SPECIFICATION / SCOPE OF WORK

NATURE OF WORK

1.1 SCOPE OF WORK

1.1.1 This specification covers the work in connection with the demolition and removal of the parapet walls in the Gauteng Region.

1.1.2 It covers the demolition of the existing unstable concrete parapets walls, demolition and removal of the unsound, damaged, or contaminated concrete structure and removal of metal sections embedded in concrete, the removal of concrete from structural elements, demolition of parapet wall concrete foundation down to pavement level, cut off reinforcement and skim smooth and dispose of rubble to an approved dump site and disposal of waste material. Installation of security fence along PRASA boundary line. The Contractor shall do the work as directed by the Engineer or his representative and in accordance with the specifications set out in this tender/contract document.

1.2 INTERPRETATION

1.2.1 Supporting specification

The following specifications shall be read with, and form part of the contract:

1.2.1.1 Project Specification

1.2.1.2 COLTO Standard Specification for Road and Bridge Works for State Road Authorities, 1998

1.2.1.3 SABS and BS standards referred to in this specification.

1.2.2 Definitions

1.2.2.1 Concrete members

1.2.2.1.1 All references to concrete members shall include mass concrete, unreinforced, reinforced and prestressed concrete members.

1.2.2.2 Demolition of concrete members

1.2.2.2.1 Demolition means the breaking up and removal of an entire concrete member.

1.2.2.3 Removal of concrete

1.2.2.3.1 Removal of concrete means cutting back into the surface or end of a concrete member and the removal of unsound, damaged, or contaminated concrete, or the partial removal of concrete sections.

1.3 MATERIALS

All devices used to remove concrete or to demolish concrete members, shall be handled, stored and used strictly in accordance with the manufacturer's instructions and current safety regulations.

1.4 PLANT AND EQUIPMENT

1.4.1 General

1.4.1.1 All plant, equipment, tools, and devices used for the demolition of concrete members or the removal of portions of existing concrete shall be based on the proven and accepted technology within the industry. The plant, equipment, tools, and accessories shall be inspected and maintained on a regular basis to ensure that they remain in a good working order, function efficiently, and that safety is not compromised. All cutting and breaking tools shall be kept sharp to reduce the force required to break out concrete to a minimum.

1.4.1.2 The plant, equipment, tools, and devices used for the demolition or removal process shall be of the accepted type and capacity for the relevant application. The suitability of the chosen method shall be demonstrated on a representative test section identified by the engineer prior to the execution of any programmed work.

1.4.2 Access structures and working platforms.

1.4.2.1 Where necessary, the contractor shall provide suitable and safe temporary access structures, working platforms, debris collection, and removal bins, including protection screens where required, at each location where concrete must be demolished or removed.

1.4.2.2 The temporary propping specified in the approved method statement and the drawings shall be securely positioned in accordance with each stage of the demolition or removal sequence prior to commencement of the following stage.

1.5 CONSTRUCTION

1.5.1 Sequence of execution

1.5.1.1 The method and sequence of demolition or removal of concrete shall be in accordance with the approved method statement submitted by the contractor following the site inspection. Any temporary propping specified in the approved method statement and the drawings shall be securely positioned in accordance with each stage of demolition or removal sequence prior to the commencement of the following stage.

1.5.2 Site preparation and access

1.5.2.1 The necessary access and temporary support shall be in place prior to the commencement of demolition or removal of concrete. Screening and protective measures shall be established around the work area as necessary to acceptable environmental, health and safety conditions.

1.5.3 Demolition of concrete members

1.5.3.1 The demolition of entire concrete structures or major elements of the parapet structure shall employ techniques that do not damage the adjacent structures and road surface, the sounding rail tracks, mast foundations and overhead electrification infrastructure nor contaminate the surrounding environment. The contractor shall ensure that any nuisance associated with his or her work activity is minimised by implementing appropriate precautions and measures for the approval by PRASA. Common nuisances associated with demolition and concrete removal include fumes, noise, dust, flying fragments, heat, and vibration. Concrete members which are to be demolished completely shall be broken into suitable sized fragments to allow easy removal from site to an approved dump area.
Recommended demolition techniques include the use of percussion breakers or other approved mechanical equipment, the use of thermal or hydraulic cutting techniques or by non-explosive chemical means, to ensure minimal damage to the existing sound concrete abutments. Demolition by explosive means will normally not be acceptable and will be subject to PRASA's approval.

1.5.4 Removal of concrete from structural elements

1.5.4.1 The technique used shall be suited to its intended purpose and not cause damage to the remaining concrete members. Only techniques that do not damage the inherent structure, bond or strength of the remaining sound concrete structure shall be used. The fixed exposed contact surface shall be bounded by straight line edges cut at least 10mm deep by a diamond cutting saw, angle grinder or other approved equipment.

1.5.5 Removal of metal sections embedded in concrete.

1.5.5.1 Metal sections that are embedded in concrete members by means of grout pockets shall be removed by carefully chipping out embedment grout filling pockets.

1.5.6 Disposal of waste material

1.5.6.1 All waste materials, rubble, scrap and rubbish arising from the contractor's presence on site and/or the execution of the works shall be disposed daily to a disposal site identified by the contractor.

1.5.7 Testing

1.5.7.1 The contractor shall carry out pre-construction tests with the proposed equipment to determine the suitability of technique for the envisaged application. The test results shall be reported to PRASA and shall be subject to the Engineer's approval.

1.5.8 Security fence

The work shall consist of supply and installing field fences, including gates and fittings.

This specification covers material requirements and installation of security fencing.

1.5.8.1 Install security fence complete.

1.5.8.2 References Codes and Standards

1.5.8.2.1 CSIR, SABS, North Atlantic Treaty Organization (NATO) and International Aviation Authority Organization (ICAO)

1.5.8.3 Materials.

1.5.8.3.1 All steel materials shall be of good commercial quality, galvanized steel.
1.5.8.3.2 All pipes shall be galvanized, one piece without joints. Furnish moisture proof caps for all posts.
1.5.8.3.3 Zinc coating shall be smooth and essentially free from lumps, globs, or points.
1.5.8.3.4 Miscellaneous material shall be galvanized.

1.5.8.4 Posts.

1.5.8.4.1 Post shall be 3m long Taper Locking Post.
1.5.8.4.2 Post width shall be 85mm - tapering to 45mm with a depth of 85mm.
1.5.8.4.3 Post shall include 'Locking Recess Mechanism' to secure panel edge.
1.5.8.4.4 Post shall be sealed with a UV stabilized polymer cap.
1.5.8.4.5 Post finish shall be Galvanized.

1.5.8.5 Panel.

1.5.8.5.1 Panel shall be of 3,297m width and 2.4m in height.
1.5.8.5.2 Panel aperture size (centres) shall be 76.2mm x 12.7mm.
1.5.8.5.3 Wire diameter will be 3mm.
1.5.8.5.4 The panel shall be reinforced with 4 x 50mm deep 'V' formation horizontal recessed bands (rigidity).

1.5.8.5.5 Panel shall have 2 x 70° flanges along sides (internal fixtures- all fixtures shall be on the inside of fence line.
1.5.8.5.6 Panel shall have 2 x 30° flange along top and toe (integrated rigid angle).
1.5.8.5.7 Panel post shall have a flush panel post finish with no climbing aid.
1.5.8.5.8 Panel shall be affixed to post over 48-line wires using 8 x Double bolt comb clamps and 8 x Single bolt comb clamps using 24 x Anti vandal bolts.
1.5.8.5.9 Panel and fixtures shall be galvanized.
1.5.8.5.10 Panel Post connection minimum break force.

1.5.8.6 Fence Corner Configuration.

1.5.8.6.1 The fence configuration should not have any sharp corners and all angles at changes of direction should be a minimum of 130 degrees.

1.5.8.7 Installation of fence.

1.5.8.7.1 Install all fencing in accordance with the drawings, specifications, instructions, and as per specified lines and grades indicated. Line posts shall be spaced at intervals of 3.382 m (10 ft). Terminal posts shall be set at abrupt changes in vertical and horizontal alignment.

1.5.8.7.2 Post holes shall be cleared of loose material. Waste material shall be spread where directed by Engineer. The ground surface irregularities along the fence line shall be eliminated to the extent necessary.

1.5.8.7.3 Posts shall be set plumb and follow the indicated alignment. All posts shall be set to the depth indicated on the design documents. Concrete shall be thoroughly consolidated around each post, free of voids, and finished with a domed shaped surface, with the base of dome at grade elevation. Concrete shall be allowed to cure prior to installing any additional components to the posts.

1.5.8.7.4 Concrete footings shall be carried down to at least the depth indicated on the design documents and shall not be smaller than the dimensions shown. Where a rock layer is encountered within the required depth to which the post is to be erected, a hole of a diameter slightly larger than the largest dimension of the post may be drilled into the rock and the post grouted in. Then the regular concrete footing shall be placed between the top of the rock and the top of the footing elevation as shown on the design documents. Posts shall be approximately centred in their footings. All concrete shall be placed promptly and consolidated by tamping or other approved methods.

1.5.8.7.5 Where the ground is firm enough to permit excavation of the post hole to neat lines, the concrete may be placed without formwork by completely filling the hole. Curing may be achieved by covering the concrete with not less than four inches of loose moist material immediately after placing concrete,

or by using a curing compound. All excess material from footings, including loose material used for curing, shall be disposed of as directed by the Engineer.

1.5.8.7.6 Where the ground cannot be satisfactorily excavated to neat lines, formwork shall be used to place concrete for footings. Under these conditions the earth and formwork coming in contact with the concrete shall be moistened and all ponded water shall be removed from the hole prior to placing concrete. When formwork is removed, the footing shall be backfilled with moistened material and thoroughly tamped. The top of the concrete shall then be covered with not less than 100 mm (4 in) of loose moistened material or use curing compound if the 7-days cure is not completed. All excess material from footings, including loose material used for curing, shall be disposed of as directed.

1. LOCATION OF CONTRACTOR'S SITE CAMP

The contractor should identify a suitable location for a site camp and propose this to the engineer on commencement of the work. The contractor should make due allowance to ensure that suitable access is achievable, especially for the transport of concrete rubble to the dumping site. Access to the site is by public roads. The Contractor must acquaint himself with the available access to the site and the condition of the roads during the site inspection. No housing of employees of the Contractor will be allowed on the property of PRASA, and the Contractor shall make his own arrangements for the housing of his employees.

2. PROVISION FOR SERVICES

The Contractor shall make his own arrangements for the supply of water (for all purposes), light, power, sanitation, and telephones, as required on the site.

3. UNDERGROUND SERVICES

Various types of services, both overhead and underground, exist within the boundaries of the site.

4.1 Before work start on a section the Contractor must ascertain himself about services such as:

4.1.1 Electrical underground cables
4.1.2 Telecoms underground cables
4.1.3 Underground Signalling cables
4.1.4 Water pipes.

4.2 Before any excavations take place, the Contractor must contact the relevant department(s) to ensure their presence on site while excavating anywhere near the underground services.

4.3 The Contractor will be held responsible for the repair of any damage to all known services and assets.

4. CONSTRUCTION IN CONFINED AREAS

5.1 It may be necessary for the Contractor 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.

5.2 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.

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

5. FEATURES REQUIRING SPECIAL ATTENTION

6.1 Railway overhead powerlines

6.1.1 Overhead powerlines are present within the boundaries of the site. To perform certain works the contractor may require these to be switched off for a certain period, termed occupation. An application to this effect must be made to the client. Refer to project specification occupation clause.

6.2 Existing Services

6.2.1 Various types of services, both overhead and underground, exist within the boundaries of the site. It is envisaged that it will be necessary for the Contractor to arrange for the removal, relocation or protection of existing services. Should any work become necessary then all work shall be done strictly in accordance with the requirements of the relevant service owner and in accordance with the requirements of these Works Specifications.

6.2.2 The procedures for the protection and/or relocation of such services are outlined in SPK7/1 specifications.

6.3 Construction in confined areas

6.3.1 It will be necessary for the Contractor to work within confined and restricted areas. No additional payment will be made for work done in such areas, despite indications to the contrary in the Standard Specifications.

6.4 Water for construction purposes

6.4.1 The Contractor must make adequate provision in their tender for all negotiations and procurement of water for demolition activities and all related costs will be deemed to be included in his or her tendered rates.

6.5 Weatherproof Protection for Workers

6.5.1 All staff required to continue working during rainy or dusty conditions shall be provided with oilskins and rubber knee boots, masks, or other approved protective clothing and footwear.

6.6 Night Work and Work on Public Holidays

6.6.1 Where the Contractor requires staff to do shift work, he or she shall make the necessary arrangements with the Engineer and obtain written approval from the Engineer. The Contractor shall bear the cost of his or her overtime work.

6.7 Environmental Requirements

6.7.1 The Contractor shall perform the works in accordance with current environmental legislation. Any queries regarding this to be directed to the engineer.

6.7.2 Personnel and plant shall not enter property beyond the railway reserve boundary irrespective of whether or not the boundary is fenced.

6.7.3 The Contractor shall take every precaution to avoid damage to landscape plants/vegetation within that area of the railway reserve which falls outside the designated work area. Any damage caused is to be repaired at the Contractor's expense.

6.7.4 Storage and stockpiling of materials within the railway reserve will not be permitted without the written consent of the Engineer. Excess material from the demolition, excavations and waste material shall be spoiled off site at suitable locations.

6.8 Concrete rubble

6.8.1 All concrete rubble, scrap and rubbish arising from the contractor's demolition work on site/or the execution of work shall be disposed to a disposal site identified by the contractor and approved by the Engineer.

6. PROTECTION OF WORKPLACES AND SECURITY ON SITE

6.1. 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 or PRASA RAIL Track master.

6.2. It is the responsibility of the contractor to provide security on site for equipment, material, and personnel for the duration of the contract. Including security for site office and PRASA Infrastructure Assets within the envelope along the boundary limits)

7. REMOVAL OF RUBBLE

7.1. No indiscriminate spoil of material is permitted. The tendered rate must include the removal of surplus or unsuitable materials to be spoiled at a site provided by the Contractor, away from the rail as to prevent further contamination of ballast and ensure adequate drainage. The local authority in whose area it is located shall approve the site, and the spoiling shall comply with the applicable statutory and municipal regulations. No material shall be disposed onto the station platform, adjacent railway line and road.

8. LABOUR REQUIREMENTS

8.1. Use of local labour

8.1.1. Where feasible and practical, work opportunities on the contract should be provided for Local Labourers within the local communities residing close to the site of the Works. Labourers and workers of the local communities required by the Contractor shall be recruited and appointed for work. The Contractor shall provide for suitable means of transport of workers from local communities to and from the site of the works. The contractor shall make provision for appointment of Community Liaison Officer from the ward within the boundary limits of the project site.

9. CONTRACT AREA

The contract area will be within the Gauteng Province.

10. SUFFICIENCY OF TENDER

10.1. The contract will only be awarded to a tenderer who has a proven record of wide experience in rail track rehabilitation works in South Africa.

10.2. The Contractor shall inspect and examine the site and its surroundings and shall satisfy himself or herself with measurements, etc. before submitting his tender as to the form and nature of the site, the quantities and nature of the work, and material necessary for completion of the works, the means of access to the site, shall consider and consider any security and risks, contingencies and other circumstances that may influence, or affect his tender.

11. DURATION OF CONTRACT

The projected duration of the contract is twelve (12) months on a fixed contract.

12. COMPLIANCE WITH STATUTES

12.1. The Contractor's procedures shall comply with all applicable legislation, Codes of Practice and Local, Regional or Provincial Authorities.

13. TO BE PROVIDED BY PRASA RAIL

The following services to be provided free of charge by PRASA RAIL where required:

13.1. PRASA RAIL will make available old, rejected ballast material where available next to the track that can be used in the base layer. The extraction and transport of the material shall be undertaken by the Contractor, and the cost thereof shall be included in the rates.

13.2. A Site Access certificate. The Contractor will not be allowed to start with any part of the contract on site before a signed certificate has been issued.

14. TO BE PROVIDED BY THE CONTRACTOR

14.1. In addition to all labour, materials, plant, equipment and incidentals needed to complete the work, the Contractor shall provide all accommodation and toilet facilities for his employees.

14.2. The Contractor shall provide at his own cost any security measures he may deem necessary for safe and effective execution of the work within the contract area for the duration of the contract.

14.3. The Contractor shall provide at his or her own cost a Site Instruction Book, a Site Dairy and a Safety File to be handed to the Technical Officer at the award of the contract. Work will not be allowed to commence without proof that the Safety File was approved by the PRASA Risk department.

14.4. A work program shall be submitted to the Technical Officer within 1 week from the date of the acceptance of the tender in the form of bar chart with sufficient detail to show clearly how the works will be performed.

14.5. The contractor is responsible to appoint the safety officer fulltime on site whose sole responsibility will be to manage and monitor safety related issues on site.

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

15. STANDARD SPECIFICATIONS

The following specifications, instructions and documents shall, inter alia, form part of this contract:

(i) The project specification

(ii) The schedule of quantities

(iii) Specification for safety arrangements and procedural compliance with the Occupational Health and Safety Act: Act 85 of 1993 and Regulations E.4E

(iv) General conditions of contract, SPK 5(SEPT 2008) (September 2008).

(v) Specification for Works on, over, under or adjacent to Railway lines and near High Voltage Equipment, SPK7/1 (September 1999).

(vi) Manual for Track Maintenance 2000

(vii) E10 Specification for Trackwork

(viii) S410 Specification for Railway Earthworks

(ix) S406 Specification for supply of ballast stone

The following relevant standardized SANAS 1200 series and TRH 14 specifications, as listed below,

shall form the Standard Specifications, and apply to this contract:

- SANS 1200 A: General
- SANS 1200 C: Site Clearance
- SANS 1200 D: Earthworks
- SANS 1200 DM: Earthworks (Roads, Sub-grade)
- SANS 1200 G: Concrete (Structural)
- SANS 1200 H: Structural Steel work
- SANS 1200 M: Roads (General)
- SANS 1200 ME: (Subbase)
- SANS 1200 MF: (Base)
- TRH 14: Guidelines for road construction materials

16. METHOD STATEMENT

Contractor is requested to submit with their tender a method statement, in it the following should be outlined in detail:

16.1. Procedure in carrying out the work (construction methods)

16.2. Technical and Engineering capability (Certificates of Engineering staff)

16.3. All Resources (Labour, Plant, Equipment, Support and Outside Services) that the contractor proposes to use in the execution of the works

17. SAMPLES AND TESTING

17.1. The Contractor shall make available, free of charge, a sufficient quantity of material supplied by him or her, which are to be used for the WORKS, for quality verification by the engineer. Soil samples for foundation structural layers to be sent to a soil materials laboratory (SANAS approved) for testing as requested by the Engineer.

18. SITE MEETINGS

18.1. Site liaison meetings will be arranged by the Engineer as necessary. The Contractor or his or her duly authorized representative shall be available when called upon to attend site meetings with the Engineer or his representative.

19. SITE INSTRUCTION BOOK AND SITE DIARY

19.1. The contractor to provide a site instruction book for any instructions that need to be issued on site. The Contractor will have to sign for all instructions issued and will be issued with copies of the instructions.

19.2. The contractor will be responsible for keeping a site diary with all information related to the contract. This diary will have to be kept to make record of rain delays, production for the day, visitors to the site, expected date of material delivery, material delivered daily, labour and plant on site each day, etc. This will have to be filled in daily.

20. HOURS OF WORK AND DAYS OF DUTY

20.1. Work shall proceed during weekdays from 07h00 to 16h30 and or over weekends from 07h00 to 17h00. Most of work will be done during the week and over-time, work on public paid holidays, Saturdays and Sundays shall only be required in exceptional cases.

20.2. Work outside of normal working hours shall not be paid against overtime rates unless:

20.3. Agreed upon by the Project Manager in writing before the start of the any project task.

20.4. The contractor can prove PRASA Rail's accountability for delays resulting in overtime being required.

21. OCCUPATIONS AND WORK PERMITS

Between trains occupations and work permits will be granted for the repair of track. The maximum duration of occupations/work permits will normally not exceed six hours nor be less than three hours. Occupations/work permits will normally be granted from 09:00 to 15:00 on weekdays. The Contractor shall apply for occupations/work permits, or "work between trains permits" 28 days in advance. Late applications will not be considered. Penalties for late completion will not be wavered should the contractor not apply for occupations in time.

22. QUALITY ASSURANCE

The contractor must provide the Technical Officer with the results of compaction tests (soil material) and concrete cube tests (7&28 days) as randomly selected / required by the Technical Officer during the construction process. Work not approved because of non-compliance will have to be rectified by the contractor on his or her account.

23. PERFORMANCE MONITORING AND EVALUATION

23.1. The Contractor shall at all times be responsible for supervision of the work and for follow-up instructions to monitor that the work is being done to specification. He or she shall immediately take appropriate remedial action, in areas where the specified standards are not achieved.

23.2. The Technical Officer shall at any time during the contract period carry out inspections of the Contractor's performance methods and procedures.

23.3. During these inspections' conformance to the standards of workmanship shall be evaluated.

Work that does not comply with the specified standards will be recorded as "rejected work" and will be subject to remedial action. The rejected work can only be contested by the Contractor at the time and place of rejection.

24. REMEDIAL WORK AND NON-PERFORMANCE

24.1. The Contractor shall implement immediate remedial action of rejected work.

24.2. In the case of inaction or non-conformance by the Contractor, PRASA reserves the right to implement remedial action and recover the cost from the Contractor.

24.3. In the case of failure by the Contractor to execute the work in accordance with the contract document, PRASA shall reserve the right to cancel the contract with immediate effect. Monies owed to the Contractor for work done and accepted up to the time of cancellation shall first and foremost be applied by PRASA to remedy the non-performance of the Contractor in terms of the contract for purpose of limiting damages to PRASA.

25. INFORMATION TO BE PROVIDED WITH TENDER

The Tenderer shall submit the following information at the time of tendering:

25.1. Full description of the plant and work methods to be used for all aspects of the work required ensuring performance as specified.

25.2. Whether the tenderer intends to work on Saturdays, Sundays or Statutory holidays or is prepared to work on such days if required to do so by PRASA.

25.3. The Schedule of Quantities and Prices must be completed in full.

25.4. An undertaking that all equipment will be ready for operation and that the work can commence timeously, to comply with requirements of the contract.

25.5. A detailed construction program shall be submitted with the tender.

26. MEASUREMENT AND PAYMENT

Claims for payment will be made on a monthly basis.

Any rejected or uncompleted work will not be paid.

All rates in the schedule of quantities must be made per unit as requested and should be all inclusive through rate, converting all the items described under “Measurement and Payments ".

The rate quoted by the Tenderer(s) and accepted by PRASA Rail must hold good till the completion of the work and shall not subject to any escalation due to increase in the local market rates for materials & labour. No claim on this account whatsoever shall be entertained at any stage including the extended period, if any

Payment will be made in accordance with the rates tendered in the schedule of prices and as follows:

26.1. **Site establishment……..…… Unit: Sum**

A fixed rate for the Site Establishment, including the management and site supervision will be made in accordance with the relevant pay item under ITEM of the BOQ.
The Contractor shall allow in this rate for the work, travelling and effort associated with pre-inspection of site in order to quantify and identify the exact demolition work site and associated plant, equipment, tools, and devices required, discuss and confirm with the depot staff the extend of preparation required of PRASA for each site.

26.2. **Security on site……...…… Unit: Sum**

The contractor shall make provision in this item to allow for security personnel on site. Minimum of three security officers (Including security for site office and PRASA Infrastructure Assets between the boundary limits)

26.3. **Community Liaison Officer……...…… Unit: Sum**

The contractor shall make provision in this item for appointment of Community Liaison Officer from the ward within the boundary limits of the project site.

26.4. **F122.01 Demolition of concrete members (location and description) ……...…..……Unit: M^3**

The unit of measurement is the cubic metre of concrete demolished, measured in its original position and shaped based on:

26.4.1. Full demolition

26.4.2. Partial demolition

The tendered rate shall include full compensation for all labour, material, screening of the structure for safety and environmental protective measures, equipment and plant as well as for all work and incidentals required to complete the work as specified and required to demolish the concrete structure and load, transport and dump the concrete segments and rubble at the nearest approved dumping site. See in clause 6.8 (6.8.1).

26.5. **F122.02 Removal of metal sections embedded in concrete (description) ……..……Unit: No.**

The unit of measurement shall be the number of metal sections removed.

The tendered rate shall include full compensation for all labour, material, equipment, screening of the structure and protective measures, required for the removal of the metal sections as described in clause 1.5.6 (1.5.6.1) and disposal of all rubble at an approved waste disposal site, and the cleaning of the pocket as specified in 1.5.5 (1.5.5.1).

27. SAFETY

27.1. All work in this contract shall comply with the Occupational Safety Act No 85 of 1993, National Environmental management Act 107 of 1997 Act and construction regulation 2014. These items shall all be included in the tendered rates.

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

27.3. 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.

27.4. 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 1 hour of its occurrence and any other incident shall be reported within 24 hours of its occurrence.

27.5. All personnel employed by the Contractor shall have undergone a Health and Safety Induction.

27.6. Permits to work (in line with Covid-19 regulations) shall be issued at the cost of the contractor to all personnel on that shall be signed and stamped by the authorized PRASA Official responsible for Risk Management.

27.7. The contractor shall ensure that all COVID - 19 protocols are adhered to.

27.8. The Contractor shall make necessary arrangements for sanitation, water and electricity at these relevant sites during the installation of the equipment.

27.9. 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.

27.10. All work shall always comply with the E7/1 Specification attached hereto.

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

27.12. 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.

27.13. The Contractor shall be responsible for the safety of personnel on site. The following shall also form part of the safety plan:

- Transportation of equipment and personnel.
- Transportation, storage, and handling of hazardous equipment
- The site access certificate shall only be issued (to the successful bidder) after the evaluation and approval of the safety file.

27.14. 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 OHS Act and the SPK7 and the E4E.

28. GENERAL

28.1. The Contractor shall ensure that all staff working on or with the contract are adequately trained, to comply with any relevant safety and quality requirements.

28.2. Flagmen must be officially trained, evaluated and certified competent, (TETA - ASSR 463972 (Accreditation no: TETA 1186) and Transnet 407 – Item Number 37/270451 - "Certificate of Competency") by a designated competent person, before being used on protection duties. This certificate of competency shall remain valid for two (2) years only after, which re-testing and re-certification of competency will be required.

28.3. PRASA shall assist the contractor with the training of flagman.

28.4. Flagmen that are already qualified will be tested by PRASA representative and if found not competent will not be allowed to form part of the contractor's team.

28.5. PRASA Regional Engineer remains ultimately responsible in terms of the requirements of Act 85 for the safe working environment of his/her own personnel as well as contractor's personnel within the track maintenance environment on his/her depot.

28.6. The Regional Engineer is therefore also responsible for ensuring that any changes in the Protection Procedures that may occur over time are effectively communicated to any flagmen prior to them being used for Protection Duties.

29. PAYMENT CERTIFICATE

29.1.1. On or after the assessment date, the Supervisor 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.

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

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

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

30. PRICING THE WORKS

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

30.1.2. The contract period shall be inclusive of the rehabilitation of service roads in the Gauteng Region on an “as and when” required basis for a period of 36 months.

30.1.3. The Contractor is advised to study the requirements of the SPK 7/1 and ensure that all works can be completed in accordance with these requirements.

30.1.4. The contract offer shall be based on the rates as indicated in the bill of quantities. The quantities shall be agreed during construction per section.

31. PENALTIES

31.1.1. If the Contractor fails to complete the Services within the time a 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 0.3% of the Contract Price per delayed Day per order, 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.

31.1.2. 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,

31.1.3. 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 32.1.1.

32. CONSTRUCTION RELATED SECURITY

32.1. MANDATORY SECURITY REQUIREMENTS

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

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

32.1.3. All security officials utilised in this project shall be South African Citizens.

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

32.1.5. Permits to work (in line with Covid-19 regulations) shall be issued at the cost of the contractor to all personnel on that shall be signed and stamped by the authorized PRASA Official responsible for Risk Management.

32.1.6. 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.

32.1.7. 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) along the section and all functioning equipment along the corridor.

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

32.1.9. 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.

32.1.10. Furthermore, it is the contractor's responsibility to ensure that valuable metal i.e. copper is adequately protected while in transit to and from site.

32.1.11. 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.

32.1.12. Scrap metal removed from the section shall be adequately protected until it is delivered to PRASA's stores.

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

32.2. Risks

32.2.1. 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

32.2.2. PROPOSED INTERVENTIONS

32.2.2.1. 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.

32.2.2.2. Requisite equipment:

- Bullet proof vests;
- Spotlight;
- Night vision equipment;
- Torches;
- Tactical Radios (PTT with GPS and Panic Button). This should be the primary communication for all personnel on site.
- Handcuffs (disposable type) and other standard equipment;
- Firearms with extra magazine; and
- Any other equipment identified though the risk assessment.

33. OVERALL STAFFING AND KEY RELATED PROFESSIONAL STAFF

34.1 PROFESSIONAL TECHNICAL STAFF REQUIREMENTS

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

33.1.1. Civil Engineer
33.1.2. Structural Engineer
33.1.3. Construction Health and Safety Officer
33.1.4. Construction Manager/Project Manager
33.1.5. Railway Flagmen

34.2 PROFESSIONAL BODY REGISTRATION

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

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

34.2.3 **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

34.2.4 **Project Management Profession Certification:** PMP

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

34.3 DETAILS OF THE MINIMUM QUALIFICATIONS FOR THE TECHNICAL STAFF LISTED ON 34.1 ARE AS OUTLINED BELOW.

34.3.1 CIVIL ENGINEER/ TECHNOLOGIST (CIVIL ENGINEERING EXPERIENCE)

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

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

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

34.3.1.3 A minimum of 5 years' experience in Civil Engineering projects.

NB: All foreign qualifications to be SAQA approved.

34.3.2 CONTRUCTION HEALTH AND SAFETY OFFICER (PRCHSO)

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

34.3.2.1 Be in possession of a NEBOSH International General Construction Health & Safety Certificate (NQF Level 6) OR National Diploma safety Management (NQF level 6) OR Degree in Safety Management (NQF level 7)

34.3.2.2 A minimum of 5 years' experience as a Health and Safety Officer in the construction environment.

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

NB: All foreign qualifications to be SAQA approved.

34.3.3 CIVIL STRUCTURAL ENGINEER/TECHNOLOGIST

The desired minimum qualifications for Structural Engineer/Technologist are as follows:

34.3.3.1 BSc Degree/ B-Tech Degree in Structural Engineering.

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

34.3.3.3 A minimum of 5 years' experience in Civil Structural Projects.

NB: All foreign qualifications to be SAQA approved.

34.3.4 CONSTRUCTION MANAGER/PROJECT MANAGER

34.3.4.1 BSc Degree/B-Tech Degree in Construction Management/Project Manager

34.3.4.2 SACPCMP registration as a Professional Construction Manager/Project Manager.

34.3.4.3 A minimum of 5 years' experience in Construction Projects.

NB: All foreign qualifications to be SAQA approved.

34.3.5 RAILWAY FLAGMAN

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

34.3.5.1 Recognised Railway – Flagman certificate;

34.3.5.2 A minimum of 3 years' experience

NB. A minimum of three qualified flagmen shall be deployed for each occupied section or site. The certificates are not required to be submitted with the bid returnable.

35 TECHNICAL SPECIFICATIONS RELATED TO THE PROJECT

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
SANS 3000-2-2-1	Level Crossings Standard.
SABS 1083:1994	Aggregates from natural sources
SANS 10100-1: 2010	The Structural use of concrete – Part 1: Design
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
SATS Bridge Code: 1983	South African Transport Service; Bridge code
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
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
CSIR Test	980289, 050036, 050056, T09998
SABS Test	536/YM139
Nato Stock	5600/99-458-7474
ICAO	ICAO Security Manual
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
E160	Maintenance of Railway Track with On-Track Machinery
Track Manual	Manual for Track Maintenance (2000)
BBB8341	Manual for Track Welding (2007)
SSS11	Trak welding specification
PRASA SHE SPECIFICATION	Safety Arrangements and Procedural Compliance with the Occupational Health and Safety Act (Act 85 of 1993) and Applicable Regulations; including any subsequent amendments;
E7/2	Specification for Works on, Over, Under or Adjacent to Railway Lines and Near High Voltage Equipment

36 Is this a CIDB GRADING, (Yes/No)

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

Class of Work: CE

Minimum Grade: 4

37 PRICING SCHEDULE

Note: Prices remain fixed for the duration of contract.

38 PROJECT SPECIFIC SAFETY RELATED REGULATIONS

38.1 The supplier shall comply with requirements of safety legislations and regulations in all respects.

38.2 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.

38.3 The supplier shall be responsible for all protective clothing and –equipment for his employees. All employees required to climb structures shall be issued with suitable harnesses.

38.4 All work shall at all times comply with the E7/1 Specification attached hereto.

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

38.6 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.

38.7 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 OHS Act and the SPK7 and the E4E.

38.8 Occupational Safety Act, 1993 (Act No: 85 of 1993)

38.9 National Environmental Management Act 107 of 1997

38.10 Construction regulation 2014

38.11 The contractor shall ensure that all Covid 19 protocols are adhered to.

38.12 The Contractor shall make necessary arrangements for sanitation, water, and electricity at these relevant sites during the installation of the equipment.

38.13 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.

38.14 The contractor shall be responsible for the safety of personnel on site. The following shall also form part of the safety plan:

38.15 Transportation of equipment and personnel.

38.16 Transportation, storage and handling of hazardous equipment

38.17 The site access certificate shall only be issued (to the successful bidder) after the evaluation and approval of the safety file.

POINTS AWARDED FOR SPECIFIC GOALS

In terms of Regulation 4(2); 5(2); 6(2) and 7(2) of the Preferential Procurement Regulations, preference points must be awarded for specific goals stated in the tender. For the purposes of this tender the tenderer will be allocated points based on the goals stated in table 39.7 below as may be supported by proof/ documentation stated in the conditions of this tender:

In cases where organs of state intend to use Regulation 3(2) of the Regulations, which states that, if it is unclear whether the 80/20 or 90/10 preference point system applies, an organ of state must, in the tender documents, stipulate in the case of—

(a) an invitation for tender for income-generating contracts, that either the 80/20 or 90/10 preference point system will apply and that the highest acceptable tender will be used to determine the applicable preference point system; or

(b) any other invitation for tender, that either the 80/20 or 90/10 preference point system will apply and that the lowest acceptable tender will be used to determine the applicable preference point system,

then the organ of state must indicate the points allocated for specific goals for both the 90/10 and 80/20 preference point system.

39 THE NATIONAL INDUSTRIAL PARTICIPATION PROGRAMME

The National Industrial Participation Programme (NIPP), which is applicable to all government procurement contracts that have an imported content, became effective on the 1 September 1996. The NIP policy and guidelines were fully endorsed by Cabinet on 30 April 1997. In terms of the Cabinet decision, all state and parastatal purchases / lease contracts (for goods, works and services) entered into after this date, are subject to the NIP requirements. NIP is obligatory and therefore must be complied with. The Industrial Participation Secretariat (IPS) of the Department of Trade and Industry (DTI) is charged with the responsibility of administering the programme.

Bidders are therefore required to complete SBD 5 to give effect to the above. **Bidders who do not complete this form will be automatically disqualified.**