

# INFRASTRUCTURE PLANNING SERVICES

Vukani Infrastructure Planning Services Incorporated

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Our Reference:

**2910 Mooiplaats West**

Department Reference:

**17/2/3/GS - 35**

17 August 2011

The Chief Executive Officer  
South African Heritage Resources Agency  
P O Box 4637  
Cape Town  
8000



Email: [dsibayi@sahra.org.za](mailto:dsibayi@sahra.org.za)

**By Registered Post**

Dear Sir,

**FINAL BASIC ASSESSMENT REPORT FOR AN APPLICATION IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT 1998 ("NEMA") AS AMENDED TO THE COMPETENT AUTHORITY FOR LISTED ACTIVITY 3 IN REGULATION 546: ESTABLISHMENT OF A CELL C (PTY) LTD TELECOMMUNICATION MAST ON PORTION 9 (REMAINING EXTENT) OF THE FARM MOOPLAATS 290 IT.**

Kindly receive the final Basic Assessment Report for the above mentioned application.

We request you to evaluate the attached report on the proposed project and provide the Mpumalanga Department of Economic Development, Environment and Tourism (MDEDET) with your written comments and/or inputs, if any, by faxing or e-mailing such to the department directly (contact below).

The final Basic Assessment Report was submitted to the MDEDET on 18 August 2011.

Should you have any further queries please do not hesitate to contact us.

Kind Regards,

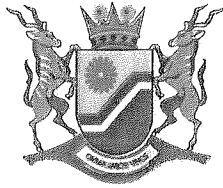
**Monica Niehof**  
For: Vukani IPS inc.

MDEDET – Gert Sibande District

Attention: **Bheki Mndawe**

Telephone: **017 811 4830/3944 (072 814 5409)**

E-mail: **[bemndawe@mpg.gov.za](mailto:bemndawe@mpg.gov.za)**



the **dedet**

Department:  
Economic Development, Environment and Tourism  
MPUMALANGA PROVINCIAL GOVERNMENT

Basic assessment report in terms of the  
Environmental Impact Assessment Regulations, 2010, promulgated in terms of the National  
Environmental Management Act, 1998(Act No. 107 of 1998), as amended.

|                               |   |
|-------------------------------|---|
| File Reference Number:        | (For applicant / EAP to complete)<br>17/2/3/GS-35                       |
| Project Title:                | The establishment of a telecommunication mast – 2910<br>Mooiplaats West |
| Name of Responsible Official: | Bheki Mndawe  |

|                        |                         |
|------------------------|-------------------------|
| NEAS Reference Number: | (For official use only) |
| Date Received:         |                         |

**Kindly note that:**

1. Required information must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. Tables can be extended as each space is filled with typing.
2. Where applicable **black out** the boxes that are not applicable in the form.
3. An incomplete report may be returned to the applicant for revision.
4. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.
5. All reports (draft and final) must be submitted to the Department at the address of the relevant **DISTRICT OFFICE** given below or by delivery thereof to the relevant **DISTRICT OFFICE**. Should the reports not be submitted at the relevant district office, they will not be considered.
6. No faxed or e-mailed reports will be accepted.
7. One copy of the draft version of this report must be submitted to the relevant district office. The case officer may request more than one copy in certain circumstances.
8. **Copies of the draft report must be submitted to the relevant State Departments / Organs of State for comment.** In order to give effect to Regulation 56(7), proof of submission/delivery of the draft documents to the State Departments / Organs of State must be attached to the draft version of this report.
9. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
10. All specialist reports must be appended to this document, and all specialists must complete a declaration of independence, which is obtainable from the Department.

## SECTION A: BACKGROUND INFORMATION

|                        |  |       |              |
|------------------------|--|-------|--------------|
| Project applicant:     | Cell C (Pty) Ltd   |       |              |
| Trading name (if any): | Cell C (Pty) Ltd   |       |              |
| Contact person:        | Alishea Viljoen  |       |              |
| Physical address:      | C/o Nokia Siemens Networks – 92 Oak Avenue, Highveld Techno Park |       |              |
| Postal address:        | C/o Nokia Siemens Networks – 92 Oak Avenue, Highveld Techno Park |       |              |
| Postal code:           | 0046   | Cell: | 082 777 8506 |
| Telephone:             | -  | Fax:  | 086 665 6555 |
| E-mail:                | alisheav@gmail.com   |       |              |

|  |   |       |                         |
|--|---|-------|-------------------------|
| Environmental Assessment Practitioner: | Monica Niehof                                       |       |                         |
| Contact person:                        | P.O. Box 32017, Totiusdal                           |       |                         |
| Postal address:                        | 0134  |       |                         |
| Postal code:                           | (012) 804 1504                                      | Cell: | 083 560 8410            |
| Telephone:                             | admin@infraplan.co.za                               | Fax:  | 0866900441 / 0866900468 |
| E-mail:                                | admin@infraplan.co.za                               |       |                         |
| Qualifications:                        | 9 Years Environmental Impact Assessment evaluations |       |                         |
| Professional affiliations (if any):    | -   |       |                         |

## SECTION B: DETAILED DESCRIPTION OF THE PROPOSED ACTIVITY

Describe the activity, which is being applied for, in detail. The description must include the size of the proposed activity (or in the case of linear activities, the length) and the size of the area that will be transformed by the activity.

**Regulation 546 Activity 3: Construction of a 45m high unpainted (galvanised) lattice mast with antennae and a 144m<sup>2</sup> Cell C (Pty) Ltd telecommunication base station with equipment containers enclosed by a 2,4 m high steel palisade fence on Portion 9 (Remaining Extent) of the farm Mooiplaats 290 IT.**

## SECTION C: PROPERTY/SITE DESCRIPTION

Provide a full description of the preferred site alternative (farm name and number, portion number, registration division, erf number etc.):

**Portion 9 (Remaining Extent) of the farm Mooiplaats 290 IT**

Indicate the position of the activity using the latitude and longitude of the centre point of the preferred site alternative. The co-ordinates should be in degrees and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a

national or local projection. The position of alternative sites must be indicated in Section B of this document.

| Latitude (S): |         | Longitude (E): |         |
|---------------|---------|----------------|---------|
| 26°           | 39.242' | 30°            | 05.947' |

In the case of linear activities:

- Starting point of the activity
- Middle point of the activity
- End point of the activity

| Latitude (S): |   | Longitude (E): |   |
|---------------|---|----------------|---|
| 0             | ' | 0              | ' |
| 0             | ' | 0              | ' |
| 0             | ' | 0              | ' |

#### SITE OR ROUTE PLAN

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as an appendix to this document.

The site or route plans must be at least A3 and must include the following:

- 6.1 a reference no / layout plan no., date, and a legend / land use table
- 6.2 the scale of the plan which must be at least a scale of 1:2000;
- 6.3 the current land use as well as the land use zoning of each of the properties adjoining the site or sites;
- 6.4 the exact position of each element of the application as well as any other structures on the site;
- 6.5 the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, street lights, sewage pipelines, storm water infrastructure and telecommunication infrastructure;
- 6.6 all indigenous trees taller than 1.8 metres and all vegetation of conservation concern (protected, endemic and/or red data species);
- 6.8 servitudes indicating the purpose of the servitude;
- 6.9 sensitive environmental elements within 100 metres of the site or sites including (but not limited thereto):
  - watercourses and wetlands;
  - the 1:100 year flood line;
  - ridges;
  - cultural and historical features;
- 6.9 10 metre contour intervals

#### SITE PHOTOGRAPHS

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached as an appendix to this form.

#### FACILITY ILLUSTRATION

A detailed illustration of the activity must be provided at a scale of 1:200 as an appendix for activities that include structures. The illustrations must be to scale and must represent a realistic image of the planned activity. The illustration must give a representative view of the activity.

## SECTION D: BASIC ASSESSMENT REPORT

Prepare a basic assessment report that complies with Regulation 22 of the Environmental Impact Assessment Regulations, 2010. The basic assessment report must be attached to this form and must contain all the information that is necessary for the competent authority to consider the application and to reach a decision contemplated in Regulation 25, and must include:

(Checklist  
for official  
use only)

|  |  |
|--|--|
| 1. A description of the environment that may be affected by the proposed activity and the manner in which the geographical, physical, biological, social, economic and cultural aspects of the environment may be affected by the proposed activity.   |  |
| 2. An identification of all legislation and guidelines that have been considered in the preparation of the basic assessment report.  |  |
| 3. Details of the public participation process conducted in terms of Regulation 21(2)(a) in connection with the application, including –<br>(i) the steps that were taken to notify potentially interested and affected parties of the proposed application;<br>(ii) proof that notice boards, advertisements and notices notifying potentially interested and affected parties of the proposed application have been displayed, placed or given;<br>(iii) a list of all persons, organisations and organs of state that were registered in terms of regulation 55 as interested and affected parties in relation to the application; and<br>(iv) a summary of the issues raised by interested and affected parties, the date of receipt of and the response of the EAP to those issues; |  |
| 4. A description of the need and desirability of the proposed activity;  |  |
| 5. A description of any identified alternatives to the proposed activity that are feasible and reasonable, including the advantages and disadvantages that the proposed activity or alternatives will have on the environment and on the community that may be affected by the activity;   |  |
| 6. A description and assessment of the significance of any environmental impacts, including—<br>(i) cumulative impacts, that may occur as a result of the undertaking of the activity or identified alternatives or as a result of any construction, erection or decommissioning associated with the undertaking of the activity;<br>(ii) the nature of the impact;<br>(iii) the extent and duration of the impact;<br>(iv) the probability of the impact occurring;<br>(v) the degree to which the impact can be reversed;<br>(vi) the degree to which the impact may cause irreplaceable loss of resources; and<br>(vii) the degree to which the impact can be mitigated;  |  |
| 7. Any environmental management and mitigation measures proposed by the EAP;   |  |
| 8. Any inputs and recommendations made by specialists to the extent that may be necessary;   |  |
| 9. A draft environmental management programme containing the aspects contemplated in regulation 33;  |  |
| 10. A description of any assumptions, uncertainties and gaps in  |  |

|   |  |
|---|--|
| knowledge;  |  |
| 11. A reasoned opinion as to whether the activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation |  |
| 12. Any representations, and comments received in connection with the application or the basic assessment report;   |  |
| 13. The minutes of any meetings held by the EAP with interested and affected parties and other role players which record the views of the participants;   |  |
| 14. Any responses by the EAP to those representations, comments and views;  |  |
| 15. Any specific information required by the competent authority; and   |  |
| 16. Any other matters required in terms of sections 24(4)(a) and (b) of the Act.  |  |

**The basic assessment report must take into account -**

- (a) any relevant guidelines; and
- (b) any departmental policies, environmental management instruments and other decision making instruments that have been developed or adopted by the competent authority in respect of the kind of activity which is the subject of the application.

\* In terms of Regulation 22(4), the EAP managing the application must provide the competent authority with detailed, written proof of an investigation as required by section 24(4)(b)(i) of the Act and motivation if no reasonable or feasible alternatives, as contemplated in subregulation 22(2)(h), exist.

|  |            |           |
|--|------------|-----------|
| Have reasonable and feasible alternatives been identified, described and assessed?   | <b>YES</b> | <b>NO</b> |
| If NO, the motivation and investigation required in terms of Regulation 22(4) must be attached as an Appendix to this document |            |           |

## 1. A DESCRIPTION OF THE ENVIRONMENT

This section describes the environment that may be affected by the proposed activity and the manner in which the geographical, physical, biological, social, economic and cultural aspects of the environment may be affected by the proposed activity in terms of *Regulation 22 sub-regulation 2 (d) of the EIA Regulations, 2010*.

### PHYSICAL ENVIRONMENT

#### Gradient of the Site

Indicate the general gradient of the site.

##### Alternative S1:

|      |      |   |      |   |      |   |       |   |       |   |              |
|------|------|---|------|---|------|---|-------|---|-------|---|--------------|
| Flat | 1:50 | – | 1:20 | – | 1:15 | – | 1:10  | – | 1:7,5 | – | Steeper than |
|      | 1:20 |   | 1:15 |   | 1:10 |   | 1:7,5 |   | 1:5   |   | 1:5          |

##### Alternative S2 (if any):

|      |      |   |      |   |      |   |       |   |       |   |              |
|------|------|---|------|---|------|---|-------|---|-------|---|--------------|
| Flat | 1:50 | – | 1:20 | – | 1:15 | – | 1:10  | – | 1:7,5 | – | Steeper than |
|      | 1:20 |   | 1:15 |   | 1:10 |   | 1:7,5 |   | 1:5   |   | 1:5          |

##### Alternative S3 (if any):

|      |      |   |      |   |      |   |       |   |       |   |              |
|------|------|---|------|---|------|---|-------|---|-------|---|--------------|
| Flat | 1:50 | – | 1:20 | – | 1:15 | – | 1:10  | – | 1:7,5 | – | Steeper than |
|      | 1:20 |   | 1:15 |   | 1:10 |   | 1:7,5 |   | 1:5   |   | 1:5          |

#### Location in landscape

Indicate the landform(s) that best describes the site:

- 2.1 Ridgeline
- 2.2 Plateau
- 2.3 Side slope of hill/mountain
- 2.4 Closed valley
- 2.5 Open valley
- 2.6 Plain
- 2.7 Undulating plain / low hills
- 2.8 Dune
- 2.9 Seafront

#### Groundwater, Soil and Geological stability of the site

Is the site(s) located on any of the following (tick the appropriate boxes)?

|   | Alternative S1: |    | Alternative S2 (if any): |    | Alternative S3 (if any): |    |
|---|-----------------|----|--------------------------|----|--------------------------|----|
|   | YES             | NO | YES                      | NO | YES                      | NO |
| Shallow water table (less than 1.5m deep)             |                 |    |                          |    |                          |    |
| Dolomite, sinkhole or doline areas                    |                 |    |                          |    |                          |    |
| Seasonally wet soils (often close to water bodies)    |                 |    |                          |    |                          |    |
| Unstable rocky slopes or steep slopes with loose soil |                 |    |                          |    |                          |    |
| Dispersive soils (soils that dissolve in water)       |                 |    |                          |    |                          |    |

|  |     |    |     |    |     |    |
|--|-----|----|-----|----|-----|----|
| Soils with high clay content (clay fraction more than 40%) | YES | NO | YES | NO | YES | NO |
| Any other unstable soil or geological feature              | YES | NO | YES | NO | YES | NO |
| An area sensitive to erosion                               | YES | NO | YES | NO | YES | NO |

If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion of this section. (Information in respect of the above will often be available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted).

## BIOLOGICAL ENVIRONMENT

### Groundcover

Indicate the types of groundcover present on the site:

The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

#### Alt 1, 2 & 3

|  |   |  |  |           |
|--|---|--|--|-----------|
| Natural veld good condition <sup>E</sup> | Natural veld with scattered aliens <sup>E</sup> | Natural veld with heavy alien infestation <sup>E</sup> | Veld dominated by alien species <sup>E</sup> | Gardens   |
| Sport field                              | Cultivated land                                 | Paved surface  | Building or other structure                  | Bare soil |

If any of the boxes marked with an "E" is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn't have the necessary expertise.

## SOCIAL AND ECONOMICAL ENVIRONMENT

### Land use character of surrounding area – Alt 1, 2 & 3

Indicate land uses and/or prominent features that does currently occur within a 500m radius of the site and give description of how this influences the application or may be impacted upon by the application:

- 5.1 Natural area
- 5.2 Low density residential
- 5.3 Medium density residential
- 5.4 High density residential
- 5.5 Informal residential<sup>A</sup>
- 5.6 Retail commercial & warehousing
- 5.7 Light industrial
- 5.8 Medium industrial<sup>AN</sup>
- 5.9 Heavy industrial<sup>AN</sup>
- 5.10 Power station



- 5.11 Office/consulting room
- 5.12 Military or police base/station/compound
- 5.13 Spoil heap or slimes dam<sup>A</sup>
- 5.14 Quarry, sand or borrow pit
- 5.15 Dam or reservoir
- 5.16 Hospital/medical centre
- 5.17 School
- 5.18 Tertiary education facility
- 5.19 Church
- 5.20 Old age home
- 5.21 Sewage treatment plant<sup>A</sup>
- 5.22 Train station or shunting yard<sup>N</sup>
- 5.23 Railway line<sup>N</sup>
- 5.24 Major road (4 lanes or more)<sup>N</sup>
- 5.25 Airport<sup>N</sup>
- 5.26 Harbour
- 5.27 Sport facilities
- 5.28 Golf course
- 5.29 Polo fields
- 5.30 Filling station<sup>H</sup>
- 5.31 Landfill or waste treatment site
- 5.32 Plantation
- 5.33 Agriculture**
- 5.34 River, stream or wetland
- 5.35 Nature conservation area
- 5.36 Mountain, koppie or ridge
- 5.37 Museum
- 5.38 Historical building
- 5.39 Protected Area
- 5.40 Graveyard
- 5.41 Archaeological site
- 5.42 Other land uses (describe) – Farmland, Colliery**

If any of the boxes marked with an <sup>N</sup> "are ticked, how will this impact / be impacted upon by the proposed activity? **No**

If any of the boxes marked with an <sup>A</sup> are ticked, how will this impact / be impacted upon by the proposed activity? **No**

If YES, specify and explain:

If YES, specify:

If any of the boxes marked with an <sup>H</sup> are ticked, how will this impact / be impacted upon by the proposed activity? **No**

If YES, specify and explain:

If YES, specify:

**Waste, effluent, emission and noise management**

**(a) Solid waste management**

Will the activity produce solid construction waste during the construction/initiation phase?

|     |    |
|-----|----|
| YES | NO |
|-----|----|

If yes, what estimated quantity will be produced per month?

|  |
|--|
| 2m <sup>3</sup> (6 weeks construction period only) |
|--|

How will the construction solid waste be disposed of (describe)?

**Loaded and transported by a suitable, roadworthy commercial vehicle to the nearest registered landfill site.**

Where will the construction solid waste be disposed of (describe)?

**At a suitable registered landfill site within the immediate area.**

Will the activity produce solid waste during its operational phase?

|     |    |
|-----|----|
| YES | NO |
|-----|----|

If yes, what estimated quantity will be produced per month?

|                |
|----------------|
| m <sup>3</sup> |
|----------------|

How will the solid waste be disposed of (describe)?

-

Where will the solid waste be disposed if it does not feed into a municipal waste stream (describe)?

-

If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Can any part of the solid waste be classified as hazardous in terms of the relevant legislation?

|     |    |
|-----|----|
| YES | NO |
|-----|----|

If yes, inform the competent authority and request a change to an application for scoping and EIA.

Is the activity that is being applied for a solid waste handling or treatment facility?

|     |    |
|-----|----|
| YES | NO |
|-----|----|

If yes, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

**(b) Liquid effluent**

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?

|     |    |
|-----|----|
| YES | NO |
|-----|----|

If yes, what estimated quantity will be produced per month?

|                |
|----------------|
| m <sup>3</sup> |
|----------------|

Will the activity produce any effluent that will be treated and/or disposed of on site?

|     |    |
|-----|----|
| Yes | NO |
|-----|----|

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Will the activity produce effluent that will be treated and/or disposed of at another facility?

|     |    |
|-----|----|
| YES | NO |
|-----|----|

If yes, provide the particulars of the facility:

|                 |   |       |   |
|-----------------|---|-------|---|
| Facility name:  | - |       |   |
| Contact person: | - |       |   |
| Postal address: | - |       |   |
| Postal code:    | - |       |   |
| Telephone:      | - | Cell: | - |
| E-mail:         | - | Fax:  | - |

Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:

-

**(c) Emissions into the atmosphere**

Will the activity release emissions into the atmosphere?

|     |    |
|-----|----|
| YES | NO |
| YES | NO |

If yes, is it controlled by any legislation of any sphere of government?

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If no, describe the emissions in terms of type and concentration:

**Non-ionised electromagnetic fields with power density < 10W/m<sup>2</sup> (Department of Health Guidelines based on International Commission on Non-Ionising Radiation Protection (ICNIRP) and World Health Organisation (WHO) guidelines.**

**(d) Generation of noise**

Will the activity generate noise?

|     |    |
|-----|----|
| YES | NO |
| YES | NO |

If yes, is it controlled by any legislation of any sphere of government?

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If no, describe the noise in terms of type and level:

**Minimum noise generation will emanate from the installed air conditioners at a <60dB noise level. The level of noise generation is well within the acceptable norm and will not cause a disturbance to the surrounding environment.**

**(e) Water Use**

Please indicate the source(s) of water that will be used for the activity by ticking the appropriate box(es)

|                       |             |                            |       |  |
|-----------------------|-------------|----------------------------|-------|--|
| municipal water board | groundwater | river, stream, dam or lake | other | <b>the activity will not use water</b> |
|-----------------------|-------------|----------------------------|-------|--|

If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate

the volume that will be extracted per month:

|        |    |
|--------|----|
| litres |    |
| YES    | NO |

Does the activity require a water use permit from the Department of Water Affairs?

If yes, please submit the necessary application to the Department of Water Affairs and attach proof thereof to this application if it has been submitted.

**(f) Energy Efficiency**

Describe the design measures, if any, that have been taken to ensure that the activity is energy efficient:

**High technological mobile telecommunication operating systems are in principle designed for minimum, cost effective energy consumption in order to preserve resources and to optimise the financial yield generated by the base station.**

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

**Alternative energy sources have not been taken into account in the design of the activity.**

## CULTURAL ENVIRONMENT

### Cultural/Historical Features – Alt 1, 2 & 3

|   |           |    |
|---|-----------|----|
| Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including Archaeological or palaeontological sites, on or close (within 20m) to the site? | YES       | NO |
|   | Uncertain |    |
| If YES, explain:  |           |    |
| If uncertain, conduct a specialist investigation by a recognised specialist in the field to establish whether there is such a feature(s) present on or close to the site.   |           |    |
| Briefly explain the findings of the specialist:   |           |    |
| Will any building or structure older than 60 years be affected in any way?  | YES       | NO |
| Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?   | YES       | NO |
| If yes, please submit or, make sure that the applicant or a specialist submits the necessary application to SAHRA or the relevant provincial heritage agency and attach proof thereof to this application if such application has been made.                  |           |    |

## 2. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES – IN TERMS OF Regulation 22 sub-regulation 2 (e) of the EIA Regulations, 2010

List all legislation, policies and/or guidelines of any sphere of government that are applicable to the application as contemplated in the EIA regulations, if applicable:

| Title of legislation, policy or guideline:  | Administering authority:  | Date:      |
|---|---|------------|
| National Environmental Management Act (NEMA) No. 107 of 1998 & related regulations & guidelines | Mpumalanga Province Department of Economic Development, Environment and Tourism | 27/11/1998 |
| Civil Aviation Act, 2009 (Act No. 13 of 2009)   | South African Civil Aviation Authority  | 2009       |
| Approval in terms of town planning schemes and/or National Building Regulations                 | Gert Sibande District Municipality (Msukaligwa Local Municipality)              | Unknown    |
| Occupational Health and Safety Act (No. 85 of 1993)   | Department of Labour  | 1993       |
| National Veld and Forest Fire Act (No. 101 of 1998)   | Department of Water and Environmental Affairs                                   | 1998       |
| National Heritage Resources Act (No. 25 of 1999)  | South African Heritage Resources Agency   | 1999       |

**3. PUBLIC PARTICIPATION – IN TERMS OF Regulation 22 sub-regulation 2 (f) of the EIA Regulations, 2010**

The person conducting a public participation process must take into account any guidelines applicable to public participation as contemplated in section 24J of the Act and must give notice to all potential interested and affected parties of the application which is subjected to public participation by—

- (a) fixing a notice board (of a size at least 60cm by 42cm; and must display the required information in lettering and in a format as may be determined by the competent authority) at a place conspicuous to the public at the boundary or on the fence of—
  - (i) the site where the activity to which the application relates is or is to be undertaken; and
  - (ii) any alternative site mentioned in the application;
- (b) giving written notice to—
  - (i) the owner or person in control of that land if the applicant is not the owner or person in control of the land;
  - (ii) the occupiers of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
  - (iii) owners and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
  - (iv) the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area;
  - (v) the municipality which has jurisdiction in the area;
  - (vi) any organ of state having jurisdiction in respect of any aspect of the activity; and
  - (vii) any other party as required by the competent authority;
- (c) placing an advertisement in—
  - (i) one local newspaper; or
  - (ii) any official *Gazette* that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;
- (d) placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or local municipality in which it is or will be undertaken: Provided that this paragraph need not be complied with if an advertisement has been placed in an official *Gazette* referred to in subregulation 54(c)(ii); and
- (e) using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desiring of but unable to participate in the process due to—
  - (i) illiteracy;
  - (ii) disability; or
  - (iii) any other disadvantage.

**Content of Advertisements and Notices**

A notice board, advertisement or notices must:

- (a) indicate the details of the application which is subjected to public participation; and
- (b) state—
  - (i) that the application has been submitted to the competent authority in terms of these Regulations, as the case may be;
  - (ii) whether basic assessment or scoping procedures are being applied to the application, in the case of an application for environmental authorisation;
  - (iii) the nature and location of the activity to which the application relates;
  - (iv) where further information on the application or activity can be obtained; and
  - (iv) the manner in which and the person to whom representations in respect of the application may be made.

### **Placement of Advertisements and Notices**

Where the proposed activity may have impacts that extend beyond the municipal area where it is located, a notice must be placed in at least one provincial newspaper or national newspaper, indicating that an application will be submitted to the competent authority in terms of these regulations, the nature and location of the activity, where further information on the proposed activity can be obtained and the manner in which representations in respect of the application can be made, unless a notice has been placed in any *Gazette* that is published specifically for the purpose of providing notice to the public of applications made in terms of the EIA regulations.

Advertisements and notices must make provision for all alternatives.

### **Determination of Appropriate Measures**

The practitioner must ensure that the public participation is adequate and must determine whether a public meeting or any other additional measure is appropriate or not based on the particular nature of each case. Special attention should be given to the involvement of local community structures such as Ward Committees, ratepayers associations and traditional authorities where appropriate. Please note that public concerns that emerge at a later stage that should have been addressed may cause the competent authority to withdraw any authorisation it may have issued if it becomes apparent that the public participation process was inadequate.

### **Comments and response report**

The practitioner must record all comments and respond to each comment of the public before the application is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations and be attached to this application. The comments and response report must be attached under Appendix E.

### **Authority Participation**

**Please note that a complete list of all organs of state and or any other applicable authority with their contact details must be appended to the basic assessment report or scoping report, whichever is applicable.**

Authorities are key interested and affected parties in each application and no decision on any application will be made before the relevant local authority is provided with the opportunity to give input.

List of authorities informed:

|  |
|--|
| <p><b>Mpumalanga Tourism and Parks Board (MTPA)</b><br/> <b>South African Heritage Resources Agency</b><br/> <b>Eskom</b><br/> <b>Msukaligwa Local Municipality</b><br/> <b>Gert Sibande District Municipality</b></p> |
|--|

List of authorities from whom comments have been received:

|   |
|---|
| - |
|---|

**Consultation with other Stakeholders**

Note that, for linear activities, or where deviation from the public participation requirements may be appropriate, the person conducting the public participation process may deviate from the requirements of that subregulation to the extent and in the manner as may be agreed to by the competent authority.

Proof of any such agreement must be provided, where applicable.

Has any comment been received from stakeholders?

|     |    |
|-----|----|
| YES | NO |
|-----|----|

If "YES", briefly describe the feedback below (also attach copies of any correspondence to and from the stakeholders to this application):

|   |
|---|
| <p><b>Mpumalanga Tourism and Parks Agency – Commented that the proposed activity occurs in an area of high sensitivity in terms of biodiversity and requested that a biodiversity specialist study be conducted. The EAP answered that the footprint of the activity is very small and that the area is disturbed and surrounded by disturbed vegetation and therefore did not recommend the biodiversity specialist study.</b></p> <p><b>The Agency did not answer this comment and it is assumed that they agree.</b></p> |
|---|

**4. NEED AND DESIRABILITY– IN TERMS OF Regulation 22 sub-regulation 2 (g) of the EIA Regulations, 2010**

**ACTIVITY MOTIVATION**

**1(a) Socio-economic value of the activity**

What is the expected capital value of the activity on completion?  
 What is the expected yearly income that will be generated by or as a result of the activity?  
 Will the activity contribute to service infrastructure?  
 Is the activity a public amenity?  
 How many new employment opportunities will be created in the development phase of the activity?  
 What is the expected value of the employment opportunities during the development phase?  
 What percentage of this will accrue to previously disadvantaged individuals?  
 How many permanent new employment opportunities will be created during the operational phase of the activity?  
 What is the expected current value of the employment opportunities during the first 10 years?  
 What percentage of this will accrue to previously disadvantaged individuals?

|                  |
|------------------|
| <b>R 500 000</b> |
| <b>Unknown</b>   |
| <b>YES NO</b>    |
| <b>YES NO</b>    |
| <b>0</b>         |
| <b>R0</b>        |
| <b>0%</b>        |
| <b>0</b>         |
| <b>R0</b>        |
| <b>0%</b>        |

(b) Need and desirability of the activity

Motivate and explain the need and desirability of the activity (including demand for the activity):

| <b>NEED:</b> |   |     |    |
|--------------|---|-----|----|
| 1.           | Was the relevant provincial planning department involved in the application?  | YES | NO |
| 2.           | Does the proposed land use fall within the relevant provincial planning framework?  | YES | NO |
| 3.           | <p>If the answer to questions 1 and / or 2 was NO, please provide further motivation / explanation:</p> <p><b>Cellular telecommunication technology is an integral part of modern daily life and licensed cellular telecommunication service operators have an obligation in terms of their license agreements, as stipulated by national government, to provide the services throughout South Africa within the allocated bandwidth spectrum. The cellular telecommunication user base is still increasing (quantitative growth) and users must be enabled to choose the services rendered by any of the licensed operators anywhere in South Africa (choice and availability). The expansion of service types and content (content &amp; technology growth) furthermore requires continuous equipment and network fine-tuning, upgrades and expansion. The user base also expects a continuous quality service to be provided and therefore network capacity and capabilities are under constant review to maintain or improve quality coverage (qualitative growth).</b></p> <p><b>Cell C (Pty) Ltd network and radio planners have identified an essential requirement in terms of the above objectives in the immediate surroundings of the planned base station in this area. Cell C (Pty) Ltd is committed to preventing the proliferation of telecommunication installations and the sharing of the infrastructure by other telecommunication service providers is promoted wherever possible and existing structures will be utilized if such supports and is suitable for the establishment of a required base station.</b></p> |     |    |

| <b>DESIRABILITY:</b> |  |     |    |
|----------------------|--|-----|----|
| 1.                   | Does the proposed land use / development fit the surrounding area?   | YES | NO |
| 2.                   | Does the proposed land use / development conform to the relevant structure plans, SDF and planning visions for the area? | YES | NO |
| 3.                   | Will the benefits of the proposed land use / development outweigh the negative impacts of it?                            | YES | NO |
| 4.                   | <p>If the answer to any of the questions 1-3 was NO, please provide further motivation / explanation:</p> <p>-</p>       |     |    |
| 5.                   | Will the proposed land use / development impact on the sense of place?   | YES | NO |
| 6.                   | Will the proposed land use / development set a precedent?  | YES | NO |
| 7.                   | Will any person's rights be affected by the proposed land use / development?   | YES | NO |
| 8.                   | Will the proposed land use / development compromise the "urban edge"?  | YES | NO |
| 9.                   | <p>If the answer to any of the question 5-8 was YES, please provide further motivation / explanation.</p> <p>-</p>       |     |    |



5. **ALTERNATIVES— IN TERMS OF Regulation 22 sub-regulation 2 (h) of the EIA Regulations, 2010**

**FEASIBLE AND REASONABLE ALTERNATIVES** – The application was originally for a red and white mast as masts of 45 m or higher are usually required to be painted red and white by the CAA for aircraft safety. However in this instance the SACAA did not require a red and white mast due to local circumstances and a third alternative (unpainted (galvanised) mast was added which is now the proposal.

“*alternatives*”, in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to—

- (a) the property on which or location where it is proposed to undertake the activity;
- (b) the type of activity to be undertaken;
- (c) the design or layout of the activity;
- (d) the technology to be used in the activity;
- (e) the operational aspects of the activity; and
- (f) the option of not implementing the activity.

Describe alternatives that are considered in this application. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed. The determination of whether site or activity (including different processes etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

**ACTIVITY POSITION**

Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

List alternative sites, if applicable.

|  | Latitude (S): |         | Longitude (E): |         |
|--|---------------|---------|----------------|---------|
| <b>Alternative:</b>  |               |         |                |         |
| Alternative S1 <sup>1</sup> (preferred or only site alternative) | 26°           | 39.242' | 30°            | 05.947' |
| Alternative S2 (if any)  | 26°           | 39.242' | 30°            | 05.947' |
| Alternative S3 (if any)  | 26°           | 39.242' | 30°            | 05.947' |

**In the case of linear activities:**

<sup>1</sup> “Alternative S..” refer to site alternatives.

**Alternative:**  
Alternative S1 (preferred or only route alternative)

**Latitude (S):**

**Longitude (E):**

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

|   |   |   |   |
|---|---|---|---|
| o | ' | o | ' |
| o | ' | o | ' |
| o | ' | o | ' |

Alternative S2 (if any)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

|   |   |   |   |
|---|---|---|---|
| o | ' | o | ' |
| o | ' | o | ' |
| o | ' | o | ' |

Alternative S3 (if any)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

|   |   |   |   |
|---|---|---|---|
| o | ' | o | ' |
| o | ' | o | ' |
| o | ' | o | ' |

For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 250 meters along the route for each alternative alignment.

**A. PHYSICAL SIZE OF THE ACTIVITY**

Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):

**Alternative:**  
Alternative A1<sup>2</sup> (preferred activity alternative)

**Size of the activity:**

|                   |
|-------------------|
| 144m <sup>2</sup> |
| 144m <sup>2</sup> |
| 144m <sup>2</sup> |

Alternative A2 (if any)  
Alternative A3 (if any)  
or, for linear activities:

**Length of the activity:**

**Alternative:**  
Alternative A1 (preferred activity alternative)  
Alternative A2 (if any)  
Alternative A3 (if any)

|   |
|---|
| m |
| m |
| m |

Indicate the size of the alternative sites or servitudes (within which the above footprints will occur):

**Alternative:**  
Alternative A1 (preferred activity alternative)  
Alternative A2 (if any)  
Alternative A3 (if any)

**Size of the site/servitude:**

|             |
|-------------|
| 423.3176 Ha |
| 423.3176 Ha |
| 423.3176 Ha |

**B. SITE ACCESS – ALT 1, 2 & 3**

Does ready access to the site exist?

|     |    |
|-----|----|
| YES | NO |
| m   |    |

If NO, what is the distance over which a new access road will be built

Describe the type of access road planned:

|   |
|---|
| - |
|---|

<sup>2</sup> "Alternative A.." refer to activity, process, technology or other alternatives.

Include the position of the access road on the site plan and required map, as well as an indication of the road in relation to the site.

**C. SITE OR ROUTE PLAN**

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as Appendix A to this document.

The site or route plans must indicate the following:

- 6.1 the scale of the plan which must be at least a scale of 1:500;
- 6.2 the property boundaries and numbers of all the properties within 50 metres of the site;
- 6.3 the current land use as well as the land use zoning of each of the properties adjoining the site or sites;
- 6.4 the exact position of each element of the application as well as any other structures on the site;
- 6.5 the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, street lights, sewage pipelines, storm water infrastructure and telecommunication infrastructure;
- 6.6 all trees and shrubs taller than 1.8 metres;
- 6.7 walls and fencing including details of the height and construction material;
- 6.8 servitudes indicating the purpose of the servitude;
- 6.9 sensitive environmental elements within 100 metres of the site or sites including (but not limited thereto):
  - rivers;
  - the 1:100 year flood line (where available or where it is required by DWA);
  - ridges;
  - cultural and historical features;
  - areas with indigenous vegetation (even if it is degraded or invested with alien species);
- 6.10 for gentle slopes the 1 metre contour intervals must be indicated on the plan and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the plan; and
- 6.11 the positions from where photographs of the site were taken.

**D. SITE PHOTOGRAPHS**

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under Appendix B to this form. It must be supplemented with additional photographs of relevant features on the site, if applicable.

**E. FACILITY ILLUSTRATION**

A detailed illustration of the activity must be provided at a scale of 1:200 as Appendix C for activities that include structures. The illustrations must be to scale and must represent a realistic image of the planned activity. The illustration must give a representative view of the activity.

**F. ADVANTAGES AND DISADVANTAGES OF THE PROPOSAL AND ALTERNATIVES**

|                    |   |            |           |
|--------------------|---|------------|-----------|
| <b>ADVANTAGES:</b> |   |            |           |
| 1.                 | Will the land use / development have any benefits for society in general? | <b>YES</b> | <b>NO</b> |

|                       |  |     |    |
|-----------------------|--|-----|----|
| 2.                    | Explain:<br>The immediate benefits of the activity to society in general can be summarized as follows: <ul style="list-style-type: none"> <li>• Increased and improved national Cell C coverage footprint enabling users to communicate on the Cell C network where ever they are.</li> <li>• Additional fulfillment of one of government's objectives to ensure the establishment of national communication network grids and services as part of a sustainable economic growth pattern.</li> </ul> |     |    |
|                       | -  |     |    |
|                       | -  |     |    |
| 3.                    | Will the land use / development have any benefits for the local communities where it will be located?  | YES | NO |
| 4.                    | Explain:<br>The motivation and benefits to society in general above apply to the local community directly. It will furthermore ensure that the communication capability and capacity of the local community will keep pace with the ever growing and availability of communication facilities nationwide.  |     |    |
|                       | -  |     |    |
|                       | -  |     |    |
| <b>DISADVANTAGES:</b> |  |     |    |
| 1.                    | Will the land use / development have any disadvantages for society in general?   | YES | NO |
| 2.                    | Explain: The area has a very low population density and the proposed activity will also be located on a road that is not used by many motorists, therefore the possible negative impacts such health concerns and visual impact have no significance for society in general and in the EAP's opinion is not a disadvantage to them.  |     |    |
|                       | -  |     |    |
|                       | -  |     |    |
| 3.                    | Will the land use / development have any disadvantages for the local communities where it will be located?   | YES | NO |
| 4.                    | Explain: The area has a very low population density and the proposed activity will also be located on a road that is not used by many motorists, therefore the possible negative impacts such health concerns and visual impact have a very low significance for local communities and in the EAP's opinion is not a disadvantage to them.   |     |    |
|                       | -  |     |    |
|                       | -  |     |    |

**6 & 7. IMPACT ASSESSMENT– IN TERMS OF Regulation 22 sub-regulation 2 (i) – (j) of the EIA Regulations, 2010**

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2010, and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

**ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES**

List the main issues raised by interested and affected parties.

**Mpumalanga Tourism and Parks Agency commented that the area is situated in a highly significant biodiversity area. This specific area however is not sensitive and the activity will therefore not have a significant impact on the biodiversity.**

Response from the practitioner to the issues raised by the interested and affected parties (A full response must be given in the Comments and Response Report that must be attached to this report as Annexure E):

-

## **IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL, DECOMMISSIONING AND CLOSURE PHASES AS WELL AS PROPOSED MANAGEMENT OF IDENTIFIED IMPACTS AND PROPOSED MITIGATION MEASURES**

List the potential direct, indirect and cumulative property/activity/design/technology/operational alternative related impacts (as appropriate) that are likely to occur as a result of the planning and design phase, construction phase, operational phase, decommissioning and closure phase, including impacts relating to the choice of site/activity/technology alternatives as well as the mitigation measures that may eliminate or reduce the potential impacts listed.

### **IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN PHASE**

List the potential site alternative related impacts (as appropriate) that are likely to occur as a result of the planning and design phase, including impacts relating to the choice of site alternatives.

#### **Alternative S1:**

##### ***Direct impacts:***

##### **PHYSICAL:**

1. **Safety aspects:** The following safety aspects were taken into consideration in planning the base station:
  - **Position & height in terms of official airports, helipads and air traffic routes as determined by SACAA. Mitigated in terms of the SACAA prescribing day & night markings.**
  - **General installation safety for the general public, owners, technicians etc.: Engineering services incorporated in the design of the mast, foundations and other design and construction safety aspects of the base station;**
  - **Base station to be surrounded with a 2.4m high galvanised steel palisade fence to prevent unauthorised access to the base station area and mast.**
2. **Visual impact:** Evaluation of structure type, height & position, taking into consideration the purpose and objective of the planned activity in terms of mobile telecommunication coverage area and quality of coverage. New base station with 45m lattice telecommunication mast painted red and white selected as appropriate based on:
  - **Investigation of sharing existing infrastructure:**
    - The specific site requirements needed by Cell C are:**
      - **Physical space for two sets of antennae, two microwave dishes and 14 feeder cables;**
      - **Wind load capacity for above mentioned equipment;**
      - **Minimum height of 45m; and**
      - **Space and load capacity for future upgrading or advances in technology.**
    - No existing facility or infrastructure within range that can fulfil the required capacity in terms of the coverage objectives.**
  - **45m height required to achieve maximum coverage objectives in the specific environment and therefore reducing the need for additional base stations to achieve/maintain the same coverage within the coverage target area;**

- Facility sharing capacity incorporated in design to make provision for and promote the sharing of infrastructure in order to prevent the proliferation of masts;
- Lattice type structure most suitable to fulfil the coverage objectives of the base station due to the coverage range required and the high flexibility of utilising the mast height for varying antennae installation configurations due to the specific characteristics of the area;
- Lattice design mast painted red & white provides maximum mitigation with maximum visibility from the air to prevent aircraft accidents (day & night markings prescribed by the SACAA for masts above 45m height). Red & white lattice mast provides low mitigation of the visual impact on the short range viewpoints from the ground. Red & white lattice mast provides high mitigation of the medium to long range visual impact from the ground due to the blending capability of the more transparent type mast against the sky background.
- 2.4m high galvanised steel palisade fence to provide maximum mitigation of the short to long range visual impact of the telecommunication base station due to the blending capability with the surrounding environment and against the sky background.

#### **BIOLOGICAL:**

No expected or proven biological impacts will result from the proposed development. The base station is situated in an area that is already disturbed by human activity. No endangered plants or tall trees will need to be removed from the 144m<sup>2</sup> footprint site.

#### **SOCIO-ECONOMIC:**

Site position has been determined based on the requirement to deliver mobile telecommunication signal coverage and availability within the target area enabling the residents, business entities and the general public within the area to select and maintain quality telecommunication services and connectivity via the Cell C mobile telecommunication network. Cell C (Pty) Ltd is obliged to fulfil their licence terms and conditions, as determined by government, in providing mobile telephony and related services on a reliable national network grid.

#### *Indirect impacts:*

The property coverage and development potential has been taken into consideration in selecting the position of the activity. The exact position of the activity on the property was determined, in consultation with the property owner, to minimise the possible impact on existing operations and future development plans or phases. Therefore the commercial value of the property is maintained.

Electricity will be supplied from the existing electricity grid. Minimum usage due to economical and energy efficient design.

#### *Cumulative impacts:*

No cumulative impacts relating to the design and planning phases are applicable.

#### **Alternative S2**

#### *Direct impacts:*

#### **PHYSICAL:**

1. **Safety aspects:** The following safety aspects were taken into consideration in planning the base station:

- Position & height in terms of official airports, helipads and air traffic

routes as determined by SACAA. Mitigated in terms of the SACAA prescribing day & night markings.

- General installation safety for the general public, owners, technicians etc.: Engineering services incorporated in the design of the mast, foundations and other design and construction safety aspects of the base station;
  - Base station to be surrounded with a 2.4m high galvanised steel palisade fence to prevent unauthorised access to the base station area and mast.
2. Visual impact: Evaluation of structure type, height & position, taking into consideration the purpose and objective of the planned activity in terms of mobile telecommunication coverage area and quality of coverage. New base station with 45m monopole telecommunication mast painted red and white selected as appropriate based on:

- Investigation of sharing existing infrastructure:

The specific site requirements needed by Cell C are:

- Physical space for two sets of antennae, two microwave dishes and 14 feeder cables;
- Wind load capacity for above mentioned equipment;
- Minimum height of 45m; and
- Space and load capacity for future upgrading or advances in technology.

No existing facility or infrastructure within range that can fulfil the required capacity in terms of the coverage objectives.

- 45m height required to achieve maximum coverage objectives in the specific environment and therefore reducing the need for additional base stations to achieve/maintain the same coverage within the coverage target area;
- Facility sharing capacity incorporated in design to make provision for and promote the sharing of infrastructure in order to prevent the proliferation of masts;
- Monopole type structure suitable to fulfil the coverage objectives of the base station due to the coverage range required and the flexibility of utilising the mast height for varying antennae installation configurations due to the specific characteristics of the area;
- Monopole design mast painted red & white provides maximum mitigation with maximum visibility from the air to prevent aircraft accidents (day & night markings prescribed by the SACAA for masts above 45m height). Red & white monopole mast provides low mitigation of the visual impact on the short range viewpoints from the ground, due to the red and white colour and the solid type mast. Although it will be visible from a long distance, the red & white monopole mast provides medium mitigation of the medium to long range visual impact from the ground due to the less technical appearance of the mast.
- 2.4m high galvanised steel palisade fence to provide maximum mitigation of the short to long range visual impact of the telecommunication base station due to the blending capability with the surrounding environment and against the sky background.

#### **BIOLOGICAL:**

No expected or proven biological impacts will result from the proposed development. The base station is situated in an area that is already disturbed by human activity. No endangered plants or tall trees will need to be removed from the 144m<sup>2</sup> footprint site.

#### **SOCIO-ECONOMIC:**

Site position has been determined based on the requirement to deliver mobile telecommunication signal coverage and availability within the target

area enabling the residents, business entities and the general public within the area to select and maintain quality telecommunication services and connectivity via the Cell C mobile telecommunication network. Cell C (Pty) Ltd is obliged to fulfil their licence terms and conditions, as determined by government, in providing mobile telephony and related services on a reliable national network grid.

**Indirect impacts:**

The property coverage and development potential has been taken into consideration in selecting the position of the activity. The exact position of the activity on the property was determined, in consultation with the property owner, to minimise the possible impact on existing operations and future development plans or phases. Therefore the commercial value of the property is maintained.

Electricity will be supplied from the existing electricity grid. Minimum usage due to economical and energy efficient design.

**Cumulative impacts:**

No cumulative impacts relating to the design and planning phases are applicable.

**Alternative S3**

**Direct impacts:**

**PHYSICAL:**

1. **Safety aspects:** The following safety aspects were taken into consideration in planning the base station:
  - Position & height in terms of official airports, helipads and air traffic routes as determined by SACAA. Mitigated in terms of the SACAA prescribing night markings.
  - General installation safety for the general public, owners, technicians etc.: Engineering services incorporated in the design of the mast, foundations and other design and construction safety aspects of the base station;
  - Base station to be surrounded with a 2.4m high galvanised steel palisade fence to prevent unauthorised access to the base station area and mast.
2. **Visual impact:** Evaluation of structure type, height & position, taking into consideration the purpose and objective of the planned activity in terms of mobile telecommunication coverage area and quality of coverage. New base station with 45m unpainted (galvanised) lattice telecommunication mast selected as most appropriate based on:
  - Investigation of sharing existing infrastructure:

The specific site requirements needed by Cell C are:

    - Physical space for two sets of antennae, two microwave dishes and 14 feeder cables;
    - Wind load capacity for above mentioned equipment;
    - Minimum height of 45m; and
    - Space and load capacity for future upgrading or advances in technology.

No existing facility or infrastructure within range that can fulfil the required capacity in terms of the coverage objectives.

- 45m height required to achieve maximum coverage objectives in the specific environment and therefore reducing the need for additional base stations to achieve/maintain the same coverage within the coverage target area;
- Facility sharing capacity incorporated in design to make provision for and promote the sharing of infrastructure in order to prevent the proliferation of masts;



- Lattice type structure most suitable to fulfil the coverage objectives of the base station due to the coverage range required and the high flexibility of utilising the mast height for varying antennae installation configurations due to the specific characteristics of the area;
- Unpainted (galvanised) lattice design mast provides maximum mitigation of the visual impact on the short range viewpoints due to being transparent and the unpainted colour blending with the surrounding vegetation. Unpainted (galvanised) lattice design mast provides maximum mitigation of the medium to long range visual impact due to the blending capability of the more transparent type mast and colour against the sky background.
- 2.4m high galvanised steel palisade fence to provide maximum mitigation of the short to long range visual impact of the telecommunication base station due to the blending capability with the surrounding environment and against the sky background.

**BIOLOGICAL:**

No expected or proven biological impacts will result from the proposed development. The base station is situated in an area that is already disturbed by human activity. No endangered plants or tall trees will need to be removed from the 144m<sup>2</sup> footprint site.

**SOCIO-ECONOMIC:**

Site position has been determined based on the requirement to deliver mobile telecommunication signal coverage and availability within the target area enabling the residents, business entities and the general public within the area to select and maintain quality telecommunication services and connectivity via the Cell C mobile telecommunication network. Cell C (Pty) Ltd is obliged to fulfil their licence terms and conditions, as determined by government, in providing mobile telephony and related services on a reliable national network grid.

*Indirect impacts:*

The property coverage and development potential has been taken into consideration in selecting the position of the activity. The exact position of the activity on the property was determined, in consultation with the property owner, to minimise the possible impact on existing operations and future development plans or phases. Therefore the commercial value of the property is maintained.

Electricity will be supplied from the existing electricity grid. Minimum usage due to economical and energy efficient design.

*Cumulative impacts:*

No cumulative impacts relating to the design and planning phases are applicable.

**No-go alternative (compulsory)**

*Direct impacts:*

- Status quo: Unacceptable mobile telecommunication coverage and quality standards on the Cell C (Pty) Ltd network within the target area;
- Status quo: Limitations in terms of mobile telecommunication network choice for residents, businesses and the general public;
- No visual impact on the base station, specifically the mast structure, on the short, medium and long distance visual impact.

*Indirect impacts:*

- Non performance in terms of the Cell C (Pty) Ltd license conditions as prescribed by government.

- Potential loss of income for businesses and individuals in the area currently contracted on the Cell C (Pty) Ltd network as well as potential losses on commercial opportunities, clients etc. for the network operator.
- Cumulative impacts:**
- Potential negative economical impact on the mobile telecommunication coverage target area.
  - Cell C (Pty) Ltd not fulfilling the applicable required license conditions.
  - Incomplete Cell C (Pty) Ltd mobile telecommunication network.

Indicate mitigation measures that may eliminate or reduce the potential impacts listed above:

| Alternative S1  | Alternative S2   | Alternative S3  |
|---|--|---|
| 1. Prescribed SACAA day & night markings.<br>2. Transparent lattice type mast painted red and white.<br>3. Galvanised steel palisade fence enclosure.<br>4. Provision for infrastructure sharing. | 1. Prescribed SACAA day & night markings.<br>2. Monopole type mast less technical look painted red and white.<br>3. Galvanised steel palisade fence enclosure.<br>4. Provision for infrastructure sharing. | 1. Prescribed SACAA night markings.<br>2. Transparent unpainted (galvanised) lattice mast.<br>3. Galvanised steel palisade fence enclosure.<br>4. Provision for infrastructure sharing. |

List the potential activity/technology alternative related impacts (as appropriate) that are likely to occur as a result of the planning and design phase:

**Alternative A1**

**Direct impacts:**

There are no activity or technology alternatives for the establishment of mobile telecommunication base stations.

**Indirect impacts:**

-

**Cumulative impacts:**

-

**Alternative A2**

**Direct impacts:**

There are no activity or technology alternatives for the establishment of mobile telecommunication base stations.

**Indirect impacts:**

-

**Cumulative impacts:**

-

**Alternative A3**

**Direct impacts:**

There are no activity or technology alternatives for the establishment of mobile telecommunication base stations.

**Indirect impacts:**

-

**Cumulative impacts:**

-

**No-go alternative (compulsory)**

**Direct impacts:**

Status quo

**Indirect impacts:**

Status quo

**Cumulative impacts:  
Status quo**

Indicate mitigation measures that may eliminate or reduce the potential impacts listed above:

| <b>Alternative A1:</b>  | <b>Alternative A2:</b>  | <b>Alternative A3:</b>  |
|---|---|---|
| There are no activity or technology alternatives for the establishment of mobile telecommunication base stations. | There are no activity or technology alternatives for the establishment of mobile telecommunication base stations. | There are no activity or technology alternatives for the establishment of mobile telecommunication base stations. |

**IMPACTS THAT MAY RESULT FROM THE CONSTRUCTION PHASE**

List the potential site alternative related impacts (as appropriate) that are likely to occur as a result of the construction phase:

**Alternative S1**

**Direct impacts:**

Construction of the telecommunication base station will extend over a period of approximately 6 weeks only;

1. Increased activity and traffic at the property including material delivery and work team movements.
2. Minimum disruption of operations within the vicinity as the base station is located in an area with low activity.
3. Increased workplace accident risk due to the mere occurrence of the activity.
4. Creation of dust and disturbance of specific soil layers due to earthwork activities.
5. Erosion and contamination of topsoil.
6. Generation of standard building rubble & the transportation thereof to the appropriate licensed landfill site.
7. Generation of construction noise created by earthwork machinery and other applicable tooling used for the establishment of the base station.

**Indirect impacts:**

Additional waste at appropriately certified dumping site.

**Cumulative impacts:**

Construction activity.

**Alternative S2**

**Direct impacts:**

Construction of the telecommunication base station will extend over a period of approximately 6 weeks only;

Increased activity and traffic at the property including material delivery and work team movements.

1. Minimum disruption of operations within the vicinity as the base station is located in an area with low activity.
2. Increased workplace accident risk due to the mere occurrence of the activity.
3. Creation of dust and disturbance of specific soil layers due to earthwork activities.
4. Erosion and contamination of topsoil.
5. Generation of standard building rubble & the transportation thereof to the appropriate licensed landfill site.
6. Generation of construction noise created by earthwork machinery and other applicable tooling used for the establishment of the base station.

**Indirect impacts:**

Additional waste at appropriately certified dumping site.

**Cumulative impacts:**

Construction activity.

**Alternative S3**

**Direct impacts:**

Construction of the telecommunication base station will extend over a period of approximately 6 weeks only;  
Increased activity and traffic at the property including material delivery and work team movements.

1. Minimum disruption of operations within the vicinity as the base station is located in an area with low activity.
2. Increased workplace accident risk due to the mere occurrence of the activity.
3. Creation of dust and disturbance of specific soil layers due to earthwork activities.
4. Erosion and contamination of topsoil.
5. Generation of standard building rubble & the transportation thereof to the appropriate licensed landfill site.
6. Generation of construction noise created by earthwork machinery and other applicable tooling used for the establishment of the base station.

**Indirect impacts:**

Additional waste at appropriately certified dumping site.

**Cumulative impacts:**

Construction activity.

**No-go alternative (compulsory)**

**Direct impacts:**

Status quo

**Indirect impacts:**

Status quo

**Cumulative impacts:**

Status quo

Indicate mitigation measures that may eliminate or reduce the potential impacts listed above:

| Alternative S1   | Alternative S2   | Alternative S3   |
|--|--|--|
| <p>1. &amp;2. Specific arrangements with property owner to minimise disruption of normal activities.</p> <p>3. Implement &amp; maintain specific construction site safety measures in accordance with the applicable clauses of the OHS Act.</p> <p>4. Implement specific construction measures to prevent dust e.g. regular sprinkling bare areas with water as needed.</p> | <p>1. &amp;2. Specific arrangements with property owner to minimise disruption of normal activities.</p> <p>3. Implement &amp; maintain specific construction site safety measures in accordance with the applicable clauses of the OHS Act.</p> <p>4. Implement specific construction measures to prevent dust e.g. regular sprinkling bare areas with water as needed.</p> | <p>1. &amp;2. Specific arrangements with property owner to minimise disruption of normal activities.</p> <p>3. Implement &amp; maintain specific construction site safety measures in accordance with the applicable clauses of the OHS Act.</p> <p>4. Implement specific construction measures to prevent dust e.g. regular sprinkling bare areas with water as needed.</p> |

|   |   |   |
|---|---|---|
| <p>5. Prevent and minimise construction waste generation. Transport construction waste on a regular basis to the appropriate landfill site.</p> <p>6. Store topsoil separately for appropriate landscaping distribution on completion of construction. Prevent pollution and contamination and erosion of topsoil by covering it with water proof covering when experiencing rainy or windy conditions. Service construction vehicles and machinery before construction to ensure that no oil or fuel will leak onto soil.</p> <p>7. Minimise noise generation to absolute minimum. Service vehicles and machinery before start of construction to ensure proper working condition. Construction activities should not be allowed outside normal working hours or on Sundays and Public Holidays.</p> | <p>5. Prevent and minimise construction waste generation. Transport construction waste on a regular basis to the appropriate landfill site.</p> <p>6. Store topsoil separately for appropriate landscaping distribution on completion of construction. Prevent pollution and contamination and erosion of topsoil by covering it with water proof covering when experiencing rainy or windy conditions. Service construction vehicles and machinery before construction to ensure that no oil or fuel will leak onto soil.</p> <p>7. Minimise noise generation to absolute minimum. Service vehicles and machinery before start of construction to ensure proper working condition. Construction activities should not be allowed outside normal working hours or on Sundays and Public Holidays.</p> | <p>5. Prevent and minimise construction waste generation. Transport construction waste on a regular basis to the appropriate landfill site.</p> <p>6. Store topsoil separately for appropriate landscaping distribution on completion of construction. Prevent pollution and contamination and erosion of topsoil by covering it with water proof covering when experiencing rainy or windy conditions. Service construction vehicles and machinery before construction to ensure that no oil or fuel will leak onto soil.</p> <p>7. Minimise noise generation to absolute minimum. Service vehicles and machinery before start of construction to ensure proper working condition. Construction activities should not be allowed outside normal working hours or on Sundays and Public Holidays.</p> |
|---|---|---|

List the potential activity/technology alternative related impacts (as appropriate) that are likely to occur as a result of the construction phase:

**Alternative A1**

**Direct impacts:**  
 There are no activity or technology alternatives for the establishment of mobile telecommunication base stations.

**Indirect impacts:**  
 -

**Cumulative impacts:**  
 -

**Alternative A2**

**Direct impacts:**  
 There are no activity or technology alternatives for the establishment of mobile telecommunication base stations.

*Indirect impacts:*  
-  
*Cumulative impacts:*  
-

**Alternative A3**  
*Direct impacts:*  
There are no activity or technology alternatives for the establishment of mobile telecommunication base stations.  
*Indirect impacts:*  
-  
*Cumulative impacts:*  
-

**No-go alternative (compulsory)**  
*Direct impacts:*  
Status quo.  
*Indirect impacts:*  
Status quo.  
*Cumulative impacts:*  
Status quo.

Indicate mitigation measures that may eliminate or reduce the potential impacts listed above:

| <b>Alternative A1:</b>  | <b>Alternative A2:</b>  | <b>Alternative A3:</b>  |
|---|---|---|
| There are no activity or technology alternatives for the establishment of mobile telecommunication base stations. | There are no activity or technology alternatives for the establishment of mobile telecommunication base stations. | There are no activity or technology alternatives for the establishment of mobile telecommunication base stations. |

**IMPACTS THAT MAY RESULT FROM THE OPERATIONAL PHASE**

List the potential site alternative related impacts (as appropriate) that are likely to occur as a result of the operational phase:

**Alternative S1**  
*Direct impacts:*  

1. Increased electricity consumption on the existing supply grid.
2. Noise generation by air conditioning units and by backup generator if electricity supply fails.
3. Non-ionised electromagnetic fields emissions on allocated frequency.
4. Increase in potential air traffic obstacles.
5. Visual impact of the 45m lattice mast painted red and white on short, medium and long distance observation.
6. Increased mobile telecommunication network capacity.

*Indirect impacts:*  

1. Minute increase in electricity generation base material usage.
2. Increased use of quality telecommunication services with the appropriate revenue increase and potential increased economic activity and financial returns.

*Cumulative impacts:*  

1. Increased telecommunication infrastructure availability and quality.

### Alternative S2

#### *Direct impacts:*

1. Increased electricity consumption on the existing supply grid.
2. Noise generation by air conditioning units and by backup generator if electricity supply fails.
3. Non-ionised electromagnetic fields emissions on allocated frequency.
4. Increase in potential air traffic obstacles.
5. Visual impact of the 45m monopole mast painted red and white on short, medium and long distance observation.
6. Increased mobile telecommunication network capacity.

#### *Indirect impacts:*

1. Minute increase in electricity generation base material usage.
2. Increased use of quality telecommunication services with the appropriate revenue increase and potential increased economic activity and financial returns.

#### *Cumulative impacts:*

1. Increased telecommunication infrastructure availability and quality.

### Alternative S3

#### *Direct impacts:*

1. Increased electricity consumption on the existing supply grid.
2. Noise generation by air conditioning units and by backup generator if electricity supply fails.
3. Non-ionised electromagnetic fields emissions on allocated frequency.
4. Increase in potential air traffic obstacles.
5. Visual impact of the 45m lattice unpainted (galvanised) mast on short, medium and long distance observation.
6. Increased mobile telecommunication network capacity.

#### *Indirect impacts:*

1. Minute increase in electricity generation base material usage.
2. Increased use of quality telecommunication services with the appropriate revenue increase and potential increased economic activity and financial returns.

#### *Cumulative impacts:*

1. Increased telecommunication infrastructure availability and quality.

### No-go alternative (compulsory)

#### *Direct impacts:*

Status quo.

#### *Indirect impacts:*

Status quo.

#### *Cumulative impacts:*

Status quo.

Indicate mitigation measures that may eliminate or reduce the potential impacts listed above:

| Alternative S1  | Alternative S2  | Alternative S3  |
|---|---|---|
| 1. Economical electricity consumption design.                             | 1. Economical electricity consumption design.                             | 1. Economical electricity consumption design.                             |
| 2. Scheduled preventative maintenance program implementation and control. | 2. Scheduled preventative maintenance program implementation and control. | 2. Scheduled preventative maintenance program implementation and control. |
| 3. Maintain level of non-ionised  | 3. Maintain level of non-ionised  | 3. Maintain level of non-ionised  |

|   |  |  |
|---|--|--|
| <p>electromagnetic field emissions within International Commission on Non-Ionising Radiation Protection (ICNIRP) &amp; World Health Organisation (WHO) guidelines.</p> <p>4. Installation/application and maintenance of day &amp; night markings as prescribed by SACAA to reduce potential air traffic safety impact. Civil Aviation Association approval obtained (Refer to Appendix G3).</p> <p>5. Lattice design mast painted red &amp; white provides maximum mitigation with maximum visibility from the air to prevent aircraft accidents (day &amp; night markings prescribed by the SACAA for masts above 45m height). Red &amp; white lattice mast provides low mitigation of the visual impact on the short range viewpoints from the ground. Red &amp; white lattice mast provides high mitigation of the medium to long range visual impact from the ground due to the blending capability of the more transparent type mast against the sky background.</p> <p>6. 2.4m high galvanised steel palisade fence to provide maximum mitigation of the short to long range visual impact of the telecommunication base station due to the blending capability with the surrounding environment and</p> | <p>electromagnetic field emissions within International Commission on Non-Ionising Radiation Protection (ICNIRP) &amp; World Health Organisation (WHO) guidelines.</p> <p>4. Installation/application and maintenance of day &amp; night markings as prescribed by SACAA to reduce potential air traffic safety impact. Civil Aviation Association approval obtained (Refer to Appendix G3).</p> <p>5. Monopole design mast painted red &amp; white provides maximum mitigation with maximum visibility from the air to prevent aircraft accidents (day &amp; night markings prescribed by the SACAA for masts above 45m height). Red &amp; white monopole mast provides low mitigation of the visual impact on the short range viewpoints from the ground. Red &amp; white monopole mast provides medium mitigation of the medium to long range visual impact from the ground due to the less technical appearance of a monopole mast.</p> <p>6. 2.4m high galvanised steel palisade fence to provide maximum mitigation of the short to long range visual impact of the telecommunication base station due to the blending capability with the surrounding environment and against the sky background.</p> | <p>electromagnetic field emissions within International Commission on Non-Ionising Radiation Protection (ICNIRP) &amp; World Health Organisation (WHO) guidelines.</p> <p>4. Unpainted (galvanised) lattice design mast provides maximum mitigation of the visual impact on the short range viewpoints due to being transparent and the unpainted colour blending with the surrounding vegetation. Unpainted (galvanised) lattice design mast provides maximum mitigation of the medium to long range visual impact due to the blending capability of the more transparent type mast and colour against the sky background.</p> <p>5. 2.4m high galvanised steel palisade fence to provide maximum mitigation of the short to long range visual impact of the telecommunication base station due to the blending capability with the surrounding environment and against the sky background.</p> |
|---|--|--|



|                             |  |  |
|-----------------------------|--|--|
| against the sky background. |  |  |
|-----------------------------|--|--|

List the potential activity/technology alternative related impacts (as appropriate) that are likely to occur as a result of the operational phase:

**Alternative A1**

**Direct impacts:**  
There are no activity or technology alternatives for the establishment of mobile telecommunication base stations.  
**Indirect impacts:**  
-  
**Cumulative impacts:**  
-

**Alternative A2**

**Direct impacts:**  
There are no activity or technology alternatives for the establishment of mobile telecommunication base stations.  
**Indirect impacts:**  
-  
**Cumulative impacts:**  
-

**Alternative A3**

**Direct impacts:**  
There are no activity or technology alternatives for the establishment of mobile telecommunication base stations.  
**Indirect impacts:**  
-  
**Cumulative impacts:**  
-

**No-go alternative (compulsory)**

**Direct impacts:**  
Status quo.  
**Indirect impacts:**  
Status quo.  
**Cumulative impacts:**  
Status quo.

Indicate mitigation measures that may eliminate or reduce the potential impacts listed above:

| <b>Alternative A1</b>   | <b>Alternative A2</b>   | <b>Alternative A3</b>   |
|---|---|---|
| There are no activity or technology alternatives for the establishment of mobile telecommunication base stations. | There are no activity or technology alternatives for the establishment of mobile telecommunication base stations. | There are no activity or technology alternatives for the establishment of mobile telecommunication base stations. |

**IMPACTS THAT MAY RESULT FROM THE DECOMMISSIONING AND CLOSURE PHASE**

List the potential site alternative related impacts (as appropriate) that are likely to occur as a result of the decommissioning or closure phase:

**Alternative S1**

**Direct impacts:**  
1. Establishment of new mobile telecommunication infrastructure elsewhere

to fill the network coverage gap caused by decommissioning.

2. Creation of waste due to decommissioning.
3. Disturbed area.

**Indirect impacts:**  
Potential waste of resources.

**Cumulative impacts:**  
None

**Alternative S2**

**Direct impacts:**

1. Establishment of new mobile telecommunication infrastructure elsewhere to fill the network coverage gap caused by decommissioning.
2. Creation of waste due to decommissioning.
3. Disturbed area.

**Indirect impacts:**  
Potential waste of resources.

**Cumulative impacts:**  
None

**Alternative S3**

**Direct impacts:**

1. Establishment of new mobile telecommunication infrastructure elsewhere to fill the network coverage gap caused by decommissioning.
2. Creation of waste due to decommissioning.
3. Disturbed area.

**Indirect impacts:**  
Potential waste of resources.

**Cumulative impacts:**  
None

**No-go alternative (compulsory)**

**Direct impacts:**  
Status quo.

**Indirect impacts:**  
Status quo.

**Cumulative impacts:**  
Status quo.

Indicate mitigation measures that may eliminate or reduce the potential impacts listed above:

| Alternative S1   | Alternative S2   | Alternative S3   |
|--|--|--|
| <ol style="list-style-type: none"> <li>1. Ensure planned base station fulfils planned and required network parameters i.e. prevent decommissioning.</li> <li>2. If decommissioning is required the site area must be rehabilitated to its original state.</li> </ol> | <ol style="list-style-type: none"> <li>1. Ensure planned base station fulfils planned and required network parameters i.e. prevent decommissioning.</li> <li>2. If decommissioning is required the site area must be rehabilitated to its original state.</li> </ol> | <ol style="list-style-type: none"> <li>1. Ensure planned base station fulfils planned and required network parameters i.e. prevent decommissioning.</li> <li>2. If decommissioning is required the site area must be rehabilitated to its original state.</li> </ol> |

List the potential activity/technology alternative related impacts (as appropriate) that are likely to occur as a result of the decommissioning and closure phase:

**Alternative A1**

There are no activity or technology alternatives for the establishment of mobile telecommunication base stations.

**Direct impacts:**  
-  
**Indirect impacts:**  
-  
**Cumulative impacts:**  
-

**Alternative A2**  
There are no activity or technology alternatives for the establishment of mobile telecommunication base stations.  
**Direct impacts:**  
-  
**Indirect impacts:**  
-  
**Cumulative impacts:**  
-

**Alternative A3**  
There are no activity or technology alternatives for the establishment of mobile telecommunication base stations.  
**Direct impacts:**  
-  
**Indirect impacts:**  
-  
**Cumulative impacts:**  
-

**No-go alternative (compulsory)**  
**Direct impacts:**  
Status quo.  
**Indirect impacts:**  
Status quo.  
**Cumulative impacts:**  
Status quo.

Indicate mitigation measures that may eliminate or reduce the potential impacts listed above:

| Alternative A1  | Alternative A2  | Alternative A3  |
|---|---|---|
| There are no activity or technology alternatives for the establishment of mobile telecommunication base stations. | There are no activity or technology alternatives for the establishment of mobile telecommunication base stations. | There are no activity or technology alternatives for the establishment of mobile telecommunication base stations. |

**ENVIRONMENTAL IMPACT STATEMENT**

Taking the assessment of potential impacts into account, please provide an environmental impact statement that summarises the impact that the proposed activity and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account, with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

**Alternative 1 (Not preferred)**  
The positive impact of the proposed activity will, taking into consideration the implementation of mitigating measures to minimise the negative impacts on the environment, have a positive overall impact.  
**Physical impacts:**  
1. The negative impacts during the construction phase, as indicated earlier in



the assessment report, are temporary and will not have a long term effect on the proposed development or immediate area. These impacts will last for a maximum of approximately 6 weeks only.

2. The planning & design of the telecommunication base station is considerate of operational and public demand needs and is done on the principle of minimising any negative impacts on the receiving environment.
3. The permanent visual impact of the lattice mast painted red and white is the highest contributing negative impact of the proposed activity on the receiving environment. Lattice design mast painted red & white provides maximum mitigation with maximum visibility from the air to prevent aircraft accidents (day & night markings prescribed by the SACAA for masts above 45m height). Red & white lattice mast provides low mitigation of the visual impact on the short range viewpoints from the ground. Red & white lattice mast provides high mitigation of the medium to long range visual impact from the ground due to the blending capability of the more transparent type mast against the sky background.
4. 2.4m high galvanised steel palisade fence to provide maximum mitigation of the short to long range visual impact of the telecommunication base station due to the blending capability with the surrounding environment and against the sky background.
5. The site is designed for use by additional telecommunication service providers. This mitigation measure will possibly prevent the establishment of additional base stations by other operators within the immediate area.

**Biological impacts:**

6. No expected or proven biological impacts will result from the proposed development. The base station is situated in an area that is already disturbed by human activity. No endangered plants or tall trees will need to be removed from the 144m<sup>2</sup> footprint site.

**Socio-economic impacts:**

The local electricity supply grid can accommodate the additional load required by the base station. The base station design requires a 3-phase electricity supply at a maximum demand of 80A.

Although the type of mast is preferred, the colour (red & white) is not preferred as the SACAA did not require a red and white mast for aircraft safety and the red and white colour has a high visual impact.

**Alternative 2 (Not preferred)**

The positive impact of the proposed activity will, taking into consideration the implementation of mitigating measures to minimise the negative impacts on the environment, have a positive overall impact.

**Physical impacts:**

1. The negative impacts during the construction phase, as indicated earlier in the assessment report, are temporary and will not have a long term effect on the proposed development or immediate area. These impacts will last for a maximum of approximately 6 weeks only.
2. The planning & design of the telecommunication base station is considerate of operational and public demand needs and is done on the principle of minimising any negative impacts on the receiving environment.
3. The permanent visual impact of the monopole mast painted red and white is the highest contributing negative impact of the proposed activity on the receiving environment. Monopole design mast painted red & white provides maximum mitigation with maximum visibility from the air to prevent aircraft accidents (day & night markings prescribed by the SACAA for masts above

45m height). Red & white monopole mast provides low mitigation of the visual impact on the short range viewpoints from the ground. Red & white monopole mast provides medium mitigation of the medium to long range visual impact from the ground due to the less technical appearance of the mast design.

4. 2.4m high galvanised steel palisade fence to provide maximum mitigation of the short to long range visual impact of the telecommunication base station due to the blending capability with the surrounding environment and against the sky background.
5. The site is designed for use by additional telecommunication service providers. This mitigation measure will possibly prevent the establishment of additional base stations by other operators within the immediate area.

**Biological impacts:**

6. No expected or proven biological impacts will result from the proposed development. The base station is situated in an area that is already disturbed by human activity. No endangered plants or tall trees will need to be removed from the 144m<sup>2</sup> footprint site.

**Socio-economic impacts:**

7. The local electricity supply grid can accommodate the additional load required by the base station. The base station design requires a 3-phase electricity supply at a maximum demand of 80A.

The type of mast and the colour (red & white) is not preferred as the SACAA did not require a red and white mast for aircraft safety and the red and white colour and monopole type mast have a high visual impact.

**Alternative 3 (preferred alternative)**

The positive impact of the proposed activity will, taking into consideration the implementation of mitigating measures to minimise the negative impacts on the environment, have a positive overall impact.

**Physical impacts:**

1. The negative impacts during the construction phase, as indicated earlier in the assessment report, are temporary and will not have a long term effect on the proposed development or immediate area. These impacts will last for a maximum of approximately 6 weeks only.
2. The planning & design of the telecommunication base station is considerate of operational and public demand needs and is done on the principle of minimising any negative impacts on the receiving environment.
3. The permanent visual impact of the unpainted (galvanised) lattice mast is the highest contributing negative impact of the proposed activity on the receiving environment. The unpainted (galvanised) lattice design mast provides maximum mitigation of the visual impact on the short to long range viewpoints due to the blending capability of the transparent type mast and unpainted colour with the surrounding vegetation and against the sky background.
4. 2.4m high galvanised steel palisade fence to provide maximum mitigation of the short to long range visual impact of the telecommunication base station due to the blending capability with the surrounding environment and against the sky background.
5. The site is designed for use by additional telecommunication service providers. This mitigation measure will possibly prevent the establishment of additional base stations by other operators within the immediate area.

**Biological impacts:**

6. No expected or proven biological impacts will result from the proposed development. The base station is situated in an area that is already disturbed by human activity. No endangered plants or tall trees will need to be removed from the 144m<sup>2</sup> footprint site.

**Socio-economic impacts:**

7. The local electricity supply grid can accommodate the additional load required by the base station. The base station design requires a 3-phase electricity supply at a maximum demand of 80A.

8. ANY INPUTS AND RECOMMENDATIONS MADE BY SPECIALISTS TO THE EXTENT THAT MAY BE NECESSARY – IN TERMS OF *Regulation 22 sub-regulation 2 (k) of the EIA Regulations, 2010* - Not in the scope of this application
9. THE EMPR IS ATTACHED AS APPENDIX F - IN TERMS OF *Regulation 22 sub-regulation 2 (l) of the EIA Regulations, 2010*
10. ASSUMPTIONS, UNCERTAINTIES AND GAPS IN KNOWLEDGE – IN TERMS OF *Regulation 22 sub-regulation 2 (m) of the EIA Regulations, 2010*

The nature of an impact study is always based on predicting the impacts of a proposed activity / development based on knowledge that can be substantiated and where there are gaps in knowledge, there are uncertainties and assumptions are also made.

There are no significant gaps in knowledge in this impact study. The only uncertainty due to a gap in knowledge in this impact study includes the health effects of non-ionised electromagnetic fields with power density < 10W/m<sup>2</sup> emitted from telecommunication antennae, but not the listed activity i.e. the mast. The EAP is not aware of any authenticated studies existing currently and therefore we refer to the Department of Health Guidelines based on the International Commission on Non-Ionising Radiation Protection (ICNIRP) and the World Health Organisation (WHO) guidelines. According to these guidelines the non-ionised electromagnetic fields emitted by antennae mounted on telecommunication masts are well below the recommended level and is therefore improbable to have harmful effects on the health of human beings.

The information in this report is sufficient for the purposes of providing the department with sufficient information to make an informed decision to grant approval for the mast or not.

11. A REASONED OPINION AS TO WHETHER THE ACTIVITY SHOULD OR SHOULD NOT BE AUTHORISED, AND IF THE OPINION IS THAT IT SHOULD BE AUTHORISED, ANY CONDITIONS THAT SHOULD BE MADE IN RESPECT OF THAT AUTHORISATION – IN TERMS OF *Regulation 22 sub-regulation 2 (n) of the EIA Regulations, 2010*

The Environmental Assessment Practitioner is of the opinion that the activity may be authorised due to:

- Should the activity not be authorised it will result in an incomplete network hampering and restricting communication quality and quantity on the network.
- The negative impacts on the surrounding environment are not significant.

Recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application:

1. Telecommunication base station with a 45m unpainted (galvanised) lattice mast (Alternative 3) to be established on the proposed position indicated on attached plans due to having the lowest visual impact and greatest flexibility in terms of sharing.
2. Measures to be implemented for the duration of the construction period to prevent unauthorised access to the construction site.
3. Dust suppression measures to be implemented during earthworks.
4. Construction only to take place within normal daytime working hours.
5. Appropriate arrangements to be made with the property owner for the use of existing sanitation facilities by construction workers or otherwise the contractor must provide chemical toilets during the construction phase.
6. Telecommunication base station to be enclosed with a 2.4m high galvanised steel palisade fence.
7. Required electricity connection point to be established in consultation with the property owner and electricity supplier.
8. Topsoil to be stored separately for appropriate landscaping distribution on completion of construction.
9. All the prevention and mitigation measures described in this report and in the EMP must be implemented and monitored.

**SECTION E: CONSULTATION WITH OTHER STATE DEPARTMENTS – IN TERMS OF Regulation 22 sub-regulation 2 (f) (iii) of the EIA Regulations, 2010**

Provide a list of all State Departments / Organs of State that have been consulted and registered as interested and affected parties, and to whom draft reports have been submitted for comment. Proof of submission / delivery of the draft report to all State Department / Organs of State must be attached to this document.

|                 |                                    |       |                |
|-----------------|------------------------------------|-------|----------------|
| Department:     | Msukaligwa Local Municipality      |       |                |
| Contact person: | Mr. T. Dlamini – Municipal Manager |       |                |
| Postal address: | P O Box 48, Ermelo                 |       |                |
| Postal code:    | 2350                               | Cell: | -              |
| Telephone:      | (017) 801 3504                     | Fax:  | (017) 801 3851 |
| E-mail:         | -                                  |       |                |

|                 |                               |       |                |
|-----------------|-------------------------------|-------|----------------|
| Department:     | Msukaligwa Local Municipality |       |                |
| Contact person: | Councillor BA Maseko Ward 11  |       |                |
| Postal address: | P O Box 48, Ermelo            |       |                |
| Postal code:    | 2350                          | Cell: | -              |
| Telephone:      | (017) 801 3504                | Fax:  | (017) 801 3851 |
| E-mail:         | -                             |       |                |

|                 |                                     |       |              |
|-----------------|-------------------------------------|-------|--------------|
| Department:     | Eskom                               |       |              |
| Contact person: | Dave Lucas Environmental Management |       |              |
| Postal address: | P O Box 1091, Johannesburg          |       |              |
| Postal code:    | 2000                                | Cell: | -            |
| Telephone:      | (011) 800 4514                      | Fax:  | 086 662 9952 |
| E-mail:         | lucasdd@eskom.co.za                 |       |              |

|                 |   |       |                |
|-----------------|---|-------|----------------|
| Department:     | South African Heritage Resources Agency |       |                |
| Contact person: | Dumisani Sibayi                         |       |                |
| Postal address: | P O Box 4637, Cape Town                 |       |                |
| Postal code:    | 8000                                    | Cell: | -              |
| Telephone:      | (021) 462 4502                          | Fax:  | (021) 462 4509 |
| E-mail:         | dsibayi@sahra.org.za                    |       |                |

|                 |                                     |       |              |
|-----------------|-------------------------------------|-------|--------------|
| Department:     | Mpumalanga Tourism and Parks Agency |       |              |
| Contact person: | Vaino Prinsloo                      |       |              |
| Postal address: | Private Bag 9068, Ermelo            |       |              |
| Postal code:    | 2350                                | Cell: | -            |
| Telephone:      | 017 819 5346                        | Fax:  | 086 609 0238 |
| E-mail:         | vaino@vodamail.co.za                |       |              |

## SECTION F: APPENDICES

The following appendices must be attached to the basic assessment report as appropriate:

Appendix A: Site plan(s) – **IN TERMS OF Regulation 22 sub-regulation 2 (c) of the EIA Regulations, 2010**

Appendix B: Photographs – **IN TERMS OF Regulation 22 sub-regulation 2 (c) of the EIA Regulations, 2010**

Appendix C: Facility illustration(s) – **IN TERMS OF Regulation 22 sub-regulation 2 (c) of the EIA Regulations, 2010**

Appendix D: Specialist reports – **IN TERMS OF Regulation 22 sub-regulation 2 (k) of the EIA Regulations, 2010 – No specialist input required**

Appendix E: Comments and Response Report – **IN TERMS OF Regulation 22 sub-regulation 2 (f) (iv) and 2 (o) and (q) of the EIA Regulations, 2010**

Appendix F: Environmental Management Programme (EMPr) – **IN TERMS OF Regulation 22 sub-regulation 2 (l) of the EIA Regulations, 2010**

Appendix G: Other information

G1: Public Participation – **IN TERMS OF Regulation 22 sub-regulation 2 (f) of the EIA Regulations, 2010**

G1 (a) – Public Participation - Proof of Site Notice



- G1 (b) – Public Participation – Written Notices to I&AP
- G1 (c) – South African Civil Aviation Authority Approval
- G1 (d) – Public Participation – Proof of Newspaper Advertisement

**Appendix A: Site Plans**

| NO.   | DATE       | DESCRIPTION |
|---|------------|-------------|
| 0   | 01/03/2011 | FIRST ISSUE |
| PROJECT:<br>NEW TELECOMMUNICATION BASESTATION WITH<br>A 45m MAST FOR CELL C (PTY) LTD   |            |             |
| DRAWN BY: R. BAKKER<br>PROPERTY DESCRIPTION:<br>PORTION 9 (REMAINING EXTENT) OF THE FARM<br>MOOIPLAATS 290 IT   |            |             |
| OWNER:<br>EGLIN INV NO 44 (PTY) LTD   |            |             |
| COORDINATES:<br>LAT: -26.654030°<br>LONG: 30.959120°  |            |             |
| APPROVALS:<br>CELL C RF PLANNER:<br>Signature: _____<br>Date: _____<br>CELL C IMPLEMENTATION:<br>Signature: _____<br>Date: _____<br>CELL C REAL ESTATE CO-ORDINATOR:<br>Signature: _____<br>Date: _____<br>CELL C ENGINEER:<br>Name: _____<br>Signature: _____<br>Number: _____ |            |             |

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Melrose Gate Park  
 197 Riverside Road  
 Sandton  
 Tel: +27 (11) 324 4000  
 Fax: +27 (11) 324 4001  
 P.O. Box 428  
 Benmore  
 2010

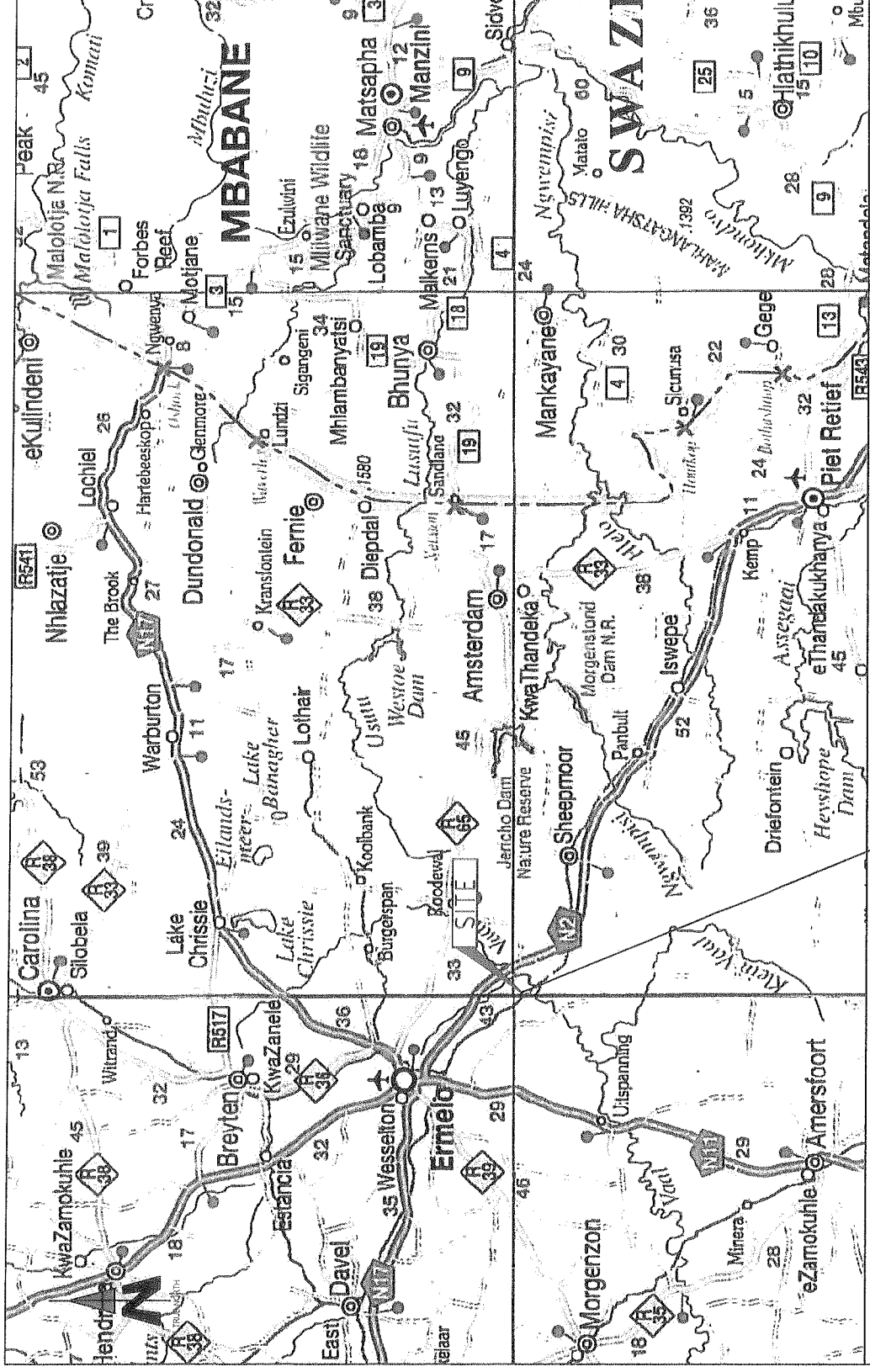
**Nokia Siemens  
 Networks**  
 92 Oak Avenue  
 Highveld Trading Park  
 Centurion, Pretoria  
 0099  
 Tel: 012 671 3000



111 Tlokoeng Road  
 P.O. Box 1077  
 Sandton  
 2154  
 Tel: +27 (11) 604 7072  
 Fax: +27 (11) 604 7073  
 admin@tlokoeng.co.za  
 www.tlokoeng.co.za

|           |           |       |        |
|-----------|-----------|-------|--------|
| REVISION: | SHEET NO. | ISSUE | SCALE: |
| 0         | 1 OF 13   | 1     | NTS    |




SITE NAME AND ADDRESS:  
 MOOIPLAATS WEST  
 OFF R2, ERMELO TO PIET RETIEF,  
 ON THE RIGHT HAND SIDE,  
 MPUMALANGA



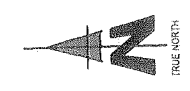
**2910**  
 MOOIPLAATS WEST

LOCALITY MAP

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 DRAWING MUST NOT BE SCALED. ONLY FIGURED DIMENSIONS  
 TO BE USED. DIMENSIONS TO BE VERIFIED ON SITE BEFORE  
 COMMENCEMENT OF WORK.  
 ALL WORK TO BE PERFORMED ACCORDING TO LATEST CELL C  
 (PTY) LTD SITE INFRASTRUCTURE SPECIFICATIONS

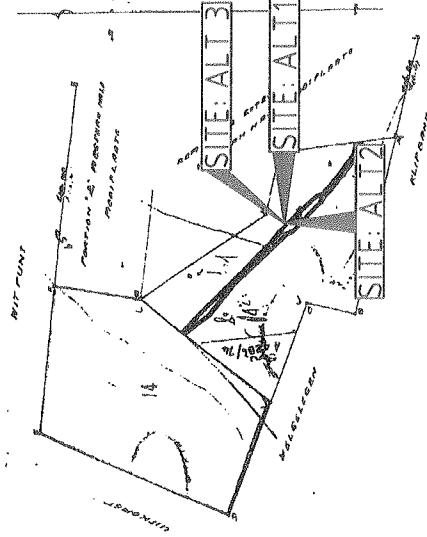
|  |                        |           |         |        |   |        |     |
|--|------------------------|-----------|---------|--------|---|--------|-----|
| NO. DATE DESCRIPTION   |                        |           |         |        |   |        |     |
| 0  | 01/03/2011 FIRST ISSUE |           |         |        |   |        |     |
| PROJECT:   |                        |           |         |        |   |        |     |
| NEW TELECOMMUNICATION BASESTATION WITH A 45m MAST FOR CELL C (PTY) LTD   |                        |           |         |        |   |        |     |
| DRAWN BY: B. BANKER  |                        |           |         |        |   |        |     |
| PROJECT DESIGNER:  |                        |           |         |        |   |        |     |
| POSITION & REMAINING EXTENT OF THE FARM MOOPLAATS 280 IT   |                        |           |         |        |   |        |     |
| OWNER:   |                        |           |         |        |   |        |     |
| EGUN INV NO 44 (PTY) LTD   |                        |           |         |        |   |        |     |
| COORDINATES:   |                        |           |         |        |   |        |     |
| LAT: -26.654030°   |                        |           |         |        |   |        |     |
| LONG: 30.089120°   |                        |           |         |        |   |        |     |
| APPROVALS:   |                        |           |         |        |   |        |     |
| CELL C RF PLANNER:   | Signature: _____       |           |         |        |   |        |     |
| Date:  | _____                  |           |         |        |   |        |     |
| CELL C IMPLEMENTATION:   | Signature: _____       |           |         |        |   |        |     |
| Date:  | _____                  |           |         |        |   |        |     |
| CELL C REAL ESTATE CO-ORDINATOR:   | Signature: _____       |           |         |        |   |        |     |
| Date:  | _____                  |           |         |        |   |        |     |
| CELL C ENGINEER:   | Signature: _____       |           |         |        |   |        |     |
| Name:  | _____                  |           |         |        |   |        |     |
| Number:  | _____                  |           |         |        |   |        |     |
|  <b>CELLO</b><br>THE POWER IS IN YOUR HANDS<br>www.cello.co.za  |                        |           |         |        |   |        |     |
| Marais Citrus Park<br>150 Riverside Road<br>Sandton<br>Tel: +27 (11) 324 4200<br>Fax: +27 (11) 324 4401<br>Private Bag 235<br>Bembere<br>2010  |                        |           |         |        |   |        |     |
|  <b>Nokia Siemens Networks</b><br>92 Oak Avenue<br>Highveld Techno Park<br>Centurion, Pretoria<br>0095<br>Tel: 011 871 3200   |                        |           |         |        |   |        |     |
| Consultant:<br> <b>TUNNISTE &amp; BOUWER</b><br>414 Rivers Road<br>Silverwood<br>P.O. Box 28017<br>Johannesburg<br>Tel: +27 (11) 804 7072<br>Fax: +27 (11) 804 7072<br>info@tunnisteandbouwer.co.za |                        |           |         |        |   |        |     |
| REVISION:  | 0                      | SHEET NO: | 2 OF 13 | ISSUE: | 1 | SCALE: | NTS |
| SITE NO: 2910<br>SITE NAME AND ADDRESS:<br>MOOPLAATS WEST<br>OFF N2, ERMELO TO PIET RETIEF<br>ON THE RIGHT HAND SIDE.<br>NPUMALANGA  |                        |           |         |        |   |        |     |

S.G. No. A. 63317  
 7/15/23



1:1000

| BEARS | ANGLES       | COORDINATES (X) | COORDINATES (Y) |
|-------|--------------|-----------------|-----------------|
| 1     | 45° 30' 00"  | 1000.000        | 1000.000        |
| 2     | 90° 00' 00"  | 1000.000        | 2000.000        |
| 3     | 135° 00' 00" | 1000.000        | 3000.000        |
| 4     | 180° 00' 00" | 1000.000        | 4000.000        |
| 5     | 225° 00' 00" | 1000.000        | 3000.000        |
| 6     | 270° 00' 00" | 1000.000        | 2000.000        |
| 7     | 315° 00' 00" | 1000.000        | 1000.000        |
| 8     | 360° 00' 00" | 1000.000        | 1000.000        |
| 9     | 45° 30' 00"  | 1000.000        | 1000.000        |
| 10    | 90° 00' 00"  | 1000.000        | 2000.000        |
| 11    | 135° 00' 00" | 1000.000        | 3000.000        |
| 12    | 180° 00' 00" | 1000.000        | 4000.000        |
| 13    | 225° 00' 00" | 1000.000        | 3000.000        |
| 14    | 270° 00' 00" | 1000.000        | 2000.000        |
| 15    | 315° 00' 00" | 1000.000        | 1000.000        |
| 16    | 360° 00' 00" | 1000.000        | 1000.000        |
| 17    | 45° 30' 00"  | 1000.000        | 1000.000        |
| 18    | 90° 00' 00"  | 1000.000        | 2000.000        |
| 19    | 135° 00' 00" | 1000.000        | 3000.000        |
| 20    | 180° 00' 00" | 1000.000        | 4000.000        |



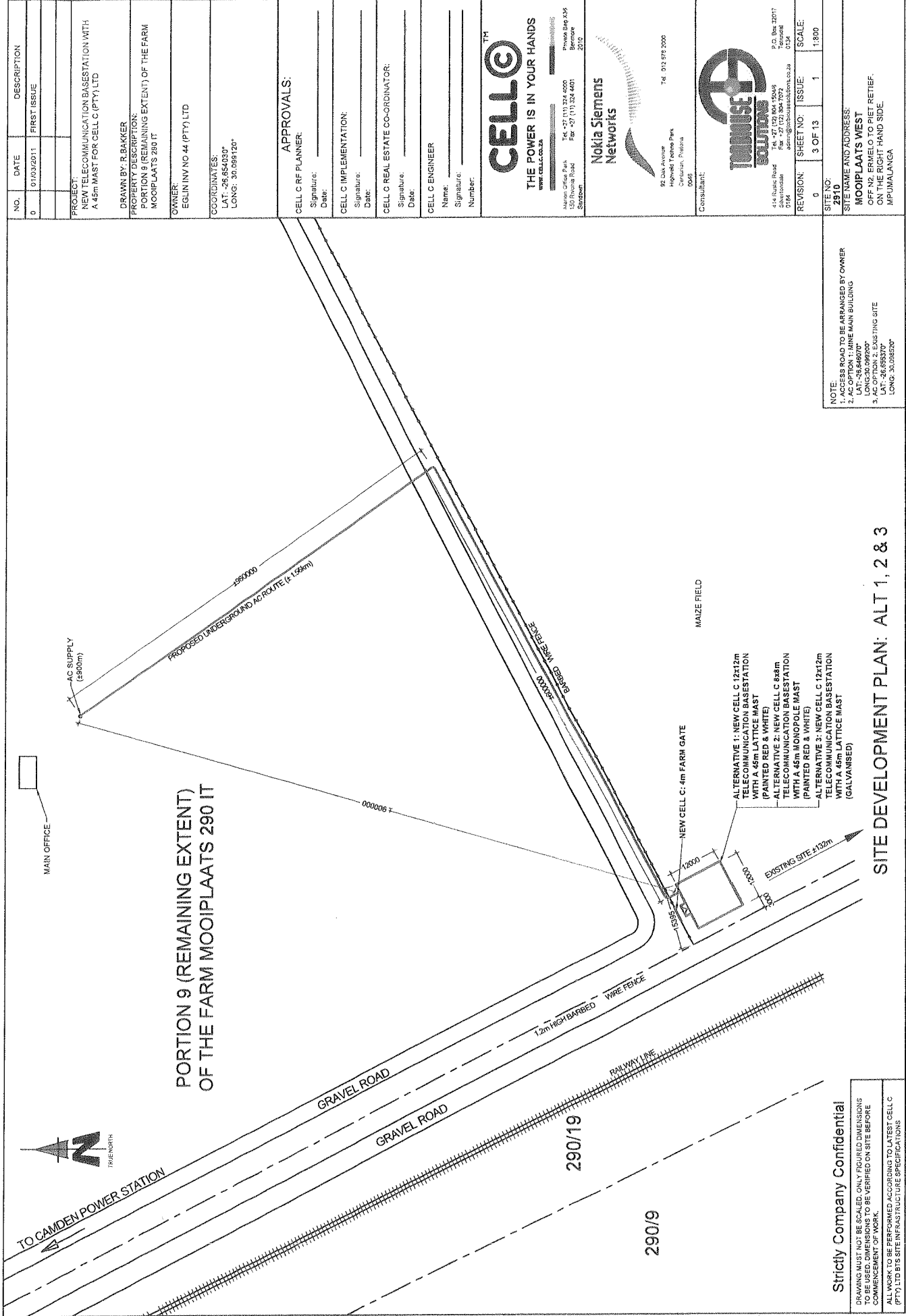
This drawing is the property of the Engineer and is not to be used for any other purpose without the written consent of the Engineer.  
 No. 290  
 REG. ARCH. DIVISION

The above figures referred to are in accordance with the S.G. No. A. 63317 as shown on the attached map and are subject to the conditions of the map and the provisions of the relevant legislation.  
 I, the undersigned, certify that the above figures are correct and true to the best of my knowledge and belief.  
 17/07/2011  
 B. Banker  
 Engineer

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 ALL WORK TO BE PERFORMED ACCORDING TO LATEST CELL C (PTY) LTD SITE INFRASTRUCTURE SPECIFICATIONS.

CADAstral INFO



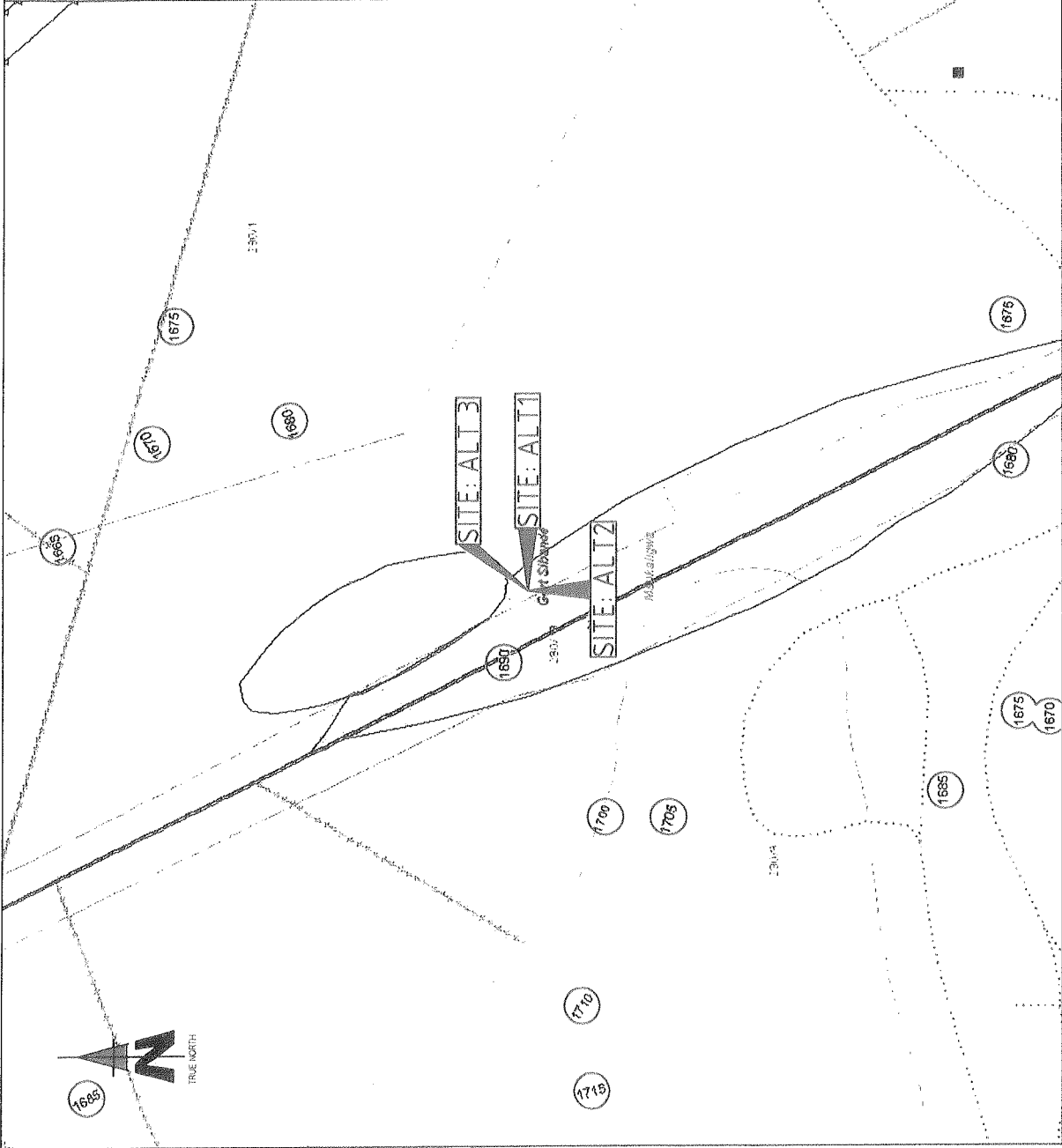
**PORTION 9 (REMAINING EXTENT)  
OF THE FARM MOOIJPLAATS 290 IT**


NOTE:  
 1. ACCESS ROAD TO BE ARRANGED BY OWNER  
 2. AG OPTION 1: MAIZE MAIN BUILDING  
 3. LAT: -26.848070°  
 4. LONG: 30.982520°  
 5. EXISTING SITE  
 6. LAT: -26.855370°  
 7. LONG: 30.982520°

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 ALL WORK TO BE PERFORMED ACCORDING TO LATEST CELL C (PTY) LTD SITE INFRASTRUCTURE SPECIFICATIONS

**SITE DEVELOPMENT PLAN: ALT 1, 2 & 3**

|  |            |             |
|--|------------|-------------|
| NO.  | DATE       | DESCRIPTION |
| 0  | 01/03/2011 | FIRST ISSUE |
| PROJECT:<br>NEW TELECOMMUNICATION BASE STATION WITH<br>A 45m MAST FOR CELL C (PTY) LTD   |            |             |
| DRAWN BY: R. BAKKER  |            |             |
| PROPERTY DESCRIPTION:<br>PORTION 9 (REMAINING EXTENT) OF THE FARM<br>MOOIJPLAATS 290 IT  |            |             |
| OWNER:<br>EGLIN INV NO 44 (PTY) LTD  |            |             |
| COORDINATES:<br>LAT: -26.850330°<br>LONG: 30.981120°   |            |             |
| APPROVALS:<br>CELL C RF PLANNER:<br>Signature: _____<br>Date: _____  |            |             |
| CELL C IMPLEMENTATION:<br>Signature: _____<br>Date: _____  |            |             |
| CELL C REAL ESTATE CO-ORDINATOR:<br>Signature: _____<br>Date: _____  |            |             |
| CELL C ENGINEER:<br>Name: _____<br>Signature: _____<br>Number: _____   |            |             |
| <p><b>CELLO</b><br/>THE POWER IS IN YOUR HANDS<br/>www.cello.co.za</p> <p>Maun Office Park<br/>150 Riverside Road<br/>Stellenbosch</p> <p>Tel: +27 (11) 324 4000<br/>Fax: +27 (11) 324 4001</p> <p>Private Bag 436<br/>Stellenbosch<br/>7201</p> |            |             |
| <p>Nokia Siemens<br/>Networks</p> <p>92 Oak Avenue<br/>Highveld Techno Park<br/>Centurion, Pretoria<br/>0083</p> <p>Tel: 012 572 2000</p>  |            |             |
| <p><b>TUNNISTE SOLUTIONS</b></p> <p>44 Ruddle Road<br/>Stellenbosch</p> <p>Tel: +27 (12) 804 4504/9<br/>Fax: +27 (12) 804 7072<br/>www.tunniste.com</p> <p>P.O. Box 20117<br/>Stellenbosch<br/>7200</p>  |            |             |
| REVISION:  | SHEET NO:  | ISSUE:      |
| 0  | 3 OF 13    | 1           |
| SCALE: 1:800   |            |             |
| SITE NO: 2910  |            |             |
| SITE NAME AND ADDRESS:<br>MOOIJPLAATS WEST<br>OFF N2, ERMELO TO PIET RETIEF,<br>ON THE RIGHT HAND SIDE,<br>MPUMALANGA  |            |             |

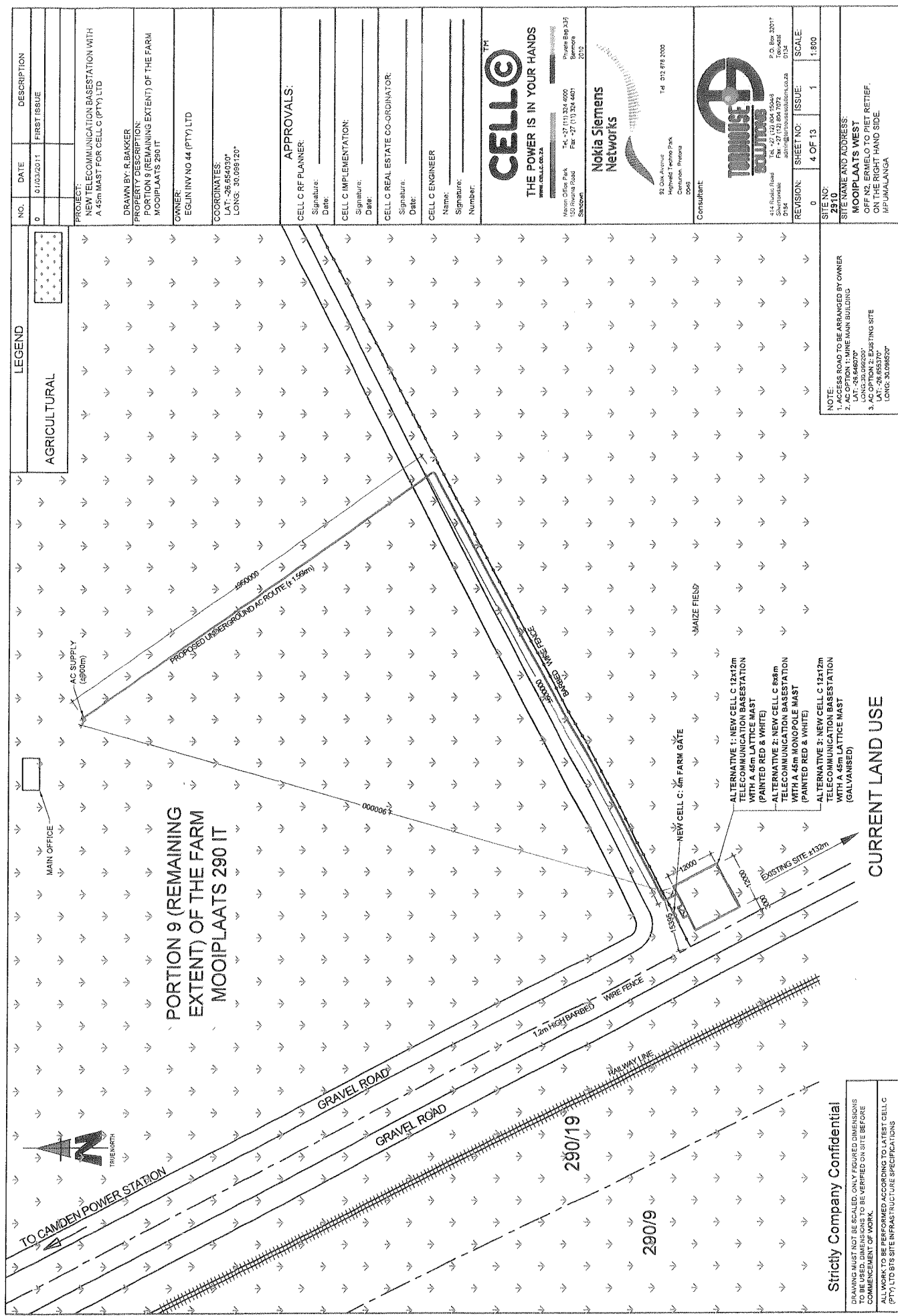


| NO.  | DATE       | DESCRIPTION |
|--|------------|-------------|
| 0  | 01/03/2011 | FIRST ISSUE |
| <b>PROJECT:</b><br>NEW TELECOMMUNICATION BASESTATION WITH<br>A 45m MAST FOR CELLO (PTY) LTD  |            |             |
| <b>DRANBY, S. BAIKER</b><br><b>PROJECT DESIGNER</b><br><b>PORTION 4 (REMAINING EXTENT) OF THE FARM</b><br><b>MOOPLAATS 280 T</b>   |            |             |
| <b>OWNER:</b><br>EGLIN INV NO 44 (PTY) LTD   |            |             |
| <b>COORDINATES:</b><br>LAT: 28.654030°<br>LONG: 30.098120°   |            |             |
| <b>APPROVALS:</b><br><b>CELL C RF PLANNER:</b><br>Signature: _____<br>Date: _____  |            |             |
| <b>CELL C IMPLEMENTATION:</b><br>Signature: _____<br>Date: _____   |            |             |
| <b>CELL C REAL ESTATE CO-ORDINATOR:</b><br>Signature: _____<br>Date: _____   |            |             |
| <b>CELL C ENGINEER:</b><br>Name: _____<br>Signature: _____<br>Number: _____  |            |             |
| <b>CELLO™</b><br><b>THE POWER IS IN YOUR HANDS</b><br><small>1997 CELLO.CO.ZA</small><br>Market Office Park, Tel: +27 (11) 324 4000, Private Bag 2039, Benmore, Benmore, 2018<br>150 Rylands Road, Fax: +27 (11) 324 4401, 2018, Sandton |            |             |
| <b>Nokia Siemens Networks</b><br><br>32 Oak Avenue, Tel: 012 678 2000<br>Highveld Techno Park, Centurion, Pretoria, 0095                              |            |             |
| <b>Consultant:</b><br><b>TUNNISE SOLUTIONS</b><br>414 Buleba Drive, Benmore, 2018<br>1111 Buleba Drive, Benmore, 2018<br>Johannesburg, 2018<br>Tel: +27 (11) 204 7072, Fax: +27 (11) 204 7073, Email: info@tunnise.com, www.tunnise.com  |            |             |
| REVISION:  | SHEET NO:  | ISSUE:      |
| 0  | 5 OF 13    | 1           |
| SCALE:   | NTS        |             |
| SITE NO:   | 2810       |             |
| <b>SITE NAME AND ADDRESS:</b><br><b>MOOPLAATS WEST</b><br>OFF N2, ERMELO TO PIET RETIEF,<br>ON THE RIGHT HAND SIDE,<br>MPLUMALANGA   |            |             |

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 ALL WORK TO BE PERFORMED ACCORDING TO LATEST CELL C (PTY) LTD BTS SITE INFRASTRUCTURE SPECIFICATIONS

COTOUR INTERVAL



**PORTION 9 (REMAINING EXTENT) OF THE FARM MOOIPLAATS 290 IT**

**CURRENT LAND USE**

| NO. | DATE       | DESCRIPTION |
|-----|------------|-------------|
| 0   | 01/03/2011 | FIRST ISSUE |

**PROJECT:**  
NEW TELECOMMUNICATION BASESTATION WITH A 45m MAST FOR CELL C (PTY) LTD

**DRAWN BY:** B. BAIKIE  
**PROJECT ENGINEER:** B. BAIKIE  
PORTION 9 (REMAINING EXTENT) OF THE FARM MOOIPLAATS 290 IT

**OWNER:**  
EGLIN INV NO 44 (PTY) LTD

**COORDINATES:**  
LAT: -26.654030°  
LONG: 30.096120°

**APPROVALS:**  
CELL C RF PLANNER:  
Signature: \_\_\_\_\_  
Date: \_\_\_\_\_

CELL C IMPLEMENTATION:  
Signature: \_\_\_\_\_  
Date: \_\_\_\_\_

CELL C REAL ESTATE CO-ORDINATOR:  
Signature: \_\_\_\_\_  
Date: \_\_\_\_\_

CELL C ENGINEER  
Name: \_\_\_\_\_  
Signature: \_\_\_\_\_  
Number: \_\_\_\_\_

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150 Rivonia Road Fax: +27 (11) 324 4401 Blemore  
Sandown  
Nokia Siemens Networks  
32 Oak Avenue Tel: 012 678 0200  
Hollywood Techno Park  
Centurion, Pretoria 0055

**TONKISE SOLUTIONS**  
P.O. Box 3301\*  
454 Ruder Road Tel: 011 804 6549  
Silvermist Fax: +27 (12) 324 1072  
Pretoria admin@tonkisesolutions.co.za 0152



**REVISION:** SHEET NO: 4 OF 13 ISSUE: 1 SCALE: 1:800

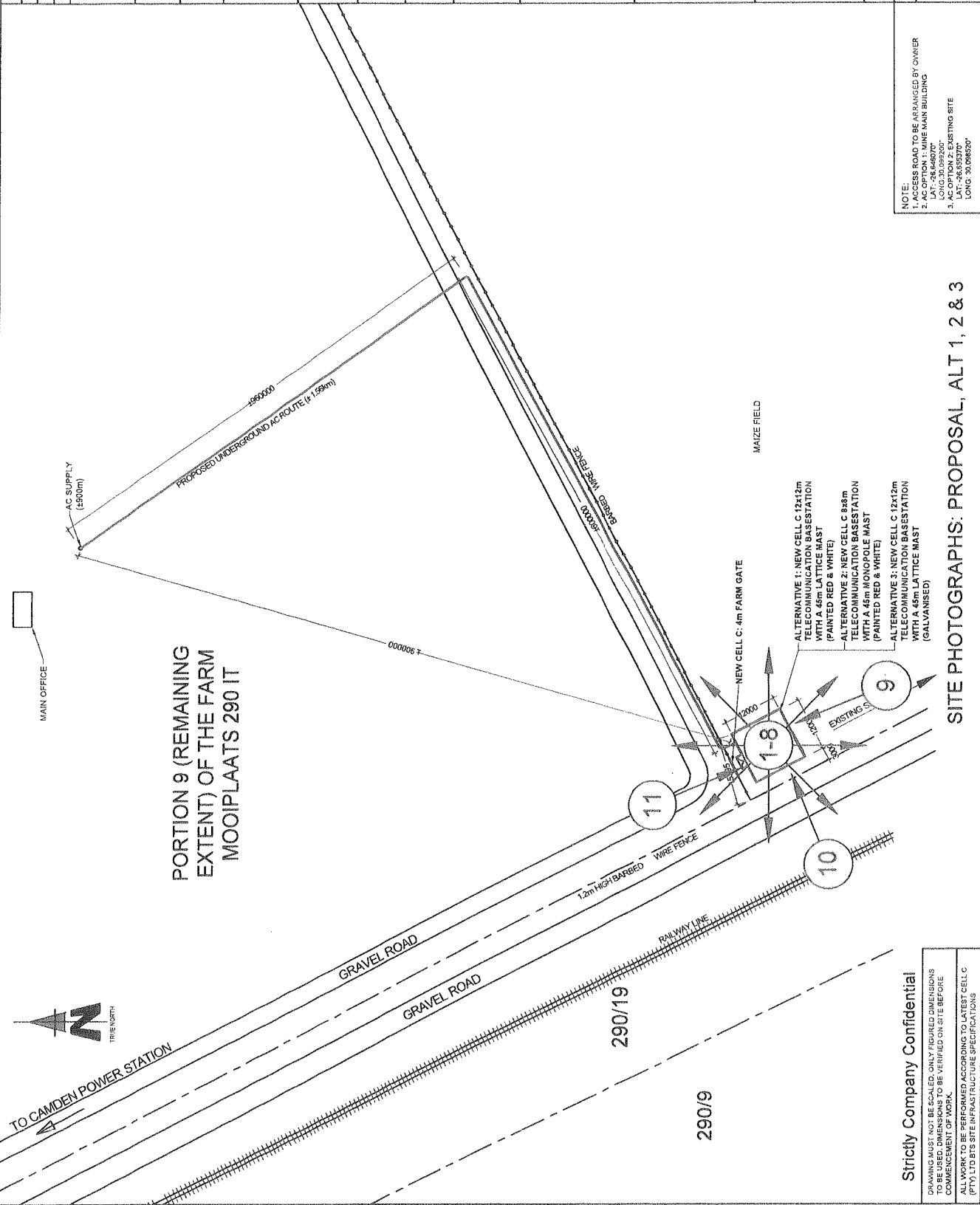
**NOTE:**  
1. ACCESS ROAD TO BE ARRANGED BY OWNER  
2. THE WORK BUILDING  
LONG: 30.09620°  
LAT: -26.64670°  
3. ACCESS ROAD TO EXISTING SITE  
LONG: 30.09620°  
LAT: -26.65370°

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DRAWING MUST NOT BE SCALED. ONLY FIGURED DIMENSIONS TO BE USED. DIMENSIONS TO BE VERIFIED ON SITE BEFORE COMMENCEMENT OF WORK.  
ALL WORK TO BE PERFORMED ACCORDING TO LATEST CELL C (PTY) LTD'S SITE INFRASTRUCTURE SPECIFICATIONS

**Appendix B: Site Photographs**



|   |            |             |
|---|------------|-------------|
| NO.   | DATE       | DESCRIPTION |
| 0   | 01/03/2011 | FIRST ISSUE |
| <b>PROJECT:</b><br>NEW TELECOMMUNICATION BASESTATION WITH A 45m MAST FOR CELL C (PTY) LTD                               |            |             |
| <b>DRAWN BY:</b> B. BAKER<br><b>PROJECT DESCRIPTION:</b><br>PORTION 9 (REMAINING EXTENT) OF THE FARM MOOIJPLAATS 290 IT |            |             |
| <b>OWNER:</b><br>EGLIN INV NO 44 (PTY) LTD  |            |             |
| <b>COORDINATES:</b><br>LAT: -26.654030°<br>LONG: 30.096120°   |            |             |
| <b>APPROVALS:</b><br>CELL C RF PLANNER:<br>Signature: _____<br>Date: _____  |            |             |
| CELL C IMPLEMENTATION:<br>Signature: _____<br>Date: _____   |            |             |
| CELL C REAL ESTATE CO-ORDINATOR:<br>Signature: _____<br>Date: _____   |            |             |
| CELL C ENGINEER:<br>Name: _____<br>Signature: _____<br>Number: _____  |            |             |
|                                        |            |             |
|                                      |            |             |
| <b>CONSULTANT:</b><br>414 Suleika Road<br>Shearwater<br>Fm: +27 (11) 804 7072<br>30m@telnetbasestations.co.za 0156      |            |             |
| REVISION:   | SHEET NO:  | ISSUE:      |
| 0   | 6 OF 13    | 1           |
| SCALE:  |            | 1:800       |



**NOTE:**

- ACCESS ROAD TO BE ARRANGED BY OWNER
- EXISTING SITE TO BE MAINTAINED
- AS SHOWN ON THE RIGHT HAND SIDE OF THE DRAWING

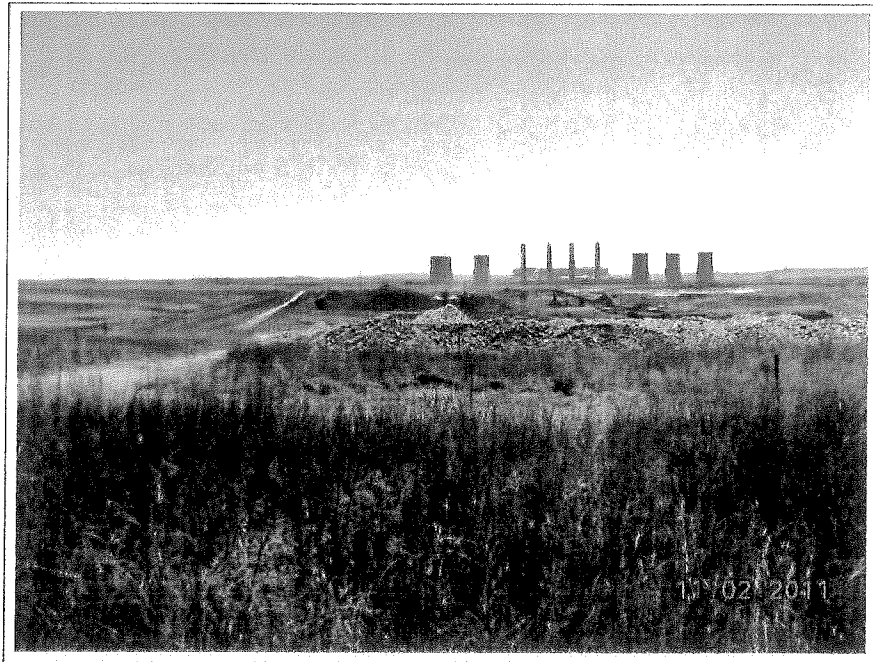
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DRAWING MUST NOT BE SCALED. ONLY FIGURED DIMENSIONS TO BE USED. DIMENSIONS TO BE VERIFIED ON SITE BEFORE COMMENCEMENT OF WORK.

ALL WORK TO BE PERFORMED ACCORDING TO LATEST CELL C (PTY) LTD SITE INFRASTRUCTURE SPECIFICATIONS

**SITE PHOTOGRAPHS: PROPOSAL, ALT 1, 2 & 3**

# SITE PHOTOGRAPHS



1. Panoramic view from the site direction North



2. Panoramic view from the site direction North East

# SITE PHOTOGRAPHS

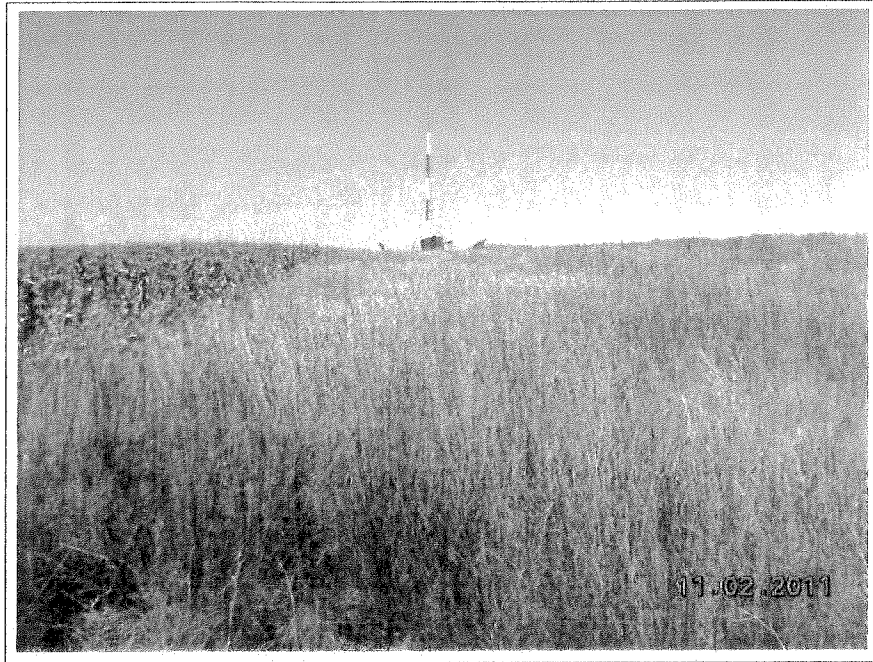


**3. Panoramic view from the site direction East**



**4. Panoramic view from the site direction South East**

# SITE PHOTOGRAPHS

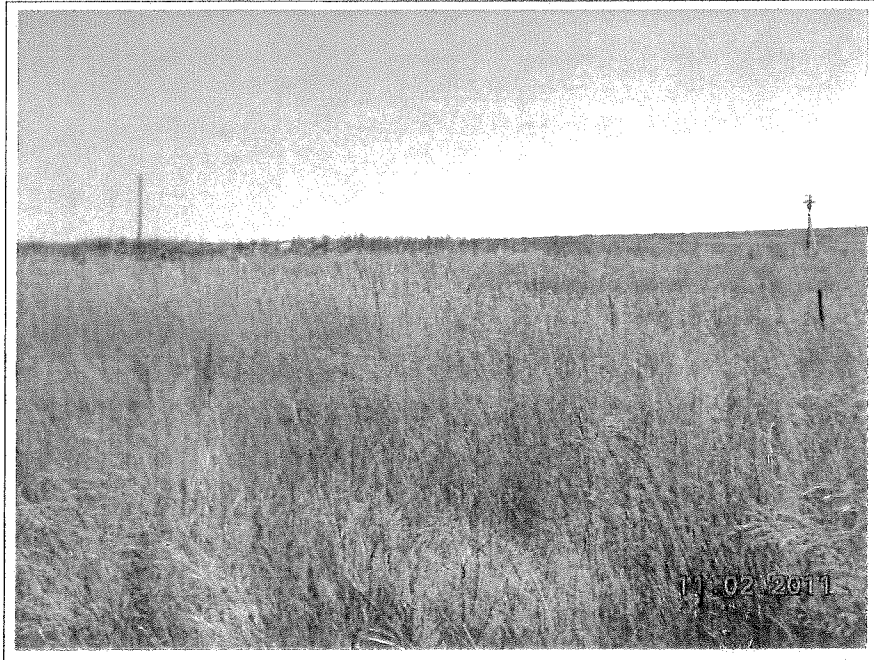


5. Panoramic view from the site direction South

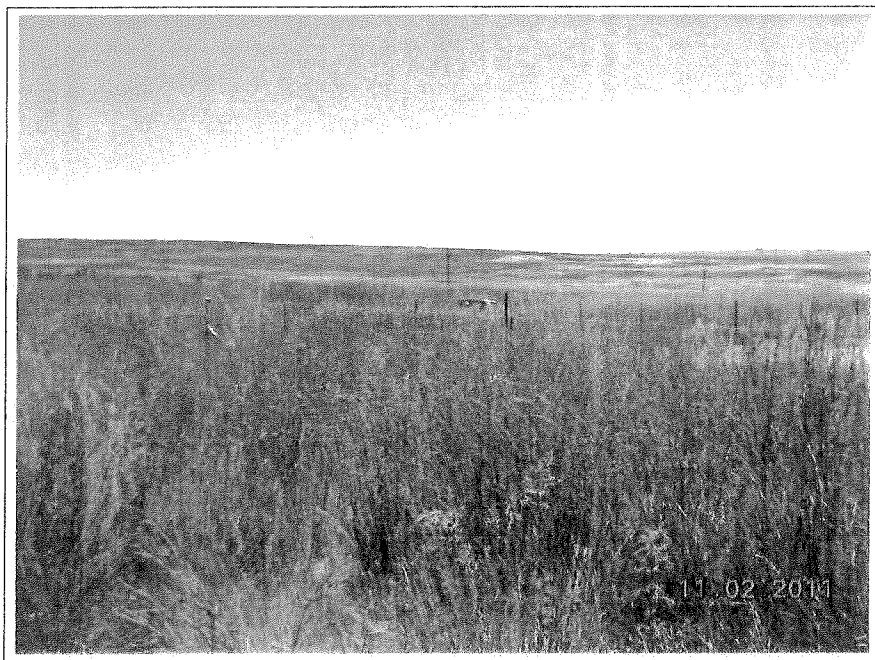


6. Panoramic view from the site direction South West

# SITE PHOTOGRAPHS

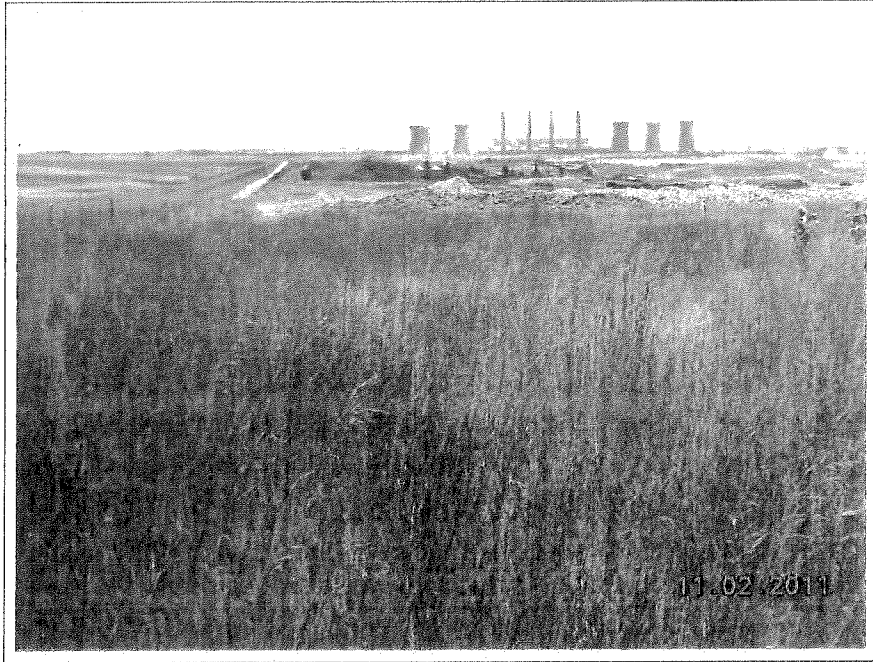


**7. Panoramic view from the site direction West**

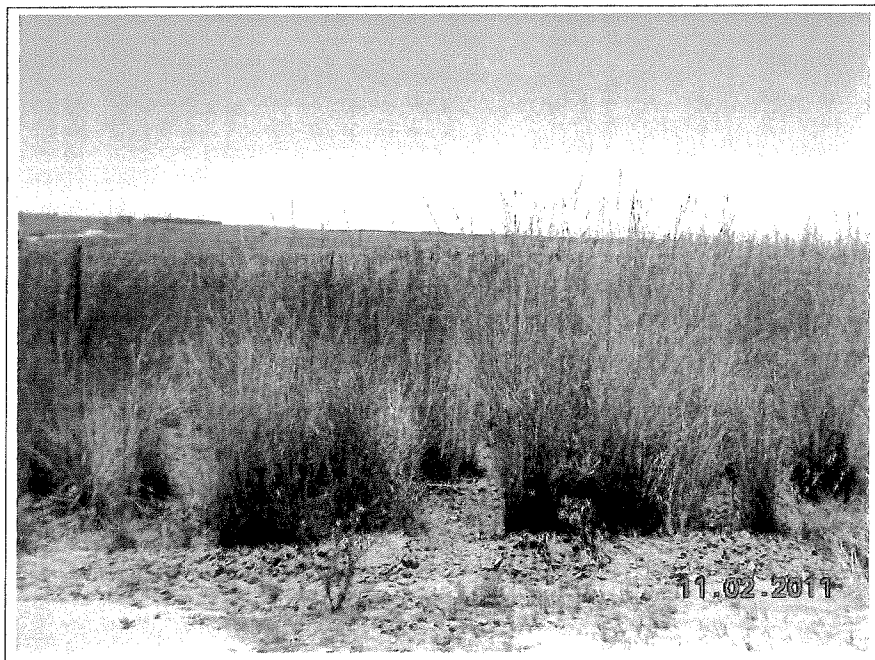


**8. Panoramic view from the site direction North West**

# SITE PHOTOGRAPHS



9. View on base station position direction North

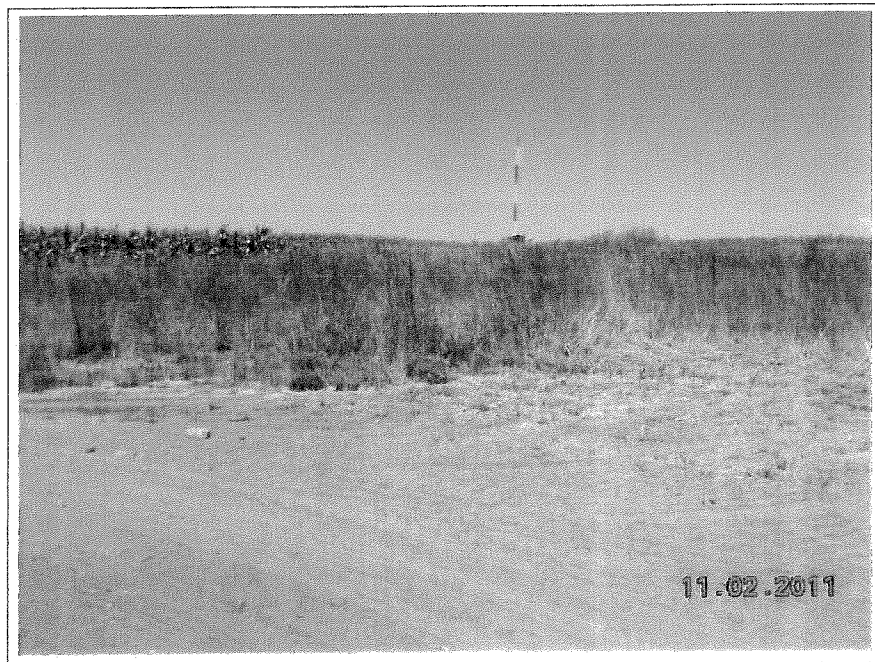


10. View on base station position direction East

# SITE PHOTOGRAPHS



11. View on base station position direction South East



12. View on base station position direction South

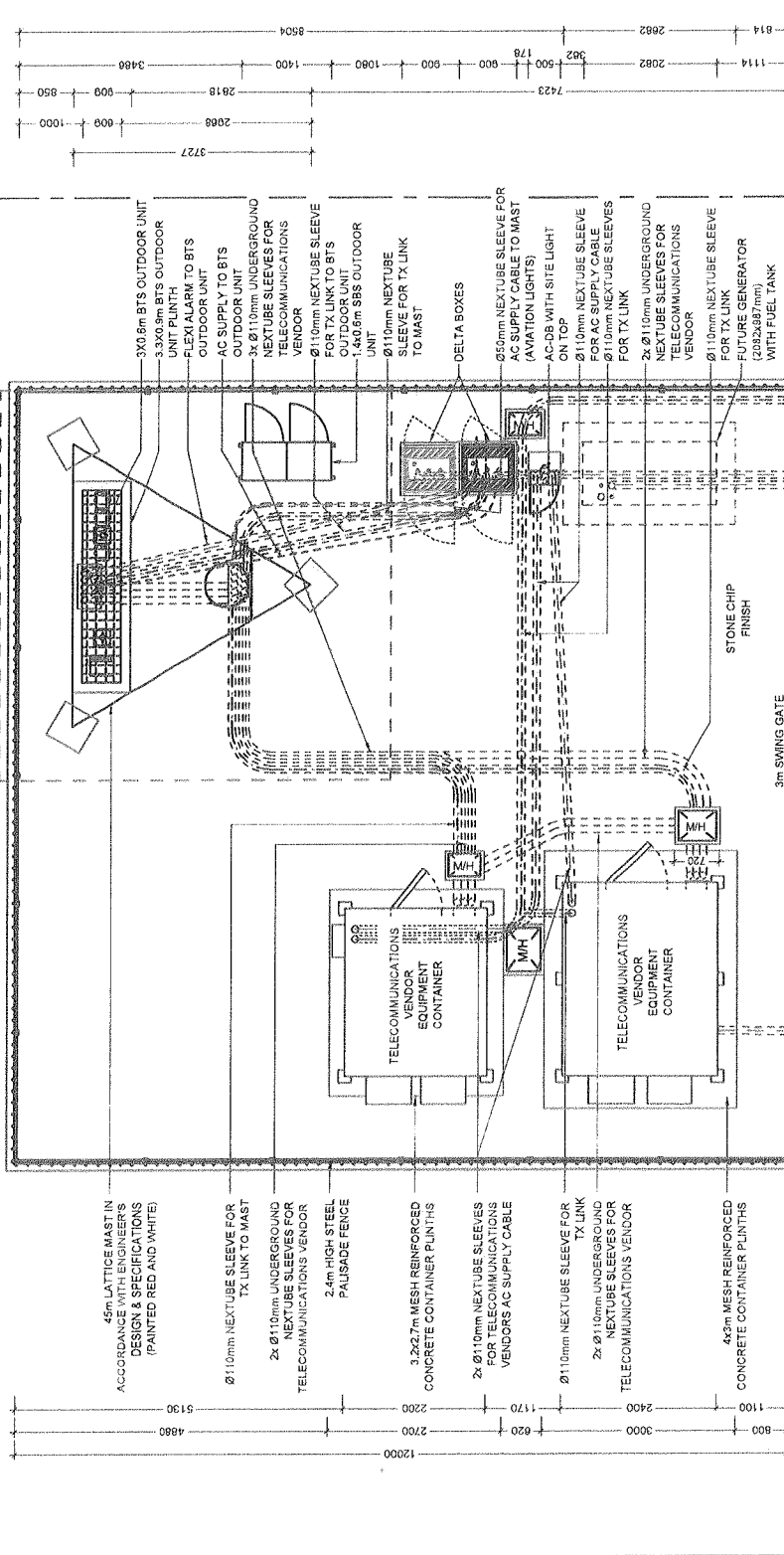
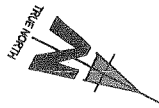
# SITE PHOTOGRAPHS



13. General view of proposed base station area



**Appendix C: Facility Illustration**



**PORTION 9  
(REMAINING EXTENT)  
OF THE FARM  
MOOIPLAATS 290 IT**

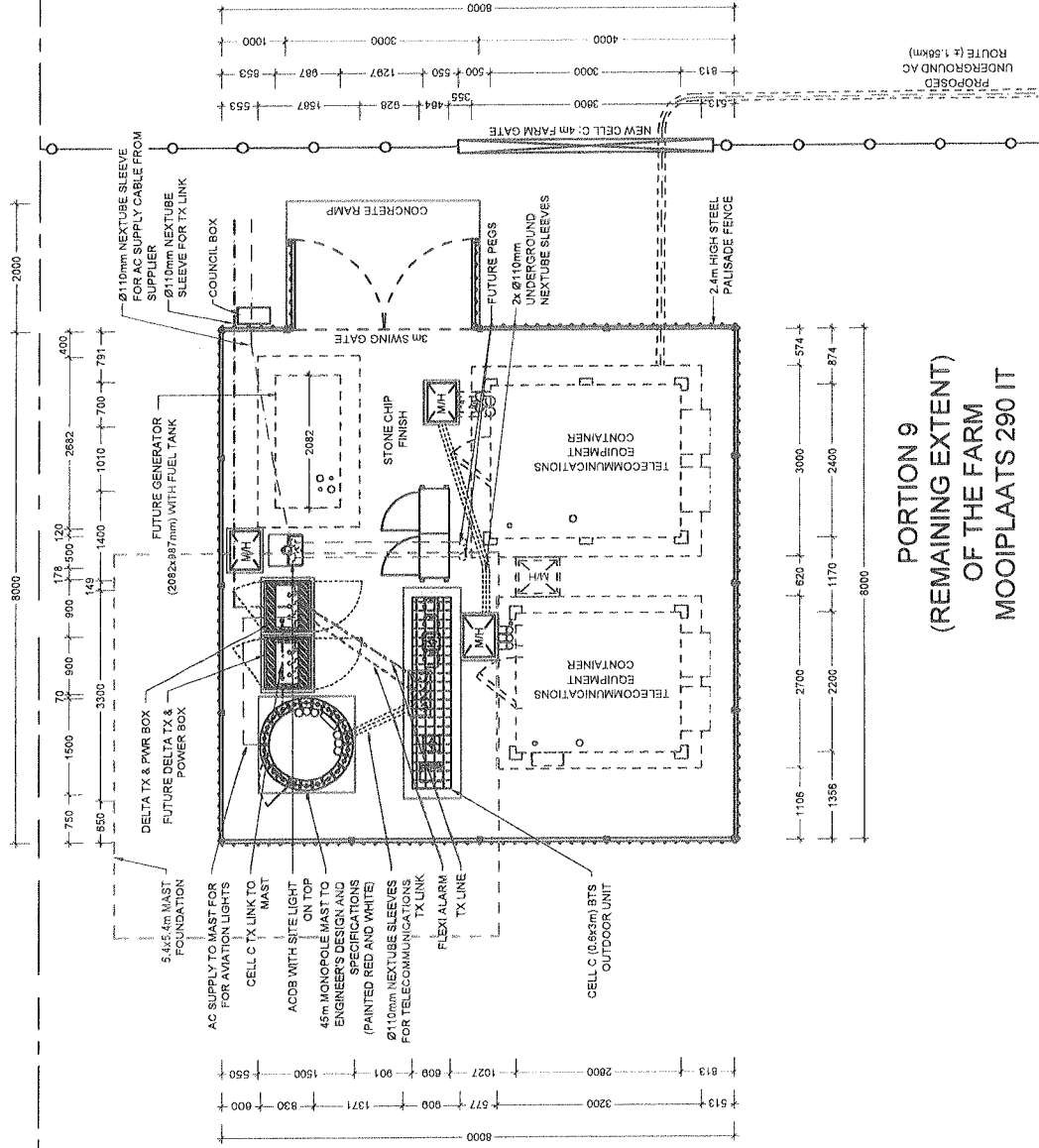
Strictly Company Confidential  
DRAWING MUST NOT BE SCALED. ONLY FIGURED DIMENSIONS TO BE USED. DIMENSIONS TO BE VERIFIED ON SITE BEFORE COMMENCEMENT OF WORK.  
ALL WORK TO BE PERFORMED ACCORDING TO LATEST CELL C (PTY) LTD SITE INFRASTRUCTURE SPECIFICATIONS

**SITE DETAIL: ALTERNATIVE 1**

|   |            |                 |        |
|---|------------|-----------------|--------|
| NO.   | DATE       | DESCRIPTION     |        |
| 0   | 01/03/2011 | FIRST ISSUE     |        |
| <b>PROJECT:</b><br>NEW TELECOMMUNICATION BASESTATION WITH A 45m MAST FOR CELL C (PTY) LTD   |            |                 |        |
| <b>DRAWN BY:</b> S. BAKER<br><b>PROJECT LOCATION:</b><br>PORTION 9 (REMAINING EXTENT) OF THE FARM MOOIPLAATS 290 IT   |            |                 |        |
| <b>OWNER:</b><br>EGUN INV NO 44 (PTY) LTD   |            |                 |        |
| <b>COORDINATES:</b><br>LAT: -26.654030°<br>LONG: 30.089120°   |            |                 |        |
| <b>APPROVALS:</b>   |            |                 |        |
| <b>CELL C RF PLANNER:</b><br>Signature: _____<br>Date: _____  |            |                 |        |
| <b>CELL C IMPLEMENTATION:</b><br>Signature: _____<br>Date: _____  |            |                 |        |
| <b>CELL C REAL ESTATE CO-ORDINATOR:</b><br>Signature: _____<br>Date: _____  |            |                 |        |
| <b>CELL C ENGINEER:</b><br>Name: _____<br>Signature: _____<br>Number: _____   |            |                 |        |
| <p><b>THE POWER IS IN YOUR HANDS</b><br/>www.cello.co.za</p> <p>Marion Office Park<br/>150 Rennie Road<br/>Stellenbosch</p> <p>Tel: +27 (0) 21 324 4000<br/>Private Bag 239<br/>Bermansig<br/>7601<br/>Fax: +27 (0) 21 324 4461</p> |            |                 |        |
| <p>Nokia Siemens Networks<br/>92 Oak Avenue<br/>Highveld Techno Park<br/>Centurion, Pretoria<br/>0095</p> <p>Tel: 012 672 2000</p>  |            |                 |        |
| <p>414 Riebel Street<br/>Stellenbosch<br/>7601<br/>Tel: +27 (0) 21 954 7972<br/>Fax: +27 (0) 21 954 7972<br/>admin@tanustsolutions.co.za</p>  |            |                 |        |
| REVISION:   | SHEET NO.  | ISSUE:          | SCALE: |
| 0   | 7 OF 13    | 1               | 1:75   |
| SITE NO.: 2910  |            | MOOIPLAATS WEST |        |
| OFF N2, ERNELO TO PIET RETIEF, ON THE RIGHT HAND SIDE, MPUMALANGA   |            |                 |        |

290/19

290/19

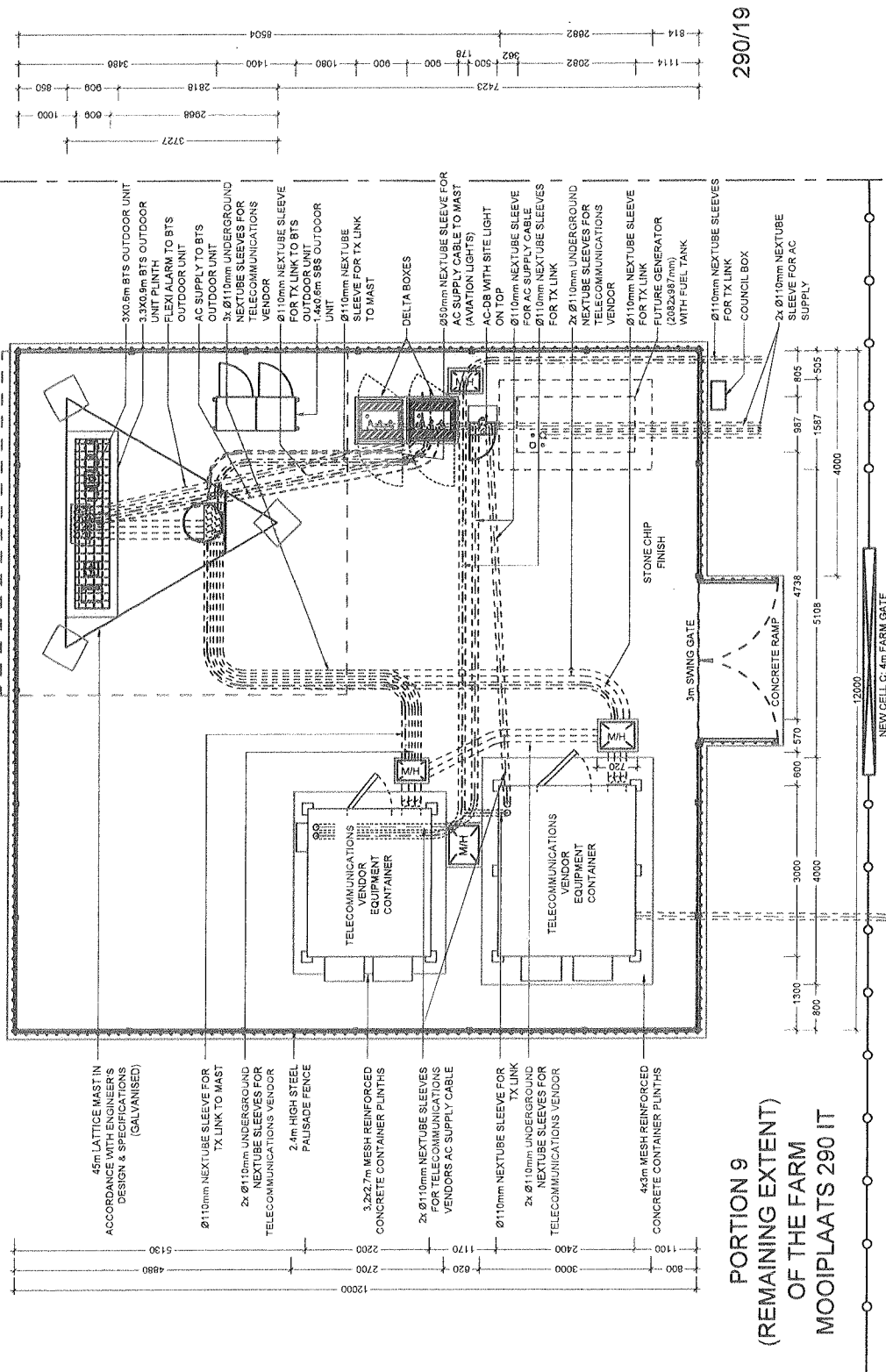
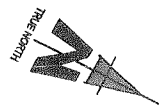


PORTION 9  
(REMAINING EXTENT)  
OF THE FARM  
MOOIPLAATS 290 IT

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ALL WORK TO BE PERFORMED ACCORDING TO LATEST CELL C (PTY) LTD BTS SITE INFRASTRUCTURE SPECIFICATIONS

SITE DETAIL: ALTERNATIVE 2

|  |            |  |        |
|--|------------|--|--------|
| NO.  | DATE       | DESCRIPTION  |        |
| 0  | 01/03/2011 | FIRST ISSUE  |        |
| PROJECT:<br>NEW TELECOMMUNICATION BASESTATION WITH<br>A 45m MAST FOR CELL C (PTY) LTD  |            |  |        |
| DRAWN BY: R. BARKER  |            |  |        |
| PROPERTY DESCRIPTION:<br>PORTION 9 (REMAINING EXTENT) OF THE FARM<br>MOOIPLAATS 290 IT   |            |  |        |
| OWNER:<br>EQLIN INV NO 44 (PTY) LTD  |            |  |        |
| COORDINATES:<br>LAT: 29° 58' 12.00"<br>LONG: 30° 58' 12.00"  |            |  |        |
| APPROVALS:<br>CELL C RF PLANNER:<br>Signature: _____<br>Date: _____  |            |  |        |
| CELL C IMPLEMENTATION:<br>Signature: _____<br>Date: _____  |            |  |        |
| CELL C REAL ESTATE CO-ORDINATOR:<br>Signature: _____<br>Date: _____  |            |  |        |
| CELL C ENGINEER:<br>Name: _____<br>Signature: _____<br>Number: _____   |            |  |        |
| <p>THE POWER IS IN YOUR HANDS<br/>www.cello.co.za</p> <p>Mason Office Park<br/>1111 Marais Road<br/>Sandton<br/>Tel: +27 (11) 254 4000<br/>Fax: +27 (11) 254 4001<br/>Private Bag 2137<br/>Sandton<br/>2013</p> <p>Nokia Siemens<br/>Networks</p> <p>92 Oak Avenue<br/>Highveld Techno Park<br/>Centurion, Pretoria<br/>0055<br/>Tel: 012 875 2000</p> |            |  |        |
| <p>414 Rourke Road<br/>Silverdale<br/>Durban<br/>Tel: +27 (12) 864 7972<br/>Fax: +27 (12) 864 7972<br/>www.tombasesolutions.co.za</p>  |            |  |        |
| REVISION:  | SHEET NO:  | ISSUE:   | SCALE: |
| 0  | 8 OF 13    | 1  | 1:75   |
| SITE NO:<br>2910   |            | SITE NAME AND ADDRESS:<br>MOOIPLAATS WEST<br>OFF NZ. ERMELO TO PIET RETIEF.<br>ON THE RIGHT HAND SIDE.<br>MPUMALANGA |        |



**PORTION 9  
(REMAINING EXTENT)  
OF THE FARM  
MOOIPLAATS 290 IT**

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ALL WORK TO BE PERFORMED ACCORDING TO LATEST CELL C (PTY) LTD BTS SITE INFRASTRUCTURE SPECIFICATIONS

**SITE DETAIL: ALTERNATIVE 3**

| NO. | DATE       | DESCRIPTION |
|-----|------------|-------------|
| 0   | 01/03/2011 | FIRST ISSUE |

**PROJECT:**  
NEW TELECOMMUNICATION BASESTATION WITH A 45m MAST FOR CELL C (PTY) LTD

**DRAWN BY:** R. BAKKER

**PROPERTY DESCRIPTION:**  
PORTION 9 (REMAINING EXTENT) OF THE FARM MOOIPLAATS 290 IT

**OWNER:**  
EGLIN INV NO 44 (PTY) LTD

**COORDINATES:**  
LAT: -26.854030°  
LONG: 30.899126°

**APPROVALS:**

**CELL C RF PLANNER:**  
Signature: \_\_\_\_\_  
Date: \_\_\_\_\_

**CELL C IMPLEMENTATION:**  
Signature: \_\_\_\_\_  
Date: \_\_\_\_\_

**CELL C REAL ESTATE CO-ORDINATOR:**  
Signature: \_\_\_\_\_  
Date: \_\_\_\_\_

**CELL C ENGINEER:**  
Name: \_\_\_\_\_  
Signature: \_\_\_\_\_  
Number: \_\_\_\_\_

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150 Rivonia Road Fax: +27 (11) 324 4001 Bembere  
Sandton  
2010

**Nokia Siemens Networks**  
92 Oak Avenue Tel: 012 878 1000  
Innovative Techno Park  
Centurion, Pretoria  
00945

**Consultant:**  
P.O. Box 30017  
114 Park Road  
Silverdale  
Townsend  
0184  
adm@urbasesubstn.co.za

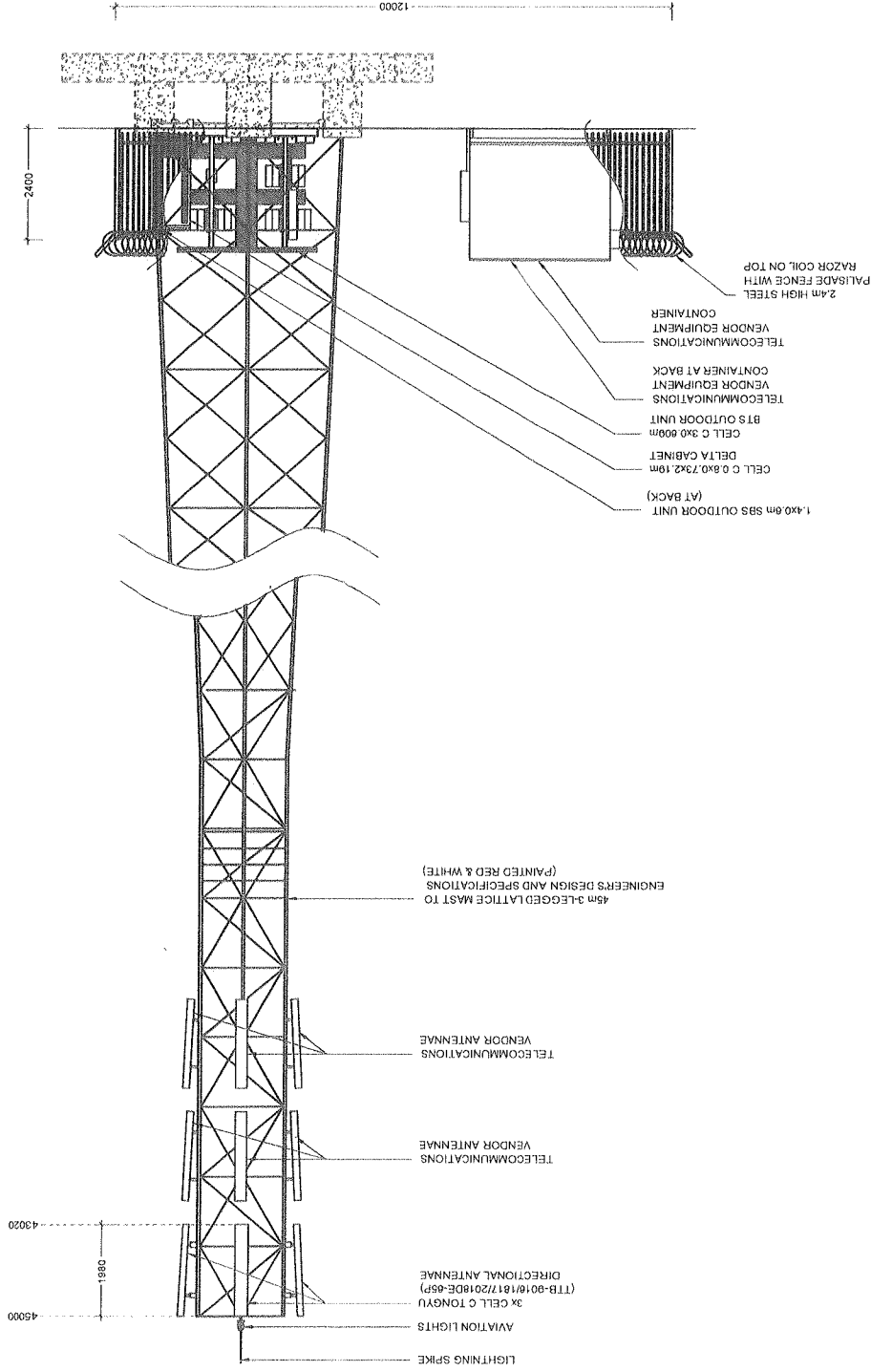
**REVISION:** SHEET NO: 9 OF 13 ISSUE: 1 SCALE: 1:75

**SITE NO:** 290/19

**SITE NAME AND ADDRESS:**  
MOOIPLAATS WEST  
OFFICE FARM 301 BET BETIEF,  
ON THE RIGHT HAND SIDE,  
MPUMALANGA

**CELL C ANTENNAE KEY**

| SECTOR | AZMUTH | ANTENNA                          | HEIGHT - BOTTOM (m) | MECH. TILT | ELEC. TILT | FEEDER SIZE | FEEDER LENGTH (m) |
|--------|--------|----------------------------------|---------------------|------------|------------|-------------|-------------------|
| 1      | 17°    | TONGYU (TTB-9016/18172018DE-65P) | 43.02               |            |            | 7/8"        | ± 47              |
| 2      | 137°   | TONGYU (TTB-9016/18172018DE-65P) | 43.02               |            |            | 7/8"        | ± 47              |
| 3      | 257°   | TONGYU (TTB-9016/18172018DE-65P) | 43.02               |            |            | 7/8"        | ± 47              |



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ALL WORK TO BE PERFORMED ACCORDING TO LATEST CELL C (PTY) LTD BTS SITE INFRASTRUCTURE SPECIFICATIONS

NOTE:  
 1. ACCESS ROAD TO BE ARRANGED BY OWNER  
 2. AC OPTION 1: MINE MAIN BUILDING  
 LAT: -26.64607°  
 3. AC OPTION 2: EXISTING SITE  
 LAT: -26.65537°  
 LONG: 30.09852°

**NORTH WEST ELEVATION: ALTERNATIVE 1**

| NO. | DATE       | DESCRIPTION |
|-----|------------|-------------|
| 0   | 01/03/2011 | FIRST ISSUE |

PROJECT:  
 NEW TELECOMMUNICATION BASESTATION WITH  
 A 45m MAST FOR CELL C (PTY) LTD

DRAWN BY: R. BARKER  
 PROPERTY DESCRIPTION:  
 PORTION 9 (REMAINING EXTENT) OF THE FARM  
 MOOPLAATS 289 IT

OWNER:  
 ESKLINV NO 44 (PTY) LTD

COORDINATES:  
 LAT: -26.655403°  
 LONG: 30.098120°

APPROVALS:  
 CELL C RF PLANNER:  
 Signature: \_\_\_\_\_  
 Date: \_\_\_\_\_

CELL C IMPLEMENTATION:  
 Signature: \_\_\_\_\_  
 Date: \_\_\_\_\_

CELL C REAL ESTATE CO-ORDINATOR:  
 Signature: \_\_\_\_\_  
 Date: \_\_\_\_\_

CELL C ENGINEER:  
 Name: \_\_\_\_\_  
 Signature: \_\_\_\_\_  
 Number: \_\_\_\_\_

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 150 Rivonia Road Fax: +27 (11) 324 4001  
 Sandown Johannesburg 2010

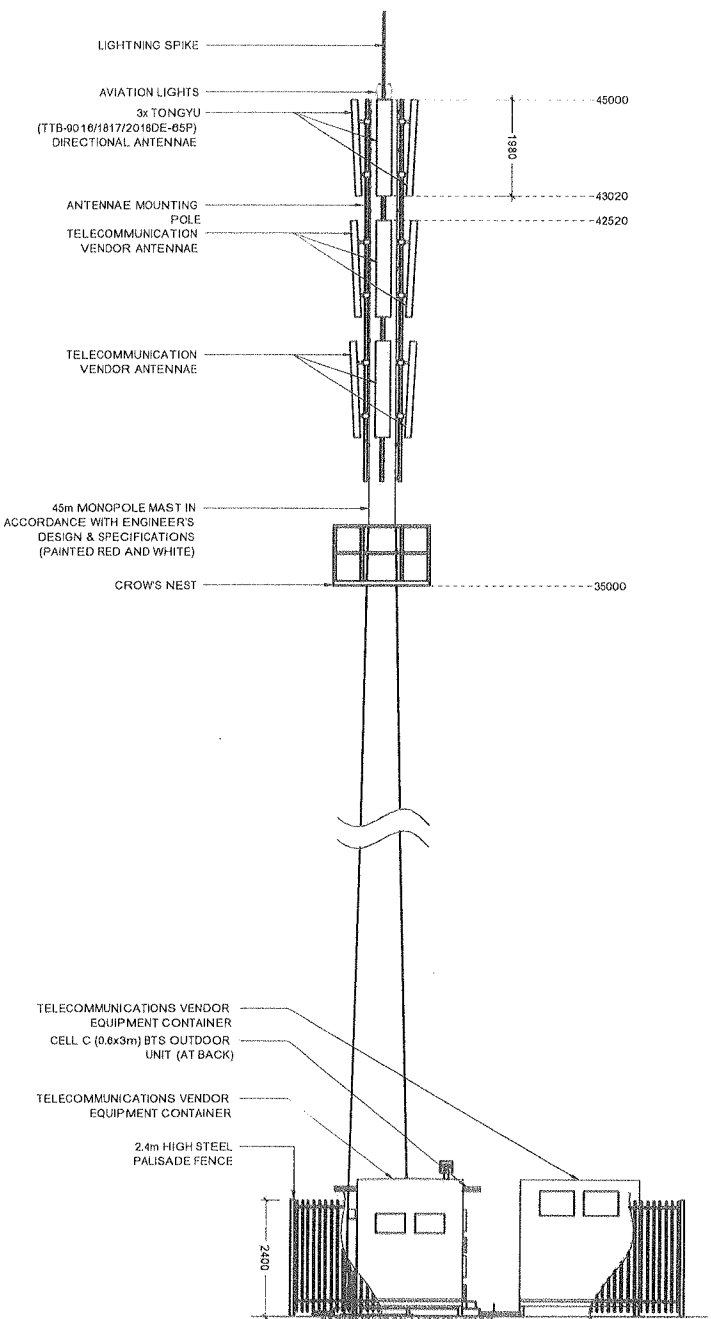
**Nokia Siemens Networks**  
 53 Avenue  
 Nigel Park  
 Centurion, Pretoria  
 0045  
 Tel: 012 879 2000

**TONGYU SOLUTIONS**  
 P.O. Box 20017  
 414 Rennie Road Tel: +27 (21) 904 1959  
 11th Floor, 414 Rennie Road Fax: +27 (21) 904 0734  
 6010 Alberton Johannesburg, S.A.

REVISION: SHEET NO. 10 OF 13 ISSUE 1 SCALE: 1:100

SITE NO: 2516  
 SITE NAME AND ADDRESS:  
 MOOPLAATS WEST  
 PORTION 9 (REMAINING EXTENT) OF THE FARM  
 ON THE RIGHT HAND SIDE  
 MPUMALANGA

| SECTOR | AZIMUTH | ANTENNA                          | HEIGHT - BOTTOM (m) | MECH. TILT | ELEC. TILT | FEEDER SIZE | FEEDER LENGTH (m) |
|--------|---------|----------------------------------|---------------------|------------|------------|-------------|-------------------|
| 1      | 17°     | TONGYU (TTB-9016/18172018DE-6SP) | 43.02               |            |            | 7/8"        | ± 47              |
| 2      | 137°    | TONGYU (TTB-9016/18172018DE-6SP) | 43.02               |            |            | 7/8"        | ± 47              |
| 3      | 257°    | TONGYU (TTB-9016/18172018DE-6SP) | 43.02               |            |            | 7/8"        | ± 47              |



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ALL WORK TO BE PERFORMED ACCORDING TO LATEST CELL C (P7) LTD SITE INFRASTRUCTURE SPECIFICATIONS

NORTH EAST ELEVATION: ALTERNATIVE 2

NOTE:  
1. ACCESS ROAD TO BE ARRANGED BY OWNER  
2. LAT: -26.56670°  
LONG: 30.09920°  
3. AC OPTION 2, EXISTING SITE  
LONG: 30.09850°

|  |                  |                  |
|--|------------------|------------------|
| NO.  | DATE             | DESCRIPTION      |
| 0  | 01/03/2011       | FIRST ISSUE      |
| PROJECT:<br>NEW TELECOMMUNICATION BASESTATION WITH A 45m MAST FOR CELL C (P7) LTD                          |                  |                  |
| DRAWN BY: R. BAKKER<br>PROPERTY DESCRIPTION:<br>PORTION 9 (REMAINING EXTENT) OF THE FARM MOORPLAATS 290 IT |                  |                  |
| OWNER:<br>EDLIN INV NO 44 (P7) LTD   |                  |                  |
| COORDINATES:<br>LAT: -26.56603°<br>LONG: 30.099120°  |                  |                  |
| APPROVALS:   |                  |                  |
| CELL C RF PLANNER:   | Signature: _____ | Date: _____      |
| CELL C IMPLEMENTATION:   | Signature: _____ | Date: _____      |
| CELL C REAL ESTATE CO-ORDINATOR:   | Signature: _____ | Date: _____      |
| CELL C ENGINEER:   | Name: _____      | Signature: _____ |
| Number: _____  |                  |                  |

82 Oak Avenue  
Highwell Ridge Park  
Dunwoody, Georgia  
USA

Tel: 012 878 2000

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Mowbray Johannesburg Tel: +27 (0) 21 564 9001  
South Africa 2010

P.O. Box 3017  
Dunwoody  
Tel: +27 (0) 201 15045  
Fax: +27 (0) 201 15047  
E-mail: info@tomase.co.za

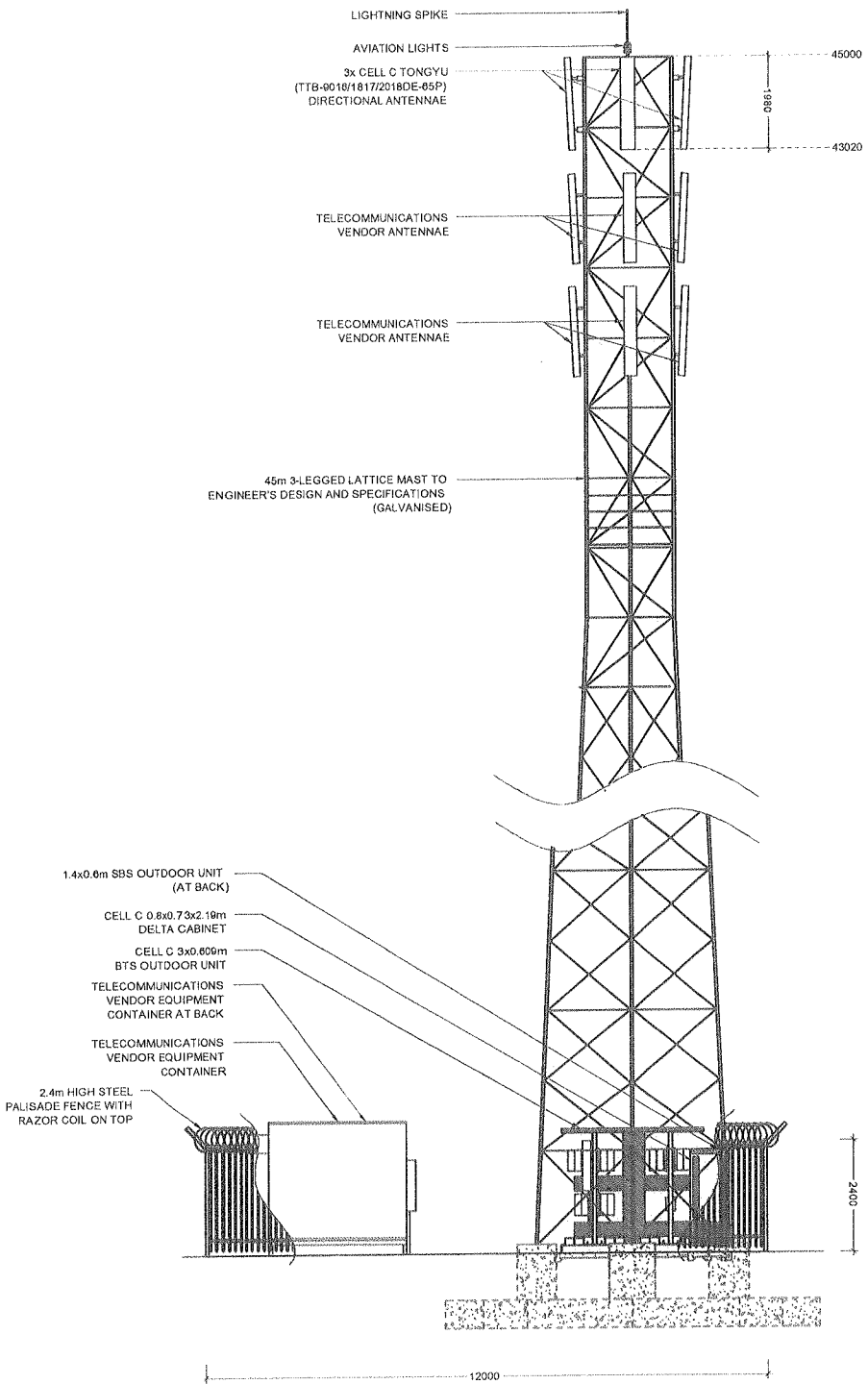
SCALE: 1:100

REVISION: 0 SHEET NO: 11 OF 13 ISSUE: 1 SCALE: 1:100

SITE NO: 2810

SITE NAME AND ADDRESS:  
MOORPLAATS WEST  
OFF N2, EMVELO TO PIET RETIEF,  
ON THE RIGHT HAND SIDE,  
MFMUNALANGA

| CELL C ANTENNAE KEY |         |                                  |                     |           |           |             |                   |
|---------------------|---------|----------------------------------|---------------------|-----------|-----------|-------------|-------------------|
| SECTOR              | AZIMUTH | ANTENNA                          | HEIGHT - BOTTOM (m) | MECH TILT | ELEC TILT | FEEDER SIZE | FEEDER LENGTH (m) |
| 1                   | 17°     | TONGYU (TTB-9016/18172018DE-65P) | 43.02               |           |           | 7/8"        | ± 47              |
| 2                   | 197°    | TONGYU (TTB-9016/18172018DE-65P) | 43.02               |           |           | 7/8"        | ± 47              |
| 3                   | 257°    | TONGYU (TTB-9016/18172018DE-65P) | 43.02               |           |           | 7/8"        | ± 47              |



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NORTH WEST ELEVATION: ALTERNATIVE 3

NOTE:  
 1. ACCESS ROAD TO BE ARRANGED BY OWNER  
 2. A/C OPTION 1 - MAIN MAIN BUILDING  
 3. LANT: -26.046537°  
 4. LANT: -26.046537°  
 5. LANT: -26.053270°  
 LONG: 30.089520°

| NO. | DATE       | DESCRIPTION |
|-----|------------|-------------|
| 0   | 01/03/2011 | FIRST ISSUE |

PROJECT:  
 NEW TELECOMMUNICATION BASE STATION WITH  
 A 45m MAST FOR CELL C (PTY) LTD

DRAWN BY: R BAKER  
 PROPERTY DESCRIPTION:  
 PORTION 8 (REMAINING EXTENT) OF THE FARM  
 MOOILLAITS 2901 JT  
 OWNER:  
 EGLIN INV NO 44 (PTY) LTD

COORDINATES:  
 LAT: -26.554035°  
 LONG: 30.089120°

APPROVALS:

CELL C RF PLANNER:  
 Signature: \_\_\_\_\_  
 Date: \_\_\_\_\_

CELL C IMPLEMENTATION:  
 Signature: \_\_\_\_\_  
 Date: \_\_\_\_\_

CELL C REAL ESTATE CO-ORDINATOR:  
 Signature: \_\_\_\_\_  
 Date: \_\_\_\_\_

CELL C ENGINEER:  
 Name: \_\_\_\_\_  
 Signature: \_\_\_\_\_  
 Number: \_\_\_\_\_

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 Mairon Office Park Tel: +27 (11) 231 4000  
 450 Rhinoceros Road Fax: +27 (11) 234 4001  
 Sandton, Johannesburg, 2010  
 Phone Bldg 315  
 2010

Nokia Siemens Networks

37 Oak Avenue, Tel: 012 678 2000  
 Highland Techno Park  
 Cuesdon, Pretoria

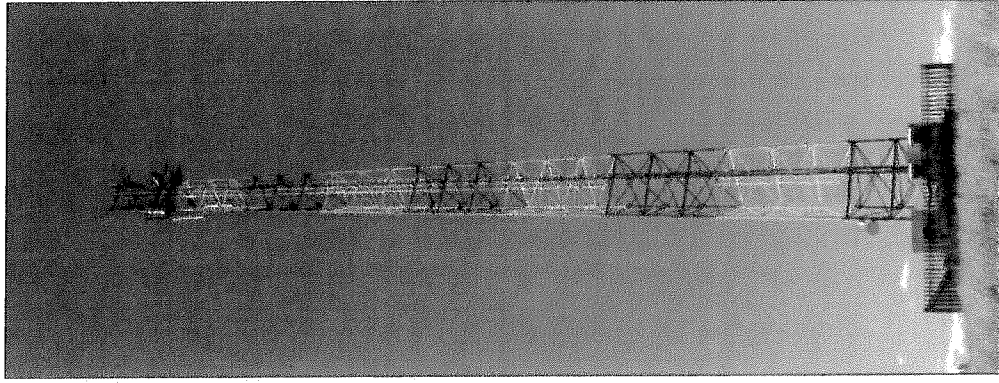
414 Roodie Road Tel: 071 773 8415  
 414 Roodie Road Tel: 071 773 8415  
 414 Roodie Road Tel: 071 773 8415  
 414 Roodie Road Tel: 071 773 8415  
 414 Roodie Road Tel: 071 773 8415

P.O. Box 20517  
 Tuckwell  
 0754  
 Durban

REVISION: SHEET NO. 12 OF 13 ISSUE: 1 SCALE: 1:100

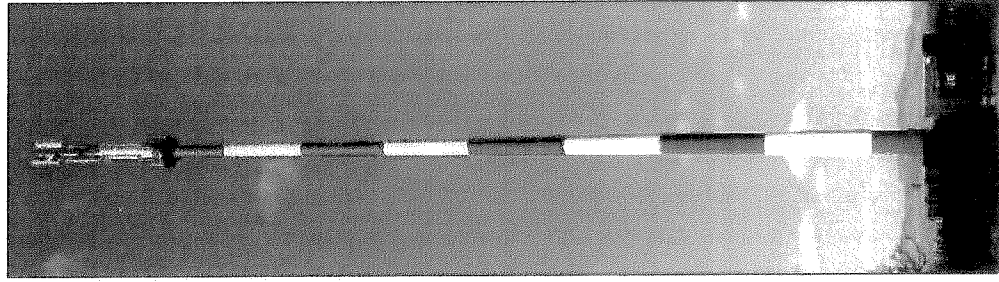
SITE NO. 115  
 SITE NAME AND ADDRESS:  
 MOOILLAITS WEST  
 OFFICE EMBLETO PLET RETIEF  
 115 MOOILLAITS WEST  
 MPUMALANGA

**ALTERNATIVE 1**



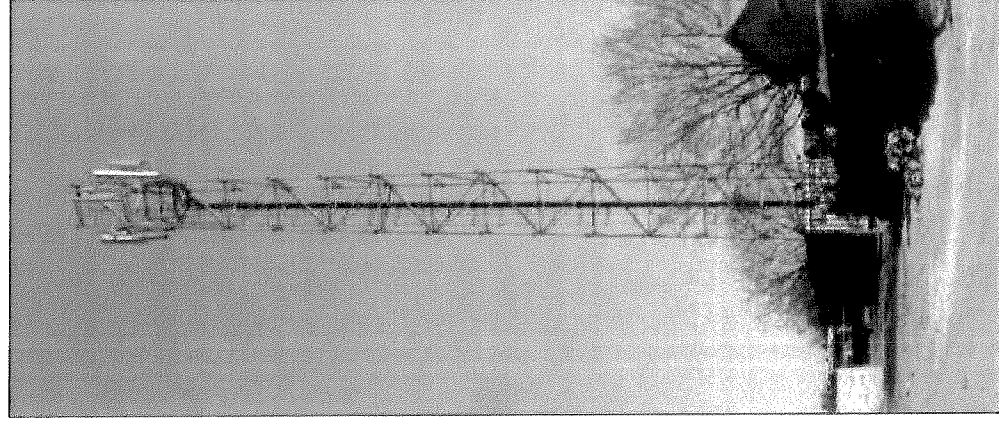
**TYPICAL LATTICE MAST  
(PAINTED RED AND WHITE)**

**ALTERNATIVE 2**



**TYPICAL MONOPOLE MAST  
(PAINTED RED AND WHITE)**

**ALTERNATIVE 3**



**TYPICAL LATTICE MAST  
(GALVANISED)**

**FACILITY ILLUSTRATION**

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|   |            |             |
|---|------------|-------------|
| NO.   | DATE       | DESCRIPTION |
| 0   | 01/03/2011 | FIRST ISSUE |
| PROJECT:  |            |             |
| NEW TELECOMMUNICATION BASESTATION WITH A 45m MAST FOR CELL C (PTY) LTD  |            |             |
| DRAWN BY: R BAKKER  |            |             |
| PROPERTY DESCRIPTION: PORTION 9 (REMAINING EXTENT) OF THE FARM MOOPLAATS 280 IT   |            |             |
| OWNER: EGLIN INV NO 44 (PTY) LTD  |            |             |
| COORDINATES:  |            |             |
| LAT: 29.9543320°  |            |             |
| LONG: 30.099120°  |            |             |
| APPROVALS:  |            |             |
| CELL C RF PLANNER:  |            |             |
| Signature: _____  |            |             |
| Date: _____   |            |             |
| CELL C IMPLEMENTATION:  |            |             |
| Signature: _____  |            |             |
| Date: _____   |            |             |
| CELL C REAL ESTATE CO-ORDINATOR:  |            |             |
| Signature: _____  |            |             |
| Date: _____   |            |             |
| CELL C ENGINEER   |            |             |
| Name: _____   |            |             |
| Signature: _____  |            |             |
| Number: _____   |            |             |
| <p><b>CELLO<sup>TM</sup></b><br/>THE POWER IS IN YOUR HANDS<br/>www.cello.co.za</p>   |            |             |
| <p>Merion Office Park<br/>13/16 Novena Road<br/>Springs<br/>Tel: +27 (11) 324 4000<br/>Fax: +27 (11) 324 4601</p>                 |            |             |
| <p>Private Bag 4292<br/>Benmore<br/>2010<br/>Tel: 012 978 3200</p>  |            |             |
| <p>Nokia Siemens Networks</p>   |            |             |
| <p>92 Oak Avenue<br/>Highveld Techno Park<br/>Pretoria, Pretoria<br/>0001<br/>Tel: 012 978 3200</p>                               |            |             |
| <p>Consultant</p>   |            |             |
| <p>414 Ficks Road<br/>Silwerdorp<br/>0184<br/>Tel: +27 (12) 904 5004<br/>Fax: +27 (12) 904 7072<br/>www.gsm-consultants.co.za</p> |            |             |
| REVISION:   | SHEET NO:  | ISSUE/SCALE |
| 0   | 13 OF 13   | 1 NTS       |
| SITE NO: 2910   |            |             |
| SITE NAME AND ADDRESS: MOOPLAATS WEST OFF N2, ERMELO TO PIET RETIEF. ON THE RIGHT HAND SIDE. MPUMALANGA                           |            |             |



**Appendix D: Specialist Reports – Not Applicable**

**Appendix E: Comments and responses report**

## Interested & Affected Parties Register / Comments and Responses Report

Site number: 2910  
 Site Name: Moolplaats West  
 EIA reference no.: 17/2/3/GS-35

| Interested and Affected Parties Register |            |   |                                     | Comments and Responses Report   |             |                                     |   |   |
|--|------------|---|-------------------------------------|---|-------------|-------------------------------------|---|---|
| No.                                      | Date       | Name  | Address                             | Contact detail  | Reacted to: | Record of initial I&AP registration | Issues raised / Comments received   | EAP Response  |
| 1  | 2011/05/24 | The Municipal Manager, Mr. T Dlamini  | PO Box 48, Ermelo, 2350             | Tel: (017) 801 3504<br>Fax: (017) 801 3851                              | Auto I&AP   | Auto I&AP                           | No comments received  | No comments received  |
| 2  | 2011/05/24 | The Ward Councillor, Cnr BA Maseko Ward 11                                      | PO Box 48, Ermelo, 2350             | Tel: (017) 801 3504<br>Fax: (017) 801 3851                              | Auto I&AP   | Auto I&AP                           | No comments received  | No comments received  |
| 3  | 2011/02/10 | South African Civil Aviation Authority  | Private Bag x73, Halfway House 1685 | Tel: (011) 545 1000<br>Fax: (011) 545 1451                              | Auto I&AP   | Auto I&AP                           | No comments received  | No comments received  |
| 4  | 2011/05/24 | South African Heritage Resources Agency, The Chief Executive Officer, D. Sibayi | PO Box 4637, Cape Town, 8000        | -   | Auto I&AP   | Auto I&AP                           | No comments received  | No comments received  |
| 5  | 2011/05/24 | Mpumalanga Tourism and Parks Agency   | Private Bag X9068, Ermelo, 2350     | Tel: (017) 819 5346<br>Fax: 086 609 0238<br>Email: vaino@vodamail.co.za | Auto I&AP   | Auto I&AP                           | The Mpumalanga Tourism and Parks Agency have the following concern, the Terrestrial biodiversity of the farm are Highly significant as indicated on a map from the Mpumalanga Biodiversity Conservation Plan (C-plan). Highly significant/important & Necessary areas are those where biodiversity has been heavily compromised and very few options remain to meet biodiversity targets. Natural vegetation cover in these areas should be maintained or restored. (Lotter M.C. & Ferrar A.A., 2006).<br><br>Decision on land use changes will require a biodiversity specialist study as part of the EIA. | The EAP acknowledge that this area's terrestrial biodiversity is labelled as Highly significant according to the Mpumalanga C-Plan and we therefore applied for environmental authorisation, due to the activity being listed when occurring in a Highly significant area. The footprint of the base station of the mast is only 144 square metres. The area on which the mast and base station will be established is already disturbed and very little natural vegetation occurs on and around the site. The site is also located in between gravel roads and maize fields, with a colliery close to the site. We therefore are of the opinion that there is no need for a biodiversity specialist study as the telecommunication mast is not a land use change i.e. no rezoning application is required, only the building plans need to be approved by the local council. |
| 5  | 2011/05/24 | Eskom Dave Lucas Environmental management                                       | P O Box 1091, Johannesburg 2000     | Tel: (011) 800 4514<br>Fax: 086 662 9952                                | Auto I&AP   | Auto I&AP                           | No comments received  | No comments received  |

**Appendix F: EMP**



THE POWER IS IN YOUR HANDS

CELL C (Pty) Ltd. 2002

## COMPANY STANDARD

### Environmental Management Plan for the construction of a Base transceiver station

DOCUMENT NO: 013 08 00009 (NUMBER)  
REVISION NO: 0.1  
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For information regarding this process guide contact:

Process guide administration: Shobana Singh  
Department process owner: Shobana Singh  
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Environmental Management Plan For The Constrction Of A Base Transciever Station

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## Environmental Management Plan For The Construction Of A Base Transceiver Station

### 1. SCOPE

#### 1.1. PURPOSE

This Environmental Management Plan (EMP) aims to manage and mitigate the environmental impact of the Base Transceiver Station (BTS) construction, rehabilitation and decommissioning activities. This is a guideline and should be seen as the minimum requirement for any BTS construction activity.

Due to the activities surrounding the roll out of a mobile telecommunications network the EMP's main focus will be on the site construction and decommissioning phases. Other activities surrounding the roll out have been quantified and assigned an environmental rating according to Cell C's Aspects and Impacts Register. These are managed through various environmental operational controls.

Its aim is to ensure that the following are in place:

- there is a process to identify existing or to predict potential negative environmental impacts;
- objectives and targets are set to ensure negative impacts are mitigated and existing impacts rehabilitated;
- actions are implemented to mitigate the identified negative environmental impacts; and
- monitoring programmes are developed to track the actions that have been implemented so as to ensure the effectiveness of the action.

The scope of this EMP is to give guidance to the Contractor regarding the care of the environment, by reducing the impacts that construction activities have on the surrounding environment.

#### 1.2. APPLICABILITY

To mitigate the effect of BTS construction and decommissioning activities on the surrounding environment.

#### 1.3. GOVERNING POLICY

Cell C's Safety, Health and Environmental Policy.

### 2. RESPONSIBILITIES

#### 2.1. ROLLOUT CO-ORDINATOR

The project co-ordinator will be accountable for the co-ordinated implementation of the Environmental Management Programme(EMP) and will ensure that it forms part of the contract.

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**3. PROCESS DESCRIPTION**

**3.1. PHYSICAL CONSTRUCTION ISSUES AND THEIR MITIGATING ACTIONS**

For the purpose of this EMP the construction phases are grouped as follows:

1. Site clearing
2. Laying of the concrete casts
3. Preparing the foundation for the fence and construction thereof
4. Placing the Mast and Container
5. Connecting all relevant components e.g. electrical, antenna
6. Access Roads

**3.1.1. Phases of construction activities and their associated environmental impacts**

**Site Clearing**

- The topsoil is to be stockpiled within the immediate vicinity and re-landscaped once construction is finished.
- All construction waste is to be stored in a designated area. It is recommended that a skip be used on site to store all waste. Waste rock generated during construction is to be sent to a permitted landfill.
- During excavations dust generated to be kept to a minimum by wetting the surface. A tanker of water may need to be brought on site if there is no water point available nearby.
- Ensure that all site clearing and excavations are done during standard working hours to limit the noise nuisance to the surrounding communities.

**Laying of the concrete casts**

- Generally concrete mixing should be done offsite and brought to the site via a concrete mixing truck. However concrete may be mixed on site for whatever reasons, especially for snag repairs.
- For minimum impact on the environment with regards to laying of concrete, ready mix concrete will be delivered by truck during standard working hours. In the event that concrete is mixed on site it will be done in a controlled manner. Any area disturbed is to be rehabilitated. It is the responsibility of the Project Managers to ensure that the concrete mixing area is rehabilitated.
- All activities that can cause dust are to be controlled via wetting procedures. This includes the access road and the surrounding disturbed areas.



#### Environmental Management Plan For The Construction Of A Base Transceiver Station

- All construction waste is to be stored in a designated area. It is recommended that a skip be used on site to store all waste

#### **Preparing the foundation for the fence and construction thereof**

- The rock and rubble removed during this phase of construction is to be taken offsite and disposed at a registered waste disposal site.
- The contractor shall ensure that all work that could create noise is done during standard working hours.
- All activities that can cause dust are to be controlled via wetting of the land surface.
- All concrete mixed on site will be done in a designated area. Concrete bags are to be stored in a dry area. Runoff for the designated area is to be monitored for any concrete runoff. Any area disturbed is to be rehabilitated.

#### **Placing of the mast and container**

- All painting activities are to be done within the designated area. The project manager is to ensure that all damage to the grass and surrounding vegetation is rehabilitated.
- Placing of the container to be done with a mechanical lifting machine during standard working hours to minimize any possible disturbance to the surrounding community. There must be adequate access to the site for turning of machines etc to prevent any damage to any natural surrounding vegetation. Machinery must be in good working order so that there are no oil leaks.

#### **Connecting all the relevant components**

- The waste generated shall be disposed at a registered waste disposal site.
- In the event that a temporary power supply is used on site the generator will be in good working condition with the correct housing. The housing will contain the necessary drip trays. If any diesel spillage takes place it will be cleaned up immediately and logged in the site diary. It is the project manager's responsibility to ensure that the diesel spillage is cleaned up in an environmental acceptable manner and to ensure that this information is captured in the site diary.
- The suppliers of the generators will be responsible to ensure that noise levels are kept within the SABS 0103 standard.

#### **Access Roads**

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- Due to the lack of access to BTS sites an access road might be needed. The development of an access road should be designed and developed in such a manner that it reduces the degradation of the surrounding environment.
- To ensure that sufficient erosion controls have been developed, especially slopes that are greater than 1 in 5.
- Follow the contours when planning a road on a slope.
- During the construction of the access road, ensure that dust is reduced via wetting the surface.

**3.1.2. General conditions regarding the construction phases:**

- All services, including maintenance, will be done via the access gate fencing closest to a road to minimize any unnecessary disturbances to the surrounding environments.
- The only atmospheric pollution will be noise and dust during construction. These will have minimal effects on the surrounding physical and biological environments.
- Littering or illegal dumping of any waste material is prohibited (no waste disposal holes are to be made on the site ground unless it is a registered waste disposal site).
- Standard working hours on site will be from 07:00 – 17:00.
- No construction workers will be on site after working hours. Unless written permission is obtained
- One chemical toilet will be used on site for workers during the construction phases.
- It is the responsibility of the Project Managers to comply with all relevant legislation will be enforced during construction.
- The site containing the mast and the equipment container to be fenced with a 2,3m high metal palisade fence. Access to the area to be strictly controlled through a locked gate.
- No servicing of any machinery or vehicle may take place on site
- Any area disturbed during construction, which falls outside the fenced area, to be rehabilitated to its original condition. The rehabilitation activities are to be coordinated by the Project Managers.
- The site to be inspected twice a year and be kept in a good condition. A record must be kept of each inspection, stating the condition of the site and any remedial work that may be necessary on the site.
- Any damage that is done to an existing access road during construction will be rehabilitated to its original state.
- Electricity supply cables to the site will be underground via a trench that is at least 600 mm deep
- The mast colour is normally white or green, but is not limited to these two colours. Any paintwork must be inspected once a year and be kept in a good condition.

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- On termination of use of the facility, all equipment to be dismantled and removed and the site restored to its original state.
- No herbicides or pesticides will be used on site unless administered by a pest control officer.
- The Contractor shall maintain a Site Diary and Instruction Book wherein daily reports of completed work, site visits, delays or inclement weather reports and details of plant and labour resources. Siemens will keep site instructions for scrutiny. Any delay incurred by the Contractor will be immediately reported to Siemens.
- It is the responsibility of the Project Managers to ensure that the environmental mitigating actions as stipulated in this Environmental Management Plan are adhered to.

**Monitoring of construction phase**

Site inspections to take place during construction and/or once the sites are completed. Site inspections (audits) are controlled via environmental pre- and post-construction checklists that ensures that all minimum requirements. Refer to Annexure 1.

**3.1.3. Interaction with the Surrounding Landowners**

- The culture and lifestyles of the communities living in close proximity to the site and work sites must be respected.
- Removal (pilfering) of agricultural products (sugar cane, fruit, vegetables, stock, fire wood, poaching, etc.) is prohibited. Receipts must be obtained for any merchandise purchased or received from land owners.
- All complaints must be reported, recorded and investigated.

**3.1.4. Biological issues and their mitigating actions**

**Fauna and Flora**

Endangered and threatened flora must be identified and suitably demarcated to prevent damage. Permits must be obtained from the regional Department of Environment Affairs and Tourism for the felling of protected trees and shrubs.

The BTS site must be suitably fenced to prevent access by any animals.

**4. DEFINITIONS**

Definitions of specific or special terms used.

**5. ABBREVIATIONS AND ACRONYMS**

**BTS:** Base Transceiver Station

**construction footprint:** The area of the BTS site including a 2m radius around the site. The BTS site can rang from 8m squared to 12m squared.

**environment:** Surroundings in which an organization operates, including air, water, land, natural

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resources, flora, fauna, humans and their interactions.

**environmental issues (aspect):** Elements of an organization's activities, products or services which can interact with the environment.

**environmental impact:** Any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organization's activities, products or services.

**environmental impact assessment (EIA):** The process of collecting, organizing, analyzing, interpreting and communicating data that is relevant to some decision. It is aimed at identifying impacts that a proposal will have on the environment as well as the impact the environment will have on the project. The result of the EIA is a planning decision to accept the best balanced alternative for a project.

**environmental management programme (EMP) :** A programme that guarantees the desired end state of the environment and describes how activities, that could have a negative impact, will be managed and monitored and impacted areas rehabilitated.

**interested party:** Individuals or groups concerned with or affected by an activity and its consequences. These include the authorities, local communities, investors, work force, customers and consumers, environmental interested groups and the general public.

**mitigate:** The implementation of practical measures to reduce adverse impacts or enhance beneficial impacts of an action.

**monitoring:** An activity which ensures that the requirements of the Environmental Management Programme are met.

**ROD:** Record of Decision

**site:** The area which houses the BTS and the mast. Including a 2m radius around the fence.

**standard working hours:** From 07:00am to 17:00pm

**TSS:** Technical Site Survey

Environmental Management Plan For The Constrction Of A Base Transciever Station

**6. APPROVAL**

| Designation                                | Name | Date | Signature |
|--|------|------|-----------|
| Author:                                    |      |      |           |
| Head of Business Process Management        |      |      |           |
| Department Process Owner                   |      |      |           |
| Head of Quality Management                 |      |      |           |
| Head of Error! Reference source not found. |      |      |           |

**7. REVISION HISTORY**

| Description of Change or Reason for Update | Rev. # | Date | Name |
|--|--------|------|------|
| Initial Issue (draft)                      | 0      |      |      |
|  |        |      |      |
|  |        |      |      |
|  |        |      |      |
|  |        |      |      |

**Appendix G1: Public Participation**

- G1(a) – Public Participation - Proof of Site Notice**
- G1(b) – Public Participation – Written Notices to I&AP**
- G1(c) - South African Civil Aviation Authority Approval**
- G(d) – Public Participation – Proof of Newspaper Advertisement**