



Procedure

Title: **Kusile Trench and Excavation
Procedure**

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Date: 10th March 2015

Date: 10th March 015

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REVISION	DESCRIPTION OF REVISIONS	APPROVAL	DATE
0	New Document	DGL	11/04/18
1	Revised Document Management Process	DGL	11/07/15
2	Revised Document Management Process	KMP	12/06/21
3	Revised Document Management Process	KMP	12/09/04
4	Revised Document Management Process • Re-numbered revision (Issue of doc in error as rev 3 dated 15/03/06 withdrawn) • Updated SHE spec information • Standard of engineers sketch is now detailed • Package manager can now delegate their role to a competent superintendent. • Package manager now responsible for the validity of access certificates. • Commissioning review removed • Engineering representative 1 is authorised to remove the need for a second Engineering review • Unlimited extensions are now possible.	MDC	15/03/10

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1 Scope

This procedure describes the process by which all Trench and Excavation permitting on the Kusile Power Station Project shall be conducted.

2 Normative References

- 2.1 Occupational Health and Safety Act 85 of 1993;
- 2.2 Kusile Safety, Health and Environmental Specification;
- 2.3 Eskom Plant Safety Regulations, GGR 0992;
- 2.4 Eskom Operating Regulations for High Voltage Systems;

Kusile SHE Specification – 42 Trench & Excavations – Revision 3

Prior to commencing work on any trench or excavation, the Contractor shall first submit a completed Trench and Excavation Notice to the Engineer. The notice shall be submitted far enough in advance to allow the Engineer to review the Contractor's submittal. After reviewing the information, the Engineer shall sign the notice indicating that it has been approved and return a copy of it to the Contractor. The Contractor may commence work after receiving the signed notice. For all trenches or excavations over 7 meters deep, the Subcontractor must have the sloping, shoring, or shielding method reviewed by a Licensed Professional Engineer of discipline. The design must be submitted to the Engineer as an attachment to the Trench and Excavation Notice.

The Contractor shall ensure that a full sketch is provided as part of the notice detailing the excavation and the location of underground services. It is unlikely that Engineer issued construction drawing(s) even annotated will constitute a detailed sketch for the purpose of recording underground services.

The Contractor shall ensure that the requirements of the Employer's trenching and excavation procedure is complied with during activities. This will include the marking of the excavation boundaries, the location of all known services, performing a scan with a cable locator by a trained individual, and also performing a physical evidence survey.

The Contractor shall appoint a competent person to fill out the permit and monitor all trench and excavation work. Daily excavation inspections are also required to be performed and documented.

Adequate precautions shall be taken to prevent the collapse of excavations, as well as to prevent rocks and loose material falling onto workers. Sloping, shoring or shielding shall be provided for all excavations over 1.5 meters in depth. Angle of repose for project site shall not exceed 1:1 unless otherwise approved by a Licensed Professional Engineer of discipline and approved by the Engineer.

All excavations shall be clearly demarcated and securely barricaded to prevent unauthorised access. Only solid barricading will be used at areas where a fall hazard is present. Solid barricading and / or hole covers shall be provided by the Contractor around all holes or openings to prevent any person being injured as a result of a fall. Danger tape may only be used as a pre-warning to make the solid barricading more visible and to prevent persons from coming too close to the danger area.

If an excavation or trench endangers the stability of buildings or walls, shoring, bracing, or underpinning will be provided by the Contractor with prior approval from the Engineer. Excavations and trenches that are adjacent to backfilled excavations or trenches, or which are subject to vibrations from railroad traffic, road traffic, blasting or the operation of machinery (e.g., shovels, cranes, trucks), must be secured by a support system, shield system or other protective systems (i.e., sheet pile shoring, bracing).

No backfill material shall be allowed to be within 1 meter of the excavation edges.

All excavations shall be on a register and inspected daily (documented) before work commences and after inclement weather (e.g. rainfall) by an appointed competent person. When declared safe work can recommence and the findings recorded in the register. If the excavation is not safe to use, remedial action shall be taken before the work site is re-opened.

When downloaded from the Kusile database, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the database.

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Every six meters of an excavation shall have an escape ladder for access/egress and use in emergencies.

Ensure that all precautionary measures as stipulated for confined spaces are determined

No work shall commence in an excavation unless the excavation has been declared safe by the competent person.

The Contractor shall conduct a cable scan using a device that can detect cables and other services. The Contractor shall ensure that the operator of the scanner is adequately trained and competent to use the device to its full capabilities with and without the use of a signal generator.

3 Applicability

The procedure applies to all Contractors and Contractor work(s) associated with the Kusile Power Station Project.

4 Definitions

- 4.1 **Access Certificate** – Document that allows Contractor to access another Contractor's area;
- 4.2 **Contractor Representative** – This shall be a person who performs his normal duties in a supervisory capacity and who is fully trained, found competent and authorized as a Representative in terms of the requirements for trench and excavation works;
- 4.3 **Excavation** - means any man-made cut, cavity, trench, or depression in an earth surface, formed by earth removal;
- 4.4 **Package Construction Manager** – Construction Manager appointed to oversee Contractor works;
- 4.5 **Protective system** - means a method of protecting employees from cave-ins, from material that could fall or roll from an excavation face or into an excavation, or from the collapse of adjacent structures. Protective systems include support systems, sloping and benching systems, shield systems, and other systems that provide the necessary protection
- 4.6 **Shoring (Shoring system)** - means a structure such as a metal hydraulic, mechanical or timber shoring system that supports the sides of an excavation and which is designed to prevent cave-ins
- 4.7 **Underground Locate** - means a method such as ultrasonic, infrared, or electromagnetic detection utilized to identify underground utilities prior to trench and excavation activity;

5 Roles and responsibilities

The appointed Package Construction Manager is responsible for ensuring that all required disciplines have reviewed and signed the Trench and Excavation Permit prior to work commencing by the Contractor. The Package Construction Manager shall ensure that the Contractor is aware of all approvals, rejections and comments that are to be incorporated in to the Trench & Excavation Permit.

The Package Construction Manager may delegate [recorded in writing] his responsibility to a suitable person that they have deemed to have the appropriate level of knowledge and experience to conduct duties relating to this procedure.

Each designated person for Construction Management, Field Engineering, and Commissioning shall review and signed the document and ensure that the Permit conforms to Site policies and procedures. When the submitted Permit does not conform it shall be rejected or commented on utilizing the method statement review sheet.

The package construction manager is responsible for ensuring that construction works only take place once a valid access permit is available. Other KET designated personnel reviewing the permit are not required to verify the validity of access permits.

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6 Trench & Excavation Guidelines

The Trench & Excavation Permit process is in place to allow consistent and timely review of excavation permits and ensure all safety measures are incorporated into Contractor's proposed works. This process involves several disciplines including, but not limited to; Engineering, Commissioning, Document Control and Construction Management. The purpose of submitting and reviewing excavation permits is to ensure compliance with applicable legislation whilst preventing injuries and property damage incidents.

6.1 Trench & Excavation Permit Process

6.1.1 Contractor identifies and trains Contractor Representatives on the Kusile Trench and Excavation Permit process. Contractor shall ensure that all identified Representatives (Competent Persons- see Section 2 of Permit) are maintained on a register and submitted to the Engineer (CM who transmits to Signing parties) for record. Register will be maintained in Document Control.

6.1.2 Contractor Representative completes Trench & Excavation Permit (Appendix A) and submits Permit (per document delivery contractual process) to the Package Construction Manager for review, acceptance and signatures. A site engineer's sketch of the proposed excavation shall be attached to the permit. The sketch should relate to the boundary of the excavation and the immediate vicinity and not solely be a copy of a drawing.

Note: If Contractor's proposed works are within another Contractor's area or area for which the Contractor doesn't have approved access, an Access Permit shall be obtained from the Primary Access Holder (the contractor currently holding access or KET) and form part of the Trench and Excavation Permit packet.

6.1.3 The engineers sketch shall detail the excavation dimensions not just the dimensions of the structure or utility that will be constructed. The sketch will include any ramps and minimum service information relating to the excavation 5m beyond the top of the excavation. The sketch will also include transposed service, utility and other pertinent information from utility drawings. The dimensioned sketch will always include a plan view and if required may require section view(s).

6.1.4 Package Construction Manager requests Permit Number from Document Control after all signatures have been obtained.

6.1.5 Package Construction Manager reviews that Contractor Representative has applicable Approved for Construction (AFC) drawing(s) and/or "As-Built" drawing(s) for the area indicated on the respective Permit.

6.1.6 Contractor shall ensure that a trained and competent person who has received the KET buried service briefing shall perform a physical evidence survey and perform an underground locate for all identified utilities and installations identified on the applicable drawing(s) in the area indicated on the respective Permit. All underground installations within the excavation servitude (+ 5 meters), in addition to excavation boundary points, shall be marked on the ground as follows:

Red	Electrical power line, cables, conduit, and lighting cables;
Orange	Telecommunications, alarm or signal lines, or conduit;
Yellow	Natural gas, oil, steam, petroleum or other gas/flammable liquid;
Green	Sewers and drain lines;
Blue	Drinking water
Violet	Reclaim water, irrigation and slurry lines;
Pink	Temporary survey markings, unknown/unidentified facilities;
White	Proposed excavation limits (boundaries) and/or route;

If no installations are noted on the respective drawing, Contractor shall still continue with underground locate to ensure no installations are present.

6.1.7 Package Construction Manager reviews proposed trench and excavation controls for adequacy and ensures all required documentation are included with the Permit. Control

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measures may include, but not be limited to, the following: de-energization, hand digging, hydro-excavating, shoring, sloping, etc;

- 6.1.8 Once reviewed and accepted, the Package Construction Manager submits the Permit to Field Engineering to review drawing validity and to review if underground installations have been appropriately identified on the applicable drawing(s). Field Engineering will accept permit by applying his/her signature.

“Engineering representative 1” (section 16(x)(C) may determine whether or not a second engineering representative is required to review the permit. If a second review is not required, they will score out and initial to indicate that there is no need for second review. During each extension, the Engineer representative 1 will make a fresh determination.

- 6.1.9 Once reviewed and accepted, Field Engineering shall sign and return permit to Package Construction Manager for further review and signatures.
- 6.1.10 Once all reviews and signatures have been obtained the Package Construction Manager will indicate Final Acceptance by applying his/her signature.
- 6.1.11 The Package Construction Manager submits the signed Trench & Excavation Permit to Document Control so it can be logged into the Trench and Excavation Register. Document Control shall make a copy for the Contractor and retain the Original. The Package Construction Manager can then return the accepted Permit (photocopy) to the Contractor Representative;
- 6.1.12 Contractor performs proposed works for the timeframe identified on the approved Trench and Excavation Permit.

6.2 Trench & Excavation Permit Extension

- 6.2.1 In the event that works cannot be completed within the agreed upon timeframe as indicated on the Trench and Excavation Permit, the following process shall be adhered to: Contractor Representative shall notify Package Construction Manager that approved works will not be complete within allocated timeframe on Original Excavation Permit. Maximum timeframe on first submittal shall not be longer than 30 Calendar days from approval date. Afterward a 4 week permit extension may be granted. Further extensions to the permit may be issued subject to the package managers (not delegate) approval.
- 6.2.2 Contractor Representative shall provide updated Access Certificate for applicable work area.
- 6.2.3 Contractor Representative shall provide Package Construction Manager Assurance that applicable permit controls are still in effect and are adequate.
- 6.2.4 Package Construction Manager shall communicate Permit Extension and obtain the required signature as shown in section 16a of permit.
- 6.2.5 Once accepted, the permit shall be signed and the new date granted. The Trench and Excavation Permit Register shall be up-dated.

6.3 Trench & Excavation Documentation

- 6.3.1 After all signatures have been obtained on the Trench and Excavation Permit, the Permit shall be logged into the Trench and Excavation Permit Register (Appendix B) by the Document Control Department;
- 6.3.2 Trench and Excavation Permit, and all submitted attachments, shall be scanned and retained by Document Control and a copy given to the Package Construction Manager to give to the Contractor;
- 6.3.3 Trench and Excavation Permit Start Date and End Date shall be logged into the Permit Register by Document Control. This timeframe shall be negotiated between the Contractor Representative and the Package Construction Manager and shall be strictly adhered to. Caution shall be observed to ensure Trench and Excavation Permits are only active for the time needed to perform such works (typically less than one week);

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- 6.3.4 Open Trench and Excavation Permits shall be stored in a the Open Permits binder (3-ring) that is maintained by the Document Control Department ;
- 6.3.5 Closed Trench and Excavation Permits shall be signed off as closed by the Contractor Representative and sent to Document Control. Document Control shall scan into
- 6.3.6 Documentum under “Closed” Contractor Permits File Number: 33.0000 yymmdd;
- 6.3.7 The Document Control Department shall update the Permit Register (Appendix B) to indicate that the Permit is closed.
- 6.3.8 A copy of the approved Trench and Excavation Permit shall be maintained by the Operator conducting the works at all times, until referenced Permit is closed as indicated by the Permit End Date;

6.4 Energized Works

All works shall be planned to avoid performing excavation works in the vicinity of energized installations. Identified installations shall be de-energized whenever feasible to support such works prior to commencement of works. Utility outages shall be coordinated via the Kusile Commissioning Department at least one week in advance to support proposed works. However, should it be determined that the proposed works must be performed within 3 meters of energized installations, the following minimum requirements shall be adhered to:

- Contractor shall complete all steps listed in section 6.0 *Trench & Excavation Guidelines* of this procedure;
- Contractor shall identify all control measures in the Trench & Excavation Risk Assessment for proposed works and submit to the *Engineer* for review, in addition to, the Trench & Excavation Permit;
- Contractor shall identify safe work measures to safely expose energized underground installation(s) (e.g. pothole with insulated tools) at intervals agreed upon with the *Engineer*;
- Contractor shall expose energized installation as agreed upon with *Engineer*;

7 Process for Monitoring

Compliance to this Level III procedure shall be monitored by the:

- Construction Managers;
- Safety & Health Manager;
- Commissioning Manager;
- Field Engineering Manager;
- Document Control Manager

8 Supporting Documents

- The Kusile SHE Specification;
- Occupational Health & Safety Act & Regulations Act 85 of 1993;

9 Appendix

- Trench & Excavation Permit (Appendix A)
- Trench & Excavation Permit Register (Appendix B)
- Access Certificate (Appendix C)

This document is authorized by the signatures of the individuals on page one of this document.

10 Revisions

The date of modification and the sections of modification must be noted in this section.

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APPENDIX A

TRENCH, EXCAVATION, EARTH MOVING AND RIPPING PERMIT (A COPY OF THIS PERMIT MUST BE WITH AND UNDERSTOOD BY EACH OPERATOR)

Site:	Project Kusile Power Station		7.) Application Date: _____ Year/MM/DD
1.) Principle Contractor/ Sub-Contractor:			8.) Permit Start Date: _____ Year/MM/DD
2.) Principle Contractor Competent Person:			9.) Permit End _____ Date: _____ Year/MM/DD Note: The permit duration shall not exceed 30 days. 9a.) Permit Extension End _____ Date: _____ Year/MM/DD Note: If permit is extended more than once, annotate, highlight and initial changes. Contractor Closing Signature: _____ Contractor Closing _____ Date: _____ Year/MM/DD
3.) Will the Excavation Cut Across a Road? ☐ YES ☐ NO <u>Notice:</u> If Yes, a Request to Modify Roads Form Must Be Attached.			10.) Permit Physical Start Point Coordinates: N.- _____ E.- _____ 11.) Permit Physical End Point Coordinates: N.- _____ E.- _____
4.) Does the Contractor have an access certificate for the requested area? ☐ YES ☐ NO <u>Notice:</u> If No, Explain in box 12 to the right. → → → <u>Notice:</u> If Yes, Attach a Certificate to the Permit			12.)
5.) Has the Contractor Performed a Locator Survey and Identified all Underground Utilities? Excavation boundaries must account for sloping, benching, ramps, etc...Mark with White Paint ☐ YES ☐ NO Type/Model of Equipment Used _____ Calibration Date of Locator _____ <u>Notice:</u> If No, Explain in box 13 to the right. → → →			13.)

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6.) Has the area been marked with paint or other means to indicate Underground Utilities? Also, has the area been physically walked down to identify other potential issues? (Such as Cable Markers, DB Boards, Manholes) <u>SEE PAINT COLOR REQUIREMENTS IN SECTION 15(C) ON PAGE 2 OF PERMIT</u> ☐ YES ☐ NO	<u>14.) Will the excavation be deeper than 7 Meters?</u> ☐ YES ☐ NO <u>If yes, is an engineers designed attached?</u>																								
15.) A. Specific Location and Description of Work (Provide a <u>detailed</u> narrative description below including the Approved For Construction Drawing 3800 Series Min. & Revision Number)																									
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 40%;">B. Size of Trench or Excavation:</td> <td style="width: 15%; text-align: center;">Meters Long</td> <td style="width: 15%; text-align: center;">Meters Wide</td> <td style="width: 30%; text-align: center;">Meters Deep</td> </tr> <tr> <td colspan="4">(Include the sloping and benching)</td> </tr> </table>		B. Size of Trench or Excavation:	Meters Long	Meters Wide	Meters Deep	(Include the sloping and benching)																			
B. Size of Trench or Excavation:	Meters Long	Meters Wide	Meters Deep																						
(Include the sloping and benching)																									
C. Utilities in Vicinity of Work: Added to Detailed Sketch <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; vertical-align: top;"> a. Electrical/ Cables/ Conduit ☐ b. Telephone/IT ☐ c. Water ☐ d. Sewer/S.W. ☐ </td> <td style="width: 25%; vertical-align: top;"> e. Slurry/R eclaime d Water ☐ f. Gas ☐ g. Drain ☐ h. Process ☐ </td> <td style="width: 50%; vertical-align: top;"> i. Other/ Unknown/ No ID ☐ Explanation Area: </td> </tr> </table> (Specify)		a. Electrical/ Cables/ Conduit ☐ b. Telephone/IT ☐ c. Water ☐ d. Sewer/S.W. ☐	e. Slurry/R eclaime d Water ☐ f. Gas ☐ g. Drain ☐ h. Process ☐	i. Other/ Unknown/ No ID ☐ Explanation Area:																					
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D. Other Known Obstructions: <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">a. Footings ☐</td> <td style="width: 30%;">c. Concrete Encasements ☐</td> <td rowspan="2" style="width: 40%; text-align: center; vertical-align: middle;">(Specify)</td> </tr> <tr> <td>b. Pilings ☐</td> <td>d. Other ☐</td> </tr> </table>		a. Footings ☐	c. Concrete Encasements ☐	(Specify)	b. Pilings ☐	d. Other ☐																			
a. Footings ☐	c. Concrete Encasements ☐	(Specify)																							
b. Pilings ☐	d. Other ☐																								
E. Precautions to be Taken: <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 40%;">a. Isolate Utilities* ☐</td> <td style="width: 60%;">c. Insulate Operator ☐</td> </tr> <tr> <td>b. Earth Equipment ☐</td> <td>d. Hand Excavate ☐</td> </tr> <tr> <td>e. Other ☐</td> <td style="text-align: center;">Explain:</td> </tr> </table> * Isolation of Utilities- Electrical and Mechanical Outages must be requested through the Kusile Commissioning Department at least one week in advance of the planned work (Permit Start Date).		a. Isolate Utilities* ☐	c. Insulate Operator ☐	b. Earth Equipment ☐	d. Hand Excavate ☐	e. Other ☐	Explain:																		
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e. Other ☐	Explain:																								
F. Excavation Protective System(s): <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Sloping (1:1 Ratio) ☐</td> <td style="width: 20%;">Vertical (m) ☐</td> <td style="width: 20%;">Horizontal (m) ☐</td> <td style="width: 30%;"></td> </tr> <tr> <td>Benching (<1.5M) ☐</td> <td>Vertical Cut (m) ☐</td> <td>Horizontal (m) ☐</td> <td></td> </tr> <tr> <td>Shoring ☐</td> <td colspan="3"></td> </tr> <tr> <td>Type:</td> <td colspan="3"></td> </tr> <tr> <td>Shield ☐</td> <td colspan="3"></td> </tr> <tr> <td>Type:</td> <td colspan="3"></td> </tr> </table> Barricading Material Available ☐ YES ☐ NO Excavation will be barricaded per the Kusile SHE Specification? ☐ YES ☐ NO		Sloping (1:1 Ratio) ☐	Vertical (m) ☐	Horizontal (m) ☐		Benching (<1.5M) ☐	Vertical Cut (m) ☐	Horizontal (m) ☐		Shoring ☐				Type:				Shield ☐				Type:			
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G. KET Comments:																									

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NOTE: - THE ABOVE DATA HAS BEEN CHECKED WITH DRAWINGS ON FILE. WHEN CLOSE CLEARANCES ARE INDICATED, HAND EXCAVATION MUST BE USED TO DETERMINE THE EXACT LOCATION. CARE SHALL BE TAKEN WHEN HAND EXCAVATING TO NOT STRIKE UG UTILITIES WITH PICKS OR SIMILAR DEVICES. - EXISTING UTILITIES AND INTERFERENCES IN THE VICINITY OF WORK MUST BE MARKED INDICATING LOCATION AND DEPTH PRIOR TO EXCAVATION. <u>Notice: Any Underground Utility Strike Must be Reported Immediately to the Project Emergency Controller Number 079 582 9090</u>		
16.) Signature Sign Off Area		
A.) Contractor's Excavation Competent Person:	Signature:	Date:
B.) Construction Manager Name:	Signature:	Date:
C.) Engineering Representative (1) Name:	Signature:	Date:
D.) Engineering Representatives (2) Name:	Signature:	Date:
E.) Construction Manager Final Sign Off:	Signature:	Date:
NOTE: - THE ABOVE WORK SHALL NOT COMMENCE UNTIL REVIEWED AND SIGNED BY THE SIGNATURES IN SECTION 16. - THE SIGNATURE BY THE KUSILE DESIGNATED PERSONS IN NO WAY CHANGES THE CONTRACTOR'S RESPONSIBILITY FOR PROPERLY UTILIZING PROTECTIVE SYSTEMS, LOCATING ALL UNDERGROUND UTILITIES, AND REPAIR OF DAMAGED UTILITIES, AS REQUIRED BY THE CONTRACT. - THE CONTRACTOR'S EXCAVATION COMPETENT PERSON IS ACCOUNTABLE FOR THE SAFETY REQUIREMENTS FOR THE EXCAVATION.		
16a.) Signature Sign Off Area for Permit Extension (If Applicable)		
A.) Contractor's Excavation Competent Person:	Signature:	Date:
B.) Construction Manager Name:	Signature:	Date:
C.) Engineering Representative (1) Name:	Signature:	Date:
D.) Engineering Representatives (2) Name:	Signature:	Date:
NOTE: - THE ABOVE WORK SHALL NOT COMMENCE UNTIL REVIEWED AND SIGNED BY THE SIGNATURES IN SECTION 16. - THE SIGNATURE BY THE KUSILE DESIGNATED PERSONS IN NO WAY CHANGES THE CONTRACTOR'S RESPONSIBILITY FOR PROPERLY UTILIZING PROTECTIVE SYSTEMS, LOCATING ALL UNDERGROUND UTILITIES, AND REPAIR OF DAMAGED UTILITIES, AS REQUIRED BY THE CONTRACT. - THE CONTRACTOR'S EXCAVATION COMPETENT PERSON IS ACCOUNTABLE FOR THE SAFETY REQUIREMENTS FOR THE EXCAVATION.		
16b.) Signature Sign Off Area for Permit Extension (If Applicable)		
A.) Contractor's Excavation Competent Person:	Signature:	Date:
B.) Construction Manager Name:	Signature:	Date:
C.) Engineering Representative (1) Name:	Signature:	Date:
D.) Engineering Representatives (2) Name:	Signature:	Date:

Note: The construction manager shall ensure that the permit extension and supporting documents are fully legible

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Permit Section Responsibility and Explanation

Section Number	Section Responsibility	Section Explanation																
Permit Number Section	Kusile Management Team	The date that the permit is received provides a unique identification number when used in conjunction with a brief description of the work. This will allow the permits to be stored electronically for later recall if necessary. For example, a permit received on the 17 th of March 2011 for digging in a communication wire near the communication tower could be called																
1	Principal Contractor	The name of the Principal Contractor is entered into the section. If a sub contractor is performing the physical work, then enter the name of that contractor in () below the Principle Contractor Name.																
2	Principal Contractor	Printed name of the Principal Contractors competent and appointed person(s) for excavation activities. This person is responsible for ensuring that the permit is filled out correctly and completely. In addition, this person is also responsible for ensuring that all individuals involved with the excavation understand the Excavation Permit. The contractor shall submit a list of their competent persons to the KMT.																
3	Principal Contractor	If the excavation, trench or earth moving operation can impact traffic flow, then a “Road Deviation” Permit must also be attached for review.																
4	Principal Contractor	The Principal Contractor must have an access certificate to the area from the Kusile Management Team. If the area is under control of another Principal Contractor, then written permission to access the area must be obtained. <u>Permits must be obtained for contractor yards.</u>																
5	Principal Contractor	The Principal Contractor is responsible for performing a ground scan to identify buried utilities such as, but not limited to, electrical, potable water, fire water and communication lines.																
6	Principal Contractor	Physical marking of the earth shall occur before the permit is submitted. The Principal Contractor is also responsible for physically walking down the area to identify any other potential issues such as survey markers, grave sites, etc... This is a requirement inside and outside of the boundaries. <table><tr><td>Red</td><td>Electrical Power Line, Cables, Conduit, and Lighting Cables</td></tr><tr><td>Orange</td><td>Telecommunications, Alarm or Signal Lines, Cables, or Conduit</td></tr><tr><td>Yellow</td><td>Natural Gas, Oil, Steam, Petroleum, or other Gaseous or Flammable Material</td></tr><tr><td>Green</td><td>Sewers and Drain Lines</td></tr><tr><td>Blue</td><td>Drinking Water</td></tr><tr><td>Violet</td><td>Reclaim Water, Irrigation, and Slurry Lines</td></tr><tr><td>Pink</td><td>Temporary Survey Markings, Unknown/Unidentified Facilities</td></tr><tr><td>White</td><td>Proposed Excavation Limits or Route</td></tr></table>	Red	Electrical Power Line, Cables, Conduit, and Lighting Cables	Orange	Telecommunications, Alarm or Signal Lines, Cables, or Conduit	Yellow	Natural Gas, Oil, Steam, Petroleum, or other Gaseous or Flammable Material	Green	Sewers and Drain Lines	Blue	Drinking Water	Violet	Reclaim Water, Irrigation, and Slurry Lines	Pink	Temporary Survey Markings, Unknown/Unidentified Facilities	White	Proposed Excavation Limits or Route
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Section Number	Section Responsibility	Section Explanation
7	Principal Contractor	Date that the application was submitted by the Principal Contractor.
8	Principal Contractor	Date that trenching, excavation or earth moving operations will begin. Operations may not occur prior to this date.
9	Principal Contractor	Date that trenching, excavation or earth moving operations will end. No operations may occur after this date. The length of time that any permit shall be open for is no more than 30 days. If an extension is issued prior to the permit end date the extension shall be no more than 30 days. A " <i>Closing Signature</i> " must occur once the excavation work is completed. This will close the permit and a new permit will need to be applied for.
10	Principal Contractor	The Site Grid Coordinates shall be entered into this area for where the excavation will start. If it is a mass excavation, with multiple start points, this Site Grid data shall be detailed in Section 15. If the area is not within the site grid, then GPS coordinates shall be entered.
11	Principal Contractor	The Site Grid Coordinates shall be entered into this area for where the excavation will end. If it is a mass excavation, with multiple end points, this Site Grid data shall be detailed in Section 15.
12	Principal Contractor	Area to explain why an access permit is not included.
13	Principal Contractor	Area to explain if an underground utility survey has NOT been conducted.
14	Principal Contractor	If the excavation exceeds 7 Meters, then there needs to be an engineers design for the excavation provided by the PC.
15	Principal Contractor	The specific location and the description of work shall be brief but detailed. Please attach an AFC 3800 series drawing with the specific area sketched on the drawing. Further, ensure that the drawing number and Revision number are clearly provided.
16	Principal Contractor & Kusile Management Team	This area is signed off by the applicable parties once all agree that the excavation work is acceptable if all of the termed and conditions in the previous boxes are adhered to.

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Appendix B

Permit Number (All Permits Have a Prefix of 33.0000)	Principal Contractor	Permit Start Date Year/MM/DD	Permit End Date Year/MM/DD	Responsible Kusile Construction Manager	Physical Area for the Permit	Permit Closed Date Year/MM/DD

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Access Certificate

1. Request for Access to the Works: Contractor/Contract No: _____ Area/Location Access is Required: _____ _____ Remarks/Observations: _____ _____ Signed: _____ Date: _____
2. Access From Primary Access Holder: Contractor/Contract No: _____ I hereby declare that the works in the area described above is sufficiently complete and therefore access can be given to: _____ _____ Remarks/Observations: _____ _____ Signed (Contractor Giving Access): _____ Date: _____ Signed (Contractor Receiving Access): _____ Date: _____
3. Access Confirmation and Conditions: Contractor/Contract No: _____ The stated contract works are hereby made available to the access taker for carrying out of associated works in terms of the contract with Eskom. As from the date of signing of the access certificate the access taker will be responsible for compliance with the requirements of OSHA, Eskom Site Safety Rules and all Environmental Conditions as set forth in the contract. The access taker is also required to hand the works back to Eskom as and when appropriate in a defect free and safe condition. Remarks/Observations: _____ _____ _____ Signed (Contractor Taking Access): _____ Date: _____ Signed (Construction Site Manager): _____ Date: _____
Distribution: Original (Contractor Taking Access); Copies (Eskom & Contractor Giving Access)