.14(c)(ii) | 3 – 4 Lanes | Number |
| V3.14(c)(iii) | 5 – 6 Lanes | Number |
| V3.14(d) | Type C1: 14-day stations | |
| V3.14(d)(i) | 1 – 2 Lanes | Number |
| V3.14(d)(ii) | 3 – 4 Lanes | Number |
| V3.14(d)(iii) | 5 – 6 Lanes | Number |
| V3.14(d)(iv) | 7 – 8 Lanes | Number |
| V3.14(e) | Removal of non-intrusive sensors | |
| V3.14(e)(i) | Gravel Roads | Number |
| V3.14(e)(ii) | 1 – 2 Lanes | Number |
| V3.14(e)(iii) | 3 – 4 Lanes | Number |
| V3.14(e)(iv) | 5 – 6 Lanes | Number |
| V3.14(e)(v) | 7 – 8 Lanes | Number |
| V3.14(f) | Security Services | Station-Days |
| V3.14(g) | Penalties | Sum |

Distinction is made between the number of lanes to be monitored.

The unit of measurement for the manufacturing of temporary sensors (if applicable), installation, operation, collection, processing of traffic monitoring data for short-term stations, shall be the number of specific durations monitored. Payment will be made for the submission of validated data for the monitoring period specified processed in accordance with the Specification. Payment will only be made for full, normal days unless otherwise requested. Additional payment will not be considered for data exceeding the monitoring period specified unless otherwise ordered in writing by the Employer.

The unit of measurement for the removal of temporary sensors, shall be the number of stations that must be removed and will include all work necessary for the physical removal of sensors as well as the disposal thereof. The appointed RRM contractor must be notified in case of damage to the road surface.

The unit of measurement for 14-day counts with intrusive sensors, shall be the number of stations monitored and will include the operation, collection and processing of data and will exclude the installation costs.

The data extracted from short term monitoring stations will be subjected to quality control and assurance procedures, and the Employer shall reject data found not to comply with requirements.

The unit of measurement for Security Services shall be the number of station-days required to provide security services at high-risk areas. This rate will include transport to and from the site, accommodation, food, as well as full compensation for all items incidental to security services.

Penalties are as per Table 2.

V3.15. PROJECT LEVEL TRAFFIC MONITORING REQUESTS

V3.15.1 SCOPE

The Subcontractor may be requested to conduct project level traffic monitoring on behalf of SANRAL appointed Consulting Engineers. These surveys can include the following:

- Manual traffic monitoring
- Electronic traffic monitoring with specific durations that may vary from network level traffic monitoring requirements.
- Origin-Destination (OD) surveys
- Pedestrian Counts

V3.15.2 PROCEDURE

The following process must be followed with a Project Level Traffic Monitoring Request:

1. The Employer will receive the request from the Consulting Engineer or by SANRAL employees.
2. The Employer will send the Project Level Count request form to the requesting party for completion.
3. On receipt of the completed form and supplementary documentation, the Employer will send the request to the appointed Traffic Leads in the appropriate province for confirmation.
4. Once confirmation is received from the Traffic Lead, the form and supplementary information will be sent to the appointed Service Provider in the appropriate province.
5. The Service Provider will verify the locations of the surveys and will obtain clarifications from the requesting party if necessary.
6. Once the locations have been verified, the Service Provider will instruct the Subcontractor to conduct the surveys.
7. The Service Provider must communicate estimated timelines with the requesting party.
8. On completion of the surveys, the Service Provider must submit the manual monitoring and electronic monitoring data to the Employer for verification. Quality checks must be done on pedestrian and OD surveys by the Service Provider.
9. Once all the data have been verified, the required reports will be done by the Employer and will be submitted to the Service Provider for distribution.

The Project Level Count Request Form can be downloaded from the tender documents.

V3.16. TRAFFIC MONITORING CERTIFICATION

V3.16.1 GENERAL

The Service Provider must assist with the certification of the Subcontractor's System Supplier as well as the Service Provider and must complete their certifications within 6 months after the award of the subcontract. Failure to do so will result in penalties as specified in Table 2.

The minimum required traffic monitoring systems for this contract are:

- Manual Traffic Monitoring = M1
- Automatic Short-Term Traffic Monitoring = C1

Please note that if the Subcontractor elects to utilize loop technology, certification will be required for non-intrusive loop systems. It is advisable for Subcontractors to complete the 28-day C1 certification to ensure preparedness for contracts requiring higher competency.

The Subcontractor will have the option to get certified for one level higher than the entry level stated above. See Table 1: Traffic Monitoring Level of Competency for further information, but only if the required certification has successfully been completed.

V3.16.2 MEASUREMENT AND PAYMENT

MANUAL TRAFFIC MONITORING CERTIFICATION

| ITEM | DESCRIPTION | UNIT |
|-------------|-------------------------------------------------------|-----------------|
| V3.16(a) | System Supplier Certification for M1 | Provisional Sum |
| V3.16(a)(i) | Subcontractor's mark-up | Percent |
| V3.16(b) | Subcontractor's Service Provider Certification for M1 | Provisional Sum |
| V3.16(b)(i) | Subcontractor's mark-up | Percent |
| V3.16(c) | Annual certification verifications | Year |
| V3.16(c)(i) | Subcontractor's mark-up | Percent |
| V3.16(d) | System Supplier Support Fees | Month |
| V3.16(e) | Penalties | Sum |

ELECTRONIC TRAFFIC MONITORING CERTIFICATION

| ITEM | DESCRIPTION | UNIT |
|-------------|----------------------------------------------------------|-----------------|
| V3.16(f) | System Supplier Certification C1 Short-Term | Provisional Sum |
| V3.16(f)(i) | Subcontractor's mark-up | Percent |
| V3.16(g) | Subcontractor's Service Provider Certification (Level 3) | Provisional Sum |
| V3.16(g)(i) | Subcontractor's mark-up | Percent |
| V3.16(h) | Annual certification verifications | Year |
| V3.16(h)(i) | Subcontractor's mark-up | Percent |
| V3.16(i) | System Supplier Support Fees | Month |
| V3.16(j) | Penalties | Sum |

Both the System Supplier's and Subcontractor's cost for certification will be paid on the submission of invoices from the Certification Organisation showing the cost price of the certification. Services rendered carry a mark-up for which a rate must be supplied to cover all the Subcontractor's handling, supervision and liability costs for the certification. All other related costs between System Suppliers and Subcontractors are for the Subcontractor's own cost. Any subsequent verifications conducted by the Certification Organisation is for the Subcontractor's own cost.

The rate for the System Supplier Support Fees includes, but is not limited to, all software related support, training, data related queries etc. for the duration of the contract and shall be paid on the submission of invoices from the System Supplier.

Penalties are as per Table 2.

V3.17. VANDALISM

Vandalism is becoming an increasing problem and the need for extra protection at specific locations will be required. Stations with a high risk for vandalism have been marked red in the Traffic Segment Report. Anti-vandalism devices that are connected to a reaction unit, should be fitted inside the housings for extra protection.

Vandalism will only be taken into account once proof of vandalism can be provided. Approval of such instances are at the sole discretion of the Employer. Evidence will consist of the following:

- a) Geotagged photos of vandalised station
- b) List of stolen/vandalised equipment
- c) Police case number

V3.17.1 MEASUREMENT AND PAYMENT**VANDALISM**

| ITEM | DESCRIPTION | UNIT |
|----------|-----------------------|---------|
| V3.17(a) | Anti-vandalism device | Number |
| V3.17(b) | Reaction Unit | Monthly |
| V3.17(c) | Call-out fee | Number |

The unit of measurement for the anti-vandalism device shall be the number of devices fitted to a station. All incidental costs associated with providing, running, maintaining and replacing the device shall be included in the rate tendered. The device should be connected to a reaction unit and should send a signal to the reaction unit for further action.

The unit of measurement for the reaction unit shall be the monthly rate required to provide the service.

The unit of measurement for the call out fee shall be the rate that the reaction unit charge per occurrence to attend to the notification of a possible vandalism instance and all related actions thereafter.

This item will not be applicable to Manual Traffic Monitoring.

V3.18. SPECIAL WORK AND RESEARCH AND DEVELOPMENT

The Service Provider may be requested by the Employer to undertake special traffic surveys (such as for instance, an origin-destination survey), provide training or undertake research and development on behalf of the Employer. Should the Service Provider be in a position to accede to such a request, the Service Provider will be required to estimate the cost to provide each service, and wherever applicable, negotiate in good faith with the Employer regarding the terms and conditions under which the work is to be undertaken. The provisional sum provided for this service will be used in the sole discretion of the Employer.

The Employer shall pay the Service Provider for the costs incurred and hours worked during a month providing that payments shall only be made against specified time sheets certified by the project leader of the Service Provider, and clear copies of invoices for expenses incurred by the Service Provider.

The time spent by the Service Provider's representatives in providing the Services shall be charged at the hourly rates agreed upon between the Employer and the Service Provider. Parts of an hour shall be charged on a pro-rata basis. The Service Provider shall ensure that those representatives engaged in providing any part of the Services shall not be unduly over-qualified or under-qualified to provide the Services.

If it shall be necessary for any of the Service Provider's representatives to make any journeys in the course of providing the Services then the Employer shall reimburse the Service Provider for all reasonable travelling and

subsistence expenses properly incurred in so doing, provided that travelling shall be reimbursed against prevailing Automobile Association (AA) tariffs up to the maximum of a 1600 cc passenger motor vehicle or a 1800 cc light delivery vehicle (if required for the service being provided), subsistence expenses against a three star hotel tariff and actual expenses of meals, excluding alcohol, and air fares against South African Airways tariffs for economy class.

The Service Provider shall maintain full and accurate records of the time spent and cost incurred by his representatives in providing the Services in a form to be approved in writing by the Employer. The Service Provider shall produce such records to the Employer for inspection at all reasonable times on request.

Where any research is undertaken, the ownership of the intellectual property shall vest in the Employer, unless an arrangement to the contrary has been concluded and signed by the principles of both Parties prior to the commencement of the work. The Service Provider shall not disclose this intellectual property to any other person or organisation without the prior consent of the Employer.

It is a condition of any research work undertaken by the Service Provider on behalf of the Employer, that a full report disclosing all methods employed, all readings taken, results of trials and tests and technology developed be submitted to the Employer upon the conclusion of the work. Unless agreed to the contrary prior to the commencement of the research, the Employer reserves the right to refer the report to a third party of the Employer's choice, for review.

V3.18.1 MEASUREMENT AND PAYMENT

SPECIAL WORK AND RESEARCH AND DEVELOPMENT

| ITEM | DESCRIPTION | UNIT |
|-------------|-------------------------------------------|-----------------|
| V3.18(a) | Special work and research and development | Provisional Sum |
| V3.18(a)(i) | Service Provider's mark-up | Percentage |

Special Work, and Training and Research and Development are at the sole discretion of the Employer, who shall authorise any work to be done by means of Works Orders. A mark up on the expenditure incurred, as reimbursement for the Service Provider's attendance, shall be payable at the tendered rate, if the work is carried out by an external party.

V3.19. DATA MANAGEMENT

V3.19.1 SCOPE

All requirements as specified in the TMH3 document as well as the TMH14 document must be adhered to.

V3.19.2 SPECIAL REQUESTS FOR DATA AND SALE OF DATA BELONGING TO THE EMPLOYER

The Service Provider shall provide any analysis of existing data upon the request of the Employer.

The Service Provider shall be reimbursed for the services rendered on an hourly rate basis at tendered rates plus any direct costs approved beforehand by the Employer. Parts of an hour shall be charged on a half-hour basis. (The Service Provider shall ensure that the personnel engaged in providing any part of the services shall not be unduly overqualified or under-qualified to provide the services).

The Employer shall refer all requests for data received from third parties to the Service Provider, who shall provide the data to the party concerned under terms and conditions which the Employer may impose on the recipient of the data.

Requests for data shall be dealt with as stipulated below;

- a) No provision of data to any third party shall be made without the approval of the Employer, who may impose terms and conditions attached to the providing of the data,
- b) A summary of data provided to third parties, shall be provided monthly.

The Service Provider shall maintain full and accurate records of all data provided, the time spent, and costs incurred. The Service Provider shall produce such records to the Employer for inspection at all reasonable times on request.

V3.19.3 MEASUREMENT AND PAYMENT

SPECIAL REQUESTS FOR DATA AND SALE OF DATA BELONGING TO THE EMPLOYER

| ITEM | DESCRIPTION | UNIT |
|-------------|-------------------------------------------|-----------------|
| V3.19(a) | Special work and research and development | Provisional Sum |
| V3.19(a)(i) | Service Provider's mark-up | Percentage |

The rate for special request for data shall include the time spent and costs incurred. The measurement shall be the number of hours spent to provide the data.

V3.20. SITE INFORMATION

Information Only

All data and descriptions contained in this section of the contract documents are given for information purposes only and cannot be interpreted as prescriptive or as an instruction despite the fact that the

text may give the opposite perspective. If any conflict arises between the content of this section and other sections of the contract documents, the latter take precedence.

V3.20.1 DESCRIPTION OF THE WORKS

The locality of the site for the purposes of this contract will be the road network as defined by the Employer and may include any road within the Republic of South Africa. The Service provider may be required to install and operate a limited number of stations in the neighbouring States. The Subcontractor may not commence with the Work before clearances, if so required, have been obtained from the respective Road and Traffic Authorities.

V3.20.2 DOWNLOADABLE INFORMATION

The following information will be downloadable from the SANRAL website as part of this section and forms part of this agreement.

V3.20.2.1 STATION INFO.XLSX

This spreadsheet contains information regarding all stations. The stations highlighted in yellow, is the active stations. Historic stations have also been given for reference purposes. The Service Provider must take note of the following:

- a) **Station Number:** Stored as a text field. Please note leading "0" in some numbers.
- b) **Station Type:** Stations marked as "Permanent xxxx" may not be counted.
- c) **Longitude/Latitude:** This is the GPS location where the station was located when last counted. This may change during the contract. The latest GPS coordinates must always be updated in the RSS files.
- d) **Phy No of Lanes:** This is an indication of the number of lanes associated with a specific station. A request for a new number must be submitted to the Employer, should the number of lanes change.
- e) **Owner:** Only stations marked as SANRAL may be counted.
- f) **Station Type Description:** The Service Provider may decide to split stations at locations where it might be difficult to count both directions. It must be noted that when it is decided to split stations, both stations must be successfully completed within the same period. Payment will be withheld should a partial station fail.
- g) **Responsibility:** This field is used to split invoices between Toll and Non-Toll. The Service Provider must take note of responsibilities marked as one of the following: TRAC, Bakwena or N3TC. Special permission must be obtained from the Employer to activate these stations as they are on concession roads.
- h) **Station Status:** Only stations marked as "In Use", "Temporary Discontinued", or "Planned" may be counted. Using stations marked as anything else, will result in no payment.

V3.20.2.2 TRAFFIC SUMMARY REPORT

This report will form the basis of all traffic counting and will be used as a management tool. The fields are explained below:

Table 5: Traffic Summary Report Details

| | |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Authority | Road Authority. There are segments that show joint responsibility with other road authorities. |
| Region | SANRAL Regions (Will be used for Manual Traffic Monitoring Schedules) |
| Province | South African Provinces (Will be used for Short-Term Traffic Monitoring Schedules). Where traffic segments span over two provinces, the responsible Service Provider will be the province in which the longest part of the traffic segment is. |
| Route | SANRAL Route |
| Road ID | Road, Section and Direction. Service Providers must note that where Dual Carriageways exist, a duplication of the traffic segments is displayed. Service Providers must only use the green shaded part (primary direction) and not the blue (secondary direction). |
| Section | Road segment start and end kilometre distance. Service providers must not confuse this with the traffic segment. |
| Description | Description of the road segment. |
| Segment | Homogeneous Traffic Segment start and end kilometre distance |
| Segment Length (Km) | Homogeneous Traffic Segment length |
| Road Type | <p>See the description of the different road types below:</p> <ul style="list-style-type: none"> • D2P = Divided 2 Lane Paved Shoulder • D3P = Divided 3 Lane Paved Shoulder • D4P= Divided 4 Lane Paved Shoulder • D5P = Divided 5 Lane Paved Shoulder • D6P = Divided 6 Lane Paved Shoulder • N2P = Undivided 2 Lane Paved Shoulder • S2P = Single Lane Paved Shoulder • S2U = Single Lane Unpaved Shoulder • N2U = Undivided 2 Lane Unpaved Shoulder |

| | |
|-----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cost Resp. | <p>SANRAL operates in two very distinct business areas, being toll and non-toll operations as required by our Act. We report and budget on each area separately for management purposes as well as cash flow requirements. No cross-subsidisation of funds between the two businesses is allowed. Effectively SANRAL maintains two trial balances for the two businesses. Further:</p> <ul style="list-style-type: none"> a) Non-toll is funded through government grants and can therefore not budget for a deficit. b) Toll is funded through, mainly, the capital market and receives income through toll fees. <p>Service Providers must use this information in preparing their monthly payment certificates. All certificates must be split in these sections.</p> |
| ADT Primary Direction | Average Daily Traffic for the Primary Direction. Please take note that the Primary Direction is the direction in which the road is proclaimed. This direction must always be used in the direction descriptions in the station information. |
| ADTT Primary Direction | Average Daily Truck Traffic for the Primary Direction |
| ADT Secondary Direction | Average Daily Traffic for the Secondary Direction |
| ADTT Secondary Direction | Average Daily Truck Traffic for the Secondary Direction |
| ADT Road Total | Average Daily Traffic for the Road Total. This value will be used in determining the duration of the traffic count |
| ADTT Road Total | Average Daily Truck Traffic for the Road Total |
| ADT Last Survey | The date of the last survey. This date will be used in prioritising traffic counts older than 3 years. |
| Full Days Counted | Number of full days counted. This number will be used to determine if the duration complied with the required duration and will have a payment implication for those counts that do not comply. |
| View ADT Trend | This field can be ignored, as it is only available in the Desktop Program. |
| Stations Currently In Use (Prim.) | Traffic monitoring station/s that are currently linked to the traffic segment for the primary direction. Service Providers must take note of partial stations. |
| Stations Currently In Use (Sec.) | Traffic monitoring station/s that are currently linked to the traffic segment for the secondary direction. Service Providers must take note of partial stations. |
| Stations Temporary Discontinued (Prim) | Traffic monitoring stations on the primary direction that are temporarily discontinued mostly due to road maintenance. |

| | |
|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Stations Temporary Discontinued (Sec) | Traffic monitoring stations on the secondary direction that are temporarily discontinued mostly due to road maintenance. |
| Stations Other (Prim.) | Traffic monitoring stations on the primary direction that have been discontinued. |
| Stations Other (Sec.) | Traffic monitoring stations on the secondary direction that have been discontinued. |
| SP ADT | ADT given by Service Provider |
| Comment | <p>Specific comments about stations on a specific traffic segment. Please take note of the following general rules:</p> <ul style="list-style-type: none"> a) Segments marked as “Permanent Station” may not be counted. b) Segments through towns are highlighted in yellow. Only 12-hour counts will be allowed. c) Segments where vandalism occurred have been noted. d) Segments affected by road works are highlighted in brown. Service Providers must regularly inspect these routes to see if construction has been completed. The Employer must be notified when segments could not be counted due to road works. |
| DIFF | ADT difference between two consecutive traffic segments. Segments have been highlighted in red if the difference is less than 10%. Some of these segments will be merged in future. The Service Provider will be notified of any changes. |
| DURATIONS | See Table 3 and Table 4 |

V3.20.2.3 COUNTING STATION DEFINITION DATA (*.RSS)

RSS files will be provided to successful Service Providers for all active stations. Refer to TMH14 for the definition of the data file.

V3.20.2.4 STATION LOCATIONS

A KML as well as a shapefile will be provided to successful Service Providers to show the locations of all active stations. These files can be imported in GIS Software.

V3.20.3 ESTIMATED STATION QUANTITIES

V3.20.3.1 MANUAL TRAFFIC MONITORING

Table 6: Manual Monitoring Durations

| Station Type | Count Duration | Phy No Of Lanes | Eastern Cape | Free State | Gauteng | Kwazulu-Natal | Limpopo | Mpumalanga | North West | Northern Cape | Western Cape | Grand Total |
|--------------|----------------|-----------------|--------------|------------|---------|---------------|---------|------------|------------|---------------|--------------|-------------|
| Manual | 12-Hour | 2 | 31 | 1 | | | 2 | 4 | 3 | 13 | | 54 |
| | | 3 | 1 | | | | | | | | 1 | 2 |
| | | 4 | 6 | | 1 | | | | 1 | | 1 | 9 |
| | | 6 | 27 | 14 | | 1 | 5 | 5 | 8 | 3 | 1 | 64 |
| | | 7 | 4 | 4 | | 1 | | 1 | 3 | | | 13 |
| | | 9 | 1 | 1 | | | | | 1 | | | 3 |
| | | 12 | 46 | 13 | 1 | 2 | 11 | 31 | 16 | 10 | 5 | 135 |
| | | 16 | 6 | | | 1 | | | | | | 7 |
| | | 25 | 1 | | | | | | | | | 1 |
| | 18-Hour | 2 | 2 | | | | | | | | | 2 |
| | 1-Day | 2 | | | | | | | | 1 | | 1 |
| Manual Total | | | 125 | 33 | 2 | 5 | 18 | 41 | 32 | 27 | 8 | 291 |

V3.20.3.2 SHORT-TERM TRAFFIC MONITORING

Table 7: Automatic Monitoring Durations

| Station Type | Count Duration | Phy No Of Lanes | Eastern Cape | Free State | Gauteng | Kwazulu-Natal | Limpopo | Mpumalanga | North West | Northern Cape | Western Cape | Grand Total |
|-----------------|----------------|-----------------|--------------|------------|---------|---------------|---------|------------|------------|---------------|--------------|-------------|
| Secondary | 14-Day | 2 | | | | 5 | 2 | 2 | 4 | | 8 | 21 |
| | | 3 | | | | 1 | 6 | 1 | | | 1 | 9 |
| | | 4 | | | 5 | 3 | 7 | 2 | 1 | 3 | 2 | 23 |
| | | 5 | 2 | 3 | | | | | | | 1 | 6 |
| | | 6 | 2 | 6 | | 2 | 2 | | 2 | | 7 | 21 |
| | | 7 | | | | | | 2 | | | | 2 |
| Secondary Total | | | 4 | 9 | 5 | 11 | 17 | 7 | 7 | 3 | 19 | 82 |

| Station Type | Count Duration | Phy No Of Lanes | Eastern Cape | Free State | Gauteng | Kwazulu-Natal | Limpopo | Mpumalanga | North West | Northern Cape | Western Cape | Grand Total |
|------------------------|----------------|-----------------|--------------|------------|---------|---------------|---------|------------|------------|---------------|--------------|-------------|
| Secondary (Temp) | 12-Hour | 2 | 1 | | | | | | | 1 | | 2 |
| | 14-Day | 2 | 1 | | | | 4 | | | | | 5 |
| | | 3 | | | | | | 1 | | | | 1 |
| | | 4 | | | | | | 1 | 1 | | | 2 |
| | 1-Day | 1 | 36 | | | 2 | | | | | | 38 |
| | | 2 | 86 | 66 | 10 | | 92 | 90 | 40 | 15 | 6 | 405 |
| | | 3 | 4 | 4 | | | 3 | 12 | 1 | | 1 | 25 |
| | | 4 | 4 | 2 | 5 | | 18 | 10 | 3 | 1 | | 43 |
| | 2-Day | 1 | 2 | 5 | | | | 1 | | | | 8 |
| | | 2 | 262 | 95 | 21 | 24 | 149 | 82 | 78 | 79 | 6 | 796 |
| | | 3 | 19 | 12 | 1 | 5 | 7 | 8 | 2 | 1 | | 55 |
| | | 4 | 8 | 16 | | 1 | 1 | 10 | 4 | 1 | 1 | 42 |
| | 7-Day | 2 | 4 | 11 | 7 | 9 | 4 | 24 | 28 | 14 | 21 | 122 |
| | | 3 | 6 | 1 | | 1 | 1 | 3 | 5 | | 2 | 19 |
| | | 4 | 1 | 1 | 2 | 1 | 2 | 1 | 5 | | | 13 |
| | Long-Term | 2 | | | | | | | | 1 | | 1 |
| Secondary (Temp) Total | | | 434 | 213 | 46 | 43 | 281 | 243 | 167 | 113 | 37 | 1577 |

V3.20.4 DRAWINGS

The drawings that form part of the tender document are issued for tender purposes only.

Only figured dimensions may be used, and drawings may not be scaled unless so instructed by the employer.
The employer will supply all figured dimensions omitted from the drawings.

The following drawings will be available from the SANRAL Website:

- a) Station information plate in PDF format
- b) SANRAL Logo