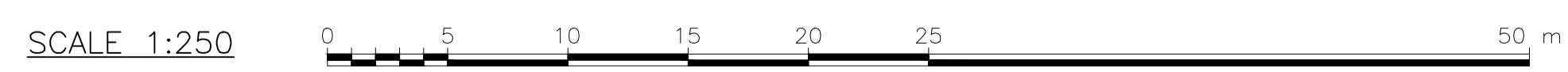


GROOTESTRYD 465 LQ
PTN 3

OFF-TAKE	QMIN (l/s)	QNOM (l/s)	QMAX (l/s)	VALVE OPEN	MAXIMUM HEAD CONDITIONS		MINIMUM FLOW CONDITIONS	
					U/S HEAD (m)	D/S HEAD (m)	U/S HEAD (m)	D/S HEAD (m)
GROOTEGLUK	85	254	320	0%	224.4	25.6	130.1	25.6
				100%	176.6	156	46.2	44.3
MATIMBA	135	400	504	0%	224.4	6.6	121.5	6.6
				100%	89.2	35.5	17.7	11.4

SHEET	DESCRIPTION	OTHER No.	REG. No.
2	GENERAL LAYOUT	2H-C5-031	XXXXXXXXXX
3	PLAN AND SECTION	2H-C5-032	XXXXXXXXXX
4	PLAN AND SECTION	2H-C5-033	XXXXXXXXXX
5	PIPE SPECIALS	2H-C5-034	XXXXXXXXXX
6	PIPE SPECIALS	2H-C5-035	XXXXXXXXXX
7	ROOF SLAB LAYOUT AND DETAILS	2H-C5-036	XXXXXXXXXX

LAYOUT PLAN – OFF-TAKE A (MATIMBA/GROOTGELUK)
SCALE 1:250



CONSULTING ENGINEER

WOODMEAD NORTH OFFICE PARK
54 MAXWELL DRIVE
WOODMEAD

IMPLEMENTING AGENT

A new word for water

MOD No.		DATE	DESCRIPTION	FOR	DWS
T1		08/21	ISSUED FOR TENDER	CVE	

TENDER
DRAWING

DEPARTMENT OF WATER AND SANITATION
REPUBLIC OF SOUTH AFRICA

HEAD OFFICE: ENGINEERING SERVICES, PRIVATE BAG X313, PRETORIA 0001

SEDBENG BUILDING, 185 FRANCIS BAARD STREET, PRETORIA (012) 336-7500

P. DU PLESSIS, Pr. Eng: 810012, 25/08/2021, CHECKED: C. VAN ECK, Pr. Eng: 20110038, 25/08/2021, ENGINEER: P. VAN HEERDEN, Pr. Eng: 920029, 25/08/2021

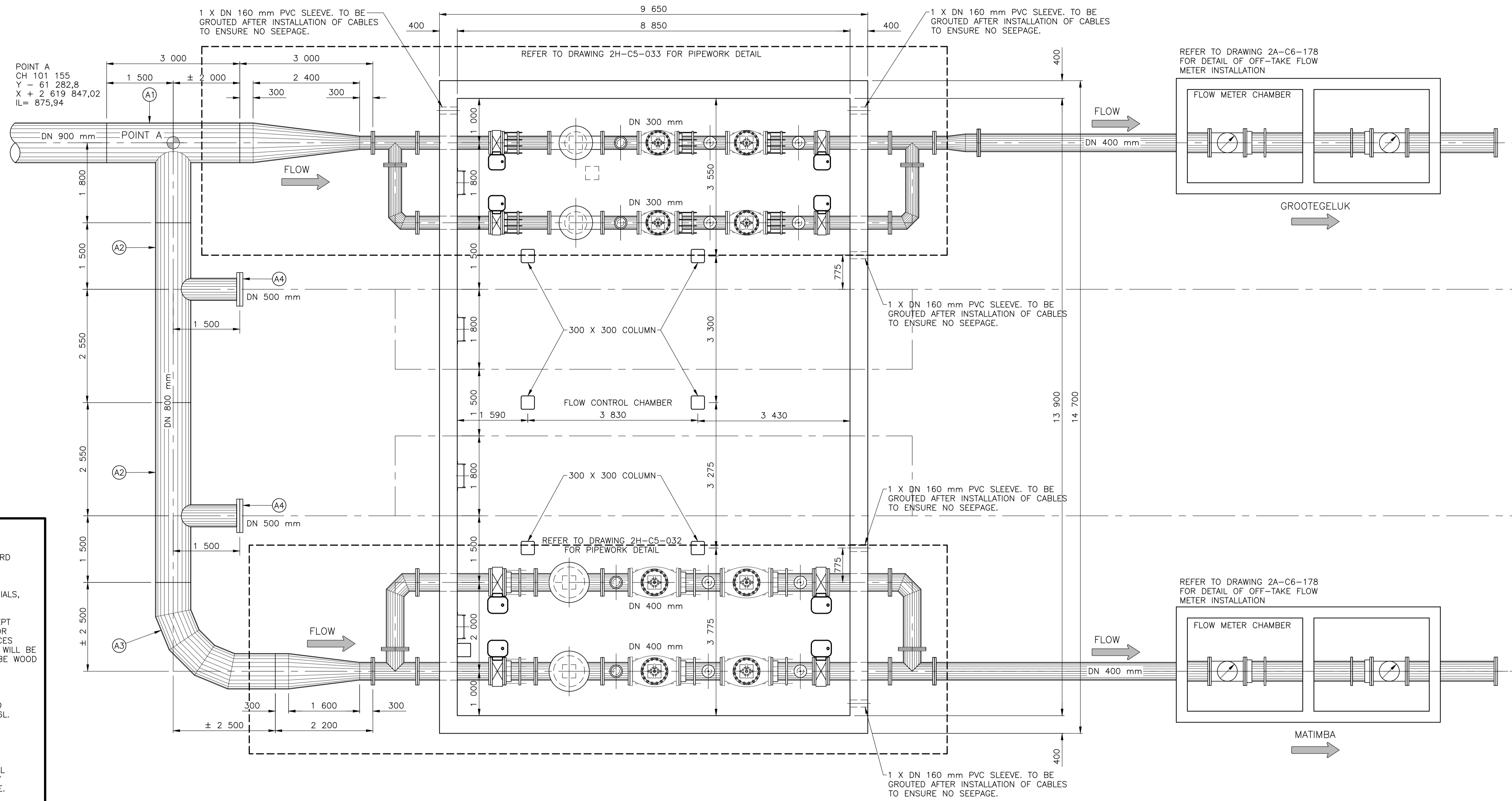
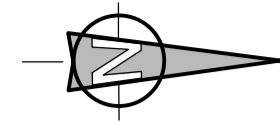
DESIGN: C. VAN ECK, DRAWN: A. STEENBERG

EXTERNAL APPROVAL: DATE: CHIEF ENGINEER / APP (Pr. Eng): DATE: DIRECTOR (Pr. Eng): DATE:

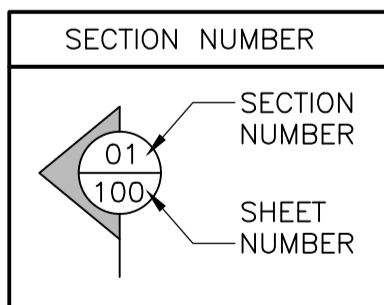
MOKOLO CROCODILE WATER AUGMENTATION PROJECT PHASE 2 (MCWAP-2)

GRAVITY MAIN
MATIMBA & GROOTGELUK OFF-TAKES (SUPPLY A)
KEYPLAN

PROVINCE: LIMPOPO, DISTRICT: THABAZIMBI/LEPHALALE, KEYCODES: LOCALITY No.: XXXXXX, TENDER/CONTRACT No.: XXXXXXXXXXXX, SHEET: 1 OF 7, REG. No.: OTHER NUMBER: 2H-C5-030, REV. T1



- NOTES:**
- REFER TO THE FOLLOWING DRAWINGS FOR STANDARD DETAILS:
 - 2A-C6-006 TYPICAL STRUCTURAL NOTES
 - 2A-C6-125 TYPICAL CHAMBER DETAILS
 - 2A-C6-127 NOTES APPLICABLE TO PIPE SPECIALS, VALVES, METERS AND ACCESS LADDERS
 - CONCRETE FINISHES SHALL BE AS FOLLOWS, EXCEPT WHERE OTHERWISE SHOWN: SMOOTH SPECIALLY FOR SURFACES EXPOSED TO VIEW; ROUGH TO SURFACES AGAINST WHICH BACKFILL OR FURTHER CONCRETE WILL BE PLACED. FLOOR FINISHES INSIDE CHAMBERS TO BE WOOD FLOATED.
 - ALL EXPOSED EDGES TO HAVE 20X20 CHAMFERS.
 - ALL STEEL BOLTS, NUTS AND ANCHOR BOLTS INTO CONCRETE SHALL BE STAINLESS STEEL GRADE 316L. REFER TO SPECIFICATION C3137.
 - ALL JOINTS AT ROOF PANELS TO BE SEALED WITH POLYURETHANE SEALANT.
 - PIPE SUPPORTS TO BE PROVIDED UNDERNEATH ALL VALVES AND FLOW METERS OR AS INSTRUCTED BY ENGINEER ON SITE. H TO BE DETERMINED ON SITE.
 - FINAL POSITION OF CHAMBER TO BE CONFIRMED BY ENGINEER ON SITE.



GENERAL LAYOUT
SCALE 1:50

LIST OF DRAWINGS			
SHEET	DESCRIPTION	OTHER No.	REG. No.
1	KEYPLAN	2H-C5-030	XXXXXXXXXX
3	PLAN AND SECTION	2H-C5-032	XXXXXXXXXX
4	PLAN AND SECTION	2H-C5-033	XXXXXXXXXX
5	PIPE SPECIALS	2H-C5-034	XXXXXXXXXX
6	PIPE SPECIALS	2H-C5-035	XXXXXXXXXX
7	ROOF SLABS LAYOUT AND DETAILS	2H-C5-036	XXXXXXXXXX



CONSULTING ENGINEER

WOODMEAD NORTH OFFICE PARK
54 MAXWELL DRIVE
WOODMEAD

IMPLEMENTING AGENT

A new word for water

REVISION		FOR	DWS
MOD No.	DATE	DESCRIPTION	
T1	08/21	ISSUED FOR TENDER	CVE

DEPARTMENT OF WATER AND SANITATION
REPUBLIC OF SOUTH AFRICA

HEAD OFFICE
ENGINEERING SERVICES
PRIVATE BAG X313
PRETORIA 0001

SEDIBENG BUILDING
185 FRANCIS BAARD STREET
PRETORIA
(012) 336-7500

P. DU PLESSIS
Pr. Eng: 810012
CHECKED: 25/08/2021
DATE: 25/08/2021

C. VAN ECK
Pr. Eng: 20110038
ENGINEER: 25/08/2021
DATE: 25/08/2021

P. VAN HEERDEN
Pr. Eng: 920029
DATE: 25/08/2021

DESIGN: C. VAN ECK
DRAWN: A. STEENBERG

EXTERNAL APPROVAL: DATE:

CHIEF ENGINEER / APP (Pr. Eng): DATE: DIRECTOR (Pr. Eng): DATE:

MOKOLO CROCODILE WATER AUGMENTATION PROJECT PHASE 2 (MCWAP-2)

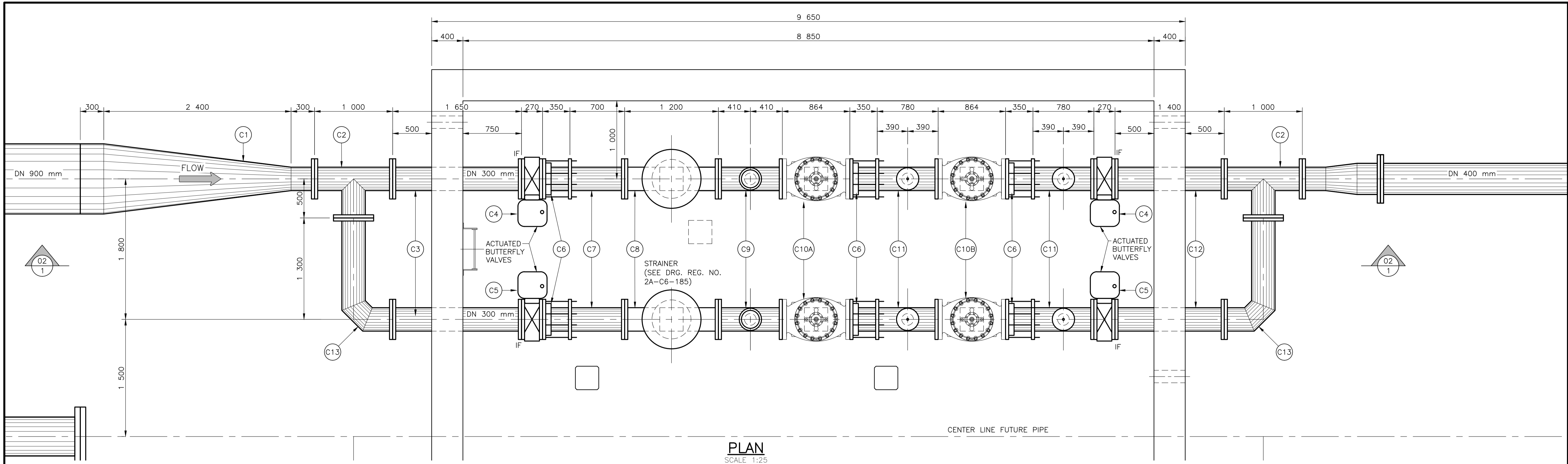
**GRAVITY MAIN
MATIMBA & GROOTEDELUK OFF-TAKES
FLOW CONTROL CHAMBER - GENERAL LAYOUT**

PROVINCE: LIMPOPO DISTRICT: THABAZIMBI/LEPHALELE KEYCODES: OTHER NUMBER: 2H-C5-031

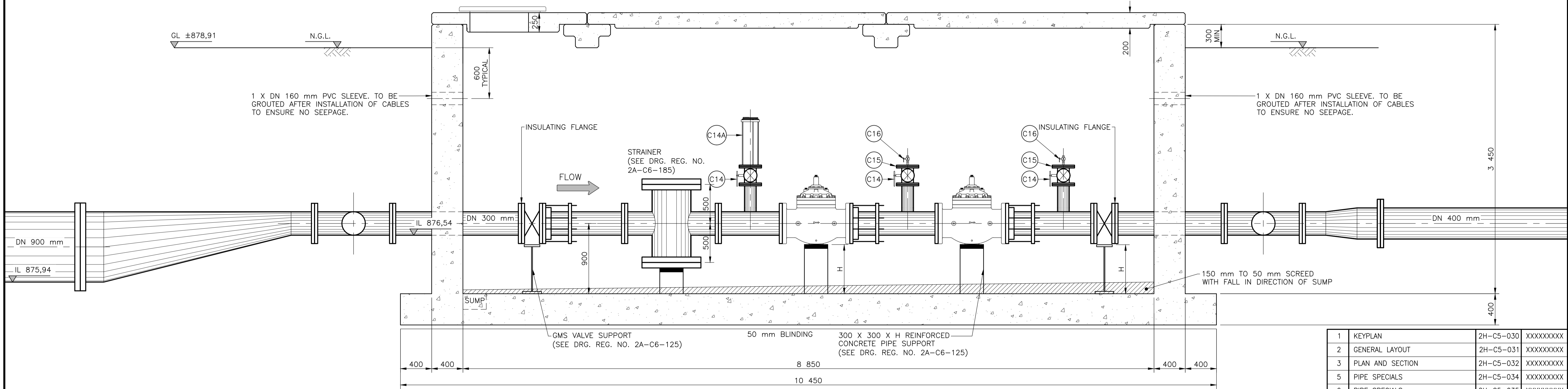
LOCALITY No.: XXXXXX TENDER/CONTRACT No.: XXXXXXXXXXXX SHEET: 2 OF 7 REG. No.: T1

CALCULATION FILE: XXXXXXXXXXXXXXXXXXXX

**TENDER
DRAWING**



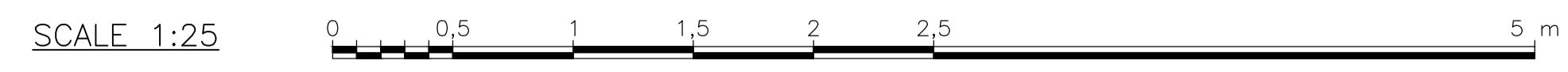
PLAN
SCALE 1:25



SECTION 02-02
SCALE 1:25

NO.	DESCRIPTION	OTHER No.	REG. No.
1	KEYPLAN	2H-C5-030	XXXXXXXXXX
2	GENERAL LAYOUT	2H-C5-031	XXXXXXXXXX
3	PLAN AND SECTION	2H-C5-032	XXXXXXXXXX
5	PIPE SPECIALS	2H-C5-034	XXXXXXXXXX
6	PIPE SPECIALS	2H-C5-035	XXXXXXXXXX
7	ROOF SLAB LAYOUT AND DETAILS	2H-C5-036	XXXXXXXXXX

LIST OF DRAWINGS



CONSULTING ENGINEER

WOODMEAD NORTH OFFICE PARK
54 MAXWELL DRIVE
WOODMEAD

IMPLEMENTING AGENT

A new word for water

MOD No.	DATE	REVISION DESCRIPTION	FOR	DWS
T1	08/21	ISSUED FOR TENDER	CVE	

DEPARTMENT OF WATER AND SANITATION
REPUBLIC OF SOUTH AFRICA

HEAD OFFICE
ENGINEERING SERVICES
PRIVATE BAG X313
PRETORIA 0001

SEDI BENG BUILDING
185 FRANCIS BAARD STREET
PRETORIA
(012) 336-7500

P. DU PLESSIS
Pr. Eng: 810012
CHECKED: 25/08/2021

C. VAN ECK
Pr. Eng: 20110038
ENGINEER: 25/08/2021

P. VAN HEERDEN
Pr. Eng: 920029
25/08/2021

DESIGN: C. VAN ECK
DRAWN: A. STEENBERG

EXTERNAL APPROVAL: DATE: _____

CHIEF ENGINEER / APP (Pr. Eng): DATE: _____

DIRECTOR (Pr. Eng): DATE: _____

MOKOLO CROCODILE WATER AUGMENTATION PROJECT PHASE 2 (MCWAP-2)

GRAVITY MAIN
GROOTEGLUK OFF-TAKE : FLOW CONTROL INSTALLATION
PLAN AND SECTION

PROVINCE: LIMPOPO DISTRICT: THABAZIMBI/LEPHALALE KEYCODES: _____ OTHER NUMBER: 2H-C5-033

LOCALITY No.: XXXXXX TENDER/CONTRACT No.: XXXXXXXXXXXX SHEET REG. No. _____

CALCULATION FILE: XXXXXXXXXXXXXXXXXXXX 4 OF 7

T1

PIPE SPECIAL SCHEDULE (REF. DRG. NO. 2H-C5-031)					
ITEM No.	DN (mm)	MATERIAL	DESCRIPTION (REFER TO DRG 2A-C6-127 AND SECTION 37 FOR CORROSION PROTECTION)	SKETCH (NTS)	TOTAL PER INSTALLATION
A1	900	STEEL GRADE X42 WT=20 mm	SPECIAL TEE: DN 900 mm X DN 800 mm PLAIN ENDED TEE. CTS.		1
	800	STEEL GRADE X42 WT=16 mm			
A2	800	STEEL GRADE X42 WT=16 mm	SPECIAL TEE: DN 800 mm X DN 500 mm TEE. DN 800 mm PLAIN ENDED, DN 500 mm FLANGED. CLASSIFICATION: TABLE 1		2
	500	STEEL GRADE X42 WT=12 mm			
A3	800	STEEL GRADE X42 WT=10 mm	SPECIAL BEND: DN 800 mm MEDIUM RADIUS BEND, BOTH ENDS PLAIN ENDED. CTS.		1
A4	500	STEEL GRADE X42	BLANK FLANGE: DN 500 mm BLANK FLANGE. CLASSIFICATION: TABLE 1		2

TABLE 1:

OFF-TAKE A INSTALLATION SCHEDULE			
NAME	CHAINAGE (m)	CLASSIFICATION	PIPE REINFORCEMENT TYPE 1 400 x 150
		FLANGES VALVES (kPa)	
GRAVITY MAIN MAIN			
MATIMBA	101 155	4 000	COLLAR PLATE (TABLE 3) TYPE 1; TYPE 3
GROOTGELUK	101 155	4 000	COLLAR PLATE (TABLE 3) TYPE 2; TYPE 3

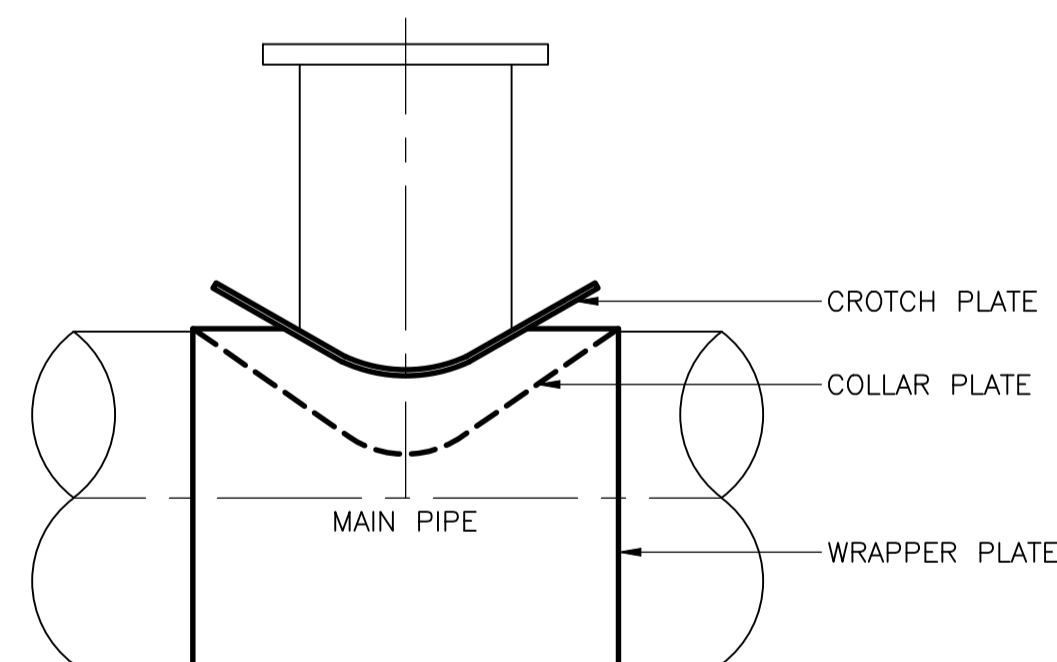


TABLE 2:

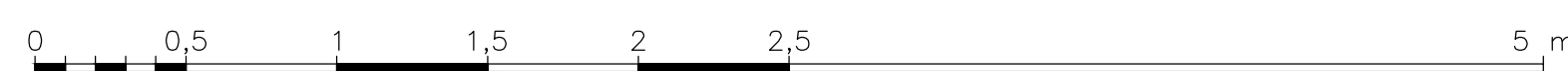
CROTCH-PLATE DIMENSIONS (SEE AWWA, MII, CHAPTER 13)				
MATERIAL : GRADE X42 STEEL THICKNESS = 25,4 mm CORROSION PROTECTION: SEE NOTE: 3				
CROTCH PLATE TYPE	DESIGN PRESSURE	d't	d'w	d'b
TYPE 1				
TYPE 2				
DOUBLE PLATE TYPE				

TABLE 3:

COLLAR PLATE DIMENSIONS			
MATERIAL: GRADE X42 STEEL T = THICKNESS			
NAME	d (mm)	w (mm)	T (mm)
TYPE 1	400 x 400	406	203
TYPE 2	300 x 300	324	162
TYPE 3	400 x 150 300 x 150	168	84

SHEET	DESCRIPTION	OTHER No.	REG. No.
1	KEYPLAN	2H-C5-030	XXXXXXXXXX
2	GENERAL LAYOUT	2H-C5-031	XXXXXXXXXX
3	PLAN AND SECTION	2H-C5-032	XXXXXXXXXX
4	PLAN AND SECTION	2H-C5-033	XXXXXXXXXX
6	PIPE SPECIALS	2H-C5-035	XXXXXXXXXX
7	ROOF SLAB LAYOUT AND DETAILS	2H-C5-036	XXXXXXXXXX

SCALE 1:25



CONSULTING ENGINEER

WOODMEAD NORTH OFFICE PARK
54 MAXWELL DRIVE
WOODMEAD

IMPLEMENTING AGENT

A new word for water

REVISION				
MOD No.	DATE	DESCRIPTION	FOR	DWS
T1	08/21	ISSUED FOR TENDER	CvE	

TENDER DRAWING

DEPARTMENT OF WATER AND SANITATION
REPUBLIC OF SOUTH AFRICA

HEAD OFFICE
ENGINEERING SERVICES
PRIVATE BAG X313
PRETORIA 0001

SEDIBENG BUILDING
185 FRANCIS BAARD STREET
PRETORIA
(012) 336-7500

P. DU PLESSIS
Pr. Eng: 810012
CHECKED: 25/08/2021
DATE:

C. VAN ECK
Pr. Eng: 20110038
ENGINEER: 25/08/2021
DATE:

P. VAN HEERDEN
Pr. Eng: 920029
25/08/2021
DATE:

DESIGN: C. VAN ECK
DRAWN: A. STEENBERG

EXTERNAL APPROVAL: DATE:

CHIEF ENGINEER / APP (Pr. Eng): DATE: DIRECTOR (Pr. Eng): DATE:

MOKOLO CROCODILE WATER AUGMENTATION PROJECT PHASE 2 (MCWAP-2)

**GRAVITY MAIN
MATIMBA & GROOTGELUK OFF-TAKES
PIPE SPECIALS**

PROVINCE: LIMPOPO DISTRICT: THABAZIMBI/LEPHALALE KEYCODES: OTHER NUMBER: 2H-C5-034

LOCALITY No.: XXXXXX TENDER/CONTRACT No.: XXXXXXXXXXXX SHEET 5 OF 7 REG. No. T1

CALCULATION FILE: XXXXXXXXXXXXXXXXXXXX

PIPE SPECIAL SCHEDULE (REF. DRG. NO. 2H-C5-032)					
ITEM No.	DN (mm)	MATERIAL	DESCRIPTION (REFER TO DRG 2A-C6-127 AND SECTION 37 FOR CORROSION PROTECTION)	SKETCH (NTS)	TOTAL PER INSTALLATION
B1	900 400	STEEL GRADE X42 REDUCER WT=12 mm	ECCENTRIC REDUCER: DN 900 mm X DN 400 mm FLANGED ECCENTRIC REDUCER. CLASSIFICATION: TABLE 1		1
B2	400	STEEL GRADE X42 WT=10 mm	SPECIAL TEE: DN 400 mm FLANGED EQUAL TEE. REINFORCEMENT TYPE & CLASSIFICATION: TABLE 1		2
B3	400	STEEL GRADE X42 WT=6,5 mm	SPECIAL STRAIGHT PIPE: DN 400 mm FLANGED STRAIGHT PIPE. CLASSIFICATION: TABLE 1		2
B4	400	-	BUTTERFLY VALVE: DN 400 mm ACTUATED BUTTERFLY VALVE WITH GEARBOX ON LEFT HAND SIDE, RIGHT OFF-SET. CLASSIFICATION: TABLE 1		2
B5	400	-	BUTTERFLY VALVE: DN 400 mm ACTUATED BUTTERFLY VALVE WITH GEARBOX ON RIGHT HAND SIDE, RIGHT OFF-SET. CLASSIFICATION: TABLE 1		2
B6	400	-	FLANGE ADAPTOR: FLANGE ADAPTOR WITH RESTRAINING BOLTS. CLASSIFICATION: TABLE 1		6
B7	400	STEEL GRADE X42 WT=6,5 mm	SPECIAL STRAIGHT PIPE: DN 400 mm STRAIGHT PIPE, ONE END PLAIN ENDED WITH RESTRAINING FLANGE, OTHER END FLANGED. CLASSIFICATION: TABLE 1		2
B8	400	-	SPECIAL STRAINER: REFER TO DRAWING 2A-C6-185 FOR DETAIL. CLASSIFICATION: TABLE 1		2
B9	400 150	STEEL GRADE X42 WT=10 mm STEEL GRADE X42 WT=8 mm	SPECIAL STRAIGHT PIPE: DN 400 mm FLANGED STRAIGHT PIPE WITH DN 150 mm FLANGED BRANCH. REINFORCEMENT TYPE AND CLASSIFICATION: TABLE 1		2
B10A	400	-	PRESSURE CONTROL VALVE: CLASSIFICATION: TABLE 1		2
B10B	400	-	FLOW CONTROL VALVE: CLASSIFICATION: TABLE 1		2
B11	400 150	STEEL GRADE X42 WT=11 mm STEEL GRADE X42 WT=8 mm	SPECIAL STRAIGHT PIPE: DN 400 mm STRAIGHT PIPE, ONE END PLAIN ENDED WITH RESTRAINING FLANGE, OTHER END FLANGED, WITH DN 150 mm FLANGED BRANCH. REINFORCEMENT TYPE AND CLASSIFICATION: TABLE 1		4
B12	400	STEEL GRADE X42 WT=6,5 mm	SPECIAL STRAIGHT PIPE: DN 400 mm FLANGED STRAIGHT PIPE. CLASSIFICATION: TABLE 1		2
B13	400	STEEL GRADE X42 WT=6,5 mm	SPECIAL ELBOW: DN 400 mm FLANGED ELBOW. CLASSIFICATION: TABLE 1		2
B14	150	SS GRADE 316L	BALL VALVE: DN 150 mm FLANGED BALL VALVE. CLASSIFICATION: TABLE 1		6
B14A	150	-	AIR VALVE: FLANGED DOUBLE ACTING AIR VALVE WITH ANTI SHOCK ORIFICE MECHANISM. CLASSIFICATION: TABLE 1		2
B15	150 25	SS GRADE 316L	BLANK FLANGE: DN 150 mm BLANK FLANGE WITH DN 25 mm THREADED SOCKET IN MIDDLE OF FLANGE. CLASSIFICATION: TABLE 1		4
B16	25	SS GRADE 316L	BALL VALVE: DN 25 mm THREADED BALL VALVE TO FIT 25 mm SOCKET.		4

PIPE SPECIAL SCHEDULE (REF. DRG. NO. 2H-C5-033)					
ITEM No.	DN (mm)	MATERIAL	DESCRIPTION (REFER TO DRG 2A-C6-127 AND SECTION 37 FOR CORROSION PROTECTION)	SKETCH (NTS)	TOTAL PER INSTALLATION
C1	900 300	STEEL GRADE X42 REDUCER WT=12 mm	ECCENTRIC REDUCER: DN 900 mm X DN 300 mm FLANGED ECCENTRIC REDUCER. CLASSIFICATION: TABLE 1		1
C2	300	STEEL GRADE X42 WT=10 mm	SPECIAL TEE: DN 300 mm FLANGED EQUAL TEE. REINFORCEMENT TYPE & CLASSIFICATION: TABLE 1		2
C3	300	STEEL GRADE X42 WT=6,5 mm	SPECIAL STRAIGHT PIPE: DN 300 mm FLANGED STRAIGHT PIPE. CLASSIFICATION: TABLE 1		2
C4	300	-	BUTTERFLY VALVE: DN 300 mm ACTUATED BUTTERFLY VALVE WITH GEARBOX ON RIGHT HAND SIDE, LEFT OFF-SET. CLASSIFICATION: TABLE 1		2
C5	300	-	BUTTERFLY VALVE: DN 300 mm ACTUATED BUTTERFLY VALVE WITH GEARBOX ON LEFT HAND SIDE, RIGHT OFF-SET. CLASSIFICATION: TABLE 1		2
C6	300	-	FLANGE ADAPTOR: FLANGE ADAPTOR WITH RESTRAINING BOLTS. CLASSIFICATION: TABLE 1		6
C7	300	STEEL GRADE X42 WT=6,5 mm	SPECIAL STRAIGHT PIPE: DN 300 mm STRAIGHT PIPE, ONE END PLAIN ENDED WITH RESTRAINING FLANGE, OTHER END FLANGED. CLASSIFICATION: TABLE 1		2
C8	300	-	SPECIAL STRAINER: REFER TO DRAWING 2A-C6-185 FOR DETAIL. CLASSIFICATION: TABLE 1		2
C9	300 150	STEEL GRADE X42 WT=10 mm STEEL GRADE X42 WT=8 mm	SPECIAL STRAIGHT PIPE: DN 300 mm FLANGED STRAIGHT PIPE WITH DN 150 mm FLANGED BRANCH. REINFORCEMENT TYPE AND CLASSIFICATION: TABLE 1		2
C10A	300	-	PRESSURE CONTROL VALVE: CLASSIFICATION: TABLE 1		2
C10B	300	-	FLOW CONTROL VALVE: CLASSIFICATION: TABLE 1		2
C11	300 150	STEEL GRADE X42 WT=10 mm STEEL GRADE X42 WT=8 mm	SPECIAL STRAIGHT PIPE: DN 300 mm STRAIGHT PIPE, ONE END PLAIN ENDED WITH RESTRAINING FLANGE, OTHER END FLANGED, WITH DN 150 mm FLANGED BRANCH. REINFORCEMENT TYPE AND CLASSIFICATION: TABLE 1		4
C12	300	STEEL GRADE X42 WT=6,5 mm	SPECIAL STRAIGHT PIPE: DN 300 mm FLANGED STRAIGHT PIPE. CLASSIFICATION: TABLE 1		2
C13	300	STEEL GRADE X42 WT=6,5 mm	SPECIAL ELBOW: DN 300 mm FLANGED ELBOW. CLASSIFICATION: TABLE 1		2
C14	150	SS GRADE 316L	BALL VALVE: DN 150 mm FLANGED BALL VALVE. CLASSIFICATION: TABLE 1		6
C14A	150	-	AIR VALVE: FLANGED DOUBLE ACTING AIR VALVE WITH ANTI SHOCK ORIFICE MECHANISM. CLASSIFICATION: TABLE 1		2
C15	150 25	SS GRADE 316L	BLANK FLANGE: DN 150 mm BLANK FLANGE WITH DN 25 mm THREADED SOCKET IN MIDDLE OF FLANGE. CLASSIFICATION: TABLE 1		4
C16	25	SS GRADE 316L	BALL VALVE: DN 25 mm THREADED BALL VALVE TO FIT 25 mm SOCKET.		4

NOTE:
TABLE 1, TABLE 2 AND TABLE 3
ARE ON DRAWING 2H-C5-034.

NO.	DESCRIPTION	OTHER No.	REG. No.
1	KEYPLAN	2H-C5-030	XXXXXXXXXX
2	GENERAL LAYOUT	2H-C5-031	XXXXXXXXXX
3	PLAN AND SECTION	2H-C5-032	XXXXXXXXXX
4	PLAN AND SECTION	2H-C5-033	XXXXXXXXXX
5	PIPE SPECIALS	2H-C5-034	XXXXXXXXXX
7	ROOF SLAB LAYOUT AND DETAILS	2H-C5-036	XXXXXXXXXX

LIST OF DRAWINGS

CONSULTING ENGINEER

WOODMEAD NORTH OFFICE PARK
54 MAXWELL DRIVE
WOODMEAD

IMPLEMENTING AGENT

A new word for water

MOD No.	DATE	DESCRIPTION	FOR	DWS
T1	08/21	ISSUED FOR TENDER	CvE	

TENDER DRAWING

DEPARTMENT OF WATER AND SANITATION
REPUBLIC OF SOUTH AFRICA

HEAD OFFICE
ENGINEERING SERVICES
PRIVATE BAG X313
PRETORIA 0001

SEDIBENG BUILDING
185 FRANCIS BAARD STREET
PRETORIA
(012) 336-7500

P. DU PLESSIS
Pr. Eng: 810012
CHECKED: _____
DATE: 25/08/2021

C. VAN ECK
Pr. Eng: 20110038
ENGINEER: _____
DATE: 25/08/2021

P. VAN HEERDEN
Pr. Eng: 920029
CHIEF ENGINEER / APP. (Pr. Eng): _____
DATE: 25/08/2021

DESIGN: C. VAN ECK
DRAWN: A. STEENBERG

EXTERNAL APPROVAL: _____
DATE: _____

DIRECTOR (Pr. Eng): _____
DATE: _____

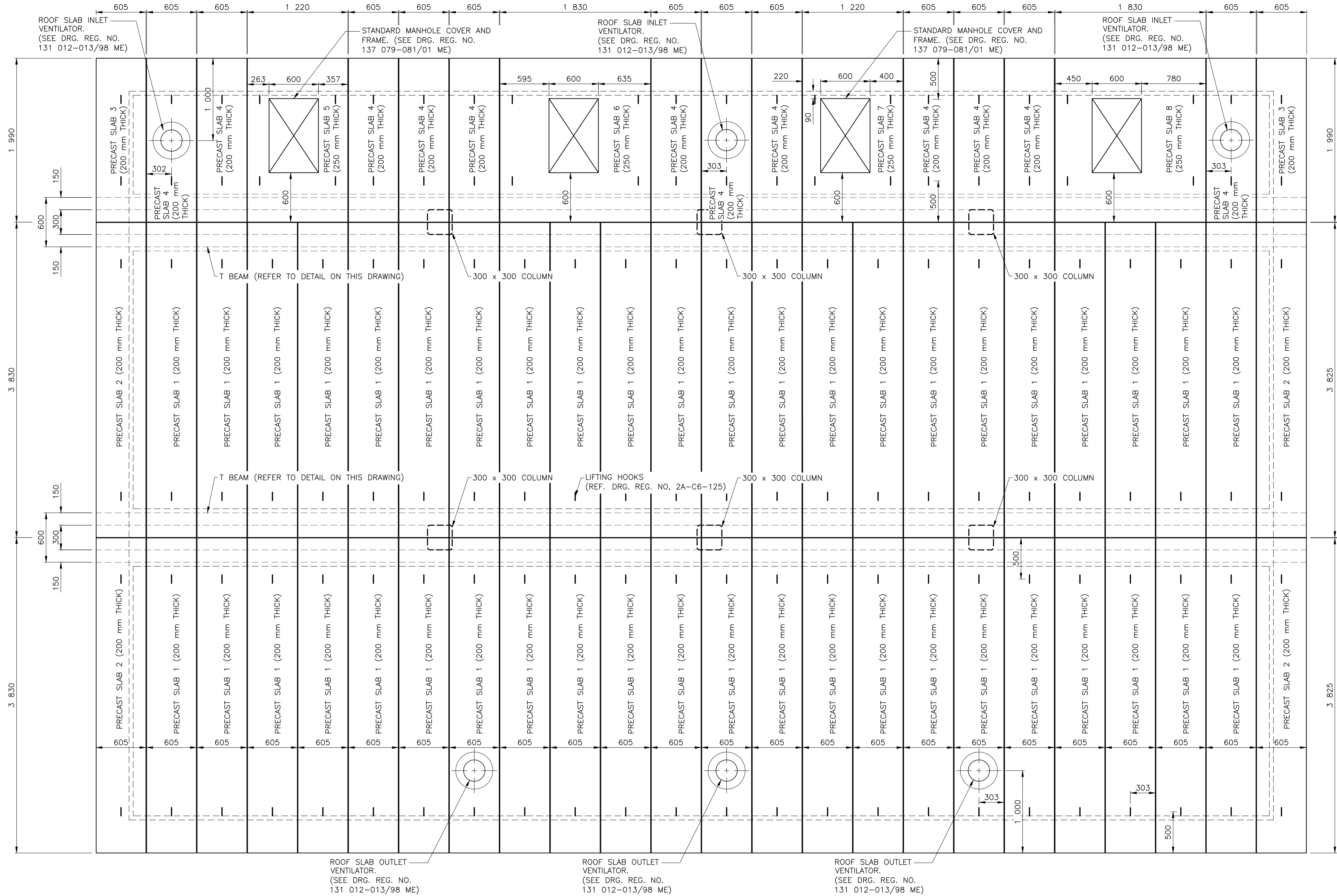
MOKOLO CROCODILE WATER AUGMENTATION PROJECT PHASE 2 (MCWAP-2)

**GRAVITY MAIN
MATIMBA & GROOTEGLUK OFF-TAKES
PIPE SPECIALS**

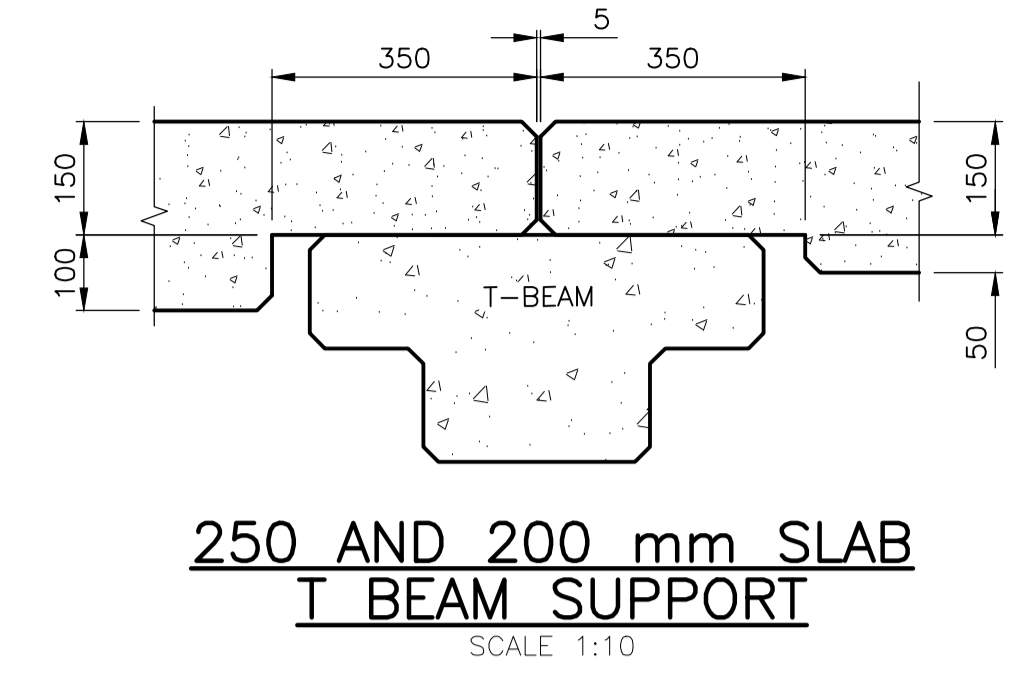
PROVINCE: LIMPOPO DISTRICT: THABAZIMBI/LEPHALALE KEYCODES: _____ OTHER NUMBER: 2H-C5-035

LOCALITY No.: XXXXXX TENDER/CONTRACT No.: XXXXXXXXXXXX SHEET: 6 of 7 REG. No.: _____ REV. T1

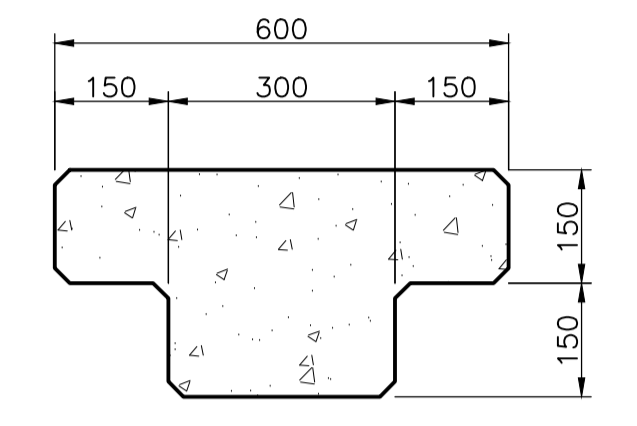
CALCULATION FILE: XXXXXXXXXXXXXXXXXXXX



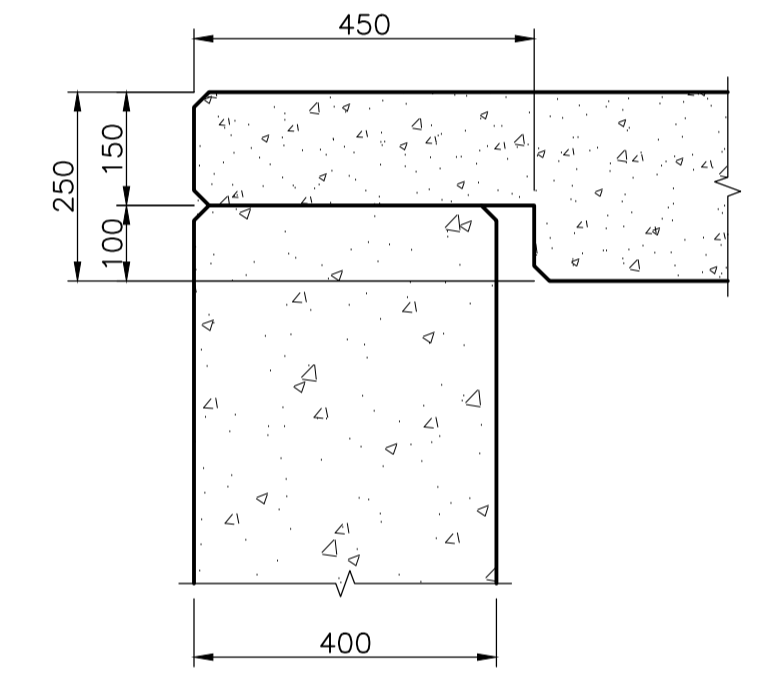
ROOF SLABS LAYOUT
SCALE 1:25



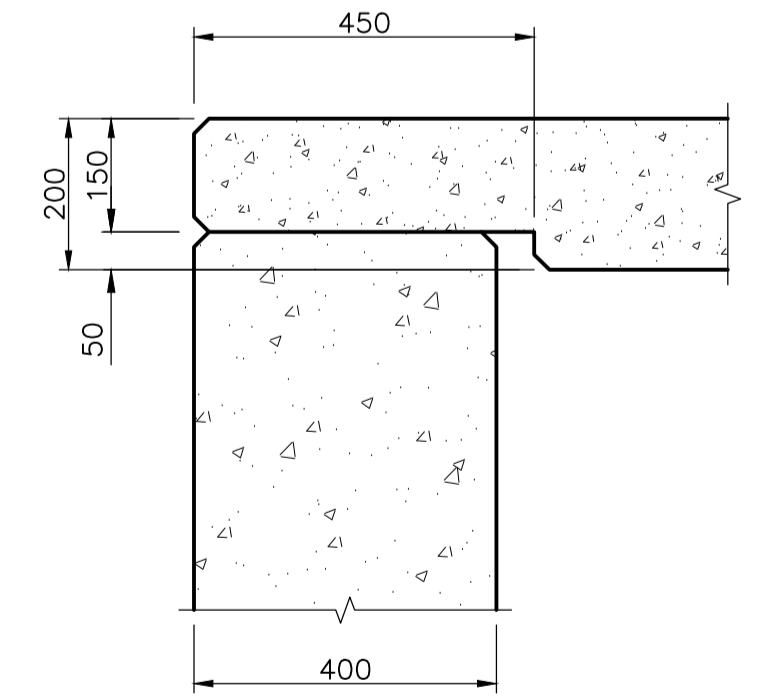
250 AND 200 mm SLAB T BEAM SUPPORT
SCALE 1:10



T BEAM SECTION
SCALE 1:10

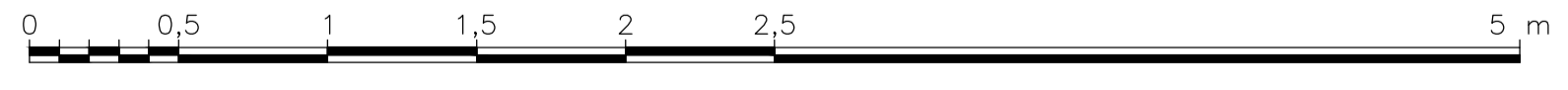


250 mm SLAB WALL SUPPORT
SCALE 1:10



200 mm SLAB WALL SUPPORT
SCALE 1:10

SCALE 1:25



NO.	DESCRIPTION	OTHER No.	REG. No.
1	KEYPLAN	2H-C5-030	XXXXXXXXXX
2	GENERAL LAYOUT	2H-C5-031	XXXXXXXXXX
3	PLAN AND SECTION	2H-C5-032	XXXXXXXXXX
4	PLAN AND SECTION	2H-C5-033	XXXXXXXXXX
5	PIPE SPECIALS	2H-C5-034	XXXXXXXXXX
6	PIPE SPECIALS	2H-C5-035	XXXXXXXXXX

LIST OF DRAWINGS

CONSULTING ENGINEER

GBN
JOINT VENTURE

WOODMEAD NORTH OFFICE PARK
54 MAXWELL DRIVE
WOODMEAD

IMPLEMENTING AGENT

TCTA
A new word for water

MOD No.	DATE	DESCRIPTION	FOR	DWS
T1	08/21	ISSUED FOR TENDER	CVE	

TENDER DRAWING

DEPARTMENT OF WATER AND SANITATION
REPUBLIC OF SOUTH AFRICA

HEAD OFFICE
ENGINEERING SERVICES
PRIVATE BAG X313
PRETORIA 0001

SEDIENGB BUILDING
185 FRANCIS BAARD STREET
PRETORIA
(012) 336-7500

P. DU PLESSIS
Pr. Eng: 810012
CHECKED: 10/08/2021

C. VAN ECK
Pr. Eng: 20110038
ENGINEER: 10/08/2021

P. VAN HEERDEN
Pr. Eng: 920029
CHIEF ENGINEER / APP (Pr. Eng): 10/08/2021

DESIGN: C. VAN ECK
DRAWN: A. STEENBERG

EXTERNAL APPROVAL: DATE: _____

DIRECTOR (Pr. Eng): DATE: _____

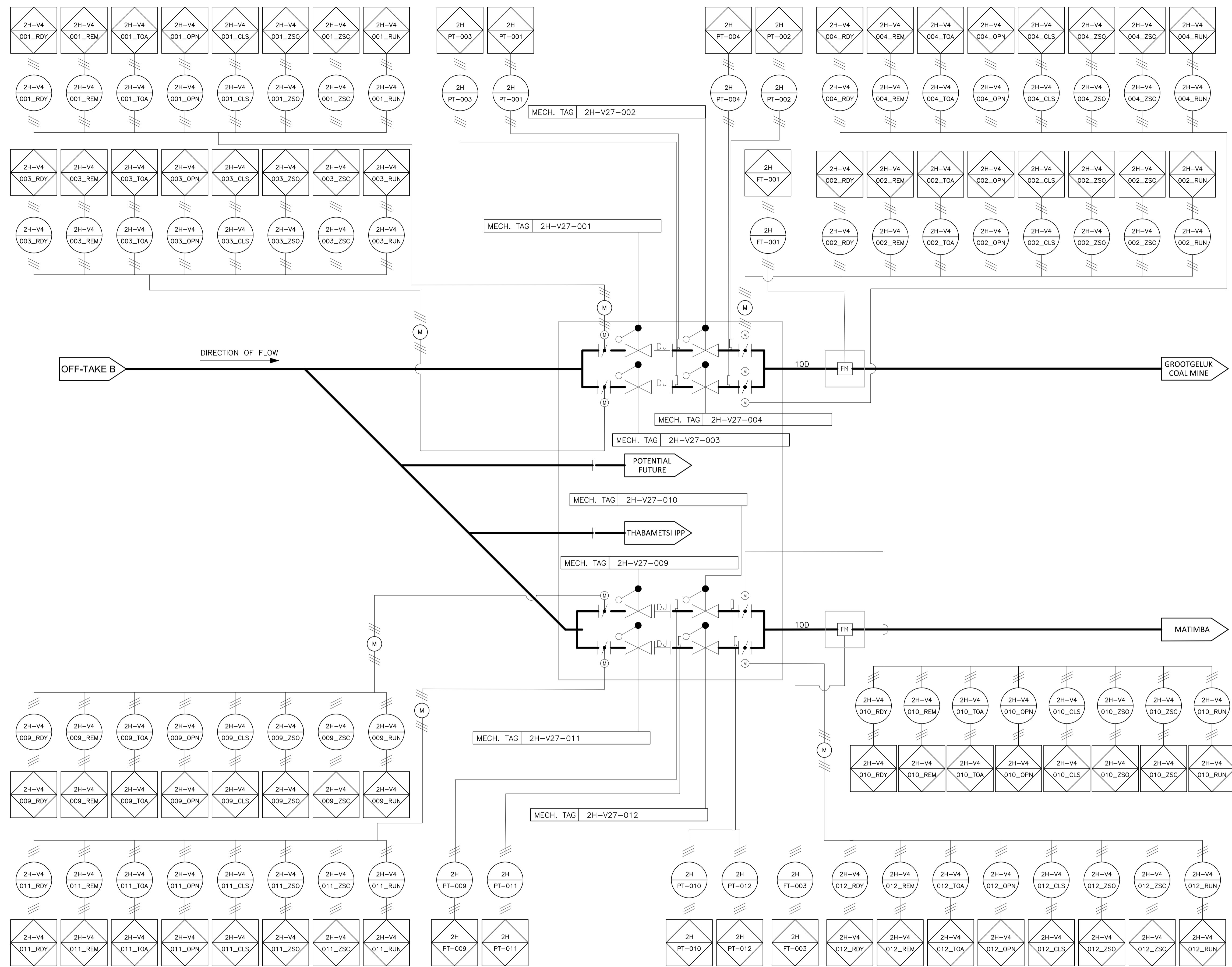
MOKOLO CROCODILE WATER AUGMENTATION PROJECT PHASE 2 (MCWAP-2)

GRAVITY MAIN
MATIMBA & GROOTGELUK OFF-TAKES
ROOF SLABS LAYOUT AND DETAIL

PROVINCE: LIMPOPO DISTRICT: THABAZIMBI/LEPHALELE KEYCODES: _____ OTHER NUMBER: 2H-C5-036

LOCALITY No.: XXXXXX TENDER/CONTRACT No.: XXXXXXXXXXXX SHEET: 7 of 7 REG. No.: _____

CALCULATION FILE: XXXXXXXXXXXXXXXXXXXX



TENDER
DRAWING

SHEET	DESCRIPTION	OTHER No.	REG. No.
2	PIPING AND INSTRUMENTATION DIAGRAM OFF TAKE B	2H-E2.1-002	XXXXXXXXXX
1	PROCESS FLOW DIAGRAM	2A-M2.1-001	XXXXXXXXXX

LIST OF DRAWINGS

CONSULTING ENGINEER

GBN
WOODMEAD NORTH OFFICE PARK
54 MAXWELL DRIVE
WOODMEAD

IMPLEMENTING AGENT

TETA
A new word for water

MOD No.		DATE		DESCRIPTION		FOR	DWS
T1	08/21	ISSUED FOR TENDER		EH			

**DEPARTMENT OF WATER AND SANITATION
REPUBLIC OF SOUTH AFRICA**

HEAD OFFICE
ENGINEERING SERVICES
PRIVATE BAG X313
PRETORIA 0001

SEDIENG BUILDING
185 FRANCIS BAARD STREET
PRETORIA
(012) 336-7500

S. MALAN
Pr. Eng: 960537
CHECKED: 17/08/2021
DATE:

E. HANNIE
ENGINEER: 17/08/2021
DATE:

P. VAN HEERDEN
Pr. Eng: 920029
DATE:

DESIGN: E. HANNIE
DRAWN: N.J.C. KGOSANA

EXTERNAL APPROVAL: DATE:

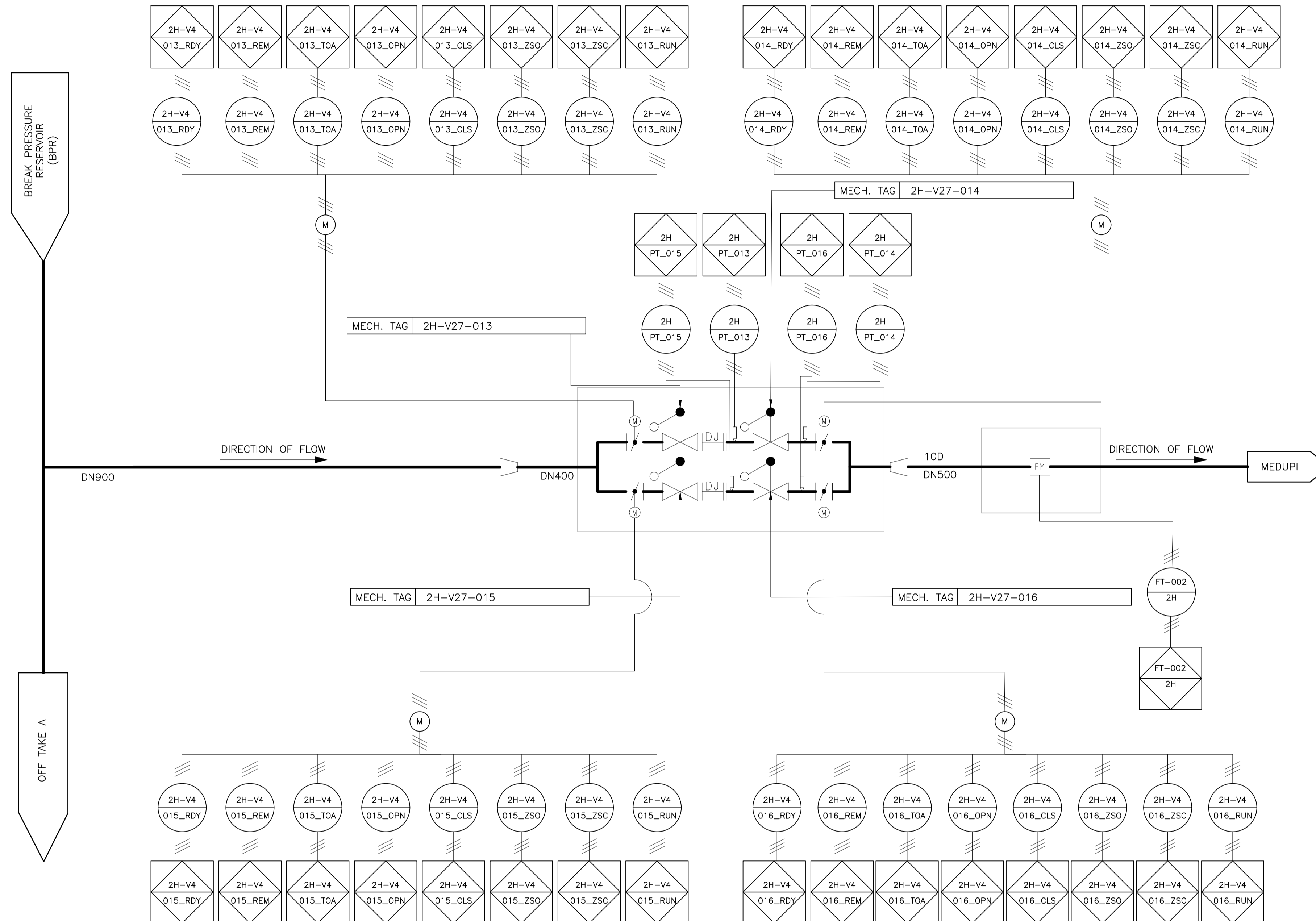
CHIEF ENGINEER / APP (Pr. Eng): DATE: DIRECTOR (Pr. Eng): DATE:

MOKOLO CROCODILE WATER AUGMENTATION PROJECT PHASE 2 (MCWAP-2)

**GRAVITY MAIN BPR TO END
OFF TAKE A
PIPING AND INSTRUMENTATION DIAGRAM**

PROVINCE: LIMPOPO DISTRICT: THABAZIMBI/LEPHALELE KEYCODES: SHEET: 1 OF 1 REG. No. T1

LOCALITY No.: XXXXXX TENDER/CONTRACT No.: XXXXXXXXXXXX CALCULATION FILE: XXXXXXXXXXXXXXXXXXXX



**TENDER
DRAWING**

LIST OF DRAWINGS			
3	PIPING AND INSTRUMENTATION DIAGRAM BREAK PRESSURE RESERVOIR	2G-E2.1-001	XXXXXXXXXX
2	PIPING AND INSTRUMENTATION DIAGRAM OFF TAKE A	2H-E2.1-001	XXXXXXXXXX
1	PROCESS FLOW DIAGRAM	2A-M2.1-001	XXXXXXXXXX
SHEET	DESCRIPTION	OTHER No.	REG. No.

CONSULTING ENGINEER

GBN JOINT VENTURE
WOODMEAD NORTH OFFICE PARK
54 MAXWELL DRIVE
WOODMEAD

IMPLEMENTING AGENT

TGTA
A new word for water

REVISION		FOR	DWS
MOD No.	DATE	DESCRIPTION	
T1	08/21	ISSUED FOR TENDER	EH

**DEPARTMENT OF WATER AND SANITATION
REPUBLIC OF SOUTH AFRICA**

HEAD OFFICE ENGINEERING SERVICES
PRIVATE BAG X313
PRETORIA 0001

SEDIENG BUILDING
185 FRANCIS BAARD STREET
PRETORIA
(012) 336-7500

S. MALAN
Pr. Eng: 960537
CHECKED: 17/08/2021

E. HANNIE
ENGINEER: 17/08/2021

P. VAN HEERDEN
Pr. Eng: 920029
17/08/2021

DESIGN: E. HANNIE
DRAWN: N.J.C. KGOSANA

EXTERNAL APPROVAL: DATE:

CHIEF ENGINEER / APP (Pr. Eng): DATE: DIRECTOR (Pr. Eng): DATE:

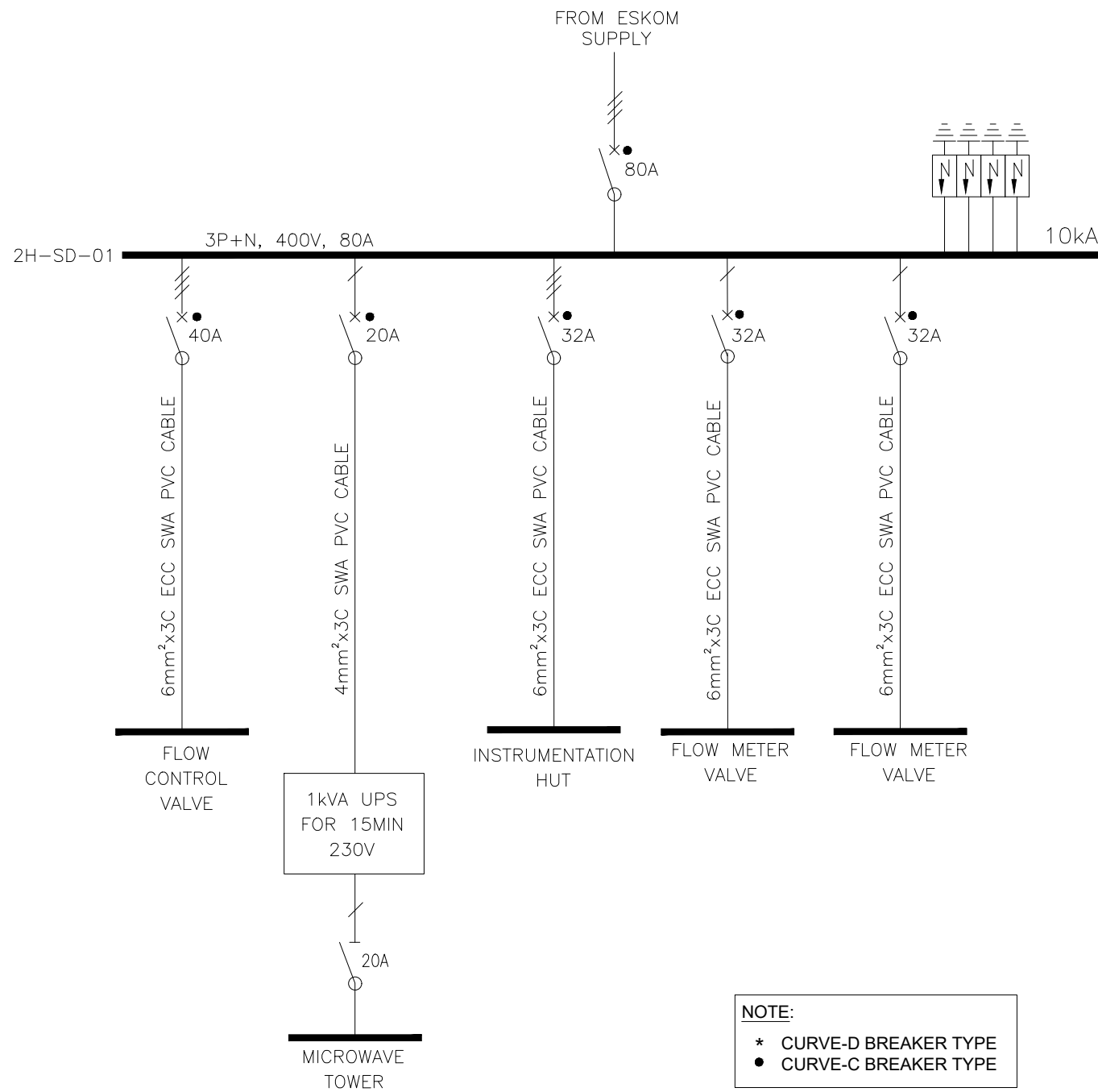
MOKOLO CROCODILE WATER AUGMENTATION PROJECT PHASE 2 (MCWAP-2)

**GRAVITY MAIN BPR TO END
OFF TAKE B
PIPING AND INSTRUMENTATION DIAGRAM**

PROVINCE: LIMPOPO DISTRICT: THABAZIMBI/LEPHALALE KEYCODES: OTHER NUMBER: 2H-E2.1-002

LOCALITY No.: XXXXXX TENDER/CONTRACT No.: XXXXXXXXXXXX SHEET: 1 OF 1 REG. No.: T1

CALCULATION FILE: XXXXXXXXXXXXXXXXXXXX



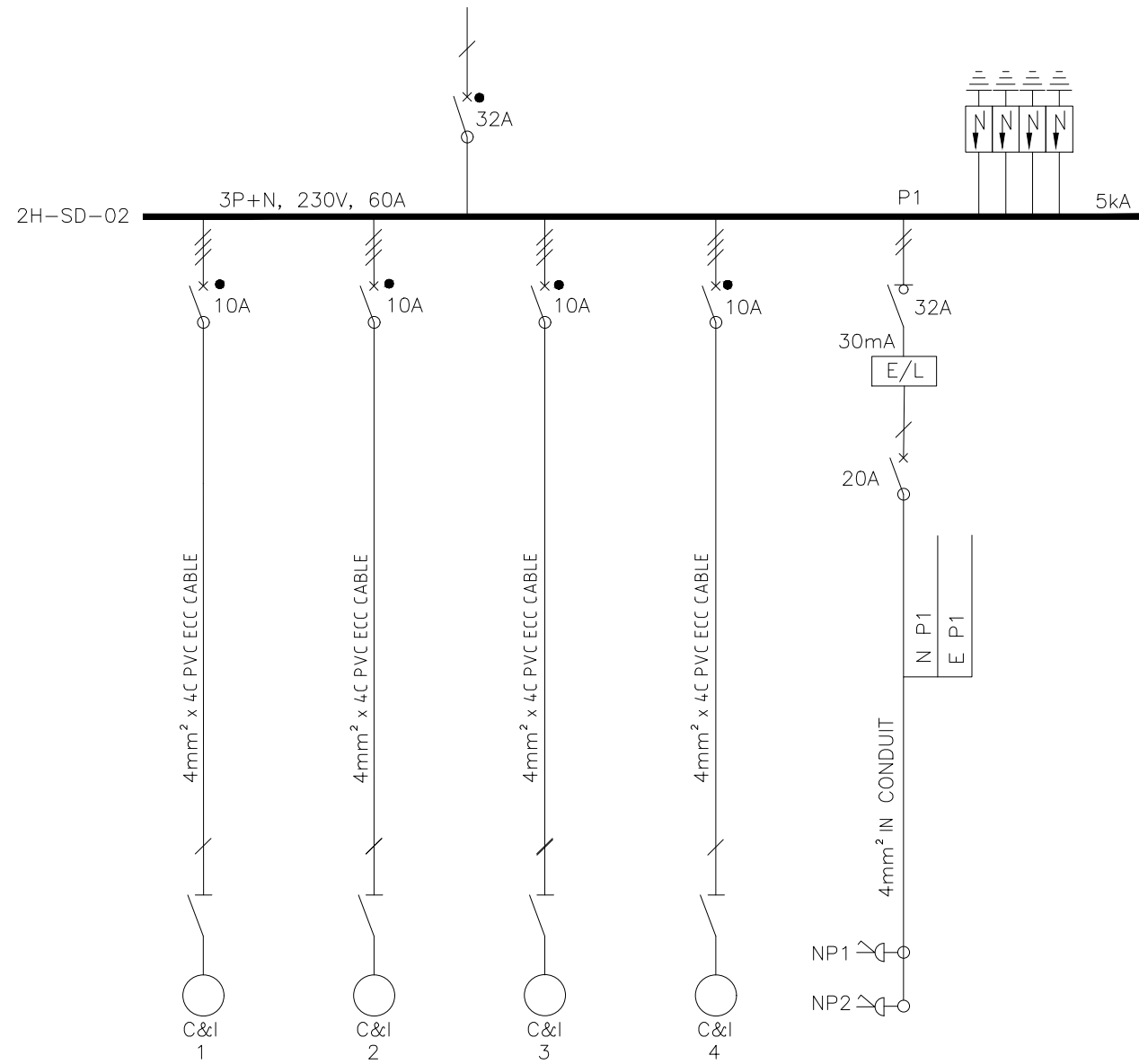
**TENDER
DRAWING**

DISTRIBUTION BOARD INFORMATION		DISTRIBUTION BOARD			VOLTAGE : 400/231 VOLT	
Recessed	Colour : SABS 1091	ACCESS	Front	Rear	Both	
Semi recessed	Normal Section	SUPPLY	Wiring	Cable	Busbar	✓
Surface	Standby Section	ENTRY : Incoming	Top	Bottom	Side	
Free standing	Seperate cubicles	ENTRY : Outgoing	Top	Bottom	Side	
Floor standing	Spare space	10%	Light Grey / Orange			
Doors	Doors lockable	✓	Surge Arrestors :	CLASS	2	

SHEET	DESCRIPTION	OTHER No.	REG. No.
1	FLOW METER L&SP LAYOUT	2A-E3-002	
1	LV & MV SINGLE LINE DIAGRAM SYMBOLS	2A-E1-003	
LIST OF DRAWINGS			

NOT TO SCALE

 CONSULTING ENGINEER WOODMEAD NORTH OFFICE PARK 54 MAXWELL DRIVE WOODMEAD	MOD No. T1	DATE 26/08/21	DESCRIPTION ISSUED FOR TENDER	FOR A. M	DWS	DEPARTMENT OF WATER AND SANITATION REPUBLIC OF SOUTH AFRICA HEAD OFFICE ENGINEERING SERVICES PRIVATE BAG X313 PRETORIA 0001	SEDIBENG BUILDING 185 FRANCIS BAARD STREET PRETORIA (012) 336-7500	MOKOLO CROCODILE WATER AUGMENTATION PROJECT PHASE 2 (MCWAP-2) GRAVITY MAIN BREAK PRESSURE RESERVOIR TO END TAKE-OFF A OUTDOOR MINI-SUB SINGLE LINE DIAGRAM	
	 IMPLEMENTING AGENT A new word for water	P. VIVIER CHECKED: 18/08/21 Pr Eng: 20130050		DATE: 18/08/21		DESIGN: A. MTHEMBU DRAWN: P. FLANAGAN		PROVINCE: LIMPOPO DISTRICT: THABAZIMBI/LEPHALALE KEYCODES:	
PAT VAN HEERDEN Pr Eng: 19920029 CHIEF ENGINEER / APP (Pr. Eng):		DATE:		DIRECTOR (Pr. Eng):		LOCALITY No.: TENDER/ CONTRACT No.:		SHEET 1 OF 1	
REG. No.:		TENDER/ CONTRACT No.:		DATE:		CALCULATION FILE:		OTHER NUMBER 2H-E2.3-001 REV. T1	



NOTE:
 * CURVE-D BREAKER TYPE
 • CURVE-C BREAKER TYPE

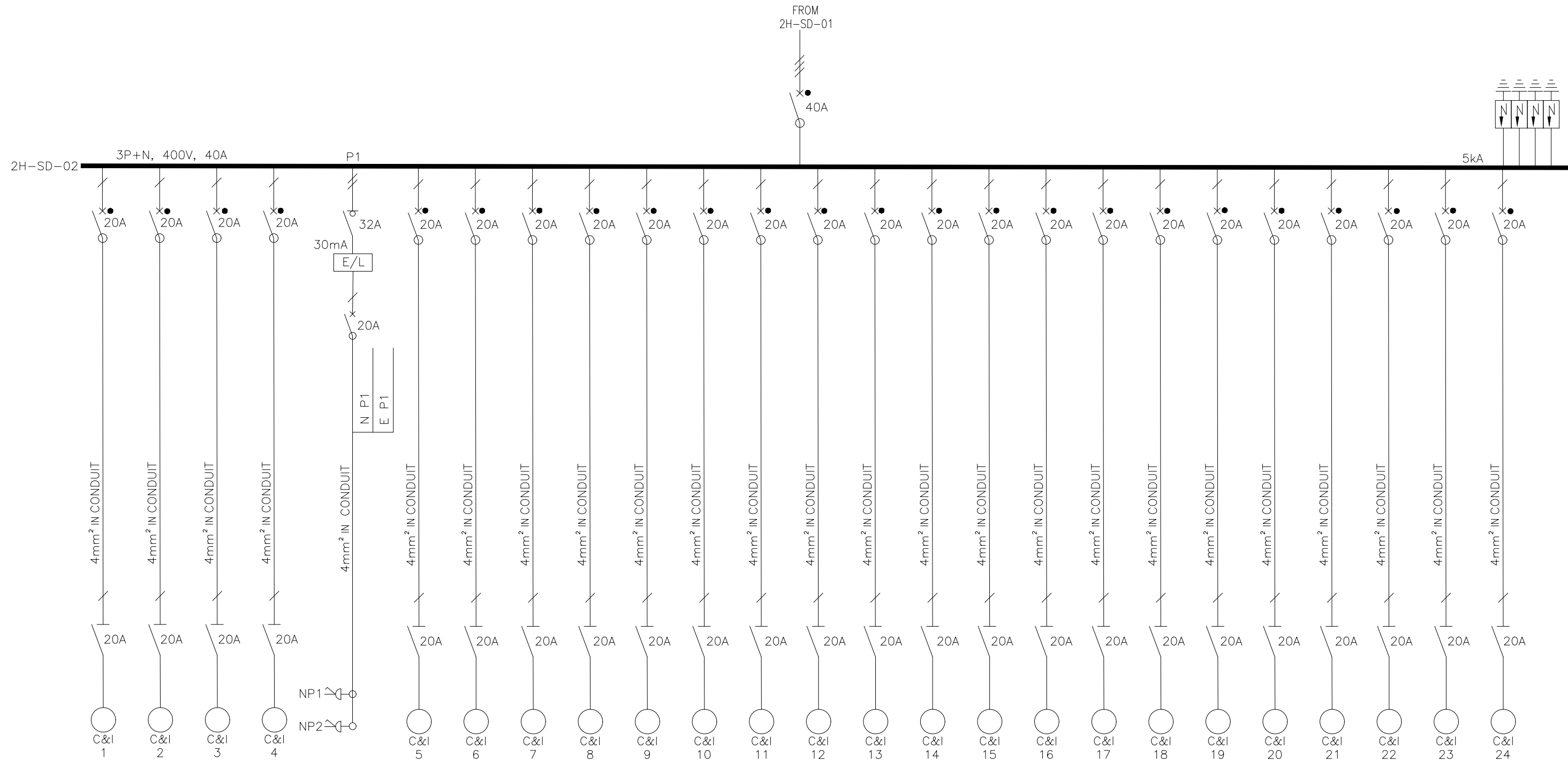
**TENDER
DRAWING**

DISTRIBUTION BOARD INFORMATION			DISTRIBUTION BOARD			VOLTAGE : 400/231 VOLT		
Recessed	Colour : SABS 1091		ACCESS	Front	Rear	Both		
Semi recessed	Normal Section	✓	SUPPLY	Wiring	Cable	Busbar		
Surface	Standby Section		ENTRY : Incoming	Top	Bottom	Side		
Free standing	Seperate cubicles		ENTRY : Outgoing	Top	Bottom	Side		
Floor standing	Spare space	10%	Light Grey / Orange					
Doors	Doors lockable	✓	Surge Arrestors : CLASS 2					

LIST OF DRAWINGS			
1	LV & MV SINGLE LINE DIAGRAM SYMBOLS	2A-E1-003	
SHEET	DESCRIPTION	OTHER No.	REG. No.

NOT TO SCALE

<p>CONSULTING ENGINEER WOODMEAD NORTH OFFICE PARK 54 MAXWELL DRIVE WOODMEAD</p>	REVISION <table border="1"> <thead> <tr> <th>MOD No.</th> <th>DATE</th> <th>DESCRIPTION</th> <th>FOR</th> <th>DWS</th> </tr> </thead> <tbody> <tr> <td>T1</td> <td>26/08/21</td> <td>ISSUED FOR TENDER</td> <td>A. M</td> <td></td> </tr> </tbody> </table>		MOD No.	DATE	DESCRIPTION	FOR	DWS	T1	26/08/21	ISSUED FOR TENDER	A. M		<p>DEPARTMENT OF WATER AND SANITATION REPUBLIC OF SOUTH AFRICA HEAD OFFICE ENGINEERING SERVICES PRIVATE BAG X313 PRETORIA 0001</p>	<p>SEDIBENG BUILDING 185 FRANCIS BAARD STREET PRETORIA (012) 336-7500</p>		<p>MOKOLO CROCODILE WATER AUGMENTATION PROJECT PHASE 2 (MCWAP-2)</p>			
	MOD No.	DATE	DESCRIPTION	FOR	DWS														
T1	26/08/21	ISSUED FOR TENDER	A. M																
<p>IMPLEMENTING AGENT A new word for water</p>	<p>P. VIVIER Pr Eng: 20130050 ENGINEER: 18/08/21</p>	<p>18/08/21 DATE:</p>	<p>DESIGN: A. MTHEMBU DRAWN: P. FLANAGAN</p>	<p>EXTERNAL APPROVAL: _____ DATE: _____</p>		<p>PROVINCE: LIMPOPO</p>	<p>DISTRICT: THABAZIMBI/LEPHALALE</p>	<p>KEYCODES: _____</p>	<p>OTHER 2H-E2.3-002 NUMBER</p>										
<p>PAT VAN HEERDEN Pr Eng: 19920029 CHIEF ENGINEER / APP (Pr. Eng): _____ DATE: _____</p>			<p>18/08/21 DATE:</p>	<p>DIRECTOR (Pr. Eng): _____ DATE: _____</p>	<p>LOCALITY No.: _____</p>	<p>TENDER/ CONTRACT No. _____</p>	<p>SHEET 1 OF 2</p>	<p>REG. No. _____</p>	<p>REV. T1</p>										



NOTE:
 * CURVE-D BREAKER TYPE
 • CURVE-C BREAKER TYPE

TENDER DRAWING

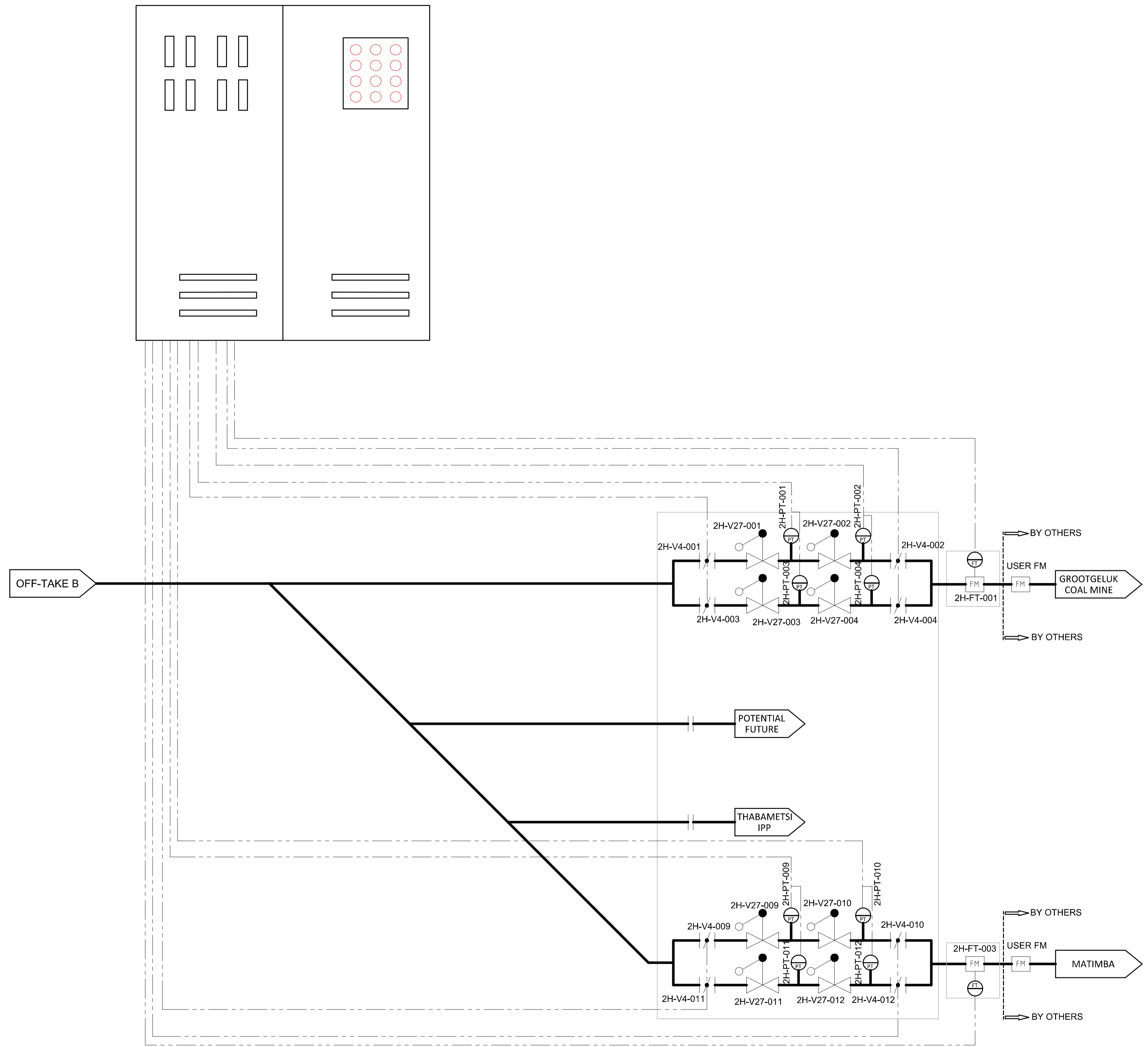
DISTRIBUTION BOARD INFORMATION		DISTRIBUTION BOARD		VOLTAGE : 400/231 VOLT		
Recessed	Colour : SABS 1091	ACCESS	Front	Rear	Both	
Semi recessed	Normal Section	SUPPLY	Wiring	Cable	Busbar	
Surface	Standby Section	ENTRY : Incoming	Top	Bottom	Side	
Free standing	Seperate cubicles	ENTRY : Outgoing	Top	Bottom	Side	
Floor standing	Spare space	10%	Light Grey / Orange			
Doors	Doors lockable	Surge Arrestors : CLASS 2				

LIST OF DRAWINGS			
1	LV & MV SINGLE LINE DIAGRAM SYMBOLS	2A-E1-003	
SHEET	DESCRIPTION	OTHER No.	REG. No.

NOT TO SCALE

<p>CONSULTING ENGINEER WOODMEAD NORTH OFFICE PARK 54 MAXWELL DRIVE WOODMEAD</p>	REVISION MOD No. DATE DESCRIPTION FOR DWS T1 26/08/21 ISSUED FOR TENDER A. M		<p>DEPARTMENT OF WATER AND SANITATION REPUBLIC OF SOUTH AFRICA HEAD OFFICE ENGINEERING SERVICES PRIVATE BAG X313 PRETORIA 0001</p>	MOKOLO CROCODILE WATER AUGMENTATION PROJECT PHASE 2 (MCWAP-2) SEDIBENG BUILDING 185 FRANCIS BAARD STREET PRETORIA (012) 336-7500	
	<p>IMPLEMENTING AGENT A new word for water</p>	P. VIVIER 18/08/21 CHECKED: DATE: DESIGN: A. MTHEMBU P. VIVIER 18/08/21 Pr Eng: 20130050 DATE: DRAWN: P. FLANAGAN PAT VAN HEERDEN Pr Eng: 19920029 CHIEF ENGINEER / APP (Pr. Eng) DATE: DIRECTOR (Pr. Eng) DATE:		PROVINCE: LIMPOPO DISTRICT: THABAZIMBI/LEPHALALE LOCALITY No.: TENDER/ CONTRACT No.: CALCULATION FILE:	KEYCODES: OTHER NUMBER: 2H-E2.3-002 SHEET 2 OF 2 REG. No. T1

2H-PLC-1A
PLC MARSHALLING CABINET

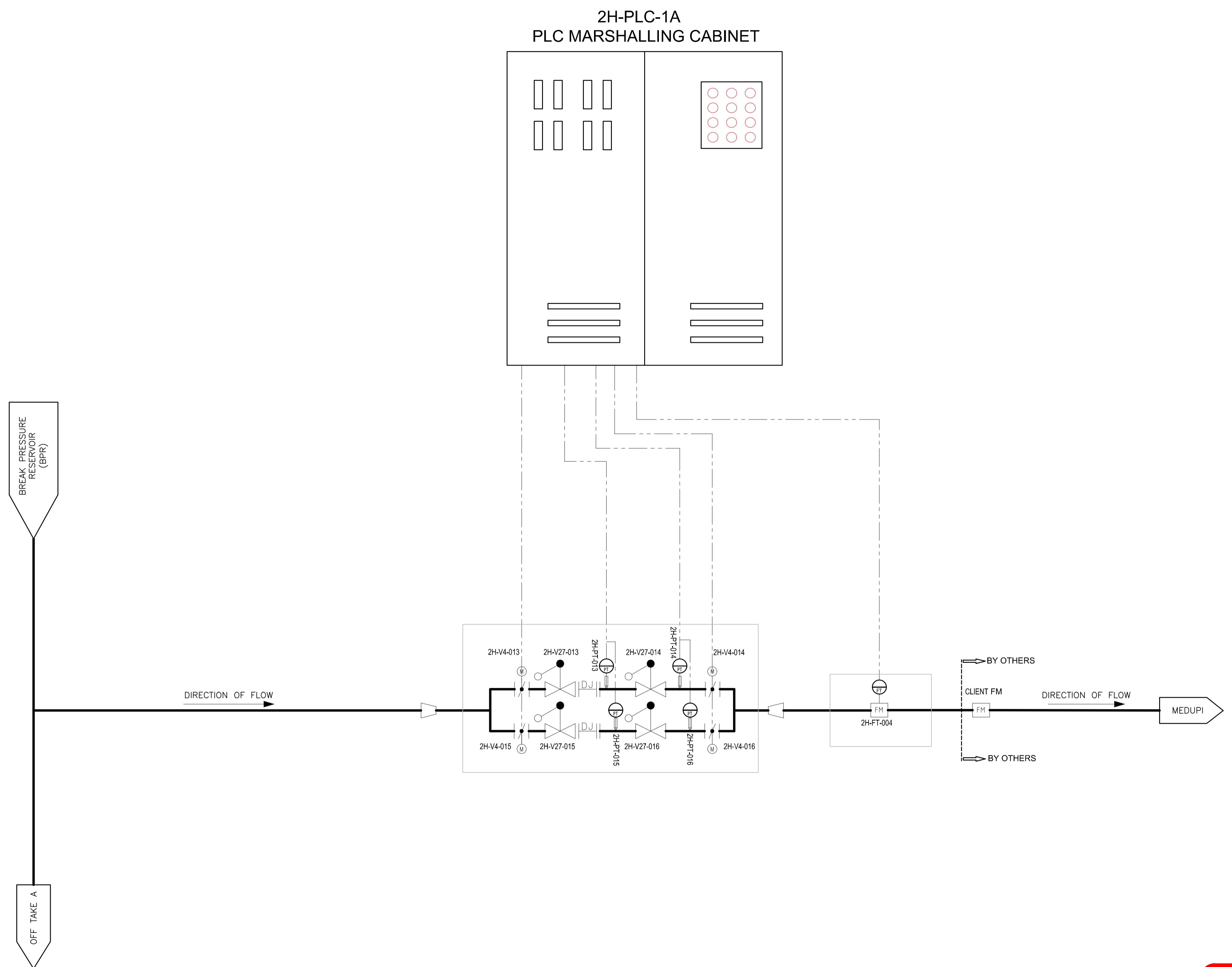


**TENDER
DRAWING**

1	GRAVITY MAIN BPR TO END OFF TAKE A PIPING AND INSTRUMENTATION DIAGRAM	2H-E2.1-001	XXXXXXXXXX
SHEET	DESCRIPTION	OTHER No.	REG. No.

LIST OF DRAWINGS

<p>CONSULTING ENGINEER</p> <p>WOODMEAD NORTH OFFICE PARK 54 MAXWELL DRIVE WOODMEAD</p>	<p>REVISION</p> <table border="1"> <tr> <th>MOD No.</th> <th>DATE</th> <th>DESCRIPTION</th> <th>FOR</th> <th>DWS</th> </tr> <tr> <td>T1</td> <td>08/21</td> <td>ISSUED FOR TENDER</td> <td>EH</td> <td></td> </tr> </table>		MOD No.	DATE	DESCRIPTION	FOR	DWS	T1	08/21	ISSUED FOR TENDER	EH		<p>DEPARTMENT OF WATER AND SANITATION REPUBLIC OF SOUTH AFRICA</p> <p>HEAD OFFICE ENGINEERING SERVICES PRIVATE BAG X313 PRETORIA 0001</p> <p>SEDIBENG BUILDING 185 FRANCIS BAARD STREET PRETORIA (012) 336-7500</p>		<p>MOKOLO CROCODILE WATER AUGMENTATION PROJECT PHASE 2 (MCWAP-2)</p> <p>GRAVITY MAIN – BPR TO END OFF TAKE A CABLE BLOCK DIAGRAM</p>			
	MOD No.	DATE	DESCRIPTION	FOR	DWS													
T1	08/21	ISSUED FOR TENDER	EH															
<p>IMPLEMENTING AGENT</p> <p>A new word for water</p>	<p>S. MALAN Pr. Eng: 960537 CHECKED: 17/08/2021</p> <p>E. HANNIE ENGINEER: 17/08/2021</p> <p>P. VAN HEERDEN Pr. Eng: 920029 17/08/2021</p>	<p>DESIGN: E. HANNIE</p> <p>DRAWN: N.J.C. KGOSANA</p> <p>EXTERNAL APPROVAL: DATE:</p>	<p>PROVINCE: LIMPOPO</p> <p>DISTRICT: THABAZIMBI/LEPHALELE</p> <p>LOCALITY No.: XXXXXX</p> <p>TENDER/CONTRACT No.: XXXXXXXXXXXX</p> <p>CALCULATION FILE: XXXXXXXXXXXXXXXXXXXX</p>	<p>KEYCODES:</p> <p>SHEET 1 OF 1</p>	<p>OTHER NUMBER: 2H-E2.4-001</p> <p>REV. T1</p>													



**TENDER
DRAWING**

1	PIPING AND INSTRUMENTATION DIAGRAM OFF TAKE B	2H-E2.1-002	XXXXXXXXXX
SHEET	DESCRIPTION	OTHER No.	REG. No.

LIST OF DRAWINGS

CONSULTING ENGINEER



WOODMEAD NORTH OFFICE PARK
54 MAXWELL DRIVE
WOODMEAD

IMPLEMENTING AGENT



A new word for water

MOD No.		DATE	DESCRIPTION	FOR	DWS
T1		08/21	ISSUED FOR TENDER	EH	

**DEPARTMENT OF WATER AND SANITATION
REPUBLIC OF SOUTH AFRICA**

HEAD OFFICE ENGINEERING SERVICES PRIVATE BAG X313 PRETORIA 0001		SEDI BENG BUILDING 185 FRANCIS BAARD STREET PRETORIA (012) 336-7500
--	---	--

S. MALAN Pr. Eng: 960537 CHECKED:	17/08/2021 DATE:	DESIGN: E. HANNIE DRAWN: N.J.C. KGOSANA
E. HANNIE ENGINEER:	17/08/2021 DATE:	EXTERNAL APPROVAL: _____ DATE: _____
P. VAN HEERDEN Pr. Eng: 920029 CHIEF ENGINEER / APP (Pr. Eng):	17/08/2021 DATE:	DIRECTOR (Pr. Eng): _____ DATE: _____

MOKOLO CROCODILE WATER AUGMENTATION PROJECT PHASE 2 (MCWAP-2)

**GRAVITY MAIN BPR TO END
OFF-TAKE B
CABLE BLOCK DIAGRAM**

PROVINCE: LIMPOPO	DISTRICT: THABAZIMBI/LEPHALELE	KEYCODES:	OTHER NUMBER: 2H-E2.4-002
LOCALITY No.: XXXXXX	TENDER/CONTRACT No.: XXXXXXXXXXXXX	SHEET: 1 of 1	REV. T1
CALCULATION FILE: XXXXXXXXXXXXXXXXXXXXX			