



**EIA REFERENCE:** 16/3/3/1/E2/37/1048/19  
**NEAS REFERENCE:** WCP/EIA/0000635/2019  
**ENQUIRIES:** D'mitri Matthews  
**DATE OF ISSUE:** 2020 -02- 10

The Chief Director  
Department of Transport and Public Works  
3<sup>rd</sup> floor  
9 Dorp Street  
**CAPE TOWN**  
8000

**Attention: Mr. J. Neethling**

Tel.: (021) 483 2261

Fax: (021) 483 8755

Dear Sir

**APPLICATION FOR ENVIRONMENTAL AUTHORISATION IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT NO. 107 OF 1998) AND THE ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS, 2014, (AS AMENDED): REPLACEMENT AND UPSTREAM RE-ALIGNMENT OF BRIDGE 0564A, LOCATED AT KM23,47 ON DIVISIONAL ROAD 1252, CROSSING THE KLEIN RIVER, SOUTH OF CALEDON, REPLACEMENT OF CAUSEWAY 12226 LOCATED AT KM0,49 ON OP4032, ON MINOR ROAD AND CLOSE TO MR326, LINKING STANFORD WITH THE N2 AND THE REPLACEMENT OF CULVERT 10656, LOCATED AT KM3,7 ON DIVISIONAL ROAD 1218 NEAR STANFORD**

1. With reference to the above application, the Department hereby notifies you of its decision to **grant** Environmental Authorisation, attached herewith, together with the reasons for the decision.
2. In terms of Regulation 4 of the Environmental Impact Assessment Regulations, 2014, (as amended), you are instructed to ensure, within 14 days of the date of the Environmental Authorisation, that all registered Interested and Affected Parties ("I&APs") are provided with access to and reasons for the decision, and that all registered I&APs are notified of their right to appeal.
3. Your attention is drawn to Chapter 2 of the National Appeal Regulations, 2014 (as amended), which prescribes the appeal procedure to be followed. This procedure is summarized in the attached Environmental Authorisation.

Yours faithfully

  
**MR. ZAHR JOFEY**  
**DIRECTOR: DEVELOPMENT MANAGEMENT (REGION 1)**  
**DEPARTMENT OF ENVIRONMENTAL AFFAIRS AND DEVELOPMENT PLANNING**

CC: (1) Ms. B. Ditcham (Sharples Environmental Services cc)  
(2) Mr. B. Kondokter (Overstrand Municipality)  
(3) Mr. F. Smith (BGCMA)  
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## ENVIRONMENTAL AUTHORISATION

**APPLICATION FOR ENVIRONMENTAL AUTHORISATION IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT NO. 107 OF 1998) AND THE ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS, 2014, (AS AMENDED): REPLACEMENT AND UPSTREAM REALIGNMENT OF BRIDGE 0564A, LOCATED AT KM23,47 ON DIVISIONAL ROAD 1252, CROSSING THE KLEIN RIVER, SOUTH OF CALEDON, REPLACEMENT OF CAUSEWAY 12226 LOCATED AT KM0,49 ON OP4032, ON MINOR ROAD AND CLOSE TO MR326, LINKING STANFORD WITH THE N2 AND THE REPLACEMENT OF CULVERT 10656, LOCATED AT KM3,7 ON DIVISIONAL ROAD 1218 NEAR STANFORD**

With reference to your application for the abovementioned, find below the outcome with respect to this application.

## DECISION

By virtue of the powers conferred on it by the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA") and the Environmental Impact Assessment ("EIA") Regulations, 2014 (as amended), the Competent Authority herewith **grants Environmental Authorisation** to the applicant to undertake the listed activities specified in Section B below with respect to the Design Alternative 1, described in the Basic Assessment Report ("BAR"), dated September 2019.

The applicant for this Environmental Authorisation is required to comply with the conditions set out in Section E below.

### A. DETAILS OF THE APPLICANT FOR THIS ENVIRONMENTAL AUTHORISATION

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% Mr. J. Neethling  
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**CAPE TOWN**  
8000

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The abovementioned applicant is the holder of this Environmental Authorisation and is hereinafter referred to as **"the holder"**.

**B. LIST OF ACTIVITIES AUTHORISED**

Listed activities	Activity/Project Description
<p>EIA Regulations Listing Notice 1 of 2014:            Activity Number 12:            The development of—</p> <p><b>(i) dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 100 square metres; or</b></p> <p><b>(ii) infrastructure or structures with a physical footprint of 100 square metres or more;</b></p> <p>where such development occurs—</p> <p><b>(a) within a watercourse;</b>  <b>(b) in front of a development setback; or</b>  <b>(c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse; —</b></p> <p>excluding—</p> <p>(aa) the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour;</p> <p>(bb) where such development activities are related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies;</p> <p>(cc) activities listed in activity 14 in Listing Notice 2 of 2014 or activity 14 in Listing Notice 3 of 2014, in which case that activity applies;</p> <p>(dd) where such development occurs within an urban area;</p> <p>(ee) where such development occurs within existing roads, road reserves or railway line reserves; or</p> <p>(ff) the development of temporary infrastructure or structures where such infrastructure or structures will be removed within 6 weeks of the commencement of development and where indigenous vegetation will not be cleared.</p>	<p>The proposal entails the construction of a bridge, 15m upstream of the existing bridge, which will have a development footprint larger than 100m<sup>2</sup>. The bridge will be constructed outside of the existing road reserve.</p>
<p>Activity Number 19:            The infilling or depositing of any material of more than 10 cubic metres into, or the dredging,</p>	<p>The proposal will require the excavation and movement of more than 10m<sup>3</sup> of material for the construction of the new river crossing (Bridge No.</p>

<p>excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse;</p> <p>but excluding where such infilling, depositing, dredging, excavation, removal or moving—</p> <ol style="list-style-type: none"> <li>will occur behind a development setback;</li> <li>is for maintenance purposes undertaken in accordance with a maintenance management plan;</li> <li>falls within the ambit of activity 21 in this Notice, in which case that activity applies;</li> <li>occurs within existing ports or harbours that will not increase the development footprint of the port or harbour; or</li> <li>where such development is related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies.</li> </ol>	<p>0564A), the upgrade of two river crossings (causeway and culvert) and the establishment of two bypass roads at the causeway and culvert sites.</p>
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The abovementioned list is hereinafter referred to as “**the listed activities**”.

The holder is herein authorised to undertake the following alternative:

The proposal entails the replacement of three watercourse crossings (Bridge No. 0564A, Causeway No. 12226 and Culvert No. 10656). Bypass roads will be established for Causeway No. 12226 and Culvert No. 10656 on the upstream side of both structures during the construction phase. Details of the proposal are described below:

**Bridge No. 564A:**

Construction of a new three-span reinforced concrete bridge with span lengths of 10m, 15m and 10m, on a new alignment, approximately 15m upstream of the existing bridge. The new deck and approaches will be at a level of 1,5m above the existing structure. The bridge will have piled foundations and concrete parapets. The bridge deck and about 40m of roadway on each side of the bridge will be asphalt surfaced.

**Causeway No. 12226:**

Replacement of the existing structure with a new two-lane low-level bridge consisting of a 3,4m wide lane in each direction and two 0,9m shoulders. The causeway will also comprise eight 3m x 2,4m high openings and approximately 15m of concrete road slabs on each of the approaches. The new deck will measure 8,6m between guide blocks and will be 1,5m higher than the existing causeway.

**Culvert No. 10656:**

Replacement of the existing culvert with a wider in-situ box culvert (2m x 3m) built at a 15 degree angle (compared to the existing culvert). The new deck width will be 8,6m between the guardrails. Gabion guide walls will be constructed at the inlet.

Coffer dams will be established at all three sites during the construction phase.

### C. SITE DESCRIPTION AND LOCATION

The listed activities will be undertaken on Portion 12 of Farm No. 609, Portion 8 of farm Klein River Kloof No. 660 and the Remainder of Farm No. 933, Stanford, at the following co-ordinates:

Bridge No. 564:

Latitude (S)	Longitude (E)
34° 21' 54.20"	19° 38' 17.37"

Causeway No. 12226:

Latitude (S)	Longitude (E)
34° 25' 00.18"	19° 32' 23.56"

Culvert No. 10656

Latitude (S)	Longitude (E)
34° 26' 36.42"	19° 32' 11.05"

The SG digit codes are: C01300000000060900012  
C01300000000066000008  
C01300000000093300000

Refer to Annexure 1: Locality Map and Annexure 2: Site Development Plans.

The above is hereinafter referred to as "**the site**".

### D. DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER

Sharples Environmental Services cc  
% Ms. B. Ditcham  
P. O. Box 443  
**MILNERTON**  
7435

Tel.: (021) 554 5195  
Fax: (086) 575 2869

### E. CONDITIONS OF AUTHORISATION

#### Scope of authorisation

1. The holder is authorised to undertake the listed activities specified in Section B above in accordance with, and restricted to, Design Alternative 1 in the BAR dated September 2019 at the site as described in Section C above.
2. The holder must commence with the listed activities on site within a period of **10 years** from the date of issue of this Environmental Authorisation.
3. The development must be concluded within **10 years** from the date of commencement of the first listed activity.

4. The holder shall be responsible for ensuring compliance with the conditions by any person acting on his/her behalf, including an agent, sub-contractor, employee or any person rendering a service to the holder.
5. Any changes to, or deviations from the scope of the alternative described in Section B above must be accepted or approved, in writing, by the Competent Authority before such changes or deviations may be implemented. In assessing whether to grant such acceptance/approval or not, the Competent Authority may request information, in order to evaluate the significance and impacts of such changes or deviations, and it may be necessary for the holder to apply for further authorisation in terms of the applicable legislation.

#### **Written notice to the Competent Authority**

6. Seven calendar days' notice, in writing, must be given to the Competent Authority before commencement of construction activities. The notice must:

- 6.1 make clear reference to the site details and EIA Reference number given above; and

- 6.2 include proof of compliance with the following conditions described herein:

Conditions: 7, 8, 10 and 11

#### **Notification and administration of appeal**

7. The holder must in writing, within 14 (fourteen) calendar days of the date of this decision-

- 7.1 notify all registered Interested and Affected Parties ("I&APs") of -

- 7.1.1 the outcome of the application;

- 7.1.2 the reasons for the decision as included in Annexure 3;

- 7.1.3 the date of the decision; and

- 7.1.4 the date when the decision was issued.

- 7.2 draw the attention of all registered I&APs to the fact that an appeal may be lodged against the decision in terms of the National Appeals Regulations, 2014 (as amended) detailed in Section G below;

- 7.3 draw the attention of all registered I&APs to the manner in which they may access the decision; and

- 7.4 provide the registered I&APs with:

- 7.4.1 the name of the holder (entity) of this Environmental Authorisation;

- 7.4.2 name of the responsible person for this Environmental Authorisation;

- 7.4.3 postal address of the holder;

- 7.4.4 telephonic and fax details of the holder;

- 7.4.5 e-mail address, if any, of the holder; and

- 7.4.6 contact details (postal and/or physical address, contact number, facsimile and e-mail address) of the decision-maker and all registered I&APs in the event that an appeal is lodged in terms of the 2014 National Appeals Regulations (as amended).

8. The listed activities, including site preparation, must not commence within 20 (twenty) calendar days from the date the applicant notifies the registered I&APs of this decision. In the event that an appeal is lodged with the Appeal Authority, the effect of this Environmental Authorisation is suspended until the appeal is decided i.e. the listed activities, including site preparation, must not commence until the appeal is decided.

#### **Management of activity**

9. The draft Environmental Management Programme ("EMPr") submitted as part of the application for Environmental Authorisation is hereby approved and must be implemented.
10. A Maintenance Management Plan ("MMP") must be compiled according to the Department's prescribed Information Document for a Maintenance Management Plan for a Watercourse. The MMP must be submitted to and adopted by the Competent Authority, prior to the commencement of construction activities.

#### **Monitoring**

11. The holder must appoint a suitably experienced environmental control officer ("ECO"), before commencement of any construction activities to ensure compliance with the EMPr and the conditions contained herein.
12. The ECO must conduct fortnightly compliance monitoring inspections during the construction phase. Monthly Environmental Compliance Reports must be compiled and quarterly Environmental Compliance Reports must be submitted to the Competent Authority for the duration of the construction phase. The final Environmental Compliance Report must be submitted to the Competent Authority six months after construction has been complete.
13. A copy of the Environmental Authorisation, EMPr and compliance monitoring reports must be kept at the site of the authorised activity.
14. Access to the site referred to in Section C must be granted, and the environmental reports mentioned above must be produced, to any authorised official representing the Competent Authority who requests to see it for the purposes of assessing and/or monitoring compliance with the conditions contained herein.

#### **Auditing**

15. The holder must ensure that environmental auditing is undertaken in accordance with Regulation 34 in terms of the NEMA EIA Regulations, 2014 (as amended) to determine compliance with the conditions of the Environmental Authorisation and the EMPr. The Environmental Audit Reports must be submitted to the Competent Authority every six (6) months during the construction phase. The Environmental Audit Report must be prepared by an independent person and must contain all the information required in Appendix 7 of the NEMA EIA Regulations, 2014 (as amended).

The holder must, within 7 days of the submission of an environmental audit report to the Competent Authority, notify all potential and registered I&APs of the submission and make the report immediately available to anyone on request and on a publicly accessible website (where the holder has such a website).

## Specific Conditions

16. Should any heritage remains be exposed during excavations or any other actions on the site, these must immediately be reported to the Provincial Heritage Resources Authority of the Western Cape, Heritage Western Cape. Heritage remains uncovered or disturbed during earthworks must not be further disturbed until the necessary approval has been obtained from Heritage Western Cape.

Heritage remains include: meteorites, archaeological and/or paleontological remains (including fossil shells and trace fossils); coins; indigenous and/or colonial ceramics; any articles of value or antiquity; marine shell heaps; stone artefacts and bone remains; structures and other built features with heritage significance; rock art and rock engravings; and/or graves or unmarked human burials including grave goods and/or associated burial material.

17. A qualified archaeologist and/or palaeontologist must be contracted where necessary (at the expense of the holder) to remove any heritage remains. Heritage remains can only be disturbed by a suitably qualified heritage specialist working under a directive from the relevant heritage resources authority.

## F. GENERAL MATTERS

1. Notwithstanding this Environmental Authorisation, the holder must comply with any other statutory requirements that may be applicable when undertaking the listed activities.
2. Non-compliance with a condition of this Environmental Authorisation or EMPr may render the holder liable to criminal prosecution.
3. If the holder does not commence with the listed activities within the period referred to in Condition 2, this Environmental Authorisation shall lapse for that activity, and a new application for Environmental Authorisation must be submitted to the Competent Authority. If the holder wishes to extend the validity period of the Environmental Authorisation, an application for amendment in this regard must be made to the Competent Authority prior to the expiry date of the Environmental Authorisation.
4. The holder must submit an application for amendment of the Environmental Authorisation to the Competent Authority where any detail with respect to the Environmental Authorisation must be amended, added, substituted, corrected, removed or updated. If a new holder is proposed, an application for Amendment in terms of Part 1 of the EIA Regulations, 2014 (as amended) must be submitted.

Please note that an amendment is not required if there is a change in the contact details of the holder. In this case, the Competent Authority must only be notified of such changes.

5. The manner and frequency for updating the EMPr is as follows:  
Amendments to the EMPr must be done in accordance with Regulations 35 to 37 of the EIA Regulations, 2014 (as amended) or any relevant legislation that may be applicable at the time.



## G. APPEALS

Appeals must comply with the provisions contained in the National Appeal Regulations 2014 (as amended).

1. An appellant (if the holder of the decision) must, within 20 (twenty) calendar days from the date on which notification of the decision was sent to the holder by the Competent Authority –
  - 1.1. submit an appeal in accordance with Regulation 4 of the National Appeal Regulations 2014 (as amended) to the Appeal Administrator; and
  - 1.2. submit a copy of the appeal to any registered I&APs, any Organ of State with interest in the matter and the decision-maker i.e. the Competent Authority that issued the decision.
2. An appellant (if NOT the holder of the decision) must, within 20 (twenty) calendar days from the date on which the holder of the decision sent notification of the decision to the registered I&APs–
  - 2.1. submit an appeal in accordance with Regulation 4 of the National Appeal Regulations 2014 (as amended) to the Appeal Administrator; and
  - 2.2. submit a copy of the appeal to the holder of the decision, any registered I&AP, any Organs of State with interest in the matter and the decision-maker i.e. the Competent Authority that issued the decision.
3. The holder of the decision (if not the appellant), the decision-maker that issued the decision, the registered I&AP and the Organs of State must submit their responding statements, if any, to the appeal authority and the appellant within 20 (twenty) calendar days from the date of receipt of the appeal submission.

4. The appeal and the responding statement must be submitted to the address listed below:

By post:                      Western Cape Ministry of Local Government, Environmental Affairs and  
Development Planning  
Private Bag X9186  
CAPE TOWN  
8000; or

By facsimile:              (021) 483 4174; or

By hand:                      Attention: Mr Marius Venter (Tel: 021 483 2659)  
Room 809  
8<sup>th</sup> Floor Utilitas Building, 1 Dorp Street, Cape Town, 8001

**Note:** For purposes of electronic database management, you are also requested to submit electronic copies (Microsoft Word format) of the appeal, responding statement and any supporting documents to the Appeal Authority to the address listed above and/ or via e-mail to [DEADP.Appeals@westerncape.gov.za](mailto:DEADP.Appeals@westerncape.gov.za)

5. A prescribed appeal form as well as assistance regarding the appeal processes is obtainable from Appeal Authority at: Tel. (021) 483 2659, E-mail DEADP.Appeals@westerncape.gov.za or URL <http://www.westerncape.gov.za/eadp>.

#### H. DISCLAIMER

The Western Cape Government, the Local Authority, committees or any other public authority or organisation appointed in terms of the conditions of this Environmental Authorisation shall not be responsible for any damages or losses suffered by the holder, developer or his/her successor in any instance where construction or operation subsequent to construction is temporarily or permanently stopped for reasons of non-compliance with the conditions as set out herein or any other subsequent document or legal action emanating from this decision.

Your interest in the future of our environment is appreciated.

Yours faithfully

  
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**MR. ZAHIR TOEFY**

**DIRECTOR: DEVELOPMENT MANAGEMENT (REGION 1)**

**DEPARTMENT OF ENVIRONMENTAL AFFAIRS AND DEVELOPMENT PLANNING**

DATE OF DECISION: 10/02/2020

CC: (1) Ms. B. Ditcham (Sharples Environmental Services cc)  
(2) Mr. B. Kondokter (Overstrand Municipality)  
(3) Mr. F. Smith (BGCMA)  
(4) Mr. R. Smart (CapeNature)  
(5) Mr. C. van der Walt (Department of Agriculture)

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## ANNEXURE 1: LOCALITY MAP



Figure 1: Location of the bridge, causeway and culvert.



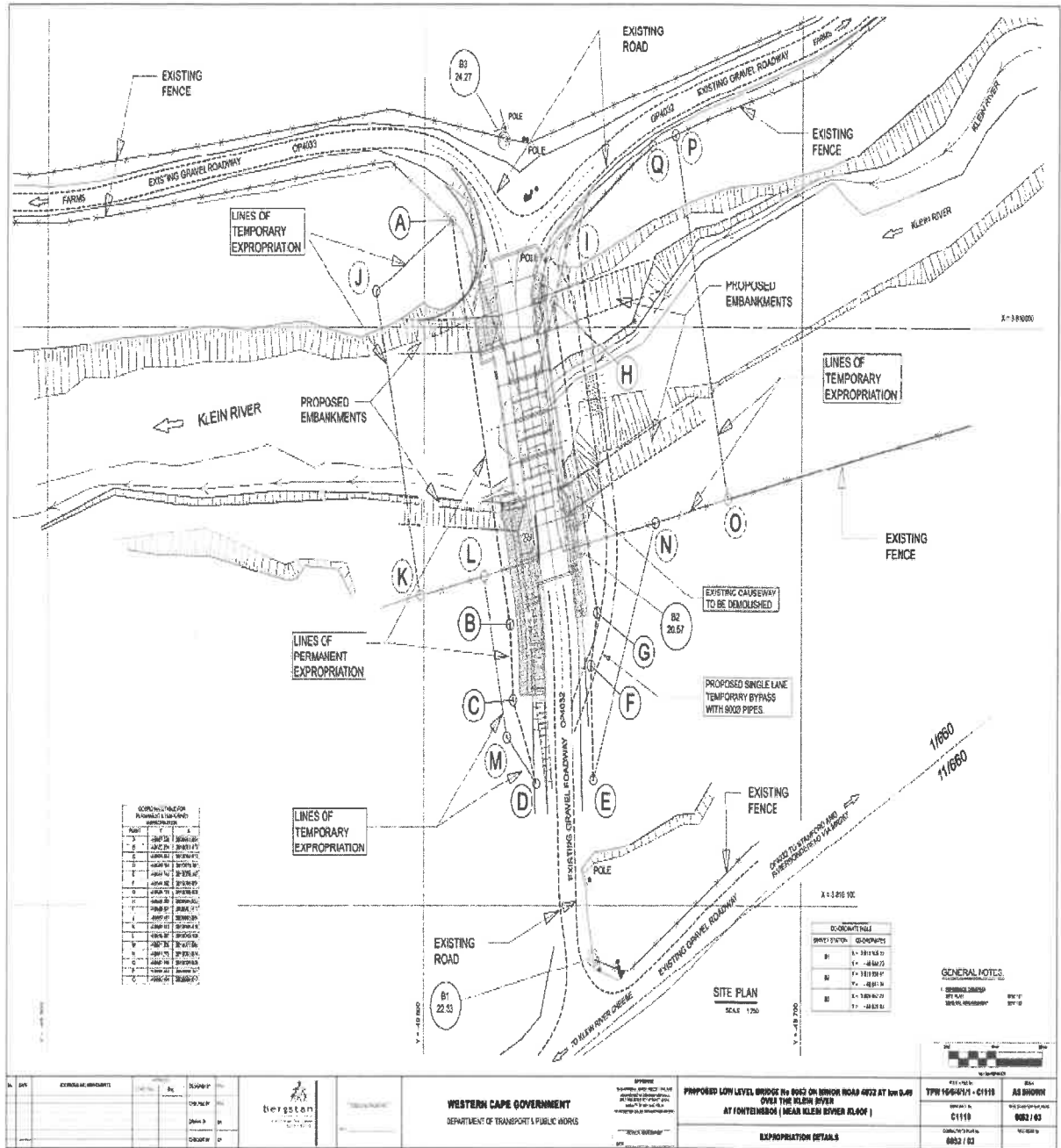


Figure 3: Site development plan for Causeway No. 12226.

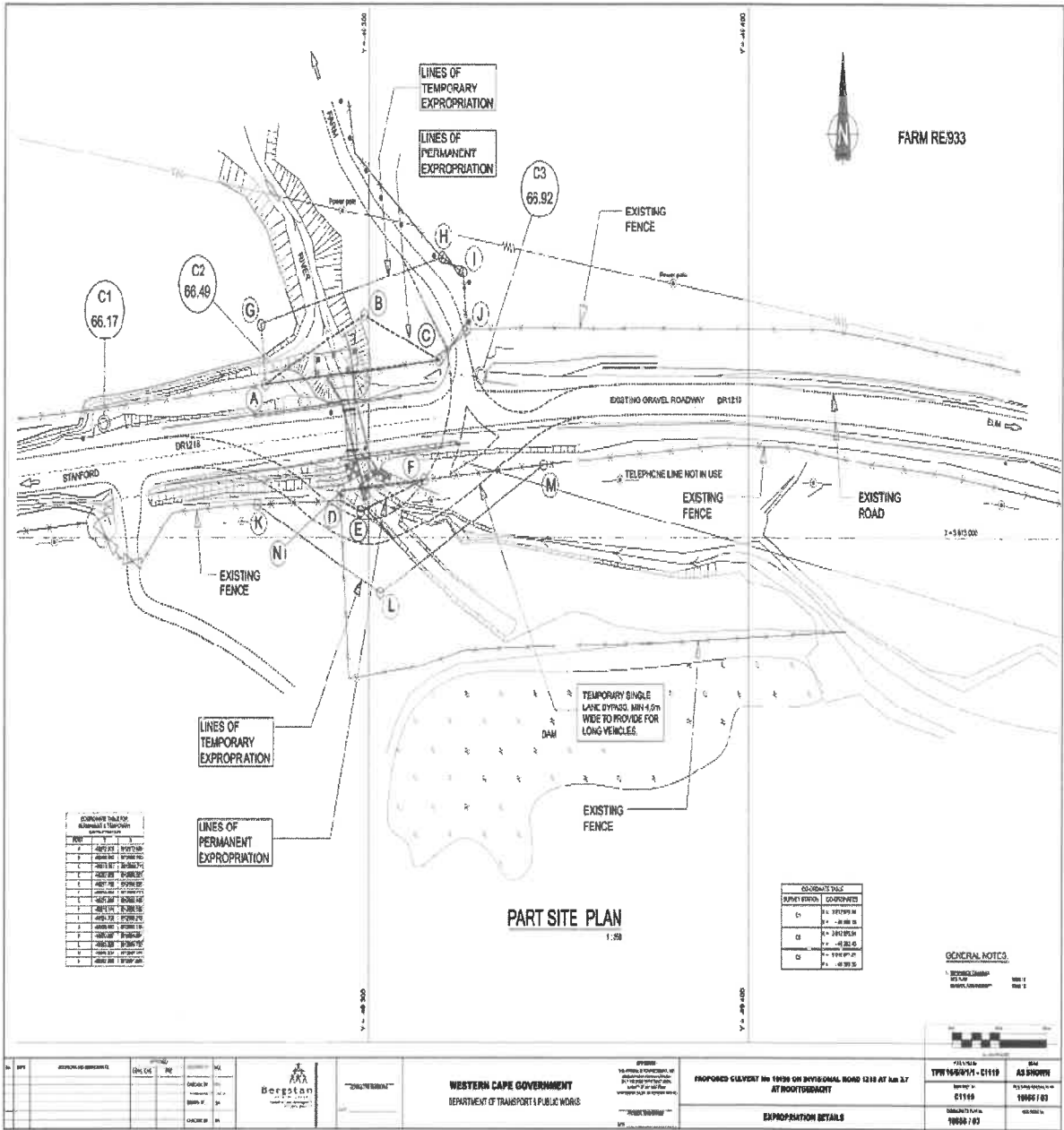


Figure 4: Site development plan for Culvert No. 10656.

## **ANNEXURE 2: REASONS FOR THE DECISION**

In reaching its decision, the Competent Authority considered, amongst others, the following:

- a) The information contained in the Application Form dated 19 June 2019, the final BAR dated September 2019 and the EMPr submitted together with the final BAR;
- b) Relevant information contained in the Departmental information base, including the Guidelines on Public Participation and Alternatives (dated March 2013);
- c) The objectives and requirements of relevant legislation, policies and guidelines, including Section 2 of NEMA;
- d) The comments received from I&APs and responses to these, included in the BAR dated September 2019; and
- e) The balancing of negative and positive impacts and proposed mitigation measures.

No site visits were conducted. The Competent Authority had sufficient information before it to make an informed decision without conducting a site visit.

All the concerns raised by I&APs were responded to and addressed during the public participation process. Specific management and mitigation measures have been considered in this Environmental Authorisation and EMPr, in order to address the concerns raised.

### **1. Public Participation**

The public participation process included:

- identification of and engagement with I&APs;
- the placing of a newspaper advertisement in the 'Hermanus Times' on 11 July 2019;
- giving written notice to the owners and occupiers of land adjacent to the site where the listed activities are to be undertaken, the municipality and ward councillor, and the various Organs of State having jurisdiction in respect of any aspect of the listed activities, on 12 July 2019;
- fixing notice boards at the sites where the listed activities are to be undertaken on 12 July 2019; and
- making the draft BAR available to I&APs for public review from 12 July 2019.

The Department is satisfied that the Public Participation Process that was followed met the minimum legal requirements and all the comments raised and responses thereto were included in the comments and response report.

Specific alternatives, management and mitigation measures have been considered in this Environmental Authorisation and EMPr to adequately address the concerns raised.

### **2. Alternatives**

The proposal entails the replacement of three watercourse crossings (Bridge No. 0564A, Causeway No. 12226 and Culvert No. 10656). Bypass roads will be established for Causeway No. 12226 and Culvert No. 10656 on the upstream side of both structures during the construction phase. The design alternatives that were assessed are discussed below.

Design Alternative 1 (Herewith Authorised):

Bridge No. 0564A:

Construction of a new three-span reinforced concrete bridge with span lengths of 10m, 15m and 10m, on a new alignment, approximately 15m upstream of the existing bridge. The new deck and approaches will be at a level of 1,5m above the existing structure. The bridge will have piled foundations and concrete parapets. The bridge deck and about 40m of roadway on each side of the bridge will be asphalt surfaced.

This alternative is preferred for the following reasons:

- The new bridge will be wide enough to accommodate larger agricultural vehicles and increase the safety of motorists using the bridge because of the concrete parapets on the deck edge.
- The existing bridge will be able to accommodate traffic during the construction of the new bridge, whereas if the existing bridge was to be replaced, a bypass road would be required and would at risk to damage caused by overtopping.

Causeway No. 12226:

Replacement of the existing structure with a new two-lane low-level bridge consisting of a 3,4m wide lane in each direction and two 0,9m shoulders. The causeway will also comprise eight 3m x 2,4m high openings and approximately 15m of concrete road slabs on each of the approaches. The new causeway deck will measure 8,6m between guide blocks and will be 1,5m higher than the existing causeway.

This alternative is preferred for the following reasons:

- The upgraded structure will increase the safety of users.
- It will be less prone to overtopping and blockages.
- This design will reduce obstruction of river flow.
- The northern approach road will not be required to be lowered.

Culvert No. 10656:

Replace the existing culvert with a wider in-situ box culvert (2m x 3m) built at a 15 degree angle (compared to the existing culvert). The new deck width will be 8,6m between the guardrails. Gabion guide walls will be constructed at the inlet.

This alternative is preferred for the following reasons:

- With the construction of gabion guide walls at the inlet to direct flows through the culvert, the flow of the watercourse will be improved.
- The structure will be less prone to blockages.

Design Alternative 2:

Bridge No. 0564:

Construction of a low-level bridge with shorter spans of approximately 8m.

This alternative is not preferred for the following reasons:

- The founding conditions are very poor and is costly to construct.
- There will be more of an obstruction of the waterway during construction.
- The low guide blocks on the bridge deck edge pose a safety concern.



Causeway No. 12226:

Replacement of the existing structure with a new two-lane low-level bridge with sixteen 1,2m diameter pipes.

This alternative is not preferred for the following reasons:

- There is a greater risk of debris blocking the structure and the foundations will require erosion and scour protection.
- Additionally, due to the larger deck thickness, there will be increased pier loads, which results in high foundation pressures.

Culvert No. 10656:

Replacement of the box culvert with five 1,2m diameter concrete pipes and a new deck.

This alternative is not preferred because it will be more prone to blockage caused by debris build-up.

### Design Alternative 3:

Bridge No. 0564A:

Construction of a level culvert type structure with spans of 3m to 4m.

This alternative is not preferred for the following reasons:

- The founding conditions are very poor.
- There is an increased risk of scouring, erosion and debris build up.
- This alternative will cause an obstruction of the waterway during construction.

Causeway No. 12226:

Replacement of the existing structure with a new two-lane low-level bridge with eight 3m x 1,8m cells.

This alternative is not preferred for the following reasons:

- It will have a greater deck thickness, which will increase flow obstruction and pier loads.
- Additional scour and erosion protection will be required.

Culvert No. 10656:

Replacement of the existing box culvert with two 2m x 1,5m rectangular box culverts.

This alternative is not preferred for the following reasons:

- This alternative is not as efficient or economically feasible compared to Design Alternative 1.
- The structure will be more prone to debris build-up.

### Design Alternative 4:

Causeway No. 12226:

Replacement of the existing structure with a new two-lane low-level bridge with four spans.

This alternative is not preferred because it is less economically feasible to implement compared to Design Alternative 1.

### "No-Go" Alternative

The "no-go" option was considered and is not preferred because the water crossings will remain unsafe due to the existing standard of the structures and the safety of users will not be guaranteed. The structures will not be able to convey water adequately during high rainfall periods and access to various farms may be compromised during flood events.

## **3. Impact Assessment and Mitigation measures**

### 3.1 Activity Need and Desirability

Bridge No. 0564A, Causeway No. 12226 and Culvert No. 10656 were identified as flood damage repair projects in 2014 and have been identified in the Western Cape Government's infrastructure asset management plan as needing replacement. The existing structures are currently unable to convey stormwater adequately during high rainfall events and are blocked with debris build-up and overtopped, causing damage to approach roads as well as undermining the structures' invert slab. The degradation of the structures caused by erosion, as well as the existing bridge not having guide blocks to guide motorists during flood events, poses a safety risk to motorists. The proposed new bridge and replacement structures at the causeway and culvert sites are therefore required to improve stormwater flow through the structures as well as increase the safety of motorists using the structures.

### 3.2 Biodiversity and Biophysical Impacts

According to the Freshwater Impact Assessment dated 1 March 2019, compiled by Ms. D. Bekker of Sharples Environmental Services cc, two watercourses will be affected by the proposed development i.e. the Klein River and a valley bottom wetland. The instream habitat integrity of the Klein River varies from moderately to largely modified, whereas the riparian habitat integrity has been extensively and critically modified. The present ecological state of the Klein River is considered to be moderately to largely modified with a moderate ecological importance and sensitivity. The present ecological state of valley bottom wetland located at the culvert site is considered to be largely modified with a moderate ecological importance and sensitivity. Through the implementation of the EMPr (accepted in Condition 9), impacts to the Klein River and valley bottom wetland will be mitigated. Additionally, the new bridge and upgraded causeway and culvert will improve longitudinal flow, sediment dynamics and morphological stability during flood events.

Furthermore, a Water Use Licence Application ("WULA") in terms of the National Water Act, 1998 (Act 38 of 1998) has been submitted to the Breede Gouritz Catchment Management Agency, for the proposed new bridge, upgraded causeway and culvert within the Klein River and valley bottom wetland.

The development will result in both negative and positive impacts.

#### **Negative Impacts:**

- The proposed development will have an impact on the Klein River and the valley bottom wetland. However, adequate mitigation measures have been included in the EMPr to mitigate impacts associated with the development.

#### **Positive impacts:**

- The river crossings will be safer for residents and other road users in the area using the river crossings.
- Longitudinal flow, sediment dynamics and morphological stability of the watercourses during flood events will be improved.
- Temporary employment opportunities will be created during the construction phase.

#### 4. National Environmental Management Act Principles

The NEMA Principles (set out in Section 2 of the NEMA, which apply to the actions of all Organs of State, serve as guidelines by reference to which any Organ of State must exercise any function when taking any decision, and which must guide the interpretation, administration and implementation of any other law concerned with the protection or management of the environment), *inter alia*, provides for:

- the effects of decisions on all aspects of the environment to be taken into account;
- the consideration, assessment and evaluation of the social, economic and environmental impacts of activities (disadvantages and benefits), and for decisions to be appropriate in the light of such consideration and assessment;
- the co-ordination and harmonisation of policies, legislation and actions relating to the environment;
- the resolving of actual or potential conflicts of interest between organs of state through conflict resolution procedures; and
- the selection of the best practicable environmental option.

#### 5. Conclusion

In view of the above, the NEMA principles, compliance with the conditions stipulated in this Environmental Authorisation, and compliance with the EMPr, the Competent Authority is satisfied that the proposed listed activities will not conflict with the general objectives of integrated environmental management stipulated in Chapter 5 of the NEMA and that any potentially detrimental environmental impacts resulting from the listed activities can be mitigated to acceptable levels.

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