

uMKHAYAKUDE DISTRICT MUNICIPALITY



HLUHLUWE WATER SUPPLY SCHEME PHASE 2

FOR TENDER
OCTOBER 2025



PREPARED BY:



DRAWING LIST

DWG No.	DESCRIPTION
PART A: LAYOUT PLAN	
J000167-WT-DL-000	DRAWING LIST
J000167-WT-LA-001	WARD LAYOUT
J000167-WT-LA-002	GENERAL LAYOUT PLAN
J000167-WT-LA-003	COMMAND RESERVOIR SITE LAYOUT
J000167-WT-LA-004	4ML RESERVOIR SITE LAYOUT
J000167-WT-LA-005	1ML CLEAR WATER TANK SITE LAYOUT
PART B: PLAN AND LONG SECTION 100-102	
J000167-WT-LS-100	PLAN AND LONG SECTION 350mmNB, WATER TREATMENT WORKS TO EXISTING 4ML RESERVOIR (CH.0.00 TO CH.1000.00) SHEET 1 OF 3
J000167-WT-LS-101	PLAN AND LONG SECTION 350 mmNB, WATER TREATMENT WORKS TO EXISTING 4ML RESERVOIR (CH.1000.00 TO CH.2000.00) SHEET 2 OF 3
J000167-WT-LS-102	PLAN AND LONG SECTION 350 mmNB, WATER TREATMENT WORKS TO EXISTING 4ML RESERVOIR (CH.2000.00 TO CH.3009.00) SHEET 3 OF 3
PART C: PLAN AND LONG SECTION 110-116	
J000167-WT-LS-110	PLAN AND LONG SECTION 350 mmNB, COMMAND RESERVOIR TO PROPOSED RESERVOIR 4ML (CH. 0.00 TO CH.1000.00) SHEET 1 OF 7
J000167-WT-LS-111	PLAN AND LONG SECTION 350 mmNB, COMMAND RESERVOIR TO PROPOSED RESERVOIR 4ML (CH. 1000.00 TO CH.2000.00) SHEET 2 OF 7
J000167-WT-LS-112	PLAN AND LONG SECTION 350 mmNB, COMMAND RESERVOIR TO PROPOSED RESERVOIR 4ML (CH. 2000.00 TO CH.3000.00) SHEET 3 OF 7
J000167-WT-LS-113	PLAN AND LONG SECTION 350 mmNB, COMMAND RESERVOIR TO PROPOSED RESERVOIR 4ML (CH. 3000.00 TO CH.4000.00) SHEET 4 OF 7
J000167-WT-LS-114	PLAN AND LONG SECTION 350 mmNB, COMMAND RESERVOIR TO PROPOSED RESERVOIR 4ML (CH. 4000.00 TO CH.5000.00) SHEET 5 OF 7
J000167-WT-LS-115	PLAN AND LONG SECTION 350 mmNB, COMMAND RESERVOIR TO PROPOSED RESERVOIR 4ML (CH. 5000.00 TO CH.6000.00) SHEET 6 OF 7
J000167-WT-LS-116	PLAN AND LONG SECTION 350 mmNB, COMMAND RESERVOIR TO PROPOSED RESERVOIR 4ML (CH. 6000.00 TO CH.7007.00) SHEET 7 OF 7
PART E: CHAMBERS AND CONCRETE DETAILS	
J000167-WT-DT-200	INLET SPLIT VALVE CHAMBER CONCRETE DETAILS AND PIPE SPECIALS (200 mmND)
J000167-WT-DT-201	FLOW METER VALVE CHAMBER CONCRETE DETAILS AND PIPE SPECIALS (300 mmND)
J000167-WT-DT-202	ISOLATION VALVE CHAMBER CONCRETE DETAILS AND PIPE SPECIALS (300 mmND)
J000167-WT-DT-203	SCOUR VALVE CHAMBER CONCRETE DETAILS TYPE 2 (350 mmND) SHEET 1 OF 2.
J000167-WT-DT-204	SCOUR VALVE CHAMBER TYPE 2 PIPE SPECIALS (350 mmND) SHEET 2 OF 2.
J000167-WT-DT-205	AIR VALVE CHAMBER CONCRETE DETAILS AND PIPE SPECIALS (300 mmND).
J000167-WT-DT-206	AIR VALVE CHAMBER CONCRETE DETAILS AND PIPE SPECIALS (350 mmND).
J000167-WT-DT-207	SCOUR VALVE CHAMBER CONCRETE DETAILS TYPE 2 (300 mmND) SHEET 1 OF 2.
J000167-WT-DT-208	SCOUR VALVE CHAMBER TYPE 2 PIPE SPECIALS (300 mmND) SHEET 2 OF 2.
J000167-WT-DT-209	SCOUR VALVE CHAMBER CONCRETE DETAIL TYPE 2 (80 mmND) SHEET 1 OF 2.
J000167-WT-DT-210	SCOUR VALVE CHAMBER TYPE 2 PIPE SPECIALS (80 mmND) SHEET 2 OF 2.
J000167-WT-DT-211	AIR VALVE CHAMBER CONCRETE DETAILS AND PIPE SPECIALS (200 mmND).
J000167-WT-DT-212	AIR VALVE CHAMBER CONCRETE DETAILS AND PIPE SPECIALS (80 mmND).
J000167-WT-DT-213	INLET FLOW METER VALVE CHAMBER CONCRETE DETAILS AND PIPE SPECIALS (200mmND).
J000167-WT-DT-214	ISOLATION VALVE CHAMBER CONCRETE DETAILS AND PIPE SPECIALS (300mmND)
J000167-WT-DT-215	DRAINAGE VALVE CHAMBER CONCRETE DETAILS AND PIPE SPECIALS (300mmND)
J000167-WT-DT-216	SPLIT VALVE CHAMBER CONCRETE DETAILS AND PIPE SPECIALS (350x200mmND)
J000167-WT-DT-217	SCOUR VALVE CHAMBER TYPE 2 CONCRETE DETAILS (200mmND)
J000167-WT-DT-218	SCOUR VALVE CHAMBER TYPE 2 PIPE SPECIALS (200mmND)
J000167-WT-DT-219	ISOLATION VALVE CHAMBER CONCRETE DETAILS AND PIPE SPECIALS (200mmND)
J000167-WT-DT-220	OUTLET FLOW METER VALVE CHAMBER CONCRETE DETAILS AND PIPE SPECIALS (200mmND)
J000167-WT-DT-221	ISOLATION AND BYPASS VALVE CHAMBER CONCRETE DETAILS (350mmND)
J000167-WT-DT-222	ISOLATION AND BYPASS VALVE PIPE SPECIALS (350mmND)
PART G: MISCELLANEOUS DRAWINGS	
J000167-WT-DT-300	NAME BOARD
J000167-WT-DT-301	TYPICAL ROAD DEVIATION NEXT TO THE ROAD
J000167-WT-DT-302	TYPICAL ROAD DEVIATION FOR ROAD CROSSING

FOR TENDER PURPOSES ONLY

NO.	A	ISSUE FOR TENDER	10/10/2025	CHECKED	M. MUKABWE	DESIGNED	N. GUMEDE	 ZIMILE UNBOUNDED ENGINEERING INTERNATIONAL BUSINESS GATEWAY OFFICE PARK CNR PIONEER AVENUE AND ELIZABETH MIDRIDGE PARK TEL: (011) 466 - 8576 FAX: (011) 466 - 8813 E-MAIL: info@zimile.co.za COPYRIGHT RESERVED ©	REFERENCE DRAWINGS:	CLIENT:	APPROVED:	PROJECT:	PROJECT PHASE		REVISION				
							T. MAKHUBALO		1.	UNESIPALA WESIFUNDA	B. SEAKE	HLUHLUWE WATER SUPPLY SCHEME PHASE 2	PRELIMINARY	TENDER	CONSTRUCTION	AS-BUILT	A		
					M. MUKABWE				2.	 UNESIPALA WESIFUNDA Unesipala Wesifunda District Municipality: Durbha Municipality	SENIOR ENGINEER	TITLE:	DATE	SIGNATURE	DRAWING No.	FILENAME	SIZE		
									3.			DRAWING LIST	OCTOBER 2025		J000167	WT	DL	000	A1
									4.										
									5.										
									6.										
									7.										



FOR TENDER PURPOSES ONLY

DESIGNED	M. MUKABWE
DRAWN	B.N. GUDA
CHECKED	N. GUMEDE
ISSUE FOR TENDER	08/10/2025
NATURE OF REVISION	DATE

ZIMILE
UNBOUNDED ENGINEERING

INTERNATIONAL BUSINESS GATEWAY OFFICE PARK
CNR PIONEER AVENUE AND ELIZABETH MIDRIDGE PARK
TEL: (011) 466 - 8576
FAX: (011) 456 - 8813
E-MAIL: info@zimile.co.za

COPYRIGHT RESERVED ©

REFERENCE DRAWINGS:
1. J000167-WT-LS-000-DRAWING LIST
2.
3.
4.
5.
6.
7.

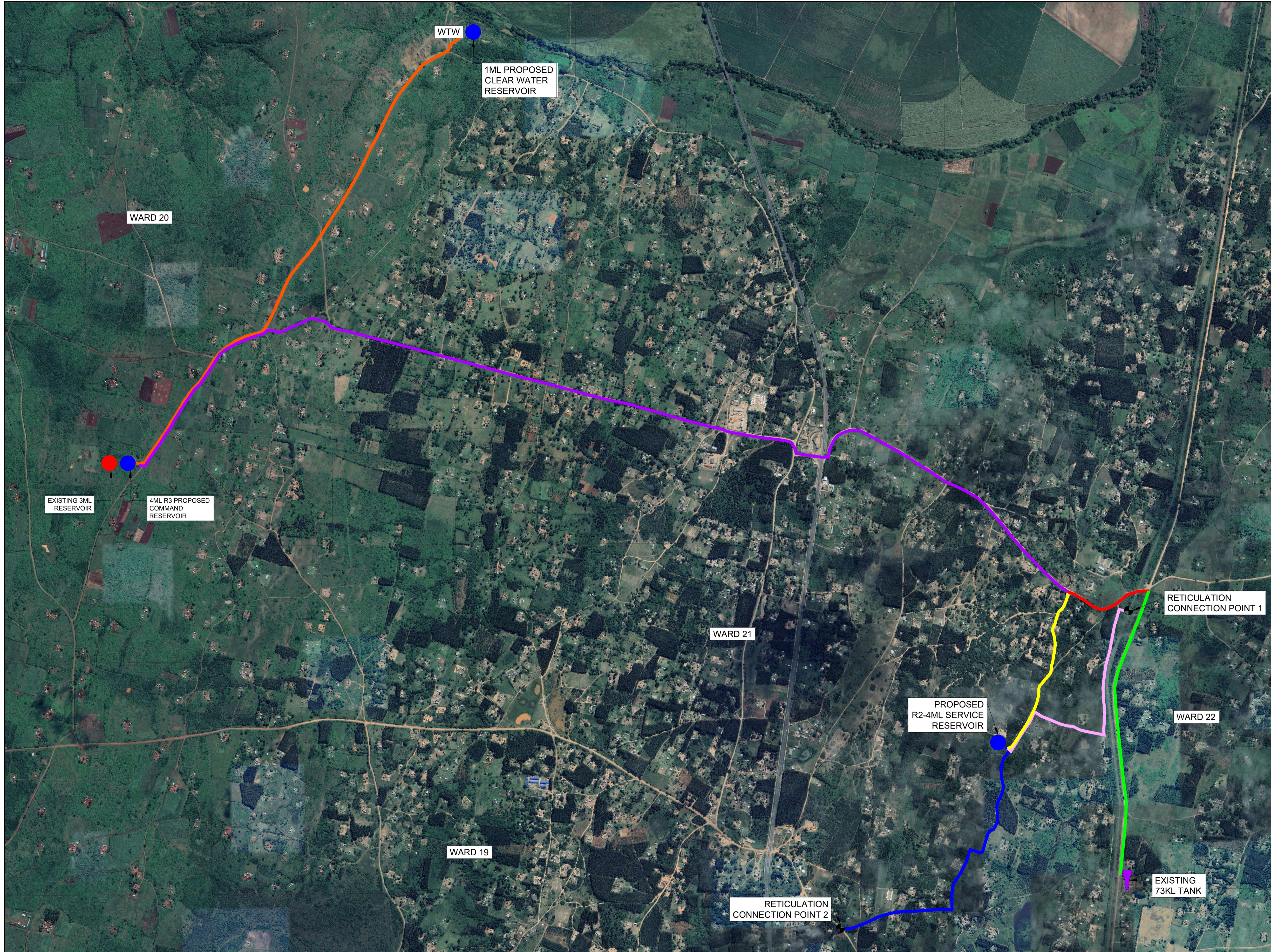
CLIENT:

UNIBHALA WEFINDA
Umkhanyakude
Municipality of Umkhanyakude

APPROVED:	B. SEAKE
FOR ZIMILE CONSULTING ENGINEERS	
DESIGNATION:	SENIOR ENGINEER
DATE:	SIGNATURE

PROJECT:	HLUHLUWE WATER SUPPLY SCHEME PHASE 2
TITLE:	WARD LAYOUT

PROJECT PHASE			
PRELIMINARY	CONSTRUCTION	AS-BUILT	
DATE:	AUGUST 2025	SCALE:	AS SHOWN
DRAWING No.	WT	LA	001
CAD FILENAME	Hluhluwe Phase 2 - Reservoir & Water Retention Upgrade V3 Detail Design Stage 2 Detail Design Drawings 01 Water V01 Working Drawings TENDER		REVISION
			A
			A1



LEGEND:

WTW	- WATER TREATMENT PLANT
Blue Circle	- PROPOSED RESERVOIR
Red Circle	- EXISTING RESERVOIR
Black Circle with cross	- CONNECTION POINT
Purple Tank	- EXISTING 73kl TANK
Orange Line	- RISING MAIN - 350mm Ø ND
Purple Line	- GRAVITY MAIN 2 - 350mm Ø ND
Yellow Line	- GRAVITY MAIN 3 - 200mm Ø ND
Red Line	- GRAVITY MAIN 4 - 200mm Ø ND
Blue Line	- RETICULATION CONNECTOR 2 - 200mm Ø ND
Pink Line	- RETICULATION CONNECTOR 1 - 300mm Ø ND
Green Line	- 73kl TANK 1 CONNECTOR - 200mm Ø ND

FOR TENDER PURPOSES ONLY

DESIGNED	M. MUKABWE
DRAWN	B.N. GUDA
CHECKED	N. GUMEDE
ISSUE FOR TENDER	23/10/2025
NATURE OF REVISION	DATE

NAME	SIG
NAME	SIG
NAME	SIG

ZIMILE
UNBOUNDED ENGINEERING

INTERNATIONAL BUSINESS GATEWAY OFFICE PARK
CNR PIONEER AVENUE AND ELIZABETH MIDRIDGE PARK
TEL: (011) 466 - 8576
FAX: (011) 456 - 8813
E-MAIL: info@zimile.co.za

COPYRIGHT RESERVED ©

REFERENCE DRAWINGS:

1. J000167-WT-LS-000-DRAWING LIST
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.

CLIENT:

UMSIBALA WESIFINDO
Umkhanyakude
KwaZulu-Natal Municipality

APPROVED:

B. SEAKE
FOR ZIMILE CONSULTING ENGINEERS

DESIGNATION: SENIOR ENGINEER

DATE: _____ SIGNATURE: _____

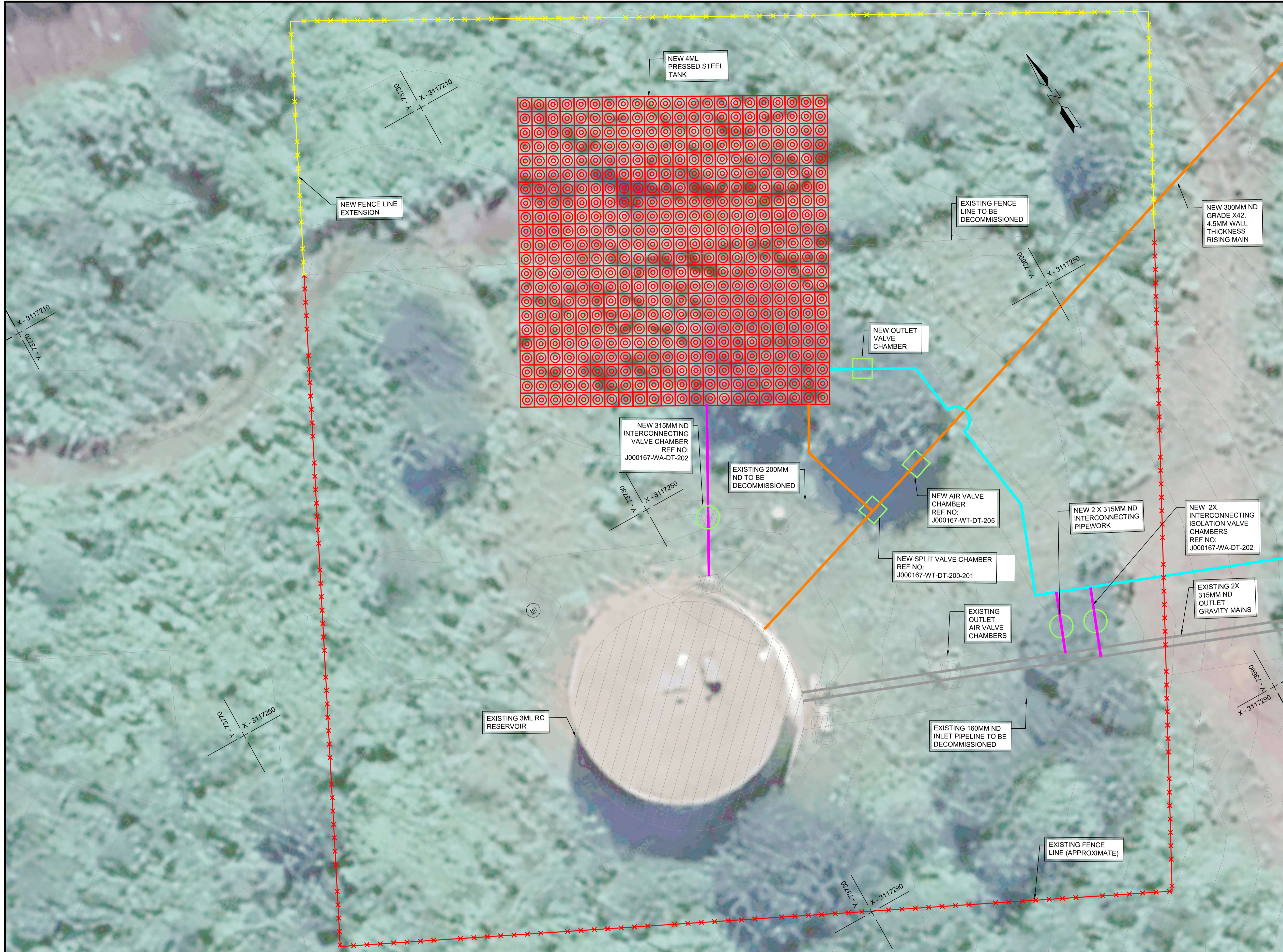
PROJECT:

HLUHLUWE WATER SUPPLY SCHEME PHASE 2

TITLE:

GENERAL LAYOUT

PROJECT PHASE				REVISION
PRELIMINARY	TENDER	CONSTRUCTION	AS-BUILT	
DATE:	OCTOBER 2025	SCALE:	AS SHOWN	
DRAWING No.	J000167	WT	LA	002
CAD FILENAME	L:\Projects\Current\Projects\WATER DEPARTMENT\J000167 - Hluhluwe Phase 2 - Reservoir & Water Reticulation\Upgrade\3. Detail Design Stage\3. Detail Design Drawings\01 Water\01 Working Drawings\TENDER\Infrastructure layout.dwg			SIZE: A1



LEGEND:

- NEW 4ml STEEL TANK
- 3ml EXISTING RESERVOIR
- NEW CHAMBERS
- EXISTING CHAMBERS
- NEW 300MM ND STEEL PIPE
- EXISTING PIPE TO BE DECOMMISSIONED
- EXISTING 315MM ND OUTLET GRAVITY MAINS
- NEW 355mm ND uPVC OUTLET PIPE
- NEW 300MM ND uPVC INTERCONNECTION PIPE
- EXISTING FENCE LINE (APPROXIMATE)
- NEW FENCE LINE EXTENSION
- EXISTING FENCE TO BE DECOMMISSIONED
- ROAD
- RC - REINFORCED CONCRETE

RESERVOIR SITE LAYOUT PLAN

FOR TENDER PURPOSES ONLY

DESIGNED	N. GUMEDE
DRAWN	T. MAKHUBALO
CHECKED	M. MUKABWE
ISSUE FOR TENDER	10/10/2025
NATURE OF REVISION	DATE

ZIMILE
UNBOUNDED ENGINEERING

INTERNATIONAL BUSINESS GATEWAY OFFICE PARK
CNR PIONEER AVENUE AND ELIZABETH MIDRIDGE PARK
TEL: (011) 466 - 8576
FAX: (011) 456 - 8813
E-MAIL: info@zimile.co.za

COPYRIGHT RESERVED ©

REFERENCE DRAWINGS:
1. J000167-WT-DL-000-DRAWING LIST
2.
3.
4.
5.
6.
7.

CLIENT:

UMKHWAPHA WESEFUNDI
Amkhanyakude
Duma Municipality Duma Municipality

APPROVED:

B. SEAKE
FOR ZIMILE CONSULTING ENGINEERS
DESIGNATION: **SENIOR ENGINEER**

DATE: _____ SIGNATURE: _____

PROJECT:

HLUHLUWE WATER SUPPLY SCHEME PHASE 2

TITLE:

COMMAND RESERVOIR COMPLEX SITE LAYOUT

PROJECT PHASE			
PRELIMINARY	TENDER	CONSTRUCTION	AS-BUILT
DATE: OCTOBER 2025		SCALE: AS SHOWN	
DRAWING No.	WT	LA	003
J000167			
CAD FILENAME	S:\Users\Bongani\Documents\000167-WT-LA-003_ResuA_RESERVOIR SITE LAYOUT PLAN.dwg		REVISION
			A
			A1



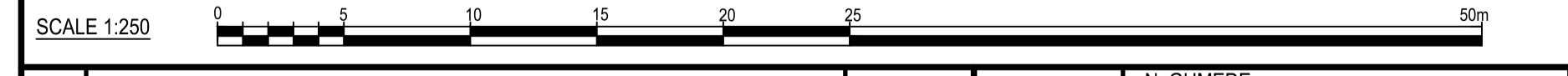
LEGEND	
NEW 200mmND GRAVITY MAIN PIPE	
NEW 315mmND OUTLET PIPE	
NEW 200mmND OUTLET PIPE	
NEW 4ML RESERVOIR	
NEW RESERVOIR SITE FENCE	
ACCESS GATE	
PROPOSED CHAMBER	
SETTING OUT POINT	

BOUNDARY COORDINATES		
POINT	Y-COORD	X-COORD
P1	-68944.6657	-3118882.8783
P2	-68954.6151	-3118872.9344
P3	-68974.5140	-3118868.4820
P4	-68983.2753	-3118868.4820
P5	-68984.7603	-3118860.6160
P6	-68972.7320	-3118815.6461
P7	-68959.5208	-3118818.3530
P8	-68948.5267	-3118817.2787
P9	-68928.4792	-3118812.6777
P10	-68905.1650	-3118826.1835

RESERVOIR COORDINATES		
POINT	Y-COORD	X-COORD
P11	-68947.8355	-3118862.0616
P12	-68933.3548	-3118840.9386
P13	-68954.4917	-3118826.4605
P14	-68968.9641	-3118847.5892

GENERAL SITE LAYOUT
SCALE 1:250

FOR TENDER PURPOSES ONLY



DESIGNED	N. GUMEDE
DRAWN	T. MAKHUBALO
CHECKED	M. MUKABWE
ISSUE FOR TENDER	10/10/2025
NATURE OF REVISION	DATE

ZIMILE
UNBOUNDED ENGINEERING

INTERNATIONAL BUSINESS GATEWAY OFFICE PARK
CNR PIONEER AVENUE AND ELIZABETH MIDRIDGE PARK
TEL: (011) 466 - 8576
FAX: (011) 466 - 8813
E-MAIL: info@zimile.co.za

COPYRIGHT RESERVED ©

CLIENT:

UNKHEPHELA WESIFUNDA
District Municipality: Dikoma Municipality

APPROVED:

B. SEAKE
FOR ZIMILE CONSULTING ENGINEERS

DESIGNATION: SENIOR ENGINEER

DATE: _____ SIGNATURE: _____

PROJECT:

**HLUHLUWE WATER SUPPLY SCHEME
PHASE 2**

TITLE:

4ML RESERVOIR SITE PLAN

PROJECT PHASE			
PRELIMINARY	TENDER	CONSTRUCTION	AS-BUILT
DATE:	OCTOBER 2025	SCALE:	AS SHOWN
DRAWING No.	J000167	WT	LA 004
CAD FILENAME	Phase 2 - Reservoir & Water Reticulation Upgrade3 - Detail Design Stage2 - Detail Design Drawings/WT Reservoir Working Drawings/DT/RESERVOIR DRAWINGS/DWG031304 Reservoir Detailing Info.dwg		REVISION
			A
			A1



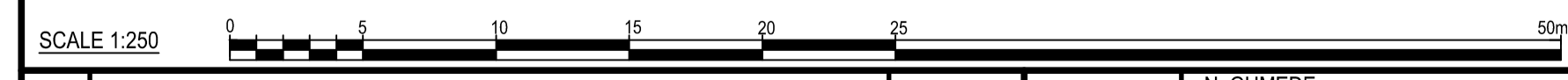
1ML CLEAR WATER TANK SITE LAYOUT
SCALE 1:250

LEGEND	
NEW 300mmND GRAVITY MAIN PIPE	
NEW 300mmND RISING MAIN	
NEW 1ML RESERVOIR	
NEW RESERVOIR SITE FENCE	
ACCESS GATE	
PROPOSED CHAMBER	
EXISTING INFRASTRUCTURE	
SETTING OUT POINT	

BOUNDARY COORDINATES		
POINT	Y-COORD	X-COORD
P1	-71999.224	-3115015.66
P2	-71976.8379	-3114998.7766
P3	-71950.2985	-3115002.7754
P4	-71924.0317	-3114984.1683
P5	-71923.539	-3114955.579
P6	-71911.796	-3114939.759
P7	-71907.67	-3114926.031
P8	-71914.706	-3114877.54
P9	-71939.606	-3114841.907
P10	-71966.0473	-3114834.9267
P11	-71975.6047	-3114834.0588
P12	-71993.5506	-3114853.6074
P13	-72011.575	-3114893.000
P14	-72009.857	-3114900.318

CLEAR WATER TANK COORDINATES		
POINT	Y-COORD	X-COORD
P15	-71948.6976	-3114991.9592
P16	-71937.6644	-3114983.3413
P17	-71946.2823	-3114972.3081
P18	-71957.3155	-3114980.926

FOR TENDER PURPOSES ONLY



DESIGNED	N. GUMEDE
DRAWN	T. MAKHUBALO
CHECKED	M. MUKABWE
ISSUED FOR TENDER	10/10/2025
NATURE OF REVISION	DATE

ZIMILE
UNBOUNDED ENGINEERING

INTERNATIONAL BUSINESS GATEWAY OFFICE PARK
CNR PIONEER AVENUE AND ELIZABETH MIDRIDGE PARK
TEL: (011) 466 - 8576
FAX: (011) 466 - 8813
E-MAIL: info@zimile.co.za

REFERENCE DRAWINGS:
1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____

CLIENT: **UMKHWISIPALA WESIFUNDA**
Umkhanyakude

APPROVED: **B. SEAKE**
FOR ZIMILE CONSULTING ENGINEERS
DESIGNATION: SENIOR ENGINEER
DATE: _____ SIGNATURE: _____

PROJECT: **HLUHLUWE WATER SUPPLY SCHEME PHASE 2**
TITLE: **1ML CLEAR WATER TANK SITE**

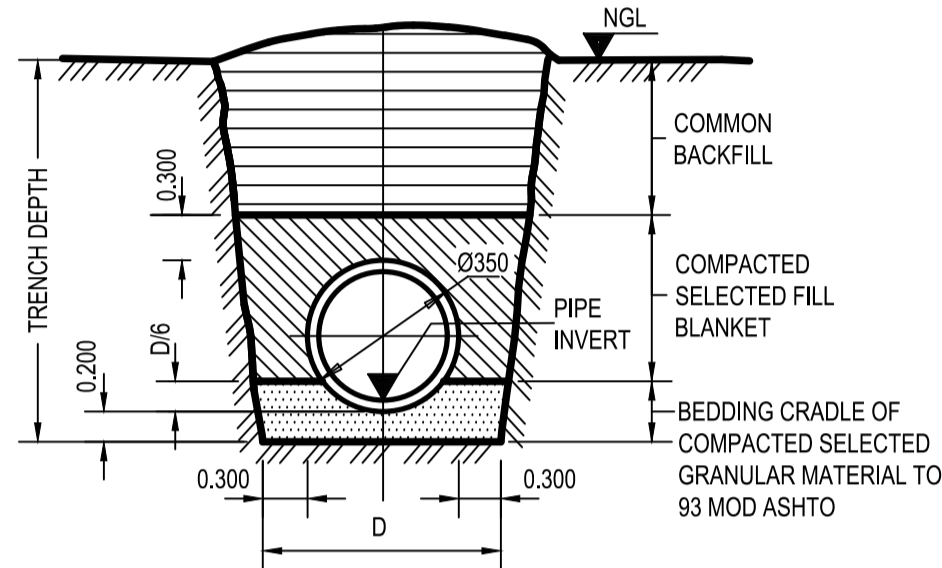
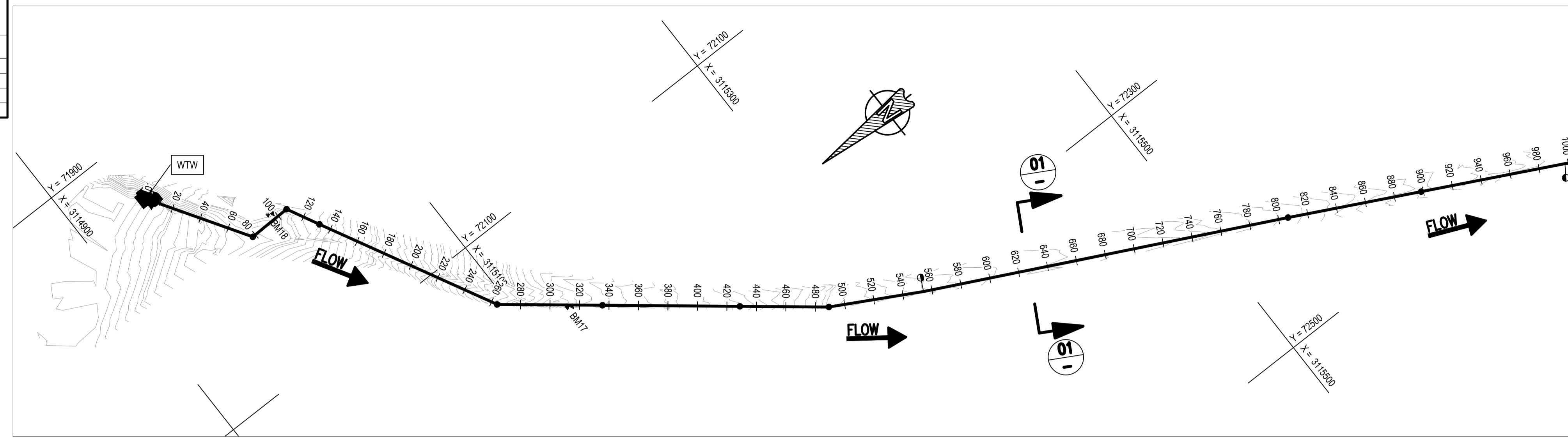
PROJECT PHASE			
PRELIMINARY	DDR	CONSTRUCTION	AS-BUILT
DATE:	OCTOBER 2025	SCALE:	AS SHOWN
DRAWING No.	J000167	WT	LA 005
CAD FILENAME	C:\Projects\Current Projects\WATER DEPARTMENT\J000167 - Hluhluwe Phase 2 - Reservoir & Water Treatment Plant Upgrade\3. Detail Design Stage 2\Detail Design Drawings\01 - Reservoir Working Drawings\TENDER\DRAWINGS\DWG\1ML Reservoir detailing info.dwg		REVISION: A
			SIZE: A1

**PIPELINE SUMMARY
FOR THIS DRAWING ONLY**

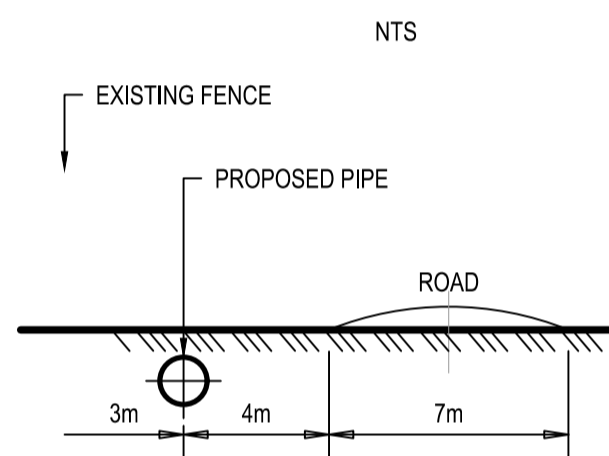
DESCRIPTION	QTY OR METER
AIR VALVE CHAMBER (QTY)	2
SCOUR VALVE CHAMBER (QTY)	0
STEEL x42 GRADE C (350mm OD)	1000.00
TOTAL PIPE LENGTH	1000.00

BENCHMARK CO-ORDINATES

POINTS	Y	X	Z
BM14	-73 672.993	-3 117 278.875	115.233
BM15	-73 718.955	-3 117 251.949	117.975
BM16	-73 396.870	-3 116 849.237	101.332
BM17	-72 174.653	-3 115 129.325	57.985
BM18	-71 999.809	-3 115 008.390	40.340



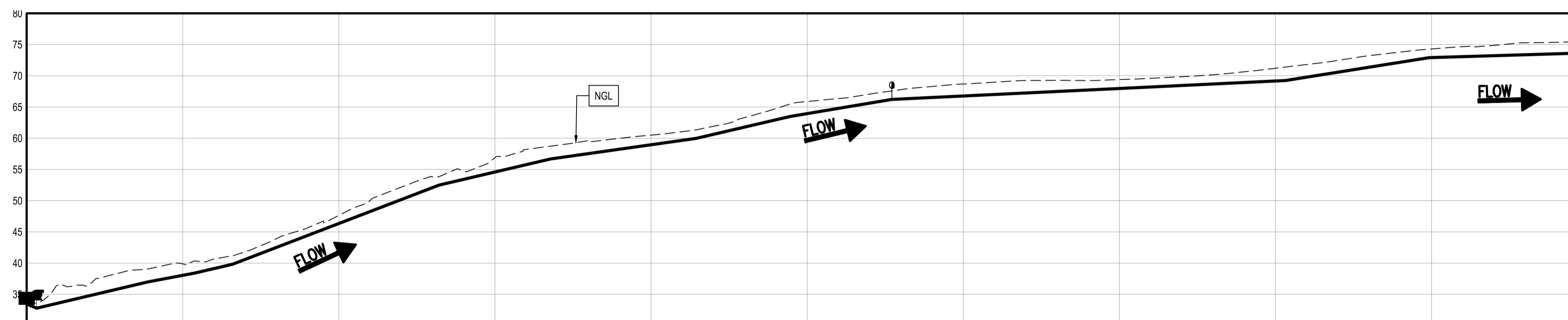
TYPICAL TRENCH CROSS-SECTION



**SECTION 01-01
POSITION OF PIPELINE IN
SERVITUDE STRIP**

SCALES:
Horizontal 1:2000
Vertical 1:500

DATUM 30.000



REFERENCE	WTW1 PUMP	N1	N2	N3	N4	N5	N6	N7	AV1	N8	N9	AV2
DISTANCE (m)	0.000	77.736	107.373	131.909	264.122	335.607	428.791	489.153	554.238	806.468	888.487	987.850
GROUND LEVEL	33.486	39.067	40.341	41.208	53.842	58.725	61.329	65.480	67.568	71.394	74.262	75.439
PIPE INVERT LEVELS	33.388	36.910	38.310	39.735	52.410	56.583	59.886	63.369	66.125	69.152	72.820	73.586
TRENCH LEVEL	33.068	36.595	37.996	38.889	52.085	56.278	59.571	63.084	65.810	68.837	72.505	73.251
SLOPE / LENGTH	10.74% 19.8m 6.37m	-5.90% -1.16,9 71.37m	-4.73% -1.21,2 29.64m	-5.81% -1.17,2 24.54m	-9.58% -1.10,4 132.21m	-5.87% -1.17,0 71.48m	-3.53% -1.28,3 93.18m	-5.82% -1.17,2 60.36m	-4.19% -1.23,9 65.09m	-1.20% -1.83,3 252.23m	-3.99% -1.25,1 92.02m	-0.75% -1.133,1 99.37m
CHANGE IN DIRECTION	0.000, 0.000 3.924, 1007.23 9.542	0.674, 55.907 58.819	0.688, 64.027 64.931	2.197, 0.402 2.233	2.115, 23.853 24.873	1.333, 0.000 1.333	1.307, 0.000 1.307	0.932, 9.733 9.765	1.711, 2.193 2.781	1.595, 0.452 1.558	1.882, 0.000 1.852	0.000, 4.769 4.769
CLASSIFICATION	350mm Ø STEEL x42 GRADE C CLASS 25											

NOTES:

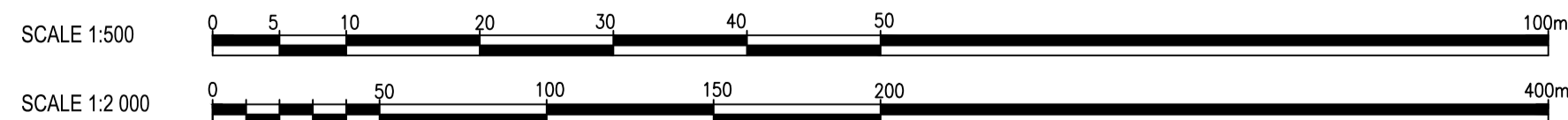
- THIS DESIGN WAS ENGINEERED BY : **ZIMILE**
- THESE DRAWINGS MUST BE READ IN CONJUNCTION WITH THE SANS AND PROJECT SPECIFICATIONS.
- ALL SETTING OUT AND DIMENSIONS MUST BE CONFIRMED AND APPROVED ON SITE BY THE ENGINEER
- ALL CONSTRUCTION TO BE DONE IN ACCORDANCE WITH THE SANS AND PROJECT SPECIFICATIONS.
- ALL MATERIAL AND WORKMANSHIP MUST COMPLY WITH THE REQUIREMENTS OF THE LATEST RELEVANT SANS 1200 AND PROJECT SPECIFICATIONS
- THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER WITH REGARDS TO THE BOQ, DRAWINGS AND SPECIFICATION BEFORE ORDERING ANY MATERIAL.
- THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL POTENTIALLY CLASHING EXISTING SERVICES AND PROTECT THEM FROM DAMAGE THROUGHOUT THE DURATION OF THE WORKS
- PIPES TO BE LAID AT LEAST 1m AWAY FROM THE STAND BOUNDARIES AND 1m AWAY FROM THE ROAD EDGE

LEGEND

- PROPOSED WATER PIPE
- PIPE DIAMETER, MATERIAL & CLASS
- NEW VALVE ON EXISTING PIPE
- NEW SCOUR VALVE
- NEW AIR VALVE
- NEW WATER METER
- NEW PIPE IN NEW SLEEVE
- PROPOSED RESERVOIR
- EXISTING BOREHOLE
- EXISTING RESERVOIR
- FENCE
- BENCHMARK
- ROAD
- ESKOM POWER LINES
- TREES

**NODES CO-ORDINATES
CO-ORDINATE SYSTEM WGS 84**

STRUCTURE NAME	Y	X
AV1	-72 315.206	-3 115 326.160
AV2	-72 515.481	-3 115 721.998
N1	-72 005.127	-3 114 991.152
N2	-72 004.504	-3 115 020.783
N3	-72 026.332	-3 115 031.989
N4	-72 143.522	-3 115 093.200
N5	-72 188.089	-3 115 149.092
N6	-72 246.184	-3 115 221.950
N7	-72 283.816	-3 115 269.145
N8	-72 428.310	-3 115 551.609
N9	-72 470.221	-3 115 633.531
PUMP1	-71 944.799	-3 114 953.018
WTW1	-71 939.429	-3 114 949.600



**FOR TENDER
PURPOSES ONLY**

DESIGNED	M. MUKABWE
DRAWN	B.N. GUDA
CHECKED	N. NDLOVU
ISSUE FOR TENDER	10/10/2025
NATURE OF REVISION	DATE

ZIMILE
UNBOUNDED ENGINEERING

INTERNATIONAL BUSINESS GATEWAY OFFICE PARK
CNR PIONEER AVENUE AND ELIZABETH MIDRIDGE PARK
TEL: (011) 466 - 8576
FAX: (011) 466 - 8813
E-MAIL: info@zimile.co.za

COPYRIGHT RESERVED ©

REFERENCE DRAWINGS:

- 1.0000167-WT-DL-000-DRAWING LIST
- 2.0000167-WT-LA-002-GENERAL LAYOUT
- 3.
- 4.
- 5.
- 6.
- 7.

CLIENT: **UNISIPALA WESIFUNDA**
Amkhanyakude

APPROVED: **B. SEAKE**
FOR ZIMILE CONSULTING ENGINEERS

DESIGNATION: **SENIOR ENGINEER**

DATE: _____ SIGNATURE: _____

PROJECT: **HLULUWE WATER SUPPLY SCHEME PHASE-2**

TITLE: **WTW TO CMND RES 350mm PIPELINE PLAN AND LONGITUDINAL SECTION CH.0.00m TO CH.1000.00m SHEET 1 OF 3**

PROJECT PHASE

PRELIMINARY	DDR	CONSTRUCTION	AS-BUILT
-------------	-----	--------------	----------

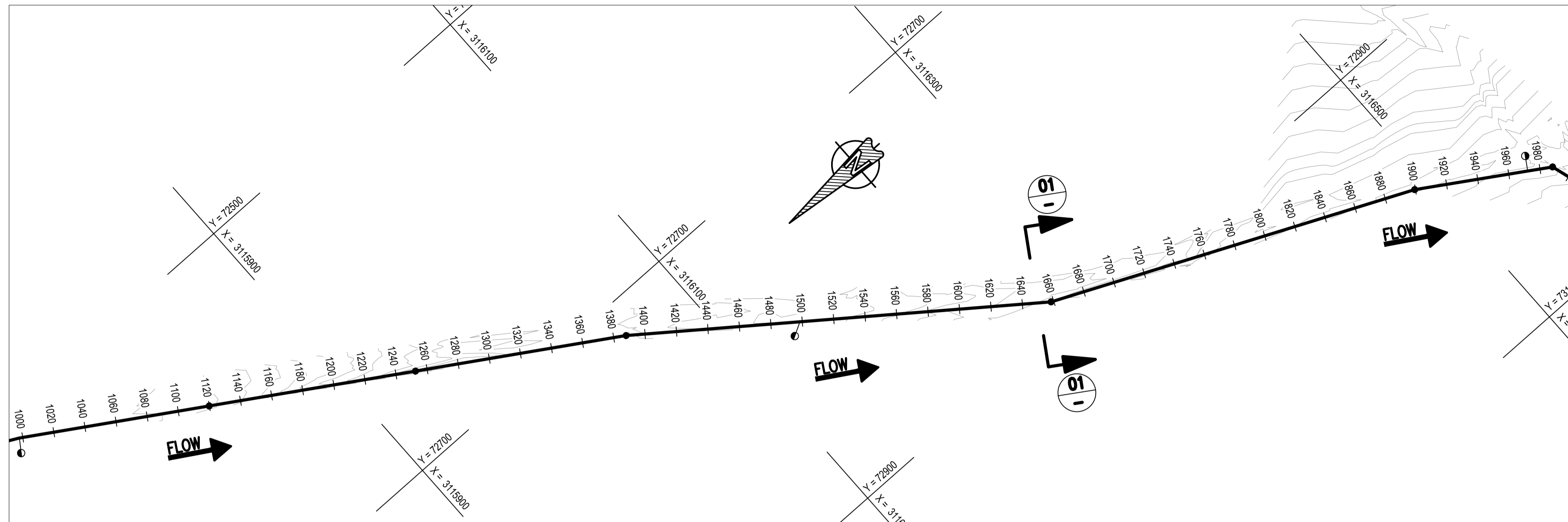
DATE: **OCTOBER 2025** SCALE: **AS SHOWN**

DRAWING No.	WA	LS	100	REVISION
J000167				A

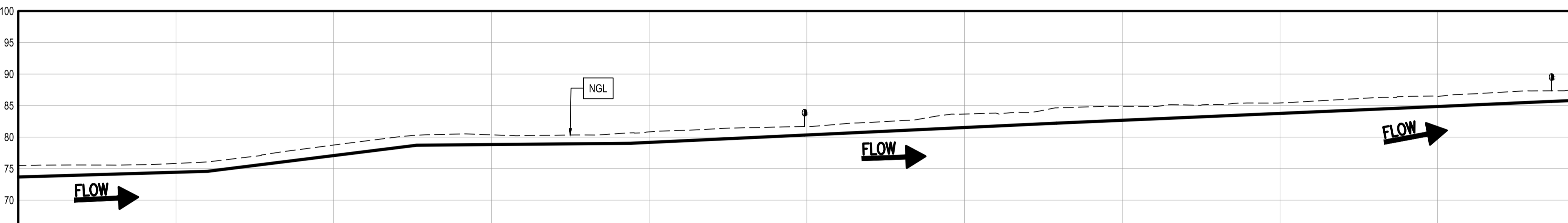
CAD FILENAME: _____ SIZE: **A1**

PIPELINE SUMMARY
FOR THIS DRAWING ONLY

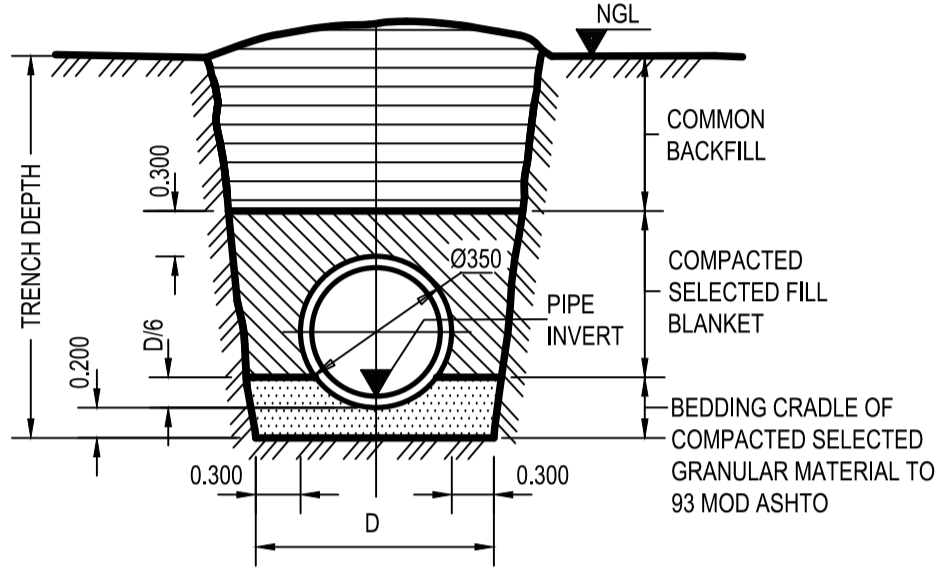
DESCRIPTION	QTY OR METER
AIR VALVE CHAMBER (QTY)	2
SCOUR VALVE CHAMBER (QTY)	0
STEEL x42 GRADE C (350mm OD)	1000.00
TOTAL PIPE LENGTH	1000.00



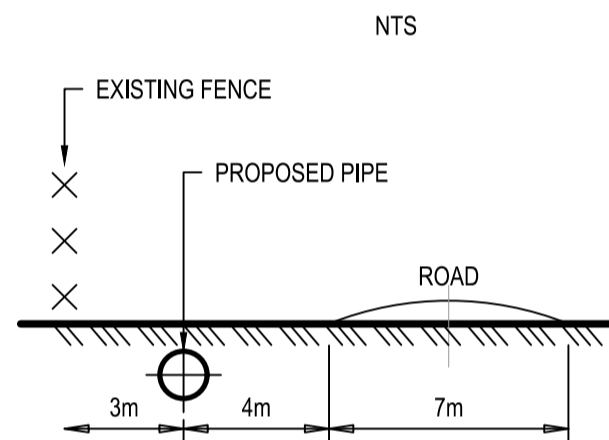
PLAN
CH.1000.00m TO CH.2000.00m
SCALE 1:2 000



LONG SECTION
CH.1000.00m TO CH.2000.00m
VERTICAL SCALE 1:500
HORIZONTAL SCALE 1:2 000



TYPICAL TRENCH CROSS-SECTION

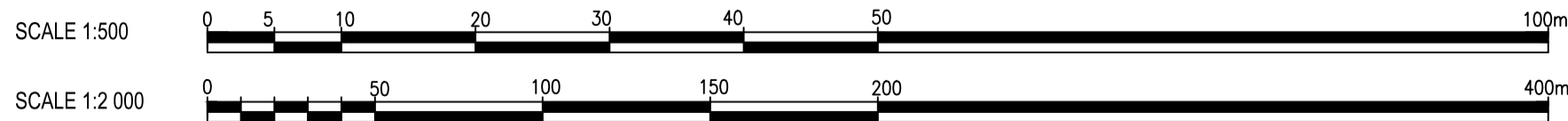


SECTION 01-01
POSITION OF PIPELINE IN
SERVIDUTE STRIP

SCALES:
Horizontal 1:2000
Vertical 1:500

DATUM 65.000

REFERENCE	N10	N11	N12	AV3	N13	N14	AV4	N15	
DISTANCE (m)	1119.904	1252.548	1387.275	1498.496	1688.278	1899.531	1972.156	2086.891	
GROUND LEVEL	76.057	80.297	80.670	81.685	84.637	86.432	87.336	87.566	
PIPE INVERT LEVELS	74.483	78.622	78.930	80.235	82.121	84.757	85.570	85.748	
TRENCH LEVEL	74.168	78.307	78.615	79.920	81.806	84.442	85.255	85.433	
SLOPE / LENGTH	-0.75% -1.133.1 122.04m	-3.12% -1.32.0 132.64m	-0.23% -1.440.3 135.43m	-1.18% -1.84.7 110.52m	-1.18% -1.84.7 159.78m	-1.09% -1.91.5 241.25m	-1.12% -1.89.4 72.62m	-1.12% -1.89.4 5.9788.77m	-1.12% -1.89.4 41.025
CHANGE IN DIRECTION	1.357 0.000 1.357	1.657 0.000 1.657	0.546 5.052 5.081	0.000 0.000 0.000	0.050 12.614 12.613	0.015 7.801 7.800	0.000 0.000 0.000	1.297 141.016 141.016	
CLASSIFICATION	350mm Ø STEEL x42 GRADE C CLASS 25								



NOTES:

- THIS DESIGN WAS ENGINEERED BY : ZIMILE
- THESE DRAWINGS MUST BE READ IN CONJUNCTION WITH THE SANS AND PROJECT SPECIFICATIONS.
- ALL SETTING OUT AND DIMENSIONS MUST BE CONFIRMED AND APPROVED ON SITE BY THE ENGINEER
- ALL CONSTRUCTION TO BE DONE IN ACCORDANCE WITH THE SANS AND PROJECT SPECIFICATIONS.
- ALL MATERIAL AND WORKMANSHIP MUST COMPLY WITH THE REQUIREMENTS OF THE LATEST RELEVANT SANS 1200 AND PROJECT SPECIFICATIONS
- THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER WITH REGARDS TO THE BOQ, DRAWINGS AND SPECIFICATION BEFORE ORDERING ANY MATERIAL.
- THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL POTENTIALLY CLASHING EXISTING SERVICES AND PROTECT THEM FROM DAMAGE THROUGHOUT THE DURATION OF THE WORKS
- PIPES TO BE LAID AT LEAST 1m AWAY FROM THE STAND BOUNDARIES AND 1m AWAY FROM THE ROAD EDGE

LEGEND

- PROPOSED WATER PIPE
- 350 Ø x42 STEEL PIPE DIAMETER, MATERIAL & CLASS
- NEW VALVE ON EXISTING PIPE
- NEW SCOUR VALVE
- NEW AIR VALVE
- NEW WATER METER
- NEW PIPE IN NEW SLEEVE
- PROPOSED RESERVOIR
- EXISTING BOREHOLE
- EXISTING RESERVOIR
- FENCE
- BENCHMARK
- ROAD
- ESKOM POWER LINES
- TREES

NODES CO-ORDINATES
CO-ORDINATE SYSTEM WGS 84

STRUCTURE NAME	Y	X
AV3	-72 787.801	-3 116 141.692
AV4	-73 021.647	-3 116 550.840
N10	-72 579.907	-3 115 825.651
N11	-72 649.928	-3 115 938.308
N12	-72 721.419	-3 116 053.327
N13	-72 883.771	-3 116 269.442
N14	-72 983.053	-3 116 489.320
N15	-73 030.134	-3 116 564.369

FOR TENDER
PURPOSES ONLY

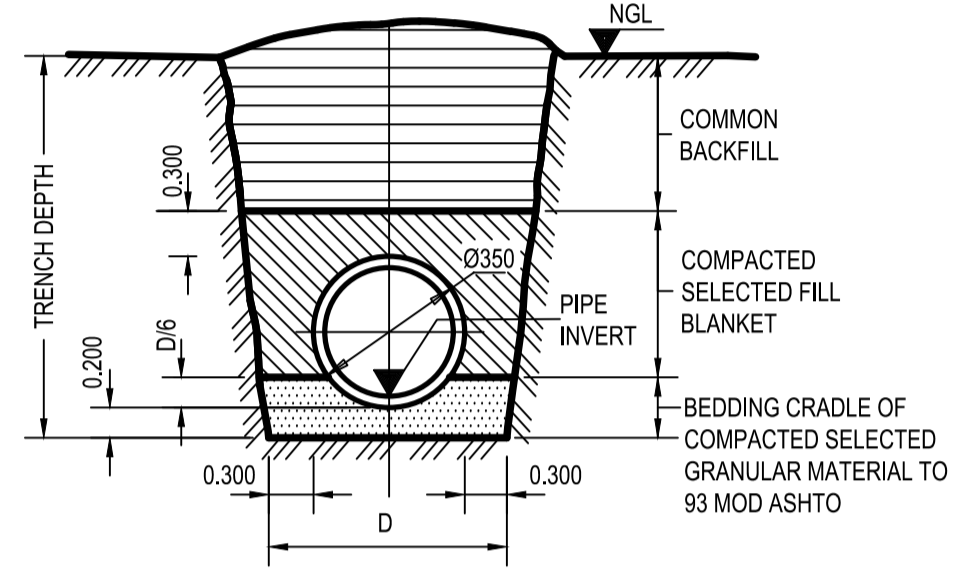
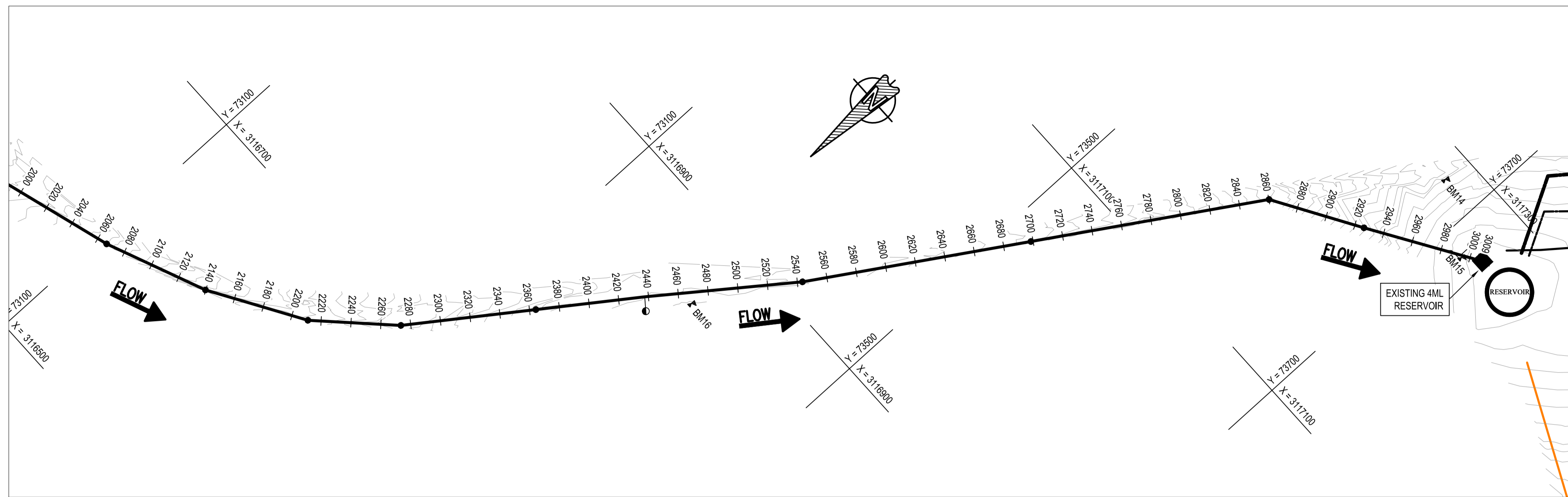
DESIGNED	M. MUKABWE	<p>INTERNATIONAL BUSINESS GATEWAY OFFICE PARK CNR PIONEER AVENUE AND ELIZABETH MIDRIDGE PARK TEL: (011) 466 - 8576 FAX: (011) 456 - 8813 E-MAIL: info@zimile.co.za</p>	REFERENCE DRAWINGS:	<p>CLIENT:</p>	APPROVED:	<p>B. SEAKE FOR ZIMILE CONSULTING ENGINEERS DESIGNATION: SENIOR ENGINEER</p>	PROJECT:	HLUHLUWE WATER SUPPLY SCHEME PHASE-2	PROJECT PHASE	PRELIMINARY	CONSTRUCTION	AS-BUILT	
DRAWN	B.N. GUDA		1. J000167-WT-DL-000-DRAWING LIST 2. J000167-WT-LA-002-GENERAL LAYOUT 3. J000167-WT-LS-100-PLAN AND LONG SECTION CH.0-1000		DATE:		OCTOBER 2025	SCALE:	AS SHOWN	DATE:	OCTOBER 2025	SCALE:	AS SHOWN
CHECKED	N. NDLOVU		4. _____ 5. _____ 6. _____ 7. _____		TITLE:		WTW TO CMND RES 350mm PIPELINE PLAN AND LONGITUDINAL SECTION CH.1000.00m TO CH.2000.00m SHEET 2 OF 3	DRAWING No.	J000167	WA	LS	101	REVISION
NO.	ISSUE FOR TENDER	10/10/2025	CLASSIFICATION	PIPE	CAD FILENAME	J000167-WT-LS-100-PLAN AND LONG SECTION CH.1000.00m TO CH.2000.00m SHEET 2 OF 3	SIZE	A1					

**PIPELINE SUMMARY
FOR THIS DRAWING ONLY**

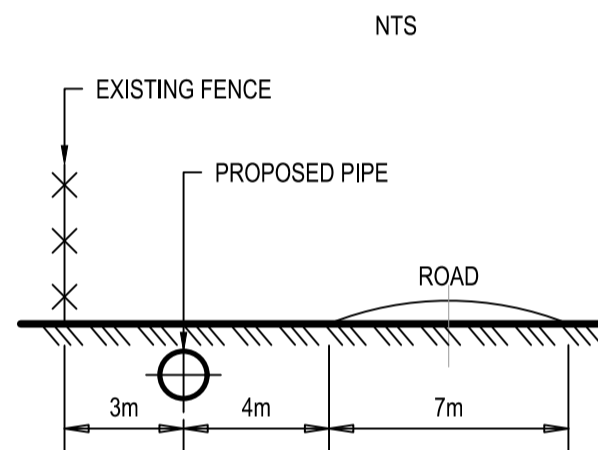
DESCRIPTION	QTY OR METER
AIR VALVE CHAMBER (QTY)	2
SCOUR VALVE CHAMBER (QTY)	0
STEEL x42 GRADE C (350mm OD)	1009.00
TOTAL PIPE LENGTH	1009.00

BENCHMARK CO-ORDINATES

POINTS	Y	X	Z
BM15	-73 718.955	-3 117 251.949	117.975
BM16	-73 396.870	-3 116 849.237	101.332



TYPICAL TRENCH CROSS-SECTION

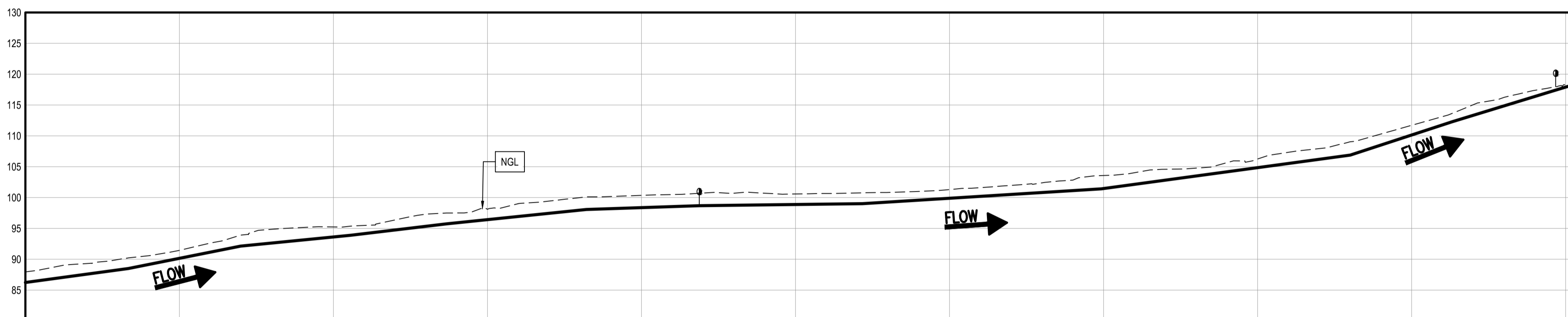


**SECTION 01-01
POSITION OF PIPELINE IN
SERVITUDE STRIP**

SCALES:
Horizontal 1:2000
Vertical 1:500

DATUM 80.000

REFERENCE	VERT	HOR	COMBINED
DISTANCE (m)			
GROUND LEVEL			
PIPE INVERT LEVELS			
TRENCH LEVEL			
SLOPE / LENGTH			
CHANGE IN DIRECTION			
CLASSIFICATION	PIPE		
	VALVE		



REFERENCE	N16	N17	N18	N19	N20	AV5	N21	N22	N23	N24	AV6	RES1
DISTANCE (m)	2065.891	2139.757	2211.611	2273.434	2364.253	2437.504	2543.443	2686.487	2860.145	2926.376	2993.520	3008.712
GROUND LEVEL	90.222	93.914	95.396	97.500	100.115	100.689	100.761	103.564	109.045	113.648	117.962	118.410
PIPE INVERT LEVELS	88.413	92.043	93.687	95.659	97.987	98.591	98.926	101.322	106.802	112.205	117.324	118.483
TRENCH LEVEL	88.089	91.728	93.486	95.344	97.672	98.276	98.611	101.007	106.487	111.890	117.010	118.169
SLOPE / LENGTH	-3.38% -1.29.6 78.77m	-4.98% -1.20.1 72.87m	-2.46% -1.40.6 71.40m	-2.98% -1.33.5 62.27m	-2.56% -1.39.0 90.82m	-0.82% -1.121.2 73.25m	-0.32% -1.317.0 105.94m	-1.55% -1.64.7 155.04m	-3.39% -1.29.5 161.66m	-8.16% -1.12.3 66.23m	-7.62% -1.13.1 67.14m	-7.62% -1.13.1 5.19m
CHANGE IN DIRECTION	0.914 6.138	1.441 8.627	0.288 13.295	0.240 9.855	0.998 0.000	0.292 1.264	0.705 4.582	1.056 1.056	2.722 26.593	0.304 0.986	0.000 0.000	0.000 0.000
CLASSIFICATION	350mm Ø STEEL x42 GRADE C											
	CLASS 25											

NOTES:

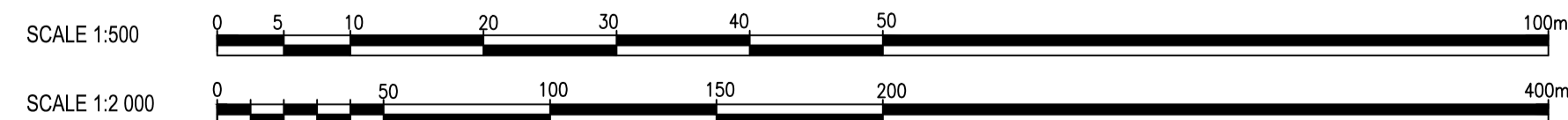
- THIS DESIGN WAS ENGINEERED BY : **ZIMILE**
- THESE DRAWINGS MUST BE READ IN CONJUNCTION WITH THE SANS AND PROJECT SPECIFICATIONS.
- ALL SETTING OUT AND DIMENSIONS MUST BE CONFIRMED AND APPROVED ON SITE BY THE ENGINEER
- ALL CONSTRUCTION TO BE DONE IN ACCORDANCE WITH THE SANS AND PROJECT SPECIFICATIONS.
- ALL MATERIAL AND WORKMANSHIP MUST COMPLY WITH THE REQUIREMENTS OF THE LATEST RELEVANT SANS 1200 AND PROJECT SPECIFICATIONS
- THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER WITH REGARDS TO THE BOQ, DRAWINGS AND SPECIFICATION BEFORE ORDERING ANY MATERIAL.
- THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL POTENTIALLY CLASHING EXISTING SERVICES AND PROTECT THEM FROM DAMAGE THROUGHOUT THE DURATION OF THE WORKS
- PIPES TO BE LAID AT LEAST 1m AWAY FROM THE STAND BOUNDARIES AND 1m AWAY FROM THE ROAD EDGE

LEGEND

- PROPOSED WATER PIPE
- 350 Ø x42 STEEL PIPE DIAMETER, MATERIAL & CLASS
- NEW VALVE ON EXISTING PIPE
- NEW SCOUR VALVE
- NEW AIR VALVE
- NEW WATER METER
- NEW PIPE IN NEW SLEEVE
- PROPOSED RESERVOIR
- EXISTING BOREHOLE
- EXISTING RESERVOIR
- FENCE
- BENCHMARK
- ROAD
- ESKOM POWER LINES
- TREES

**NODES CO-ORDINATES
CO-ORDINATE SYSTEM WGS 84**

STRUCTURE NAME	Y	X
AV5	-73 372.711	-3 116 830.563
N16	-73 105.505	-3 116 587.242
N17	-73 172.599	-3 116 615.663
N18	-73 233.502	-3 116 652.939
N19	-73 277.716	-3 116 696.791
N20	-73 330.300	-3 116 770.839
N21	-73 435.940	-3 116 915.564
N22	-73 518.244	-3 117 046.960
N23	-73 604.058	-3 117 183.960
N24	-73 660.624	-3 117 218.412
RES1	-73 730.303	-3 117 262.275



**LONG SECTION
CH.2000.00m TO CH.3009.00m**
VERTICAL SCALE 1:500
HORIZONTAL SCALE 1:2 000

**FOR TENDER
PURPOSES ONLY**

DESIGNED	M. MUKABWE
DRAWN	B.N. GUDA
CHECKED	N. NDLOVU
ISSUE FOR TENDER	10/10/2025
NATURE OF REVISION	DATE

ZIMILE
UNBOUNDED ENGINEERING

INTERNATIONAL BUSINESS
GATEWAY OFFICE PARK
CNR PIONEER AVENUE AND ELIZABETH
MIDRIDGE PARK
TEL: (011) 466 - 8576
FAX: (011) 466 - 8813
E-MAIL: info@zimile.co.za

COPYRIGHT RESERVED ©

REFERENCE DRAWINGS:
1. J000167-WT-DL-000-DRAWING LIST
2. J000167-WT-LA-002-GENERAL LAYOUT
3. J000167-WT-LS-100-PLAN AND LONG SECTION: CH.0-1000
4. J000167-WT-LS-100-PLAN AND LONG SECTION: CH.1000-2000
5.
6.
7.

CLIENT:

UMSIPALA WESIFUNDA
Umkhanyakude

APPROVED:
B. SEAKE FOR ZIMILE CONSULTING ENGINEERS
DESIGNATION: SENIOR ENGINEER
DATE: _____ SIGNATURE: _____

PROJECT:
HLULUWE WATER SUPPLY SCHEME PHASE-2
TITLE: WTW TO CMND RES 350mm PIPELINE PLAN AND LONGITUDINAL SECTION CH.2000.00m TO CH.3009.00m SHEET 3 OF 3

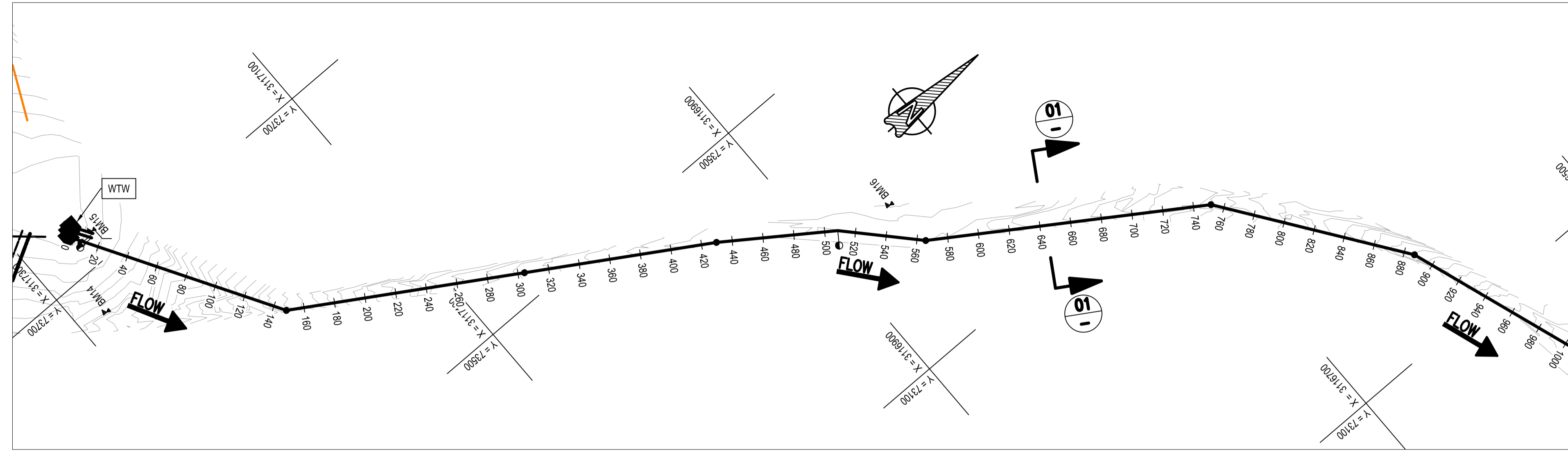
PROJECT PHASE			
PRELIMINARY	DDR	CONSTRUCTION	AS-BUILT
DATE: OCTOBER 2025	SCALE: AS SHOWN		
DRAWING No. J000167	WA	LS	102
CAD FILENAME			REVISION A
			SIZE A1

**PIPELINE SUMMARY
FOR THIS DRAWING ONLY**

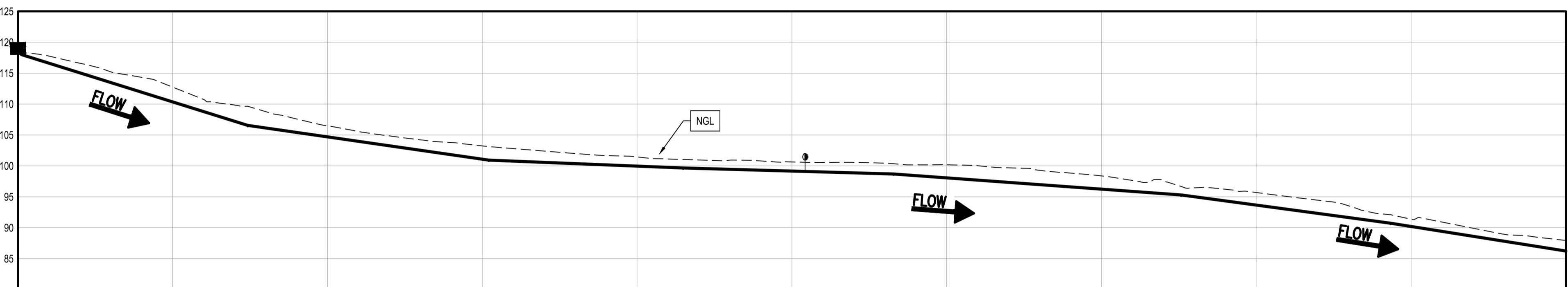
DESCRIPTION	QTY OR METER
AIR VALVE CHAMBER (QTY)	1
SCOUR VALVE CHAMBER (QTY)	0
X42 STEEL (350mm ND)	1000.00
TOTAL PIPE LENGTH	1000.00

BENCHMARK CO-ORDINATES

POINTS	Y	X	Z
BM14	-73 672.993	-3 117 278.875	115.233
BM15	-73 718.955	-3 117 251.949	117.975
BM16	-73 396.870	-3 116 849.237	101.332

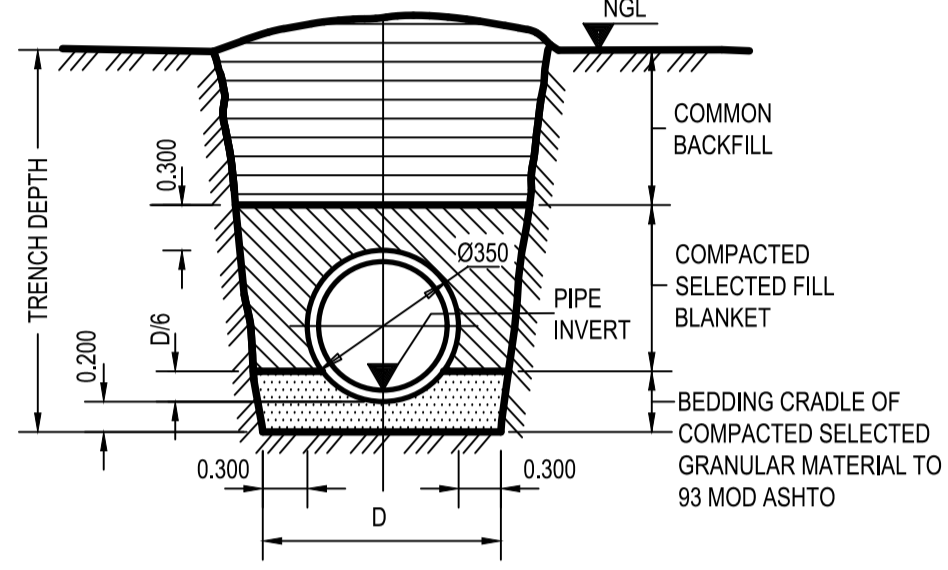


PLAN
CH.0.00m TO CH.1000.00m
SCALE 1:2 000

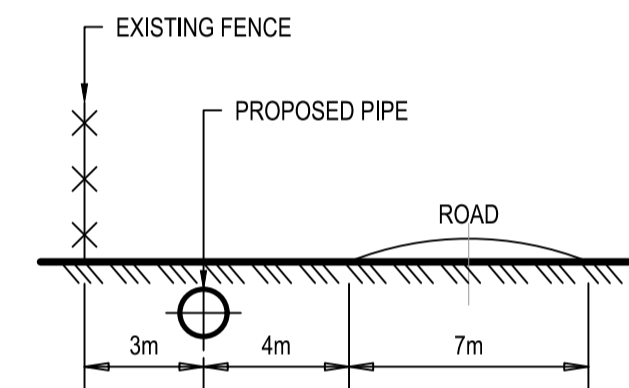


LONG SECTION
CH.0.00m TO CH.1000.00m
VERTICAL SCALE 1:500
HORIZONTAL SCALE 1:2 000

REFERENCE	G1	G2	G3	AV13	G4	G5	G6	1006.640	
DISTANCE (m)	148.459	304.214	429.774	508.494	565.686	751.414	866.729	1006.640	
GROUND LEVEL	109.644	103.113	101.036	100.588	100.356	96.881	92.105	86.688	
PIPE INVERT LEVELS	106.391	100.774	99.497	99.939	98.532	95.143	90.957	86.688	
TRENCH LEVEL	106.075	100.458	99.181	98.622	98.216	94.826	90.250	85.752	
SLOPE / LENGTH	7.84% 1:12.8 148.46m	3.61% 1:27.7 155.76m	1.02% 1:98.3 125.56m	0.71% 1:140.8 78.72m	0.71% 1:140.8 57.19m	1.82% 1:54.8 185.73m	3.38% 1:29.6 135.38m	3.97% 1:25.2 119.85m	
CHANGE IN DIRECTION	2.415 / 27.700 0.000 / 0.000	1.483 / 1.483 0.000 / 0.000	0.176 / 3.442 0.000 / 11.933	0.000 / 11.933 11.932 / 13.570	0.638 / 13.556 13.570 / 21.002	0.890 / 20.991 21.002 / 16.373	0.340 / 16.581 16.373 / 16.373		
CLASSIFICATION	350mm Ø x42 STEEL CLASS 16								



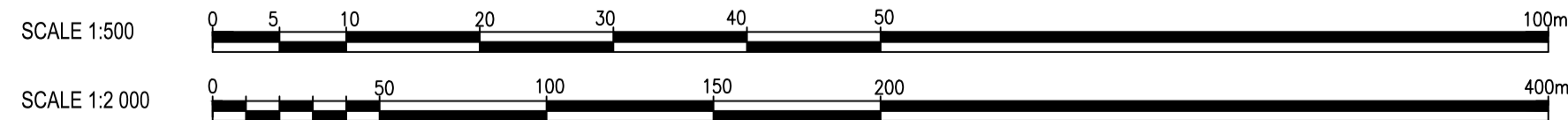
TYPICAL TRENCH CROSS-SECTION



**SECTION 01-01
POSITION OF PIPELINE IN
SERVITUDE STRIP**

SCALES:
Horizontal 1:2000
Vertical 1:500

DATUM 80.000



NOTES:

- THIS DESIGN WAS ENGINEERED BY : **ZIMILE**
- THESE DRAWINGS MUST BE READ IN CONJUNCTION WITH THE SANS AND PROJECT SPECIFICATIONS.
- ALL SETTING OUT AND DIMENSIONS MUST BE CONFIRMED AND APPROVED ON SITE BY THE ENGINEER
- ALL CONSTRUCTION TO BE DONE IN ACCORDANCE WITH THE SANS AND PROJECT SPECIFICATIONS.
- ALL MATERIAL AND WORKMANSHIP MUST COMPLY WITH THE REQUIREMENTS OF THE LATEST RELEVANT SANS 1200 AND PROJECT SPECIFICATIONS
- THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER WITH REGARDS TO THE BOQ, DRAWINGS AND SPECIFICATION BEFORE ORDERING ANY MATERIAL.
- THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL POTENTIALLY CLASHING EXISTING SERVICES AND PROTECT THEM FROM DAMAGE THROUGHOUT THE DURATION OF THE WORKS
- PIPES TO BE LAID AT LEAST 1m AWAY FROM THE STAND BOUNDARIES AND 1m AWAY FROM THE ROAD EDGE

LEGEND

- PROPOSED WATER PIPE
- 350 Ø x42 STEEL PIPE DIAMETER, MATERIAL & CLASS
- NEW VALVE ON EXISTING PIPE
- NEW SCOUR VALVE
- NEW AIR VALVE
- NEW WATER METER
- NEW PIPE IN NEW SLEEVE
- PROPOSED RESERVOIR
- EXISTING BOREHOLE
- EXISTING RESERVOIR
- FENCE
- BENCHMARK
- ROAD
- ESKOM POWER LINES
- TREES

**NODES CO-ORDINATES
CO-ORDINATE SYSTEM WGS 84**

STRUCTURE NAME	Y	X
AV13	-73 406.328	-3 116 887.158
G1	-73 598.531	-3 117 191.466
G2	-73 517.099	-3 117 058.694
G3	-73 451.445	-3 116 951.668
G4	-73 364.568	-3 116 848.082
G5	-73 262.477	-3 116 692.929
G6	-73 152.492	-3 116 614.001
RES3	-73 726.004	-3 117 267.564

**FOR TENDER
PURPOSES ONLY**

DESIGNED	M. MUKABWE
DRAWN	B.N. GUDA
CHECKED	N. NDLOVU
ISSUE FOR TENDER	10/10/2025
NATURE OF REVISION	DATE

ZIMILE
UNBOUNDED ENGINEERING

INTERNATIONAL BUSINESS GATEWAY OFFICE PARK
CNR PIONEER AVENUE AND ELIZABETH MIDRIDGE PARK
TEL: (011) 466 - 8576
FAX: (011) 456 - 8813
E-MAIL: info@zimile.co.za

COPYRIGHT RESERVED ©

REFERENCE DRAWINGS:

- J000167-WT-DL-000-DRAWING LIST
- J000167-WT-LA-002-GENERAL LAYOUT
-
-
-
-
-
-

CLIENT:

UMAPHALA WESIFUNZI
Umkhanyakude

APPROVED:

B. SEAKE
FOR ZIMILE CONSULTING ENGINEERS

DESIGNATION: SENIOR ENGINEER

DATE: _____ SIGNATURE: _____

PROJECT:

**HLUHLUWE
WATER SUPPLY SCHEME
PHASE-2**

TITLE:
FROM COMMAND RES. TO 4ML PROPOSED RES.
PLAN AND LONGITUDINAL SECTION
CH.0.00m TO CH.1000.00m SHEET 1 OF 7

PROJECT PHASE

PRELIMINARY	TENDER	CONSTRUCTION	AS-BUILT
-------------	--------	--------------	----------

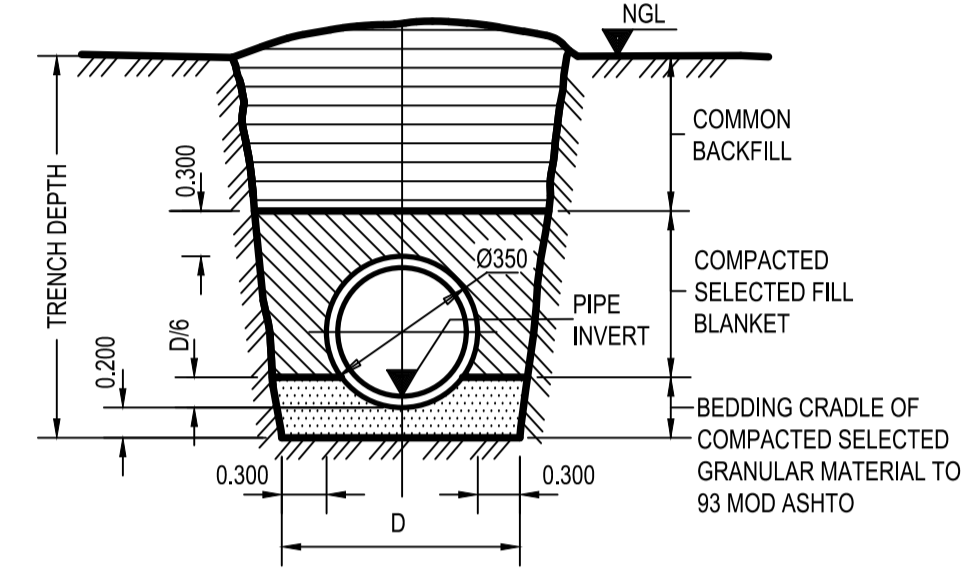
DATE: OCTOBER 2025 SCALE: AS SHOWN

DRAWING No.	WA	LS	110	REVISION
J000167				A

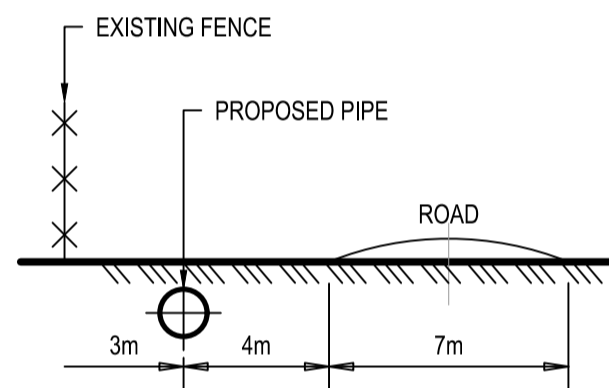
CAD FILENAME: _____ SIZE: A1

PIPELINE SUMMARY
FOR THIS DRAWING ONLY

DESCRIPTION	QTY OR METER
AIR VALVE CHAMBER (QTY)	2
SCOUR VALVE CHAMBER (QTY)	1
X42 STEEL (350mm ND)	1000.00
TOTAL PIPE LENGTH	1000.00



TYPICAL TRENCH CROSS-SECTION

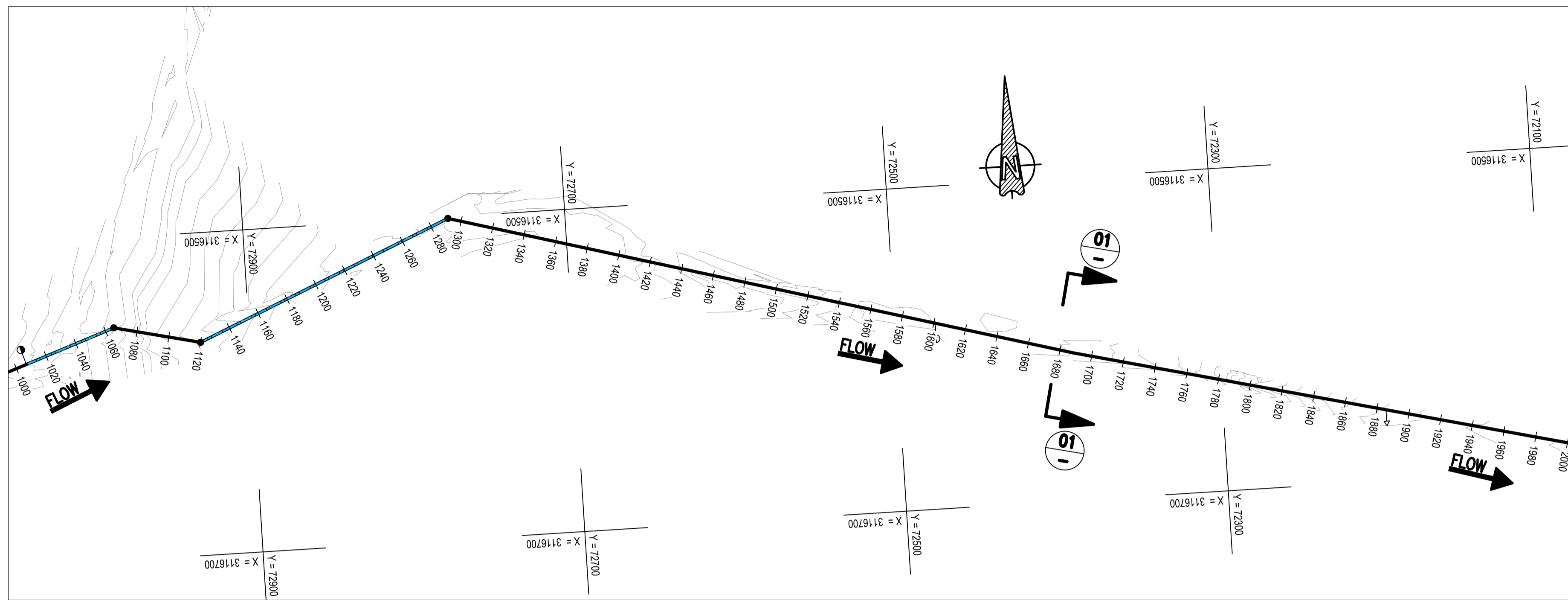


SECTION 01-01
POSITION OF PIPELINE IN
SERVITUDE STRIP

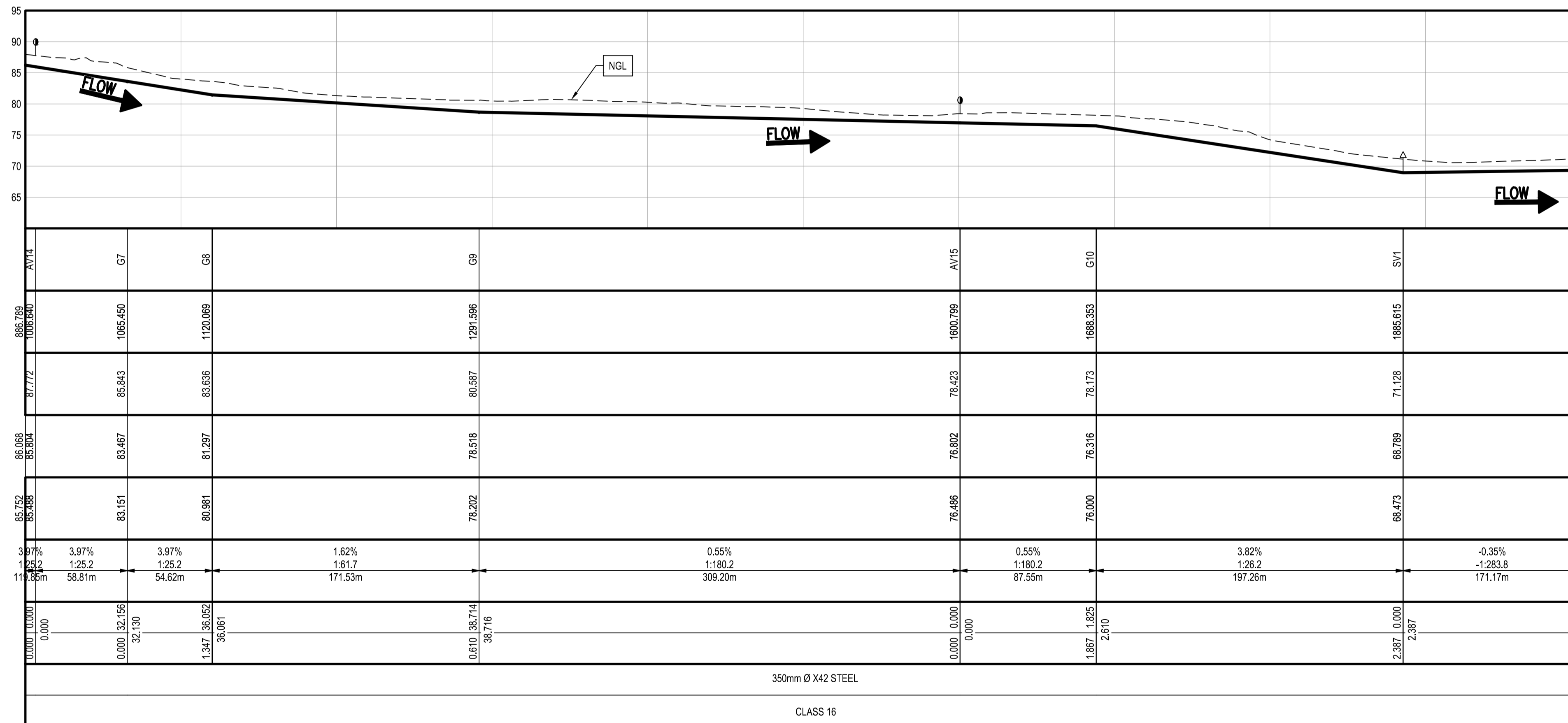
SCALES:
Horizontal 1:2000
Vertical 1:500

DATUM 60.000

REFERENCE	PIPE
DISTANCE (m)	VALVE
GROUND LEVEL	
PIPE INVERT LEVELS	
TRENCH LEVEL	
SLOPE / LENGTH	
CHANGE IN DIRECTION	
CLASSIFICATION	

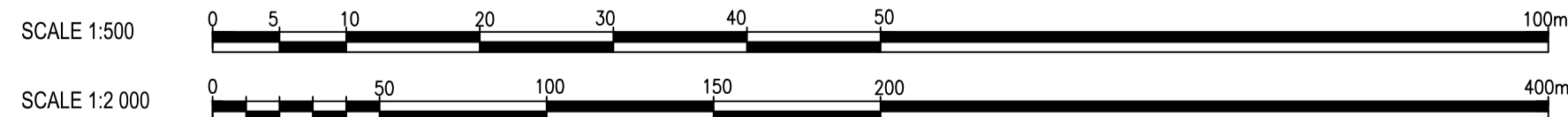


PLAN
CH.1000.00m TO CH.2000.00m
SCALE 1:2 000



LONG SECTION
CH.1000.00m TO CH.2000.00m

VERTICAL SCALE 1:500
HORIZONTAL SCALE 1:2 000



NOTES:

- THIS DESIGN WAS ENGINEERED BY : **ZIMILE**
- THESE DRAWINGS MUST BE READ IN CONJUNCTION WITH THE SANS AND PROJECT SPECIFICATIONS.
- ALL SETTING OUT AND DIMENSIONS MUST BE CONFIRMED AND APPROVED ON SITE BY THE ENGINEER
- ALL CONSTRUCTION TO BE DONE IN ACCORDANCE WITH THE SANS AND PROJECT SPECIFICATIONS.
- ALL MATERIAL AND WORKMANSHIP MUST COMPLY WITH THE REQUIREMENTS OF THE LATEST RELEVANT SANS 1200 AND PROJECT SPECIFICATIONS
- THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER WITH REGARDS TO THE BOQ, DRAWINGS AND SPECIFICATION BEFORE ORDERING ANY MATERIAL.
- THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL POTENTIALLY CLASHING EXISTING SERVICES AND PROTECT THEM FROM DAMAGE THROUGHOUT THE DURATION OF THE WORKS
- PIPES TO BE LAID AT LEAST 1m AWAY FROM THE STAND BOUNDARIES AND 1m AWAY FROM THE ROAD EDGE

LEGEND

- PROPOSED WATER PIPE
- 350 Ø x42 STEEL PIPE DIAMETER, MATERIAL & CLASS
- NEW VALVE ON EXISTING PIPE
- NEW SCOUR VALVE
- NEW AIR VALVE
- NEW WATER METER
- NEW PIPE IN NEW SLEEVE
- PROPOSED RESERVOIR
- EXISTING BOREHOLE
- EXISTING RESERVOIR
- FENCE
- BENCHMARK
- ROAD
- ESKOM POWER LINES
- TREES

NODES CO-ORDINATES
CO-ORDINATE SYSTEM WGS 84

STRUCTURE NAME	Y	X
AV14	-73 039.228	-3 116 574.816
G7	-72 983.650	-3 116 555.588
G8	-72 930.447	-3 116 567.942
G9	-72 772.530	-3 116 500.978
G10	-72 390.642	-3 116 608.574
SV1	-72 199.164	-3 116 655.996

FOR TENDER
PURPOSES ONLY

DESIGNED	M. MUKABWE
DRAWN	B.N. GUDA
CHECKED	N. NDLOVU
ISSUE FOR TENDER	10/10/2025
NATURE OF REVISION	DATE

ZIMILE
UNBOUNDED ENGINEERING

INTERNATIONAL BUSINESS GATEWAY OFFICE PARK
CNR PIONEER AVENUE AND ELIZABETH MIDRIDGE PARK
TEL: (011) 466 - 8576
FAX: (011) 466 - 8813
E-MAIL: info@zimile.co.za

COPYRIGHT RESERVED ©

REFERENCE DRAWINGS:

- J000167-WT-DL-000-DRAWING LIST
- J000167-WT-LA-002-GENERAL LAYOUT
- J000167-WT-LS-110-PLAN AND LONG SECTION CH.0-1000

CLIENT: **UMKHANYAKUDE**

APPROVED: **B. SEAKE**
FOR ZIMILE CONSULTING ENGINEERS

DESIGNATION: SENIOR ENGINEER

PROJECT: **HLUHLUWE WATER SUPPLY SCHEME PHASE-2**

TITLE: **FROM COMMAND RES. TO 4ML PROPOSED RES. PLAN AND LONGITUDINAL SECTION CH.1000.00m TO CH.2000.00m SHEET 2 OF 7**

PROJECT PHASE

PRELIMINARY	TENDER	CONSTRUCTION	AS-BUILT

DATE: OCTOBER 2025 SCALE: AS SHOWN

DRAWING No.	WA	LS	111	REVISION
J000167				A

CAD FILENAME: [unreadable]

REVISION

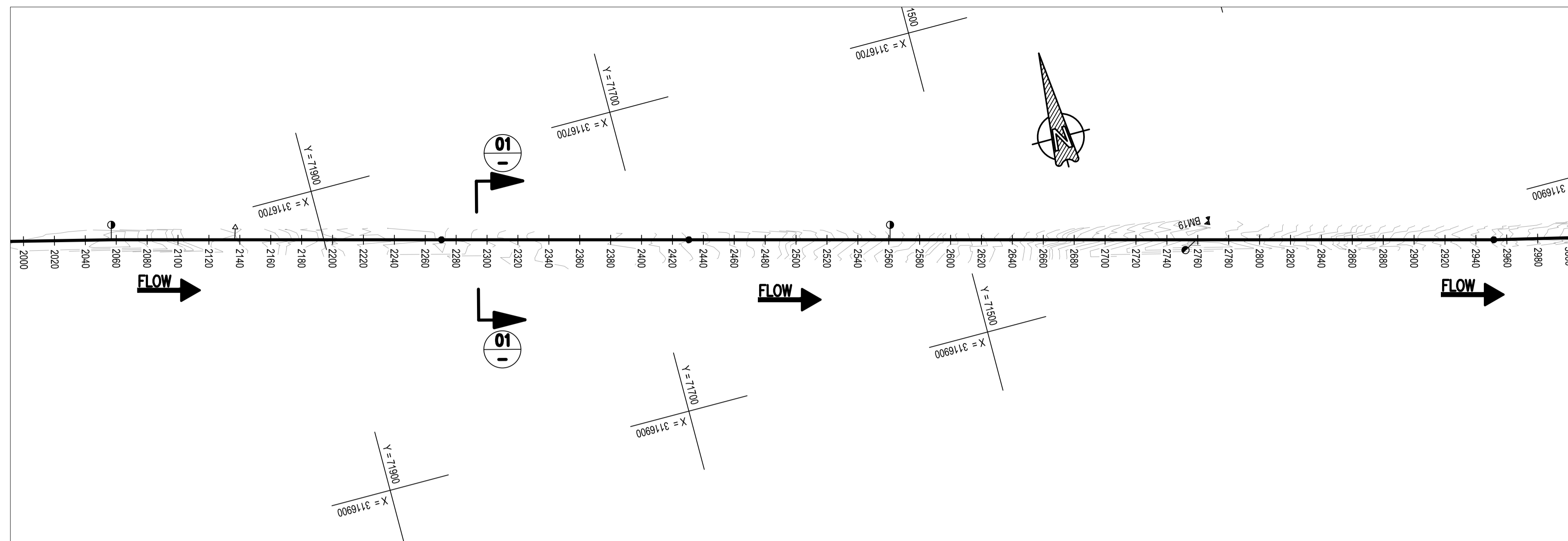
NO.	DATE	DESCRIPTION
A	10/10/2025	ISSUE FOR TENDER

**PIPELINE SUMMARY
FOR THIS DRAWING ONLY**

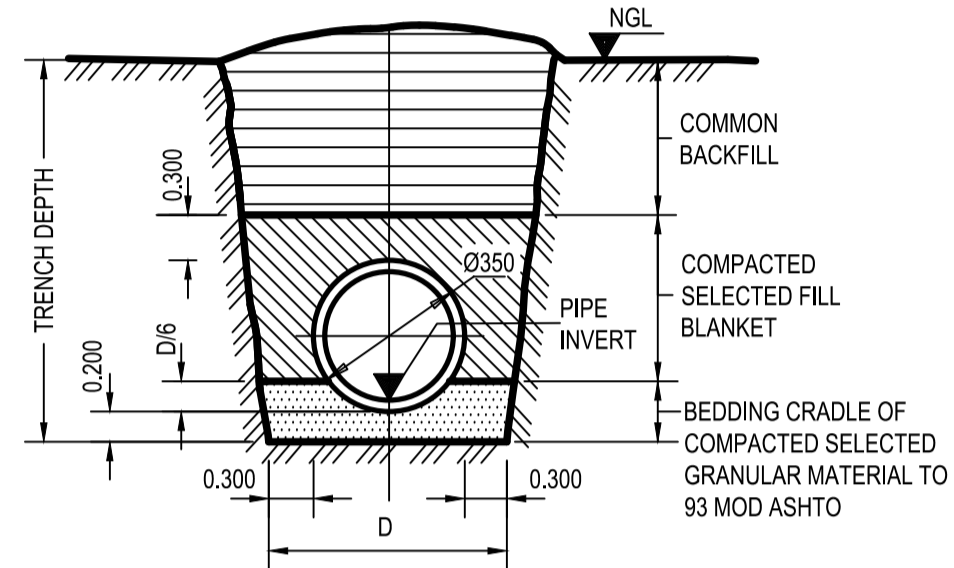
DESCRIPTION	QTY OR METER
AIR VALVE CHAMBER (QTY)	3
SCOUR VALVE CHAMBER (QTY)	1
X42 STEEL (350mm ND)	1000.00
TOTAL PIPE LENGTH	1000.00

BENCHMARK CO-ORDINATES

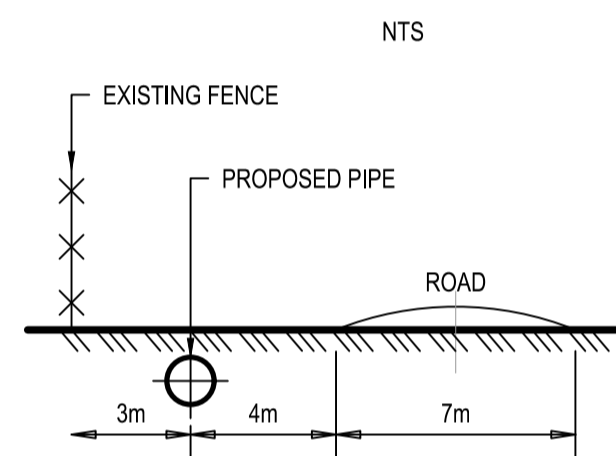
POINTS	Y	X	Z
BM19	-71 343.169	-3 116 865.355	89.144



PLAN
CH.2000.00m TO CH.3000.00m
SCALE 1:2 000



TYPICAL TRENCH CROSS-SECTION

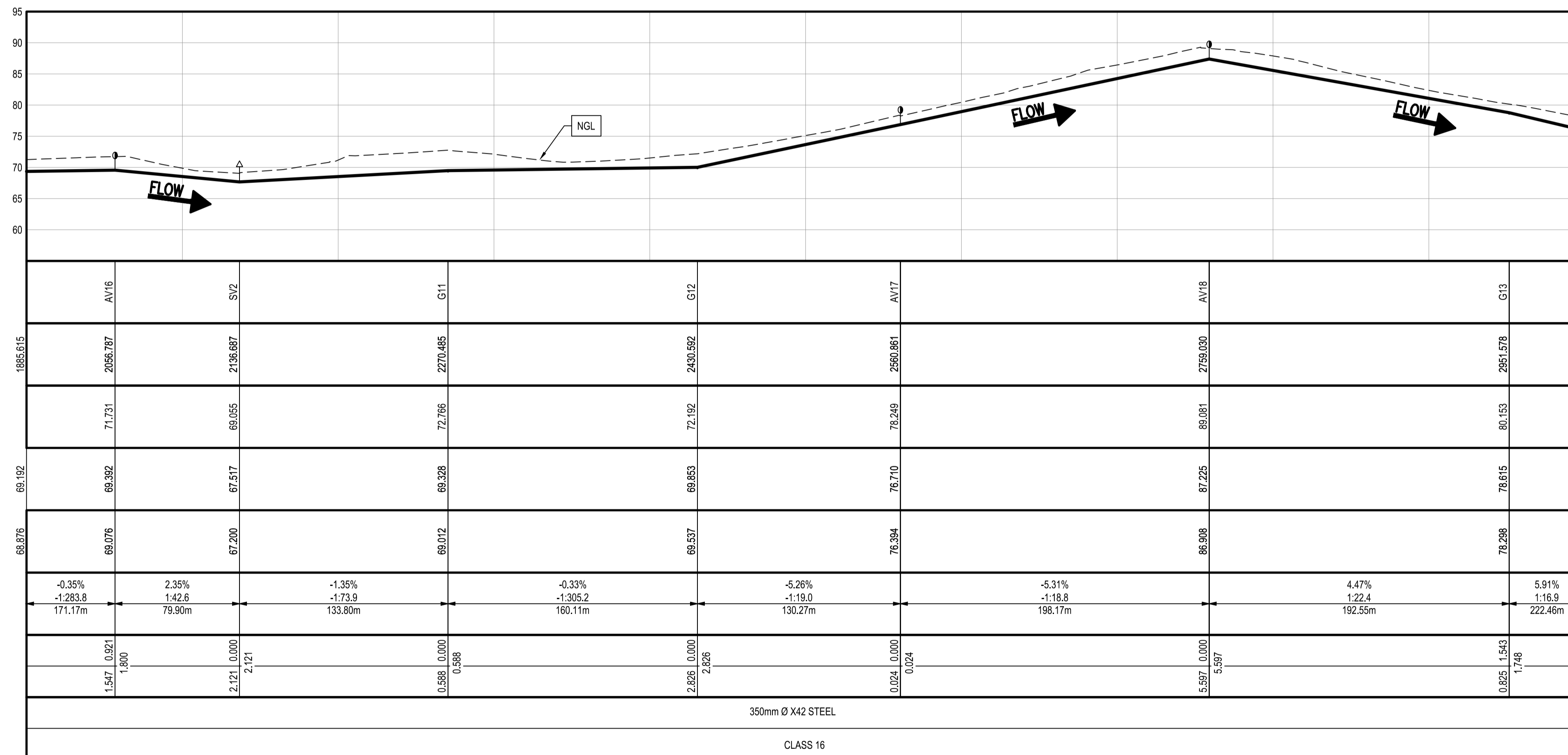


**SECTION 01-01
POSITION OF PIPELINE IN
SERVITUDE STRIP**

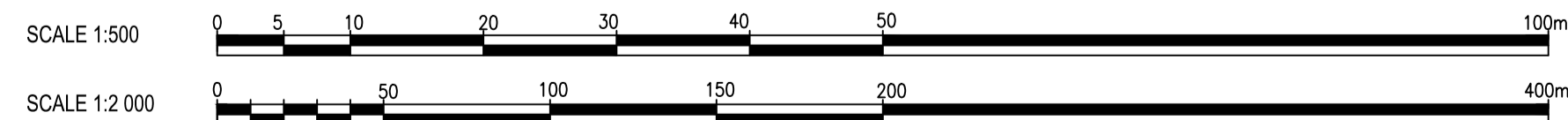
SCALES:
Horizontal 1:2000
Vertical 1:500

DATUM 55.000

REFERENCE	VERT. HICR	COMBINED
DISTANCE (m)		
GROUND LEVEL		
PIPE INVERT LEVELS		
TRENCH LEVEL		
SLOPE / LENGTH		
CHANGE IN DIRECTION		
CLASSIFICATION	PIPE	VALVE



LONG SECTION
CH.2000.00m TO CH.3000.00m
VERTICAL SCALE 1:500
HORIZONTAL SCALE 1:2 000



NOTES:

- THIS DESIGN WAS ENGINEERED BY : **ZIMILE**
- THESE DRAWINGS MUST BE READ IN CONJUNCTION WITH THE SANS AND PROJECT SPECIFICATIONS.
- ALL SETTING OUT AND DIMENSIONS MUST BE CONFIRMED AND APPROVED ON SITE BY THE ENGINEER
- ALL CONSTRUCTION TO BE DONE IN ACCORDANCE WITH THE SANS AND PROJECT SPECIFICATIONS.
- ALL MATERIAL AND WORKMANSHIP MUST COMPLY WITH THE REQUIREMENTS OF THE LATEST RELEVANT SANS 1200 AND PROJECT SPECIFICATIONS
- THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER WITH REGARDS TO THE BOQ, DRAWINGS AND SPECIFICATION BEFORE ORDERING ANY MATERIAL.
- THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL POTENTIALLY CLASHING EXISTING SERVICES AND PROTECT THEM FROM DAMAGE THROUGHOUT THE DURATION OF THE WORKS
- PIPES TO BE LAID AT LEAST 1m AWAY FROM THE STAND BOUNDARIES AND 1m AWAY FROM THE ROAD EDGE

LEGEND

- PROPOSED WATER PIPE
- PIPE DIAMETER, MATERIAL & CLASS
- NEW VALVE ON EXISTING PIPE
- NEW SCOUR VALVE
- NEW AIR VALVE
- NEW WATER METER
- NEW PIPE IN NEW SLEEVE
- PROPOSED RESERVOIR
- EXISTING BOREHOLE
- EXISTING RESERVOIR
- FENCE
- BENCHMARK
- ROAD
- ESKOM POWER LINES
- TREES

**NODES CO-ORDINATES
CO-ORDINATE SYSTEM WGS 84**

STRUCTURE NAME	Y	X
AV16	-72 033.013	-3 116 697.147
AV17	-71 545.734	-3 116 826.181
AV18	-71 354.167	-3 116 876.909
G11	-71 826.435	-3 116 751.850
G12	-71 671.662	-3 116 792.834
G13	-71 168.035	-3 116 926.198
SV2	-71 955.774	-3 116 717.600

**FOR TENDER
PURPOSES ONLY**

DESIGNED	M. MUKABWE
DRAWN	B.N. GUDA
CHECKED	N. NDLOVU
ISSUE FOR TENDER	10/10/2025
NATURE OF REVISION	DATE

ZIMILE
UNBOUNDED ENGINEERING

INTERNATIONAL BUSINESS GATEWAY OFFICE PARK
CNR PIONEER AVENUE AND ELIZABETH MIDRIDGE PARK
TEL: (011) 466 - 8576
FAX: (011) 466 - 8813
E-MAIL: info@zimile.co.za

COPYRIGHT RESERVED ©

REFERENCE DRAWINGS:

- 1.0000167-WT-DL-000-DRAWING LIST
- 2.0000167-WT-LA-002-GENERAL LAYOUT
- 3.0000167-WT-LS-110-PLAN AND LONG SECTION CH.0-1000
- 4.0000167-WT-LS-111-PLAN AND LONG SECTION CH.1000-2000

CLIENT: **UMAPHALA WESIFUDU**
Umkhanyakude

APPROVED: **B. SEAKE**
FOR ZIMILE CONSULTING ENGINEERS

DESIGNATION: **SENIOR ENGINEER**

DATE: _____ SIGNATURE: _____

PROJECT: **HLUHLUWE WATER SUPPLY SCHEME PHASE-2**

TITLE: **FROM COMMAND RES. TO 4ML PROPOSED RES. PLAN AND LONGITUDINAL SECTION CH.2000.00m TO CH.3000.00m SHEET 3 OF 7**

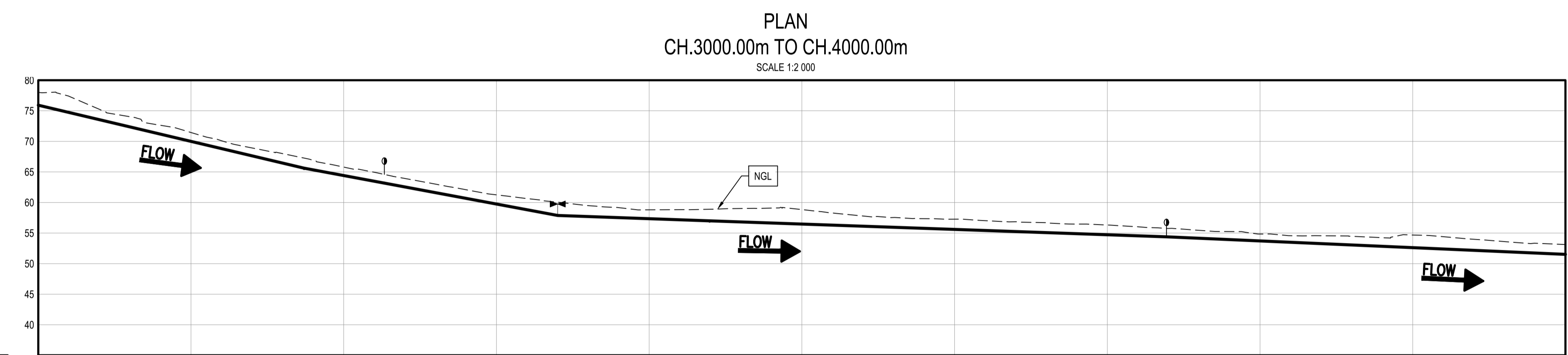
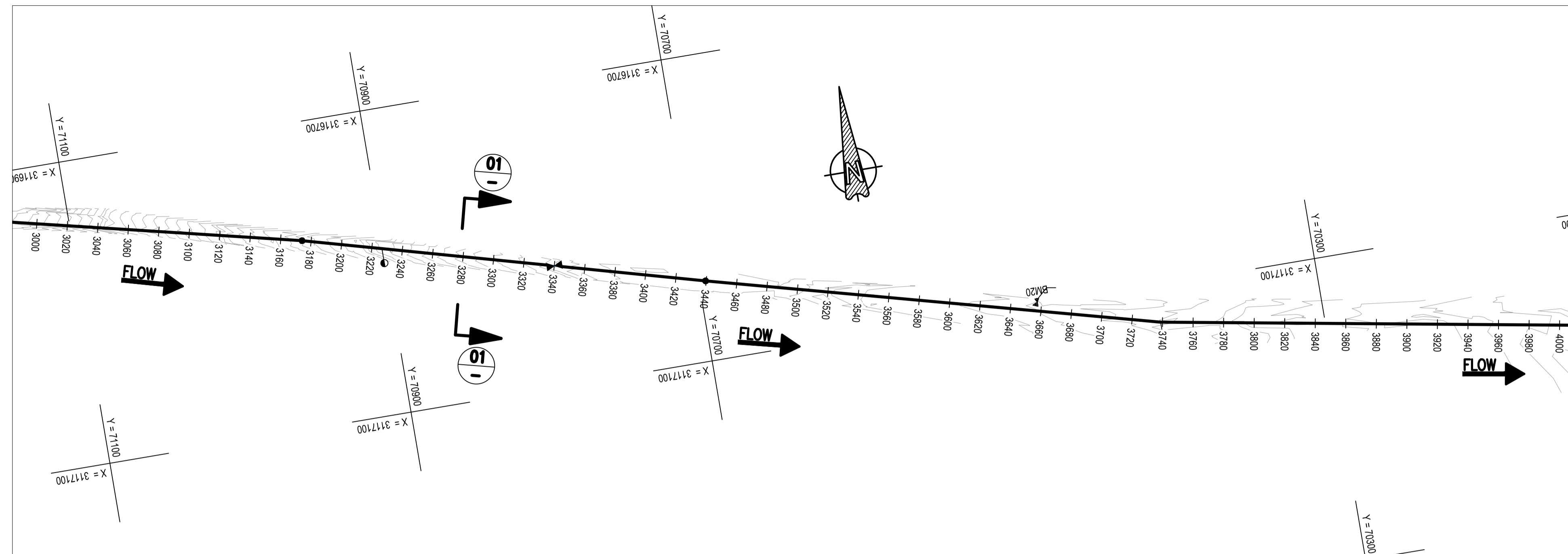
PROJECT PHASE			
PRELIMINARY	TENDER	CONSTRUCTION	AS-BUILT
DATE: OCTOBER 2025	SCALE: AS SHOWN		
DRAWING No. J000167	WA	LS	112
CAD FILENAME			REVISION A
			SIZE A1

**PIPELINE SUMMARY
FOR THIS DRAWING ONLY**

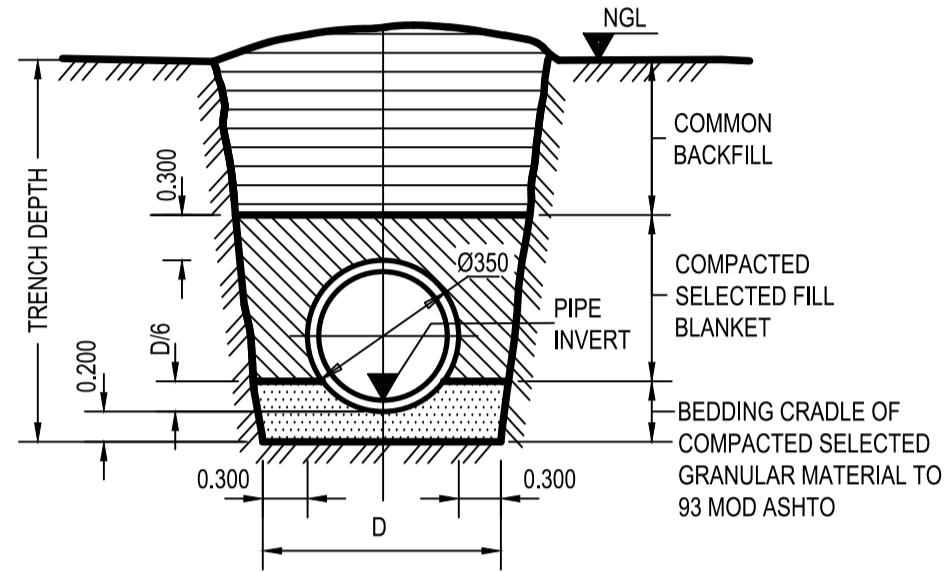
DESCRIPTION	QTY OR METER
AIR VALVE CHAMBER (QTY)	2
SCOUR VALVE CHAMBER (QTY)	0
ISOLATION VALVE CHAMBER (QTY)	1
X42 STEEL (350mm ND)	1000.00
TOTAL PIPE LENGTH	1000.00

BENCHMARK CO-ORDINATES

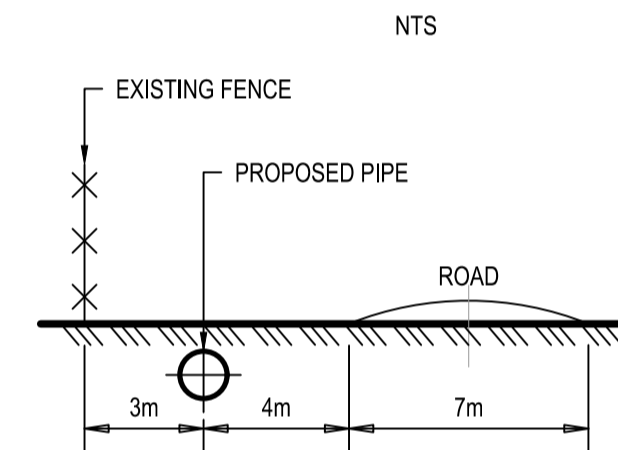
POINTS	Y	X	Z
BM20	-70 483.639	-3 117 096.132	56.844



REFERENCE	PIPE INVERT LEVELS	TRENCH LEVEL	SLOPE / LENGTH	CHANGE IN DIRECTION	CLASSIFICATION
G14	67.282	65.140	5.91% 118.9 222.46m	0.716 2.052 2.170	350mm Ø X42 STEEL CLASS 16
AV19	64.582	62.880	4.66% 121.5 52.56m	0.000 0.000 0.000	
IV1	60.053	57.398	4.66% 121.5 113.52m	2.167 0.000 2.167	350mm Ø X42 STEEL CLASS 16
G16	58.888	56.528	0.88% 1114.2 99.49m	0.000 0.510 0.510	
AV20	55.764	53.808	0.88% 191.1 298.16m	0.127 4.760 4.762	350mm Ø X42 STEEL CLASS 16
	51.356	51.040	1.10% 191.1 312.35m		



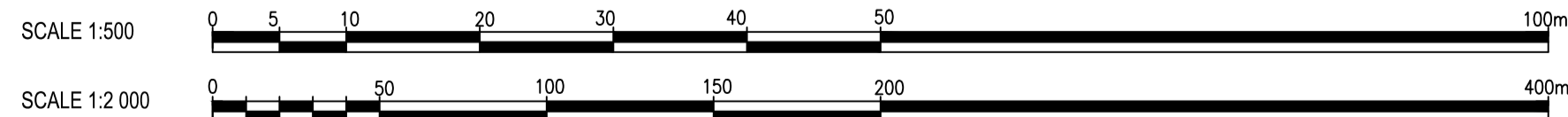
TYPICAL TRENCH CROSS-SECTION



**SECTION 01-01
POSITION OF PIPELINE IN
SERVITUDE STRIP**

SCALES:
Horizontal 1:2000
Vertical 1:500

DATUM 35.000



NOTES:

- THIS DESIGN WAS ENGINEERED BY : **ZIMILE**
- THESE DRAWINGS MUST BE READ IN CONJUNCTION WITH THE SANS AND PROJECT SPECIFICATIONS.
- ALL SETTING OUT AND DIMENSIONS MUST BE CONFIRMED AND APPROVED ON SITE BY THE ENGINEER
- ALL CONSTRUCTION TO BE DONE IN ACCORDANCE WITH THE SANS AND PROJECT SPECIFICATIONS.
- ALL MATERIAL AND WORKMANSHIP MUST COMPLY WITH THE REQUIREMENTS OF THE LATEST RELEVANT SANS 1200 AND PROJECT SPECIFICATIONS
- THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER WITH REGARDS TO THE BOQ, DRAWINGS AND SPECIFICATION BEFORE ORDERING ANY MATERIAL.
- THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL POTENTIALLY CLASHING EXISTING SERVICES AND PROTECT THEM FROM DAMAGE THROUGHOUT THE DURATION OF THE WORKS
- PIPES TO BE LAID AT LEAST 1m AWAY FROM THE STAND BOUNDARIES AND 1m AWAY FROM THE ROAD EDGE

LEGEND

- PROPOSED WATER PIPE
- 350 Ø x42 STEEL PIPE DIAMETER, MATERIAL & CLASS
- NEW VALVE ON EXISTING PIPE
- NEW SCOUR VALVE
- NEW AIR VALVE
- NEW WATER METER
- NEW PIPE IN NEW SLEEVE
- PROPOSED RESERVOIR
- EXISTING BOREHOLE
- EXISTING RESERVOIR
- FENCE
- BENCHMARK
- ROAD
- ESKOM POWER LINES
- TREES

**NODES CO-ORDINATES
CO-ORDINATE SYSTEM WGS 84**

STRUCTURE NAME	Y	X
AV19	-70 900.844	-3 116 991.238
AV20	-70 406.268	-3 117 124.155
G14	-70 951.533	-3 116 977.332
G16	-70 695.461	-3 117 047.581
IV1	-70 791.371	-3 117 021.270

**FOR TENDER
PURPOSES ONLY**

NO.	ISSUE FOR TENDER	DATE	DESIGNED	DRAWN	CHECKED
A	ISSUE FOR TENDER	10/10/2025	M. MUKABWE	B.N. GUDA	N. NDLOVU
	NATURE OF REVISION	DATE			

ZIMILE
UNBOUNDED ENGINEERING

INTERNATIONAL BUSINESS GATEWAY OFFICE PARK
CNR PIONEER AVENUE AND ELIZABETH MIDRIDGE PARK
TEL: (011) 466 - 8576
FAX: (011) 466 - 8813
E-MAIL: info@zimile.co.za

COPYRIGHT RESERVED ©

REFERENCE DRAWINGS:

- J000167-WT-DL-000-DRAWING LIST
- J000167-WT-LA-002-GENERAL LAYOUT
- J000167-WT-LS-110-PLAN AND LONG SECTION CH.0-1000
- J000167-WT-LS-111-PLAN AND LONG SECTION CH.1000-2000
- J000167-WT-LS-112-PLAN AND LONG SECTION CH.2000-3000
-
-
-

CLIENT: **UMKHAHYAKUDE**

APPROVED: **B. SEAKE**
FOR ZIMILE CONSULTING ENGINEERS
DESIGNATION: SENIOR ENGINEER

PROJECT: **HLUHLUWE WATER SUPPLY SCHEME PHASE-2**

TITLE: **FROM COMMAND RES. TO 4ML PROPOSED RES. PLAN AND LONGITUDINAL SECTION CH.3000.00m TO CH.4000.00m SHEET 4 OF 7**

PROJECT PHASE

PRELIMINARY	TENDER	CONSTRUCTION	AS-BUILT

DATE: OCTOBER 2025 SCALE: AS SHOWN

DRAWING No.	WA	LS	113	REVISION
J000167				A

CAD FILENAME: **ProjectName\Drawings\001\01-01-LS-113-PLAN AND LONG SECTION CH.3000-4000.dwg**

DATE: OCTOBER 2025 SCALE: AS SHOWN

DRAWING No.	WA	LS	113	REVISION
J000167				A

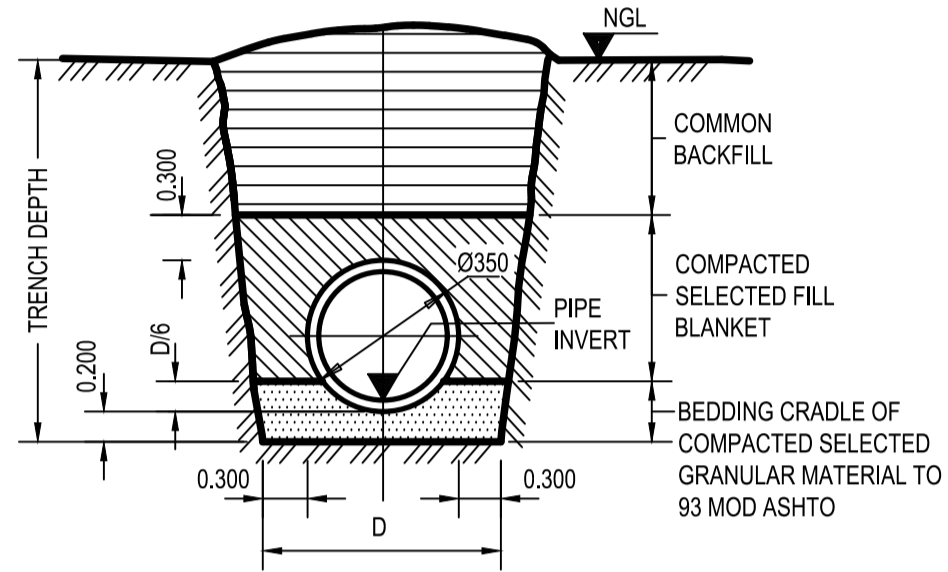
CAD FILENAME: **ProjectName\Drawings\001\01-01-LS-113-PLAN AND LONG SECTION CH.3000-4000.dwg**

**PIPELINE SUMMARY
FOR THIS DRAWING ONLY**

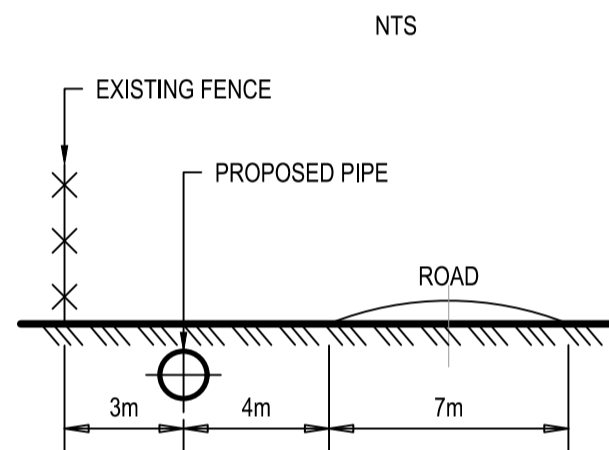
DESCRIPTION	QTY OR METER
AIR VALVE CHAMBER (QTY)	2
SCOUR VALVE CHAMBER (QTY)	1
X42 STEEL (350mm ND)	1000.00
TOTAL PIPE LENGTH	1000.00

BENCHMARK CO-ORDINATES

POINTS	Y	X	Z
BM21	-69 945.376	-3 117 270.647	51.301
BM22	-69 943.474	-3 117 256.432	51.295



TYPICAL TRENCH CROSS-SECTION

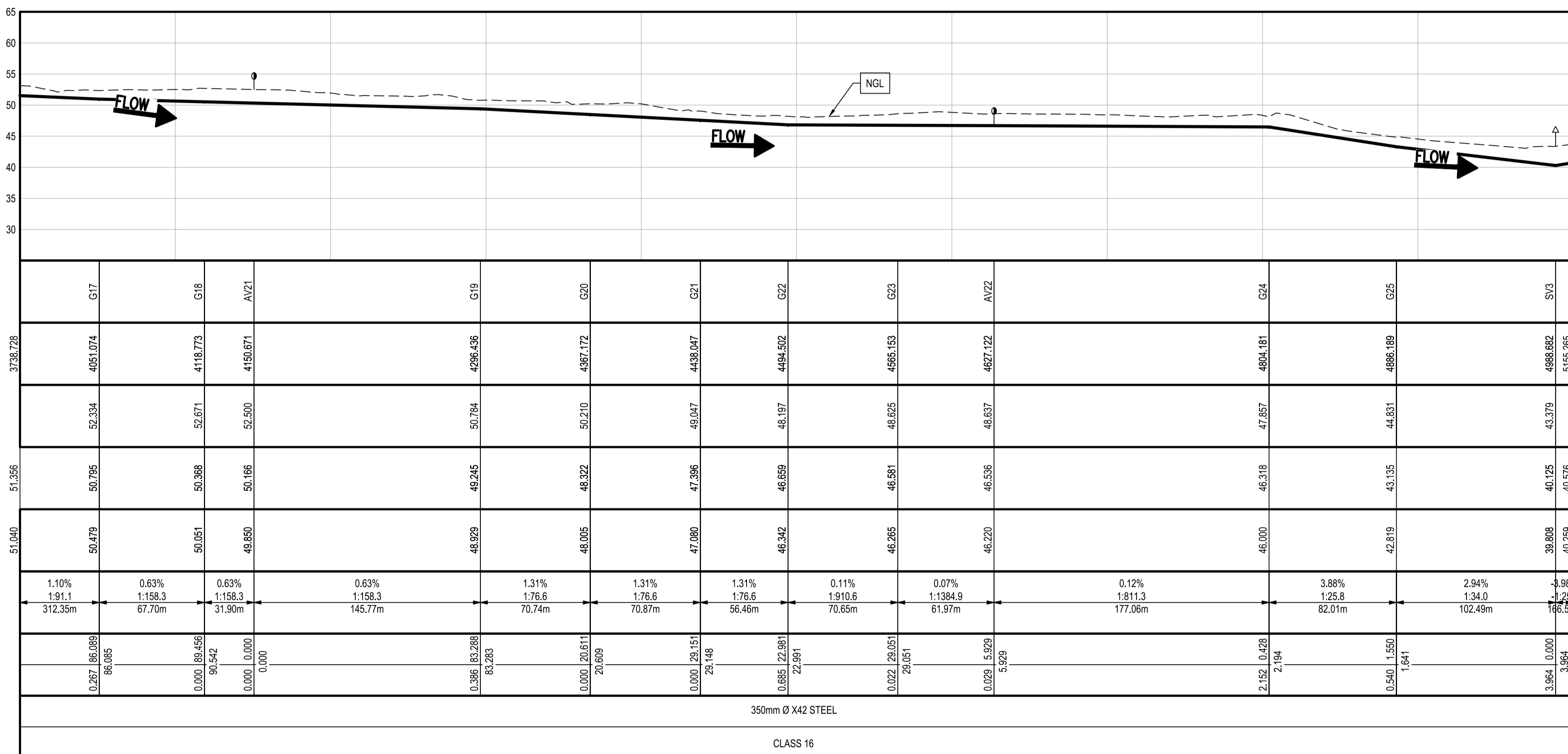


**SECTION 01-01
POSITION OF PIPELINE IN
SERVITUDE STRIP**

SCALES:
Horizontal 1:2000
Vertical 1:500

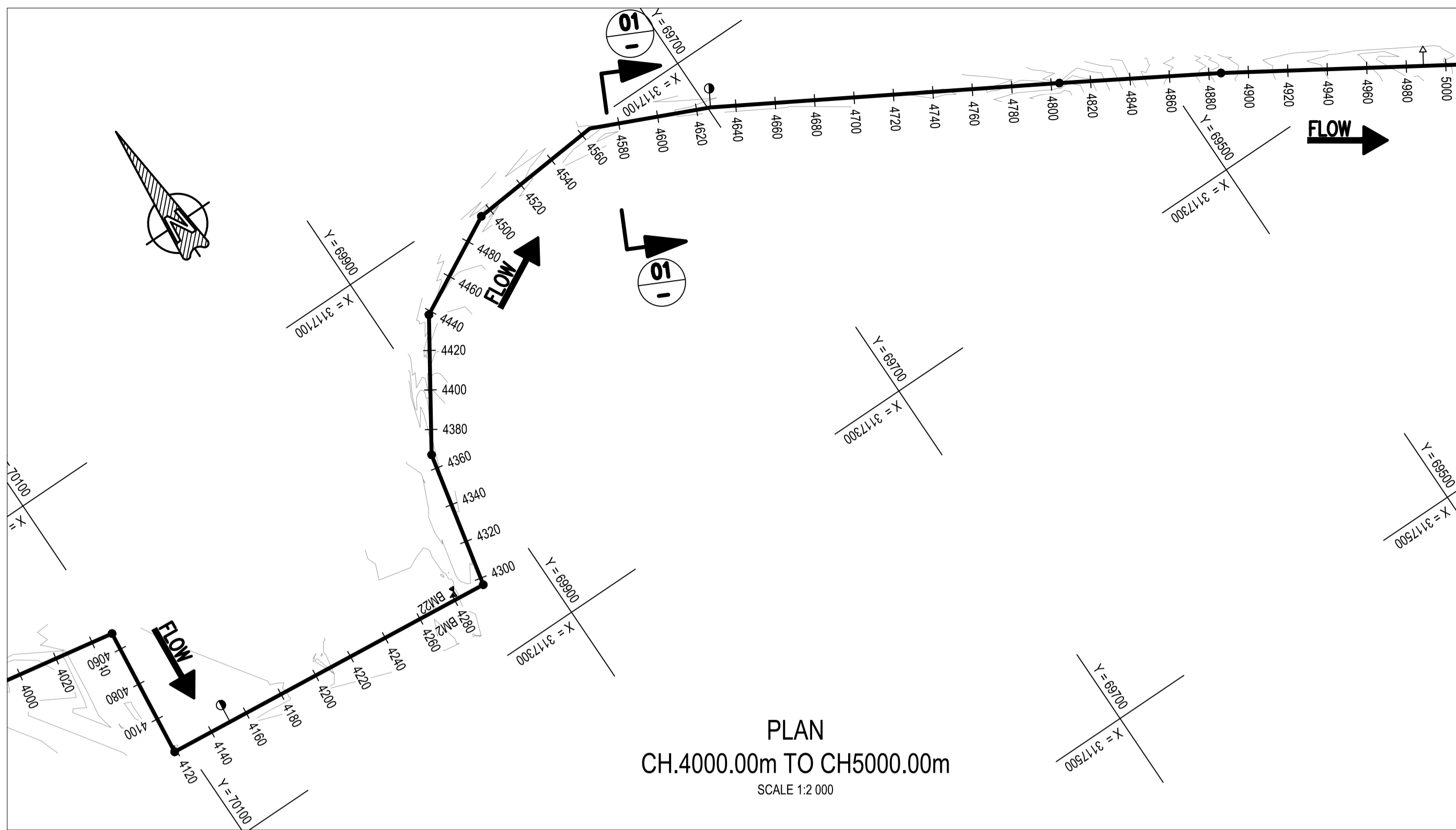
DATUM 25.000

REFERENCE	DISTANCE (m)	GROUND LEVEL	PIPE INVERT LEVELS	TRENCH LEVEL	SLOPE / LENGTH	CHANGE IN DIRECTION	CLASSIFICATION
G17	4051.074	52.354	50.795	50.479	1.10% 312.35m	0.267 86.005	PIPE
G18	4118.773	52.671	50.388	50.051	0.63% 67.70m	0.000 90.542	
AV21	4158.671	52.500	50.166	48.850	0.63% 31.90m	0.000 0.000	VALVE
G19	4296.436	50.784	49.245	48.929	0.63% 145.77m	0.386 83.288	
G20	4367.172	50.210	48.322	48.005	1.31% 70.74m	0.000 20.611	PIPE
G21	4438.047	49.047	47.396	47.080	1.31% 70.87m	0.000 20.151	
G22	4494.502	48.197	46.659	46.342	1.31% 176.6	0.685 22.981	VALVE
G23	4565.153	48.625	46.581	46.265	0.11% 70.65m	0.002 29.051	
AV22	4627.122	48.637	46.556	46.220	0.07% 61.97m	0.009 5.928	PIPE
G24	4804.181	47.857	46.318	46.000	1:1384.9 70.65m	2.152 2.184	
G25	4886.189	44.831	43.135	42.819	3.88% 82.01m	0.540 1.550	VALVE
SV3	4988.682	43.379	40.125	39.808	0.12% 177.06m	3.984 0.000	



**LONG SECTION
CH.4000.00m TO CH.5000.00m**

VERTICAL SCALE 1:500
HORIZONTAL SCALE 1:2000



**PLAN
CH.4000.00m TO CH.5000.00m**

SCALE 1:2 000

NOTES:

- THIS DESIGN WAS ENGINEERED BY : **ZIMILE**
- THESE DRAWINGS MUST BE READ IN CONJUNCTION WITH THE SANS AND PROJECT SPECIFICATIONS.
- ALL SETTING OUT AND DIMENSIONS MUST BE CONFIRMED AND APPROVED ON SITE BY THE ENGINEER
- ALL CONSTRUCTION TO BE DONE IN ACCORDANCE WITH THE SANS AND PROJECT SPECIFICATIONS.
- ALL MATERIAL AND WORKMANSHIP MUST COMPLY WITH THE REQUIREMENTS OF THE LATEST RELEVANT SANS 1200 AND PROJECT SPECIFICATIONS
- THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER WITH REGARDS TO THE BOQ, DRAWINGS AND SPECIFICATION BEFORE ORDERING ANY MATERIAL.
- THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL POTENTIALLY CLASHING EXISTING SERVICES AND PROTECT THEM FROM DAMAGE THROUGHOUT THE DURATION OF THE WORKS
- PIPES TO BE LAID AT LEAST 1m AWAY FROM THE STAND BOUNDARIES AND 1m AWAY FROM THE ROAD EDGE

LEGEND

- PROPOSED WATER PIPE
- 350 Ø x42 STEEL PIPE DIAMETER, MATERIAL & CLASS
- NEW VALVE ON EXISTING PIPE
- NEW SCOUR VALVE
- NEW AIR VALVE
- NEW WATER METER
- NEW PIPE IN NEW SLEEVE
- PROPOSED RESERVOIR
- EXISTING BOREHOLE
- EXISTING RESERVOIR
- FENCE
- BENCHMARK
- ROAD
- ESKOM POWER LINES
- TREES

**NODES CO-ORDINATES
CO-ORDINATE SYSTEM WGS 84**

STRUCTURE NAME	Y	X
AV21	-70 074.253	-3 117 249.201
AV22	-69 698.713	-3 117 127.700
G17	-70 088.735	-3 117 178.772
G18	-70 105.998	-3 117 246.080
G19	-69 929.188	-3 117 263.463
G20	-69 914.086	-3 117 194.357
G21	-69 875.549	-3 117 134.875
G22	-69 825.660	-3 117 108.448
G23	-69 765.271	-3 117 102.376
G24	-69 545.450	-3 117 216.360
G25	-69 474.772	-3 117 257.954
SV3	-69 387.879	-3 117 312.309

**FOR TENDER
PURPOSES ONLY**

DESIGNED	M. MUKABWE
DRAWN	B.N. GUDA
CHECKED	N. NDLOVU
ISSUE FOR TENDER	10/10/2025
NATURE OF REVISION	DATE



INTERNATIONAL BUSINESS
GATEWAY OFFICE PARK
CNR PIONEER AVENUE AND ELIZABETH
MIDRIDGE PARK
TEL: (011) 466 - 8576
FAX: (011) 456 - 8813
E-MAIL: info@zimile.co.za

COPYRIGHT RESERVED ©

REFERENCE DRAWINGS:
1. J000167-WT-DL-000-DRAWING LIST
2. J000167-WT-LA-002-GENERAL LAYOUT
3. J000167-WT-LS-110-PLAN AND LONG SECTION CH.0-1000
4. J000167-WT-LS-111-PLAN AND LONG SECTION CH.1000-2000
5. J000167-WT-LS-112-PLAN AND LONG SECTION CH.2000-3000
6. J000167-WT-LS-113-PLAN AND LONG SECTION CH.3000-4000
7.
8.



CLIENT:	
APPROVED:	B. SEAKE
FOR ZIMILE CONSULTING ENGINEERS	
DESIGNATION:	SENIOR ENGINEER
DATE:	
SIGNATURE:	

PROJECT:	HLULUWE WATER SUPPLY SCHEME PHASE-2
TITLE:	FROM COMMAND RES. TO 4ML PROPOSED RES. PLAN AND LONGITUDINAL SECTION CH.4000.00m TO CH.5000.00m SHEET 5 OF 7

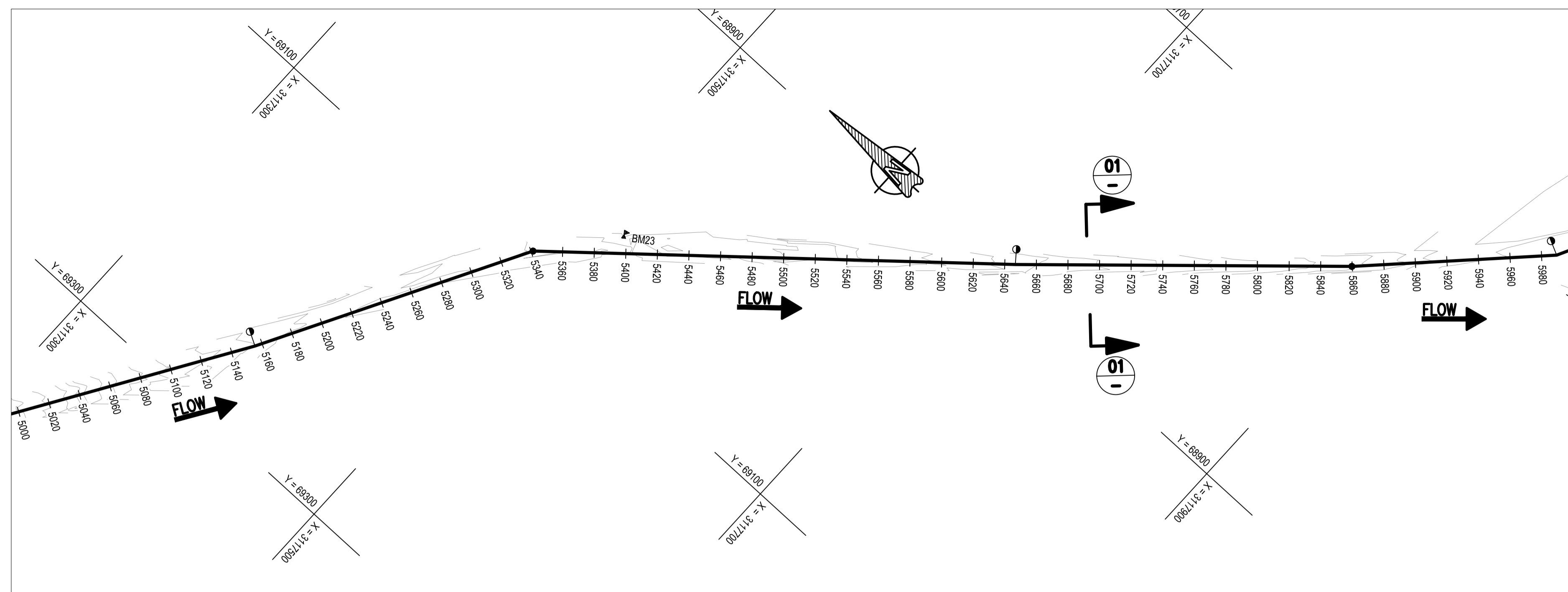
PROJECT PHASE			
PRELIMINARY	TENDER	CONSTRUCTION	AS-BUILT
DATE:	OCTOBER 2025	SCALE:	AS SHOWN
DRAWING No.	J000167	WA	LS
REVISION	114		A
CAD FILENAME			A1

**PIPELINE SUMMARY
FOR THIS DRAWING ONLY**

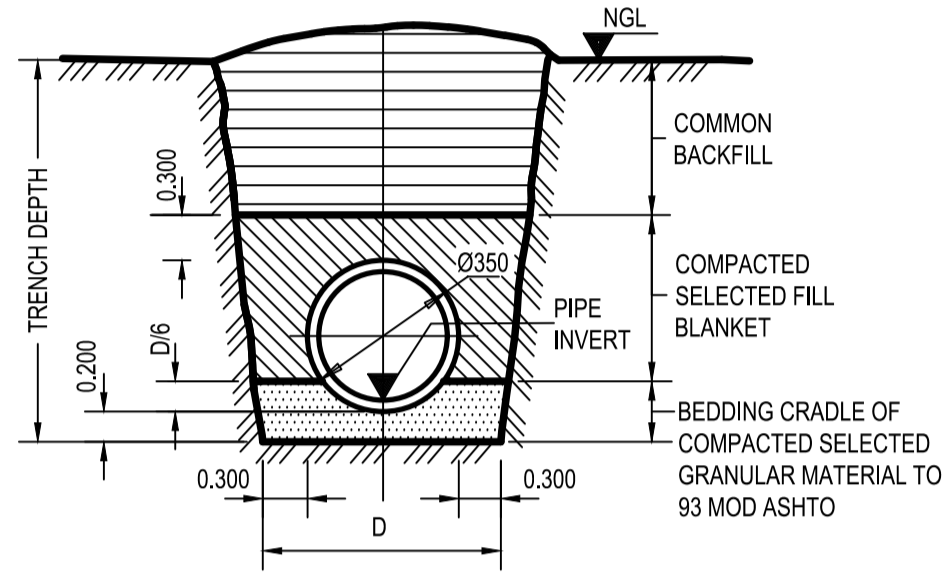
DESCRIPTION	QTY OR METER
AIR VALVE CHAMBER (QTY)	3
SCOUR VALVE CHAMBER (QTY)	0
X42 STEEL (350mm OD)	1000.00
TOTAL PIPE LENGTH	1000.00

BENCHMARK CO-ORDINATES

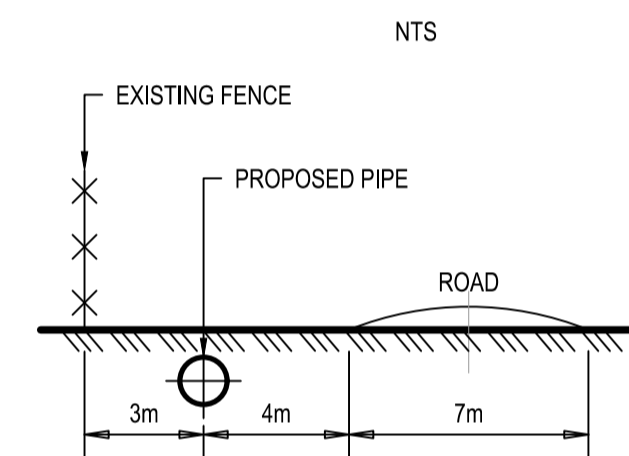
POINTS	Y	X	Z
BM23	-69 038.270	-3 117 526.465	49.702



PLAN
CH.5000.00m TO CH.6000.00m
SCALE 1:2 000



TYPICAL TRENCH CROSS-SECTION

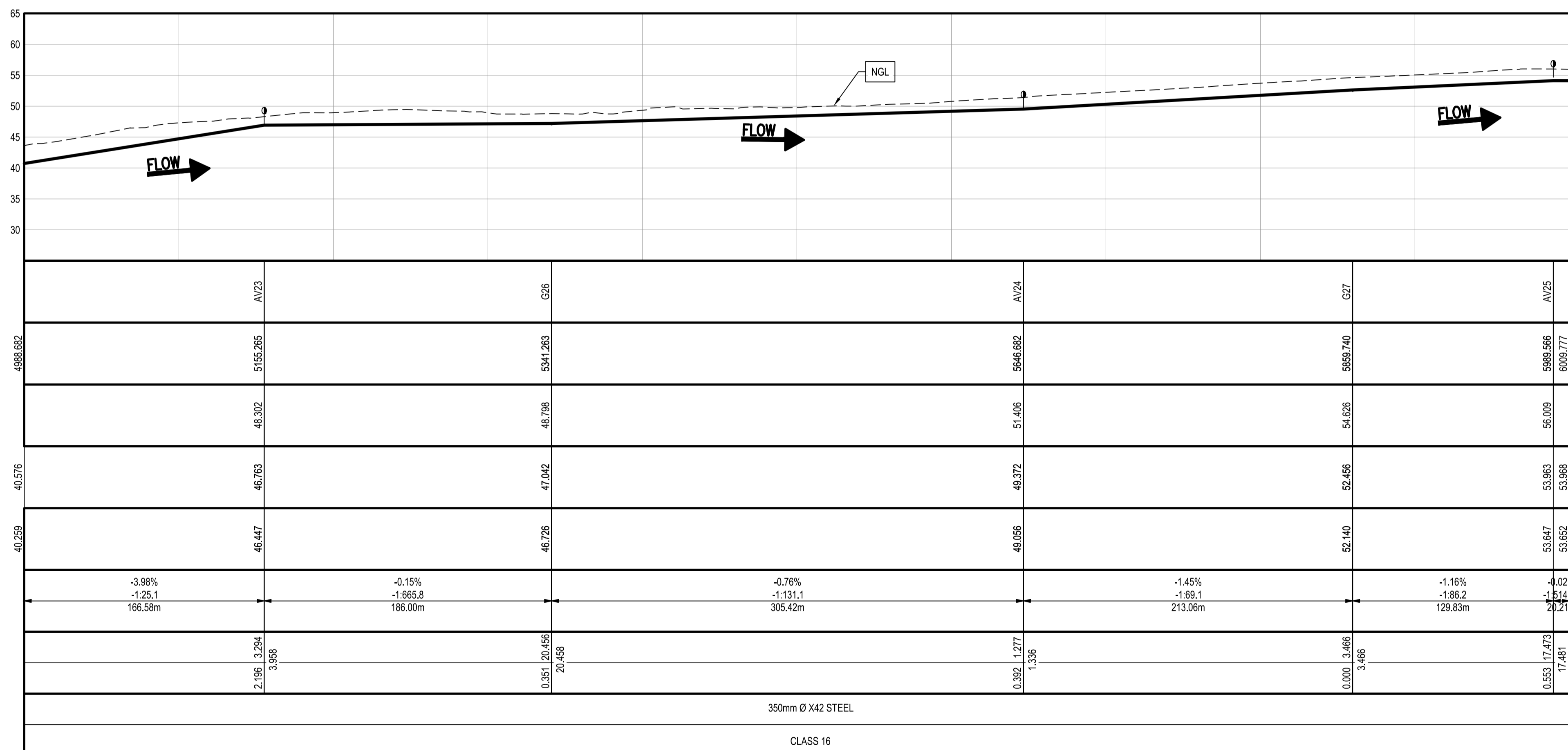


**SECTION 01-01
POSITION OF PIPELINE IN
SERVIDUTE STRIP**

SCALES:
Horizontal 1:2000
Vertical 1:500

DATUM 25.000

REFERENCE	AV23	AV24	AV25
DISTANCE (m)	5155.265	5341.263	5985.566
GROUND LEVEL	48.302	48.798	51.406
PIPE INVERT LEVELS	46.763	47.042	49.372
TRENCH LEVEL	46.447	46.726	49.056
SLOPE / LENGTH	-3.98% 166.58m	-0.15% 186.00m	-0.76% 305.42m
CHANGE IN DIRECTION	2.196, 3.294, 3.589	0.351, 20.055, 20.458	0.392, 4.277, 1.336
CLASSIFICATION	350mm Ø X42 STEEL CLASS 16		



LONG SECTION
CH.5000.00m TO CH.6000.00m
VERTICAL SCALE 1:500
HORIZONTAL SCALE 1:2 000



NOTES:

- THIS DESIGN WAS ENGINEERED BY : **ZIMILE**
- THESE DRAWINGS MUST BE READ IN CONJUNCTION WITH THE SANS AND PROJECT SPECIFICATIONS.
- ALL SETTING OUT AND DIMENSIONS MUST BE CONFIRMED AND APPROVED ON SITE BY THE ENGINEER
- ALL CONSTRUCTION TO BE DONE IN ACCORDANCE WITH THE SANS AND PROJECT SPECIFICATIONS.
- ALL MATERIAL AND WORKMANSHIP MUST COMPLY WITH THE REQUIREMENTS OF THE LATEST RELEVANT SANS 1200 AND PROJECT SPECIFICATIONS
- THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER WITH REGARDS TO THE BOQ, DRAWINGS AND SPECIFICATION BEFORE ORDERING ANY MATERIAL.
- THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL POTENTIALLY CLASHING EXISTING SERVICES AND PROTECT THEM FROM DAMAGE THROUGHOUT THE DURATION OF THE WORKS
- PIPES TO BE LAID AT LEAST 1m AWAY FROM THE STAND BOUNDARIES AND 1m AWAY FROM THE ROAD EDGE

LEGEND

- PROPOSED WATER PIPE
- 350 Ø X42 STEEL PIPE DIAMETER, MATERIAL & CLASS
- NEW VALVE ON EXISTING PIPE
- NEW SCOUR VALVE
- NEW AIR VALVE
- NEW WATER METER
- NEW PIPE IN NEW SLEEVE
- PROPOSED RESERVOIR
- EXISTING BOREHOLE
- EXISTING RESERVOIR
- FENCE
- BENCHMARK
- ROAD
- ESKOM POWER LINES
- TREES

**NODES CO-ORDINATES
CO-ORDINATE SYSTEM WGS 84**

STRUCTURE NAME	Y	X
AV23	-69 246.650	-3 117 400.651
AV24	-68 883.944	-3 117 721.230
AV25	-68 648.453	-3 117 970.251
G26	-69 083.556	-3 117 490.067
G27	-68 741.137	-3 117 879.343

**FOR TENDER
PURPOSES ONLY**

NO.	ISSUE FOR TENDER	DATE	DESIGNED	DRAWN	CHECKED
A	ISSUE FOR TENDER	10/10/2025	M. MUKABWE	B.N. GUDA	N. NDLOVU
	NATURE OF REVISION	DATE			

ZIMILE
UNBOUNDED ENGINEERING

INTERNATIONAL BUSINESS GATEWAY OFFICE PARK
CNR PIONEER AVENUE AND ELIZABETH MIDRIDGE PARK
TEL: (011) 466 - 8576
FAX: (011) 466 - 8813
E-MAIL: info@zimile.co.za

COPYRIGHT RESERVED ©

REFERENCE DRAWINGS:

- 1.0000167-WT-DL-000-DRAWING LIST
- 2.0000167-WT-LS-002-GENERAL LAYOUT
- 3.0000167-WT-LS-110-PLAN AND LONG SECTION CH.0-1000
- 4.0000167-WT-LS-111-PLAN AND LONG SECTION CH.1000-2000
- 5.0000167-WT-LS-112-PLAN AND LONG SECTION CH.2000-3000
- 6.0000167-WT-LS-113-PLAN AND LONG SECTION CH.3000-4000
- 7.0000167-WT-LS-114-PLAN AND LONG SECTION CH.4000-5000

CLIENT: **UMKHAHAYAKUDE**

APPROVED: **B. SEAKE**
FOR ZIMILE CONSULTING ENGINEERS
DESIGNATION: SENIOR ENGINEER

PROJECT: **HLUHLUWE WATER SUPPLY SCHEME PHASE-2**

TITLE: **FROM COMMAND RES. TO 4ML PROPOSED RES. PLAN AND LONGITUDINAL SECTION CH.5000.00m TO CH.6000.00m SHEET 6 OF 7**

PROJECT PHASE

PRELIMINARY	TENDER	CONSTRUCTION	AS-BUILT

DATE: OCTOBER 2025 SCALE: AS SHOWN

DRAWING No.	WA	LS	115	REVISION
J000167				A

CAD FILENAME: [unclear]

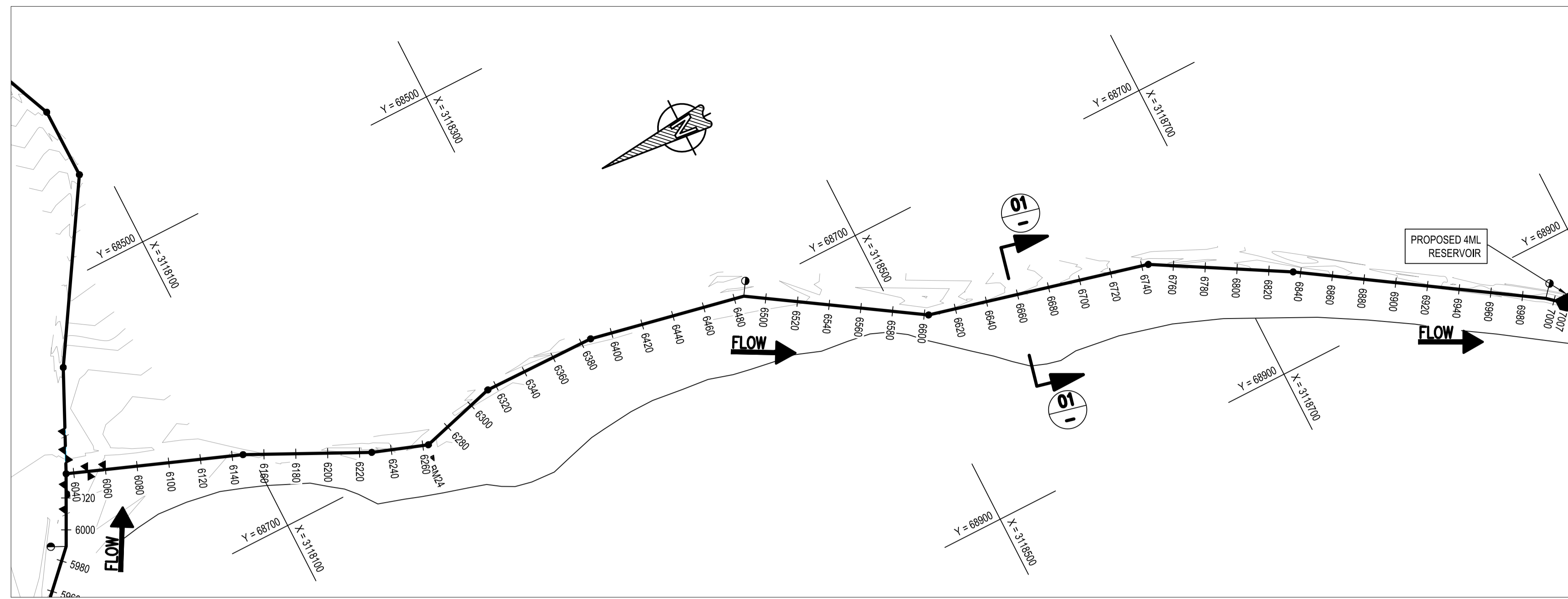
NO.	DATE	REVISION
A	10/10/2025	A

**PIPELINE SUMMARY
FOR THIS DRAWING ONLY**

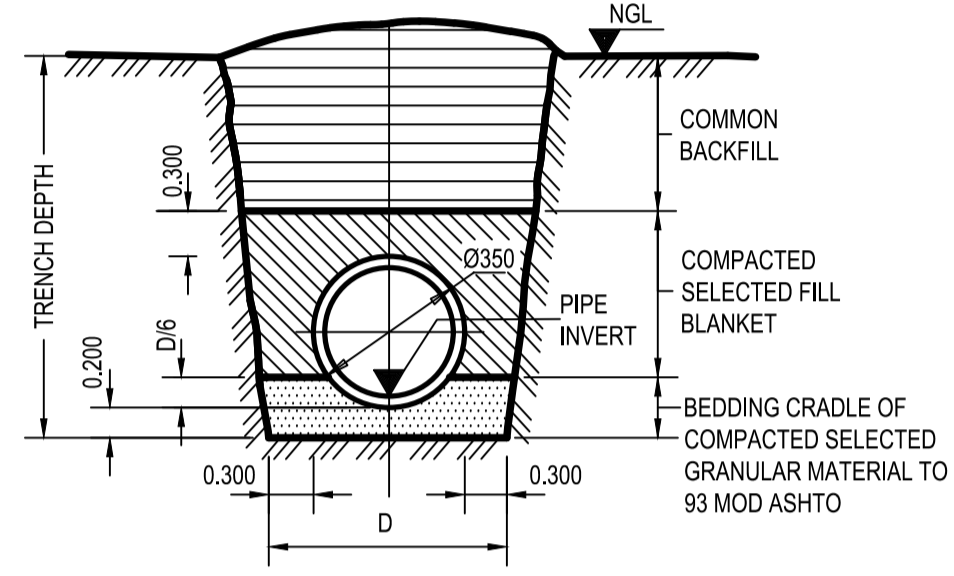
DESCRIPTION	QTY OR METER
AIR VALVE CHAMBER (QTY)	2
SCOUR VALVE CHAMBER (QTY)	0
ISOLATION VALVE CHAMBER (QTY)	2
NON-RETURN VALVE CHAMBER (QTY)	2
X42 STEEL (350mm OD)	35.192
X42 STEEL (200mm OD)	972.281
TOTAL PIPE LENGTH	1007.473

BENCHMARK CO-ORDINATES

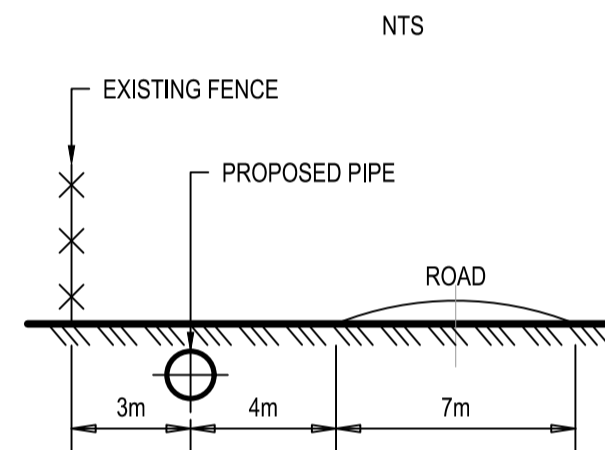
POINTS	Y	X	Z
BM24	-68 702.476	-3 118 197.394	57.342



PLAN
CH.6000.00m TO CH.7007.00m
SCALE 1:2 000

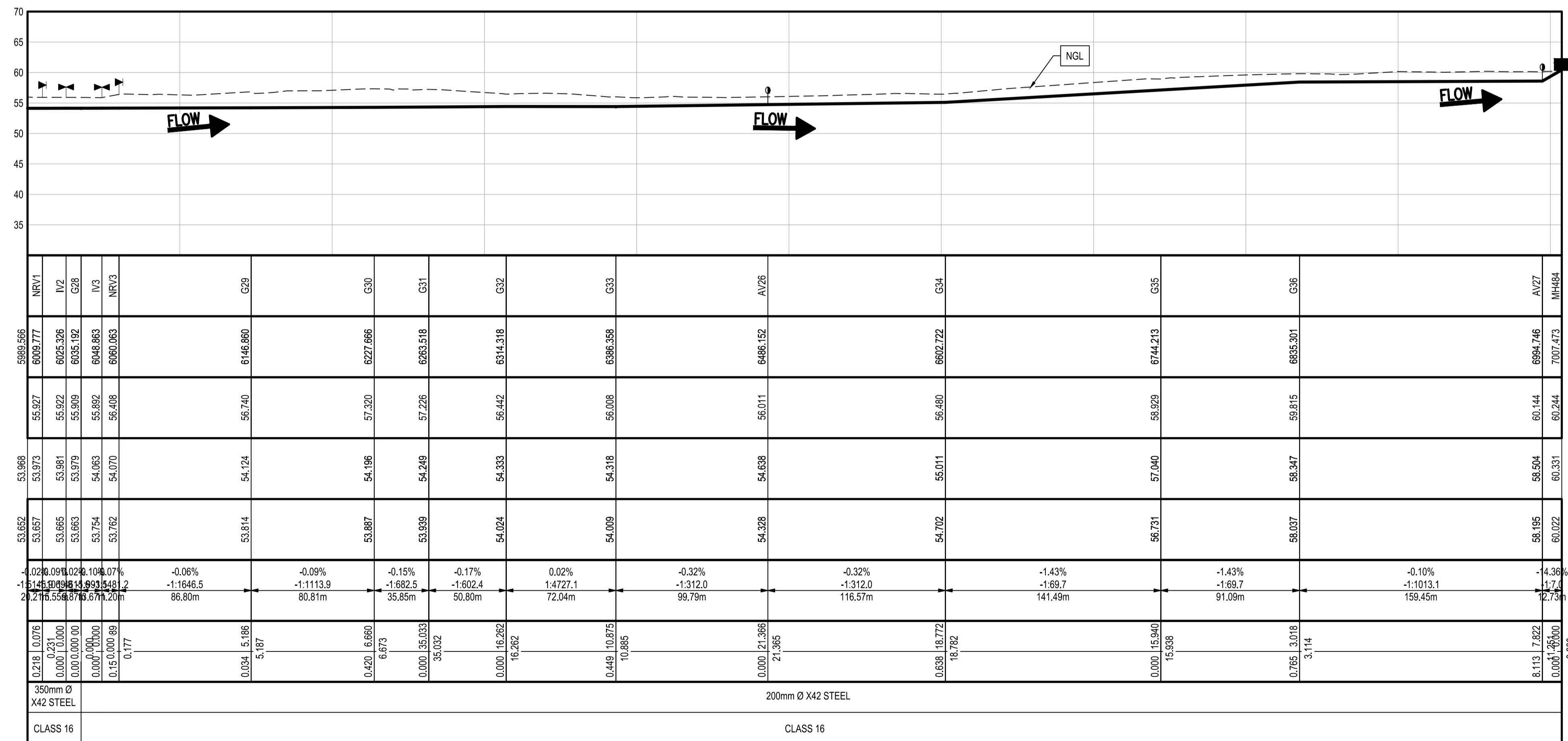


TYPICAL TRENCH CROSS-SECTION

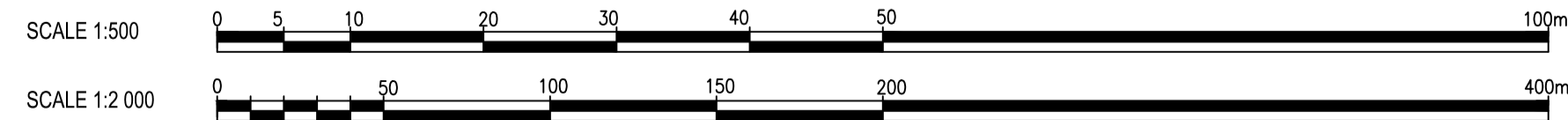


**SECTION 01-01
POSITION OF PIPELINE IN
SERVITUDE STRIP**

NTS
SCALES:
Horizontal 1:2000
Vertical 1:500
DATUM 30.000



LONG SECTION
CH.6000.00m TO CH.7007.00m
VERTICAL SCALE 1:500
HORIZONTAL SCALE 1:2 000



NOTES:

- THIS DESIGN WAS ENGINEERED BY : **ZIMILE**
- THESE DRAWINGS MUST BE READ IN CONJUNCTION WITH THE SANS AND PROJECT SPECIFICATIONS.
- ALL SETTING OUT AND DIMENSIONS MUST BE CONFIRMED AND APPROVED ON SITE BY THE ENGINEER
- ALL CONSTRUCTION TO BE DONE IN ACCORDANCE WITH THE SANS AND PROJECT SPECIFICATIONS.
- ALL MATERIAL AND WORKMANSHIP MUST COMPLY WITH THE REQUIREMENTS OF THE LATEST RELEVANT SANS 1200 AND PROJECT SPECIFICATIONS
- THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER WITH REGARDS TO THE BOQ, DRAWINGS AND SPECIFICATION BEFORE ORDERING ANY MATERIAL.
- THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL POTENTIALLY CLASHING EXISTING SERVICES AND PROTECT THEM FROM DAMAGE THROUGHOUT THE DURATION OF THE WORKS
- PIPES TO BE LAID AT LEAST 1m AWAY FROM THE STAND BOUNDARIES AND 1m AWAY FROM THE ROAD EDGE

LEGEND

- PROPOSED WATER PIPE
- 200 Ø x42 STEEL PIPE DIAMETER, MATERIAL & CLASS
- NEW VALVE ON EXISTING PIPE
- NEW SCOUR VALVE
- NEW AIR VALVE
- NEW WATER METER
- NEW PIPE IN NEW SLEEVE
- PROPOSED RESERVOIR
- EXISTING BOREHOLE
- EXISTING RESERVOIR
- FENCE
- BENCHMARK
- ROAD
- ESKOM POWER LINES
- TREES

**NODES CO-ORDINATES
CO-ORDINATE SYSTEM WGS 84**

STRUCTURE NAME	Y	X
AV26	-68 702.097	-3 118 420.442
AV27	-68 932.454	-3 118 868.041
G28	-68 607.805	-3 117 990.976
G29	-68 647.643	-3 118 095.296
G30	-68 683.151	-3 118 167.883
G31	-68 695.064	-3 118 201.698
G32	-68 681.381	-3 118 250.620
G33	-68 682.181	-3 118 322.655
G34	-68 765.376	-3 118 518.342
G35	-68 799.858	-3 118 655.567
G36	-68 845.464	-3 118 734.415
IV2	-68 616.592	-3 117 986.490
IV3	-68 612.897	-3 118 003.742
MH484	-68 940.784	-3 118 877.662
NRV1	-68 630.440	-3 117 979.419
NRV3	-68 616.706	-3 118 014.200

**FOR TENDER
PURPOSES ONLY**

DESIGNED	M. MUKABWE
DRAWN	B.N. GUDA
CHECKED	N. NDLOVU
ISSUE FOR TENDER	10/10/2025
NATURE OF REVISION	DATE

ZIMILE
UNBOUNDED ENGINEERING

INTERNATIONAL BUSINESS GATEWAY OFFICE PARK
CNR PIONEER AVENUE AND ELIZABETH MIDRIDGE PARK
TEL: (011) 466-8576
FAX: (011) 466-8813
E-MAIL: info@zimile.co.za

COPYRIGHT RESERVED ©

REFERENCE DRAWINGS:

- 1.0000167-WT-DL-000-DRAWING LIST
- 2.0000167-WT-LA-002-GENERAL LAYOUT
- 3.0000167-WT-LS-110-PLAN AND LONG SECTION CH.0-1000
- 4.0000167-WT-LS-111-PLAN AND LONG SECTION CH.1000-2000
- 5.0000167-WT-LS-112-PLAN AND LONG SECTION CH.2000-3000
- 6.0000167-WT-LS-113-PLAN AND LONG SECTION CH.3000-4000
- 7.0000167-WT-LS-114-PLAN AND LONG SECTION CH.4000-5000
- 8.0000167-WT-LS-115-PLAN AND LONG SECTION CH.5000-6000

CLIENT: **UMKHAHAKUDE**

APPROVED: **B. SEAKE**
FOR ZIMILE CONSULTING ENGINEERS

DESIGNATION: **SENIOR ENGINEER**

DATE: _____ SIGNATURE: _____

PROJECT: **HLUHLUWE WATER SUPPLY SCHEME PHASE-2**

TITLE: **FROM COMMAND RES. TO 4ML PROPOSED RES. PLAN AND LONGITUDINAL SECTION CH.6000.00m TO CH.7007.00m SHEET 7 OF 7**

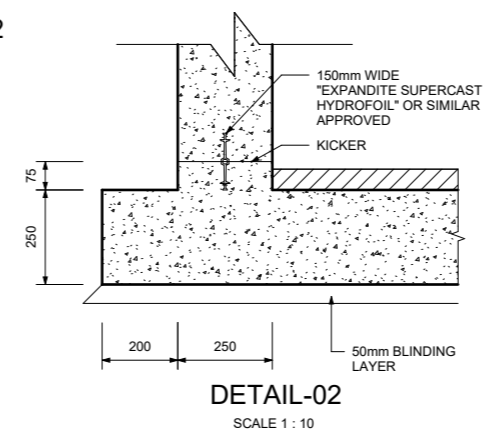
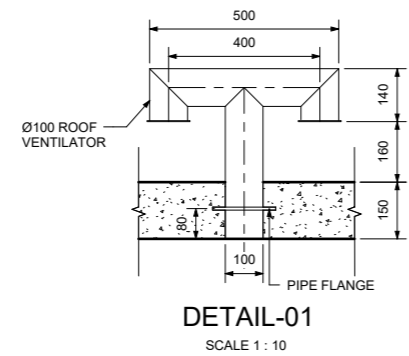
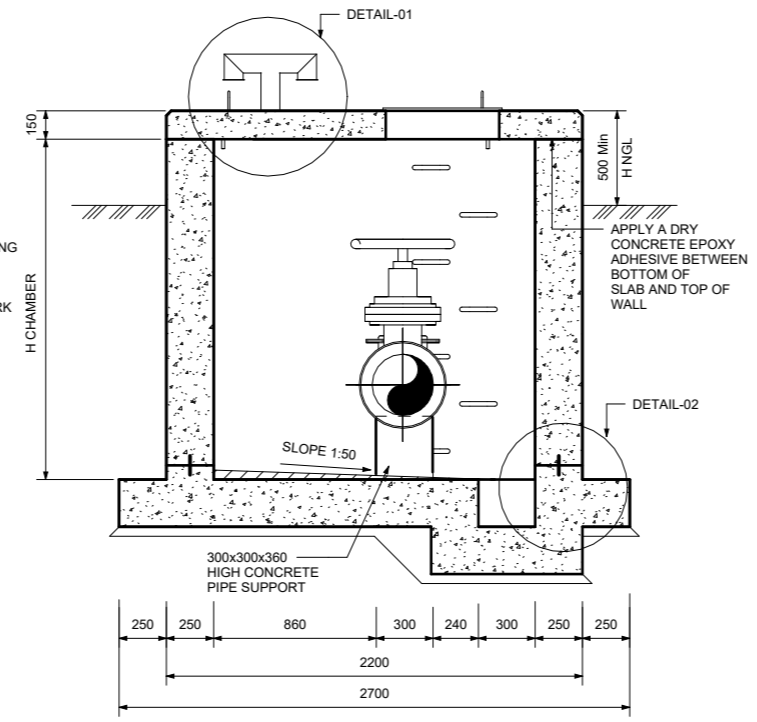
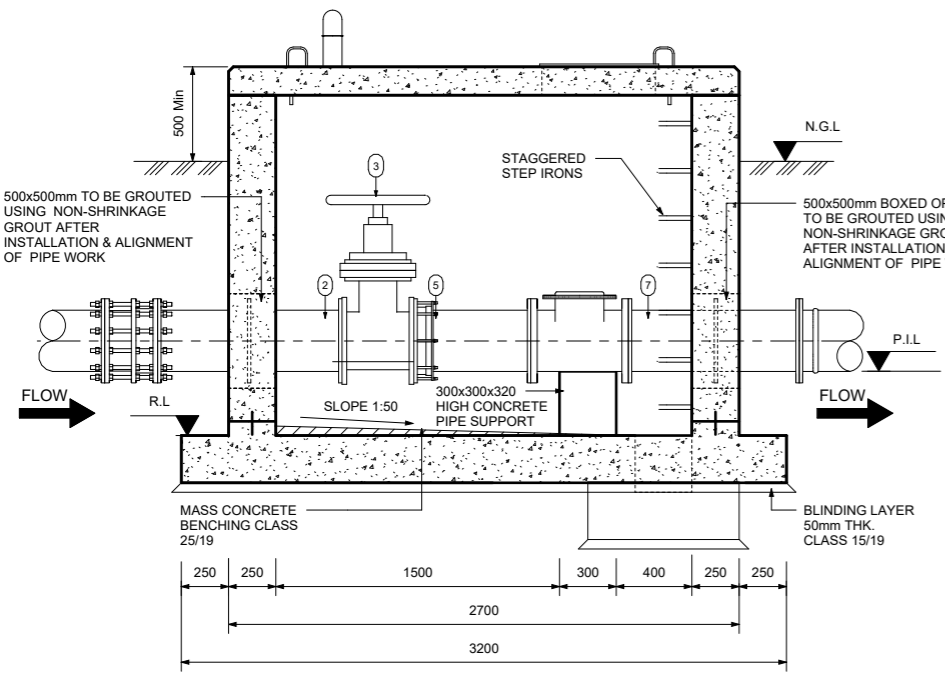
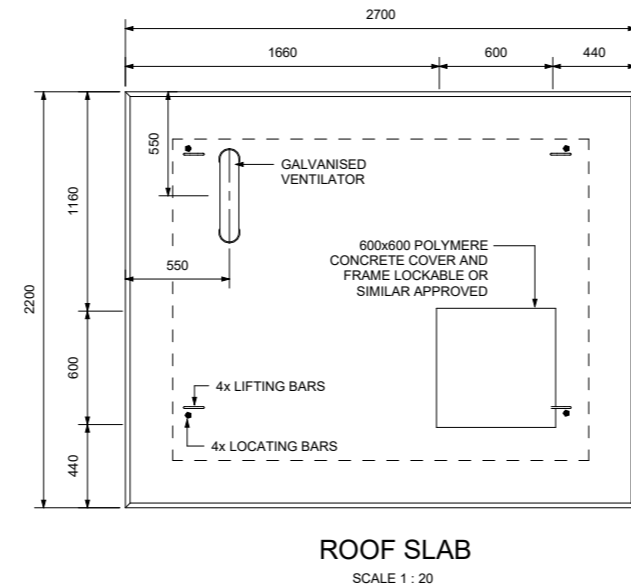
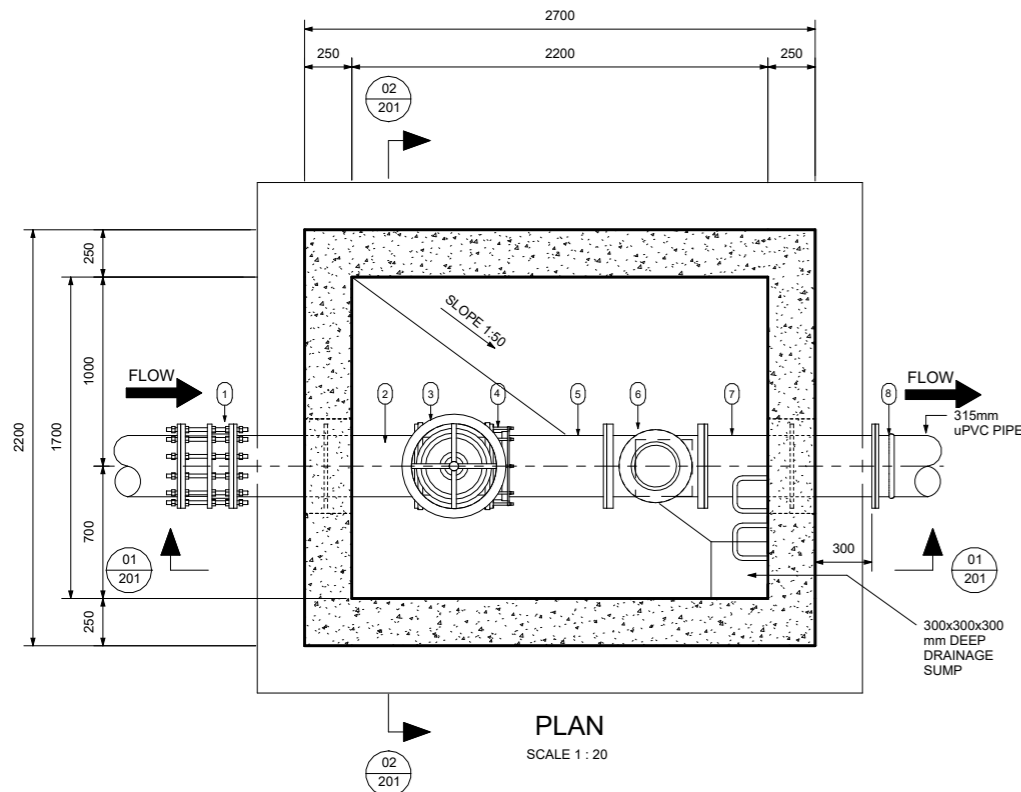
PROJECT PHASE

PRELIMINARY	TENDER	CONSTRUCTION	AS-BUILT
-------------	--------	--------------	----------

DATE: **OCTOBER 2025** SCALE: **AS SHOWN**

DRAWING No.	WA	LS	116	REVISION
J000167				A

CAD FILENAME: _____ SIZE: **A1**



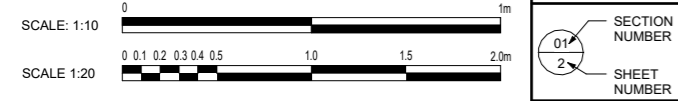
FLOW METER CHAMBER PIPE SPECIALS							CORROSION AND PROTECTION AS SHOWN IN PIPE NOTES		
Mark	Count	Size	MATERIAL	WALL THK.(mm)	DESCRIPTION	SKETCH	LINING	COATING	FLANGES
1	1	300 mme-300 mme			DISMANTLING JOINT, PN20				
2	1	300 mme	STEEL X42	4.5	STRAIGHT PIPE BOTH ENDS FLANGED, PUDDLE FLANGE AS INDICATED, PN20		3.1	3.2	3.3
3	1	300 mme-300 mme	STEEL X42		RESILIENT SEAL GATE VALVE PN20		3.1	3.2	
4	1	300 mme-300 mme			FLANGE ADAPTOR PN20				
5	1	300 mme	STEEL X42	4.5	STRAIGHT PIPE ONE END FLANGED, OTHER PLAIN TO CUT TO SUIT ON SITE, PN20		3.1	3.2	3.3
6	1				ELECTRO-MAGNETIC FLOW METER PN20				
7	1	300 mme	STEEL X42	4.5	STRAIGHT PIPE BOTH ENDS FLANGED, PUDDLE FLANGE AS INDICATED, PN20		3.1	3.2	3.3
8	1	300 mme-300 mme			SG FLANGE PN20		3.1	3.2	3.3

- PIPE NOTES:**
- FLANGES:
 - ALL DRILLED FLANGES' THICKNESS TO SANS 1123 T1600/3, TYPE 3 TABLE AND FOR CLASSIFICATION REFER TO THE RELEVANT DRAWING. FLANGES TO BE DRILLED OFF-CENTRE AND TO BE FLAT JOINT FACES MACHINED N11.
 - PUDDLE FLANGES: SAME TYPE AND OD AS DRILLED FLANGES. FLAT FACES. NO DRILLING.
 - ANCHOR/TRUST FLANGES: SAME TYPE AND OD. 'Y' AS DRILLED FLANGES. FLAT FACED.
 - COUPLINGS BURIED IN SOIL TO BE PROTECTED IN ACCORDANCE WITH DWS 9900, SECTION 13 (COATING SYSTEM PLUS PETROLATUM WRAPPING).
 - FASTENERS FOR STAINLESS STEEL BALL VALVES ONTO MILD STEEL FLANGES:
 - FASTENERS SHALL BE STAINLESS STEEL ON BOTH JOINTS, TOP AND BOTTOM.
 - CORROSION PROTECTION:
 - LINING: THE STEEL PIPES WILL BE PROTECTED INTERNALLY BY A SOLVENT BORNE LIQUID EPOXY LINING WITH A MINIMUM THICKNESS OF 300 MICRONS.
 - COATING: EPOXY COATING AND LINING SHALL CONFORM TO SANS1217
 - FLANGE FACES: ALL FLANGES IN CONTACT WITH SOIL TO BE WRAPPED WITH PETROLEUM BASED TAPE OR SIMILAR.
 - FASTENERS FOR STAINLESS STEEL BALL VALVES: HEADS AND SHANKS AREAS OF BOLTS, NUTS AND WASHERS SHALL BE EPOXY POWDER COATED TO DFT 50 MICRONS. THREADS SHALL BE PROTECTED WITH MOLYBDENUM DISULPHIDE LUBRICANT OR A NICKEL ANTISEIZE COMPOUND. THREAD OF THE BOLTS MUST BE ON THE STAINLESS STEEL FLANGE.
 - GENERAL:
 - CHECK THAT PIPES SPECIALS FIT CORRECTLY IN THE CHAMBER BEFORE MANUFACTURED.
 - PIPE SPECIALS TO BE CUT ON SITE SHALL BE MANUFACTURED WITH AN EXTRA LENGTH OF 40 PERCENT.
 - ALLOW FOR 3mm THICK GASKET BETWEEN THE FLANGES.
 - CHECK DIMENSION OF THE EXISTING PIPELINE BEFORE ORDERING PIPE SPECIALS AND COUPLING.
 - PROVIDE LIFTING LUGS WHERE REQUIRED.

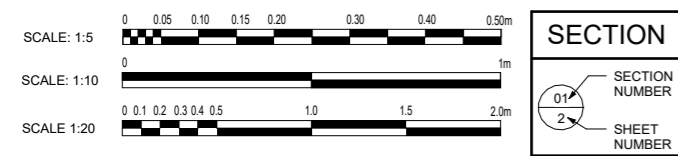
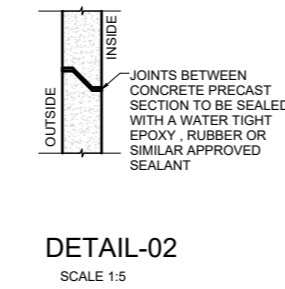
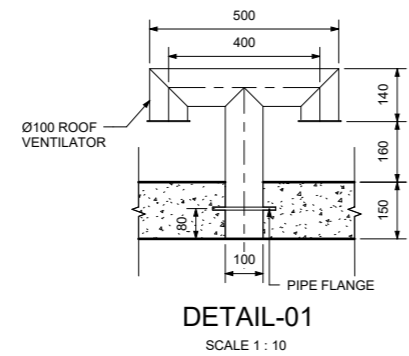
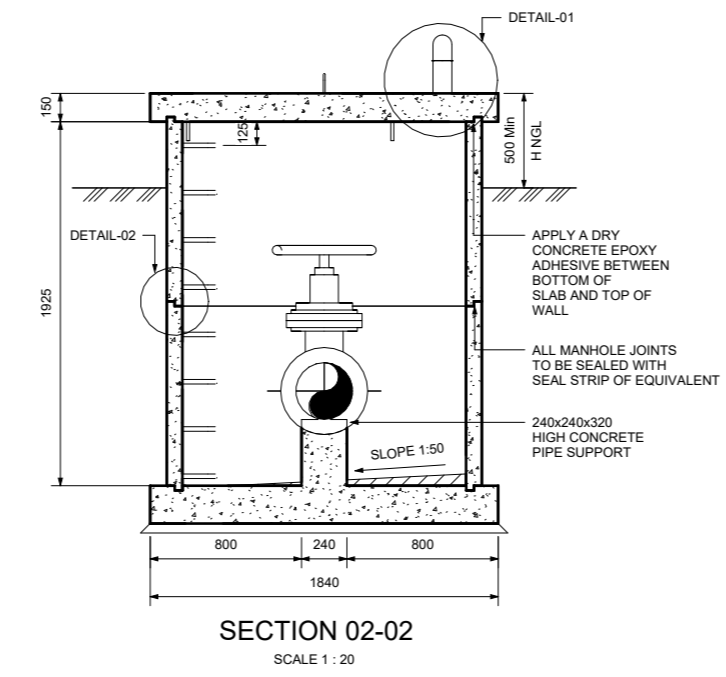
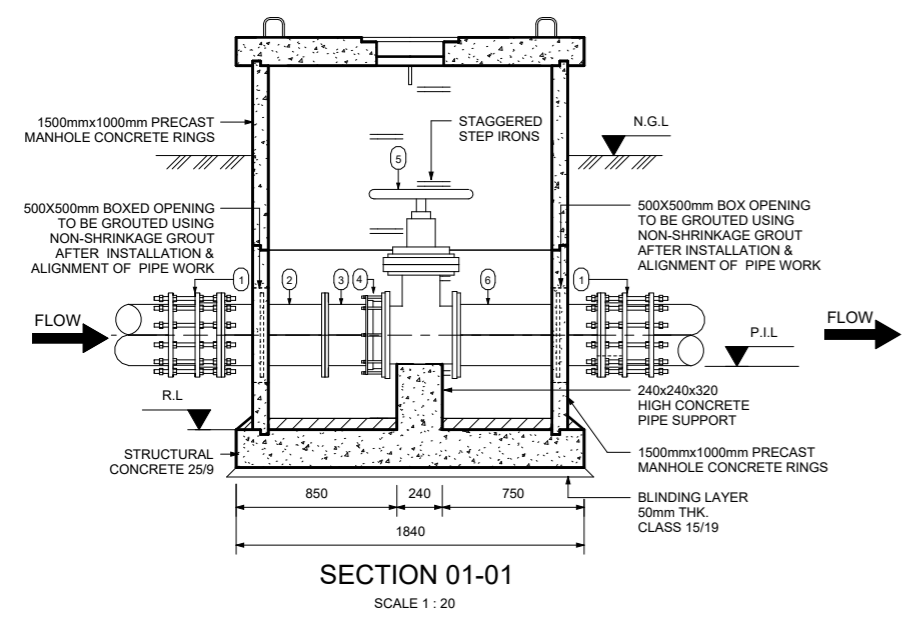
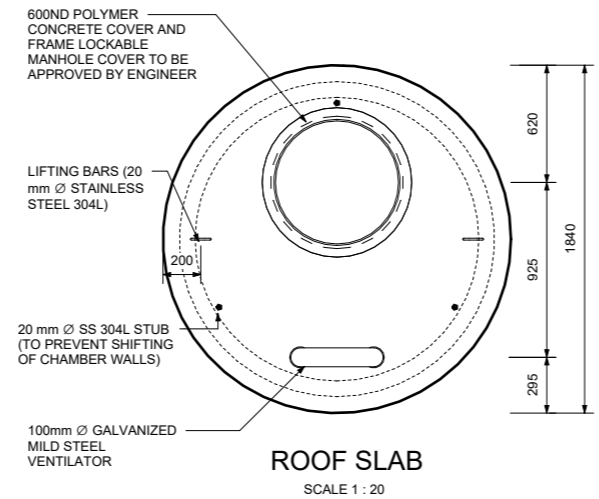
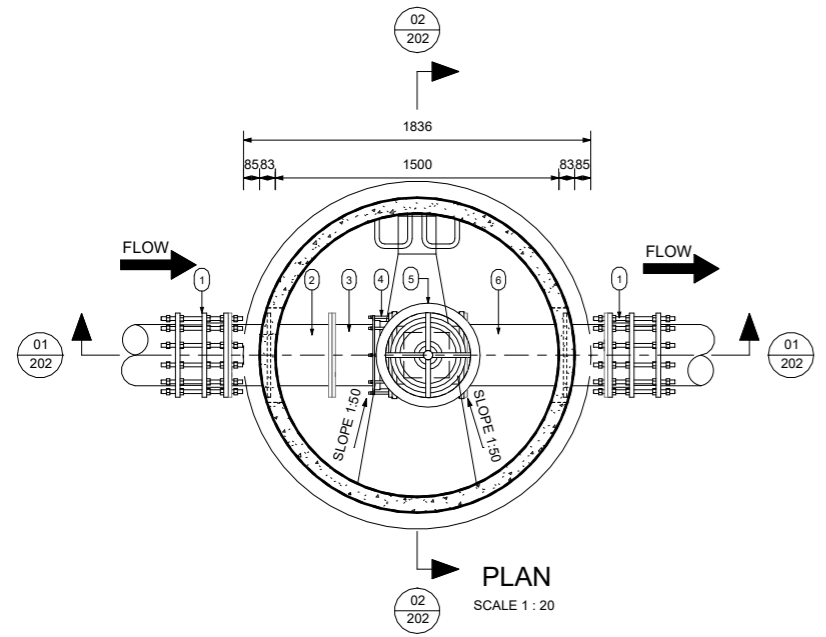
- GENERAL NOTES:**
- ALL LEVELS TO BE CONFIRMED ON SITE.
 - READ THIS DRAWING IN CONJUNCTION WITH RELEVANT ENGINEERING DRAWINGS.
 - DO NOT SCALE FROM THIS DRAWING. USE ONLY THE CALCULATED AND WRITTEN DIMENSIONS.
 - ALL EXCAVATIONS SHOULD BE INSPECTED AND APPROVED BY THE ENGINEER ON SITE.
 - ALL DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE STATED.

- ABBREVIATION:**
- NGL - NATURAL GROUND LEVEL
 PIL - PIPE INVERT LEVEL
 RL - REDUCED LEVEL
- MISCELLANEOUS NOTES:**
- CONCRETE AND MISCELLANEOUS
 - ALL CONCRETE EDGES TO BE 25mm CHAMFERED.
 - CONCRETE: CHAMBER - CLASS 25/19 BLINDING LAYER - CLASS 15/19.
 - ALL EXPOSED METAL WORK TO BE CR12(UNPAINTED) OR SIMILAR APPROVED BY ENGINEER.
 - BACKFILL BELOW CHAMBER TO BE COMPACTED ON 150mm LAYERS TO 90 PERCENT MOD AASHTO

FOR TENDER PURPOSES ONLY



A NO	ISSUE FOR TENDER NATURE OF REVISION	10/10/2025 DATE	DESIGNED	M. MUKABWE	ZIMILE UNBOUNDED ENGINEERING	INTERNATIONAL BUSINESS GATEWAY OFFICE PARK CNR PIONEER AVENUE AND ELIZABETH MIDRIDGE PARK TEL: (011) 466 - 8576 FAX: (011) 466 - 8813 E-MAIL: info@zimile.co.za	REFERENCE DRAWING/S:	CLIENT: UNABIRALA WESIFUNGA Mkhanyakude	APPROVED:	B. SEAKE FOR ZIMILE CONSULTING ENGINEERS	PROJECT: HLUHLUWE WATER SUPPLY SCHEME PHASE 2	PROJECT PHASE PRELIMINARY TENDER CONSTRUCTION AS BUILT					
			DRAWN	T. MAKHUBALO					DESIGNATION:	SENIOR ENGINEER		DATE:	OCTOBER 2025	SCALE:	AS SHOWN		
			CHECKED	N. GUMEDE	COPYRIGHT RESERVED ©						TITLE:	RESERVOIR FLOW METER VALVE CHAMBER CONCRETE DETAILS AND PIPE SPECIALS					
											DRAWING No.	J000167	WA	DT	201	REVISION	A
											CAD FILENAME					SIZE	A1



ISOLATION CHAMBER PIPE SPECIALS							CORROSION AND PROTECTION AS SHOWN IN PIPE NOTES		
Mark	Count	Size	MATERIAL	WALL THK.(mm)	DESCRIPTION	SKETCH	LINING	COATING	FLANGES
1	2	300 mme-300 mme			DISMANTLING JOINT PN20				
2	1	300 mme	STEEL X42	4.5	STRAIGHT PIPE BOTH ENDS FLANGED, PUDDLE FLANGE AS INDICATED. PN16		3.1	3.2	3.3
3	1	300 mme	STEEL X42	4.5	STRAIGHT PIPE ONE END FLANGED OTHER PLAIN TO CUT TO SUIT ON SITE. PN20		3.1	3.2	3.3
4	1	300 mme-300 mme			FLANGE ADAPTOR PN20				
5	1	300 mme-300 mme	STEEL X42		RESILIENT SEAL GATE VALVE PN20		3.1	3.2	
6	1	300 mme	STEEL X42	4.5	STRAIGHT PIPE BOTH ENDS FLANGED, PUDDLE FLANGE AS INDICATED. PN20		3.1	3.2	3.3

- PIPE NOTES:**
- FLANGES:
 - ALL DRILLED FLANGES' THICKNESS TO SANS 1123 T1600/3, TYPE 3 TABLE AND FOR CLASSIFICATION REFER TO THE RELEVANT DRAWING. FLANGES TO BE DRILLED OFF-CENTRE AND TO BE FLAT JOINT FACES MACHINED N11.
 - PUDDLE FLANGES: SAME TYPE AND OD AS DRILLED FLANGES. FLAT FACES. NO DRILLING.
 - ANCHOR/TRUST FLANGES: SAME TYPE AND OD. 'Y' AS DRILLED FLANGES. FLAT FACED.
 - COUPLINGS BURIED IN SOIL TO BE PROTECTED IN ACCORDANCE WITH DWS 9900, SECTION 13(COATING SYSTEM PLUS PETROLATUM WRAPPING).
 - FASTENERS FOR STAINLESS STEEL BALL VALVES ONTO MILD STEEL FLANGES:
 - FASTENERS SHALL BE STAINLESS STEEL ON BOTH JOINTS, TOP AND BOTTOM.
 - CORROSION PROTECTION:
 - LINING: THE STEEL PIPES WILL BE PROTECTED INTERNALLY BY A SOLVENT BORNE LIQUID EPOXY LINING WITH A MINIMUM THICKNESS OF 300 MICRONS.
 - COATING: EPOXY COATING AND LINING SHALL CONFORM TO SANS1217
 - FLANGE FACES: ALL FLANGES IN CONTACT WITH SOIL TO BE WRAPPED WITH PETROLEUM BASED TAPE OR SIMILAR.
 - FASTENERS FOR STAINLESS STEEL BALL VALVES: HEADS AND SHANKS AREAS OF BOLTS, NUTS AND WASHERS SHALL BE EPOXY POWDER COATED TO DFT 50 MICRONS. THREADS SHALL BE PROTECTED WITH MOLYBDENUM DISULPHIDE LUBRICANT OR A NICKEL ANTISEIZE COMPOUND. THREAD OF THE BOLTS MUST BE ON THE STAINLESS STEEL FLANGE.
 - GENERAL:
 - CHECK THAT PIPES SPECIALS FIT CORRECTLY IN THE CHAMBER BEFORE MANUFACTURED.
 - PIPE SPECIALS TO BE CUT ON SITE SHALL BE MANUFACTURED WITH AN EXTRA LENGTH OF 40 PERCENT.
 - ALLOW FOR 3mm THICK GASKET BETWEEN THE FLANGES.
 - CHECK DIMENSION OF THE EXISTING PIPELINE BEFORE ORDERING PIPE SPECIALS AND COUPLING.
 - PROVIDE LIFTING LUGS WHERE REQUIRED.

- GENERAL NOTES:**
- ALL LEVELS TO BE CONFIRMED ON SITE.
 - READ THIS DRAWING IN CONJUNCTION WITH RELEVANT ENGINEERING DRAWINGS.
 - DO NOT SCALE FROM THIS DRAWING. USE ONLY THE CALCULATED AND WRITTEN DIMENSIONS.
 - ALL EXCAVATIONS SHOULD BE INSPECTED AND APPROVED BY THE ENGINEER ON SITE.
 - ALL DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE STATED.

- ABBREVIATION:**
- NGL - NATURAL GROUND LEVEL
PIL - PIPE INVERT LEVEL
RL - REDUCED LEVEL
- MISCELLANEOUS NOTES:**
- CONCRETE AND MISCELLANEOUS
 - ALL CONCRETE EDGES TO BE 25mm CHAMFERED.
 - CONCRETE : CHAMBER - CLASS 25/19 BLINDING LAYER - CLASS 15/19.
 - ALL EXPOSED METAL WORK TO BE CR12(UNPAINTED) OR SIMILAR APPROVED BY ENGINEER.
 - BACKFILL BELOW CHAMBER TO BE COMPACTED ON 150mm LAYERS TO 90 PERCENT MOD AASHTO

FOR TENDER PURPOSES ONLY

A	ISSUE FOR TENDER	10/10/2025	DESIGNED	M. MUKABWE	ZIMILE	INTERNATIONAL BUSINESS GATEWAY OFFICE PARK CNR PIONEER AVENUE AND ELIZABETH MIDRIDGE PARK TEL: (011) 466 - 8576 FAX: (011) 466 - 8813 E-MAIL: info@zimile.co.za	REFERENCE DRAWING/S:	CLIENT:	APPROVED:	PROJECT:	PROJECT PHASE					
			DRAWN	T. MAKHUBALO			UNBOUNDED ENGINEERING				FOR ZIMILE CONSULTING ENGINEERS	HLUHLUWE WATER SUPPLY SCHEME PHASE 2	PRELIMINARY	TENDER	CONSTRUCTION	ASBUILT
NO	NATURE OF REVISION	DATE	CHECKED	N. GUMEDE	COPYRIGHT RESERVED ©						TITLE:	DRAWING No.	REVISION			
											RESERVOIR ISOLATION VALVE CHAMBER CONCRETE DETAILS AND PIPE SPECIALS	J000167	WA	DT	202	A
												CAD FILENAME	DATE	SIGNATURE	SCALE:	AS SHOWN

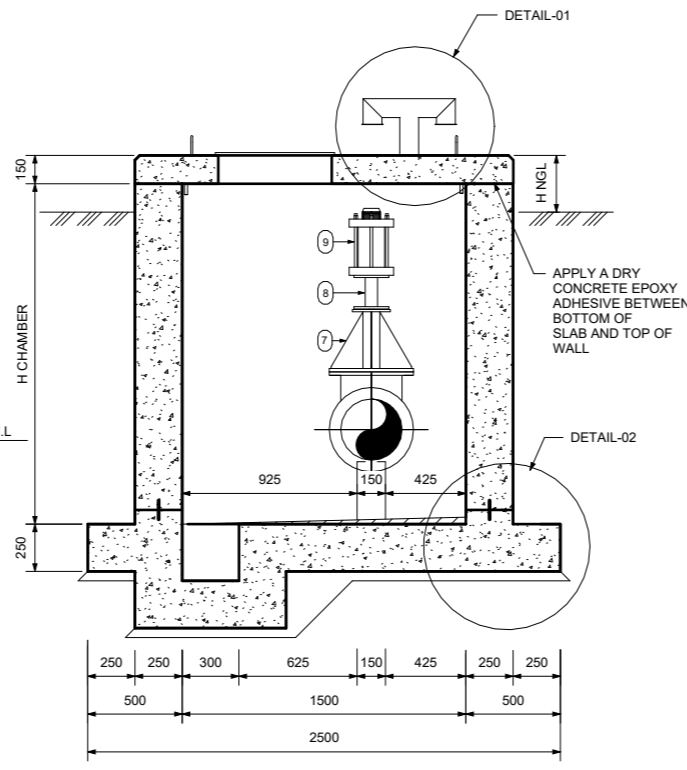
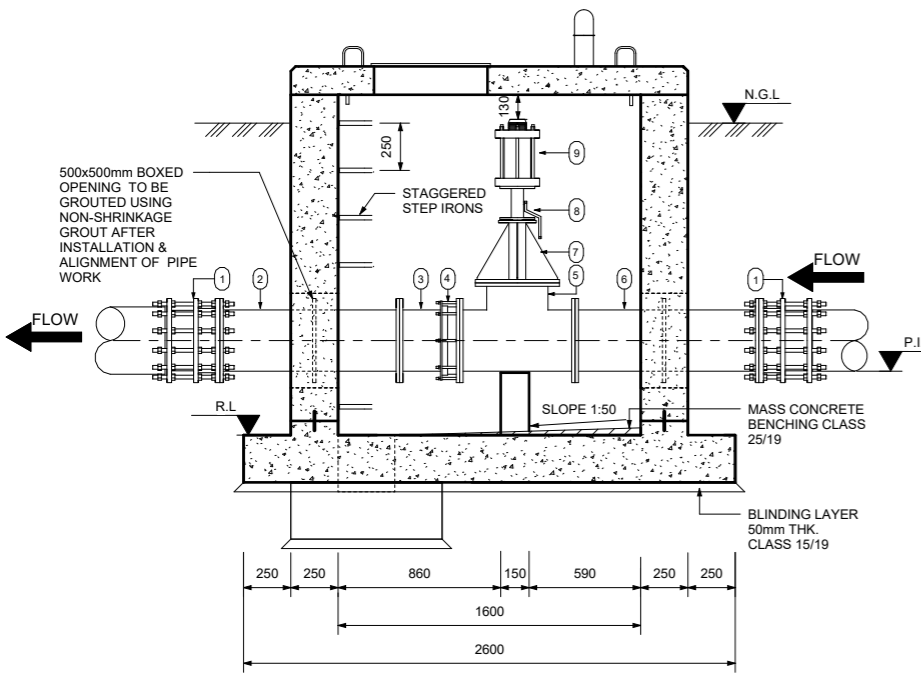
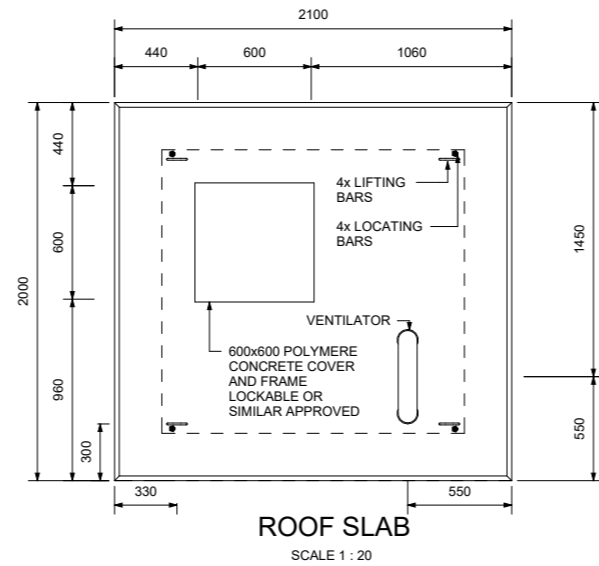
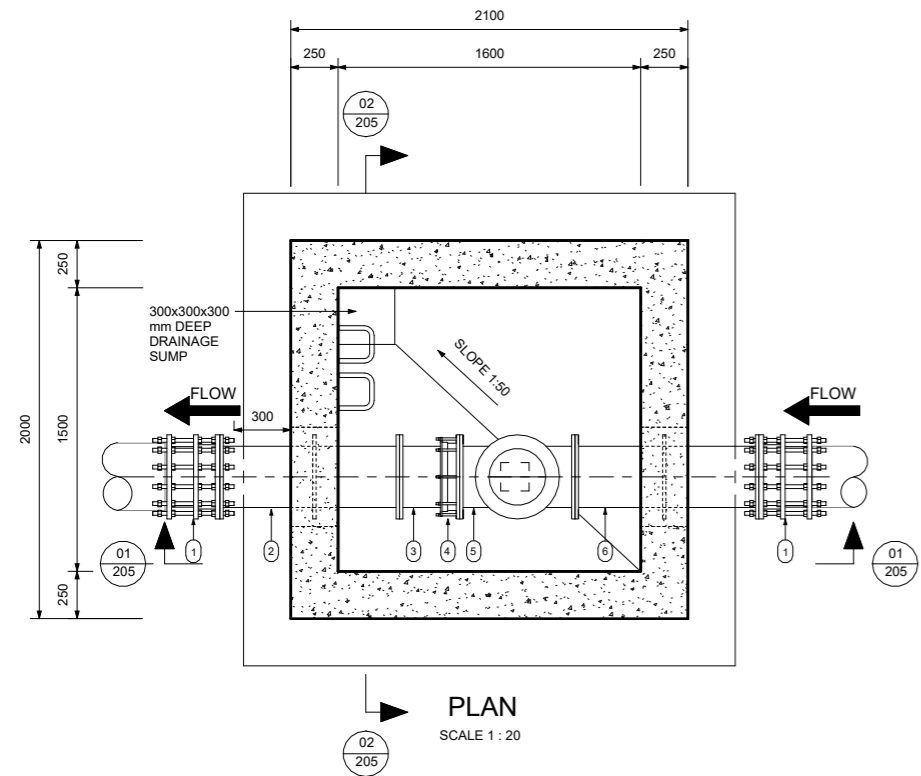
SCOUR VALVE CHAMBER PIPE SPECIALS									
Mark	Count	Size	MATERIAL	WALL THK.(mm)	DESCRIPTION	SKETCH	CORROSION AND PROTECTION AS SHOWN IN PIPE NOTES		
							LINING	COATING	FLANGES
1	2	355 mmø-355 mmø			DISMANTLING JOINT PN20				
2	1	355 mmø	STEEL X42	4.5	STRAIGHT PIPE BOTH ENDS FLANGED, PUDDLE FLANGE AS REQUESTED. PN20		3.1	3.2	3.3
3	1	355 mmø-355 mmø-150 mmø	STEEL X42	4.5	90° UNEQUAL TEE, FLANGED. PN20		3.1	3.2	3.3
4	1	355 mmø	STEEL X42	4.5	STRAIGHT PIPE ONE END FLANGED, OTHER PLAIN TO CUT TO SUIT ON SITE. PN20		3.1	3.2	3.3
5	1	355 mmø-355 mmø			FLANGED ADAPTOR. PN20				3.3
6	1	355 mmø-355 mmø			BUTTERFLY VALVE, RIGHT HAND ACUATOR, RIGHT HAND PROJECTION, PN20				3.3
7	1	350 mmø	STEEL X42	4.5	STRAIGHT PIPE BOTH ENDS FLANGED, PUDDLE FLANGE AS REQUESTED. PN20		3.1	3.2	3.3
8	1	150 mmø	STEEL X42	2.5	STRAIGHT PIPE BOTH ENDS FLANGED. PN20		3.1	3.2	3.3
9	1	150 mmø-150 mmø			FLANGED ADAPTOR. PN20				3.3
10	1	150 mmø-150 mmø			RESILIENT SEAL GATE VALVE, NONE RISING SPINDLE, FLANGED. PN20				3.3
11	1	150 mmø	STEEL X42	2.5	STRAIGHT PIPE BOTH ENDS PLAIN FOR CUTTING TO SUIT ON SITE, PUDDLE FLANGE AS INDICATED. PN20		3.1	3.2	3.3

PIPE NOTES:

1. FLANGES:
 - 1.1. ALL DRILLED FLANGES' THICKNESS TO SANS 1123 T1600/3, TYPE 3 TABLE AND FOR CLASSIFICATION REFER TO THE RELEVANT DRAWING. FLANGES TO BE DRILLED OFF-CENTRE AND TO BE FLAT JOINT FACES MACHINED N11.
 - 1.2. PUDDLE FLANGES: SAME TYPE AND OD AS DRILLED FLANGES. FLAT FACES. NO DRILLING.
 - 1.3. ANCHOR/TRUST FLANGES: SAME TYPE AND OD. 'I' AS DRILLED FLANGES. FLAT FACED.
 - 1.4. COUPLINGS BURIED IN SOIL TO BE PROTECTED IN ACCORDANCE WITH DWS 9900, SECTION 13 (COATING SYSTEM PLUS PETROLATUM WRAPPING).
2. FASTENERS FOR STAINLESS STEEL BALL VALVES ONTO MILD STEEL FLANGES:
 - 2.1. FASTENERS SHALL BE STAINLESS STEEL ON BOTH JOINTS, TOP AND BOTTOM.
3. CORROSION PROTECTION:
 - 3.1. LINING: THE STEEL PIPES WILL BE PROTECTED INTERNALLY BY A SOLVENT BORNE LIQUID EPOXY LINING WITH A MINIMUM THICKNESS OF 300 MICRONS.
 - 3.2. COATING: EPOXY COATING AND LINING SHALL CONFORM TO SANS1217
 - 3.3. FLANGE FACES: ALL FLANGES IN CONTACT SOIL TO BE WRAPPED WITH PETROLEUM BASED TAPE OR SIMILAR.
 - 3.4. FASTENERS FOR STAINLESS STEEL BALL VALVES: HEADS AND SHANKS AREAS OF BOLTS, NUTS AND WASHERS SHALL BE EPOXY POWDER COATED TO DFT 50 MICRONS. THREADS SHALL BE PROTECTED WITH MOLYBDENUM DISULPHIDE LUBRICANT OR A NICKEL ANTISEIZE COMPOUND. THREAD OF THE BOLTS MUST BE ON THE STAINLESS STEEL FLANGE.
4. GENERAL:
 - 4.1. CHECK THAT PIPES SPECIALS FIT CORRECTLY IN THE CHAMBER BEFORE MANUFACTURED.
 - 4.2. PIPE SPECIALS TO BE CUT ON SITE SHALL BE MANUFACTURED WITH AN EXTRA LENGTH OF 40 PERCENT.
 - 4.3. ALLOW FOR 3mm THICK GASKET BETWEEN THE FLANGES.
 - 4.4. CHECK DIMENSION OF THE EXISTING PIPELINE BEFORE ORDERING PIPE SPECIALS AND COUPLING.
 - 4.5. PROVIDE LIFTING LUGS WHERE REQUIRED.

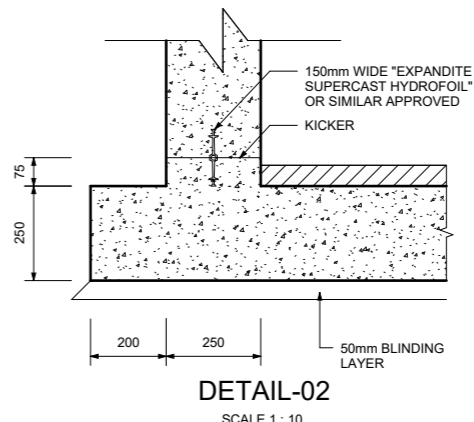
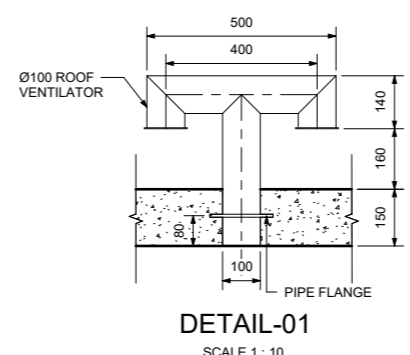
FOR TENDER PURPOSES ONLY

		DESIGNED M. MUKABWE	 ZIMILE UNBOUNDED ENGINEERING COPYRIGHT RESERVED ©	INTERNATIONAL BUSINESS GATEWAY OFFICE PARK CNR PIONEER AVENUE AND ELIZABETH MIDRIDGE PARK TEL: (011) 466 - 8576 FAX: (011) 466 - 8813 E-MAIL: info@zimile.co.za	REFERENCE DRAWING/S:	CLIENT: Umaphala Wesifiso Imkhanyakude	APPROVED: B. SEAKE FOR ZIMILE CONSULTING ENGINEERS DESIGNATION: SENIOR ENGINEER DATE: _____ SIGNATURE: _____	PROJECT: HLUHLUWE WATER SUPPLY SCHEME PHASE 2	PROJECT PHASE PRELIMINARY TENDER CONSTRUCTION AS BUILT	
		DRAWN T. MAKHUBALO							TITLE: SCOUR VALVE CHAMBER TYPE-2 PIPE SPECIALS	DATE: OCTOBER 2025 SCALE: AS SHOWN
A	ISSUED FOR TENDER	10/10/2025		CHECKED N. GUMEDE					DRAWING No. J000167 REVISION A	WT WT DT DT 204 A
NO.	NATURE OF REVISION	DATE						CAD FILENAME	SIZE A1	



AIR VALVE CHAMBER PIPE SPECIALS							CORROSION AND PROTECTION AS SHOWN IN PIPE NOTES		
Mark	Count	Size	MATERIAL	WALL THK.(mm)	DESCRIPTION	SKETCH	LINING	FLANGES	COATING
1	2	300mm ø			DISMANTLING JOINT PN20				
2	1	300 mm	STEEL X42	4.5mm	STRAIGHT PIPE ONE END FLANGED, OTHER PLAIN TO CUT TO SUIT ON SITE. PUDDLE FLANGE AS INDICATED. PN20		3.1	3.2	3.3
3	1	300 mm	STEEL X42	4.5mm	STRAIGHT PIPE ONE END FLANGED, OTHER PLAIN TO CUT TO SUIT ON SITE. PUDDLE FLANGE AS INDICATED. PN20		3.1	3.2	3.3
5	1	300mm Ø	STEEL X42	4.5mm	AIR VALVE TEE, FLANGED. PN20				
4	1				FLANGE ADAPTOR PN20				
6	1	300 mm	STEEL X42	4.5mm	STRAIGHT PIPE ONE END FLANGED, OTHER PLAIN TO CUT TO SUIT ON SITE. PUDDLE FLANGE AS INDICATED. PN20		3.1	3.2	3.3
7	1	300mm / 80mm			BLANK FLANGE: 350mm NB FLANGE WITH 80mm STEEL PIPE, WELDED IN THE MIDDLE OF BLANK FLANGE. PIPE FLANGED WITH 4x6mm M.S GUSSET PLATES AS INDICATED. PN20				
8	1	80mm Ø			BALL VALVE FLANGED. PN20				
9	1	80mm Ø			DOUBLE ORIFICE AIR VALVE. PN20				

AIR VALVE CHAMBER SCHEDULE						
VALVE	CH. (m)	NGL (masl)	PIL (masl)	RL (masl)	H CHAMBER	H NGL
AV1						
AV2						
AV3						



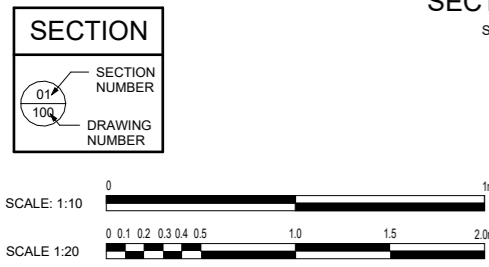
- GENERAL NOTES:**
- ALL LEVELS TO BE CONFIRMED ON SITE.
 - READ THIS DRAWING IN CONJUNCTION WITH RELEVANT ENGINEERING DRAWINGS.
 - DO NOT SCALE FROM THIS DRAWING. USE ONLY THE CALCULATED AND WRITTEN DIMENSIONS.
 - ALL EXCAVATIONS SHOULD BE INSPECTED AND APPROVED BY THE ENGINEER ON SITE.
 - ALL DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE STATED.

- ABBREVIATION:**
- NGL - NATURAL GROUND LEVEL
 - PIL - PIPE INVERT LEVEL
 - RL - REDUCED LEVEL

- MISCELLANEOUS NOTES:**
- CONCRETE AND MISCELLANEOUS
 - ALL CONCRETE EDGES TO BE 25mm CHAMFERED.
 - CONCRETE CHAMBER - CLASS 25/19 BLINDING LAYER - CLASS 15/19.
 - ALL EXPOSED METAL WORK TO BE CR12(UNPAINTED) OR SIMILAR APPROVED BY ENGINEER.
 - BACKFILL BELOW CHAMBER TO BE COMPACTED ON 150mm LAYERS TO 90 PERCENT MOD AASHTO

- PIPE NOTES:**
- FLANGES:
 - ALL DRILLED FLANGES THICKNESS TO SANS 1123 T1600/3, TYPE 3 TABLE AND FOR CLASSIFICATION REFER TO THE RELEVANT DRAWING. FLANGES TO BE DRILLED OFF-CENTRE AND TO BE FLAT JOINT FACES MACHINED N11.
 - PUDDLE FLANGES: SAME TYPE AND OD AS DRILLED FLANGES. FLAT FACES. NO DRILLING.
 - ANCHOR/TRUST FLANGES: SAME TYPE AND OD. 'I' AS DRILLED FLANGES. FLAT FACED.
 - COUPLINGS BURIED IN SOIL TO BE PROTECTED IN ACCORDANCE WITH DWS 9900, SECTION 13 (COATING SYSTEM PLUS PETROLATUM WRAPPING).
 - FASTENERS FOR STAINLESS STEEL BALL VALVES ONTO MILD STEEL FLANGES:
 - FASTENERS SHALL BE STAINLESS STEEL ON BOTH JOINTS, TOP AND BOTTOM.
 - CORROSION PROTECTION:
 - LINING: THE STEEL PIPES WILL BE PROTECTED INTERNALLY BY A SOLVENT BORNE LIQUID EPOXY LINING WITH A MINIMUM THICKNESS OF 300 MICRONS.
 - COATING: EPOXY COATING AND LINING SHALL CONFORM TO SANS1217
 - FLANGE FACES: ALL FLANGES IN CONTACT WITH SOIL TO BE WRAPPED WITH PETROLEUM BASE TAPE OR SIMILAR.
 - FASTENERS FOR STAINLESS STEEL BALL VALVES: HEADS AND SHANKS AREAS OF BOLTS, NUTS AND WASHERS SHALL BE EPOXY POWDER COATED TO DFT 50 MICRONS. THREADS SHALL BE PROTECTED WITH MOLYBDENUM DISULPHIDE LUBRICANT OR A NICKEL ANTISEIZE COMPOUND. THREAD OF THE BOLTS MUST BE ON THE STAINLESS STEEL FLANGE.
 - GENERAL:
 - CHECK THAT PIPES SPECIALS FIT CORRECTLY IN THE CHAMBER BEFORE MANUFACTURED.
 - PIPE SPECIALS TO BE CUT ON SITE SHALL BE MANUFACTURED WITH AN EXTRA LENGTH OF 40 PERCENT.
 - ALLOW FOR 3mm THICK GASKET BETWEEN THE FLANGES.
 - CHECK DIMENSION OF THE EXISTING PIPELINE BEFORE ORDERING PIPE SPECIALS AND COUPLING.
 - PROVIDE LIFTING LUGS WHERE REQUIRED.

FOR TENDER PURPOSES ONLY



DESIGNED	M. MUKABWE
DRAWN	T. MAKHUBALO
CHECKED	N. GUMEDE
DATE	10/10/2025

ZIMILE UNBOUNDED ENGINEERING

INTERNATIONAL BUSINESS GATEWAY OFFICE PARK
 CNR PIONEER AVENUE AND ELIZABETH MIDRIDGE PARK
 TEL: (011) 466 - 8576
 FAX: (011) 466 - 8813
 E-MAIL: info@zimile.co.za

COPYRIGHT RESERVED ©

REFERENCE DRAWING/S:

CLIENT: **UMABHALA WESIFUNGA**

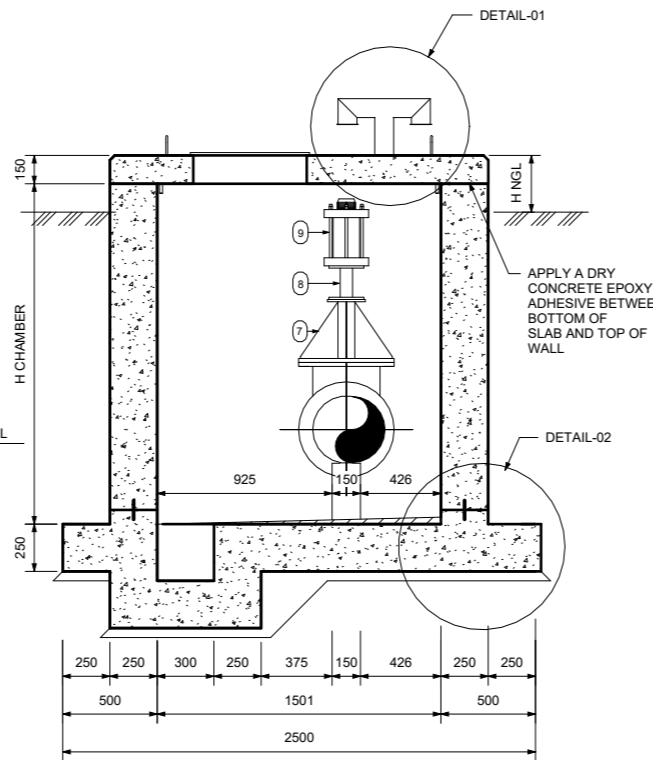
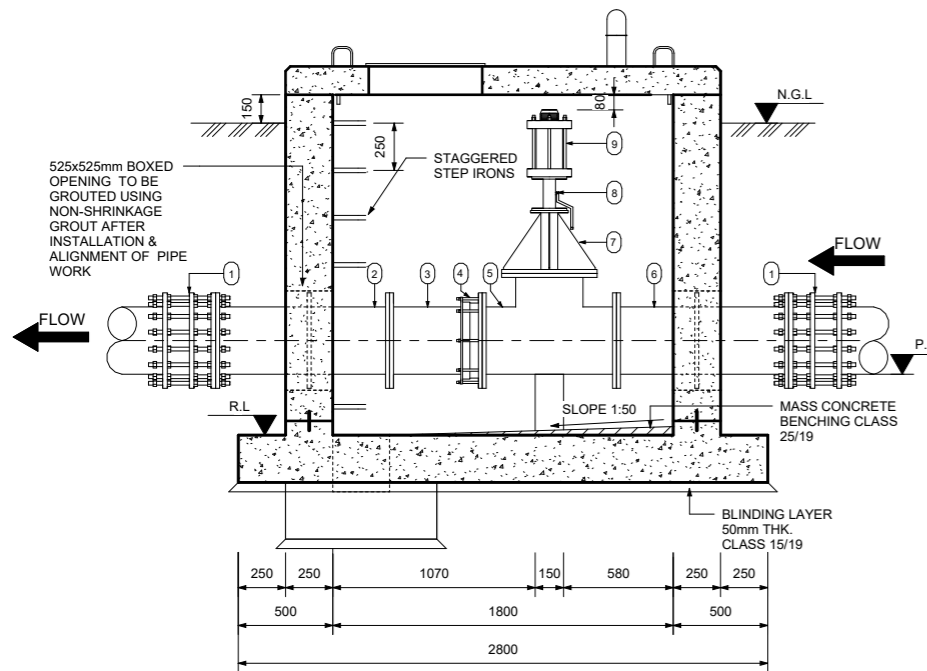
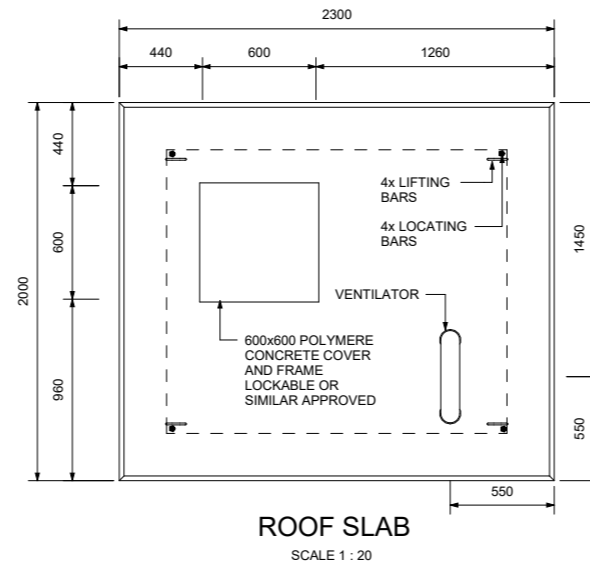
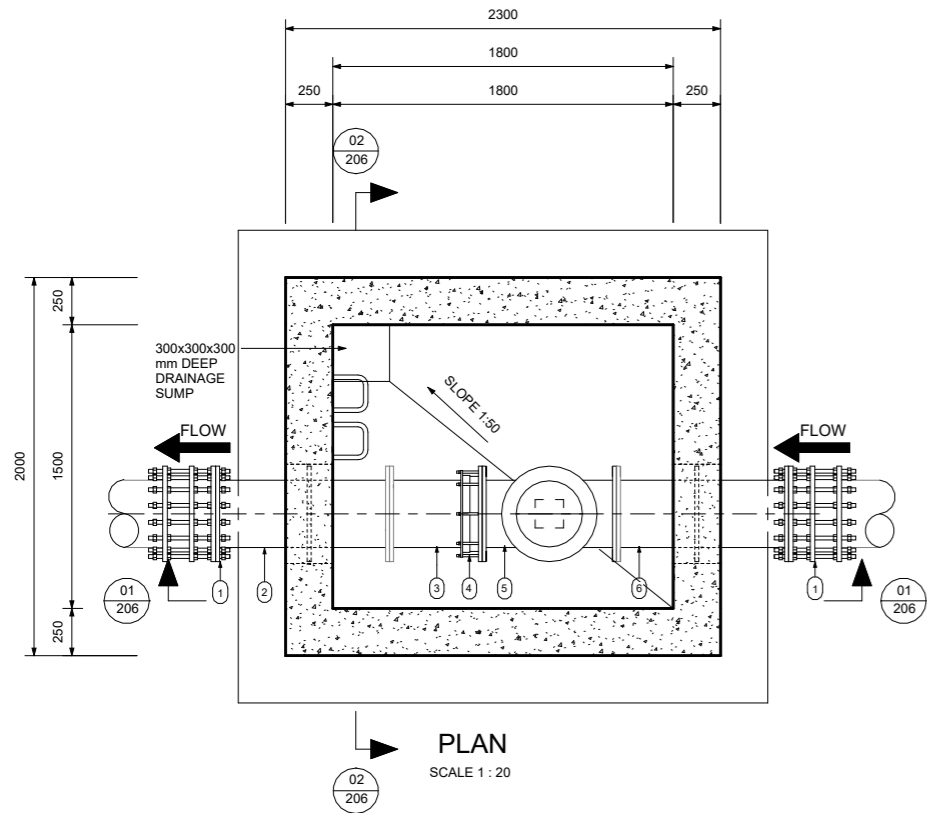
APPROVED: **B. SEAKE**
 FOR ZIMILE CONSULTING ENGINEERS
 DESIGNATION: SENIOR ENGINEER

DATE: _____ SIGNATURE: _____

PROJECT: **HLUHLUWE WATER SUPPLY SCHEME PHASE 2**

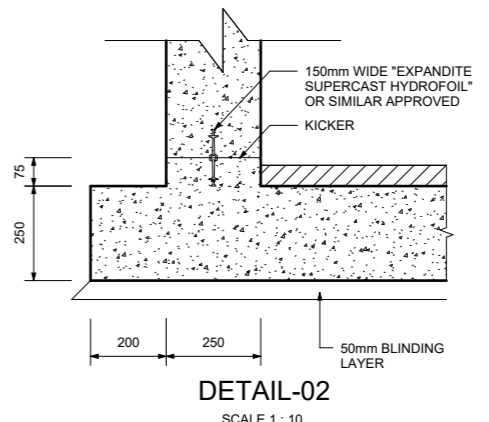
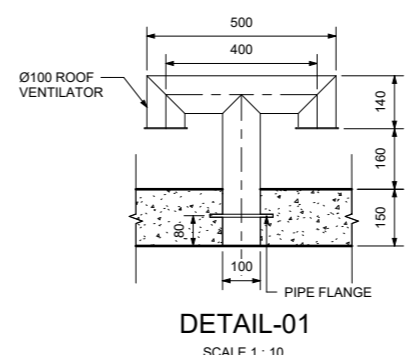
TITLE: **AIR VALVE CHAMBER VALVE CHAMBER CONCRETE DETAILS AND PIPE SPECIALS 300mm Ø**

PROJECT PHASE			
PRELIMINARY	TENDER	CONSTRUCTION	AS BUILT
DATE:	OCTOBER 2025	SCALE:	AS SHOWN
DRAWING No.	J000167	WT	DT
CAD FILENAME		205	A
			A1



AIR VALVE CHAMBER PIPE SPECIALS							CORROSION AND PROTECTION AS SHOWN IN PIPE NOTES		
Mark	Count	Size	MATERIAL	WALL THK.(mm)	DESCRIPTION	SKETCH	LINING	FLANGES	COATING
1	2	355 mm Ø			DISMANTLING JOINT PN20				
2	1	355 mm	MILD STEEL X42	6mm	STRAIGHT PIPE BOTH ENDS FLANGED, PUDDLE FLANGE AS INDICATED. PN20		3.1	3.2	3.3
3	1	350 mm / 355	MILD STEEL X42	6mm	STRAIGHT PIPE ONE END FLANGED, OTHER PLAIN TO CUT TO SUIT ON SITE. PN20		3.1	3.2	3.3
4	1	355mm Ø			FLANGE ADAPTOR. PN20				
5	1	355mm Ø	GALVANIZED X42	6mm	AIR VALVE TEE FLANGED. PN20				
6	1	350 mm / 355	MILD STEEL X42	6mm	STRAIGHT PIPE ONE END FLANGED, OTHER PLAIN TO CUT TO SUIT ON SITE. PN20		3.1	3.2	3.3
7	1	355mm / 80mm			BLANK FLANGE: 350mm NB FLANGE WITH 80mm STEEL PIPE, WELDED IN THE MIDDLE OF BLANK FLANGE. PIPE FLANGED WITH 4x6mm M.S GUSSET PLATES AS INDICATED. PN20				
8	1	80mm Ø			BALL VALVE FLANGED. PN20				
9	1	80mm Ø			DOUBLE ORIFICE AIR VALVE. PN20				

AIR VALVE CHAMBER SCHEDULE						
VALVE	CH. (m)	NGL (masl)	PIL (masl)	RL (masl)	H CHAMBER	H NGL



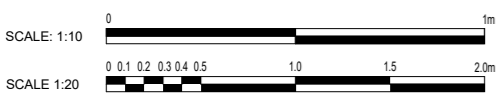
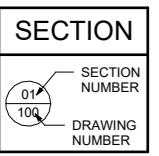
- GENERAL NOTES:**
- ALL LEVELS TO BE CONFIRMED ON SITE.
 - READ THIS DRAWING IN CONJUNCTION WITH RELEVANT ENGINEERING DRAWINGS.
 - DO NOT SCALE FROM THIS DRAWING. USE ONLY THE CALCULATED AND WRITTEN DIMENSIONS.
 - ALL EXCAVATIONS SHOULD BE INSPECTED AND APPROVED BY THE ENGINEER ON SITE.
 - ALL DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE STATED.

- ABBREVIATION:**
- NGL - NATURAL GROUND LEVEL
 - PIL - PIPE INVERT LEVEL
 - RL - REDUCED LEVEL

- MISCELLANEOUS NOTES:**
- CONCRETE AND MISCELLANEOUS
 - ALL CONCRETE EDGES TO BE 25mm CHAMFERED.
 - CONCRETE CHAMBER - CLASS 25/19 BLINDING LAYER - CLASS 15/19.
 - ALL EXPOSED METAL WORK TO BE CR12 (UNPAINTED) OR SIMILAR APPROVED BY ENGINEER.
 - BACKFILL BELOW CHAMBER TO BE COMPACTED ON 150mm LAYERS TO 90 PERCENT MOD AASHTO

- PIPE NOTES:**
- FLANGES:
 - ALL DRILLED FLANGES' THICKNESS TO SANS 1123 T1600/3, TYPE 3 TABLE AND FOR CLASSIFICATION REFER TO THE RELEVANT DRAWING. FLANGES TO BE DRILLED OFF-CENTRE AND TO BE FLAT JOINT FACES MACHINED N11.
 - PUDDLE FLANGES: SAME TYPE AND OD AS DRILLED FLANGES. FLAT FACES. NO DRILLING.
 - ANCHOR/TRUST FLANGES: SAME TYPE AND OD. 'I' AS DRILLED FLANGES. FLAT FACED.
 - COUPLINGS BURIED IN SOIL TO BE PROTECTED IN ACCORDANCE WITH DWS 9900, SECTION 13 (COATING SYSTEM PLUS PETROLATUM WRAPPING).
 - FASTENERS FOR STAINLESS STEEL BALL VALVES ONTO MILD STEEL FLANGES:
 - FASTENERS SHALL BE STAINLESS STEEL ON BOTH JOINTS, TOP AND BOTTOM.
 - CORROSION PROTECTION:
 - LINING: THE STEEL PIPES WILL BE PROTECTED INTERNALLY BY A SOLVENT BORNE LIQUID EPOXY LINING WITH A MINIMUM THICKNESS OF 300 MICRONS.
 - COATING: EPOXY COATING AND LINING SHALL CONFORM TO SANS1217.
 - FLANGE FACES: ALL FLANGES IN CONTACT WITH SOIL TO BE WRAPPED WITH PETROLEUM BASE TAPE OR SIMILAR.
 - FASTENERS FOR STAINLESS STEEL BALL VALVES: HEADS AND SHANKS AREAS OF BOLTS, NUTS AND WASHERS SHALL BE EPOXY POWDER COATED TO DFT 50 MICRONS. THREADS SHALL BE PROTECTED WITH MOLYBDENUM DISULPHIDE LUBRICANT OR A NICKEL ANTISEIZE COMPOUND. THREAD OF THE BOLTS MUST BE ON THE STAINLESS STEEL FLANGE.
 - GENERAL:
 - CHECK THAT PIPES SPECIALS FIT CORRECTLY IN THE CHAMBER BEFORE MANUFACTURED.
 - PIPE SPECIALS TO BE CUT ON SITE SHALL BE MANUFACTURED WITH AN EXTRA LENGTH OF 40 PERCENT.
 - ALLOW FOR 3mm THICK GASKET BETWEEN THE FLANGES.
 - CHECK DIMENSION OF THE EXISTING PIPELINE BEFORE ORDERING PIPE SPECIALS AND COUPLING.
 - PROVIDE LIFTING LUGS WHERE REQUIRED.

FOR TENDER PURPOSES ONLY



DESIGNED	M. MUKABWE
DRAWN	T. MAKHUBALO
CHECKED	N. GUMEDE
DATE	10/10/2025

ZIMILE UNBOUNDED ENGINEERING

INTERNATIONAL BUSINESS GATEWAY OFFICE PARK
 CNR PIONEER AVENUE AND ELIZABETH MIDRIDGE PARK
 TEL: (011) 466 - 8576
 FAX: (011) 466 - 8813
 E-MAIL: info@zimile.co.za

COPYRIGHT RESERVED ©

REFERENCE DRAWING/S:

CLIENT: **UMAPHALA WESITHINGA**

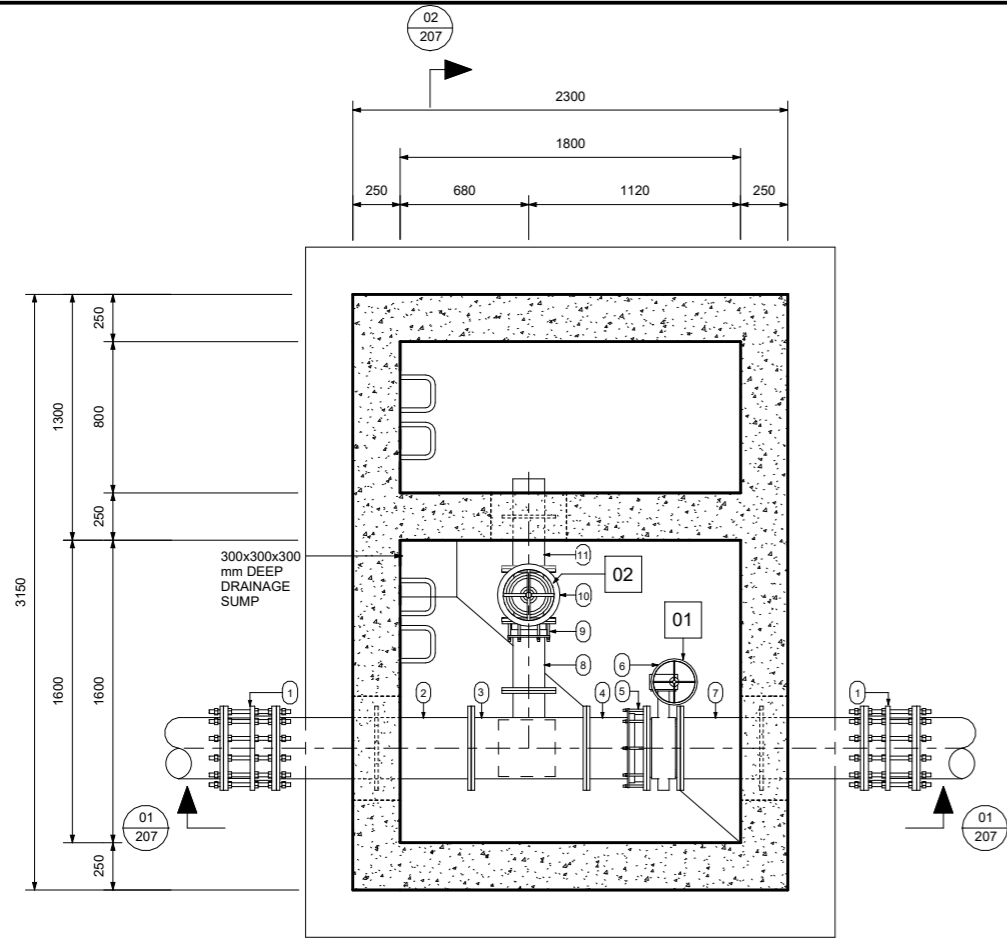
APPROVED: **B. SEAKE**
 FOR ZIMILE CONSULTING ENGINEERS
 DESIGNATION: SENIOR ENGINEER

DATE: _____ SIGNATURE: _____

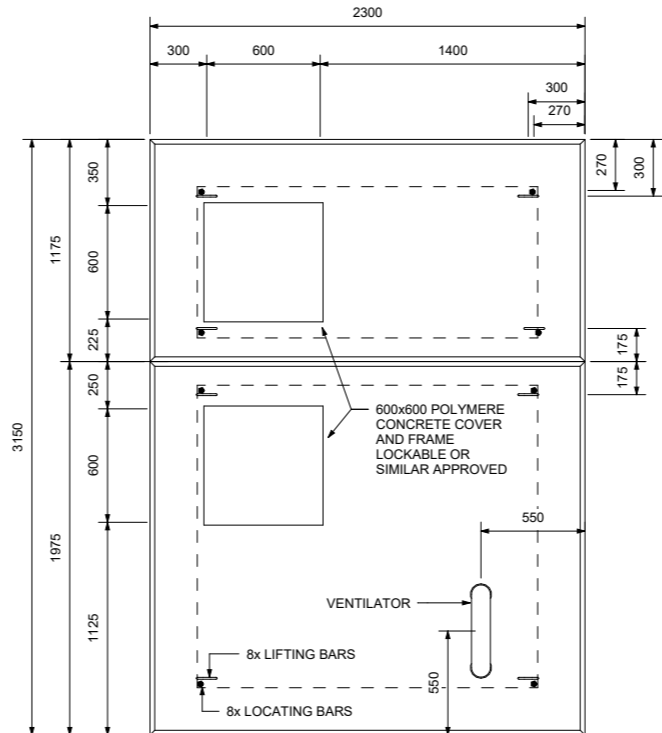
PROJECT: **HLULUWE WATER SUPPLY SCHEME PHASE 2**

TITLE: **AIR VALVE CHAMBER VALVE, CHAMBER CONCRETE DETAILS AND PIPE SPECIALS 355mm Ø**

PROJECT PHASE			
PRELIMINARY	TENDER	CONSTRUCTION	AS BUILT
DATE: OCTPBER 2025	SCALE: AS SHOWN		
DRAWING No. J000167	WT	DT	206
CAD FILENAME	REVISION	SIZE	A1



PLAN
SCALE 1 : 20



ROOF SLAB
SCALE 1 : 20

NOTES:
POSITION OF THE CHAMBER MUST BE DECIDED TO THE TERRAIN SLOPE

GENERAL NOTES:

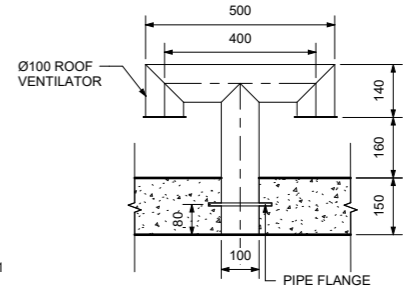
1. ALL LEVELS TO BE CONFIRMED ON SITE.
2. READ THIS DRAWING IN CONJUNCTION WITH RELEVANT ENGINEERING DRAWINGS.
3. DO NOT SCALE FROM THIS DRAWING. USE ONLY THE CALCULATED AND WRITTEN DIMENSIONS.
4. ALL EXCAVATIONS SHOULD BE INSPECTED AND APPROVED BY THE ENGINEER ON SITE.
5. ALL DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE STATED.

ABBREVIATION:

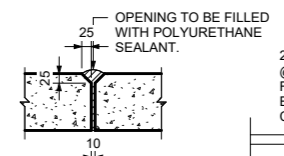
- NGL - NATURAL GROUND LEVEL
- PIL - PIPE INVERT LEVEL
- RL - REDUCED LEVEL

MISCELLANEOUS NOTES:

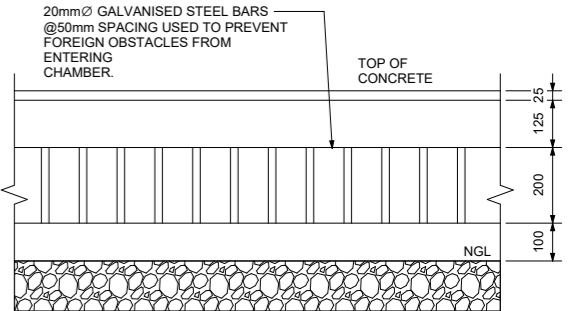
1. CONCRETE AND MISCELLANEOUS
1.1. ALL CONCRETE EDGES TO BE 25mm CHAMFERED.
- 1.2. CONCRETE - CHAMBER - CLASS 25/19
BLINDING LAYER - CLASS 15/19.
- 1.3. ALL EXPOSED METAL WORK TO BE CR12(UNPAINTED) OR SIMILAR APPROVED BY ENGINEER.
- 1.4. BACKFILL BELOW CHAMBER TO BE COMPACTED ON 150mm LAYERS TO 90 PERCENT MOD AASHTO



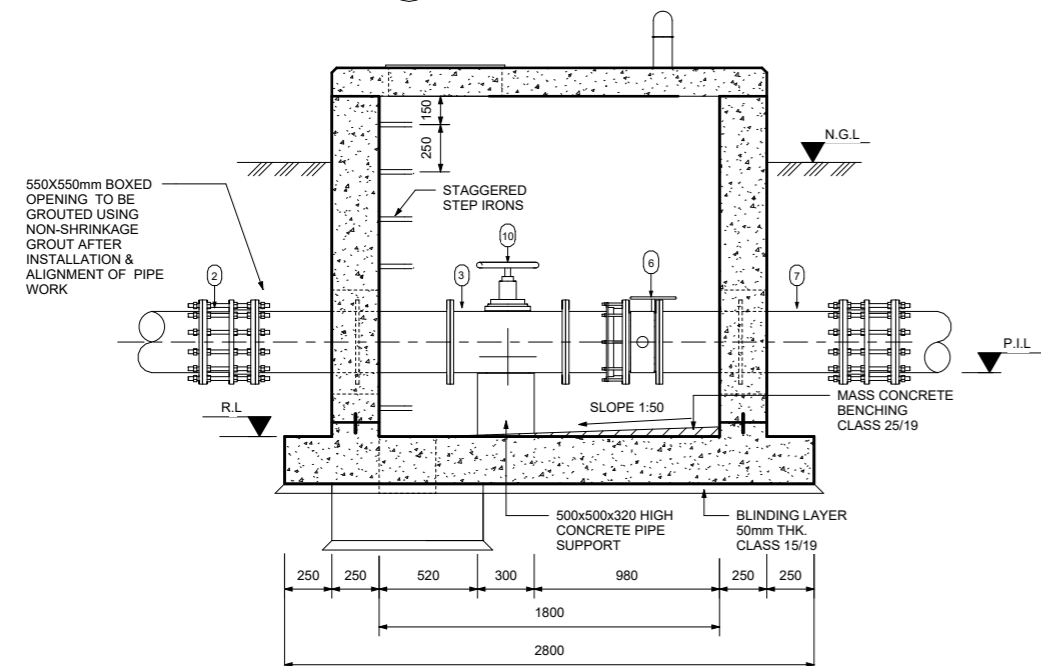
DETAIL-01
SCALE 1 : 10



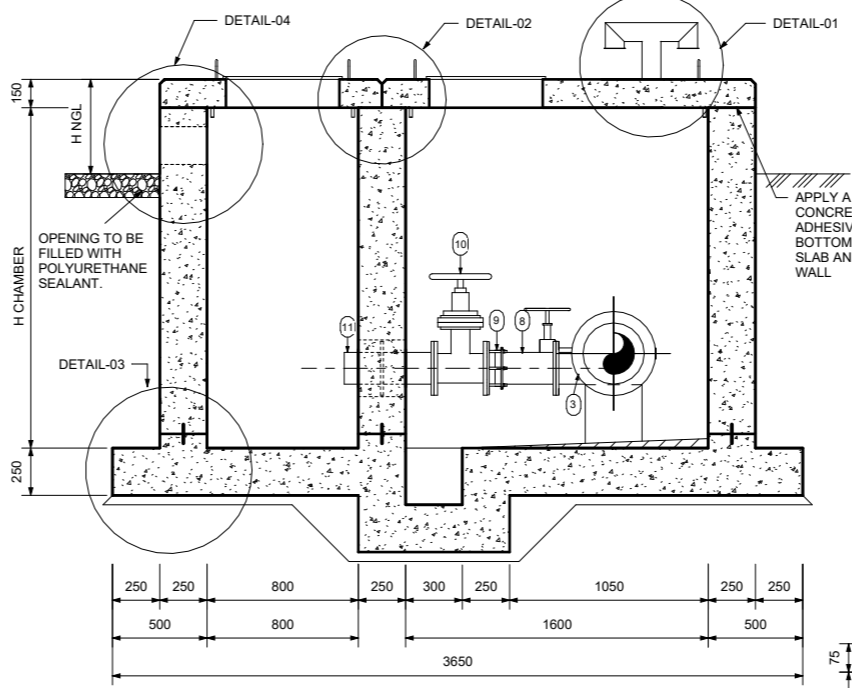
DETAIL-02
SCALE 1 : 10



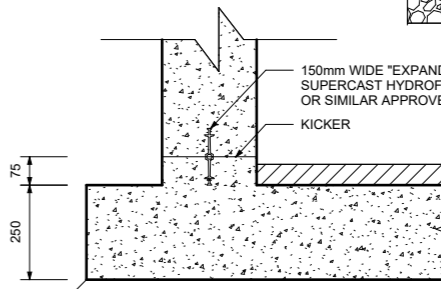
DETAIL-04
SCALE 1 : 10



SECTION 01-01
SCALE 1 : 20



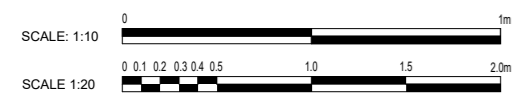
SECTION 02-02
SCALE 1 : 20



DETAIL-03
SCALE 1 : 10

FOR TENDER PURPOSES ONLY

SCOUR VALVE CHAMBER SCHEDULE						
SCOUR VALVE	CH. (m)	NGL (masl)	PIL (masl)	RL (masl)	H CHAMBER	H NGL
SCOUR VALVE-1						
SCOUR VALVE-2						
SCOUR VALVE-3						



A NO	ISSUE FOR TENDER NATURE OF REVISION	10/10/2025 DATE	DESIGNED	M. MUKABWE	ZIMILE UNBOUNDED ENGINEERING	INTERNATIONAL BUSINESS GATEWAY OFFICE PARK CNR PIONEER AVENUE AND ELIZABETH MIDRIDGE PARK TEL: (011) 466 - 8576 FAX: (011) 466 - 8813 E-MAIL: info@zimile.co.za	REFERENCE DRAWING/S:	CLIENT: UNAPRALA WESIFINDA FOR ZIMILE CONSULTING ENGINEERS	APPROVED: B. SEAKE SENIOR ENGINEER	PROJECT: HLUHLUWE WATER SUPPLY SCHEME PHASE 2	PROJECT PHASE PRELIMINARY TENDER CONSTRUCTION AS-BUILT						
			DRAWN	T. MAKHUBALO							DATE:	OCTOBER 2025	SCALE:	AS SHOWN			
			CHECKED	N. GUMEDE							DRAWING No.	J000167	WT	DT	207	REVISION	A
											CAD FILENAME					SIZE	A1

SCOUR VALVE CHAMBER PIPE SPECIALS							CORROSION AND PROTECTION AS SHOWN IN PIPE NOTES		
Mark	Count	Size	MATERIAL	WALL THK (mm)	DESCRIPTION	SKETCH	LINING	COATING	FLANGES
1	2	300 mmø-300 mmø			DISMANTLING JOINTS PN20				
2	1	300 mmø	STEEL X42	4.5	STRAIGHT PIPE BOTH ENDS FLANGED, PUDDLE FLANGE AS REQUESTED. PN20		3.1	3.2	3.3
3	1	300 mmø-300 mmø-150 mmø	STEEL X42	4.5	90° UNEQUAL TEE, FLANGED. PN20		3.1	3.2	3.3
4	1	300 mmø	STEEL X42	4.5	STRAIGHT PIPE ONE END FLANGED, OTHER PLAIN TO CUT TO SUIT ON SITE. PN20		3.1	3.2	3.3
5	1	300 mmø-300 mmø			FLANGED ADAPTOR. PN20				
6	1	300 mmø-300 mmø			BUTTERFLY VALVE, RIGHT HAND ACUATOR, RIGHT HAND PROJECTION, PN20				3.3
7	1	300 mmø	STEEL X42	4.5	STRAIGHT PIPE BOTH ENDS FLANGED, PUDDLE FLANGE AS REQUESTED. PN20		3.1	3.2	3.3
8	1	150 mmø	STEEL X42	4.5	STRAIGHT PIPE ONE END FLANGED, OTHER PLAIN TO CUT TO SUIT ON SITE. PN20		3.1	3.2	3.3
9	1	150 mmø-150 mmø			FLANGED ADAPTOR. PN20				3.3
10	1	150 mmø-150 mmø			RESILIENT SEAL GATE VALVE, NONE RISING SPINDLE, FLANGED. PN20				3.3
11	1	150 mmø	STEEL X42	4.5	STRAIGHT PIPE ONE END FLANGED, OTHER PLAIN TO CUT TO SUIT ON SITE. PUDDLE FLANGE AS INDICATED. PN20		3.1	3.2	3.3

- PIPE NOTES:**
- FLANGES:
 - ALL DRILLED FLANGES' THICKNESS TO SANS 1123 T1600/3, TYPE 3 TABLE AND FOR CLASSIFICATION REFER TO THE RELEVANT DRAWING. FLANGES TO BE DRILLED OFF-CENTRE AND TO BE FLAT JOINT FACES MACHINED N11.
 - PUDDLE FLANGES: SAME TYPE AND OD AS DRILLED FLANGES. FLAT FACES. NO DRILLING.
 - ANCHOR/TRUST FLANGES: SAME TYPE AND OD. 'T' AS DRILLED FLANGES. FLAT FACED.
 - COUPLINGS BURIED IN SOIL TO BE PROTECTED IN ACCORDANCE WITH DWS 9900, SECTION 13 (COATING SYSTEM PLUS PETROLATUM WRAPPING).
 - FASTENERS FOR STAINLESS STEEL BALL VALVES ONTO MILD STEEL FLANGES:
 - FASTENERS SHALL BE STAINLESS STEEL ON BOTH JOINTS, TOP AND BOTTOM.
 - CORROSION PROTECTION:
 - THE STEEL PIPES WILL BE PROTECTED INTERNALLY BY A SOLVENT BORNE LIQUID EPOXY LINING WITH A MINIMUM THICKNESS OF 300 MICRONS.
 - COATING: EPOXY COATING AND LINING SHALL CONFIRM TO SANS1217.
 - FLANGE FACES: ALL FLANGES IN CONTACT WITH SOIL TO BE WRAPPED WITH PETROLEUM BASE TAPE OR SIMILAR.
 - FASTENERS FOR STAINLESS STEEL BALL VALVES: HEADS AND SHANKS AREAS OF BOLTS, NUTS AND WASHERS SHALL BE EPOXY POWDER COATED TO DFT 50 MICRONS. THREADS SHALL BE PROTECTED WITH MOLYBDENUM DISULPHIDE LUBRICANT OR A NICKEL ANTISEIZE COMPOUND. THREAD OF THE BOLTS MUST BE ON THE STAINLESS STEEL FLANGE.
 - GENERAL:
 - CHECK THAT PIPES SPECIALS FIT CORRECTLY IN THE CHAMBER BEFORE MANUFACTURED.
 - PIPE SPECIALS TO BE CUT ON SITE SHALL BE MANUFACTURED WITH AN EXTRA LENGTH OF 40 PERCENT.
 - ALLOW FOR 3mm THICK GASKET BETWEEN THE FLANGES.
 - CHECK DIMENSION OF THE EXISTING PIPELINE BEFORE ORDERING PIPE SPECIALS AND COUPLING.
 - PROVIDE LIFTING LUGS WHERE REQUIRED.

FOR TENDER PURPOSES ONLY

		DESIGNED M. MUKABWE	 INTERNATIONAL BUSINESS GATEWAY OFFICE PARK CNR PIONEER AVENUE AND ELIZABETH MIDRIDGE PARK TEL: (011) 466 - 8576 FAX: (011) 466 - 8813 E-MAIL: info@zimile.co.za COPYRIGHT RESERVED ©	REFERENCE DRAWING/S:	CLIENT: UNABIRALA WESIFUNGA Mkhanyakude	APPROVED: B. SEAKE FOR ZIMILE CONSULTING ENGINEERS DESIGNATION: SENIOR ENGINEER	PROJECT: HLUHLUWE WATER SUPPLY SCHEME PHASE 2	PROJECT PHASE PRELIMINARY TENDER CONSTRUCTION AS BUILT DATE: OCTOBER 2025 SCALE: AS SHOWN DRAWING No. J000167 WT DT 208 A CAD FILENAME:	
		DRAWN T. MAKHUBALO						SCOUR VALVE CHAMBER TYPE-2 PIPE SPECIALS 300mmø	REVISION A1
A NO.	ISSUE FOR TENDER NATURE OF REVISION	CHECKED N. GUMEDE					DATE SIGNATURE		

GENERAL NOTES:

1. ALL LEVELS TO BE CONFIRMED ON SITE.
2. READ THIS DRAWING IN CONJUNCTION WITH RELEVANT ENGINEERING DRAWINGS.
3. DO NOT SCALE FROM THIS DRAWING. USE ONLY THE CALCULATED AND WRITTEN DIMENSIONS.
4. ALL EXCAVATIONS SHOULD BE INSPECTED AND APPROVED BY THE ENGINEER ON SITE.
5. ALL DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE STATED.

ABBREVIATION:

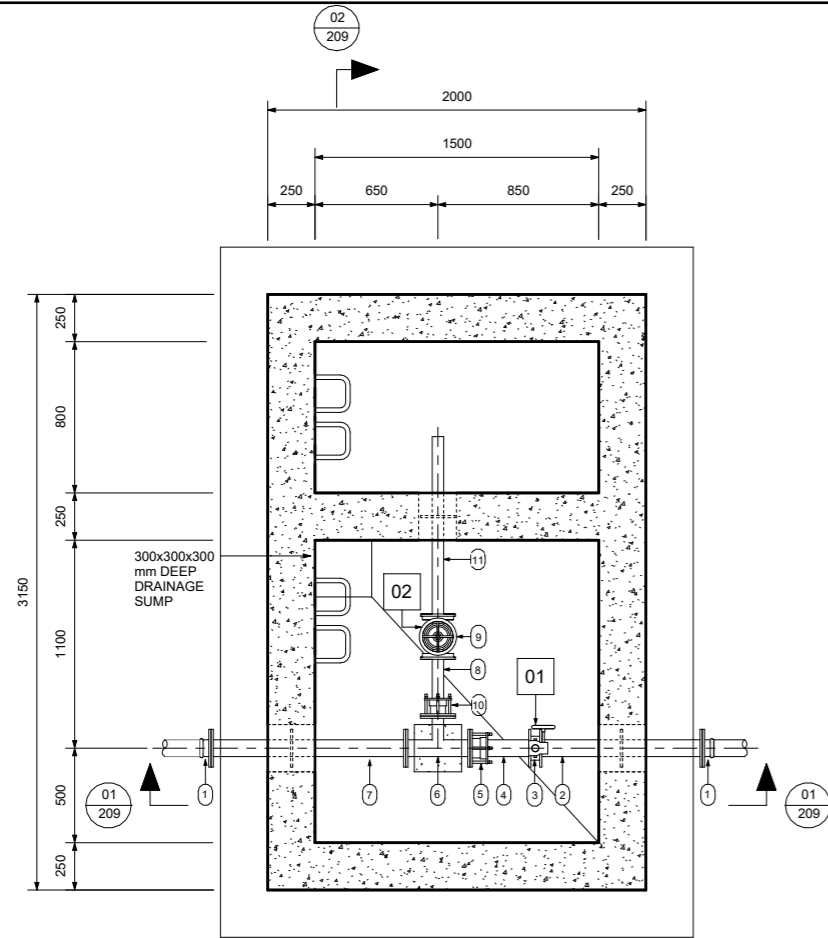
- NGL - NATURAL GROUND LEVEL
- PIL - PIPE INVERT LEVEL
- RL - REDUCED LEVEL

MISCELLANEOUS NOTES:

1. CONCRETE AND MISCELLANEOUS
 - 1.1 ALL CONCRETE EDGES TO BE 25mm CHAMFERED.
 - 1.2 CONCRETE - CHAMBER - CLASS 25/19
BLINDING LAYER - CLASS 15/19.
 - 1.3 ALL EXPOSED METAL WORK TO BE CR12 (UNPAINTED) OR SIMILAR APPROVED BY ENGINEER.
 - 1.4 BACKFILL BELOW CHAMBER TO BE COMPACTED ON 150mm LAYERS TO 90 PERCENT MOD AASHTO

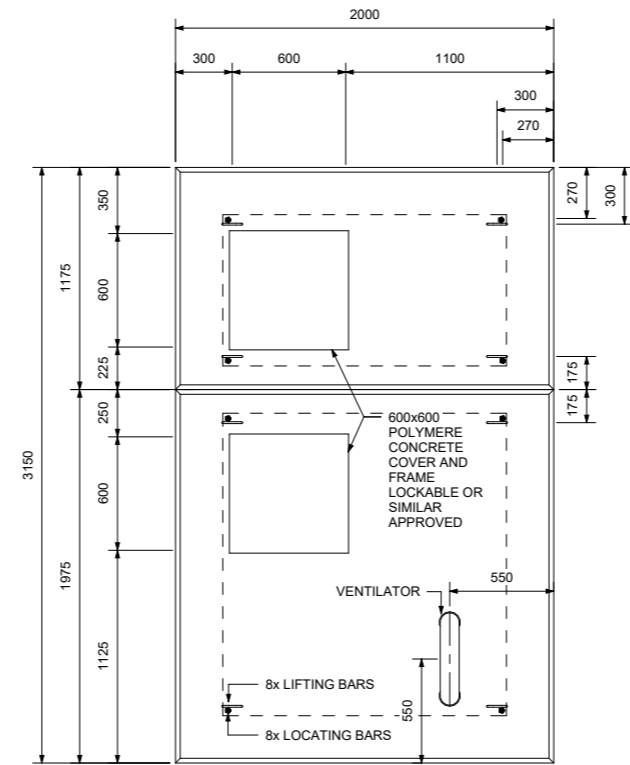
NOTES:

POSITION OF THE CHAMBER MUST BE DECIDED TO THE TERRAIN SLOPE



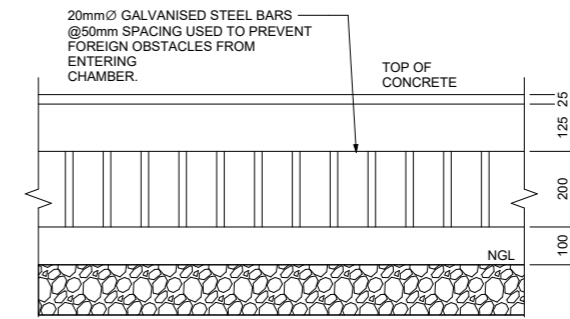
PLAN

SCALE 1 : 20



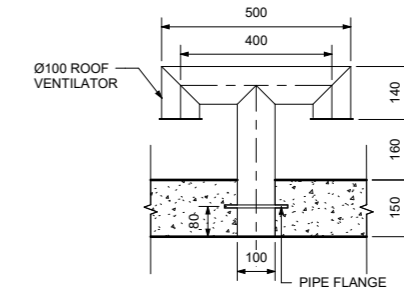
ROOF SLAB

SCALE 1 : 20



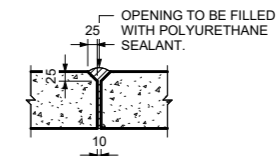
DETAIL-04

SCALE 1 : 10



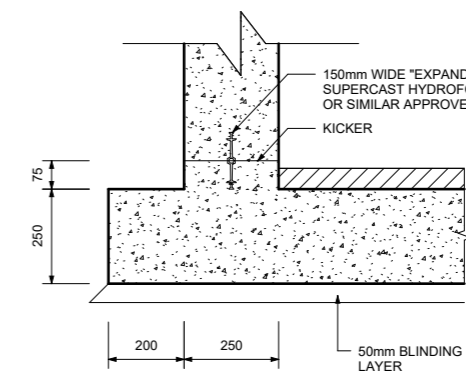
DETAIL-01

SCALE 1 : 10



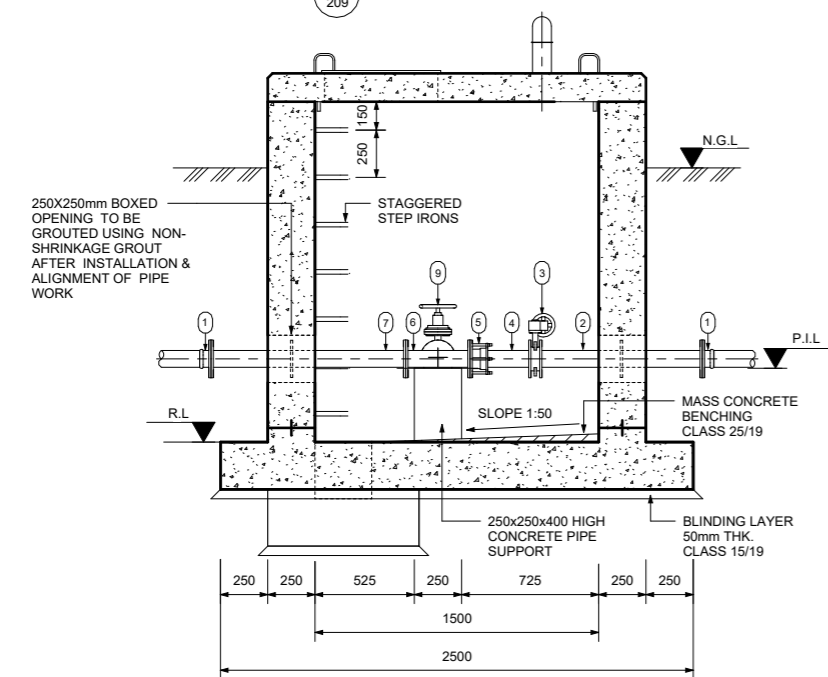
DETAIL-02

SCALE 1 : 10



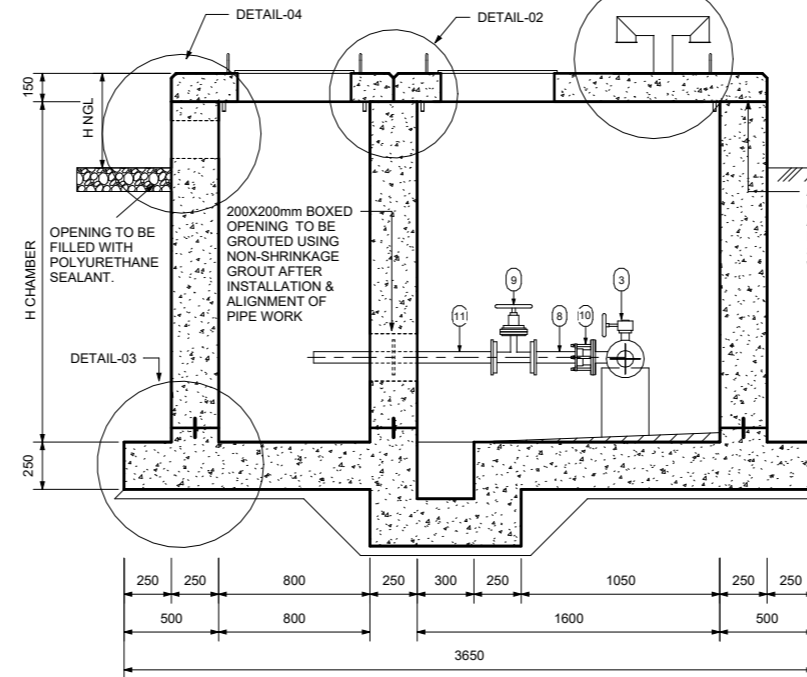
DETAIL-03

SCALE 1 : 10



SECTION 01-01

SCALE 1 : 20

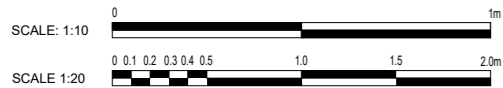


SECTION 02-02

SCALE 1 : 20

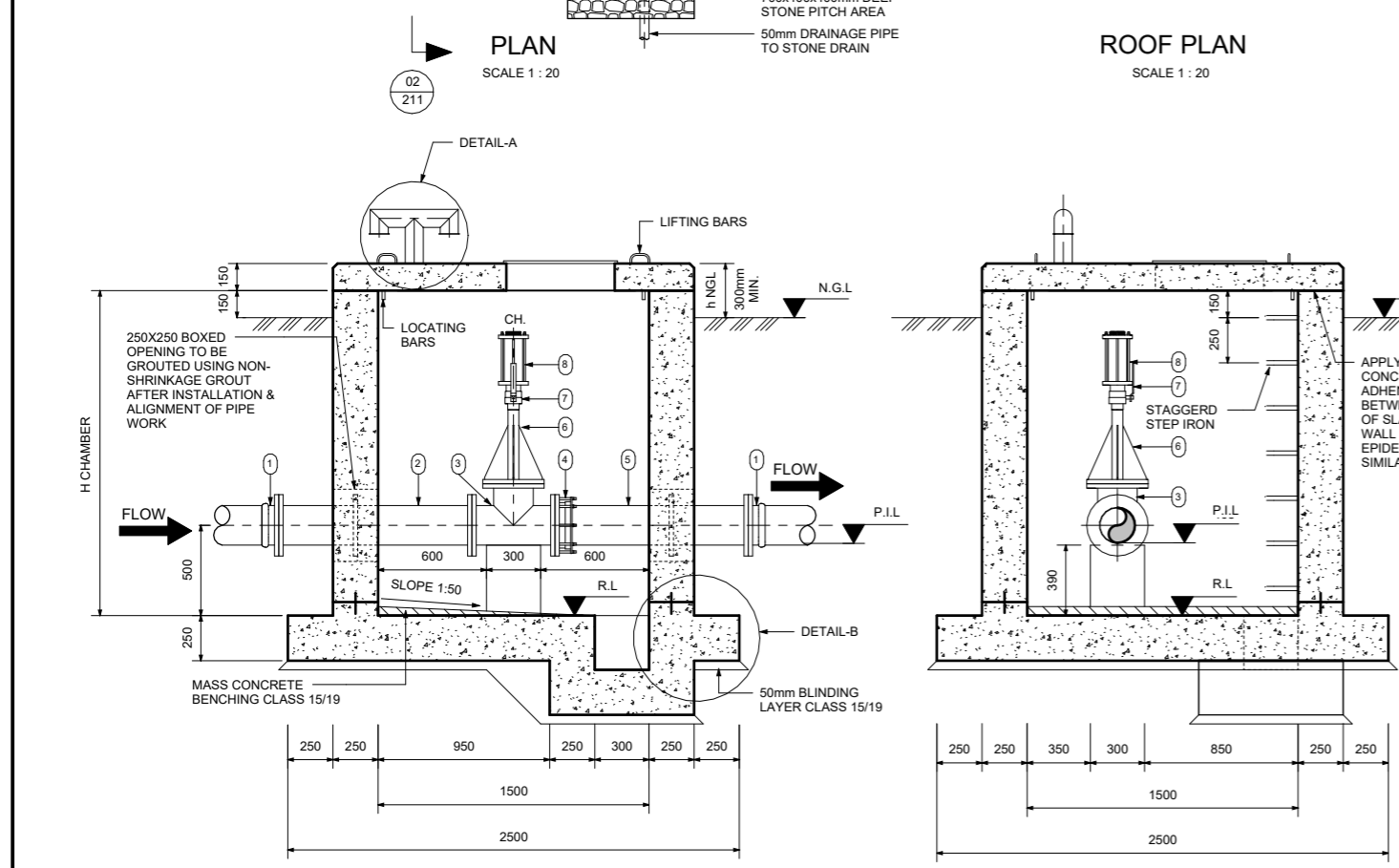
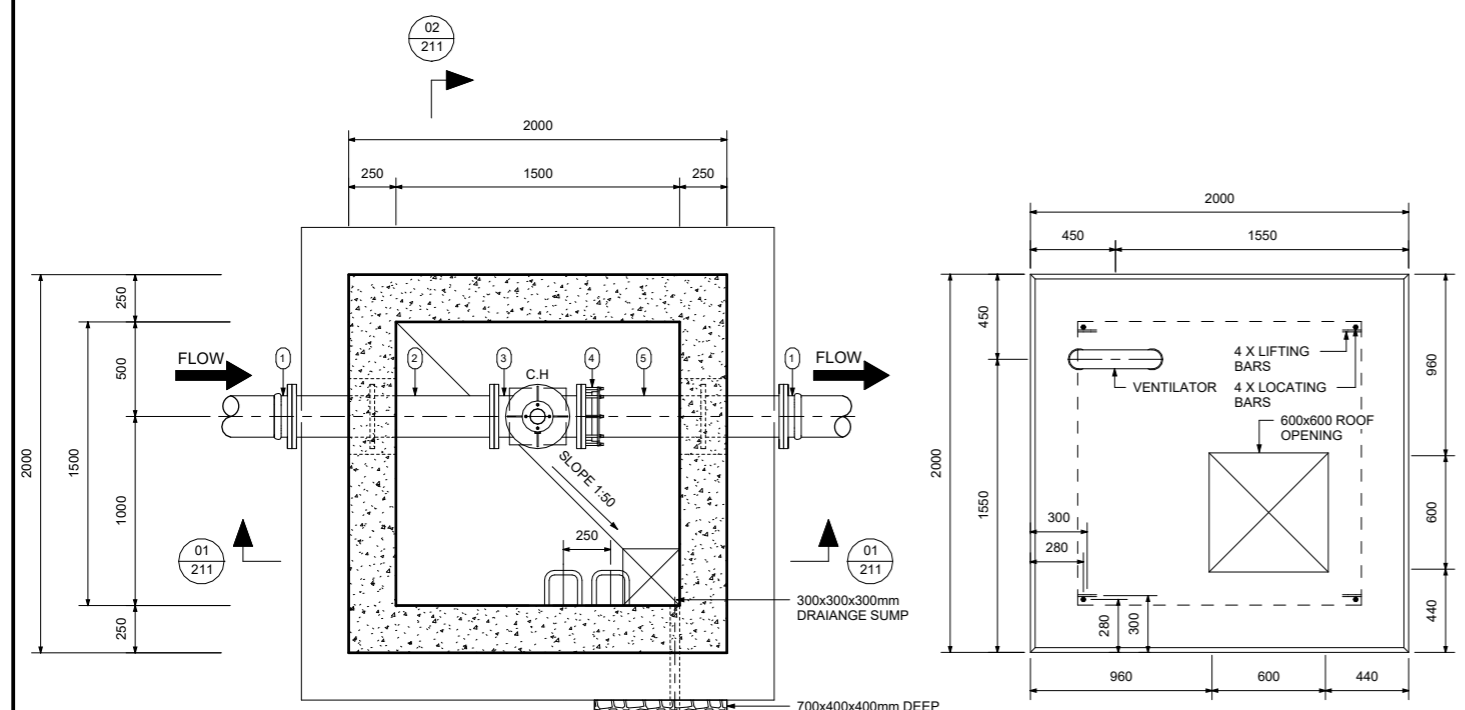
SCOUR VALVE CHAMBER SCHEDULE

	CH. (m)	NGL (masl)	PIL (masl)	RL (masl)	H CHAMBER	H NGL
SCOUR VALVE-1						
SCOUR VALVE-2						



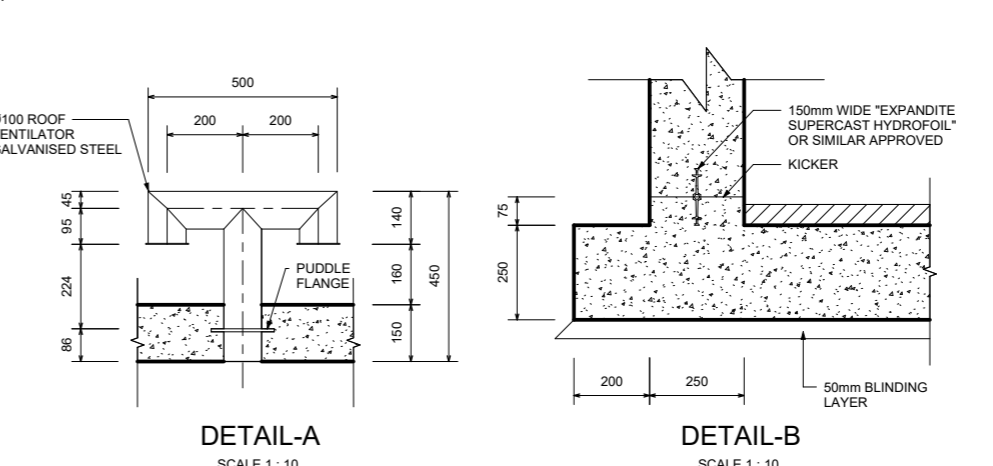
FOR TENDER PURPOSES ONLY

A	ISSUE FOR TENDER	10/10/2025	CHECKED	M. MUKABWE	DESIGNED	ZIMILE	INTERNATIONAL BUSINESS GATEWAY OFFICE PARK CNR PIONEER AVENUE AND ELIZABETH MIDRIDGE PARK TEL: (011) 466 - 8576 FAX: (011) 466 - 8813 E-MAIL: info@zimile.co.za	REFERENCE:	CLIENT:	APPROVED:	PROJECT:	PROJECT PHASE				
												PRELIMINARY TENDER CONSTRUCTION AS-BUILT				
NO	NATURE OF REVISION	DATE	N. GUMEDE	DRAWN	T. MAKHUBALO	UNBOUNDED ENGINEERING	COPYRIGHT RESERVED ©			B. SEAKE FOR ZIMILE CONSULTING ENGINEERS DESIGNATION: SENIOR ENGINEER	HLUHLUWE WATER SUPPLY SCHEME PHASE 2	DATE:	OCTOBER 2025	SCALE:	AS SHOWN	
												DRAWING No.	J000167	WT	DT	209
TITLE: SCOUR VALVE CHAMBER TYPE-2 CONCRETE DETAILS AND PIPE SPECIALS												CAD FILENAME			SIZE	A1



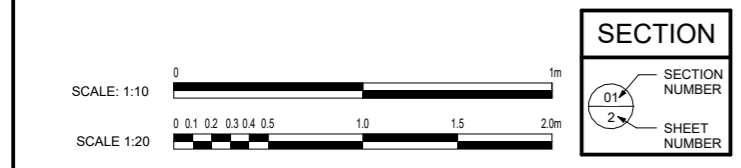
AIR VALVE PIPE SCHEDULE							CORROSION PROTECTION AS SHOWN IN PIPE NOTES		
Mark	Count	DIA. (mm) NB	WALL THICK.	MATERIAL	DESCRIPTION	SKETCH	CORROSION PROTECTION AS SHOWN IN PIPE NOTES		
							LINING	COATING	FLANGES
1	2	200mm			SG FLANGE ADAPTOR. PN20				3.3
2	1	200mm		STEEL GARDE A	STRAIGHT PIPE BOTH ENDS FLANGED. PUDDLE FLANGE AS INDICATED. PN20		3.1	3.2	3.3
3	1	200mm		STEEL GRADE A	AIR VALVE TEE, FLANGED. PN20		3.1	3.2	3.3
4	1	200mm			FLANGE ADAPTOR. PN20				3.3
5	1	200mm		STEEL GARDE A	STRAIGHT PIPE ONE END FLANGED. OTHER PLAIN FOR CUTTING TO SUIT ON SITE. PUDDLE FLANGE AS INDICATED. PN20		3.1	3.2	3.3
6	1	200mm			(d) mm NB SS NIPPLE. 100 mm LONG IN THE CENTER OF A BLANK FLANGE 150 mm NB. PN20				3.3
7	1	80mm		SS	(d) mm NB SS BALL VALVE, FULL PORT. SCREWED. PN20				
8	1	80mm		SS	(d) mm NB SS DOUBLE ORIFICE AIR VALVE. ANTI-SHOCK MECHANISM. SCREWED. PN20				

AIR VALVE CHAMBER SCHEDULE										
AIR VALVE	CH. (m)	NGL (masl)	PIL (masl)	RL (masl)	D (mm)	d (mm)	VALVE CLASS	PIPE CLASS	H CHAMBER (m)	h NGL (m)



- GENERAL NOTES:**
- ALL LEVELS TO BE CONFIRMED ON SITE.
 - READ THIS DRAWING IN CONJUNCTION WITH RELEVANT ENGINEERING DRAWINGS.
 - DO NOT SCALE FROM THIS DRAWING. USE ONLY THE CALCULATED AND WRITTEN DIMENSIONS.
 - ALL EXCAVATIONS SHOULD BE INSPECTED AND APPROVED BY THE ENGINEER ON SITE.
 - ALL DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE STATED.
- ABBREVIATION:**
- NGL - NATURAL GROUND LEVEL
PIL - PIPE INVERT LEVEL
RL - REDUCED LEVEL
- MISCELLANEOUS NOTES:**
- CONCRETE AND MISCELLANEOUS
 - ALL CONCRETE EDGES TO BE 25mm CHAMFERED.
 - CONCRETE :
CHAMBER - CLASS 25/19
BLINDING LAYER - CLASS 15/19.
 - ALL EXPOSED METAL WORK TO BE CR12 (UNPAINTED) OR SIMILAR APPROVED BY ENGINEER.
 - BACKFILL BELOW CHAMBER TO BE COMPACTED ON 150mm LAYERS TO 90 PERCENT MOD AASHTO

- PIPE NOTES:**
- FLANGES:
 - ALL DRILLED FLANGES' THICKNESS TO SANS 1123, TYPE 3 TABLE AND FOR CLASSIFICATION REFER TO THE RELEVANT DRAWING. FLANGES TO BE DRILLED OFF-CENTRE AND TO BE FLAT JOINT FACES MACHINED N11.
 - PUDDLE FLANGES: SAME TYPE AND OD AS DRILLED FLANGES. FLAT FACES. NO DRILLING.
 - ANCHOR/TRUST FLANGES: SAME TYPE AND OD. 'A' AS DRILLED FLANGES. FLAT FACED.
 - COUPLINGS BURIED IN SOIL TO BE PROTECTED IN ACCORDANCE WITH DWS 9900, SECTION 13 (COATING SYSTEM PLUS PETROLATUM WRAPPING).
 - FASTENERS FOR STAINLESS STEEL BALL VALVES ONTO MILD STEEL FLANGES:
 - FASTENERS SHALL BE STAINLESS STEEL ON BOTH JOINTS, TOP AND BOTTOM.
 - CORROSION PROTECTION:
 - LINING: THE STEEL PIPES WILL BE PROTECTED INTERNALLY BY A SOLVENT BORNE LIQUID EPOXY LINING WITH A MINIMUM THICKNESS OF 500 MICRONS.
 - COATING: EXTERNAL CORROSION PROTECTION WILL CONSIST OF A SINTAKOTE II FUSION BONDED POLYETHYLENE COATING FOR PIPES INSTALL UNDERGROUND. PIPES INSTALLED IN CHAMBERS, THE RESERVOIR AND IN PUMP STATION WILL HAVE A SOLVENT FREE EPOXY COATING WITH MINIMUM THICKNESS OF 500 MICRONS.
 - FLANGE FACES: ALL FLANGES UNDERGROUND TO BE WRAPPED WITH DENSO-TAPE.
 - FASTENERS FOR STAINLESS STEEL BALL VALVES: HEADS AND SHANKS AREAS OF BOLTS, NUTS AND WASHERS SHALL BE EPOXY POWDER COATED TO DFT 50 MICRONS. THREADS SHALL BE PROTECTED WITH MOLYBDENUM DISULPHIDE LUBRICANT OR A NICKEL ANTISEIZE COMPOUND. THREAD OF THE BOLTS MUST BE ON THE STAINLESS STEEL FLANGE.
 - GENERAL:
 - CHECK THAT PIPES SPECIALS FIT CORRECTLY IN THE CHAMBER BEFORE MANUFACTURE.
 - PIPE SPECIALS TO BE CUT ON SITE SHALL BE MANUFACTURED WITH AN EXTRA LENGTH OF 40 PERCENT.
 - ALLOW FOR 3mm THICK GASKET BETWEEN THE FLANGES.
 - CHECK DIMENSION OF THE EXISTING PIPELINE BEFORE ORDERING PIPE SPECIALS AND COUPLING.
 - PROVIDE LIFTING LUGS WHERE REQUIRED.



FOR TENDER PURPOSES ONLY

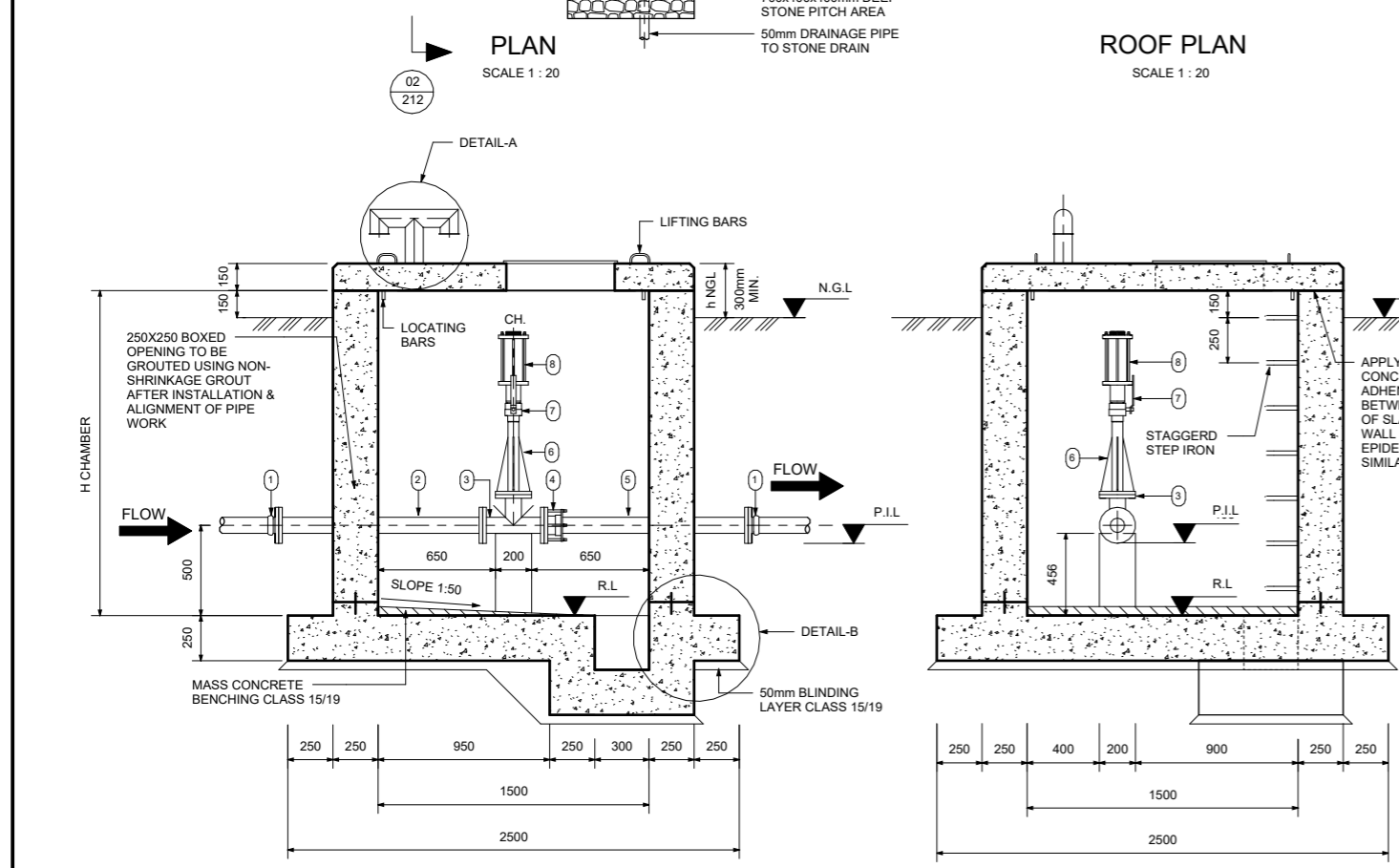
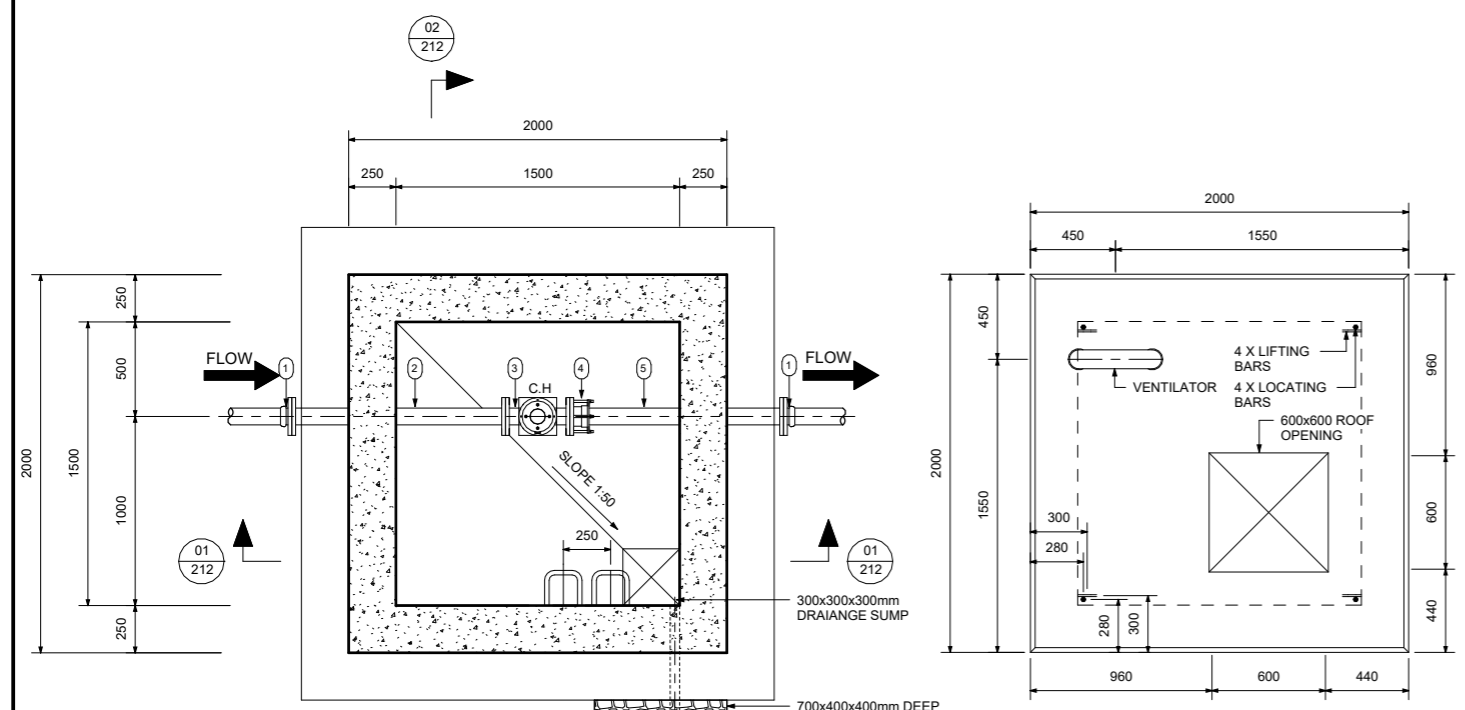
DESIGNED	M. MUKABWE	DRAWN	T. MAKHUBALO	CHECKED	N. GUMEDE	DATE	10/10/2025	REFERENCE DRAWINGS:	CLIENT:	APPROVED:	B. SEAKE FOR ZIMILE CONSULTING ENGINEERS DESIGNATION: SENIOR ENGINEER	PROJECT:	HLUHLUWE WATER SUPPLY SCHEME PHASE 2	PROJECT PHASE	PRELIMINARY	TENDER	CONSTRUCTION	ASSET
	DATE		10/10/2025		SCALE		AS SHOWN				DRAWING No.		J000159		WT	DT	211	REVISION

ZIMILE
UNBOUNDED ENGINEERING

INTERNATIONAL BUSINESS GATEWAY OFFICE PARK
CNR PIONEER AVENUE AND ELIZABETH MIDRIDGE PARK
TEL: (011) 466 - 8576
FAX: (011) 466 - 8813
E-MAIL: info@zimile.co.za

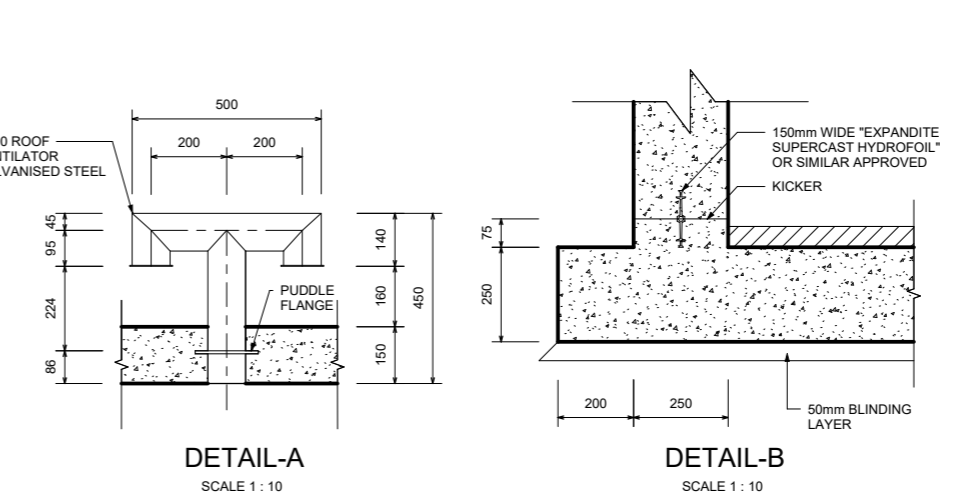
COPYRIGHT RESERVED ©





AIR VALVE PIPE SCHEDULE							CORROSION PROTECTION AS SHOWN IN PIPE NOTES		
Mark	Count	DIA. (mm) NB	WALL THICK.	MATERIAL	DESCRIPTION	SKETCH	LINING	COATING	FLANGES
1	2	80 mm			SG FLANGE ADAPTOR. PN20				3.3
2	1	80 mm		STEEL GRADE A	STRAIGHT PIPE BOTH ENDS FLANGED. PUDDLE FLANGE AS INDICATED. PN20		3.1	3.2	3.3
3	1	80 mm		STEEL GRADE A	AIR VALVE TEE, FLANGED. PN20		3.1	3.2	3.3
4	1	80			FLANGE ADAPTOR. PN20				3.3
5	1	80 mm		STEEL GRADE A	STRAIGHT PIPE ONE END FLANGED. OTHER PLAIN FOR CUTTING TO SUIT ON SITE. PUDDLE FLANGE AS INDICATED. PN20		3.1	3.2	3.3
6	1	80 mm -50 mm			(d) mm NB SS NIPPLE. 100 mm LONG IN THE CENTER OF A BLANK FLANGE 150 mm NB. PN20				3.3
7	1	50 mm		SS	(d) mm NB SS BALL VALVE, FULL PORT. SCREWED. PN20				
8	1	50 mm		SS	(d) mm NB SS DOUBLE ORIFICE AIR VALVE. ANTI-SHOCK MECHANISM. SCREWED. PN20				

AIR VALVE CHAMBER SCHEDULE										
AIR VALVE	CH. (m)	NGL (masl)	PIL (masl)	RL (masl)	D (mm)	d (mm)	VALVE CLASS	PIPE CLASS	H CHAMBER (m)	h NGL (m)
AIR1										



GENERAL NOTES:

- ALL LEVELS TO BE CONFIRMED ON SITE.
- READ THIS DRAWING IN CONJUNCTION WITH RELEVANT ENGINEERING DRAWINGS.
- DO NOT SCALE FROM THIS DRAWING. USE ONLY THE CALCULATED AND WRITTEN DIMENSIONS.
- ALL EXCAVATIONS SHOULD BE INSPECTED AND APPROVED BY THE ENGINEER ON SITE.
- ALL DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE STATED.

ABBREVIATION:

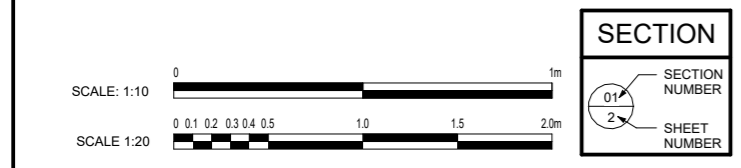
NGL - NATURAL GROUND LEVEL
 PIL - PIPE INVERT LEVEL
 RL - REDUCED LEVEL

MISCELLANEOUS NOTES:

- CONCRETE AND MISCELLANEOUS
 - ALL CONCRETE EDGES TO BE 25mm CHAMFERED.
 - CONCRETE :
 CHAMBER - CLASS 25/19
 BLINDING LAYER - CLASS 15/19.
 - ALL EXPOSED METAL WORK TO BE CR12 (UNPAINTED) OR SIMILAR APPROVED BY ENGINEER.
 - BACKFILL BELOW CHAMBER TO BE COMPACTED ON 150mm LAYERS TO 90 PERCENT MOD AASHTO

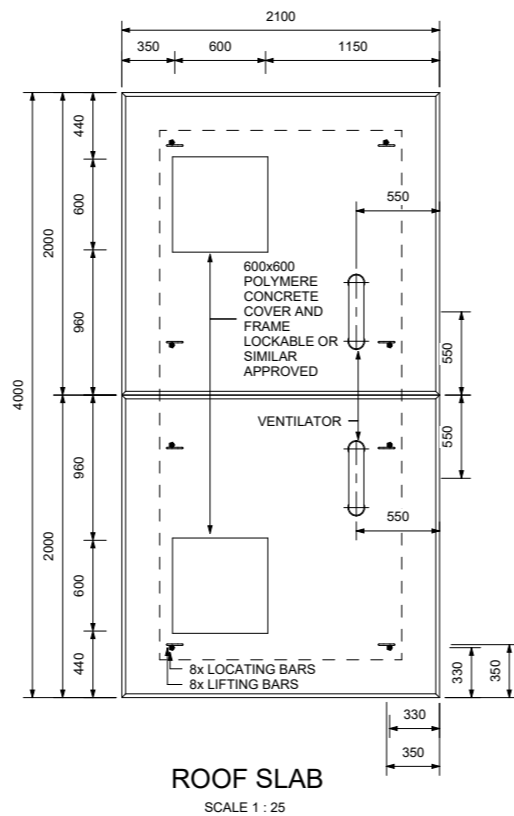
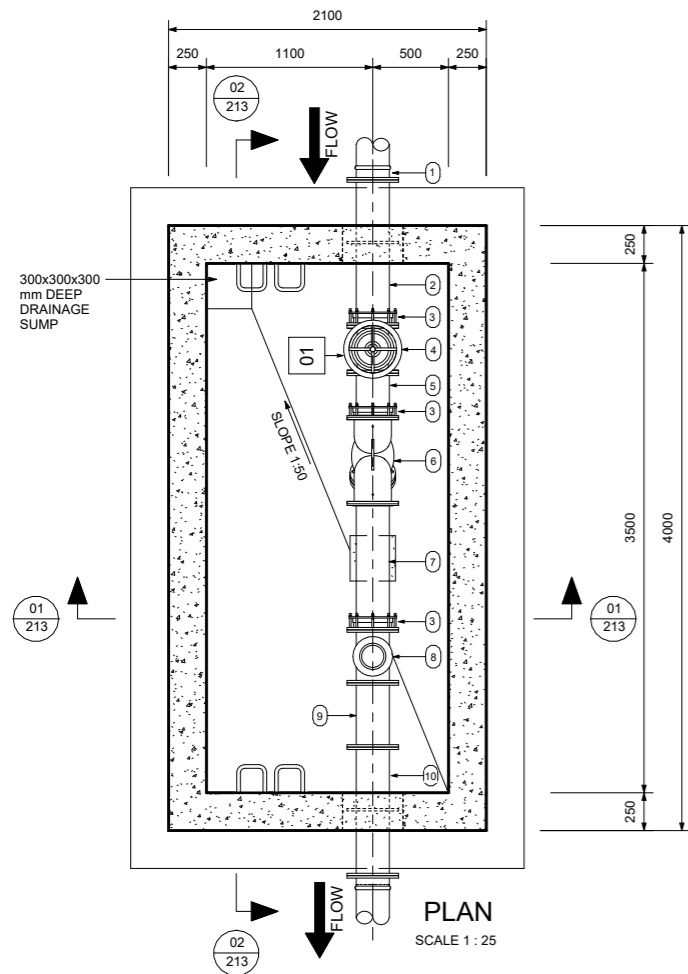
PIPE NOTES:

- FLANGES:
 - ALL DRILLED FLANGES' THICKNESS TO SANS 1123, TYPE 3 TABLE AND FOR CLASSIFICATION REFER TO THE RELEVANT DRAWING. FLANGES TO BE DRILLED OFF-CENTRE AND TO BE FLAT JOINT FACES MACHINED N11.
 - PUDDLE FLANGES: SAME TYPE AND OD AS DRILLED FLANGES. FLAT FACES. NO DRILLING.
 - ANCHOR/TRUST FLANGES: SAME TYPE AND OD. 'A' AS DRILLED FLANGES. FLAT FACED.
 - COUPLINGS BURIED IN SOIL TO BE PROTECTED IN ACCORDANCE WITH DWS 9900, SECTION 13 (COATING SYSTEM PLUS PETROLATUM WRAPPING).
- FASTENERS FOR STAINLESS STEEL BALL VALVES ONTO MILD STEEL FLANGES:
 - FASTENERS SHALL BE STAINLESS STEEL ON BOTH JOINTS, TOP AND BOTTOM.
- CORROSION PROTECTION:
 - LINING: THE STEEL PIPES WILL BE PROTECTED INTERNALLY BY A SOLVENT BORNE LIQUID EPOXY LINING WITH A MINIMUM THICKNESS OF 500 MICRONS.
 - COATING: EXTERNAL CORROSION PROTECTION WILL CONSIST OF A SINTAKOTE II FUSION BONDED POLYETHYLENE COATING FOR PIPES INSTALL UNDERGROUND. PIPES INSTALLED IN CHAMBERS, THE RESERVOIR AND IN PUMP STATION WILL HAVE A SOLVENT FREE EPOXY COATING WITH MINIMUM THICKNESS OF 500 MICRONS.
 - FLANGE FACES: ALL FLANGES UNDERGROUND TO BE WRAPPED WITH DENSO-TAPE.
 - FASTENERS FOR STAINLESS STEEL BALL VALVES: HEADS AND SHANKS AREAS OF BOLTS, NUTS AND WASHERS SHALL BE EPOXY POWDER COATED TO DFT 50 MICRONS. THREADS SHALL BE PROTECTED WITH MOLYBDENUM DISULPHIDE LUBRICANT OR A NICKEL ANTISEIZE COMPOUND. THREAD OF THE BOLTS MUST BE ON THE STAINLESS STEEL FLANGE.
- GENERAL:
 - CHECK THAT PIPES SPECIALS FIT CORRECTLY IN THE CHAMBER BEFORE MANUFACTURE.
 - PIPE SPECIALS TO BE CUT ON SITE SHALL BE MANUFACTURED WITH AN EXTRA LENGTH OF 40 PERCENT.
 - ALLOW FOR 3mm THICK GASKET BETWEEN THE FLANGES.
 - CHECK DIMENSION OF THE EXISTING PIPELINE BEFORE ORDERING PIPE SPECIALS AND COUPLING.
 - PROVIDE LIFTING LUGS WHERE REQUIRED.

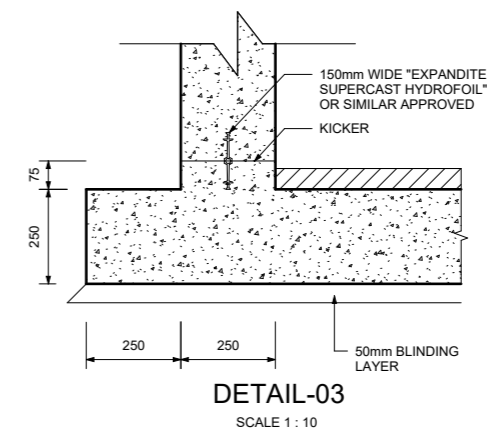
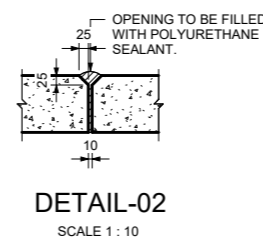
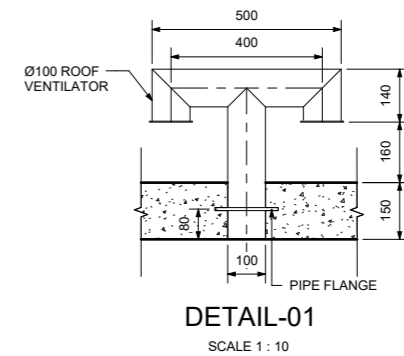
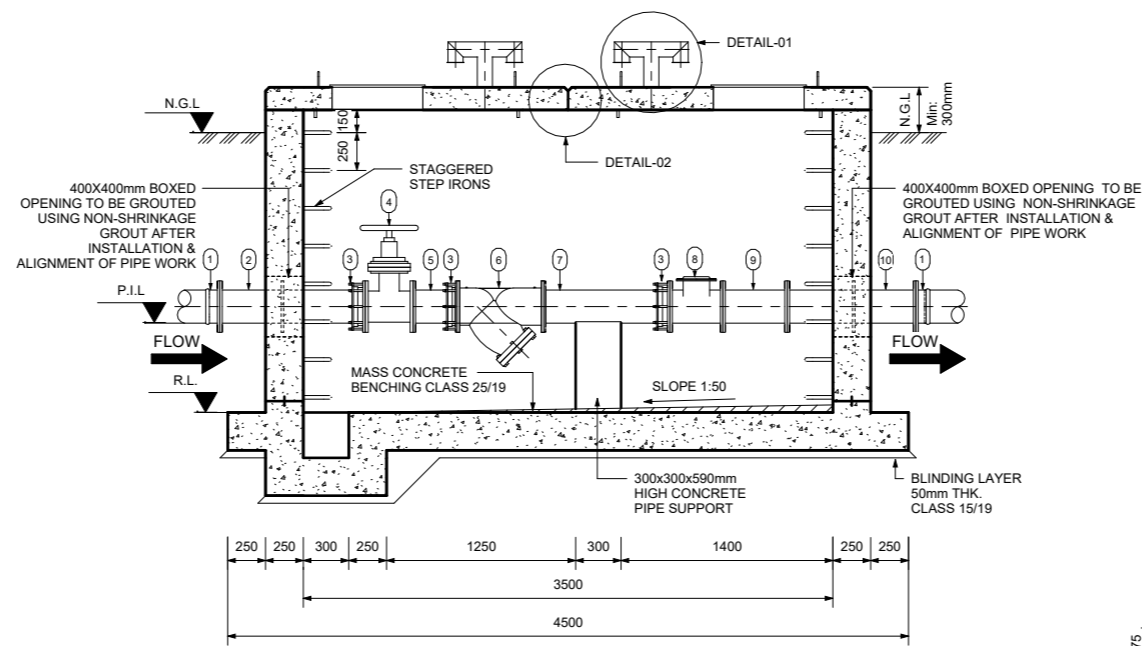
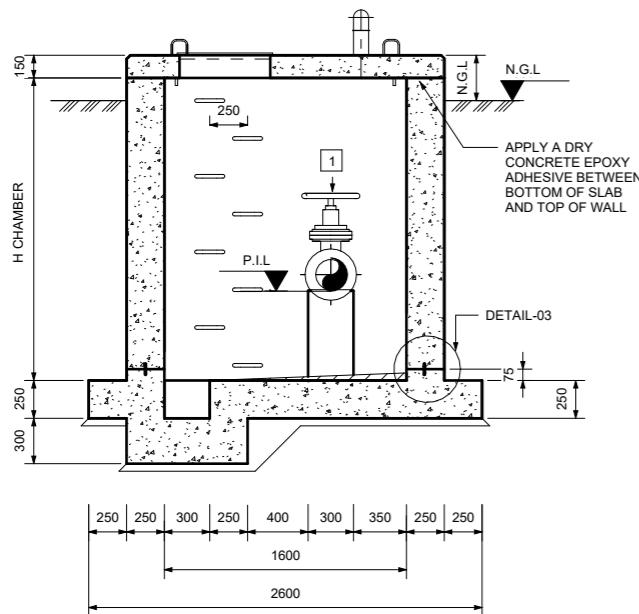


FOR TENDER PURPOSES ONLY

DESIGNED M. MUKABWE	DRAWN T. MAKHUBALO	CHECKED N. GUMEDE	 INTERNATIONAL BUSINESS GATEWAY OFFICE PARK CNR PIONEER AVENUE AND ELIZABETH MIDRIDGE PARK TEL: (011) 466 - 8576 FAX: (011) 466 - 8813 E-MAIL: info@zimile.co.za	REFERENCE DRAWING/S:	CLIENT: UMAPHALA WESIFUNDO MKHANYAKUDE	APPROVED: B. SEAKE FOR ZIMILE CONSULTING ENGINEERS DESIGNATION: SENIOR ENGINEER DATE: _____ SIGNATURE: _____	PROJECT: HLUHLUWE WATER SUPPLY SCHEME PHASE 2 TITLE: AIR VALVE CHAMBER CONCRETE DETAILS AND PIPE SPECIALS 80mmND	PROJECT PHASE PRELIMINARY TENDER CONSTRUCTION AS BUILT DATE: OCTOBER 2025 SCALE: AS SHOWN DRAWING No. J000167 WT DT 212 A CAD FILENAME: _____ REVISION: _____ SIZE: A1
				ISSUE FOR TENDER NATURE OF REVISION	10/10/2025	NO.	DATE	



FLOW METER CHAMBER PIPE SPECIALS									
Mark	Count	Size	MATERIAL	WALL THK.(mm)	DESCRIPTION	SKETCH	CORROSION AND PROTECTION AS SHOWN IN PIPE NOTES		
							LINING	COATING	FLANGES
1	2	200 mmø-200 mm			SG IRON FLANGE ADAPTOR. PN16				3.3
2	1	200 mmø	STEEL GRADE A	4.5	STRAIGHT PIPE ONE END FLANGED. OTHER PLAIN TO CUT TO SUIT ON SITE. PUDDLE FLANGED AS INDICATED PN16		3.1	3.2	3.3
3	3	200 mmø-200 mm			FLANGE ADAPTOR. PN16				3.3
4	1	200 mmø-200 mm			GATE VALVE. NONE RISING SPINDLE. PN16				3.3
5	1	200 mmø	STEEL GRADE A	4.5	STRAIGHT PIPE ONE END FLANGED. OTHER PLAIN TO CUT TO SUIT ON SITE. PN16		3.1	3.2	3.3
6	1	200 mmø-200 mm			STRAINER. BOTH ENDS FLANGED. PN16				3.3
7	1	200 mmø	STEEL GRADE A	4.5	STRAIGHT PIPE ONE END FLANGED. OTHER PLAIN TO CUT TO SUIT ON SITE. PN16		3.1	3.2	3.3
8	1	200 mmø			ELECTRO-MAGNETIC FLOW METER. BOTH ENDS FLANGED. PN16				3.3
9	1	200 mmø	STEEL GRADE A	4.5	STRAIGHT PIPE BOTH ENDS FLANGED. PN16		3.1	3.2	3.3
10	1	200 mmø	STEEL GRADE A	4.5	STRAIGHT PIPE BOTH ENDS FLANGED. PUDDLE FLANGE AS INDICATED. PN16		3.1	3.2	3.3



GENERAL NOTES:

- ALL LEVELS TO BE CONFIRMED ON SITE.
- READ THIS DRAWING IN CONJUNCTION WITH RELEVANT ENGINEERING DRAWINGS.
- DO NOT SCALE FROM THIS DRAWING. USE ONLY THE CALCULATED AND WRITTEN DIMENSIONS.
- ALL EXCAVATIONS SHOULD BE INSPECTED AND APPROVED BY THE ENGINEER ON SITE.
- ALL DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE STATED.

ABBREVIATION:

- NGL - NATURAL GROUND LEVEL
- P.I.L - PIPE INVERT LEVEL
- RL - REDUCED LEVEL

MISCELLANEOUS NOTES:

- CONCRETE AND MISCELLANEOUS
 - ALL CONCRETE EDGES TO BE 25mm CHAMFERED.
- CONCRETE - CLASS 25/19
BLINDING LAYER - CLASS 15/19.
- ALL EXPOSED METAL WORK TO BE CR12(UNPAINTED) OR SIMILAR APPROVED BY ENGINEER.
- BACKFILL BELOW CHAMBER TO BE COMPACTED ON 150mm LAYERS TO 90 PERCENT MOD AASHTO

PIPE NOTES:

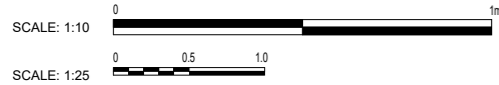
- FLANGES:
 - ALL DRILLED FLANGES' THICKNESS TO SANS 1123, TYPE 3 TABLE AND FOR CLASSIFICATION REFER TO THE RELEVANT DRAWING. FLANGES TO BE DRILLED OFF-CENTRE AND TO BE FLAT JOINT FACES MACHINED N11.
- PUDDLE FLANGES: SAME TYPE AND OD AS DRILLED FLANGES. FLAT FACES. NO DRILLING.
- ANCHOR/TRUST FLANGES: SAME TYPE AND OD. 'I' AS DRILLED FLANGES. FLAT FACED.
- COUPLINGS BURIED IN SOIL TO BE PROTECTED IN ACCORDANCE WITH DWS 9900, SECTION 13(COATING SYSTEM PLUS PETROLATUM WRAPPING).
- FASTENERS FOR STAINLESS STEEL BALL VALVES ONTO MILD STEEL FLANGES:
 - FASTENERS SHALL BE STAINLESS STEEL ON BOTH JOINTS, TOP AND BOTTOM.
 - CORROSION PROTECTION:
 - LINING: THE STEEL PIPES WILL BE PROTECTED INTERNALLY BY A SOLVENT BORNE LIQUID EPOXY LINING WITH A MINIMUM THICKNESS OF 500 MICRONS.
 - COATING: EXTERNAL CORROSION PROTECTION WILL CONSIST OF A SINTAKOTE II FUSION BONDED POLYETHYLENE COATING FOR PIPES INSTALL UNDERGROUND. PIPES INSTALLED IN CHAMBERS, THE RESERVOIR AND IN PUMP STATION WILL HAVE A SOLVENT FREE EPOXY COATING WITH MINIMUM THICKNESS OF 500 MICRONS.
 - FLANGE FACES: ALL FLANGES UNDERGROUND TO BE WRAPPED WITH DENSO-TAPE.
 - FASTENERS FOR STAINLESS STEEL BALL VALVES: HEADS AND SHANKS AREAS OF BOLTS, NUTS AND WASHERS SHALL BE EPOXY POWDER COATED TO DFT 50 MICRONS. THREADS SHALL BE PROTECTED WITH MOLYBDENUM DISULPHIDE LUBRICANT OR A NICKEL ANTISEIZE COMPOUND. THREAD OF THE BOLTS MUST BE ON THE STAINLESS STEEL FLANGE.
- GENERAL:
 - CHECK THAT PIPES SPECIALS FIT CORRECTLY IN THE CHAMBER BEFORE MANUFACTURED.
 - PIPE SPECIALS TO BE CUT ON SITE SHALL BE MANUFACTURED WITH AN EXTRA LENGTH OF 40 PERCENT.
 - ALLOW FOR 3mm THICK GASKET BETWEEN THE FLANGES.
 - CHECK DIMENSION OF THE EXISTING PIPELINE BEFORE ORDERING PIPE SPECIALS AND COUPLING.
 - PROVIDE LIFTING LUGS WHERE REQUIRED.

NOTES:

POSITION OF THE CHAMBER MUST BE DECIDED TO THE TERRAIN SLOPE

FOR TENDER PURPOSES ONLY

SECTION
SECTION NUMBER
DRAWING NUMBER



DESIGNED	M. MUKABWE
DRAWN	T. MAKHUBALO
CHECKED	N. GUMEDE
ISSUE FOR TENDER	10/10/2025
NATURE OF REVISION	

ZIMILE
UNBOUNDED ENGINEERING

INTERNATIONAL BUSINESS GATEWAY OFFICE PARK
CNR PIONEER AVENUE AND ELIZABETH MIDRIDGE PARK
TEL: (011) 466 - 8576
FAX: (011) 466 - 8813
E-MAIL: info@zimile.co.za

REFERENCE:

CLIENT: UNKIPALA WEHIBINDA
INKHANYAKUDE

APPROVED: B. SEAKE
FOR ZIMILE CONSULTING ENGINEERS
DESIGNATION: SENIOR ENGINEER
DATE: SIGNATURE

PROJECT: HLUHLUWE WATER SUPPLY SCHEME PHASE 2

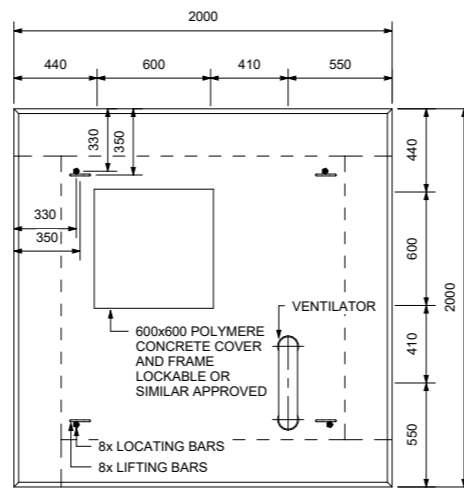
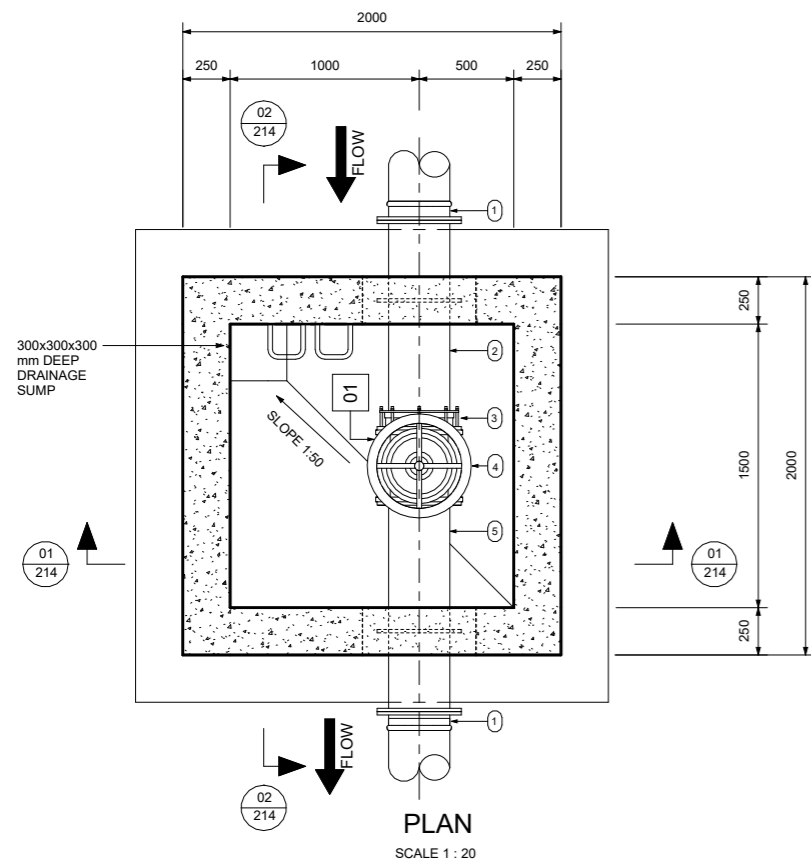
TITLE: FLOW METER CHAMBER CONCRETE DETAILS AND PIPE SPECIALS 200mmND

PROJECT PHASE: PRELIMINARY TENDER CONSTRUCTION AS-BUILT

DATE: OCTOBER 2025 SCALE: AS SHOWN

DRAWING No. J00167 WT DT 213 A

CAD FILENAME: REVISION: A1



Mark	Count	Size	MATERIAL	WALL THK. (mm)	DESCRIPTION	SKETCH	CORROSION AND PROTECTION AS SHOWN IN PIPE NOTES		
							LINING	COATING	FLANGES
1	2	300 mmø-300 mmø		4.5	SG IRON FLANGE PN16				3.3
2	1	300 mmø	STEEL GRADE A	4.5	STRAIGHT PIPE ONE END FLANGED, OTHER PLAIN TO CUT TO SUIT ON SITE. PUDDLE FLANGED AS INDICATED PN16		3.1	3.2	3.3
3	1	300 mmø-300 mmø			FLANGE ADAPTOR PN16				3.3
4	1	300 mmø-300 mmø			GATE VALVE, NONE RISING SPINDLE. PN16				3.3
5	1	300 mmø	STEEL GRADE A	4.5	STRAIGHT PIPE BOTH ENDS FLANGED. PUDDLE FLANGED AS INDICATED PN16		3.1	3.2	3.3

VALVE OPERATION INSTRUCTION:

- A. NORMAL OPERATION**
- VALVE 1 CLOSED AT ALL TIMES.
- B. PIPELINE SCOURING**
- VALVE 1 TO BE OPENED DURING SCOURING.
 - ONCE SCOURING HAS BEEN COMPLETE VALVE 1 TO BE FULLY CLOSED.

GENERAL NOTES:

- ALL LEVELS TO BE CONFIRMED ON SITE.
- READ THIS DRAWING IN CONJUNCTION WITH RELEVANT ENGINEERING DRAWINGS.
- DO NOT SCALE FROM THIS DRAWING. USE ONLY THE CALCULATED AND WRITTEN DIMENSIONS.
- ALL EXCAVATIONS SHOULD BE INSPECTED AND APPROVED BY THE ENGINEER ON SITE.
- ALL DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE STATED.

ABBREVIATION:

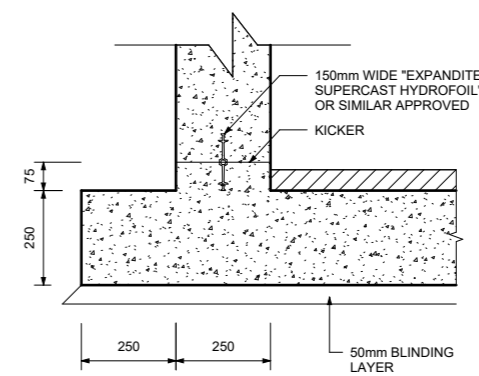
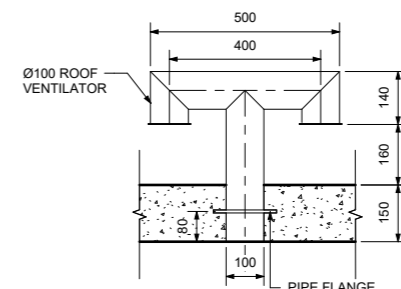
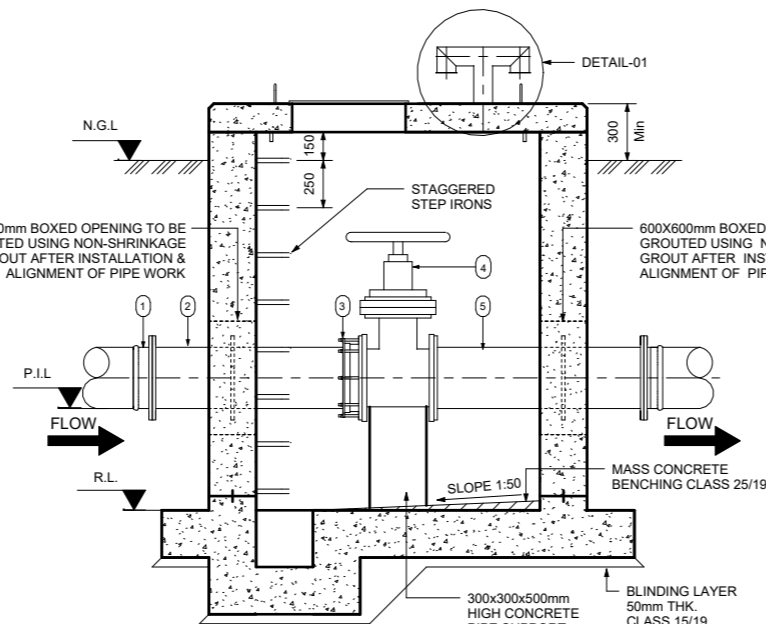
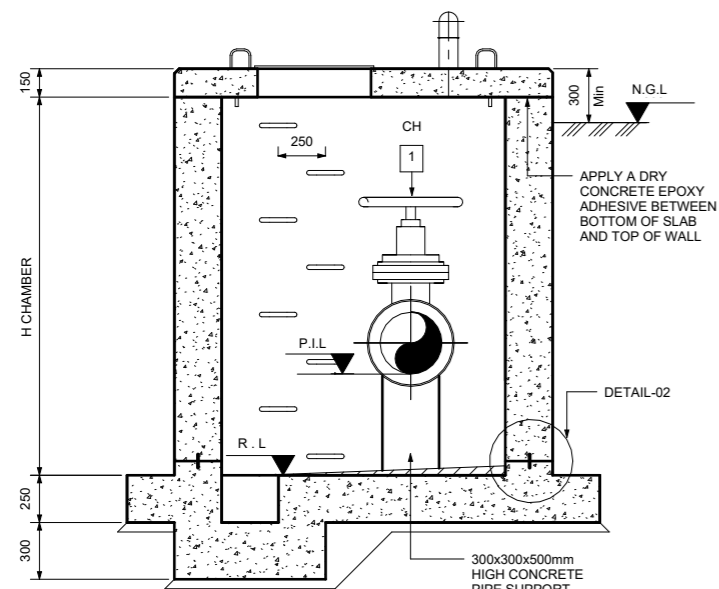
- NGL - NATURAL GROUND LEVEL
- P.I.L - PIPE INVERT LEVEL
- RL - REDUCED LEVEL

MISCELLANEOUS NOTES:

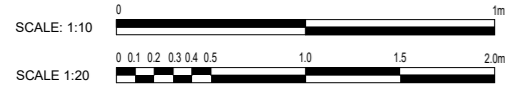
- CONCRETE AND MISCELLANEOUS
 - ALL CONCRETE EDGES TO BE 25mm CHAMFERED.
- CONCRETE - CHAMBER - CLASS 25/19
BLINDING LAYER - CLASS 15/19.
- ALL EXPOSED METAL WORK TO BE CR12(UNPAINTED) OR SIMILAR APPROVED BY ENGINEER.
- BACKFILL BELOW CHAMBER TO BE COMPACTED ON 150mm LAYERS TO 90 PERCENT MOD AASHTO

PIPE NOTES:

- FLANGES:
 - ALL DRILLED FLANGES' THICKNESS TO SANS 1123, TYPE 3 TABLE AND FOR CLASSIFICATION REFER TO THE RELEVANT DRAWING. FLANGES TO BE DRILLED OFF-CENTRE AND TO BE FLAT JOINT FACES MACHINED N11.
 - PUDDLE FLANGES: SAME TYPE AND OD AS DRILLED FLANGES. FLAT FACES. NO DRILLING.
 - ANCHOR/TRUST FLANGES: SAME TYPE AND OD. 'I' AS DRILLED FLANGES. FLAT FACED.
 - COUPLINGS BURIED IN SOIL TO BE PROTECTED IN ACCORDANCE WITH DWS 9900, SECTION 13(COATING SYSTEM PLUS PETROLATUM WRAPPING).
- 2. FASTENERS FOR STAINLESS STEEL BALL VALVES ONTO MILD STEEL FLANGES:**
- FASTENERS SHALL BE STAINLESS STEEL ON BOTH JOINTS, TOP AND BOTTOM.
 - CORROSION PROTECTION:
 - LINING: THE STEEL PIPES WILL BE PROTECTED INTERNALLY BY A SOLVENT BORNE LIQUID EPOXY LINING WITH A MINIMUM THICKNESS OF 500 MICRONS.
 - COATING: EXTERNAL CORROSION PROTECTION WILL CONSIST OF A SINTAKOTE II FUSION BONDED POLYETHYLENE COATING FOR PIPES INSTALL UNDERGROUND. PIPES INSTALLED IN CHAMBERS, THE RESERVOIR AND IN PUMP STATION WILL HAVE A SOLVENT FREE EPOXY COATING WITH MINIMUM THICKNESS OF 500 MICRONS.
 - FLANGE FACES: ALL FLANGES UNDERGROUND TO BE WRAPPED WITH DENSO-TAPE.
 - FASTENERS FOR STAINLESS STEEL BALL VALVES: HEADS AND SHANKS AREAS OF BOLTS, NUTS AND WASHERS SHALL BE EPOXY POWDER COATED TO DFT 50 MICRONS. THREADS SHALL BE PROTECTED WITH MOLYBDENUM DISULPHIDE LUBRICANT OR A NICKEL ANTISEIZE COMPOUND. THREAD OF THE BOLTS MUST BE ON THE STAINLESS STEEL FLANGE.
- 4. GENERAL:**
- CHECK THAT PIPES SPECIALS FIT CORRECTLY IN THE CHAMBER BEFORE MANUFACTURED.
 - PIPE SPECIALS TO BE CUT ON SITE SHALL BE MANUFACTURED WITH AN EXTRA LENGTH OF 40 PERCENT.
 - ALLOW FOR 3mm THICK GASKET BETWEEN THE FLANGES.
 - CHECK DIMENSION OF THE EXISTING PIPELINE BEFORE ORDERING PIPE SPECIALS AND COUPLING.
 - PROVIDE LIFTING LUGS WHERE REQUIRED.



SECTION
SECTION NUMBER: 01
DRAWING NUMBER: 204



NOTES:

POSITION OF THE CHAMBER MUST BE DECIDED TO THE TERRAIN SLOPE

FOR TENDER PURPOSES ONLY

DESIGNED	M. MUKABWE
DRAWN	T. MAKHUBALO
CHECKED	N. GUMEDE
DATE	10/10/2025
ISSUE FOR TENDER	
NATURE OF REVISION	

ZIMILE
UNBOUNDED ENGINEERING

INTERNATIONAL BUSINESS GATEWAY OFFICE PARK
CNR PIONEER AVENUE AND ELIZABETH MIDRIDGE PARK
TEL: (011) 466 - 8576
FAX: (011) 466 - 8813
E-MAIL: info@zimile.co.za

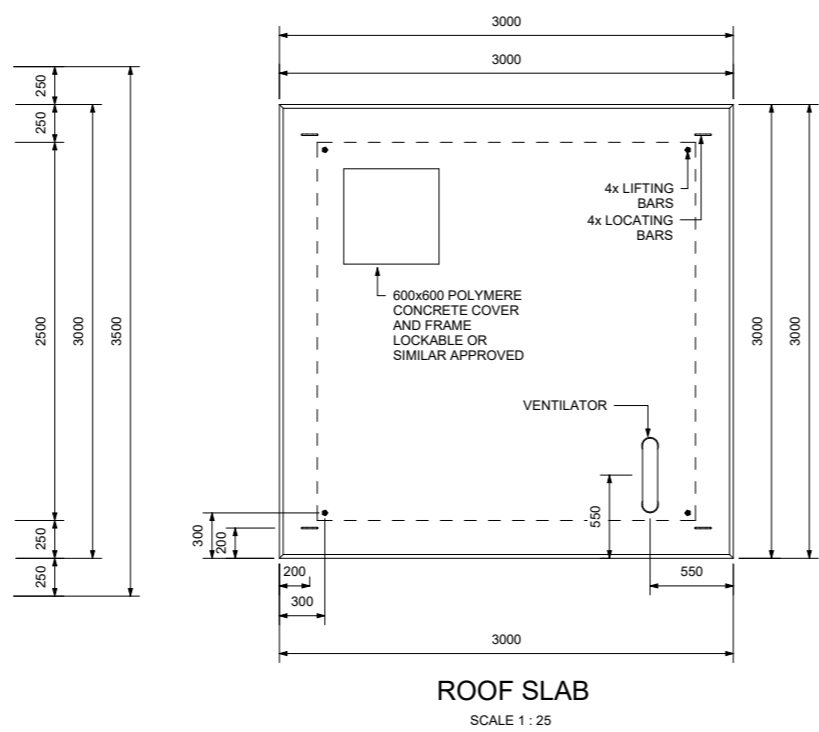
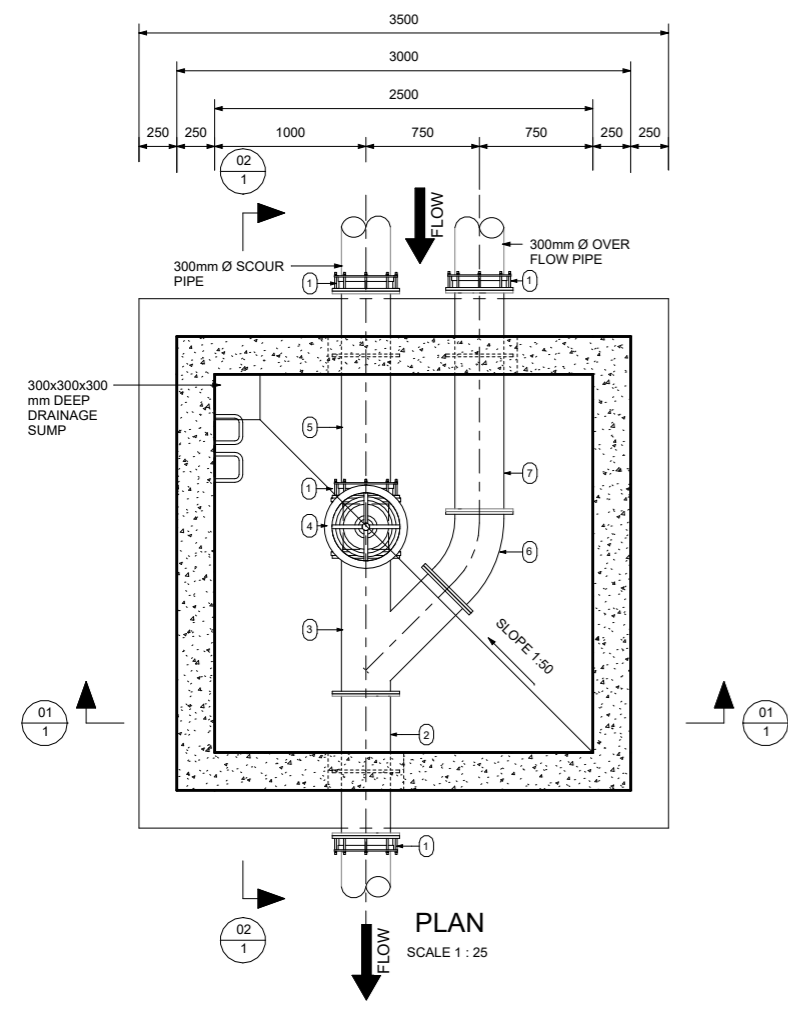
REFERENCE:

CLIENT: **Amchanyakude**

APPROVED: B. SEAKE
FOR ZIMILE CONSULTING ENGINEERS
DESIGNATION: SENIOR ENGINEER
DATE: _____ SIGNATURE: _____

PROJECT: HLUHLUWE WATER SUPPLY SCHEME PHASE 2
TITLE: ISOLATION CHAMBER CONCRETE DETAILS AND PIPE SPECIALS 300mmND

PROJECT PHASE		PRELIMINARY	TENDER	CONSTRUCTION	AS-BUILT
DATE:	OCTOBER 2025	SCALE:	AS SHOWN		
DRAWING No.	J000167	WT	DT	214	REVISION: A
CAD FILENAME		SIZE	A1		



DRAINAGE VALVE CHAMBER PIPE SPECIALS							CORROSION AND PROTECTION AS SHOWN IN PIPE NOTES		
Mark	Count	Size	MATERIAL	WALL THK.(mm)	DESCRIPTION	SKETCH	LINING	COATING	FLANGES
1	4	300mm Ø			FLANGE ADAPTOR. PN16				3.3
2	1	300 mmØ	GALVANISED X42	6mm	STRAIGHT PIPE BOTH ENDS FLANGED, PUDDLE FLANGE AS INDICATED. PN16		3.1	3.2	3.3
3	1	300mm Ø	GALVANISED X42	6mm - 4.5mm	45° LATERAL TEE, FLANGED. PN16		3.1	3.2	3.3
4	1	300mm Ø			RESILIENT SEAL GATE VALVE, NONE RISING SPINDLE. PN16				3.3
5	1	300 mmØ	GALVANISED X42	6mm	STRAIGHT PIPE ONE END FLANGED, OTHER PLAIN FOR CUTTING TO SUIT ON SITE, PUDDLE FLANGE AS INDICATED. PN16		3.1	3.2	3.3
6	1	300mm Ø	GALVANISED X42	4.5mm	45° MIDIUM RADIUS BEND, FLANGED. PN16		3.1	3.2	3.3
7	1	300 mmØ	GALVANISED X42	6mm - 4.5mm	STRAIGHT PIPE BOTH ENDS FLANGED, PUDDLE FLANGE AS INDICATED. PN16		3.1	3.2	3.3

GENERAL NOTES:

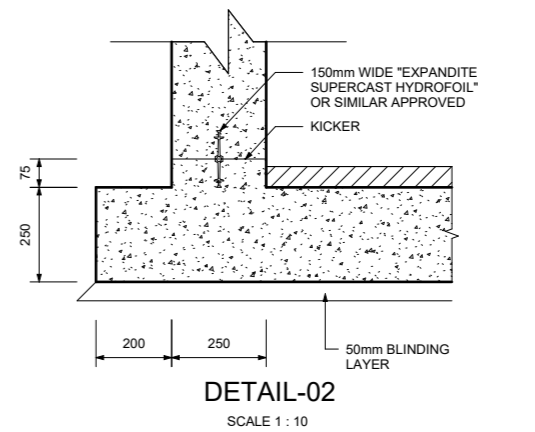
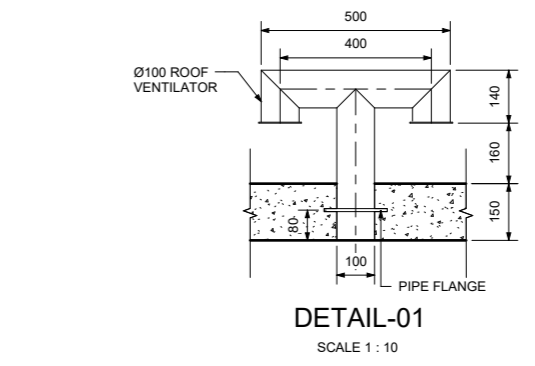
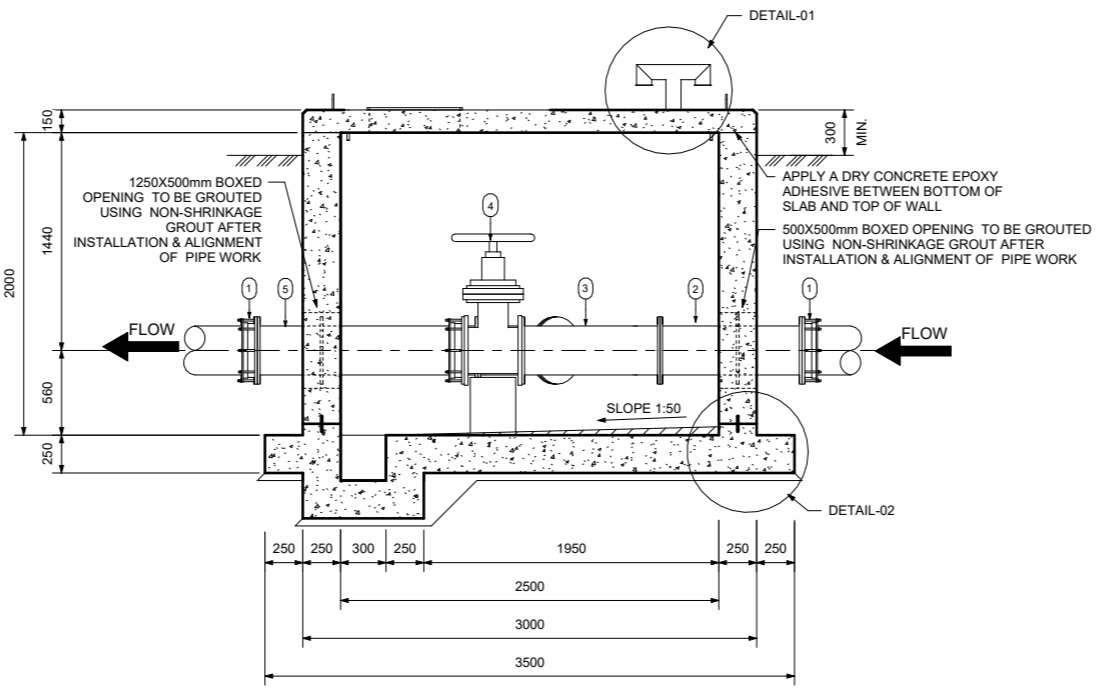
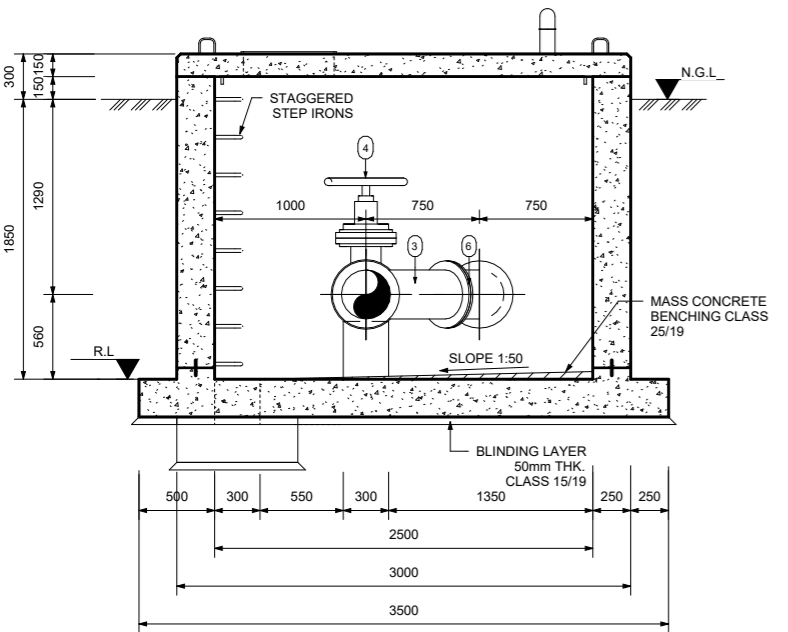
- ALL LEVELS TO BE CONFIRMED ON SITE.
- READ THIS DRAWING IN CONJUNCTION WITH RELEVANT ENGINEERING DRAWINGS.
- DO NOT SCALE FROM THIS DRAWING. USE ONLY THE CALCULATED AND WRITTEN DIMENSIONS.
- ALL EXCAVATIONS SHOULD BE INSPECTED AND APPROVED BY THE ENGINEER ON SITE.
- ALL DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE STATED.

ABBREVIATION:

NGL - NATURAL GROUND LEVEL
 PIL - PIPE INVERT LEVEL
 RL - REDUCED LEVEL

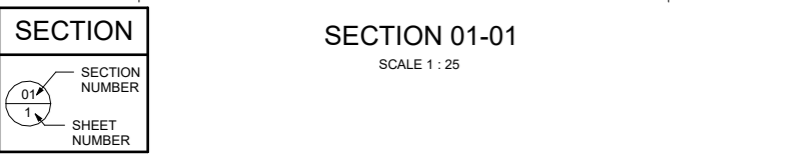
MISCELLANEOUS NOTES:

- CONCRETE AND MISCELLANEOUS
 - ALL CONCRETE EDGES TO BE 25mm CHAMFERED.
 - CONCRETE - CHAMBER - CLASS 25/19
BLINDING LAYER - CLASS 15/19.
 - ALL EXPOSED METAL WORK TO BE CR12 (UNPAINTED) OR SIMILAR APPROVED BY ENGINEER.
 - BACKFILL BELOW CHAMBER TO BE COMPACTED ON 150mm LAYERS TO 90 PERCENT MOD AASHTO



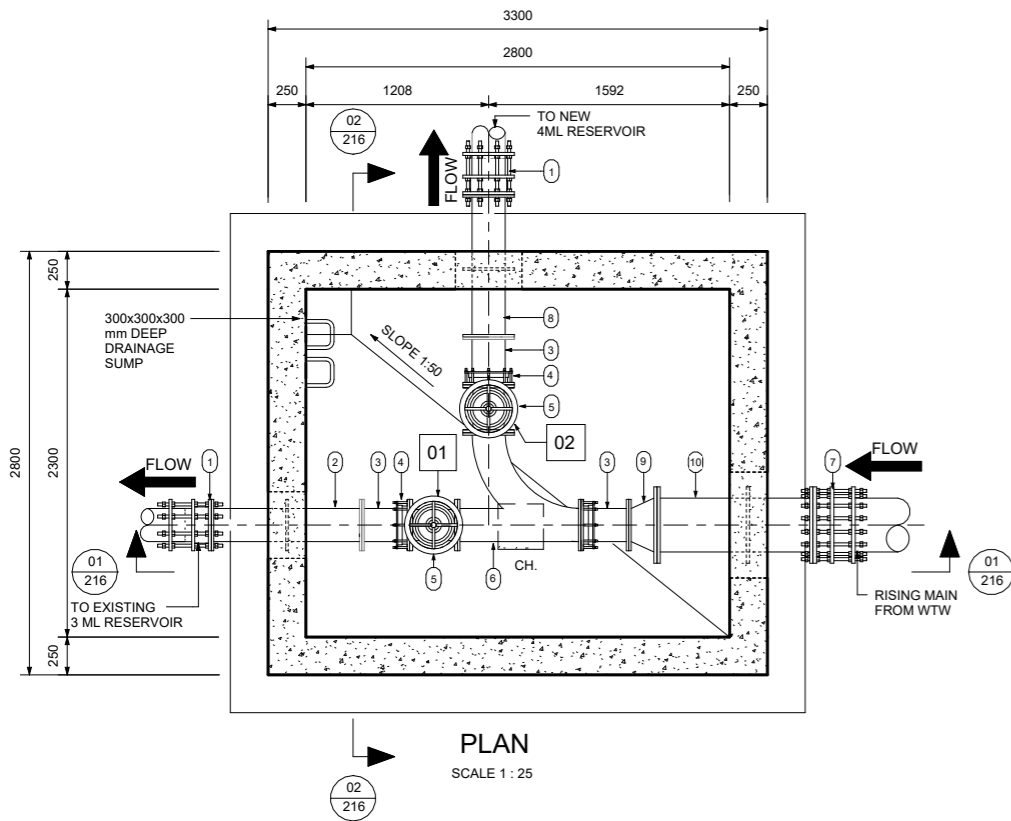
PIPE NOTES:

- FLANGES:
 - ALL DRILLED FLANGES' THICKNESS TO SANS 1123, TYPE 3 TABLE AND FOR CLASSIFICATION REFER TO THE RELEVANT DRAWING. FLANGES TO BE DRILLED OFF-CENTRE AND TO BE FLAT JOINT FACES MACHINED N11.
 - PUDDLE FLANGES: SAME TYPE AND OD AS DRILLED FLANGES. FLAT FACES. NO DRILLING.
 - ANCHOR/TRUST FLANGES: SAME TYPE AND OD. 'I' AS DRILLED FLANGES. FLAT FACED.
 - COUPLINGS BURIED IN SOIL TO BE PROTECTED IN ACCORDANCE WITH DWS 9900, SECTION 13 (COATING SYSTEM PLUS PETROLATUM WRAPPING).
- FASTENERS FOR STAINLESS STEEL BALL VALVES ONTO MILD STEEL FLANGES:
 - FASTENERS SHALL BE STAINLESS STEEL ON BOTH JOINTS, TOP AND BOTTOM.
- CORROSION PROTECTION:
 - THE STEEL PIPES WILL BE PROTECTED INTERNALLY BY A SOLVENT BORNE LIQUID EPOXY LINING WITH A MINIMUM THICKNESS OF 500 MICRONS.
 - EXTERNAL CORROSION PROTECTION WILL CONSIST OF A SINTAKOTE II FUSION BONDED POLYETHYLENE COATING FOR PIPES INSTALLED UNDERGROUND. PIPES INSTALLED IN CHAMBERS, THE RESERVOIR AND IN PUMP STATION WILL HAVE A SOLVENT FREE EPOXY COATING WITH MINIMUM THICKNESS OF 500 MICRONS.
 - FLANGE FACES: ALL FLANGES UNDERGROUND TO BE WRAPPED WITH DENSO-TAPE.
 - FASTENERS FOR STAINLESS STEEL BALL VALVES: HEADS AND SHANKS AREAS OF BOLTS, NUTS AND WASHERS SHALL BE EPOXY POWDER COATED TO DFT 50 MICRONS. THREADS SHALL BE PROTECTED WITH MOLYBDENUM DISULPHIDE LUBRICANT OR A NICKEL ANTISEIZE COMPOUND. THREAD OF THE BOLTS MUST BE ON THE STAINLESS STEEL FLANGE.
- GENERAL:
 - CHECK THAT PIPES SPECIALS FIT CORRECTLY IN THE CHAMBER BEFORE MANUFACTURED.
 - PIPE SPECIALS TO BE CUT ON SITE SHALL BE MANUFACTURED WITH AN EXTRA LENGTH OF 40 PERCENT.
 - ALLOW FOR 3mm THICK GASKET BETWEEN THE FLANGES.
 - CHECK DIMENSION OF THE EXISTING PIPELINE BEFORE ORDERING PIPE SPECIALS AND COUPLING.
 - PROVIDE LIFTING LUGS WHERE REQUIRED.



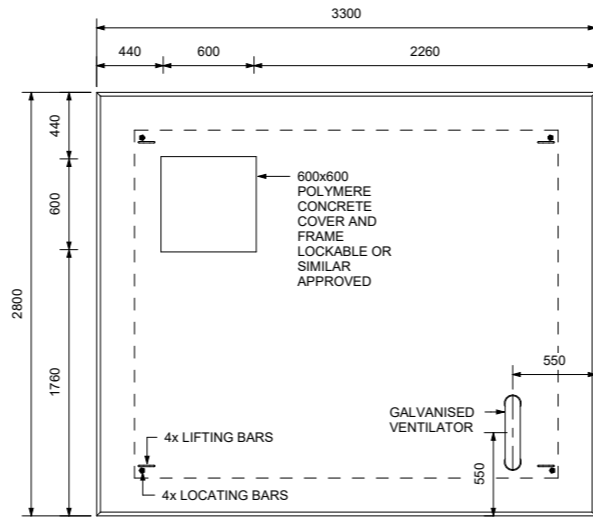
FOR TENDER PURPOSES ONLY

DESIGNED	M. MUKABWE	DRAWN	T. MAKHUBALO	CHECKED	N. GUMEDE	INTERNATIONAL BUSINESS GATEWAY OFFICE PARK CNR PIONEER AVENUE AND ELIZABETH MIDRIDGE PARK TEL: (011) 466 - 8576 FAX: (011) 466 - 8813 E-MAIL: info@zimile.co.za	REFERENCE DRAWING/S:	CLIENT: 	APPROVED: B. SEAKE FOR ZIMILE CONSULTING ENGINEERS DESIGNATION: SENIOR ENGINEER DATE: _____ SIGNATURE: _____	PROJECT: HLUHLUWE WATER SUPPLY SCHEME PHASE 2	PROJECT PHASE PRELIMINARY TENDER CONSTRUCTION AS-BUILT			
	DATE: 10/10/2025		SCALE: AS SHOWN		DRAWING No. J000167						WT	DT	215	A
ISSUE FOR TENDER NATURE OF REVISION										TITLE: DRAINAGE VALVE CHAMBER CONCRETE DETAILS 300mmND				
										CAD FILENAME				
										REVISION A1				



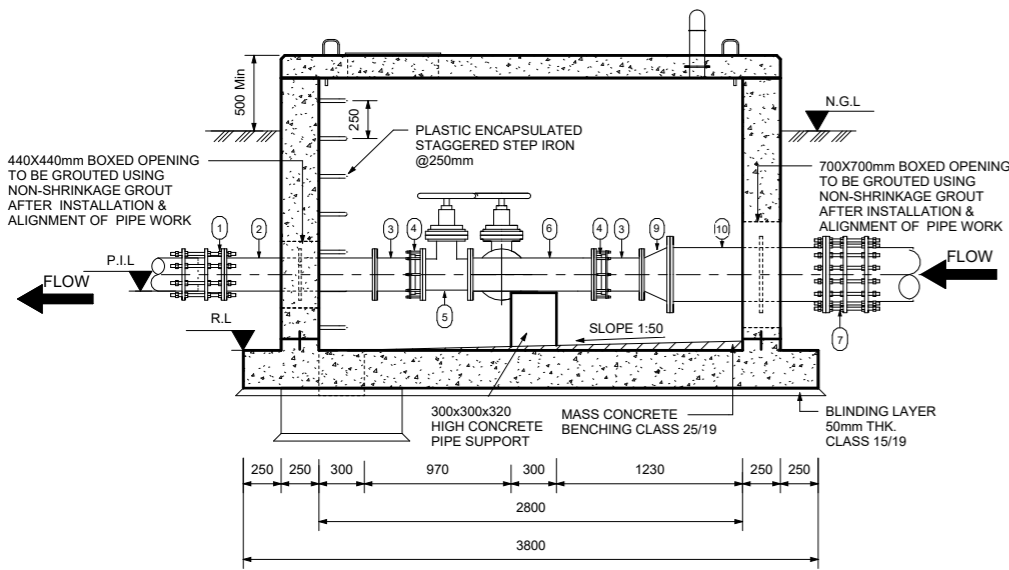
PLAN

SCALE 1 : 25



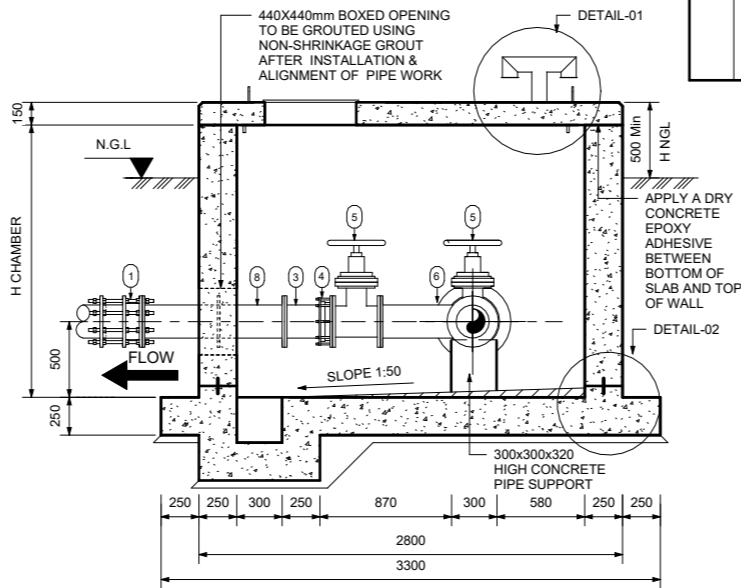
ROOF SLAB

SCALE 1 : 25



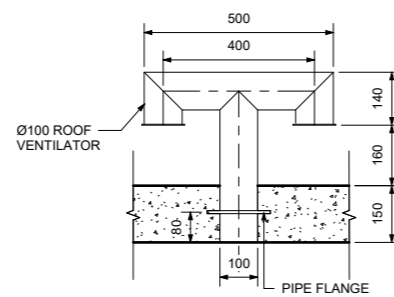
SECTION 01-01

SCALE 1 : 25



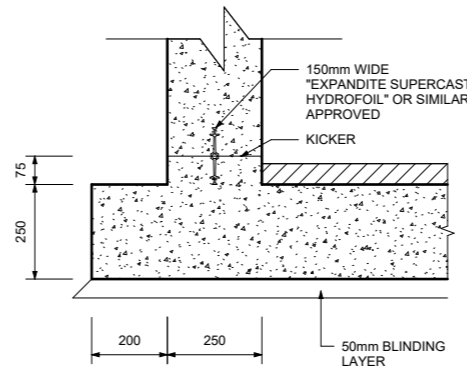
SECTION 02-02

SCALE 1 : 25



DETAIL-01

SCALE 1 : 10



DETAIL-02

SCALE 1 : 10

SPLIT VALVE CHAMBER PIPE SPECIALS									
Mark	Count	Size	MATERIAL	WALL THK.(mm)	DESCRIPTION	SKETCH	CORROSION AND PROTECTION AS SHOWN IN PIPE NOTES		
							LINING	COATING	FLANGES
1	2	200 mmø-200 mmø	STEEL X42	4.5	DISMANTLING JOINT PN20				
2	1	200 mmø	STEEL X42	4.5	STRAIGHT PIPE BOTH ENDS FLANGED, PUDDLE FLANGE AS INDICATED. PN16		3.1	3.2	3.3
3	3	200 mmø	STEEL X42	4.5	STRAIGHT PIPE ONE END FLANGED, OTHER PLAIN TO CUT TO SUIT ON SITE. PN16		3.1	3.2	
4	3	200 mmø-200 mmø			FLANGE ADAPTOR PN16				3.3
5	2	200 mmø-200 mmø	STEEL X42		RESILIENT SEAL GATE VALVE PN20				3.3
6	1	200 mmø-200 mmø	STEEL X42	4.5	90° SWEEP TEE, FLANGED, PN16		3.1	3.2	3.3
7	1	355 mmø-355 mmø			DISMANTLING JOINT PN20				
8	1	200 mmø	STEEL X42	4.5	STRAIGHT PIPE BOTH ENDS FLANGED, PUDDLE FLANGE AS INDICATED. PN16		3.1	3.2	3.3
9	1	355 mmø-200 mmø	STEEL X42	4.5	CONCENTRIC REDUCER PN16		3.1	3.2	3.3
10	1	355 mmø	STEEL X42	4.5	STRAIGHT PIPE BOTH ENDS FLANGED, PUDDLE FLANGE AS INDICATED. PN16		3.1	3.2	3.3

PIPE NOTES:

- FLANGES: ALL DRILLED FLANGES THICKNESS TO SANS 1123 T1600/3, TYPE 3 TABLE AND FOR CLASSIFICATION REFER TO THE RELEVANT DRAWING. FLANGES TO BE DRILLED OFF-CENTRE AND TO BE FLAT JOINT FACES MACHINED N11.
- PUDDLE FLANGES: SAME TYPE AND OD AS DRILLED FLANGES. FLAT FACES. NO DRILLING.
- ANCHOR/TRUST FLANGES: SAME TYPE AND OD. Y AS DRILLED FLANGES. FLAT FACED.
- COUPLINGS BURIED IN SOIL TO BE PROTECTED IN ACCORDANCE WITH DWS 9900, SECTION 13 (COATING SYSTEM PLUS PETROLATUM WRAPPING).
- FASTENERS FOR STAINLESS STEEL BALL VALVES ONTO MILD STEEL FLANGES:
 - FASTENERS SHALL BE STAINLESS STEEL ON BOTH JOINTS, TOP AND BOTTOM.
- CORROSION PROTECTION:
 - LINING: THE STEEL PIPES WILL BE PROTECTED INTERNALLY BY A SOLVENT BORNE LIQUID EPOXY LINING WITH A MINIMUM THICKNESS OF 300 MICRONS.
 - COATING: EPOXY COATING AND LINING SHALL CONFORM TO SANS1217
 - FLANGE FACES: ALL FLANGES IN CONTACT WITH SOIL TO BE WRAPPED WITH PETROLEUM BASED TAPE OR SIMILAR.
 - FASTENERS FOR STAINLESS STEEL BALL VALVES: HEADS AND SHANKS AREAS OF BOLTS, NUTS AND WASHERS SHALL BE EPOXY POWDER COATED TO DFT 50 MICRONS. THREADS SHALL BE PROTECTED WITH MOLYBDENUM DISULPHIDE LUBRICANT OR A NICKEL ANTISEIZE COMPOUND. THREAD OF THE BOLTS MUST BE ON THE STAINLESS STEEL FLANGE.
- GENERAL:
 - CHECK THAT PIPES SPECIALS FIT CORRECTLY IN THE CHAMBER BEFORE MANUFACTURED.
 - PIPE SPECIALS TO BE CUT ON SITE SHALL BE MANUFACTURED WITH AN EXTRA LENGTH OF 40 PERCENT.
 - ALLOW FOR 3mm THICK GASKET BETWEEN THE FLANGES.
 - CHECK DIMENSION OF THE EXISTING PIPELINE BEFORE ORDERING PIPE SPECIALS AND COUPLING.
 - PROVIDE LIFTING LUGS WHERE REQUIRED.

GENERAL NOTES:

- ALL LEVELS TO BE CONFIRMED ON SITE.
- READ THIS DRAWING IN CONJUNCTION WITH RELEVANT ENGINEERING DRAWINGS.
- DO NOT SCALE FROM THIS DRAWING. USE ONLY THE CALCULATED AND WRITTEN DIMENSIONS.
- ALL EXCAVATIONS SHOULD BE INSPECTED AND APPROVED BY THE ENGINEER ON SITE.
- ALL DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE STATED.

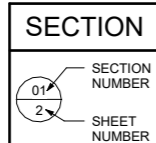
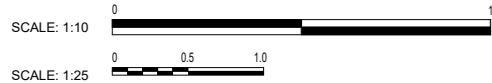
ABBREVIATION:

- NGL - NATURAL GROUND LEVEL
- PIL - PIPE INVERT LEVEL
- RL - REDUCED LEVEL

MISCELLANEOUS NOTES:

- CONCRETE AND MISCELLANEOUS
 - ALL CONCRETE EDGES TO BE 25mm CHAMFERED.
 - CONCRETE: CHAMBER - CLASS 25/19 BLINDING LAYER - CLASS 15/19.
 - ALL EXPOSED METAL WORK TO BE CR12 (UNPAINTED) OR SIMILAR APPROVED BY ENGINEER.
 - BACKFILL BELOW CHAMBER TO BE COMPACTED ON 150mm LAYERS TO 90 PERCENT MOD AASHTO

FOR TENDER PURPOSES



A	NO	DESIGNED	M. MUKABWE	INTERNATIONAL BUSINESS GATEWAY OFFICE PARK CNR PIONEER AVENUE AND ELIZABETH MIDRIDGE PARK TEL: (011) 466 - 8576 FAX: (011) 466 - 8813 E-MAIL: info@zimile.co.za	REFERENCE DRAWING/S:	CLIENT: UNABIRALA WESIFUNGA APPROVED: B. SEAKE FOR ZIMILE CONSULTING ENGINEERS DESIGNATION: SENIOR ENGINEER DATE: _____ SIGNATURE: _____	PROJECT:	HLUHLUWE WATER SUPPLY SCHEME PHASE 2	PROJECT PHASE	PRELIMINARY	TENDER	CONSTRUCTION	AS BUILT
		DRAWN	T. MAKHUBALO		DATE:		OCTOBER 2025	SCALE:	AS SHOWN				
		CHECKED	N. GUMEDE		DRAWING No.		J000167	WT	DT	216	REVISION	A	
ISSUE FOR TENDER NATURE OF REVISION		DATE	10/10/2025	CAD FILENAME				SIZE	A1				

GENERAL NOTES:

1. ALL LEVELS TO BE CONFIRMED ON SITE.
2. READ THIS DRAWING IN CONJUNCTION WITH RELEVANT ENGINEERING DRAWINGS.
3. DO NOT SCALE FROM THIS DRAWING. USE ONLY THE CALCULATED AND WRITTEN DIMENSIONS.
4. ALL EXCAVATIONS SHOULD BE INSPECTED AND APPROVED BY THE ENGINEER ON SITE.
5. ALL DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE STATED.

ABBREVIATION:

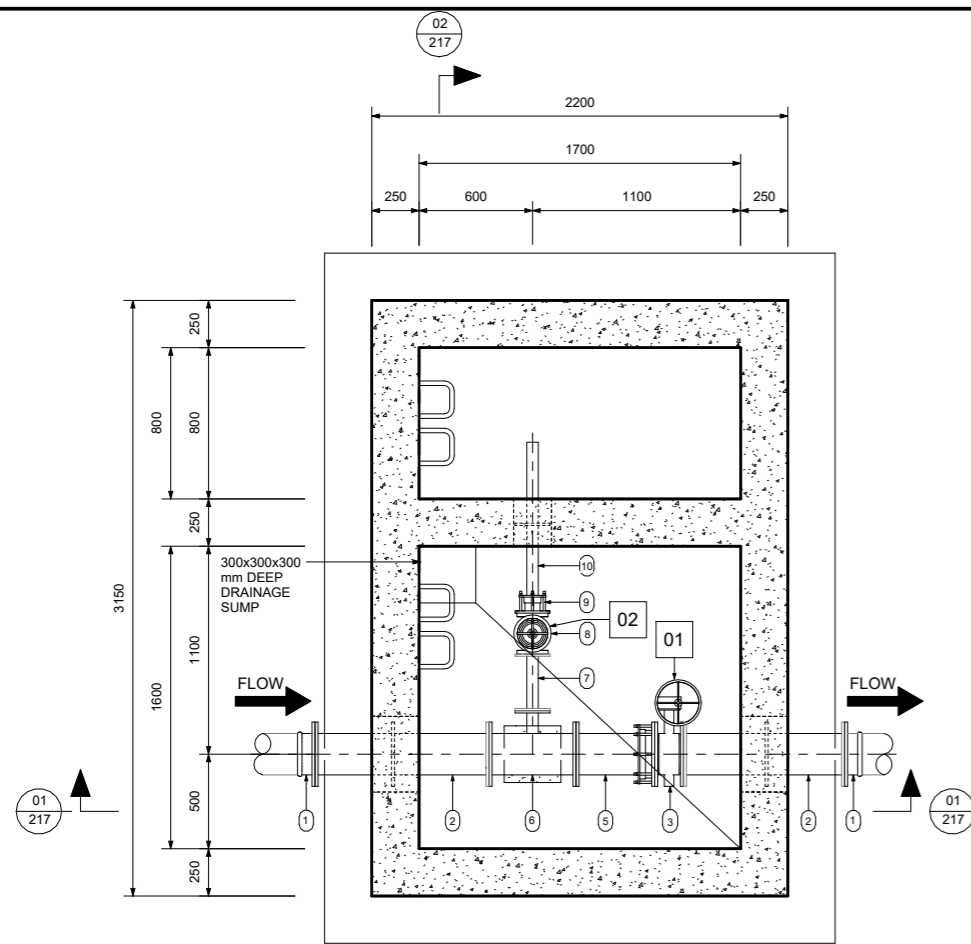
- NGL - NATURAL GROUND LEVEL
- PIL - PIPE INVERT LEVEL
- RL - REDUCED LEVEL

MISCELLANEOUS NOTES:

1. CONCRETE AND MISCELLANEOUS
 - 1.1 ALL CONCRETE EDGES TO BE 25mm CHAMFERED.
 - 1.2 CONCRETE - CHAMBER - CLASS 25/19
BLINDING LAYER - CLASS 15/19.
 - 1.3 ALL EXPOSED METAL WORK TO BE CR12(UNPAINTED) OR SIMILAR APPROVED BY ENGINEER.
 - 1.4 BACKFILL BELOW CHAMBER TO BE COMPACTED ON 150mm LAYERS TO 90 PERCENT MOD AASHTO

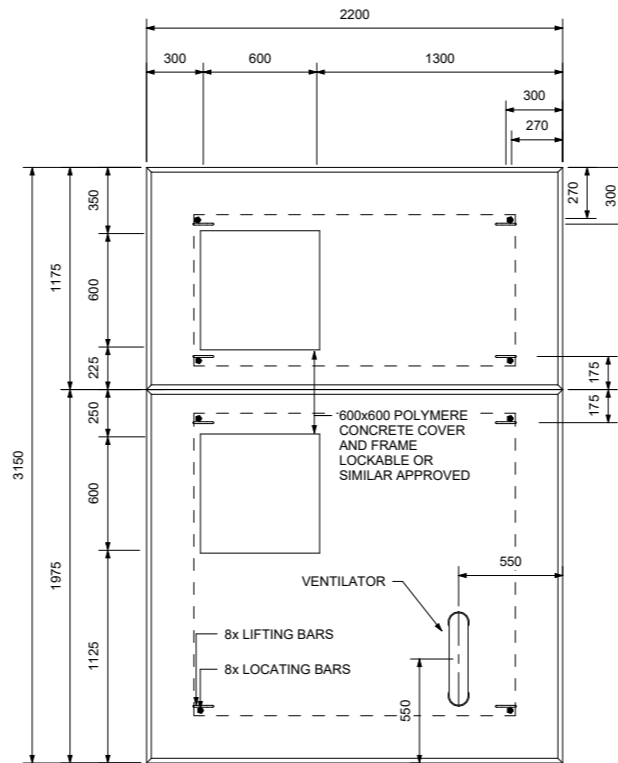
NOTES:

POSITION OF THE CHAMBER MUST BE DECIDED TO THE TERRAIN SLOPE



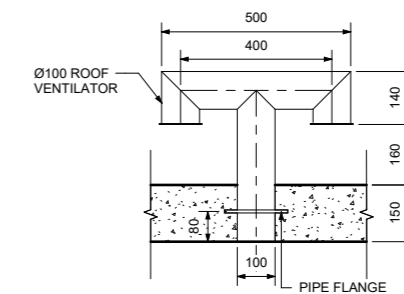
PLAN

SCALE 1 : 20



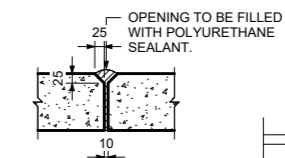
ROOF SLAB

SCALE 1 : 20



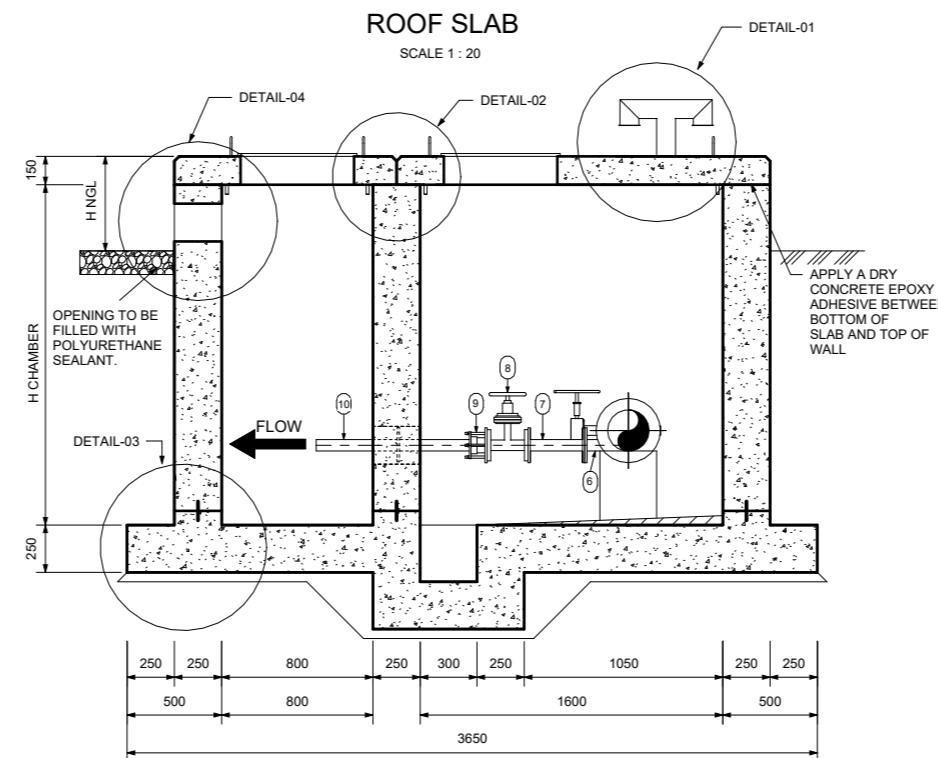
DETAIL-01

SCALE 1 : 10



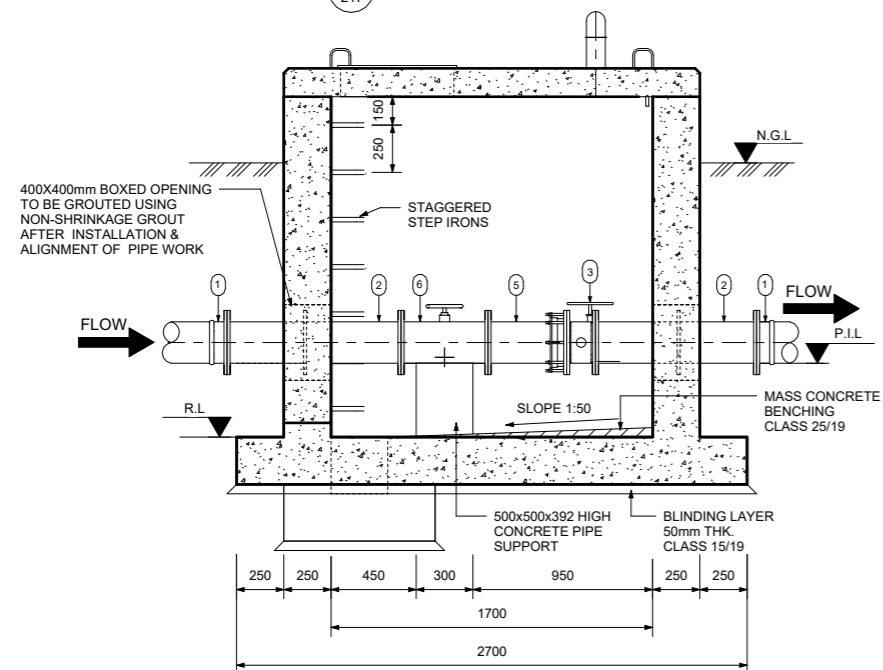
DETAIL-02

SCALE 1 : 10



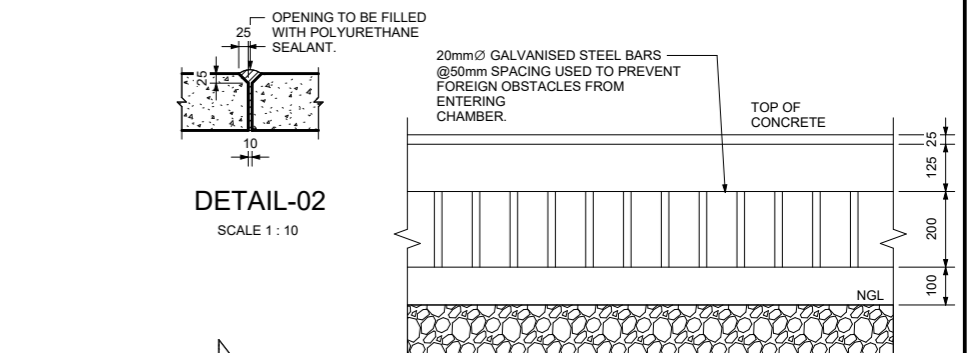
SECTION 02-02

SCALE 1 : 20



SECTION 01-01

SCALE 1 : 20



DETAIL-04

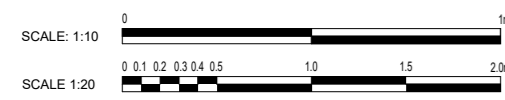
SCALE 1 : 10

DETAIL-03

SCALE 1 : 10

SCOUR VALVE CHAMBER SCHEDULE						
	CH. (m)	NGL (masl)	PIL (masl)	RL (masl)	H CHAMBER	H NGL
SCOUR VALVE-1						
SCOUR VALVE-2						

FOR TENDER PURPOSES ONLY



A NO.	ISSUE FOR TENDER	10/10/2025	DESIGNED	M. MUKABWE	INTERNATIONAL BUSINESS GATEWAY OFFICE PARK CNR PIONEER AVENUE AND ELIZABETH MIDRIDGE PARK TEL: (011) 466 - 8576 FAX: (011) 466 - 8813 E-MAIL: info@zimile.co.za	REFERENCE DRAWING/S:	UMBRALA WESIFUNGA mikhanyakude	APPROVED:	B. SEAKE	PROJECT: HLUHLUWE WATER SUPPLY SCHEME PHASE 2 TITLE: SCOUR VALVE CHAMBER TYPE-2 CONCRETE DETAILS AND PIPE SPECIALS 200mmØ	PROJECT PHASE	PRELIMINARY	TENDER	CONSTRUCTION	ASSET
	NATURE OF REVISION		DRAWN	T. MAKHUBALO		FOR ZIMILE CONSULTING ENGINEERS		DATE:	OCTOBER 2025		SCALE:	AS SHOWN			
			CHECKED	N. GUMEDE		DESIGNATION: SENIOR ENGINEER		DRAWING No.	J000167		WT	DT	217	REVISION	A
						DATE		SIGNATURE	CAD FILENAME					SIZE	A1

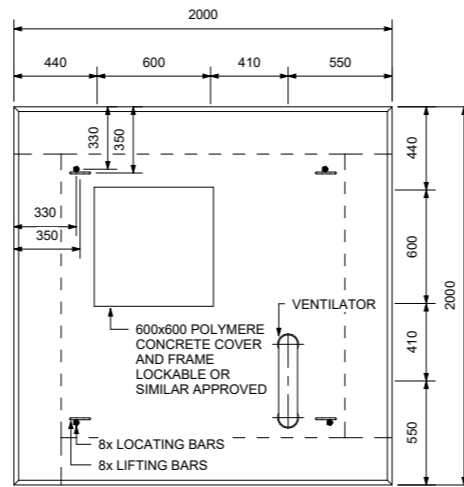
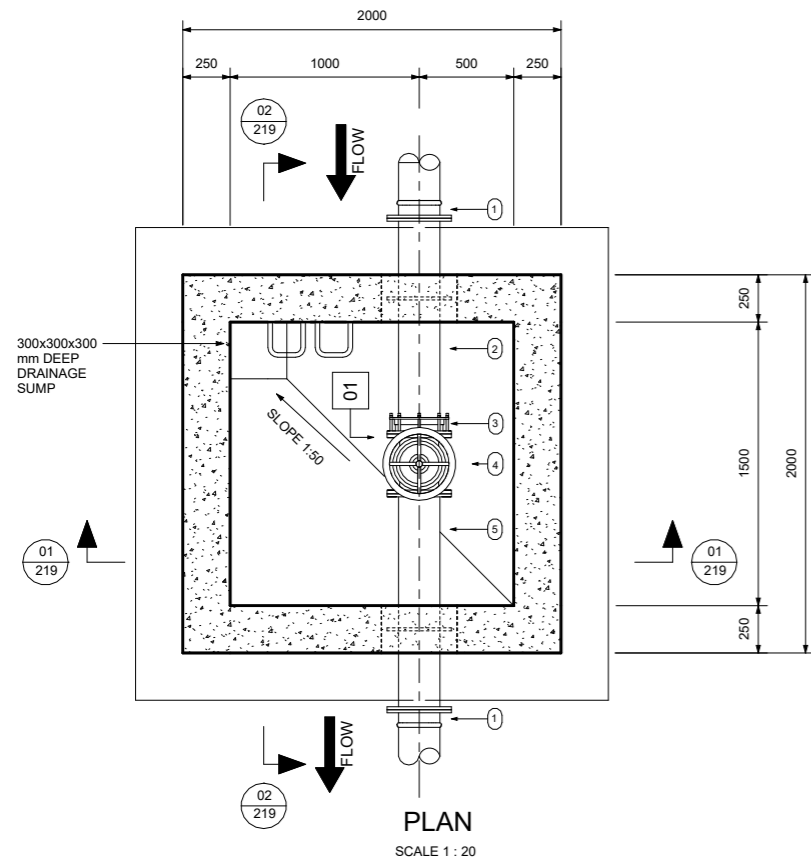
SCOUR VALVE CHAMBER PIPE SPECIALS							CORROSION AND PROTECTION AS SHOWN IN PIPE NOTES		
Mark	Count	Size	MATERIAL	WALL THK.(mm)	DESCRIPTION	SKETCH	LINING	FLANGES	COATING
1	2	200 mme-200 mme			SG IRON FLANGE ADAPTOR. PN16				3.3
2	2	200 mme	STEEL X42	4.5	STRAIGHT PIPE BOTH ENDS FLANGED. PUDDLE FLANGE AS REQUESTED. PN16		3.1	3.2	3.3
3	1	200 mme-200 mme			BUTTERFLY VALVE, RIGHT HAND ACUATOR, RIGHT HAND PROJECTION. PN16				3.3
4	1	200 mme-200 mme			FLANGE ADAPTOR. PN16				3.3
5	1	200 mme	STEEL X42	4.5	STRAIGHT PIPE ONE END FLANGED, OTHER PLAIN TO CUT TO SUIT ON SITE. PN16		3.1	3.2	3.3
6	1	200 mme-200 mme-50 mme	STEEL X42	4.5	90° UNEQUAL TEE. FLANGED. PN16		3.1	3.2	3.3
7	1	50 mme	STEEL X42	2.5	STRAIGHT PIPE BOTH ENDS FLANGED. PN16		3.1	3.2	3.3
8	1	50 mme-50 mme			RESILIENT SEAL GATE VALVE, NONE RISING SPINDLE. FLANGED. PN16				3.3
9	1	50 mme-50 mme			FLANGE ADAPTOR. PN16				3.3
10	1	50 mme	STEEL X42	2.5	STRAIGHT PIPE BOTH ENDS PLAIN FOR CUTTING TO SUIT ON SITE, PUDDLE FLANGE AS INDICATED. PN16		3.1	3.2	3.3

- PIPE NOTES:**
- FLANGES:
 - ALL DRILLED FLANGES' THICKNESS TO SANS 1123, TYPE 3 TABLE AND FOR CLASSIFICATION REFER TO THE RELEVANT DRAWING. FLANGES TO BE DRILLED OFF-CENTRE AND TO BE FLAT JOINT FACES MACHINED N11.
 - PUDDLE FLANGES: SAME TYPE AND OD AS DRILLED FLANGES. FLAT FACES. NO DRILLING.
 - ANCHOR/TRUST FLANGES: SAME TYPE AND OD. 'I' AS DRILLED FLANGES. FLAT FACED.
 - COUPLINGS BURIED IN SOIL TO BE PROTECTED IN ACCORDANCE WITH DWS 9900, SECTION 13 (COATING SYSTEM PLUS PETROLATUM WRAPPING).
 - FASTENERS FOR STAINLESS STEEL BALL VALVES ONTO MILD STEEL FLANGES:
 - FASTENERS SHALL BE STAINLESS STEEL ON BOTH JOINTS, TOP AND BOTTOM.
 - CORROSION PROTECTION:
 - LINING: THE STEEL PIPES WILL BE PROTECTED INTERNALLY BY A SOLVENT BORNE LIQUID EPOXY LINING WITH A MINIMUM THICKNESS OF 500 MICRONS.
 - COATING: EXTERNAL CORROSION PROTECTION WILL CONSIST OF A SINTAKOTE II FUSION BONDED POLYETHYLENE COATING FOR PIPES INSTALLED UNDERGROUND. PIPES INSTALLED IN CHAMBERS, THE RESERVOIR AND IN PUMP STATION WILL HAVE A SOLVENT FREE EPOXY COATING WITH MINIMUM THICKNESS OF 500 MICRONS.
 - FLANGE FACES: ALL FLANGES UNDERGROUND TO BE WRAPPED WITH DENSO-TAPE.
 - FASTENERS FOR STAINLESS STEEL BALL VALVES: HEADS AND SHANKS AREAS OF BOLTS, NUTS AND WASHERS SHALL BE EPOXY POWDER COATED TO DFT 50 MICRONS. THREADS SHALL BE PROTECTED WITH MOLYBDENUM DISULPHIDE LUBRICANT OR A NICKEL ANTISEIZE COMPOUND. THREAD OF THE BOLTS MUST BE ON THE STAINLESS STEEL FLANGE.
 - GENERAL:
 - CHECK THAT PIPES SPECIALS FIT CORRECTLY IN THE CHAMBER BEFORE MANUFACTURED.
 - PIPE SPECIALS TO BE CUT ON SITE SHALL BE MANUFACTURED WITH AN EXTRA LENGTH OF 40 PERCENT.
 - ALLOW FOR 3mm THICK GASKET BETWEEN THE FLANGES.
 - CHECK DIMENSION OF THE EXISTING PIPELINE BEFORE ORDERING PIPE SPECIALS AND COUPLING.
 - PROVIDE LIFTING LUGS WHERE REQUIRED.

FOR TENDER PURPOSES ONLY

	DESIGNED M. MUKABWE	 INTERNATIONAL BUSINESS GATEWAY OFFICE PARK CNR PIONEER AVENUE AND ELIZABETH MIDRIDGE PARK TEL: (011) 466 - 8576 FAX: (011) 466 - 8813 E-MAIL: info@zimile.co.za COPYRIGHT RESERVED ©	REFERENCE DRAWING/S:	CLIENT: UMAPHALA WESIFUNDO Mkhanyakude	APPROVED: B. SEAKE FOR ZIMILE CONSULTING ENGINEERS DESIGNATION: SENIOR ENGINEER DATE: _____ SIGNATURE: _____	PROJECT: HLUHLUWE WATER SUPPLY SCHEME PHASE 2 TITLE: SCOUR VALVE CHAMBER TYPE-2 PIPE SPECIALS	PROJECT PHASE <input checked="" type="checkbox"/> PRELIMINARY <input checked="" type="checkbox"/> TENDER <input checked="" type="checkbox"/> CONSTRUCTION <input type="checkbox"/> AS BUILT DATE: OCTOBER 2025 SCALE: AS SHOWN DRAWING No. J000167 WT DT 218 A CAD FILENAME:	
	DRAWN T. MAKHUBALO							REVISION A
A NO.	CHECKED N. GUMEDE							SIZE A1

ISSUE FOR TENDER
NATURE OF REVISION
10/10/2025
DATE



ISOLATION CHAMBER PIPE SPECIALS							CORROSION AND PROTECTION AS SHOWN IN PIPE NOTES		
Mark	Count	Size	MATERIAL	WALL THK (mm)	DESCRIPTION	SKETCH	LINING	COATING	FLANGES
1	2	200 mmø-200 mmø		4.5	SG IRON FLANGE PN16				3.3
2	1	200 mmø	STEEL GRADE A	4.5	STRAIGHT PIPE ONE END FLANGED, OTHER PLAIN TO CUT TO SUIT ON SITE. PUDDLE FLANGED AS INDICATED PN16		3.1	3.2	3.3
3	1	200 mmø-200 mmø			FLANGE ADAPTOR PN16				3.3
4	1	200 mmø-200 mmø			GATE VALVE, NONE RISING SPINDLE. PN16				3.3
5	1	200 mmø	STEEL GRADE A	4.5	STRAIGHT PIPE BOTH ENDS FLANGED. PUDDLE FLANGED AS INDICATED PN16		3.1	3.2	3.3

GENERAL NOTES:

- ALL LEVELS TO BE CONFIRMED ON SITE.
- READ THIS DRAWING IN CONJUNCTION WITH RELEVANT ENGINEERING DRAWINGS.
- DO NOT SCALE FROM THIS DRAWING. USE ONLY THE CALCULATED AND WRITTEN DIMENSIONS.
- ALL EXCAVATIONS SHOULD BE INSPECTED AND APPROVED BY THE ENGINEER ON SITE.
- ALL DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE STATED.

ABBREVIATION:

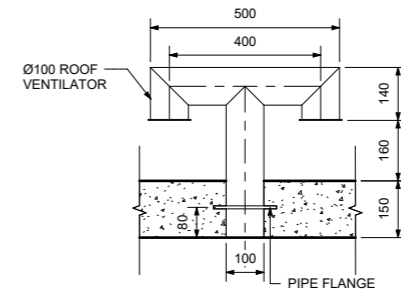
- NGL - NATURAL GROUND LEVEL
- P.I.L - PIPE INVERT LEVEL
- RL - REDUCED LEVEL

MISCELLANEOUS NOTES:

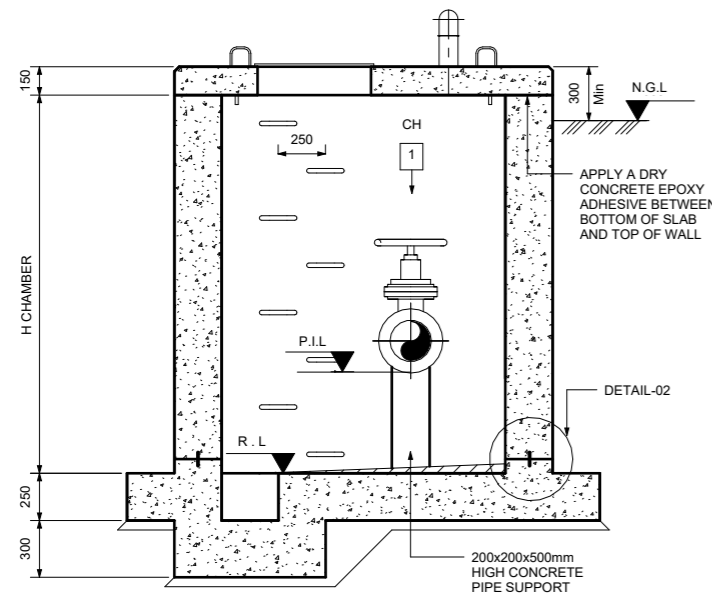
- CONCRETE AND MISCELLANEOUS
 - ALL CONCRETE EDGES TO BE 25mm CHAMFERED.
- CONCRETE - CHAMBER - CLASS 25/19 BLINDING LAYER - CLASS 15/19.
- ALL EXPOSED METAL WORK TO BE CR12(UNPAINTED) OR SIMILAR APPROVED BY ENGINEER.
- BACKFILL BELOW CHAMBER TO BE COMPACTED ON 150mm LAYERS TO 90 PERCENT MOD AASHTO

ROOF SLAB
SCALE 1:20

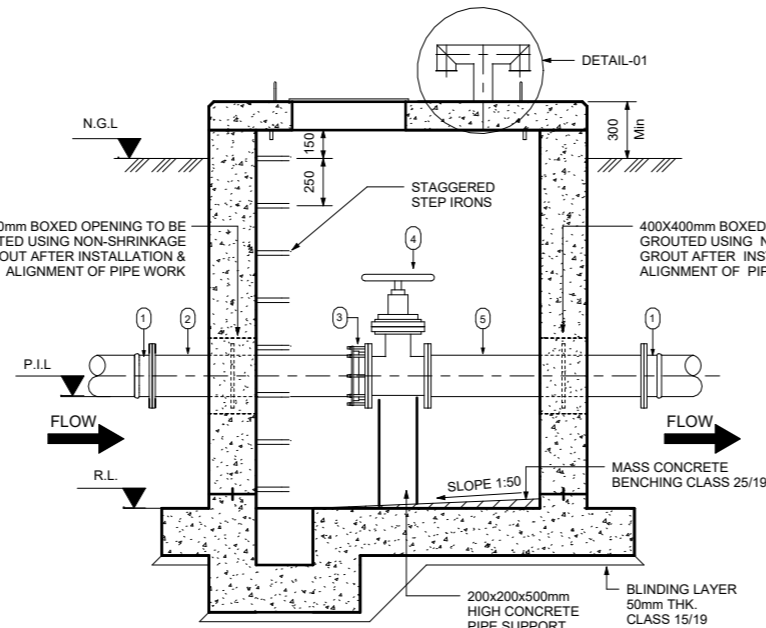
PLAN
SCALE 1:20



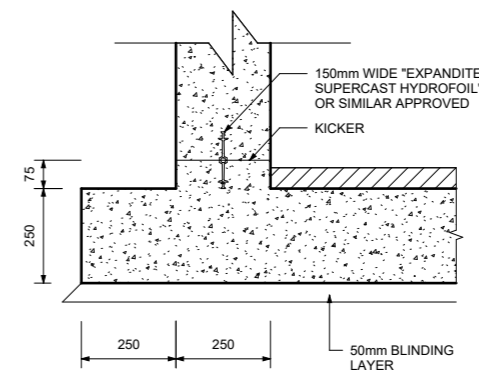
DETAIL-01
SCALE 1:10



SECTION 01-01
SCALE 1:20



SECTION 02-02
SCALE 1:20



DETAIL-02
SCALE 1:10

PIPE NOTES:

- FLANGES:
 - ALL DRILLED FLANGES' THICKNESS TO SANS 1123, TYPE 3 TABLE AND FOR CLASSIFICATION REFER TO THE RELEVANT DRAWING. FLANGES TO BE DRILLED OFF-CENTRE AND TO BE FLAT JOINT FACES MACHINED N11.
 - PUDDLE FLANGES: SAME TYPE AND OD AS DRILLED FLANGES. FLAT FACES. NO DRILLING.
 - ANCHOR/TRUST FLANGES: SAME TYPE AND OD. 'I' AS DRILLED FLANGES. FLAT FACED.
 - COUPLINGS BURIED IN SOIL TO BE PROTECTED IN ACCORDANCE WITH DW5 9900, SECTION 13(COATING SYSTEM PLUS PETROLATUM WRAPPING).
- FASTENERS FOR STAINLESS STEEL BALL VALVES ONTO MILD STEEL FLANGES:
 - FASTENERS SHALL BE STAINLESS STEEL ON BOTH JOINTS, TOP AND BOTTOM.
 - CORROSION PROTECTION:
 - LINING: THE STEEL PIPES WILL BE PROTECTED INTERNALLY BY A SOLVENT BORNE LIQUID EPOXY LINING WITH A MINIMUM THICKNESS OF 500 MICRONS.
 - COATING: EXTERNAL CORROSION PROTECTION WILL CONSIST OF A SINTAKOTE II FUSION BONDED POLYETHYLENE COATING FOR PIPES INSTALLED UNDERGROUND. PIPES INSTALLED IN CHAMBERS, THE RESERVOIR AND IN PUMP STATION WILL HAVE A SOLVENT FREE EPOXY COATING WITH MINIMUM THICKNESS OF 500 MICRONS.
 - FLANGE FACES: ALL FLANGES UNDERGROUND TO BE WRAPPED WITH DENSO-TAPE.
 - FASTENERS FOR STAINLESS STEEL BALL VALVES: HEADS AND SHANKS AREAS OF BOLTS, NUTS AND WASHERS SHALL BE EPOXY POWDER COATED TO DFT 50 MICRONS. THREADS SHALL BE PROTECTED WITH MOLYBDENUM DISULPHIDE LUBRICANT OR A NICKEL ANTISEIZE COMPOUND. THREAD OF THE BOLTS MUST BE ON THE STAINLESS STEEL FLANGE.
- GENERAL:
 - CHECK THAT PIPES SPECIALS FIT CORRECTLY IN THE CHAMBER BEFORE MANUFACTURED.
 - PIPE SPECIALS TO BE CUT ON SITE SHALL BE MANUFACTURED WITH AN EXTRA LENGTH OF 40 PERCENT.
 - ALLOW FOR 3mm THICK GASKET BETWEEN THE FLANGES.
 - CHECK DIMENSION OF THE EXISTING PIPELINE BEFORE ORDERING PIPE SPECIALS AND COUPLING.
 - PROVIDE LIFTING LUGS WHERE REQUIRED.

NOTES:

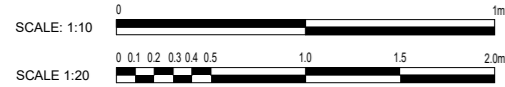
POSITION OF THE CHAMBER MUST BE DECIDED TO THE TERRAIN SLOPE

FOR TENDER PURPOSES ONLY

SECTION

SECTION NUMBER: 01/204

DRAWING NUMBER: 204



DESIGNED	M. MUKABWE
DRAWN	T. MAKHUBALO
CHECKED	N. GUMEDE
DATE	10/10/2025
ISSUE FOR TENDER	
NATURE OF REVISION	

ZIMILE
UNBOUNDED ENGINEERING

INTERNATIONAL BUSINESS GATEWAY OFFICE PARK
FOR ZIMILE PIONEER AVENUE AND ELIZABETH MIDRIDGE PARK
TEL: (011) 466 - 8576
FAX: (011) 466 - 8813
E-MAIL: info@zimile.co.za

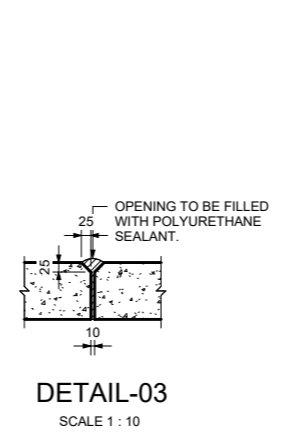
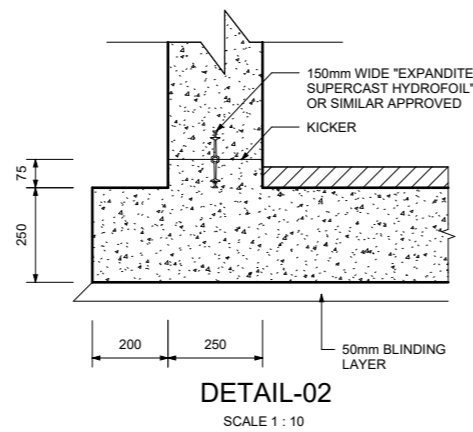
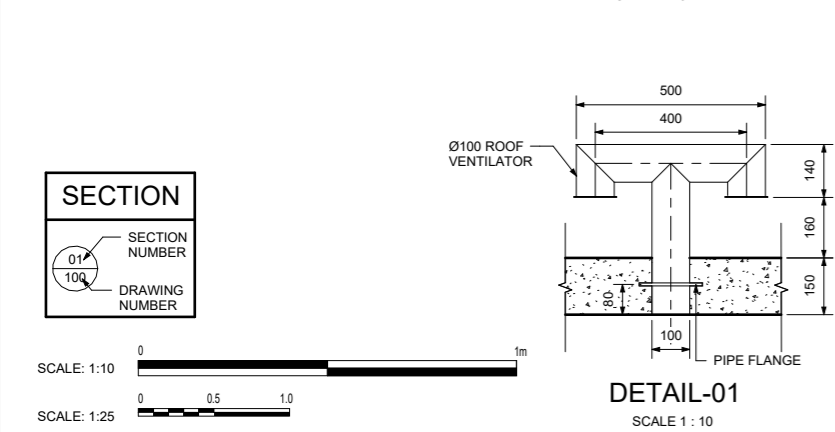
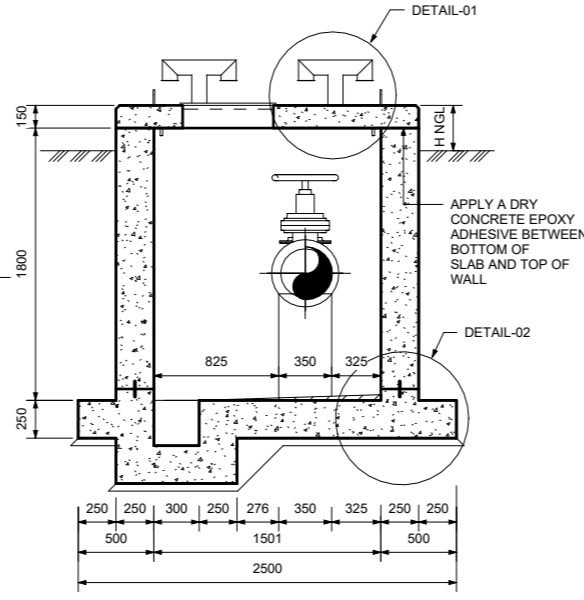
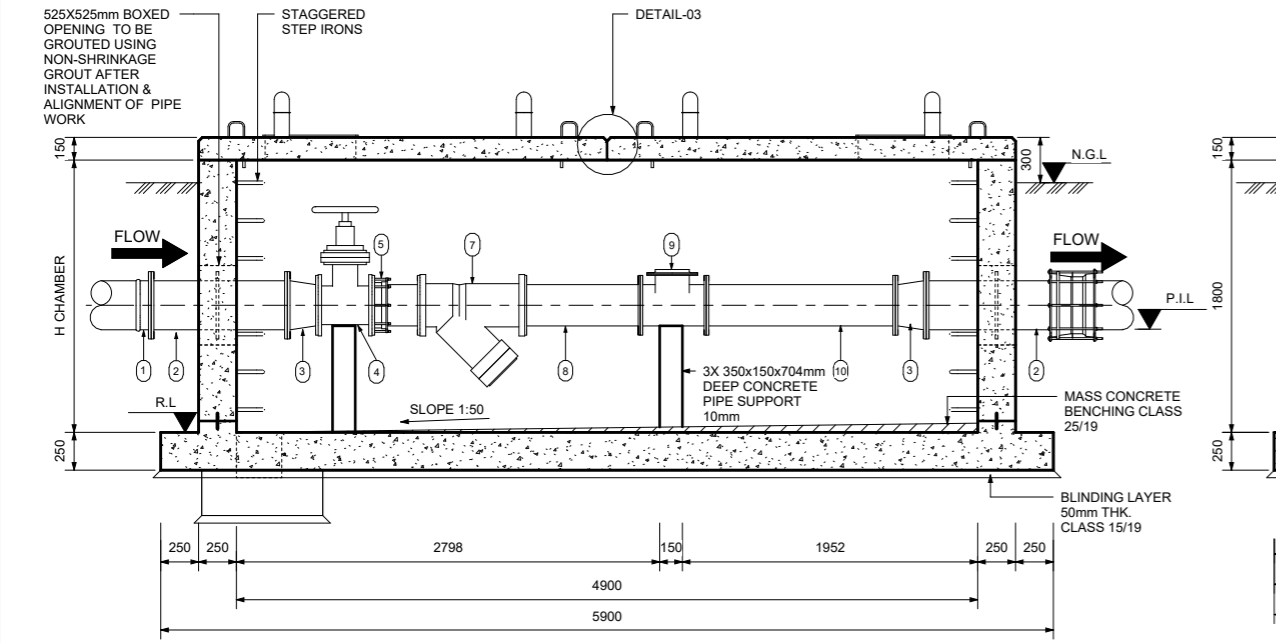
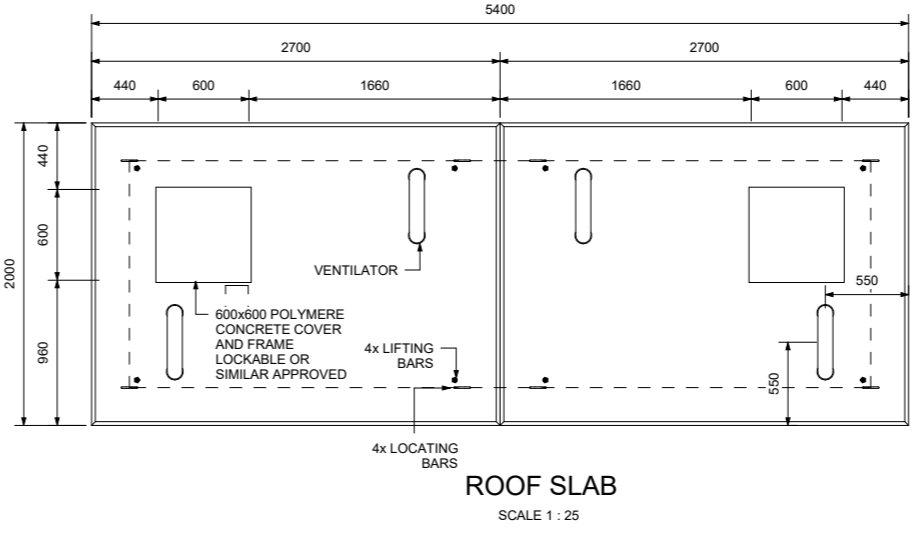
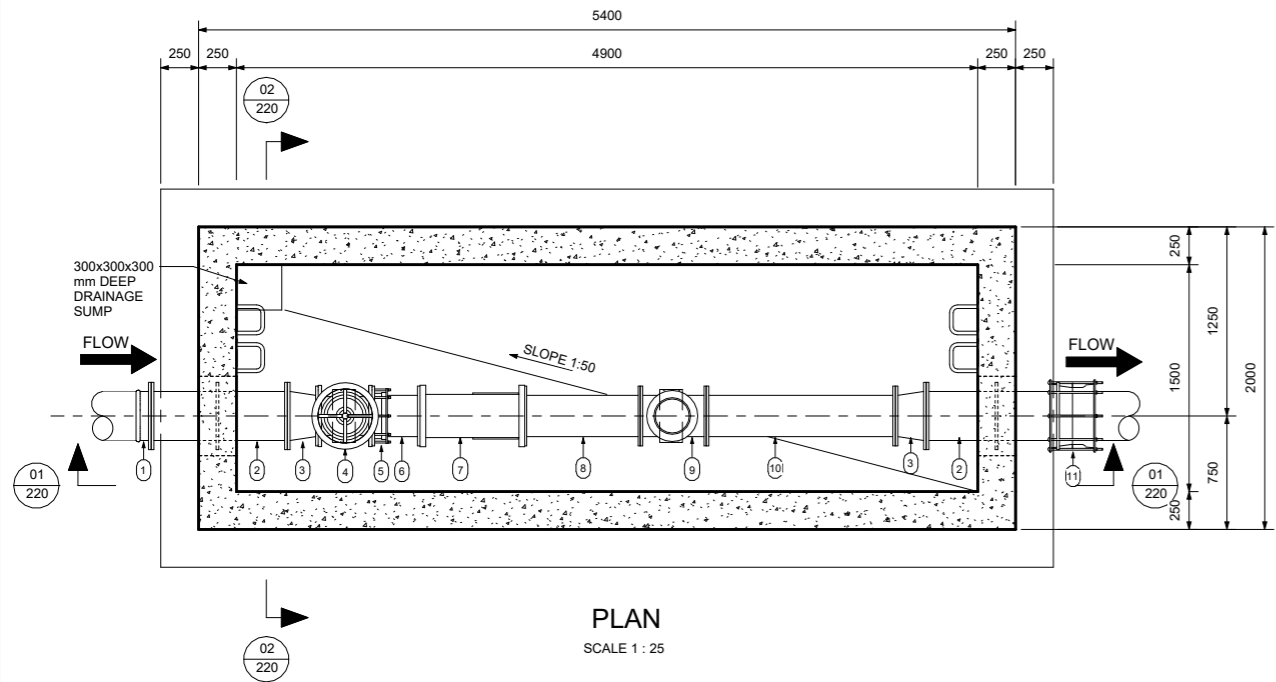
REFERENCE:

CLIENT: **Amchanyakude**

APPROVED: B. SEAKE
FOR ZIMILE CONSULTING ENGINEERS
DESIGNATION: SENIOR ENGINEER
DATE: _____ SIGNATURE: _____

PROJECT: HLUHLUWE WATER SUPPLY SCHEME PHASE 2
TITLE: ISOLATION CHAMBER CONCRETE DETAILS AND PIPE SPECIALS 200mmND

PROJECT PHASE			
PRELIMINARY	TENDER	CONSTRUCTION	AS-BUILT
DATE: OCTOBER 2025	SCALE: AS SHOWN		
DRAWING No. J000167	WT	DT	219
CAD FILENAME	SIZE	A1	



OUTLET VALVE CHAMBER PIPE SPECIALS							CORROSION AND PROTECTION AS SHOWN IN PIPE NOTES		
Mark	Count	Size	MATERIAL	WALL THK.(mm)	DESCRIPTION	SKETCH	LINING	FLANGES	COATING
1	1	300mm Ø			SG FLANGE PN16				3.3
2	2	300mm	GRADE A	6mm	STRAIGHT PIPE BOTH ENDS FLANGED, PUDDLE FLANGED AS INDICATED. PN16		3.1	3.2	3.3
3	2	300mm Ø -250mm Ø	GRADE A	6mm	CONCENTRIC REDUCER. PN16		3.1	3.2	3.3
4	1	250mm Ø			GATE VALVE NONE RISING SPINDLE. PN16				3.3
5	1	250mm Ø			FLANGE ADAPTOR. PN16				3.3
6	1	250mm	GRADE A	6mm	STRAIGHT PIPE ONE END FLANGED. OTHER PLAIN TO CUT TO SUITE ON SITE. PN16		3.1	3.2	3.3
7	1	250mm Ø			STRAINER, FLANGED. PN16				3.3
8	1	250mm	GRADE A	6mm	STRAIGHT PIPE BOTH ENDS FLANGED. PN16		3.1	3.2	3.3
9	1	250mm Ø			MAG FLOW METER. PN16				3.3
10	1	250mm	GRADE A	6mm	STRAIGHT PIPE BOTH ENDS FLANGED. PN16		3.1	3.2	3.3
11	1	300mm Ø			STEP COUPLING. PN16				3.3

GENERAL NOTES:

- ALL LEVELS TO BE CONFIRMED ON SITE.
- READ THIS DRAWING IN CONJUNCTION WITH RELEVANT ENGINEERING DRAWINGS.
- DO NOT SCALE FROM THIS DRAWING. USE ONLY THE CALCULATED AND WRITTEN DIMENSIONS.
- ALL EXCAVATIONS SHOULD BE INSPECTED AND APPROVED BY THE ENGINEER ON SITE.
- ALL DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE STATED.

ABBREVIATION:

NGL - NATURAL GROUND LEVEL
PIL - PIPE INVERT LEVEL
RL - REDUCED LEVEL

MISCELLANEOUS NOTES:

- CONCRETE AND MISCELLANEOUS
1.1. ALL CONCRETE EDGES TO BE 25mm CHAMFERED.
- CONCRETE - CLASS 25/19
CHAMBER - CLASS 25/19
BLINDING LAYER - CLASS 15/19.
- ALL EXPOSED METAL WORK TO BE CR12 (UNPAINTED) OR SIMILAR APPROVED BY ENGINEER.
- BACKFILL BELOW CHAMBER TO BE COMPACTED ON 150mm LAYERS TO 90 PERCENT MOD AASHTO

PIPE NOTES:

- FLANGES:
1.1. ALL DRILLED FLANGES' THICKNESS TO SANS 1123, TYPE 3 TABLE AND FOR CLASSIFICATION REFER TO THE RELEVANT DRAWING. FLANGES TO BE DRILLED OFF-CENTRE AND TO BE FLAT JOINT FACES MACHINED N11.
- PUDDLE FLANGES: SAME TYPE AND OD AS DRILLED FLANGES. FLAT FACES. NO DRILLING.
- ANCHOR/TRUST FLANGES: SAME TYPE AND OD. 'Y' AS DRILLED FLANGES. FLAT FACED.
- COUPLINGS BURIED IN SOIL TO BE PROTECTED IN ACCORDANCE WITH DWS 9900, SECTION 13 (COATING SYSTEM PLUS PETROLATUM WRAPPING).
- FASTENERS FOR STAINLESS STEEL BALL VALVES ONTO MILD STEEL FLANGES:
2.1. FASTENERS SHALL BE STAINLESS STEEL ON BOTH JOINTS, TOP AND BOTTOM.
- CORROSION PROTECTION:
3.1. LINING: THE STEEL PIPES WILL BE PROTECTED INTERNALLY BY A SOLVENT BORNE LIQUID EPOXY LINING WITH A MINIMUM THICKNESS OF 500 MICRONS.
- COATING: EXTERNAL CORROSION PROTECTION WILL CONSIST OF A SINTAKOTE II FUSION BONDED POLYETHYLENE COATING FOR PIPES INSTALL UNDERGROUND. PIPES INSTALLED IN CHAMBERS, THE RESERVOIR AND IN PUMP STATION WILL HAVE A SOLVENT FREE EPOXY COATING WITH MINIMUM THICKNESS OF 500 MICRONS.
- FLANGE FACES: ALL FLANGES UNDERGROUND TO BE WRAPPED WITH DENSO-TAPE.
- FASTENERS FOR STAINLESS STEEL BALL VALVES: HEADS AND SHANKS AREAS OF BOLTS, NUTS AND WASHERS SHALL BE EPOXY POWDER COATED TO DFT 50 MICRONS. THREADS SHALL BE PROTECTED WITH MOLYBDENUM DISULPHIDE LUBRICANT OR A NICKEL ANTISEIZE COMPOUND. THREAD OF THE BOLTS MUST BE ON THE STAINLESS STEEL FLANGE.
- GENERAL:
4.1. CHECK THAT PIPES SPECIALS FIT CORRECTLY IN THE CHAMBER BEFORE MANUFACTURING.
4.2. PIPE SPECIALS TO BE CUT ON SITE SHALL BE MANUFACTURED WITH AN EXTRA LENGTH OF 40 PERCENT.
4.3. ALLOW FOR 3mm THICK GASKET BETWEEN THE FLANGES.
4.4. CHECK DIMENSION OF THE EXISTING PIPELINE BEFORE ORDERING PIPE SPECIALS AND COUPLING.
4.5. PROVIDE LIFTING LUGS WHERE REQUIRED.

FOR TENDER PURPOSES ONLY

0 NO ISSUE FOR TENDER NATURE OF REVISION 10/10/2025 DATE	DESIGNED	N. GUMEDE	 INTERNATIONAL BUSINESS GATEWAY OFFICE PARK CNR PIONEER AVENUE AND ELIZABETH MIDRIDGE PARK TEL: (011) 466 - 8576 FAX: (011) 466 - 8813 E-MAIL: info@zimile.co.za COPYRIGHT RESERVED ©	REFERENCE DRAWINGS:	 CLIENT: UMSHAYAKUDE APPROVED: B. SEAKE FOR ZIMILE CONSULTING ENGINEERS DESIGNATION: SENIOR ENGINEER DATE: _____ SIGNATURE: _____	PROJECT:	HLULUWE WATER SUPPLY SCHEME PHASE 2	PROJECT PHASE	PRELIMINARY TENDER CONSTRUCTION AS-BUILT				
	DRAWN	T. MAKHUBALO					DRAWING No.	J000167	WT	DT	220	REVISION	0
	CHECKED	M. MUKABWE					TITLE:	OUTLET VALVE CHAMBER CONCRETE DETAILS AND PIPE SPECIALS		DATE:	OCTOBER 2025	SCALE:	AS SHOWN

GENERAL NOTES:

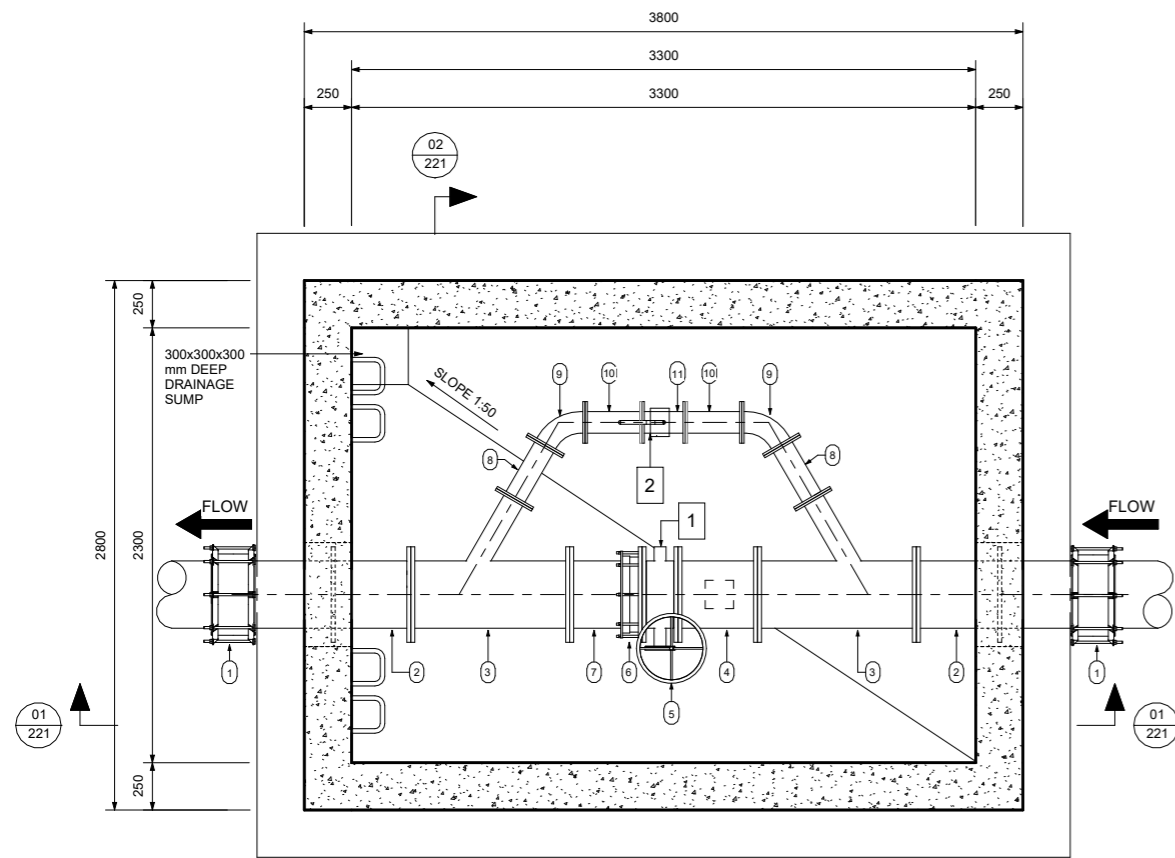
1. ALL LEVELS TO BE CONFIRMED ON SITE.
2. READ THIS DRAWING IN CONJUNCTION WITH RELEVANT ENGINEERING DRAWINGS.
3. DO NOT SCALE FROM THIS DRAWING. USE ONLY THE CALCULATED AND WRITTEN DIMENSIONS.
4. ALL EXCAVATIONS SHOULD BE INSPECTED AND APPROVED BY THE ENGINEER ON SITE.
5. ALL DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE STATED.

ABBREVIATION:

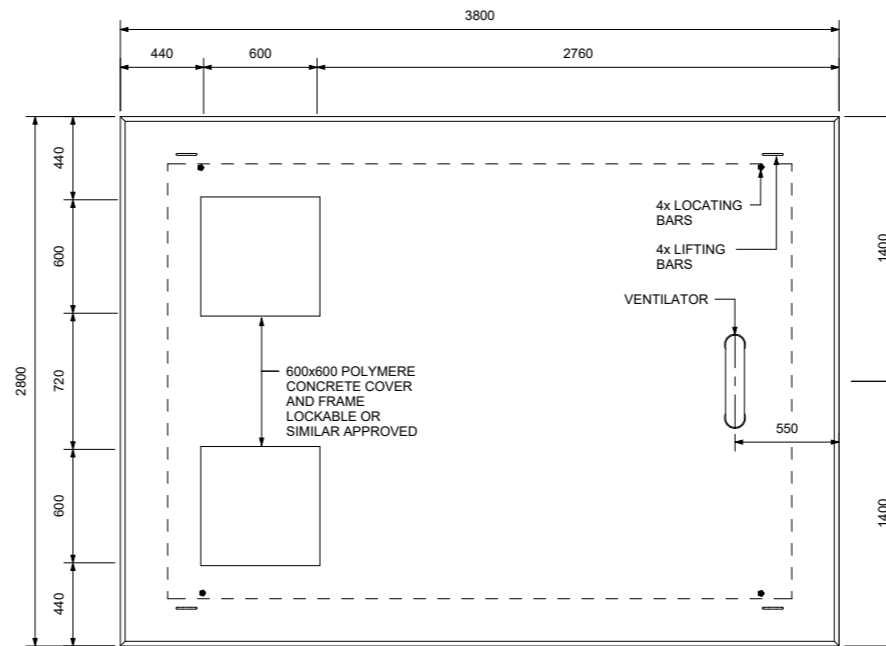
- NGL - NATURAL GROUND LEVEL
- P.I.L - PIPE INVERT LEVEL
- RL - REDUCED LEVEL

MISCELLANEOUS NOTES:

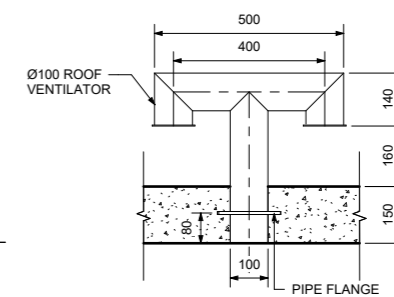
1. CONCRETE AND MISCELLANEOUS
 - 1.1 ALL CONCRETE EDGES TO BE 25mm CHAMFERED.
 - 1.2 CONCRETE - CHAMBER - CLASS 25/19
BLINDING LAYER - CLASS 15/19.
 - 1.3 ALL EXPOSED METAL WORK TO BE CR12(UNPAINTED) OR SIMILAR APPROVED BY ENGINEER.
 - 1.4 BACKFILL BELOW CHAMBER TO BE COMPACTED ON 150mm LAYERS TO 90 PERCENT MOD AASHTO



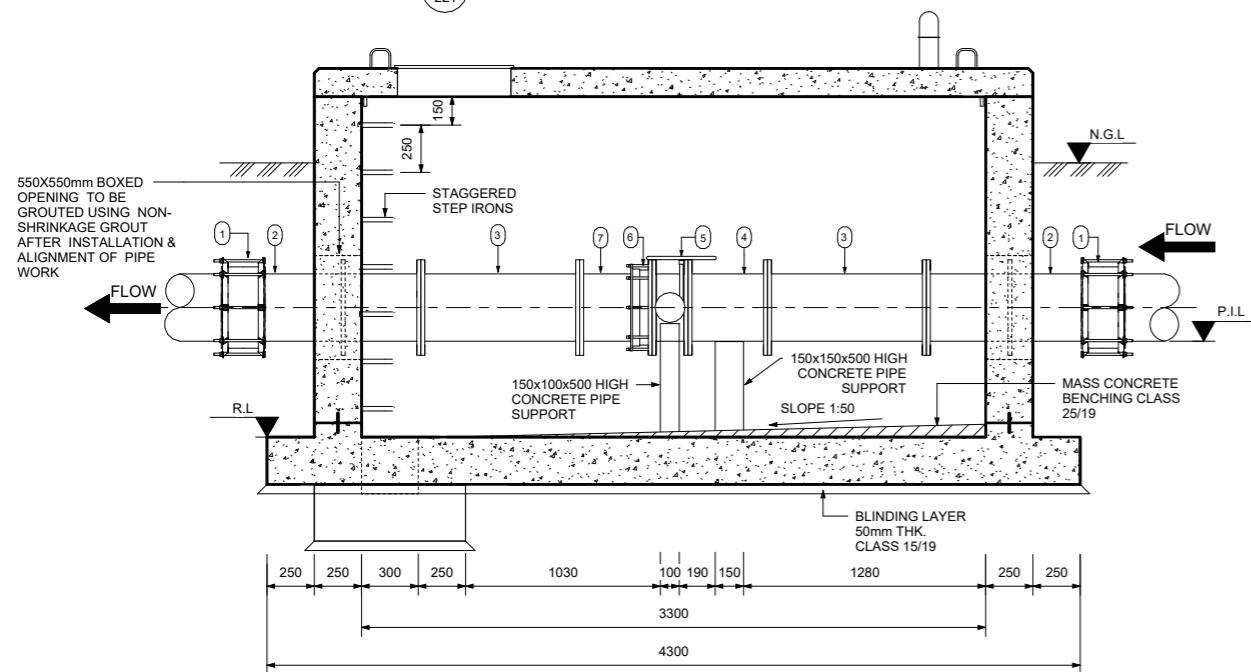
PLAN
SCALE 1 : 20



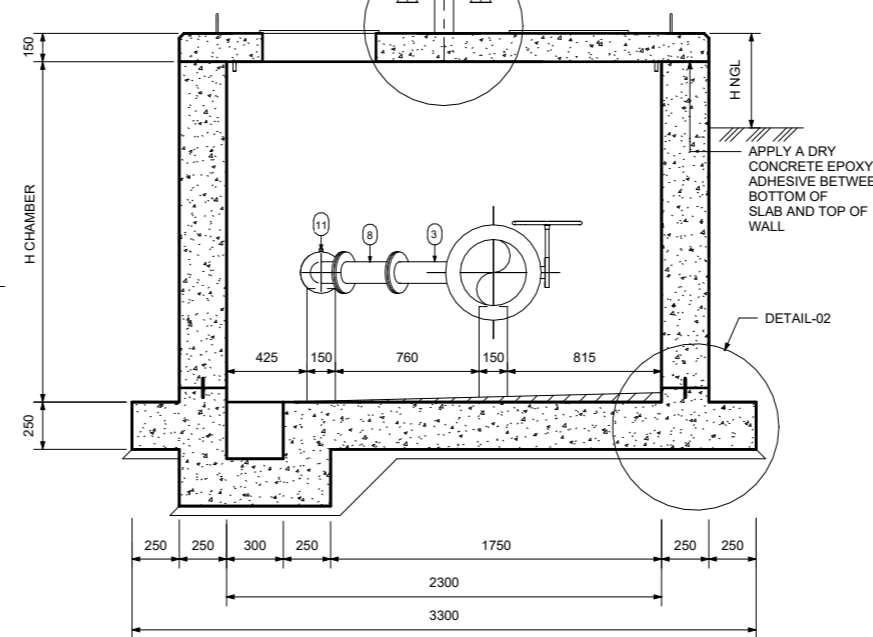
ROOF SLAB
SCALE 1 : 20



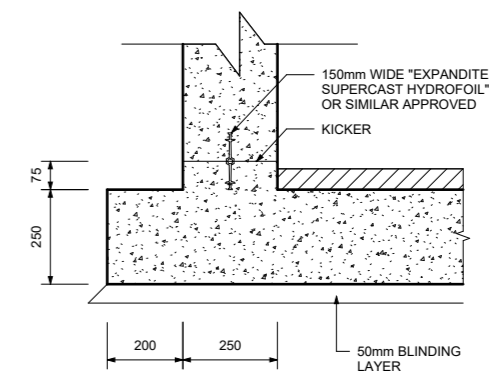
DETAIL-01
SCALE 1 : 10



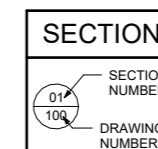
SECTION 01-01
SCALE 1 : 20



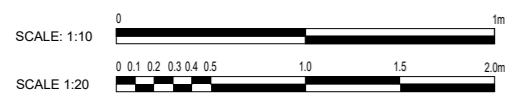
SECTION 02-02
SCALE 1 : 20



DETAIL-02
SCALE 1 : 10



FOR TENDER PURPOSES ONLY



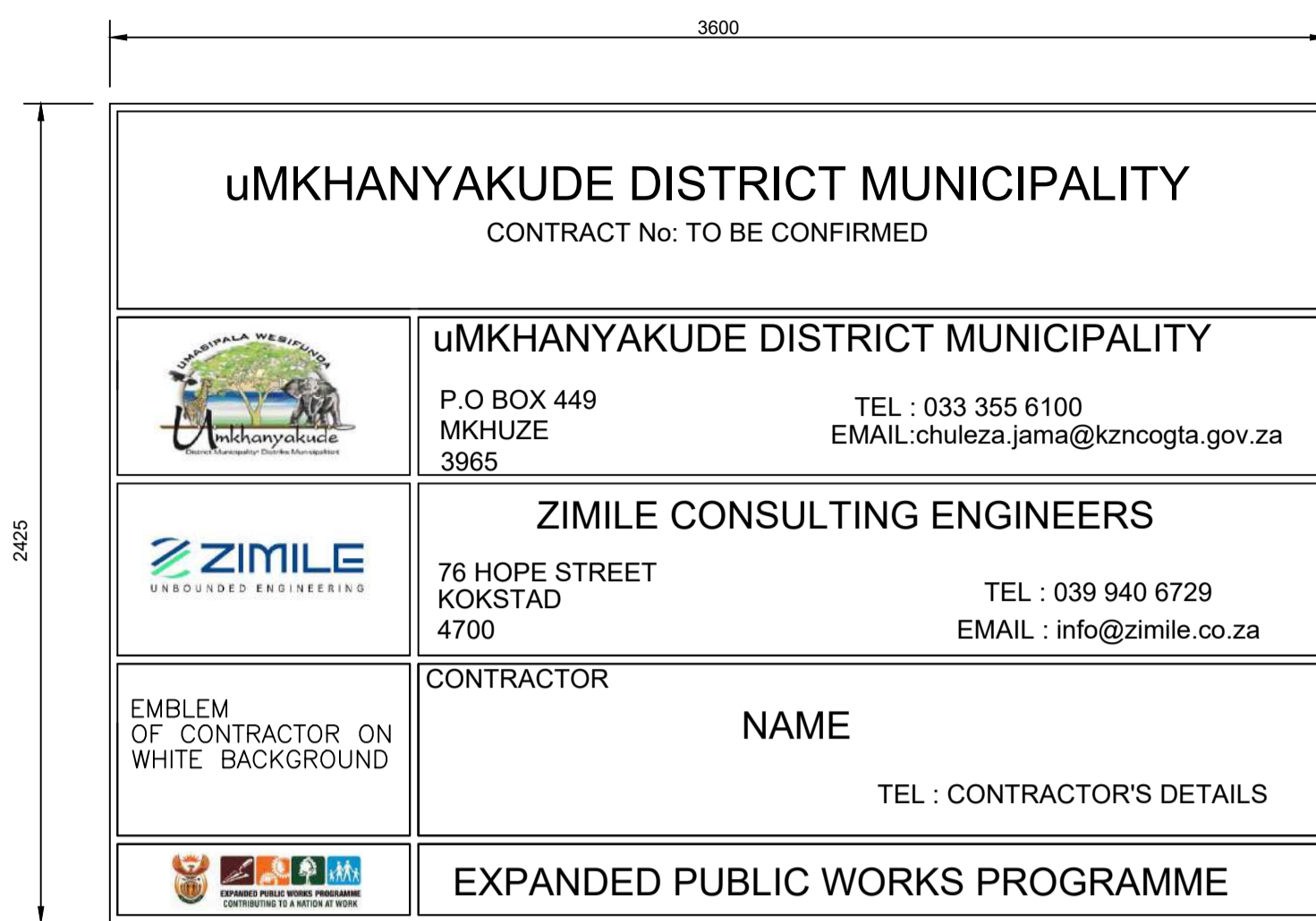
A NO.	ISSUE FOR TENDER NATURE OF REVISION	10/10/2025 DATE	DESIGNED	N. GUMEDE	INTERNATIONAL BUSINESS GATEWAY OFFICE PARK CNR PIONEER AVENUE AND ELIZABETH MIDRIDGE PARK TEL: (011) 466 - 8576 FAX: (011) 466 - 8813 E-MAIL: info@zimile.co.za	REFERENCE DRAWING/S:	CLIENT:	UNABIRALA WESIFUNGA FOR ZIMILE CONSULTING ENGINEERS	APPROVED:	B. SEAKE SENIOR ENGINEER	PROJECT:	HLULUWE WATER SUPPLY SCHEME PHASE 2	PROJECT PHASE	PRELIMINARY	TENDER	CONSTRUCTION	AS-BUILT
			DRAWN	T. MAKHUBALO			DESIGNATION:	SENIOR ENGINEER	TITLE:	ISOLATION VALVE AND BYPASS CHAMBER (355mm ND) CONCRETE DETAILS	DRAWING No.	J000167	WT	DT	221	REVISION	A
			CHECKED	M. MUKABWE			DATE	SIGNATURE	DATE	SIGNATURE	CAD FILENAME		SCALE:	OCTOBER 2025	AS SHOWN	SIZE	A1
																COPYRIGHT RESERVED ©	

ISOLATION VALVE CHAMBER PIPE SPECIALS									
Mark	Count	Size	MATERIAL	WALL THK.(mm)	DESCRIPTION	SKETCH	CORROSION AND PROTECTION AS SHOWN IN PIPE NOTES		
							LINING	FLANGES	COATING
1	2	355 mma-355 mma			STEP COUPLING PN16				
2	2	350 mma	STEEL X42	11.9	STRAIGHT PIPE ONE END FLANGED, OTHER PLAIN TO CUT TO SUIT ON SITE. PUDDLE FLANGE AS INDICATED. PN20		3.1	3.2	3.3
3	2	355mm Ø - 100mm Ø	STEEL X42		UNEQUAL LATERAL TEE, FLANGED. PN20		3.1	3.2	3.3
4	1	355 mma	STEEL X42	11.9	STRAIGHT PIPE BOTH ENDS FLANGED. PN20		3.1	3.2	3.3
5	1	355 mma-355 mma			BUTTERFLY VALVE, FLANGED. PN20				3.3
6	1	355mmØ			FLANGE ADAPTOR PN20				3.3
7	1	350 mma	STEEL X42	11.9	STRAIGHT PIPE ONE END FLANGED, OTHER PLAIN TO CUT TO SUIT ON SITE. PN20		3.1	3.2	3.3
8	2	100 mma	STEEL X42	11.9	STRAIGHT PIPE BOTH ENDS FLANGED. PN20		3.1	3.2	3.3
9	2	100mmØ	STEEL X42		90° SHORT BEND, FLANGED. PN20		3.1	3.2	3.3
10	2	100 mma	STEEL X42	11.9	STRAIGHT PIPE BOTH ENDS FLANGED. PN20		3.1	3.2	3.3
11	1	100 mma-100 mma			BALL VALVE, FLANGED. PN20				3.3

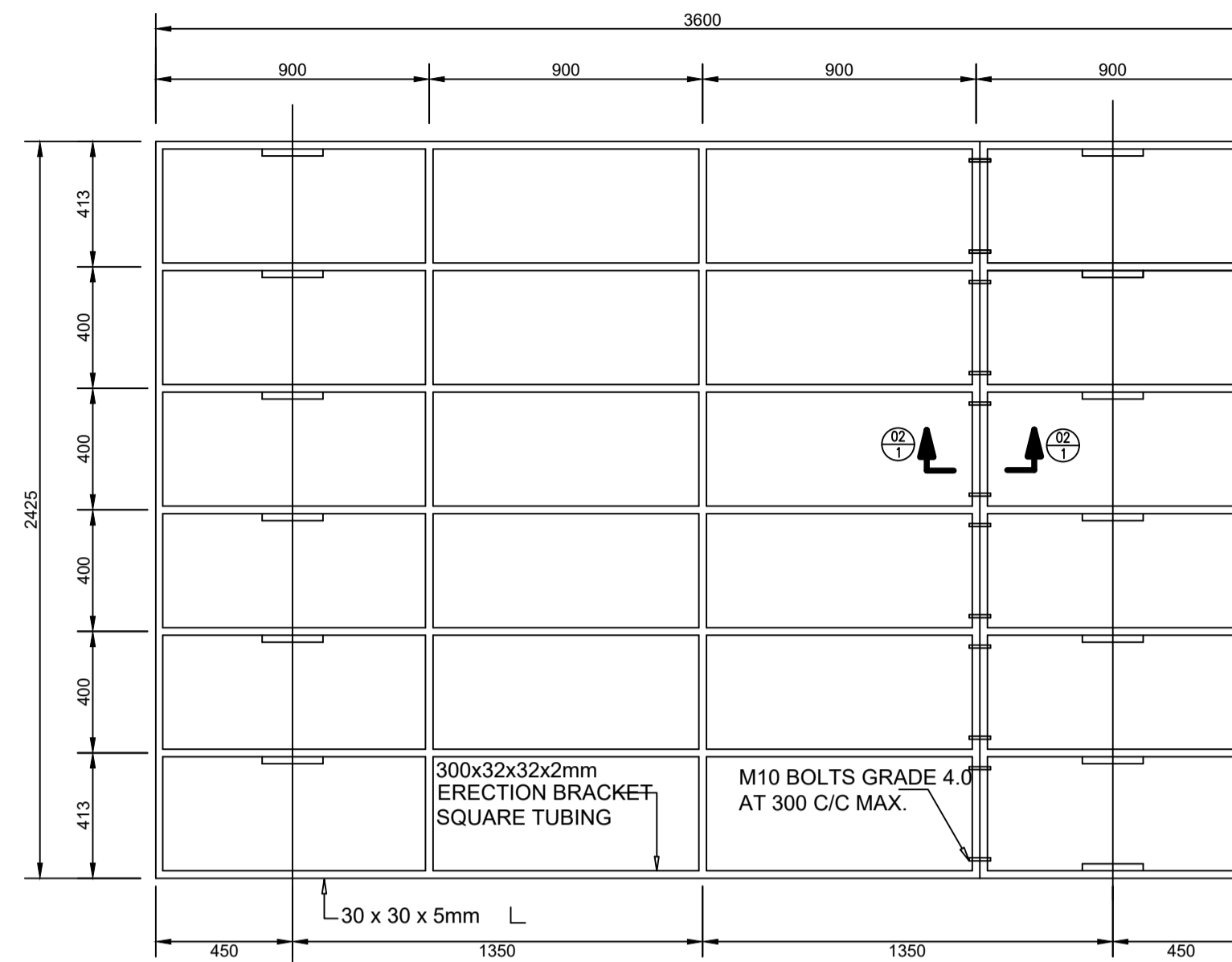
- PIPE NOTES:**
- FLANGES:
 - ALL DRILLED FLANGES' THICKNESS TO SANS 1123, TYPE 3 TABLE AND FOR CLASSIFICATION REFER TO THE RELEVANT DRAWING. FLANGES TO BE DRILLED OFF-CENTRE AND TO BE FLAT JOINT FACES MACHINED N11.
 - PUDDLE FLANGES: SAME TYPE AND OD AS DRILLED FLANGES. FLAT FACES. NO DRILLING.
 - ANCHOR/TRUST FLANGES: SAME TYPE AND OD. Y' AS DRILLED FLANGES. FLAT FACED.
 - COUPLINGS BURIED IN SOIL TO BE PROTECTED IN ACCORDANCE WITH DWS 9900, SECTION 13(COATING SYSTEM PLUS PETROLATUM WRAPPING).
 - FASTENERS FOR STAINLESS STEEL BALL VALVES ONTO MILD STEEL FLANGES:
 - FASTENERS SHALL BE STAINLESS STEEL ON BOTH JOINTS, TOP AND BOTTOM.
 - CORROSION PROTECTION:
 - LINING: THE STEEL PIPES WILL BE PROTECTED INTERNALLY BY A SOLVENT BORNE LIQUID EPOXY LINING WITH A MINIMUM THICKNESS OF 500 MICRONS.
 - COATING: EXTERNAL CORROSION PROTECTION WILL CONSIST OF A SINTAKOTE II FUSION BONDED POLYETHYLENE COATING FOR PIPES INSTALL UNDERGROUND. PIPES INSTALLED IN CHAMBERS, THE RESERVOIR AND IN PUMP STATION WILL HAVE A SOLVENT FREE EPOXY COATING WITH MINIMUM THICKNESS OF 500 MICRONS.
 - FLANGE FACES: ALL FLANGES UNDERGROUND TO BE WRAPPED WITH DENSO-TAPE.
 - FASTENERS FOR STAINLESS STEEL BALL VALVES: HEADS AND SHANKS AREAS OF BOLTS, NUTS AND WASHERS SHALL BE EPOXY POWDER COATED TO DFT 50 MICRONS. THREADS SHALL BE PROTECTED WITH MOLYBDENUM DISULPHIDE LUBRICANT OR A NICKEL ANTISEIZE COMPOUND. THREAD OF THE BOLTS MUST BE ON THE STAINLESS STEEL FLANGE.
 - GENERAL:
 - CHECK THAT PIPES SPECIALS FIT CORRECTLY IN THE CHAMBER BEFORE MANUFACTURED.
 - PIPE SPECIALS TO BE CUT ON SITE SHALL BE MANUFACTURED WITH AN EXTRA LENGTH OF 40 PERCENT.
 - ALLOW FOR 3mm THICK GASKET BETWEEN THE FLANGES.
 - CHECK DIMENSION OF THE EXISTING PIPELINE BEFORE ORDERING PIPE SPECIALS AND COUPLING.
 - PROVIDE LIFTING LUGS WHERE REQUIRED.

FOR TENDER PURPOSES ONLY

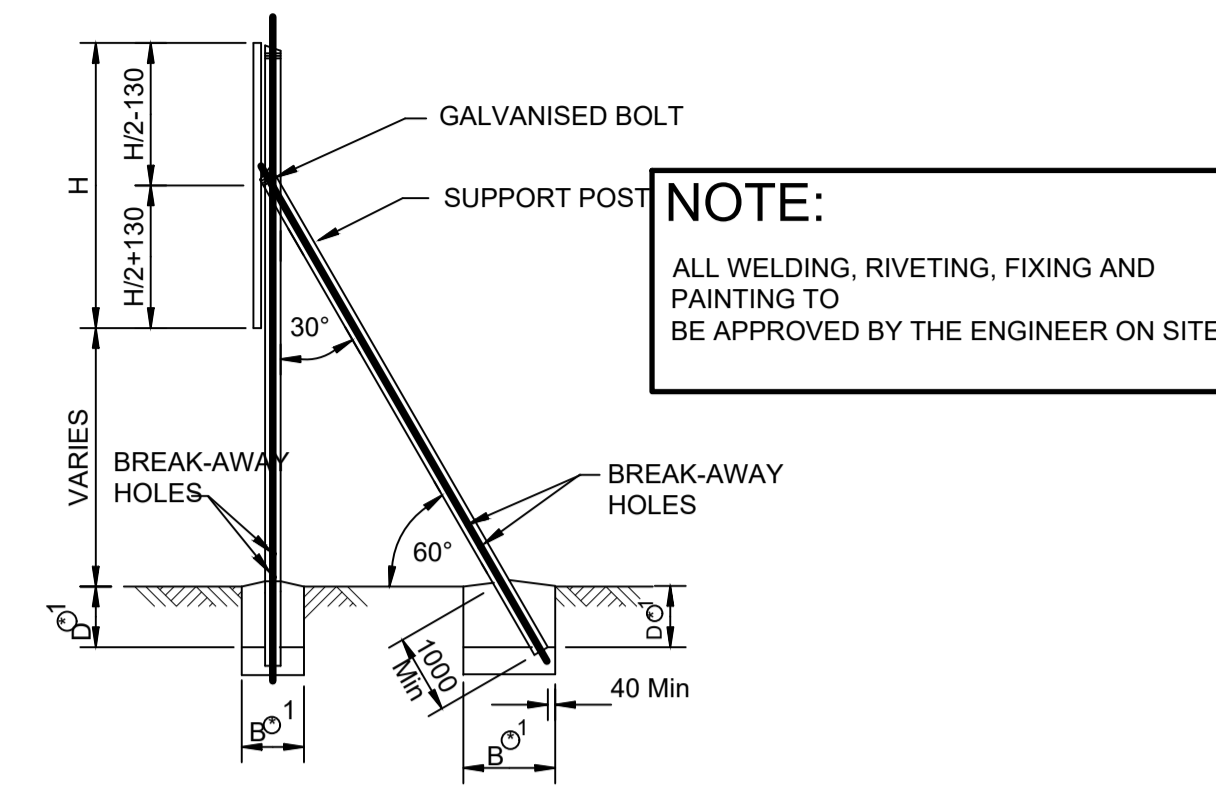
		DESIGNED N. GUMEDE <small>NAME</small>	 ZIMILE UNBOUNDED ENGINEERING <small>COPYRIGHT RESERVED ©</small>	INTERNATIONAL BUSINESS GATEWAY OFFICE PARK CNR PIONEER AVENUE AND ELIZABETH MIDRIDGE PARK TEL: (011) 466 - 8576 FAX: (011) 466 - 8813 E-MAIL: info@zimile.co.za	REFERENCE DRAWING/S: 	CLIENT: UMAPHALA WESIFUNDO Mkhanyakude <small>Umaphala Wesifundo - Umla-ntshona</small>	APPROVED: B. SEAKE FOR ZIMILE CONSULTING ENGINEERS DESIGNATION: SENIOR ENGINEER DATE _____ SIGNATURE _____	PROJECT: HLUHLUWE WATER SUPPLY SCHEME PHASE 2 TITLE: ISOLATION VALVE AND BYPASS CHAMBER (355mm ND) PIPE SPECIALS	PROJECT PHASE PRELIMINARY TENDER CONSTRUCTION AS BUILT DATE: OCTOBER 2025 SCALE: AS SHOWN DRAWING No. J000167 WT DT 222 REVISION A CAD FILENAME: <small>Project: HLUHLUWE WATER SUPPLY SCHEME PHASE 2</small>	
A NO.	ISSUE FOR TENDER NATURE OF REVISION	10/10/2025 DATE	CHECKED M. MUKABWE <small>NAME</small>							REVISION A A1



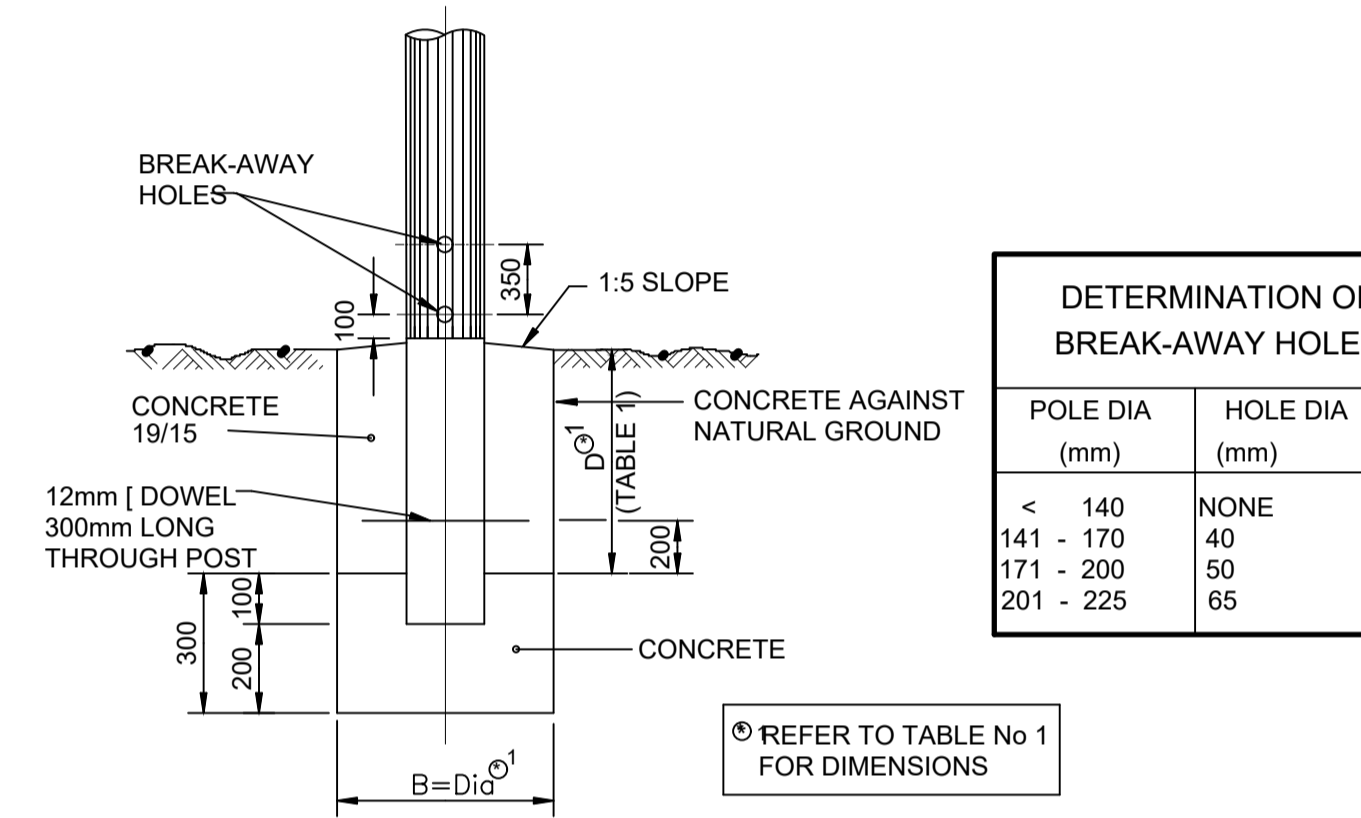
FRONT ELEVATION
SCALE 1:20



REAR SIDE BRACING
SCALE 1:20

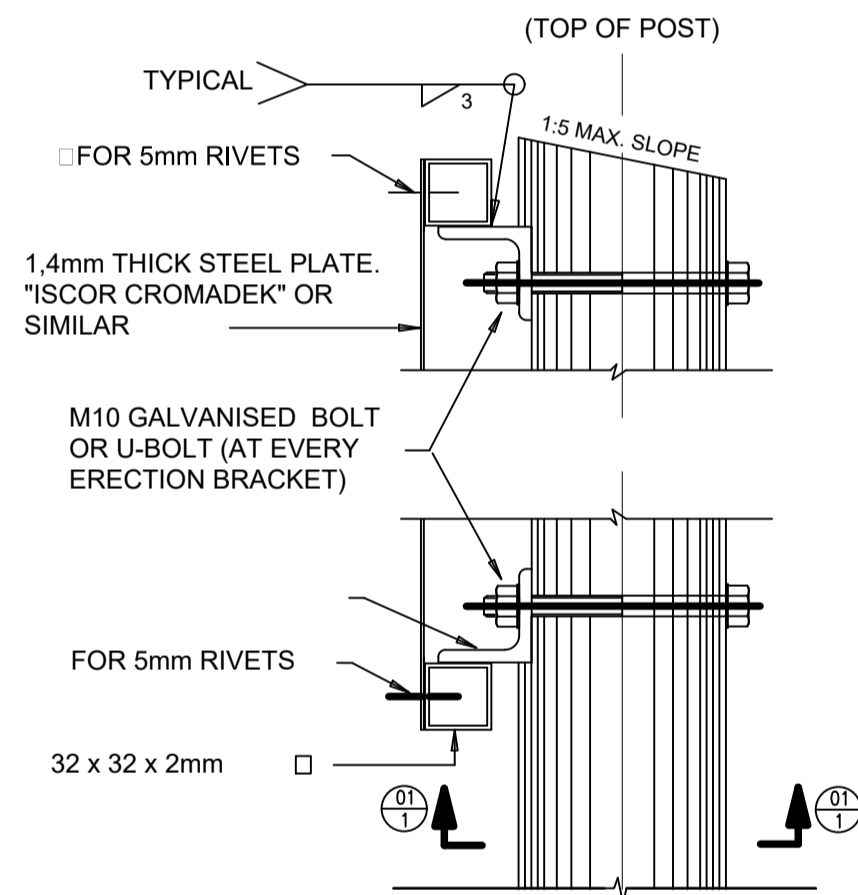


SIDE ELEVATION OF ROAD SIGN

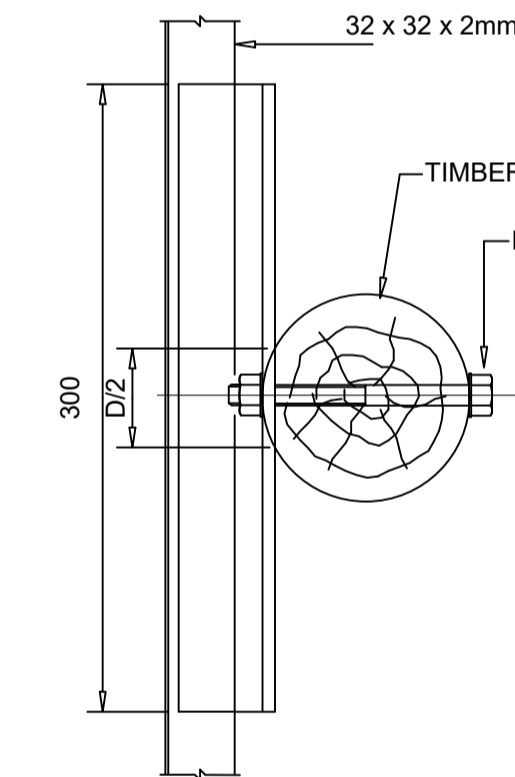


FOUNDATION DETAIL
SCALE NTS

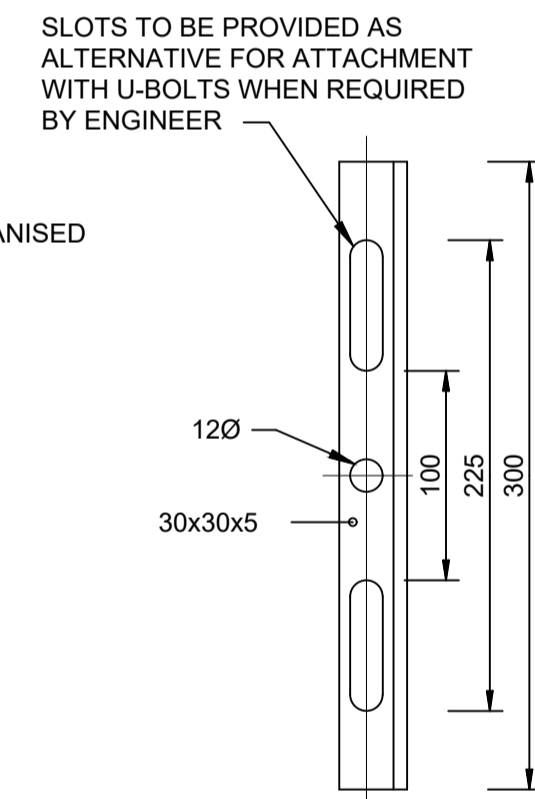
DETERMINATION OF BREAK-AWAY HOLES	
POLE DIA (mm)	HOLE DIA (mm)
< 140	NONE
141 - 170	40
171 - 200	50
201 - 225	65



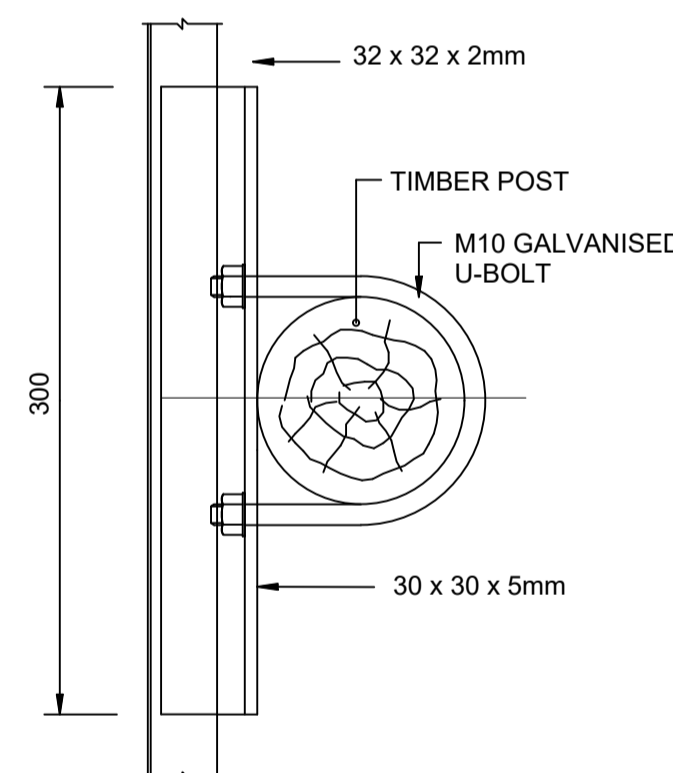
SIDE ELEVATION



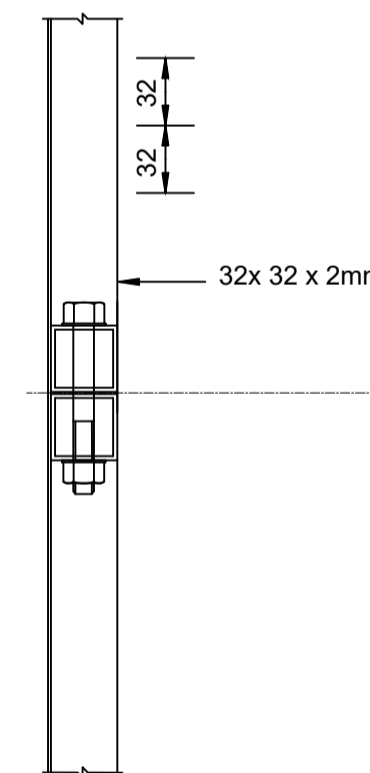
SECTION 01-01



ELEVATION OF ERECTION BRACKET



SECTION 01-01 (WITH U-BOLT)



SECTION 02-02 (AT JOINT OF SIGN)

TABLE 1: DETERMINATION OF POSTS & FOOTINGS ERECTION DETAILS				
TYPE OF POST	UPRIGHT	STAY	D	B(DIA)
TIMBER POST AND STAY	100mm	80mm	600mm	850mm
TIMBER POST	180mm	-	1000mm	1450mm
D SECTION STEEL POST	100mm x 4mm	-	1000mm	1450mm

FIXING DETAIL FOR SIGN BOARDS
SCALE NTS



NOTES:

- DO NOT SCALE FROM THIS DRAWING. USE ONLY THE CALCULATED AND WRITTEN DIMENSIONS.
- ALL EXCAVATIONS SHOULD BE INSPECTED AND APPROVED BY THE ENGINEER ON SITE.
- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
- ALL LEVELS IN METERS.
- ALL CONCRETE TO BE CLASS 19/15 OR OTHERWISE SPECIFIED.
- ALL SHARP EDGES OF WALLS AND FLOOR TO BE 25 X 25 CHAMFER.

EMBLEM AND BORDER NOTES

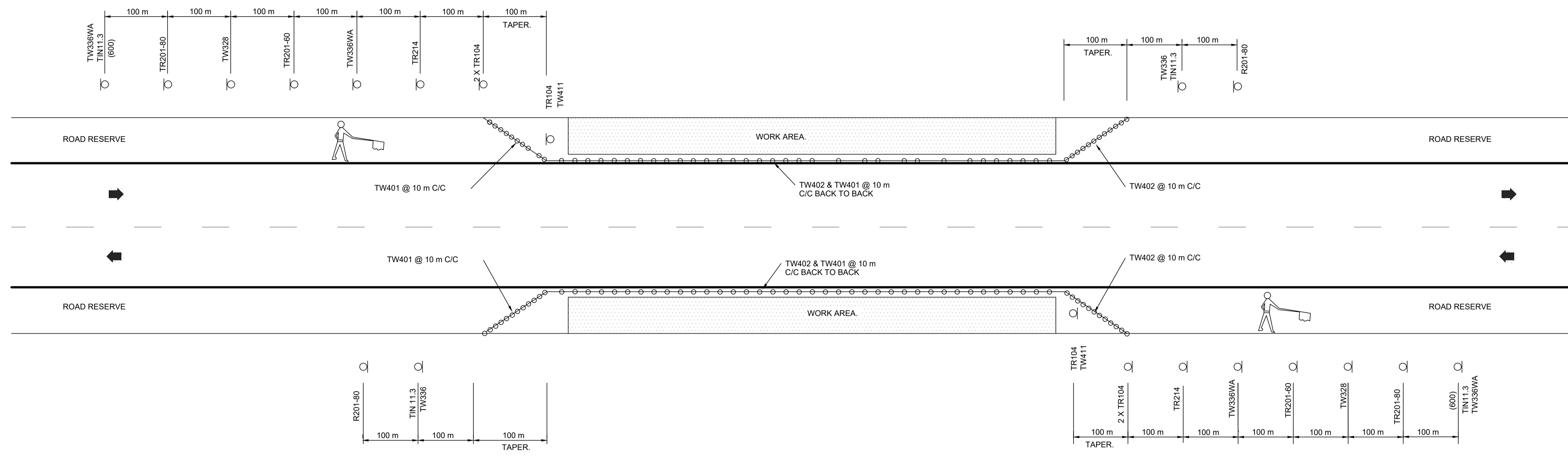
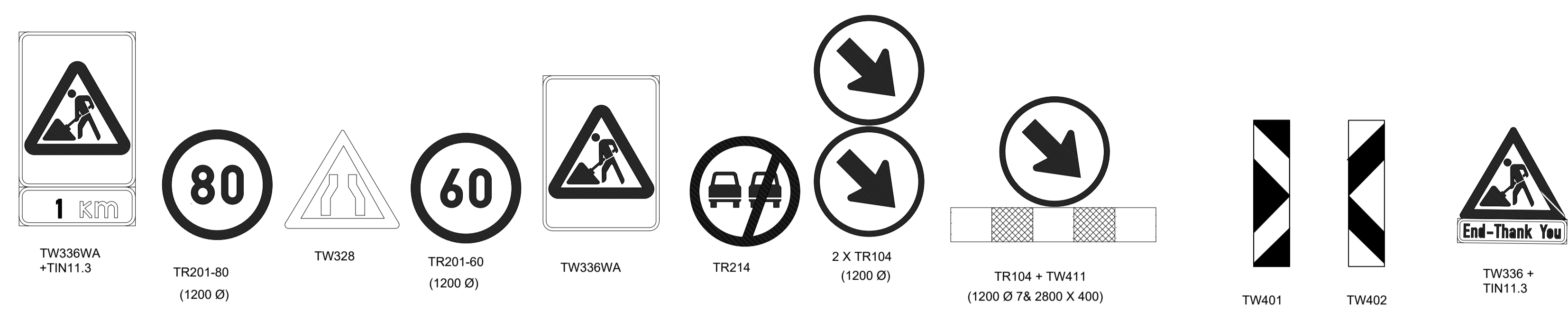
- EMBLEMS:
- ALL EMBLEMS TO BE DISPLAYED IN FULL COLOUR ON A SEMI-MATT BACKGROUND.
- LETTERS AND NUMBERS:
- DESCRIPTION : MATT-BLACK, SERIES DIN B LETTERS AND NUMBERS ON A SEMI-MATT SMOKE-GREY BACKGROUND.
- BORDERS:
- BORDER : GREEN NON-REFLECTORIZED.
- QUANTITY:
- TWO SIGN BOARDS, SHALL BE ERECTED AT POSITIONS AS DETERMINED BY THE ENGINEER.
- DESCRIPTION:
- DESCRIPTION OF WORK (NUMBER OF KILOMETRES AND TYPE OF WORK eg "13.5km RECONSTRUCTION OF ROAD 1974." DESCRIPTION STARTS CENTERED ON THE LEFT-HAND SIDE AND THE FIRST 105mm-DIMENSION BELOW "NORTHERN"
 - SAFCEC EMBLEM ONLY IF CONTRACTOR IS A MEMBER OTHERWISE BLANK.
 - ZIMILE CONSULTING ENGINEERS LOGO TO BE OBTAINED FROM ZIMILE, KOKSTAD OFFICE
 - 3600mmX2000mmX1.6mm THICK CONTINUANT CHROMODECK STEEL PLATE TO BE RIVETED AT 200mm CENTRES ALONG THE SQUARE STEEL TUBING FRAME AS WELL AS ALONG ALL CHROMODECK OVERLAPS OF ATLEAST 15mm WHERE ALTERNATIVE CHROMODECK PLATE SIZES ARE USED.

FOR TENDER PURPOSES ONLY

DESIGNED	N. GUMEDE	<p>INTERNATIONAL BUSINESS GATEWAY OFFICE PARK CNR PIONEER AVENUE AND ELIZABETH MIDRIDGE PARK TEL: (011) 466 - 8576 FAX: (011) 466 - 8813 E-MAIL: info@zimile.co.za</p>	REFERENCE DRAWINGS:	CLIENT:	APPROVED:	PROJECT:	PROJECT PHASE			
DRAWN	T. MAKHUBALO		1.		<p>B. SEAKE FOR ZIMILE CONSULTING ENGINEERS</p>	<p>HLUHLUWE WATER SUPPLY SCHEME PHASE 2</p>	PRELIMINARY	TENDER	CONSTRUCTION	AS-BUILT
CHECKED	M. MUKABWE		2.				DATE: OCTOBER 2025	SCALE: AS SHOWN		
ISSUE FOR TENDER	10/10/2025	COPYRIGHT RESERVED ©	3.	DESIGNATION: SENIOR ENGINEER	TITLE: NAME BOARD	DRAWING No. J000167	WT	DE	300	REVISION A
NATURE OF REVISION	DATE		4.	DATE	SIGNATURE	CAD FILENAME				SIZE A1

NOTES:

1. DURING DAY TIME THE TW401 & TW402 CAN BE REPLACED WITH 750 mm CONES. FOR LONG WORK AREAS EVERY 5TH CONE MUST BE REPLACED WITH A DELINEATOR.
2. TYPICAL DETAILS ARE SHOWN. ROAD SIGNS TO BE ADJUSTED FOR EACH PARTICULAR CASE IN ACCORDANCE WITH SPECIFICATION AND REGULATIONS OF ROAD AUTHORITY.



ACCOMMODATION OF TRAFFIC AT WORK TO THE ROAD/SHOULDER

NOT TO SCALE

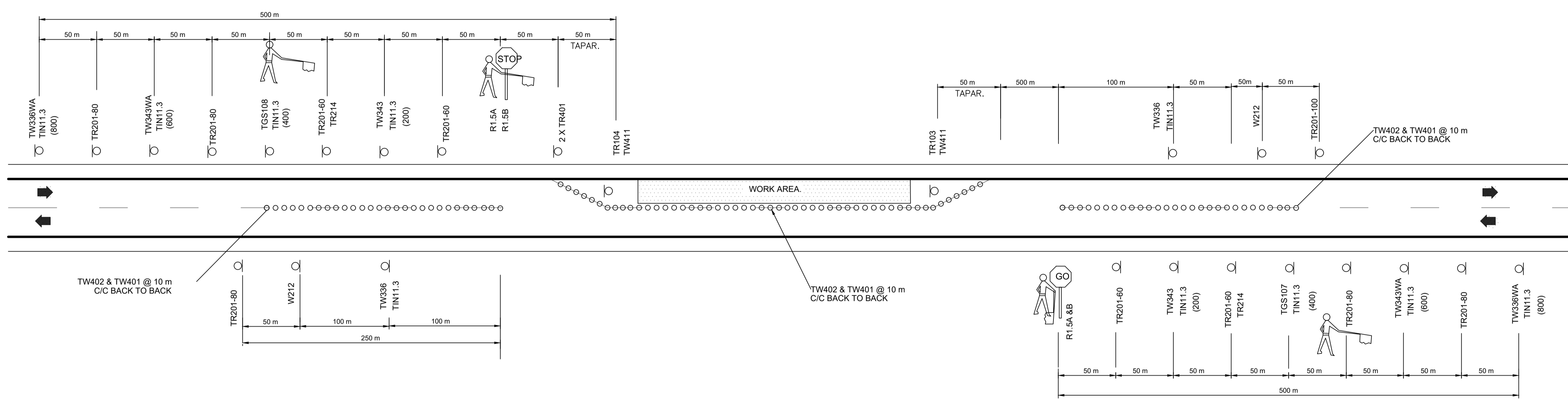
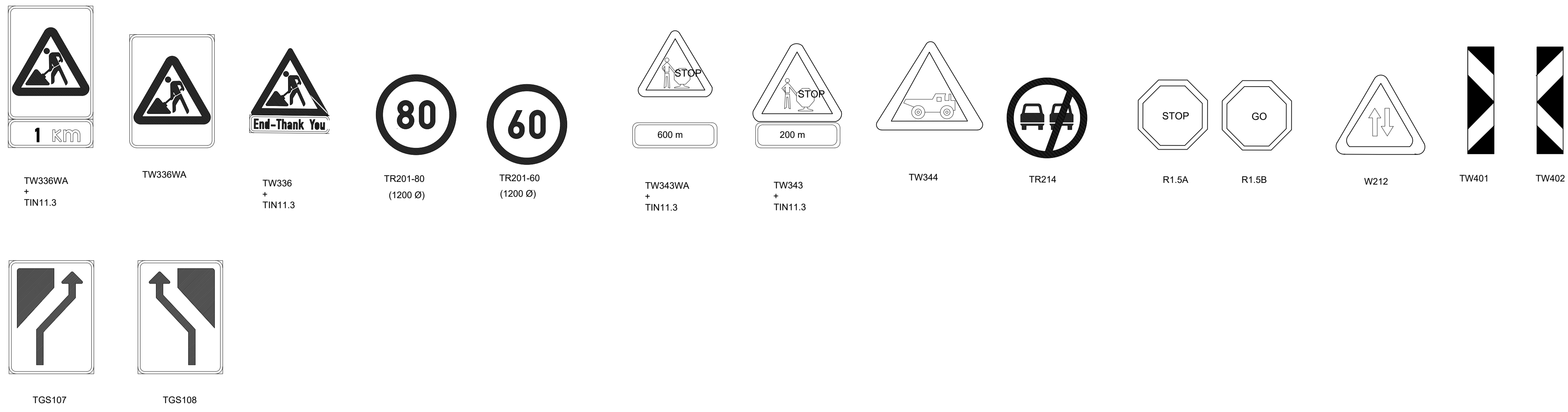
FOR TENDER PURPOSES ONLY

DESIGNED N. GUMEDE NAME		<p>INTERNATIONAL BUSINESS GATEWAY OFFICE PARK CNR PIONEER AVENUE AND ELIZABETH MIDRIDGE PARK TEL: (011) 466 - 8576 FAX: (011) 466 - 8813 E-MAIL: info@zimile.co.za</p> <p>UNBOUNDED ENGINEERING COPYRIGHT RESERVED ©</p>	REFERENCE DRAWINGS:	CLIENT:	APPROVED:	PROJECT:	PROJECT PHASE					
DRAWN T. MAKHUBALO NAME			1.	<p>UMKHANYAKUDE DORIS MUNICIPALITY - DORIS MUNICIPALITEIT</p>	B. SEAKE FOR ZIMILE CONSULTING ENGINEERS DESIGNATION: <u>SENIOR ENGINEER</u> DATE: _____ SIGNATURE: _____	HLUHLUWE WATER SUPPLY SCHEME PHASE 2 TITLE: TYPICAL ROAD DEVIATION NEXT TO ROAD	PRELIMINARY		CONSTRUCTION		AS-BUILT	
CHECKED M. MUKABWE NAME			2.				DATE: <u>AUGUST 2025</u>	SCALE: <u>AS SHOWN</u>		DRAWING No.	WT	DE
A	ISSUE FOR TENDER	10/10/2025	3.			J000167				A		
NO.	NATURE OF REVISION	DATE	4.			CAD FILENAME				SIZE		
			5.							A1		
			6.									
			7.									

NOTES:

TYPICAL DETAILS ARE SHOWN.

ROAD SIGNS TO BE ADJUSTED FOR EACH PARTICULAR CASE IN ACCORDANCE WITH SPECIFICATION AND REGULATIONS OF ROAD AUTHORITY.



ACCOMODATION OF TRAFFIC A STOP/GO CONTROL
NOT TO SCALE

DETAIL DESIGN REPORT

DESIGNED N. GUMEDE		 INTERNATIONAL BUSINESS GATEWAY OFFICE PARK CNR PIONEER AVENUE AND ELIZABETH MIDRIDGE PARK TEL: (011) 466 - 8576 FAX: (011) 466 - 8813 E-MAIL: info@zimile.co.za COPYRIGHT RESERVED ©	REFERENCE DRAWINGS:	CLIENT:	APPROVED:	PROJECT:	PROJECT PHASE			
DRAWN T. MAKHUBALO			1.	 UMSHAPALA WESIFUNDA Umkhanyakude District Municipality - Durrheim Municipality	B. SEAKE FOR ZIMILE CONSULTING ENGINEERS SENIOR ENGINEER	HLUHLUWE WATER SUPPLY SCHEME PHASE 2 TYPICAL ROAD DEVIATION FOR ROAD CROSSING	PRELIMINARY	TENDER	CONSTRUCTION	AS-BUILT
CHECKED M. MUKABWE			2.				DATE: OCTOBER 2025	SCALE: AS SHOWN		
NO.			3.				DRAWING No. J000167	REVISION A		
ISSUE FOR TENDER		4.	WT				DE	302	SIZE A1	
NATURE OF REVISION		5.	CAD FILENAME							
DATE: 10/10/2025		6.								
		7.								