



**nelson mandela bay**  
**M U N I C I P A L I T Y**  
PORT ELIZABETH | UITENHAGE | DESPATCH

## NELSON MANDELA BAY MUNICIPALITY

CONTRACT No.

### BULK SERVICE REPORT

**PROJECT NAME:** GQEBERA TOWNSHIP DEVELOPMENT: ERF 11305

**AREA:** NELSON MANDELA BAY MUNICIPALITY

**PROVINCE:** EASTERN CAPE

**DATE:** September 2017

**Prepared By:**



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**Document Change History**

Revision	Date	Changes	Approval

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**APPENDICES**

**APPENDIX A – COMMUNICATIONS CONCERNING BULK INFRASTRUCTURE AVAILABILITY**

**APPENDIX B – LAYOUTS DISPLAYING PROPOSED ROADS AND BULK STORMWATER DRAINAGE**

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**1. EXECUTIVE SUMMARY**

The proposed project entails the development of mixed typology housing with associated facilities and infrastructure, on Erf 11305, an undeveloped 43.74 ha site in Walmer. The development aims to cater for the overflow of residents currently living in informal settlements in the Walmer Gqebera area. The provision of civil engineering services includes roads, storm water, sewerage, water supply and construction of an estimated 1700 housing units, along with associated community facilities.

Bulk Services that are currently not available are in the planning stage as is evidenced in the NMBM rezoning application attached in Appendix A.

The roads to be constructed include district collectors, residential access collector and access roads. The roads are township roads and have been classified according to the "Road Reserve widths for new Residential Developments within the NMBM" and Guidelines for Human Settlement Planning.

The storm water works comprises; installation of concrete pipes, construction of storm water structures i.e. grids and kerb inlets, manholes and head walls.

Sewerage will include installation of uPVC sewer pipe reticulation precast concrete manholes and connection to existing Municipal sewers. Water supply will involve the installation of Class 9 uPVC pressure pipe reticulation, fire hydrants and water meters and connection to the existing Municipal mains.

**2. BACKGROUND**

**2.1 Terms of Reference**

Makhetha Development Consultants were appointed by the Nelson Mandela Bay Municipality to provide support for other professional service providers, principally the environmental consultants, in the throes of laying the ground work to develop the site by providing civil engineering services for the proposed housing development in Erf 11305. The proposed services include roads, water supply, sewerage and stormwater. The project entails construction of an estimated 1700 mixed typology housing units, on a 43.74 ha site. The Eastern Cape Department of Economic Development, environmental Affairs & Tourism [DEDEAT] requires that a full bulk services engineering report be part of the Draft Environmental Impact Report [DEIR].

**2.2 Principal Objectives**

The principal objectives of this report are:

- To clarify the existence of essential bulk services;
- To establish the design parameters for the required internal services;
- To establish that the proposed internal services can be accommodated by the existing municipal bulk infrastructure.

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**3. PROJECT DESCRIPTION**

**3.1 PROJECT LOCATION**

The erf is located to the west of Walmer Gqebera adjacent to Victoria Drive, Port Elizabeth, and is bordered by the suburb of Walmer Heights to the North West, the Walmer Country Club to the north, and the defunct Arlington Race Course, to the east.

**3.2 TOPOGRAPHY**

The site is characterised by high points on the north, west and south side of the development and is relatively flat within the development. The eastern side of the development adjacent to the golf course is the lowest side, generally the fall is in the easterly direction.

The flat areas have slopes of 0.5% at certain areas, with the highest point at approximately 113m and the lowest at approximately 102m above mean sea level. There is a watershed in the southern and northern area which have rendered the north and south sided landlocked, hence the need for on-site storm water detention ponds.

**3.3 LAND USE IN THE AREA**

The area is currently undeveloped.

**3.4 CLIMATE**

The project area is in a moderate climatic region with approximate Weinert values of 2 – 5. The annual rainfall is 600-800mm.

**4. TOPOGRAPHICAL SURVEY AND INVESTIGATION OF EXISTING SERVICES**

**4.1 TOPOGRAPHICAL SURVEY**

Three invitations were sent out to Allen Nicholson, Survtec and Surplan to quote for the provision of Topographical survey services. All three service providers responded. Allen Nicholson were appointed for R 113 170.00 excluding VAT to undertake the topographical survey of the area. The survey was done and submitted electronically on 5<sup>th</sup> May 2017.

**4.2 INVESTIGATION OF EXISTING SERVICES**

**4.2.1 Roads**

The area is a Greenfield area and has no road infrastructure.

**4.2.2 Stormwater Drainage**

No storm water pipes and structures were located within the proposed development.

**4.2.3 Water Supply Pipeline**

A 315mmØ Class 9 UPVC pipe adjacent to Erf 11305 in Victoria Drive and a 525 mmØ AC Class C Pipe servicing the Airport Reservoir are fully utilised and a

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160mmØ AC Class C Pipe (Emerald Hill) at the intersection of Schubert Road and Beethoven Avenue approximately 400m from Erf 11305 is insufficient to service the proposed development. For this reason it has been proposed that a new 450mmØ pipeline be laid from Emerald Hill Reservoir to the site to service it and other possible local developments.

**4.2.4 Telkom**

There are no Telkom lines located in situ.

**4.2.5 Electricity**

There are overhead electrical cables south-east of the proposed development.

**4.2.6 Sewer**

There is no existing sewer reticulation within the proposed development.

**5. ENVIRONMENTAL IMPACT ASSESSMENT**

In terms of Environmental Impact Assessment Regulations, Regulation Gazette No. 9314 Vol. 540 dated 18 June 2010 under Section 24(2)(a) of National Environmental Management Act 1998, activities pertaining to the project that may not commence without an environmental authorisation from the competent authority are as follows:

“The construction of facilities or infrastructure exceeding 1000 metres in length for the bulk transportation water, sewage or storm water –

- With an internal diameter of 0.36 metres or more; or
- With a peak throughput of 120l per second or more,

Excluding where:

- a) Such facilities or infrastructure are for bulk transportation of water, sewage or storm water or storm water drainage inside a road reserve; or
- b) Where such construction will occur within urban areas but further than 32 metres from a water course, measured from edge of the watercourse.”

**6. GEOTECHNICAL INVESTIGATION**

No Geotechnical investigation has been undertaken.

**7. PROPOSED WATER RETICULATION INFRASTRUCTURE**

The pressurized water reticulation network will be located along the road reserve connecting to each erf. Roads will be designed to full township standards with surface and subsurface storm water drainage. The water mains will be offset 1.3m instead of the normal 2.5m from erf boundary so that it does not end up in the road carriageway

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**7.1 SUPPLY POINT**

Water will be supplied from the Emerald Hill reservoir via a proposed 450mmØ gravity main, within an existing servitude, to feed this and other developments anticipated in the area. The rezoning application attached has reference on page 397 item [c](iv).

Due to the Demand flow in the area, the minimum size for a supply pipe is 250mmØ. The area can have two connections points of minimum 160mmØ pipes. There is an existing 160mmØ AC Class C Pipe that is at the intersection of Schubert Road and Beethoven Avenue approximately 400m from Erf 11305 that may also be used as connection point.

Emerald Hill Reservoir	:	169m Top Water Level
Location	:	Y -50 748.566; X 3 763 776.33
Distance to Erf 11305	:	4620m

**7.2 DESIGN CRITERIA**

The design guidelines were according to the "Guidelines for Human Settlement Planning and Design Volume 2" (Red Book). Positions of water supply pipelines are to be in accordance with the "Nelson Mandela Bay Municipality, Standard Infrastructure Details Revised Edition July 2007". No water mains may be installed on or across residential erven, without the approval of the NMBM.

Minimum cover to pipe	-	0.75 m (sidewalks)
Minimum cover to pipe	-	1.0 m (roadways)
Minimum pipe sizes	-	Pipes 75mm or larger must be uPVC pipes Pipes less than 75mm must be HDPE pipes
Minimum Head	-	15m during peak design flow
Maximum Head	-	90m during zero flow conditions

**7.2.1 DESIGN OVERVIEW**

Residential	:	1721 households
Business	:	6701.9 m <sup>2</sup>
Institution Zone I	:	19447.71 m <sup>2</sup>
Institution Zone III	:	3103.52 m <sup>2</sup>
Local Authority	:	3794.76 m <sup>2</sup>
Special Area	:	1583.31 m <sup>2</sup>
Total Development Area	:	43.72 Hectares



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**7.2.2 Water Demand**

Residential	:	600 l/erf/day
Business	:	400 l/per 100m <sup>2</sup> /day
Peak factor	:	4
Annual Average Daily Demand	:	48.556 litres/second (±4.2 million l/day).

**8. PROPOSED SEWER RETICULATION INFRASTRUCTURE**

**8.1 Discharge Points**

A conventional full waterborne sewerage system will be provided with separate connections to individual erven. The new sewer lines will be constructed within the road reserves running at 1.3 m from the erf boundary. There are two existing discharge points that have been identified and they are: an existing 225mmØ pipe situated north-east of the development in the golf course and a proposed 250mmØ mm sewer being designed by JG Afrika situated south-east of the development running along Victoria drive.

**8.2 DESIGN CRITERIA AND PARAMETERS**

**8.2.1 Design Criteria**

The design criteria for this project are:

- Development Category No. = 3
- Average Erf Size = 400 m<sup>2</sup> design
- Persons per Erf = 5.5
- Average Dry Weather Flow per Erf = 550 litres / day / erf
- Harmon Peak Factor Maximum = 3.8
- Peak Wet Weather Flow = 2 x Peak Dry Weather Flow
- Peak Wet Weather Flow per Erf = 0.484 litres / second / erf

**8.2.2 Minimum Design Parameters**

- Minimum Depth of Sewer DS = 1m
- Minimum Depth of Erf Connection DC = 0.70m
- Minimum Gradient = 1.00%
- Minimum Flow Velocity = 0.70m/sec

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- Maximum Flow Velocity = 2.20m/sec
- Offset From Erf Boundary = 1.30m
- Minimum cover to pipes = 0.6 m in servitudes, 0.8m inroad reserves and 1.2m below finished road level at intersections.
- Minimum pipe size = 110 mm diameter for house connections;  
Maximum pipe size = 200 mm diameter for mains
- Minimum gradients:

<i><b>Dwelling Units</b></i>	<i><b>Grade</b></i>
Less than 10	1:100
10 to 80	1:120
81 to 100	1:150
101 to 130	1:180

Where connections are required into the existing downstream sewers these were checked to determine the potential capacity for accepting additional flows. A letter confirming that there will be sufficient capacity titled 'Re Development on Property 11305 and 1948' dated 30 March 2015 is attached in Appendix A.

### 8.3 LAYOUT

#### 8.3.1 Drainage Zones

The sewers in the proposed developments are connecting to an existing 225mmØ sewer north-east of the development running through the golf course and JG Afrika 250mmØ mm future proposed sewer pipe that eventually connects into the Driftsands Bulk Pipeline.

#### 8.3.2 Reticulation

The 160mmØ sewer pipes will mostly be at minimum grades 1:100 and the 200mmØ will mostly be at minimum grade 1:200. Pipelines laid at depths less than the minimum depths of 1.0 m due to shallow connection manholes, will be encased in concrete where necessary. The proposed reticulation is therefore designed to meet minimum cover and deep enough to drain the adjacent erfs or deep enough to run at the appropriate grades to connect to the existing manhole.

#### 8.3.3 Pipelines

Sewer mainlines are running in the road reserve at 1.3 m from the erf boundary as per standard municipal requirements. Pipeline material for pipe sizes up to 200 mm diameter:

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- uPVC (heavy duty) solid wall complying with SABS 791  
Pipes shall be laid on bedding for flexible pipes.

## 9. PROPOSED ROAD INFRASTRUCTURE

### 9.1 LAND REQUIREMENTS

Two access routes to the site are proposed. Access to the majority of the area will take place from Victoria Drive. A second access road, linking up to Beethoven Drive in Walmer Heights is proposed for access from the northern side of the site. The internal roads alignments follow the provided road reserves and no further expropriation will be needed.

### 9.2 Geometric Design

The design guidelines were according the document "Road Reserve widths for new Residential Developments within the NMBM" and Guidelines for Human Settlement Planning and Design as shown in the table below.

**Table 9.1: Design Standards**

Parameter	District Collector 4c	Residential Access Collector 5a	Residential Access loops 5b	Access way
Desired maximum speed	50km/hr	40km/hr	30km/hr	30km/hr
Minimum stopping sight distance	65m	50m	30m	30m
Minimum gradient	0.5%	0.5%	0.5%	0.5%
Maximum gradient/grade length	12%/100m	12%/70m	12%/50m	12%/50m
Minimum K-value	10	6	6	6
Minimum vertical curve	40	30	20	20
Cross fall	2.5%	2.5%	2.5%	2.5%

### 9.3 Road Cross Section

The road cross sections are based on the recommendation of the Revised Road Reserve widths from NMBM. The road width varies with class of road.

The following cross sections were used for the different road classes are:

**Table 9.2: Cross sections**

Parameter	District Collector 4c	Residential Access Collector 5a	Residential Access loops 5b	Access way 5d
Road reserve width	16m	12m	10m	8m
Carriageways width	6m	5m	5m	4m
Sidewalk	1.8 m	1.8 m	n/a	n/a

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**9.4 Pavement Design**

**9.4.1 Road Category**

The roads are typical township roads and have been classified according to the “Road Reserve widths for new Residential Developments within the NMBM” and Guidelines for Human Settlement Planning into three different Categories. Roads with 16 m road reserves have been classified as 4c UB district collectors and roads with 12 m road reserves have been classified as 5a UC access collectors. All the roads with 10 m wide road reserve have been classified as Class 5b and roads with 8 m wide road reserve have been classified as Class 5d access roads and both classes are classified as Category UD roads.

**9.4.2 Design Traffic and Structural Design**

For structural design purposes, the design period for the road is taken to 20 years and because the alignment will not change in the future the analysis period of 30 years is chosen.

The Design traffic will be as per tabulated values in Table 3 of UTG3 and is shown in Table 3 below.

**Table 9.3: Design Traffic**

Road Reserve Width (m)	Category	Traffic Class	E80s
16	UB (District Collector)	E1	0.2 to 0.8 x 10 <sup>6</sup>
12	UC (Access Collector)	E0	0.05 to 0.2 x 10 <sup>6</sup>
8 and 10	UD (access roads)	ER	Less than 0.05 x 10 <sup>6</sup>

**9.4.3 Pavement Layers**

Using the Catalogue Method, for granular bases in a moderate climate region, the pavement structure tabulated in Table 9.4 would suffice.

**Table 9.4: Pavement structure according to Catalogue method.**

Category	Base	Sub-base	Selected Sub grade
UB (district collector)	150mm G4	150mm G5	150mm G7
UC (Access Collector)	150mm G4	150mm G5	150mm G7
UD (access roads)	100mm G4	125mm G6	150mm G9

**10 PROPOSED STORMWATER INFRASTRUCTURE**

**10.1 DESIGN RAINFALL DATA**

The rainfall intensity was determined as per IDF curves. The following equation was used to determine the peak intensity of the storm for each catchment area:

$$I = a / (b + t)^c$$

I = Intensity (mm/hr)

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- a = Mean Annual precipitation (mm)
- b = constant based on local conditions
- t = duration (minutes)
- c = constant based on local conditions

## **10.2 Minor Drainage**

### **10.2.1 Hydrology**

A 1:20 000 orthophoto image was used to ascertain and identify hydrological conditions and requirements for drainage structures.

### **10.2.2 Hydraulics**

The latest software from Civil Designer Suite program, called Storm, was used to undertake the analysis:

The storm water run-off was determined in accordance to the rational method were:

- Q = CIA/3.6
- Q = Storm water runoff (m<sup>3</sup>/s)
- C = Runoff coefficient
- I = rainfall intensity over catchment (mm/h) (633 mm/hr)
- A = Effective area of catchment (km<sup>2</sup>)

The storm water runoff was checked using the following flood recurrence periods:

- Pipe system : 1:5 years

Storm water Design Parameters:

- Minimum pipe diameter : 450 mm
- Minimum pipe class : 100D
- Maximum velocity of storm water run-off : Pipes 3m/s
- Minimum velocity of storm water run-off : 0.6m/s
- Minimum slope in pipes : 1%

## **10.3 Minor System**

The primary goal of minor systems is to quickly remove water emanating from a minor storm of 1:5-year recurrence interval, to ensure convenience of nearby residents and the safety of traffic during normal rainfall. The proposed development stormwater drainage

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system should be able to handle infrequent severe storms (major storms) and frequent minor storms. According to CSIR (2000), the typical formal drainage system should be able to handle the minor storms and during the major storms should support the major drainage system in handling the unusual storm.

The minor system usually consists of road drainage channels and kerbs, kerb inlets, grid inlets, manholes, pipes, and small open channels for rapid discharge of run-offs. The preliminary sizing of the facilities is determined on the basis of short duration, high intensity storms taking into account concentrated flow entering a minor system.

#### **10.4 MAJOR DRAINAGE**

The main purpose of the major system is to convey and control large floods of 1:50-year recurrence interval. The use of attenuation ponds is an effective means of attenuating flood peaks. This helps with reducing excessive sizes of culverts and channels by reducing peak to manageable levels. Thus, development of new areas should attempt to attenuate storm water within the developments, before releasing it into a municipality system. However, it is sometimes not cost effective because they sometimes require substantial structural measures. Major floods can be controlled by roads, park strips without putting attenuation ponds in place. However, ponds have been provided on site as requested by DEDEAT.

Three Major catchment areas have been identified for the proposed development. Three on-site attenuation ponds have been provided for the three major catchment areas as per DEDEAT requirements. Three main roads have been identified to convey the major storm to the proposed ponds.

The principle design for the proposed on-site Detention Pond 1 can be summarised as follows:

- Capacity : 1502.00m<sup>3</sup>;
- Footprint Area : 2700.00m<sup>2</sup> (Includes required construction space);
- Pond Average Depth: 1.46m;
- Max. Water Depth : 0.596m;
- Total Cut : 2245.00m<sup>3</sup>
- Total Fill : 0.00m<sup>3</sup>;
- Inlets : Overland runoff in-flow;
- Outlets : 525mm Ø concrete pipe.

The principle design for the proposed on-site Detention Pond 2 can be summarised as follows:

- Capacity : 1331.00m<sup>3</sup>;
- Footprint Area : 1700m<sup>2</sup> (Includes required construction space);
- Pond Average Depth: 2.40m;
- Max. Water Depth : 0.817m;
- Total Cut : 2441.939m<sup>3</sup>
- Total Fill : 0.00m<sup>3</sup>;
- Inlets : Overland runoff in-flow;
- Outlets : 525mm Ø concrete pipe.

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The principle design for the proposed on-site Detention Pond 3 can be summarised as follows:

- Capacity : 7598.000m<sup>3</sup>;
- Footprint Area : 3800.00m<sup>2</sup> (Includes required construction space);
- Pond Average Depth: 4.20m;
- Max. Water Depth : 2.054m;
- Total Cut : 11357.692m<sup>3</sup>
- Total Fill : 0.00m<sup>3</sup>;
- Inlets : Overland runoff in-flow;
- Outlets : 525mm Ø concrete pipe.

The ponds were initially designed to discharge via a 525mm Ø outlet into stormwater reticulation that would eventually connect to the existing municipal system along Victoria Drive.

On checking this option with JG Afrika the designers of the stormwater master plan for this region<sup>1</sup>, their response [see Appendix A] was that the direct connection from the site to the pipe system now installed in Victoria Drive would not handle the proposed flows from the site.

However, a storm water pond has also been provided as part of the master plan in the north-eastern side to attenuate major storm from the site and is currently under construction. This is the only economically viable alternative to piping the stormwater discharged from the site for several kilometres.

The principle design for this Detention Pond can be summarised as follows:

- Capacity : 18300.00m<sup>3</sup>;
- Footprint Area : 22520.00m<sup>2</sup> (Includes required construction space);
- Pond Depth : 4.15m;
- Max. Water Depth : 3.15m;
- Total Cut : 36,625m<sup>3</sup>
- Total Fill : 235m<sup>3</sup>;
- Inlets : Overland runoff in-flow;
- Outlets : 525mm Ø concrete pipe.

This is therefore the recommended discharge point for stormwater piped from Erf 11305 [see Layout in Appendix B]. The total length of stormwater drainage pipes outside the project footprint is 706 m ranging from 405m of 525mm Ø to 750mm Ø running parallel to the site and eventually connecting into a 301m length of 1050mm Ø pipe that eventually discharges into the pond at the golf course.

<sup>1</sup> Title: Stormwater Master Plan Theescombe to 3<sup>rd</sup> Avenue, Walmer, Port Elizabeth  
Dated: March 2009

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**11. DETAILED COST ESTIMATES**

A more detailed cost estimate will be undertaken at detail design stage. However, from previous experience of similar type of development the cost estimate is anticipated to be approximately R 60 000 000 inclusive of VAT.

**12. RECOMMENDATIONS**

**12.1 WATER**

It is recommended that the water reticulation be implemented according to the processes that have been mentioned above. Liaison with the Client will be of utmost importance to come up with a workable plan for engagement and supervision of the SMMEs. Labour intensive methodologies should be encouraged and practised by SMMEs.

**12.2 SEWER**

It is recommended that the sewer reticulation be implemented according to the processes that have been mentioned above. Liaison with Client will be of utmost importance to come up with a workable plan for engagement and supervision of the SMMEs. Labour intensive methodologies should be encouraged and practised by SMMEs.

**12.3 ROADS**

It is recommended that the roads be implemented according to the processes that have been mentioned above. Liaison with Client will be of utmost importance to come up with a workable plan for engagement and supervision of the SMMEs.

**12.4 STORM WATER**

It is recommended that storm water drainage be implemented as per proposal to facilitate minor and major storm to avoid flooding and causing a nuisance and health hazard to the public. It is also recommended that the Ponds be fenced to prevent access by the public.

**13. SMME WORK PACKAGES**

We recommend that SMMEs should be engaged in this project as per NMBM requirements. Labour intensive methodologies should be encouraged and practised by both the Main Contractor and the SMMEs.

It is proposed that the packages that will be given to SMMEs **exclude** earthworks, haulage, processing of the road layers and traffic accommodation. The packages can **include** construction of the installation of culverts, construction of manholes both sewer and storm water, construction of valve boxes and thrust blocks for water reticulation.



**NELSON MANDELA BAY METROPOLITAN  
GQEBERA TOWNSHIP DEVELOPMENT: ERF 11305  
CONTRACT NO.**

**14. CONCLUSION**

**14.1 SEWER**

The sewers in the proposed developments are connecting to an existing 225mmØ sewer north-east of the development running through the golf course and JG Afrika 250mmØ mm future proposed sewer pipe that eventually connects into the Driftsands Bulk Pipeline.

**14.2 WATER**

Water will be supplied from the Emerald Hill reservoir via a proposed 450mm gravity main, to feed this and other developments anticipated in the area.

**14.3 ROADS**

Once the site layout is approved a geotechnical investigation will follow which will yield more detail for road pavement design. At present, it is envisaged that 150mm of topsoil will be removed and the roadbed will be ripped and recompacted followed by suitable imported gravel material for the base and sub base layers. No major earthworks are anticipated.

**14.4 STORM WATER**

The storm water drainage will be a mixture of both surface and pipe system. The designed storm water system for the Erf 11305 Township will be more than adequate to handle the minor and major storm flows (1:5 year).

**NELSON MANDELA BAY METROPOLITAN  
GQEBERA TOWNSHIP DEVELOPMENT: ERF 11305  
CONTRACT NO.**

**APPENDIX A**

**COMMUNICATIONS CONCERNING BULK INFRASTRUCTURE AVAILABILITY**

- **Excerpt, Municipal Planning Tribunal, Item 19, pp 394 – 398;**
- **Sewer – Letter dated 30 March 2015 from NMBM;**
- **Stormwater – Email from JG Afrika.**

The proposal to remove the said restrictive conditions is deemed to be in support of the SPLUMA principle of "Efficiency" as the removal of the said restrictive conditions in question will allow for the better utilisation of existing infrastructure.

In principle this department has no objection to the removal the above-mentioned restrictions relating to the development controls of the said property as the Town Planning Scheme regulates the use of the property as well as imposing development parameters such as land use, building lines, coverage, height, etc.

In light of the above, it is recommended that Conditions C5(a), (b), (c) and (d) be removed as they are deemed to be obsolete and no longer necessary for land use management purposes.

(b) Ward 9 Committee:

The Ward 9 Councillor Muller was advised of the application on 23 March 2016 and no comment was received. A copy of the letter to the Councillor is attached to the Agenda marked **Annexure "R2"**.

#### RECOMMENDATION:

That, in terms of Section 47(1) of the Spatial Planning and Land Use Management Act (Act 16 of 2013), the application to remove Conditions C5(a), (b), (c), and (d) contained in Title Deed No. T71298/2006, be approved subject to the provisions of the Port Elizabeth Zoning Scheme remaining applicable.

19. **SUBJECT:** REZONING (TPA 9011), SUBDIVISION 7430 AND DEPARTURE (TPD 4541)  
**ERF:** 11305, WALMER  
**SITUATION:** VICTORIA DRIVE  
**APPLICANT:** METROPLAN OBO NMBM  
**OWNER:** NMBM  
**FILE:** CF32/11305 (S Ngxisho)  
**APPLICATION DATE:** 4 JULY 2015

#### EXECUTIVE SUMMARY

<b>Subject</b>	Rezoning (TPA 9011), Subdivision 7430 and Departure (TPD 4541)
<b>Property Description</b>	Erf 11305, Walmer
<b>Applicant/Owner</b>	Metroplan obo NMBM
<b>Existing</b>	Residential Zone 2, Transport Zone 2 and Open Space Zone 2
<b>Proposed</b>	Residential Zone 1, Residential Zone IV, Institutional Zone 1 and 3, Transportation Zone 2, Open Space Zone 1 and 3, Authority Zone and Special Zone
<b>Application support</b>	<b>SUPPORTED</b>
<b>Comments</b>	This is a municipal project that seeks to accommodate families that are being relocated from overcrowded, flooding, unhealthy and unsafe living conditions of the Informal Settlements of Gqebera Township. The project will not only contribute to the Upgrading of Informal Settlements Programme (UISP) but will also promote access to basic services and secure tenure for the Walmer residents.
<b>File</b>	CF32/11305

#### INTRODUCTION:

The applicant proposes to:

- (i) rezone Erf 11305, Walmer from Residential Zone 2, Transport Zone 2 and Open Space Zone 2 to Residential Zone 1, Residential Zone IV, Institutional Zone 1 and 3, Transportation Zone 2, Open Space Zone 1 and 3, Authority Zone and Special Zone;
- (ii) subdivide Erf 11305, Walmer into:
  - 4 Residential Zone 4 ( $\pm 124$  units/ha) portions measuring  $\pm 59\ 803\text{m}^2$ ;
  - 622 Residential Zone 1 (houses) portions measuring an average of  $\pm 153\text{m}^2$ ;

- 241 Residential Zone 1 (Gap) portions measuring an average of  $\pm 188\text{m}^2$ ;
  - 1 Business Zone 1 measuring  $\pm 6706\text{m}^2$ ;
  - 2 Institutional Zone 3 portions measuring  $\pm 3103\text{m}^2$ ;
  - 1 Institutional Zone 1 portion measuring  $\pm 19\,447\text{m}^2$ ;
  - 1 Authority Zone portion measuring  $\pm 3794\text{m}^2$ ;
  - 2 Special Zone portions measuring a total of  $\pm 1583\text{m}^2$ ;
  - 24 Open Space Zone 1 portions measuring a total of  $\pm 107\,501\text{m}^2$ ;
  - Transport Zone 2 measuring  $\pm 94\,192\text{m}^2$ .
- (iii) a Zoning Scheme Departure for the following:
- (a) Residential Zone 1 to permit coverage of up to 80%, street building line reduction from 3m to 1m, and the side building line reduction from 2m to 0m in order to permit the development of semi-detached and row houses;
  - (b) Residential Zone 4 to increase coverage up to 75%, reduction of building set-back to 3m, reduction in the minimum street building line from 8m to 3m, reduction in parking from 1,25 bays per flat to 1 bay per flat of 1 to 2 habitable rooms;
  - (c) reduction of the side building line from 4m to 3m or half of the height of the building;
  - (d) permit residential densities of up to 120 units/ha on Residential 4 sites.

**APPLICANT:**

The applicant is Metroplan on behalf of Nelson Mandela Bay Municipality, the registered owner of the subject property.

**SUBJECT PROPERTY:**

Erf 11305, Walmer is zoned for Residential 2, Transportation 2 and Open Space 2 purposes in terms of the Port Elizabeth Zoning Scheme and measures 43,727ha in extent.

A print of a plan, showing the subdivision and locality of the subject property and the surrounding properties, is attached to the Agenda marked **Annexure "S"**.

**MOTIVATION:**

The applicant's motivation has been summarised in the following manner:

- (i) "The purpose of this application is to apply for the Zoning Scheme Departure and Subdivision of Erf 11350 Walmer into 10 portions of which will be rezoned from Residential 2, Transport 2 and Open Space 2 to Residential 1, Residential 4, Institutional 1 and 3, Transport 2, Open Space 1 and 3, Authority Zone and Special Zone.
- (ii) It opens a new growth area south of Walmer and south of Port Elizabeth Airport.
- (iii) It constitute one of the largest and strategic municipal owned land parcels south of the city that can be developed for Greenfields areas that it physically and visually detached from existing and higher income property areas whose owners may feel threatened the idea of an integrated residential area on their doorstep.
- (iv) The subject site is part of the Mega Project Area 2; Walmer/Summerstrand/Driftsands mixed Housing approved by Council.
- (v) The subject site is well located based on Distance to the PE CBD, proximity to employment opportunities and proximity to health, recreation and public transport facilities.

**COMMENTS:****(a) Spatial Planning:**

Walmer Gqebera Township is considered a "stressed area" where more than 3000 families reside in informal settlements and where the lack of secure tenure of land, basic services, flooding, problems with regards to methane gas emissions have resulted in protracted service delivery protests over the last couple of years.

Because of the density of the informal settlement and the limited space available to upgrade the area, Council has resolved that additional land in the vicinity of Walmer be identified to accommodate the overflow of Walmer Gqebera residents. The Walmer Gqebera project has been identified as a strategic project for the Metro and Council has committed to its development as a priority project.

Erf 11305, Walmer was originally rezoned from Agriculture zone 1 to Residential 2 and ancillary purposes in December 2006. The site has however remained undeveloped due to the down-turn in market. The development of mixed housing catering for the low and affordable market is a response to the changes in the market and existing demand of housing beneficiaries.

The subject site is part of the area between Victoria Drive, Glendore Road, Walmer Heights and Walmer Country Club which was designated for housing development before 2010 in the NMBM SDF, 2009. The area remained undeveloped.

The Property is inside the Urban Edge. The NMBM Council resolved to designate all areas within the Urban Edge as Restructuring Zones for the development of mixed housing and at high residential densities in order to achieve integration and social cohesion, make better use of well-located land and existing services and to certain urban sprawl.

This project is the culmination of the various inputs by Municipal Service Directorates and Provincial Government Departments that have been tasked with the development of the Walmer area.

The project is in accordance with several Municipal Policy instruments that seek to promote sustainable and integrated development. For example, in terms of the SDF and SCU guidelines and principles, the development promotes integration, contributes to the development of an efficient city by reducing urban sprawl and provides basic services to the communities. It also promotes densification through infill development of well-located land.

It has also been identified as a Mega Project for housing development where its objectives are (among others) to link Summerstrand and Walmer, ensure better utilisation of well-located public land and spatial restructuring through integrated housing, including GAP and Social Housing.

The project also contributes to the Upgrading of Informal Settlements Programme (UISP) that seeks to accommodate families that are being relocated from overcrowded informal areas. It will also promote access to basic services and secure tenure for the Walmer residents.

Furthermore the development proposal complies with the provisions of the Port Elizabeth Zoning scheme. The departure from the building lines and parking standards is also supported as it will facilitate the development.

In light of the above it is recommended that the subdivision, rezoning and departure application for this project be approved.

#### **RECOMMENDATION:**

- (a) That, in terms of Provincial Circular LDC/GOK 9/1988, the Port Elizabeth Zoning Scheme be amended by way of a substitution scheme in terms of Section 14.4 of the Land Use Planning Ordinance (Ordinance 15 of 1985) by the rezoning of Erf 11305, Walmer from Residential 2, Transportation 2 and Open Space 2 to Residential 1, Residential 4, Institutional 1 and 3, Transportation 2, Open Space 1 and 3, Authority Zone and Special Zone, as shown on Plan no. Wal/14022/0B Rev. 1, subject to the following conditions:
- (i) all conditions and parameters applicable to Residential Zone 4, Residential 3 Sub-zone F, Business 1, Community 1, 2 and 3 and Transport 1 as set out in the Port Elizabeth Zoning Scheme Regulations, being adhered to:
- (ii) for the purposes of this development, Special purposes shall be defined as follows:
- (1) uses: Informal trading, service trades, tourist facilities and business purposes, provided that the uses do not interfere with pedestrian and vehicular circulation, shall not disturb neighbours and not interfere with the amenity of the direct neighbourhood;
  - (2) FSI: No restriction;
  - (3) coverage: Maximum of 80%;
  - (4) street building lines/street setback lines: 0(nil)m.

- (iii) residential densities of up to 120 units/ha on Residential 3 Sub Zone F sites being permitted;
- (iv) Site Development Plan in accordance with Clause 11 of the Port Elizabeth Zoning Scheme, indicating measures that are proposed to minimize the impact of the proposed Use on the adjacent properties being submitted for approval by the Executive Director: Human Settlements prior to the submission of any building plans before the new use Rights on Residential 1, Residential 4, Institutional 1 and 3, Transport 2, Open Space 1 and 3, Authority Zone and Special Zone sites are exercised;
- (v) in terms of the National Building Regulations and before any new used rights are exercised, building plans showing the change in use of the building and possible parking layout being submitted for the approval by the Executive Director: Human Settlements. Building plans shall not be signed off until such time as all on-site parking has been physically provided in accordance with the approved building plan;
- (vi) any outdoor advertising signs being submitted to the Executive Director: Human Settlements for approval in terms of the Council's Outdoor Advertising Policy;
- (b) That Erf 11305, Walmer be zoned (TPA 9011) in a manner permitting subdivision, subject to the provisions of the Port Elizabeth Zoning Scheme as they affect the Residential 1, Residential 4, Institutional 1 and 3, Transport 2, Open Space 1 and 3, Authority Zone and Special Use zone.
- (c) That Subdivision Application 7430 (Erf 11305, Walmer) be approved, subject to the standard conditions and the following:
  - (i) the new Victoria Drive collector sewer and the augmentation of the existing Driftsands collector sewer being upgraded at the Council's costs;
  - (ii) a Traffic Impact Assessment being submitted for review and approval at the costs of the Council;
  - (iii) Council taking cognisance that the existing 315mm diameter watermain does not have sufficient capacity to serve this proposal development;
  - (iv) the Council upgrading this water-main to a 9 450 mm diameter all the way from the Emerald Hill reservoir to the development. The estimated cost of this is R9 600 000;
  - (v) a development plan, accompanied by a report/designs from a Consulting Engineer detailing all on site service designs, all services traversing the erf and the interaction of such services with the surrounding municipal services, including the disposal of concentrated or non-concentrated stormwater and subsoil water being discharged from the surrounding catchment area [municipal roads, the abutting properties, etc.] onto the erf, being submitted for approval by the Executive Director: Infrastructure and Engineering;
  - (vi) any stormwater and/or road modifications and/or alterations being at the Council's expense and to the satisfaction of the Executive Director: Infrastructure and Engineering;
  - (vii) a detailed stormwater masterplan for the area being submitted;
  - (viii) Roads and Stormwater Sub-Directorate reserves the right to add additional comments at development design stage which might change the layout;
  - (ix) the Waste collection services to the area will be a weekly curb-side refuse removal service, in terms of the National Domestic Waste Collection Standards and disposed of at the existing licensed municipal waste disposal sites (Arlington), which have sufficient air space for the increase in disposal;
  - (x) in order to ensure that the Waste Management sub-directorate can provide a refuse collection service to the proposed development, a construction and occupation time-line need to be submitted to the Waste Management Sub-directorate at least 6 months prior to any development taking place and at least 18 months before occupation. This time-line must include the phases, number of units per phase and the expected date of first occupants moving in;

- (xi) the Council constructing road infrastructure (access and internal roads) to such a level that refuse collection vehicles (i.e. refuse compactors) will be able to access all the households;
- (xii) it is noted that the cul-de-sac situated in the road adjacent to erven 712-716 and 725-733 do not adhere to the required minimum standards below and therefore needs to be upgraded at Council's costs;
- (xiii) minimum requirements for cul-de-sac's shall apply:  
  
The road layout should permit a turning circle of 19,6m, curb to curb or 21.1m wall to wall. If these requirements cannot be reached, the maximum length of the cul-de-sac shall not exceed a length of 35m;
- (d) That, in terms of Provincial Circular LDC/GOK 9/1988 Town Planning Departure (TPD 4541) being granted for the following:
  - (i) Residential 1 zoned portions on Erf 11305, Walmer be granted a coverage of up to 80%, the relaxation of the street building line from 3m to 1m and the relaxation of the side building line from 2m to 0m, to permit the development of semi-detached and row houses;
  - (ii) Residential 4 zoned portions on Erf 11305, Walmer be granted an increased coverage of up to 75%, relaxation of the building setback to 3m, reduction in the minimum street building line from 8m to 3m, reduction in parking from 1,25 bays per flat to 1 bay per flat of 1 to 2 habitable rooms;
  - (iii) relaxation of the side building line from 4m to 3m or half of the height of the building;
  - (iv) to permit residential densities of up to 120 units/ha on the Residential 4 zoned sites.
- (e) That, in terms of Provincial Circular LDC/GOK 9/1988, a Town Planning Departure (TPD 4541A) be approved for the Residential 4 zoned portions on Erf 11305, Walmer for side building lines of 0m, to permit, where required, the development of row houses and/or semi- detached housing units;
- (f) That Council's Special Consent (SC 142/2016) be granted to the informal trading, service trades, tourist facilities and business purposes on Erf 11305, Walmer, provided that the uses do not interfere with pedestrian and vehicular circulation, shall not disturb neighbours and not interfere with the amenity of the direct neighbourhood;
- (g) That, in terms of Provincial Circular LDC/GOK 9/1988, a Town Planning Departure (TPD 4541A1) be granted for the relaxation of the parking requirement to 33,3 bays per 100m<sup>2</sup> GLA for the Business 1 zoned portions situated on Erf 11305, Walmer.

20. **SUBJECT: REZONING**  
**ERF: PORTION 3 OF THE FARM BAUERSKRAAL NO. 234**  
**SITUATION: UITENHAGE FARMS**  
**APPLICANT: URBAN DYNAMICS**  
**OWNER: G RANGER**  
**FILE: CF62/00234P3 (T November)**  
**APPLICATION DATE: 26 SEPTEMBER 2015**

#### EXECUTIVE SUMMARY

<b>Subject</b>	Rezoning
<b>Property Description</b>	Portion 3 of the Farm Bauerskraal No. 234
<b>Applicant/Owner</b>	Urban Dynamics obo G Ranger
<b>Existing</b>	Agricultural Zone 1
<b>Proposed</b>	Special Zone (Solar Power Generating Facility)
<b>Objections</b>	No objections
<b>Ward Councillor</b>	No comment received

Tel: +27(41) 506 2156, fax: +27(41) 506 2855  
PO Box 7, Port Elizabeth 6000  
Republic of South Africa  
e-mail: lpieters@mandelametro.gov.za

Deals with This Matter: Mr L Pieterse  
Tel: (041) 506-2209; Fax: (041) 506-2855  
Date: 30 March 2015

Makhetha Development Consultants (Pty) Ltd  
36 Mangold Street  
Newton Park  
PORT ELIZABETH  
6001

Attention: Mr. J Zambe

**RE: DEVELOPMENT ON PROPERTY 11305 AND 1948**

I refer to your original email received on 07 November 2014.

I hereby confirm that allowance in terms of flow capacity has been made for both properties as referred to in this letter.

Please note that the bulk services to which you have to connect to, namely Driftsands Collector Sewer Phase 1 (connection for property 1948) and Walmer Heights to Mount Pleasant Phase 1 (connection for property 11305) have not yet been constructed. A connection point will be made available during construction.

This Division, Planning and Research will notify you as soon as the services are in place.

Once the bulk sewer services are available the connections can be made by your Contractor under your direct supervision but shall be subjected to the inspection and final approval by the Wastewater Conveyance Division before backfilling commences. At least three days notification to inspect the connection is required.

A standard fee of R660-33 (including VAT) will be charged for the inspection and must be paid before the inspection will be conducted. Cheques must be made payable to the Nelson Mandela Bay Municipality and documentation for payment must be collected at the Enquiry Counter of the Waste Water Conveyance Division, on the 6th floor of the Mfanasekhaya Gqobose Building (formerly Eric Tindale Building), Govan Mbeki Avenue. **A copy of this letter must be presented when making payment.**

Furthermore, the developer will be required to contribute towards the Water and Sanitation Services Development Levy for the proposed residential development referred to in this letter. The amount payable will be determined at a later stage.

Please note that this levy is payable before any site works commences.

I trust that you shall find the above in order and that you will advise your client accordingly.



L PIETERSE ON BEHALF OF  
EXECUTIVE DIRECTOR OF  
INFRASTRUCTURE & ENGINEERING



## Mark Hallowes

---

**Subject:** FW: Walmer Stormwater

**From:** Hendrik Spangenberg [<mailto:SpangenbergH@jgafrika.com>]  
**Sent:** 18 September 2017 16:43  
**To:** [lethu@makhetha.co.za](mailto:lethu@makhetha.co.za)  
**Cc:** Mthuthuzeli Gqokoma <[GqokomaM@jgafrika.com](mailto:GqokomaM@jgafrika.com)>  
**Subject:** RE: Walmer Stormwater

Lethu

Your email below with regard discharging stormwater into existing stormwater pipes along Victoria drive refer.

The following is noted:

- The outflow pipes installed under contract SCM/15-59/S along Victoria drive vary from 450mm dia. to 750mm dia.
- The last downstream pipe along this stormwater pipe line, immediately prior to discharging into a pond near Buffelsfontein road, is 750mm dia. pipe with a slope of approximately 1.3%.
- The maximum gravity free flow(no surcharge) in a 750mm dia. pipe at 1.3% slope is approximately 1.2m<sup>3</sup>/s.
- Your capacity required 2.02 m<sup>3</sup>/s.
- Therefore, irrespective of any existing upstream pipe sizes and slopes, the required capacity cannot be accommodated in the last downstream 750mm dia. pipe under free flow(no surcharge) conditions.

You are welcome to discuss the above at our offices should you require any further clarity.

We trust the above is in order.

Kind regards

**Hendrik Spangenberg** Pr Tech Eng  
**Technologist**  
**Municipal Infrastructure**



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**NELSON MANDELA BAY METROPOLITAN  
GQEBERA TOWNSHIP DEVELOPMENT: ERF 11305  
CONTRACT NO.**

**APPENDIX B**

**LAYOUTS DISPLAYING PROPOSED ROADS AND BULK STORMWATER DRAINAGE**

- **Option A;**
- **Option B – Including Buffer Strip.**

**LEGEND**

- Overland Storm Water Flow Direction
- Proposed Stormwater Pipe
- High Density Residential
- Business Zone I
- Industrial Zone III
- Industrial Zone I
- Authority Zone
- Special Zone
- Open Space Zone I

**NOTES**

**SCALE**  
 1:1000

**DATE**

Rev.	Date	By	Description
1	2011	ML	PRELIMINARY DRAWING
2	2011	ML	REVISED
3	2011	ML	REVISED
4	2011	ML	REVISED
5	2011	ML	REVISED
6	2011	ML	REVISED
7	2011	ML	REVISED
8	2011	ML	REVISED
9	2011	ML	REVISED
10	2011	ML	REVISED

City Approved

**nelson mandela bay MUNICIPALITY**  
 Water Engineering & Infrastructure  
 1000  
 P.O. BOX 2770, GORAMBACHES  
 PORT ELIZABETH  
 TEL: 047 945 2800  
 FAX: 047 945 2100

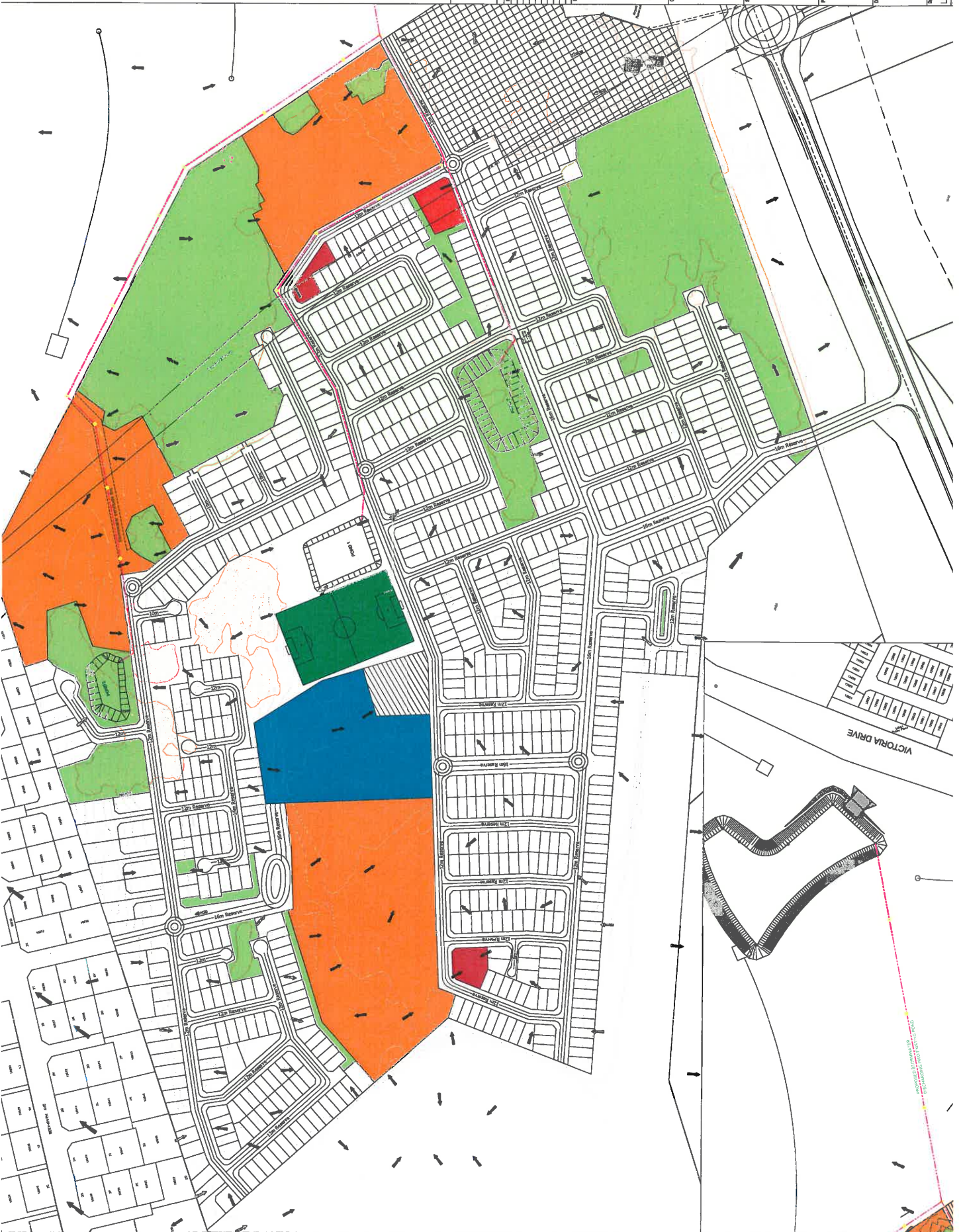
Client Approved

**MARKETH DEVELOPMENT CONSULTANTS**  
 P.O. BOX 2770, GORAMBACHES  
 PORT ELIZABETH  
 TEL: 047 945 2800  
 FAX: 047 945 2100

**WALKER GOEBERA TOWNSHIP DEVELOPMENT**

**ERF 11305**  
**ROADS AND STORMWATER PLAN - OPTION A**

Author	LD	Drawn	M.M.	Date	2011
Checked		Checked			
Project No.		Client Ref.		Project Name	SEPT-17



**LEGEND**

- Overhead Storm water Flow Direction
- Proposed Stormwater Pipe
- High Density Residential
- Business Zone I
- Institutional Zone III
- Authority Zone I
- Special Zone
- Open Space Zone I

**NOTES**

**SCALE**  
1:1500

**DATE**  
15 JAN 2011

**PROJECT**  
WALMER GOEBERA TOWNSHIP DEVELOPMENT

**raison munda bay MUNICIPALITY**  
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WALMER GOEBERA TOWNSHIP DEVELOPMENT

**MAURETHA DEVELOPMENT CONSULTANTS**

P.O. BOX 27376, BURENBERG  
PORT ELIZABETH  
TEL: 047 150 2020  
FAX: 047 150 2279

**WALMER GOEBERA TOWNSHIP DEVELOPMENT**

ERF 11316  
ROADS AND STORMWATER  
PLAN - OPTION B

Drawn By: [Name]  
Checked: [Name]  
Approved: [Name]  
Date: SEPT 17

