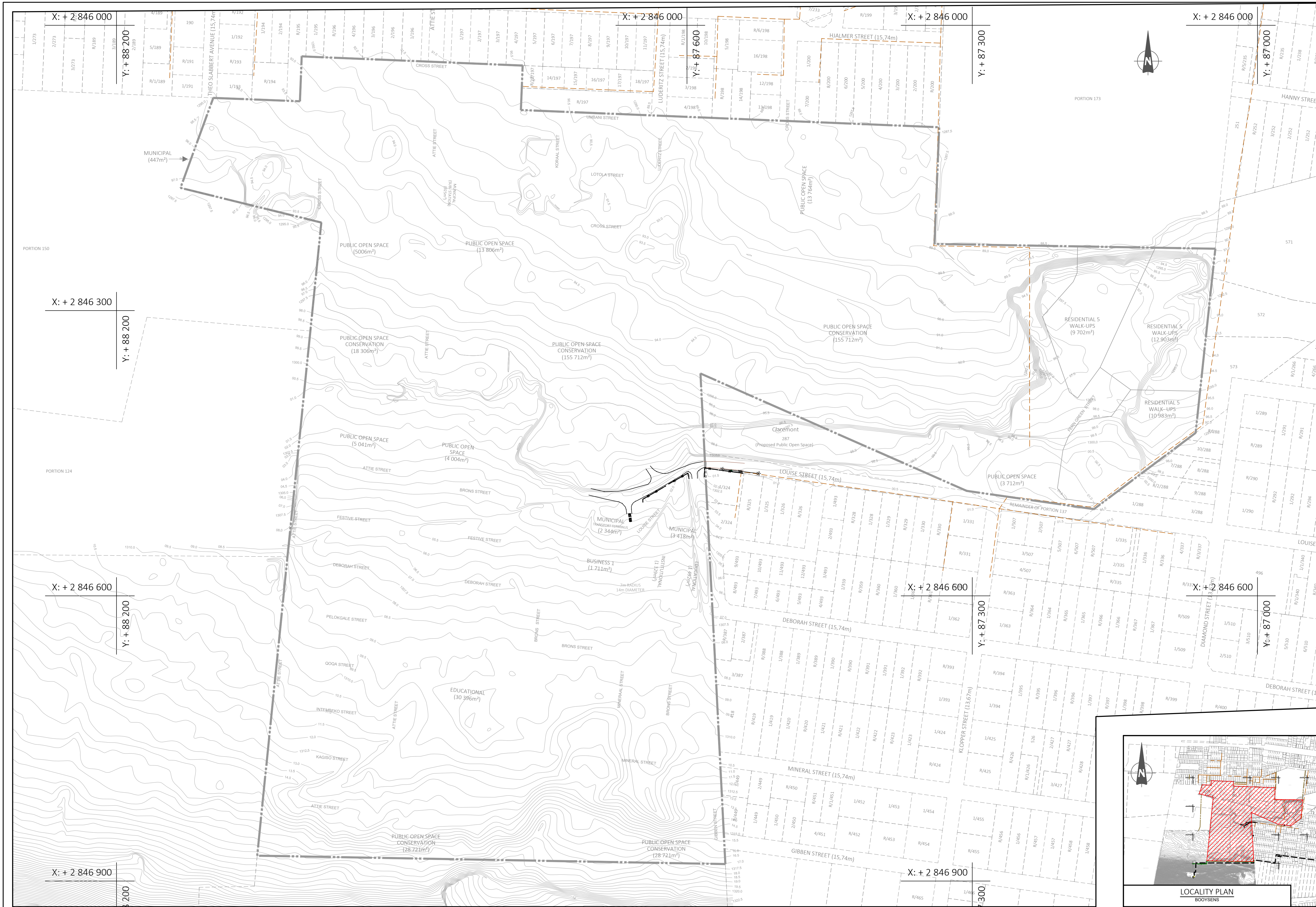
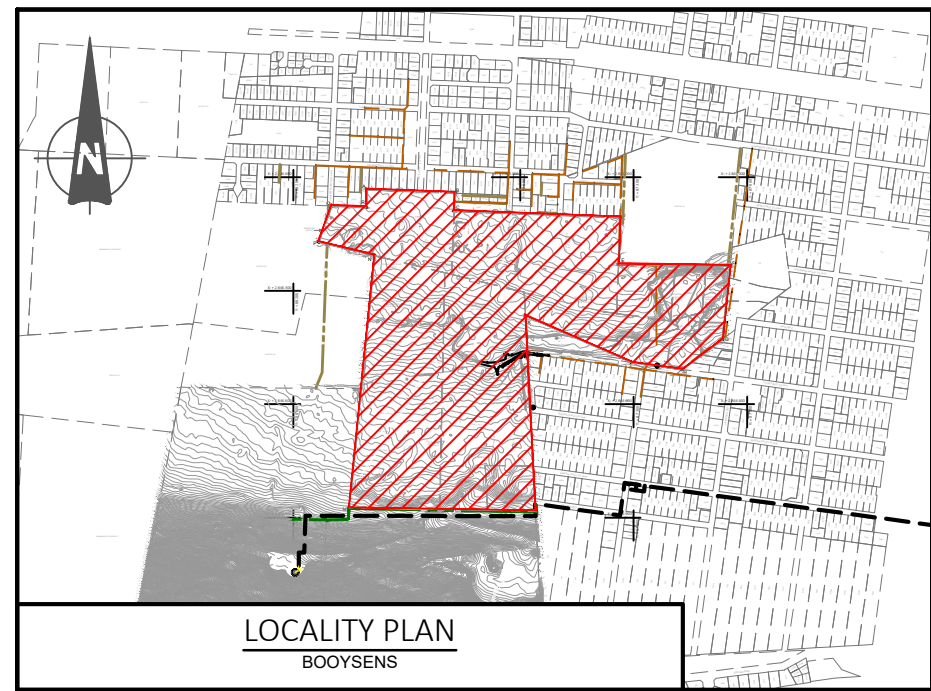




- ### NOTES AND SPECIFICATIONS
- #### GENERAL
- DO NOT SCALE FROM THESE DRAWINGS.
 - ALL DIMENSIONS MUST BE CHECKED AND APPROVED ON SITE.
 - THE SIGNATURE OR INITIALS ON THIS DRAWING, OF ANY DIRECTOR OF THE PUBLIC WORKS AND INFRASTRUCTURE DEVELOPMENT DEPARTMENT, IN NO WAY REMOVES ANY RESPONSIBILITY WHATSOEVER FROM THE CONSULTANT.
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 - FINAL POSITION OF SERVICES TO BE DETERMINED ON SITE.



AMENDMENTS				
NR	DATE	APPROVED	DESCRIPTION	PAR
1	01-12-2025	Z.D RANTA	CONSTRUCTION DRAWINGS	

WATER AND SANITATION			
FOR INTERNAL APPROVAL - PRELIMINARY AND NOT FOR CONSTRUCTION			
DIRECTOR: WATER AND SANITATION - PLANNING			
NAME	Prof. Reg. No.	SIGNATURE	DATE
REGIONAL DIRECTOR: (1,2,3,4,5,6 or 7)			
NAME	Prof. Reg. No.	SIGNATURE	DATE
DIRECTOR: SYSTEM DEVELOPMENT			
NAME	Prof. Reg. No.	SIGNATURE	DATE
DIRECTOR: BULK WATER			
NAME	Prof. Reg. No.	SIGNATURE	DATE
DIRECTOR: INFRASTRUCTURE PROVISION			
NAME	Prof. Reg. No.	SIGNATURE	DATE
DIRECTOR: WASTE WATER TREATMENT			
NAME	Prof. Reg. No.	SIGNATURE	DATE



DPT
CIVIL & STRUCTURAL IV

Prof Reg Nr
HEREBY CERTIFY THAT THE SERVICES WILL HAVE BEEN INSTALLED
ACCORDING TO NOTE 9 OF THE ABOVE NOTES AND TO THE DRAWING

SIGNATURE _____ DATE _____

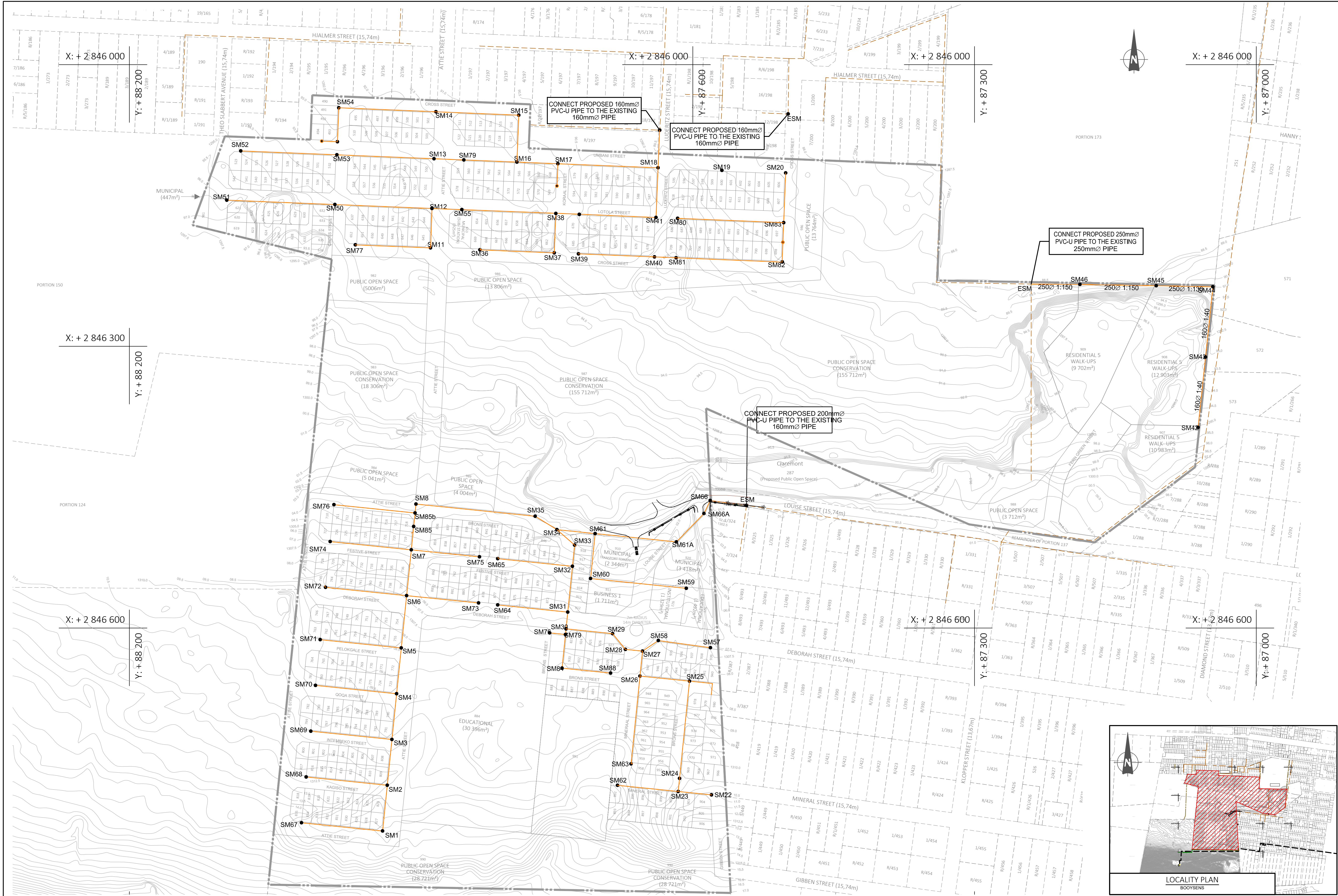
CONSULTANT DRAWING NUMBER:
2017/SM/10/01-SRL-011

DESIGNED	
NAME: Z.D RANTA	Dr Eng. Prof Reg No: 201170066
SIGNATURE: _____	DATE: _____
DRAWN	
NAME: K. MOLEMA	Prof Reg No: _____
SIGNATURE: _____	DATE: _____
CHECKED	
NAME: Z.D RANTA	Dr Eng. Prof Reg No: 201170066
SIGNATURE: _____	DATE: _____
INFORMATION OFFICE CHECKED	
NAME: _____	Dr Eng. Prof Reg No: _____
SIGNATURE: _____	DATE: _____
DESIGN OFFICE APPROVAL	
NAME: Z.D RANTA	Dr Eng. Prof Reg No: 201170066
SIGNATURE: _____	DATE: _____

CONTRACT No:
PROJECT No.
SHEET No.
2543IES-101
PAPER SIZE:
A1
SCALE:
AS SHOWN
DATE:
2025-06-10

PROJECT STATUS	
RECEIVED SIGN WHEN APPLICABLE	
☐ CONCEPT DRAWING	☒ TENDER DRAWING
☐ APPROVED CONSTRUCTION DRAWING	☐ AS BUILT DRAWING
PROJECT ENGINEER OF COT:	
NAME: _____	Dr Eng. Prof Reg No: _____
SIGNATURE: _____	DATE: _____
INSPECTOR OF WORKS OF COT:	
NAME: _____	Dr Eng. Prof Reg No: _____
SIGNATURE: _____	DATE: _____

LOCATION OF PROJECT:	
BOOYSSENS	
DESCRIPTION OF PROJECT:	
BOOYSSENS EXT 4 SITE PLAN	
WBS No.:	
COT DRAWING NUMBER:	

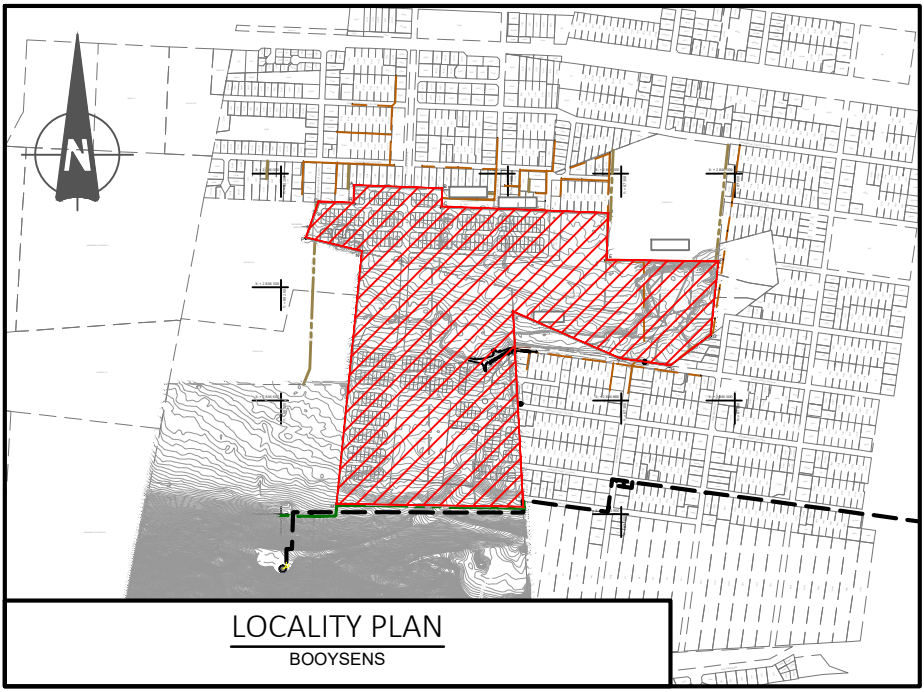


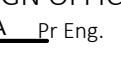
NOTES AND SPECIFICATIONS

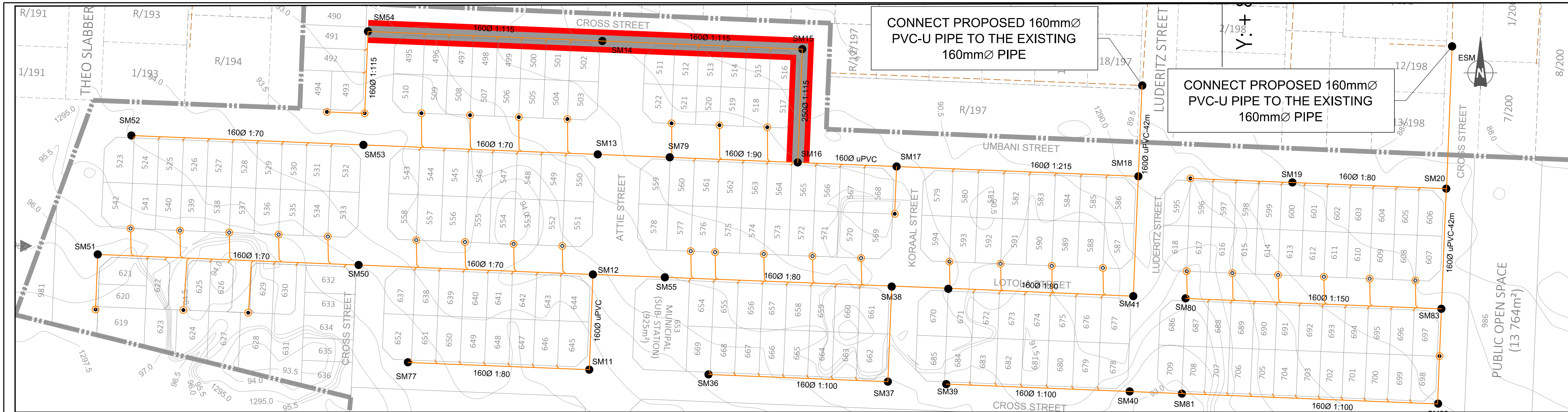
- GENERAL**
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 2. ALL DIMENSIONS ARE IN MILLIMETRES. (UNLESS OTHERWISE SPECIFIED).
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 9. THE CONSULTANT REMAINS RESPONSIBLE TO ENSURE THAT ALL THE GUIDELINES, STANDARD DRAWINGS, STANDARDS AND SPECIFICATIONS OF THE PUBLIC WORKS AND INFRASTRUCTURE DEVELOPMENT DEPARTMENT HAVE BEEN MET AND ARE COMPLIED WITH.
 10. FINAL POSITION OF SERVICES TO BE DETERMINED ON SITE.

- LEGEND**
- SANITATION**
- MANHOLE
 - CE / LH
 - NEW CCTV INSPECTION
 - EXIST. LINE INSPECTED BY CCTV
 - NEW SEWER LINE
 - REVISED NEW SEWER LINE
 - EXISTING SEWER LINE
 - HOUSE CONNECTION

N.B: ALL NEW SEWER PIPELINES ARE PVC-U PIPES



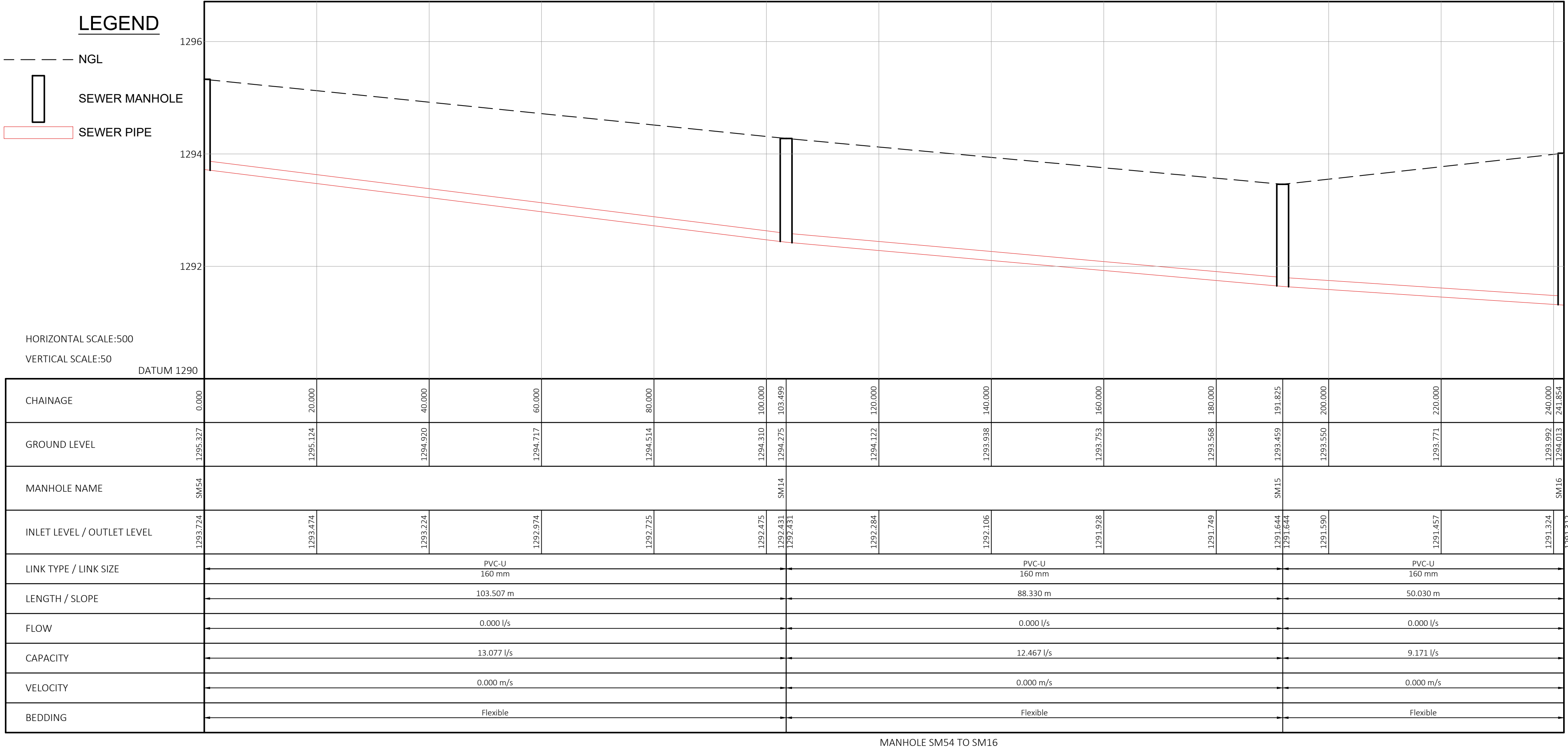
 CITY OF TSHWANE BUILDING EXCELLENCE PO BOX 1022 PRETORIA 0001 CITY OF TSHWANE SERVICES INFRASTRUCTURE DEPARTMENT WATER AND SANITATION DIVISION	AMENDMENTS				WATER AND SANITATION FOR INTERNAL APPROVAL - INSTRUCTIONS WHEN APPLICABLE				CONSULTANT DETAIL				DESIGNED				CONTRACT No:		PROJECT STATUS INDICATED SIGN WHEN APPLICABLE				LOCATION OF PROJECT:			
									 DPT CIVIL & STRUCTURAL IV I, _____ Prof Reg Nr. _____ HEREBY CERTIFY THAT THE SERVICES WILL HAVE BEEN INSTALLED ACCORDING TO NOTE 9 OF THE ABOVE NOTES AND TO THE DRAWING SIGNATURE: _____ DATE: _____ CONSULTANT DRAWING NUMBER: 2017/SM/10/01-SRL-011 				NAME: <u>Z.D RANTA</u> Dr Eng. Prof Reg No: <u>20090303</u>				PROJECT No.		PROJECT ENGINEER OF COT:				BOOYSENS			
													SIGNATURE: _____ DATE: _____				RTD 04-2014/15 (H5-01)		NAME: _____ Dr Eng. Prof Reg No: _____							
													DRAWN				SHEET No.		INSPECTOR OF WORKS OF COT:				BOOYSENS EXT 4 SEWER RETICULATION LAYOUT			
													NAME: <u>K. MOLEMA</u> Prof Reg No: _____				2543IES-147		NAME: _____ Dr Eng. Prof Reg No: _____							
													CHECKED				PAPER SIZE:									
													NAME: <u>Z.D RANTA</u> Dr Eng. Prof Reg No: <u>20090303</u>				A1									
													INFORMATION OFFICE CHECKED				SCALE:									
													NAME: _____ Dr Eng. Prof Reg No: _____				AS SHOWN									
													SIGNATURE: _____ DATE: _____				DATE:									
												DESIGN OFFICE APPROVAL				DATE:										
												NAME: <u>Z.D RANTA</u> Dr Eng. Prof Reg No: <u>20090303</u>				2020-08-02										
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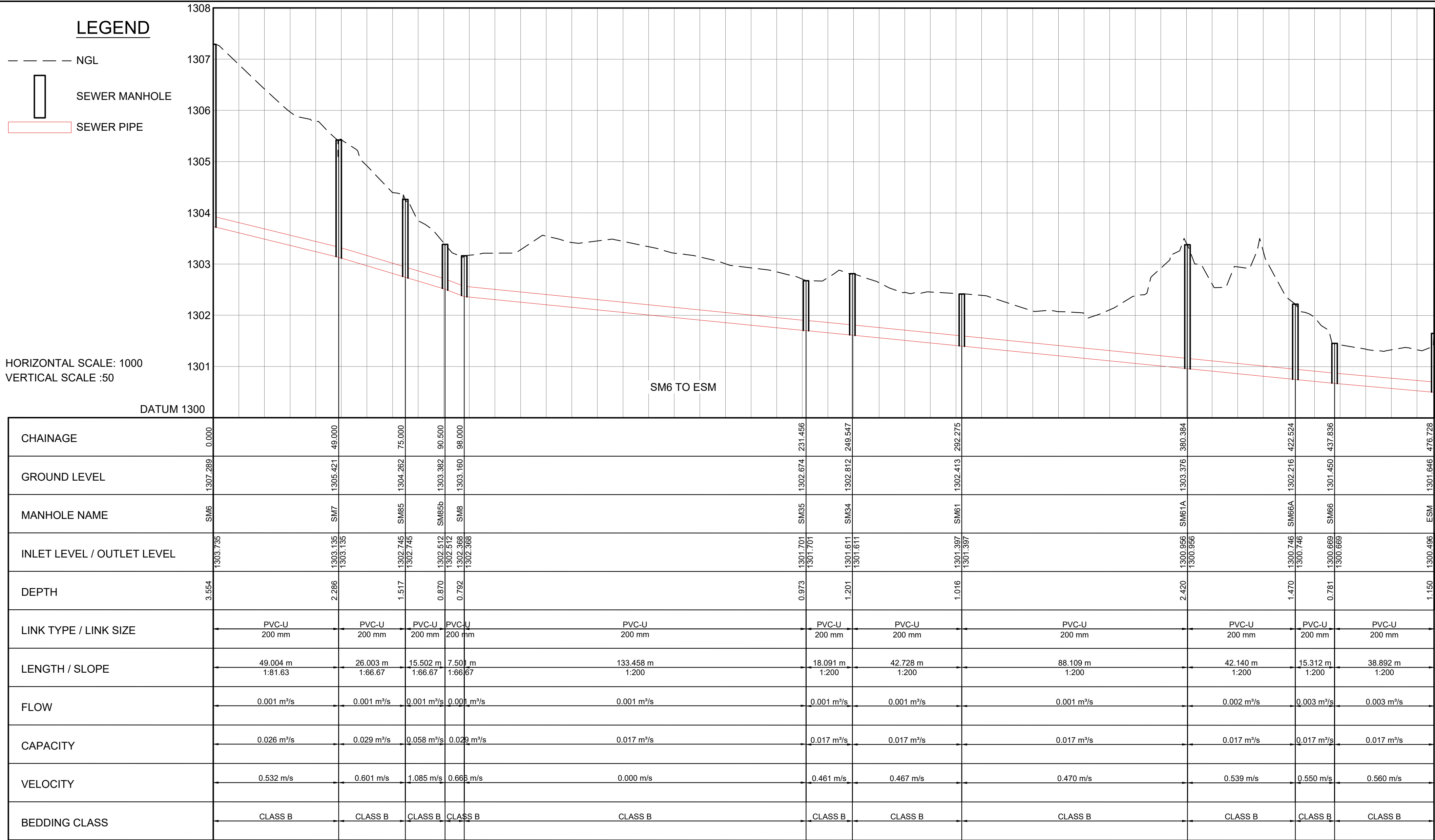
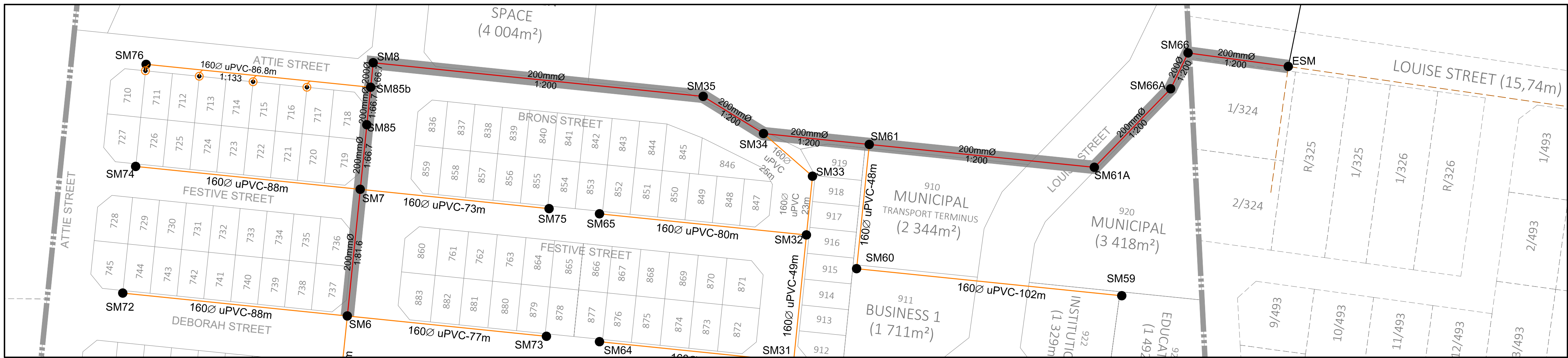
- NOTES AND SPECIFICATIONS**
- GENERAL**
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- LEGEND**
- SANITATION**
- MANHOLE
 - CE / LH
 - NEW CCTV INSPECTION
 - EXIST. LINE INSPECTED BY CCTV
 - NEW SEWER LINE
 - REVISED NEW SEWER LINE
 - EXISTING SEWER LINE
 - HOUSE CONNECTION

N.B: ALL NEW SEWER PIPELINES ARE PVC-U PIPES



 CITY OF TSHWANE SERVICES INFRASTRUCTURE DEPARTMENT WATER AND SANITATION DIVISION	AMENDMENTS			WATER AND SANITATION FOR INTERNAL APPROVAL - NOT FOR PUBLIC USE			CONSULTANT DETAIL			DESIGNED NAME: <u>Z.D RANTA</u> Dr Eng. Prof Reg No: <u>201170066</u> SIGNATURE: _____ DATE: _____		CONTRACT No: _____ PROJECT No: _____		PROJECT STATUS REVISIONS SHOULD BE INDICATED ☐ CONCEPT DRAWING ☐ TENDER DRAWING ☒ APPROVED CONSTRUCTION DRAWING ☐ AS BUILT DRAWING		LOCATION OF PROJECT: BOOYSENS		
	NR 1 DATE 01-12-2025 APPROVED Z.D RANTA DESCRIPTION CONSTRUCTION DRAWINGS PAR			DIRECTOR: WATER AND SANITATION - PLANNING NAME _____ Prof. Reg. No. _____ SIGNATURE _____ DATE _____ REGIONAL DIRECTOR: (1,2,3,4,5,6 or 7) NAME _____ Prof. Reg. No. _____ SIGNATURE _____ DATE _____ DIRECTOR: SYSTEM DEVELOPMENT NAME _____ Prof. Reg. No. _____ SIGNATURE _____ DATE _____ DIRECTOR: BULK WATER NAME _____ Prof. Reg. No. _____ SIGNATURE _____ DATE _____ DIRECTOR: INFRASTRUCTURE PROVISION NAME _____ Prof. Reg. No. _____ SIGNATURE _____ DATE _____ DIRECTOR: WASTE WATER TREATMENT NAME _____ Prof. Reg. No. _____ SIGNATURE _____ DATE _____			DPT CIVIL AND STRUCTURAL JV POSTNET SUITE 453 SINOVILLE CONER PRIVATE BAG X504 SINOVILLE 0129 TEL: 012 567 7381 FAX: 012 567 1996 E-MAIL: info@ditshimega.co.za I, _____ Prof Reg Nr _____ HEREBY CERTIFY THAT THE SERVICES WILL HAVE BEEN INSTALLED ACCORDING TO NOTE 9 OF THE ABOVE NOTES AND TO THE DRAWING SIGNATURE _____ DATE _____ CONSULTANT DRAWING NUMBER: 2017/SM/10/01-SRL-011			DRAWN NAME: <u>K. MOLEMA</u> Prof Reg No: _____ SIGNATURE: _____ DATE: _____ CHECKED NAME: <u>Z.D RANTA</u> Dr Eng. Prof Reg No: <u>201170066</u> SIGNATURE: _____ DATE: _____ INFORMATION OFFICE CHECKED NAME: _____ Dr Eng. Prof Reg No: _____ SIGNATURE: _____ DATE: _____ DESIGN OFFICE APPROVAL NAME: <u>Z.D RANTA</u> Dr Eng. Prof Reg No: <u>201170066</u> SIGNATURE: _____ DATE: _____		SHEET No. 2543IES-129 PAPER SIZE: A1 SCALE: AS SHOWN DATE: 2025-06-10		PROJECT ENGINEER OF COT: NAME: _____ Dr Eng. Prof Reg No: _____ SIGNATURE: _____ DATE: _____ INSPECTOR OF WORKS OF COT: NAME: _____ Dr Eng. Prof Reg No: _____ SIGNATURE: _____ DATE: _____				DESCRIPTION OF PROJECT: BOOYSENS EXT 4 SEWER RETICULATION LONG SECTION 11
														WBS No. : _____				
																COT DRAWING NUMBER: _____		



NOTES AND SPECIFICATIONS

GENERAL

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LEGEND

SANITATION

- MANHOLE
- CE / LH
- NEW CCTV INSPECTION
- EXIST. LINE INSPECTED BY CCTV
- NEW SEWER LINE
- REVISED NEW SEWER LINE
- EXISTING SEWER LINE
- HOUSE CONNECTION

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KEY PLAN

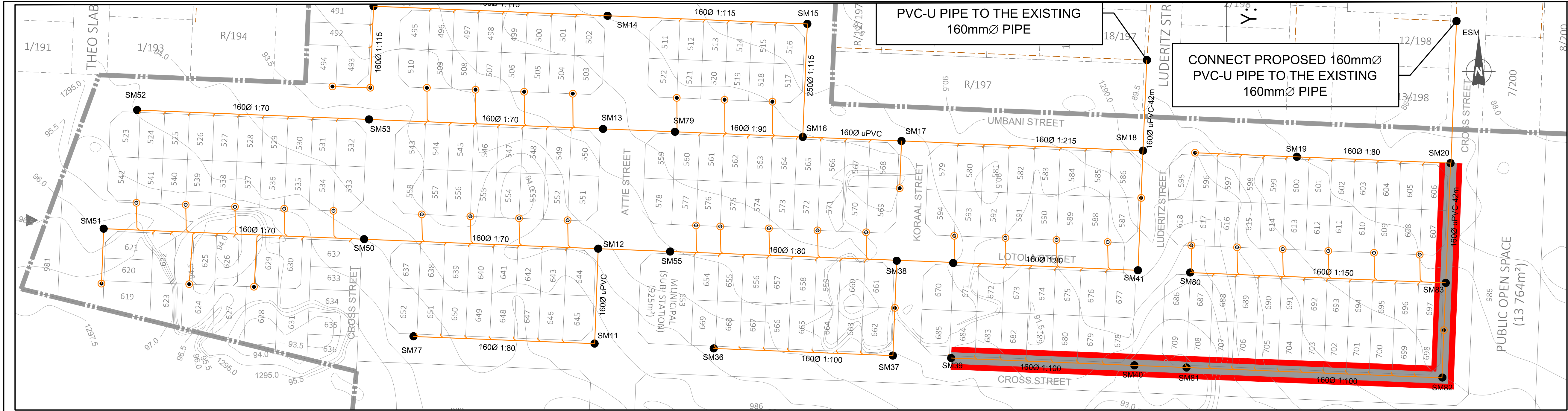
CITY OF TSHWANE
SERVICES INFRASTRUCTURE DEPARTMENT
WATER AND SANITATION DIVISION

AMENDMENTS				WATER AND SANITATION				CONSULTANT DETAIL				PROJECT STATUS				LOCATION OF PROJECT:				
NR	DATE	APPROVED	DESCRIPTION	PAR	DIRECTOR: WATER AND SANITATION - PLANNING				DESIGNED				CONTRACT				BOOYSSENS			
1	01-12-2025	Z.D RANTA	CONSTRUCTION DRAWINGS		NAME: _____ Prof. Reg. No. _____ SIGNATURE: _____ DATE: _____				NAME: <u>Z.D RANTA</u> Dr Eng. Prof Reg No: <u>201170066</u> SIGNATURE: _____ DATE: _____				PROJECT No. _____ SHEET No. <u>2543IES-130</u> PAPER SIZE: <u>A1</u> SCALE: <u>AS SHOWN</u> DATE: <u>2025-06-10</u>				PROJECT ENGINEER OF COT: NAME: _____ Dr Eng. Prof Reg No: _____ SIGNATURE: _____ DATE: _____			
					REGIONAL DIRECTOR: (1,2,3,4,5,6 or 7) NAME: _____ Prof. Reg. No. _____ SIGNATURE: _____ DATE: _____				DRAWN NAME: <u>K. MOLEMA</u> Prof Reg No: _____ SIGNATURE: _____ DATE: _____				PROJECT No. _____				DESCRIPTION OF PROJECT: BOOYSSENS EXT 4 SEWER RETICULATION LONGITUDINAL SECTION 1A			
					DIRECTOR: SYSTEM DEVELOPMENT NAME: _____ Prof. Reg. No. _____ SIGNATURE: _____ DATE: _____				CHECKED NAME: <u>Z.D RANTA</u> Dr Eng. Prof Reg No: <u>201170066</u> SIGNATURE: _____ DATE: _____				PAPER SIZE: <u>A1</u> SCALE: <u>AS SHOWN</u> DATE: <u>2025-06-10</u>				INSPECTOR OF WORKS OF COT: NAME: _____ Dr Eng. Prof Reg No: _____ SIGNATURE: _____ DATE: _____			
					DIRECTOR: BULK WATER NAME: _____ Prof. Reg. No. _____ SIGNATURE: _____ DATE: _____				INFORMATION OFFICE CHECKED NAME: _____ Dr Eng. Prof Reg No: _____ SIGNATURE: _____ DATE: _____								WBS No. : _____			
					DIRECTOR: INFRASTRUCTURE PROVISION NAME: _____ Prof. Reg. No. _____ SIGNATURE: _____ DATE: _____				DESIGN OFFICE APPROVAL NAME: <u>Z.D RANTA</u> Dr Eng. Prof Reg No: <u>201170066</u> SIGNATURE: _____ DATE: _____								COT DRAWING NUMBER: _____			
					DIRECTOR: WASTE WATER TREATMENT NAME: _____ Prof. Reg. No. _____ SIGNATURE: _____ DATE: _____															

DPT
CIVIL & STRUCTURAL JV

I, _____ Prof Reg Nr _____ HEREBY CERTIFY THAT THE SERVICES WILL HAVE BEEN INSTALLED ACCORDING TO NOTE 9 OF THE ABOVE NOTES AND TO THE DRAWING

CONSULTANT DRAWING NUMBER: 2017/SMI/10/01-SRL-011

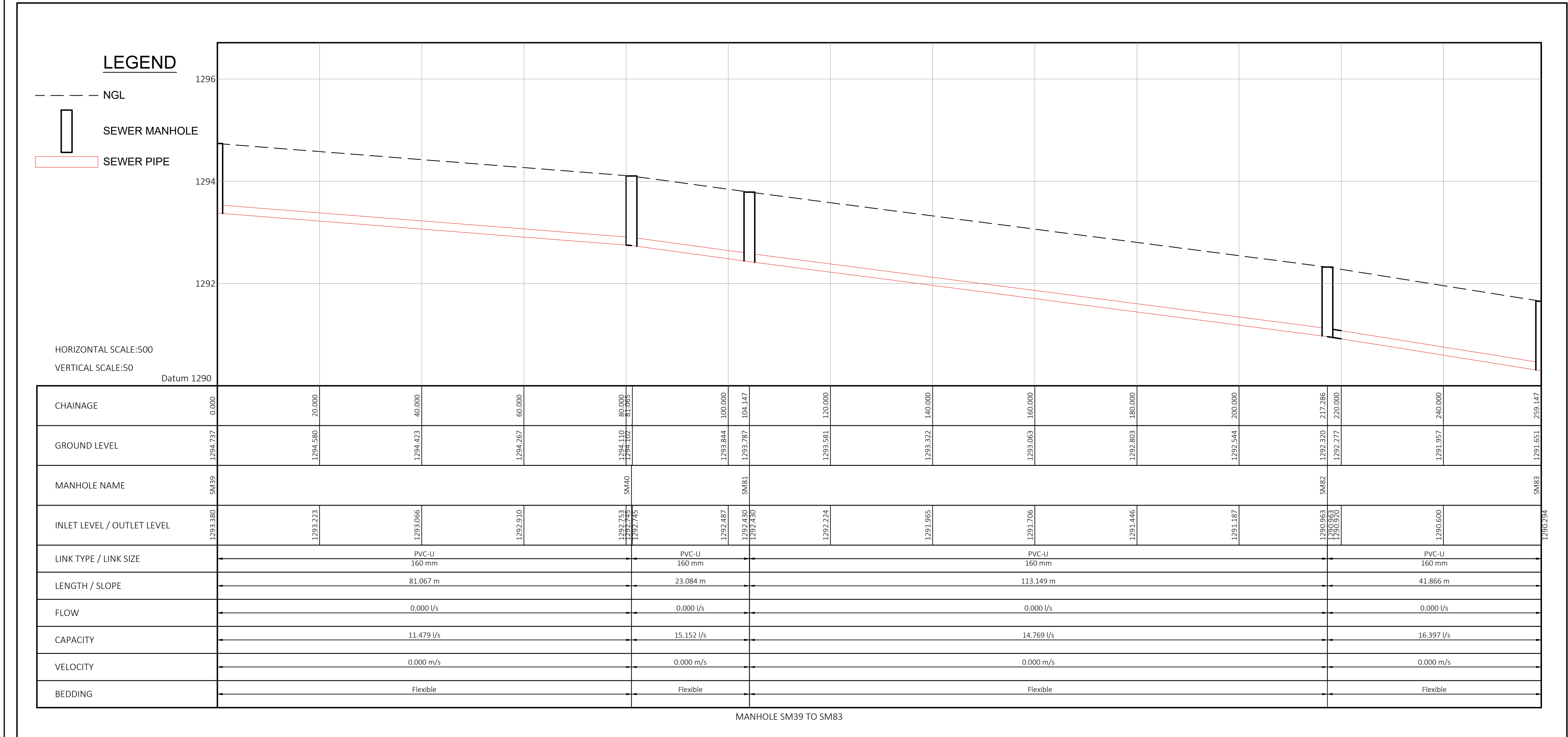


NOTES AND SPECIFICATIONS

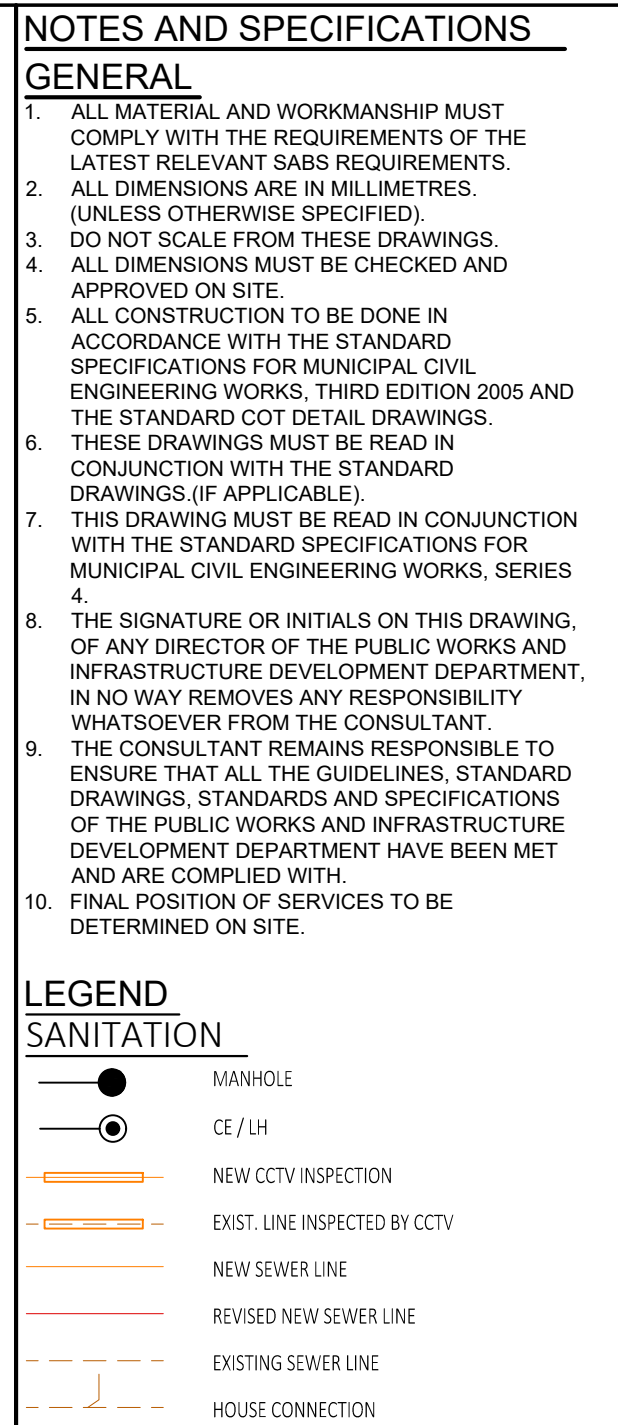
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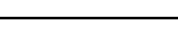
- LEGEND**
- SANITATION**
- MANHOLE
 - CE / LH
 - NEW CCTV INSPECTION
 - EXIST. LINE INSPECTED BY CCTV
 - NEW SEWER LINE
 - REVISED NEW SEWER LINE
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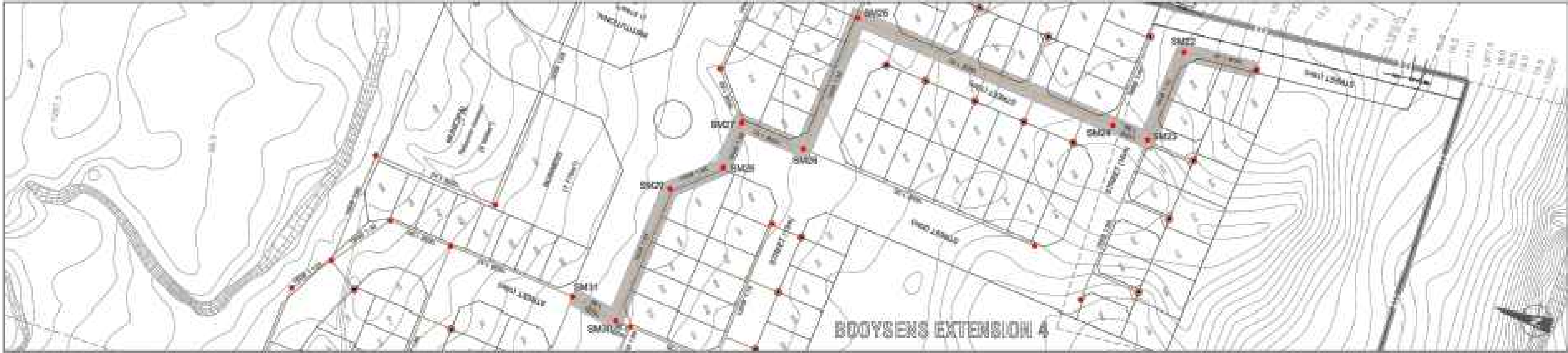
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 CITY OF TSHWANE SERVICES INFRASTRUCTURE DEPARTMENT WATER AND SANITATION DIVISION	AMENDMENTS				WATER AND SANITATION				CONSULTANT DETAIL				DESIGNED				CONTRACT				PROJECT STATUS				LOCATION OF PROJECT:				
	NR	DATE	APPROVED	DESCRIPTION	PAR	DIRECTOR: WATER AND SANITATION - PLANNING				DPT CIVIL AND STRUCTURAL IV POSTNET SUITE 453 SNOVILLE CONER PRIVATE BAG X504 SNOVILLE 0129 TEL: 012 567 7381 FAX: 012 567 1996 E-MAIL: info@dtshimaga.co.za				NAME: <u>Z.D RANTA</u> Br Eng. Prof Reg No: <u>201170066</u>				CONTRACT No: _____				PROJECT No: _____				BOOYSENS			
	1	01-12-2025	Z.D RANTA	CONSTRUCTION DRAWINGS		DIRECTOR: SYSTEM DEVELOPMENT				DPT CIVIL AND STRUCTURAL IV				NAME: <u>K. MOLEMA</u> Prof Reg No: _____				PROJECT No: _____				PROJECT ENGINEER OF COT:				DESCRIPTION OF PROJECT: BOOYSENS EXT 4 SEWER RETICULATION LONGITUDINAL SECTION 1B			
						DIRECTOR: BULK WATER				DPT CIVIL AND STRUCTURAL IV				NAME: <u>Z.D RANTA</u> Br Eng. Prof Reg No: <u>201170066</u>				SHEET No: 2543IES-131				INSPECTOR OF WORKS OF COT:				WBS No.:			
						DIRECTOR: INFRASTRUCTURE PROVISION				DPT CIVIL AND STRUCTURAL IV				NAME: _____ Br Eng. Prof Reg No: _____				PAPER SIZE: A1				DATE: 2025-06-10				COT DRAWING NUMBER:			
						DIRECTOR: WASTE WATER TREATMENT				DPT CIVIL AND STRUCTURAL IV				NAME: <u>Z.D RANTA</u> Br Eng. Prof Reg No: <u>201170066</u>				SCALE: AS SHOWN				DATE: 2025-06-10				REVISION			
														NAME: _____ Br Eng. Prof Reg No: _____				AS SHOWN				DATE: 2025-06-10				REVISION			



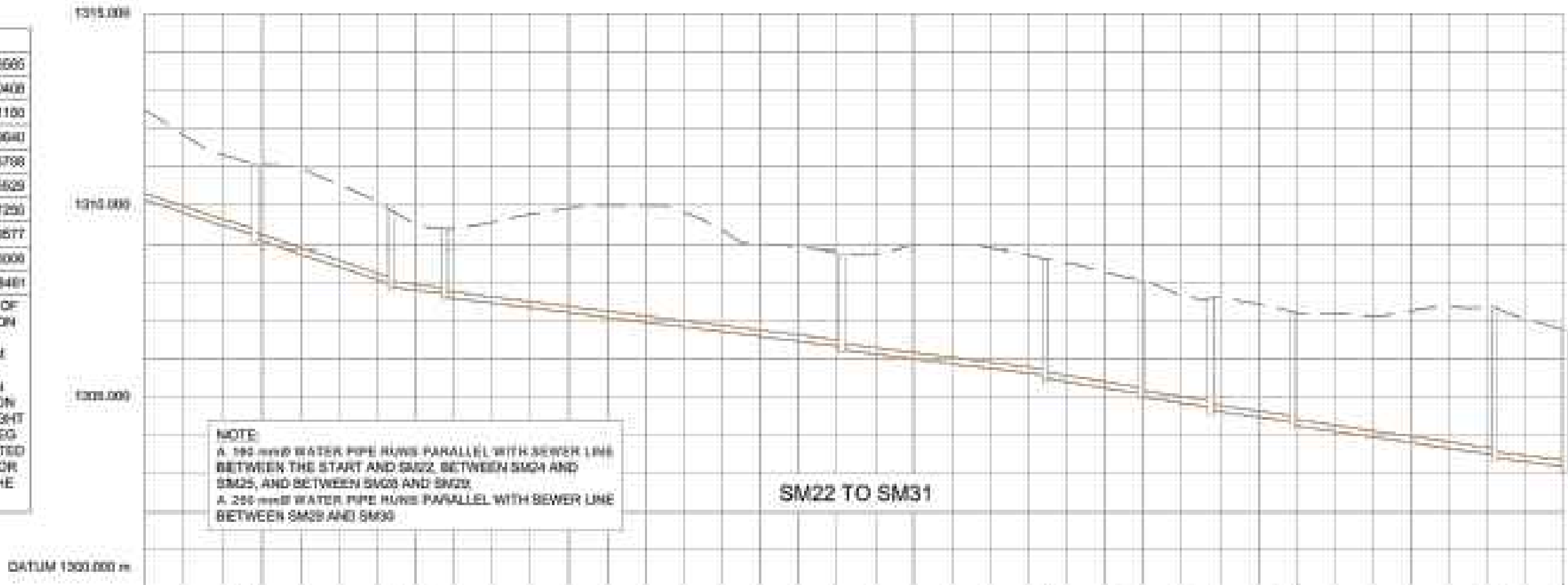
 CITY OF TSHWANE SERVICES INFRASTRUCTURE DEPARTMENT WATER AND SANITATION DIVISION	AMENDMENTS				WATER AND SANITATION				CONSULTANT DETAIL				DESIGNED				CONTRACT No:		PROJECT STATUS				LOCATION OF PROJECT:			
	NR	DATE	APPROVED	DESCRIPTION	PAR	DIRECTOR: WATER AND SANITATION - PLANNING				 DPT CIVIL AND STRUCTURAL JV POSTNET SUITE 453 SINOVILLE CONER PRIVATE BAG X504 SINOVILLE 0129 TEL: 012 567 7381 FAX: 012 567 1996 E-MAIL: info@dlstshwamega.co.za				NAME: <u>Z.D RANTA</u> Pr Eng. Prof Reg No: <u>201170066</u>				PROJECT No:		☒ CONCEPT DRAWING ☐ TENDER DRAWING ☐ APPROVED CONSTRUCTION DRAWING ☐ AS BUILT DRAWING				BOOYSENS		
1	01-12-2025	Z.D RANTA	CONSTRUCTION DRAWINGS		NAME: _____ Prof. Reg. No. _____ SIGNATURE: _____ DATE: _____				NAME: <u>K. MOLEMA</u> Prof Reg No: _____					SHEET No:		PROJECT ENGINEER of COT:										
					NAME: _____ Prof. Reg. No. _____ SIGNATURE: _____ DATE: _____				NAME: <u>Z.D RANTA</u> Pr Eng. Prof Reg No: <u>201170066</u>				2543IES-132		INSPECTOR OF WORKS OF COT:											
					DIRECTOR: SYSTEM DEVELOPMENT				SIGNATURE: _____ DATE: _____				PAPER SIZE:						WBS No. : _____							
					NAME: _____ Prof. Reg. No. _____ SIGNATURE: _____ DATE: _____				NAME: _____ Pr Eng. Prof Reg No: _____				A1		COT DRAWING NUMBER: _____											
					DIRECTOR: BULK WATER				NAME: _____ Pr Eng. Prof Reg No: _____				SCALE:													
					NAME: _____ Prof. Reg. No. _____ SIGNATURE: _____ DATE: _____				SIGNATURE: _____ DATE: _____				AS SHOWN													
					DIRECTOR: INFRASTRUCTURE PROVISION				NAME: _____ Pr Eng. Prof Reg No: _____				DATE:													
					NAME: _____ Prof. Reg. No. _____ SIGNATURE: _____ DATE: _____				NAME: <u>Z.D RANTA</u> Pr Eng. Prof Reg No: <u>201170066</u>				2025-06-10													
					DIRECTOR: WASTE WATER TREATMENT				SIGNATURE: _____ DATE: _____																	
					NAME: _____ Prof. Reg. No. _____ SIGNATURE: _____ DATE: _____				CONSULTANT DRAWING NUMBER: 2017/SM/10/01-SRL-011																	
																										



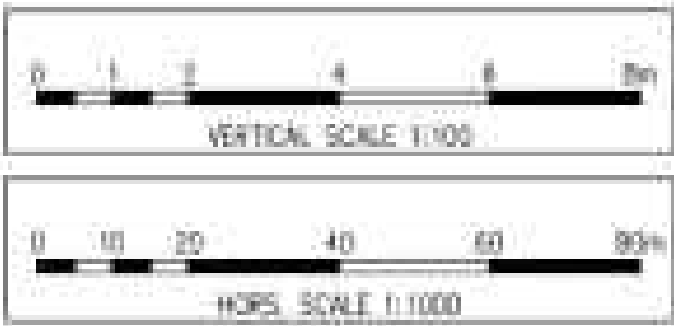
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SM30	67737.7756	2848603.6006
SM31	67734.4467	2848594.9461

1. THE X AND Y CO-ORDINATES OF THE INFORMATION INDICATED ON THIS DRAWING ARE BASED ON THE WORLD GEODETIC SYSTEM 1984 (WGS84) (MGS84)
2. ALL Z CO-ORDINATES SHOWN ON THE DRAWING ARE BASED ON THE LOCAL ORTHOMETRIC HEIGHT SYSTEM AND ON THE DATUM REG WITH AN ELEVATION AS INDICATED IN WRITING TO THE CONTRACTOR AT THE COMMENCEMENT OF THE WORKS



MANHOLE	SM22	SM23	SM24	SM25	SM26	SM27	SM28	SM29	SM30	SM31
CHAINAGE	0.000	26.000	52.000	78.000	104.000	130.000	156.000	182.000	208.000	234.000
GROUND LEVEL	1310.140	1309.216	1309.160	1308.700	1308.016	1306.166	1305.006	1304.247	1303.411	1302.673
INVERT LEVEL	1310.140	1309.216	1309.160	1308.700	1308.016	1306.166	1305.006	1304.247	1303.411	1302.673
DEPTH	2.347	1.871	2.011	1.776	2.403	1.921	1.045	2.022	1.808	1.879
GRADES	1:30	1:30	1:30	1:30	1:30	1:30	1:30	1:30	1:30	1:30
LENGTH (m)	20.000	26.000	26.000	26.000	26.000	26.000	26.000	26.000	26.000	26.000
PIPE DIAMETER (mm)	150	150	150	150	150	150	150	150	150	150
BEDDING CLASS	B	B	B	B	B	B	B	B	B	B
DESIGN FLOW (l/s)	0.043	0.088	0.094	0.097	0.099	1.088	1.285	1.287	1.403	1.572
Q70 CAPACITY (l/s)	23.38	23.38	14.20	14.20	14.20	16.19	15.48	15.48	15.48	14.20
DESIGN VELOCITY (m/s)	0.296	0.383	0.372	0.407	0.529	0.889	0.903	0.902	0.917	0.793
V70 VELOCITY (m/s)	1.78	1.78	1.78	1.78	1.78	1.23	1.17	1.17	1.17	1.58



NOTES AND SPECIFICATIONS

GENERAL

- ALL MATERIAL AND WORKMANSHIP MUST COMPLY WITH THE REQUIREMENTS OF THE LATEST RELEVANT SABS REQUIREMENTS.
- ALL DIMENSIONS ARE IN MILLIMETRES. (UNLESS OTHERWISE SPECIFIED).
- DO NOT SCALE FROM THESE DRAWINGS.
- ALL DIMENSIONS MUST BE CHECKED AND APPROVED ON SITE.
- ALL CONSTRUCTION TO BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR MUNICIPAL CIVIL ENGINEERING WORKS, THIRD EDITION 2005 AND THE STANDARD COT DETAIL DRAWINGS.
- THESE DRAWINGS MUST BE READ IN CONJUNCTION WITH THE STANDARD DRAWINGS (IF APPLICABLE).
- THIS DRAWING MUST BE READ IN CONJUNCTION WITH THE STANDARD SPECIFICATIONS FOR MUNICIPAL CIVIL ENGINEERING WORKS, SERIES 4.
- THE SIGNATURE OR INITIALS ON THIS DRAWING, OF ANY DIRECTOR OF THE PUBLIC WORKS AND INFRASTRUCTURE DEVELOPMENT DEPARTMENT, IN NO WAY REMOVES ANY RESPONSIBILITY WHATSOEVER FROM THE CONSULTANT.
- THE CONSULTANT REMAINS RESPONSIBLE TO ENSURE THAT ALL THE GUIDELINES, STANDARD DRAWINGS, STANDARDS AND SPECIFICATIONS OF THE PUBLIC WORKS AND INFRASTRUCTURE DEVELOPMENT DEPARTMENT HAVE BEEN MET AND ARE COMPLIED WITH.
- FINAL POSITION OF SERVICES TO BE DETERMINED ON SITE.

LEGEND

SANITATION

- MANHOLE
- CE / LH
- NEW CCTV INSPECTION
- EXIST. LINE INSPECTED BY CCTV
- NEW SEWER LINE
- REVISED NEW SEWER LINE
- EXISTING SEWER LINE
- HOUSE CONNECTION

N.B: ALL NEW SEWER PIPELINES ARE PVC-U PIPES



CITY OF TSHWANE
SERVICES INFRASTRUCTURE
DEPARTMENT
WATER AND SANITATION
DIVISION

AMENDMENTS				
NR	DATE	APPROVED	DESCRIPTION	PAR
1	01-12-2025	Z.D RANTA	CONSTRUCTION DRAWINGS	

WATER AND SANITATION			
FOR INTERNAL APPROVAL - PROJECT NO. 2017/SM/10/01-SRL-011			
DIRECTOR: WATER AND SANITATION - PLANNING			
NAME	Prof. Reg. No.	SIGNATURE	DATE
REGIONAL DIRECTOR: (1, 2, 3, 4, 5, 6 or 7)			
NAME	Prof. Reg. No.	SIGNATURE	DATE
DIRECTOR: SYSTEM DEVELOPMENT			
NAME	Prof. Reg. No.	SIGNATURE	DATE
DIRECTOR: BULK WATER			
NAME	Prof. Reg. No.	SIGNATURE	DATE
DIRECTOR: INFRASTRUCTURE PROVISION			
NAME	Prof. Reg. No.	SIGNATURE	DATE
DIRECTOR: WASTE WATER TREATMENT			
NAME	Prof. Reg. No.	SIGNATURE	DATE

CONSULTANT DETAIL



DPT CIVIL AND STRUCTURAL IV
POSTNET SUITE 453
SINOVILLE CORNER
PRIVATE BAG X504
SINOVILLE 0129
TEL: 012 567 7381
FAX: 012 567 1996
E-MAIL: info@dtshimaga.co.za

I, Prof. Reg. Nr. _____
HEREBY CERTIFY THAT THE SERVICES WILL HAVE BEEN INSTALLED
ACCORDING TO NOTE 9 OF THE ABOVE NOTES AND TO THE DRAWING
SIGNATURE _____ DATE _____
CONSULTANT DRAWING NUMBER:
2017/SM/10/01-SRL-011

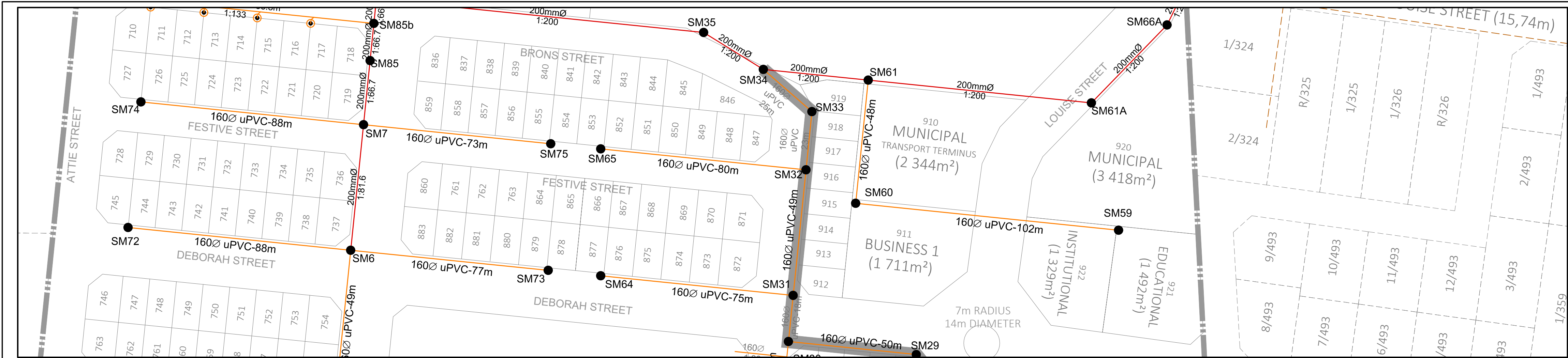
DESIGNED	
NAME: Z.D RANTA	Dr Eng. Prof Reg No: 201170066
SIGNATURE: _____	DATE: _____
DRAWN	
NAME: K. MOLEMA	Prof Reg No: _____
SIGNATURE: _____	DATE: _____
CHECKED	
NAME: Z.D RANTA	Dr Eng. Prof Reg No: 201170066
SIGNATURE: _____	DATE: _____
INFORMATION OFFICE CHECKED	
NAME: _____	Dr Eng. Prof Reg No: _____
SIGNATURE: _____	DATE: _____
DESIGN OFFICE APPROVAL	
NAME: Z.D RANTA	Dr Eng. Prof Reg No: 201170066
SIGNATURE: _____	DATE: _____

CONTRACT	
No:	
PROJECT	
No:	
SHEET	
No:	2543IES-133
PAPER SIZE	
	A1
SCALE	
AS SHOWN	
DATE	
2025-06-10	

PROJECT STATUS			
RECEIVED SIGN WHEN APPLICABLE			
☐ CONCEPT DRAWING	☐ TENDER DRAWING	☒ APPROVED CONSTRUCTION DRAWING	☐ AS BUILT DRAWING
PROJECT ENGINEER OF COT:			
NAME: _____	Dr Eng.	Prof Reg No: _____	
SIGNATURE: _____		DATE: _____	
INSPECTOR OF WORKS OF COT:			
NAME: _____	Dr Eng.	Prof Reg No: _____	
SIGNATURE: _____		DATE: _____	

LOCATION OF PROJECT:	
BOOYSENS	
DESCRIPTION OF PROJECT:	
BOOYSENS EXT 4 SEWER RETICULATION LONGITUDINAL SECTION 2A	
WBS No.:	

COT DRAWING NUMBER:	



NOTES AND SPECIFICATIONS

- GENERAL**
1. ALL MATERIAL AND WORKMANSHIP MUST COMPLY WITH THE REQUIREMENTS OF THE LATEST RELEVANT SABS REQUIREMENTS.
 2. ALL DIMENSIONS ARE IN MILLIMETRES. (UNLESS OTHERWISE SPECIFIED).
 3. DO NOT SCALE FROM THESE DRAWINGS.
 4. ALL DIMENSIONS MUST BE CHECKED AND APPROVED ON SITE.
 5. ALL CONSTRUCTION TO BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR MUNICIPAL CIVIL ENGINEERING WORKS, THIRD EDITION 2005 AND THE STANDARD COT DETAIL DRAWINGS.
 6. THESE DRAWINGS MUST BE READ IN CONJUNCTION WITH THE STANDARD DRAWINGS (IF APPLICABLE).
 7. THIS DRAWING MUST BE READ IN CONJUNCTION WITH THE STANDARD SPECIFICATIONS FOR MUNICIPAL CIVIL ENGINEERING WORKS, SERIES 4.
 8. THE SIGNATURE OR INITIALS ON THIS DRAWING, OF ANY DIRECTOR OF THE PUBLIC WORKS AND INFRASTRUCTURE DEVELOPMENT DEPARTMENT, IN NO WAY REMOVES ANY RESPONSIBILITY WHATSOEVER FROM THE CONSULTANT.
 9. THE CONSULTANT REMAINS RESPONSIBLE TO ENSURE THAT ALL THE GUIDELINES, STANDARD DRAWINGS, STANDARDS AND SPECIFICATIONS OF THE PUBLIC WORKS AND INFRASTRUCTURE DEVELOPMENT DEPARTMENT HAVE BEEN MET AND ARE COMPLIED WITH.
 10. FINAL POSITION OF SERVICES TO BE DETERMINED ON SITE.

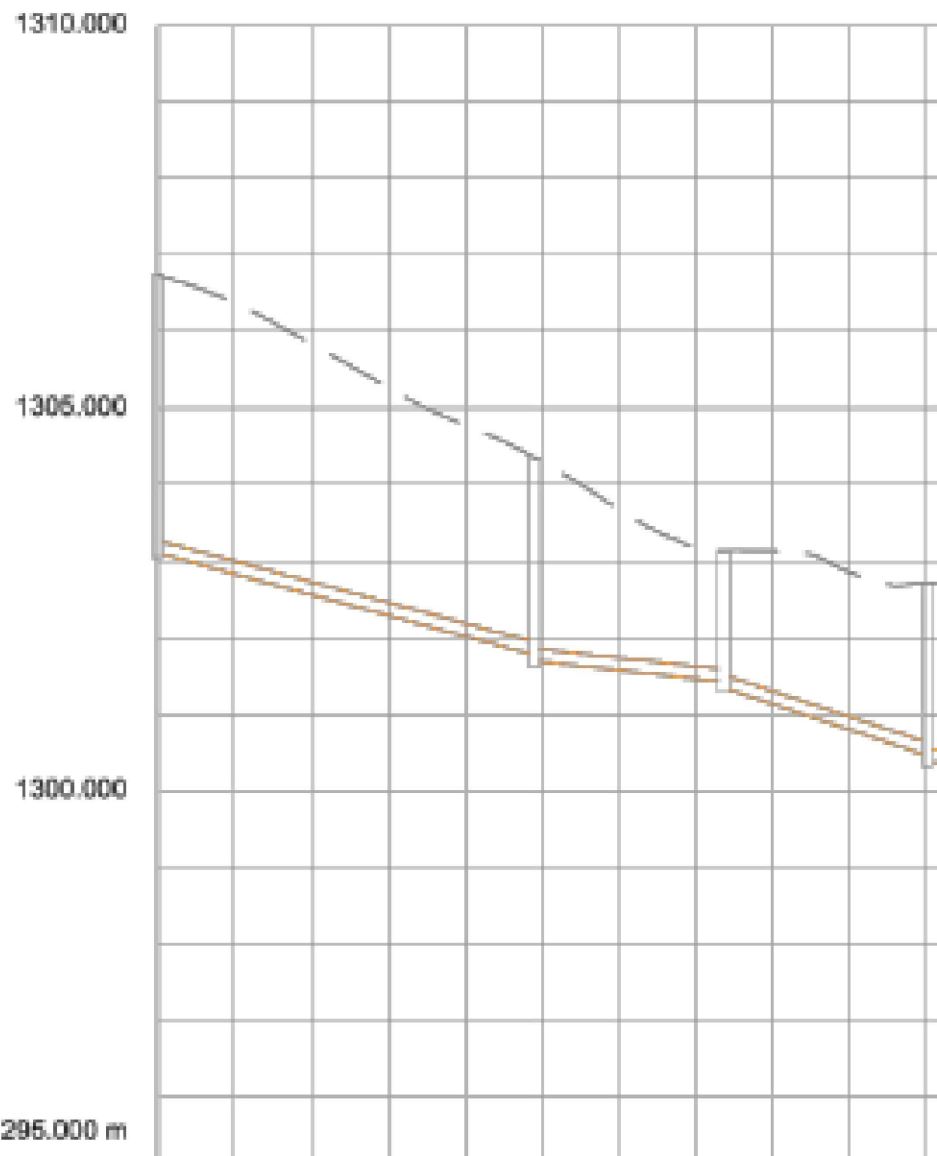
- LEGEND**
- SANITATION**
- MANHOLE
 - CE / LH
 - NEW CCTV INSPECTION
 - EXIST. LINE INSPECTED BY CCTV
 - NEW SEWER LINE
 - REVISED NEW SEWER LINE
 - EXISTING SEWER LINE
 - HOUSE CONNECTION

N.B: ALL NEW SEWER PIPELINES ARE PVC-U PIPES

COORDINATE LIST

NAME	Y	X
SM31	87734.4497	2846584.8461
SM32	87729.4719	2846536.0995
SM33	87726.9639	2846511.5393
SM34	87747.6108	2846494.9274
SM35	87761.7536	2846483.6480
SM8	87894.5100	2846469.9919

1. THE X AND Y CO-ORDINATES OF THE INFORMATION INDICATED ON THIS DRAWING ARE BASED ON THE WORLD GEODETIC SYSTEM 1984 ELLIPSOID (WGS84)
2. ALL Z CO-ORDINATES SHOWN ON THE DRAWING ARE BASED ON THE LOCAL ORTHOMETRIC HEIGHT SYSTEM AND ON THE DATUM PEG WITH AN ELEVATION AS INDICATED IN WRITING TO THE CONTRACTOR AT THE COMMENCEMENT OF THE WORKS



MANHOLE	SM31	SM32	SM33	SM34
CHAINAGE	1303.906	1304.360	1303.136	1302.722
GROUND LEVEL	1303.105	1301.701	1301.427	1300.463
INVERT LEVEL	1303.105	1301.701	1301.347	1300.463
DEPTH	3.639	2.659	1.792	2.338
GRADES	1:37	1:90	1:30	
LENGTH (m)	49.000	24.689	26.500	
PIPE DIAMETER (mm)	160	160	160	
BEDDING CLASS	B	B	B	
DESIGN FLOW (l/s)	3.784	4.094	4.116	
Q70 CAPACITY (l/s)	20.96	13.44	23.28	
DESIGN VELOCITY (m/s)	1.021	0.759	1.127	
V70 VELOCITY (m/s)	1.59	1.02	1.76	



CITY OF TSHWANE
SERVICES INFRASTRUCTURE
DEPARTMENT
WATER AND SANITATION
DIVISION

AMENDMENTS				
NR	DATE	APPROVED	DESCRIPTION	PAR
1	01-12-2025	Z.D RANTA	CONSTRUCTION DRAWINGS	

WATER AND SANITATION			
FOR INTERNAL APPROVAL - PROJECT/WORKS APPROVAL			
DIRECTOR: WATER AND SANITATION - PLANNING			
NAME	Prof. Reg. No.	SIGNATURE	DATE
REGIONAL DIRECTOR: (1,2,3,4,5,6 or 7)			
NAME	Prof. Reg. No.	SIGNATURE	DATE
DIRECTOR: SYSTEM DEVELOPMENT			
NAME	Prof. Reg. No.	SIGNATURE	DATE
DIRECTOR: BULK WATER			
NAME	Prof. Reg. No.	SIGNATURE	DATE
DIRECTOR: INFRASTRUCTURE PROVISION			
NAME	Prof. Reg. No.	SIGNATURE	DATE
DIRECTOR: WASTE WATER TREATMENT			
NAME	Prof. Reg. No.	SIGNATURE	DATE

CONSULTANT DETAIL

DPT
CIVIL & STRUCTURAL JV

I, _____ Prof Reg Nr _____
HEREBY CERTIFY THAT THE SERVICES WILL HAVE BEEN INSTALLED
ACCORDING TO NOTE 9 OF THE ABOVE NOTES AND TO THE DRAWING

SIGNATURE _____ DATE _____

CONSULTANT DRAWING NUMBER:
2017/SM/10/01-SRL-011

DESIGNED
NAME: Z.D RANTA Dr Eng. Prof Reg No: 201170066
SIGNATURE: _____ DATE: _____

DRAWN
NAME: K. MOLEMA Prof Reg No: _____
SIGNATURE: _____ DATE: _____

CHECKED
NAME: Z.D RANTA Dr Eng. Prof Reg No: 201170066
SIGNATURE: _____ DATE: _____

INFORMATION OFFICE CHECKED
NAME: _____ Dr Eng. Prof Reg No: _____
SIGNATURE: _____ DATE: _____

DESIGN OFFICE APPROVAL
NAME: Z.D RANTA Dr Eng. Prof Reg No: 201170066
SIGNATURE: _____ DATE: _____

CONTRACT No: _____

PROJECT No: _____

SHEET No. 2543IES-134

PAPER SIZE: A1

SCALE: AS SHOWN

DATE: 2025-06-10

PROJECT STATUS
RECEIVED SIGN WHEN APPLICABLE

☐ CONCEPT DRAWING
☒ TENDER DRAWING
☐ APPROVED CONSTRUCTION DRAWING
☐ AS BUILT DRAWING

PROJECT ENGINEER OF COT:
NAME: _____ Dr Eng. Prof Reg No: _____
SIGNATURE: _____ DATE: _____

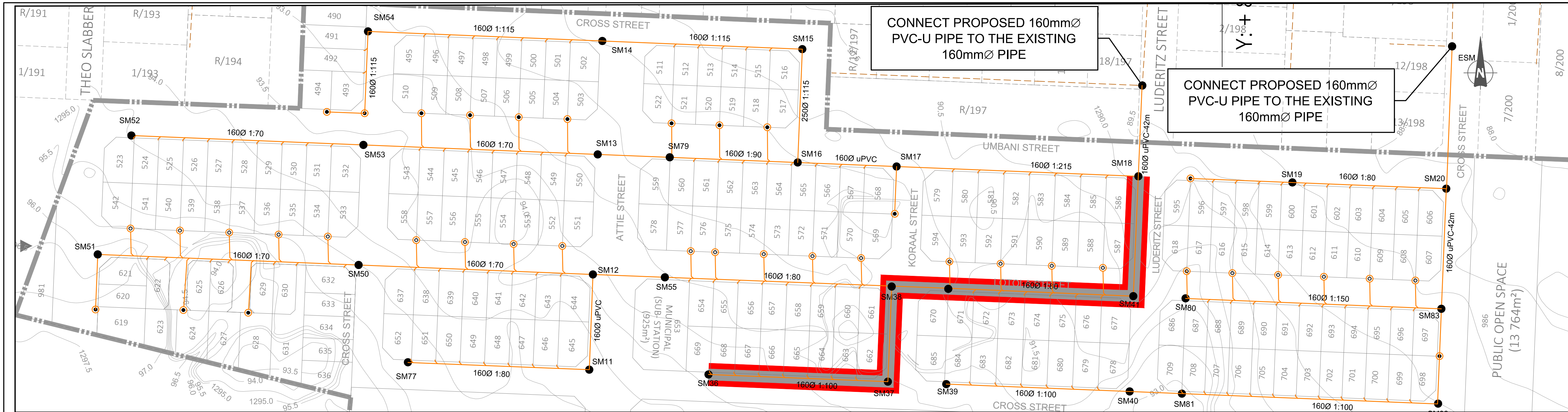
INSPECTOR OF WORKS of COT:
NAME: _____ Dr Eng. Prof Reg No: _____
SIGNATURE: _____ DATE: _____

LOCATION OF PROJECT: BOOYSENS

DESCRIPTION OF PROJECT: BOOYSENS EXT 4 SEWER RETICULATION LONGITUDINAL SECTION 2B

WBS No.: _____

COT DRAWING NUMBER: _____



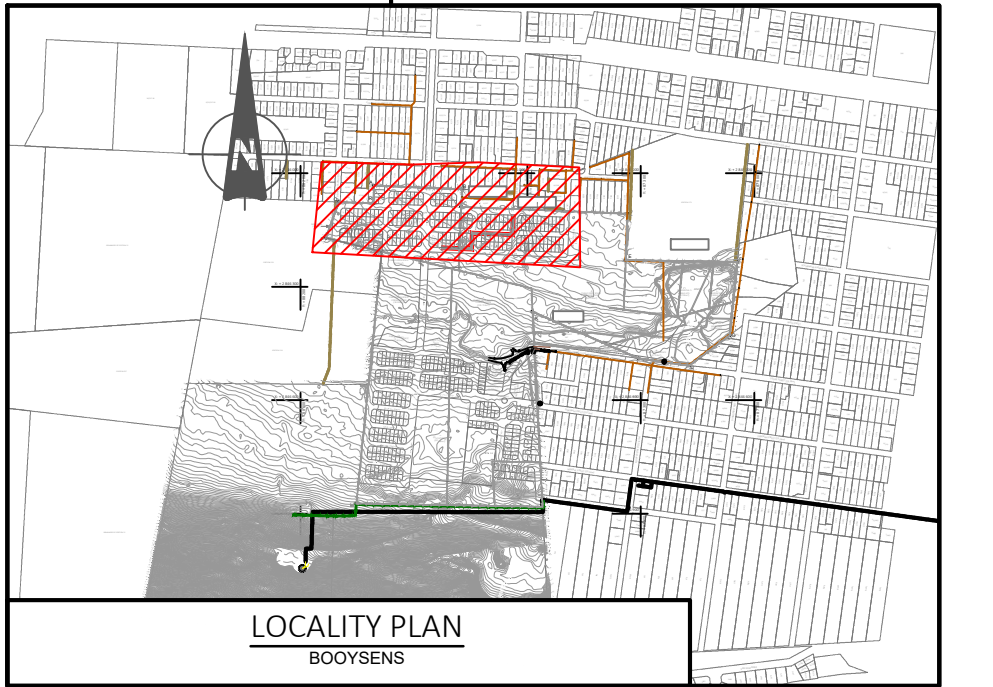
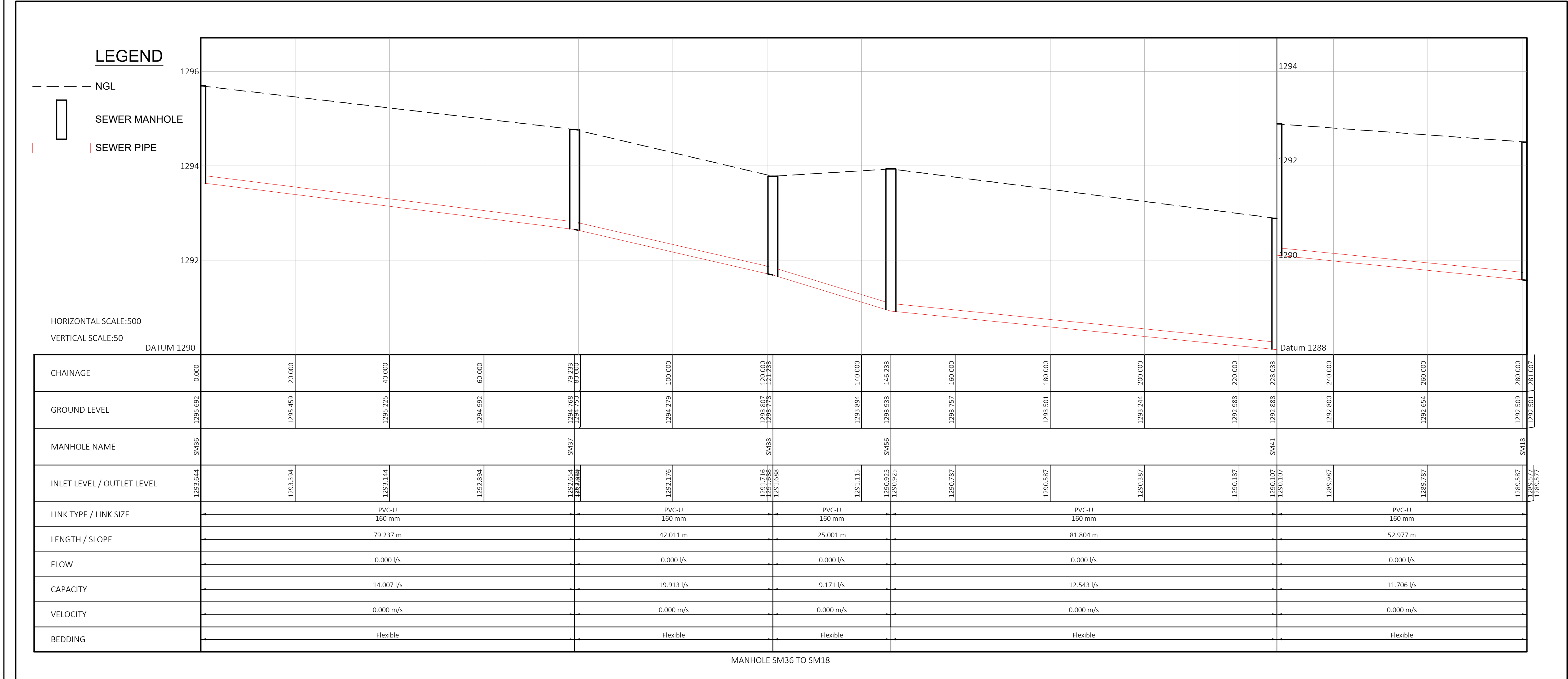
NOTES AND SPECIFICATIONS

- GENERAL
1. ALL MATERIAL AND WORKMANSHIP MUST COMPLY WITH THE REQUIREMENTS OF THE LATEST RELEVANT STANDARDS AND SPECIFICATIONS.
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 10. FINAL POSITION OF SERVICES TO BE DETERMINED ON SITE.

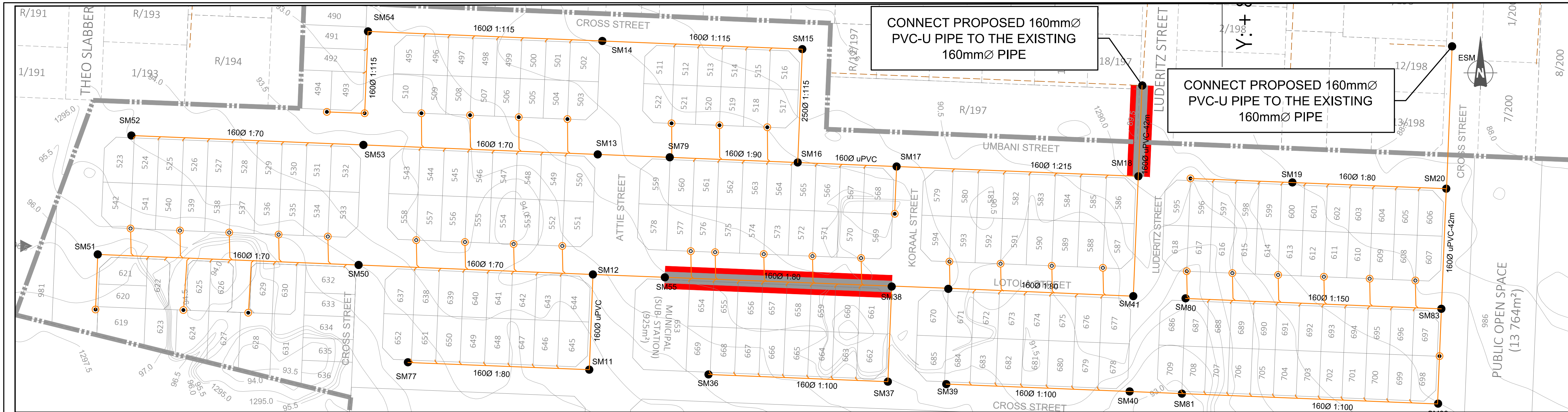
LEGEND
SANITATION

- MANHOLE
- CE / LH
- NEW CCTV INSPECTION
- EXIST. LINE INSPECTED BY CCTV
- NEW SEWER LINE
- REVISED NEW SEWER LINE
- EXISTING SEWER LINE
- HOUSE CONNECTION

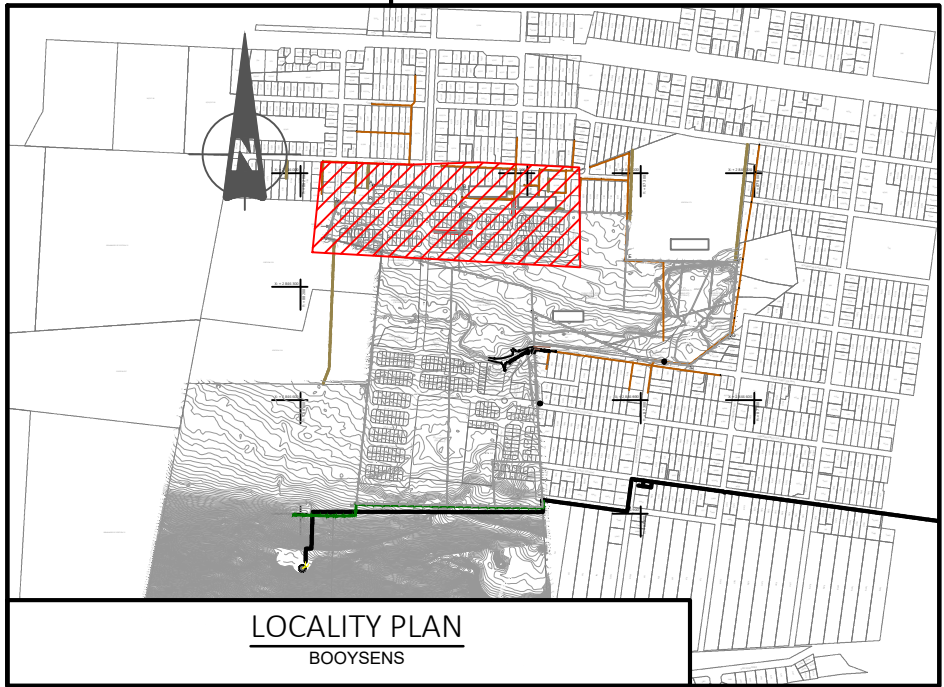
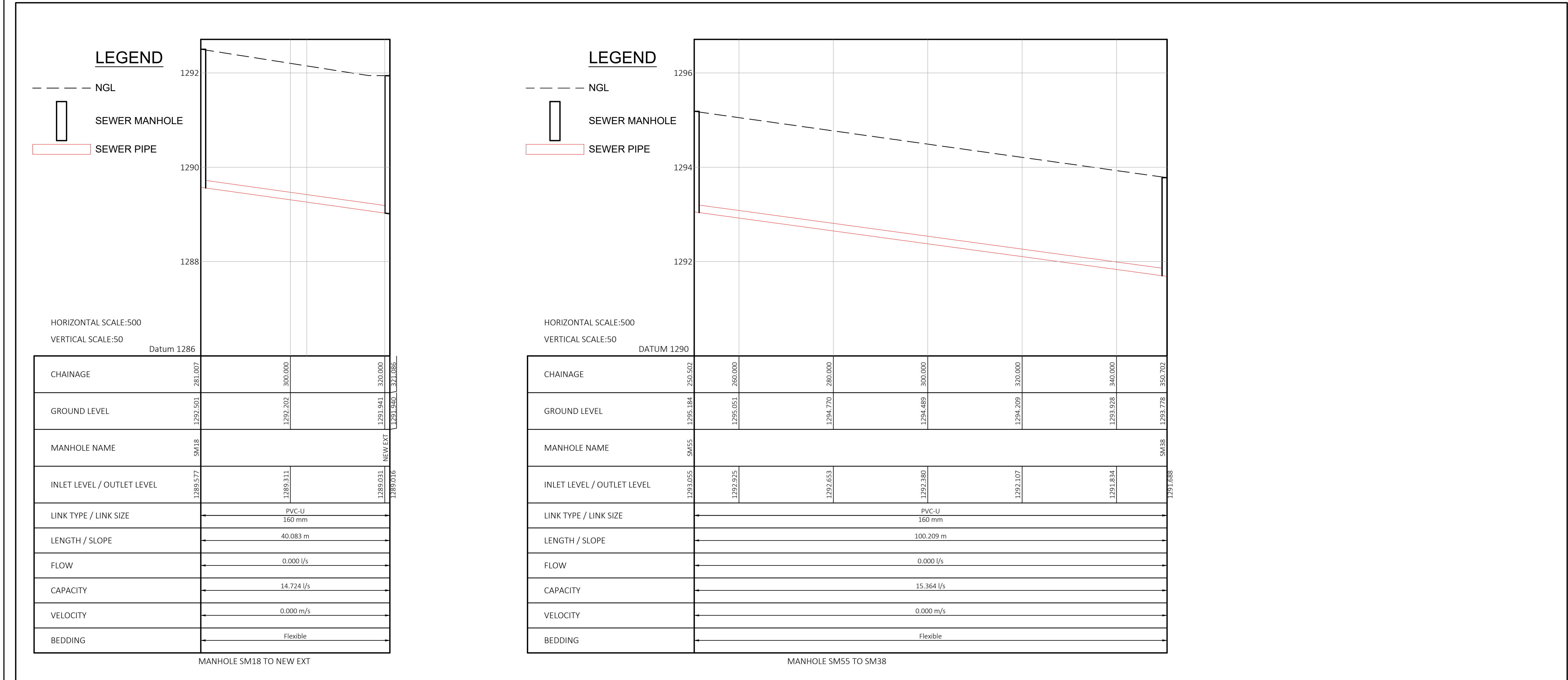
N.B: ALL NEW SEWER PIPELINES ARE PVC-U PIPES



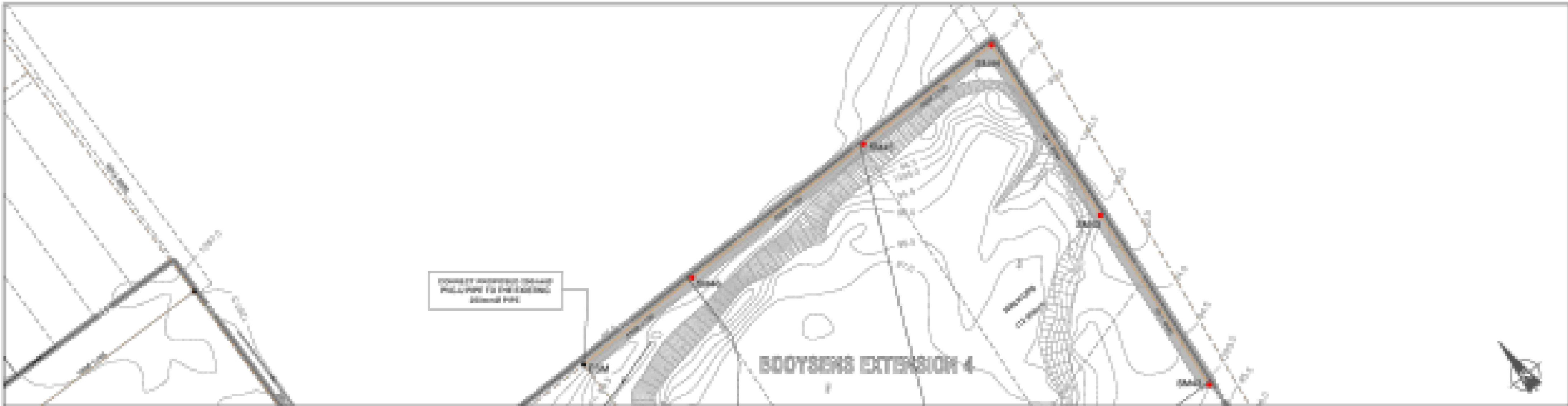
 CITY OF TSHWANE SERVICES INFRASTRUCTURE DEPARTMENT WATER AND SANITATION DIVISION	AMENDMENTS				WATER AND SANITATION FOR INTERNAL APPROVAL - NOT FOR SUBMISSION				CONSULTANT DETAIL				DESIGNED NAME: <u>Z.D RANTA</u> Dr Eng. Prof Reg No: <u>201170066</u> SIGNATURE: _____ DATE: _____				CONTRACT No: _____ PROJECT No: _____ SHEET No: <u>2543IES-136</u> PAPER SIZE: <u>A1</u> SCALE: <u>AS SHOWN</u> DATE: <u>2025-06-10</u>				PROJECT STATUS RELEVANT SIGN WHEN APPLICABLE ☐ CONCEPT DRAWING ☒ TENDER DRAWING ☐ APPROVED CONSTRUCTION DRAWING ☐ AS BUILT DRAWING PROJECT ENGINEER OF COT: _____ INSPECTOR OF WORKS OF COT: _____				LOCATION OF PROJECT: BOOYSENS			
	NR 1 DATE 01-12-2025 APPROVED Z.D RANTA DESCRIPTION CONSTRUCTION DRAWINGS PAR				DIRECTOR: WATER AND SANITATION - PLANNING NAME _____ Prof. Reg. No. _____ SIGNATURE _____ DATE _____ REGIONAL DIRECTOR: (1,2,3,4,5,6 or 7) NAME _____ Prof. Reg. No. _____ SIGNATURE _____ DATE _____ DIRECTOR: SYSTEM DEVELOPMENT NAME _____ Prof. Reg. No. _____ SIGNATURE _____ DATE _____ DIRECTOR: BULK WATER NAME _____ Prof. Reg. No. _____ SIGNATURE _____ DATE _____ DIRECTOR: INFRASTRUCTURE PROVISION NAME _____ Prof. Reg. No. _____ SIGNATURE _____ DATE _____ DIRECTOR: WASTE WATER TREATMENT NAME _____ Prof. Reg. No. _____ SIGNATURE _____ DATE _____				DPT CIVIL AND STRUCTURAL IV POSTNET SUITE 453 SINOVILLE CONER PRIVATE BAG X504 SINOVILLE 0129 TEL: 012 567 7381 FAX: 012 567 1996 E-MAIL: info@ditshimega.co.za I, _____ Prof Reg Nr _____ HEREBY CERTIFY THAT THE SERVICES WILL HAVE BEEN INSTALLED ACCORDING TO NOTE 9 OF THE ABOVE NOTES AND TO THE DRAWING SIGNATURE _____ DATE _____ CONSULTANT DRAWING NUMBER: 2017/SM/10/01-SRL-011				NAME: <u>Z.D RANTA</u> Dr Eng. Prof Reg No: <u>201170066</u> SIGNATURE: _____ DATE: _____				CONTRACT No: _____ PROJECT No: _____ SHEET No: <u>2543IES-136</u> PAPER SIZE: <u>A1</u> SCALE: <u>AS SHOWN</u> DATE: <u>2025-06-10</u>				PROJECT ENGINEER OF COT: _____ INSPECTOR OF WORKS OF COT: _____				DESCRIPTION OF PROJECT: BOOYSENS EXT 4 SEWER RETICULATION LONGITUDINAL SECTION 3B			
																				WBS No.: _____				COT DRAWING NUMBER: _____				



- NOTES AND SPECIFICATIONS**
- GENERAL**
1. ALL MATERIAL AND WORKMANSHIP MUST COMPLY WITH THE REQUIREMENTS OF THE LATEST RELEVANT STANDARDS REQUIREMENTS.
 2. ALL DIMENSIONS ARE IN MILLIMETRES. (UNLESS OTHERWISE SPECIFIED).
 3. DO NOT SCALE FROM THESE DRAWINGS.
 4. ALL DIMENSIONS MUST BE CHECKED AND APPROVED ON SITE.
 5. ALL CONSTRUCTION TO BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR MUNICIPAL CIVIL ENGINEERING WORKS, THIRD EDITION 2005 AND THE STANDARD COT DETAIL DRAWINGS.
 6. THESE DRAWINGS MUST BE READ IN CONJUNCTION WITH THE STANDARD DRAWINGS (IF APPLICABLE).
 7. THIS DRAWING MUST BE READ IN CONJUNCTION WITH THE STANDARD SPECIFICATIONS FOR MUNICIPAL CIVIL ENGINEERING WORKS, SERIES 4.
 8. THE SIGNATURE OR INITIALS ON THIS DRAWING, OF ANY DIRECTOR OF THE PUBLIC WORKS AND INFRASTRUCTURE DEVELOPMENT DEPARTMENT, IN NO WAY REMOVES ANY RESPONSIBILITY WHATSOEVER FROM THE CONSULTANT.
 9. THE CONSULTANT REMAINS RESPONSIBLE TO ENSURE THAT ALL THE GUIDELINES, STANDARD DRAWINGS, STANDARDS AND SPECIFICATIONS OF THE PUBLIC WORKS AND INFRASTRUCTURE DEVELOPMENT DEPARTMENT HAVE BEEN MET AND ARE COMPLIED WITH.
 10. FINAL POSITION OF SERVICES TO BE DETERMINED ON SITE.
- LEGEND**
- SANITATION**
- MANHOLE
 - CE / LH
 - NEW CCTV INSPECTION
 - EXIST. LINE INSPECTED BY CCTV
 - NEW SEWER LINE
 - REVISED NEW SEWER LINE
 - EXISTING SEWER LINE
 - HOUSE CONNECTION
- N.B: ALL NEW SEWER PIPELINES ARE PVC-U PIPES**



 CITY OF TSHWANE SERVICES INFRASTRUCTURE DEPARTMENT WATER AND SANITATION DIVISION	AMENDMENTS			WATER AND SANITATION (FOR INTERNAL APPROVAL - NOT FOR SUBMITTAL)			CONSULTANT DETAIL		DESIGNED NAME: <u>Z.D RANTA</u> Dr Eng. Prof Reg No: <u>2011700066</u> SIGNATURE: _____ DATE: _____		CONTRACT No: _____ PROJECT No: _____		PROJECT STATUS (RELEVANT SIGN WHEN APPLICABLE) ☐ CONCEPT DRAWING ☒ TENDER DRAWING ☐ APPROVED CONSTRUCTION DRAWING ☐ AS BUILT DRAWING		LOCATION OF PROJECT: BOOYSENS	
	NR	DATE	APPROVED	DESCRIPTION	PAR	DIRECTOR: WATER AND SANITATION - PLANNING NAME _____ Prof. Reg. No. _____ SIGNATURE _____ DATE _____ REGIONAL DIRECTOR: (1,2,3,4,5,6 or 7) NAME _____ Prof. Reg. No. _____ SIGNATURE _____ DATE _____ DIRECTOR: SYSTEM DEVELOPMENT NAME _____ Prof. Reg. No. _____ SIGNATURE _____ DATE _____ DIRECTOR: BULK WATER NAME _____ Prof. Reg. No. _____ SIGNATURE _____ DATE _____ DIRECTOR: INFRASTRUCTURE PROVISION NAME _____ Prof. Reg. No. _____ SIGNATURE _____ DATE _____ DIRECTOR: WASTE WATER TREATMENT NAME _____ Prof. Reg. No. _____ SIGNATURE _____ DATE _____	DPT CIVIL AND STRUCTURAL IV POSTNET SUITE 453 SINOVILLE CONER PRIVATE BAG X504 SINOVILLE 0129 TEL: 012 567 7381 FAX: 012 567 1996 E-MAIL: info@ditshimega.co.za Prof Reg Nr HEREBY CERTIFY THAT THE SERVICES WILL HAVE BEEN INSTALLED ACCORDING TO NOTE 9 OF THE ABOVE NOTES AND TO THE DRAWING SIGNATURE _____ DATE _____ CONSULTANT DRAWING NUMBER: 2017/SM/10/01-SRL-011	NAME: <u>K. MOLEMA</u> Prof Reg No: _____ SIGNATURE: _____ DATE: _____ NAME: <u>Z.D RANTA</u> Dr Eng. Prof Reg No: <u>2011700066</u> SIGNATURE: _____ DATE: _____ INFORMATION OFFICE CHECKED NAME: _____ Dr Eng. Prof Reg No: _____ SIGNATURE: _____ DATE: _____ DESIGN OFFICE APPROVAL NAME: <u>Z.D RANTA</u> Dr Eng. Prof Reg No: <u>2011700066</u> SIGNATURE: _____ DATE: _____	SHEET No. 2543IES-137 PAPER SIZE: A1 SCALE: AS SHOWN DATE: 2025-06-10	PROJECT ENGINEER OF COT: NAME: _____ Dr Eng. Prof Reg No: _____ SIGNATURE: _____ DATE: _____ INSPECTOR OF WORKS OF COT: NAME: _____ Dr Eng. Prof Reg No: _____ SIGNATURE: _____ DATE: _____	DESCRIPTION OF PROJECT: BOOYSENS EXT 4 SEWER RETICULATION LONGITUDINAL SECTION 4 & 5	WBS No.: _____ COT DRAWING NUMBER: _____				

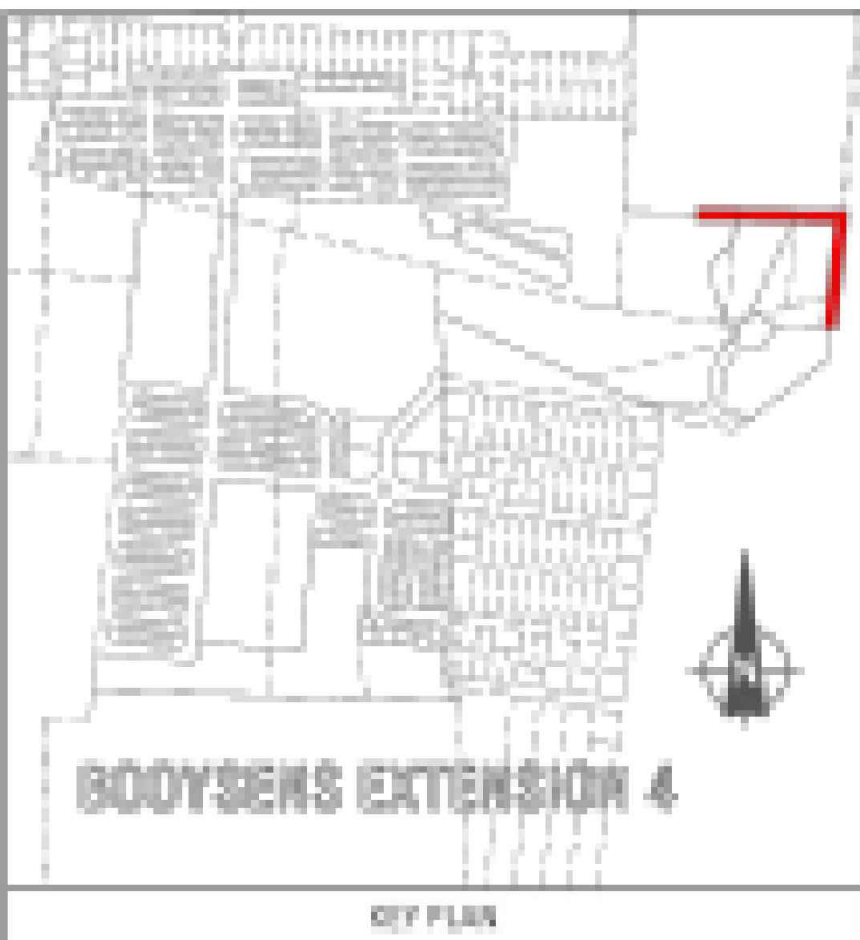


COORDINATE LIST

NAME	Y	X
BM42	1000.000	2000.000
BM43	1000.000	2000.000
BM44	1000.000	2000.000
BM45	1000.000	2000.000
BM46	1000.000	2000.000
BM47	1000.000	2000.000
BM48	1000.000	2000.000
BM49	1000.000	2000.000
BM50	1000.000	2000.000

1. THE X AND Y COORDINATES OF THE INFORMATION INSERTED ON THIS DRAWING ARE BASED ON THE WORLD GEODETIC SYSTEM 1984 (WGS84) (GDA94).
2. ALL Z COORDINATES SHOWN ON THE DRAWING ARE BASED ON THE LOCAL ORTHOMETRIC HEIGHT SYSTEM AND ON THE DATUM 1984 WITH AN ELEVATION AS INDICATED IN THE DRAWING.
3. THE FINAL POSITION OF THE WORKS

MANHOLE	BM42	BM43	BM44	BM45	BM46	BM47
CHAINAGE	0+00	0+25	0+50	0+75	1+00	1+25
GROUND LEVEL	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000
INVERT LEVEL	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000
DEPTH	0.00	0.00	0.00	0.00	0.00	0.00
GRADES	1:40	1:40	1:100	1:100	1:100	1:100
LENGTH (m)	75.000	75.000	80.000	80.000	80.000	80.000
PIPE DIAMETER (mm)	150	150	200	200	200	200
BEDDING CLASS	B	B	B	B	B	B
DESIGN FLOW (l/s)	4.000	7.000	8.000	10.000	14.000	14.000
GTS CAPACITY (l/s)	20.00	20.00	30.00	30.00	30.00	30.00
DESIGN VELOCITY (m/s)	1.000	1.000	0.700	0.700	0.800	0.800
V70 VELOCITY (m/s)	1.50	1.50	1.10	1.10	1.00	1.00



NOTES AND SPECIFICATIONS

GENERAL

- ALL MATERIAL AND WORKMANSHIP MUST COMPLY WITH THE REQUIREMENTS OF THE LATEST RELEVANT SABS REQUIREMENTS.
- ALL DIMENSIONS ARE IN MILLIMETRES. (UNLESS OTHERWISE SPECIFIED).
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- FINAL POSITION OF SERVICES TO BE DETERMINED ON SITE.

LEGEND

SANITATION

- MANHOLE
- CE / LH
- NEW CCTV INSPECTION
- EXIST. LINE INSPECTED BY CCTV
- NEW SEWER LINE
- REVISED NEW SEWER LINE
- EXISTING SEWER LINE
- HOUSE CONNECTION

N.B: ALL NEW SEWER PIPELINES ARE PVC-U PIPES



CITY OF TSHWANE
SERVICES INFRASTRUCTURE
DEPARTMENT
WATER AND SANITATION
DIVISION

AMENDMENTS				
NR	DATE	APPROVED	DESCRIPTION	PAR
1	01-12-2025	Z.D. RANTA	CONSTRUCTION DRAWINGS	

WATER AND SANITATION			
FOR INTERNAL APPROVAL - NOT FOR CONSTRUCTION			
DIRECTOR: WATER AND SANITATION - PLANNING			
NAME	Prof. Reg. No.	SIGNATURE	DATE
REGIONAL DIRECTOR: (1, 2, 3, 4, 5, 6 or 7)			
NAME	Prof. Reg. No.	SIGNATURE	DATE
DIRECTOR: SYSTEM DEVELOPMENT			
NAME	Prof. Reg. No.	SIGNATURE	DATE
DIRECTOR: BULK WATER			
NAME	Prof. Reg. No.	SIGNATURE	DATE
DIRECTOR: INFRASTRUCTURE PROVISION			
NAME	Prof. Reg. No.	SIGNATURE	DATE
DIRECTOR: WASTE WATER TREATMENT			
NAME	Prof. Reg. No.	SIGNATURE	DATE

CONSULTANT DETAIL	
DPT CIVIL AND STRUCTURAL JV POSTNET SUITE 453 SINOVILLE CONER PRIVATE BAG X504 SINOVILLE 0129 TEL: 012 567 7381 FAX: 012 567 1996 E-MAIL: info@ditshimega.co.za	
I, _____ Prof. Reg. Nr. _____ HEREBY CERTIFY THAT THE SERVICES WILL HAVE BEEN INSTALLED ACCORDING TO NOTE 9 OF THE ABOVE NOTES AND TO THE DRAWING	
SIGNATURE	DATE
CONSULTANT DRAWING NUMBER: 2017/SM/10/01-SRL-011	

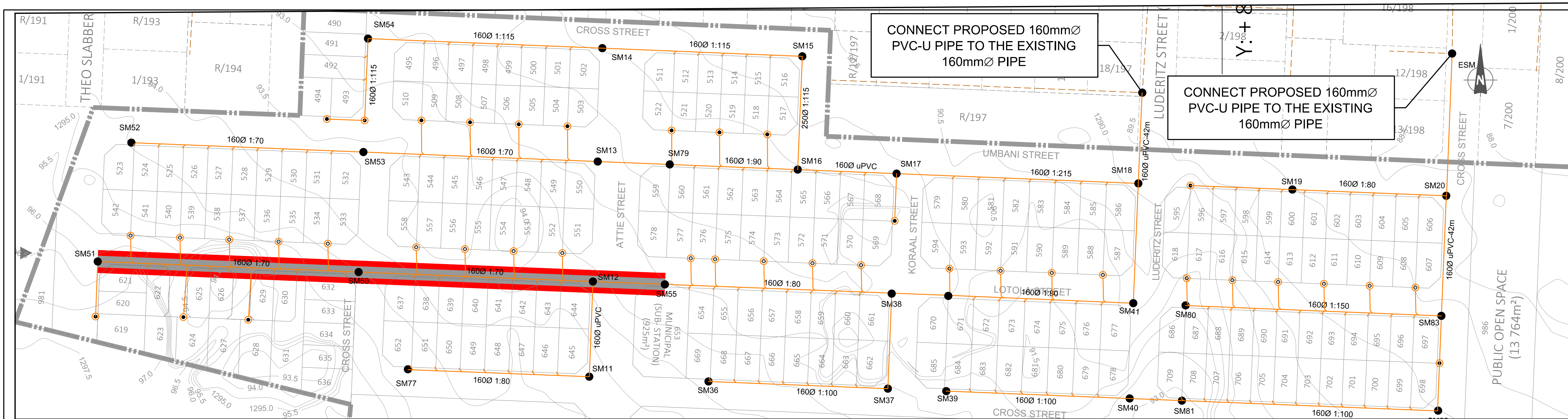
DESIGNED	
NAME: Z.D. RANTA	Br Eng. Prof. Reg. No.: 201170066
SIGNATURE: _____	DATE: _____
DRAWN	
NAME: K. MOLEMA	Prof. Reg. No.: _____
SIGNATURE: _____	DATE: _____
CHECKED	
NAME: Z.D. RANTA	Br Eng. Prof. Reg. No.: 201170066
SIGNATURE: _____	DATE: _____
INFORMATION OFFICE CHECKED	
NAME: _____	Br Eng. Prof. Reg. No.: _____
SIGNATURE: _____	DATE: _____
DESIGN OFFICE APPROVAL	
NAME: Z.D. RANTA	Br Eng. Prof. Reg. No.: 201170066
SIGNATURE: _____	DATE: _____

CONTRACT	
No.:	
PROJECT No.	
SHEET No.	
2543IES-138	
PAPER SIZE:	
A1	
SCALE:	
AS SHOWN	
DATE:	
2025-06-10	

PROJECT STATUS			
THE LATEST SIGN WHEN APPLICABLE			
☐ CONCEPT DRAWING	☒ TENDER DRAWING	☐ APPROVED CONSTRUCTION DRAWING	☐ AS BUILT DRAWING
PROJECT ENGINEER OF COT:			
NAME: _____	Br Eng.	Prof. Reg. No.: _____	
SIGNATURE: _____		DATE: _____	
INSPECTOR OF WORKS OF COT:			
NAME: _____	Br Eng.	Prof. Reg. No.: _____	
SIGNATURE: _____		DATE: _____	

LOCATION OF PROJECT:	
BOOYSENS	
DESCRIPTION OF PROJECT:	
BOOYSENS EXT 4 SEWER RETICULATION LONGITUDINAL SECTION 6	
WBS No.:	

COT DRAWING NUMBER:	



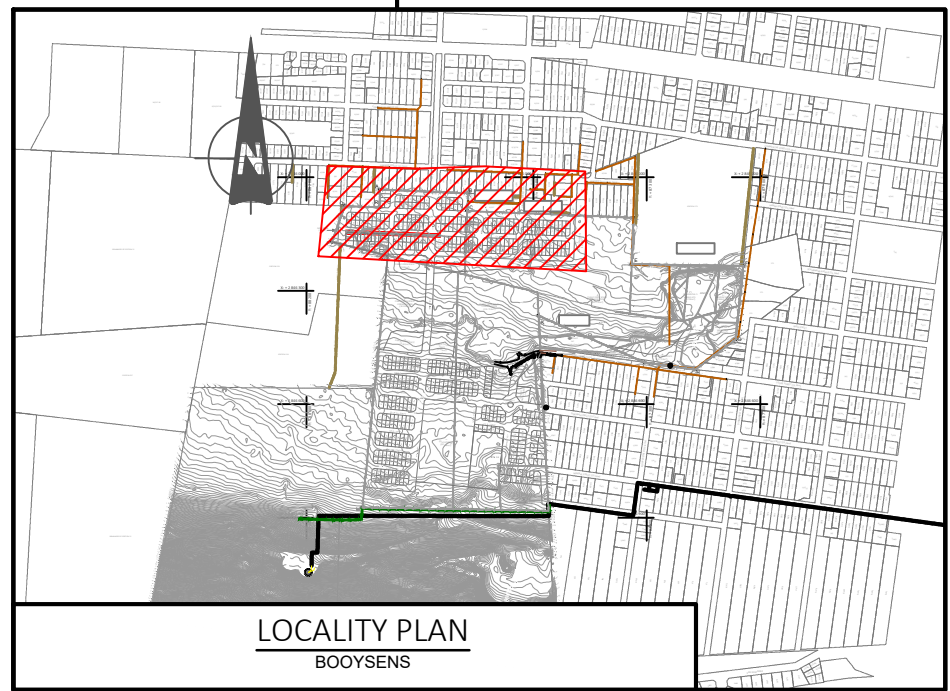
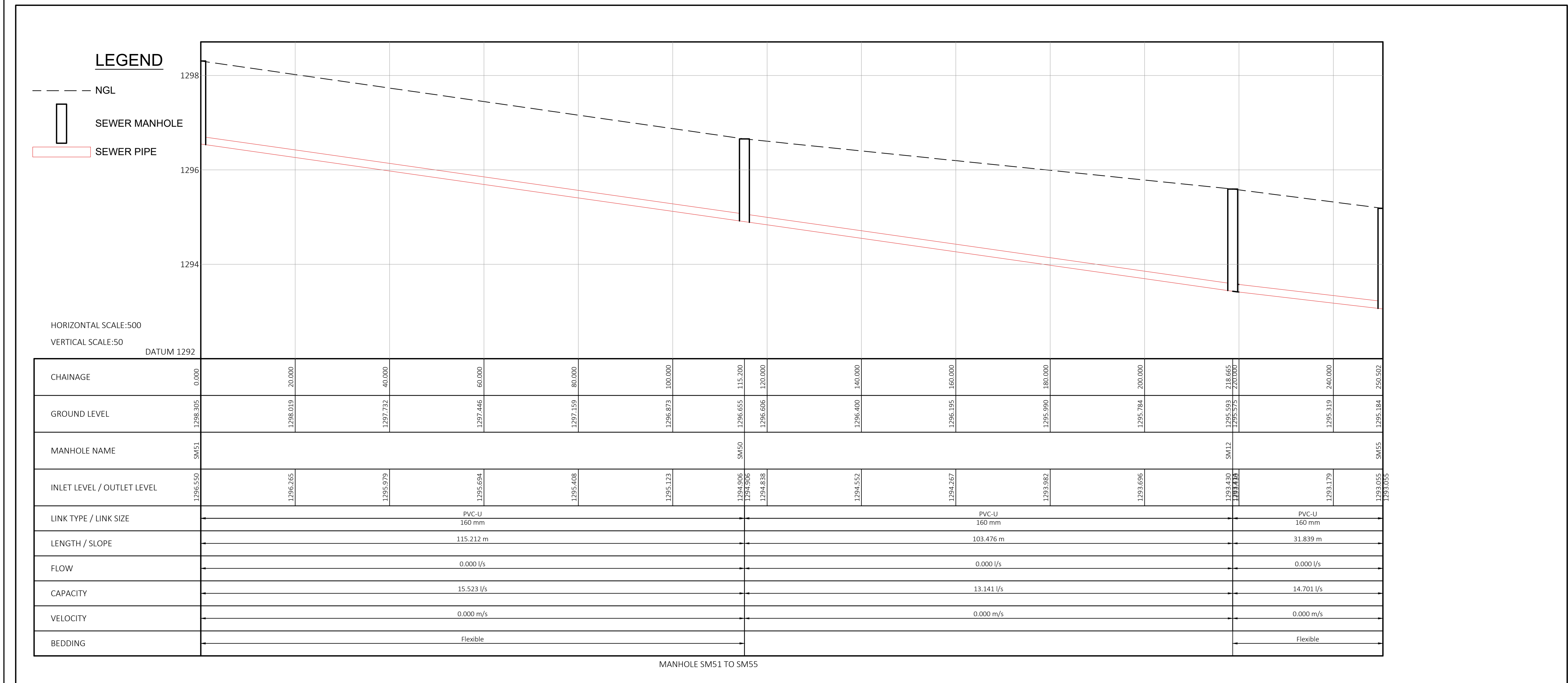
NOTES AND SPECIFICATIONS

- GENERAL
1. ALL MATERIAL AND WORKMANSHIP MUST COMPLY WITH THE REQUIREMENTS OF THE LATEST RELEVANT SA SANS RELEVEMENTS.
 2. ALL DIMENSIONS ARE IN MILLIMETRES. (UNLESS OTHERWISE SPECIFIED).
 3. DO NOT SCALE FROM THESE DRAWINGS.
 4. ALL DIMENSIONS MUST BE CHECKED AND APPROVED ON SITE.
 5. ALL CONSTRUCTION TO BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR MUNICIPAL CIVIL ENGINEERING WORKS, THIRD EDITION 2005 AND THE STANDARD COT DETAIL DRAWINGS.
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 9. THE CONSULTANT REMAINS RESPONSIBLE TO ENSURE THAT ALL THE GUIDELINES, STANDARD DRAWINGS, STANDARDS AND SPECIFICATIONS OF THE PUBLIC WORKS AND INFRASTRUCTURE DEVELOPMENT DEPARTMENT HAVE BEEN MET AND ARE COMPLIED WITH.
 10. FINAL POSITION OF SERVICES TO BE DETERMINED ON SITE.

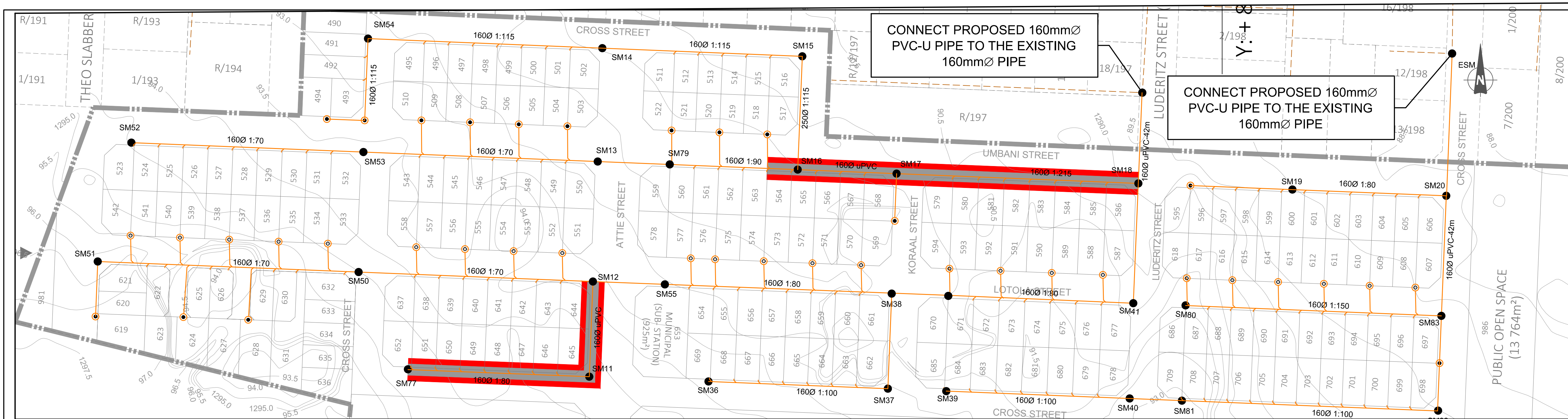
LEGEND
SANITATION

- MANHOLE
- CE / LH
- NEW CCTV INSPECTION
- EXIST. LINE INSPECTED BY CCTV
- NEW SEWER LINE
- REVISED NEW SEWER LINE
- EXISTING SEWER LINE
- HOUSE CONNECTION

N.B: ALL NEW SEWER PIPELINES ARE PVC-U PIPES



 CITY OF TSHWANE SERVICES INFRASTRUCTURE DEPARTMENT WATER AND SANITATION DIVISION	AMENDMENTS				WATER AND SANITATION				CONSULTANT DETAIL				DESIGNED				CONTRACT				PROJECT STATUS				LOCATION OF PROJECT:				
	NR	DATE	APPROVED	DESCRIPTION	PAR	DIRECTOR: WATER AND SANITATION - PLANNING				DPT CIVIL AND STRUCTURAL IV POSTNET SUITE 453 SINOVILLE CONER PRIVATE BAG X504 SINOVILLE 0129 TEL: 012 567 7381 FAX: 012 567 1996 E-MAIL: info@ditshimega.co.za				NAME: <u>Z.D RANTA</u> Dr Eng. Prof Reg No: <u>201170066</u>				CONTRACT No: _____				PROJECT No: _____				BOOYSENS			
	1	01-12-2025	Z.D RANTA	CONSTRUCTION DRAWINGS		NAME _____ Prof. Reg. No. _____ SIGNATURE _____ DATE _____				NAME: <u>K. MOLEMA</u> Prof Reg No: _____				SIGNATURE: _____ DATE: _____				SHEET No. <u>2543IES-139</u>				PROJECT ENGINEER OF COT: _____				DESCRIPTION OF PROJECT: BOOYSENS EXT 4 SEWER RETICULATION LONGITUDINAL SECTION 7			
						NAME _____ Prof. Reg. No. _____ SIGNATURE _____ DATE _____				NAME: <u>Z.D RANTA</u> Dr Eng. Prof Reg No: <u>201170066</u>				SIGNATURE: _____ DATE: _____				PAPER SIZE: <u>A1</u>				INSPECTOR OF WORKS OF COT: _____				WBS No.: _____			
						NAME _____ Prof. Reg. No. _____ SIGNATURE _____ DATE _____				NAME: _____ Dr Eng. Prof Reg No: _____				SIGNATURE: _____ DATE: _____				SCALE: <u>AS SHOWN</u>				DATE: <u>2025-06-10</u>				COT DRAWING NUMBER: _____			
						NAME _____ Prof. Reg. No. _____ SIGNATURE _____ DATE _____				NAME: <u>Z.D RANTA</u> Dr Eng. Prof Reg No: <u>201170066</u>				SIGNATURE: _____ DATE: _____															

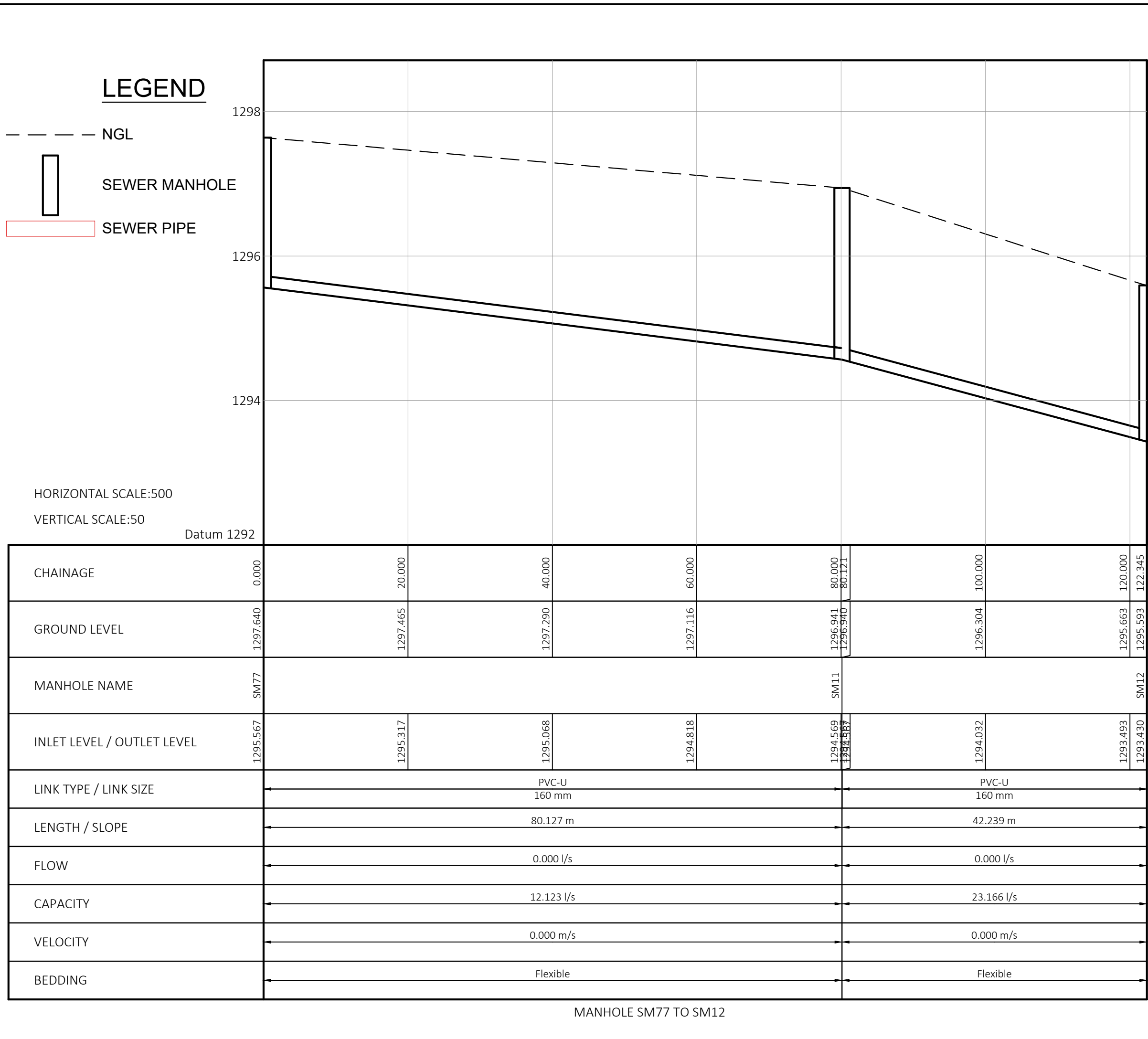
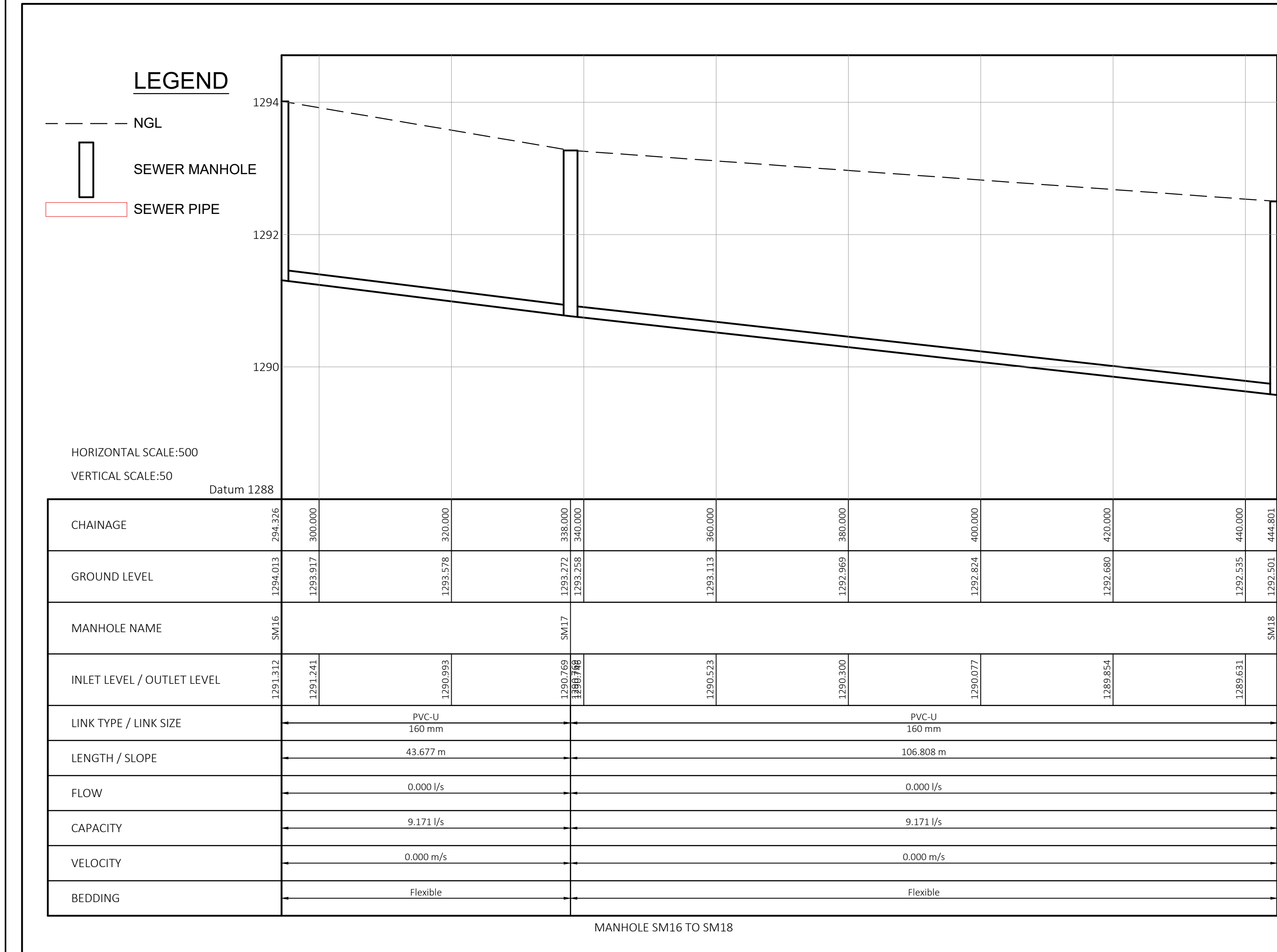


NOTES AND SPECIFICATIONS

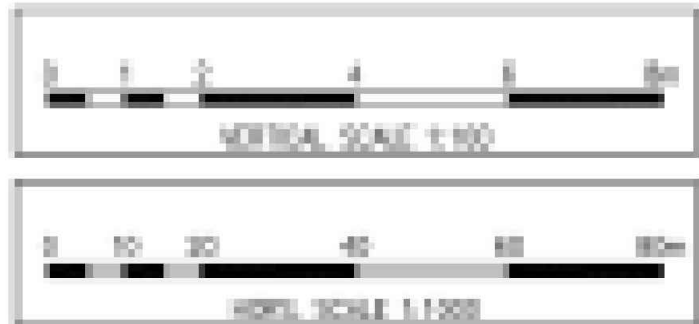
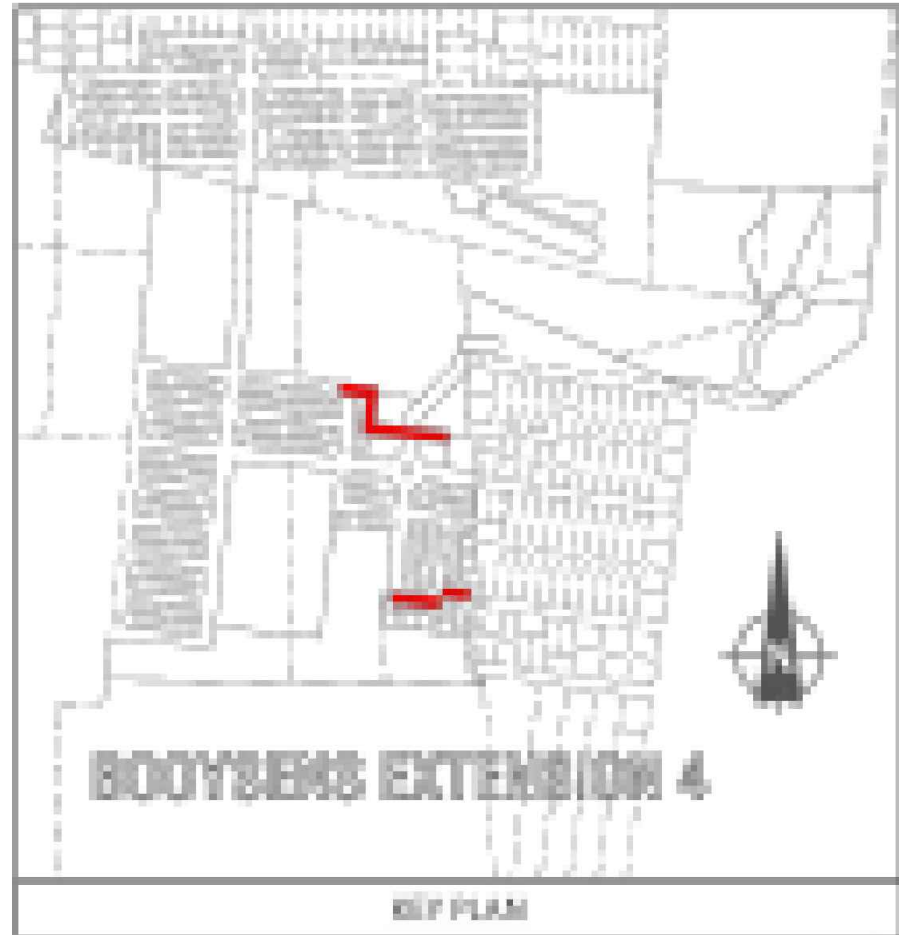
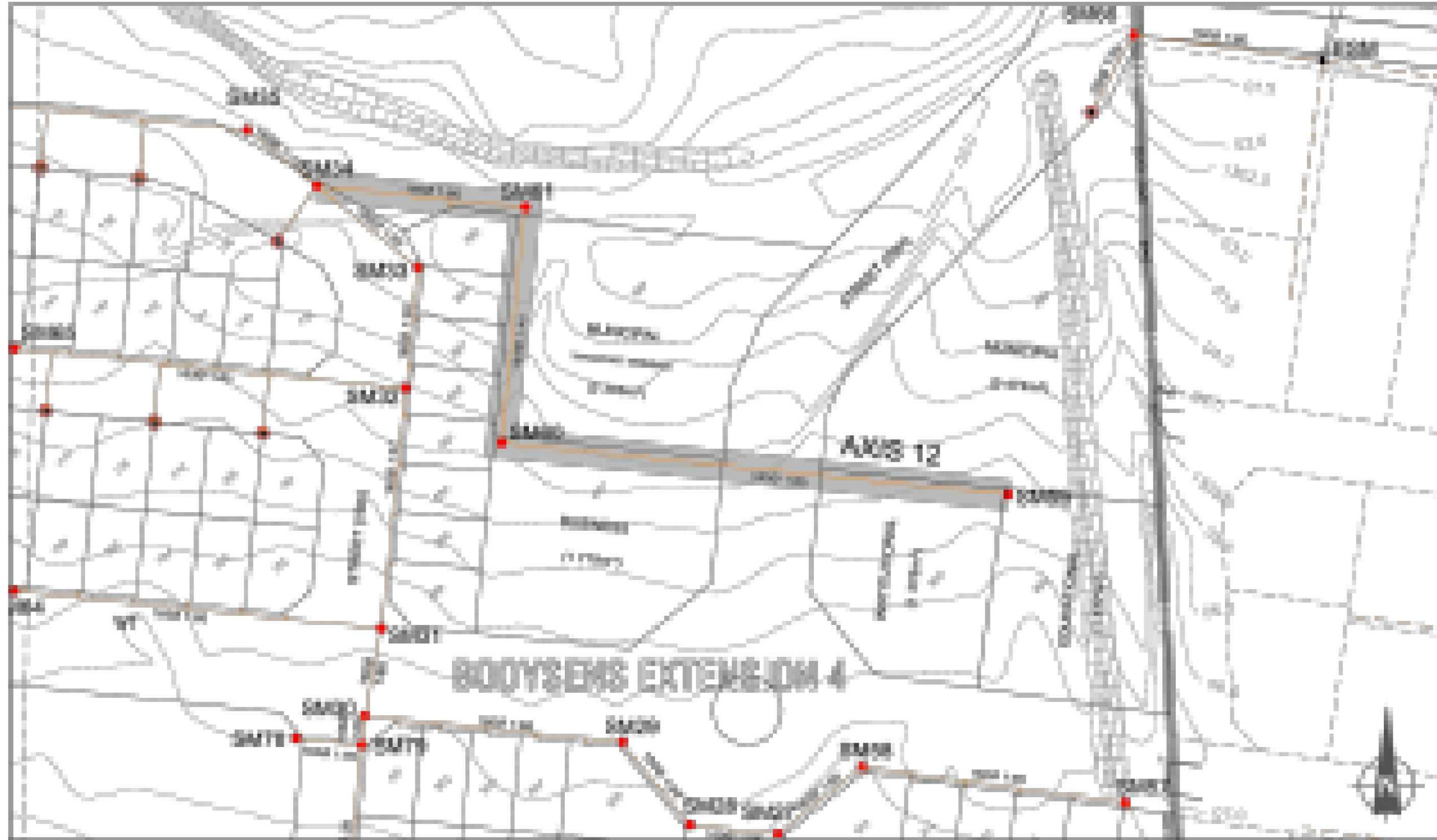
- GENERAL
1. ALL MATERIAL AND WORKMANSHIP MUST COMPLY WITH THE REQUIREMENTS OF THE LATEST RELEVANT SABS REQUIREMENTS.
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 10. FINAL POSITION OF SERVICES TO BE DETERMINED ON SITE.

- LEGEND
SANITATION
- MANHOLE
 - CE / LH
 - NEW CCTV INSPECTION
 - EXIST. LINE INSPECTED BY CCTV
 - NEW SEWER LINE
 - REVISED NEW SEWER LINE
 - EXISTING SEWER LINE
 - HOUSE CONNECTION

N.B: ALL NEW SEWER PIPELINES ARE PVC-U PIPES



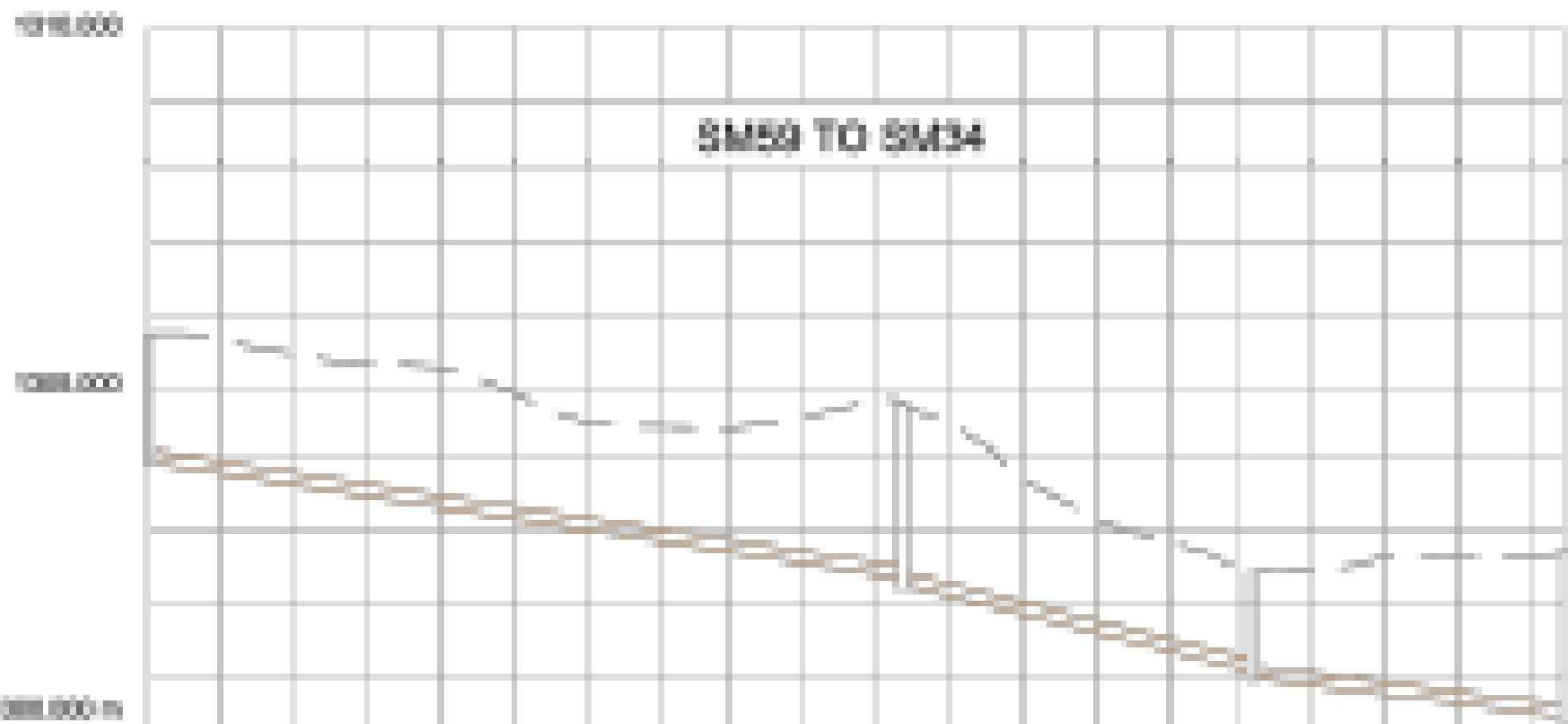
 CITY OF TSHWANE SERVICES INFRASTRUCTURE DEPARTMENT WATER AND SANITATION DIVISION	AMENDMENTS			WATER AND SANITATION FOR INTERNAL APPROVAL - PRELIMINARY USE ONLY			CONSULTANT DETAIL		DESIGNED NAME: <u>Z.D. RANTA</u> Dr Eng. Prof Reg No: <u>201170066</u> SIGNATURE: _____ DATE: _____		CONTRACT No: _____ PROJECT No: _____		PROJECT STATUS RELEVANT SIGNATURES APPLICABLE		LOCATION OF PROJECT: BOOYSENS		
	NR	DATE	APPROVED	DESCRIPTION	PAR	DIRECTOR: WATER AND SANITATION - PLANNING	NAME	SIGNATURE	DATE	DRAWN NAME: <u>K. MOLEMA</u> Prof Reg No: _____ SIGNATURE: _____ DATE: _____		SHEET No. 2543IES-141		PROJECT ENGINEER of COT: NAME: _____ Dr Eng. Prof Reg No: _____ SIGNATURE: _____ DATE: _____		DESCRIPTION OF PROJECT: BOOYSENS EXT 4 SEWER RETICULATION LONGITUDINAL SECTION 9 & 10	
	1	01-12-2025	Z.D. RANTA	CONSTRUCTION DRAWINGS		REGIONAL DIRECTOR: (1,2,3,4,5,6 or 7)	NAME	SIGNATURE	DATE	CHECKED NAME: <u>Z.D. RANTA</u> Dr Eng. Prof Reg No: <u>201170066</u> SIGNATURE: _____ DATE: _____		PAPER SIZE: A1		INSPECTOR OF WORKS of COT: NAME: _____ Dr Eng. Prof Reg No: _____ SIGNATURE: _____ DATE: _____			
					DIRECTOR: SYSTEM DEVELOPMENT	NAME	SIGNATURE	DATE	INFORMATION OFFICE CHECKED NAME: _____ Dr Eng. Prof Reg No: _____ SIGNATURE: _____ DATE: _____		SCALE: AS SHOWN				WBS No.: _____		
					DIRECTOR: BULK WATER	NAME	SIGNATURE	DATE	DESIGN OFFICE APPROVAL NAME: <u>Z.D. RANTA</u> Dr Eng. Prof Reg No: <u>201170066</u> SIGNATURE: _____ DATE: _____		DATE: 2025-06-10				COT DRAWING NUMBER: _____		
					DIRECTOR: INFRASTRUCTURE PROVISION	NAME	SIGNATURE	DATE	CONSULTANT DRAWING NUMBER: 2017/SM/10/01-SRL-011								
					DIRECTOR: WASTE WATER TREATMENT	NAME	SIGNATURE	DATE									



COORDINATE LIST

NAME	Y	X
SM29	47008.8240	264897.0004
SM30	47708.8633	2648947.1108
SM31	47708.8633	2648999.2644
SM32	47707.8138	2648994.0070

1. THE X AND Y CO-ORDINATES OF THE INFORMATION INDICATED ON THIS DRAWING ARE BASED ON THE WORLD-GEODETIC SYSTEM 1984 ELLIPSOID (WGS84)
2. ALL Z CO-ORDINATES SHOWN ON THE DRAWING ARE BASED ON THE LOCAL ORTHOMETRIC HEIGHT SYSTEM AND ON THE DATUM PEG WITH AN ELEVATION AS INDICATED IN WRITING TO THE CONTRACTOR AT THE COMMENCEMENT OF THE WORKS

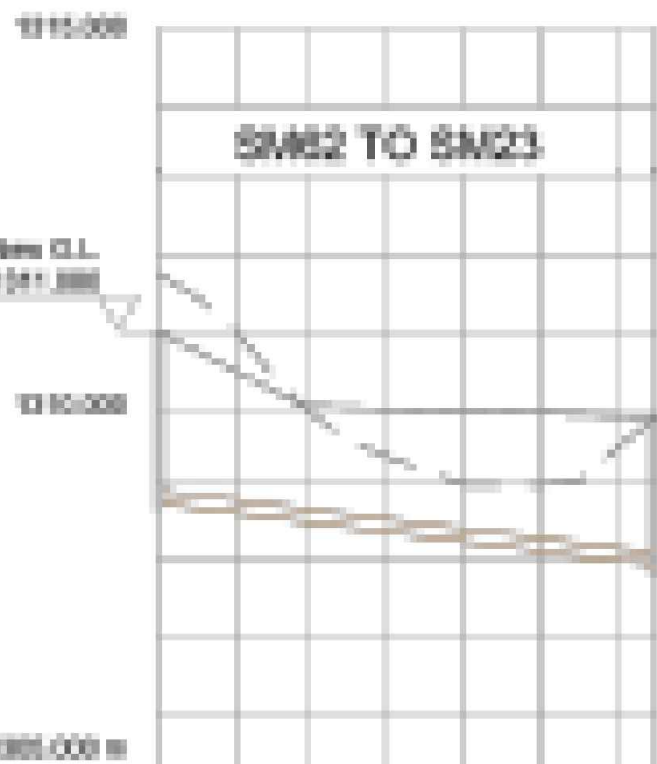


MANHOLE	SM29	SM30	SM31	SM32	SM33	SM34
CHAINAGE		100.000	48.500	42.728		
GROUND LEVEL	1088.000	1088.000	1088.000	1088.000	1088.000	1088.000
INVERT LEVEL	1088.000	1088.000	1088.000	1088.000	1088.000	1088.000
DEPTH	1.000	2.470	1.440	1.440	1.000	2.200
GRADES		1.48	1.40	1.40		
LENGTH (m)		100.000	48.500	42.728		
PIPE DIAMETER (mm)		100	100	100		
BEDDING CLASS		B	B	B		
DESIGN FLOW (l/s)		1.328	2.288	2.288		
Q75 CAPACITY (l/s)		18.81	26.56	14.28		
DESIGN VELOCITY (m/s)		0.818	0.898	0.872		
V75 VELOCITY (m/s)		1.28	1.63	1.08		

COORDINATE LIST

NAME	Y	X
SM32	47708.8633	264897.0004
SM33	47708.8633	2648999.2644

1. THE X AND Y CO-ORDINATES OF THE INFORMATION INDICATED ON THIS DRAWING ARE BASED ON THE WORLD-GEODETIC SYSTEM 1984 ELLIPSOID (WGS84)
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MANHOLE	SM32	SM33
CHAINAGE		100.000
GROUND LEVEL	1088.000	1088.000
INVERT LEVEL	1088.000	1088.000
DEPTH	1.000	1.000
GRADES		1.48
LENGTH (m)		100.000
PIPE DIAMETER (mm)		100
BEDDING CLASS		B
DESIGN FLOW (l/s)		2.288
Q75 CAPACITY (l/s)		14.28
DESIGN VELOCITY (m/s)		0.872
V75 VELOCITY (m/s)		1.08

COORDINATE LIST

NAME	Y	X
SM34	47708.8633	2648999.2644

1. THE X AND Y CO-ORDINATES OF THE INFORMATION INDICATED ON THIS DRAWING ARE BASED ON THE WORLD-GEODETIC SYSTEM 1984 ELLIPSOID (WGS84)
2. ALL Z CO-ORDINATES SHOWN ON THE DRAWING ARE BASED ON THE LOCAL ORTHOMETRIC HEIGHT SYSTEM AND ON THE DATUM PEG WITH AN ELEVATION AS INDICATED IN WRITING TO THE CONTRACTOR AT THE COMMENCEMENT OF THE WORKS

NOTE: A 150mm WATER PIPE RUNS PARALLEL WITH THE SEWER LINE



MANHOLE	SM34	SM35
CHAINAGE		100.000
GROUND LEVEL	1088.000	1088.000
INVERT LEVEL	1088.000	1088.000
DEPTH	1.000	1.000
GRADES		1.48
LENGTH (m)		100.000
PIPE DIAMETER (mm)		100
BEDDING CLASS		B
DESIGN FLOW (l/s)		2.288
Q75 CAPACITY (l/s)		14.28
DESIGN VELOCITY (m/s)		0.872
V75 VELOCITY (m/s)		1.08

NOTES AND SPECIFICATIONS

GENERAL

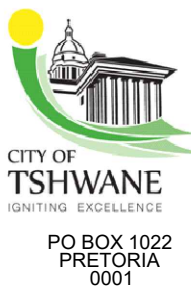
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LEGEND

SANITATION

- MANHOLE
- CE / LH
- NEW CCTV INSPECTION
- EXIST. LINE INSPECTED BY CCTV
- NEW SEWER LINE
- REVISED NEW SEWER LINE
- EXISTING SEWER LINE
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CITY OF TSHWANE
SERVICES INFRASTRUCTURE
DEPARTMENT
WATER AND SANITATION
DIVISION

AMENDMENTS				
NR	DATE	APPROVED	DESCRIPTION	PAR
1	01-12-2025	Z.D. RANTA	CONSTRUCTION DRAWINGS	

WATER AND SANITATION				
DIRECTOR: WATER AND SANITATION - PLANNING				
NAME	Prof. Reg. No.	SIGNATURE	DATE	
REGIONAL DIRECTOR: (1,2,3,4,5,6 or 7)				
NAME	Prof. Reg. No.	SIGNATURE	DATE	
DIRECTOR: SYSTEM DEVELOPMENT				
NAME	Prof. Reg. No.	SIGNATURE	DATE	
DIRECTOR: BULK WATER				
NAME	Prof. Reg. No.	SIGNATURE	DATE	
DIRECTOR: INFRASTRUCTURE PROVISION				
NAME	Prof. Reg. No.	SIGNATURE	DATE	
DIRECTOR: WASTE WATER TREATMENT				
NAME	Prof. Reg. No.	SIGNATURE	DATE	

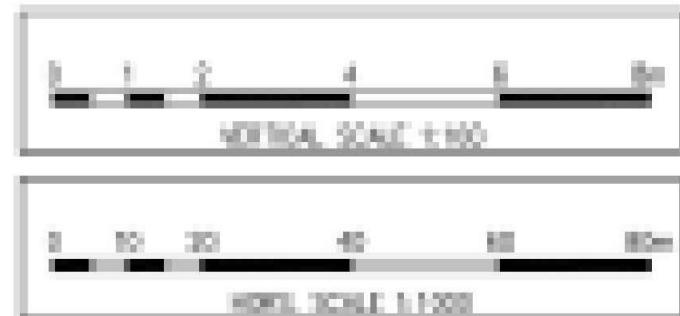
CONSULTANT DETAIL	
DPT CIVIL AND STRUCTURAL IV POSTNET SUITE 453 SNOVILLE CORNER PRIVATE BAG X504 SNOVILLE 0129 TEL: 012 567 7381 FAX: 012 567 1996 E-MAIL: info@dtshimaga.co.za	
I, Prof. Reg. Nr. _____ HEREBY CERTIFY THAT THE SERVICES WERE/ HAVE BEEN INSTALLED ACCORDING TO NOTE 9 OF THE ABOVE NOTES AND TO THE DRAWING	
SIGNATURE	DATE
CONSULTANT DRAWING NUMBER: 2017/SM/10/01-SRL-011	

DESIGNED	
NAME: Z.D. RANTA	Dr Eng. Prof Reg No.: 201170066
SIGNATURE: _____	DATE: _____
DRAWN	
NAME: K. MOLEMA	Prof Reg No.: _____
SIGNATURE: _____	DATE: _____
CHECKED	
NAME: Z.D. RANTA	Dr Eng. Prof Reg No.: 201170066
SIGNATURE: _____	DATE: _____
INFORMATION OFFICE CHECKED	
NAME: _____	Dr Eng. Prof Reg No.: _____
SIGNATURE: _____	DATE: _____
DESIGN OFFICE APPROVAL	
NAME: Z.D. RANTA	Dr Eng. Prof Reg No.: 201170066
SIGNATURE: _____	DATE: _____

CONTRACT No:
PROJECT No.
SHEET No. 2543IES-142
PAPER SIZE: A1
SCALE: AS SHOWN
DATE: 2025-06-10

PROJECT STATUS	
☒ CONCEPT DRAWING	☐ TENDER DRAWING
☐ APPROVED CONSTRUCTION DRAWING	☐ AS BUILT DRAWING
PROJECT ENGINEER OF COT:	
NAME: _____	Prof Reg No.: _____
SIGNATURE: _____	DATE: _____
INSPECTOR OF WORKS OF COT:	
NAME: _____	Prof Reg No.: _____
SIGNATURE: _____	DATE: _____

LOCATION OF PROJECT:	
BOOYSENS	
DESCRIPTION OF PROJECT:	
BOOYSENS EXT 4 SEWER RETICULATION LONGITUDINAL SECTION 12, 13 & 14	
WBS No.:	_____
COT DRAWING NUMBER:	_____

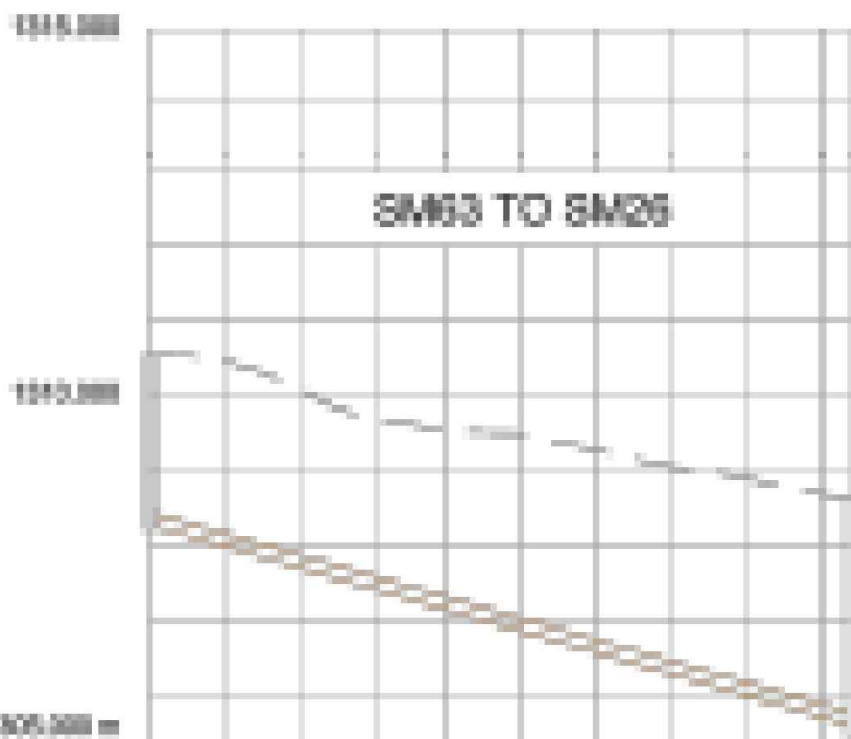


COORDINATE LIST

NAME	Y	X
SM63	87988.8828	2848716.3038
SM68	87988.3047	2848887.8758

1. THE X AND Y CO-ORDINATES OF THE INFORMATION INDICATED ON THIS DRAWING ARE BASED ON THE WORLD GEODETIC SYSTEM 1984 (WGS84) (PROJ4).

2. ALL Z CO-ORDINATES SHOWN ON THIS DRAWING ARE BASED ON THE LOCAL ORTHOMETRIC HEIGHT SYSTEM AND ON THE DATUM PROVIDED WITH AN ELEVATION AS INDICATED IN WRITING TO THE CONTRACTOR AT THE COMMENCEMENT OF THE WORKS.



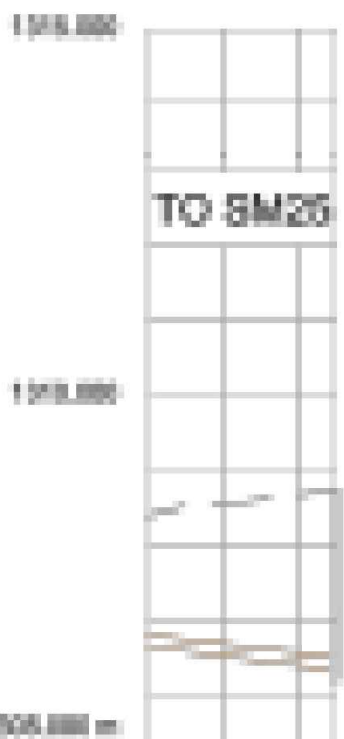
MANHOLE	SM63	SM68
CHAINAGE	0+00.00	0+45.00
GROUND LEVEL	1315.000	1305.000
INVERT LEVEL	1305.000	1305.000
DEPTH	1.000	1.000
GRADES	1.00	1.00
LENGTH (m)	45.000	
PIPE DIAMETER (mm)	150	150
BEDDING CLASS	B	B
DESIGN FLOW (l/s)	0.000	0.000
GPD CAPACITY (l/s)	11.33	11.33
DESIGN VELOCITY (m/s)	0.400	0.400
V75 VELOCITY (m/s)	1.000	1.000

COORDINATE LIST

NAME	Y	X
SM63	87988.8828	2848888.8840
SM70	87988.4987	2848888.8840

1. THE X AND Y CO-ORDINATES OF THE INFORMATION INDICATED ON THIS DRAWING ARE BASED ON THE WORLD GEODETIC SYSTEM 1984 (WGS84) (PROJ4).

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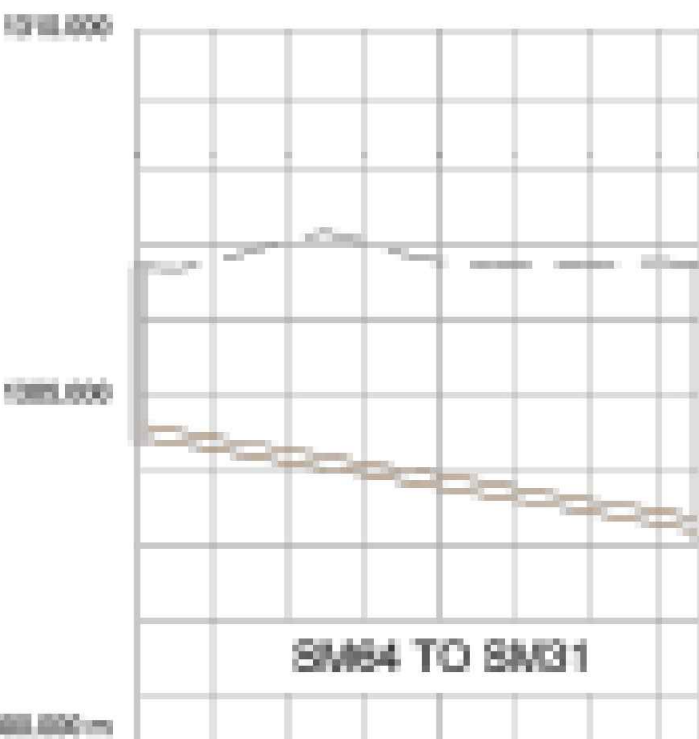
MANHOLE	SM63	SM70
CHAINAGE	0+00.00	0+45.00
GROUND LEVEL	1315.000	1305.000
INVERT LEVEL	1305.000	1305.000
DEPTH	1.000	1.000
GRADES	1.00	1.00
LENGTH (m)	45.000	
PIPE DIAMETER (mm)	150	150
BEDDING CLASS	B	B
DESIGN FLOW (l/s)	0.000	0.000
GPD CAPACITY (l/s)	11.33	11.33
DESIGN VELOCITY (m/s)	0.400	0.400
V75 VELOCITY (m/s)	1.000	1.000

COORDINATE LIST

NAME	Y	X
SM64	87988.8828	2848888.8840
SM71	87988.4987	2848888.8840

1. THE X AND Y CO-ORDINATES OF THE INFORMATION INDICATED ON THIS DRAWING ARE BASED ON THE WORLD GEODETIC SYSTEM 1984 (WGS84) (PROJ4).

2. ALL Z CO-ORDINATES SHOWN ON THIS DRAWING ARE BASED ON THE LOCAL ORTHOMETRIC HEIGHT SYSTEM AND ON THE DATUM PROVIDED WITH AN ELEVATION AS INDICATED IN WRITING TO THE CONTRACTOR AT THE COMMENCEMENT OF THE WORKS.



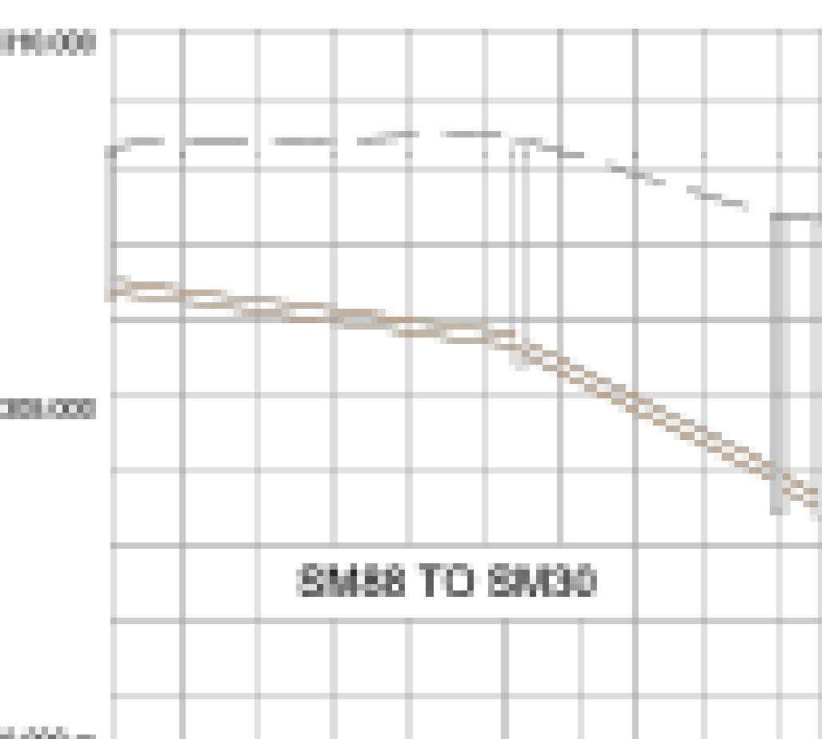
MANHOLE	SM64	SM71
CHAINAGE	0+00.00	0+45.00
GROUND LEVEL	1315.000	1305.000
INVERT LEVEL	1305.000	1305.000
DEPTH	1.000	1.000
GRADES	1.00	1.00
LENGTH (m)	45.000	
PIPE DIAMETER (mm)	150	150
BEDDING CLASS	B	B
DESIGN FLOW (l/s)	0.000	0.000
GPD CAPACITY (l/s)	11.33	11.33
DESIGN VELOCITY (m/s)	0.400	0.400
V75 VELOCITY (m/s)	1.000	1.000

COORDINATE LIST

NAME	Y	X
SM65	87988.8828	2848888.8840
SM66	87988.8828	2848888.8840
SM67	87988.8828	2848888.8840
SM68	87988.8828	2848888.8840
SM69	87988.8828	2848888.8840
SM70	87988.8828	2848888.8840
SM71	87988.8828	2848888.8840
SM72	87988.8828	2848888.8840
SM73	87988.8828	2848888.8840
SM74	87988.8828	2848888.8840
SM75	87988.8828	2848888.8840

1. THE X AND Y CO-ORDINATES OF THE INFORMATION INDICATED ON THIS DRAWING ARE BASED ON THE WORLD GEODETIC SYSTEM 1984 (WGS84) (PROJ4).

2. ALL Z CO-ORDINATES SHOWN ON THIS DRAWING ARE BASED ON THE LOCAL ORTHOMETRIC HEIGHT SYSTEM AND ON THE DATUM PROVIDED WITH AN ELEVATION AS INDICATED IN WRITING TO THE CONTRACTOR AT THE COMMENCEMENT OF THE WORKS.



MANHOLE	SM65	SM70
CHAINAGE	0+00.00	0+45.00
GROUND LEVEL	1315.000	1305.000
INVERT LEVEL	1305.000	1305.000
DEPTH	1.000	1.000
GRADES	1.00	1.00
LENGTH (m)	45.000	
PIPE DIAMETER (mm)	150	150
BEDDING CLASS	B	B
DESIGN FLOW (l/s)	0.000	0.000
GPD CAPACITY (l/s)	11.33	11.33
DESIGN VELOCITY (m/s)	0.400	0.400
V75 VELOCITY (m/s)	1.000	1.000

NOTES AND SPECIFICATIONS

GENERAL

- ALL MATERIAL AND WORKMANSHIP MUST COMPLY WITH THE REQUIREMENTS OF THE LATEST RELEVANT SABS REQUIREMENTS.
- ALL DIMENSIONS ARE IN MILLIMETRES. (UNLESS OTHERWISE SPECIFIED).
- DO NOT SCALE FROM THESE DRAWINGS.
- ALL DIMENSIONS MUST BE CHECKED AND APPROVED ON SITE.
- ALL CONSTRUCTION TO BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR MUNICIPAL CIVIL ENGINEERING WORKS, THIRD EDITION 2005 AND THE STANDARD COT DETAIL DRAWINGS.
- THESE DRAWINGS MUST BE READ IN CONJUNCTION WITH THE STANDARD DRAWINGS (IF APPLICABLE).
- THIS DRAWING MUST BE READ IN CONJUNCTION WITH THE STANDARD SPECIFICATIONS FOR MUNICIPAL CIVIL ENGINEERING WORKS, SERIES 4.
- THE SIGNATURE OR INITIALS ON THIS DRAWING, OF ANY DIRECTOR OF THE PUBLIC WORKS AND INFRASTRUCTURE DEVELOPMENT DEPARTMENT, IN NO WAY REMOVES ANY RESPONSIBILITY WHATSOEVER FROM THE CONSULTANT.
- THE CONSULTANT REMAINS RESPONSIBLE TO ENSURE THAT ALL THE GUIDELINES, STANDARD DRAWINGS, STANDARDS AND SPECIFICATIONS OF THE PUBLIC WORKS AND INFRASTRUCTURE DEVELOPMENT DEPARTMENT HAVE BEEN MET AND ARE COMPLIED WITH.
- FINAL POSITION OF SERVICES TO BE DETERMINED ON SITE.

LEGEND

SANITATION

- MANHOLE
- CE / LH
- NEW CCTV INSPECTION
- EXIST. LINE INSPECTED BY CCTV
- NEW SEWER LINE
- REVISED NEW SEWER LINE
- EXISTING SEWER LINE
- HOUSE CONNECTION

N.B: ALL NEW SEWER PIPELINES ARE PVC-U PIPES



CITY OF TSHWANE
SERVICES INFRASTRUCTURE
DEPARTMENT
WATER AND SANITATION
DIVISION

AMENDMENTS				
NR	DATE	APPROVED	DESCRIPTION	PAR
1	01-12-2025	Z.D. RANTA	CONSTRUCTION DRAWINGS	

WATER AND SANITATION				
FOR INTERNAL APPROVAL - NOT VALID FOR CONSTRUCTION				
DIRECTOR: WATER AND SANITATION - PLANNING				
NAME	Prof. Reg. No.	SIGNATURE	DATE	
REGIONAL DIRECTOR: (1, 2, 3, 4, 5, 6 or 7)				
NAME	Prof. Reg. No.	SIGNATURE	DATE	
DIRECTOR: SYSTEM DEVELOPMENT				
NAME	Prof. Reg. No.	SIGNATURE	DATE	
DIRECTOR: BULK WATER				
NAME	Prof. Reg. No.	SIGNATURE	DATE	
DIRECTOR: INFRASTRUCTURE PROVISION				
NAME	Prof. Reg. No.	SIGNATURE	DATE	
DIRECTOR: WASTE WATER TREATMENT				
NAME	Prof. Reg. No.	SIGNATURE	DATE	

CONSULTANT DETAIL



DPT CIVIL AND STRUCTURAL IV
POSTNET SUITE 453
SINOVILLE CONER
PRIVATE BAG X504
SINOVILLE 0129
TEL: 012 567 7381
FAX: 012 567 1996
E-MAIL: info@ditshimega.co.za

I, _____ Prof. Reg. No. _____
HEREBY CERTIFY THAT THE SERVICES WILL HAVE BEEN INSTALLED
ACCORDING TO NOTE 9 OF THE ABOVE NOTES AND TO THE DRAWING
SIGNATURE _____ DATE _____

CONSULTANT DRAWING NUMBER:
2017/SM/10/01-SRL-011



REVISION

DESIGNED	
NAME: Z.D. RANTA	Dr Eng. Prof Reg No.: 201170066
SIGNATURE: _____	DATE: _____
DRAWN	
NAME: K. MOLEMA	Prof Reg No.: _____
SIGNATURE: _____	DATE: _____
CHECKED	
NAME: Z.D. RANTA	Dr Eng. Prof Reg No.: 201170066
SIGNATURE: _____	DATE: _____
INFORMATION OFFICE CHECKED	
NAME: _____	Dr Eng. Prof Reg No.: _____
SIGNATURE: _____	DATE: _____
DESIGN OFFICE APPROVAL	
NAME: Z.D. RANTA	Dr Eng. Prof Reg No.: 201170066
SIGNATURE: _____	DATE: _____

CONTRACT

CONTRACT No.: _____
PROJECT No.: _____
SHEET No.: 2543IES-143
PAPER SIZE: A1
SCALE: AS SHOWN
DATE: 2025-06-10

PROJECT STATUS

RECEIVED SHUN YIP CHAI BUILDING

 TENDER DRAWING	 APPROVED CONSTRUCTION DRAWING	 AS BUILT DRAWING
--	---	--

ENGINEER of COT:

_____ Pr Eng.

Prof Reg No: _____

DATE: _____

OF WORKS of COT:

_____ Pr Eng.

Prof Reg No: _____

DATE: _____

LOCATION OF PROJECT:

BOOYSENS

DESCRIPTION OF PROJECT:

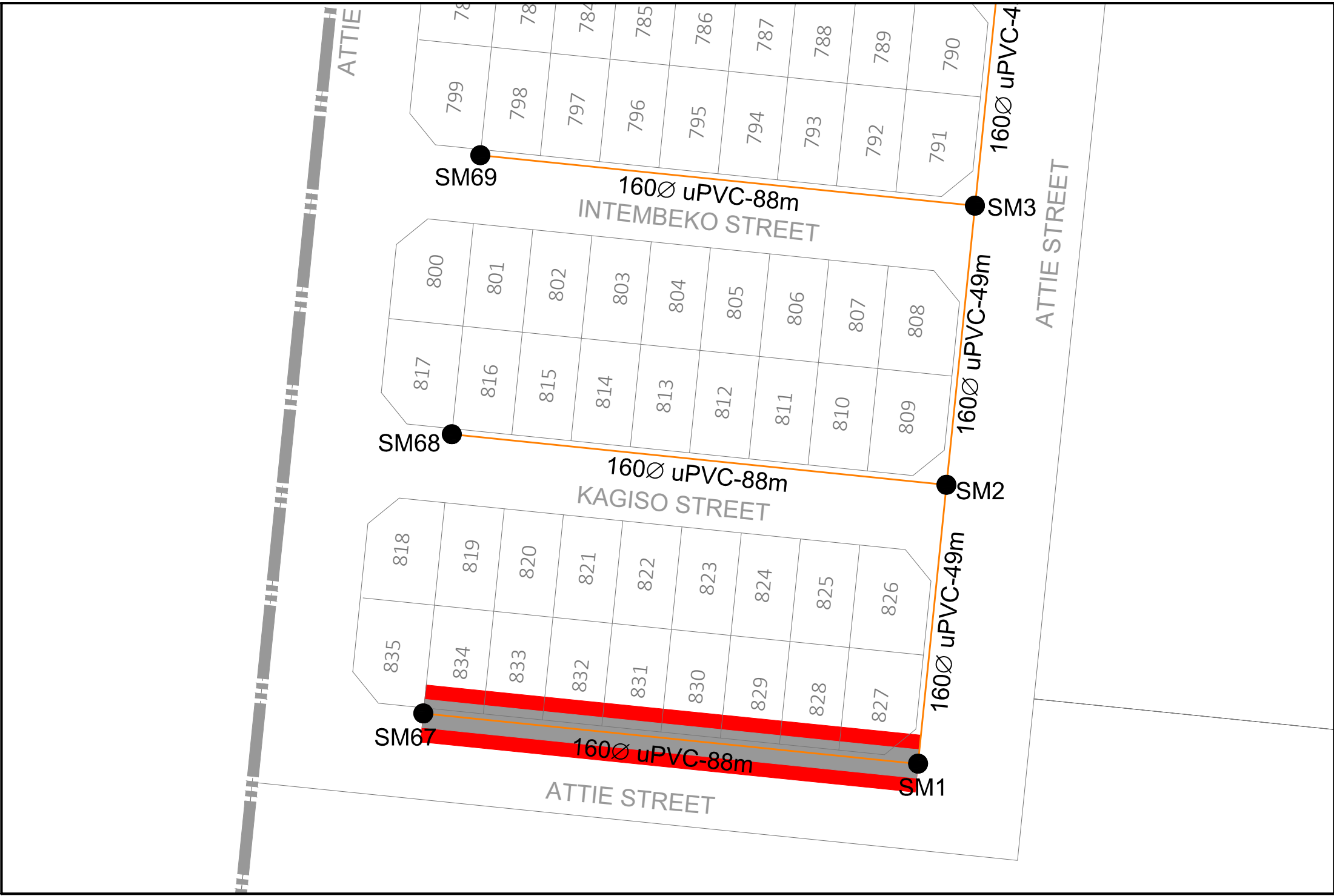
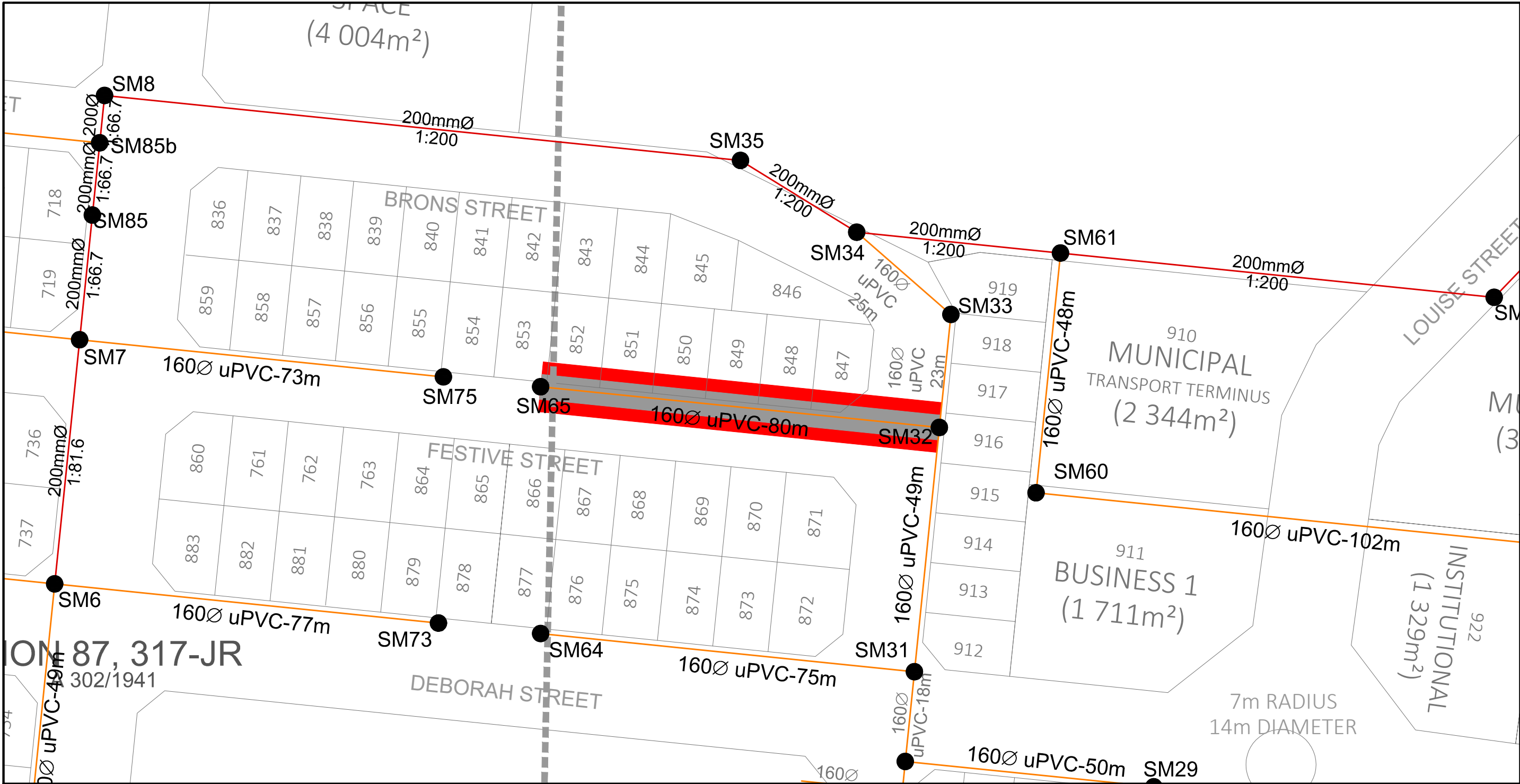
BOOYSENS EXT 4
SEWER RETICULATION
LONGITUDINAL SECTION 15, 16, 17 & 30

WBS No.:

COT DRAWING NUMBER:



REVISION

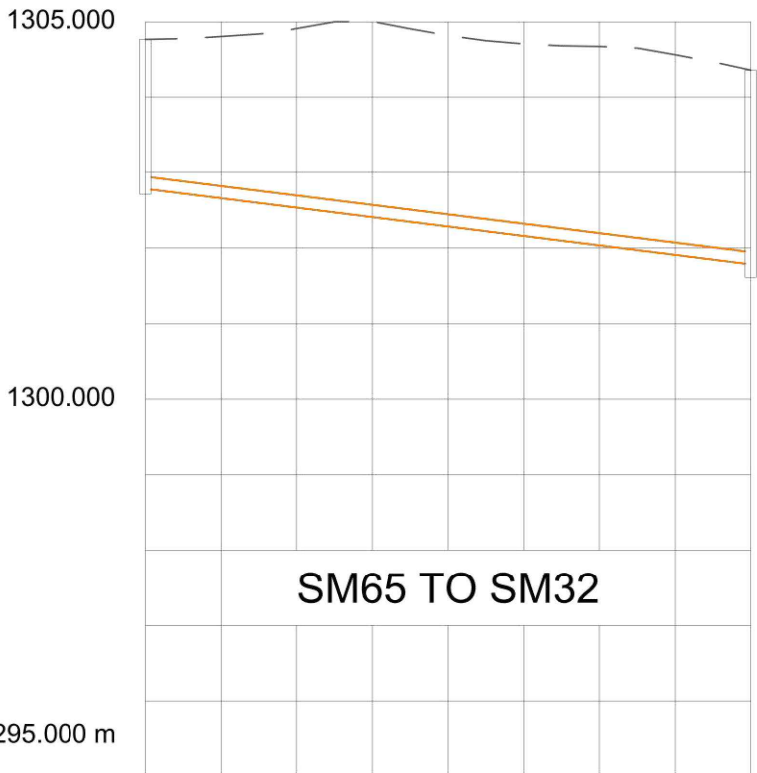


- NOTES AND SPECIFICATIONS**
- GENERAL**
1. ALL MATERIAL AND WORKMANSHIP MUST COMPLY WITH THE REQUIREMENTS OF THE LATEST RELEVANT SABS REQUIREMENTS.
 2. ALL DIMENSIONS ARE IN MILLIMETRES. (UNLESS OTHERWISE SPECIFIED).
 3. DO NOT SCALE FROM THESE DRAWINGS.
 4. ALL DIMENSIONS MUST BE CHECKED AND APPROVED ON SITE.
 5. ALL CONSTRUCTION TO BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR MUNICIPAL CIVIL ENGINEERING WORKS, THIRD EDITION 2005 AND THE STANDARD COT DETAIL DRAWINGS.
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 8. THE SIGNATURE OR INITIALS ON THIS DRAWING, OF ANY DIRECTOR OF THE PUBLIC WORKS AND INFRASTRUCTURE DEVELOPMENT DEPARTMENT, IN NO WAY REMOVES ANY RESPONSIBILITY, WHATSOEVER FROM THE CONSULTANT.
 9. THE CONSULTANT REMAINS RESPONSIBLE TO ENSURE THAT ALL THE GUIDELINES, STANDARD DRAWINGS, STANDARDS AND SPECIFICATIONS OF THE PUBLIC WORKS AND INFRASTRUCTURE DEVELOPMENT DEPARTMENT HAVE BEEN MET AND ARE COMPLIED WITH.
 10. FINAL POSITION OF SERVICES TO BE DETERMINED ON SITE.
- LEGEND**
- SANITATION**
- MANHOLE
 - CE / LH
 - NEW CCTV INSPECTION
 - EXIST. LINE INSPECTED BY CCTV
 - NEW SEWER LINE
 - REVISED NEW SEWER LINE
 - EXISTING SEWER LINE
 - HOUSE CONNECTION
- N.B: ALL NEW SEWER PIPELINES ARE PVC-U PIPES**

COORDINATE LIST

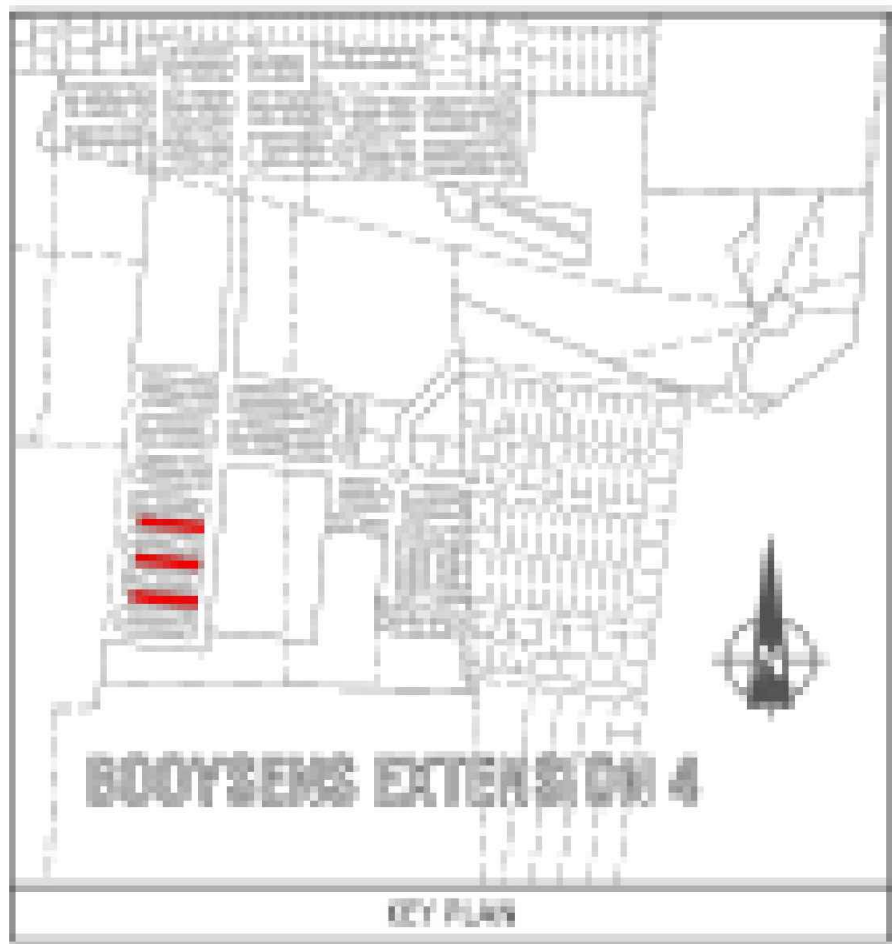
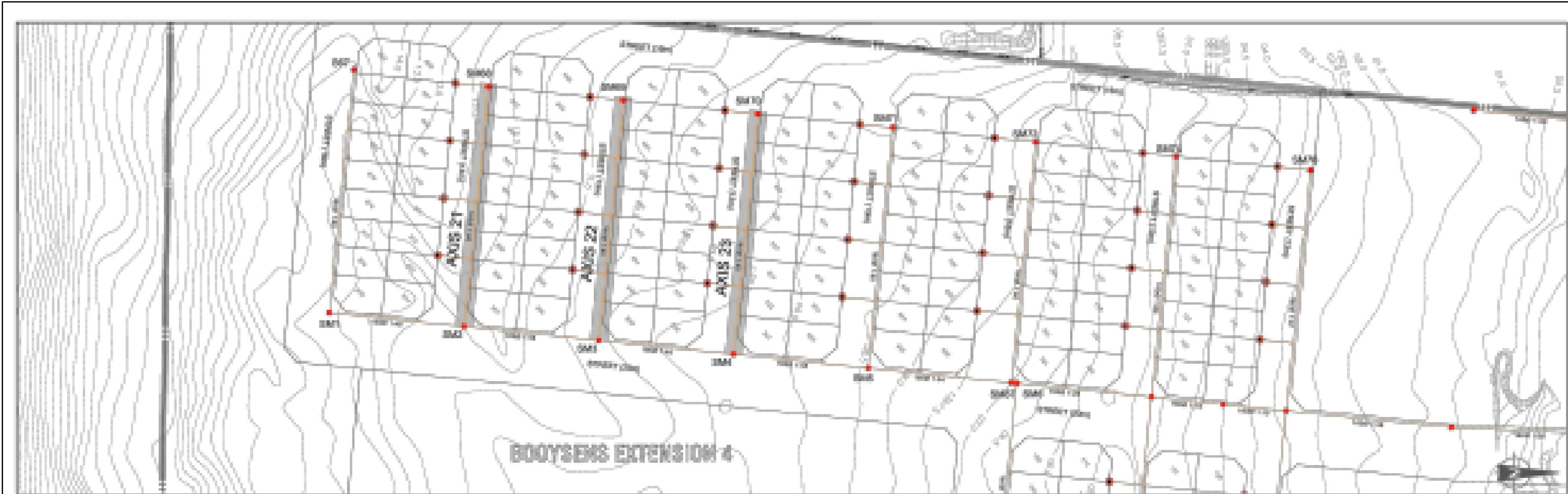
NAME	Y	X
SM65	87809.0580	2846527.9725
SM32	87729.4719	2846536.0995

1. THE X AND Y CO-ORDINATES OF THE INFORMATION INDICATED ON THIS DRAWING ARE BASED ON THE WORLD GEODETIC SYSTEM 1984 ELLIPSOID (WGS84)
2. ALL Z CO-ORDINATES SHOWN ON THE DRAWING ARE BASED ON THE LOCAL ORTHOMETRIC HEIGHT SYSTEM AND ON THE DATUM PEG WITH AN ELEVATION AS INDICATED IN WRITING TO THE CONTRACTOR AT THE COMMENCEMENT OF THE WORKS



MANHOLE	SM65	SM32
CHAINAGE	1304.765 0.000	1304.360 80.000
GROUND LEVEL	1304.765	1304.360
INVERT LEVEL	1302.781	1301.781
DEPTH	1.983	2.579
GRADES	1:80	
LENGTH (m)	80.000	
PIPE DIAMETER (mm)	160	
BEDDING CLASS	B	
DESIGN FLOW (l/s)	0.268	
Q70 CAPACITY (l/s)	14.26	
DESIGN VELOCITY (m/s)	0.355	
V70 VELOCITY (m/s)	1.08	

 CITY OF TSHWANE SERVICES INFRASTRUCTURE DEPARTMENT WATER AND SANITATION DIVISION	AMENDMENTS			WATER AND SANITATION FOR INTERNAL APPROVAL - PROJECT/WORKS/REPAIRS APPLICABLE			CONSULTANT DETAIL			DESIGNED NAME: <u>Z.D RANTA</u> Dr Eng. Prof Reg No: <u>201170066</u> SIGNATURE: _____ DATE: _____		CONTRACT No: _____ PROJECT No: _____		PROJECT STATUS RELEVANT SIGN WHEN APPLICABLE ☐ CONCEPT DRAWING ☒ TENDER DRAWING ☐ APPROVED CONSTRUCTION DRAWING ☐ AS BUILT DRAWING		LOCATION OF PROJECT: BOOYSENS	
	NR DATE APPROVED DESCRIPTION PAR			DIRECTOR: WATER AND SANITATION - PLANNING NAME Prof. Reg. No SIGNATURE DATE REGIONAL DIRECTOR: (1,2,3,4,5,6 or 7) NAME Prof. Reg. No SIGNATURE DATE DIRECTOR: SYSTEM DEVELOPMENT NAME Prof. Reg. No SIGNATURE DATE DIRECTOR: BULK WATER NAME Prof. Reg. No SIGNATURE DATE DIRECTOR: INFRASTRUCTURE PROVISION NAME Prof. Reg. No SIGNATURE DATE DIRECTOR: WASTE WATER TREATMENT NAME Prof. Reg. No SIGNATURE DATE			DPT CIVIL AND STRUCTURAL JV POSTNET SUITE 453 SINOVILLE CONER PRIVATE BAG X504 SINOVILLE 0129 TEL: 012 567 7381 FAX: 012 567 1996 E-MAIL: info@ditshimega.co.za I, _____ Prof Reg Nr _____ HEREBY CERTIFY THAT THE SERVICES WILL HAVE BEEN INSTALLED ACCORDING TO NOTE 9 OF THE ABOVE NOTES AND TO THE DRAWING SIGNATURE _____ DATE _____ CONSULTANT DRAWING NUMBER: 2017/SM/10/01-SRL-011			DRAWN NAME: <u>K. MOLEMA</u> Prof Reg No: _____ SIGNATURE: _____ DATE: _____ CHECKED NAME: <u>Z.D RANTA</u> Dr Eng. Prof Reg No: <u>201170066</u> SIGNATURE: _____ DATE: _____ INFORMATION OFFICE CHECKED NAME: _____ Dr Eng. Prof Reg No: _____ SIGNATURE: _____ DATE: _____ DESIGN OFFICE APPROVAL NAME: <u>Z.D RANTA</u> Dr Eng. Prof Reg No: <u>201170066</u> SIGNATURE: _____ DATE: _____		SHEET No. <u>2543IES-144</u> PAPER SIZE: <u>A1</u> SCALE: <u>AS SHOWN</u> DATE: <u>2025-06-10</u>		PROJECT ENGINEER of COT: NAME: _____ Dr Eng. Prof Reg No: _____ SIGNATURE: _____ DATE: _____ INSPECTOR OF WORKS of COT: NAME: _____ Dr Eng. Prof Reg No: _____ SIGNATURE: _____ DATE: _____			
														WBS No. : _____			
																COT DRAWING NUMBER: _____	



- NOTES AND SPECIFICATIONS**
- GENERAL**
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 9. THE CONSULTANT REMAINS RESPONSIBLE TO ENSURE THAT ALL THE GUIDELINES, STANDARD DRAWINGS, STANDARDS AND SPECIFICATIONS OF THE PUBLIC WORKS AND INFRASTRUCTURE DEVELOPMENT DEPARTMENT HAVE BEEN MET AND ARE COMPLIED WITH.
 10. FINAL POSITION OF SERVICES TO BE DETERMINED ON SITE.

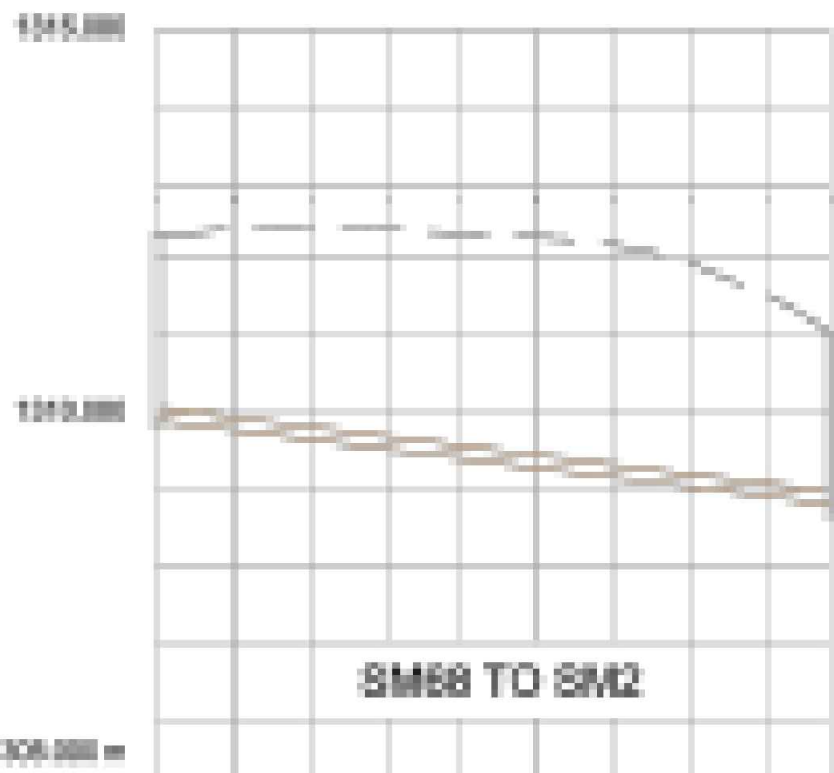
- LEGEND**
- SANITATION**
- MANHOLE
 - CE / LH
 - NEW CCTV INSPECTION
 - EXIST. LINE INSPECTED BY CCTV
 - NEW SEWER LINE
 - REVISED NEW SEWER LINE
 - EXISTING SEWER LINE
 - HOUSE CONNECTION

N.B: ALL NEW SEWER PIPELINES ARE PVC-U PIPES

COORDINATE LIST

NAME	Y	X
SM68	88811.2550	3544518.6335
SM2	87934.8668	3544517.4480

1. THE X AND Y CO-ORDINATES OF THE INFORMATION INDICATED ON THIS DRAWING ARE BASED ON THE WORLD GEODETIC SYSTEM 1984 (WGS84) (UTM PROJECTION).
2. ALL Z CO-ORDINATES SHOWN ON THIS DRAWING ARE BASED ON THE LOCAL ORTHOMETRIC HEIGHT SYSTEM AND ON THE DATUM PEG WITH AN ELEVATION AS INDICATED IN WRITING TO THE CONTRACTOR AT THE COMMENCEMENT OF THE WORKS.

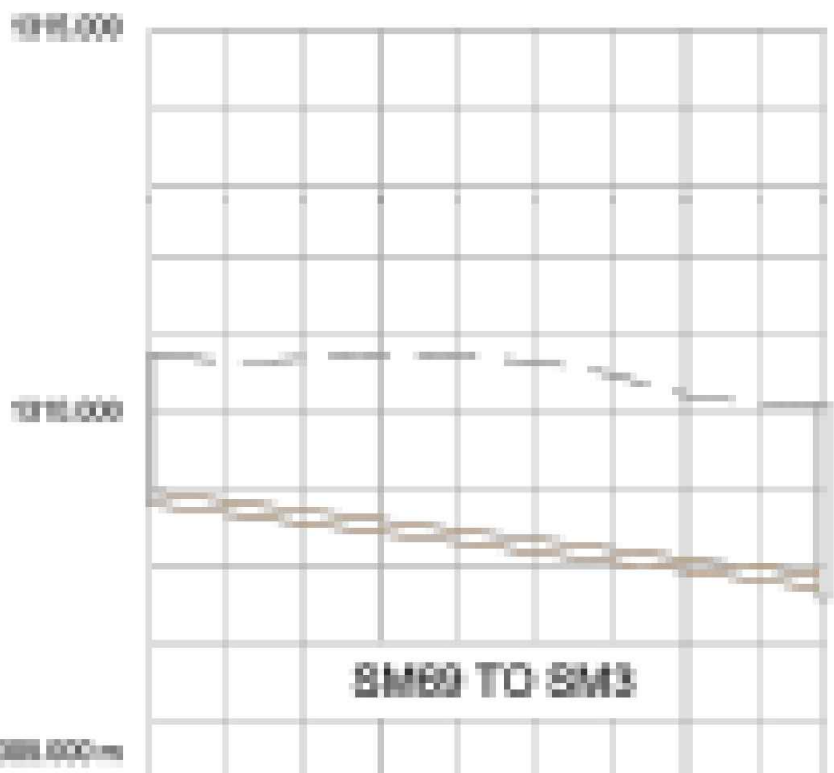


MANHOLE	SM68	SM2
CHAINAGE	1306.000	1306.000
GROUND LEVEL	1306.000	1306.000
INVERT LEVEL	1306.000	1306.000
DEPTH	1.00	1.00
GRADES	1.00	1.00
LENGTH (m)	50.000	50.000
PIPE DIAMETER (mm)	150	150
BEDDING CLASS	B	B
DESIGN FLOW (l/s)	0.388	0.388
C/D CAPACITY (%)	14.25	14.25
DESIGN VELOCITY (m/s)	0.381	0.381
V75 VELOCITY (m/s)	1.00	1.00

COORDINATE LIST

NAME	Y	X
SM69	88808.1627	3544518.6335
SM3	87918.8163	3544517.4480

1. THE X AND Y CO-ORDINATES OF THE INFORMATION INDICATED ON THIS DRAWING ARE BASED ON THE WORLD GEODETIC SYSTEM 1984 (WGS84) (UTM PROJECTION).
2. ALL Z CO-ORDINATES SHOWN ON THIS DRAWING ARE BASED ON THE LOCAL ORTHOMETRIC HEIGHT SYSTEM AND ON THE DATUM PEG WITH AN ELEVATION AS INDICATED IN WRITING TO THE CONTRACTOR AT THE COMMENCEMENT OF THE WORKS.

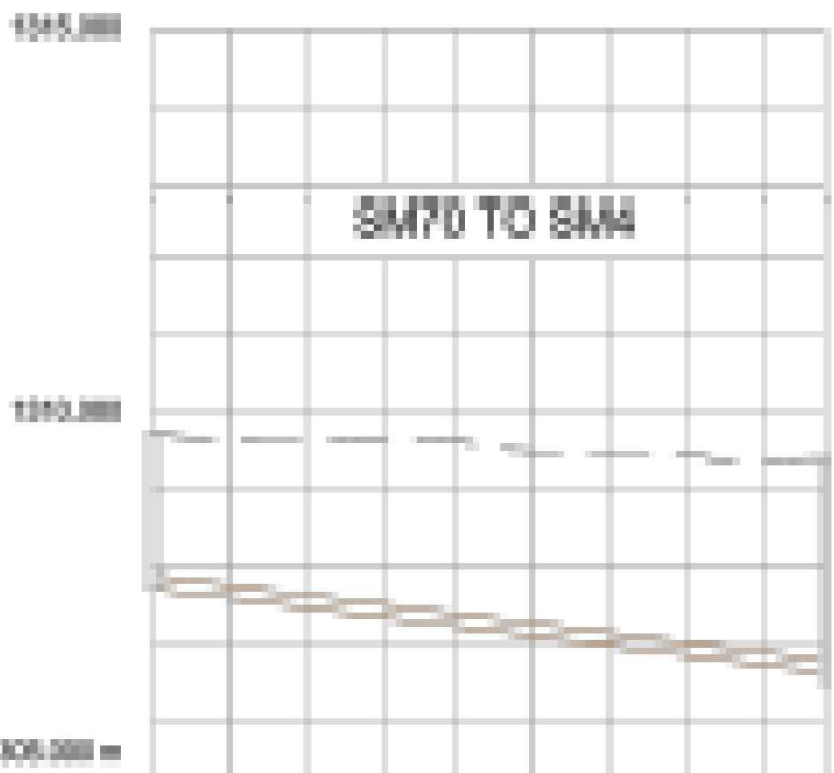


MANHOLE	SM69	SM3
CHAINAGE	1306.000	1306.000
GROUND LEVEL	1306.000	1306.000
INVERT LEVEL	1306.000	1306.000
DEPTH	1.00	1.00
GRADES	1.00	1.00
LENGTH (m)	50.000	50.000
PIPE DIAMETER (mm)	150	150
BEDDING CLASS	B	B
DESIGN FLOW (l/s)	0.388	0.388
C/D CAPACITY (%)	14.25	14.25
DESIGN VELOCITY (m/s)	0.381	0.381
V75 VELOCITY (m/s)	1.00	1.00

COORDINATE LIST

NAME	Y	X
SM70	88811.2550	3544518.6335
SM4	87934.8668	3544517.4480

1. THE X AND Y CO-ORDINATES OF THE INFORMATION INDICATED ON THIS DRAWING ARE BASED ON THE WORLD GEODETIC SYSTEM 1984 (WGS84) (UTM PROJECTION).
2. ALL Z CO-ORDINATES SHOWN ON THIS DRAWING ARE BASED ON THE LOCAL ORTHOMETRIC HEIGHT SYSTEM AND ON THE DATUM PEG WITH AN ELEVATION AS INDICATED IN WRITING TO THE CONTRACTOR AT THE COMMENCEMENT OF THE WORKS.



MANHOLE	SM70	SM4
CHAINAGE	1306.000	1306.000
GROUND LEVEL	1306.000	1306.000
INVERT LEVEL	1306.000	1306.000
DEPTH	1.00	1.00
GRADES	1.00	1.00
LENGTH (m)	50.000	50.000
PIPE DIAMETER (mm)	150	150
BEDDING CLASS	B	B
DESIGN FLOW (l/s)	0.388	0.388
C/D CAPACITY (%)	14.25	14.25
DESIGN VELOCITY (m/s)	0.381	0.381
V75 VELOCITY (m/s)	1.00	1.00



CITY OF TSHWANE
SERVICES INFRASTRUCTURE
DEPARTMENT
WATER AND SANITATION
DIVISION

AMENDMENTS				
NR	DATE	APPROVED	DESCRIPTION	PAR
1	01-12-2025	Z.D. RANTA	CONSTRUCTION DRAWINGS	

WATER AND SANITATION				
DIRECTOR: WATER AND SANITATION - PLANNING				
NAME	Prof. Reg. No.	SIGNATURE	DATE	
REGIONAL DIRECTOR: (1,2,3,4,5,6 or 7)				
NAME	Prof. Reg. No.	SIGNATURE	DATE	
DIRECTOR: SYSTEM DEVELOPMENT				
NAME	Prof. Reg. No.	SIGNATURE	DATE	
DIRECTOR: BULK WATER				
NAME	Prof. Reg. No.	SIGNATURE	DATE	
DIRECTOR: INFRASTRUCTURE PROVISION				
NAME	Prof. Reg. No.	SIGNATURE	DATE	
DIRECTOR: WASTE WATER TREATMENT				
NAME	Prof. Reg. No.	SIGNATURE	DATE	

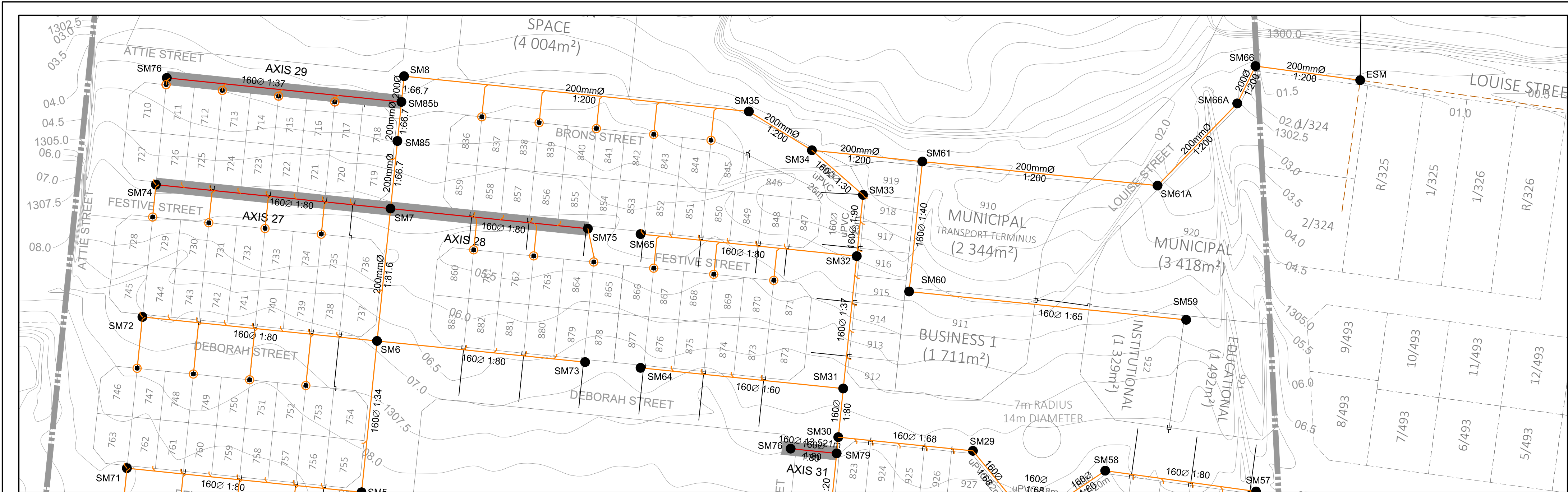
CONSULTANT DETAIL	
	DPT CIVIL AND STRUCTURAL IV POSTNET SUITE 453 SINOVILLE CORER PRIVATE BAG X504 SINOVILLE 0129 TEL: 012 567 7381 FAX: 012 567 1996 E-MAIL: info@ditshimega.co.za
I, _____ Prof. Reg. Nr. _____ HEREBY CERTIFY THAT THE SERVICES WILL HAVE BEEN INSTALLED ACCORDING TO NOTE 9 OF THE ABOVE NOTES AND TO THE DRAWING	
SIGNATURE	DATE
CONSULTANT DRAWING NUMBER: 2017/SM/10/01-SRL-011	

DESIGNED	
NAME: Z.D. RANTA	Dr. Eng. Prof. Reg. No.: 201170066
SIGNATURE:	DATE:
DRAWN	
NAME: K. MOLEMA	Prof. Reg. No.: _____
SIGNATURE:	DATE:
CHECKED	
NAME: Z.D. RANTA	Dr. Eng. Prof. Reg. No.: 201170066
SIGNATURE:	DATE:
INFORMATION OFFICE CHECKED	
NAME: _____	Dr. Eng. Prof. Reg. No.: _____
SIGNATURE:	DATE:
DESIGN OFFICE APPROVAL	
NAME: Z.D. RANTA	Dr. Eng. Prof. Reg. No.: 201170066
SIGNATURE:	DATE:

CONTRACT	
No.:	
PROJECT No.	
SHEET No.	
2543IES-145	
PAPER SIZE:	
A1	
SCALE:	
AS SHOWN	
DATE:	
2025-06-10	

PROJECT STATUS			
☐ CONCEPT DRAWING	☐ TENDER DRAWING	☒ APPROVED CONSTRUCTION DRAWING	☐ AS BUILT DRAWING
PROJECT ENGINEER OF COT:			
NAME: _____	Dr. Eng.	Prof. Reg. No.: _____	
SIGNATURE:		DATE:	
INSPECTOR OF WORKS OF COT:			
NAME: _____	Dr. Eng.	Prof. Reg. No.: _____	
SIGNATURE:		DATE:	

LOCATION OF PROJECT:	
BOOYSENS	
DESCRIPTION OF PROJECT:	
BOOYSENS EXT 4 SEWER RETICULATION LONGITUDINAL SECTION 21, 22 & 23	
WBS No.:	
COT DRAWING NUMBER:	



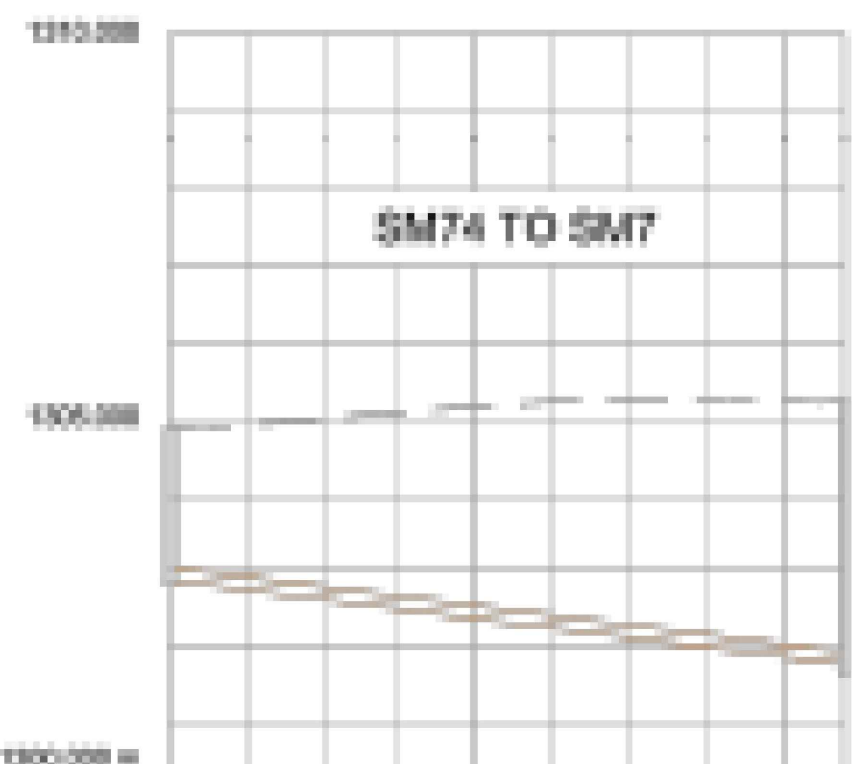
- ### NOTES AND SPECIFICATIONS
- #### GENERAL
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 2. ALL DIMENSIONS ARE IN MILLIMETRES. (UNLESS OTHERWISE SPECIFIED).
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 9. THE CONSULTANT REMAINS RESPONSIBLE TO ENSURE THAT ALL THE GUIDELINES, STANDARD DRAWINGS, STANDARDS AND SPECIFICATIONS OF THE PUBLIC WORKS AND INFRASTRUCTURE DEVELOPMENT DEPARTMENT HAVE BEEN MET AND ARE COMPLIED WITH.
 10. FINAL POSITION OF SERVICES TO BE DETERMINED ON SITE.
 11. SEWER INSTALLED WITHIN PROPERTIES ARE USUALLY PLACED 1.2m FROM ERF BOUNDARY UNLESS OTHERWISE SPECIFIED.
 12. SEWER INSTALLED WITHIN THE ROAD RESERVE BOUNDARY MUST BE POSITIONED IN ACCORDANCE WITH THE APPLIABLE SERVICES LAYOUT DRAWING.

COORDINATE LIST

NAME	Y	X
SM74	87988.1240	284668.5885
SM7	87988.4677	284667.1977

1. THE X AND Y CO-ORDINATES OF THE INFORMATION INDICATED ON THIS DRAWING ARE BASED ON THE WORLD GEODETIC SYSTEM 1984 ELLIPSOID (WGS84).

2. ALL Z CO-ORDINATES SHOWN ON THE DRAWING ARE BASED ON THE LOCAL ORTHOMETRIC HEIGHT SYSTEM AND ON THE DATUM PEG WITH AN ELEVATION AS INDICATED IN WRITING TO THE CONTRACTOR AT THE COMMENCEMENT OF THE WORKS.

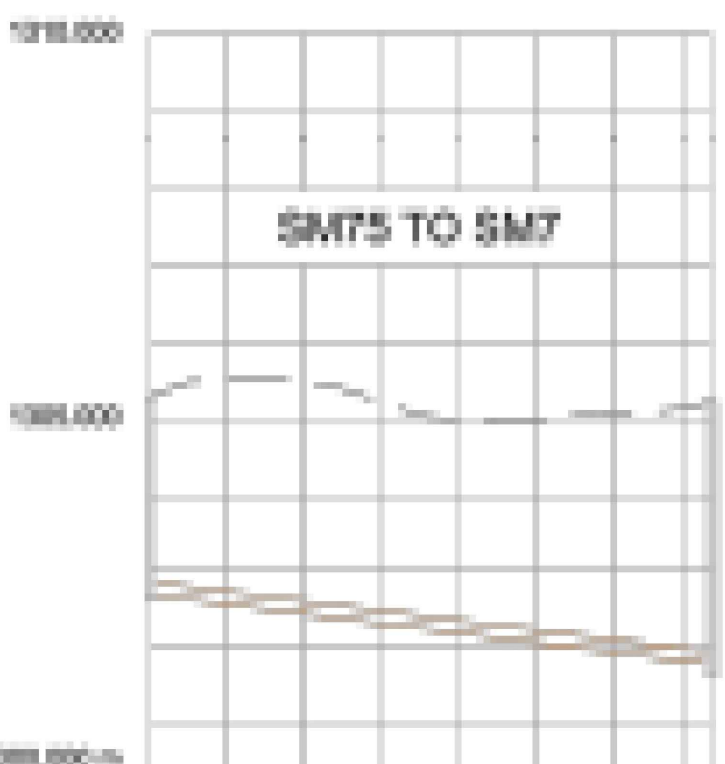


COORDINATE LIST

NAME	Y	X
SM75	87988.4677	284667.1977
SM7	87988.4677	284667.1977

1. THE X AND Y CO-ORDINATES OF THE INFORMATION INDICATED ON THIS DRAWING ARE BASED ON THE WORLD GEODETIC SYSTEM 1984 ELLIPSOID (WGS84).

2. ALL Z CO-ORDINATES SHOWN ON THE DRAWING ARE BASED ON THE LOCAL ORTHOMETRIC HEIGHT SYSTEM AND ON THE DATUM PEG WITH AN ELEVATION AS INDICATED IN WRITING TO THE CONTRACTOR AT THE COMMENCEMENT OF THE WORKS.



COORDINATE LIST

NAME	Y	X
SM76	87982.120	2846468.586
SM85b	87895.272	2846477.453

1. THE X AND Y CO-ORDINATES OF THE INFORMATION INDICATED ON THIS DRAWING ARE BASED ON THE WORLD GEODETIC SYSTEM 1984 ELLIPSOID (WGS84).

2. ALL Z CO-ORDINATES SHOWN ON THE DRAWING ARE BASED ON THE LOCAL ORTHOMETRIC HEIGHT SYSTEM AND ON THE DATUM PEG WITH AN ELEVATION AS INDICATED IN WRITING TO THE CONTRACTOR AT THE COMMENCEMENT OF THE WORKS.

HORIZONTAL SCALE:1000
VERTICAL SCALE:50

CHAINAGE	GROUND LEVEL	MANHOLE NAME	INLET LEVEL / OUTLET LEVEL	DEPTH	LINK TYPE / LINK SIZE	LENGTH / SLOPE	FLOW	CAPACITY	VELOCITY	BEDDING
0.000	1303.926	SM76	1303.169	0.757	PVC-U 160 mm	87.302 m 1 : 133	0.142 l/s	16.325 l/s	0.365 m/s	CLASS B
20.000	1303.764		1303.019	0.745						
40.000	1303.502		1302.868	0.634						
60.000	1303.362		1302.718	0.644						
80.000	1303.390		1302.567	0.823						
87.300	1303.382	SM85b	1302.512	0.870						

COORDINATE LIST

NAME	Y	X
SM78	87988.1240	284668.5885
SM79	87988.4677	284667.1977

1. THE X AND Y CO-ORDINATES OF THE INFORMATION INDICATED ON THIS DRAWING ARE BASED ON THE WORLD GEODETIC SYSTEM 1984 ELLIPSOID (WGS84).

2. ALL Z CO-ORDINATES SHOWN ON THE DRAWING ARE BASED ON THE LOCAL ORTHOMETRIC HEIGHT SYSTEM AND ON THE DATUM PEG WITH AN ELEVATION AS INDICATED IN WRITING TO THE CONTRACTOR AT THE COMMENCEMENT OF THE WORKS.

DATUM 1299

MANHOLE	CHAINAGE	GROUND LEVEL	INVERT LEVEL	DEPTH	GRADES	LENGTH (m)	PIPE DIAMETER (mm)	BEDDING CLASS	DESIGN FLOW (m³/s)	CFS CAPACITY (m³/s)	DESIGN VELOCITY (m/s)	V75 VELOCITY (m/s)
SM78	0.000	1303.926	1303.169	0.757	1:133	87.302	160	B	1.888	14.256	0.656	1.879
SM79	87.300	1303.382	1302.512	0.870								

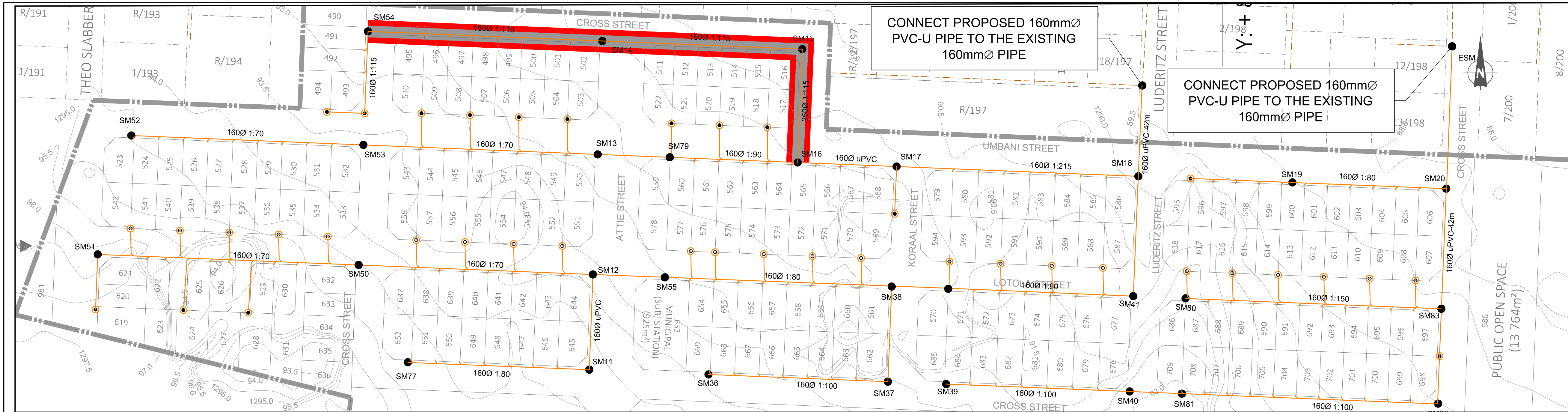
LEGEND

SANITATION

- MANHOLE
- CE / LH
- NEW CCTV INSPECTION
- EXST. LINE INSPECTED BY CCTV
- NEW SEWER LINE
- REVISED NEW SEWER LINE
- EXISTING SEWER LINE
- HOUSE CONNECTION

N.B: ALL NEW SEWER PIPELINES ARE PVC-U PIPES

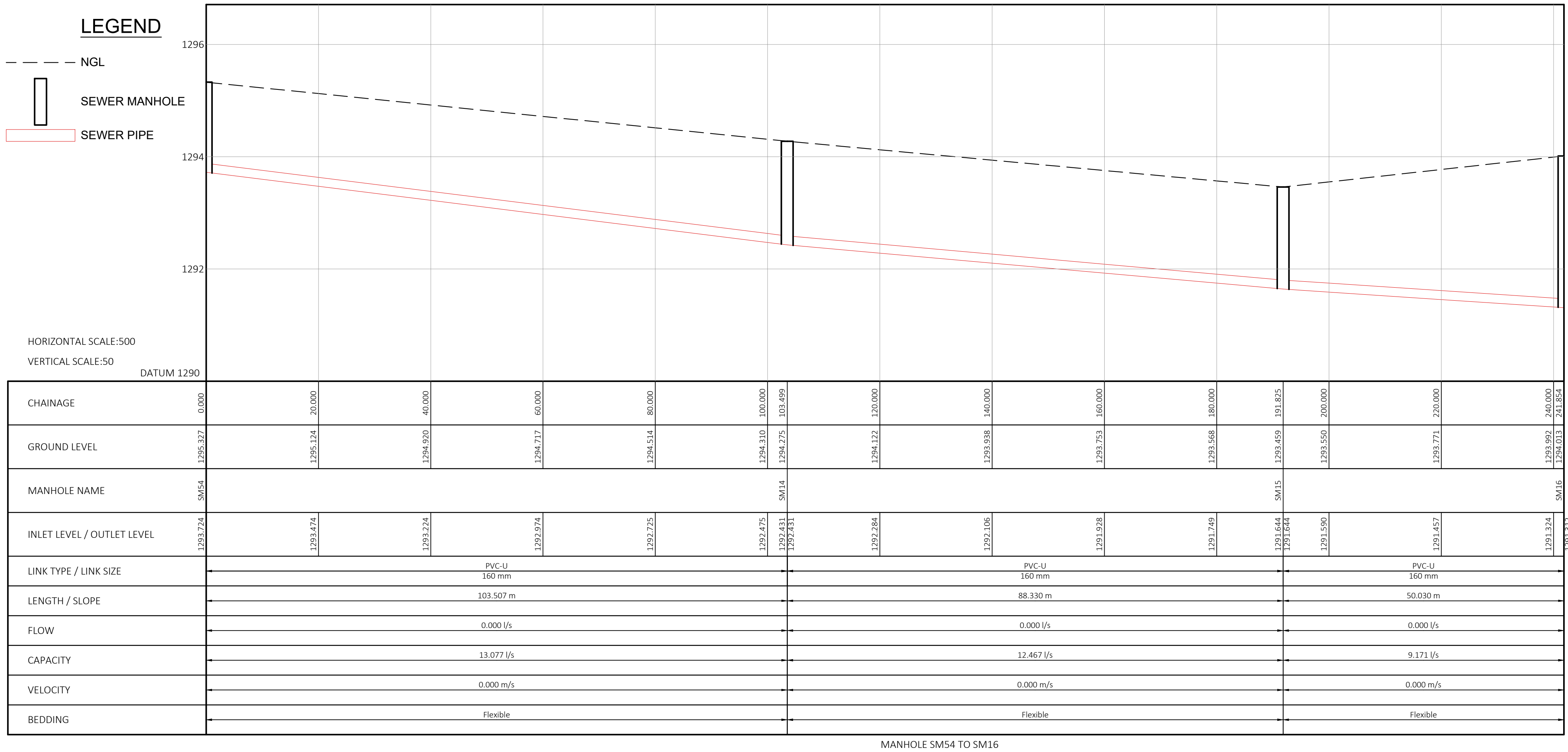
 CITY OF TSHWANE SERVICES INFRASTRUCTURE DEPARTMENT WATER AND SANITATION DIVISION	AMENDMENTS				WATER AND SANITATION FOR INTERNAL APPROVAL - NOT VALID FOR PERMITS/APPLICABLE				CONSULTANT DETAIL				DESIGNED NAME: Z.D RANTA Pr Eng. Prof Reg No: 20090303 SIGNATURE: DATE:				CONTRACT No: PROJECT No. RTD 04-2014/15 (15-01) SHEET No. 2543IES-147 PAPER SIZE: A1 SCALE: AS SHOWN DATE: 2020-08-02				PROJECT STATUS RECEIVED SIGN WHERE APPLICABLE CONCEPT DRAWING TENDER DRAWING ☒ APPROVED CONSTRUCTION DRAWING AS BUILT DRAWING PROJECT ENGINEER OF COT: NAME: Pr Eng. Prof Reg No: SIGNATURE: DATE: INSPECTOR OF WORKS OF COT: NAME: Pr Eng. Prof Reg No: SIGNATURE: DATE:				LOCATION OF PROJECT: BOOYSENS			
	NR. DATE APPROVED DESCRIPTION PAR				DIRECTOR: WATER AND SANITATION - PLANNING				DPT CIVIL AND STRUCTURAL IV POSTNET SUITE 453 SINOVILLE CORNER PRIVATE BAG X504 SINOVILLE 0129 TEL: 012 567 7381 FAX: 012 567 1996 E-MAIL: info@ditshimega.co.za				NAME: K. MOLEMA Pr Eng. Prof Reg No: SIGNATURE: DATE:				NAME: Z.D RANTA Pr Eng. Prof Reg No: 20090303 SIGNATURE: DATE:				NAME: Pr Eng. Prof Reg No: SIGNATURE: DATE:				DESCRIPTION OF PROJECT: SEWER RETICULATION LONGITUDINAL SECTION 27, 28, 29 & 31			
					NAME Prof. Reg. No SIGNATURE DATE				NAME Prof. Reg. No SIGNATURE DATE				NAME Prof. Reg. No SIGNATURE DATE				NAME Prof. Reg. No SIGNATURE DATE				WBS No.:							
					NAME Prof. Reg. No SIGNATURE DATE				NAME Prof. Reg. No SIGNATURE DATE				NAME Prof. Reg. No SIGNATURE DATE				NAME Prof. Reg. No SIGNATURE DATE				COT DRAWING NUMBER:							



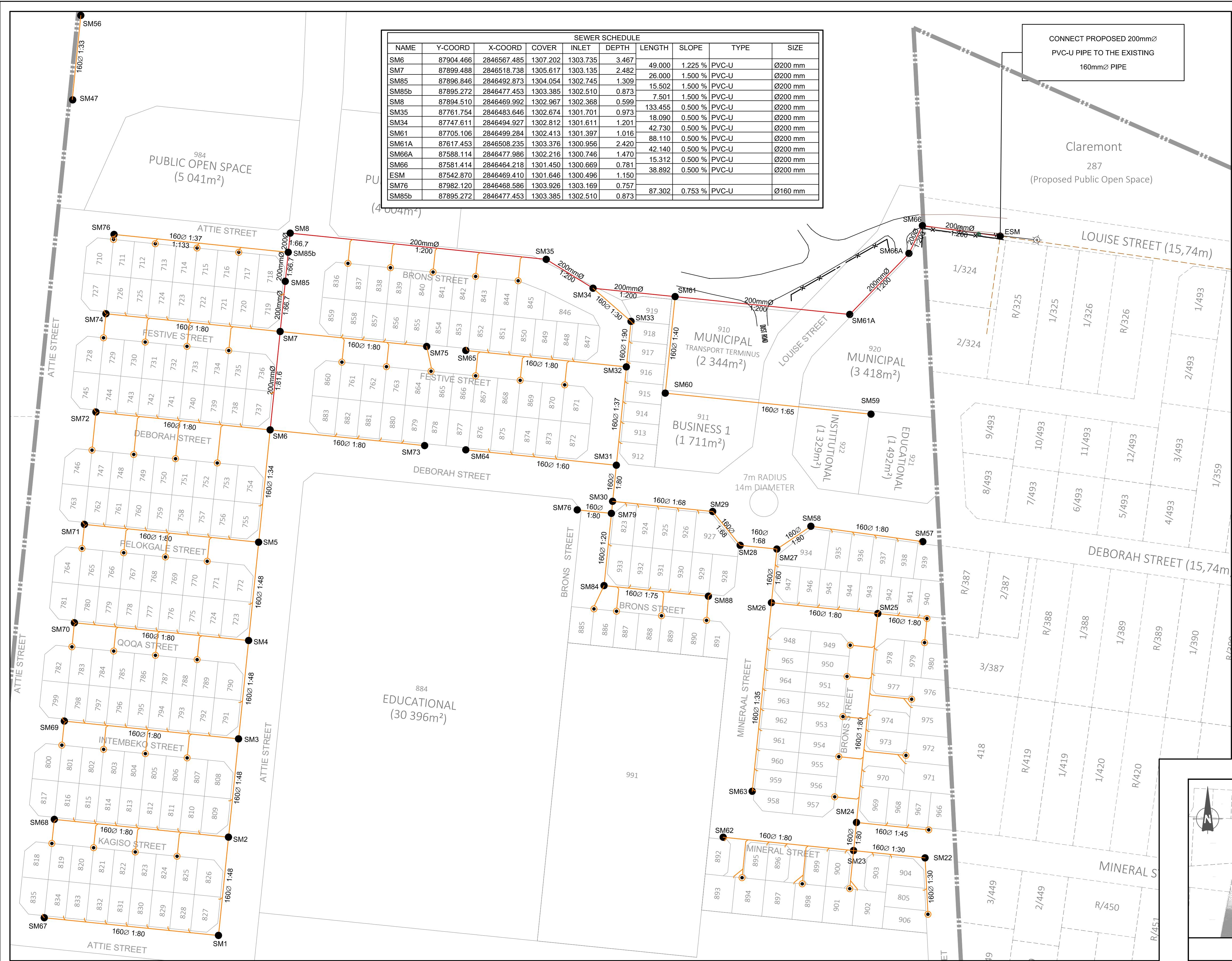
- ### NOTES AND SPECIFICATIONS
- #### GENERAL
1. ALL MATERIAL AND WORKMANSHIP MUST COMPLY WITH THE REQUIREMENTS OF THE LATEST RELEVANT SABS REQUIREMENTS.
 2. ALL DIMENSIONS ARE IN MILLIMETRES. (UNLESS OTHERWISE SPECIFIED).
 3. DO NOT SCALE FROM THESE DRAWINGS.
 4. ALL DIMENSIONS MUST BE CHECKED AND APPROVED ON SITE.
 5. ALL CONSTRUCTION TO BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR MUNICIPAL CIVIL ENGINEERING WORKS, THIRD EDITION 2005 AND THE STANDARD COT DETAIL DRAWINGS.
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 7. THIS DRAWING MUST BE READ IN CONJUNCTION WITH THE STANDARD SPECIFICATIONS FOR MUNICIPAL CIVIL ENGINEERING WORKS, SERIES 4.
 8. THE SIGNATURE OR INITIALS ON THIS DRAWING, OF ANY DIRECTOR OF THE PUBLIC WORKS AND INFRASTRUCTURE DEVELOPMENT DEPARTMENT, IN NO WAY REMOVES ANY RESPONSIBILITY WHATSOEVER FROM THE CONSULTANT.
 9. THE CONSULTANT REMAINS RESPONSIBLE TO ENSURE THAT ALL THE GUIDELINES, STANDARD DRAWINGS, STANDARDS AND SPECIFICATIONS OF THE PUBLIC WORKS AND INFRASTRUCTURE DEVELOPMENT DEPARTMENT HAVE BEEN MET AND ARE COMPLIED WITH.
 10. FINAL POSITION OF SERVICES TO BE DETERMINED ON SITE.

- #### LEGEND
- ##### SANITATION
- MANHOLE
 - CE / LH
 - NEW CCTV INSPECTION
 - EXIST. LINE INSPECTED BY CCTV
 - NEW SEWER LINE
 - REVISED NEW SEWER LINE
 - EXISTING SEWER LINE
 - HOUSE CONNECTION

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 CITY OF TSHWANE SERVICES INFRASTRUCTURE DEPARTMENT WATER AND SANITATION DIVISION	AMENDMENTS			WATER AND SANITATION FOR INTERNAL APPROVAL - NOT FOR PUBLIC USE			CONSULTANT DETAIL			DESIGNED NAME: <u>Z.D RANTA</u> Dr Eng. Prof Reg No: <u>201170066</u> SIGNATURE: _____ DATE: _____			CONTRACT No: _____ PROJECT No: _____			PROJECT STATUS REVISIONS SHOULD BE INDICATED ☐ CONCEPT DRAWING ☐ TENDER DRAWING ☒ APPROVED CONSTRUCTION DRAWING ☐ AS BUILT DRAWING			LOCATION OF PROJECT: BOOYSENS					
	NR <u>1</u> DATE <u>01-12-2025</u> APPROVED <u>Z.D RANTA</u> DESCRIPTION <u>CONSTRUCTION DRAWINGS</u> PAR _____			DIRECTOR: WATER AND SANITATION - PLANNING NAME _____ Prof. Reg. No. _____ SIGNATURE _____ DATE _____ REGIONAL DIRECTOR: (1,2,3,4,5,6 or 7) NAME _____ Prof. Reg. No. _____ SIGNATURE _____ DATE _____ DIRECTOR: SYSTEM DEVELOPMENT NAME _____ Prof. Reg. No. _____ SIGNATURE _____ DATE _____ DIRECTOR: BULK WATER NAME _____ Prof. Reg. No. _____ SIGNATURE _____ DATE _____ DIRECTOR: INFRASTRUCTURE PROVISION NAME _____ Prof. Reg. No. _____ SIGNATURE _____ DATE _____ DIRECTOR: WASTE WATER TREATMENT NAME _____ Prof. Reg. No. _____ SIGNATURE _____ DATE _____			DPT CIVIL AND STRUCTURAL JV POSTNET SUITE 453 SINOVILLE CONER PRIVATE BAG X504 SINOVILLE 0129 TEL: 012 567 7381 FAX: 012 567 1996 E-MAIL: info@ditshimega.co.za I, _____ Prof Reg Nr _____ HEREBY CERTIFY THAT THE SERVICES WILL HAVE BEEN INSTALLED ACCORDING TO NOTE 9 OF THE ABOVE NOTES AND TO THE DRAWING SIGNATURE _____ DATE _____ CONSULTANT DRAWING NUMBER: 2017/SM/10/01-SRL-011			NAME: <u>Z.D RANTA</u> Dr Eng. Prof Reg No: <u>201170066</u> SIGNATURE: _____ DATE: _____			DRAWN NAME: <u>K. MOLEMA</u> Prof Reg No: _____ SIGNATURE: _____ DATE: _____ CHECKED NAME: <u>Z.D RANTA</u> Dr Eng. Prof Reg No: <u>201170066</u> SIGNATURE: _____ DATE: _____ INFORMATION OFFICE CHECKED NAME: _____ Dr Eng. Prof Reg No: _____ SIGNATURE: _____ DATE: _____ DESIGN OFFICE APPROVAL NAME: <u>Z.D RANTA</u> Dr Eng. Prof Reg No: <u>201170066</u> SIGNATURE: _____ DATE: _____			SHEET No. <u>2543IES-129</u> PAPER SIZE: <u>A1</u> SCALE: <u>AS SHOWN</u> DATE: <u>2025-06-10</u>						PROJECT ENGINEER OF COT: NAME: _____ Dr Eng. Prof Reg No: _____ SIGNATURE: _____ DATE: _____ INSPECTOR OF WORKS of COT: NAME: _____ Dr Eng. Prof Reg No: _____ SIGNATURE: _____ DATE: _____		
																WBS No. : _____								
																			COT DRAWING NUMBER: _____					



SEWER SCHEDULE									
NAME	Y-COORD	X-COORD	COVER	INLET	DEPTH	LENGTH	SLOPE	TYPE	SIZE
SM6	87904.466	2846567.485	1307.202	1303.735	3.467	49.000	1.225 %	PVC-U	Ø200 mm
SM7	87899.488	2846518.738	1305.617	1303.135	2.482	26.000	1.500 %	PVC-U	Ø200 mm
SM85	87896.846	2846492.873	1304.054	1302.745	1.309	15.502	1.500 %	PVC-U	Ø200 mm
SM85b	87895.272	2846477.453	1303.385	1302.510	0.873	7.501	1.500 %	PVC-U	Ø200 mm
SM8	87894.510	2846469.992	1302.967	1302.368	0.599	133.455	0.500 %	PVC-U	Ø200 mm
SM35	87761.754	2846483.646	1302.674	1301.701	0.973	18.090	0.500 %	PVC-U	Ø200 mm
SM34	87747.611	2846494.927	1302.812	1301.611	1.201	42.730	0.500 %	PVC-U	Ø200 mm
SM61	87705.106	2846499.284	1302.413	1301.397	1.016	88.110	0.500 %	PVC-U	Ø200 mm
SM61A	87617.453	2846508.235	1303.376	1300.956	2.420	42.140	0.500 %	PVC-U	Ø200 mm
SM66A	87588.114	2846477.986	1302.216	1300.746	1.470	15.312	0.500 %	PVC-U	Ø200 mm
SM66	87581.414	2846464.218	1301.450	1300.669	0.781	38.892	0.500 %	PVC-U	Ø200 mm
ESM	87542.870	2846469.410	1301.646	1300.496	1.150	87.302	0.753 %	PVC-U	Ø160 mm
SM76	87982.120	2846468.586	1303.926	1303.169	0.757				
SM85b	87895.272	2846477.453	1303.385	1302.510	0.873				

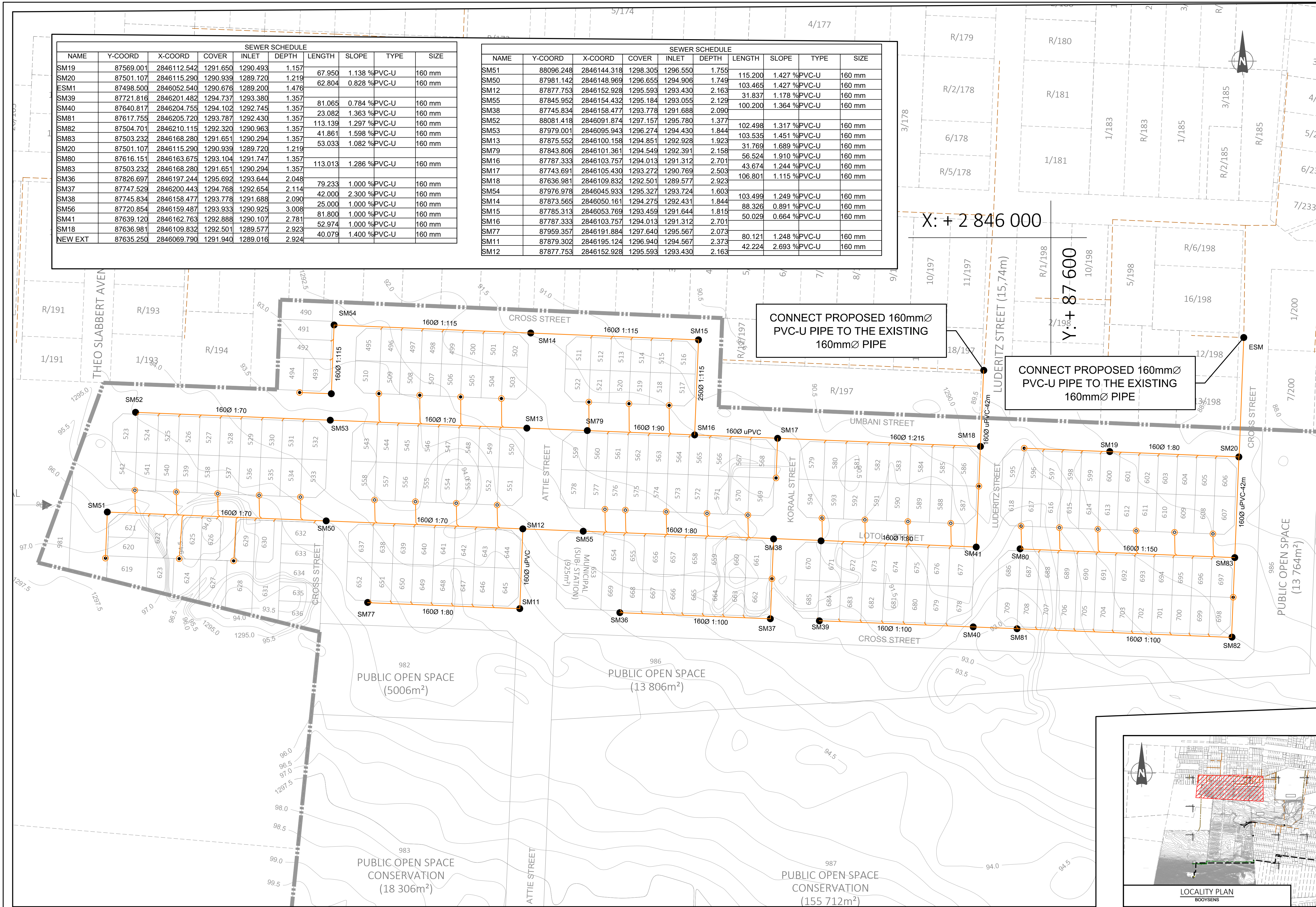
NOTES AND SPECIFICATIONS

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 CITY OF TSHWANE SERVICES INFRASTRUCTURE DEPARTMENT WATER AND SANITATION DIVISION	AMENDMENTS			WATER AND SANITATION			CONSULTANT DETAIL			DESIGNED			CONTRACT			PROJECT STATUS			LOCATION OF PROJECT:				
	NR	DATE	APPROVED	DESCRIPTION	PAR	DIRECTOR: WATER AND SANITATION - PLANNING			DPT CIVIL AND STRUCTURAL IV POSTNET SUITE 453 SINOVILLE CORNER PRIVATE BAG X504 SINOVILLE 0129 TEL: 012 567 7381 FAX: 012 567 1996 E-MAIL: info@dtshimaga.co.za			NAME: Z.D RANTA Br Eng. Prof Reg No: 201170066 SIGNATURE: _____ DATE: _____			PROJECT No. 2543IES-147			PROJECT ENGINEER OF COT:			BOOYSENS		
	1	01-12-2025	Z.D RANTA	CONSTRUCTION DRAWINGS		REGIONAL DIRECTOR: (1,2,3,4,5,6 or 7)			DPT			NAME: K. MOLEMA Prof Reg No: _____ SIGNATURE: _____ DATE: _____			SHEET No. 2543IES-147			PROJECT ENGINEER OF COT:			DESCRIPTION OF PROJECT:		
						DIRECTOR: SYSTEM DEVELOPMENT			HEREBY CERTIFY THAT THE SERVICES WILL HAVE BEEN INSTALLED ACCORDING TO NOTE 9 OF THE ABOVE NOTES AND TO THE DRAWING			NAME: Z.D RANTA Br Eng. Prof Reg No: 201170066 SIGNATURE: _____ DATE: _____			PAPER SIZE: A1			PROJECT ENGINEER OF COT:			SEWER RETICULATION LAYOUT - SOUTH		
					DIRECTOR: BULK WATER						NAME: _____ Prof Reg No: _____ SIGNATURE: _____ DATE: _____			SCALE: AS SHOWN			INSPECTOR OF WORKS OF COT:			WBS No.:			
					DIRECTOR: INFRASTRUCTURE PROVISION						NAME: _____ Prof Reg No: _____ SIGNATURE: _____ DATE: _____			DATE: 2025-06-10			INSPECTOR OF WORKS OF COT:			COT DRAWING NUMBER:			
					DIRECTOR: WASTE WATER TREATMENT						NAME: _____ Prof Reg No: _____ SIGNATURE: _____ DATE: _____												



SEWER SCHEDULE									
NAME	Y-COORD	X-COORD	COVER	INLET	DEPTH	LENGTH	SLOPE	TYPE	SIZE
SM19	87569.001	2846112.542	1291.650	1290.493	1.157	67.950	1.138	PVC-U	160 mm
SM20	87501.107	2846115.290	1290.938	1289.720	1.219	62.804	0.828	PVC-U	160 mm
ESM1	87498.500	2846052.540	1290.678	1289.200	1.476				
SM39	87721.816	2846201.482	1294.737	1293.380	1.357				
SM40	87640.817	2846204.755	1294.102	1292.745	1.357	81.065	0.784	PVC-U	160 mm
SM81	87617.755	2846205.720	1293.787	1292.430	1.357				
SM82	87504.701	2846102.115	1292.320	1290.963	1.357	113.139	1.297	PVC-U	160 mm
SM83	87503.232	2846168.280	1291.651	1290.294	1.357	41.861	1.598	PVC-U	160 mm
SM20	87501.107	2846115.290	1290.938	1289.720	1.219	53.033	1.082	PVC-U	160 mm
SM80	87616.151	2846163.675	1293.104	1291.747	1.357				
SM83	87503.232	2846168.280	1291.651	1290.294	1.357	113.013	1.286	PVC-U	160 mm
SM36	87826.697	2846197.244	1295.692	1293.644	2.048	79.233	1.000	PVC-U	160 mm
SM37	87747.529	2846200.443	1294.768	1292.654	2.114	42.000	2.300	PVC-U	160 mm
SM38	87745.834	2846158.477	1293.778	1291.688	2.090	25.000	1.000	PVC-U	160 mm
SM56	87720.854	2846159.487	1293.933	1290.925	3.008	81.800	1.000	PVC-U	160 mm
SM41	87639.120	2846162.763	1292.888	1290.107	2.781	52.974	1.000	PVC-U	160 mm
SM18	87636.981	2846109.832	1292.501	1289.577	2.923	40.079	1.400	PVC-U	160 mm
NEW EXT	87635.250	2846069.790	1291.940	1289.016	2.924				

SEWER SCHEDULE									
NAME	Y-COORD	X-COORD	COVER	INLET	DEPTH	LENGTH	SLOPE	TYPE	SIZE
SM51	88096.248	2846144.318	1298.305	1296.550	1.755	115.200	1.427	PVC-U	160 mm
SM50	87981.142	2846148.969	1296.655	1294.906	1.749	103.465	1.427	PVC-U	160 mm
SM12	87877.753	2846152.928	1295.593	1293.430	2.163	31.837	1.178	PVC-U	160 mm
SM55	87845.952	2846154.432	1295.184	1293.055	2.129	100.200	1.364	PVC-U	160 mm
SM38	87745.834	2846158.477	1293.778	1291.688	2.090				
SM52	88081.418	2846091.874	1297.157	1295.780	1.377	102.498	1.317	PVC-U	160 mm
SM53	87979.001	2846095.943	1296.274	1294.430	1.844	103.535	1.451	PVC-U	160 mm
SM13	87875.552	2846100.158	1294.851	1292.928	1.923	31.769	1.689	PVC-U	160 mm
SM79	87843.806	2846101.361	1294.549	1292.391	2.158	56.524	1.910	PVC-U	160 mm
SM16	87787.333	2846103.757	1294.013	1291.312	2.701	43.674	1.244	PVC-U	160 mm
SM17	87743.691	2846105.430	1293.272	1290.769	2.503	106.801	1.115	PVC-U	160 mm
SM18	87636.981	2846109.832	1292.501	1289.577	2.923				
SM54	87976.978	2846045.933	1295.327	1293.724	1.603	103.499	1.249	PVC-U	160 mm
SM14	87873.565	2846050.161	1294.275	1292.431	1.844	88.326	0.891	PVC-U	160 mm
SM15	87785.313	2846053.769	1293.459	1291.644	1.815	50.029	0.664	PVC-U	160 mm
SM16	87787.333	2846103.757	1294.013	1291.312	2.701				
SM77	87959.357	2846191.884	1297.640	1295.567	2.073	80.121	1.248	PVC-U	160 mm
SM11	87879.302	2846195.124	1296.940	1294.567	2.373	42.224	2.693	PVC-U	160 mm
SM12	87877.753	2846152.928	1295.593	1293.430	2.163				

CONNECT PROPOSED 160mmØ
PVC-U PIPE TO THE EXISTING
160mmØ PIPE

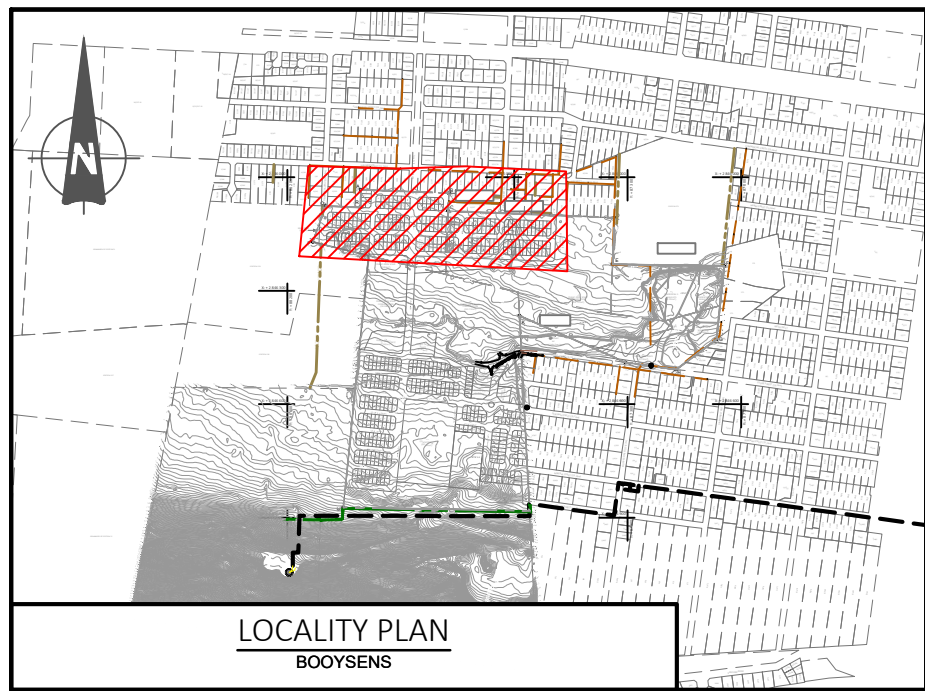
CONNECT PROPOSED 160mmØ
PVC-U PIPE TO THE EXISTING
160mmØ PIPE

NOTES AND SPECIFICATIONS

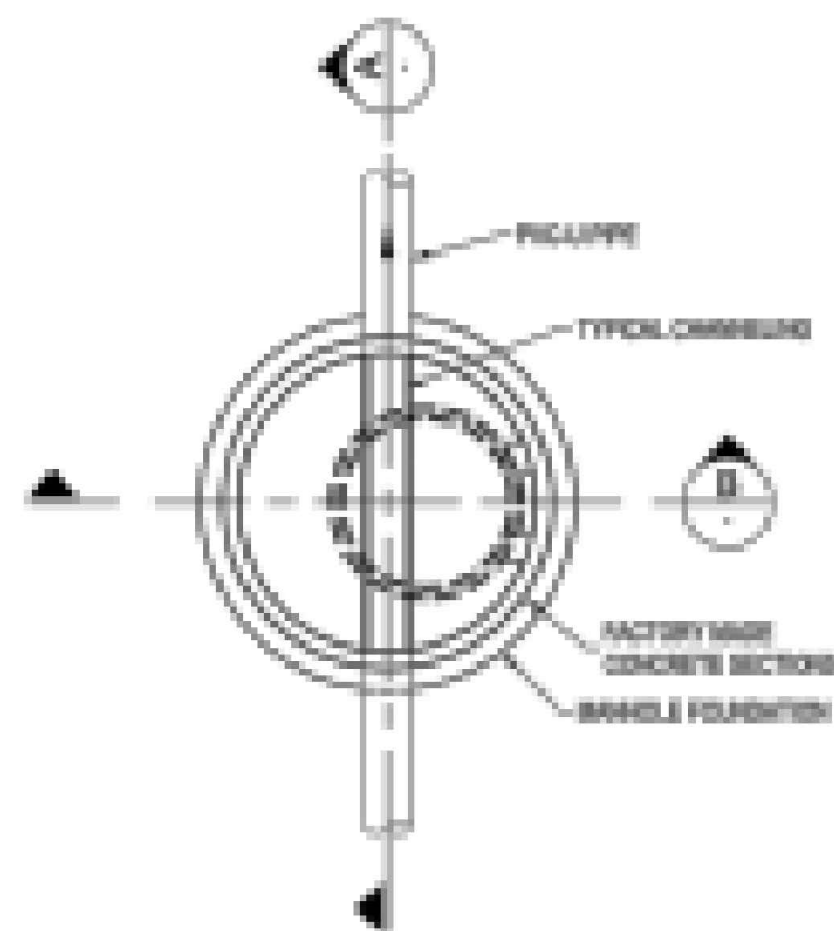
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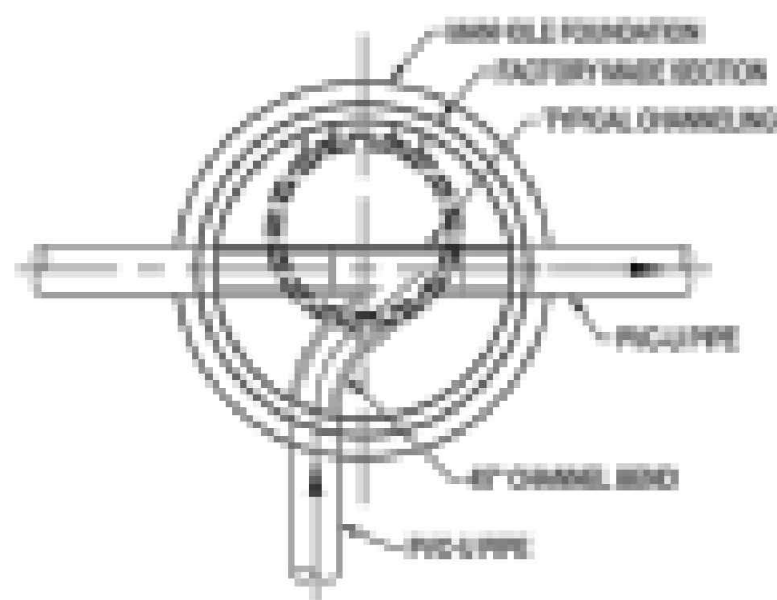
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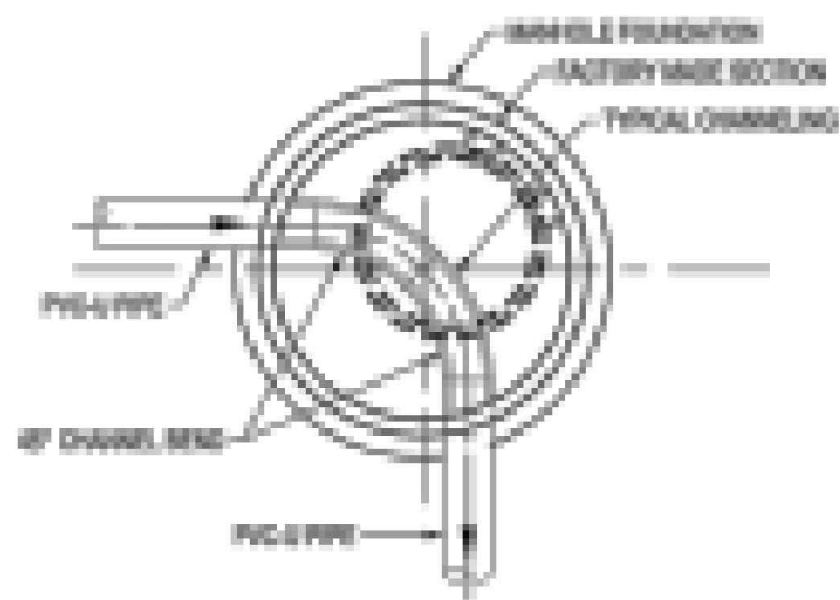
 CITY OF TSHWANE SERVICES INFRASTRUCTURE DEPARTMENT WATER AND SANITATION DIVISION	AMENDMENTS			WATER AND SANITATION			CONSULTANT DETAIL			DESIGNED			CONTRACT			PROJECT STATUS			LOCATION OF PROJECT:				
	NR	DATE	APPROVED	DESCRIPTION	PAR	DIRECTOR: WATER AND SANITATION - PLANNING			DPT CIVIL AND STRUCTURAL IV POSTNET SUITE 453 SINOVILLE CONER PRIVATE BAG X504 SINOVILLE 0129 TEL: 012 567 7381 FAX: 012 567 1996 E-MAIL: info@ditshimega.co.za			NAME: Z.D RANTA Br Eng. Prof Reg No: 201170066			PROJECT No.			PROJECT ENGINEER of COT:			BOOYSENS		
	1	01-12-2025	Z.D RANTA	CONSTRUCTION DRAWINGS		REGIONAL DIRECTOR: (1,2,3,4,5,6 or 7)			HEREBY CERTIFY THAT THE SERVICES WILL HAVE BEEN INSTALLED ACCORDING TO NOTE 9 OF THE ABOVE NOTES AND TO THE DRAWING			NAME: K. MOLEMA Prof Reg No:			SHEET No. 2543IES-128			DESCRIPTION OF PROJECT:					
						DIRECTOR: SYSTEM DEVELOPMENT			SIGNATURE: DATE			NAME: Z.D RANTA Br Eng. Prof Reg No: 201170066			PAPER SIZE: A1			SEWER RETICULATION LAYOUT - NORTH					
					DIRECTOR: BULK WATER			SIGNATURE: DATE			INFORMATION OFFICE CHECKED			SCALE: AS SHOWN			INSPECTOR OF WORKS of COT:			WBS No.:			
					DIRECTOR: INFRASTRUCTURE PROVISION			SIGNATURE: DATE			NAME: Br Eng. Prof Reg No:			DATE: 2025-06-10			COT DRAWING NUMBER:						
					DIRECTOR: WASTE WATER TREATMENT			SIGNATURE: DATE			NAME: Br Eng. Prof Reg No: 201170066												
								CONSULTANT DRAWING NUMBER: 2017/SM/10/01-SRL-011			SIGNATURE: DATE												



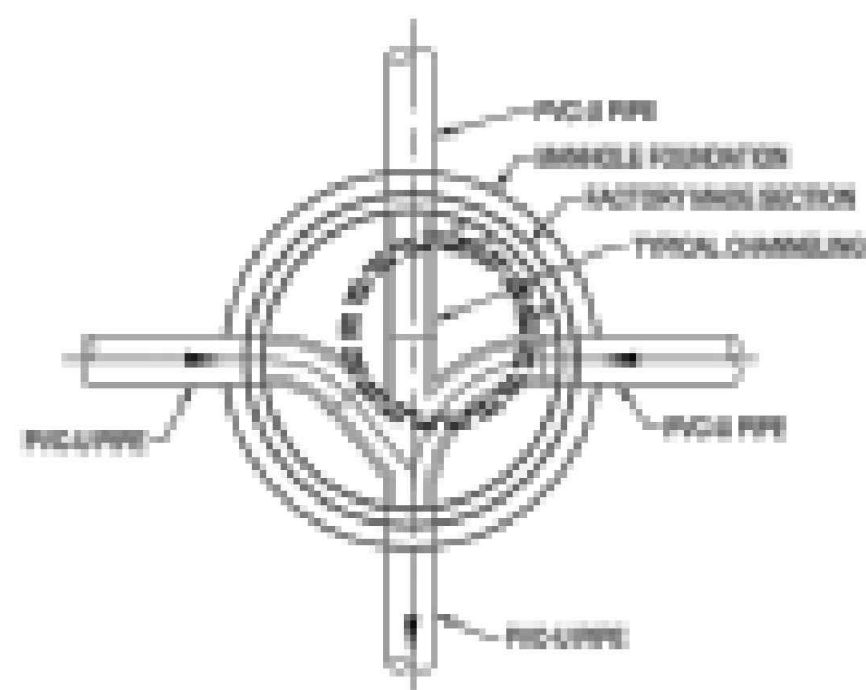
PLAN
SCALE 1:25
(TYPICAL EXAMPLE OF THROUGH CONNECTION IN MANHOLE)



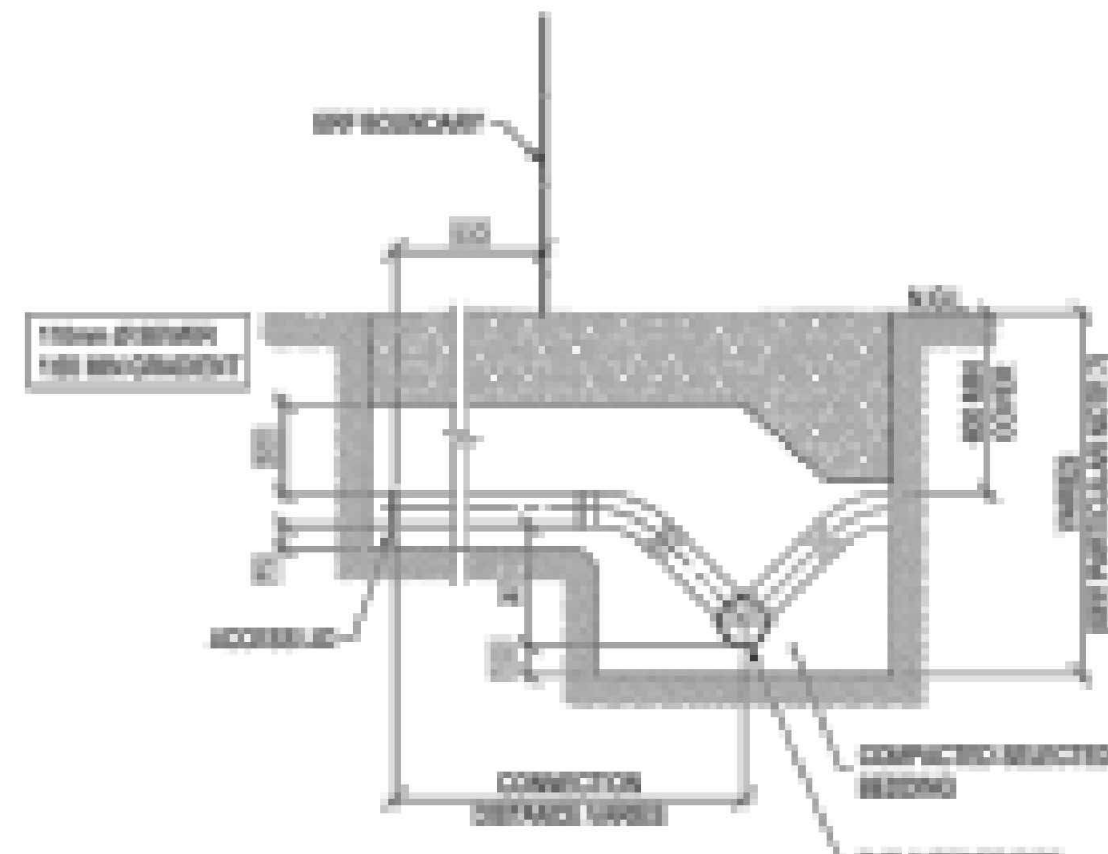
PLAN
SCALE 1:25
(TYPICAL EXAMPLE OF 45° CONNECTION IN MANHOLE)



PLAN
SCALE 1:25
(TYPICAL EXAMPLE OF 90° CONNECTION IN MANHOLE)

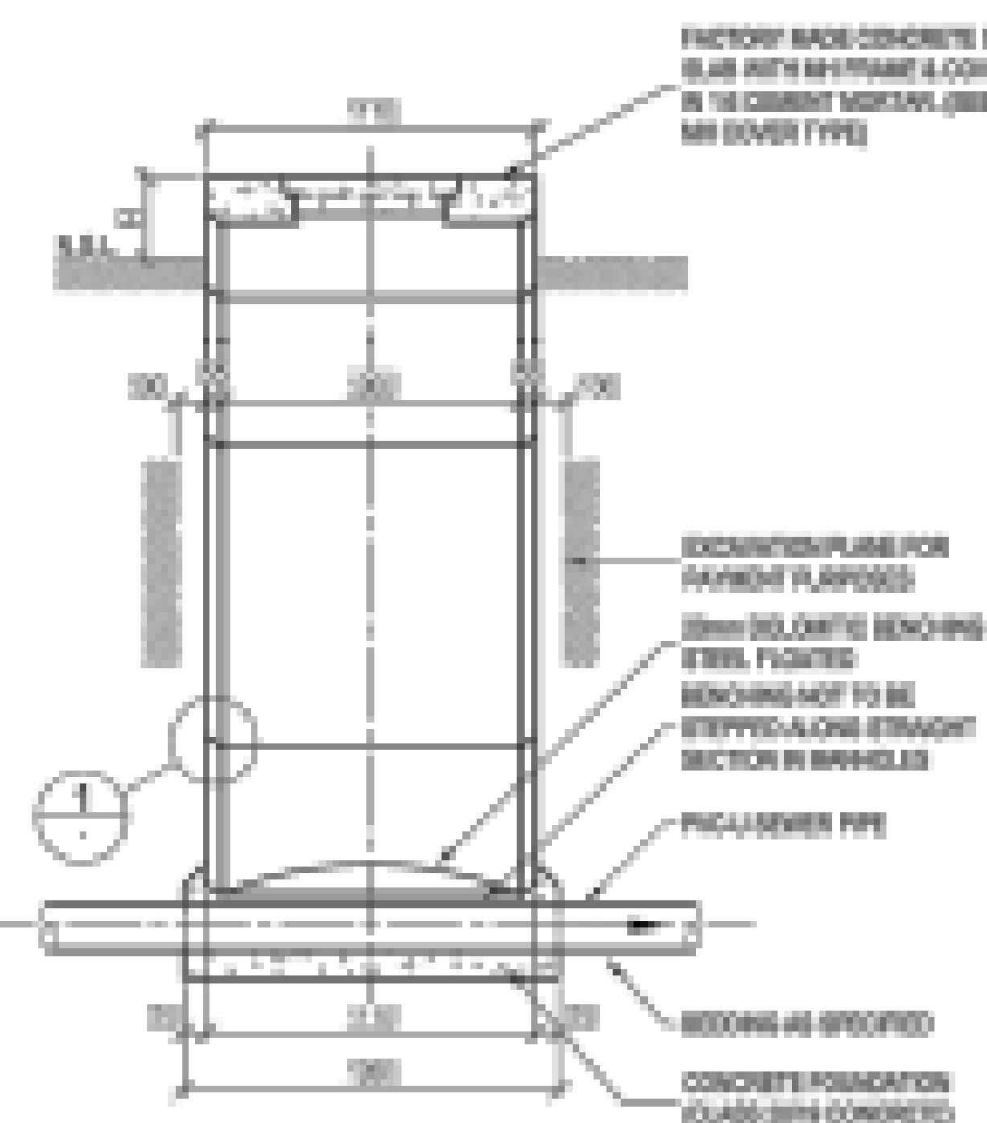


PLAN
SCALE 1:25
(TYPICAL EXAMPLE OF 90° CONNECTION IN MANHOLE)

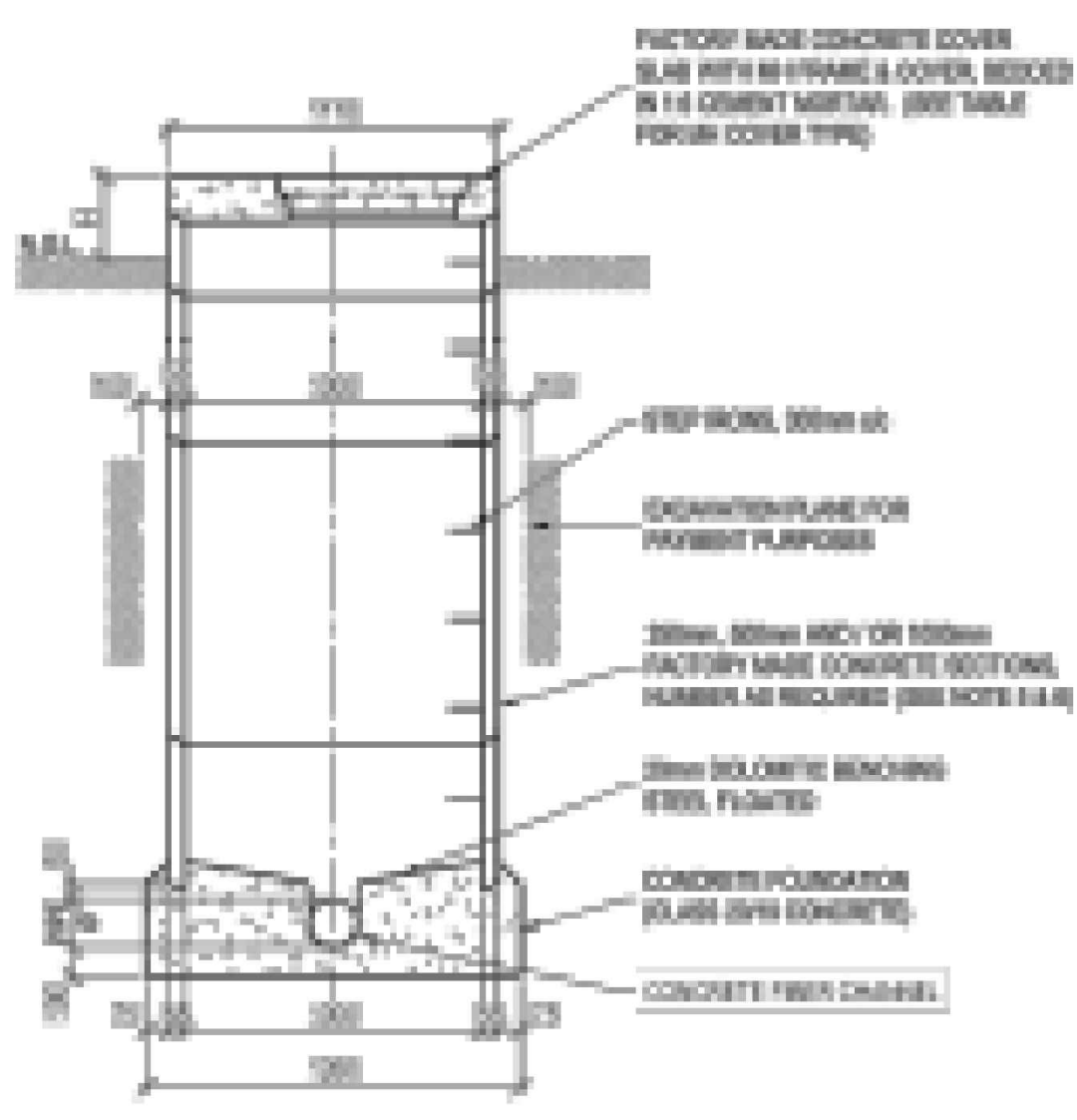


SECTION
SCALE 1:25

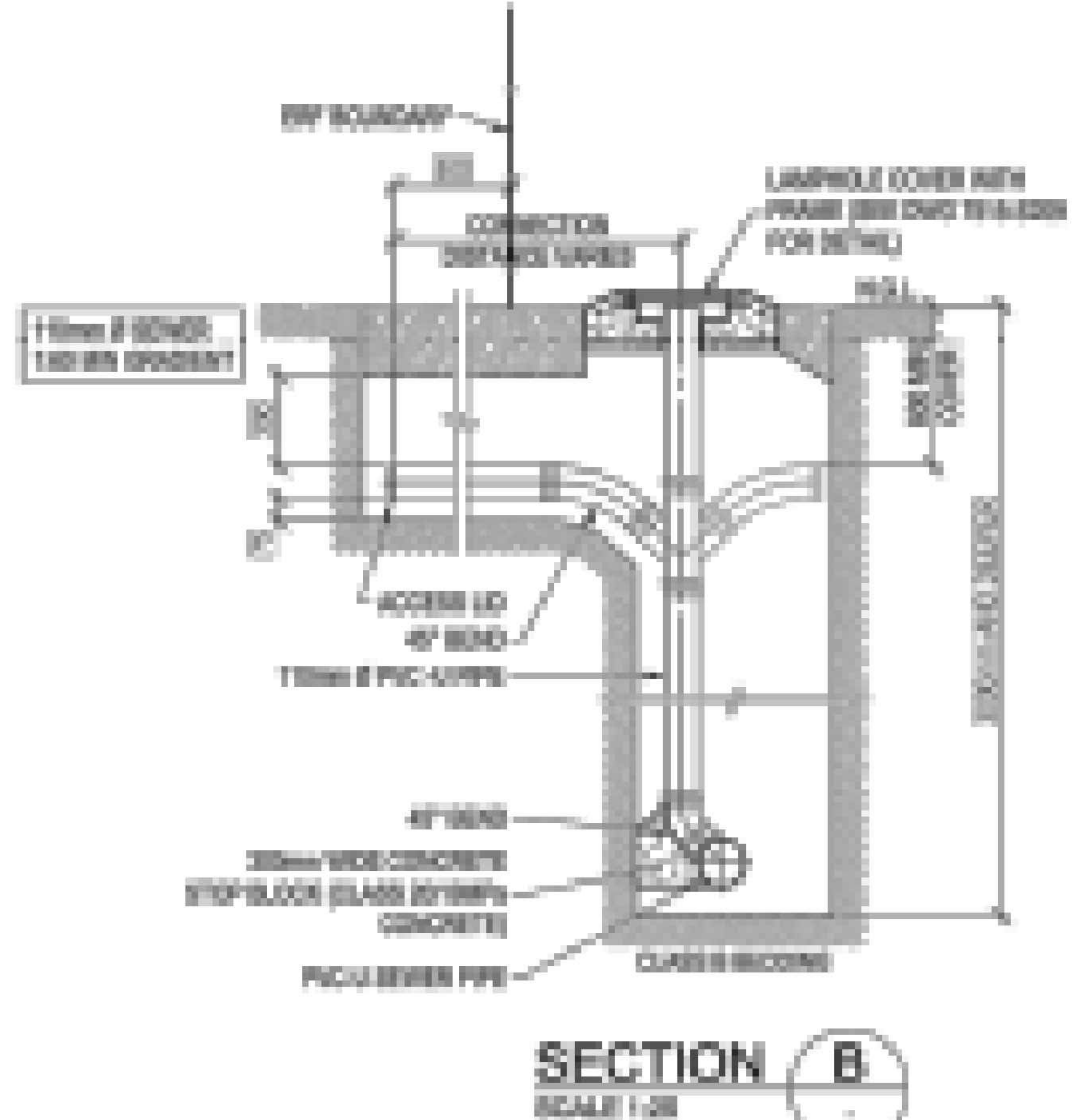
TYPICAL MANHOLE LAYOUTS SHOWING POSITIONS OF MANHOLE FRAME, STEPS & CHANNELING



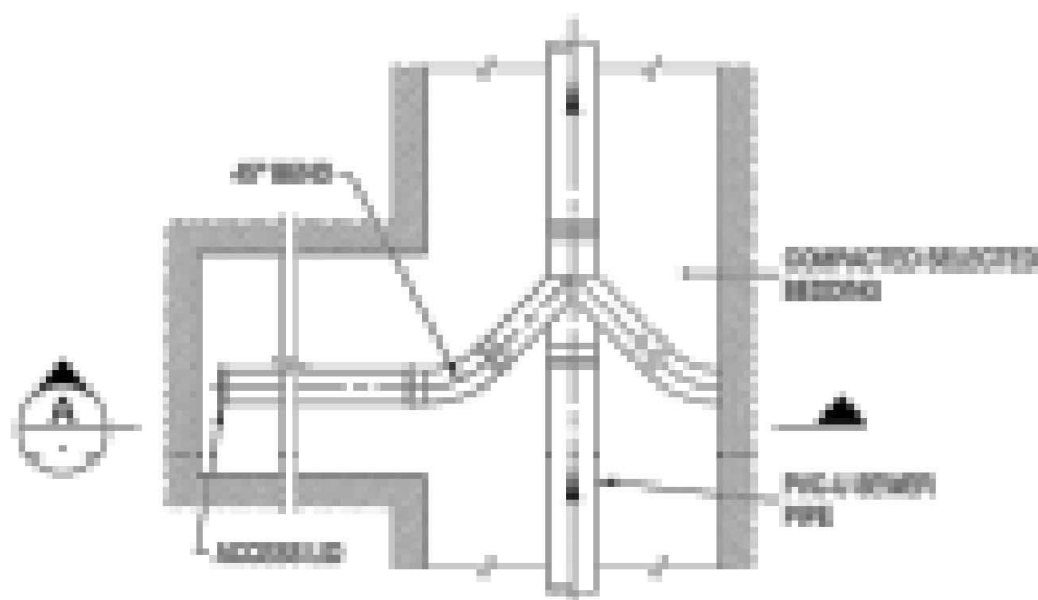
SECTION A
SCALE 1:25



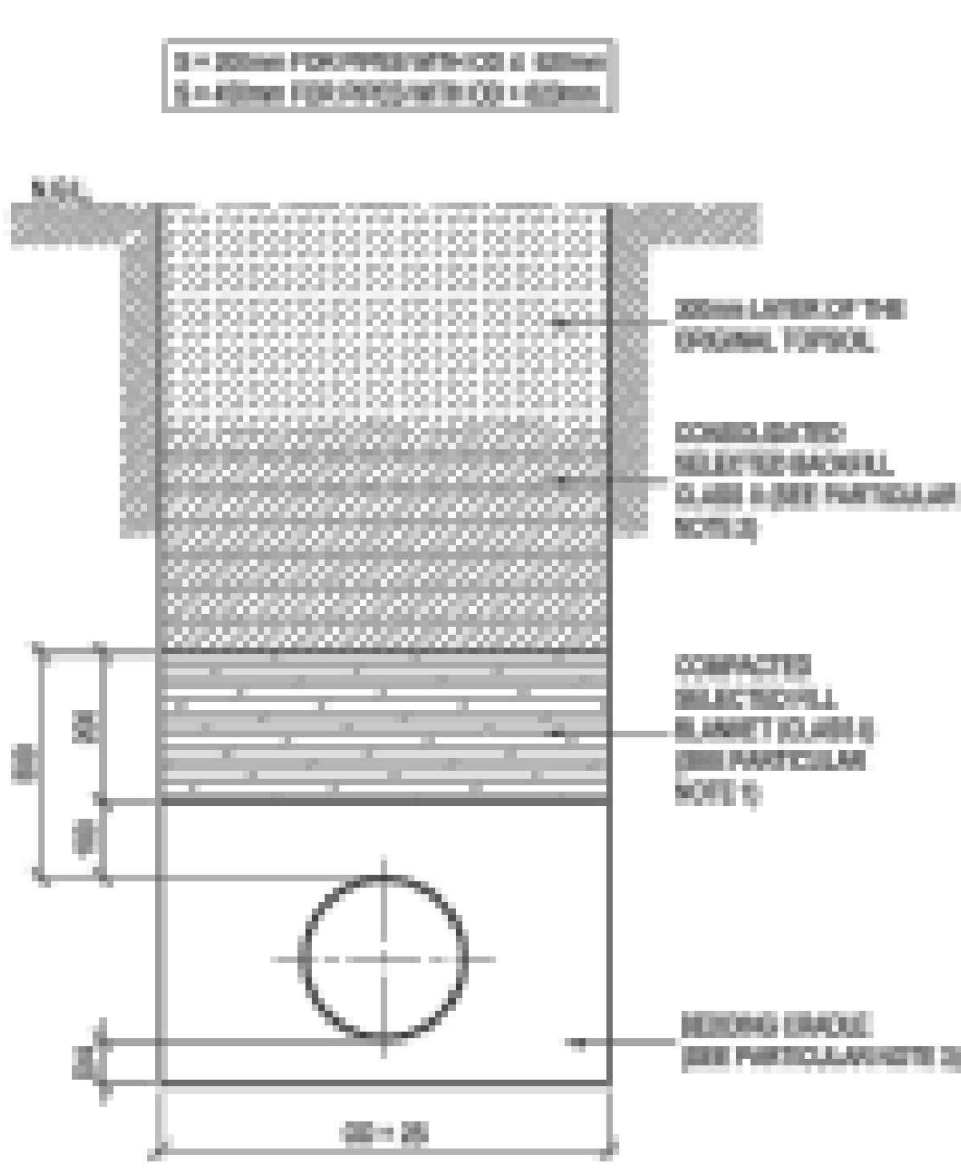
SECTION B
SCALE 1:25



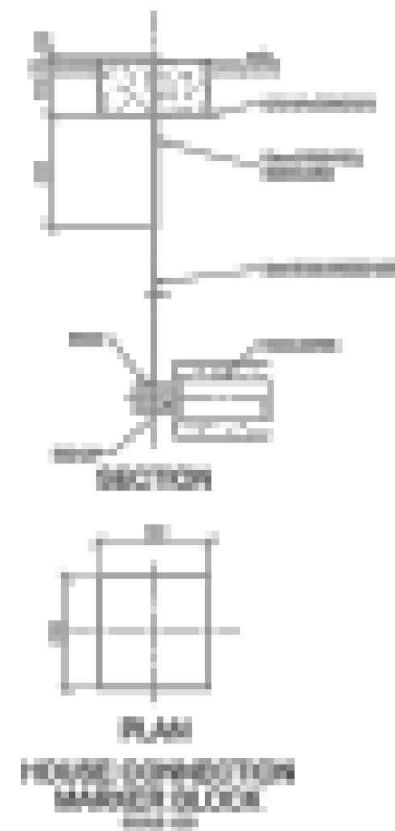
SECTION B
SCALE 1:25



PLAN
SCALE 1:25
PLAN - HOUSE CONNECTION TYPE A



CLASS B BEDDING
FOR FLEXIBLE PIPE LINE
SCALE 1:10



PLAN
HOUSE CONNECTION
MANHOLE BLOCK
SCALE 1:25

NOTES AND SPECIFICATIONS

GENERAL

1. ALL MATERIAL AND WORKMANSHIP MUST COMPLY WITH THE REQUIREMENTS OF THE LATEST RELEVANT SABS REQUIREMENTS.
2. ALL DIMENSIONS ARE IN MILLIMETRES. (UNLESS OTHERWISE SPECIFIED).
3. DO NOT SCALE FROM THESE DRAWINGS.
4. ALL DIMENSIONS MUST BE CHECKED AND APPROVED ON SITE.
5. ALL CONSTRUCTION TO BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR MUNICIPAL CIVIL ENGINEERING WORKS, THIRD EDITION 2005 AND THE STANDARD COT DETAIL DRAWINGS.
6. THESE DRAWINGS MUST BE READ IN CONJUNCTION WITH THE STANDARD DRAWINGS (IF APPLICABLE).
7. THIS DRAWING MUST BE READ IN CONJUNCTION WITH THE STANDARD SPECIFICATIONS FOR MUNICIPAL CIVIL ENGINEERING WORKS, SERIES 4.
8. THE SIGNATURE OR INITIALS ON THIS DRAWING, OF ANY DIRECTOR OF THE PUBLIC WORKS AND INFRASTRUCTURE DEVELOPMENT DEPARTMENT, IN NO WAY REMOVES ANY RESPONSIBILITY WHATSOEVER FROM THE CONSULTANT.
9. THE CONSULTANT REMAINS RESPONSIBLE TO ENSURE THAT ALL THE GUIDELINES, STANDARD DRAWINGS, STANDARDS AND SPECIFICATIONS OF THE PUBLIC WORKS AND INFRASTRUCTURE DEVELOPMENT DEPARTMENT HAVE BEEN MET AND ARE COMPLIED WITH.
10. FINAL POSITION OF SERVICES TO BE DETERMINED ON SITE.

LEGEND

SANITATION

- MANHOLE
- CE / LH
- NEW CCTV INSPECTION
- EXIST. LINE INSPECTED BY CCTV
- NEW SEWER LINE
- REVISED NEW SEWER LINE
- EXISTING SEWER LINE
- HOUSE CONNECTION

N.B: ALL NEW SEWER PIPELINES ARE PVC-U PIPES



CITY OF TSHWANE
SERVICES INFRASTRUCTURE
DEPARTMENT
WATER AND SANITATION
DIVISION

AMENDMENTS				
NR	DATE	APPROVED	DESCRIPTION	PAR
1	01-12-2025	Z.D RANTA	CONSTRUCTION DRAWINGS	

WATER AND SANITATION				
FOR INTERNAL APPROVAL - INTERNAL USE ONLY - NOT FOR APPLICATION				
DIRECTOR: WATER AND SANITATION - PLANNING				
NAME	Prof. Reg. No.	SIGNATURE	DATE	
REGIONAL DIRECTOR: (1,2,3,4,5,6 or 7)				
NAME	Prof. Reg. No.	SIGNATURE	DATE	
DIRECTOR: SYSTEM DEVELOPMENT				
NAME	Prof. Reg. No.	SIGNATURE	DATE	
DIRECTOR: BULK WATER				
NAME	Prof. Reg. No.	SIGNATURE	DATE	
DIRECTOR: INFRASTRUCTURE PROVISION				
NAME	Prof. Reg. No.	SIGNATURE	DATE	
DIRECTOR: WASTE WATER TREATMENT				
NAME	Prof. Reg. No.	SIGNATURE	DATE	

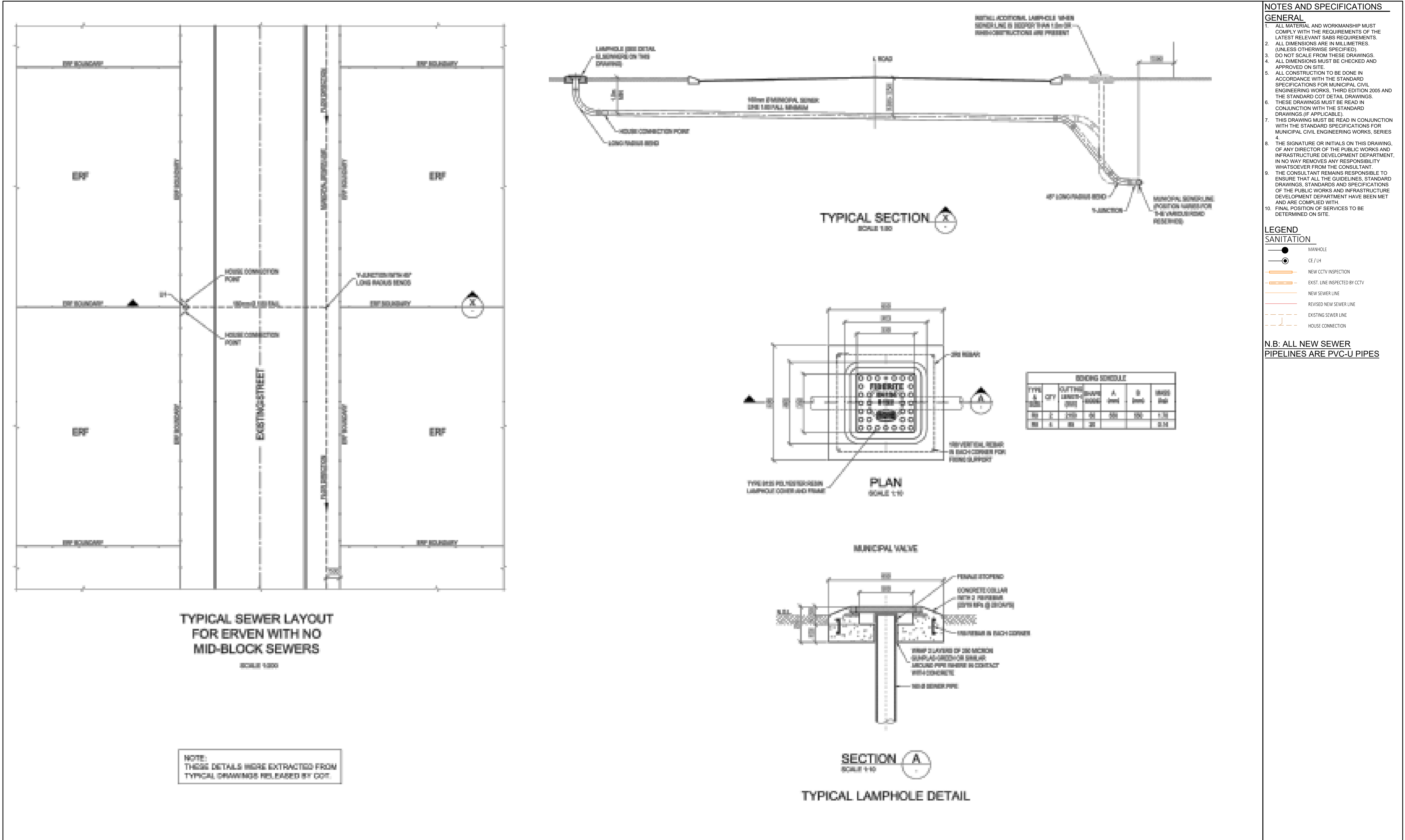
CONSULTANT DETAIL	
DPT CIVIL AND STRUCTURAL IV POSTNET SUITE 453 SINOVILLE CORNER PRIVATE BAG X504 SINOVILLE 0129 TEL: 012 567 7381 FAX: 012 567 1996 E-MAIL: info@ditshimega.co.za	
I, _____ Prof Reg Nr _____ HEREBY CERTIFY THAT THE SERVICES WILL HAVE BEEN INSTALLED ACCORDING TO NOTE 9 OF THE ABOVE NOTES AND TO THE DRAWING	
SIGNATURE	DATE
CONSULTANT DRAWING NUMBER: 2017/SM/10/01-SRL-011	

DESIGNED	
NAME: Z.D RANTA	Dr Eng. Prof Reg No: 201170066
SIGNATURE:	DATE:
DRAWN	
NAME: K. MOLEMA	Prof Reg No: _____
SIGNATURE:	DATE:
CHECKED	
NAME: Z.D RANTA	Dr Eng. Prof Reg No: 201170066
SIGNATURE:	DATE:
INFORMATION OFFICE CHECKED	
NAME: _____	Dr Eng. Prof Reg No: _____
SIGNATURE:	DATE:
DESIGN OFFICE APPROVAL	
NAME: Z.D RANTA	Dr Eng. Prof Reg No: 201170066
SIGNATURE:	DATE:

CONTRACT	
No:	
PROJECT No.	
SHEET No.	
2543IES-148	
PAPER SIZE:	
A1	
SCALE:	
AS SHOWN	
DATE:	
2025-06-10	

PROJECT STATUS	
RECEIVED 3000 WBS/ACTUABLE	
☐ CONCEPT DRAWING	☐ TENDER DRAWING
☒ APPROVED CONSTRUCTION DRAWING	☐ AS BUILT DRAWING
PROJECT ENGINEER OF COT:	
NAME: _____	Dr Eng. Prof Reg No: _____
SIGNATURE:	DATE:
INSPECTOR OF WORKS OF COT:	
NAME: _____	Dr Eng. Prof Reg No: _____
SIGNATURE:	DATE:

LOCATION OF PROJECT:	
BOOYSSENS	
DESCRIPTION OF PROJECT:	
BOOYSSENS EXT 4 SEWER RETICULATION STANDARD DETAILS	
WBS No.:	
COT DRAWING NUMBER:	



 CITY OF TSHWANE SERVICES INFRASTRUCTURE DEPARTMENT WATER AND SANITATION DIVISION	AMENDMENTS				WATER AND SANITATION FOR INTERNAL APPROVAL - SIGNATURES NOT NECESSARY				CONSULTANT DETAIL				DESIGNED NAME: <u>Z.D. RANTA</u> Dr Eng. Prof Reg No: <u>201170066</u> SIGNATURE: _____ DATE: _____				CONTRACT No: _____ PROJECT No: _____				PROJECT STATUS RECEIVED SIGN WHEN APPLICABLE				LOCATION OF PROJECT: BOOYSENS						
	NR	DATE	APPROVED	DESCRIPTION	PAR	DIRECTOR: WATER AND SANITATION - PLANNING	NAME	Prof. Reg. No	SIGNATURE	DATE	 DPT CIVIL & STRUCTURAL JV I, _____ Prof Reg Nr _____ HEREBY CERTIFY THAT THE SERVICES WILL HAVE BEEN INSTALLED ACCORDING TO NOTE 9 OF THE ABOVE NOTES AND TO THE DRAWING SIGNATURE _____ DATE _____ CONSULTANT DRAWING NUMBER: 2017/SM/10/01-SRL-011	DRAWN NAME: <u>K. MOLEMA</u> Prof Reg No: _____ SIGNATURE: _____ DATE: _____		CHECKED NAME: <u>Z.D. RANTA</u> Dr Eng. Prof Reg No: <u>201170066</u> SIGNATURE: _____ DATE: _____		INFORMATION OFFICE CHECKED NAME: _____ Dr Eng. Prof Reg No: _____ SIGNATURE: _____ DATE: _____		DESIGN OFFICE APPROVAL NAME: <u>Z.D. RANTA</u> Dr Eng. Prof Reg No: <u>201170066</u> SIGNATURE: _____ DATE: _____		CONCEPT DRAWING ☐		TENDER DRAWING ☐		APPROVED CONSTRUCTION DRAWING ☒		AS BUILT DRAWING ☐		DESCRIPTION OF PROJECT: BOOYSENS EXT 4 SEWER RETICULATION STANDARD DETAILS 2			
	1	01-12-2025	Z.D. RANTA	CONSTRUCTION DRAWINGS		REGIONAL DIRECTOR: (1,2,3,4,5,6 or 7)	NAME	Prof. Reg. No	SIGNATURE	DATE		PROJECT ENGINEER of COT: NAME: _____ Dr Eng. Prof Reg No: _____ SIGNATURE: _____ DATE: _____		INSPECTOR OF WORKS of COT: NAME: _____ Dr Eng. Prof Reg No: _____ SIGNATURE: _____ DATE: _____		WBS No. : _____															
						DIRECTOR: SYSTEM DEVELOPMENT	NAME	Prof. Reg. No	SIGNATURE	DATE		SHEET No. 2543IES-149		PAPER SIZE: A1		SCALE: AS SHOWN		DATE: 2025-06-10		COT DRAWING NUMBER: _____											
					DIRECTOR: BULK WATER	NAME	Prof. Reg. No	SIGNATURE	DATE	SHEET No. 2543IES-149		PAPER SIZE: A1		SCALE: AS SHOWN		DATE: 2025-06-10		COT DRAWING NUMBER: _____													
					DIRECTOR: INFRASTRUCTURE PROVISION	NAME	Prof. Reg. No	SIGNATURE	DATE	SHEET No. 2543IES-149		PAPER SIZE: A1		SCALE: AS SHOWN		DATE: 2025-06-10		COT DRAWING NUMBER: _____													
					DIRECTOR: WASTE WATER TREATMENT	NAME	Prof. Reg. No	SIGNATURE	DATE	SHEET No. 2543IES-149		PAPER SIZE: A1		SCALE: AS SHOWN		DATE: 2025-06-10		COT DRAWING NUMBER: _____													