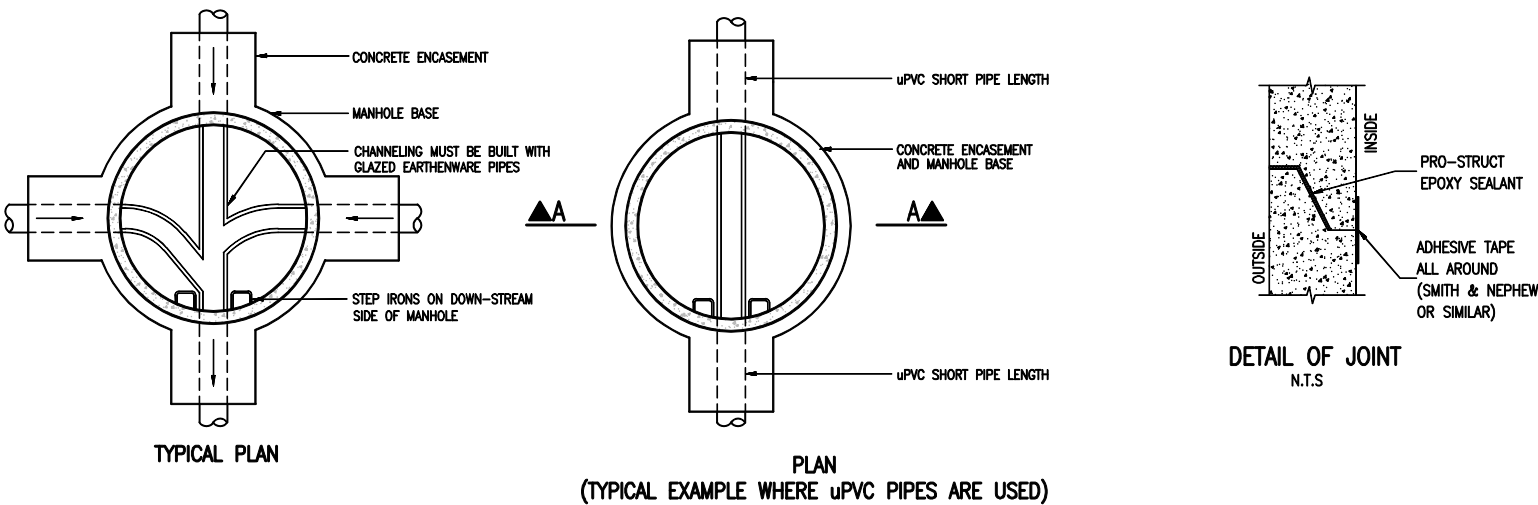


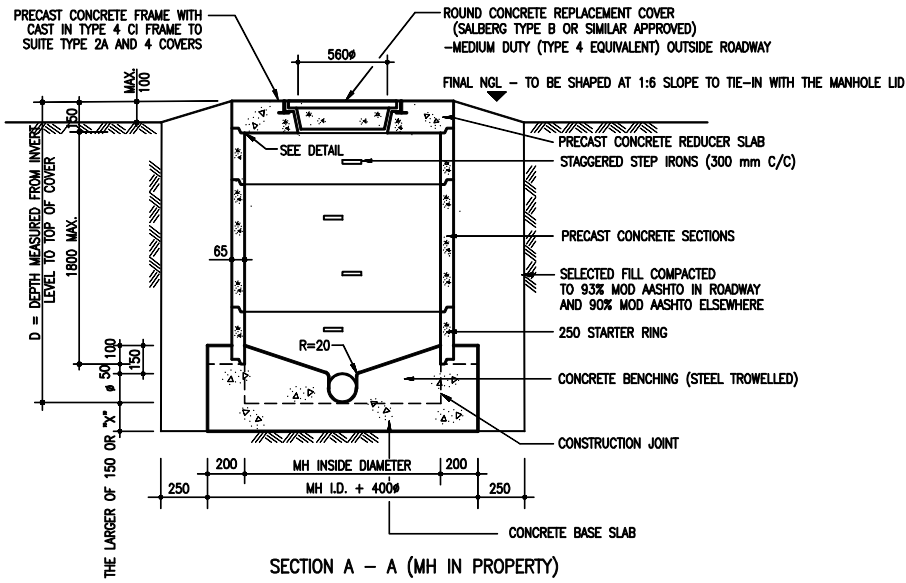
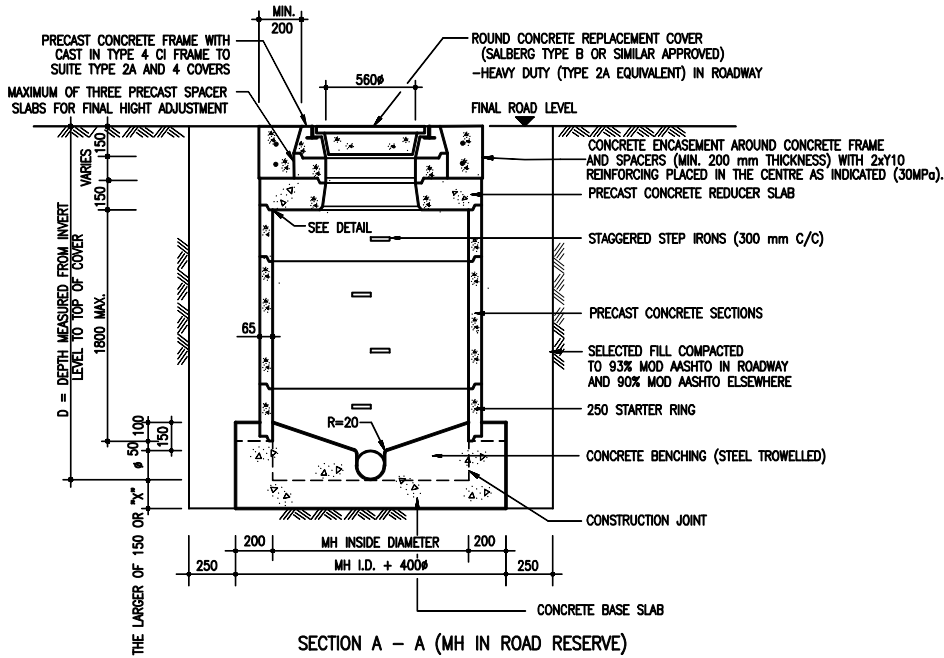
NOTES ON MANHOLES AND ACCESSORIES

1. Manholes of Precast Concrete Sections :
- a) All concrete, benching and sealers to comprise of dolomitic aggregate and shall comply with SABS 1200 G as applicable.
 - b) Precast concrete sections to comply with SABS 1294.
 - c) Classes of concrete :
 - i) Precast concrete sections - 30MPa/19mm
 - ii) All other concrete - 20MPa/19mm
 - d) Channels in manholes to be bedded in the wet concrete floor and the first precast concrete section to be placed and the benching completed within 24 hours after casting the concrete floor. No driers will be permitted for the benching. Benching to be steel trowelled to a smooth finish.
2. Penetrations :
- All pipes entering manholes shall be flush with the inside walls of the structure and all pipes entering at an angle shall be suitably cut to remove any projection into the manhole area, unless otherwise shown on the drawings or directed by the Engineer. All rough or ragged ends of pipes that have been cut and all ends of reinforcing wires shall be smoothed off neatly so as to prevent any possibility of blockage or injury to persons.
3. Benching :
- a) Benching for manholes shall consist of concrete Class 20/19, steel trowelled to a smooth, impervious finish.
 - b) The inverts of manholes shall be provided with half round channelling of the same diameter of the outgoing pipe. The benching shall be carried up vertically from the channel to the level of the soffit of the higher pipe from where it shall be sloped upwards at a slope of 1:6 to the walls. An arris of not less than 25mm shall be provided between the vertical side of the channel and the sloping benching. Upon completion of trowelling, the benching shall be cured by being kept wet for one week.
4. Accessories :
- a) Cast iron manhole covers and frames to comply with SABS 558.
 - b) Concrete manhole covers to be Salberg or similar approved.
 - c) Step irons to be Calcamite type or similar approved.
5. General :
- a) Mid-block sewers: Top of frame must be 50 mm above the natural ground level and surrounded by ground.
 - b) Manhole frames may only be built in on sloped finished sidewalks on a written instruction by the Engineer.
 - c) Over excavation may only be filled after approval by the Engineer with grade 20/19 concrete or suitable material as directed by the Engineer.
 - d) No part of the manhole may be finished off with cement-wash or mortar.



DIMENSION X AND MANHOLE DIAMETER		
PIPE DIAMETER ø (mm)	X (mm)	MH NOMINAL ø (mm)
100/150	100	1050
200/250	125	1050
300/350	150	1250
400/450	175	1250

NOTE: ALL MANHOLES TO BE 1050 mm DIAMETER UNLESS OTHERWISE INDICATED IN THE ABOVE TABLE AND ON THE LONGSECTIONS.



AS-BUILT RECORD			
CONTRACT No.	DESCRIPTION	CERTIFIED BY	DATE
1555-30-04	CERTIFIED AS BUILT	FJV	09-2015
2334-10-00	CERTIFIED AS BUILT	FJV	10-2015
CERTIFIED AS-BUILT FOR CONTRACT :			
ENGINEER		DATE	

VERSION/AMENDMENTS			
No.	DATE	DESCRIPTION	AUTHORISED BY
2.0	05/2011	MANHOLE COVER DETAILS AMENDED	DS
3.0	09/2015	CERTIFIED AS BUILT PHASE 1	FJV
4.0	10/2015	CERTIFIED AS BUILT PHASE 2	FJV



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E-mail: kimberley@bigengroup.com
www.bigengroup.com

PROJECT TITLE:
**LERATO PARK
INTERNAL CIVIL ENGINEERING SERVICES**

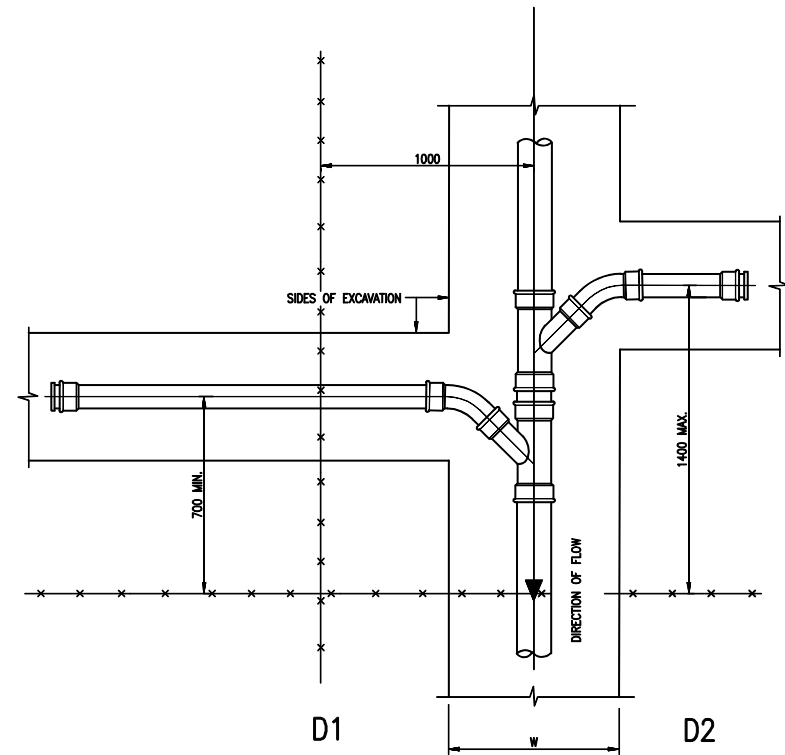
DRAWING TITLE:
TYPICAL SEWER MANHOLE DETAIL



0 50 100 100mm ON ORIGINAL DRAWING	
ORIGINAL DRAWING SCALE: As Shown	ORIGINAL DRAWING SHEET SIZE: A1
APPROVED:	
CLIENT OR ASSIGNEE: _____ DATE: _____	CLIENT REF No.: _____

SURVEYED	-	DESIGNED	S Ndleleka
DRAWN	N Bester	CHECKED	L Gertenbach
CO-ORDINATE SYSTEM:	WG25	DATE:	October 2019
APPROVED ON BEHALF OF BIGEN:			
ENGINEER: _____ DATE: _____		DRAWING No.: 1396.10.ZA.06D001	
CLIENT DRAWING No.: _____		VERSION: 4.0	

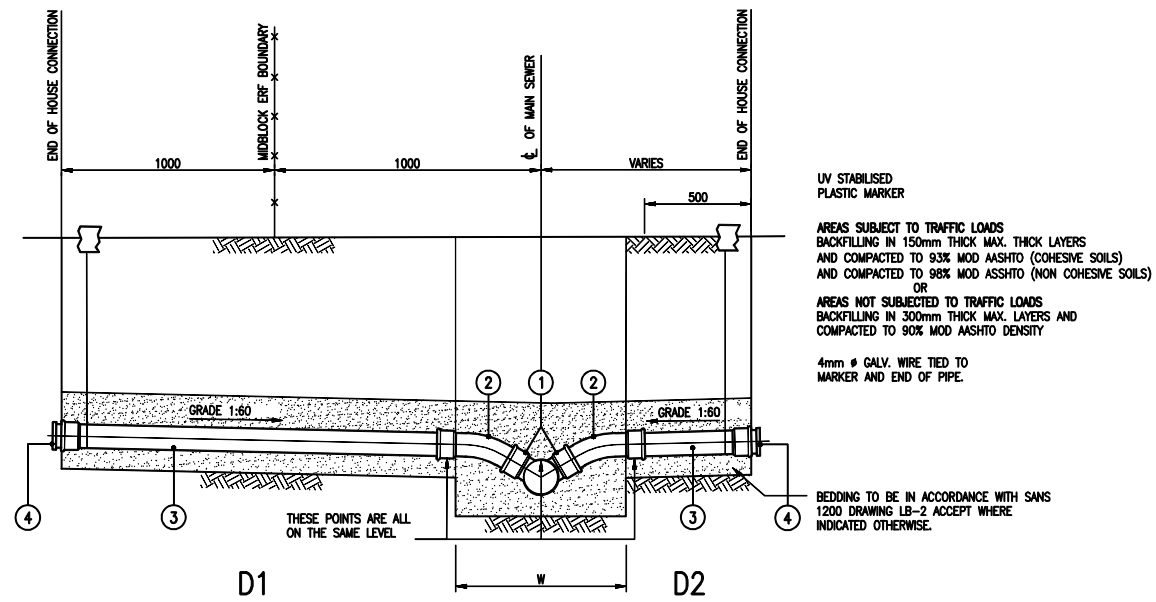
1396.10.ZA.06D001



PLAN

DIRECT HOUSE CONNECTION

SCALE 1:20



SECTION

NOTES

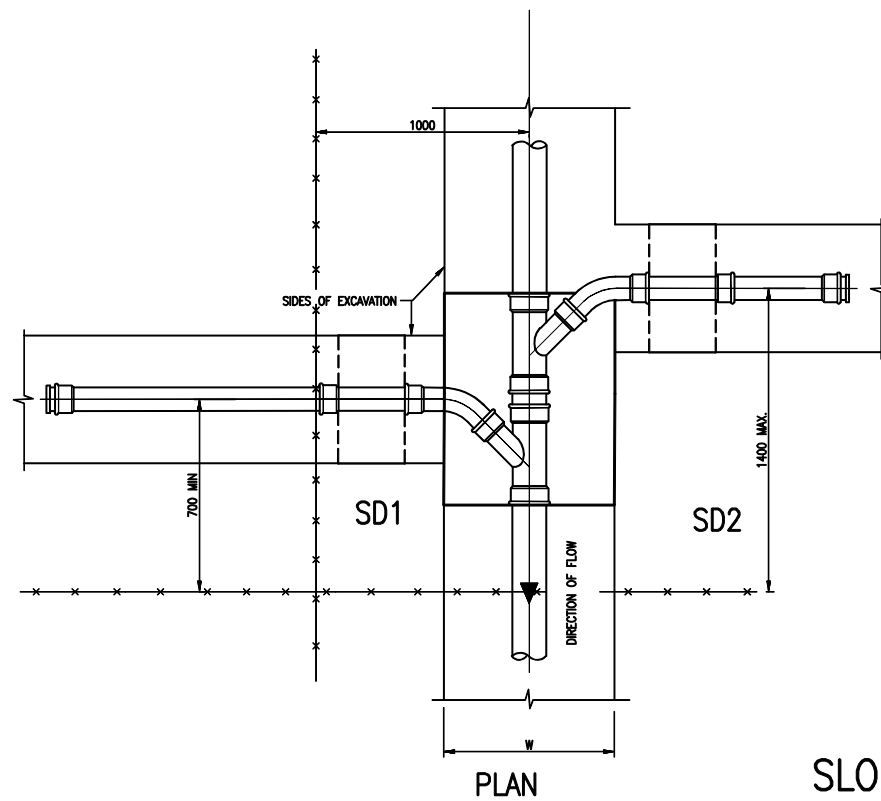
- THE MINIMUM GRADE OF THE SEWER CONNECTION IS TO BE 1 IN 60.
- ALL CONNECTIONS TO BE CAPPED BEFORE BACKFILLING AND TO BE WIRE MARKED AS INDICATED.
- ALL PIPES, FITTINGS TO SABS 559, AS AMENDED.

HOUSE CONNECTION FITTING DETAILS	
ITEM 1 : 110mm Ø uPVC 45° PLAIN JUNCTION	
MAIN LINE DIAMETER TO BE OBTAINED FROM LAYOUT DRAWING + LONGITUDINAL SECTION.	
ITEM 2 : 110mm Ø uPVC 45° SHORT RADIUS SINGLE BEND	
ITEM 3 : 110mm Ø uPVC PIPE.	
(LENGTH TO BE DETERMINED ON SITE)	
ITEM 4 : 110mm Ø MALE SOCKET PLUG.	
ITEM 5 : 100mm Ø ABC CAST IRON CLEANING EYE	

DIMENSION X FROM DRAWING	
PIPE DIAMETER ND (mm)	X (mm)
110	100
150	100
200	125
250	125
300	150
350	150
400	250

NOTE:

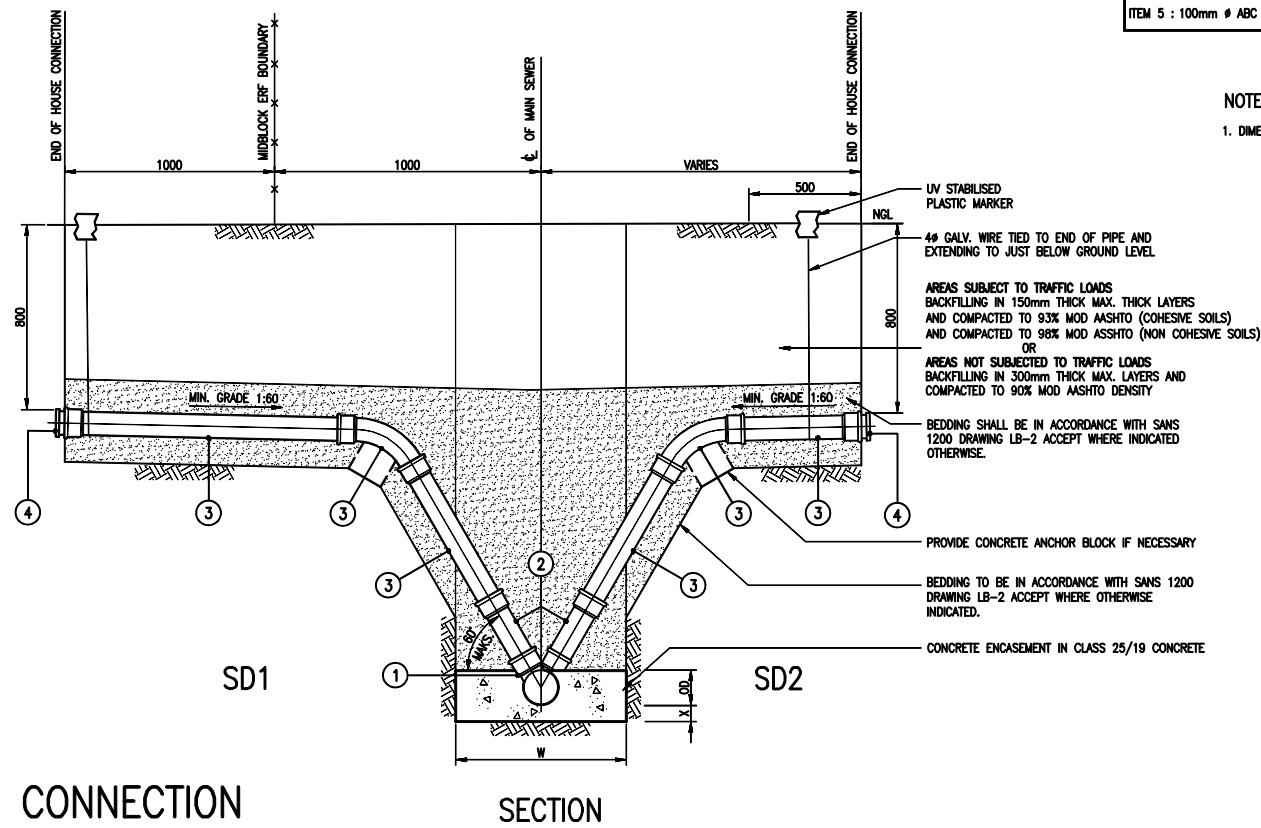
- DIMENSION W = OD+600
= PAY WIDTH OF TRENCH



PLAN

SLOPE DROP HOUSE CONNECTION

SCALE 1:20



SECTION

AS-BUILT RECORD			
CONTRACT No.	DESCRIPTION	CERTIFIED BY	DATE
1555-30-04	CERTIFIED AS BUILT	F/V	09-2015
2334-10-00	CERTIFIED AS BUILT	F/V	10-2015
CERTIFIED AS-BUILT FOR CONTRACT :			
ENGINEER		DATE	

VERSION/AMENDMENTS			
No.	DATE	DESCRIPTION	AUTHORISED BY
2.0	02/2011	DISTANCE TO ERF BOUNDARY ADDED.	DS
3.0	09/2015	CERTIFIED AS BUILT PHASE 1	F/V
4.0	10/2015	CERTIFIED AS BUILT PHASE 2	F/V



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www.bigengroup.com

PROJECT TITLE:	LERATO PARK INTERNAL CIVIL ENGINEERING SERVICES
DRAWING TITLE:	TYPICAL SEWER HOUSE CONNECTION DETAILS SHEET 1



0 50 100 100mm ON ORIGINAL DRAWING	
ORIGINAL DRAWING SCALE:	As Shown
ORIGINAL DRAWING SHEET SIZE:	A1
APPROVED:	
CLIENT OR ASSIGNED:	DATE:
CLIENT DRAWING No.:	CLIENT REF No.:

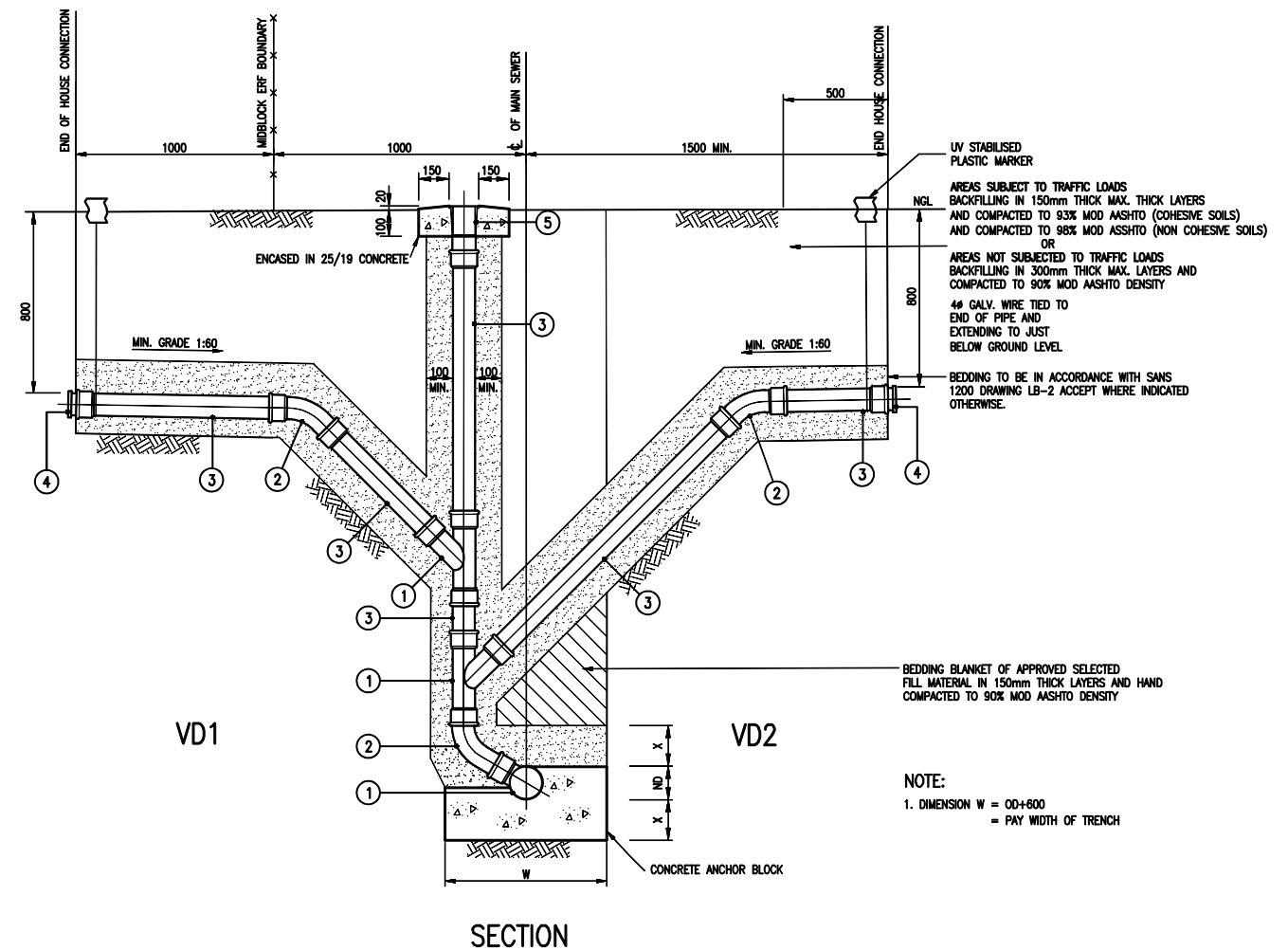
SURVEYED	DESIGNED	L. Gerlenbach
DRAWN	CHECKED	L. Gerlenbach
CO-ORDINATE SYSTEM:	WG25	DATE: October 2019
APPROVED ON BEHALF OF BIGEN:		ENGINEER: DATE:
DRAWING No.:		VERSION: 4.0
1396.10.ZA.06D002		

1396.10.ZA.06D002



HOUSE CONNECTION FITTING DETAILS	
ITEM 1 :	110mm Ø uPVC 45° PLAIN JUNCTION MAIN LINE DIAMETER TO BE OBTAINED FROM LAYOUT DRAWING + LONGITUDINAL SECTION.
ITEM 2 :	110mm Ø uPVC 45° SHORT RADIUS SINGLE BEND
ITEM 3 :	110mm Ø uPVC PIPE. (LENGTH TO BE DETERMINED ON SITE)
ITEM 4 :	110mm Ø MALE SOCKET PLUG.
ITEM 5 :	100mm Ø ABC CAST IRON CLEANING EYE

-
- The diagram is a plan view of a manhole installation. It shows a central manhole structure with a square frame and a circular opening. The manhole is surrounded by an excavation area, indicated by a dashed line and labeled "SIDES OF EXCAVATION". The excavation is 1000 units wide. The manhole is located at the intersection of two main lines, labeled "VD1" and "VD2". The flow direction is indicated by arrows and labeled "DIRECTION OF FLOW". The manhole is labeled "MANHOLE No. 2". The diagram also shows the "PAVEMENT ITEM" on either side of the manhole. The overall layout is symmetrical, with the manhole at the center and the excavation extending outwards.



AS-BUILT RECORD			
CONTRACT No.	DESCRIPTION	CERTIFIED BY	DATE
1555-30-04	CERTIFIED AS BUILT	F/W	09-2015
2334-10-00	CERTIFIED AS BUILT	F/W	10-2015

CERTIFIED AS-BUILT FOR CONTRACT :

AS-BUILT

ENGINEER

DATE

[illegible]

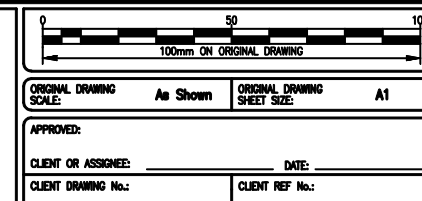

Doing good while
doing business

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Fax: + 27 (0) 86 518 5094

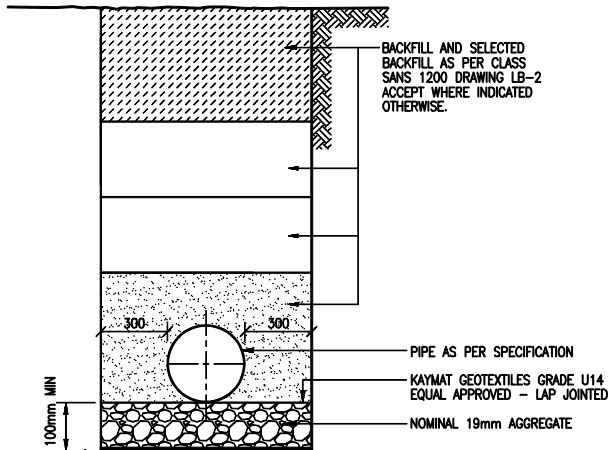
E-mail: kimberley@bigengroup.com
www.bigengroup.com

PROJECT TITLE:	LERATO PARK INTERNAL CIVIL ENGINEERING SERVICES
DRAWING TITLE:	TYPICAL SEWER HOUSE CONNECTION DETAILS SHEET 2

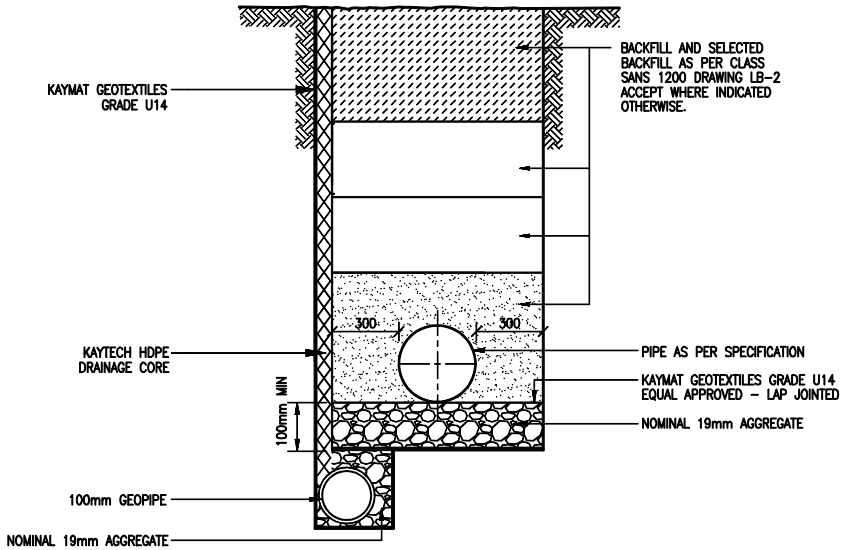


0	SURVEYED		DESIGNED	L. Gertenbach
	DRAWN	N. Bester	CHECKED	L. Gertenbach
CO-ORDINATE SYSTEM:		WG25	DATE:	October 2019
APPROVED ON BEHALF OF BIGEN:				
DRAWING No.:			VERSION:	
1396.10.ZA-06D003			4.0	

NOTES
BACKFILLING OF TRENCH EXCAVATIONS AS PER SANS 1200.



SEWER WITH TYPE 1 SUBSOIL DRAIN



SEWER WITH TYPE 2 SUBSOIL DRAIN

NOTES:
FINAL POSITIONS OF ALL SUB-SOIL DRAINS TO BE FINALIZED BY THE ENGINEER ON SITE PRIOR TO CONSTRUCTION.

AS-BUILT RECORD			
CONTRACT No.	DESCRIPTION	CERTIFIED BY	DATE
1555-30-04	CERTIFIED AS BUILT	FJV	09-2015
2334-10-00	CERTIFIED AS BUILT	FJV	10-2015
CERTIFIED AS-BUILT FOR CONTRACT :			
ENGINEER		DATE	

VERSION/AMENDMENTS			
No.	DATE	DESCRIPTION	AUTHORISED BY
2.0	09/2015	CERTIFIED AS BUILT PHASE 1	FWJ
3.0	10/2015	CERTIFIED AS BUILT PHASE 2	FWJ



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PROJECT TITLE:	LERATO PARK INTERNAL CIVIL ENGINEERING SERVICES
DRAWING TITLE:	BEDDING AND SUBSOIL DRAINAGE



0 50 100 100mm ON ORIGINAL DRAWING	
ORIGINAL DRAWING SCALE: NOT TO SCALE	ORIGINAL DRAWING SHEET SIZE: A1
APPROVED:	
CLIENT OR ASSIGNEE: _____ DATE: _____	
CLIENT DRAWING No.: _____	CLIENT REF No.: _____

SURVEYED	—	DESIGNED	S Matuleka
DRAWN	N Beeler	CHECKED	L Gertenbach
CO-ORDINATE SYSTEM:	WG25	DATE:	October 2019
APPROVED ON BEHALF OF BIGEN:			
ENGINEER: _____ DATE: _____		DRAWING No.: 1396.10.ZA.06.D004	
		VERSION: 3.0	

1396.10.ZA.06.D006

NOTES ON MANHOLES AND ACCESSORIES

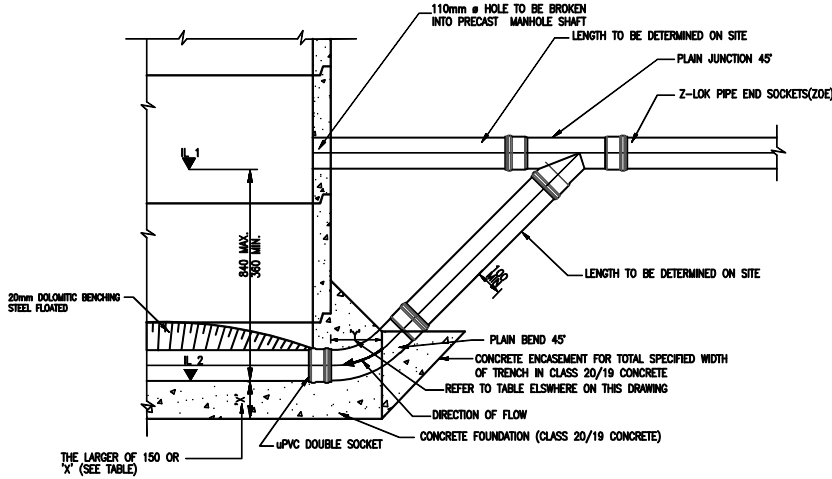
1. Manholes of Precast Concrete Sections :
- a) All concrete, benching and sealers to comprise of dolomitic aggregate and shall comply with SABS 1200 G as applicable.
 - b) Precast concrete sections to comply with SABS 1294.
 - c) Classes of concrete :
 - i) Precast concrete sections - 30MPa/19mm
 - ii) All other concrete - 20MPa/19mm
 - d) Channels in manholes to be bedded in the wet concrete floor and the first precast concrete section to be placed and the benching completed within 24 hours after casting the concrete floor. No driers will be permitted for the benching. Benching to be steel trowelled to a smooth finish.

2. Penetrations :
- All pipes entering manholes shall be flush with the inside walls of the structure and all pipes entering at an angle shall be suitably cut to remove any projection into the manhole area, unless otherwise shown on the drawings or directed by the Engineer. All rough or ragged ends of pipes that have been cut and all ends of reinforcing wires shall be smoothed off neatly so as to prevent any possibility of blockage or injury to persons.

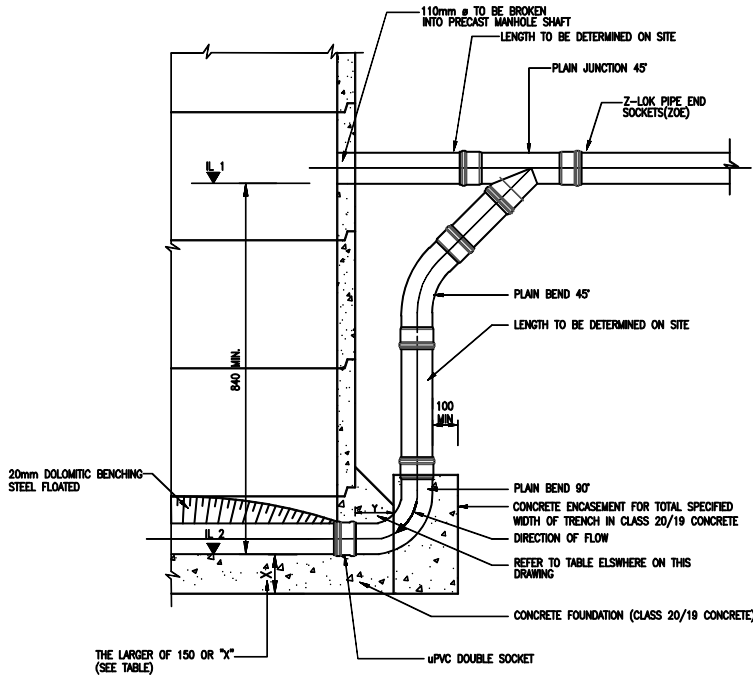
3. Benching :
- a) Benching for manholes shall consist of concrete Class 20/19, steel trowelled to a smooth, impervious finish.
 - b) The inverts of manholes shall be provided with half round channelling of the same diameter of the outgoing pipe. The benching shall be carried up vertically from the channel to the level of the soffit of the higher pipe from where it shall be sloped upwards at a slope of 1:6 to the walls. An arris of not less than 25mm shall be provided between the vertical side of the channel and the sloping benching. Upon completion of trowelling, the benching shall be cured by being kept wet for one week.

4. Accessories :
- a) Cast iron manhole covers and frames to comply with SABS 558.
 - b) Concrete manhole covers to be Salberg or similar approved.
 - c) Step irons to be Calcamite type or similar approved.

5. General :
- a) Mid-block sewers: Top of frame must be 50 mm above the natural ground level and surrounded by ground.
 - b) Manhole frames may only be built in on sloped finished sidewalks on a written instruction by the Engineer.
 - c) Over excavation may only be filled after approval by the Engineer with grade 20/19 concrete or suitable material as directed by the Engineer.
 - d) No part of the manhole may be finished off with cement-wash or mortar.



DROP MANHOLE INLET FOR CAST IN-SITU BASE
(IL1-IL2 < 840mm)



DROP MANHOLE INLET FOR CAST IN SITU BASE
(IL1-IL2 > 840mm)

DIMENSION 'X' AND 'Y' FROM DRAWING		
PIPE DIAMETER D(mm)	'X' (mm)	'Y' (mm)
110	100	N/A
160	100	165
200	125	450
250	125	475
315	150	550
355	150	-
400	250	-

AS-BUILT RECORD			
CONTRACT No.	DESCRIPTION	CERTIFIED BY	DATE
1555-30-04	CERTIFIED AS BUILT	FJV	09-2015
2334-10-00	CERTIFIED AS BUILT	FJV	10-2015
CERTIFIED AS-BUILT FOR CONTRACT :			
ENGINEER		DATE	

VERSION/AMENDMENTS			
No.	DATE	DESCRIPTION	AUTHORISED BY
2.0	09/2015	CERTIFIED AS BUILT PHASE 1	FJV
3.0	10/2015	CERTIFIED AS BUILT PHASE 2	FJV



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www.bigengroup.com

PROJECT TITLE:

**LERATO PARK
INTERNAL CIVIL ENGINEERING SERVICES**

DRAWING TITLE:

DROP MANHOLE DETAIL



Sol Plaatje Municipality

We Serve

0 50 100
100mm ON ORIGINAL DRAWING

ORIGINAL DRAWING SCALE: As Shown ORIGINAL DRAWING SHEET SIZE: A1

APPROVED:

CLIENT OR ASSIGNEE: DATE:

CLIENT DRAWING No.: CLIENT REF No.:

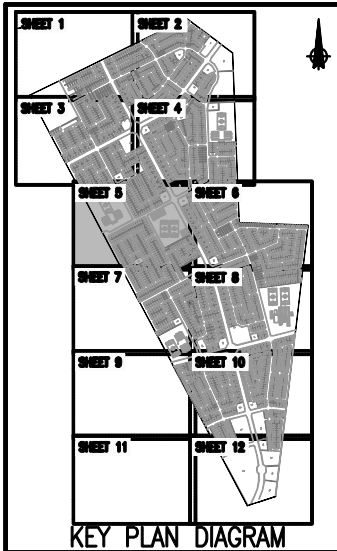
SURVEYED	DESIGNED	S Ndleka
DRAWN	CHECKED	L Gertenbach

CO-ORDINATE SYSTEM: WG25	DATE: October 2019
--------------------------	--------------------

APPROVED ON BEHALF OF BIGEN:

ENGINEER: 1396.10.ZA.06D005	DATE:
DRAWING No.:	VERSION: 3.0

1396.10.ZA.06D005



- NOTES:**
1. ALL SEWERS TO BE 160mm# to 315mm# O.D – CLASS 400 TYPE 1, SANDWICH WALL CONSTRUCTION uPVC PIPES SABS 1601 ALL SEWERS LARGER THAN 315mm# O.D – SOLID WALL CLASS 34 TO SABS 791.
 2. SEE DRAWING 1396.10.ZA.06.D002 AND D003 FOR DETAILS OF THE ERF CONNECTIONS.
 3. THE INVERT DEPTH OF THE HOUSE CONNECTIONS SHALL BE MEASURED ON SITE AND INDICATED ON THE AS-BUILT DRAWINGS.
 4. UNLESS SHOWN OTHERWISE ALL SEWER CONNECTIONS ARE 110mm#.
 5. SEWERS 1.0m FROM ERF BOUNDARIES AT MIDBLOCKS AND SEE DRAWING 1396.10.ZA.03.D001 FOR SEWERS IN ROAD RESERVES
 6. MANHOLES TO CONFORM TO THE DETAILS SHOWN ON DRAWING NO. 1396.10.ZA.06.D001. ALL MANHOLE COVERS TO BE OF CONCRETE – 19/25MPa.
 7. SEE DRAWING 1396.10.ZA.06.D004 FOR SUBSOIL DRAINAGE AND BEDDING DETAILS.
 8. ALL BEDDING SHALL BE IN ACCORDANCE WITH SANS 1200 DRAWING LB-2 ACCEPT WHERE INDICATED OTHERWISE.

- LEGEND:**
- D2 — SEWER CONNECTION
 - CONNECTION TYPE
 - MH MANHOLE
 - CE CLEANING EYE
 - PHASE BOUNDARY
 - INTERNAL SEWER
 - FUTURE SEWER
 - EXISTING SEWER

AS-BUILT RECORD			
CONTRACT No.	DESCRIPTION	CERTIFIED BY	DATE
CERTIFIED AS-BUILT FOR CONTRACT :			
ENGINEER	DATE		

VERSION/AMENDMENTS			
No.	DATE	DESCRIPTION	AUTHORISED BY
2.0	07-2021	LIMIT OF CONSTRUCTION FOR PHASE 6	LG
3.0	03-2022	SEWER POSITIONS AMENDED	LG



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PROJECT TITLE:

**LERATO PARK
INTERNAL CIVIL ENGINEERING SERVICES**


DRAWING TITLE:

**SEWER LAYOUT PLAN
SHEET 5 OF 12**



Sol Plaatje Municipality

We Serve



0 50 100
100mm ON ORIGINAL DRAWING

ORIGINAL DRAWING SCALE: 1: 1000 ORIGINAL DRAWING SHEET SIZE: A1

APPROVED:

CLIENT OR ASSIGNEE: DATE: CLIENT DRAWING No.: CLIENT REF No.:


SURVEYED	DESIGNED	S Msholeke
DRAWN	CHECKED	L Gertanbach
CO-ORDINATE SYSTEM:	WG25	DATE: October 2019
APPROVED ON BEHALF OF BIGEN:		ENGINEER: DATE: DRAWING No.: 1396.10.ZA.06.U005 VERSION: 3.0

1396.10.ZA.06.U005



- NOTES:**
1. ALL SEWERS TO BE 160mm Ø TO 315mm Ø O.D. - CLASS 400 TYPE 1, SANDWICH WALL CONSTRUCTION uPVC PIPES SABS 1801 ALL SEWERS LARGER THAN 315mm Ø O.D. - SOLID WALL CLASS 34 TO SABS 791.
 2. SEE DRAWING 1396.10.ZA.06.D002 AND D003 FOR DETAILS OF THE ERF CONNECTIONS.
 3. THE INVERT DEPTH OF THE HOUSE CONNECTIONS SHALL BE MEASURED ON SITE AND INDICATED ON THE AS-BUILT DRAWINGS.
 4. UNLESS SHOWN OTHERWISE ALL SEWER CONNECTIONS ARE 110mm Ø.
 5. SEWERS 1.0m FROM ERF BOUNDARIES AT MIDLINES AND SEE DRAWING 1396.10.ZA.03.D001 FOR SEWERS IN ROAD RESERVES
 6. MANHOLES TO CONFORM TO THE DETAILS SHOWN ON DRAWING NO. 1396.10.ZA.06.D001. ALL MANHOLE COVERS TO BE OF CONCRETE - 19/25MPa.
 7. SEE DRAWING 1396.10.ZA.06.D004 FOR SUBSOIL DRAINAGE AND BEDDING DETAILS.
 8. ALL BEDDING SHALL BE IN ACCORDANCE WITH SANS 1200 DRAWING LB-2 ACCEPT WHERE INDICATED OTHERWISE.
- LEGEND:**
- D2 — SEWER CONNECTION
 - CONNECTION TYPE
 - MH MANHOLE
 - CE CLEANING EYE
 - PHASE BOUNDARY
 - INTERNAL SEWER
 - FUTURE SEWER
 - EXISTING SEWER

AS-BUILT RECORD				VERSION/AMENDMENTS				PROJECT TITLE:		DRAWING TITLE:		SHEET 6 OF 12		1396.10.ZA.06.U006	
CONTRACT No.	DESCRIPTION	CERTIFIED BY	DATE	No.	DATE	DESCRIPTION	AUTHORISED BY	LERATO PARK INTERNAL CML ENGINEERING SERVICES		SEWER LAYOUT PLAN		SHEET 6 OF 12		1396.10.ZA.06.U006	
				2.0	07-2021	LIMIT OF CONSTRUCTION FOR PHASE 6	LG								
				3.0	03-2022	SEWER POSITIONS AMENDED	LG								
CERTIFIED AS-BUILT FOR CONTRACT :															
ENGINEER															
DATE															




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www.bigen.co.za

PROJECT TITLE:

**LERATO PARK
INTERNAL CML ENGINEERING SERVICES**

DRAWING TITLE:

**SEWER LAYOUT PLAN
SHEET 6 OF 12**



Sei Plantje Municipality

APPROVED:

CLIENT OR ASSIGNEE: _____ DATE: _____

CLIENT DRAWING No.: _____ CLIENT REF No.: _____

ORIGINAL DRAWING SCALE: 1: 1000 ORIGINAL DRAWING SHEET SIZE: A1

APPROVED ON BEHALF OF BIGEN:

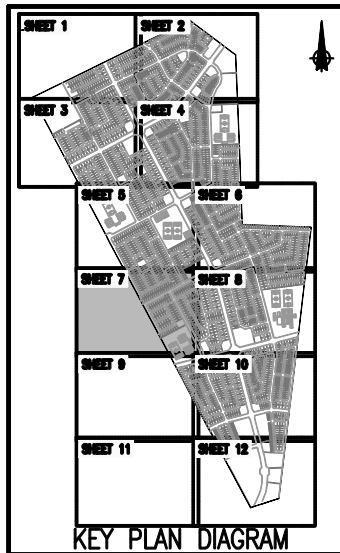
ENGINEER: _____ DATE: _____

DRAWING No.: **1396.10.ZA.06.U006** VERSION: **3.0**

SURVEYED: _____ DESIGNED: **S. Makhole**

DRAWN: **N. Bester** CHECKED: **L. Gertanbach**

CO-ORDINATE SYSTEM: **WGS84** DATE: **October 2019**



- NOTES:**
1. ALL SEWERS TO BE 160mm# TO 315mm# O.D. - CLASS 400 TYPE 1, SANDWICH WALL CONSTRUCTION uPVC PIPES SABS 1601 ALL SEWERS LARGER THAN 315mm# O.D. - SOLID WALL CLASS 34 TO SABS 791.
 2. SEE DRAWING 1396.10.ZA.06.D002 AND D003 FOR DETAILS OF THE ERF CONNECTIONS.
 3. THE INVERT DEPTH OF THE HOUSE CONNECTIONS SHALL BE MEASURED ON SITE AND INDICATED ON THE AS-BUILT DRAWINGS.
 4. UNLESS SHOWN OTHERWISE ALL SEWER CONNECTIONS ARE 110mm#.
 5. SEWERS 1.0m FROM ERF BOUNDARIES AT MIDBLOCKS AND SEE DRAWING 1396.10.ZA.03.D001 FOR SEWERS IN ROAD RESERVES
 6. MANHOLES TO CONFORM TO THE DETAILS SHOWN ON DRAWING NO. 1396.10.ZA.06.D001. ALL MANHOLE COVERS TO BE OF CONCRETE - 19/25MPa.
 7. SEE DRAWING 1396.10.ZA.06.D004 FOR SUBSOIL DRAINAGE AND BEDDING DETAILS.
 8. ALL BEDDING SHALL BE IN ACCORDANCE WITH SANS 1200 DRAWING LB-2 ACCEPT WHERE INDICATED OTHERWISE.

- LEGEND:**
- D2 — SEWER CONNECTION
 - CONNECTION TYPE
 - MH MANHOLE
 - CE CLEANING EYE
 - PHASE BOUNDARY
 - INTERNAL SEWER
 - FUTURE SEWER
 - EXISTING SEWER

AS-BUILT RECORD			
CONTRACT No.	DESCRIPTION	CERTIFIED BY	DATE
CERTIFIED AS-BUILT FOR CONTRACT :			
ENGINEER	DATE		

VERSION/AMENDMENTS			
No.	DATE	DESCRIPTION	AUTHORISED BY
2.0	07-2021	LIMIT OF CONSTRUCTION FOR PHASES	LG



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Kimberley
8301
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PROJECT TITLE:
**LERATO PARK
INTERNAL CIVIL ENGINEERING SERVICES**

DRAWING TITLE:
**SEWER LAYOUT PLAN
SHEET 7 OF 12**



Sol Plaatje Municipality

0 50 100
100mm ON ORIGINAL DRAWING

ORIGINAL DRAWING SCALE: 1: 1000 ORIGINAL DRAWING SHEET SIZE: A1

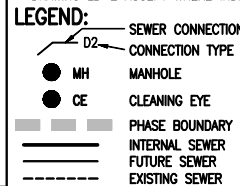
APPROVED:
CLIENT OR ASSIGNEE: DATE: CLIENT DRAWING No.: CLIENT REF No.:

SURVEYED	DESIGNED	S Makhole
DRAWN	CHECKED	L. Gertsenbach
CO-ORDINATE SYSTEM:	WG25	DATE: February 2020
APPROVED ON BEHALF OF BIGEN:	ENGINEER:	DATE:
DRAWING No.: 1396.10.ZA.06.U007	VERSION: 2.0	

1396.10.ZA.06.U007



- NOTES:**
1. ALL SEWERS TO BE 160mm Ø TO 315mm Ø - CLASS 400 TYPE 1, SANDWICH WALL CONSTRUCTION uPVC PIPES SABS 1801 ALL SEWERS LARGER THAN 315mm Ø - SOLID WALL CLASS 34 TO SABS 791.
 2. SEE DRAWING 1396.10.ZA.06.D002 AND D003 FOR DETAILS OF THE ERF CONNECTIONS.
 3. THE INVERT DEPTH OF THE HOUSE CONNECTIONS SHALL BE MEASURED ON SITE AND INDICATED ON THE AS-BUILT DRAWINGS.
 4. UNLESS SHOWN OTHERWISE ALL SEWER CONNECTIONS ARE 110mm Ø.
 5. SEWERS 1.0m FROM ERF BOUNDARIES AT MIDDLOCKS AND SEE DRAWING 1396.10.ZA.03.D001 FOR SEWERS IN ROAD RESERVES
 6. MANHOLES TO CONFORM TO THE DETAILS SHOWN ON DRAWING NO. 1396.10.ZA.06.D001. ALL MANHOLE COVERS TO BE OF CONCRETE - 19/25MPa.
 7. SEE DRAWING 1396.10.ZA.06.D004 FOR SUBSOIL DRAINAGE AND BEDDING DETAILS.
 8. ALL BEDDING SHALL BE IN ACCORDANCE WITH SANS 1200 DRAWING LB-2 ACCEPT WHERE INDICATED OTHERWISE.



AS-BUILT RECORD			
CONTRACT No.	DESCRIPTION	CERTIFIED BY	DATE
CERTIFIED AS-BUILT FOR CONTRACT :			
ENGINEER		DATE	

VERSION/AMENDMENTS			
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PROJECT TITLE:

**LERATO PARK
INTERNAL CIVIL ENGINEERING SERVICES**

DRAWING TITLE:

**SEWER LAYOUT PLAN
SHEET 8 OF 12**



Sol Plaatje Municipality

We Serve

0 50 100
100mm ON ORIGINAL DRAWING

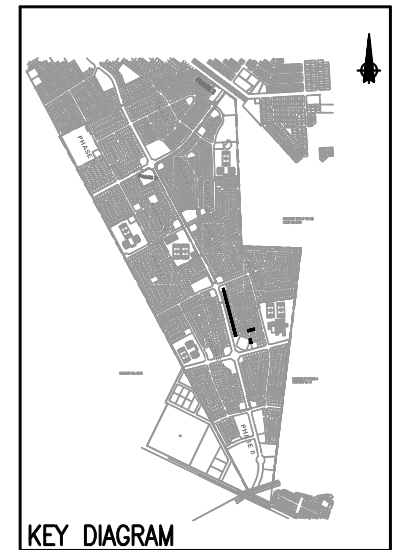
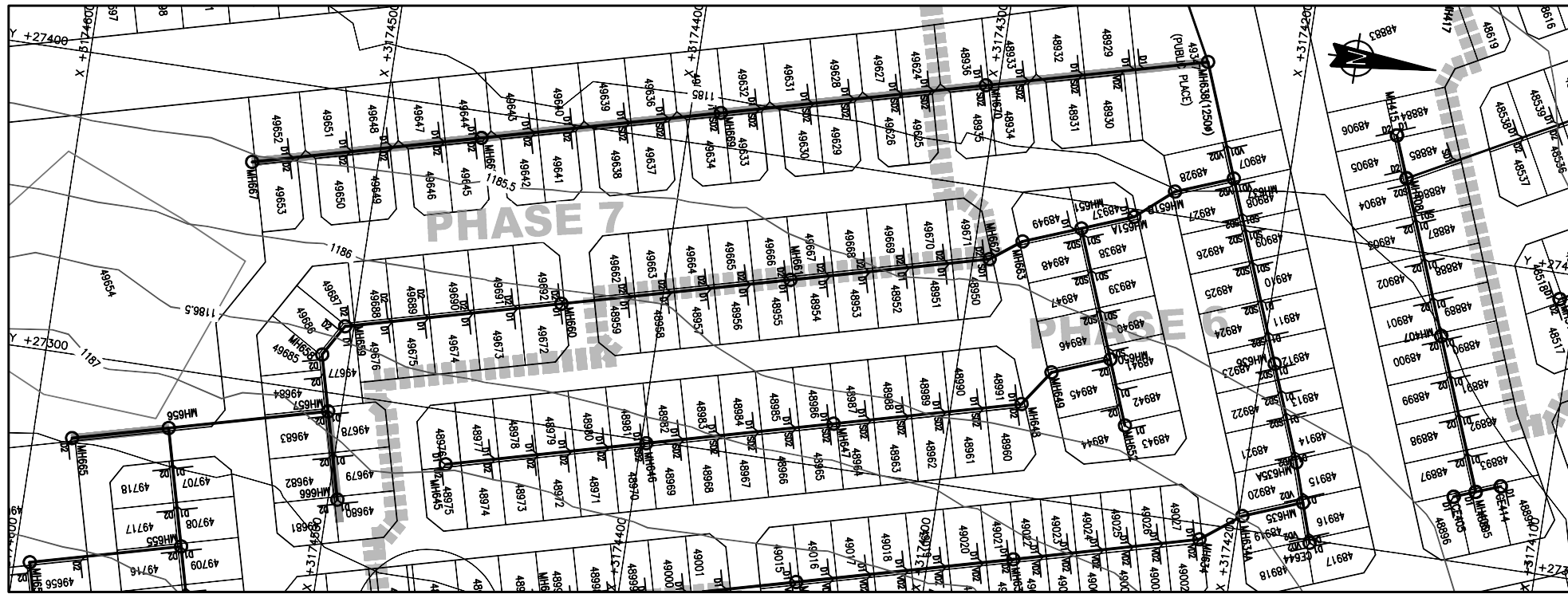
ORIGINAL DRAWING SCALE: 1: 1000 ORIGINAL DRAWING SHEET SIZE: A1

APPROVED:

CLIENT OR ASSIGNEE: DATE: CLIENT DRAWING No.: CLIENT REF No.:

SURVEYED	DESIGNED	S Mchaleke
DRAWN	CHECKED	L. Gertsenbach
CO-ORDINATE SYSTEM:	WG25	DATE: February 2020
APPROVED ON BEHALF OF BIGEN:		ENGINEER: DATE: DRAWING No.: 1396.10.ZA.06.U008 VERSION: 2.0

1396.10.ZA.06.U008



LAYOUT PLAN
Scale 1:1000

PIPE
NGL

SCALES:
Horizontal 1:1000
Vertical 1:100
Datum : 1181m

DEPTH TO INVERTS
INVERT LEVEL
GROUND LEVEL
CHAINAGE (m)
PIPE GRADES
PIPE DETAILS
HYDRAULICS

PHASE 7			
MH667	MH668	MH669	MH670
1185	1184	1183	1182
1184	1183	1182	1181
1183	1182	1181	1180
1182	1181	1180	1179
1181	1180	1179	1178
1180	1179	1178	1177
1179	1178	1177	1176
1178	1177	1176	1175
1177	1176	1175	1174
1176	1175	1174	1173
1175	1174	1173	1172
1174	1173	1172	1171
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1172	1171	1170	1169
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1170	1169	1168	1167
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