

	<b>Specification</b>	<b>Technology</b>
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Title: **Duvha Power Station HV yard  
sump repairs scope of work**

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## 1. INTRODUCTION

Duvha Power Station Heavy Voltage (HV) yard sump 2 is a component of the station south drainage system. The sump captures both storm and dirty water from the Water treatment plant (WTP), Low pressure services (LPS) and some of the south surrounding areas. Over the past years corrosion has been developing on the sump concrete structure due to seepage of contaminated water from the WTP. The deterioration of the concrete structure has led to seepage of water from the sump to the surrounding area. The area within the sump is currently saturated with water such that when the sump is drained there is seepage water flowing back to the sump through the corroded sections of the concrete structure as well as through the joint between the sump wall and inlet of stormwater to the sump. This document details the requirements for the sump concrete repairs as well as draining of seepage outside the sump and rehabilitation within and underneath sump to fill up possible sinkholes on the compromised underlaying soil.

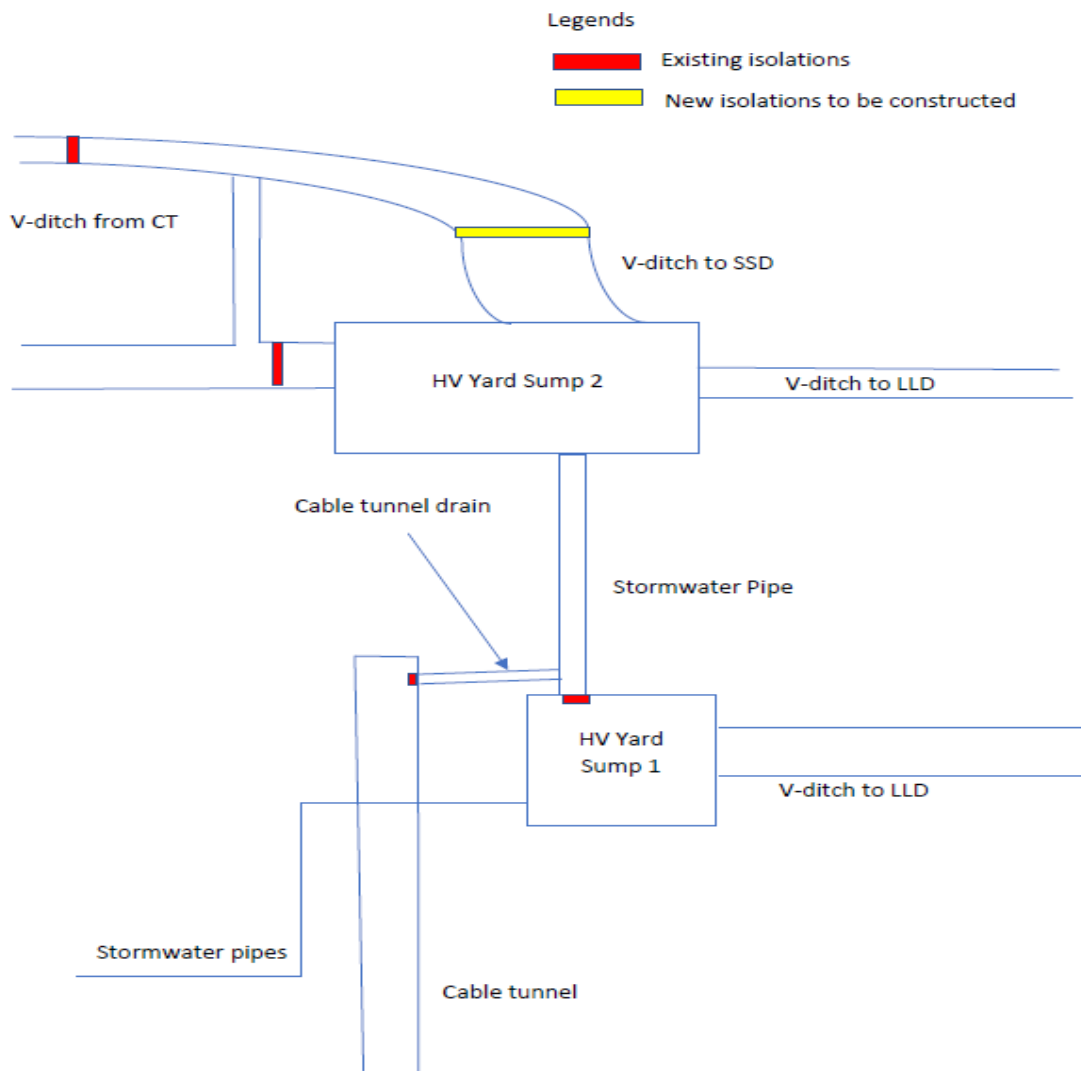


Figure 1: Station south drains layout.

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## **2. SUPPORTING CLAUSES**

### **2.1 SCOPE**

This document covers the minimum technical specification for the scope of the works. The scope covers the following.

- Excavation on the lower side of the sump (inside the station south drain v-ditch) and stormwater pipe joint to the sump.
- Construction of a temporary wall inside the station south drain v-ditch.
- Inspect and repair the temporary wall inside the HV yard sump 1.
- Provision of pumping for drainage of seepage water from the ground.
- Filling up of sinkholes and soil erosion underneath and surrounding area.
- Repair of stormwater to sump joint.
- Repair of sump concrete structure.
- Relining of the sump with acid resistance.
- Backfilling and restoration of the sump surrounding structures and soil.
- Removal of temporary isolations in the cable tunnel, HV yard sump 1, v-ditch to station south drains and v-ditch from cooling towers.

#### **2.1.1 Purpose**

The purpose of this document is to describe in detail the technical specification for scope of work for HV yard sump repairs prescribed herein to be conducted by an appointed contractor.

#### **2.1.2 Applicability**

This document applies to Duvha Power Station only.

## **2.2 NORMATIVE/INFORMATIVE REFERENCES**

Parties using this document shall apply the most recent edition of the documents listed in the following paragraphs.

### **2.2.1 Normative**

- [1] ISO 9001 Quality Management Systems.
- [2] ENVP0005 - Duvha Power Station Waste Management procedure
- [3] 240-107981296, Constructability Assessment Guideline
- [4] 240-53114186, Project/ Plant Specific Technical Document and Records Management Procedure
- [5] National Environmental Management Act, 1998 (Act 107 of 1998)
- [6] National Environmental Management Waste Act, 2008 (Act 59 of 2008)
- [7] SANS 2001, Construction Works (All applicable parts)
- [8] 32-727 - Eskom Safety, Health, Environment and Quality (SHEQ) Policy
- [9] Occupational Health and Safety Act No. 85 of 1993, Asbestos regulations.

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These documents are indispensable for the application of this document, i.e., documents to be used together with this document.

### 2.2.2 Informative

[10] 474-58 (Rev1): Document and Records Management

[11] 240-53114026, Project Engineering Change Management Procedure

[12] 240-76992014, Project/Plant Specific Technical Documents and Records Management Work Instruction

## 2.3 DEFINITIONS

### 2.3.1 Disclosure Classification

**Controlled disclosure:** controlled disclosure to external parties (either enforced by law, or discretionary).

## 2.4 ABBREVIATIONS

Abbreviation	Description
ECSA	Engineering Council of South Africa
ISO	International Organisation of Standards
OEM	Original Equipment Manufacturer
SANS	South African National Standards
SHEQ	Safety, Health, Environmental & Quality
SE	System Engineer
PM	Project Manager
QA	Quality Assurance
QC	Quality Control
QCP	Quality Control Plan
RT&D	Research, testing and Development
TDS	Technical Data Sheet

## 2.5 ROLES AND RESPONSIBILITIES

### 2.5.1 Employer

#### Safety, Health and Environmental

The Employer shall ensure the following:

- The Contractor is in good standing with the compensation fund, or any licensed compensation insurer as contemplated in the compensation for occupational injuries and diseases act, before work beginning work on site.

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- A Health and Safety specification or plan is in place/available, implemented and maintained. The Employer shall also ensure that a copy of the Principal Contractor's health and safety plan is available on request to an Employee, Inspector or Contractor. Non-compliances will result in work stoppages.
- Audit periods are mutually agreed between the Client and Principal Contractor.
- The Contractor is notified promptly of situations which may affect the health and safety of any person carrying out works on site.
- Sufficient health and safety information as well as resources are made available to the Principal Contractor, where changes are brought about.
- Persons appointed by the Employer may at any stage during the term of the contract:
  - Conduct health and safety audits to establish the effectiveness of the Contractor's health and safety management systems.
  - Refuse employees or agents of the Contractor access to the Power Station Site if such persons commit unsafe acts or unsafe working practice or is found not competent or authorised.
  - Stop works should there be unsafe working practices and procedures.

### **General**

The Employer shall ensure the following:

- Employees of the Contractor have the necessary competencies and resources to carry out works.
- The work is carried out by appropriately by competent person(s).
- All relevant Eskom governance documents are provided to the Contractor.
- Conduct periodical inspections for the works performed by the Contractor.
- Provide quality assurance for the works performed by the Contractor.

### **2.5.2 Appointed Principal Contractor**

#### **Safety, Health and Environmental**

The Principal Contractor shall ensure the following:

- Compliance with all requirements of the Occupational Health and Safety Act no 85 of 1993 and its regulations and all other relevant health and safety legislation to ensure the health and safety of persons carrying out works. This shall also apply to sub-contractors.
- A health and safety plan, based on the employer's health and safety specification is provided to the employer. This shall be applied from the date of commencement and duration of works. The contents of the health and safety plan shall also be discussed and negotiated with sub-Contractors. The health and safety plan shall be implemented and maintained on site.
- Compliance with Eskom's SHE policy, procedures, standards, guidelines, specifications, and site regulations.
- All employees undergo safety induction training on-site.

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- All employees or agents, visitors of the Contractor are medically, physical, and psychologically fit to enter the Power Station and carry out works. Employees shall also have a valid medical certificate of fitness specific to the work to be performed.
- Sub-Contractor(s) is in good standing with the compensation fund, or any licensed compensation insurer as contemplated in the compensation for occupational injuries and diseases act, before work beginning work on site.
- Safeguard all employees by maintaining a safe and hygiene working environment and culture.
- A safety profile is kept for tracking and auditing purposes.
- All safety and health related incidents around site or working areas and threats that pose a danger to one's life or health are at once reported.
- Sufficient health and safety information as well as resources are made available to the Contractor, where changes are brought about.
- The Contractor shall also ensure that ergonomic related hazards are evaluated and addressed in the risk assessment.
- The Contractor's employees and/or sub-Contractors are notified promptly of situations which may affect the health and safety of any person carrying out works on site.
- The Contractor shall wear the full PPE as displayed at different plant areas. The provision of the PPE to the Contractors' Employees is the responsibility of the Contractor.
- Employees/agents are supervised. Full responsibility and accountability shall be taken to ensure that all employees are competent and aware of all requirements needed to execute works safely.
- Perform quality control and risk assessments on all on-site activities or works. These shall be performed by a competent person appointed in writing. The risk assessment shall form part of the health and safety plan to be applied on the site and shall include at least:
  - The identification of the risks and hazards to which persons may be exposed to.
  - The analysis and evaluation of the risks and hazards identified.
  - A documented plan of safe work procedures to mitigate, reduce or control the risks and hazards that have been identified.
  - A monitoring plan; and
  - A review plans.
- Compliance with all applicable environmental laws and regulations, guidelines and procedures during the execution of maintenance services. Subcontractors and others under the Contractor's direction and control shall observe and comply with the latter.

## **General**

- All Contractors shall work within the parameter of the job description and scope of work. To keep all instructions/ procedures on hand and supply Eskom power station with reference to be included in this document and supply record and history requirements.
- The Contractor is responsible for executing the works as detailed in this document. The Contractor takes all necessary precautions that may be required to safeguard existing

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infrastructure and services including protection of all surface works. These additional works are formally documented in method statements for the Employer's review and acceptance.

- The Contractor takes note that review and acceptance of any document/ drawing/ design calculations by the Contract Manager in no way relieves the Contractor of his liability for the works. The Contractor remains liable for all works conducted as per this document.
- The Contractor is liable and fully accountable for the works and the constructability thereof.
- The Contractor interacts with others through the Contract Manager or Contract Manager's delegates, to ensure seamless integration of the various works.
- Execute the scope of work as per the employer's specification.
- Shall work with and consult with the other functions/structures of the Employer.
- Resources and tools required by personnel for executing works are provided by the Contractor.
- Shall produce and submit to the Employer for approval, the number and details of personnel that will execute the works. Qualifications and proof thereof shall also be provided to the Employer.
- Shall procure or co-ordinate the supply of required consumables.
- Shall assist the maintenance Contract Manager in planning, organizing, and managing all maintenance related activities.
- Shall take adequate precautions to prevent damage to civil and structural assets.
- The Contractor's employees or agent shall abide to Eskom's Life Saving Rules. If found to have violated any of the Eskom Life Saving Rules, they may face disciplinary action.
  - Open, isolate, test, earth, bond, and/or insulate before touch.
  - Hook up at heights.
  - Buckle up.
  - Be sober.
  - Ensure that you have a permit to work.
  - Wear correct PPE at all times.
  - Report all incidents.

## **2.6 REQUIRED CRITERIA FOR CONSULTANT**

Not Applicable

## **2.7 RELATED/SUPPORTING DOCUMENTS**

Not Applicable

## **3. SCOPE OF WORKS**

### **3.1 DESCRIPTION OF THE WORKS**

The Contractor is responsible for executing the scope of work that includes but not limited to earthworks, concrete works, acid resistance coating, pumping of water as well as GPR scanning. The Contractor takes all necessary precautions that may be required to safeguard existing infrastructure and services

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including protection of all surface works. All the works required and described herein shall be detailed in a method statement thoroughly explaining how the work will be executed in a safe way and achieving the quality of work required.

The Contractor takes note that review and acceptance of any document/ drawing by the Project Manager in no way relieves the Contractor of his liability for the works. The Contractor remains liable for all works conducted as per this document.

The Contractor is liable and fully accountable for the works and the constructability thereof.

The Contractor interacts with others through the Project Manager, to ensure seamless integration of the various works.

Only trained personnel are allowed to perform repair and replacement works of all infrastructure.

Records of training are maintained by the Contractor's Quality Control Department

### **3.2 EMPLOYER'S DESIGN REQUIREMENTS**

The repair works on the sump shall be conducted in the absence of water, the contractor is required to pump out the water from the sump as well as seepage from underneath and surrounding area. The works shall be carried out with the specifications stipulated in section 4 herein.

### **3.3 CONSULTANT 'S DESIGN**

#### **3.3.1 Temporary Works**

The *Contractor* is responsible for the design of all temporary works required for the execution of the *works* and is mandated in terms of Construction Regulations 2014: Duties of Designer, 6(2) a – d, to fulfil the duties described therein for the temporary works designs done by the *Contractor*.

The *Contractor's* appointed ECSA professionally registered engineer:

- i. Reviews and approves (by signature) the designs and drawings of all temporary works and additional supports and method statements produced by the *Contractor*; and
- ii. Supervises, inspects, and approves the *works*.

## **4. CONSTRUCTION**

The *Contractor* is responsible for the construction of the *works*, including all temporary works and design thereof, and all associated services in accordance with the specifications set out by the client.

The *Contractor* disposes of all waste generated during construction at a licenced waste disposal site to be accepted by the *Project Manager*. The waste disposal site is selected to suit the classification of the materials to be disposed of. Certificates of disposal are required to be submitted to the *Employer*. The contractor shall provide their own waste bins for rubbles. The Bins shall be labelled for the type of waste to be disposed of.

### **4.1 CIVIL AND STRUCTURES SCOPE**

#### **4.1.1 Isolation wall**

- Construct a single wall course brick wall inside the v-ditch to station south drains as indicated in figure 1.
- The brick wall shall be constructed to prevent water from seeping into the working area.

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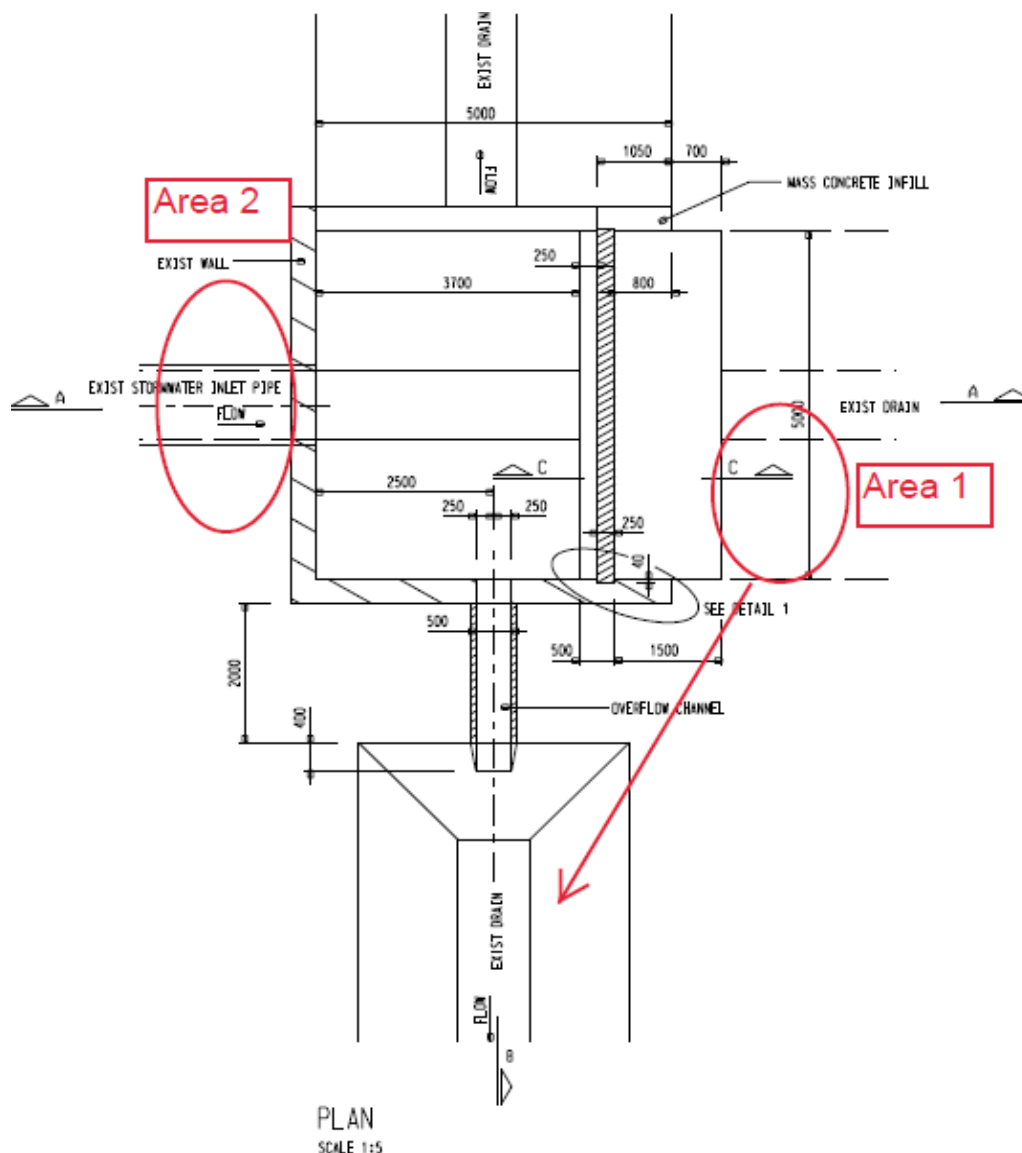
- The stormwater pipe connecting HV yard sump 1 and 2 is currently isolated with a concrete wall. The contractor shall drain the water out, assess and repair the concrete wall to ensure that the isolation remains intact and tight isolated.
- The wall shall be demolished and restoration of the v-ditch concrete panel to be done after the sump repair works are completed.

#### **4.1.2 Earthworks outside the sump**

- Conduct underground scanning for both area 1 and 2.
- The scan report shall be submitted to the project manager for review and accepted before excavation works commences.
- Demolish an area of 2000mm x 2000mm of the existing concrete panels on the stormwater v-ditch to the station south drains. This section is indicated as area 1 in figure 2 below.
- Excavate to a depth of 1500mm to allow seepage to be collected into the earth sump.
- The earth sump shall have side walls slope protection to prevent collapsing of saturated soil.
- Supply a pump to collect and remove seepage water will be installed inside the area 1 shown on figure 2.
- Excavate and expose the entire perimeter of the stormwater at the pipe inlet to the sump. The pipe invert level is at approximately 4m below the surface.
- Excavation to be done with care as there are present utilities within the area.
- Excavated material to be stockpiled aside for reuse.
- Once the seepage water has been completely pumped out on area 1 and the concrete pipe encasement has been repaired and sealed around the pipe to sump joint on area 2. Both areas to be rehabilitated.
- Backfill using the existing material as well as imported material the excavated areas shall be backfilled and compacted to 95% Mod Aashto density in layers not exceeding 150mm.
- Exported material to be a G5 material grade.

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**Figure 2: HV yard sump 2 plan**

#### 4.1.3 Sump internal surface grouting works.

- Clean the sump by removing oil, grease, grits and correctly dispose waste into skip bins.
- Chip and remove all corroded sections to expose the surface that is still in good condition on the sump concrete walls (including damaged concrete acid lining coating) as well as the stormwater pipe joint concrete encasement structure.
- Supply, mix and apply wet to dry epoxy product for concrete bonding on all areas to receive grouting.
- Supply, mix and apply high strength non-shrink grouting on all the corroded sections of the sump and the around the internal surface of the stormwater pipe to sump inlet encasement concrete structure.
- Grouting to be applied shall be power floated to a smooth surface to the same level of the existing wall surface.
- Supply, mix and apply acid resistant coating on the areas where repairs were conducted.

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#### **4.1.4 Filling of sinkholes' formation around the sump**

- Supply and pump 30Mpa soilcrete to fill sinkhole or cavities formation underneath the sump structure.
- The soilcrete mix design shall be submitted to the project manager for review and acceptance.
- The mix design shall cater for workability that is suitable for pumping.

#### **4.1.5 Removal of temporary isolation walls.**

- Demolish the concrete isolation wall inside the cable tunnel, inside sump 1, inside v-ditch to station south drains and, in the v-ditch from south cooling towers.
- Repair and restore using high strength grout on the concrete surfaces after removal of isolation walls.
- Repair and restore the concrete side wall and v-ditch floor panel from the cooling towers using 30Mpa concrete.
- Supply and install ref.395 mesh wire for the v-ditch concrete floor panel repair.

#### **4.1.6 Access road rehabilitation and shaping**

- Conduct survey for road levelling and to ensure the road is slopping towards the nearest existing drainage system.
- Rip and store a layer of 200mm surface material.
- Shape as per surveying points and compact the in-situ to Mod Aashto 93%.
- Mix, treat and lay a 150mm thick road base using the existing material to create C2 material (Stabilized with 3% cement).
- Level and compact the base to 95% Moad Ashto.
- Supply and lay Damp proof course (DPC).
- Supply, lay and compact using riversand on top of the paving brick.
- Lay interlocking paving bricks using existing.
- Supply and lay interlocking paving bricks.
- Supply and cast mass concrete of 15MPa/13mm stones on all edges of the pavement.

### **4.2 SPECIFICATIONS**

#### **4.2.1 Earthworks specifications**

##### **Imported Material**

- Natural Gravel or natural gravel boulders which might require crushing or crushed rock
- The percentage by mass passing the 2.00mm sieve shall not be less than 20% nor more than 70%.
- Atterburg limits – Liquid limit (LL) shall not exceed 30 Plasticity Index (PI) shall not exceed 10 LS shall not exceed 5%
- Strength - CBR at 95% of Modified AASHTO density shall not be less than 45%

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## Excavation

No excavations are permitted without an excavation permit obtained from the Project Manager. The Contractor complies with the requirements of the Construction Regulations. Excavations are performed such that it imposes a minimum restriction on access to Site for Others. Excavation permits are only issued if the area has been scanned by the Contractor, to ensure that there are no underground services in the area to be excavated. Refer to 32-727, Eskom Safety, Health, Environment and Quality (SHEQ) Policy.

## Specification data associated with SANS 2001 BE1 – Earthworks

Clause/No	Specification data
<b>Essential data</b>	
<b>4.1</b>	<b>Materials</b>
4.1.5.2	<p>Materials from excavation is disposed of as follows:</p> <p>Suitable materials intended for re-use are stockpiled in an area provide the Contract Manager</p> <p>Material suitability is determined by the intended re-use of the material. Where temporary stockpiles hold materials intended for rehabilitation of ground, stockpiles that can deteriorate if exposed are protected against erosion and weathering.</p> <p>Unsuitable materials not intended for re-use are removed from the work site and disposed of at a location accepted by the Contract Manager. Materials are disposed of in accordance with local and national laws and regulations.</p>
<b>4.2</b>	<b>Methods and procedures</b>
4.2.1.1	All areas in which excavation is to take place or that are to be covered by terraces, banks or structures is cleared in accordance with the requirements of SANS 2001-BS1.
4.2.1.2	<p>Topsoil is conserved for later use in the following manner:</p> <p>Vegetation intended for re-use is removed to a location provide the Contract Manager and is neatly stacked and regularly watered and tended until required for replanting.</p> <p>Topsoil intended for re-use is stock-piled and/or spread in a location provide the Contract Manager</p>
4.2.1.3	The overburden is stripped and removed to depth of 300mm.
4.2.3	Surplus and unsuitable material are removed from the work site and disposed of at a location accepted by the Contract Manager. Materials are disposed of in accordance with local and national laws and regulations.
<b>Additional Clauses</b>	
BE1.A.1	<p>Design of Excavations:</p> <p>The <i>Contractor</i> is solely responsible for the design and installation of all temporary works to ensure the stability of the excavations. The <i>Contractor</i> provides his</p>

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Clause/No	Specification data
	<p>proposals to the Supervisor for acceptance before excavation work commences on site.</p> <p>The macro and micro stability of cuttings, excavation and embankment slopes and the related soil/rock deformations is analysed in accordance with the SAICE Code (2010).</p> <p>Design of cuttings, excavation and embankment slopes includes erosion protection of slopes, Soil deformation with respect to settlements due to consolidation, compression of soil structure, movements required to develop shear resistance, the consequence of sliding and squeezing, etc., are analysed.</p>
BE1.A.2	<p>Excavation Classification</p> <p>The <i>Contractor</i> uses any method he chooses to excavate any class of material, but his chosen method of excavation does not determine the classification of the excavation. The <i>Contractor</i> uses guidelines for excavation classification and methods set out by SANS 1200D Section 3.1.</p>
BE1.A.3	<p>The <i>Contractor</i> notifies the <i>Contract Manager</i> of his intention to excavate 3 days prior excavation for planned works, no excavation work to commence without the presence of the <i>Contract Manager</i>.</p> <p>The <i>Contractor</i> does not excavate before a method statement, excavation permits, and underground services scans are submitted and accepted by the Contract Manager.</p>
BE1.A.4	<p>The effect of earthworks on neighbouring structures, services, etc., are analysed (for both short and long-term effects) and detrimental effects are avoided, or appropriate measures taken to safeguard the integrity of the item in question.</p> <p>Similarly, the effects of dewatering or disturbance of the existing geohydrological conditions because of earthworks on neighbouring structures, services, etc., are considered.</p>

#### 4.2.2 Concrete specification

##### Specification data associated with SANS 2001 CC1 – Concrete works (structural)

4.2.7	<p>The material requirements for grout are as follows:</p> <p>Cement complies with SANS 50196-1.</p> <ul style="list-style-type: none"> <li>• Sand-cement grout <ul style="list-style-type: none"> <li>○ The grout has a minimum crushing strength of the concrete. The sand aggregate is capable of freely passing a filter mesh of 1.5 mm.</li> </ul> </li> <li>• Non-shrink grout <ul style="list-style-type: none"> <li>○ A grout is regarded as non-shrink if its volume is not less than the initial volume, after hardening for 28 days. During this period, the test specimens shall have been completely protected against drying,</li> </ul> </li> </ul>
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	<p>evaporating, carbonation and exposure to temperatures outside the range <math>23\text{ }^{\circ}\text{C} \pm 3\text{ }^{\circ}\text{C}</math>.</p> <p>The type and brand of non-shrink grout shall, after approval, be indicated on the drawings and/or specification for concrete work.</p> <p>In general, one of the following types of non-shrink grout are used:</p> <ul style="list-style-type: none"> <li>• Cement-based non-shrink grout is not less than the strength of the concrete.</li> <li>• Special proprietary non-shrink or expansive grout is not less than the strength of the concrete.</li> </ul>
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### Grouting Characteristics

- Good flow characteristics
- Good bond to concrete
- Non-corrosive
- No segregation or bleeding
- To have at least 30 MPa of compressive strength at 28 days

### 4.2.3 Masonry wall

Specification data associated with SANS 2001 CM1 – Masonry walling

Clause/No	Specification Data
<b>Essential data</b>	
<b>4.1</b>	<b>Materials</b>
4.1.1.2	<p>Burnt Clay masonry units complies with the requirements of SANS 227 and have the following properties:</p> <ul style="list-style-type: none"> <li>• Class of unit: FBS</li> <li>• Foundation brickwork: NFX</li> <li>• Internal brickwork: NFP</li> <li>• Face Brick: FBS</li> <li>• Work size: 222 x 106 x 73mm</li> <li>• Colour of the face units: <ul style="list-style-type: none"> <li>○ Dark: Country Meadow Satin</li> <li>○ Light: Opal Satin</li> </ul> </li> <li>• Nature of the unit: Manufacturer's Specification</li> <li>• Uniformity of colour and texture: Required</li> <li>• Nominal compressive strength (non-facing): <ul style="list-style-type: none"> <li>○ Foundation brickwork: NFX – 7.5 MPa minimum.</li> <li>○ Internal brickwork: NFP – 7.5 MPa minimum.</li> <li>○ Face Brick: FBS – 12.5 MPa</li> </ul> </li> <li>• Limit of water absorption: Refer to 4.7 of SANS 227</li> <li>• Limit of water soluble salts content: Refer to 4.7 of SANS 227</li> </ul>

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Clause/No	Specification Data
	<ul style="list-style-type: none"> <li>Limits of selected radicals: Refer to 4.7 of SANS 227</li> <li>Limits of pH value of water extracts: Refer to 4.7 of SANS 227</li> <li>Limits of moisture expansion: Refer to 4.7 of SANS 227</li> </ul>
4.1.4.1	Sands that comply with the requirements of SANS 1090 are required.
4.1.6	Mortar plasticizers and set-retarder admixtures are permitted.
4.1.9.1.2	Brickforce are galvanised.
4.1.9.2.2	Rod reinforcement are galvanised
4.1.12.1	Only galvanised steel wall ties are used.
<b>4.2</b>	<b>Mortar</b>
4.2.1.2	Mortar plasticizers and set-retarder admixtures are permitted
4.6.3.1	Reference panels are required
<b>5</b>	<b>Compliance with Requirements</b>
5.1.1	The degree of accuracy shall be II
<b>Variations</b>	

#### 4.2.4 Acid resistant coating

The proposed product to be used shall have following characteristics:

- To resist Sulphuric acid & caustic.
- To resist effluent containing water with pH range of 1 up to 11.
- To be flexible enough to allow concrete movement without breaking or cracking.
- To be able to handle mechanical stresses, thermal shocks, and abrasion.
- Non-slip, non-corrosive, free-thaw resistance, antistatic, antibacterial, aesthetic and should have hygienic advantages.
- Life span guarantee of not less than 5 years.

Acid resistant coating product shall comply with the requirements in 240-106365693 - Standard for the External Corrosion Protection of Plant, Equipment and Associated Piping with Coatings.

#### 4.2.5 Road Rehabilitation

- Interlocking bricks shall be 60mm thick of class 40/2.6 (compressive strength/Tensile splitting strength).
- Interlocking bricks shall comply with the requirements of SANS 1058.
- Damp proof membrane to be 250 microns.

### 5. SAFETY REQUIREMENTS

- Contractor's* Safety File must be pre-approved by Duvha Safety Department.
- Contractor employees must complete Duvha Safety Induction Course before any work can be executed.

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- Risk assessment and Pre-job brief shall be conducted by *Contractor's* Supervisor with all his employees. Copies shall be handed over to the client.
- No work shall be performed without a Permit to Work. Domestic installations are exempted.
- No work shall be performed without pre-arrangement with the project manager.
- Special care must be taken regarding people that might occupy the office while the installations are done.
- Any damage to the ceiling, walls, floors, paint work or other office equipment etc. shall be repaired by the *Contractor's* on own cost.
- All other spares, materials and safety equipment needed to do the work, shall be supplied by the *Contractor*.
- All required Personal protective equipment (PPE) must be worn all the time.
- All Eskom's and other safety rules must be adhered to all the time.

## **6. QUALITY REQUIREMENTS**

The *Contractor's* ISO 9001:2015 Certificate of compliance or equivalent must be supplied with tender documents. If the *Contractor* is not certified, the objective evidence of a developed and fully implemented Quality Management System that complies with ISO 9001:2015 requirements shall be submitted.

The *Contractor* shall comply with the *Employer's* Quality Requirements as specified in the Supplier Quality Management Specification 240 – 105658000 (QM-58). Form A (Tender and contract quality requirements for QM 58 and Quality Requirements for ISO 9001 standard) of this Specification indicates the specific application thereof.

All Quality Control documentation must be submitted to the *Employer* at least a week before planned works starts. Quality Control Plans must include hold and witness points, must clearly state 3<sup>rd</sup> party interventions and quality/test specifications where applicable.

The Quality Control documentation that will be handed over within 30 days of order placement by the successful *Contractor* to the Employer and shall consist of the following:

### **6.1 QUALITY CONTROL PLAN**

The Quality Control Plan shall consist of the following as a minimum and shall be accepted by the *Quality representative* of the *Contractor* prior to commencement of work and shall be sent to Eskom for approval. The QCP will also include welding procedures where applicable.

A covering page, table of contents and QCP which includes and makes provision for the following but not limited to: -

- QCP unique number.
- Revision number.
- Page number
- Provision for QCP approval signatures by the *Contractor* (Contract Manager and Quality Controller) and Eskom System Engineer and/ or Eskom QC.
- Provision to incorporate all inspection reports or any form of records to prove conformity to requirements.
- High level description of work in execution including Item/ component/ system/ sub-system.

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- Provision for nomination of intervention points for each activity as per SOW.
- Provision for review and approval signatures and dates by the *Contractor* (Contract Manager and Quality Controller) and Eskom System Engineer and/ or Eskom QC.
- Provision for final acceptance/ releases approval signatures by the *Contractor* (Contract Manager and Quality Controller) Eskom System Engineer and/ or Eskom QC.

## 7. HANDOVER

Apart from any statutory data packages required, the Contractor also compiles a data package of the relevant drawings, test certificates, etc. to the Project Manager for acceptance. These include, but are not limited to:

- Document List.
- Instruction for Work/ Purchase Order.
- Approved and signed off ITP's, QCP's.
- Certificate of Compliance
- Material certificates
- Test certificate or reports
- Signed QCPs
- Notifications.
- Modifications.
- Concessions.
- Technical Queries, Engineering Responses, and communications with Project Manager/ Employer
- Non-conformance reports.
- As-built data and marked up drawings of the completed *works* upon handover.

## 8. AUTHORISATION

This document has been seen and accepted by:

Name & Surname	Designation

## 9. REVISIONS

Date	Rev.	Compiler	Remarks
May 2024	A		Draft Document
May 2024	0		Final Document for Authorisation

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