

APPENDIX F

DRAWINGS

(Note the dimensions and specific information regarding the project infrastructure should this be regarded as approximate, which may be refined and optimised as part of the final design phase)

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PROJECT INFORMATION			REVISION			REFERENCE DRAWINGS		
PROPERTY DESCRIPTION	DISCIPLINE	DATE	NO.	DATE	DESCRIPTION	NO.	DATE	DESCRIPTION
PROJECT: UMKHOMAZI WATER PROJECT 1 250ML/D WATER TREATMENT PLANT	A.S.	MAY 2013	-	-	-	-	-	-
DRAWING CHECKER	CHECKER	DATE	-	-	-	-	-	-
DESIGN CHECK	G.L.	MAY 2013	-	-	-	-	-	-
REVISION NUMBER	CHECK	DATE	-	-	-	-	-	-
	ENGIN	DATE	-	-	-	-	-	-
	PROJECT NUMBER							

DRAWINGNO.

REV. 8

PROJECT: UMKHOMAZI WATER PROJECT
1 250ML/D WATER TREATMENT PLANT

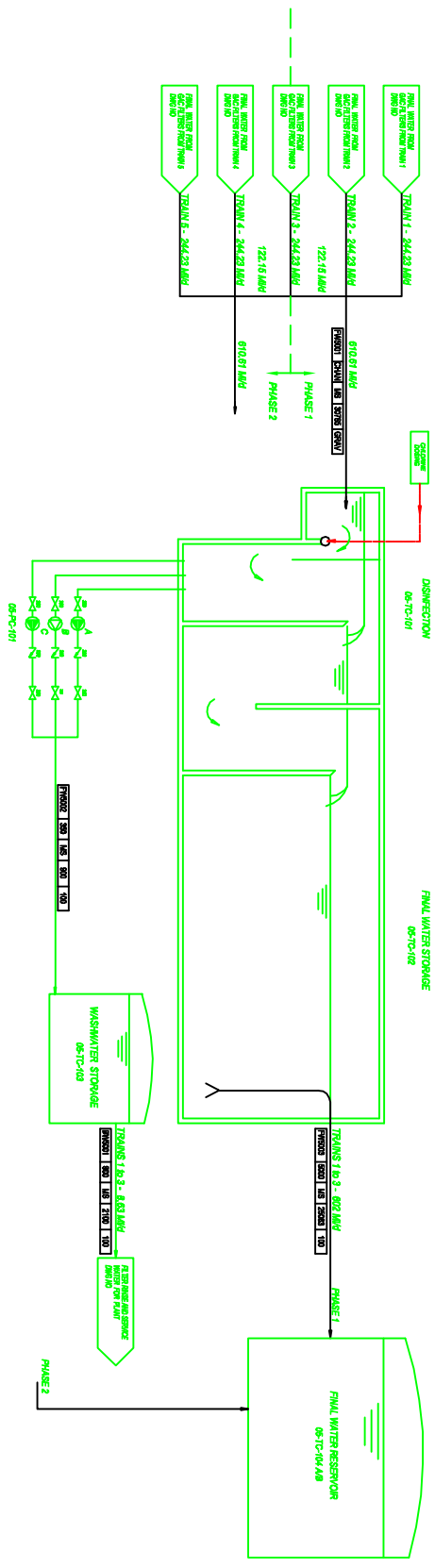
TITLE: P & ID

SHEET: SHEET 4 OF 5

DRG. No. 1301.X01.UW - 001

REV. 8

CHLORINE CONTACT TANK AND FINAL WATER STORAGE RESERVOIR (AREA 9) *(for 625 MGD)*



DESCRIPTION	UNIT	VALUE
DESIGN FLOW RATE	MGD	625
DESIGN FLOW RATE	L/S	22830
DESIGN FLOW RATE	M ³ /HR	23100
DESIGN FLOW RATE	MGD	625
DESIGN FLOW RATE	L/S	22830
DESIGN FLOW RATE	M ³ /HR	23100
DESIGN FLOW RATE	MGD	625
DESIGN FLOW RATE	L/S	22830
DESIGN FLOW RATE	M ³ /HR	23100
DESIGN FLOW RATE	MGD	625
DESIGN FLOW RATE	L/S	22830
DESIGN FLOW RATE	M ³ /HR	23100
DESIGN FLOW RATE	MGD	625
DESIGN FLOW RATE	L/S	22830
DESIGN FLOW RATE	M ³ /HR	23100
DESIGN FLOW RATE	MGD	625
DESIGN FLOW RATE	L/S	22830
DESIGN FLOW RATE	M ³ /HR	23100

NOTES:

1. LINE NUMBER LEGEND

1001	26	PVC	2.5	Z7
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LINE No

PIPE (O/DIA)

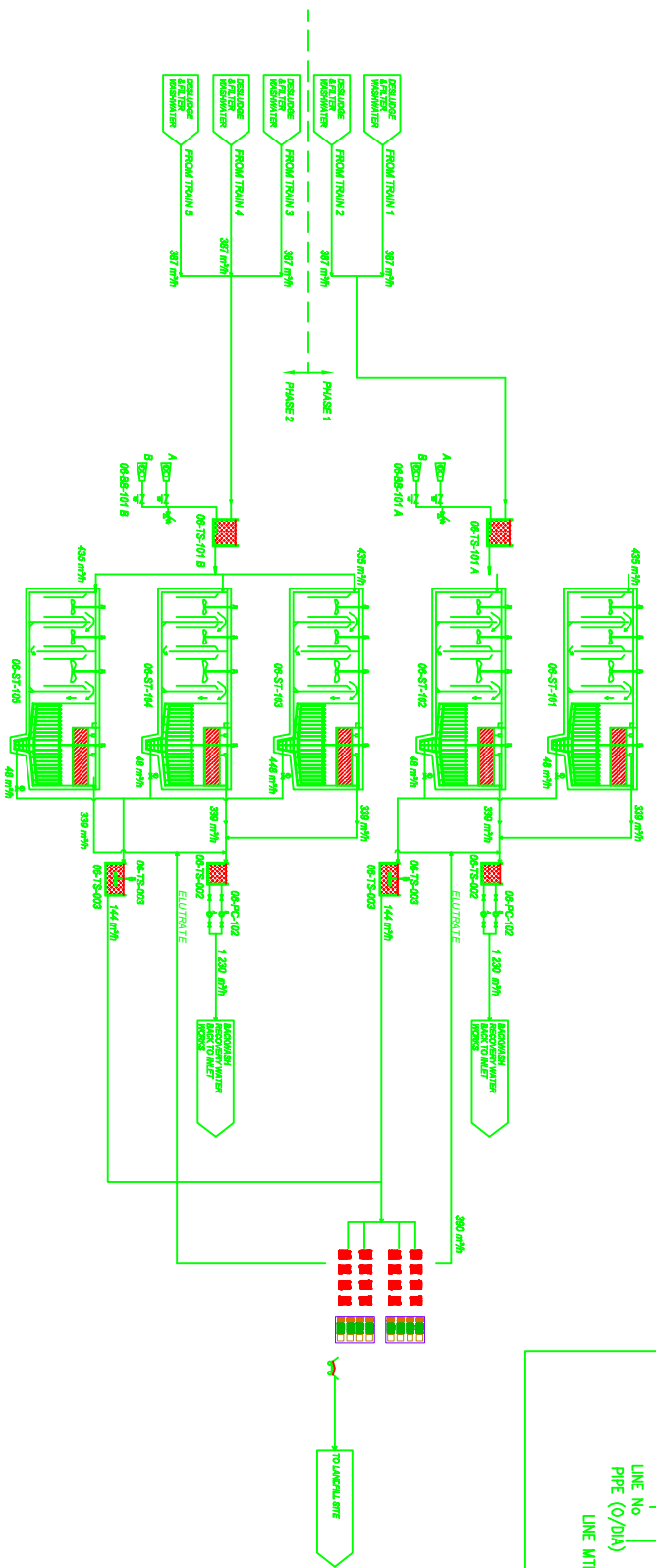
LINE MTL

OPP - PRESSURE RPO

FLOW m³/hr - LIQUID

MASS kg/hr - GAS

SUDGE TREATMENT PLANT (AREA 09)
for 1250 MLD



NOTES:

1. LINE NUMBER LEGEND

1001	26	PVC	25	Z7
LINE No.				
PPE (O/DIA)				
LINE MTL.				

OPP: PRESSURE RPO
FLOW m³/hr – LIQUID
MASS kg/hr – GAS

06-8B-101A/B SUDGE WASTEWATER
TYPE: 1000 m³
EFFECTIVE VOLUME: 1000 m³
SIZE (LxWxH): 20m x 20m x 3.5m
MOTOR: 180 kW (100hp)

06-TS-101 SUDGE TRAIN
TYPE: 1000 m³
EFFECTIVE VOLUME: 1000 m³
SIZE (LxWxH): 20m x 20m x 3.5m
MOTOR: 180 kW (100hp)

06-ST-101, 102, 103, 104 AND 105 RECYCLED WASTEWATER
TYPE: 1000 m³
EFFECTIVE VOLUME: 1000 m³
SIZE (LxWxH): 20m x 20m x 3.5m
MOTOR: 180 kW (100hp)

06-PC-101 RECYCLED WASTEWATER
TYPE: 1000 m³
EFFECTIVE VOLUME: 1000 m³
SIZE (LxWxH): 20m x 20m x 3.5m
MOTOR: 180 kW (100hp)

06-PC-102 RECYCLED WASTEWATER
TYPE: 1000 m³
EFFECTIVE VOLUME: 1000 m³
SIZE (LxWxH): 20m x 20m x 3.5m
MOTOR: 180 kW (100hp)

06-FS-101 RECYCLED WASTEWATER
TYPE: 1000 m³
EFFECTIVE VOLUME: 1000 m³
SIZE (LxWxH): 20m x 20m x 3.5m
MOTOR: 180 kW (100hp)

06-FS-102 RECYCLED WASTEWATER
TYPE: 1000 m³
EFFECTIVE VOLUME: 1000 m³
SIZE (LxWxH): 20m x 20m x 3.5m
MOTOR: 180 kW (100hp)

06-FS-103 RECYCLED WASTEWATER
TYPE: 1000 m³
EFFECTIVE VOLUME: 1000 m³
SIZE (LxWxH): 20m x 20m x 3.5m
MOTOR: 180 kW (100hp)

PROJECT DESCRIPTION	DISCIPLINE	DATE
A.S.	MAY 2013	
CHECKER	C.L.	MAY 2013
DESIGNER	C.L.	MAY 2013
PROJECT ENGINEER	ENGR	

REVISION	NO.	DATE	DESCRIPTION

REVISION	NO.	DATE	DESCRIPTION

REVISION	NO.	DATE	DESCRIPTION

REVISION	NO.	DATE	DESCRIPTION

REVISION	NO.	DATE	DESCRIPTION

PROJECT: UMKHOMAZI WATER PROJECT
1 250ML/D WATER TREATMENT PLANT

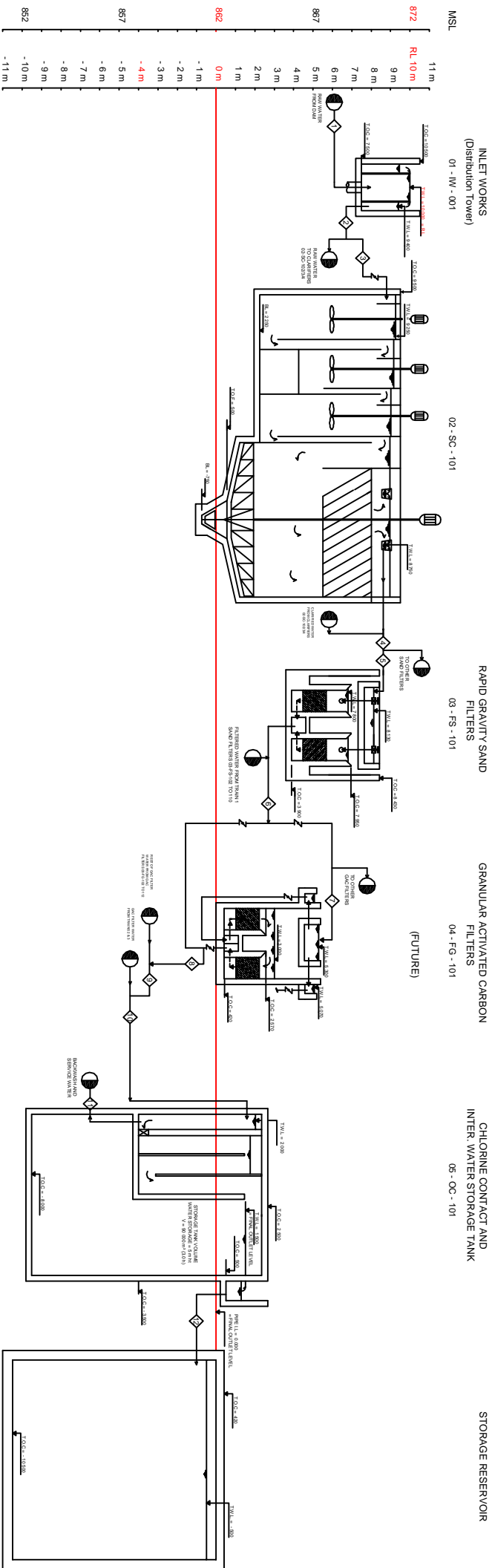
TITLE: P & ID

SHEET: SHEET 5 OF 5

DRG. No. 1301.X01.UW - 001

REV. 8

UMKHOMAZI WTW (PHASE 1 = 500 ML/D) - HYDRAULIC PROFILE



PHASE 1: 500 ML/D FLOW RATE (m³/h)	1	2	3	4	5	6	7	8	9	10	11	12
	52 100	10 420	2 605	10 300	1 030	10 180	848	848	10 180	20 360	900	20 070

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PROJECT: UMKHOMAZI WATER PROJECT
1 250ML/D WATER TREATMENT PLANT

TITLE: HYDRAULIC PROFILE

SHEET: DRG. No. 1301.X01.UW - 003

REV. 6

DISCIPLINE: MAY2013

CHECKER: DATE

DESIGN CHECK: CL MAY2013

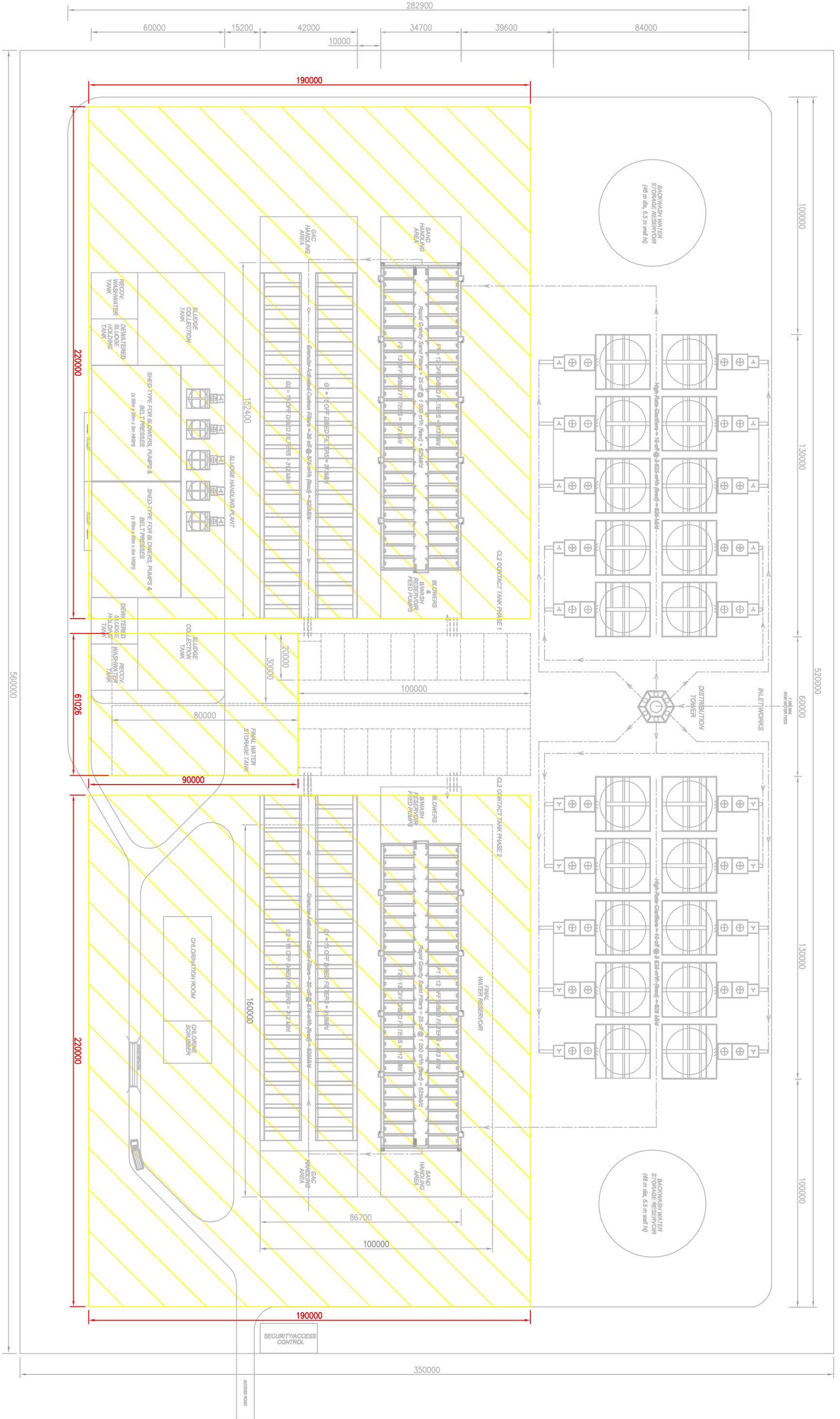
PRODUCT ENGINE: DATE

REVISION

NO.	DATE	DESCRIPTION	BY	CHECKED
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

REFERENCE DRAWINGS

DRAWING No.	DATE	TITLE



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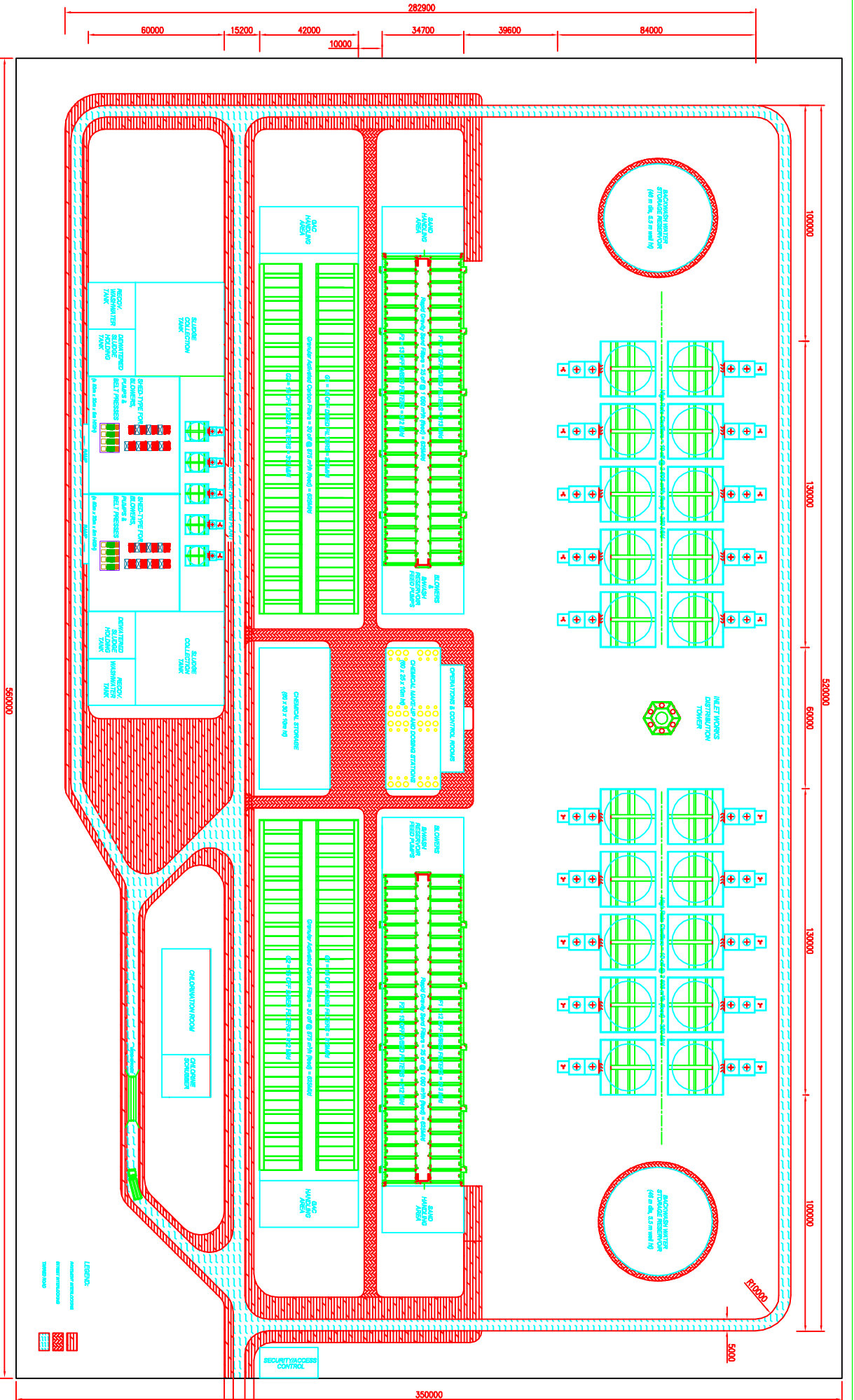
PRIMARY DISCIPLINE	DISCIPLINE	DATE	REVISION	DATE	BY	CHKD.
DRAWN	A.S.	APRIL 13				
DESIGN CHECK	G.L.					
DESIGN CHECK						
PROJECT ENGINEER						

REVISION	DESCRIPTION	DATE	BY	CHKD.
REV 1				
REV 2				
REV 3				
REV 4				
REV 5				
REV 6				
REV 7				
REV 8				
REV 9				

DRAWING No.	WATERS No.	TITLE

PROJECT:
UMKHOMAZI PROJECT
1 250 MLD WATER TREATMENT WORKS
WTW LAYOUT INCL. STORAGE RESERVOIR
SHEET: SHEET 1 OF 1
DRG. No. 1301.X01.UW-100
REV. 9

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REVISION	DISCIPLINE	DATE	BY	CHECKED	DATE	BY
1	A.S.	APRIL 13	REV	REV		REV
2	CL		REV	REV		REV
3			REV	REV		REV
4			REV	REV		REV
5			REV	REV		REV

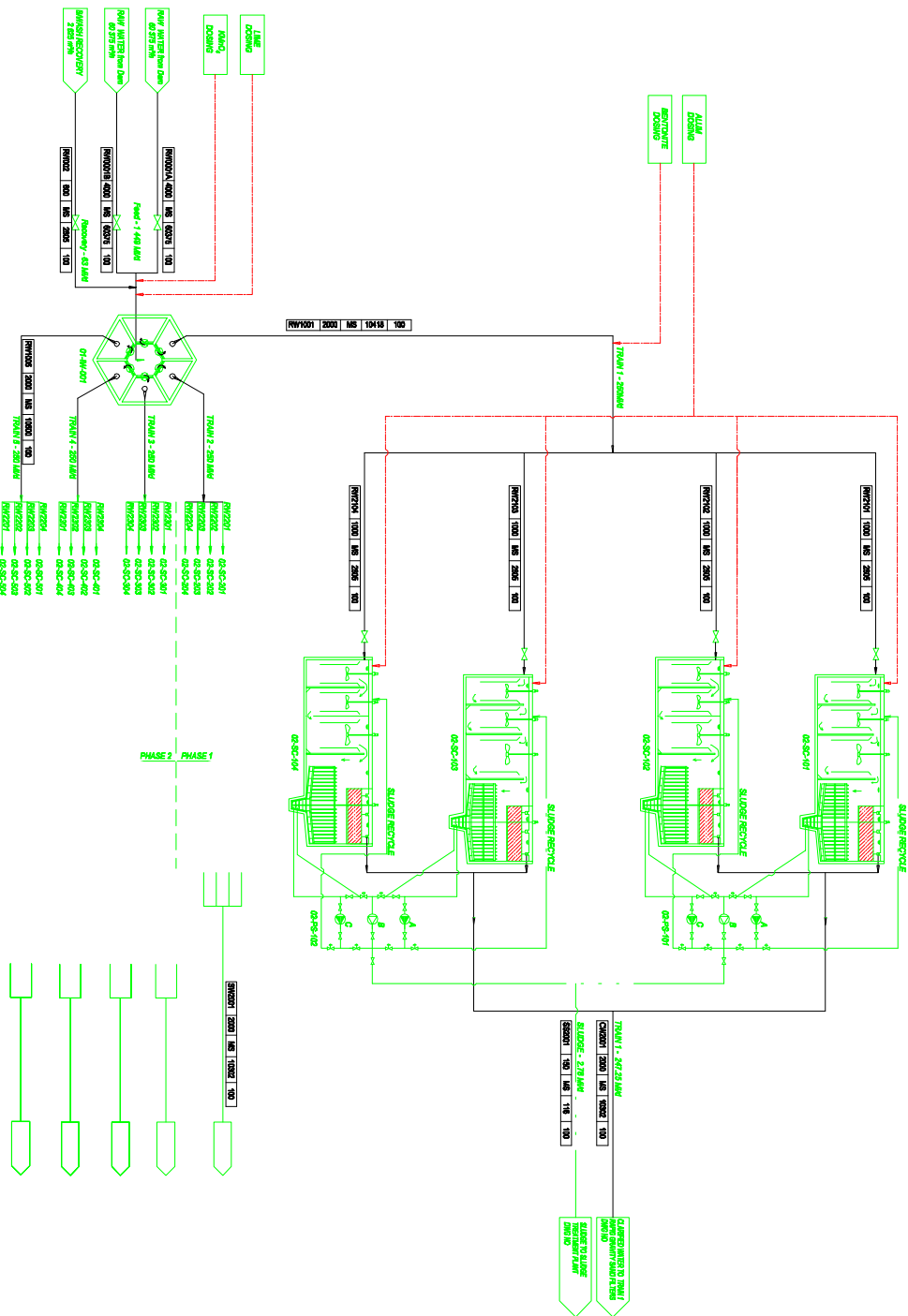
REFERENCE DRAWINGS	DATE	BY	CHECKED	DATE	BY

PROJECT:	UMKHOMAZI PROJECT
TITLE:	1 500 ML/D WATER TREATMENT WORKS
SHEET:	SITE WORKS
DRG. No.	1301.X01.UW-110
SHEET:	SHEET 1 OF 1
REV. 3	

LEGEND:
ALIGNMENT COLLECTION TANK
HEAD TYPE FLOW CONTROL VALVE
HEAD TYPE FLOW CONTROL PRESSURE
D/G HANDLING AREA
SECURITY ACCESS CONTROL
AQUARIUM

INLET WORKS (AREA 01)

CLARIFICATION (AREA 02)
 4 off Clarifiers @ 2 505 m³ = 250 MGD



NOTES:

1. LINE NUMBER LEGEND

1001	25	PVC	2.5	27
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LINE No. | LINE (O/DIA) | LINE MTL. | OPP. PRESSURE MPa | FLOW m³/hr - LIQUID | MASS kg/hr - GAS

0144-01
 MAX. OPERATING PRESSURE
 CAPACITY - 25100 M³

0250-01 TO 04
 MAX. OPERATING PRESSURE
 CAPACITY - 2500 M³

0250-01 TO 06
 MAX. OPERATING PRESSURE
 CAPACITY - 2500 M³

REVISION

REFERENCE DRAWINGS

Knight Piesold
 CONSULTING

PREPARED BY	DISCIPLINE	DATE
A.S.	MAY2013	
CHECKED BY	CHECKER	DATE
Q.L.	MAY2013	
DESIGN CHECK	CHECK	DATE
PROJECT NUMBER	ENGIN	DATE

NO.	DATE	DESCRIPTION	BY	CHKD.	APPD.
1					



DRAWING No.	METERS No.	TITLE

PROJECT: **UMKHOMAZI WATER PROJECT**
1 250ML/D WATER TREATMENT PLANT

TITLE: **P & ID**

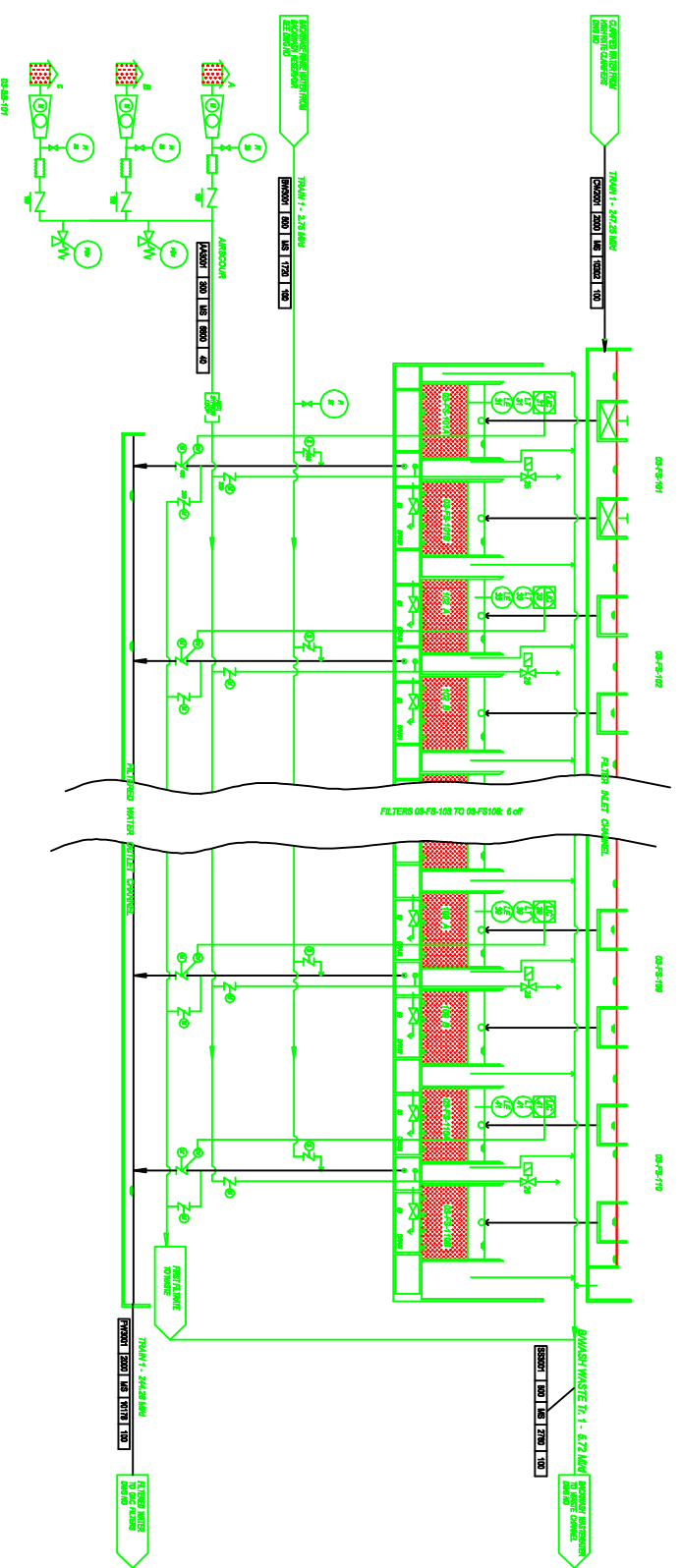
SHEET: SHEET 1 OF 5

DRG. No. **1301.X01.UW - 001**

REV. 8

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RAPID GRAVITY SAND FILTERS (AREA 109)
 110 dft (N+1) @ 1 030 m³/h = 247,26 MLD



DESIGN/REVISIONS

NO.	DATE	DESCRIPTION
1	05.2013	ISSUED FOR CONSTRUCTION

DESIGN/REVISIONS

NO.	DATE	DESCRIPTION
1	05.2013	ISSUED FOR CONSTRUCTION

DESIGN/REVISIONS

NO.	DATE	DESCRIPTION
1	05.2013	ISSUED FOR CONSTRUCTION

NOTES:

1. LINE NUMBER LEGEND

001	28	PROJ	25	ZI
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LINE No | | | | |

PIPE (O/DIA) | | | | |

LINE MTL | | | | |

OPP. PRESSURE kPa

FLOW m³/hr - LIQUID

MASS kg/hr - GAS

Knight Piésold CONSULTING

REVISION	DATE	DESCRIPTION

PROJECT: UMKHOMAZI WATER TREATMENT PLANT

TITLE: P & ID

SHEET: SHEET 2 OF 5

DRG. No. 1301.X01.UW - 001

REV. 8