- MUNICIPAL LINES.
- STRUCTURAL ENGINEERING AND ARCHITECTURAL
- WORKS CONSTRUCTED UPON COMPLETION OF THE
- THE RELEVANT SABS 1200 SPECIFICATIONS.
- UP ANY WORKS.
- TESTING AT FREQUENCIES SPECIFIED IN THE RELEVANT SANS 1200 SPECIFICATIONS. COSTS FOR CONTROL TESTING WILL BE FOR THE CONTRACTORS ACCOUNT
- CALL THE ENGINEER FOR INSPECTION PRIOR TO COMMENCING WITH CONSTRUCTION.
- DISCREPANCIES MUST BE BROUGHT TO THE ATTENTION BE MADE.
- OTHER THAN THOSE SPECIFIED, HE MUST OBTAIN WRITTEN APPROVAL FROM THE ENGINEER TO DO SO.
- ISSUED UNDER SITE INSTRUCTION, AFTER APPROVAL BY THE PRINCIPAL AGENT
- BRICKS CONFORMING TO SANS 1200 LD.
- BY THE CONTRACTOR AND IS SHOWN ON THE CONSTRUCTION DRAWINGS OR INDICATED TO THE CONTRACTOR ON SITE BY THE ENGINEER, MUST BE





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FINAL COVER LEVEL			02.00	0 0 0	00.10	00.89		200.25		99.82	99.14		98.27		97.29	96.64
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ΕΧΟΔΥΔΤΙΟΝ ΠΕΡΤΗ			┥┟													
TO INVERT (m)			1.911		7071	1.872		1.925		2.117	2.105		1.907		1.589	4.007
			┥┟			8	8		9	+		<i></i>		8		8
INTERNAL PIPE DIAM	TER			u u u		Ommo	E E E E E E E E E E E E E E E E E E E		u u u		u m m O	u u u u u u u u u u u u u u u u u u u		шщо		0 U U
			┥┝	11		11	11		11	+	11	11		11		11
CONSTRUCTION GRA	DIENT %			67%		67%	67%		67%		67%	67%		67%		67%
			┥┝	Ξ		-			-	+	Π			-	_	
	DESIGN	Q(I/s)		0.240		0.479	0.479		0.661		0.661	0.661		0.661		0.661
HYDRAULICS		v(III/S)	┥┠	0.025		0.050	0.050	_	0.070	_	0.070	0.070		0.070		0.070
	FULL	Q(I/s) V(m/s)		0.980		0.980	0.980		0.980		0.980	0.980		0.980		0.980
			┥┝							+						
BETW	EEN POINTS	(m)		31.89		31.90	39.24		40.02		40.00	40.01		40.01		34.15
DISTANCE			┥┝							10						
ACCL	MULATED(m)		000.0	600 L	100.1	3.778		33.01		13.02(	33.020		23.024		53.028	71.75
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DRAINAGE STRUCTUR	E		¥			Η Σ		μ		MM	HM		MH		MH	PUN
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GROUND LE	VEL			196.64	
FINAL COVER LE	EVEL			6.649	
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INVERT LEVEL					5.135
EXCAVATION D	EPTH			14	
TO INVERT (m)				4.0	
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CONSTRUCTION	N GRADIE	NT %			
			O(1/c)		
		DESIGN	V(m/s)		
HYDRAULICS		FUU	Q(I/s)		
		TOLL	V(m/s)		
BETWEEN		N POINTS (m	1)		
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ACCUMULATED(m)		0.000			
DRAINAGE STRU	JCTURE			ЧМ	
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1	ļ	Datur	m : 195	5m 1	195 1							
	GROUND LE	VEL			200.813	200.653	200.544	200.752		200.499		200.298
	FINAL COVER LE	EVEL			200.812	200.652	200.544	200.752		200.499		200.297
	INVERT LEVEL					200.017 199.880	199.880 199.684	199.684 199.561	199.561	198.894 198.894	- 	198.372
	EXCAVATION DEPTH TO INVERT (m)					0.773	0.860	1.191		1.605		1.925
	INTERNAL PIPE	DIAMET	ER			110mm Ø	110mm Ø	110mm Ø	110mm Ø		110mm Ø	
	CONSTRUCTION	I GRADIE	ENT %			1.67%	1.67%	1.67%	1.67%		1.67%	
			DESIGN	Q(l/s) V(m/s)		0.002 0.000	0.002 0.000	0.002 0.000	0.002 0.000		0.181 0.019	
	FULL Q(I/s) FULL V(m/s)		Q(I/s) V(m/s)		9.315 0.980	9.315 0.980	9.315 0.980	9.315 0.980		9.315 0.980		
		BETWEE	BETWEEN POINTS (m)				11.74	7.39	40.01		31.23	
	ACCUMULATED(m)			0.000	8.227	19.962	27.348		67.354		98.582	
	DRAINAGE STRUCTURE					MH 12B	MH 12C	MH 12D		MH 12E		MH 12

MH 9 TO PUMP CHAMBER Horizontal 1:500 Vertical 1:100

> RISING MAIN TO PACKAGE PLANT Horizontal 1:500 Vertical 1:100

7.220

0.760

9.315

0.980

332.73

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MH 12A - MH 12 Horizontal 1:500 Vertical 1:100

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## NOTES :

## A. GENERAL

- 1. ALL SETTING OUT TO BE UNDERTAKEN BY A REGISTERED PROFESSIONAL LAND SURVEYOR.
- 2. ALL WORK AREAS TO BE REINSTATED (PREMIX,
- CONCRETE, ETC.)
  3. MUNICIPALITY TO EXECUTE ALL CONNECTIONS INTO
  MUNICIPAL UNIES
- MUNICIPAL LINES. 4. ALL LEVELS AND DIMENSIONS TO BE VERIFIED ON SITE. 5. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE
- STRUCTURAL ENGINEERING AND ARCHITECTURAL DRAWINGS.6. CONTRACTOR TO PROVIDE AN AS-BUILT SURVEY OF ALL
- WORKS CONSTRUCTED UPON COMPLETION OF THE PROJECT.
- 7. ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH THE RELEVANT SABS 1200 SPECIFICATIONS.
- 8. THE CONTRACTOR MUST GIVE THE ENGINEER 48 HOURS WRITTEN NOTICE OF INSPECTIONS PRIOR TO COVERING UP ANY WORKS.
- 9. THE CONTRACTOR MUST ARRANGE FOR CONTROL TESTING AT FREQUENCIES SPECIFIED IN THE RELEVANT SANS 1200 SPECIFICATIONS. COSTS FOR CONTROL TESTING WILL BE FOR THE CONTRACTORS ACCOUNT.
- 10. ONCE THE WORKS ARE SET OUT THE CONTRACTOR MUST CALL THE ENGINEER FOR INSPECTION PRIOR TO COMMENCING WITH CONSTRUCTION.
- 11. SHOULD THE CONTRACTOR DISCOVER ANY DISCREPANCIES IN THE DRAWINGS, THESE DISCREPANCIES MUST BE BROUGHT TO THE ATTENTION
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- ISSUED UNDER SITE INSTRUCTION, AFTER APPROVAL BY THE PRINCIPAL AGENT 14. ALL BRICKS USED TO CONSTRUCT SEWER AND
- STORMWATER MANHOLES MUST BE NFX LOAD BEARING BRICKS CONFORMING TO SANS 1200 LD.
- 15. ALL EXISTING SERVICES TO BE PROVED PRIOR TO WORK COMMENCING. ANY EXISTING SERVICE THAT IS DAMAGED BY THE CONTRACTOR AND IS SHOWN ON THE CONSTRUCTION DRAWINGS OR INDICATED TO THE CONTRACTOR ON SITE BY THE ENGINEER, MUST BE REPAIRED BY THE CONTRACTOR AT HIS OWN COST.





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Legend:			1	95										
NGL Sewer Pipe														
Sewer Fipe														
[	Datur	m : 190	0m <sub>1</sub>	.90										
GROUND LE	VEL			198.623	198.495	198.490		198.001	197.802	197.320	196.879		196.762	196.649
FINAL COVER LE	EVEL			198.623	198.495	198.490		198.001	197.802	197.320	196.879		196.762	196.649
INVERT LEVEL					197.552 197.311	197.311 197.114	<u>197.114</u>	196.754	196.754 196.497	196.49/ 196.214	196.214 195.806	195.806	195.374	195.374 195.135
EXCAVATION DI TO INVERT (m)	EXCAVATION DEPTH TO INVERT (m)			1.071	1.184	1.376		1.247	1.305	1.107	1.073		1.388	4.014
INTERNAL PIPE	DIAMETI	ER			110mm Ø	110mm Ø	110mm Ø		110mm Ø	110mm Ø	110mm Ø	110mm Ø		110mm Ø
CONSTRUCTION	N GRADIE	ENT %			1.67%	1.67%	1.67%		1.67%	1.67%	1.67%	1.25%		1.25%
		DESIGN	Q(I/s) V(m/s)		0.080 0.008	0.080 0.008	0.080 0.008		0.080 0.008	0.379 0.040	0.379 0.040	0.530 0.056		0.554 0.058
HYDRAULICS		FULL	Q(I/s) V(m/s)		9.315 0.980	9.315 0.980	9.315 0.980		9.315 0.980	9.315 0.980	9.315 0.980	9.315 0.980		9.315 0.980
DISTANCE	BETWEE	N POINTS (m	ו)		14.45	11.80	21.62		15.40	16.95	24.45	34.53		19.13
DISTANCE ACCUMULATED(m)				0.000	14.447	26.246		47.867	63.269	80.213	104.655		139.187	158.317
DRAINAGE STRUCTURE				MH 1	MH 2	MH 3		MH 4	MH 5	0 HM	7 HM		MH 8	PUMP CHAMBER
L				. 1			1	I	1				I	

MH 1 TO PUMP CHAMBER

Horizontal 1:500 Vertical 1:100

NOTES :

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Horizontal 1:500 Vertical 1:100



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	No.	DATE	AMENDMENT	D.P.W.
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	ser P R T P	vice AFUI ELOO O MA OWE	RI LAND PORT OF ENTR CATION OF WET SERVIO AKE WAY FOR THE SOL/ R PANEL PROJECT	Y: CES AR
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	ref.	no. <sup>Ile</sup> 1:1 <sup>e</sup> MA`	designedTT MPHOL000drawnH MALUWAY 2019checkedT RAMJOG	OANE
Y		W drawin	<sup>g number</sup> 546/07	



ED OUT IN ACCORDANCE	No.	DATE	AMENDM	ENT	D.P.W.
ERIAL FOR PIPE CRADLE					
TO 90% OF MOD. AASHTO					
ATERIAL SHALL COMPLY OF SANS 1200 LB AND OD. AASHTO DENSITY.					
LANKET SHALL BE DONE IN EQUIREMENTS OF SANS TO 90% OF MOD. AASHTO BJECTED TO TRAFFIC					
AFFIC LOADS THE BACKFILL ACTED TO 93% OF MOD. NDERSIDE THE PAVEMENT					
S MUST BE OF DOLOMITIC					
) AREAS. EN UNPAVED AREAS. LD.					
SECTIONS MUST BE IN 1294.					
ER PIPE CAN BE REPLACED ED STONE IN AREAS WITH N INSTRUCTION BY					
AMES IN ROAD RESERVES					
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TO BE ABLE TO HANDLE NT:					
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	Clie	file name <b>Jtocad</b> nt	S Publick Wor REPUBLIC O	C WORKS	age type
SELCTED BACKFILL GRANULAR MATERIAL COMPACTED IN 200mm LAYERS NEW 100mm Ø uPVC SEWER RETICULATION PIPE	Cons Cons Cons Cons Cons Cons Pine Wood disc Cons Pine Wood disc Cons Pine Wood disc Cons Cons Cons Cons Cons Cons Cons Cons	sultant Solution e F10, 33 Riley R wood Office Park dmead, 2191 ipline CIVI rice FURI LA POE): SU STALLA JD WATI	GENGINEER toad	Tel : (011) 234 032 Fax : (011) 234 014 Email: admin@bmkg	I 6 Jroup.co.za
OSES ONLY	App NA PF RE WC drav Grav SF SF SF SF SF	roved by Desi ME: T. F A. TECH. G NO:20 S number wing title EWER D HEET 1 ( no. e 1:1 000 G June 2023 V drawing number	ign Leader RAMJOGI ENG D2120099 0524 0524 0524 0524 at at at at at at at at at at at at at	7 76 esigned TT MPHOL awn H MALUWA hecked T RAMJOG	OANE
		,1546	0/U8		



	ITEM	No. OFF	DIAMETER (mm)	DESCRIPTION
	1	2	80	1500mm LONG PUDDLE FLANGE PIECE WITH PUDDLE FLANGE AT 550mm
	2	2	80	PE 100 STEEL FLANGED 90 BEND SPECIAL DISCHARGE FOOT SPECIAL TO BE PERMANENTLY BOLTED TO SUMP DISCHARGE PIPES. FLANGES DRILLED TO SABS 1123, T
▼ 8	3	2	50	DOUBLE GUIDE BARS - GALVANISED.
	4	1	80	90° SHORT RADIUS BEND, FLANGED ON BOTH ENDS. FL SABS 1123, TABLE 1000.
	5	2	80	STEEL PIPE 5700mm LONG, FLANGED ON BOTH ENDS. F DRILLED TO SABS 1123, TABLE 1000.
	6	2	80	FLANGED SINGLE DOOR SWING CHECK VALVE. FLANGE TABLE 1000. MANUFACTURED TO SABS 192
	7	2	80	KNIFE GATE VALVE. WAFER TYPE
NCH OUTLET	8	2	80	V.J. FLANGE ADAPTOR. FLANGES DRILLED TO SABS 112
50mm BLINDING	9	1	80	PIPE SPECIAL WITH PUDDLE FLANGE, FLANGED ON DIS DRILLED TO SABS 1123, TABLE 1000.
600mm G5 LAYER	10	1	80	300mm FLANGED SPOOL PIECE. (FLANGES DRILLED TO MANUFACTURED TO SANS192
LAYERS @ 93% MOD AASHTO	11	1	80	PE 100 HDPE STUB FLANGE WITH HGD BACKING FLANG
	12	1	150	SPOOL PIECE, 760mm LONG WITH PUDDLE FLANGE AT 3
	13	2	150	SPOOL PIECE, 760mm LONG ON END PLAIN, ONE END FI 380mm (FLANGE DRILL TO SANS 1123 AND MANUFACTU
	14	2	150	FLANGED FLAP GATE VALVE (GERG OR EQUALLY APPR
	15	2	80	SPECIAL 90° BEND WITH BRACKET TO TIE TO CHAMBER
	16	2	SPECIAL	BRACKET MANUFACTURED TO SANS 192

## Domestic wastewater





PACKAGE TREATMENT PROCESS FLOW SCALE: NTS



