



KEY PLAN:

MODULE ONE

MODULE TWO

MODULE THREE

MODULE FOUR

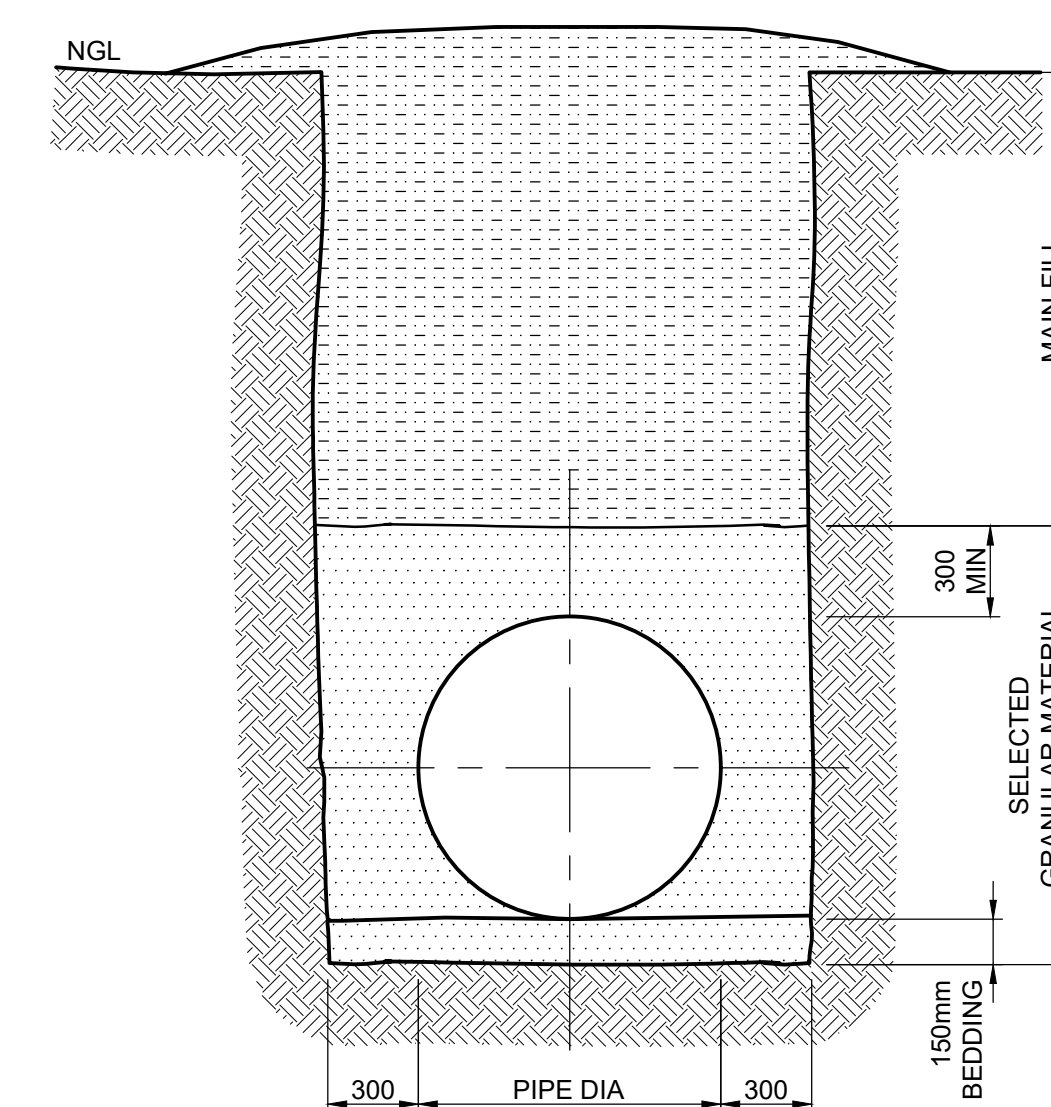
MODULE FIVE


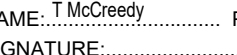
SLUDGE HANDLING FACILITY

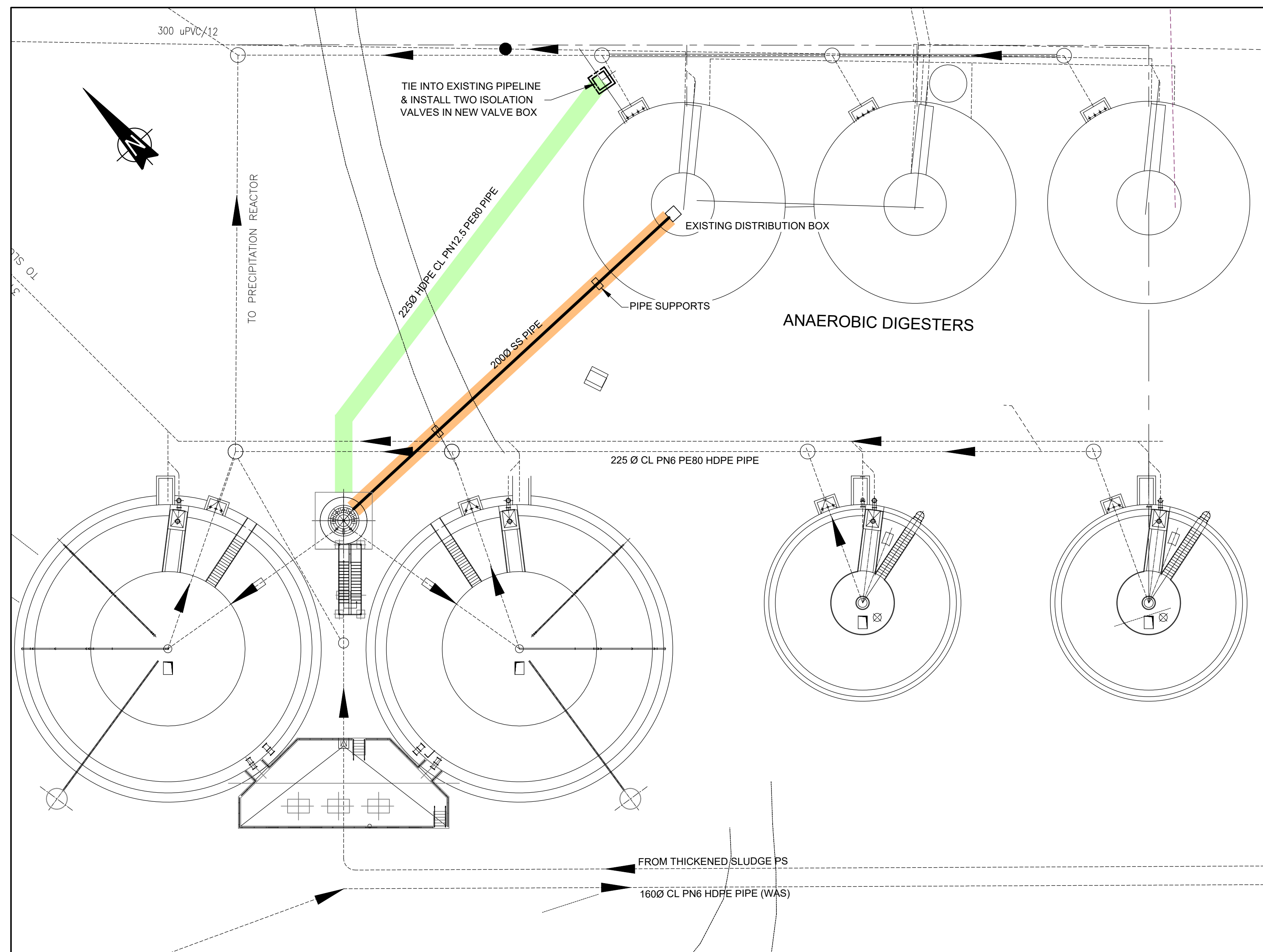
<div><div><div><div></div></div><div>CITY OF TSHWANE</div><div>PO BOX 1022</div><div>PRETORIA</div><div>0001</div></div><div>CITY OF TSHWANE</div><div>SERVICES INFRASTRUCTURE</div><div>DEPARTMENT</div><div>WATER AND SANITATION</div><div>Mr D Gubuza</div><div>EXECUTIVE DIRECTOR</div></div>	AMENDMENTS				WATER AND SANITATION				Bigen Africa Services (PTY) LTD				DESIGNED				CONTRACT		PROJECT DISCRPTION:				PROJECT STATUS			
	FOR INTERNAL APPROVAL - RECEIVED SIGN WHEN APPLICABLE				DIRECTOR:INFRASTRUCTURE PROVISION				Enquiries: T Mukwena				NAME: T McCready				No.		REFURBISHMENT OF THE SUNDERLAND RIDGE				CONCEPT			
					DIRECTOR: WATER DISTRIBUTION				Tsh: + 27 (0) 12 842 8700				SIGNATURE: A Steenberg				PROJECT No.		WASTEWATER TREATMENT WORKS				DRAWING			
					DIRECTOR: BULK WATER SERVICES				Fax: + 27 (0) 12 843 9000/9001				SIGNATURE: T Mukwena				SHEET No.		DRAWING TITLE:				APPROVED			
								NAME: Prof. Reg. No. SIGNATURE DATE				NAME: Prof. Reg. No. SIGNATURE DATE				PAPER SIZE		SITE LAYOUT				CONSTRUCTION				
				DIRECTOR: WATER & SANITATION: PLANNING & REGULATION				NAME: Prof. Reg. No. SIGNATURE DATE				NAME: Prof. Reg. No. SIGNATURE DATE				SCALE		PLAN				DRAWING				
				DIRECTOR: WASTE WATER COLLECTION				NAME: Prof. Reg. No. SIGNATURE DATE				NAME: Prof. Reg. No. SIGNATURE DATE				AS SHOWN						AS BUILT				
				DIRECTOR: WASTE WATER TREATMENT				NAME: Prof. Reg. No. SIGNATURE DATE				NAME: Prof. Reg. No. SIGNATURE DATE				DATE:		WBS No.				PROJECT ENGINEER of COT:				
								NAME: Prof. Reg. No. SIGNATURE DATE				NAME: Prof. Reg. No. SIGNATURE DATE				DATE:		COT DRAWING NUMBER				INSPECTOR OF WORKS of COT:				
SIGNATURE Prof. Reg. No. DATE												CONSULTANT DRAWING NUMBER				A3		- - - - -				NAME DATE				
								3243.00.00.AAA.10.U001				REVISION														



NOTE:
BACKFILL TO BE COMPACTED TO 93% MOD.
AASHTO DENSITY.

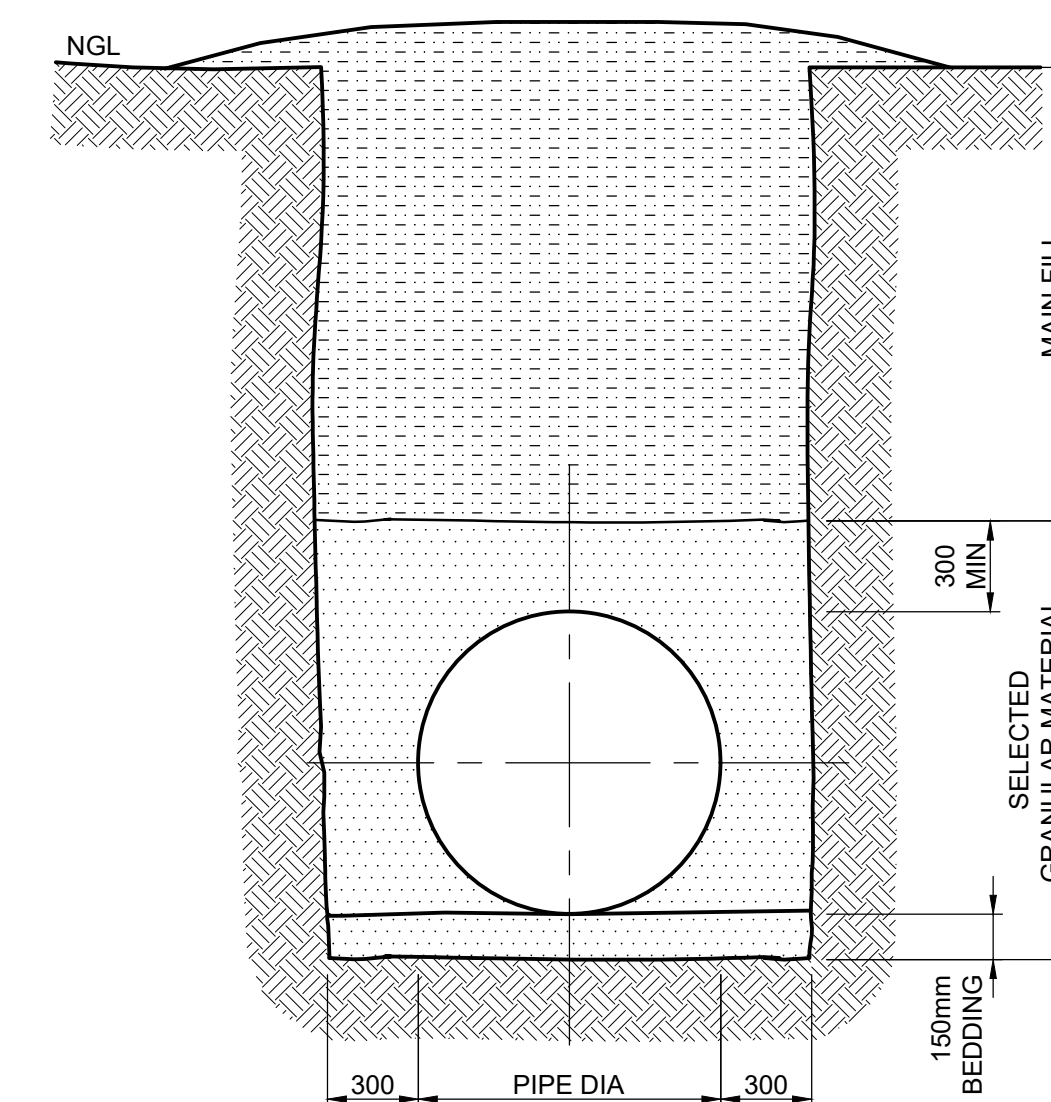


<div><p>CITY OF TSHWANE SERVICES INFRASTRUCTURE DEPARTMENT</p><p>WATER AND SANITATION</p><p>Mr D Gubuza EXECUTIVE DIRECTOR</p></div> <div>SIGNATURE: _____ Prof. Reg. No. _____ DATE _____</div>	AMENDMENTS					WATER AND SANITATION FOR INTERNAL APPROVAL - RECEIVED SIGN WHEN APPLICABLE					Bigen Africa Services (PTY) LTD					DESIGNED					CONTRACT No.		PROJECT DISCRIPTION: REFURBISHMENT OF THE SUNDERLAND RIDGE WASTEWATER TREATMENT WORKS					PROJECT STATUS <div><div>CONCEPT DRAWING</div><div>TENDER DRAWING</div><div>APPROVED CONSTRUCTION DRAWING</div><div>AS BUILT DRAWING</div></div> PROJECT ENGINEER OF COT: NAME _____ SIGNATURE _____ Prof Reg No. _____ DATE _____ INSPECTOR OF WORKS OF COT: NAME _____ SIGNATURE _____ DATE _____					
	NR	DATE	APPROVED	DESCRIPTION	PAR	DIRECTOR: INFRASTRUCTURE PROVISION					<div><div>Enquiries: T Mukwena Tel: + 27 (0) 12 842 8700 Fax: + 27 (0) 12 843 9000/9001 taf.mukwenabigengroup.com The Innovation Hub Pretoria 0087</div><div></div></div>					NAME: T McCreedy Prof Reg No: _____ SIGNATURE: _____ DATE: 2021/07					PROJECT No. _____												
						NAME: _____ Prof. Reg. No. _____ SIGNATURE _____ DATE _____ DIRECTOR: WATER DISTRIBUTION					NAME: A Sienberg Prof Reg No: 2021/07 SIGNATURE: _____ DATE: 2021/07					SHEET No. _____																	
						NAME: _____ Prof. Reg. No. _____ SIGNATURE _____ DATE _____ DIRECTOR: BULK WATER SERVICES					NAME: T Mukwena Prof Reg No: 20060203 SIGNATURE: _____ DATE: 2021/07					PAPER SIZE _____																	
						NAME: _____ Prof. Reg. No. _____ SIGNATURE _____ DATE _____ DIRECTOR: WATER & SANITATION: PLANNING & REGULATION					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					INFORMATION OFFICE CHECKED																	
						NAME: _____ Prof. Reg. No. _____ SIGNATURE _____ DATE _____ DIRECTOR: WASTE WATER COLLECTION					SIGNATURE _____ DATE _____					DESIGN OFFICE APPROVAL																	
						NAME: _____ Prof. Reg. No. _____ SIGNATURE _____ DATE _____ DIRECTOR: WASTE WATER TREATMENT					CONSULTANT DRAWING NUMBER 3243.00.00.AAA.12.D001					NAME: _____ Prof Reg No: _____ SIGNATURE: _____ DATE: _____		SCALE AS SHOWN															
						NAME: _____ Prof. Reg. No. _____ SIGNATURE _____ DATE _____										DATE: 2021/01		DATE: 2021/01															
																					DATE: 2021/01		DATE: 2021/01										
																									COT DRAWING NUMBER - - - - -								





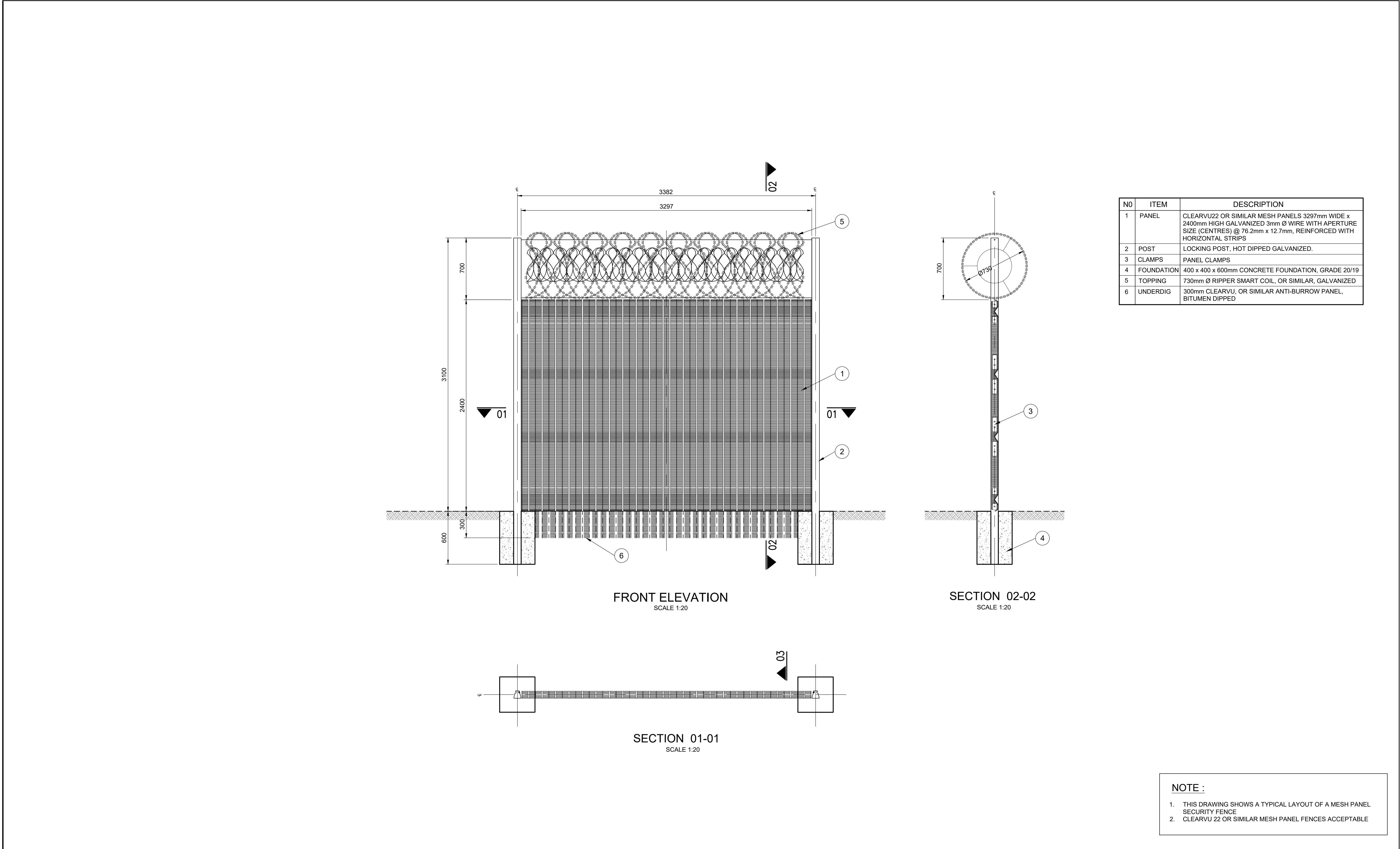
LAYOUT PLAN
SCALE 1:250

NOTE:
BACKFILL TO BE COMPACTED TO 93% MOD.
AASHTO DENSITY.

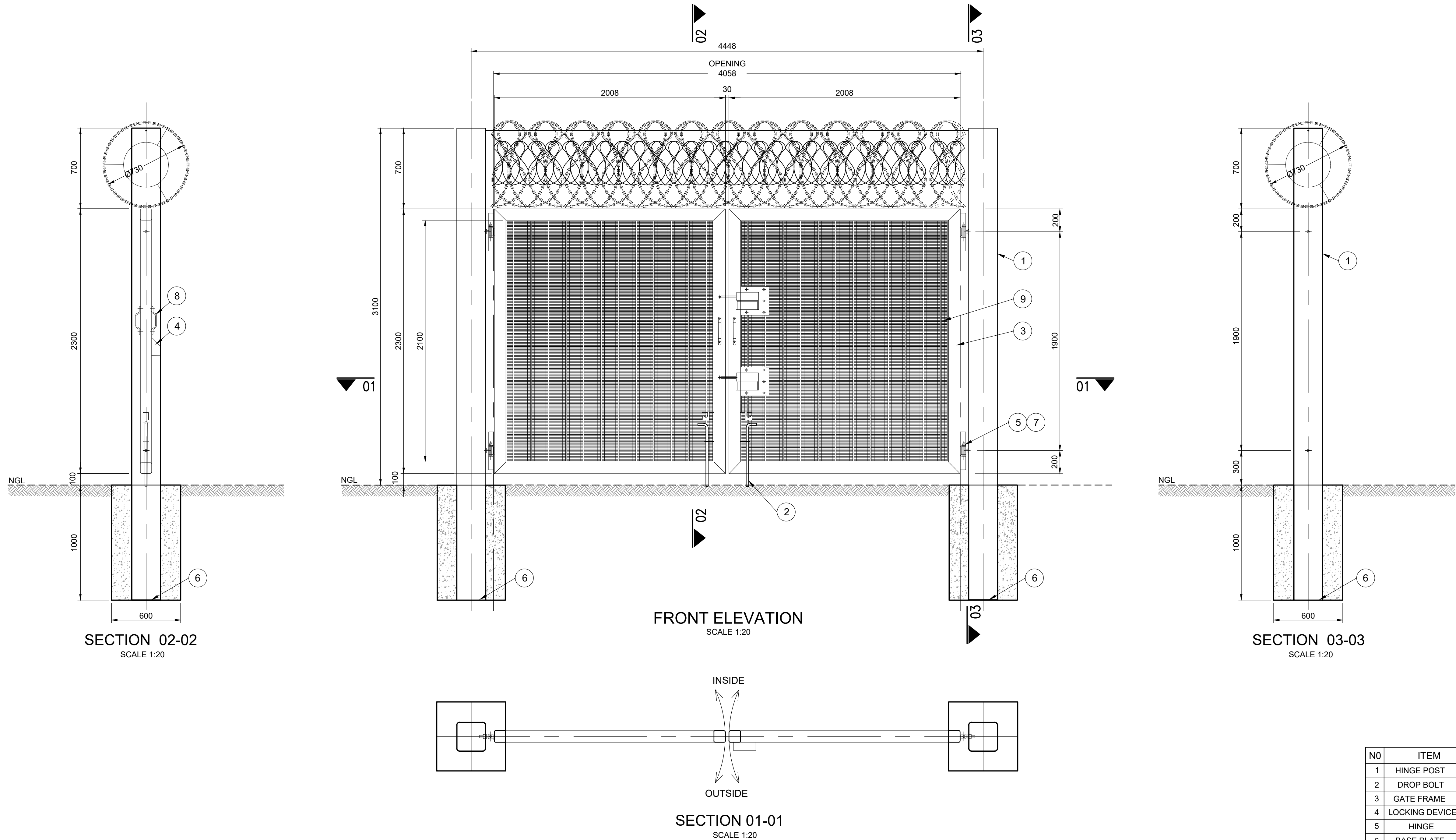


TYPICAL BEDDING DETAIL
NTS

 CITY OF TSHWANE SERVICES INFRASTRUCTURE DEPARTMENT Mr D Gubuza EXECUTIVE DIRECTOR	AMENDMENTS <table border="1"> <thead> <tr> <th>NR</th> <th>DATE</th> <th>APPROVED</th> <th>DESCRIPTION</th> <th>PAR</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>				NR	DATE	APPROVED	DESCRIPTION	PAR																																														WATER AND SANITATION FOR INTERNAL APPROVAL - RECEIVED SIGN WHEN APPLICABLE DIRECTOR: INFRASTRUCTURE PROVISION NAME: _____ Prof. Reg. No. _____ SIGNATURE: _____ DATE: _____ DIRECTOR: WATER DISTRIBUTION NAME: _____ Prof. Reg. No. _____ SIGNATURE: _____ DATE: _____ DIRECTOR: BULK WATER SERVICES NAME: _____ Prof. Reg. No. _____ SIGNATURE: _____ DATE: _____ DIRECTOR: WATER & SANITATION: PLANNING & REGULATION NAME: _____ Prof. Reg. No. _____ SIGNATURE: _____ DATE: _____ DIRECTOR: WASTE WATER COLLECTION NAME: _____ Prof. Reg. No. _____ SIGNATURE: _____ DATE: _____ DIRECTOR: WASTE WATER TREATMENT NAME: _____ Prof. Reg. No. _____ SIGNATURE: _____ DATE: _____				Bigen Africa Services (PTY) LTD Enquiries: T. Mukwena Tel: +27 (0) 12 842 8700 Fax: +27 (0) 12 843 9000/9001 taf.mukwena@bigengroup.com The Innovation Hub Pretoria 0087  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 3243.00.00.AAA.12.D002		DESIGNED NAME: T. McCready Prof. Reg. No. _____ SIGNATURE: _____ DATE: 2021/07 DRAWN NAME: A. Steenberg Prof. Reg. No. _____ SIGNATURE: _____ DATE: 2021/07 CHECKED NAME: T. Mukwena Prof. Reg. No. 20060203 SIGNATURE: _____ DATE: 2021/07 INFORMATION OFFICE CHECKED NAME: _____ Prof. Reg. No. _____ SIGNATURE: _____ DATE: _____ DESIGN OFFICE APPROVAL NAME: _____ Prof. Reg. No. _____ SIGNATURE: _____ DATE: _____		CONTRACT No. _____ PROJECT No. _____ SHEET No. _____ PAPER SIZE A1 SCALE AS SHOWN DATE: 2021/01	PROJECT DISCRPTION: REFURBISHMENT OF THE SUNDERLAND RIDGE WASTEWATER TREATMENT WORKS DRAWING TITLE: SITE PIPEWORK: DIGESTER FEED PIPE - LAYOUT & DETAILS WBS No. _____ COT DRAWING NUMBER _____	PROJECT STATUS <table border="1"> <tr> <td><input type="radio"/> CONCEPT DRAWING</td> <td><input checked="" type="radio"/> TENDER DRAWING</td> <td><input type="radio"/> APPROVED CONSTRUCTION DRAWING</td> <td><input type="radio"/> AS BUILT DRAWING</td> </tr> </table> PROJECT ENGINEER of COT: NAME: _____ SIGNATURE: _____ Prof. Reg. No. _____ DATE: _____ INSPECTOR OF WORKS of COT: NAME: _____ SIGNATURE: _____ DATE: _____	<input type="radio"/> CONCEPT DRAWING	<input checked="" type="radio"/> TENDER DRAWING	<input type="radio"/> APPROVED CONSTRUCTION DRAWING	<input type="radio"/> AS BUILT DRAWING
	NR	DATE	APPROVED	DESCRIPTION	PAR																																																																
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SIGNATURE: _____ Prof. Reg. No. _____ DATE: _____																																																																					



 CITY OF TSHWANE SERVICES INFRASTRUCTURE DEPARTMENT Mr D Gubuza EXECUTIVE DIRECTOR	AMENDMENTS				WATER AND SANITATION FOR INTERNAL APPROVAL - RECEIVED SIGN WHEN APPLICABLE				Bigen Africa Services (PTY) LTD Enquiries: T. Mukwena Tel: + 27 (0) 12 842 8700 Fax: + 27 (0) 12 843 9000/9001 taf.mukwena@bigengroup.com The Innovation Hub Pretoria 0087		DESIGNED NAME: T. McCredy Prof Reg No: 202107 SIGNATURE: DATE: 2021/07		CONTRACT No.	PROJECT DISCRPTION: REFURBISHMENT OF THE SUNDERLAND RIDGE WASTEWATER TREATMENT WORKS	PROJECT STATUS						
	NR	DATE	APPROVED	DESCRIPTION	PAR	DIRECTOR: INFRASTRUCTURE PROVISION	NAME	Prof. Reg. No	SIGNATURE	DATE	NAME: A. Steenberg Prof Reg No: 20060203 SIGNATURE: DATE: 2021/07	PROJECT No.	SHEET No.		PAPER SIZE	SCALE	DATE:	AS SHOWN	2021/01	CONCEPT DRAWING	TENDER DRAWING
						NAME	Prof. Reg. No	SIGNATURE	DATE	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		CHECKED NAME: T. Mukwena Prof Reg No: 20060203 SIGNATURE: DATE: 2021/07				DESIGNED NAME: T. McCredy Prof Reg No: 202107 SIGNATURE: DATE: 2021/07			PROJECT ENGINEER of COT: NAME SIGNATURE Prof Reg No. DATE		
						NAME	Prof. Reg. No	SIGNATURE	DATE	CONSULTANT DRAWING NUMBER 3243.00.00.GZA.17.D001		INFORMATION OFFICE CHECKED NAME: SIGNATURE: DATE:				DESIGN OFFICE APPROVAL NAME: Prof Reg No: SIGNATURE: DATE:			INSPECTOR OF WORKS of COT: NAME SIGNATURE DATE		
						NAME	Prof. Reg. No	SIGNATURE	DATE												




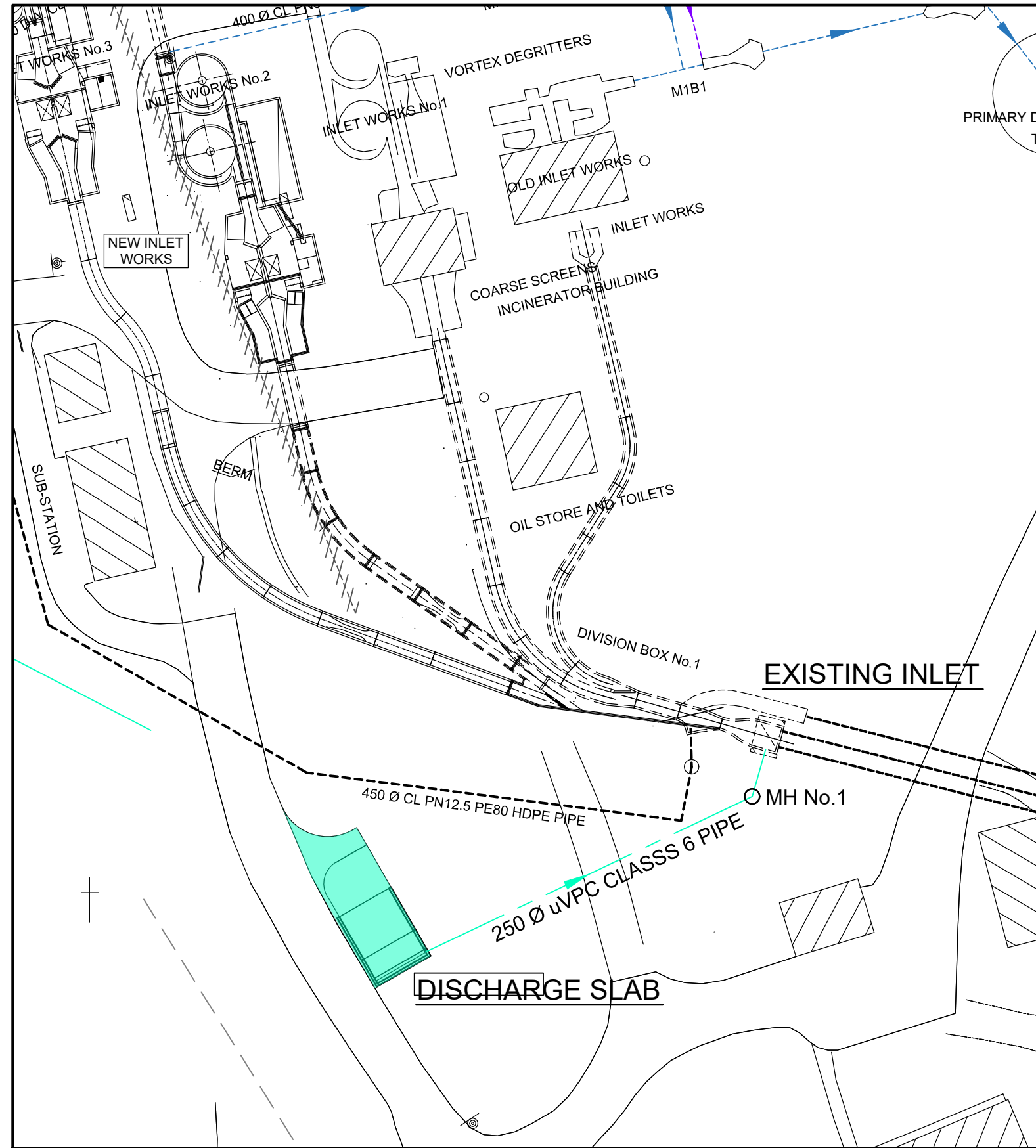
N0	ITEM	DESCRIPTION	QTY
1	HINGE POST	250x250x6 SHS	2
2	DROP BOLT	32mm Ø ROUND BAR	2
3	GATE FRAME	100x100x4 SHS	2
4	LOCKING DEVICE	30mm Ø T-SLIDE LOCK, WITH LOCK BOX	1
5	HINGE	ADJUSTABLE SCREW HINGE	4
6	BASE PLATE	600x600x5 FLAT	2
7	COVER PLATE	50x50x5 L, 120mm LONG	4
8	GRAB HANDLE	HANDLE	4
9	MESH	CLEARVU22 OR SIMILAR REINFORCED MESH	2
9	FOUNDATION	600x600x1000 CONCRETE, 20/19 @ 28 DAYS	2

NOTE :
1. THIS DRAWING SHOWS A TYPICAL LAYOUT OF A MESH PANEL SECURITY GATE
2. CLEARVU 22 OR SIMILAR MESH ACCEPTABLE

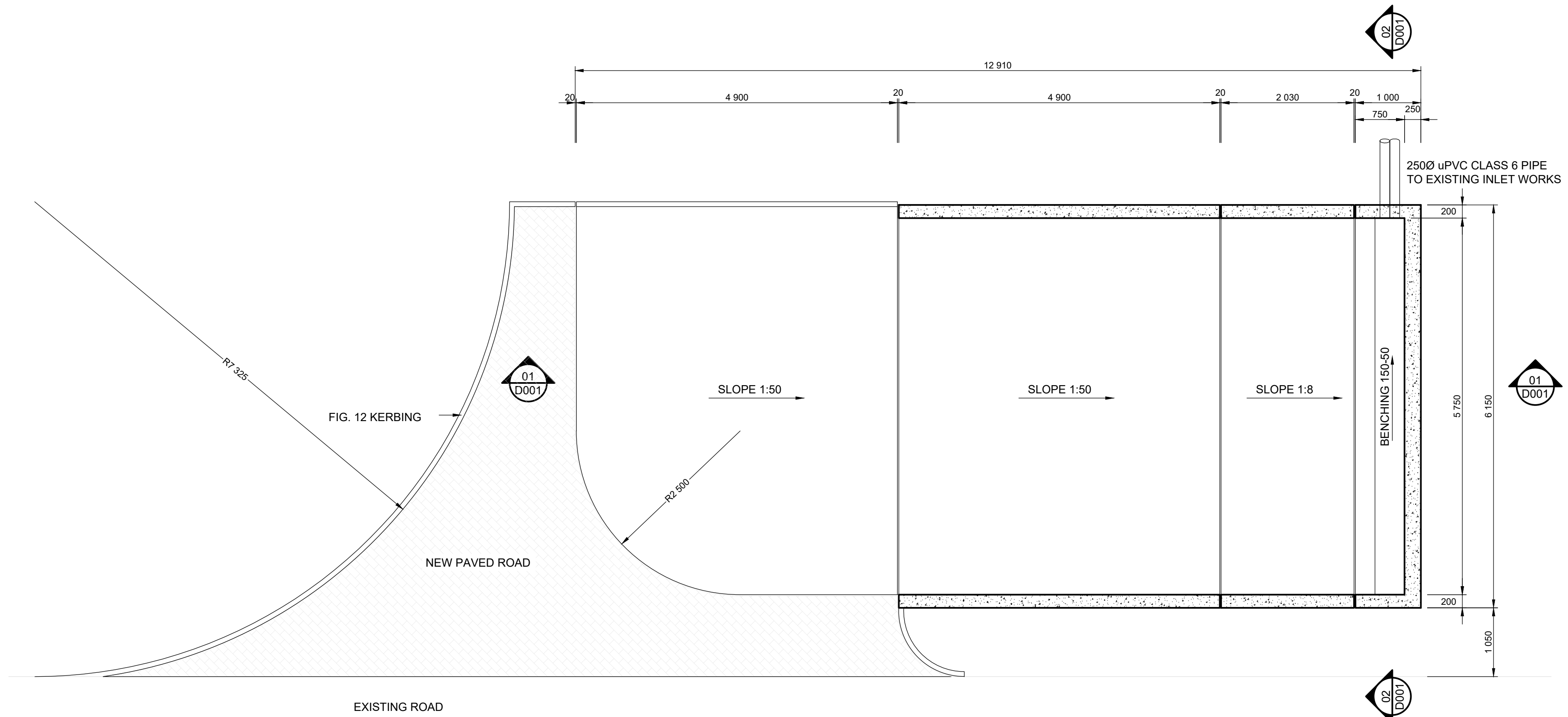
 CITY OF TSHWANE SERVICES INFRASTRUCTURE DEPARTMENT Mr D Gubuza EXECUTIVE DIRECTOR	AMENDMENTS				WATER AND SANITATION FOR INTERNAL APPROVAL - RECEIVED SIGN WHEN APPLICABLE				Bigen Africa Services (PTY) LTD Enquiries: T. Mukwena Tel: + 27 (0) 12 842 8700 Fax: + 27 (0) 12 843 9000/9001 taf.mukwena@bigengroup.com The Innovation Hub Pretoria 0087 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 3243.00.00.GZA.17.D002	DESIGNED NAME: T. McCready Prof Reg No: _____ SIGNATURE: _____ DATE: 2021/07		CONTRACT No. _____ PROJECT No. _____ SHEET No. _____ PAPER SIZE A1 SCALE AS SHOWN DATE: 2021/01	PROJECT DISCRPTION: REFURBISHMENT OF THE SUNDERLAND RIDGE WASTEWATER TREATMENT WORKS DRAWING TITLE: SECURITY FENCE: REINFORCED MESH GATE DETAILS WBS No. _____ COT DRAWING NUMBER _____	PROJECT STATUS	
	NR	DATE	APPROVED	DESCRIPTION	PAR	DIRECTOR: INFRASTRUCTURE PROVISION		CONCEPT DRAWING		TENDER DRAWING					
						NAME _____ Prof. Reg. No. _____ SIGNATURE _____ DATE _____		APPROVED CONSTRUCTION DRAWING		AS BUILT DRAWING					
						DIRECTOR: WATER DISTRIBUTION		PROJECT ENGINEER of COT:		NAME _____ SIGNATURE _____					
					NAME _____ Prof. Reg. No. _____ SIGNATURE _____ DATE _____		DIRECTOR: BULK WATER SERVICES		Prof Reg No. _____ DATE _____		INSPECTOR OF WORKS of COT:				
					NAME _____ Prof. Reg. No. _____ SIGNATURE _____ DATE _____		DIRECTOR: WATER & SANITATION: PLANNING & REGULATION		NAME _____ SIGNATURE _____		NAME _____ SIGNATURE _____				
					NAME _____ Prof. Reg. No. _____ SIGNATURE _____ DATE _____		DIRECTOR: WASTE WATER COLLECTION		NAME _____ SIGNATURE _____		NAME _____ SIGNATURE _____				
					NAME _____ Prof. Reg. No. _____ SIGNATURE _____ DATE _____		DIRECTOR: WASTE WATER TREATMENT		NAME _____ SIGNATURE _____		NAME _____ SIGNATURE _____				
					NAME _____ Prof. Reg. No. _____ SIGNATURE _____ DATE _____				NAME _____ SIGNATURE _____		NAME _____ SIGNATURE _____				



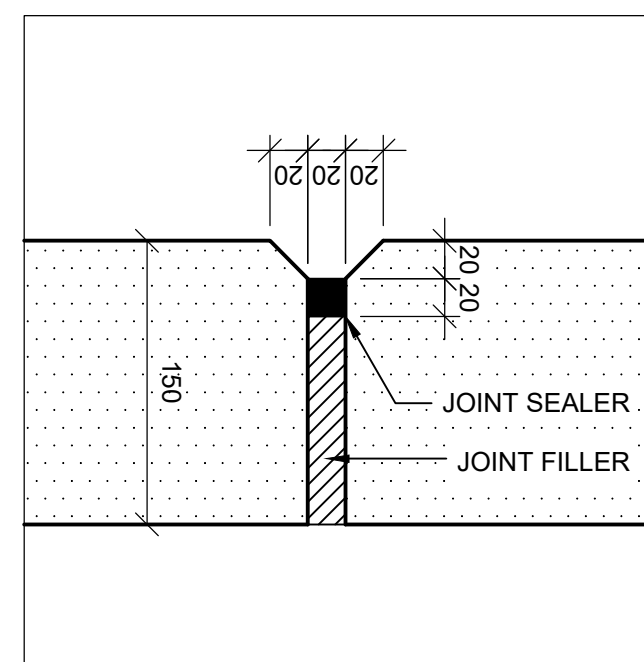
 CITY OF TSHWANE PO BOX 1022 PRETORIA 0001 SERVICES INFRASTRUCTURE DEPARTMENT WATER AND SANITATION Mr D Gubuza EXECUTIVE DIRECTOR	AMENDMENTS				WATER AND SANITATION FOR INTERNAL APPROVAL - RECEIVED SIGN WHEN APPLICABLE				Bigen Africa Services (PTY) LTD				DESIGNED				CONTRACT		PROJECT DISCRIPTION: REFURBISHMENT OF THE SUNDERLAND RIDGE WASTEWATER TREATMENT WORKS				PROJECT STATUS <div><div>○ CONCEPT DRAWING</div><div>● TENDER DRAWING</div><div>○ APPROVED CONSTRUCTION DRAWING</div><div>○ AS BUILT DRAWING</div></div> PROJECT ENGINEER of COT: NAME _____ SIGNATURE _____ Prof Reg No. _____ DATE _____ INSPECTOR OF WORKS of COT: NAME _____ SIGNATURE _____ DATE _____					
	NR	DATE	APPROVED	DESCRIPTION	PAR	NAME	Prof. Reg. No	SIGNATURE	DATE	NAME	Prof. Reg. No	SIGNATURE	DATE	NAME	Prof. Reg. No	SIGNATURE	DATE	NAME									Prof. Reg. No	SIGNATURE
					DIRECTOR: INFRASTRUCTURE PROVISION				Enquiries: T. Mukwena Tel: +27 (0) 12 842 8700 Fax: +27 (0) 12 843 9000/9001 taf.mukwena@bigengroup.com The Innovation Hub Pretoria 0087				NAME: T. McCready SIGNATURE: _____ DATE: 2021/07				No. _____		DRAWING TITLE: SECURITY FENCE: LAYOUT PLAN				WBS No. _____ COT DRAWING NUMBER _____					
					DIRECTOR: WATER DISTRIBUTION				NAME: A. Steenberg SIGNATURE: _____ DATE: 2021/07				PROJECT No. _____															
					DIRECTOR: BULK WATER SERVICES				NAME: T. Mukwena SIGNATURE: _____ DATE: 2021/07				SHEET No. _____		PAPER SIZE A1				SCALE AS SHOWN				DATE: 2021/01					
					DIRECTOR: WATER & SANITATION: PLANNING & REGULATION				NAME: T. Mukwena SIGNATURE: _____ DATE: 2021/07				DESIGNED Prof Reg No: 20060203 DATE: 2021/07															
					DIRECTOR: WASTE WATER COLLECTION				NAME: _____ SIGNATURE: _____ DATE: _____				CHECKED Prof Reg No: 20060203 DATE: 2021/07		INFORMATION OFFICE CHECKED		DESIGN OFFICE APPROVAL		CONSULTANT DRAWING NUMBER 3243.00.00.GZA.10.U001				A3 REVISION					
					DIRECTOR: WASTE WATER TREATMENT				NAME: _____ SIGNATURE: _____ DATE: _____				NAME: _____ SIGNATURE: _____ DATE: _____		NAME: _____ SIGNATURE: _____ DATE: _____													
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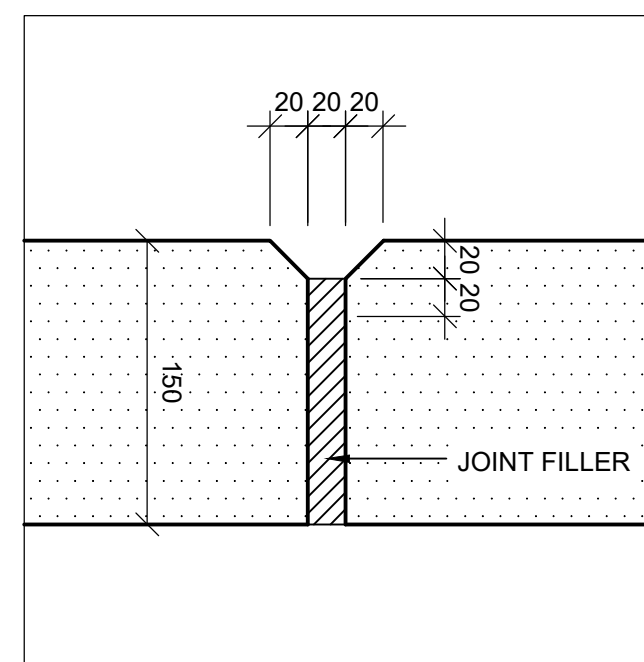
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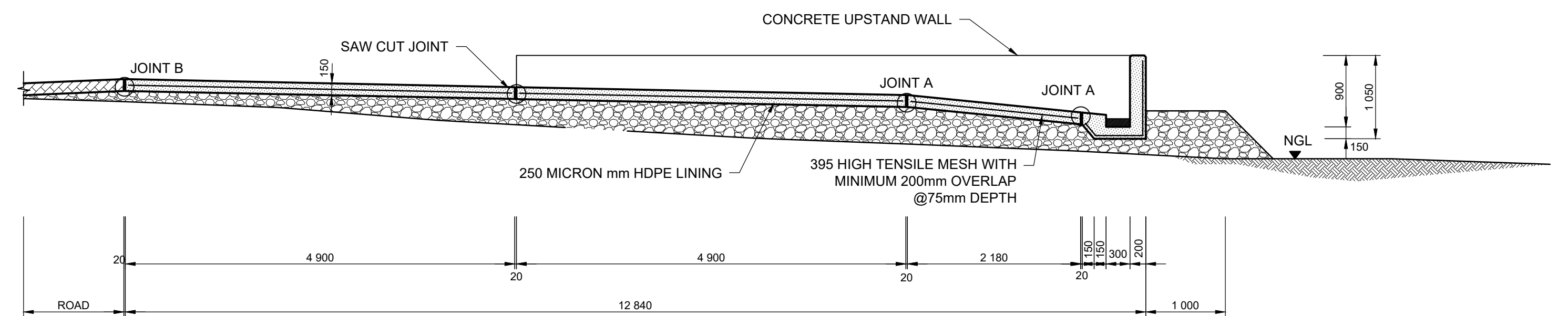
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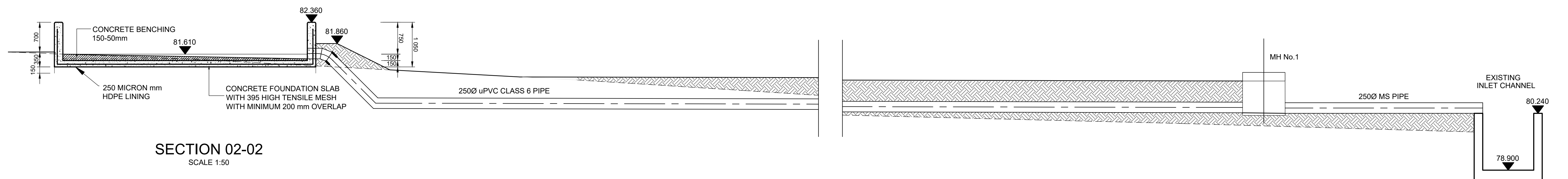
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SCALE 1:4



EXPANSION JOINT TYPE B
SCALE 1:4



SECTION 01-01
SCALE 1:50



SECTION 02-02
SCALE 1:50

VERSION / AMENDMENTS			
No.	DATE	DESCRIPTION	AUTH. BY
SURVEY DATUM:			

www.bigengroup.com
Allan Cormack Street
The Innovation Hub
Pretoria
Phone: +27 (0) 12 842 8700
pretoria@bigengroup.com



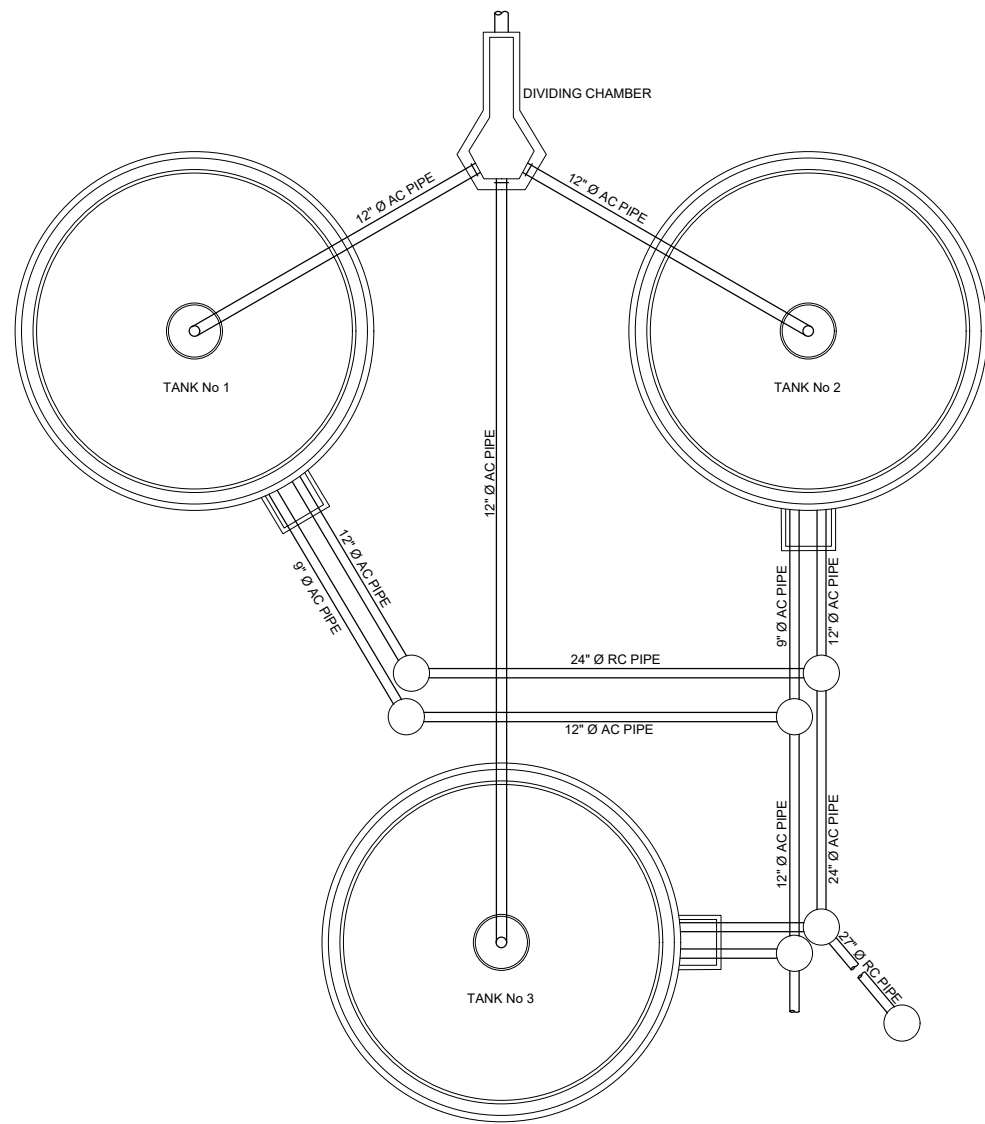
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DRAWING TITLE: INLET WORKS: TANKER DISCHARGE SLAB - LAYOUT, SECTIONS & DETAILS



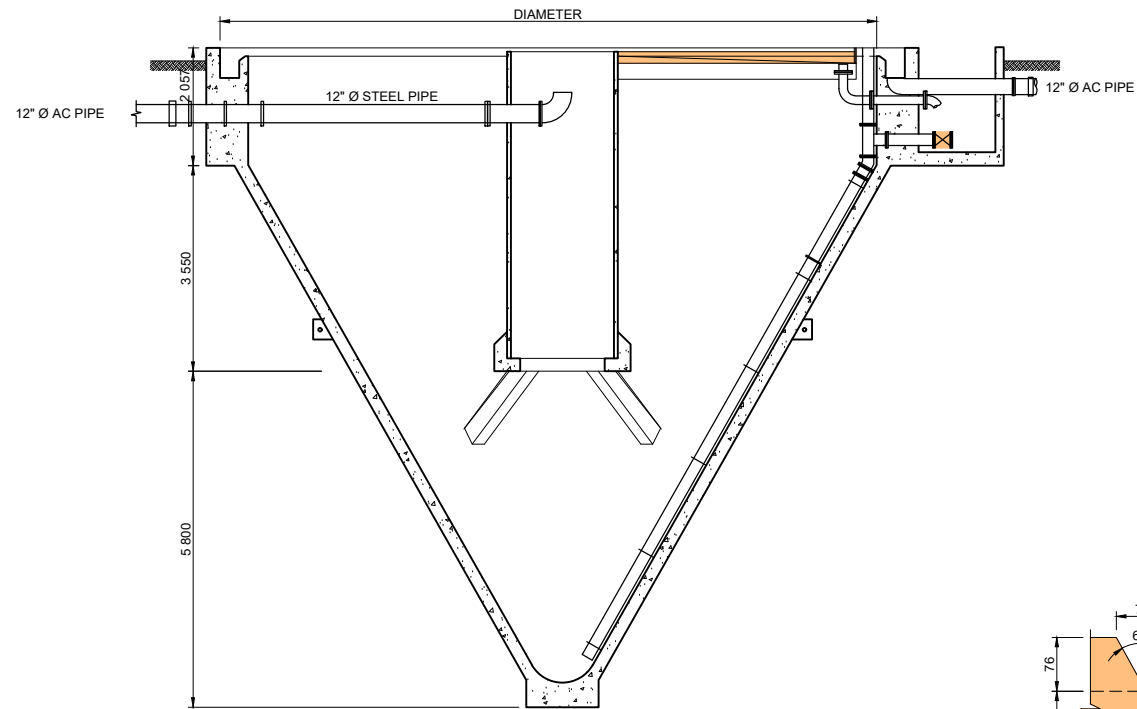
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APPROVED ON BEHALF OF CLIENT:	
NAME:	
DATE:	
CLIENT DRAWING No.:	CLIENT REF No.:

SURVEYED: -	DESIGNED: T Mc CREEDY
DRAWN: A STEENBERG	CHECKED: H VD MERWE
COORD SYSTEM: WG29	DATE: MARCH 2021
APPROVED ON BEHALF OF BIGEN:	
DRAWING No.: 3422.00.00.WBA.14.D001	
VERSION: A.0	

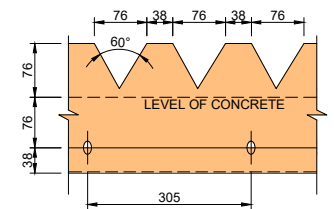
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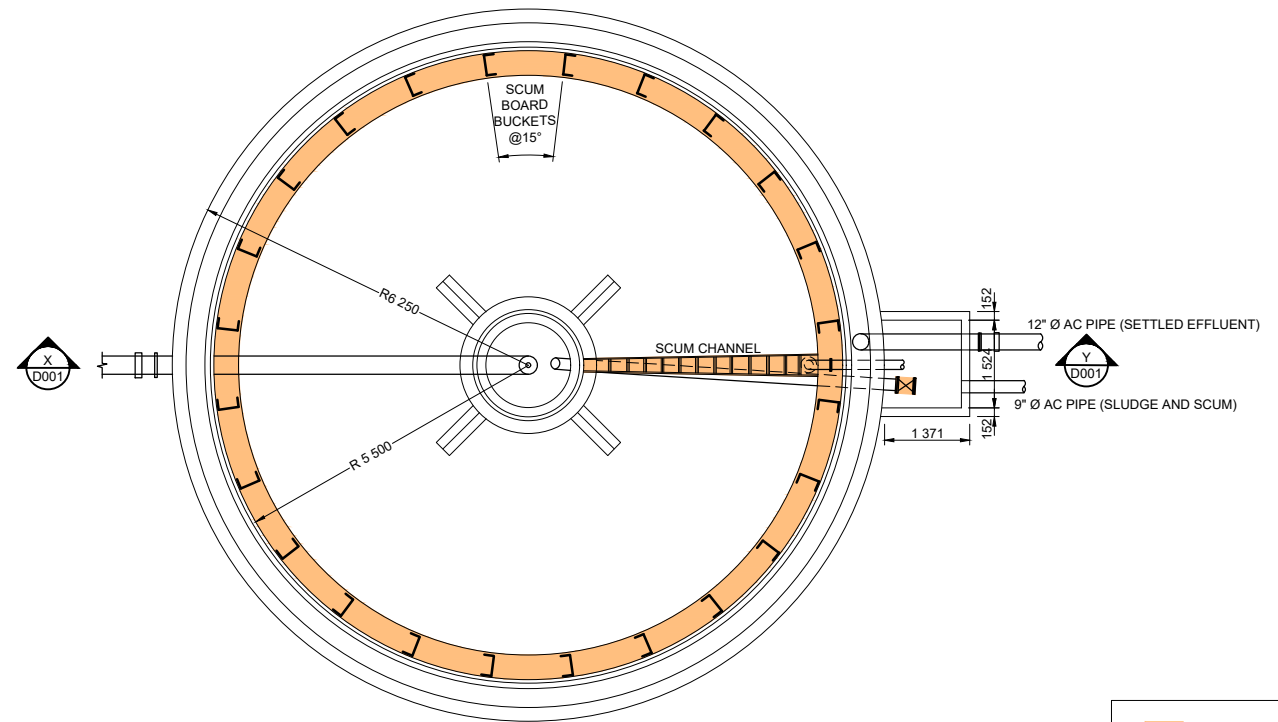
LAYOUT PLAN



SECTION X-X




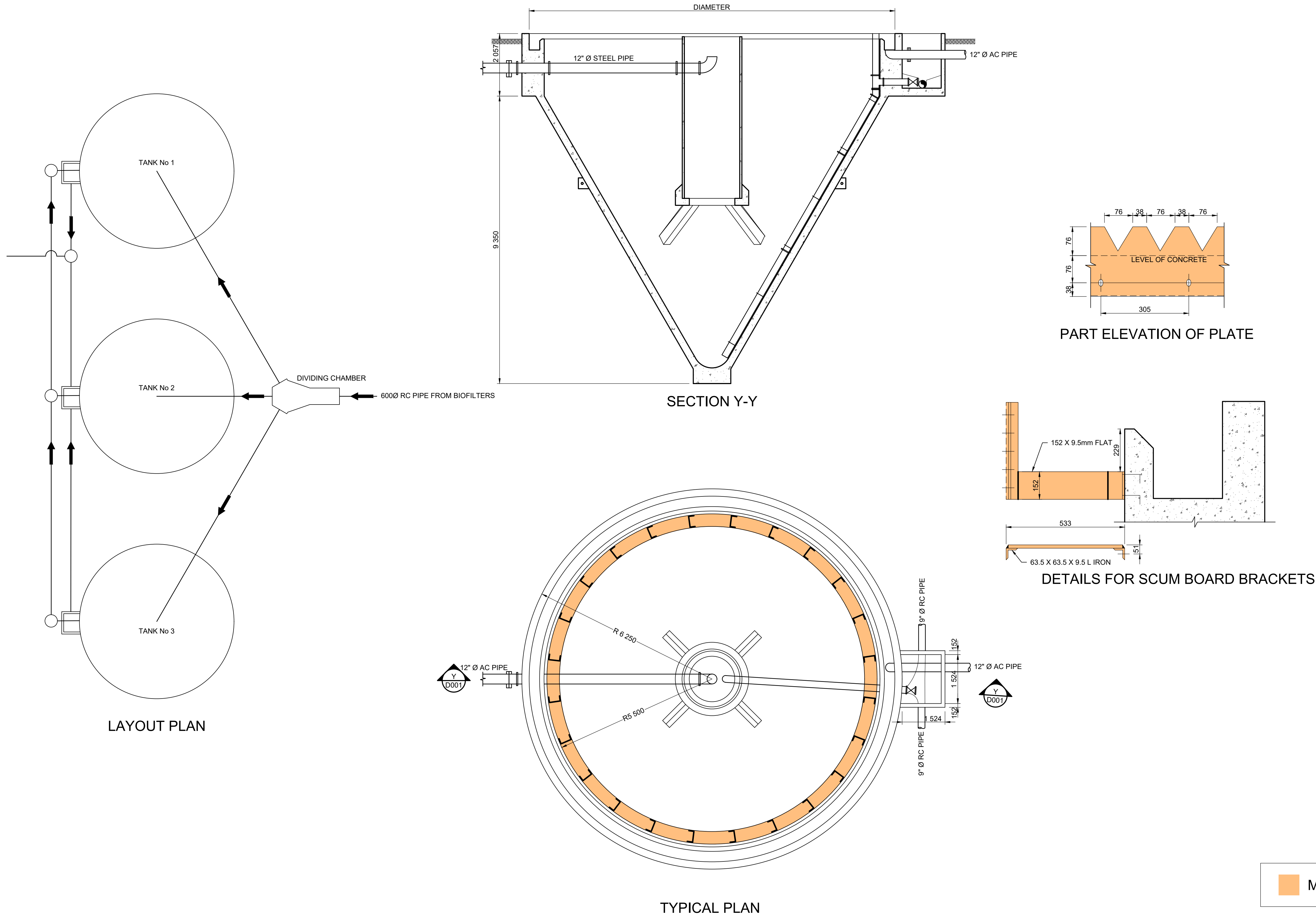
PART ELEVATION OF WEIR PLATE



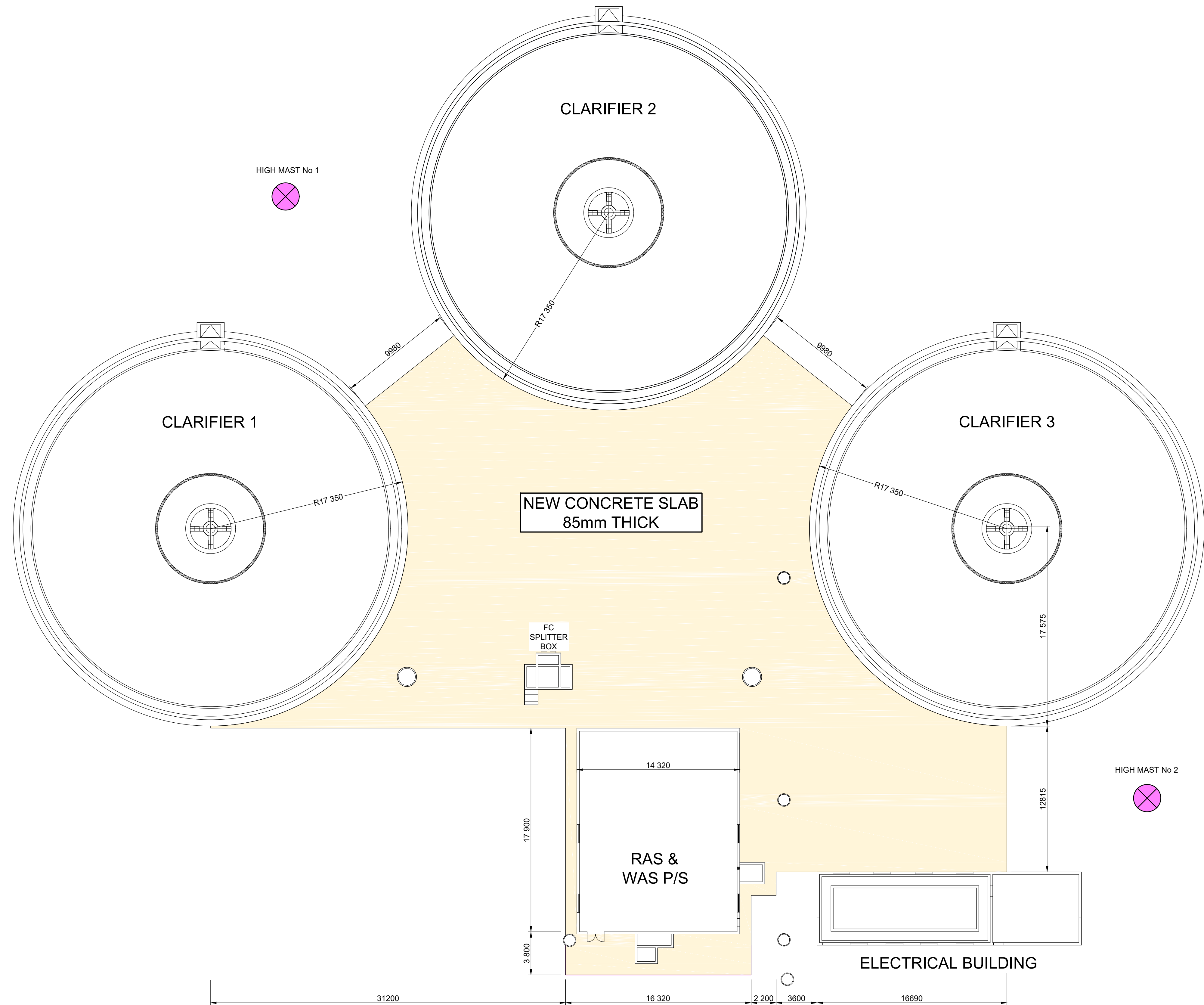
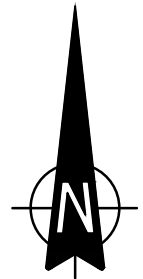
TYPICAL PLAN

MECHANICAL SCOPE



 CITY OF TSHWANE SERVICES INFRASTRUCTURE DEPARTMENT Mr D Gubuza EXECUTIVE DIRECTOR	AMENDMENTS				WATER AND SANITATION FOR INTERNAL APPROVAL - RECEIVED SIGN WHEN APPLICABLE				Bigen Africa Services (PTY) LTD Enquiries: T. Mukwena Tel: +27 (0) 12 842 8700 Fax: +27 (0) 12 843 9000/9001 taf.mukwena@bigengroup.com The Innovation Hub Pretoria 0087		DESIGNED NAME: T. McCready SIGNATURE: _____ DATE: 2021/07		CONTRACT No.		PROJECT DISCRIPTION: REFURBISHMENT OF THE SUNDERLAND RIDGE WASTEWATER TREATMENT WORKS		PROJECT STATUS <input type="radio"/> CONCEPT <input checked="" type="radio"/> TENDER <input type="radio"/> APPROVED DRAWING <input type="radio"/> AS BUILT DRAWING PROJECT ENGINEER of COT: NAME _____ SIGNATURE _____ Prof Reg No. _____ DATE _____ INSPECTOR OF WORKS of COT: NAME _____ SIGNATURE _____ DATE _____										
	NR	DATE	APPROVED	DESCRIPTION	PAR	DIRECTOR: INFRASTRUCTURE PROVISION	NAME _____ Prof. Reg. No. _____ SIGNATURE _____ DATE _____	DIRECTOR: WATER DISTRIBUTION	NAME _____ Prof. Reg. No. _____ SIGNATURE _____ DATE _____	DIRECTOR: BULK WATER SERVICES	NAME _____ Prof. Reg. No. _____ SIGNATURE _____ DATE _____	DIRECTOR: WATER & SANITATION: PLANNING & REGULATION	NAME _____ Prof. Reg. No. _____ SIGNATURE _____ DATE _____	DIRECTOR: WASTE WATER COLLECTION							NAME _____ Prof. Reg. No. _____ SIGNATURE _____ DATE _____	DIRECTOR: WASTE WATER TREATMENT	NAME _____ Prof. Reg. No. _____ SIGNATURE _____ DATE _____	CONSULTANT DRAWING NUMBER 3243.00.00.WDA.13.D001	DRAWN NAME: A. Steenberg SIGNATURE: _____ DATE: 2021/07	CHECKED NAME: T. Mukwena SIGNATURE: _____ DATE: 2021/07	INFORMATION OFFICE CHECKED NAME: _____ SIGNATURE: _____ DATE: _____

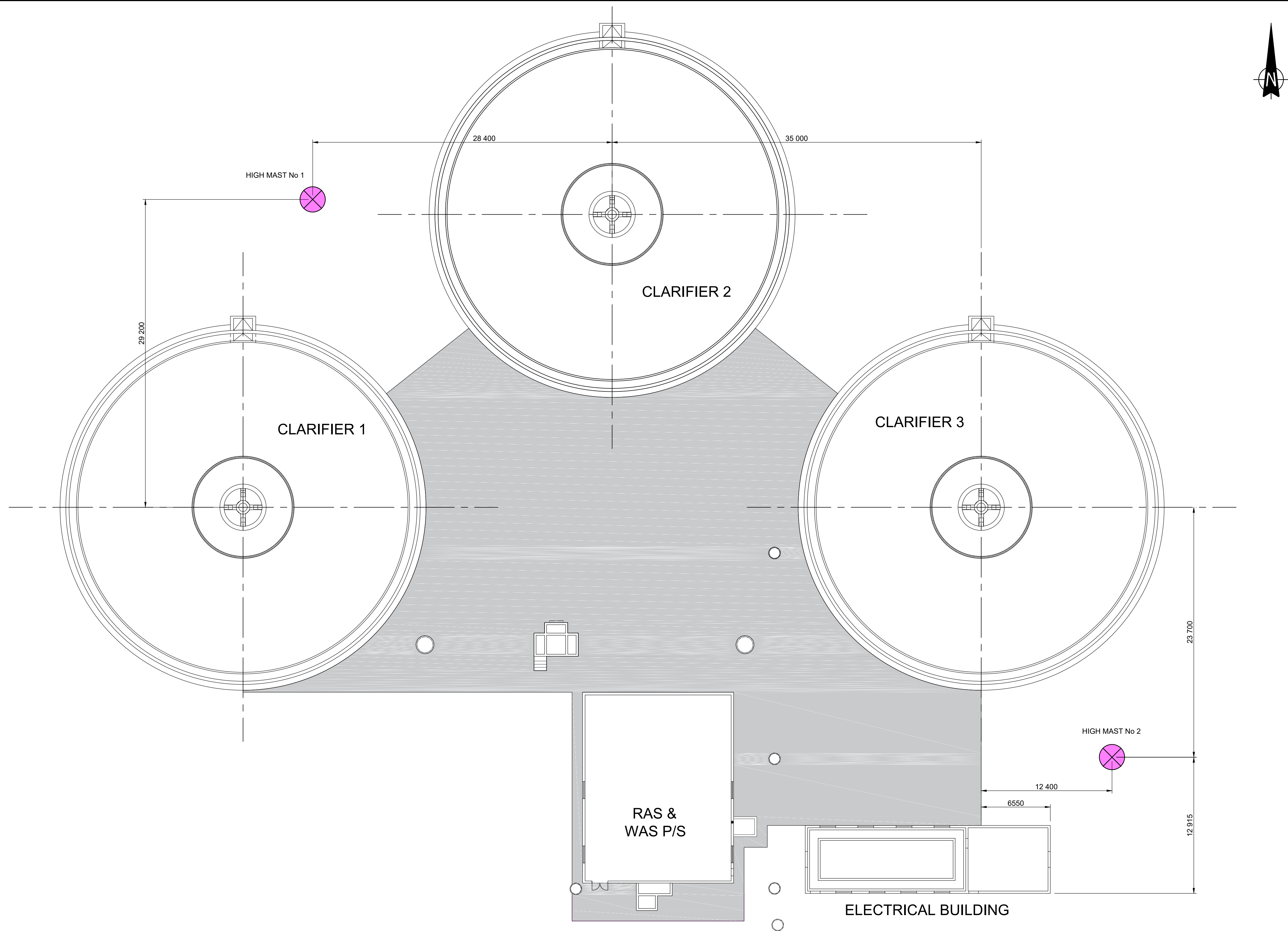


 CITY OF TSHWANE SERVICES INFRASTRUCTURE DEPARTMENT WATER AND SANITATION Mr D Gubuz EXECUTIVE DIRECTOR	AMENDMENTS				WATER AND SANITATION FOR INTERNAL APPROVAL - RECEIVED SIGN WHEN APPLICABLE				Bigen Africa Services (PTY) LTD <small>Enquiries: T. Mukwena Tel: +27 (0) 12 842 8700 Fax: +27 (0) 12 843 9000/9001 tsh.mukwena@bigengroup.com The Innovation Hub Pretoria 0087</small>		DESIGNED NAME: T. McCredy SIGNATURE: _____ DATE: 2021/07		CONTRACT No. PROJECT No. SHEET No. PAPER SIZE A1 SCALE AS SHOWN DATE: 2021/01	PROJECT DISCRPTION: REFURBISHMENT OF THE SUNDERLAND RIDGE WASTEWATER TREATMENT WORKS DRAWING TITLE: MODULE 1: BIOLFITERS MECHANICAL EQUIPMENT WBS No. COT DRAWING NUMBER -	PROJECT STATUS					
	NR	DATE	APPROVED	DESCRIPTION	PAR	DIRECTOR: INFRASTRUCTURE PROVISION	NAME	Prof. Reg. No	SIGNATURE	DATE	NAME	Prof. Reg. No			SIGNATURE	DATE	CONCEPT DRAWING	TENDER DRAWING	APPROVED CONSTRUCTION DRAWING	AS BUILT DRAWING
						DIRECTOR: WATER DISTRIBUTION	NAME	Prof. Reg. No	SIGNATURE	DATE	NAME	Prof. Reg. No			SIGNATURE	DATE	PROJECT ENGINEER of COT:			
						DIRECTOR: BULK WATER SERVICES	NAME	Prof. Reg. No	SIGNATURE	DATE	NAME	Prof. Reg. No			SIGNATURE	DATE	INSPECTOR OF WORKS of COT:			
						DIRECTOR: WATER & SANITATION: PLANNING & REGULATION	NAME	Prof. Reg. No	SIGNATURE	DATE	NAME	Prof. Reg. No			SIGNATURE	DATE				
					DIRECTOR: WASTE WATER COLLECTION	NAME	Prof. Reg. No	SIGNATURE	DATE	NAME	Prof. Reg. No	SIGNATURE	DATE							
					DIRECTOR: WASTE WATER TREATMENT	NAME	Prof. Reg. No	SIGNATURE	DATE	NAME	Prof. Reg. No	SIGNATURE	DATE							
						NAME	Prof. Reg. No	SIGNATURE	DATE	CONSULTANT DRAWING NUMBER 3243.00.00.WDB.13.D001		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: _____		DESIGN OFFICE APPROVAL NAME: _____ Prof Reg No: _____ SIGNATURE: _____ DATE: _____						




SITE PLAN OVERVIEW
SCALE 1:200

 CITY OF TSHWANE SERVICES INFRASTRUCTURE DEPARTMENT Mr D Gubuza EXECUTIVE DIRECTOR	AMENDMENTS				WATER AND SANITATION FOR INTERNAL APPROVAL - RECEIVED SIGN WHEN APPLICABLE				Bigen Africa Services (PTY) LTD <small>Enquiries: T. Mukwena Tel: +27 (0) 12 842 8700 Fax: +27 (0) 12 843 9000/9001 taf.mukwena@bigengroup.com The Innovation Hub Pretoria 0087</small>  <small>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 3243.00.00.WDC.14.D001</small>		DESIGNED NAME: T. McCready Prof Reg No: _____ SIGNATURE: _____ DATE: 2021/07		CONTRACT No. _____ PROJECT No. _____ SHEET No. _____ PAPER SIZE A1 SCALE AS SHOWN DATE: 2021/01	PROJECT DISCRPTION: REFURBISHMENT OF THE SUNDERLAND RIDGE WASTEWATER TREATMENT WORKS DRAWING TITLE: MODULE 5: SECONDARY SETTLING TANKS - CONCRETE COVER SLABS LAYOUT WBS No. _____ COT DRAWING NUMBER _____	PROJECT STATUS				
	NR	DATE	APPROVED	DESCRIPTION	PAR	DIRECTOR: INFRASTRUCTURE PROVISION	DIRECTOR: WATER DISTRIBUTION	DIRECTOR: BULK WATER SERVICES			DIRECTOR: WATER & SANITATION: PLANNING & REGULATION	DIRECTOR: WASTE WATER COLLECTION			DIRECTOR: WASTE WATER TREATMENT	NAME	SIGNATURE	DATE	NAME



LAYOUT PLAN
SCALE 1:200

 CITY OF TSHWANE SERVICES INFRASTRUCTURE DEPARTMENT Mr D Gubuza EXECUTIVE DIRECTOR	AMENDMENTS				WATER AND SANITATION FOR INTERNAL APPROVAL - RECEIVED SIGN WHEN APPLICABLE				Bigen Africa Services (PTY) LTD <small>Enquiries: T. Mukwena Tel: + 27 (0) 12 842 8700 Fax: + 27 (0) 12 843 9000/9001 taf.mukwena@bigengroup.com The Innovation Hub Pretoria 0087</small>		DESIGNED NAME: T. McCready Prof Reg No: 202107 SIGNATURE: DATE: 202107		CONTRACT No. PROJECT No. SHEET No. PAPER SIZE SCALE AS SHOWN DATE: 202101	PROJECT DISCRPTION: REFURBISHMENT OF THE SUNDERLAND RIDGE WASTEWATER TREATMENT WORKS DRAWING TITLE: MODULE 5: SECONDARY SETTLING TANKS - SITE LIGHTING LAYOUT PLAN WBS No. COT DRAWING NUMBER	PROJECT STATUS <div><input type="radio"/> CONCEPT <input checked="" type="radio"/> TENDER <input type="radio"/> APPROVED DRAWING DRAWING <input type="radio"/> AS BUILT DRAWING</div>	
	NR	DATE	APPROVED	DESCRIPTION	PAR	DIRECTOR: INFRASTRUCTURE PROVISION	DIRECTOR: WATER DISTRIBUTION	DIRECTOR: BULK WATER SERVICES	DIRECTOR: WATER & SANITATION: PLANNING & REGULATION	DIRECTOR: WASTE WATER COLLECTION	DIRECTOR: WASTE WATER TREATMENT	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 3243.00.00.WDC.22.U001			CHECKED NAME: T. Mukwena Prof Reg No: 20060203 SIGNATURE: DATE: 202107 INFORMATION OFFICE CHECKED NAME: SIGNATURE: DATE: _____ DESIGN OFFICE APPROVAL NAME: Prof Reg No: SIGNATURE: DATE: _____	




PLAN

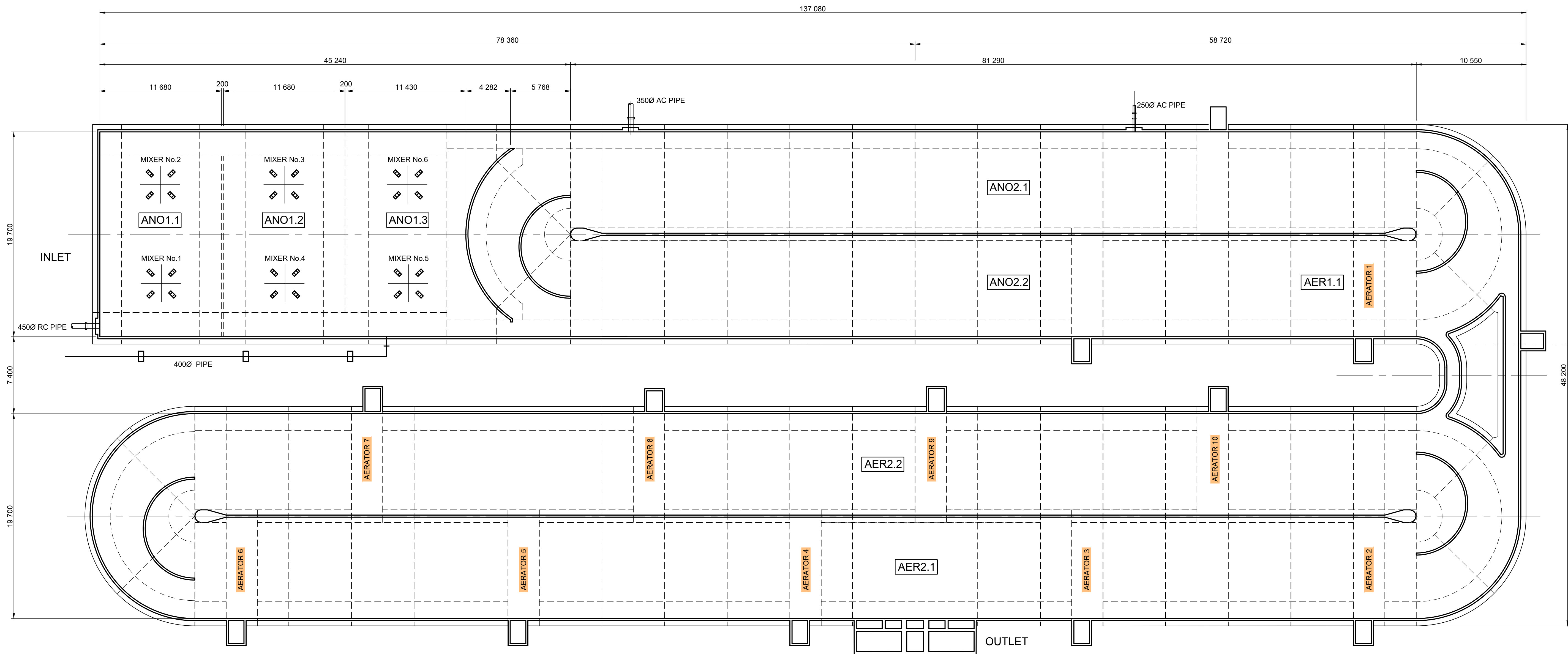


SECTION D-D




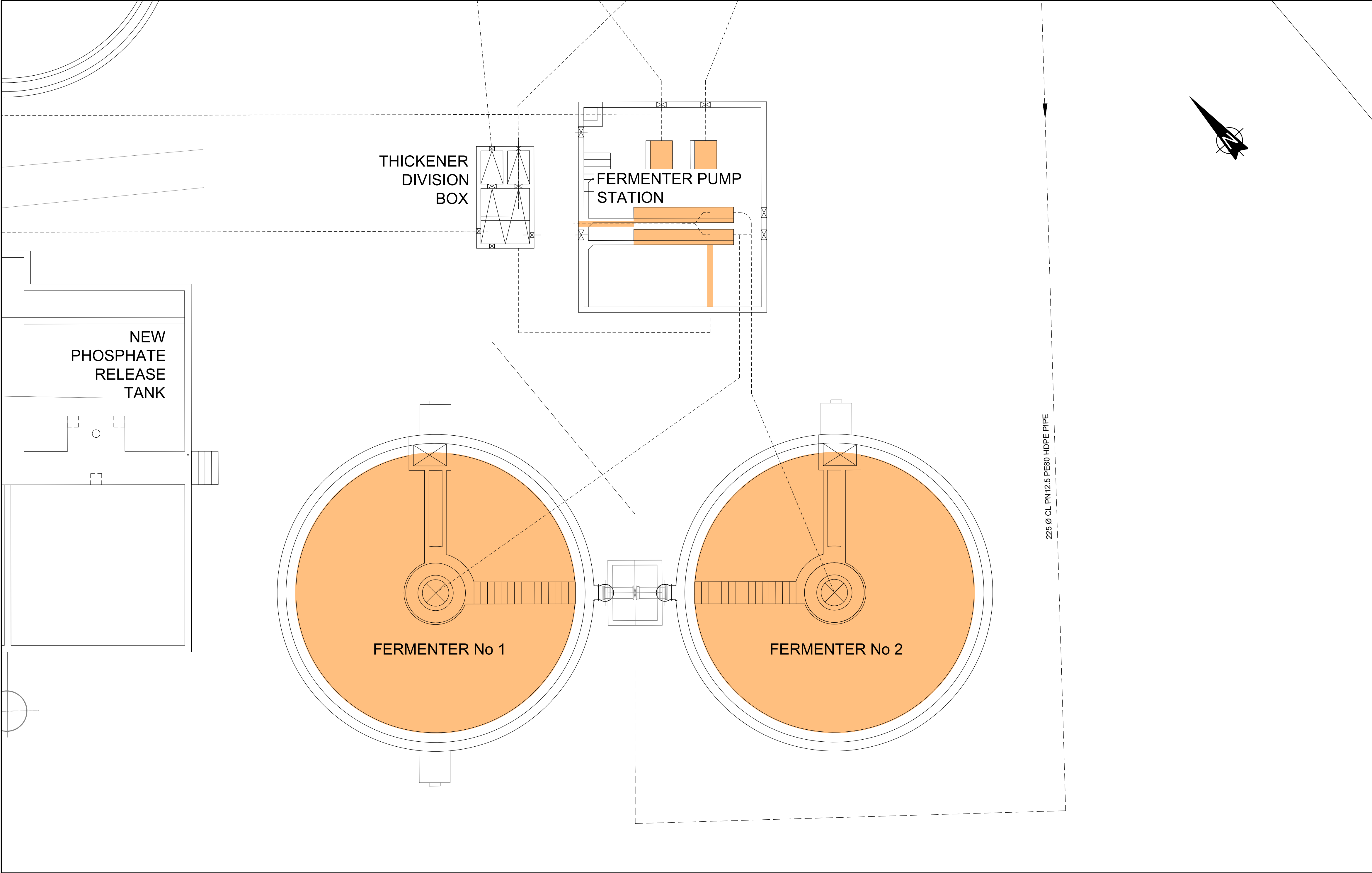
LAYOUT OF BIOLOGICAL FILTERS

 <p>CITY OF TSHWANE SERVICES INFRASTRUCTURE DEPARTMENT</p> <p>WATER AND SANITATION</p> <p>Mr D Gubuza EXECUTIVE DIRECTOR</p>	AMENDMENTS				WATER AND SANITATION FOR INTERNAL APPROVAL - RECEIVED SIGN WHEN APPLICABLE				<p>Bigen Africa Services (PTY) LTD</p> <p>Enquiries: T. Mukwena Tel: +27 (0) 12 842 8700 Fax: +27 (0) 12 843 9000/9001 taf.mukwena@bigengroup.com The Innovation Hub Pretoria 0087</p>	<p>DESIGNED</p> <p>NAME: T. McCredy Prof Reg No: _____ SIGNATURE: _____ DATE: 2021/07</p>		<p>CONTRACT No. _____</p> <p>PROJECT DISCRIPTION: REFURBISHMENT OF THE SUNDERLAND RIDGE WASTEWATER TREATMENT WORKS</p>	<p>PROJECT STATUS</p> <p><input type="radio"/> CONCEPT DRAWING <input checked="" type="radio"/> TENDER DRAWING <input type="radio"/> APPROVED CONSTRUCTION DRAWING <input type="radio"/> AS BUILT DRAWING</p>					
	NR	DATE	APPROVED	DESCRIPTION	PAR	DIRECTOR: INFRASTRUCTURE PROVISION	<p>NAME: _____ Prof. Reg. No. _____ SIGNATURE: _____ DATE: _____</p> <p>DIRECTOR: WATER DISTRIBUTION</p> <p>NAME: _____ Prof. Reg. No. _____ SIGNATURE: _____ DATE: _____</p> <p>DIRECTOR: BULK WATER SERVICES</p> <p>NAME: _____ Prof. Reg. No. _____ SIGNATURE: _____ DATE: _____</p> <p>DIRECTOR: WATER & SANITATION: PLANNING & REGULATION</p> <p>NAME: _____ Prof. Reg. No. _____ SIGNATURE: _____ DATE: _____</p> <p>DIRECTOR: WASTE WATER COLLECTION</p> <p>NAME: _____ Prof. Reg. No. _____ SIGNATURE: _____ DATE: _____</p> <p>DIRECTOR: WASTE WATER TREATMENT</p> <p>NAME: _____ Prof. Reg. No. _____ SIGNATURE: _____ DATE: _____</p>			<p>DRAWN</p> <p>NAME: A. Steenberg Prof Reg No: _____ SIGNATURE: _____ DATE: 2021/07</p> <p>CHECKED</p> <p>NAME: T. Mukwena Prof Reg No: 20080203 SIGNATURE: _____ DATE: 2021/07</p> <p>INFORMATION OFFICE CHECKED</p> <p>NAME: _____ DATE: _____ SIGNATURE: _____</p> <p>DESIGN OFFICE APPROVAL</p> <p>NAME: _____ Prof Reg No: _____ SIGNATURE: _____ DATE: _____</p>			<p>PROJECT No. _____</p> <p>SHEET No. _____</p> <p>PAPER SIZE _____</p> <p>A1</p> <p>SCALE AS SHOWN</p> <p>DATE: 2021/01</p>	<p>DRAWING TITLE: MODULE 1: BIOFILTERS MECHANICAL EQUIPMENT</p> <p>WBS No. _____</p> <p>COT DRAWING NUMBER _____</p>				<p>PROJECT ENGINEER of COT:</p> <p>NAME _____ SIGNATURE _____</p> <p>Prof Reg No. _____ DATE _____</p> <p>INSPECTOR OF WORKS of COT:</p> <p>NAME _____ SIGNATURE _____</p> <p>DATE _____</p>
SIGNATURE _____ Prof. Reg. No. _____ DATE _____					CONSULTANT DRAWING NUMBER 3243.00.00.WHA.13.D001					<p>AD</p>								




LAYOUT PLAN
SCALE 1:200

 CITY OF TSHWANE SERVICES INFRASTRUCTURE DEPARTMENT WATER AND SANITATION Mr D Gubuz EXECUTIVE DIRECTOR	AMENDMENTS				WATER AND SANITATION FOR INTERNAL APPROVAL - RECEIVED SIGN WHEN APPLICABLE				Bigen Africa Services (PTY) LTD <small>Enquiries: T. Mukwena Tel: + 27 (0) 12 842 8700 Fax: + 27 (0) 12 843 9000/9001 tsh.mukwena@bigengroup.com The Innovation Hub Pretoria 0087</small>		DESIGNED NAME: T. McCredy SIGNATURE: _____ DATE: 2021/07 DRAWN NAME: A. Steenberg SIGNATURE: _____ DATE: 2021/07 CHECKED NAME: T. Mukwena SIGNATURE: _____ DATE: 2021/07 INFORMATION OFFICE CHECKED NAME: _____ SIGNATURE: _____ DATE: _____ DESIGN OFFICE APPROVAL NAME: _____ SIGNATURE: _____ DATE: _____		CONTRACT No. _____ PROJECT No. _____ SHEET No. _____ PAPER SIZE A1 SCALE AS SHOWN DATE: 2021/01		PROJECT DISCRPTION: REFURBISHMENT OF THE SUNDERLAND RIDGE WASTEWATER TREATMENT WORKS DRAWING TITLE: MODULE 2: BIOLOGICAL REACTOR - LAYOUT WBS No. _____ COT DRAWING NUMBER _____		PROJECT STATUS <div><input type="radio"/> CONCEPT DRAWING</div> <div><input checked="" type="radio"/> TENDER DRAWING</div> <div><input type="radio"/> APPROVED CONSTRUCTION DRAWING</div> <div><input type="radio"/> AS BUILT DRAWING</div> PROJECT ENGINEER of COT: NAME _____ SIGNATURE _____ Prof Reg No. _____ DATE _____ INSPECTOR OF WORKS of COT: NAME _____ SIGNATURE _____ DATE _____	
	NR	DATE	APPROVED	DESCRIPTION	PAR	DIRECTOR: INFRASTRUCTURE PROVISION	DIRECTOR: WATER DISTRIBUTION	DIRECTOR: BULK WATER SERVICES	DIRECTOR: WATER & SANITATION: PLANNING & REGULATION	DIRECTOR: WASTE WATER COLLECTION	DIRECTOR: WASTE WATER TREATMENT	CONSULTANT DRAWING NUMBER 3243.00.00.WIA.13.D001						



LAYOUT PLAN
SCALE 1:100

 CITY OF TSHWANE SERVICES INFRASTRUCTURE DEPARTMENT Mr D Gubuza EXECUTIVE DIRECTOR	AMENDMENTS				WATER AND SANITATION FOR INTERNAL APPROVAL - RECEIVED SIGN WHEN APPLICABLE				Bigen Africa Services (PTY) LTD <small>Enquiries: T. Mukwena Tel: + 27 (0) 12 842 8700 Fax: + 27 (0) 12 843 9000/9001 taf.mukwena@bigengroup.com The Innovation Hub Pretoria 0087</small>		DESIGNED NAME: T. McCready Prof Reg No: SIGNATURE: DATE: 2021/07		CONTRACT No. PROJECT No. SHEET No. PAPER SIZE A1 SCALE AS SHOWN DATE: 2021/01	PROJECT DISCRPTION: REFURBISHMENT OF THE SUNDERLAND RIDGE WASTEWATER TREATMENT WORKS DRAWING TITLE: SLUDGE HANLDING: FERMENTATION SYSTEM - LAYOUT WBS No. COT DRAWING NUMBER	PROJECT STATUS <div><input type="radio"/> CONCEPT DRAWING</div> <div><input checked="" type="radio"/> TENDER DRAWING</div> <div><input type="radio"/> APPROVED CONSTRUCTION DRAWING</div> <div><input type="radio"/> AS BUILT DRAWING</div> PROJECT ENGINEER of COT: NAME SIGNATURE Prof Reg No. DATE INSPECTOR OF WORKS of COT: NAME SIGNATURE DATE		
	NR	DATE	APPROVED	DESCRIPTION	PAR	DIRECTOR: INFRASTRUCTURE PROVISION	DIRECTOR: WATER DISTRIBUTION	DIRECTOR: BULK WATER SERVICES			DIRECTOR: WATER & SANITATION: PLANNING & REGULATION	DIRECTOR: WASTE WATER COLLECTION					DIRECTOR: WASTE WATER TREATMENT
	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										INFORMATION OFFICE CHECKED NAME: DATE: DESIGN OFFICE APPROVAL NAME: Prof Reg No: SIGNATURE: DATE:						
	CONSULTANT DRAWING NUMBER 3243.00.00.WJB.13.D001										DESIGNED NAME: T. McCready Prof Reg No: SIGNATURE: DATE: 2021/07						