







PIPE	DESCRIPTION	SIZE (Ømm)	VELOCITY		
			MIN	MAX	HEAD LOSSES
P1	MH TO INLET - GRAVITY	900mm	0.882 m/s	1.069 m/s	0.459 m/s
P2	INLET TO EO - GRAVITY	600mm	0.787 m/s	0.803 m/s	m/s
P3	INLET TO DIV. BOX -HYDROSTATIC	700mm	0.506 m/s	1.180 m/s	0.286 m/s
P4	DIV. BOX TO REACTOR -HYDROSTATIC	600mm	0.347 m/s	0.810 m/s	0.158 m/s
P5	A-RECYCLE - HYDROSTATIC TFM	600mm	0.521 m/s	0.868 m/s	0.082 m/s
P6	ANOXIC TO AEROBIC - CHANNEL	mm	m/s	..... m/s	..... m/s
P7	REACTOR TO CLARIFIER-HYDROSTATIC	700mm	0.258 m/s	1.245 m/s	0.284 m/s
P8	RAS TO RAS BOX(ANOXIC)-HYDROST.	600mm	0.299 m/s	0.933 m/s	0.235 m/s
P9	RAS BOX TO ANOXIC BOX-HYDROST.	500mm	0.304 m/s	0.690 m/s	0.073 m/s
P10	CLARIFIER TO CHLORINATION-GRAY.	500mm	1.652 m/s	2.006 m/s	0.092 m/s
P11	CHLORINATION TO PUMP SUMP-GRAY.	2x500mm	0.373 m/s	0.871 m/s	0.092 m/s
P12	EMERG. OVERFLOW OF PUMP SUMP-GRAY	800mm	0.979 m/s	1.44 m/s	m/s
P13	PUMPLINE FROM SUMP	mm	m/s	m/s	m/s
P14	PUMPLINE, WAS SUMP TO VOLUTE	100mm	m/s	1.229 m/s	m/s
P15	PUMPLINE, EMERG. OVERFL. TO INLET	315mm	m/s	m/s	m/s
P16	SUPERNATANT RET.-VOLUME TO REACT	160mm	m/s	m/s	m/s
P17	SUPERNATANT RET.-COMP.SLAB -REACT	160mm	m/s	m/s	m/s
P18	SCUM FROM SST TO WAS BOX - GRAY.	200mm	0.338 m/s	0.716 m/s	m/s

Approved: \_\_\_\_\_ Date: \_\_\_\_\_

Client: \_\_\_\_\_

Project Name: MARAPONG BOKARABELLO EFFLUENT TRANSFER (MBET1)

Drawing Title: 16MI WwTP (PHASE 1) SITE PIPE LAYOUT

Drawing Number: 5324W-004-004

Approved: \_\_\_\_\_ Date: \_\_\_\_\_

Client: \_\_\_\_\_

Project Name: LEPHALALE LOCAL MUNICIPALITY

Revision Table:

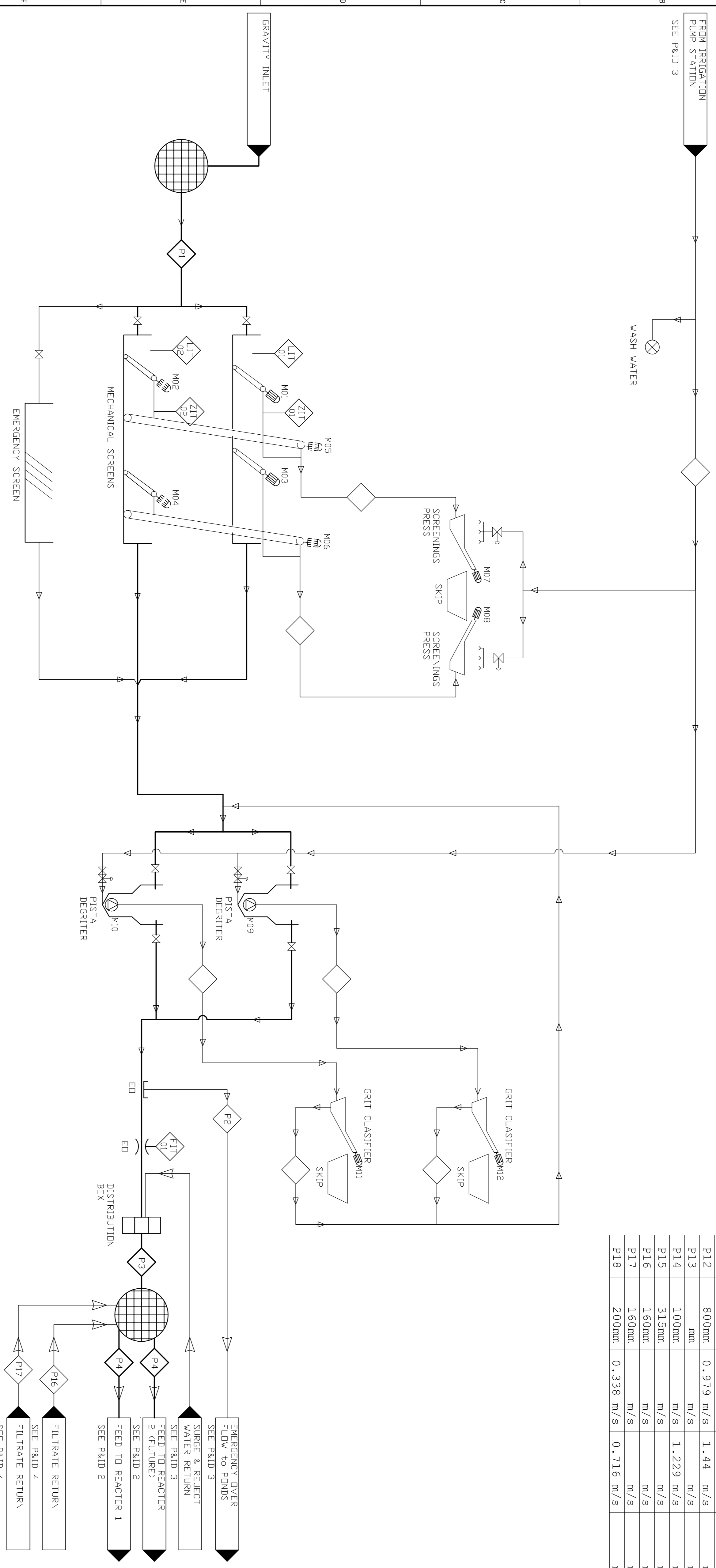
NO.	DATE	REASON	BY
0	2012/10/25	SUBMITTED FOR APPROVAL	RSB
1			RSB

resource generation

MANAGEMENT TECHNOLOGY ENGINEERING



PIPE SIZE (Ømm)	VELOCITY			HEAD LOSSES
	MIN	MAX	HEAD LOSSES	
P1	900mm	0.882 m/s	1.069 m/s	0.459 m/s
P2	600mm	0.787 m/s	0.803 m/s	m/s
P3	700mm	0.506 m/s	1.180 m/s	0.286 m/s
P4	600mm	0.347 m/s	0.810 m/s	0.158 m/s
P5	600mm	0.521 m/s	0.868 m/s	0.082 m/s
P6	mm	m/s	..... m/s	..... m/s
P7	700mm	0.258 m/s	1.245 m/s	0.284 m/s
P8	600mm	0.299 m/s	0.933 m/s	0.235 m/s
P9	500mm	0.304 m/s	0.690 m/s	0.073 m/s
P10	500mm	1.652 m/s	2.006 m/s	0.092 m/s
P11	2*500mm	0.373 m/s	0.871 m/s	0.092 m/s
P12	800mm	0.979 m/s	1.44 m/s	m/s
P13	mm	m/s	m/s	m/s
P14	100mm	m/s	1.229 m/s	m/s
P15	315mm	m/s	m/s	m/s
P16	160mm	m/s	m/s	m/s
P17	160mm	m/s	m/s	m/s
P18	200mm	0.338 m/s	0.716 m/s	m/s



INLET WORKS

NOTES

0 2012-10-25 ISSUED FOR APPROVAL REVISION 1B

Owner: **LEPHALLE LOCAL MUNICIPALITY**

Approved: \_\_\_\_\_ Date: \_\_\_\_\_

Client: \_\_\_\_\_ Date: \_\_\_\_\_

Approved: \_\_\_\_\_ Date: \_\_\_\_\_

Client: \_\_\_\_\_ Date: \_\_\_\_\_

**resource generation**  
Ledjadia Coal (Pty) Ltd

Approved: \_\_\_\_\_ Date: \_\_\_\_\_

PROJECT NAME: **MARAPONG BOKARABELO EFFLUENT TRANSFER (MBET)**

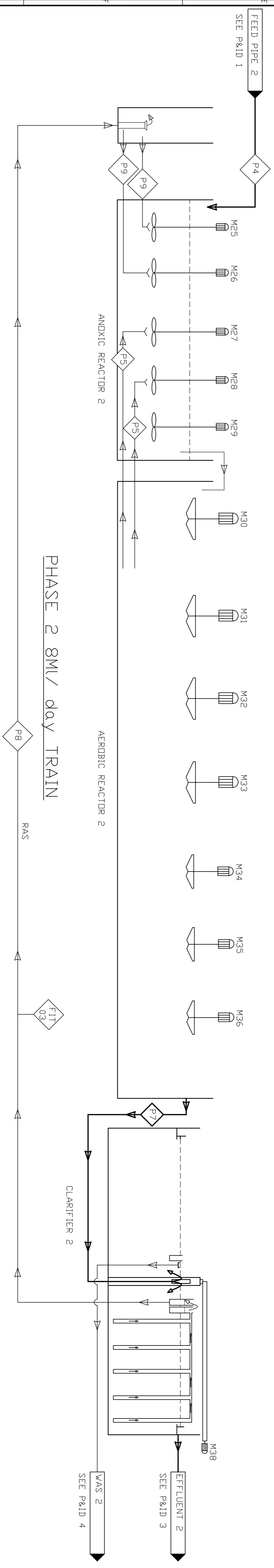
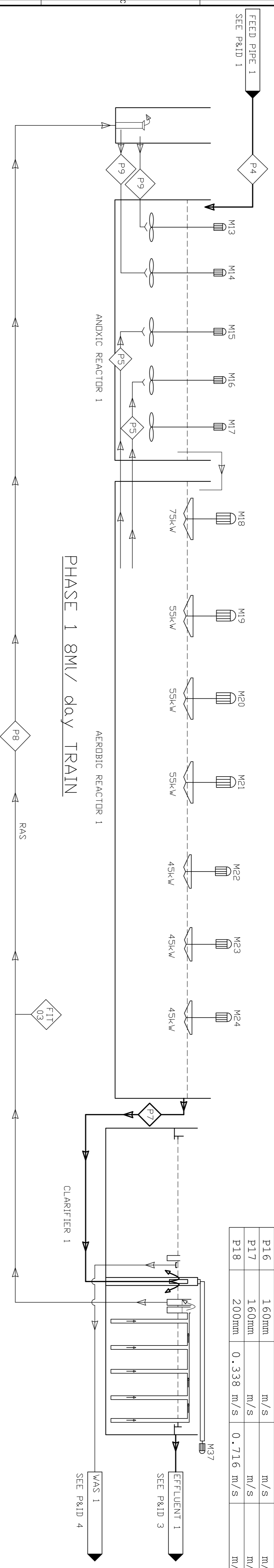
DRAWING TITLE: **16MI WwTP (PHASE 1) P&ID - 1**

NAME	SIGNATURE	DATE
Client		
Designer	M. vd BERG	2012-10-25
Drawn By	JH. ELS/IN BURROUHER	2012-10-25
Checked By		
Approved		
Engineer		
Scale		

DRAWING NUMBER: **5324W-005-001**

SHEET REVISION: **1 / 1 0**

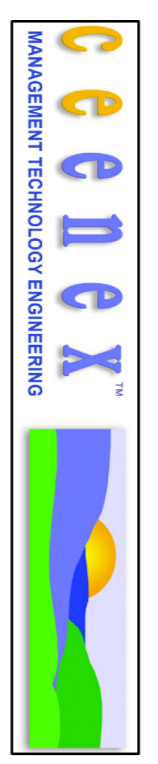
PIPE	SIZE (Ømm)	VELOCITY			HEAD LOSSES
		MIN	MAX	HEAD LOSSES	
P1	900mm	0.882 m/s	1.069 m/s	0.459 m/s	
P2	600mm	0.787 m/s	0.803 m/s	m/s	
P3	700mm	0.506 m/s	1.180 m/s	0.286 m/s	
P4	600mm	0.347 m/s	0.810 m/s	0.158 m/s	
P5	600mm	0.521 m/s	0.868 m/s	0.082 m/s	
P6	mm	m/s	••••• m/s	••••• m/s	
P7	700mm	0.258 m/s	1.245 m/s	0.284 m/s	
P8	600mm	0.299 m/s	0.933 m/s	0.235 m/s	
P9	500mm	0.304 m/s	0.690 m/s	0.073 m/s	
P10	500mm	1.652 m/s	2.006 m/s	0.092 m/s	
P11	2*500mm	0.373 m/s	0.871 m/s	0.092 m/s	
P12	800mm	0.979 m/s	1.44 m/s	m/s	
P13	mm	m/s	m/s	m/s	
P14	100mm	m/s	1.229 m/s	m/s	
P15	315mm	m/s	m/s	m/s	
P16	160mm	m/s	m/s	m/s	
P17	160mm	m/s	m/s	m/s	
P18	200mm	0.338 m/s	0.716 m/s	m/s	



BIOLOGICAL TREATMENT TRAINS

NOTES

0 2012-10-26 ISSUED FOR APPROVAL  
 NO. DATE REVISION  
 OWNER  
**LEPHALALE LOCAL MUNICIPALITY**



Approved: \_\_\_\_\_ Date: \_\_\_\_\_  
 PROJECT NAME  
**MARAPONG BOKARABELO  
 EFFLUENT TRANSFER (MBET)**

DRAWING TITLE  
**16ML WwTP (PHASE 1)  
 P&ID - 2**

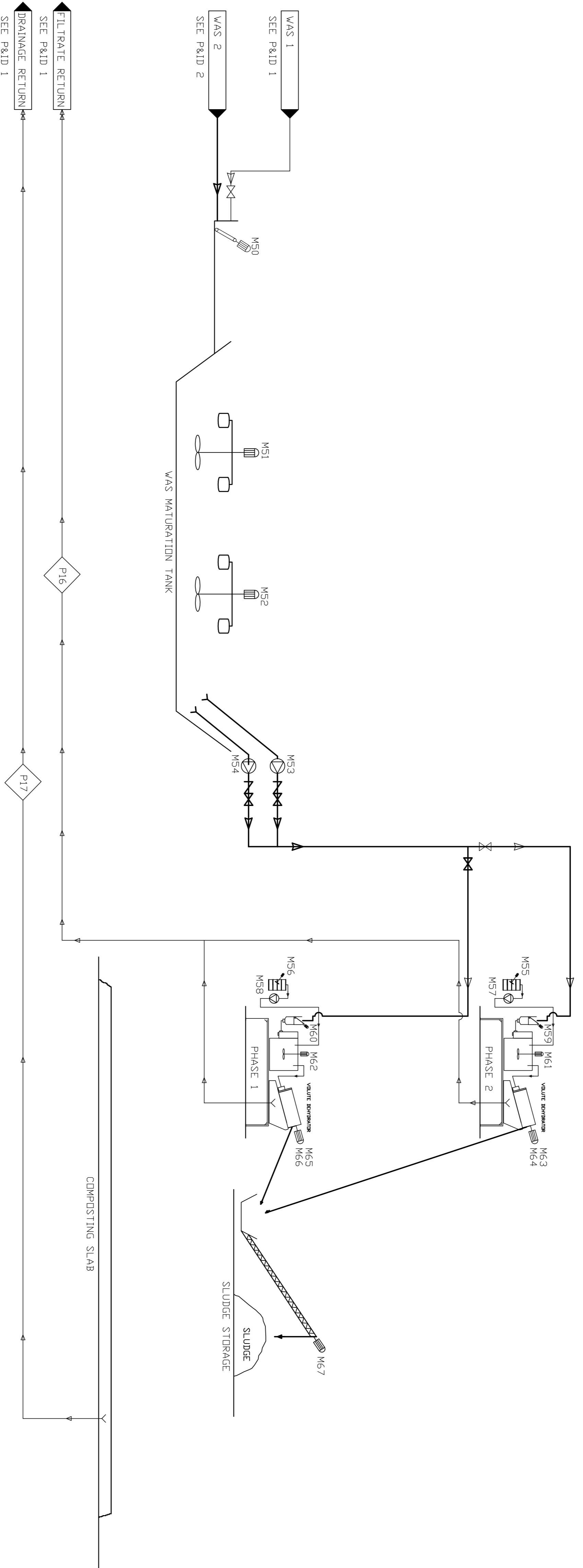
NAME	SIGNATURE	DATE
Client		
Designer	M vd BERG	2012-10-25
Drawn By	JH ELS/IN BURROUHER	2012-10-25
Checked By		
Approved		
Engineer		
Scale		

DRAWING NUMBER  
**5324W-005-002**  
 SHEET REVISION  
 1 / 1 0





PIPE	SIZE (Ømm)	VELOCITY			HEAD LOSSES
		MIN	MAX		
P1	900mm	0.882 m/s	1.069 m/s	0.459 m/s	
P2	600mm	0.787 m/s	0.803 m/s		m/s
P3	700mm	0.506 m/s	1.180 m/s	0.286 m/s	
P4	600mm	0.347 m/s	0.810 m/s	0.158 m/s	
P5	600mm	0.521 m/s	0.868 m/s	0.082 m/s	
P6	mm	m/s	..... m/s	..... m/s	
P7	700mm	0.258 m/s	1.245 m/s	0.284 m/s	
P8	600mm	0.299 m/s	0.933 m/s	0.235 m/s	
P9	500mm	0.304 m/s	0.690 m/s	0.073 m/s	
P10	500mm	1.652 m/s	2.006 m/s	0.092 m/s	
P11	2*500mm	0.373 m/s	0.871 m/s	0.092 m/s	
P12	800mm	0.979 m/s	1.44 m/s		m/s
P13	mm	m/s	m/s		m/s
P14	100mm	m/s	1.229 m/s		m/s
P15	315mm	m/s	m/s		m/s
P16	160mm	m/s	m/s		m/s
P17	160mm	m/s	m/s		m/s
P18	200mm	0.338 m/s	0.716 m/s		m/s

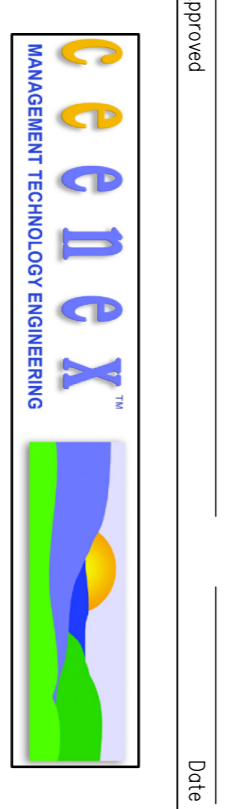


WASTE SLUDGE TREATMENT

NOTES

NO.	DATE	REVISION	BY
0	2012-10-25	ISSUED FOR APPROVAL	JB
			RS

LEPHALLE LOCAL MUNICIPALITY

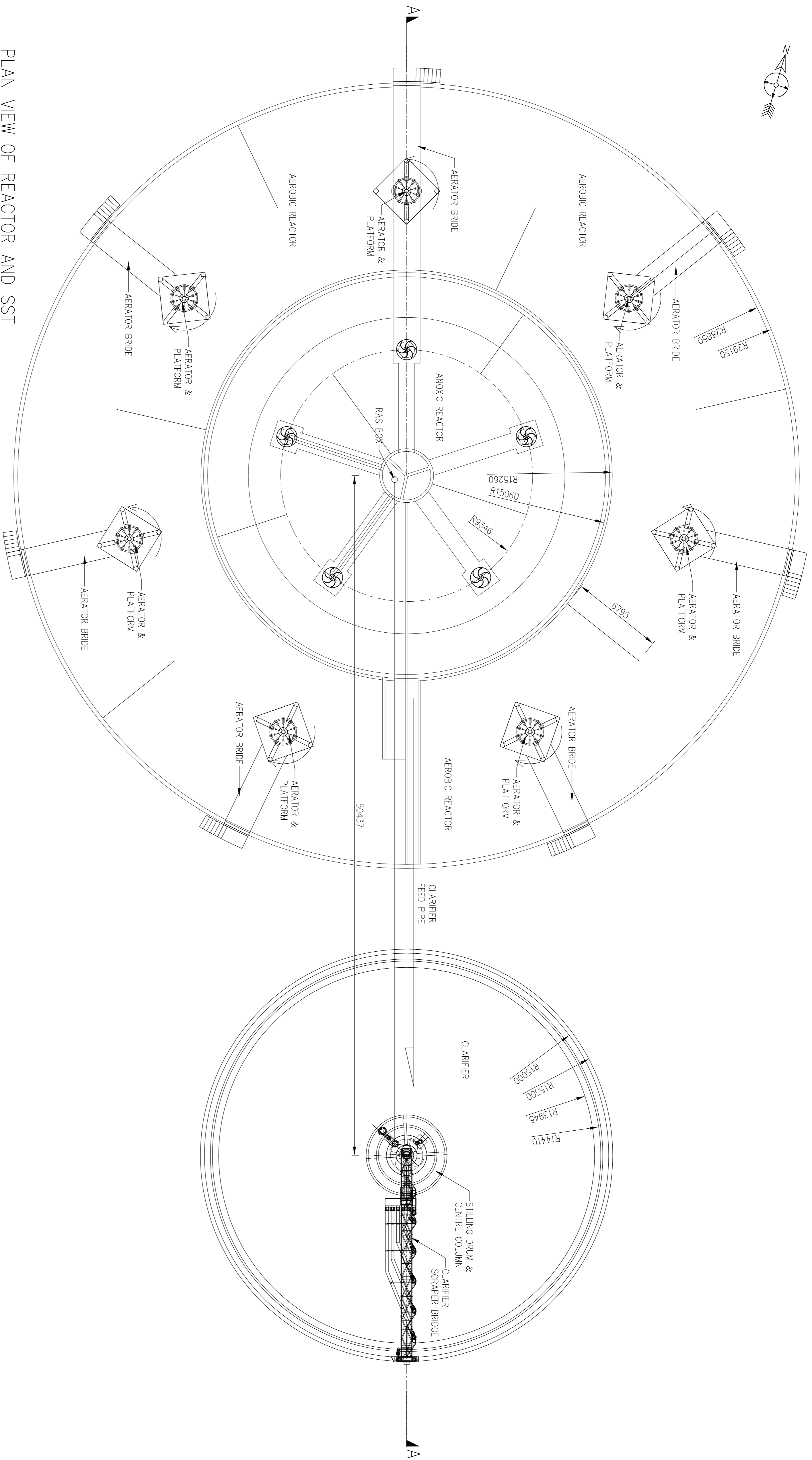


Approved: \_\_\_\_\_ Date: \_\_\_\_\_  
 PROJECT NAME: MARAPONG BOKARABELO  
 EFFLUENT TRANSFER (MBET)

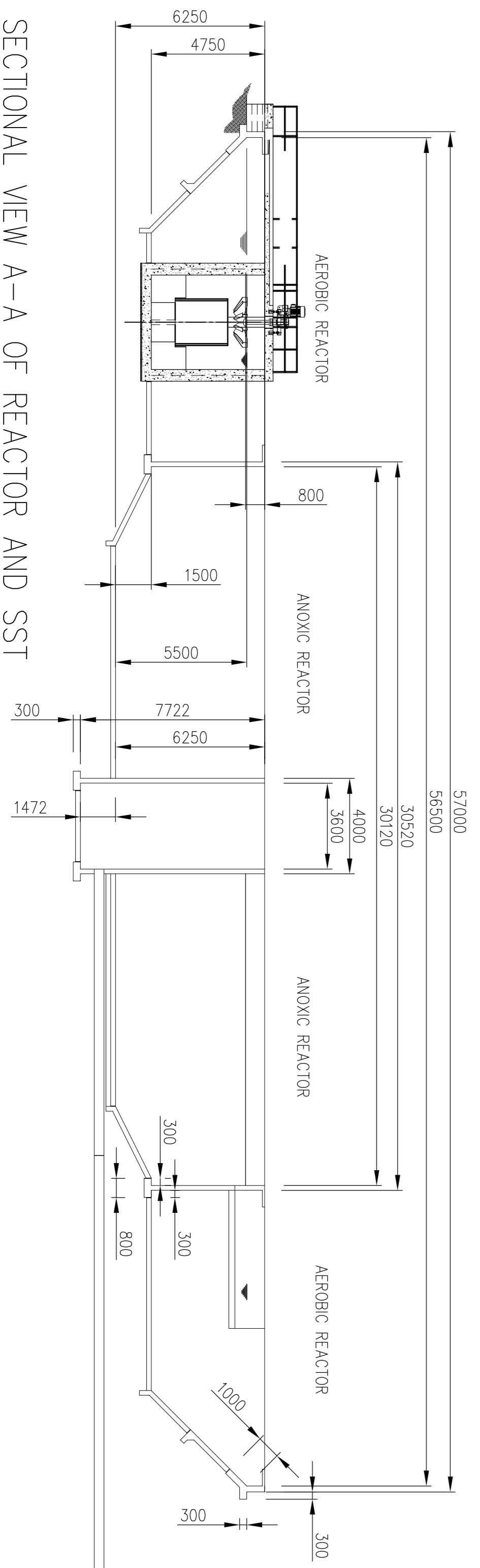
DRAWING TITLE: 16M1 WwTP (PHASE 1)  
 P&ID - 4

NAME	SIGNATURE	DATE
Client		
Designer	M vd BERG	2012-10-25
Drawn By	JH ELS/TH BURROUWER	2012-10-25
Checked By		
Approved		
Engineer		
Scale		

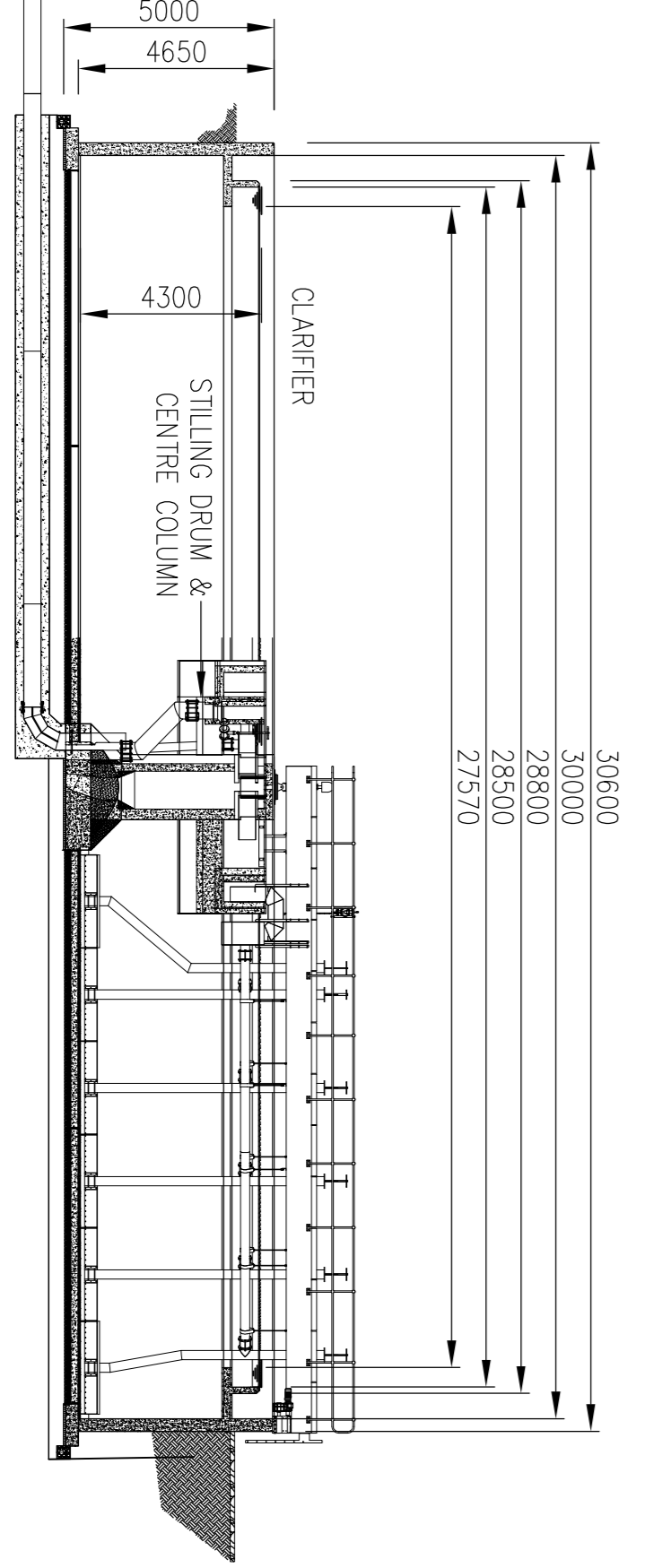
DRAWING NUMBER: 5324W-005-004  
 SHEET REVISION: 1 / 1 0

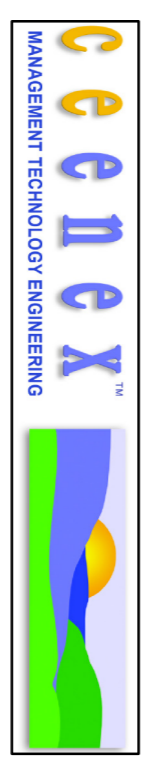



PLAN VIEW OF REACTOR AND SST  
SCALE NTS



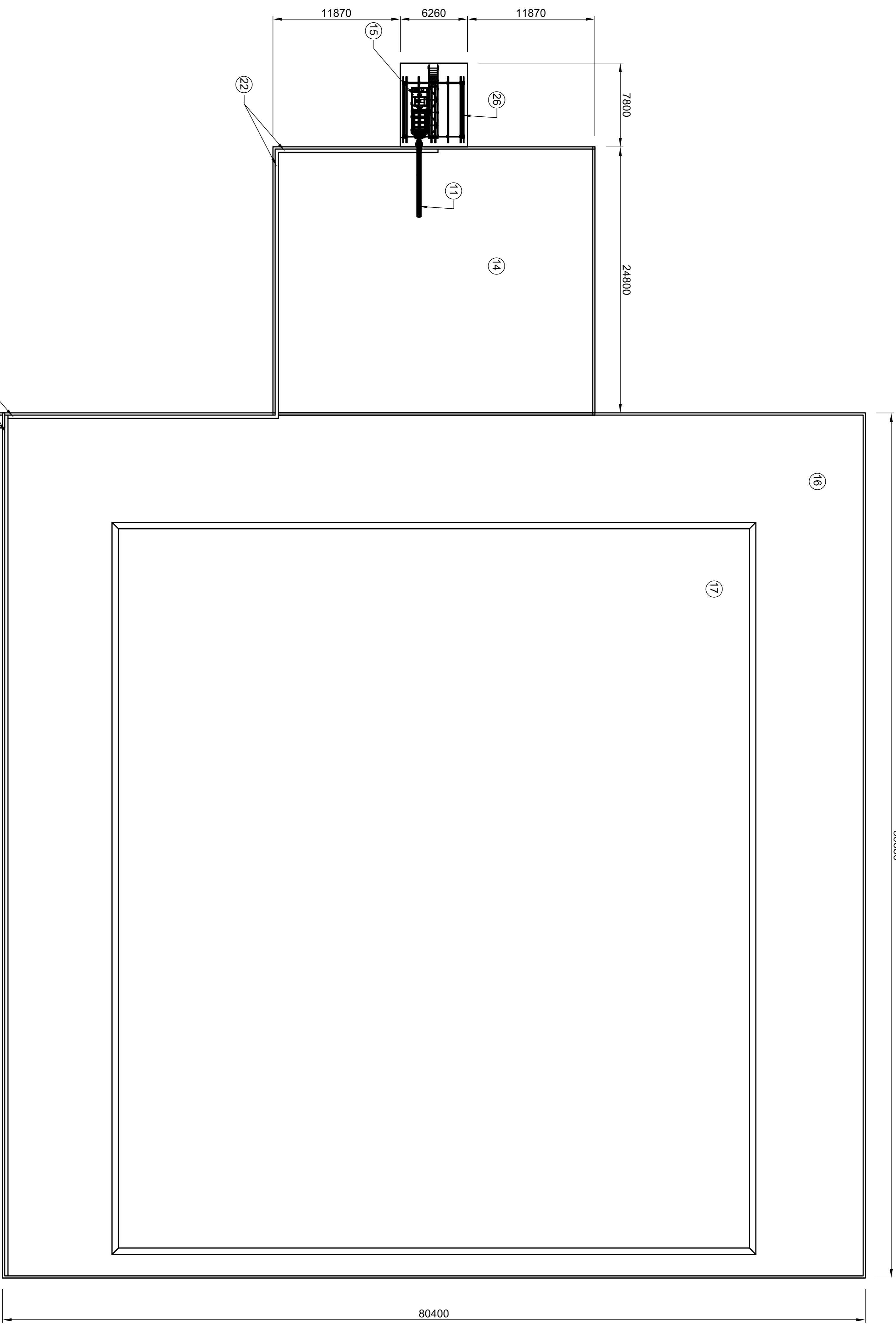
SECTIONAL VIEW A-A OF REACTOR AND SST  
SCALE NTS



			
<p>Approved: _____ Date: _____</p>		<p>Approved: _____ Date: _____</p>	
<p>PROJECT NAME: MARAPONG BOKARABELO EFFLUENT TRANSFER (MBE1)</p>		<p>CLIENT: LEPHALALE LOCAL MUNICIPALITY</p>	
<p>DRAWING TITLE: REACTOR AND CLARIFIER LAYOUT</p>		<p>NO. 0 2012-10-25 ISSUED FOR APPROVAL</p>	
<p>Client: _____</p>		<p>DATE: _____</p>	
<p>Designer: M. vd BERG</p>		<p>REVISION: _____</p>	
<p>Drawn By: JH. ESTI/11 BURROCHTER</p>		<p>DATE: _____</p>	
<p>Checked By: _____</p>		<p>1 / 1 0</p>	
<p>Approved: _____</p>		<p>SHEET REVISION</p>	
<p>Scale: _____</p>		<p>DRAWING NUMBER: 5324W-401-001</p>	

- 11. SLUDGE PUMP
- 14. STORAGE SLAB
- 15. VOLUTE DEHYDRATOR
- 16. SLAB FOR COMPOSTING
- 17. COMPOST HEAP
- 22. FILTRATE RETURN CHANNEL
- 23. SEEPAGE AND DRAINAGE CHANNEL
- 24. DRAIN PIPE TO DIVIDING BOX.
- 25. DEHYDRATOR BUILDING

80650

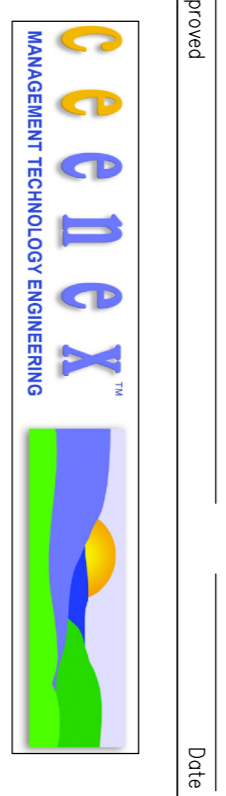


PLAN VIEW OF SLUDGE HANDLING FACILITY

SECTIONAL VIEW OF SLUDGE HANDLING FACILITY

NO.	DATE	REVISION	REVISOR
0			
1			
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LEPHALALE LOCAL MUNICIPALITY



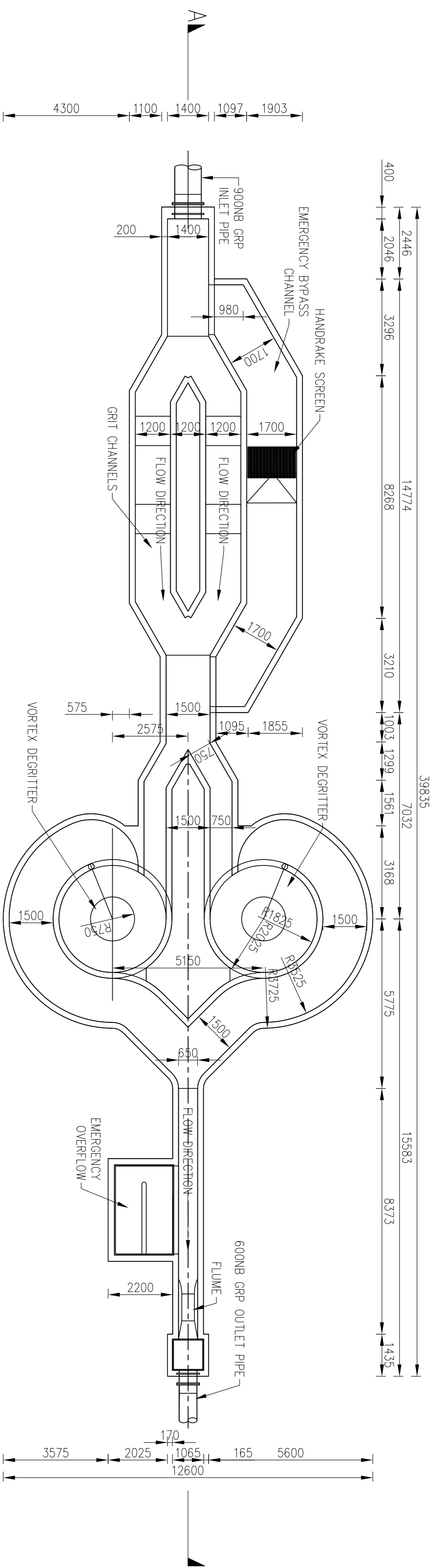
Approved: \_\_\_\_\_ Date: \_\_\_\_\_  
 PROJECT NAME: MARAPONG BOKARABELO EFFLUENT TRANSFER (MBET)  
 DRAWING TITLE: GENERAL ARRANGEMENT SLUDGE HANDLING SLABS

NAME	SIGNATURE	DATE
Client		
Designer	Z. vd BERG	
Drawn By	JH. ELS/TH. BURROUWER	2012-10-25
Checked By		
Approved		
Engineer		
Scale		

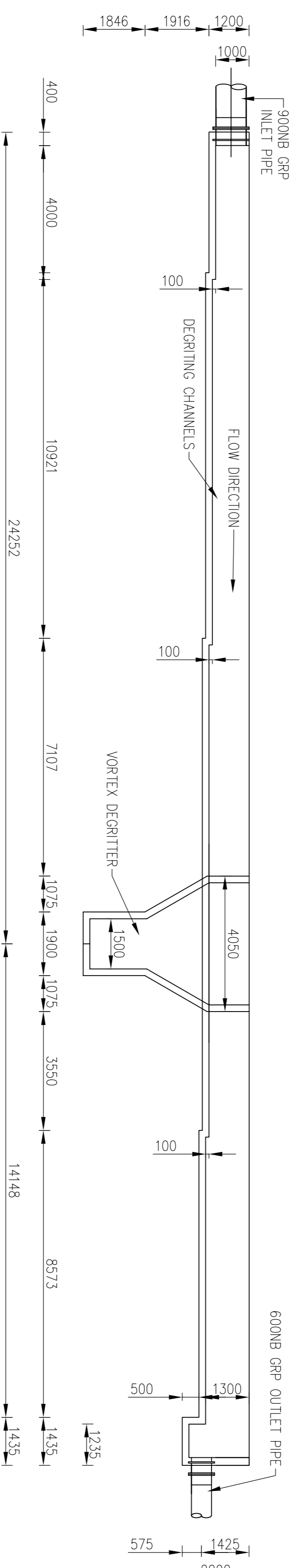
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 SHEET: 1/1  
 REVISION: 0







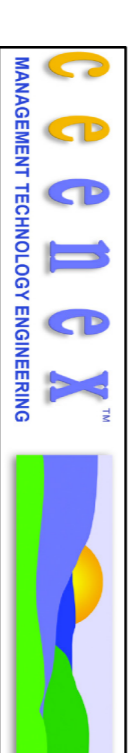
PLAN VIEW OF INLET WORKS  
SCALE NTS



NOTES

NO.	DATE	REVISION	BY
0	2012-10-25	ISSUED FOR APPROVAL	JH
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2			
3			
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5			
6			
7			
8			
9			
10			

LEPHALLE LOCAL MUNICIPALITY



Approved: \_\_\_\_\_ Date: \_\_\_\_\_  
 PROJECT NAME: MARAPONG BOKARABELO EFFLUENT TRANSFER (MBET)  
 DRAWING TITLE: INLET WORKS CLARIFIER LAYOUT

NAME	SIGNATURE	DATE
Client		
Designer	M. vd BERG	2012-10-25
Drawn By	JH (S/L) BURROGHER	2012-10-25
Checked By		
Approved		
Engineer		
Scale		

DRAWING NUMBER: 5324W-501-001  
 SHEET: 1 / 1  
 REVISION: 0