ANNEXURE 3 SPECIFICATION

1. SPECIFICATION OF THE WORK OR PRODUCTS OR SERVICES REQUIRED

1.1 SCOPE OF WORK

1.1.1 This project entails, broadly the following elements and the appointed services provider will be required to undertake the following services,

1.1.1.1 Investigation and report on the problems regarding the storm water control system, the stability of the track formation and retaining structures. Hydrological survey of the area to determine the relevant storm water characteristics shall be included.

1.1.1.2 Ascertain the extent of the works, with respect to the washaway on railway infrastructure.

1.1.1.3 Preparation of a Complete Preliminary Investigation Report Detailing the extent of the problem highlighting the different problem areas as well as recommending specific solution to the problem.

1.1.1.4 Following the acceptance and approval of the report by PRASA the preparation of Complete Detail Designs in accordance with the latest Technical Specifications.

1.1.1.5 Submission of the prepared Detail Designs for construction to PRASA for approval:

1.1.1.5.1 **Drainage:** Track drainage is an important requirement. Careful consideration should be given to the design of drainage to ensure that the storm water run-off from the formation can be discharged adequately into the main watercourses in order to limit possible damage to the earthwork's formation.

1.1.1.5.2 **Formation Design**: The proposed formation layer works are to be designed as specified in the *Specification for Railway Earthworks S410* included in this document. The formation shall meet the minimum structural requirements for 20t axle loading (S410 Figure 2).

1.1.1.5.3 Culverts site survey to be carried out at points where major streams or rivers cross the railway line.

1.1.1.5.4 The design requirements of culverts should be such that the risk of 1:50 year storm water damage is limited along the affected length of the rail corridor.

1.1.1.5.5 Careful consideration should be given to natural watercourses and the possible development of new watercourses that may form as a result of the construction of the drainage system. These watercourses should be fully integrated in the design of the drainage system.

1.1.1.5.6 Repair of embankment and construction of cut-off protection berms upstream to reduce pressure on side drains from water seepage through the embankment: The design shall include construction of the attenuation pond right through the embankment. Also ensure construction of energy dissipators where required.

1.1.1.5.7 Erosion control: Adequate erosion protection measures should be designed to prevent unnecessary scouring and erosion of the earthworks formation where required. Hand screening of all ballast is required in all affected lines. Wing walls to be erected on the existing culverts.

1.1.1.6 Submission to PRASA of project technical information for records.

1.1.1.7 Construction and commissioning of the works in accordance with the approved designs.

1.1.1.8 Preparation of Close out Reports and Submission of As-built Drawings.

1.1.1.9 The standard specification for rail and track works shall be the relevant E.10 Specifications.

1.1.1.10 Project Management, Cost Control and Quality Management as well as Value Engineering from concept right through to implementation and commissioning.

1.1.1.11 Environmental Impact Assessments (EIA) approved by the Water Affairs department and Acquiring of water license.

1.1.1.12 Compile a risk assessment matrix and manage the risk matrix on behalf of PRASA.

1.1.1.13 Negotiate and compile service level agreements with relevant parties as and when required.

1.1.1.14 Finalization and submission of completion documents as well as submission of "Close out" report.

1.1.2 The following studies and services are required from the Supplier/Consultant in conducting the design and the list is not limited to the following:

1.1.2.1 Topographical Surveys.

1.1.2.2 Geotechnical investigations.

1.1.2.3 Occupation Health and Safety.

1.1.2.4 Cadastral Surveys; Engineering Surveys

1.1.2.5 Service Detection.

1.1.2.6 Stream modelling, drainage modelling

1.1.2.7 Existing roads

1.1.3 The winning bidder shall acquaint him/herself with all and any standards and requirements laid down by a local authority, provincial or Government administration for the work in the contract and shall abide by such standards and requirements for the duration of the contract. Adherence to environmental and pollution requirements shall be strictly observed.

1.1.4 The work will be in a close proximity to intense suburban rail service and a large proportion of the work will have to take place under permit conditions possibly including weekend. Occupation on main lines would most probably be granted during weekends in order to minimize the disruption of service. However, occupation might be arranged during weekdays as well.

1.1.5 No security will be provided on site by PRASA, this is the responsibility of the tendering party

1.1.6 Aerial survey results of the stations might be accessed on the Internet Site www.prasacres.co.za, section GIS.

1.1.7 No geo-technical or topographical survey results are available. It will be necessary for the contractor to carry out sufficient geo-technical investigations to enable realistic assumptions to be made in respect of the soil profile of the rail formation and embankment.

1.1.8 In addition, the contractor must note the Client's SPK7/2 *Specification for Works On, Over, Under or Adjacent to Railway Lines and Near High Voltage Equipment*.

1.1.9 **PUBLIC PARTICIPATION PROCESS.**

1.1.9.1 Public participation will also form an important and necessary part of the project delivery process. Public input will be facilitated by the appointed Contractor through the established local community liaison forum. It will be required to accurately document the proceedings at every liaison meeting and to record the attendance of representatives by means of a signed attendance register.

1.1.10 **COMPETENCY.**

Due to the nature of the work to be undertaken, the contractor must reflect in his or her proposal the access to suitable knowledge of rail specification and rail competency.

1.1.10.1. The Contractor shall be familiar with the restrictions to access and other matters as stated but not restricted to the SPK 7/2 (Specification for Works on, Over, Under or Adjacent to Railway Lines and near High Voltage Equipment),

1.1.10.2. PRASA SHE Specification [Safety Arrangements and Procedural Compliance with the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993) and Applicable Regulations (January 2006)], and the Standard for Uniformity in Construction Procurement (CIDB Act, 2000 – Act 38 of 2000, as amended).

1.1.11 BUSINESS SCOPE

1.1.11.1 The multi-disciplinary elements associated with this project have been indicated in previous sections. The following listing, **not exhaustive**, highlights the areas of expertise that are anticipated:

1.1.11.1.1 Project and Construction Management

1.1.11.1.2 Civil Engineering (Structural / Water / Waste Management / Transportation (Roads /access)/ Environmental)

1.1.11.1.3 Quantity Surveying

1.1.11.1.4 Health & Safety

1.1.11.1.5 Environmental input

1.1.11.1.6 Historical input

1.1.11.1.7 Community liaison (Public Involvement Participation)

1.1.11.2 Broad areas of responsibilities for this multi-disciplinary project are amongst others:

1.1.11.2.1 Civil and Perway activities.

1.1.11.2.2 Structural Engineering activities.

1.1.11.2.3 Water Engineering activities.

1.1.11.2.4 Geotechnical Engineering activities.

1.1.11.2.5 Transportation Engineering activities.

1.1.11.2.6 Environmental activities.

1.1.11.2.7 Health and safety activities.

1.1.11.2.8 Project management.

1.1.11.2.9 Construction activities.

1.1.12 MANAGEMENT SCOPE

The Project manager (Consultant), as part of the Contractor's team shall be responsible for the following:

1.1.12.1 General:

1.1.12.1.1 Insure himself or herself, Principals, Associates, Specialist Contractors and staff and provide proof thereof that Works in the PRASA environment are included, thereby indemnifying PRASA against all claims arising from consequential work performed by him in this environment.

1.1.12.1.2 Provide a cost for the different elements contained in the project as well as a cash flow projection for the entire project.

1.1.12.1.3 Submit monthly project reports to the Client's office by e-mail and hard copy using "Microsoft Office- 2010" (written reports) and "Microsoft Projects" (Gantt chart/s).

1.1.12.1.4 Liaise with the PRASA/Metrorail and Transnet regarding technical standards, specifications and statutory provisions relating to the rail infrastructure and Trains Operations when necessary.

1.1.12.1.5 Chair regular meetings with Technical team, Contractors, Sub-contractors and any other role players to ensure that all activities are well integrated and proceed in an orderly manner and suitable tempo.

1.1.12.1.6 Liaise with any relevant third party regarding the establishment and usage/relocation of services or facilities associated with this project.

1.1.12.1.7 Carry out the tasks associated with his/her appointment with due diligence.

1.1.12.2 Inception Stage:

1.1.12.2.1 Provide all normal services as described in Clause 3.2.1, sub clauses (1) to (10) of the ECSA Guideline Scope of Services and processes for Estimating Fees for Persons Registered in terms of the Engineering Profession Act, 2000 (Act No. 46 of 2000), March 2021. Sub-clauses (9) and (10) shall not apply.

1.1.12.3 **Concept and Viability (Often called Preliminary Design)**:

1.1.12.3.1 Provide all "Normal Services as described in Clause 3.2.2 sub-clauses (1) to (12) of the ECSA Guideline Scope of Services and processes for Estimating Fees for

Persons Registered in terms of the Engineering Profession Act, 2000 (Act No. 46 of 2000), March 2021. Sub-clauses (1) and (12) shall not apply.

1.1.12.3.2 Prepare and obtain formal acceptance of all relevant working drawings.

1.1.12.4 **Design Development (also termed Detail Design)**:

1.1.12.4.1 Provide all "Normal Services" as described in Clause 3.2.3 sub-clauses (1) to (9) of the ECSA Guideline Scope of Services and processes for Estimating Fees for Persons Registered in terms of the Engineering Profession Act, 2000 (Act No. 46 of 2000), March 2021, Sub-clauses (1) and (9) shall not apply.

1.1.12.4.2 Prepare and obtain formal acceptance of all relevant working drawings.

1.1.12.5 **Documentation and Procurement**:

1.1.12.5.1 Provide all "Normal Services" as described in Clause 3.2.4 sub-clauses (1) to (13) of the ECSA Guideline Scope of Services and Processes for Estimating Fees for Persons Registered in terms of the Engineering Profession Act, 2000 (Act No. 46 of 2000), March 2021, Sub-clauses (1) and (9) shall not apply.

1.1.12.5.2 Prepare procurement and construction documentation, confirm, and implement the procurement strategies and procedures.

1.1.12.6 **Contract Administration and Inspection**:

1.1.12.6.1 Provide all "Normal Services" as described in Clause 3.2.5 sub-clauses (1) to (20) of the ECSA Guideline Scope of Services and processes for Estimating Fees for Persons Registered in terms of the Engineering Profession Act, 2000 (Act No. 46 of 2000), March 2021, Sub-clauses (1) and (2) shall not apply.

1.1.12.6.2 Manage, administer, and monitor construction processes and contracts, prepared construction drawings and As-built drawings.

1.1.12.6.3 Prepare, print, and bind a suitable Quality Assurance Plan for implementation during the construction phase of the project.

This plan shall be ready for publication before construction works can commence.

1.1.12.6.4 Prepare, print and bind a suitable Environmental Management Plan for implementation during the construction phase of the project.

This plan shall be ready for publication before construction commence.

Ensure compliance with legislation in terms of Environmental Impact Assessment process.

1.1.12.6.5 Negotiate and compile a formal Service Level Agreement with the local Metrorail Manager (Perway Regional Engineer) for the provision of suitably skilled, qualified, and accredited personnel to perform the following statutory tasks required of him or her as a maintenance executer, **where necessary:**

1.1.12.6.5.1 Electrical switching and supervision during construction and takeover of completed Works.

1.1.12.6.5.2 Perway supervision of pipe crossings and cutting of block joints, as well as take over completed Works

1.1.12.6.5.3 Flagmen for the protection of PRASA's assets, (The contract shall be responsible for the provision of Flagmen to protect his/her own staff and assets).

1.1.12.6.5.4 Liaison Officer to co-ordinate and supervise the movement of a construction train (If required this cost will be for the contractor's account).

1.1.12.6.5.5 Signalling supervision and take-over of completed Works.

1.1.12.6.5.6 Bussing of rail passengers during track occupations.

1.1.12.6.6 Negotiate and compile a formal Service Agreement with Transnet for the provision of the following services where required:

1.1.12.6.6.1 Hire of Rail wagons: Assistant General Manager-Operational Maintenance (Wagons)

1.1.12.6.6.2 Diesel Locomotives: Assistant General Manager-Operational Maintenance (Traction)

1.1.12.6.6.3 Train crew: Chief operating Officer-Service Delivery

All the above officials are based in Gauteng Metrorail region and Transnet.

1.1.12.6.7 Ensure the timeous submission of the prescribed Contract Insurance notices to the Client at contract award, upon extension of the contract completion dates and at contract termination.

1.1.12.6.8 Submit to the Client detailed project execution programs covering all the main areas of activity.

1.1.12.6.9 Undertake the approval of the contractor designs and drawings by an authorized and **professionally registered Engineer/Technologist.**

1.1.12.6.9.1 Furthermore, in the case of signalling work, an authorised and accredited Signalling Engineer is required to undertake the checking and approval of the contractor designs and drawings.

1.1.12.6.10 Monitor and report on the physical progress of the work against the planned.

1.1.12.7 **Additional Services**: The Consultant/Contractor shall:

1.1.12.7.1 Provide all Additional Services as described in Clause 3.3.1, paragraphs (1), (3), (4), (5), (6), (7), (8), (9), (10), (11), (13), (14), (15), (16), (17), (18) and (19) of the ECSA Guideline Scope of Services and Tariff of Fees-March 2021. Paragraphs (2), and (12) shall not apply.

1.1.12.7.2 **Occupational Health and Safety Act:** The Consultant shall be familiar with the restrictions to access and other matters as stated but not restricted to the SPK 7/2 (Specification for Works on, Over, Under or Adjacent to Railway Lines and near High Voltage Equipment) and PRASA SHE specification [Safety Arrangements and Procedural Compliance with the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993) and Applicable Regulations (January 2006)]. The service provider shall ensure that there is compliance to all contract and legislation issues.

1.1.12.7.3 **Quality Assurance System**: Provide all duties as prescribed in Clause 3.3.4 of the ECSA Guidelines of the Scope of Services and Processes for Estimating Fees for Persons Registered in terms of the Engineering Profession Act, 2000 (Act No. 46 of 2000), March 2021.

1.1.12.7.4 **Lead Consulting Engineer**: Clause 3.3.5, all services are deemed to be included.

1.1.12.7.5 **Principal Agent of the Client**: Clause 3.3.8, all services are deemed to be included

1.1.12.7.6 **Engineering Management Services**: The fee elements for a lead Consulting Engineer, Principal Agent of the Client or Engineering Management Services are not considered appropriate in this instance and must be included in the proposal.

1.1.12.7.7 **Mediation, arbitration and litigation proceedings and similar services:** Clause 3.3.7 of the ECSA Guideline Scope of Services and Processes for Estimating Fees for Persons Registered in terms of the Engineering Profession Act, 2000 (Act No. 46 of 2000), March 2021.

1.1.12.7.8 Co-ordinate all interaction between the Contractors and the Technical and Operating departments of PRASA/Metrorail for the entire duration of the work.

1.1.12.7.9 The management of track occupations and the overall co-ordination thereof shall be the responsibility of the consultant.

1.1.12.7.10 Ensure the execution of, and certify all commissioning, functional and operational tests if necessary.

The deliverable for this appointment will be, amongst others, the successful completion of the contract/s, on time, within the approved budget and to the required standard of quality providing a workable asset or assets.

1.1.12.8 **Construction Monitoring**

1.1.12.8.1 Level 4 Construction Monitoring in terms of Clause 3.3.2 of the ECSA Guideline Scope of Services and Processes for Estimating Fees for Persons Registered in terms of the Engineering Profession Act, 2000 (Act No. 46 of 2000), March 2021 is required during the execution of site activities.

1.1.12.8.1.1 The Quality Plan is to be implemented as part of this service.

1.1.12.8.2 As site activities move within the confines of the rail tunnel environment (within 3 meters of track centre line) and within proximity to live installation or when they are interfering with the normal train movement, Level 4 Construction Monitoring in terms of Clause 3.3.2 (d) of the ECSA Guideline Scope of Services and Processes for Estimating Fees for Persons Registered in terms of the Engineering Profession Act, 2000 (Act No. 46 of 2000), March 2021, is required during the execution of site activities.

1.1.12.8.3 In addition, the presence of a Resident, Authorised and Accredited signal engineer is required to undertake the testing and commissioning of the signalling installation, where applicable.

1.1.12.8.4 The Contractor with its Specialist Engineer shall be held responsible for the safe and successful execution of the project including the testing and commissioning facets of the project.

1.1.12.9 Finalisation and Close Out

1.1.12.9.1 Procure on a USB and verify "as-built" plans in Autocad14 format, maintenance schedules, spare part catalogues etc. for handing over to the Client within **one month** of completion and handing over the Works.

1.1.12.9.2 Within **one month** of completion and handing over of the Works, prepare and submit completion and handover certificates to the Program Manager together with the close out report, as applicable.

1.2 PROJECT ORGANISATION

1.2.1 The Contractor shall be required to consult with and solicit information from some or all of the following people and departments (amongst others) for the duration of the appointment.

1.2.1.1 The Regional Engineer Perway, located in the Gauteng Metrorail region must be approached in the first instance for authorised staff to attend to project requirements and the appointed contractor/s where access to restricted site and plant is necessary as well as for any Permanent Way, Electrical, Signals, Telecoms, and Facilities matters.

1.2.1.2 The Infrastructure Manager, Gauteng Metrorail.

1.2.1.3 The Regional Engineers (Electrical and Signals), Gauteng Metrorail for any electrical and signals matters.

1.2.1.4 The Managers Train Operations Metrorail and Transnet, for any matters related to the train operations.

1.2.1.5 The Rolling Stock Managers, Metrorail and Transnet, for any Rolling Stock matters.

1.2.1.6 A Steering Committee formed for this project.

1.2.2 This project will be coordinated in the office of Perway Regional Engineer, PRASA Gauteng Infrastructure.

1.2.3 Your proposal is to include the nomination, by name, of staff members, formal Associates and/or Specialist Contractors who will be specifically appointed to this project in respect of the following roles and functions, should your bid be successful.

1.2.3.1 Consultant who will be responsible for all deliverables in terms of the appointment.

1.2.3.2 Names, designation, and authorities of all key personnel assigned to the contract for project management, engineering, safety, construction and commissioning and shall include reporting channels.

1.2.3.3 Engineers/Technicians/Specialist Contractors responsible for Survey, Site aspects, Quality Control, Testing, Commissioning of systems etc.

1.2.3.4 Any other functions you may consider necessary to delineate.

1.2.4 PRASA reserves the right to approve/disapprove any individual so nominated. Any alterations to the organizational chart, submitted at tender stage, during the execution of the project shall be submitted in writing. A final list of sub-contractors to be used with detailed statements of qualifications and experience of their representatives on site shall accompany this proposal for approval by PRASA.

1.2.5 After award, no changes to the Project team shall be made without the approval of PRASA.

1.2.6 The Regional PRASA/Metrorail Infrastructure manager Gauteng Metrorail shall issue a letter authorizing your staff to enter the site (Site Access Certificate). Whilst within the restricted area or in close proximity to live equipment, your staff shall submit to the authority of the Metrorail authorized representative on all matters of safety.

1.3 SCOPE OF WORK OF RISK AND SAFETY (CONSULTANT TO BE INCLUDED IN THE PROPOSAL)

1.3.1 Assess the Contractors Health and Safety Plan, which was prepared based on the Health and Safety Specification, ensure that the said Health and Safety Plan complies with the specification, has addressed all the identified and likely hazards that would be encountered while performing the work, and has included safe work procedures (method statements) to mitigate, reduce or control the hazards identified. Should the plan not comply fully, the Agent will be required to direct the Contractor to make the necessary changes so that the approved Health and Safety Plan is compliant to the specification and any other legislative requirements.

1.3.2 Ensure that this Health & Safety Plan and all the other required record documents (e.g., Appointments, inspection, compliance certificates, “as built”

documents, etc.) are kept in the Contractor's Health & Safety file on site. The service provider is expected to comply to PRASA Tech safety specification

1.3.3 Approve the Health & Safety Plan and appoint the Principal Contractor in writing.

1.3.4 Ensure that any sub-contractor of the Principal Contractor has provided their own specific Health and Safety Plan, which plan conforms to the main Health & Safety Plan requirements.

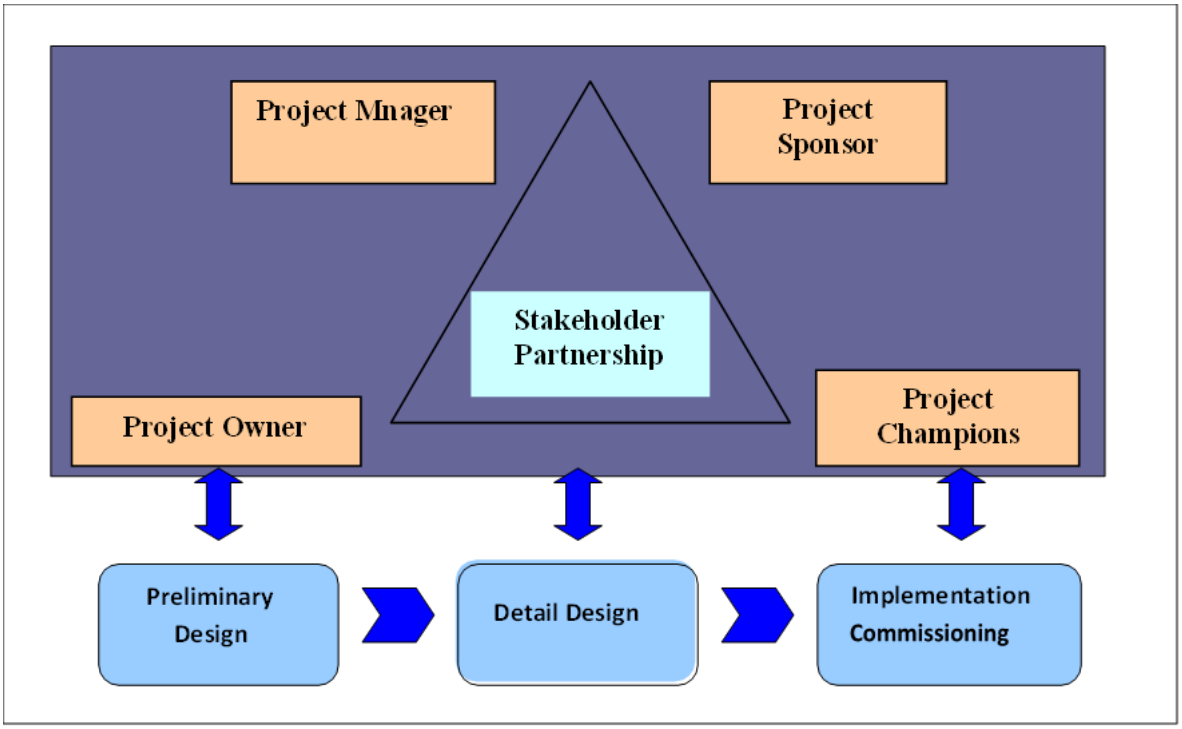
1.3.5 Audit the Contractor's work on a monthly basis to ensure compliance with the agreed Health & Safety Plan, and that any sub-contractors also comply with the agreed plan. Furthermore, advise PRASA in writing should it be required that PRASA should stop a Contractor working in instances where the Contractor is not working in accordance with the Health & Safety Plan or if working unsafely. Furthermore, ensure that the Principal Contractor has corrected the defects reported in the Client's monthly inspection audit.

1.3.6 Ensure that should any changes be brought about to the design or construction; sufficient Health & Safety information and appropriate resources are made available to the Principal Contractor to execute the work.

1.3.7 Evaluate the Principal Contractor consolidated Health & Safety file before handover to the PRASA.

1.4 TECHNICAL SCOPE:

1.4.1 Project Management requirements



1.4.2 Standards, Design Criteria & Requirements:

1.4.2.1 A Typical Network Schematic is attached as Annexure 4

1.4.2.2 Standards and design criteria will be as per those contained within the relevant documentation employed, maintained or used by the PRASA/ Metrorail and any other requirement governed by legislation or regulation.

1.4.2.3 Where interface with the City of Joburg urban design occurs, the appropriate standards and design criteria should be applied to ensure a seamless design co-ordination is achieved.

1.4.2.4 All materials and equipment supplied must be new and conform to the relevant Transnet and PRASA Specifications.

1.4.3 The following principles are to be applied in dealing with the works:

1.4.3.1 The contractor shall be responsible for the supply, transport, delivery on site, off-loading, storage, placing, fixing, installation, erection, making-off, connecting up,

testing, commissioning, guarantees, materials and labour needed to complete the project for final handover in complete working order and in accordance to the specifications, drawings and project schedules.

1.4.3.2 All work undertaken by the contractor shall be subject to a guarantee for a period of one year against faulty and /or inferior workmanship and material.

1.4.3.3 The guarantee period shall commence the day the installation is formally handed over and accepted by the local Metrorail Regional Engineer or his/her own delegates.

1.4.3.4 The Contractor shall undertake to repair all faults or defects due to bad workmanship and/or faulty materials during the guarantee period (The works shall be handed over on completion as required by the client.

1.4.3.5 The Contractor shall undertake work on the rectification of any defects that may arise during the guarantee period within 7 days of being notified by the Client.

1.4.3.6 Should the Contractor fail to comply with the requirements stipulated above, the Client shall be entitled to undertake the necessary repair work or effect replacement of defective apparatus or material, and the Contractor shall reimburse the client the total cost of such repair or replacement, including the labour costs incurred in replacing defective material.

1.4.3.7 Two handing-over dates shall be met. The first handing over shall be when the works is commissioned to the satisfaction of PRASA/Metrorail. All non-consumable equipment and labour shall be guaranteed for twelve months after this date. The final inspection and final handover shall end the guarantee period.

1.4.3.8 The PRASA optic fibre cable shall be moved/suspended by the Contractor, whilst the third-party optic fibre call shall be re-routed by third party. The Contractor shall be responsible to arrange with PRASA Telecoms department for any work that involves the optic fibre cable.

1.4.3.9 The responsibility (Planning and Coordination) for the relocation of existing services pertaining to other disciplines not referred to in clause 1.4.3.8 is that of the contractor.

1.4.3.10 All rubble to be disposed to a dumping site and material to be transported to Driehoek stores.

1.4.4 Environmental Compliance

1.4.4.1 The contractor shall ensure Compliance with Environmental legislation and regulations.

1.4.5 Sustainability

1.4.5.1 The design philosophy that is adopted will be cognisant of the need to ensure sustainability in the output or deliverable.

1.4.5.2 Life cycle costing implications need to be taken into account in all proposals that are submitted.

1.4.6 Critical Success Factors

1.4.6.1 Alignment of purpose between the PRASA TECHNICAL HEAD OFFICE, PRASA Rail and Gauteng South Metrorail Region.

1.4.6.2 Stakeholders buy-in of the final anticipated outcome.

1.4.6.3 Regular Steering Committee, technical co-ordination, and task team interaction.

1.4.6.4 Professional project management, programme management and co-ordination supported by full contract documentation (documentation in the broader understanding including formal management progress reports, minutes, decisions log, issues log, Risk log, correspondence, appointments etc)

1.4.6.5 Timeous availability of resources to ensure the smooth functioning of the project.

1.4.6.6 Detailed account of programme progress and budget performance.

1.4.7 Technical Requirements

The firm bidding or leading the consortium for this appointment shall:

1.4.7.1 Have the required CIDB contractor grading of **8CE or Higher.**

1.4.7.2 Have a record of having managed and executing projects of a similar nature or, in the case of Emerging Enterprises, be able to provide proof at the time of submitting his or her proposal, of an association with a specialist professionals and contractors with the necessary experience and expertise.

1.4.7.3 Provide Construction Costs as well as Professional fees, plus a monthly cash flow projection.

1.4.7.4 Provide a payment schedule indicating deliverables/milestones for each payment.

1.4.7.5 Provide a proposal containing various options as listed below (Do note that this list is not exhaustive):

1.4.7.5.1 The priced proposal stipulating the scope of work plus associated cost required to address the drainage and rail formation problem. This proposal needs to include all statutory cost (Diesel Locomotives, DZ trucks, Transportation by road, Occupations, Relocation of Services and etc)

1.4.7.5.2 Do note the price proposal must include reformation of berms, attenuation pond, drainage upgrade infrastructure (Culverts, Channels, dissipators), Track work and embankment rehabilitation as part of the solution!!

1.4.7.6 Provide proof of the “All Risk Insurance and Indemnity Insurance” with respect to him/herself, consultants, Principals, Associates, Specialist Contractors, and staff and provide proof thereof that the specific Works in the PRASA environment are included, thereby indemnifying PRASA against all claims arising from consequential work performed by him in this environment.

1.4.7.7 Include in his/her proposal abridged Curriculum Vitae of Principals, Associates, Specialist Contractors and consultants and staff proposed for the project.

1.4.7.8 Have the capacity available to perform the functions within PRASA's overall time schedule for the project.

1.4.7.9 Being member of recognized contractor and trade association, and in the case of consultants, membership of Consulting Engineers of South Africa (CESA) might be considered an advantage:

1.5 OPERATING ENVIRONMENT

1.5.1 The Works site is situated within the restricted confines of the rail line at Gauteng respectively.

1.5.2 The work will be in a close proximity to intense suburban rail service and most of the work will have to take place under permit conditions possibly including weekend.

1.5.3 Occupation on main lines would most probably be granted during weekends (Including nights) in order to minimize the disruption of the train service.

1.5.3.1 However some occupations might be granted during weekdays (09:00 – 15:00), during off peak hours.

1.5.3.2 The Contractor shall be responsible for arranging all occupations, and outside of any special occupation, the Contractor shall ensure that his/her work in no way interferes with nor causes any delays to the normal operations of the railway lines or trains.

1.5.4 No security will be provided on site by PRASA, the contractor is expected to have its own security

1.5.5 No geo-technical or topographical survey results are available. It will be necessary to carry out sufficient geo-technical investigations to enable realistic assumptions to be made where required.

1.5.6 Access to site is restricted and will only be granted once the necessary requirements are met and a site access certificate has been issued.

1.6 THE PROPOSAL

1.6.1 The main proposal, which is to be limited to a maximum of Two hundred (200) A4 pages in triplicate (one original, two clearly marked copies and a copy electronically stored on a USB) only, shall state the following, amongst others:

1.6.1.1 The tenderer's understanding of and approach to the scope of work:

1.6.1.1.1 A proposed scope of work for the project and/or comments on the scope of work included in the Request for Proposal

1.6.1.1.2 A Project Team Organogram showing names, functions & responsibilities.

1.6.1.2 Qualifications of the firm to perform this project (based on similar work) to include the firm specific experience in the following areas, amongst others:

1.6.1.2.1 Project and Construction Management

1.6.1.2.2 Civil Engineering (Perway / Structural / Water / Waste Management / Roads (access))

1.6.1.2.3 Quantity Surveying

1.6.1.2.4 Health & Safety Management

1.6.1.2.5 Environmental Management

1.6.1.2.6 Community liaison (Public Involvement Participation)

1.6.1.3 Key personnel and their qualifications and availability to perform the work:

1.6.1.3.1 Identification of key personnel who will be assigned to each phase of the project. Information about key personnel should include, amongst others:

1.6.1.3.1.1 Condensed CV's of individual team members.

1.6.1.3.1.2 Role in the project and previous similar experience.

1.6.1.3.1.3 Location of the office/s where key personnel are based and where they will perform the work.

1.6.1.4 A detailed proposed baseline schedule including time & the following deliverables, amongst others:

1.6.1.4.1 Start and completion dates for all major activities.

1.6.1.4.2 Phases of the work, to include design, design reviews and approvals.

1.6.1.4.3 Submission of Quality Assurance Plan, Environmental Plan, Environmental Impact Assessment Process.

1.6.1.4.4 Project Execution Plan including construction by major activity.

1.6.1.4.5 Submission of Handover certificates, As-built drawings and Close-out report

1.6.1.5 Cost and fee information:

1.6.1.5.1 A detailed cost estimate for the work shall be developed, including a breakdown of costs to complete each major task

1.6.1.5.2 Allowances: Listing of specified allowances and acknowledgement that they are in the lump sum quoted amount, to include all associated profit, overhead, fees and general conditions and design/engineering costs.

1.6.1.5.3 Monthly Cash flow breakdown.

1.6.1.6 Alternatives: Quoted pricing for any alternates, with the acknowledgement that the lump sums quoted for each alternate includes all required labour, equipment, materials, associated material and/or equipment items, profit, overhead, fees and general conditions and design/engineering costs to provide the work in a complete and timely manner.

1.6.1.7 Suggested reporting framework.

1.6.1.8 Any special observations & comments.

1.6.1.9 A statement of professional indemnity and insurance with supporting evidence and proof that Principals, Specialist Contractors, Staff, and Works in the PRASA environment are included.

1.7 HOURS OF WORK / OCCUPATION PERIOD

1.7.1 The site shall be available to the contractor on unlimited hours until the works are complete.

1.8 CONSTRUCTION IN CONFINED SPACE

1.8.1 **Contractor(s) will be expected to work within confined areas and no additional** payment will be made for work done in restricted areas. The method of construction in these confined areas will depend largely on the contractor's construction plan.

1.8.2 The tendered rates and amounts shall include full compensation for all special equipment and construction methods and for all difficulties encountered during working in confined areas and narrow widths, and at, around or through obstructions, and that no extra payment will be made nor will any claim for additional payment be considered in such cases.

1.8.3 The contractor will be held responsible when working in confined areas for the repair, at his own cost, of damage caused by him to any asset or service indicated to him/her.

1.9 PROJECT SCHEDULE / PROGRAM

1.9.1 Bidders shall submit with their tender a detailed method statement and sequenced program of how he/she proposes to execute the work.

1.9.1.1 This shall include details of a number and grades of staff, plant, equipment, and all resources that he or she intends using for the duration of the appointment.

1.9.1.2 On award of the tender the Contractor’s first task under the contract shall be to agree with the Project Manager on the final work programme to be followed. This must be done within 7 (seven) days from date of award.

1.10 DURATION OF CONTRACT

1.10.1 The Contractor should be able to commence once all necessary documentation has been completed including acquiring site access certificate.

1.10.2 The Contract duration will be Six (6) Months from the award date/appointment letter signed by the contractor.

1.11 ESTABLISHMENT OF PLANT AND MACHINERY ON SITE

1.11.1 The contractor shall deliver the plant and machinery, in operational condition with maintenance crew, operator crew labour and consumables (diesel, lubricants, etc.) to the initial place of work as directed by the Project Manager.

1.11.2 This time shall not be regarded as travelling time.

1.12 PROTECTION OF WORKPLACE AND SECURITY ON SITE

1.12.1 Protection of the workplace will be done by flagmen supplied by the contractor and all liaisons with Train Services shall be done by the contractor's supervisor and PRASA RAIL Track Inspector/master.

1.12.2 It is the responsibility of the contractor to provide security on site for equipment, material and personnel for the duration of the contract.

1.13 TO BE PROVIDED BY PRASA

1.13.1 PRASA Rail (in cooperation with the contractor) will arrange for the occupations during which the project will take place where applicable relative to the project.

1.13.2 PRASA Rail will arrange and provide:

1.13.2.1 Rails and fastenings for the project.

1.13.2.2 Client based Supervision of works.

1.14 TO BE PROVIDED BY CONTRACTOR

1.14.1 The contractor shall in addition to what is stipulated in the Conditions of Contract, also supply the following:

1.14.1.1 A Site book (in triplicate) to record all incidents as well as the progress of work done during the occupation.

1.14.1.2 All equipment, tools and labour that he/she shall need to successfully complete the project.

1.14.1.3 Supervision over of the work site by qualified people.

1.14.1.4 Provide barricade onsite on all the works and ensure protection of works from damages.

1.14.1.5 Staff – with valid track required qualification for all types of track work.

1.14.1.6 The Contractor will have to ensure he/she is familiar with the specifications within this contract documents.

1.15 GUARANTEES

1.15.1 All work done shall be guaranteed for a period of 12 months after the successful handover

1.15.2 All completion certificates will be given in writing after all contract obligations are met and approved by PRASA Project Manager.

1.15.3 Corrective action to be taken by the Contractor during the guarantee period at his/her own cost and expense.

1.15.4 Project Manager will, where practicable be entitled to take corrective action of its own should the Contractor not be able to give immediate attention at the time a fault occurs and recover from the contractor any costs and expenses reasonably incurred by it in doing so as per penalty clauses.

1.16 PAYMENT CERTIFICATE

1.16.1 On or after the assessment date, the Project Manager and the Contractor will together assess the quantities of the progress on each item in the Bill of Quantities and complete the Progress Assessment Detail form, where after the Progress Assessment Certificate will be issued.

1.16.2 The Contractor shall then submit a VAT invoice and attach the above Progress Certificate for payment by the Employer.

1.16.3 Claims for payment will only be made on a monthly basis and payments will be made within 30 days of approved invoices.

1.16.4 Contractor to provide the Employer with the necessary details regarding banking details to enable the Employer to make electronic payments.

1.17 PRICING THE WORKS

1.17.1 The contractor is required to provide firm prices/ rates for material and labor for the duration of the contract.

1.17.2 The contract period shall be inclusive of the construction work for drainage upgrade, embankment, stream works and track works including formation rehabilitation for a period of Six (6) months.

1.17.3 The Contractor is advised to study the requirements of the SPK 7/2 and ensure that all works can be completed in accordance with these requirements.

1.17.4 The contract offer shall be based on the rates as indicated in the bill of quantities.

1.18 PENALTIES

1.18.1 If the Contractor fails to complete the Services within the time as stipulated in this Contract for completion of Services or a part or portion of Services, the Contractor

shall be liable to the Employer for an amount calculated at 0.03% of the Contract Price per delayed Day, which shall be paid for every day which shall elapse between the time for due completion and completion of the relevant Services. However, the total amount due under this sub-clause shall not exceed the maximum of 10% of the Contract Price.

1.18.2 The imposition of such penalty shall not relieve the Contractor from its obligation to complete Services or from any of its obligations and liabilities under the Contract,

1.18.3 PRASA may set off or deduct from the fees due to the Contractor any penalty amounts due and owing by the Contractor in terms of clause 5.19.1

1.18.4 The following penalties will be recovered from the Contractor for delays to PRASA trains as described above:

1.18.5 Each train R2500,00 per hour or part thereof - maximum of R22 500,00 per day.

1.18.6 Any missing released materials not accounted for will be deducted from the invoice according to following items:

1.18.6.1 R740.00 Per Wooden sleeper.

1.18.6.2 R970.00 Per Concrete sleeper.

1.18.6.3 R130.00 Per Chair.

1.18.7 Any missing released materials not accounted for will be deducted from the invoice according to the following prices:

1.18.7.1 R900.00 Per old, vandalized and faulty rail lubricator.

1.19 CONSTRUCTION RELATED SECURITY

1.19.1 MANDATORY SECURITY REQUIREMENTS

1.19.1.1 All security companies used by the Contractor shall be PSIRA registered with valid letter of good standing.

1.19.1.2 Security personnel shall all be PSIRA registered with a clear criminal record no criminal pending cases and preferably be sourced from the local community.

1.19.1.3 All personnel employed by the Contractor including sub-contractors shall have undergone a Health and Safety Induction.

1.19.1.4 The security to be provided by the contractor shall be responsible for both the appointed contractor's assets and PRASA's assets on site until the site is handed over to PRASA. A list of all functioning equipment that do not form part of this scope of work will be shared with the successful bidder and shall be signed off by both the successful bidder and PRASA's representative.

1.19.1.5 PRASA assets that shall be guarded by the contracted security includes Permanent way assets, All Train Authorisation on track elements, all train stations (with all assets included) within the construction site and all functioning equipment within the construction site.

1.19.1.6 Any lost or stolen material shall be replaced by the contractor at his/her own cost.

1.19.1.7 The contractor shall provide on-site security for personnel and material stock and should ensure that patrols are in place at the section handed over to the contractor and until the completed work is handed over to PRASA. No claims of material or losses shall be lodged with the client for stolen goods during the construction before the completed work is handed over to PRASA.

1.19.1.8 Furthermore, it is the contractor's responsibility to ensure that valuable metal i.e. Rail fastenings and turnout components are adequately protected while in transit to and from site.

1.19.1.9 The contractor shall make sure that all material removed from site is quantified, counted, logged in the site diary and that it is co-signed by a PRASA representative on site before it is removed from site.

1.19.1.10 Scrap metal removed from the section shall be adequately protected until it is delivered to PRASA's stores (Driehoek)

1.19.1.11 PRASA reserves the right to conduct ad-hoc inspections to ensure Compliance

1.19.2 Risks

1.19.2.1 Tabulated below are the associated security Risks and proposed mitigation measures. It should be noted that this are minimum risks identified and bidders shall be responsible for conducting their own risk assessment that will influence their quotations.

Risk	Probability	Mitigation
Project Hi-jacking – Regulation 9 30% Subcontracting. This includes the provision of security.	High	Social Facilitation to ensure community involvement and buy in. PRASA recommends an approach that involves the local community. Failure to ensure local involvement can result in serious work stoppages.
Theft of Installed equipment	High	Fit for purpose security with an integrated plan for assets installed and physical security at site office. Ensure protective measures for site with an access gate.
Hi-jacking of site personnel vehicles	High	Armed Escorts to and from the site
Armed Robbery of personnel on site and Storage Facility at site	High	Armed Guarding at site and site office with an armed response for mobilisation

1.19.3 PROPOSED INTERVENTIONS

1.19.3.1 Minimum of 2 vehicles with armed response officers (2-4) per vehicle strategically deployed within the site. To supplement the vehicles, a suitable number of day and night visible officers on foot patrol is required.

1.19.3.2 Requisite equipment:

1.19.3.2.1 Bullet proof vests.

1.19.3.2.2 Spotlight.

1.19.3.2.3 Night vision equipment; Torches.

1.19.3.2.4 Tactical Radios (PTT with GPS and Panic Button). This should be the primary communication for all personnel on site.

1.19.3.2.5 Handcuffs (disposable type) and other standard equipment.

1.19.3.2.6 Firearms with extra magazine; and

1.19.3.2.7 Any other equipment identified through the risk assessment.

1.20 OVERALL STAFFING AND KEY RELATED PROFESSIONAL STAFF

1.20.1 PROFESSIONAL TECHNICAL STAFF REQUIREMENTS

The appointed Service provider will be required to provide qualified and experienced professional staff with the following key professional expertise:

1.20.1.1 Team Leader/Project Director (Civil or Structural)

1.20.1.2 Civil / Structural Engineer

1.20.1.3 Civil Geotechnical Engineer

1.20.1.4 Civil Roads and Stormwater Engineer

1.20.1.5 Civil – Resident Engineer

1.20.1.6 Environmental Practitioner

1.20.1.7 Construction Health and Safety Officer

1.20.1.8 Perway – Track Inspector/Track master

1.20.1.9 Perway – Track welder

1.20.1.10 Railway – Flagman

1.20.2 PROFESSIONAL BODY REGISTRATION

1.20.2.1 **Engineering Council of South Africa:** Pr. Engineer/s, Pr. Technologist/s, Pr. Technician/s

1.20.2.2 **South African Institute of Civil Engineering:** SAICE

1.20.2.3 **South African Council for the Project and Construction Management Professions:** Pr. CPM, CPM **and/or** Pr. CM, CM **and/or** Pr. CHSA, CHSO and CHSM

1.20.2.4 **Project Management Profession Certification:** PMP

1.20.2.5 **Environmental Assessment Practitioners Association of South Africa (EAPA)/ South African Council for natural Scientific Professions:**

1.20.3 DETAILS OF THE MINIMUM QUALIFICATIONS FOR THE TECHNICAL STAFF LISTED ON 5.21.2 ARE AS OUTLINED BELOW.

1.20.3.1 TEAM LEADER / PROJECT DIRECTOR

The desired minimum qualifications for the Team Leader/Project Director are as follows:

1.20.3.1.1 BSc Degree/B-Tech Degree in Civil Engineering.

1.20.3.1.2 ECSA registration as a Professional Engineer (Pr. Eng)/Technologist (Pr. Tech Eng).

1.20.3.1.3 A minimum of 5 years' experience post professional registration in the Built Environment field of study with a minimum of five (5) years relevant Project Management experience in similar project disciplines in the Built Environment.

1.20.3.1.4 Project Management qualification and a minimum of 5 years' experience in Project Management.

1.20.3.1.5 South African Council for the Project and Construction Management Professions (SACPCMP) professional registration certification or Project Management Professional (PMP) Certification with a minimum of five (5) years relevant post-certification practical experience.

1.20.3.1.6 A minimum of 5 years of leadership experience on multi-disciplinary similar or related projects.

1.20.3.1.7 A minimum of 5 years' experience in the planning and design of multi-disciplinary similar or related projects.

1.20.3.2 CIVIL ENGINEER/ TECHNOLOGIST (CIVIL STRUCTURAL EXPERIENCE)

The desired minimum qualifications for the Civil and structural Engineer/s are as follows:

1.20.3.2.1 BSc Degree/ B-Tech Degree in Civil Engineering.

1.20.3.2.2 ECSA registration as a Professional Engineer (Pr. Eng)/Technologist (Pr. Tech Eng).

1.20.3.2.3 A minimum of 5 years post-graduate experience in Civil and Structural design including Construction Management experience, with 5 years post professional registration.

1.20.3.2.4 Project Management qualification and a minimum of 5 years' experience in Project Management.

1.20.3.2.5 South African Council for the Project and Construction Management Professions (SACPCMP) professional registration certification or Project Management Professional (PMP) Certification.

1.20.3.2.6 A minimum of 5 years of leadership experience on similar or related projects.

1.20.3.2.7 A minimum of 5 years' experience in the planning and design of similar or related projects.

1.20.3.3 CIVIL EGNINEER (GEOTECHNICAL AND PERMANENT WAY)

The desired minimum qualifications for the Civil Engineer (Geotechnical and Permanent Way) are as follows:

1.20.3.3.1 BSc Degree/B-Tech Degree in Civil Engineering.

1.20.3.3.2 ECSA registration as a Professional Engineer (Pr. Eng)/Technologist (Pr. Tech Eng).

1.20.3.3.3 A minimum of 5 years post-graduate experience in Geotechnical and Permanent way Design including Construction Management experience with 5 years post professional registration.

1.20.3.3.4 Project Management qualification and over 5 years' experience in Project Management.

1.20.3.3.5 South African Council for the Project and Construction Management Professions (SACPCMP) professional registration certification or Project Management Professional (PMP) Certification.

1.20.3.3.6 A minimum of 5 years of leadership experience on similar or related projects.

1.20.3.3.7 A minimum of 5 years' experience in the planning and design of similar or related projects.

1.20.3.4 CIVIL ENGINEER (ROADS AND STORMWATER)

The desired minimum qualifications for Civil Engineer (Roads and Stormwater) are as follows:

1.20.3.4.1 BSc Degree/ B-Tech Degree in Civil Engineering.

1.20.3.4.2 ECSA registration as a Professional Engineer (Pr. Eng)/Technologist (Pr. Tech Eng).

1.20.3.4.3 A minimum of 5 years post-graduate experience in Roads and Stormwater Design including Construction Management experience with 5 years post professional registration.

1.20.3.4.4 Project Management qualification and over 5 years' experience in Project Management.

1.20.3.4.5 South African Council for the Project and Construction Management Professions (SACPCMP) professional registration certification or Project Management Professional (PMP) Certification.

1.20.3.4.6 A minimum of 5 years of leadership experience on similar or related projects.

1.20.3.4.7 A minimum of 5 years' experience in the planning and design of similar or related projects.

1.20.3.5 CIVIL - RESIDENT ENGINEER

The desired minimum qualifications for Resident Engineer are as follows:

1.20.3.5.1 BSc Degree/ B-Tech Degree in Civil Engineering.

1.20.3.5.2 ECSA registration as a Professional Engineer (Pr. Eng)/Technologist (Pr. Tech Eng).

1.20.3.5.3 A minimum of 5 years post-graduate experience in Civil and Structural Design including Construction Management experience with 5 years post professional registration.

1.20.3.5.4 Project Management qualification and minimum of 5 years' experience in Project Management.

1.20.3.5.5 South African Council for the Project and Construction Management Professions (SACPCMP) professional registration certification or Project Management Professional (PMP) Certification.

1.20.3.5.6 A minimum of 5 years of leadership experience on similar or related projects.

1.20.3.5.7 A minimum of 5 years' experience in the planning and design of similar or related projects.

1.20.3.6 ENVIRONMENTAL PRACTITIONER

The desired minimum qualifications for Environmental Practitioner are as follows:

1.20.3.6.1 BSc Degree/ B-Tech Degree in Environmental Science, Natural Resource Management, or related field but affiliated and registered with Environmental Assessment Practitioners Association of South Africa (EAPA)

1.20.3.6.2 A minimum of 5 years of post-graduate experience in environmental management especially on bridges over watercourses.

1.20.3.6.3 Experience in water license applications, control of wetlands and natural attenuation ponds.

1.20.3.6.4 Experience on river trainings, watercourse upgrade and environment management.

1.20.3.7 CONTRUCTION HEALTH AND SAFETY AGENT (PRCHSA)

The desired minimum qualifications for Health and Safety Agent are as follows:

1.20.3.7.1 BSc Degree/ B-Tech Degree in Safety Management.

1.20.3.7.2 A minimum of 5 years post-graduate experience in Health and Safety including Construction Management experience with 5 years post professional registration.

1.20.3.7.3 South African Council for the Project and Construction Management Professions (SACPCMP) professional registration certification.

1.20.3.8 PERWAY – TRACK INSPECTOR / MASTER

The desired minimum qualifications for the Perway Track Inspector / Master are as follows:

1.20.3.8.1 Recognised Track Inspector / Master qualification.

1.20.3.8.2 A minimum of 5 years' experience.

1.20.3.8.3 A minimum of 5 years of leadership experience on similar or related projects.

1.20.3.9 PERWAY – TRACK WELDER

The desired minimum qualifications for the Perway – Welder are as follows:

1.20.3.9.1 Recognised Perway – Welder qualification.

1.20.3.9.2 A minimum of 5 years' working experience.

1.20.3.10 RAILWAY – FLAGMAN

The desired minimum qualifications for the Railway – Flagman are as follows:

1.20.3.10.1 Valid and recognised Railway – Flagman certificate.

1.20.3.10.2 A minimum of 3 years' experience.

NB: A minimum of three qualified railway flagmen shall be deployed for each occupied section.

2 TECHNICAL SPECIFICATIONS RELATED TO THE PROJECT

2.1 The documents forming the contract are to be taken as complimentary to each other. In case of any discrepancy or inconsistency between contract documents, the order of precedence will be:

SANS 3000-1 to 2,	Railway Safety Management
SABS 1200NB	Railway Sidings (Track work)
EN13674-1	Specification for new Railway Rails or the latest equivalent standard
UIC 860-0, UIC 8610-1	UIC Codes or the latest equivalent standard
EN13848	Railway applications – Track geometry quality standard
	Safety Arrangements and Procedural Compliance with the Occupational Health and Safety Act (Act 85 of 1993) and Applicable Regulations; including any subsequent amendments;
SANS 3000-2-2-1	Level Crossings Standard.
SABS 1083:1994	Aggregates from natural sources
SABS 0100-2: 1992	The Structural use of concrete – Part 2: Materials and execution of work
SABS 50197 – 1: 2000	Cement – composition, specifications, and conformity criteria. Part 1: Common cements
SABS 1491 – 1: 1989	Cement extenders – Part 1 Ground granulated blast furnace slag
SABS 1491 – 2: 1989	Cement extenders – Part 2 Fly ash
SABS 1491 – 3: 1989	Cement extenders – Part 3 Condensed Silica Fume
Bridge Code: 1983	South African Transport Service

COLTO	Standard specifications for Road and Bridge Works for State Road Authorities, 1998
SANS 1200A	Standardised Specifications for Civil Engineering Construction, Section A: General
SANS 1200C	Standardised Specifications for Civil Engineering Construction, Section C: Site Clearance
SANS 1200D	Standardised Specifications for Civil Engineering Construction, Section D: Earthworks
SANS 1200L	Standardised Specifications for Civil Engineering Construction, Section L: Medium Pressure Pipelines
SANS 1200LB	Standardised Specifications for Civil Engineering Construction, Section L: Bedding (Pipes)
SANS 1200LD	Standardised Specifications for Civil Engineering Construction, Section L: Sewers
SANS 1200G	Standardised Specifications for Civil Engineering Construction, Section G: Concrete
SANS 1200M	Standardised Specifications for Civil Engineering Construction, Section M: Roads (General)
SANS 1200ME	Standardised Specifications for Civil Engineering Construction, Section ME: Subbase
SANS 1200MFL	Standardised Specifications for Civil Engineering Construction, Section MFL: Base (Light Pavement Surfacing)
SANS 1200MH	Standardised Specifications for Civil Engineering Construction, Section MH: Asphalt Base and Surfacing
EN 13481- Part 1	Performance requirements for fastening systems
EN 13146	Test methods for fastening systems
EN 10089	Hot rolled steels for quenched and tempered springs
EN ISO 6506-1	Brinell hardness test method for rails
CCE 1/57/2	Specification for concrete sleepers to standard dimensions 1065mm gauge track
PWM 2/5	Specification for prestressed concrete sleepers used on 1065mm gauge Railway track
SABS 1083:2013	Ballast specification (latest revision for Railway lines)
S406 (1998)	Transnet specification for supply of ballast stone
EN13674	Specification for new Railway Rails
CP1/1	Exothermic welding portions packaging specification

SABS 1431	Grade 300wa for weldable structural steel
BBB8341	Manual for Track Welding (2007)
SANRAL	Drainage Manual 6th Edition 2013;
S410	Specification for Railway earthworks
BBC4038	Geosynthetics Specification for Railway earthworks construction
TRH4	Structural design of flexible pavements for interurban and rural roads
TRH14	Guidelines for road construction materials
TRH15	Subsurface drainage for roads
TRH17	Geometric design for rural roads
TMH1	Standard methods of testing road construction materials
TMH7	Code of practice for the design of highway bridges and culverts in South Africa TMH7: 1985
PRASA SPECIFICATIONS	
E10	General Specifications for Railway Track work (1996)
E10/1:	Laying of rails
E10/2:	Laying of sleepers
E10/3:	Ballast cleaning
E10/4:	Ballasting and tamping
E10/5:	Destressing of Rails
E10/6:	Building and Replacement of sets
E10/7:	Field welding of Rail joints
E10/8:	Field welding of skid marks
E10/9:	Slewing and Alignment
E10/10:	Drain cleaning
E10/11:	Survey and setting out of Track Alignment and Referencing
E10/14:	Building of New Lines
E7/2	Specification for Works on, Over, Under or Adjacent to Railway Lines and Near High Voltage Equipment
E160	Maintenance of Railway Track with On-Track Machinery
	PRASA SHE Specification
Track Manual	Manual for Track Maintenance (2000)

3 Is this a CIDB related Project? (Yes / No)

If YES, what is the applicable Class of Work & Grade?

Class of Work: **CE**

Minimum Grade: **8**

4 PROJECT SPECIFIC TERMS AND CONDITION

4.1 INCREASE OR DECREASE IN COSTS

4.1.1 PRASA intends to enter into a fixed price, turnkey contract with the winning tenderer. No escalation will be allowed in the contract, and no contract price adjustment will be applied to allow for all increases or decreases in production costs of a product, from any cause whatsoever, which may occur after the closing date of the sub-mission of tenders and before the date of completion.

4.1.2 Price shall be firm for the duration of contract.

4.1.3 It is the tenderer's responsibility to ensure that they provide such explanatory notes and rationale to their tender submission as to satisfy PRASA that their proposal meets the user requirements, within the fixed allocated budget.

4.2 EXCHANGE RATE

The contract price payable to the Contractor will not be adjusted for increases and decreases in costs of imported materials, machines and spare parts, due to fluctuations in foreign currency exchange rates after the conclusion of the Contract and for the duration thereof.

4.3 SITE PHYSICAL CONDITIONS

4.3.1 The tenderer must ensure that they make any provision in their tender price and programme to cater for any adverse physical site conditions/circumstances that may occur such as hard rock, underground water and **this list is not exhaustive**.

4.3.2 It is the tenderer's responsibility to obtain such information about the site and project circumstances, as is necessary for them to submit a fixed price.

5 PROJECT SPECIFIC SAFETY RELATED REGULATIONS

5.1 The contractor shall comply with requirements of safety legislations and regulations in all respects.

5.2 It is the requirement of this contract that the contractor should provide PRASA with a detailed safety plan prior to being issued with a site access certificate, in accordance with the latest version of the Occupational Safety Act, 1993 (Act No: 85 of 1993) and the SPK7, PRASA SHE Specification and National Environmental Management Act 107 of 1997

5.3 All drivers shall be in possession of valid driver's licenses and Public Drivers Permits (PDP) where applicable. Crane operators will be required to have a valid Crane Operator's certificate. All vehicles shall be road worthy.

5.4 The contractor shall be responsible for all protective clothing and equipment for his/her employees. All employees required to climb structures shall be issued with suitable harnesses.

5.5 A copy of the act as well as an approved safety file shall be kept on site for the duration of the project.

5.6 The Contractor shall comply with all applicable legislation and PRASA's safety requirements adopted from time to time and instructed by the Project Manager. Such compliance shall be entirely at the contractor's cost and shall be deemed to have been allowed for in the rates or total prices in the contract.

5.7 The Contractor shall report all incident verbally or telephonically to the project Manager within 5 minutes of occurrence.

5.8 The Contractor shall report all incidents in writing to the Project Manager. Any incident resulting in the death of or injury to any person on the works shall be reported within 12 hour of its occurrence and any other incident shall be reported

within 24 hours of its occurrence.

5.9 The Contractor shall make necessary arrangements for sanitation, water, and electricity at this relevant site during the entire occupation period.

5.10 The safety file will be approved only after all the requirements on the checklist are met. WITS_LIB/RISK_MGT/SHE File Checklist (version 3) is attached in this regard.

5.11 All work shall at all times comply with the E7/2 Specification attached hereto.

5.12 Normal protection measures in accordance with the Protection Manual shall apply.

5.13 The contractor shall at all times be required to supply adequate and competent supervision. **The contractor shall provide a fully qualified Track Inspector/Master - with Track Inspector/Master certificate** (as required by PRASA) to properly supervise the execution of the track work.

5.14 The contractor must supply his or her own flagmen with valid flagmen certificate as required per work site for protection duties. (At least 3 flagmen per site)

5.15 The contractor shall appoint at each work site a person whose sole task shall be to be on the lookout for approaching rail traffic. This employee shall operate an audible warning device to timeously warn all people on the work site of approaching rail traffic.

5.16 The contractor shall not allow any persons on the work site to venture within the structure gauge when this warning procedure is not operating effectively.

5.17 The warning device shall be such that its sound can be clearly and effectively heard above the noise on the work site by all personnel within a radius of 100m around the centre of each work site. The cost to the contractor of providing the lookout as well as the warning device shall be deemed to be included in the rates tendered and no separate payment shall be made.

5.18 An effective safety procedure to be followed by all personnel on any work site in the case of approaching rail traffic shall be compiled by the Contractor and implemented before any work commences. This procedure shall be updated whenever the need arises and any changes shall be communicated to all employees on a works site before work proceeds.

5.19 The Contractor shall accept responsibility for safe custody of the material and care of PRASA assets from the time the site and material is handed over into his custody by PRASA RAIL.

5.20 Any loss or damage to Material and PRASA assets will be recovered on the contractor's account.

5.21 This clause will remain effective to the duration of the contract until the contractor hand back the site to PRASA project manager.