

# **STRUBENSVALLEI EXT.24 ERF.1327**

**Situated In Strubensvallei**

## **OUTLINE SCHEME REPORT FOR WATER AND SANITATION ON THE PROVISION OF CIVIL ENGINEERING SERVICES AND SERVICE AGREEMENTS**

**Prepared for**



**Prepared By**



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**Ref No.: - 20521  
October 2020**

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**Drawings**

• Locality Layout ( <b>Annexure-A</b> )	20521-300
• Water Reticulation Layout ( <b>Annexure-D</b> )	20521-600
• Sewer Reticulation Layout ( <b>Annexure-E</b> )	20521-700

## **1. SCOPE OF REPORT**

This Report deals with the provision of Water and Sewer reticulation for the proposed residential development on Strubensvallei Ext.24 Erf.1327, situated in Strubensvallei within the City of Johannesburg's Metropolitan Municipal Boundary in the Gauteng Province.

A separate report will be submitted to the JRA for the approval of Roads and Stormwater provision in conjunction with the approved TIA.

Estimated Costs indicated in this Report are given for the purposes of establishing guarantee amounts and service agreements only.

Provision of the Electrical Reticulation has **not** been dealt with in this Report.

## **2. TOWNSHIP DESCRIPTION**

### **2.1 Locality (Annexure-A /Drawing Number 20521-300)**

The proposed residential development (Strubensvallei Ext.24 Erf.1327) is bounded by:

- Strubensvallei Ext.25 to the North,
- Metro Boulevard Servitude to the West,
- Christian De Wet to the South,
- Strubensvallei Ext.3 to the East.

### **2.2 Zoning (Annexure-B)**

It is our client's intention to develop the proposed development to "Residential 3"  
With a site area of 1.9724ha.

### **2.3 Description**

The site is currently covered by grass and scattered trees. There is a natural slope over the Erf that falls from the North Eastern higher lying boundary to the South Western lower boundary line and drains to the South Western Boundary low point with a contour interval ranging between 44m and 32, resulting in a level difference of 12m over a distance of +- 201m which results in an average 6% fall over the Erf's.

There are no existing buildings on site and the development is affected by the proposed Metro Boulevard along the Western boundary, the planned on and off ramp to the Metro Boulevard and flood lines along the Southern Boundary.

## **2.4 Existing Services (Annexure-D)**

### **Water:**

There is an existing 110mm-diameter Council water pipes which can be located North of the developments access, situated within the Fiddle Avenue Road Reserves.

### **Sewer:**

There are existing 150mm-diameter clay Council sewer pipes running along the Southern Boundary line of the development situated within the flood lines.

## **2.5 Flood Lines**

The development is affected by a 100-year flood line as specified in Chapter 14, Part 3 of the Water Act (Act 36 of 1998), as required in terms of the Town Planning and Township Ordinance (Ordinance 15 of 1986)

## **3. DESIGN GUIDELINES**

The design of the Township's services will be based on the design principles in the "Guidelines for the Provision of Engineering Services and Amenities in Residential Township Development" published by the Department of Community Development and to the City of Johannesburg requirements for Engineering Services.

A competent contractor through acceptable tender process will install all services. The General Conditions for the Works of Civil Engineering Construction, Standard Specification SABS 1200 and relevant specifications will pertain to the contract.

## **4. WATER RETICULATION**

### **4.1 Layout and Design (Annexure-D)**

The layout of the existing Council water reticulation system and the connections to the development is shown on drawing number 20521-600.

The proposed 110mm-diameter mPVC CL 16 water supply pipe which will form the developments supply feed will connect to the existing 110mm-diameter water pipe situated within the Fiddle Avenue Road Reserves.

The proposed water reticulation to connection to the existing water line will be installed in conjunction with the construction of the new required access road to the development therefore no road crossings will be required. The external section of water line will be constructed to Johannesburg Waters latest standards and handed over to Johannesburg Water upon completion and acceptance of the installed water infrastructure.

Construction of the water reticulation system to service the proposed development will remain the responsibility of the developer and the internal water reticulation will remain private and maintained by the Section 21 Company for this development.

#### **Design Criteria:**

Site Area	:	1.9724 ha, 19 724 m <sup>2</sup>
Proposed Zoning	:	"Residential 3"
F.A.R	:	0.279 / 78 units on Erf
Coverage	:	Primary Allowed 40%, Actual 26%
Fire Risk Category	:	Moderate Risk
Hydrant Flow	:	1 500 l/min @ 15m
Daily Demand	:	2700 l/day (per 500m <sup>2</sup> of gross floor area = 8072.96m <sup>2</sup> )
Peak Factor	:	4
Delivery Required	:	0.505 l/s
Instantaneous	:	2.018 l/s
Max Velocity	:	1.0 - 3.5 m/s
Design Pipe Size	:	Ø110mm mPVC Class 16

### **4.2 Materials and Construction**

It is proposed that all materials, construction and testing of the water reticulation comply with Johannesburg Water requirements, as well as the SABS Standards. All fire hydrants will meet the standard requirements of the Johannesburg Fire Department.

The water reticulation pipelines to feed the site will consist of mPVC Class 16 to SANS 1283 and fittings as per the latest Johannesburg Water Standards.

### **4.3 Conclusion**

***It can therefore be concluded taking into account the existing council infrastructure and the peak draw off as calculated above for the proposed new developments that the peak draw off will not negatively impact on the existing council water reticulation infrastructure.***

### **4.4 Estimate Costs**

The connection to the existing council water line will be done by the developers and the internal water reticulation system will remain private. Costs included in this Report is for a new 110mm-diameter mPVC CL16 water feed pipe that will connect on to the existing 110mm-diameter council water line situated within the Fiddle Avenue Road Reserves and reticulate towards the proposed development.

## **5. SEWER RETICULATION**

### **5.1 Layout and Design (Annexure-E)**

The layout of the existing council sewerage reticulation system and the proposed connection to the existing sewer system is shown on drawing number 20521-700.

There is an existing 150mm-diameter clay sewer system which can be located adjacent to the Southern boundary of the development conveying sewer from the higher lying Eastern side to the lower lying Western side which will serve as the connection point for the development.

A new 160mm-diameter uPVC CL 400 H/D pipe will connect into the existing sewer system by means of a new MH. adjacent to the Southern boundary line.

The internal sewer reticulation system will remain private and maintained by the Section 21 Company for this development.

### Design Criteria:

Site Area	:	1.9724 ha, 19 724 m <sup>2</sup>
Proposed zoning	:	“Residential 3”
F.A.R	:	0.279 / 78 units on Erf
Coverage	:	Primary Allowed 40%, Actual 26%
Average Sewage Discharge	:	2300 l/day (per 500m <sup>2</sup> of gross floor area = 8072.96m <sup>2</sup> )
Normal Flow Discharge	:	0.430 l/s
Peak Factor	:	2.3
Peak Discharge	:	0.989 l/s
Design Flow	:	67% with min 0.7m/s full flow velocity
Design pipe size	:	Ø160mm uPVC Heavy Duty Class 400 to SANS 1601

### 5.2 Materials and Construction

It is proposed that all materials, construction and testing of the sewer reticulation comply with local council, as well as the SABS Standards. Pipes will consist of uPVC Heavy Duty Class 400 to SANS 1601.

Manholes and chambers shall be constructed as specified in SANS 1294.

Manholes shall be precast concrete with dolomitic aggregate or fibre-cement rings (min. 1,05m nominal diameter).

Manholes deeper than 3m shall be a minimum of 1.5m in diameter.

### 5.3 Conclusion

***It can therefore be concluded based on the peak discharge as calculated above for the proposed new development that the new developments peak discharge and normal flow discharge will not negatively impact on the existing council sewer reticulation infrastructure.***

### 5.4 Estimate Costs

Costs included in this Report is for the connection to the existing sewer infrastructure situated within the flood lines which can be located adjacent to the Southern boundary of the development.

**Telkom and Electrical services are not included in this Report**

## 6. ESTIMATE COST

### 6.1 Estimated Cost of Connection to Council Water Reticulation

Description	Unit	Quantity	Rate	Amount
Clear & Grub	m	182.00	R 20.00	R 3 640.00
Trench Excavation	m	182.00	R 120.00	R 21 840.00
E/O For Intermediate	m <sup>3</sup>	20.00	R 360.00	R 7 200.00
E/O For Rock	m <sup>3</sup>	15.00	R 205.00	R 3 075.00
Bedding Material	m <sup>3</sup>	18.20	R 60.00	R 1 092.00
Selected Fill Material	m <sup>3</sup>	36.40	R 60.00	R 2 184.00
Supply&Lay 110Dia mPVC CL16	m	182.00	R 340.00	R 61 880.00
Directional Drilling	m	0.00	R 1 150.00	R 0.00
Supply & Install Gate valves	No	1.00	R 7 500.00	R 7 500.00
Fire Hydrant Relocate	No	0.00	R 8 650.00	R 0.00
Fittings, Anchors	Sum	1.00	R 8 500.00	R 8 500.00
Test and Commissioning	Sum	1.00	R 8 500.00	R 8 500.00
Connection to Existing	Sum	1.00	R 5 500.00	R 5 500.00
<b>Subtotal</b>				<b>R 130 911.00</b>
Contingencies (10%)				R 13 091.10
P & G (15%)				R 19 636.65
<b>Subtotal</b>				<b>R 163 638.75</b>
Total Excl Vat				<b>R 163 638.75</b>



## 6.2 Estimated Cost of Council Sewer Reticulation

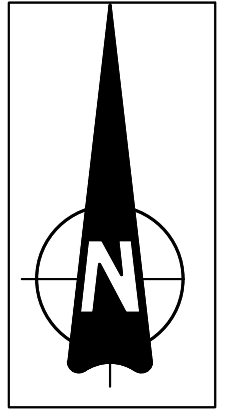
Description	Unit	Quantity	Rate	Amount
Clear & Grub	m	20.00	R 20.00	R 400.00
Trench Excavation	m	20.00	R 120.00	R 2 400.00
E/O For Intermediate	m <sup>3</sup>	5.00	R 360.00	R 1 800.00
E/O For Rock	m <sup>3</sup>	5.00	R 205.00	R 1 025.00
Bedding Material	m <sup>3</sup>	3.00	R 60.00	R 180.00
Selected Fill Material	m <sup>3</sup>	8.55	R 60.00	R 513.00
Supply & Lay 160 Dia CL400	m	20.00	R 175.00	R 3 500.00
Manholes	No	1.00	R 15 500.00	R 15 500.00
Reinstate Surface	No	1.00	R 2 500.00	R 2 500.00
Testing and Commsissioning	Sum	1.00	R 12 500.00	R 12 500.00
Connection to Existing	Sum	1.00	R 9 500.00	R 9 500.00
<b>Subtotal</b>				<b>R 49 818.00</b>
Contingencies (10%)				R 4 981.80
P & G (12.5%)				R 6 227.25
<b>Subtotal</b>				<b>R 61 027.05</b>
Total Excl Vat				<b>R 61 027.05</b>

## 6.3 Summation of Estimate Costs

Item	Quantity	Estimated Costs
6.1	Water Reticulation	R 163 638.75
6.2	Sewer Reticulation	R 61 027.05
	<b>Total</b>	<b>R 224 665.80</b>

## DRAWINGS

**ANNEXURE-A**  
**LOCALITY**  
**DRAWING NUMBER**  
**20521-300**



# Untitled Map

Write a description for your map.

### Legend

- Feature 1
- Strubensvallei Ext. 24
- ▣ Sure Makro Travel



Google Earth  
 © 2020 AirGIS (Pty) Ltd.  
 © 2020 Google

DEPARTMENT	APPROVED	DESIGNATION	DATE

CONSULTING ENGINEERS	SURVEYED	DESIGNED	JOHANNESBURG WATER (PTY) LTD
G.P. VAN DER MERWE 433 Orkney Road Rosebank Tel: (011) 472 2877 Fax: (011) 472 2366 www.gpm.co.za	G.HUYSAMEN OCTOBER 2020 G.HUYSAMEN OCTOBER 2020 KC OOLJKAAS OCTOBER 2020	17 HARRISON STREET MARSHALLTOWN JOHANNESBURG 2107 TEL: (011) 688-1400 FAX: (011) 688-1529	

CITY OF JOHANNESBURG  
 LOCALITY LAYOUT OF STRUBENSVALLEI EXT.24

DESIGN MANAGER	SCALE	AMENDMENTS	APPROVED DATE	DRAWING No.
	A0 1:N.T.S	A ISSUED FOR COUNCIL INFORMATION	2020/10/06	20521-300 1 OFF 1
DATE				FILE No

**ANNEXURE-B**  
**ZONING**

**TOWNPLANNING REQUIREMENTS:**

SITE AREA = 1.9724 Ha  
 ZONING = RESIDENTIAL 3  
 HEIGHT = 2 STOREYS  
 COVERAGE = 40%  
 FAR = 0.4  
 DENSITY = 40 UNITS PER Ha

\* TOTAL GROUND FLOOR AREA:

TYPE A	Unit: 55.00 X18 = 990.00
Cov Terrace: 12.29 X18 = 221.22	
Total: 67.29 X18 = 1211.22	

TYPE B	Unit: 55.00 X18 = 990.00
Cov Terrace: 12.29 X18 = 221.22	
Total: 67.29 X18 = 1211.22	

TYPE C	Unit: 77.06 X6 = 462.36
Cov Terrace: 8.30 X6 = 49.80	
Total: 85.36 X6 = 512.16	
Stairs: 20.19 X3 = 60.57	

TYPE D	Unit: 95.33 X6 = 571.98
Cov Terrace: 11.86 X6 = 71.16	
Total: 107.19 X6 = 643.14	
Stairs: 23.51 X3 = 70.53	

TOTAL GF- 3708.84

CARPPTS: 15.40 X144 = 2217.60
GATEHOUSE: 22.47 X1 = 22.47
TOTAL COVERAGE - 5948.91

\* COVERAGE = PERMISSIBLE / 40%  
 TOTAL GROUND FLOOR AREA = 5948.91m<sup>2</sup> X 100 = 19724 m<sup>2</sup>

\* FAR = PERMISSIBLE / 0.4  
 TOTAL AREA OF BUILDINGS = 7190.10 m<sup>2</sup>  
 SITE AREA = 19724 m<sup>2</sup>  
 = 0.36

\* TOTAL FIRST FLOOR AREA:

TYPE A	Unit: 58.53 X18 = 1053.54
Total: 58.53 X18 = 1053.54	

TYPE B	Unit: 58.53 X18 = 1053.54
Total: 58.53 X18 = 1053.54	

TYPE C	Unit: 77.06 X6 = 462.36
Cov Terrace: 8.30 X6 = 49.80	
Total: 85.36 X6 = 512.16	
Stairs: 20.19 X3 = 60.57	

TYPE D	Unit: 95.33 X6 = 571.98
Cov Terrace: 11.86 X6 = 71.16	
Total: 107.19 X6 = 643.14	
Stairs: 23.51 X3 = 70.53	

TOTAL FF- 3393.48

TYPE C	Unit: 77.06 X6 = 462.36
Cov Terrace: 8.30 X6 = 49.80	
Total: 85.36 X6 = 512.16	
Stairs: 20.19 X3 = 60.57	

TYPE D	Unit: 95.33 X6 = 571.98
Cov Terrace: 11.86 X6 = 71.16	
Total: 107.19 X6 = 643.14	
Stairs: 23.51 X3 = 70.53	

TOTAL FF- 1286.40

**PARKING REQUIREMENTS:**

REQUIRED	PROVIDED
2.0 COVERED BAYS PER UNIT = 72 UNITS X 2 = 144 COVERED AND 0.3 OPEN VISITORS PER UNIT = 72 UNITS X 0.3 = 22 VISITORS	ACTUAL COVERED = 144 COV AND ACTUAL OPEN = 25 VISITORS
TOTAL REQUIRED = 166 BAYS	TOTAL ACTUAL = 169 BAYS
TOTAL - 3 BAYS IN HAND	

TOTAL UNITS = 72 (36.50U/HA)  
 TOTAL ROOFED AREA: 10628.79

3bed/2bath - 18 UNITS  
 3bed/2bath - 18 UNITS  
 3bed/2bath - 18 UNITS  
 3bed/2bath - 18 UNITS

FIRE DEPT COPY  
 CLIENT / ARCH COPY  
 MDB COPY  
 SITE COPY

**SCHEDULE OF RIGHTS**

PROPERTY DESCRIPTION: Erf / Portion 1327, Site Area 1.9724 Ha, Township STRUBENSVALLEI EXT 24, Title Deed No.

ZONING INFORMATION: Town Planning Scheme 1987, Ammendment Scheme No., Use Zone RESIDENTIAL 3, Annexure No.

DEVELOPMENT CONTROL MEASURES:

Permissible (with council consent)	Control	Actual
3 STOREYS	Height of Buildings	3 STOREYS
40%	Coverage	30%
0.4	Floor Area Ratio	0.36
40 DWELLINGS/HA (79.9)	Floor Area	10628.79 m <sup>2</sup>
	Density/Dwelling Units per Ha	72 DWELLINGS (36.50 U/HA)
	No of Dwelling Units on Erf	72

PARKING:

Parking Ratio per use	Area per Use	Parking Bays Required
2.00 parking bays COVERED	floor area	144 parking bays
0.3 parking bays OPEN	floor area	22 parking bays
Parking bays per 100m <sup>2</sup>	floor area	parking bays
Parking bays per 100m <sup>2</sup>	floor area	units parking bays
Parking bays per 100m <sup>2</sup>	floor area	seats parking bays

TOTAL PARKING BAYS REQUIRED: 166 parking bays  
 TOTAL PARKING BAYS PROVIDED: 169 parking bays  
 Surplus / Deficit No of Parking Bays: 3 parking bays

NAME: \_\_\_\_\_ SIGNATURE: \_\_\_\_\_  
 DATE: \_\_\_\_\_ PLAN No: \_\_\_\_\_

**FIRE NOTES**

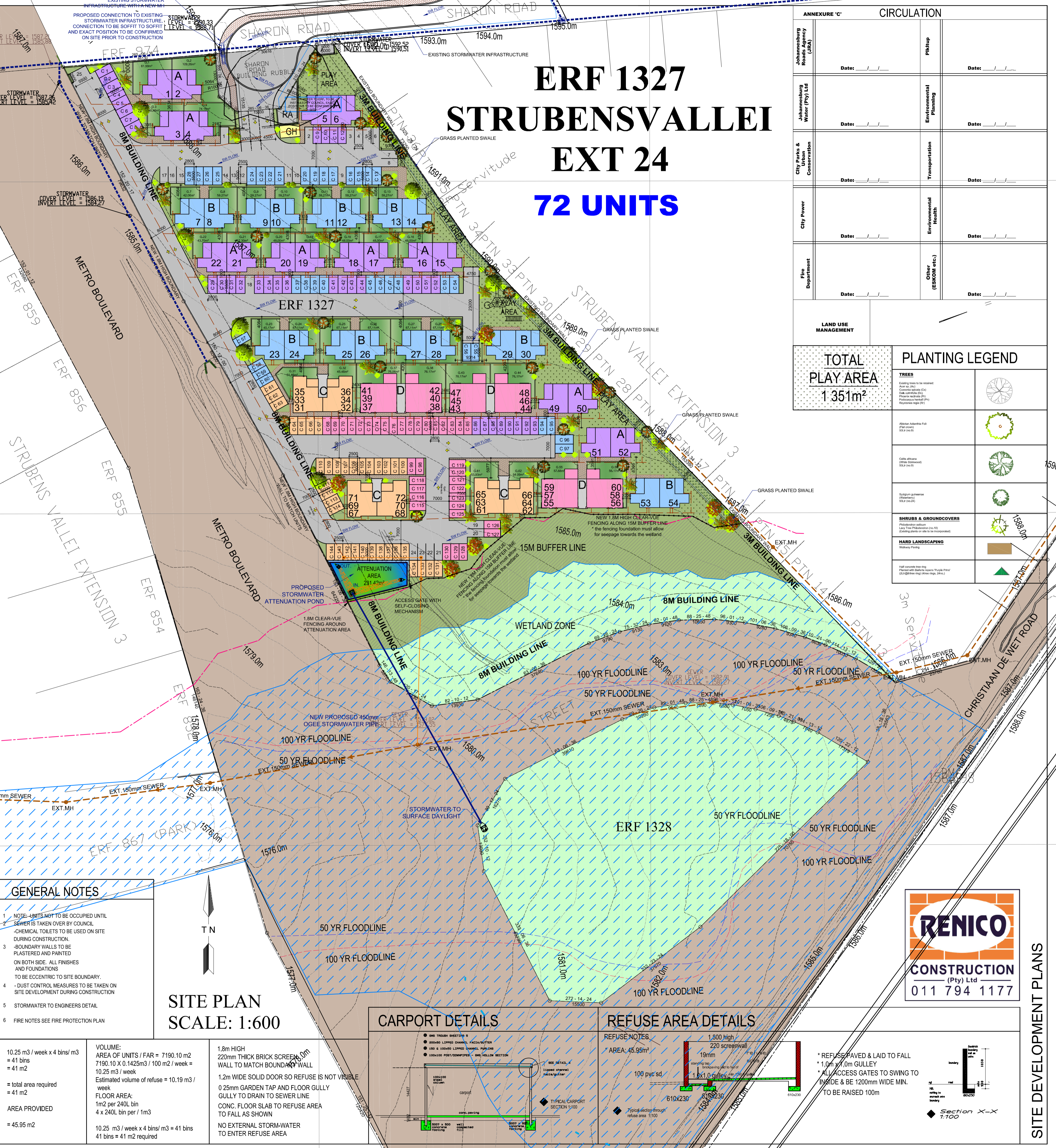
- 6 X 65mm PILLAR HYDRANT TWIN BOOSTER NON-RETURN
- 80mm UPVC PIPE CLASS 12
- 50mm UPVC PIPE CLASS 12
- 40mm UPVC PIPE CLASS 12
- 32mm UPVC PIPE CLASS 12
- 25mm UPVC PIPE CLASS 12
- 30 M FHR 2X4.5kg DCP FE
- 1 x 4.5kg DCP FE
- FIRE WALLS BETWEEN UNITS 100mm FROM BRANDERINGS

**GENERAL NOTES**

- NOTE: UNITS NOT TO BE OCCUPIED UNTIL SEWER IS TAKEN OVER BY COUNCIL.
- CHEMICAL TOILETS TO BE USED ON SITE DURING CONSTRUCTION.
- BOUNDARY WALLS TO BE PLASTERED AND PAINTED ON BOTH SIDE. ALL FINISHES AND FOUNDATIONS TO BE ECCENTRIC TO SITE BOUNDARY.
- DUST CONTROL MEASURES TO BE TAKEN ON SITE DEVELOPMENT DURING CONSTRUCTION.
- STORMWATER TO ENGINEERS DETAIL.
- FIRE NOTES SEE FIRE PROTECTION PLAN.

**CALCULATING THE SIZE OF A REFUSE AREA**  
 (G) X FA / 100 = VOLUME (M3) / WEEK

10.25 m <sup>3</sup> / week x 4 bins / m <sup>3</sup> = 41 bins = 41 m <sup>2</sup>	VOLUME: AREA OF UNITS / FAR = 7190.10 m <sup>2</sup> / 0.36 = 19972.5 m <sup>2</sup> / week = 10.25 m <sup>3</sup> / week	1.8m HIGH 220mm THICK BRICK SCREEN WALL TO MATCH BOUNDARY WALL
= total area required = 41 m <sup>2</sup>	Estimated volume of refuse = 10.19 m <sup>3</sup> / week	1.2m WIDE SOLID DOOR SO REFUSE IS NOT VISIBLE
AREA PROVIDED = 45.96 m <sup>2</sup>	FLOOR AREA: 1m <sup>2</sup> per 240L bin	0.25mm GARDEN TAP AND FLOOR GULLY TO DRAIN TO SEWER LINE
	4 x 240L bin per 1m <sup>3</sup>	CONC. FLOOR SLAB TO REFUSE AREA TO FALL AS SHOWN
	10.25 m <sup>3</sup> / week x 4 bins / m <sup>3</sup> = 41 bins = 41 m <sup>2</sup> required	NO EXTERNAL STORMWATER TO ENTER REFUSE AREA



# ERF 1327 STRUBENSVALLEI EXT 24 72 UNITS

**ANNEXURE 'C' CIRCULATION**

Authority	Signature	Date
Scholarship Roads Agency (JHA)		
Johannesburg Water (JW) Ltd		
City Parks & Urban Conservation		
City Power		
Fire Department		

**LAND USE MANAGEMENT**

TOTAL PLAY AREA: 1351m<sup>2</sup>

**PLANTING LEGEND**

TREES	SHRUBS & GROUNDCOVERS	HARD LANDSCAPING
Symbol: ...	Symbol: ...	Symbol: ...
Symbol: ...	Symbol: ...	Symbol: ...
Symbol: ...	Symbol: ...	Symbol: ...
Symbol: ...	Symbol: ...	Symbol: ...

**N M B SAIT**  
 N DIP ARCH  
 PLSA/NT, S.A.C.A.P. Reg. No. ST0690  
 MNT (SA) SAIT Reg. No. 71416

**PAULINE FISHER ARCHITECTURE**

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**GENERAL NOTES:**

- ALL DIMENSIONS AND LEVELS TO BE CHECKED ON SITE BEFORE WORK COMMENCES.
- ANY DEVIATION FROM THIS DRAWING MUST BE APPROVED IN WRITING BY THE ARCHITECTURAL PROFESSIONAL BEFORE WORK IS PUT IN HAND.
- ANY DISCREPANCY TO BE REPORTED TO THE ARCHITECTURAL PROFESSIONAL BEFORE PROCEEDING WITH WORK.
- FIGURED DIMENSIONS ON THE DRAWING TO BE TAKEN IN PREFERENCE TO SCALING.

**ROOF NOTES**

PITCH: 22°  
 ROOF FINISH: CEMENT ROOF TILES  
 BATTENS: 38x38 @ 320 C/C  
 DAMPROOF MEMBRANE: TALCOM WHITE BY GUNDEL  
 TRUSSES: GRADE 7 TIMBER @ MAX 680mm C/C  
 RAFTER: 152X38 TIE-BEAMS: 152X38  
 WALL PLATE: 114X38 BRANDERING  
 CEILING: 9mm THICK RHINOBOARD  
 PREFABRICATED ENGINEER DESIGNED TRUSSES TO SABS 0169 AND SABS 0163 SPECIFICATION

**DRAINAGE NOTES**

LE'S TO ALL CONNECTIONS  
 RE'S AT CHANGE OF DIRECTION & END OF DRAIN WITH MARKED COVERS AT GROUND LEVEL  
 WHERE DRAINAGE OCCURS UNDER FOUNDATIONS AND CONCRETE FLOOR SLAB, DRAIN TO BE PROTECTED AGAINST THE LOAD  
 MINIMUM INVERT LEVEL OF DRAIN 460mm  
 1000V OVP AT HEAD OF DRAIN  
 MINIMUM FALL OF DRAIN 1:60

**FLOOR NOTES**

SKIRTING: 70X19 HARDWOOD WITH 19mm QUADRANT FLOOR FINISH AS ON PLAN  
 SCREEN: SAND CEMENT 25mm MINIMUM SURFACE BED, 50mm CONCRETE FLOPSLAB ON 75mm MICRON DAMP PROOF MEMBRANE ON WELL COMPACTED FILL  
 PERMITE POISON TO ALL SURFACE BEDS PRIOR TO CONCRETE POUR

**WINDOWS:**

GLAZED SECTIONS TO BE IN ACCORDANCE WITH THE A SECTION OF THE NBR 1 & THE SABS-0137

**REVISION SCHEDULE**

NO.	DATE	DESCRIPTION
1	23/11/2021	WETLAND DELINEATION ADDED
2	24/11/2021	PARKING MOVED & ATTENUATION REVISED
3	07/12/2021	BOUNDARY REVISED TO MATCH SURVEY
4	08/12/2021	LAYOUT REVISED
5	09/12/2021	PARKING REVISED
6	09/12/2021	WETLAND ZONE DESCRIPTION REVISED
7	03/02/2021	HIGHLIGHTED WETLAND AND ROADS
8	31/03/2021	SITE LAYOUT REVISED
9	23/04/2021	SITE LAYOUT REVISED
10	28/04/2021	SITE LAYOUT REVISED
11	05/05/2021	PLAY AREAS & GH, RA POSITIONS REVISED
12	11/05/2021	INTERNAL STORMWATER ADDED
13	12/05/2021	MINI-SUB SERVITUDE ADDED
14	14/05/2021	STORMWATER LAYOUT REVISED

OWNERS SIGNATURE: \_\_\_\_\_  
 ARCHITECTS SIGNATURE: \_\_\_\_\_

**PAULINE FISHER ARCHITECTURE**

PHYSICAL ADDRESS: STUDIO 102, THE RIDGE WELLNESS CNT, 1 ATELIER STREET, RANDPARKRIDGE  
 POSTAL ADDRESS: P.O. BOX 2376, CRAMERVIEW, 2060

EMAIL: pauline@pfarch.co.za OFFICE: 011 7942570 MOBILE: 0829055512

**CLIENT**

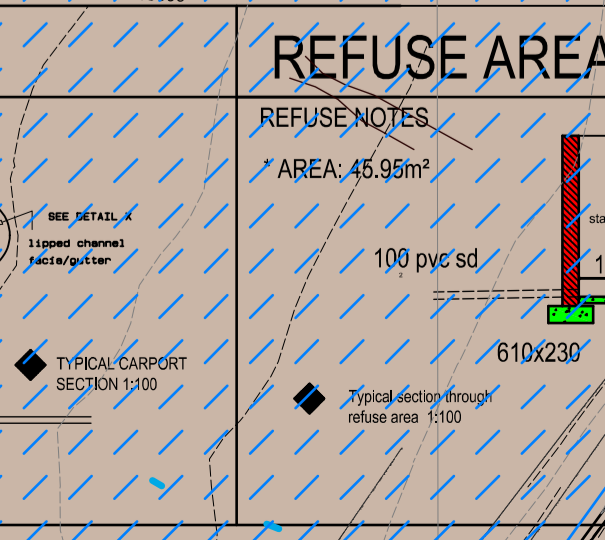
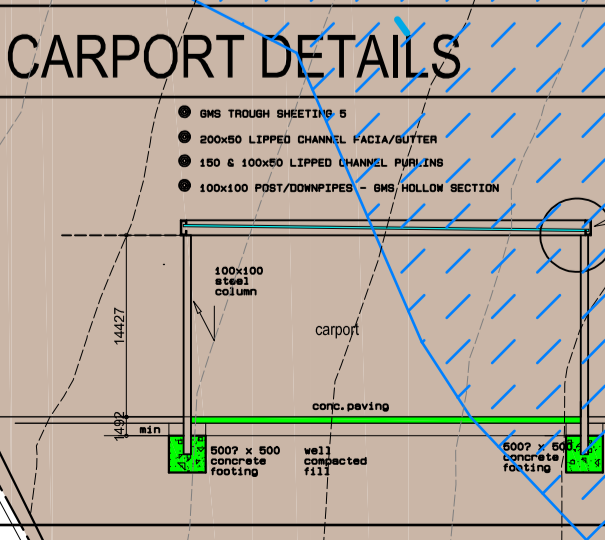
PROPOSED NEW DEVELOPMENT ON STAND 1327 STRUBENSVALLEI EXT 24 FOR: RENICO CONSTRUCTION

**DRAWING**

SITE DEVELOPMENT PLANS

DRAWN BY	DATE	SCALE
PF	14/05/2021	1:600

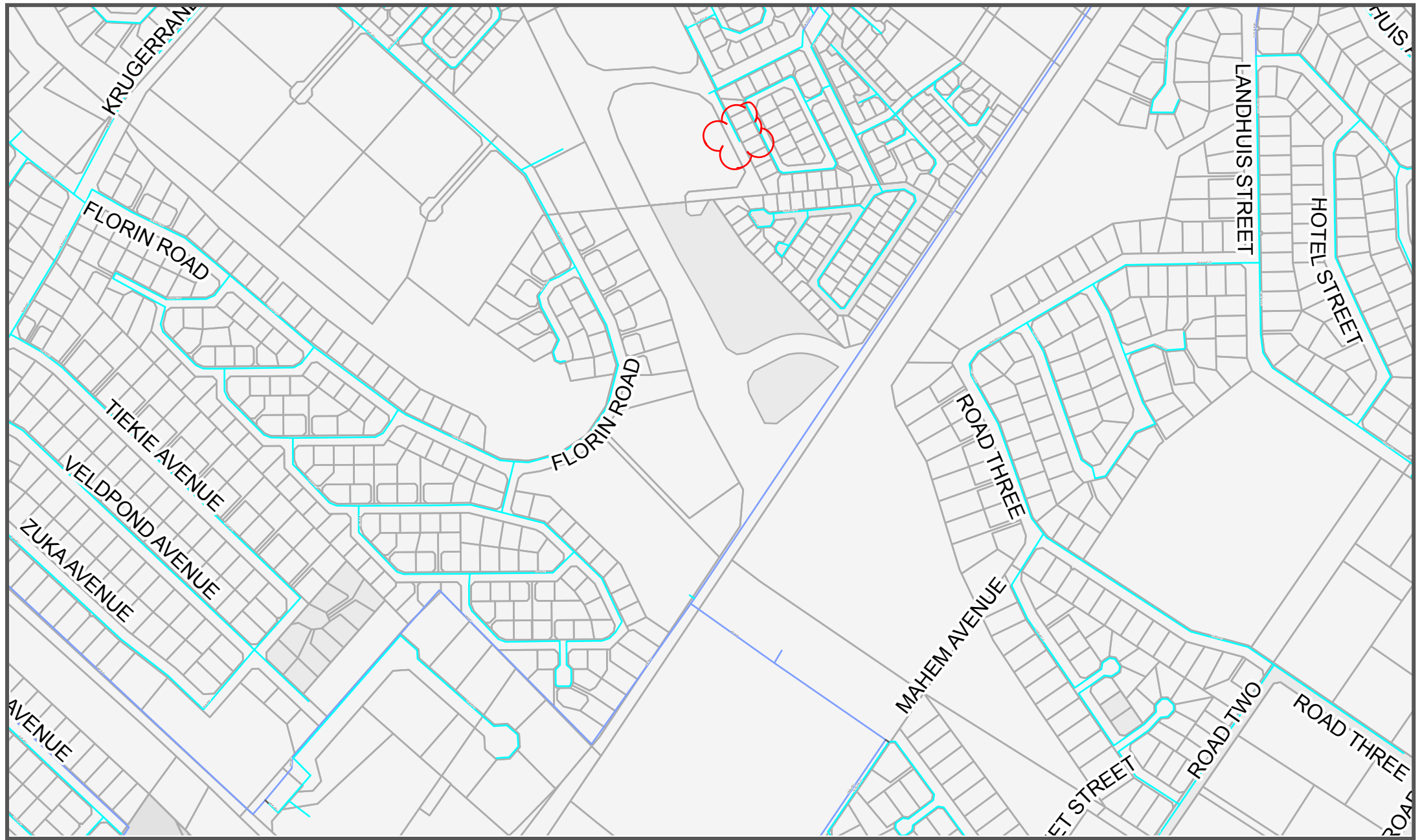
JOB No.	DRAWING No.	REV.
1327-SV	1327-SDP01	14



**RENICO CONSTRUCTION**  
 (Pty) Ltd  
 011 794 1177

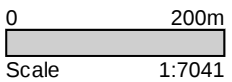
SITE DEVELOPMENT PLANS

**ANNEXURE-C**  
**EXISTING SERVICES**

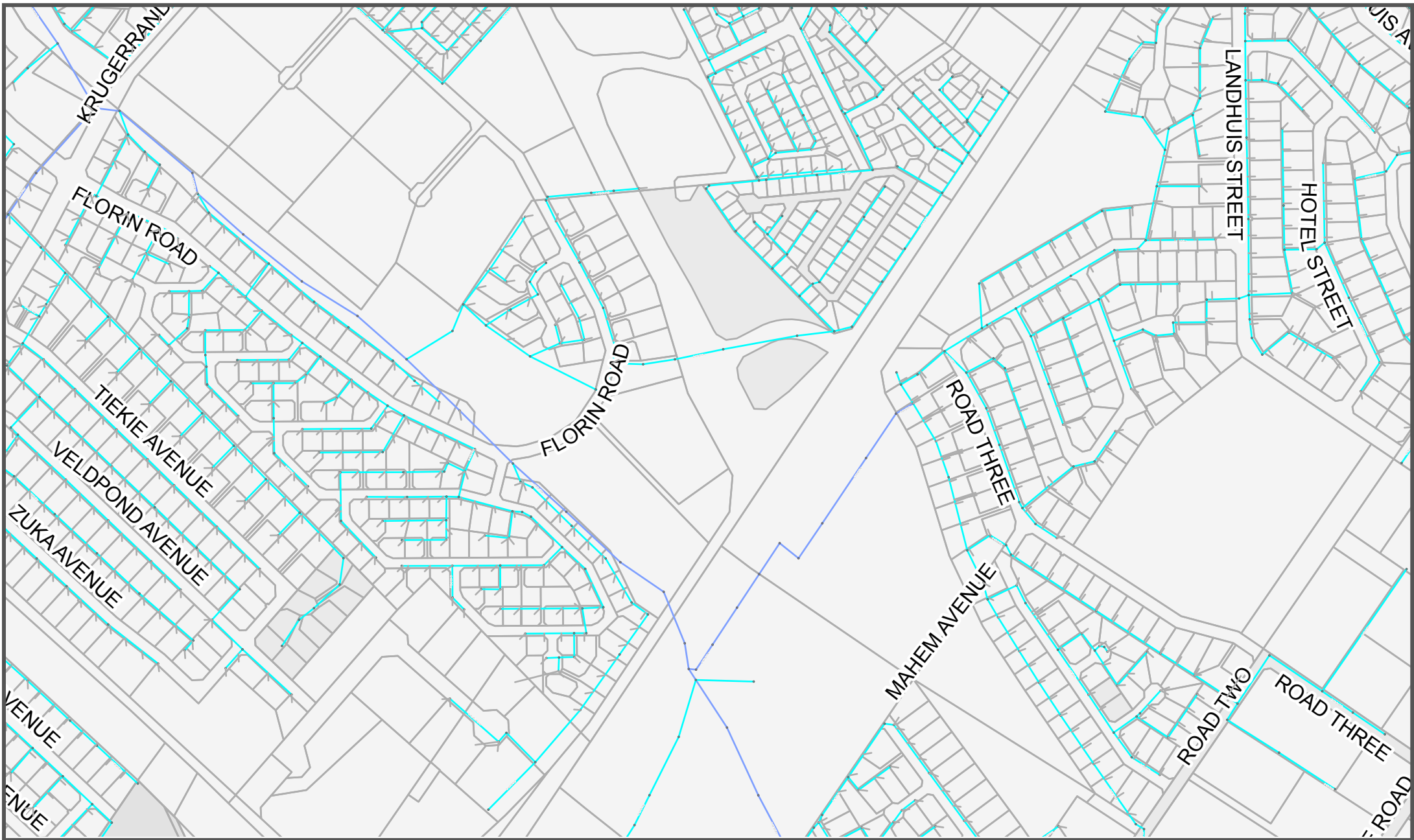


# Water: System Type

2020-10-01 15:17

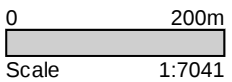


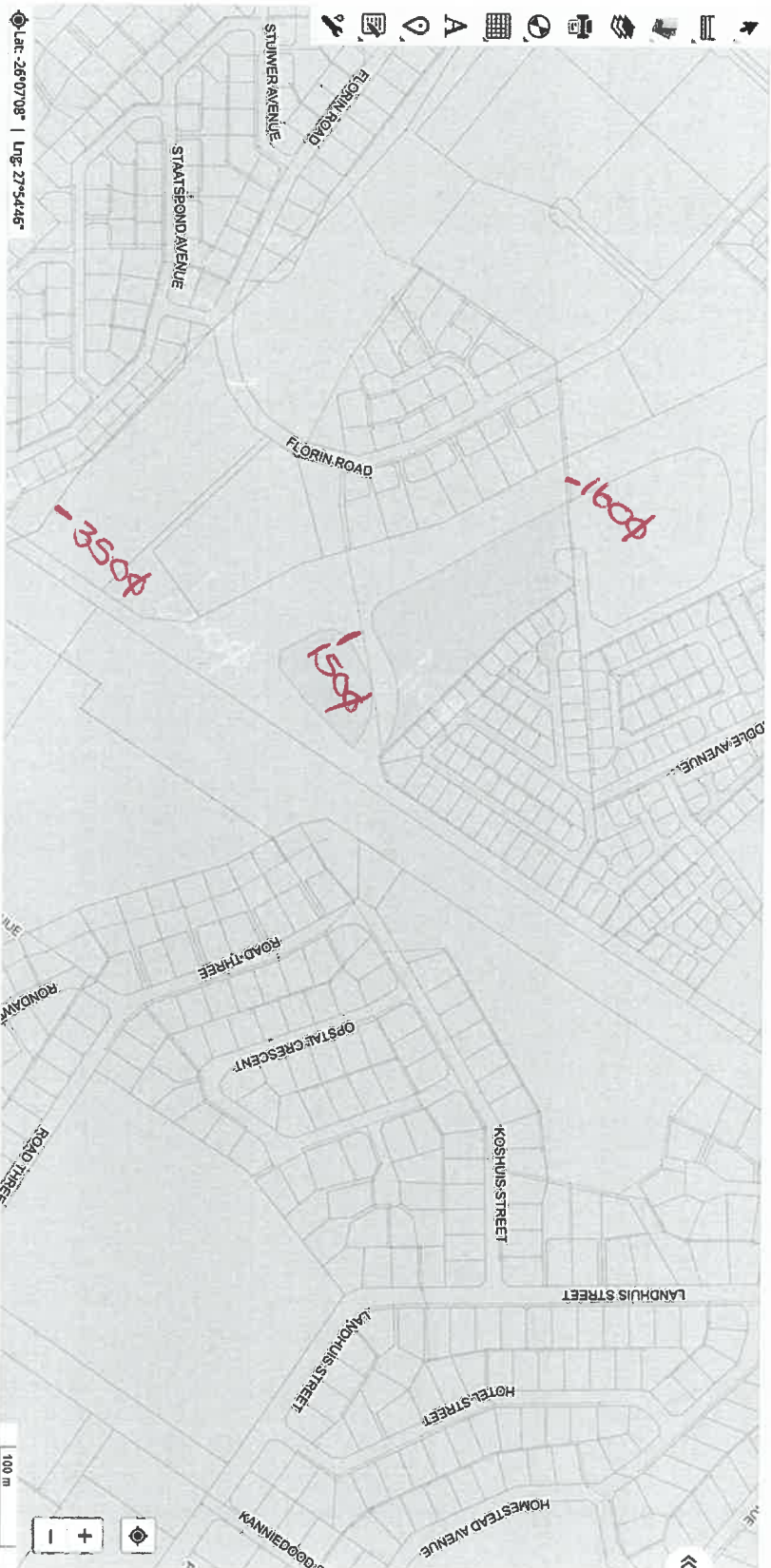




# Sewer: System Type

2020-10-01 15:18





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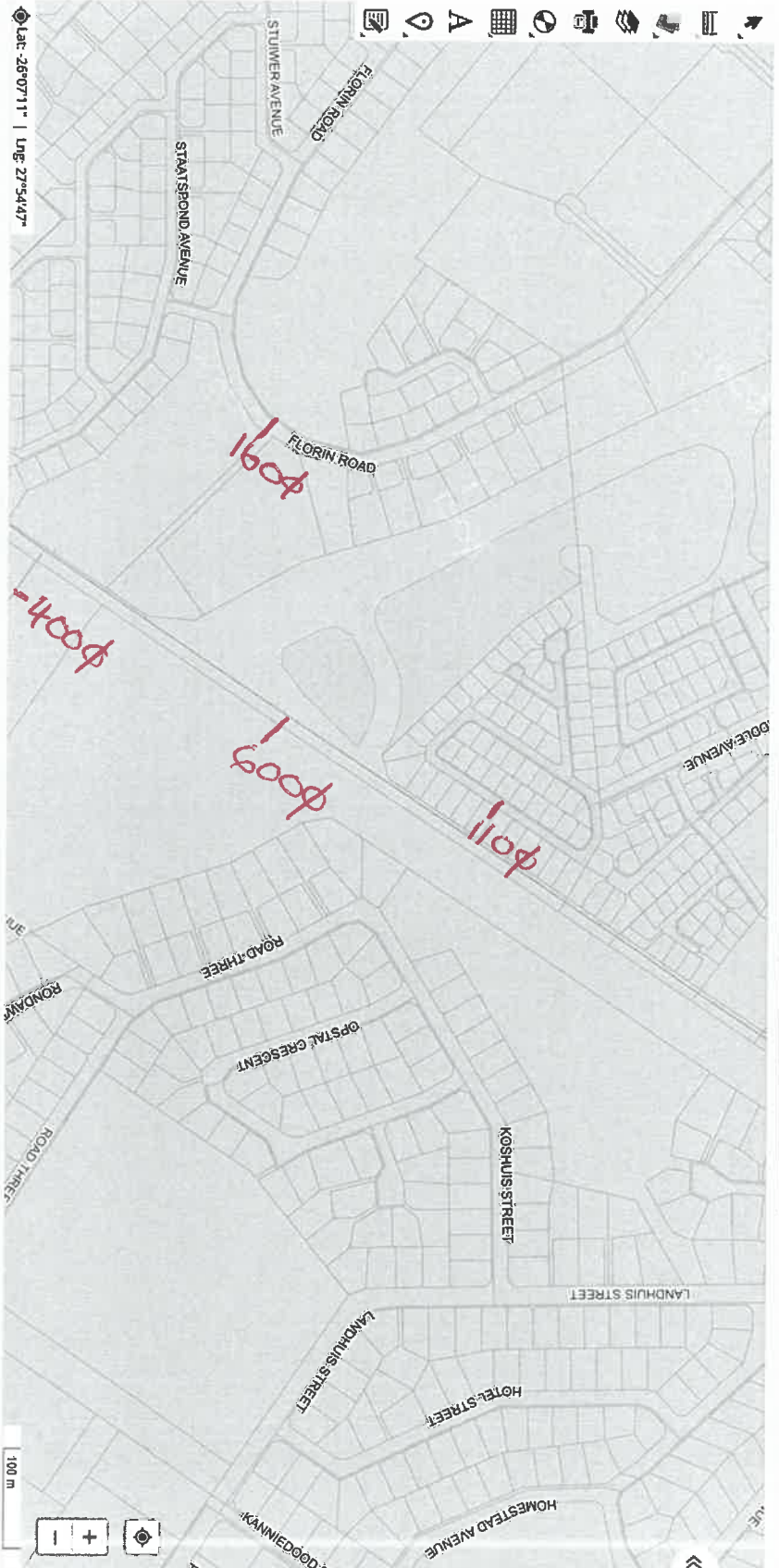


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Type to search...

Bookmarks... HOME WATER MAP System Type ntabeleng.molojoa@water.co.za

- Search bookmarks
- Bookmarks Toolbar
- Bookmarks Menu
- Other Bookmarks

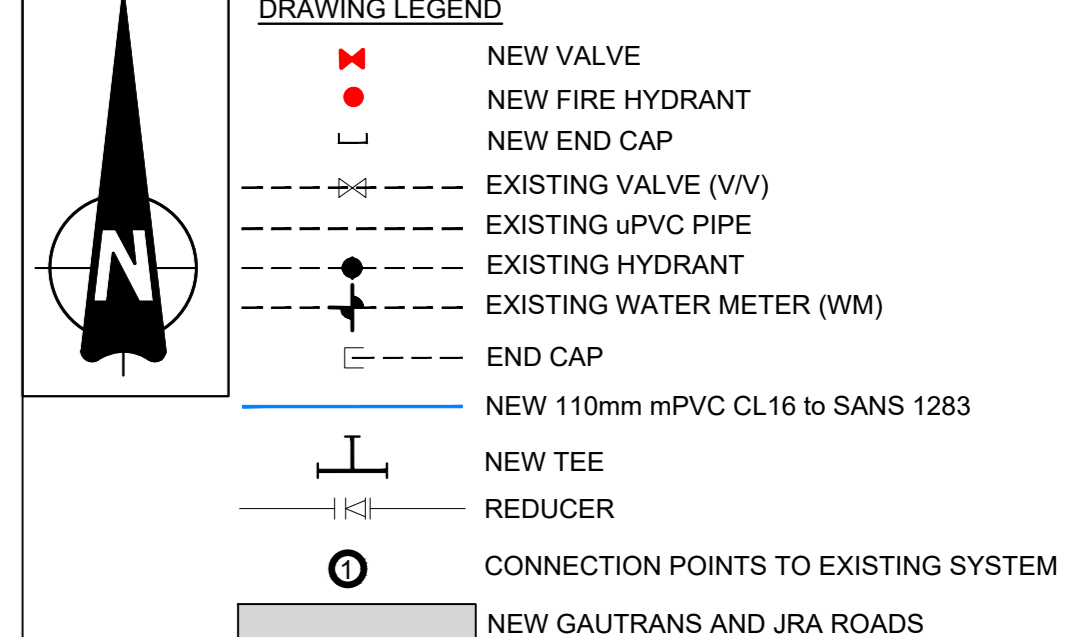
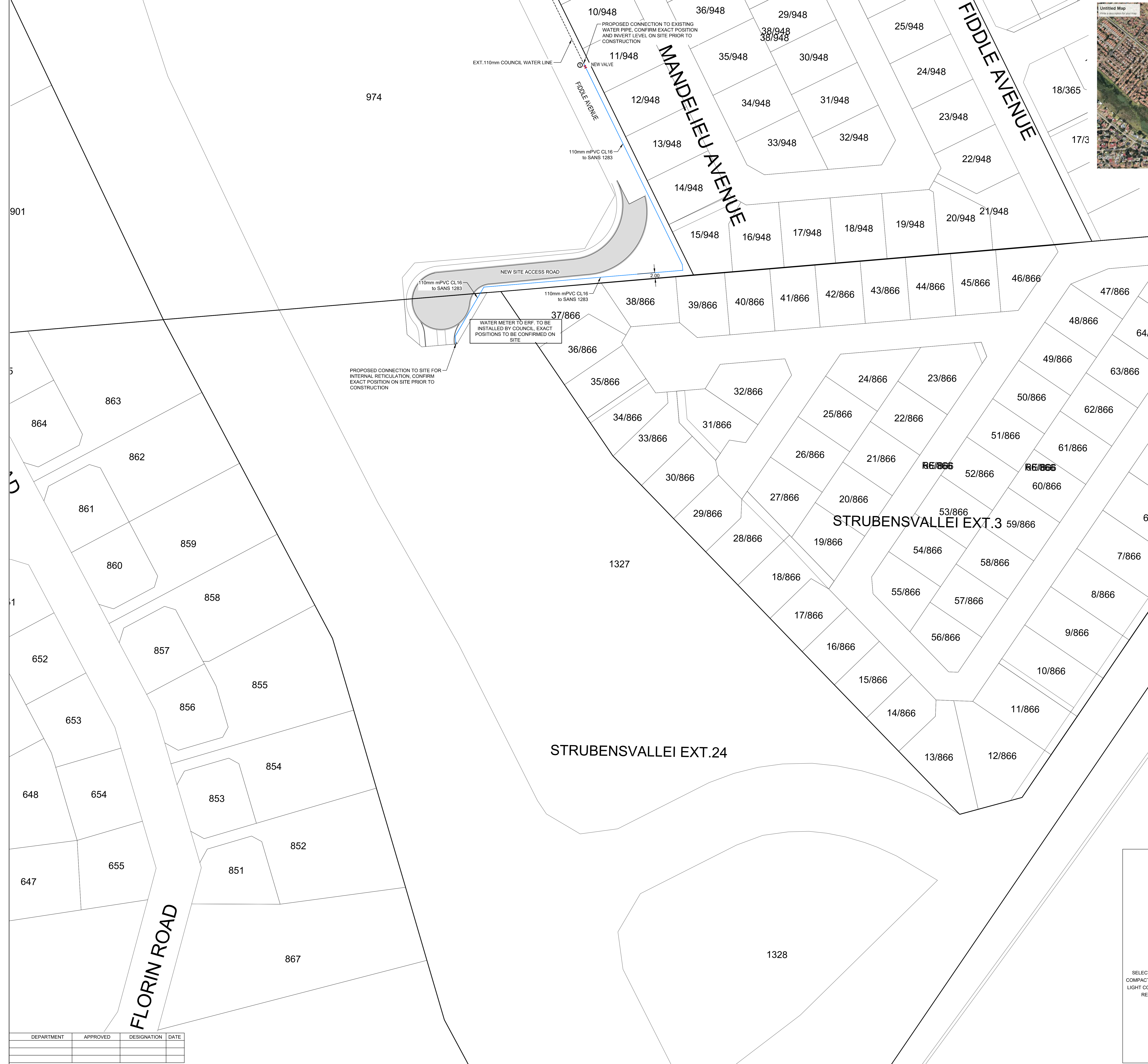


Lat: -26°07'11" | Lng: 27°54'47"

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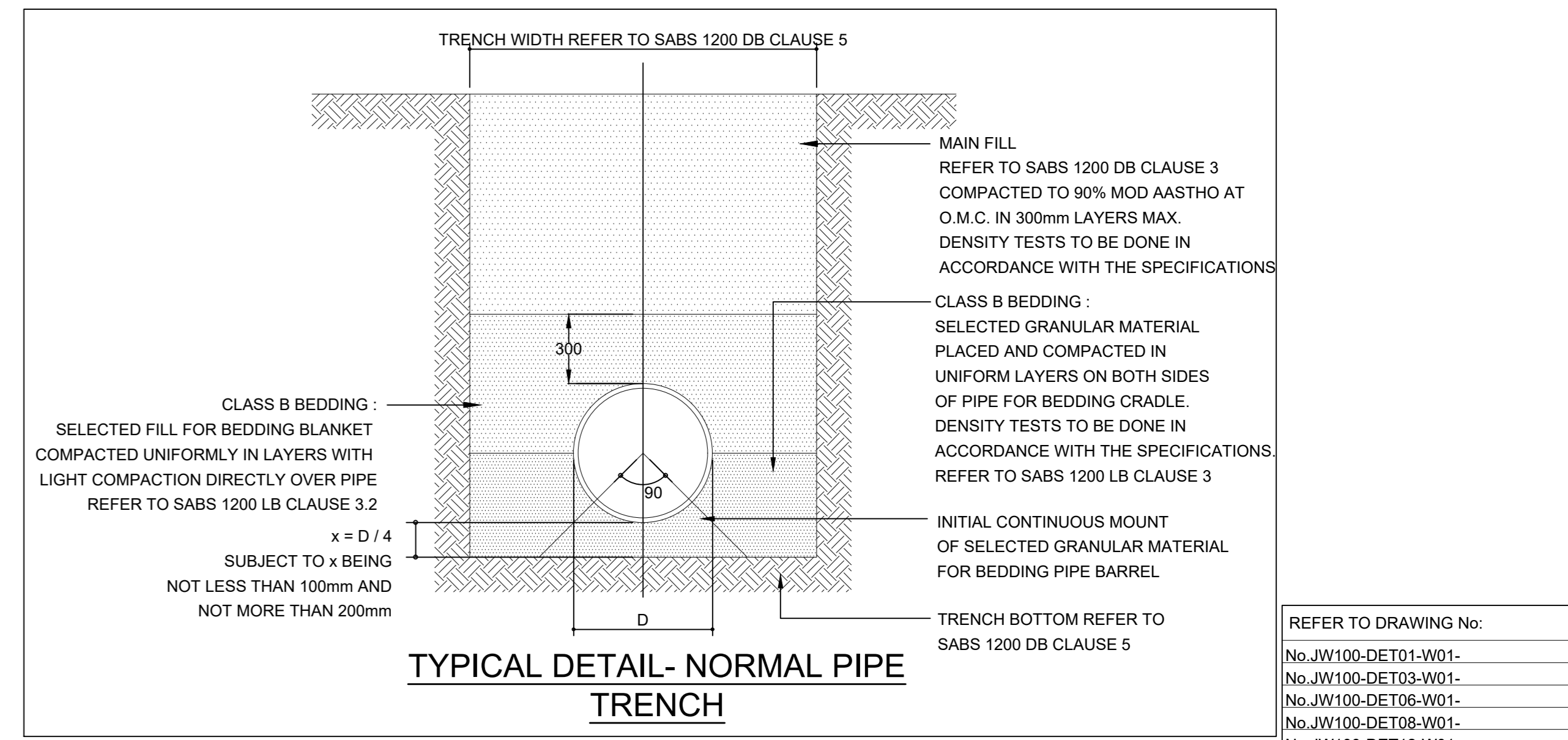
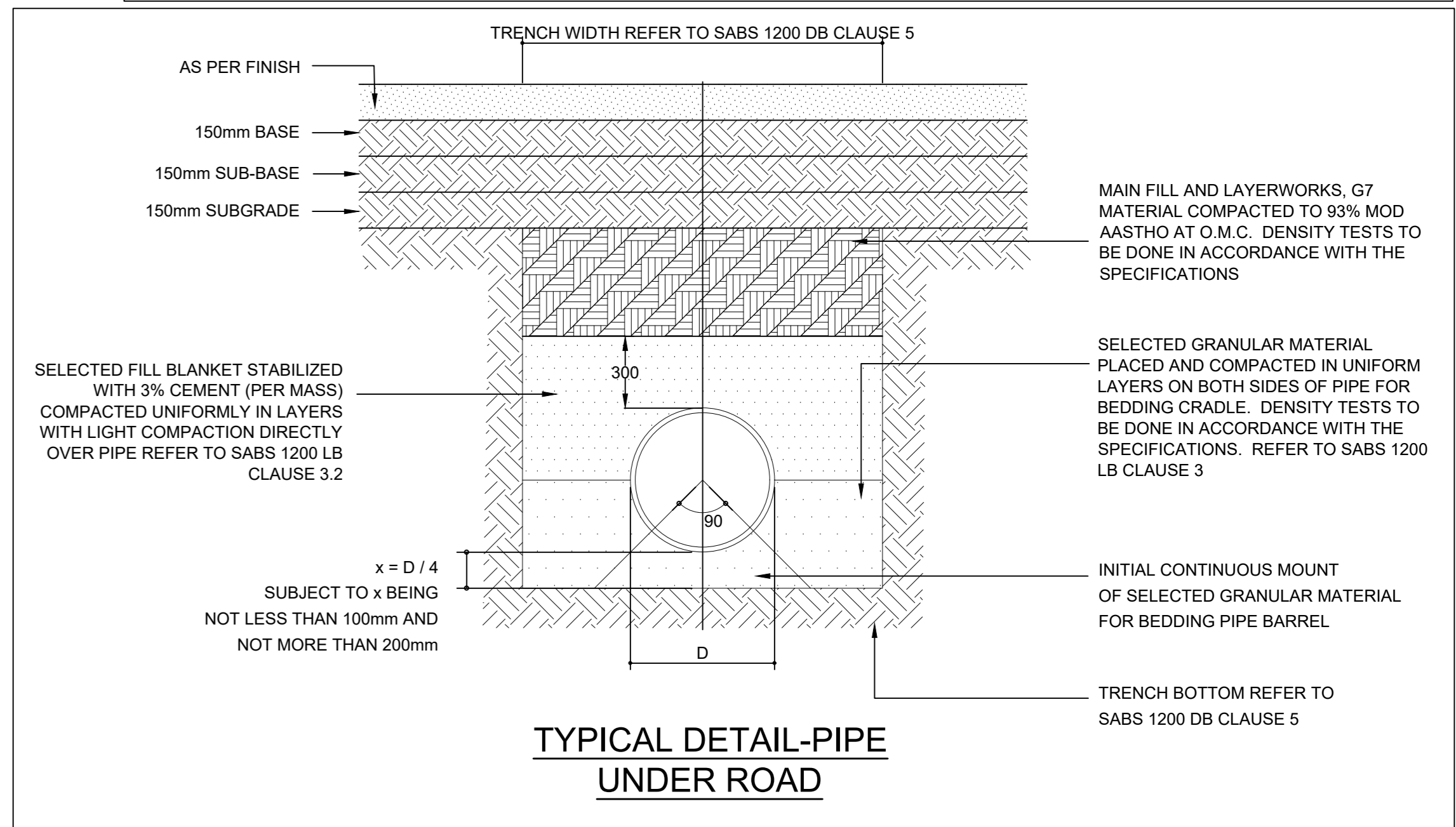
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**ANNEXURE-D**  
**WATER RETICULATION LAYOUT**  
**20521-600**



LOCALITY  
NTS.

- 1) GENERAL NOTES**
- 1.1 THE NEW CUSTOMER MANAGER AT THE JOHANNESBURG WATER (PTY) LTD REGIONAL OFFICE MUST BE NOTIFIED BEFORE ANY CONSTRUCTION WORKS RELATED TO THE INSTALLATION OF WATER OR SEWER MAY COMMENCE.
  - 1.2 ALL CONSTRUCTION WORK SHALL COMPLY WITH THE RELEVANT SABS 1200 SPECIFICATION AND THE JOHANNESBURG WATER (PTY) LTD SPECIFIC REQUIREMENTS.
  - 1.3 ALL MATERIALS USED IN INSTALLING WATER AND SEWER MAINS SHALL COMPLY WITH THE RELEVANT SABS SPECIFICATION AND WITH THE MINIMUM REQUIREMENTS OF JOHANNESBURG WATER (PTY) LTD.
  - 1.4 THE POSITION AND DEPTH OF ALL EXISTING SERVICES ON THE SITE AND OFF SITE AFFECTED BY THE WORKS SHALL BE CONFIRMED PRIOR TO ANY CONSTRUCTION WORK ON THE INSTALLATION OF THE WATER OR THE SEWER MAINS BEING COMMENCED.
  - 1.5 NOTE THAT A MINIMUM OF 2 WEEKS NOTICE SHALL BE GIVEN TO JOHANNESBURG WATER (PTY) LTD TO ATTEND SITE INSPECTIONS, MEETINGS AND ANY NECESSARY ON SITE LIAISON.
- 2) SPECIFIC WATER REQUIREMENTS**
- 2.1 FOR STANDARD DETAILS REFER TO JOHANNESBURG WATER STANDARD DRAWINGS
  - 2.2 PROTECTION OF FITTINGS AND MAINS :  
2.2.1 STEEL MAINS : COPON LINED AND SUITABLE WRAPPED PER SPECIFICATION.  
2.2.2 STEEL FITTINGS : COPON COATED INTERNALLY AND SUITABLE WRAPPED PER SPECIFICATION.  
2.2.3 GALVANISED FITTINGS : SUITABLE WRAPPED PER SPECIFICATION.
  - 2.3 ALL VALVE AND BELOW HYDRANT CHAMBERS TO BE WATER TIGHT.
  - 2.4 POSITION OF ACROSS THE ROAD ERF CONNECTIONS TO BE MARKED BY A W CUT INTO THE CURBSTONE.
  - 2.5 THE CONTRACTOR SHALL NOT OPERATE ANY WATER VALVE OR OTHER FITTING WITHOUT THE PERMISSION OF JOHANNESBURG WATER (PTY) LTD.
  - 2.6 COVER TO WATER MAINS : THE DEPTHS LISTED ARE DEPTHS TO FINAL GROUND LEVEL INCLUSIVE OF ANY LANDSCAPING UNDERTAKEN ON THE SITE
- SEWER PIPES SPECIFICATIONS :**
- uPVC HEAVY DUTY SOLID (SANDWICHED) WALLED uPVC CLASS 400 TO SANS 1601 FOR SIZES UP TO 400mm DIAMETER.  
HDPE SEWER PIPES FOR ALL SIZES ABOVE 400mm DIAMETER.
- SPECIFIC SEWER REQUIREMENTS**
1. FOR STANDARD DETAILS REFER TO JOHANNESBURG WATER STANDARD DRAWINGS.
  2. ALL MATERIALS SHALL COMPLY WITH THE RELEVANT SABS SPECIFICATION AND WITH THE REQUIREMENTS OF JOHANNESBURG WATER (PTY) LTD.
  3. ANCHORING OF SEWER MAINS :  
3.1 GRADE - 1:12 AND STEEPER - ANCHOR BLOCKS SHALL BE INSTALLED AT INTERVALS NOT EXCEEDING 12 METERS.
  4. NO TREES OR SHRUBS SHALL BE PLANTED WITHIN 2m OF A SEWER MAIN.
  5. SEWER MANHOLES ARE TO BE SPACED A MAXIMUM DISTANCE OF 80 METERS.



DEPARTMENT	APPROVED	DESIGNATION	DATE

CONSULTING ENGINEERS	SURVEYED	DESIGNED	DATE
C. J. VAN DER MERWE 453 Orkney Street Rondebosch Tel: (011) 472 2077 Fax: (011) 472 2366 www.cjvan.com	G. HUYSAMEN K. HUYSAMEN K. OOLJKAAS	OCTOBER 2020 OCTOBER 2020 OCTOBER 2020	

JOHANNESBURG WATER (PTY) LTD

17 HARRISON STREET  
MARSHALLTOWN  
JOHANNESBURG  
2107  
TEL: (011) 688-1400  
FAX: (011) 688-1529

CITY OF JOHANNESBURG

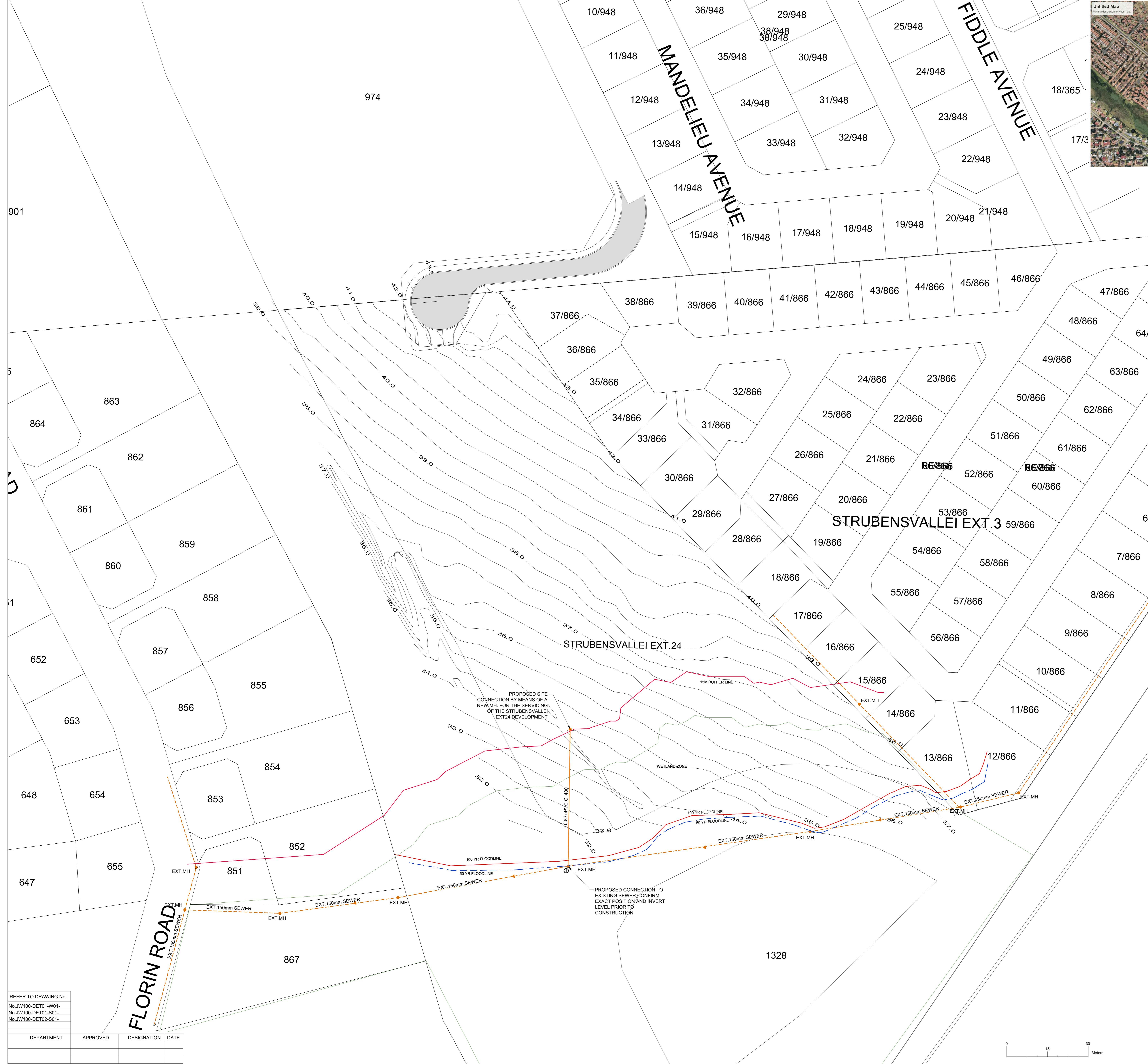
WATER RETICULATION LAYOUT FOR THE NEW PROPOSED DEVELOPMENT ON THE PROPOSED DEVELOPMENT OF STRUBENSVALLEI EXT.24

DESIGN MANAGER	SCALE	AMENDMENTS	APPROVED	DATE	DRAWING No.
	A0 1:500	A ISSUED FOR COUNCIL APPROVAL		2020/10/06	20521-600 1 OFF 1

DATE

REFER TO DRAWING No:	FILE No
No. JW100-DE101-W01-	
No. JW100-DE103-W01-	
No. JW100-DE106-W01-	
No. JW100-DE108-W01-	
No. JW100-DE112-W01-	

**ANNEXURE-D**  
**SEWER RETICULATION LAYOUT**  
**20521-700**



LOCALITY  
NTS.

**DRAWING LEGEND**

- NEW MANHOLE (MH)
- NEW CLEANING EYE (CE)
- EXISTING MANHOLE (EXT.MH)
- EXISTING PIPE, SIZE AS PER LAYOUT
- NEW UPVC HD CL400 SEWER PIPE, SIZE AS PER LAYOUT
- CONNECTION POINTS TO EXISTING SYSTEM
- NEW GAUTRANS AND JRA ROADS

**NOTES:**

- ALL PIPES TO BE LAID IN ACCORDANCE WITH SANS 1200, LATEST REVISION AND THE REQUIREMENTS OF JOHANNESBURG WATER SOC LTD.
- CONTRACTOR TO CONFIRM LEVELS OF EXISTING PIPES BEFORE COMMENCING CONSTRUCTION.
- POSITIONS OF ALL EXISTING SERVICES ARE APPROXIMATED AND MUST BE VERIFIED ON SITE PRIOR TO CONSTRUCTION.

**1) GENERAL NOTES**

- THE NEW CUSTOMER MANAGER AT THE JOHANNESBURG WATER (PTY) LTD REGIONAL OFFICE MUST BE NOTIFIED BEFORE ANY CONSTRUCTION WORKS RELATED TO THE INSTALLATION OF WATER OR SEWER MAY COMMENCE.
- ALL CONSTRUCTION WORK SHALL COMPLY WITH THE RELEVANT SABS 1200 SPECIFICATION AND THE JOHANNESBURG WATER (PTY) LTD SPECIFIC REQUIREMENTS.
- ALL MATERIALS USED IN INSTALLING WATER AND SEWER MAINS SHALL COMPLY WITH THE RELEVANT SABS SPECIFICATION AND WITH THE MINIMUM REQUIREMENTS OF JOHANNESBURG WATER (PTY) LTD.
- THE POSITION AND DEPTH OF ALL EXISTING SERVICES ON THE SITE AND OFF SITE WHERE AFFECTED BY THE WORKS SHALL BE CONFIRMED PRIOR TO ANY CONSTRUCTION WORK ON THE INSTALLATION OF THE WATER OR THE SEWER MAINS BEING COMMENCED.
- NOTE THAT A MINIMUM OF 2 WEEKS NOTICE SHALL BE GIVEN TO JOHANNESBURG WATER (PTY) LTD TO ATTEND SITE INSPECTIONS, MEETINGS AND ANY NECESSARY ON SITE LIAISON.

**2) SPECIFIC WATER REQUIREMENTS**

- FOR STANDARD DETAILS REFER TO JOHANNESBURG WATER STANDARD DRAWINGS
- PROTECTION OF FITTINGS AND MAINS :
  - 2.2.1 STEEL MAINS - COPON LINED AND SUITABLE WRAPPED PER SPECIFICATION.
  - 2.2.2 STEEL FITTINGS - COPON COATED INTERNALLY AND SUITABLE WRAPPED PER SPECIFICATION.
  - 2.2.3 GALVANISED FITTINGS - SUITABLE WRAPPED PER SPECIFICATION.
- ALL VALVE AND BELOW HYDRANT CHAMBERS TO BE WATER TIGHT.
- POSITION OF ACROSS THE ROAD ERF CONNECTIONS TO BE MARKED BY A W CUT INTO THE CURBSTONE.
- THE CONTRACTOR SHALL NOT OPERATE ANY WATER VALVE OR OTHER FITTING WITHOUT THE PERMISSION OF JOHANNESBURG WATER (PTY) LTD.
- COVER TO WATER MAINS - THE DEPTHS LISTED ARE DEPTHS TO FINAL GROUND LEVEL INCLUSIVE OF ANY LANDSCAPING UNDERTAKEN ON THE SITE
- ALL WATER MAINS ARE TO BE INSTALLED AT 2.0m FROM ERF BOUNDARIES UNLESS OTHERWISE SHOWN ON THE DRAWING
- ANY ANCHOR BLOCKS CONSTRUCTED ARE TO BE PROPERLY SHUTTERED AND CAST AGAINST UNDISTURBED GROUND, ANY OVER EXCAVATION IS TO BE FILLED WITH MASS CONCRETE

**INSPECTION NOTES**

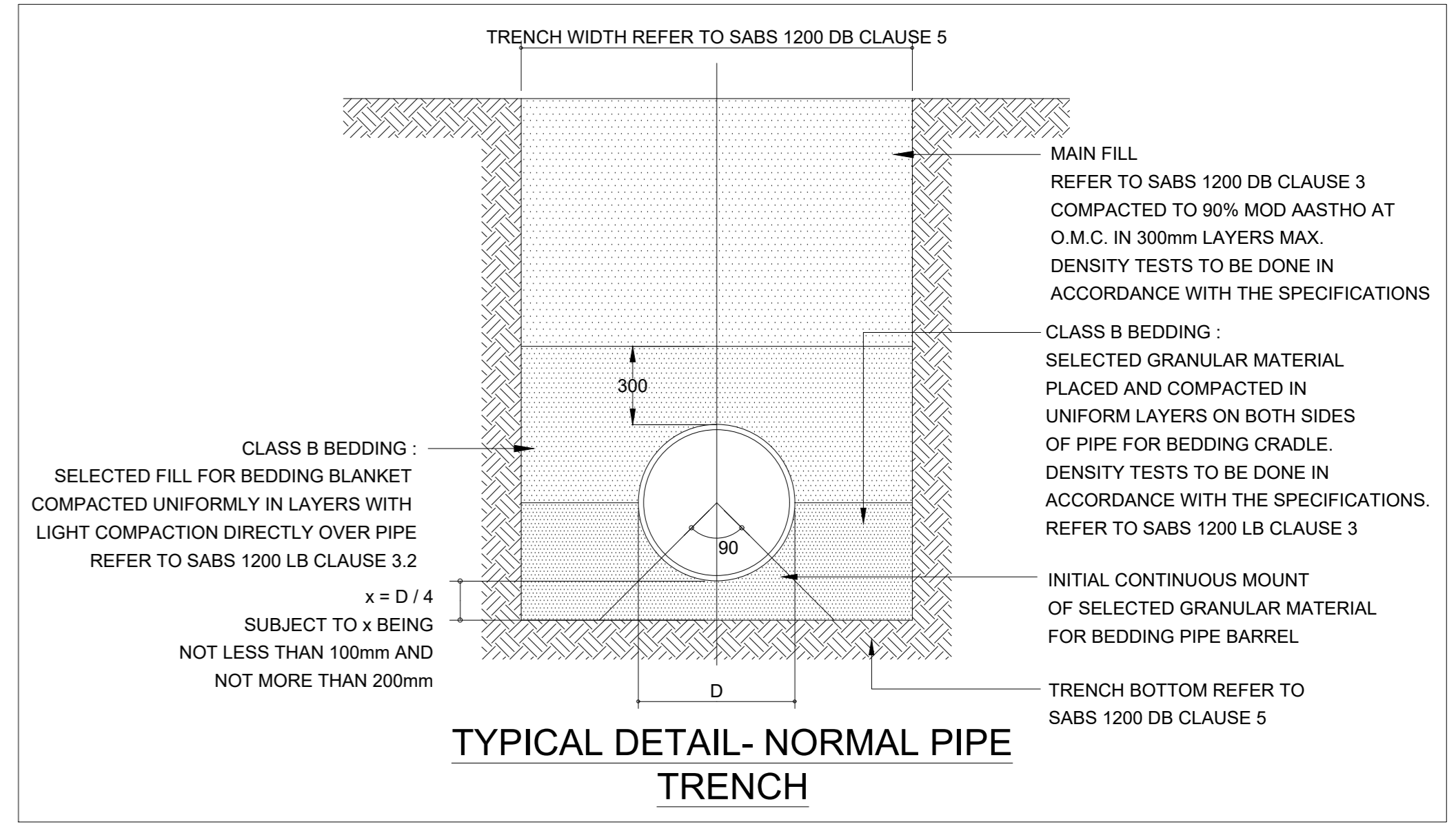
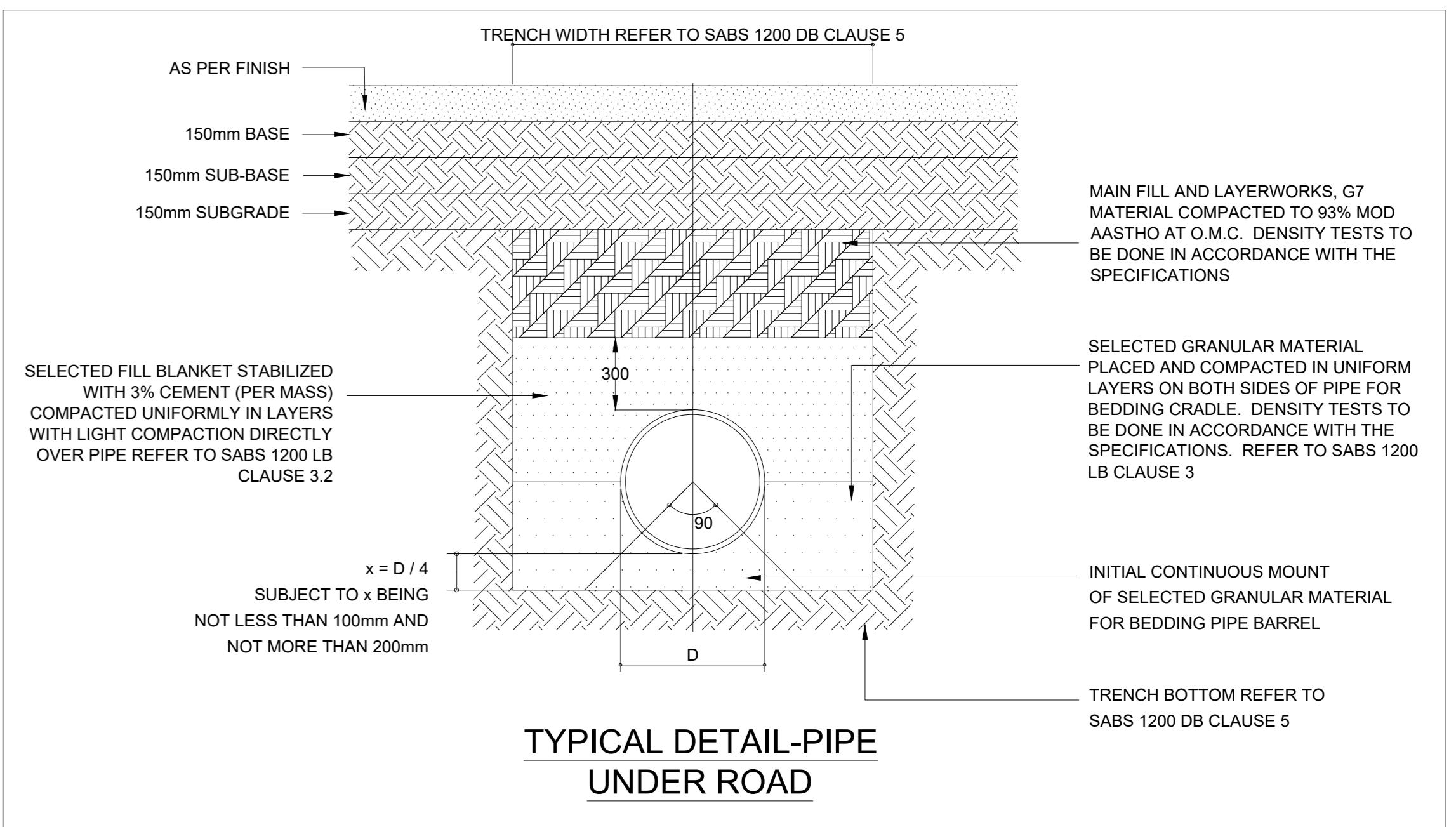
- ALL WATER SUPPLY INSTALLATIONS ARE TO BE INSPECTED IN THE PRESENCE OF THE ENGINEER, THE CONTRACTOR & THE JHB WATER'S WORKS INSPECTOR.
- FIRST INSPECTION: THE FIRST INSPECTION SHALL BE HELD ONCE THE PIPING AND FITTINGS HAVE BEEN INSTALLED, BACK-FILLED AND COMPACTED TO 50% OF THE DIAMETER.
- SECOND INSPECTION: THE SECOND INSPECTION SHALL BE HELD ONCE THE COMPACTED FILLING HAS BEEN COMPLETED TO APPROXIMATELY 300mm ABOVE THE TOP OF THE PIPE. ALL JOINTS AND FITTINGS ARE TO REMAIN EXPOSED FOR THIS INSPECTION. THE PRESSURE TEST WILL BE DONE AS PART OF THE SECOND INSPECTION. NOTE - THE PRESSURE TEST FOR JHB'S WATER IS STRICTER THAN THE RECOMMENDED IN SABS 1200, AND PROVISION MUST BE MADE FOR THIS. THE NEW WATER RETICULATION IS TO BE TESTED TO 1.5 TIMES THE WORKING PRESSURE OF THE PIPE THAT IS BEING INSTALLED. (I.E. 1800 kPa) PIPES.
- THIRD INSPECTION: THE THIRD INSPECTION WILL BE THE FINAL HAND OVER INSPECTION AND WILL ONLY TAKE PLACE ONCE ALL SNAGS FROM THE PREVIOUS INSPECTIONS HAVE BEEN ATTENDED TO.

**SEWER PIPES SPECIFICATIONS :**

- UPVC HEAVY DUTY SOLID (SANDWICHED) WALLED UPVC CLASS 400 TO SABS 1601 FOR SIZES UP TO 400mm DIAMETER.
- HDPE SEWER PIPES FOR ALL SIZES ABOVE 400mm DIAMETER.

**SPECIFIC SEWER REQUIREMENTS**

- FOR STANDARD DETAILS REFER TO JOHANNESBURG WATER STANDARD DRAWINGS.
- ALL MATERIALS SHALL COMPLY WITH THE RELEVANT SABS SPECIFICATION AND WITH THE REQUIREMENTS OF JOHANNESBURG WATER (PTY) LTD.
- ANCHORING OF SEWER MAINS :
  - 3.1 GRADE - 1:12 AND STEEPER .
  - ANCHOR BLOCKS SHALL BE INSTALLED AT INTERVALS NOT EXCEEDING 12 METERS.
- NO TREES OR SHRUBS SHALL BE PLANTED WITHIN 2m OF A SEWER MAIN.
- SEWER MANHOLES ARE TO BE SPACED A MAXIMUM DISTANCE OF 80 METERS.



REFER TO DRAWING No:	
No. JW100-DET01-WD1-	
No. JW100-DET01-S01-	
No. JW100-DET02-S01-	
DEPARTMENT	APPROVED
DESIGNATION	DATE

CONSULTING ENGINEERS	SURVEYED	DESIGNED	G. HUYSAMEN	OCTOBER 2020	JOHANNESBURG WATER (PTY) LTD
DESIGNED	G. HUYSAMEN	OCTOBER 2020			
CHECKED	KC. OOLJKAAS	OCTOBER 2020			
SERVICES CHECKED					
GEOTECHNICAL INVESTIGATION					
SERVITUDES					
APPROVED					

**JOHANNESBURG WATER (PTY) LTD**

17 HARRISON STREET  
MARSHALLTOWN  
JOHANNESBURG  
2107  
TEL: (011) 688-1400  
FAX: (011) 688-1529

**CITY OF JOHANNESBURG**  
**SEWER RETICULATION LAYOUT FOR THE NEW PROPOSED DEVELOPMENT ON STRUBENSVALLEI EXT.24**

DESIGN MANAGER	SCALE	AMENDMENTS	APPROVED	DATE	DRAWING No.
	A0 1:500	A ISSUED FOR COUNCIL APPROVAL B SEWER REVISED		2020/10/08 2021/05/13	20521-700 1 OFF 1
DATE					FILE No



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City of Johannesburg

Johannesburg Water SOC Ltd

17 Harrison Street  
Johannesburg

Johannesburg Water  
PO Box 61542  
Marshalltown  
2107

Tel +27(0) 11 688 1400  
Fax +27(0) 11 688 1528

[www.johannesburgwater.co.za](http://www.johannesburgwater.co.za)

**Date: 23 November 2020**  
**Our Ref.: Strubensvallei\_24**  
**Your Ref.: 20521**

**C-PLAN CIVIL ENGINEERS**  
**PO Box 6622**  
**Westgate**  
**1734**  
E-mail: [gerhard@cplan.co.za](mailto:gerhard@cplan.co.za)

**ATTENTION: Mr. Gerhard Huysamen**  
Dear Sir

**RE: STRUBENSVALLEI EXT. 24 ERF 1327**  
**OUTLINE SCHEME REPORT**

Your Outline Scheme Report (OSR) and cover letter dated 15 October 2020 refers.

The abovementioned development was evaluated against the following proposed zoning parameters:

Erf:	1327
Zoning:	Residential 3 (78 units)
FAR:	0.279
Coverage:	40% (Actual 26%)
Total dev. area:	1.9724 ha

**Comments on application:**

The proposed development will be supported based on the abovementioned zoning parameters and the following conditions. The following will be applicable:

- Construction drawings will be required by Johannesburg Water for approval of all proposed municipal services to be taken over by Johannesburg Water. These construction drawings shall be according to the latest JW Design Guidelines and Detail drawings.
- All internal services will be privately owned and maintained as such.

**The following comments were received from Infrastructure Planning (JW) are for information purposes:**

The abovementioned OSR was forwarded to Infrastructure Planning (JW) that supplied the following comments:

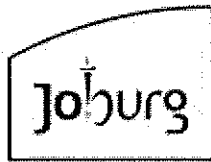
**Sewer:**

**Directors:**

Mr Sibusiso Buthelezi (Chairperson), Mr Nishavheni Mukwevho (Managing Director), Mr Johan Koekemoer (Financial Director),  
Dr Jack Maduna, Ms Aggie Sekoba, Ms Rachel Kalidass, Ms Patricia Marah, Professor Clinton Aigbavboa, Ms Mpusi Mangena,  
Ms Nomvuyiso Balyi, Mr Mongezi Ntsokolo

Ms Kethabile Mabe (Company Secretary),  
Johannesburg Water SOC Ltd  
Registration Number: 2000/029271/30





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## City of Johannesburg

Johannesburg Water SOC Ltd

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"The proposed development is situated in the Driefontein Sewer Drainage Basin. The existing sewer infrastructure comprising a 150mm diameter pipe on the southern side of the proposed development and the rest downstream has enough capacity to accommodate flows to be generated from the proposed 78 units to be constructed on site. The proposed development is therefore supported.

Upgrades that have been identified in the master plan will be required in the future scenario and subject to investigation."

### Water:

"This proposed development is located in the RW1269 Direct Feed Water District and specifically in the Radiokop PRV2 water sub-district. The proposed connection point is on the existing 110mm diameter pipe along Fiddle Avenue. The existing infrastructure including bulk has enough capacity to accommodate anticipated demand for the proposed 78 units to be constructed on site. The proposed development is therefore supported."

## 1. General Comments

- 1.1. All services to be taken over by Johannesburg Water must comply with the minimum requirements of Johannesburg Water in respect of materials used, design standards used in the design of the systems, construction drawing standards and construction methodology where these requirements supersede currently recognised guidelines and/or regulations.
- 1.2. Water and sewer mains which are to be taken over by Johannesburg Water are to be designed to be located in roadways which are to be handed over to the City of Johannesburg or which have right of way servitudes registered over the roadways in favour of the City of Johannesburg for the access to and maintenance of installed municipal services. Note that sewers in servitudes in private property are acceptable, however, this must be motivated to Johannesburg Water prior to the submission of construction drawings for approval.
- 1.3. Servitudes across private property within which sewer mains are located and ROW servitudes within which both sewer and water mains will be located must be shown on the proposed construction drawings and the SG diagrams must accompany the final as built drawing for the project.
- 1.4. Water mains, which provide metered connections to erven in the development, must be designed in terms of layout to be far enough from erf boundaries to allow for the installation of water meters at 90 Degrees to the water main (the minimum acceptable distance is 1.5 meters).
- 1.5. Johannesburg Water utilises fire hydrants for maintenance purposes to enable sections of water main to be scoured of water prior to undertaking maintenance work and for air release once the maintenance work has been completed. Thus fire hydrants must be placed to comply with both maintenance and fire fighting purposes and each section of isolateable water

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main must have a hydrant at both the highest point on the line as well as on the lowest point of the line in addition to hydrants for fire fighting purposes.

- 1.6. Cross section of roadway must be designed such that distances between services are such that each service can be excavated safely without having other services suspended in mid-air.
- 1.7. Section of water main that will be isolated for maintenance purpose must be isolatable by a maximum of three valves (if more than three valves will be required then this must be motivated to Johannesburg water). Each section must not shut down more than thirty consumers at one time.

## 2. Engineering Drawings

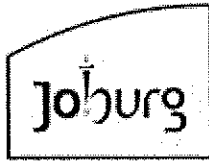
The following are the requirements with respect to the content of construction drawings that are to be submitted for approval.

- 2.1. Prior to any construction being undertaken on site, an engineering drawing (or drawings) is to be submitted for approval:
- 2.2. All water and sewer project drawings shall be on Johannesburg Water's (the Company's) standard drawing title block;
- 2.3. Layout drawing(s) shall show the following:
  - 2.3.1. — A north arrow;
  - 2.3.2. Sufficient cadastral information of existing surrounding development to allow the easy location of the proposed development;
  - 2.3.3. The standard notes of the Company together with any specific project notes by the engineer;
  - 2.3.4. A legend identifying the symbols used on the drawings;
  - 2.3.5. Contours appropriate to the scale of the drawing(s);
  - 2.3.6. New water and sewer mains are to be marked boldly with existing services being marked lightly;
  - 2.3.7. The boundaries of proposed and existing servitudes and dimension are to be clearly marked;
  - 2.3.8. The distances of water and sewer mains from boundaries;
  - 2.3.9. The proposed position of both water and sewer connection points are to be shown as well as dimensioned or described (for example 10 meters east of west meaning 10 meters east of the western boundary of the erf in question);
  - 2.3.10. The position and depth to invert of proposed sewer manholes to be marked on the drawings;
  - 2.3.11. The title is to contain a correct cadastral description of the location of the project as well as a description of what the drawing depicts;

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- 2.4. The set of drawings is to include the following:
- 2.4.1. --- Layout plan showing the layout of proposed new water and sewer mains;
  - 2.4.2. A long section of the proposed sewer mains;
  - 2.4.3. The designs for the anchor blocks for the water mains (for pipe jointing systems that do not lock pipes section together e.g. spigot and socket joints). Note that where services are congested and distances between services is the minimum acceptable then only high impact uPVC pipes jointed by means of victaulic clamps for water mains will be accepted.;
  - 2.4.4. Copies of the Company's relevant standard drawing as prepared by the Company's engineers. (A copy of the latest standard drawings can be obtained from the writer).
- 2.5. Layout drawing(s) shall make reference to the Company's standard drawings even though these drawings are included in the set of drawings.

### 3. Materials

- 3.1. All materials that are to be used in the extension of the existing system are to comply with this company's minimum materials specifications. (A copy of the latest material specifications and design guide document can be obtained from the writer).
- 3.2. The writer's recommendation is that the materials, which are used by the developer's contractor to undertake the works, are purchased from the Company's current approved suppliers.

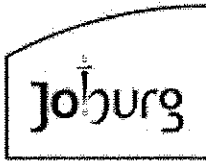
### 4. Drawings Approval

- 4.1. The preparation of engineering drawings, supervision of the installation of the extension of this company's existing systems and preparation of as-built drawings are to be undertaken by an engineer competent to do so in terms of the National Building Regulation. This person will become the engineer for the project. (Please note, the engineer who prepared the construction drawings and who supervised the installation of the services is to sign the as-built drawing and certify them. The Company will not accept an as-built drawing from a second engineer unless the installed reticulation has been re-excavated, tested and approved in the presence of the second engineer and the Company's employees. Note, the Company will not be a party to copy right infringement and accept any drawing from an engineer which violates another engineer's copy rights.)
- 4.2. Any disputes between the developer and the engineer is to be resolved between the developer and the engineer. Johannesburg Water will not become involved in any dispute between the engineer and the developer. It is suggested the dispute resolution process of the South African Association of

#### Directors:

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Ms Nomvuyiso Batyi, Mr Mongezi Ntsokolo

Ms Kethabile Mabe (Company Secretary),  
Johannesburg Water SOC Ltd  
Registration Number: 2000/029271/30



a world class African city



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Consulting Engineers be followed in resolving disputes.

- 4.3. Johannesburg Water requires two paper prints of the engineering drawings for the project for approval purposes. However, the engineer is advised to submit a single set of paper prints to Johannesburg Water for perusal to ensure compliance with the requirements of the company prior to the submission of the final engineering drawings for the project.
- 4.4. Once the engineering drawings for the project had been approved by Johannesburg Water, one set of the approved drawings will be returned to the engineer, one will be retained by Johannesburg Water Development Control for record purposes and one set will be forwarded to the relevant Johannesburg Water regional office with a notification that the drawings have been approved.
- 4.5. Please note that the engineer is responsible for ensuring that the installed water and/or sewer main complies with the project specification and all legislative requirements, such as compliance with national building regulation, SABS 1200, municipal by-laws, etc. Thus the engineer must ensure that the developer has made adequate financial provision for inspections of the works as well as any tests such as compaction test on back filled material. The engineer will be held accountable for the completed works.

Note that all construction costs and costs associated with complying with the above requirements are for the developer's account.

Yours faithfully

T. Kent

For **MANAGER: DEVELOPMENT CONTROL**  
**(011) 688-1578**

[terence.kent@jwater.co.za](mailto:terence.kent@jwater.co.za)

**DISCLAIMER:**

Johannesburg Water indemnifies itself from all non-compliances, directives, fines etc. issued during construction by relevant authorities (GDARD, DWS etc.)

The Contractor/Developer/Principle agent is liable to comply with the National Environmental Management Act (NEMA), National water act (NWA), and all other environmentally related legislations.

Should the Contractor/Developer/Principle agent deviate from the conditions and requirements of DWS, GDARD, PHRAG, Municipality Bylaws etc., then the Contractor/Developer/Principle agent is solely liable for non-compliances, rectification, directives and associated fines thereof.

Johannesburg Water may issue contractors with a Johannesburg Water Standard Environmental management plan (EMP), upon request that could be aligned with all construction activities. It (EMP) however does not exempt the Contractor/Developer/Principle agent from complying with other relevant legislations related to the construction activities.

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