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RICHTERSVELD MUNICIPALITY

UPGRADING OF SPORTS FACILITIES IN RICHTERSVELD

PROJECT REF NO.: 01/USFR/NC061/07/2021

C3.7 : ENVIRONMENTAL MANAGEMENT

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ENVIRONMENTAL SPECIFICATION

For Construction

RICHTERSVELD MUNICIPALITY

UPGRADING OF SPORTS FACILITIES IN RICHTERSVELD

PROJECT REF NO.: 01/USFR/NC061/07/2021

This specification shall be used in conjunction with all other applicable safety specifications, legislation and regulations in force at the time of the contract. Where unique site specifications are in force, those site specifications shall take precedence over this specification.

Definitions:	National Environmental Management Act (107 of 1998)
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1. INTRODUCTION

1.1 Scope

This Specification covers the requirements for managing and mitigation of environmental impacts affecting the environment on the UPGRADING OF SPORT FACILITIES IN RICHTERSVELD construction project.

The specification will provide the requirements that Principal Contractor and Contractors will have to comply with in order to reduce pollution or degradation of the environment from occurring, continuing or recurring associated with the above mentioned contract work that may lead to damage to property and surrounding environment to a level as low as reasonably practicable.

1.2 Preamble

Every effort has been made to ensure that this Specification is accurate in all respects; however, should it contain any errors or omissions they may not be considered as grounds for claims under the contract for additional reimbursement or extension of time.

1.3 Purpose

The purpose of this Specification is to brief contractors on the significant environmental aspects of the project. It provides information and requirements on *inter alia*:

- ✓ submissions and approvals of environmental method statements;
- ✓ management and impact mitigation of construction activities affecting the site and its surrounding environment;
- ✓ rehabilitation of affected site and surrounding environment;
- ✓ ensuring compliance monitoring in terms of NEMA requirements and other relative legislations, permits, environmental authorisations and approved EMP; and
- ✓ submissions and correspondence on environmental matters.

1.4 Interpretations

National Environmental Management Act, Act 107 of 1998 shall apply to this applies to any person involved in construction work. These regulations are hereinafter referred to as “the Environmental Regulation” and the said Act as “the Act”.

Construction work is defined as any work in connection with:

- ✓ “commence” - the start of any physical activity, including site preparation and any other activity on site in furtherance of a listed or specified activity;
- ✓ the building, erection or establishment of a facility, structure or infrastructure that is necessary for the undertaking of a listed or specifies activity;

- ✓ the modification, extension, alteration, or upgrading of a facility, structure or infrastructure at which an activity takes place in such a manner that the capacity of the facility or the footprint of the activity is increased;

- ✓ the taking out of active service permanently or dismantle partly or wholly, or closure of a facility to the extent that it cannot be readily re-commissioned;

- ✓ activities that is developed in phases over time on the same or adjacent properties to create a single or linked entity through interconnected internal vehicular or pedestrian circulation, sharing of infrastructure, or the continuum of design, style or concept by the same proponent or his or her successors.

1.5 Definitions

Definitions as listed in the National Environmental Management Act (NEMA), Act No 107 of 1998 as amended, the Environmental Impact Assessment (EIA) Regulations, 18 June 2010, National Environmental Management: Waste Act (NEM:WA), Act 57 of 2008, National Water Act (NWA), Act No. 36 of 1998, and National Heritage Resources Act, Act No. 25 of 1999.

Competent Authority means the organ of state charged by the Act with evaluating the environmental impact of the activity and, where appropriate, with granting or refusing and environmental authorisation in respect of the activity.

1.5.1 The Method Statement is a written submission by the Contractor to the Engineer/ECO, in response to the Specifications or a request by the Engineer/ECO, setting out the plant, materials, labour and method the Contractor proposes using to carry out an activity, identified by the relevant specification or the Engineer/ECO when requesting the Method Statement, in such detail that the Engineer/ECO is enabled to assess whether the Contractor's proposal is in accordance with the Specifications.

The Method Statement shall cover applicable details with regards to:

- Construction procedures;
- Materials and equipment to be used;
- Getting the equipment to and from site;
- How the equipment/material will be moved while on site;
- How and where material will be stored;
- The containment (or action to be taken if containment is not possible) or leaks or spills of any liquid or material that may occur;
- Timing and location of activities;
- Compliance/non-compliance with the Specifications; and
- Any other information deemed necessary by the Engineer/ECO.

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2. ADMINISTRATION

2.1 Legal Requirements

All Contractors entering into a Contract with THE CLIENT shall, as a minimum, comply with the -

- ✓ National Environmental Management Act (Act 107 of 1998).
- ✓ Environmental Authorisation issued by the Competent Authority (should the activity required authorisation in terms of the EIA Regulations or Schedule 1 of NEM:WA). A copy must be available on site at all times.
- ✓ Environmental Management Programme (EMP) approved by the Competent Authority. A copy must be available on site at all times.
- ✓ National Water Act, Act 36 of 1998.
- ✓ The, Environmental Control Officer (ECO), shall notify the Competent Authority on behalf of the Principal Contractor in writing, two weeks prior construction work commences. A copy of this notification and proof of submission must be held in the Environmental Management File on site.

2.2 Further (Specific) Supervision Responsibilities for Environmental Management

1. Depending on the activities associated with the Construction work the Contractor shall appoint designated competent employees and/or other competent persons as required by the Act and Regulations.
2. The appointments must be in writing and the responsibilities clearly stated together with the period for which the appointment is made. This information must be communicated and agreed with the appointees.
3. Copies of appointments must be submitted to THE CLIENT together with concise CV's of the appointees. All appointments must be officially approved by THE CLIENT and any changes in appointees or appointments must be communicated to THE CLIENT forthwith.
4. The Principal Contractor must, furthermore, provide THE CLIENT with an organogram or schedule of all Contractors that he/she has appointed or intends to appoint and keep this record updated on a weekly basis.
5. Where necessary, or when instructed by THE CLIENT or an Environmental Regional Manager of the Competent Authority, the Principal Contractor must appoint a competent ECO subject to the approval of THE CLIENT.

2.3 Designation of ECO (Section 24Q of NEMA)

Where the CLIENT has been issued with an EA in terms of the EIA Regulations, 18 June 2010, has to ensure compliance with the general terms and conditions of the EA to ensure compliance with the conditions of the EA and to assess the continued appropriateness and adequacy of the EMP.

Should no EA be required in terms of the EIA Regulations, 18 June 2010 or Schedule 1 of NEM:WA for the activity the CLIENT, Principle Contractor and Engineer have a Duty of Care and required remediation of environmental damage in terms of Section 28 of NEMA. Every person who causes, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring, or, in so far as such harm to the environment is authorised by Law or cannot reasonably be avoided or stopped, to minimize and rectify pollution or degradation of the environment.

3. CONSTRUCTION

3.1 Method Statements

The following Method Statements shall be provided by the Contractor fourteen (14) days after receipt of the Letter of Acceptance.

3.1.1 Bunding

- Method of bunding for static plant.

3.1.2 Camp establishment

- Layout and preparation of the construction camp.
- Method of installing fences required for “no go” areas, working areas and construction camp areas.
- Preparation of the working area.

3.1.3 Cement / concrete batching

- Location, layout and preparation of cement/concrete batching facilities including the methods employed for them mixing of concrete including the management of runoff water from such areas.

3.1.4 Contaminated water

- Contaminated water management plan, including the containment of runoff and polluted water.

3.1.5 Dust

- Dust control.

3.1.6 Earthwork

- Method for the control of erosion during bulk earthwork operations.
- Method of undertaking earthworks, including hand excavation and spoil management.

3.1.7 Emergency

- Emergency construction method statements.

3.1.8 **Erosion control**

- Method of erosion control, including erosion of spoil material.

3.1.9 **Fire, hazardous and poisonous substances**

- Handling and storage of hazardous wastes.
- Emergency spillage procedures and compounds to be used.
- Emergency procedures for fire.
- Use of herbicides, pesticides and other poisonous substances.
- Methods for the disposal of hazardous building materials including asbestos, fibre claddings, refrigerants and coolants.

3.1.10 **Fuels and fuel spills**

- Methods of refueling vehicles.
- Details of methods for fuel spills and clean up operations.
- Refueling of construction vehicles in high flow areas [or in the 1 in 50 year floodplain].
- Method of refueling dredger during dredging operations.

3.1.11 **Solid waste management**

- Solid waste control and removal of waste from Site.
- Methods for the disposal of vegetation cuttings, tree trunks and/or building materials.

3.1.12 **Sources of materials**

- Details of materials imported to the Site (where applicable).

3.1.13 **Traffic**

- Traffic safety measure for entry/exit onto/off public roads.

3.1.14 **Wash areas**

- Location, layout, preparation and operation of all wash areas, including vehicle wash, workshop washing and paint washing and clearing.

3.2 Site Division

Construction camp location

1. The construction camp shall be located at an easily accessible point and within an area of low environmental sensitivity. The location shall be identified in consultation with the Engineer/ECO/EO.

2. No site establishment shall be allowed within 15 m in of a drainage channel or water body unless otherwise approved by the Engineer/ECO/EO.

Routing of services

1. Main bulk service providers such as Telkom and Eskom shall be advised of the construction activities as well as the requirements of this specification and the Contractor shall be responsible for their activities within their work areas.

Site establishment

1. To facilitate the necessary monitoring, the Contractor shall inform the Engineer/ECO/EO of the intended actions and programme for site establishment.

2. The site layout shall take cognisance of access for deliveries and services, and future works. Likely disturbance to neighbours, as well as security implications shall be considered.

3.3 Access Routes / Haul Roads

[Routes]

1. Access to the Campsite and works area shall utilise existing roads or tracks where possible.

2. Upgrading of the access roads shall be undertaken within the existing confines of the road, unless otherwise agreed with the Engineer/ECO/EO.

[Control]

1. The Contractor shall erect and maintain marker pegs along the boundaries of the working areas, access roads, haul roads or paths, to the satisfaction of the Engineer/ECO/EO, before commencing any other work.

2. The movement of any vehicles and/or personnel outside of the designated working areas shall not be permitted without the written authorisation of the Engineer/ECO/EO.

3. Should the Contractor not exercise sufficient control to restrict all work to the area within the marker boundaries, then these on instruction of the Engineer/ECO/EO shall be replaced by fencing the additional cost of which shall be borne by the Contractor.

4. Dust control measures such as dampening with water shall be implemented where necessary, as indicated by the Engineer/ECO/EO.

[Construction / maintenance / rehabilitation]

1. Access and haul roads shall be maintained by the Contractor.

2. Maintenance includes adequate drainage and side drains, dust control and restriction of edge use.

3. All temporary access routes shall be rehabilitated at the end of the contract to the satisfaction of the Engineer/ECO/EO.

4. All public roads shall be kept clear of mud and sand. Mud and sand that has been deposited through construction activities shall be cleared regularly.

5. Any materials used for layerworks shall be approved by the Engineer/ECO/EO prior to the activity commencing.

6. Damage to the existing access roads as a result of construction activities shall be repaired to the satisfaction of the Engineer/ECO/EO, using material similar to that originally used. The cost of the repairs shall be borne by the Contractor (safely)

[Safety]

1. Traffic safety measures, to the satisfaction of the Engineer/ECO/EO, shall be considered in determining entry / exit onto public roads.

2. All users of haul roads shall not exceed 45 km/h (cars) / 15 km/h (trucks) {note that the standard spec places a site speed limit of 45 km/h for all vehicles}

3. Appropriate traffic warning signs shall be erected and maintained.

4. Trained and equipped flagmen shall be used where the access road intersects with any public roads.

5. Attention shall be paid to minimising disruption of the flow of traffic and reducing the danger to other road users and pedestrians.

[Method statements]

Method statements are required for the following:

1. Traffic safety measures with regard to entry and exit on public roads and the control of construction traffic.

2. Proposed route for new access roads, tracks, or haul roads; the proposed construction of new roads, and the method of upgrading existing roads; and the proposed methods of rehabilitation on completion

3.4 Construction Personnel Information Posters

1. An A3 construction personnel information poster must be laminated and erected in the eating area. The Contractor shall ensure that the construction personnel information poster is not damaged in any way, and shall replace it if any part of it becomes illegible.

{Refer to figures at end of this Detailed Environmental Specification}

3.5 Fire Control

1. The Contractor shall take all reasonable and active steps to avoid increasing the risk of fire through their activities on Site. No fires may be lit except at places approved 5 by the Engineer/ECO/EO.

2. The Contractor shall ensure that the basic fire-fighting equipment is to the satisfaction of the Municipal Fire Chief.

3. The Contractor shall supply all living quarters, site offices, kitchen areas, workshop areas, materials, stores and any other areas identified by the Engineer/ECO/EO with tested and approved fire fighting equipment.

4. Fire and "hot work" shall be restricted to a site approved by the Engineer/ECO/EO.

5. A braai facility may be considered at the discretion of the Engineer/ECO/EO. The area shall be away from flammable stores. All events shall be under management supervision and a fire extinguisher shall be immediately available. "Low smoke" fuels shall be used. Smoke free zoning regulations shall be considered.

6. Fires within National Parks, Nature Reserves and natural areas are prohibited. Cooking shall be restricted to bottled gas facilities under strict control and supervision. The sensitivity of the surrounding land uses and occurrence of natural indigenous vegetation must be considered when assessing the risk of fires.

7. The Contractor shall take precautions when working with welding or grinding equipment near potential sources of combustion. Such precautions include having a suitable, tested and approved fire extinguisher immediately at hand and the use of welding curtains.

8. The Municipal Fire Chief must be informed and consulted in terms of Fire Regulations.

3.6 Compliance Monitoring and Reporting

1. Monthly or bi-monthly site investigations will be conducted to ensure compliance with environmental legislation, authorisation and management programmes.

2. Activities not assessed in the environmental assessment phase and/or authorised by the Competent Authority of the project; or possible deviations will require consultation with the Competent Authorities and submission of environmental methods statements by the Client/Principle Contractor.

3.7 Emergency Procedures

The Principal Contractor must prepare a detailed emergency Procedure. The procedure must include the following:

- List of key competent personnel
- Details of emergency services
- Actions to be taken in the event of an emergency.

Emergency Procedure shall include, but is not limited to: major spillages, incidents/accidents, injury to employees, damage to property/equipment/plant, incidents involving hazardous substances, fires, floods.

The Principal Contractor shall advise THE CLIENT in writing forthwith, of any emergency, together with a record of action taken.

A contact list of Fire Department, Ambulance, SAPD, Hospital and contractors contact person must be maintained, available and displayed on site.

4. EROSION AND SEDIMENTATION CONTROL

1. During construction the Contractor shall protect areas susceptible to erosion by installing necessary temporary and permanent drainage works as soon as possible and by taking other measures necessary to prevent the surface water from being concentrated in streams and from scouring the slopes, banks or other areas.

2. A method statement shall be developed (in consultation with a specialist if necessary) and submitted to the Engineer/ECO/EO to deal with erosion issues prior to bulk earthworks operations commencing.

3. Any runnels or erosion channels developed during the construction period or during the vegetation establishment period shall be backfilled and compacted, and the areas restored to a proper condition.

4. Stabilisation of cleared areas to prevent and control erosion shall be actively managed. The method of stabilisation shall determined in consultation with the Engineer/ECO/EO and a specialist if necessary. Consideration and provision shall be made for the following methods (or combination): *(choose appropriate method)*

    - Brush-cut packing
    - Mulch or **chip cover**
    - Straw stabilising (at the rate of one bale/m^2 and rotated **into** the top 100 mm of the completed earthworks)
    - Watering
    - Planting / sodding
    - Hand seeding sowing
    - Hydroseeding
    - Soil binders and anti erosion compounds
    - Mechanical cover or packing structures

        (i) Gabions & mattresses
        (ii) Geofabric
        (iii) Hessian cover
        (iv) Armourflex
        (v) Log / pole fencing
        (vi) Retaining walls

5. Traffic and movement over stabilised areas shall be restricted and controlled, and damage to stabilised areas shall be repaired and maintained to the satisfaction of the Engineer/ECO/EO.

6. Anti-erosion compounds shall consist of an organic or inorganic material to bind soil particles together and shall be a proven product able to suppress dust and erosion. The application rate shall conform to the manufacturer's recommendations. The material used shall be of such a quality that grass and Fynbos seeds may germinate and not prohibit growth.

{Refer to figures *at end of this Detailed Environmental Specification}*

5. STORMWATER CONTROLS

1. The Contractor shall take reasonable measures to control the erosive effects of stormwater runoff.

2. The Contractor shall use silt screens to prevent overland flowing water from causing erosion.

3. The use of straw bales as filters, which are placed across the flow of overland stormwater flows, shall be used as an erosion protection measure.

4. The ploughing in of straw offers limited protection against stormwater runoff-induced erosion and shall be used as an erosion protection measure.

5. The Contractor shall be liable for any damage to downstream property caused by the diversion of overland stormwater flows.

6. COMMUNITY RELATIONS

6.1 Access to Site

1. The Contractor shall ensure that access to the Site and associated infrastructure and equipment is off-limits to the public at all times during construction. Additional areas restricted to the public and suggested detours shall be clearly marked on the information boards to the satisfaction of the Engineer/ECO/EO.

6.2 Protection of Archaeological and Palaeontological Remains

If remains are discovered on site during earthworks, works shall cease and the Contractor shall immediately inform the Engineer/ECO and contact the relevant authority, i.e. South African Heritage Resources Agency (SAHRA) and Heritage Western Cape (HWC).

6.3 Asphalt, Bitumen and Paving

1. Over spray of bitumen products outside of the road surface and onto roadside vegetation shall be prevented using a method approved by the Engineer/ECO.

2. Bitumen drums / products shall be stored in an area approved by the Engineer/ECO. This area shall be indicated on the construction camp layout plan. The storage area shall have a smooth impermeable (concrete or thick plastic covered in sand floor. The floor shall be bunded and sloped towards a sump to contain any spillages of substance.

3. When chip / gravel excess shall not be left on road/paved area verges. This shall be swept/raked into piles and removed to an area approved by the Engineer/ECO.

4. Stone chip / gravel excess shall not be left on road / paved area verges. This shall be swept/raked into piles and removed to an area approved by the Engineer/ECO.

5. Milled or cutout bitumen shall be removed to an area approved by the Engineer/ECO.

6. Water quality from runoff from newly / fresh bitumen surfaces shall be monitored by the Engineer/ECO and remedial actions taken where necessary.

7. Heating of bitumen products shall only be undertaken using LPG or similar zero emission fuels.

8. Appropriate fire fighting equipment shall be readily available.

6.4 Earthworks

1. The excavation of any material on Site shall be done in accordance with SABS 1200 D or DB and PSD or PSDB, as applicable.

2. Prior to earthworks (including site clearance) starting on site, a search and rescue operation for bulbs and other indigenous plants of value, as detailed in the Revegetation Specification shall be undertaken.

3. All earthworks shall be undertaken in such a manner so as to minimise the extent of any impacts caused by such activities.

4. Defined access routes to and from the area of operation as well as around the area of operation shall be detailed in a Method Statement for approval by the Engineer/ECO/EO.

5. No equipment associated with the activity shall be allowed outside of these areas unless expressly permitted by the Engineer/ECO/EO.

6.5 Power Tools

1. The Contractor shall take preventative measures, such as screening, muffling, dust control, timing and pre-notification of affected parties shall be implemented to minimise complaints regarding dust, noise and vibration nuisances.

6.6 Retaining Walls and Gabions

1. A Method Statement, approved by the Engineer/ECO/EO, shall be required to deal with these structures.

2. Rocks for use in gabion baskets/reno-mattresses shall be obtained from a source approved by the Engineer/ECO/EO

3. Rocks for use in gabion baskets/reno-mattresses shall not be obtained from a watercourse.

6.7 Trenching

- Trenching for services shall be undertaken in accordance with the engineering specifications (SABS 1200 DB) with the following environmental amplifications, where applicable:

a. Trenching shall be kept to a minimum through the use of single trenches for multiple service provision.

b. The planning and selection of trench routes shall be undertaken in liaison with the Engineer/ECO/EO and cognisance shall be given to minimising the potential for soil erosion.

c. Trench routes with permitted working areas shall be clearly defined and marked with painted stakes prior to excavation.

d. The stripping and separation of topsoil shall occur as stipulated by the Engineer/ECO/EO. Soil shall be excavated and used for re-filling trenches using the rollover method, i.e. soil from the first trench section shall be stockpiled. Thereafter, soil excavated from subsequent trench lengths shall be used to backfill the trench behind it once the services have been laid. The final trench length shall be re-filled using the soil stockpiled from the first length.

e. Trench lengths shall be kept as short as practically possible before backfilling and compacting.

f. Trenches shall be re-filled to the same level as (or slightly higher to allow for settlement) the surrounding land surface to minimise erosion. Excess soil shall be stockpiled in an appropriate manner.

g. Immediately after re-filling, trenches and associated disturbed working areas shall be planted with a suitable plant species and regularly watered. Where there is a particularly high erosion risk, a fabric such as Geojute (biodegradable) shall be used in addition to planting.

- Trenching in ecologically sensitive environments on slopes or through wetlands:

a. The upper 250 mm of soil (topsoil, which includes roots and leaf litter) shall be placed in heavy-duty (>300 micron) plastic bags on one side of the trench within the specified working corridor;

b. The remainder of the soil shall be placed in separate heavy-duty plastic bags, on the other side of the working corridor in order to ensure separation of subsoil and topsoil. Bags must also be clearly marked as to whether they contain topsoil or subsoil;

c. Topsoil and subsoil may not be mixed at any time, since this impedes the restoration process following closure;

d. Where necessary, bags of excavated subsoil must be placed into the trench at the end of each working day in order to ensure that water does not flow down the trench and cause erosion;

e. Small rocks and stones (to a diameter of 100 mm) should be included in these bags of topsoil and subsoil. Larger rocks and stones (∅ >100 mm) must be placed to the side of the trench within the working corridor for later use in restoration by the restoration sub-contractor;

f. Following the cable/ pipe laying operation, soils are to be replaced in the order in which they were excavated, i.e. subsoil must be replaced first and capped with the topsoil, and

g. Brush-cut plant material is to be replaced (scattered) within the working corridor on either side of the closed trench;

h. This method reduces erosion, protects the vegetation within the working corridor, and conserves the topsoil and seed-banks.

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7. TOLERANCE

7.1 Fines

Fines will be issued for the transgressions listed below. Fines may be issued per incident at the discretion f the Engineer. Such fines will be issued in addition to any remedial costs incurred as a result of non-compliance with the Environmental Specifications and Environmental Authorisation (where applicable). The Engineer will inform the Contractor of the contravention and the amount of the fine, and will deduct the amount from monies due under the Contract.

Fines for the activities detailed below, will be imposed by the Engineer on the Contractor and/or his Subcontractors.

A	Any person, vehicles, plant, or thing related to the Contractors operations within the designated boundaries of a “no-go” area	R 4000
B	Any vehicle driving in excess of designated speed limits	R 1000
C	Any vehicle being driven, and items of plant or material being parked or stored outside the demarcated boundaries of the site	R 2000
D	Any person walking outside the demarcated boundaries of the site	R 500
E	Persistent and un-repaired oil leaks from machinery. The use of inappropriate methods of refueling such as the use of funnel rather than a pump.	R 3000
F	Litter of site	R 1000
G	Deliberate lighting of illegal fires on site	R 5000
H	The eating of meals on site outside the defined eating areas. Individuals not making use of the site ablution facilities.	R 1000
I	Dust or excess noise on or emanating from the site.	R 1000
J	Any person, vehicle, item of plant, or anything related to the Contractors operation causing a public nuisance.	R 2000

For each subsequent similar offence the fine may, at the discretion of the Engineer/ECO, be doubled in value to a maximum value of R50,000.00.

7.2 Penalties

The following penalties are suggested for transgressions:

A	Erosion	A penalty equivalent in value to the cost of rehabilitation plus 20%
B	Oil spills	A penalty equivalent in value to the cost of cleanup operations plus 20%
C	Damage to indigenous vegetation	A penalty equivalent in value to the cost of restoration plus 20%
D	Damage to sensitive environments	A penalty equivalent in value to the cost of restoration plus 20%
E	Damage to cultural sites	A penalty to a maximum of R100 000 shall be paid for any damage to any cultural/historical sites
F	Damage to trees	A penalty to a maximum of R100 000 shall be paid for each trees removed without prior permission, or a maximum of R5 000 for damage to any tree, which is to be retained on site
G	Penalties for removing or damaging trees	
	Girth of trunk (1m above ground level)	Replacement value per tree
	0 – 15 mm	R100
	16 – 30 mm	R200
	31 – 50 mm	R500
	51 – 75 mm	R1 000
	76 – 100 mm	R2 500
	101 – 150 mm	R5 000
	151 – 300 mm	R10 000
	Larger than 300 mm	R15 000 to R100 000

8. MEASUREMENT AND PAYMENT

8.1 Refuse Removal

1. The unit of measurement shall be a sum for the removal of refuse.

2. The rate shall include the collection of refuse, for providing, maintaining and running the refuse vehicles, refuse bins and special refuse enclosures, and for all loading, unloading and double handling as required.

8.2 Dust Control

1. The unit of measurement shall be a sum for watering and/or straw stabilisation straw stabilisation.

2. The rate shall include the cost of obtaining, transporting and applying the water and/or straw stabilisation including supplying and maintaining suitable water browsers.

8.3 Supply and Erection of Public Information Boards

1. The supply and erection of public information boards shall be measured by number.

2. *{xx}* A2 copy(ies) of the poster for the board shall be supplied to the Contractor. The rate shall cover the cost of securing the posters to the backing boards, the cost of all labour, materials, plant and equipment necessary for the erection, maintenance and removal on completion.

8.4 Supply and Erection of Construction Personnel Information Boards

1. The supply and erection of construction personnel information boards shall be measured by number.

2. The tendered rate shall cover the cost of all printing, labour, materials, plant and equipment, necessary for the erection, maintenance and removal on completion.

8.5 Speed Limit and Route Marker Signs

1. The supply and erection of speed limit signs and signs to indicate the route up the access road to the site shall be measured as a sum.

2. The tendered rate shall cover the cost of all labour, materials, plant and equipment, necessary for the erection, maintenance and removal on completion.

8.6 Fire Control

1. The compliance with fire control requirements shall be measured as a sum.

2. The tendered rate shall cover the cost of all labour, materials, equipment and any other operation or thing necessary to comply with the requirements including maintenance and replacement of defective or damaged equipment, and refilling.

8.7 All Other Requirements of the Environmental Management Specification

1. All other work not measured elsewhere, associated with complying with any requirement of the environmental management programme shall be measured as a sum.

2. The tendered rate shall cover any cost associated with complying with the environmental management specification and shall include for all material, labour and plant required to execute and complete the work as specified, described in the Schedule of Quantities or shown on the drawing(s).

Non-compliance items identified during audits/visits will be categorized into three levels.

Note: THE CLIENT or his Agent has the right, in terms of Section 28 of the National Environmental Management Act, Act No. 107 of 1998, to stop the Contractor from executing construction works which either:

⇒ **is not in accordance with the terms and conditions of the Environmental Authorisation and/or Environmental Management Programme for the construction activities**

and/or

⇒ **poses a threat to the environment.**

Should THE CLIENT invoke this right, THE CLIENT will, in addition to any other legal remedies, invoke its rights to claim penalties and/or cancel the contract between itself and the Contractor in terms of the relevant provisions thereof.