

INALA LOCAL MUNICIPALITY

MONYAKENG - NEW WATER NETWORK FOR 950 STANDS IN KHALINKOMO AND VERGENOEG

Tender: NLM/TS/005/2023-2024

VOLUME 2 OF 2: DETAILED DESIGN DRAWINGS (reduced copies)



PREPARED FOR:
INALA LOCAL MUNICIPALITY
PRIVATE BAG X 15,
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PREPARED BY:
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FIRST FLOOR SOFTBRAND
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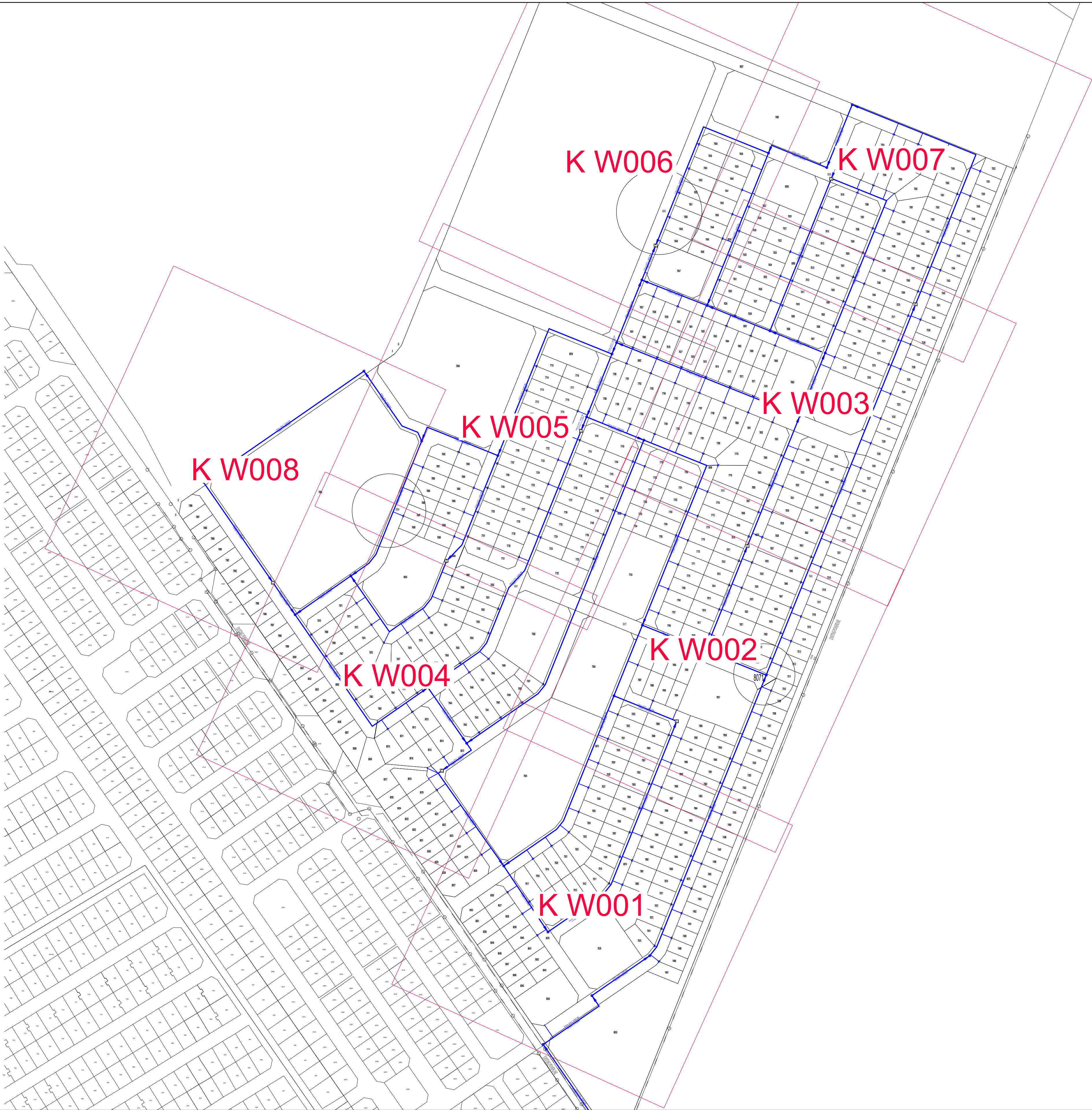
LIST OF WATER DRAWINGS

DRAWING No.

DRAWING DESCRIPTION

NMKV - 2401 - WT - 0001 - 00	KHALINKOMO WATER LAYOUT (SHEET 1 OF 8)
NMKV - 2401 - WT - 0002 - 00	KHALINKOMO WATER LAYOUT (SHEET 2 OF 8)
NMKV - 2401 - WT - 0003 - 00	KHALINKOMO WATER LAYOUT (SHEET 3 OF 8)
NMKV - 2401 - WT - 0004 - 00	KHALINKOMO WATER LAYOUT (SHEET 4 OF 8)
NMKV - 2401 - WT - 0005 - 00	KHALINKOMO WATER LAYOUT (SHEET 5 OF 8)
NMKV - 2401 - WT - 0006 - 00	KHALINKOMO WATER LAYOUT (SHEET 6 OF 8)
NMKV - 2401 - WT - 0007 - 00	KHALINKOMO WATER LAYOUT (SHEET 7 OF 8)
NMKV - 2401 - WT - 0008 - 00	KHALINKOMO WATER LAYOUT (SHEET 8 OF 8)
NMKV - 2401 - WT - 0000 - 00	KHALINKOMO WATER LAYOUT KEYPLAN
NMKV - 2401 - WT - 0010 - 00	VERGENOEG WATER LAYOUT (SHEET 1 OF 6)
NMKV - 2401 - WT - 0011 - 00	VERGENOEG WATER LAYOUT (SHEET 2 OF 6)
NMKV - 2401 - WT - 0012 - 00	VERGENOEG WATER LAYOUT (SHEET 3 OF 6)
NMKV - 2401 - WT - 0013 - 00	VERGENOEG WATER LAYOUT (SHEET 4 OF 6)
NMKV - 2401 - WT - 0014 - 00	VERGENOEG WATER LAYOUT (SHEET 5 OF 6)
NMKV - 2401 - WT - 0015 - 00	VERGENOEG WATER LAYOUT (SHEET 6 OF 6)
NMKV - 2401 - WT - 0009 - 00	VERGENOEG WATER LAYOUT KEYPLAN
NMKV - 2401 - GD - 0004 - 00	OPEN TRENCH EXCAVATION (>2.5m)
NMKV - 2401 - GD - 0005 - 00	TYPICAL ISOLATION VALVE DETAILS
NMKV - 2401 - GD - 0006 - 00	TYPICAL STANDPIPE DETAILS
NMKV - 2401 - GD - 0007 - 00	AIR VALVE CHAMBER DETAILS
NMKV - 2401 - GD - 0008 - 00	SCOUR VALVE CHAMBER DETAILS
NMKV - 2401 - GD - 0009 - 00	PIPE THRUST BLOCK DETAILS
NMKV - 2401 - GD - 0010 - 00	PIPELINE INSTALLATION DETAILS
NMKV - 2401 - GD - 0011 - 00	PIPELINE MARKER DETAILS

NO	DATE	AMENDMENTS	BY	APPROVED	 Mamadi & Company SA FIRST FLOOR SOFTBRAND THANDANANI OFFICE PARK 16 INVICTA ROAD MIDRAND 1658 TEL: 011 532 8659 EMAIL: info@mamadi.co.za	COMPILED BY : M Z NKALA	 NALA LOCAL MUNICIPALITY PRIVATE BAG X 15, PRIVAAT SAK, BOTHAVILLE, 960 TEL: +27 56 514 5200 EMAIL: mkokotedi@nala.org.za	NALA LOCAL MUNICIPALITY	DETAILED DESIGN STAGE
0	20/10/23	LIST OF DRAWINGS	MZN	MGT		CHECKED BY: M G TSHUMA		MONYAKENG - NEW WATER NETWORK FOR 950 STANDS IN KHALINKOMO AND VERGENOE	
								LIST OF DRAWINGS	



FOR APPROVAL

NO.	DATE	AMENDMENTS	BY	APPROVED
A	28/08/23	PRELIMINARY DESIGN REPORT DRAWINGS	SPT	MGST
B	20/10/23	DETAILED DESIGN REPORT DRAWINGS	MZN	MGST



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DESIGNED BY: M G TSHUMA		



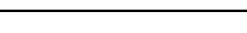
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NALA LOCAL MUNICIPALITY	NMKV - 2401 - WATER	DETAILED DESIGN STAGE
MONYAKENG - NEW WATER NETWORK FOR 950 STANDS IN KHALINKOMO AND VERGENOEG		NMKV - 2401 - WT - 0000 - 00
KHALINKOMO WATER LAYOUT KEYPLAN		



WATER LAYOUT PLAN
Scale : 1:1000

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A	28/08/23	PRELIMINARY DESIGN REPORT DRAWINGS	SPT	MG					MONYAKENG - NEW WATER NETWORK FOR 950 STANDS IN KHALINKOMO AND VERGENOEG			NMKV - 2401 - WT - 0001 - 00	
B	20/10/23	DETAILED DESIGN REPORT DRAWINGS	MZN	MG					KHALINKOMO WATER LAYOUT SHEET 1 OF 8				



WATER LAYOUT PLAN
Scale : 1:1000

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A	28/08/23	PRELIMINARY DESIGN REPORT DRAWINGS	SPT	MG		CHECKED BY: S P TSHUMA			MONYAKENG - NEW WATER NETWORK FOR 950 STANDS IN KHALINKOMO AND VERGENOEG		
B	20/10/23	DETAILED DESIGN REPORT DRAWINGS	MZN	MG		DESIGNED BY: M G TSHUMA			KHALINKOMO WATER LAYOUT SHEET 2 OF 8		NMKV - 2401 - WT - 0002 - 00



WATER LAYOUT PLAN
Scale : 1:1000

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A		28/08/23	PRELIMINARY DESIGN REPORT DRAWINGS	SPT	MG				MONYAKENG - NEW WATER NETWORK FOR 950 STANDS IN KHALINKOMO AND VERGENOE			
B		20/10/23	DETAILED DESIGN REPORT DRAWINGS	MZN	MG		CHECKED BY: S P TSHUMA		KHALINKOMO WATER LAYOUT SHEET 3 OF 8			
							DESIGNED BY: M G TSHUMA					

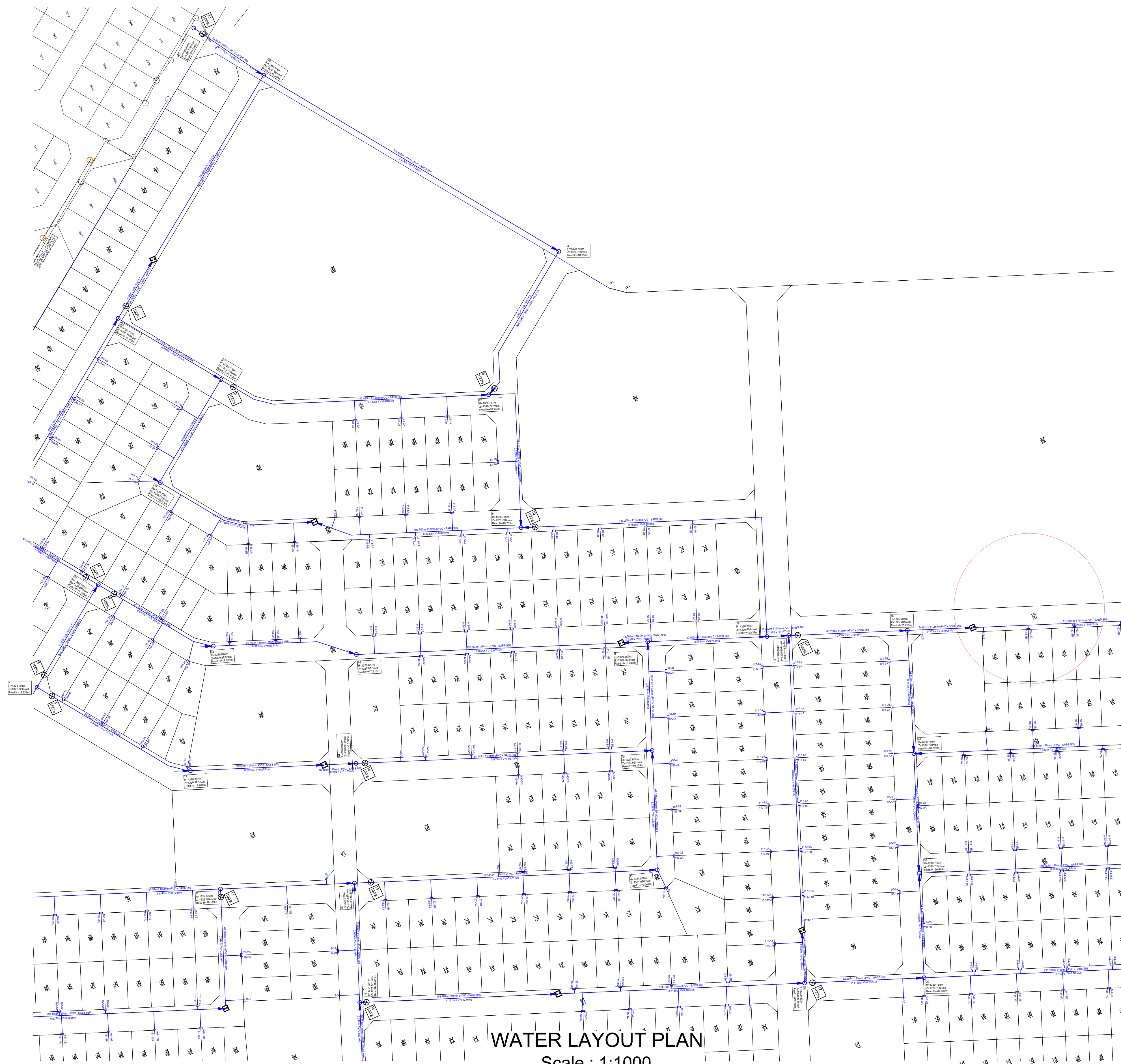


WATER LAYOUT PLAN

Scale : 1:1000

FOR APPROVAL

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B	20/10/23	DETAILED DESIGN REPORT DRAWINGS	MZN	MG

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MONYAKENG - NEW WATER NETWORK FOR 950 STANDS IN KHALINKOMO AND
VERGENOE

KHALINKOMO WATER LAYOUT SHEET 5 OF 8

NMKV - 2401 - WATER

DETAILED DESIGN STAGE

NMKV - 2401 - WT - 0005 - 00



WATER LAYOUT PLAN
Scale : 1:1000

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B	20/10/23	DETAILED DESIGN REPORT DRAWINGS	MZN	MGT



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MONYAKENG - NEW WATER NETWORK FOR 950 STANDS IN KHALINKOMO AND VERGENOE

KHALINKOMO WATER LAYOUT SHEET 6 OF 8

NMKV - 2401 - WATER

DETAILED DESIGN STAGE

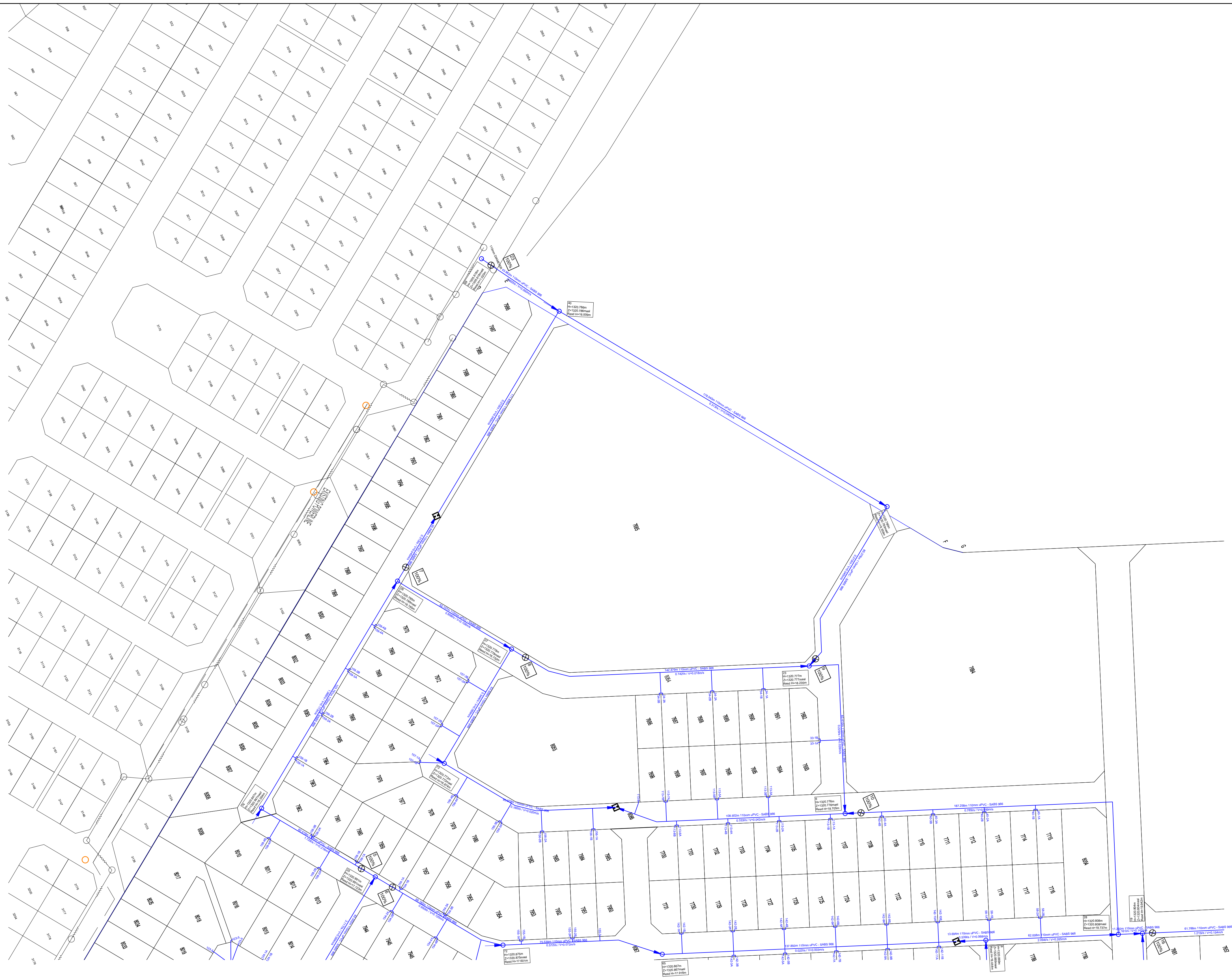
NMKV - 2401 - WT - 0006 - 00



WATER LAYOUT PLAN
Scale : 1:1000

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A	28/08/23	PRELIMINARY DESIGN REPORT DRAWINGS	SPT	MG					CHECKED BY: S P TSHUMA	MONYAKENG - NEW WATER NETWORK FOR 950 STANDS IN KHALINKOMO AND VERGENOEG	NMKV - 2401 - WT - 0007 - 00	
B	20/10/23	DETAILED DESIGN REPORT DRAWINGS	MZN	MG					DESIGNED BY: M G TSHUMA	KHALINKOMO WATER LAYOUT SHEET 7 OF 8		



WATER LAYOUT PLAN
Scale : 1:1000

FOR APPROVAL

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B	20/10/23	DETAILED DESIGN REPORT DRAWINGS	MZN	MGH



Mamadi & Company SA

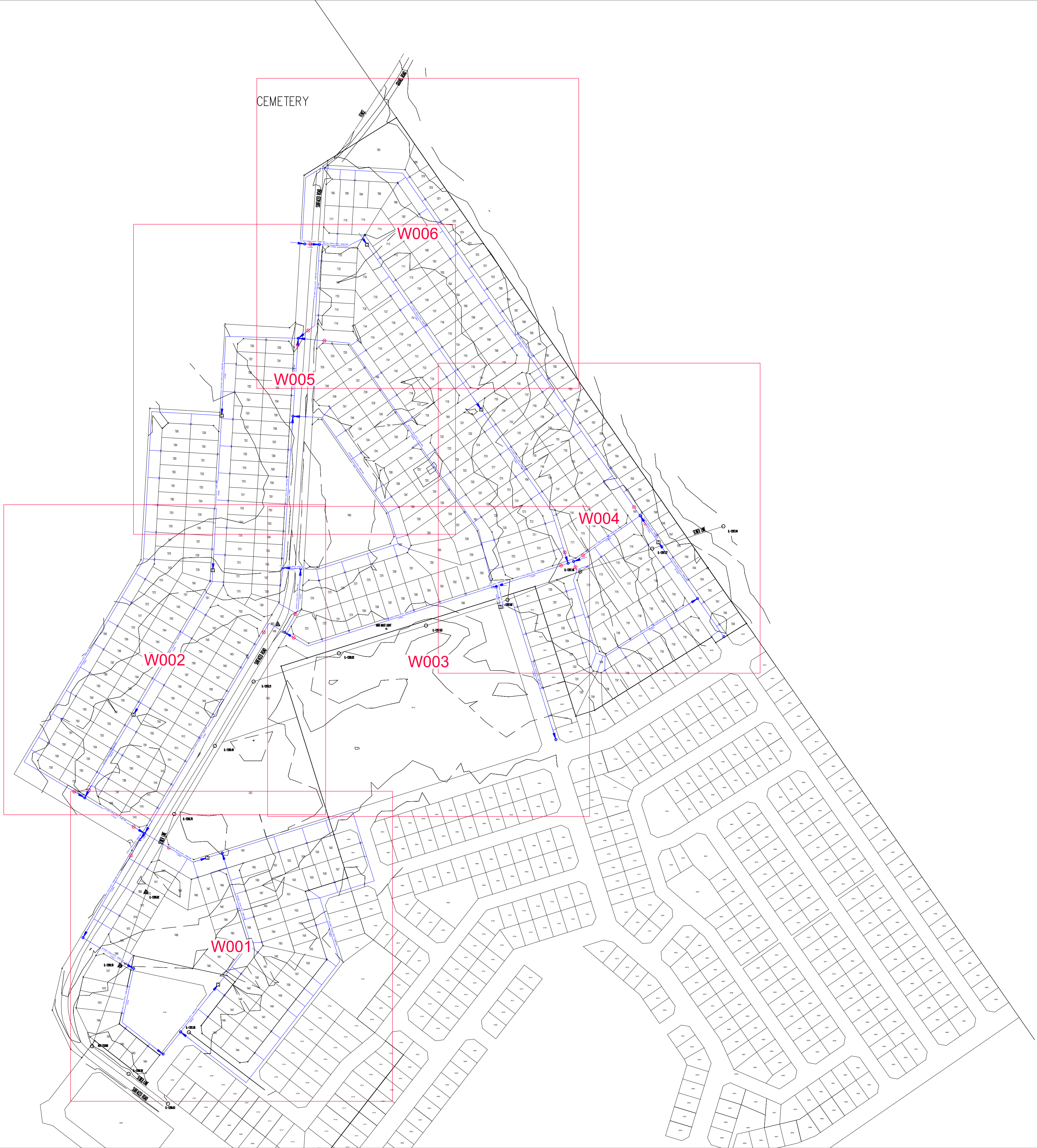
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NALA LOCAL MUNICIPALITY	NMKV - 2401 - WATER	DETAILED DESIGN STAGE
MONYAKENG - NEW WATER NETWORK FOR 950 STANDS IN KHALINKOMO AND VERGENOEG		
KHALINKOMO WATER LAYOUT SHEET 8 OF 8		NMKV - 2401 - WT - 0008 - 00



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DESIGNED BY: M G TSHUMA



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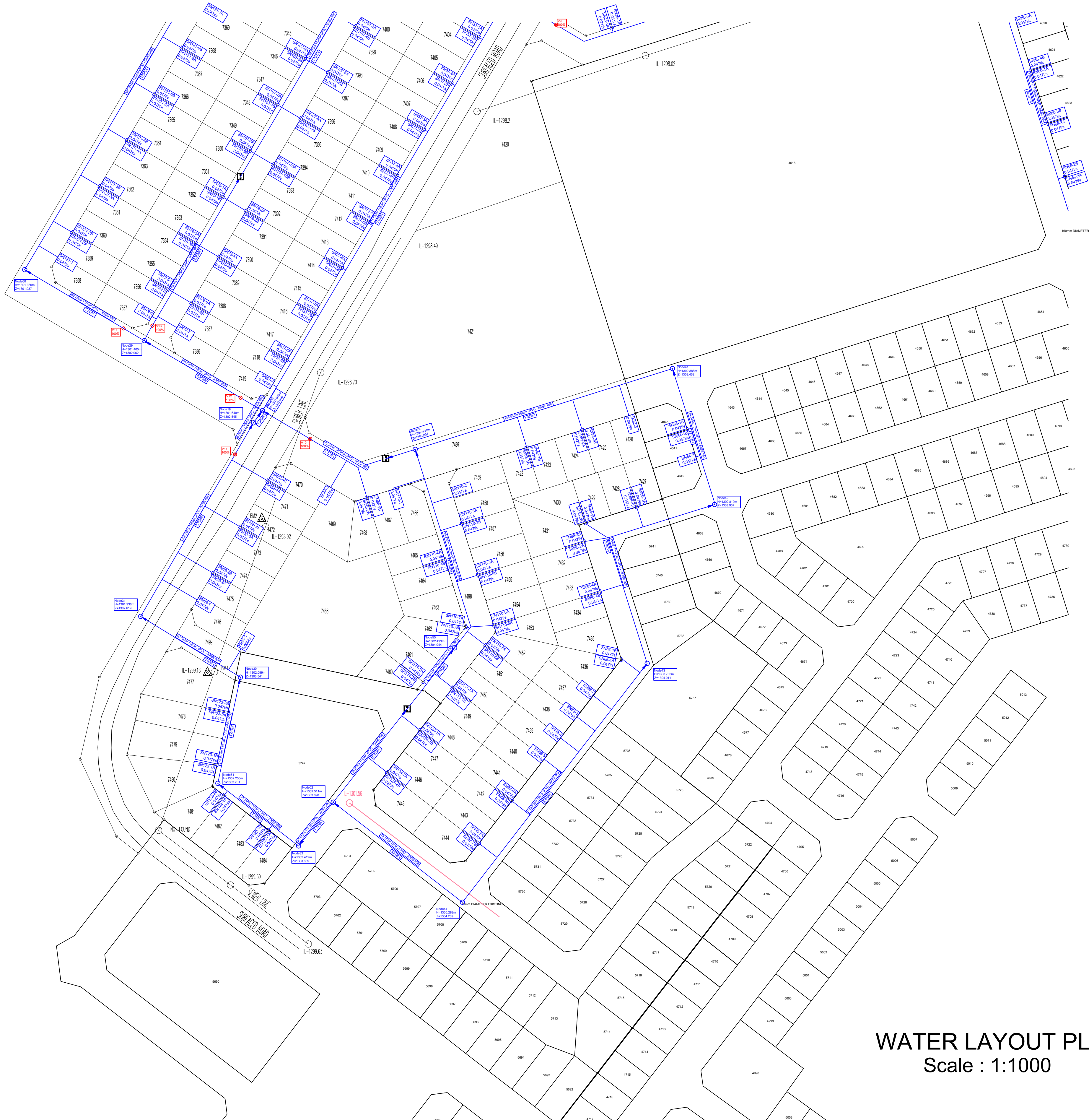
NMKV - 2401 - WATER

DETAILED DESIGN STAGE

MONYAKENG - NEW WATER NETWORK FOR 950 STANDS IN KHALINKOMO AND VERGENOEG

VERGENOEG WATER LAYOUT KEYPLAN

NMKV - 2401 - WT - 0009 - 00



WATER LAYOUT PLAN
Scale : 1:1000

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A	28/08/23	PRELIMINARY DESIGN REPORT DRAWINGS	SPT	MGT			DRAWN BY : M Z NKALA				
B	20/10/23	DETAILED DESIGN REPORT DRAWINGS	MZN	MGT			CHECKED BY: S P TSHUMA				
							DESIGNED BY: M G TSHUMA				
								MONYAKENG - NEW WATER NETWORK FOR 950 STANDS IN KHALINKOMO AND VERGENOEG			NMKV - 2401 - WT - 0010 - 00
								VERGENOEG WATER LAYOUT 1 OF 6			



WATER LAYOUT PLAN
Scale : 1:1000

FOR APPROVAL

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A	28/08/23	PRELIMINARY DESIGN REPORT DRAWINGS	SPT	MG
B	20/10/23	DETAILED DESIGN REPORT DRAWINGS	MZN	MG



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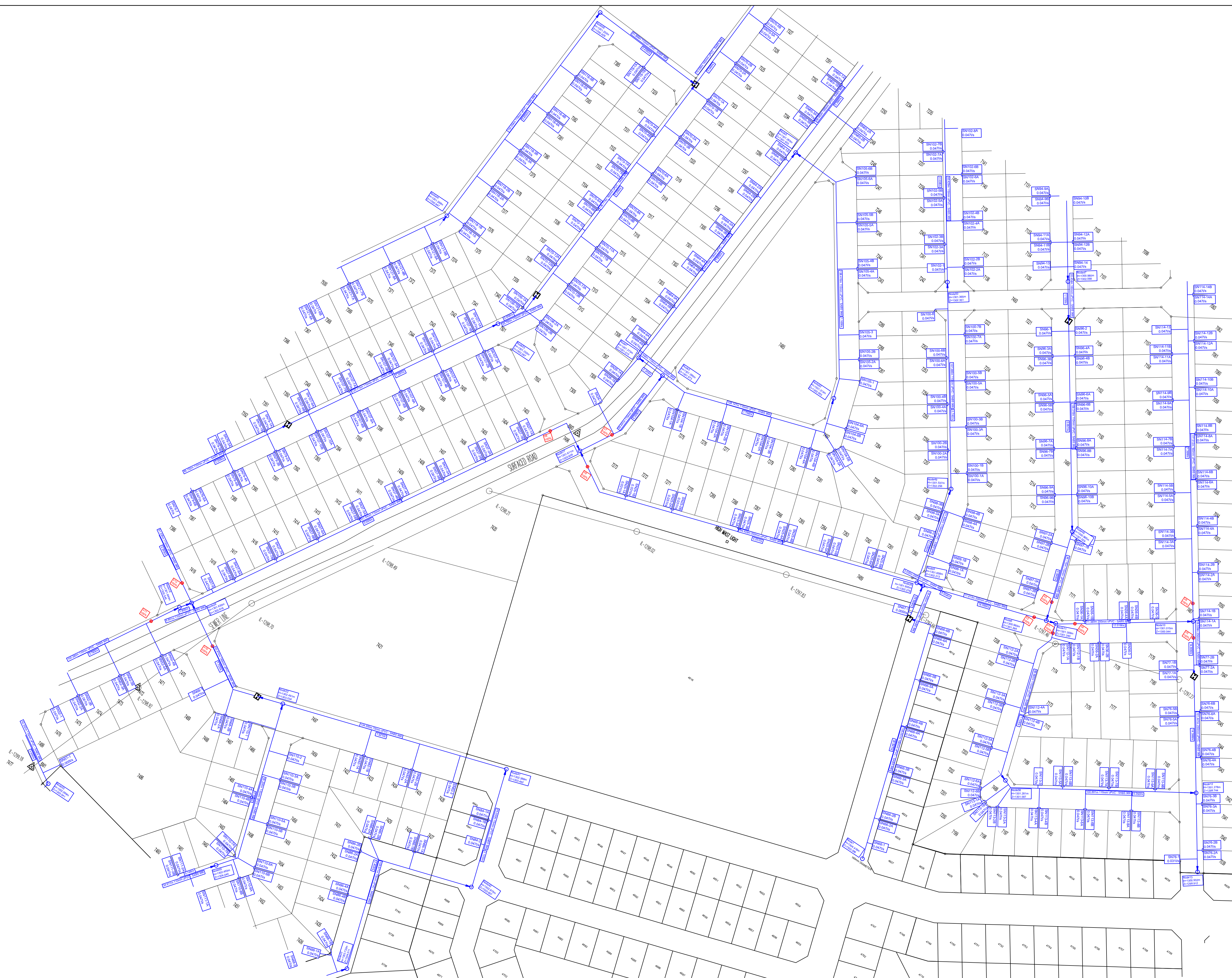
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NALA LOCAL MUNICIPALITY	NMKV - 2401 - WATER
MONYAKENG - NEW WATER NETWORK FOR 950 STANDS IN KHALINKOMO AND VERGENOEG	
VERGENOEG WATER LAYOUT 2 OF 6	

	DETAILED DESIGN STAGE
	NMKV - 2401 - WT - 0011 - 00

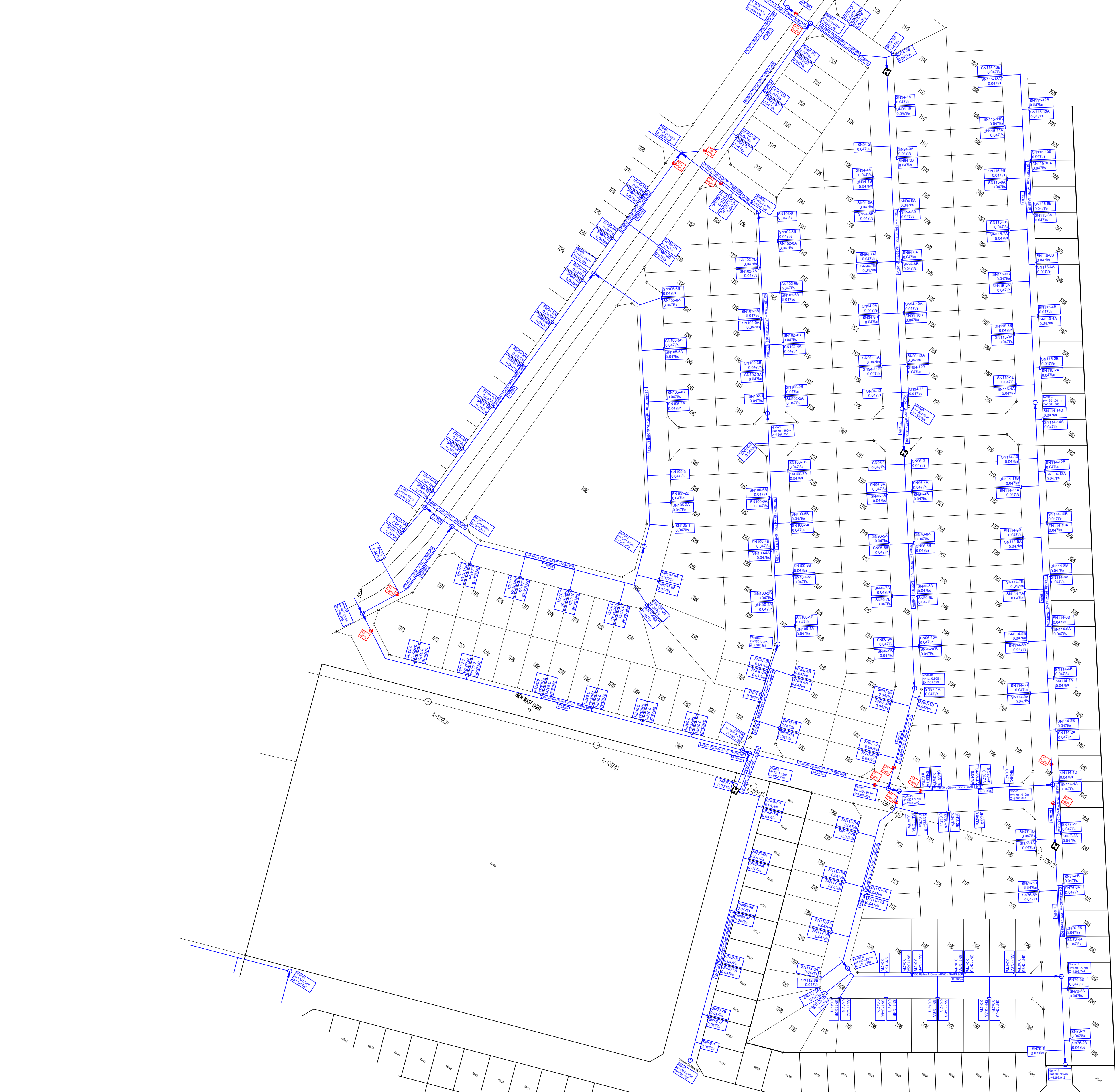


WATER LAYOUT PLAN

Scale : 1:1000

FOR APPROVAL

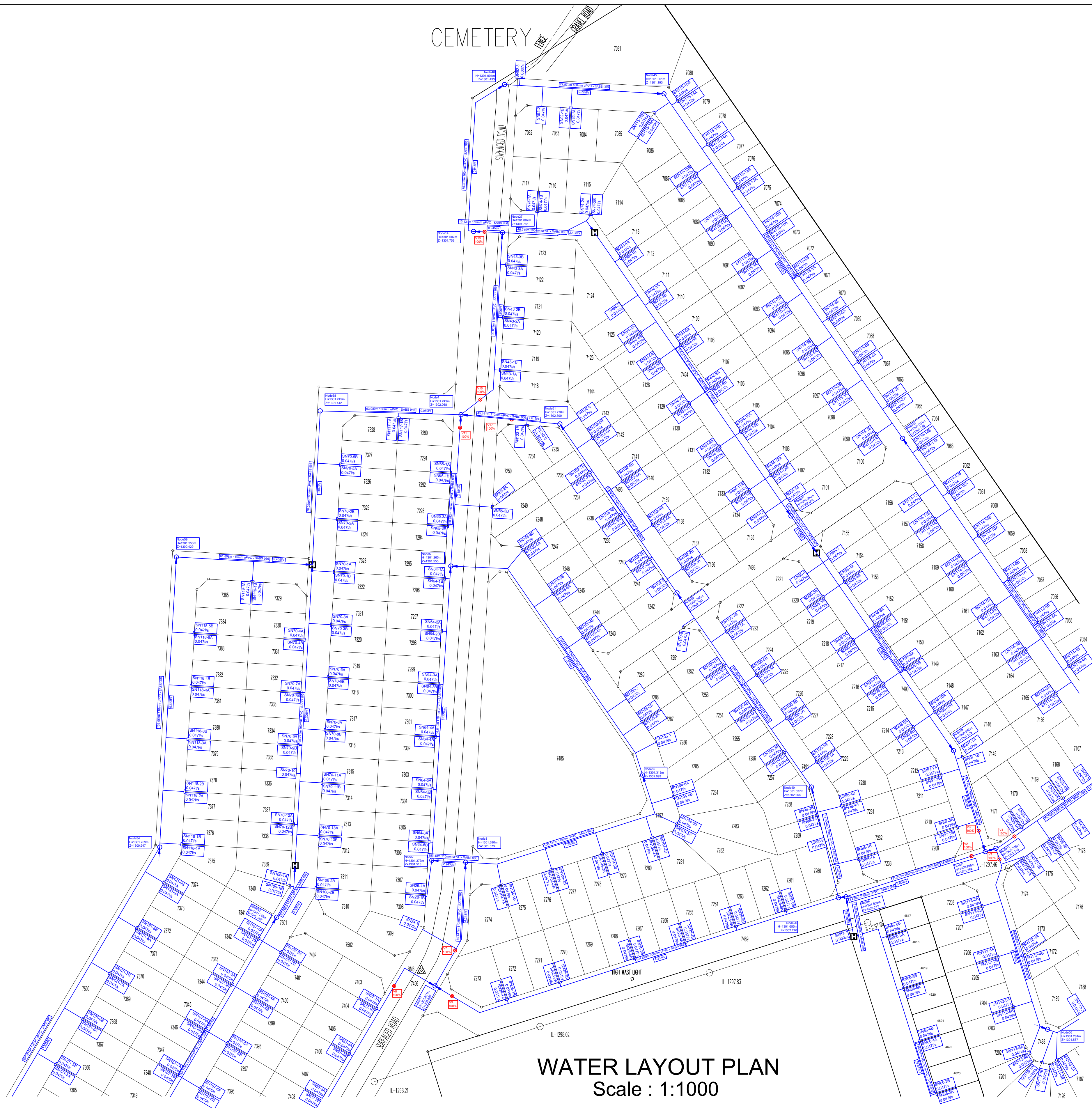
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A	28/08/23	PRELIMINARY DESIGN REPORT DRAWINGS	SPT	MGT		CHECKED BY: S P TSHUMA		MONYAKENG - NEW WATER NETWORK FOR 950 STANDS IN KHALINKOMO AND VERGENOE	NMKV - 2401 - WT - 0012 - 00	
B	20/10/23	DETAILED DESIGN REPORT DRAWINGS	MZN	MGT		DESIGNED BY: M G TSHUMA		VERGENOE WATER LAYOUT 3 OF 6		



WATER LAYOUT PLAN
Scale : 1:1000

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B	20/10/23	DETAILED DESIGN REPORT DRAWINGS	MZN	MG					VERGENOEG WATER LAYOUT 4 OF 6				



WATER LAYOUT PLAN
Scale : 1:1000

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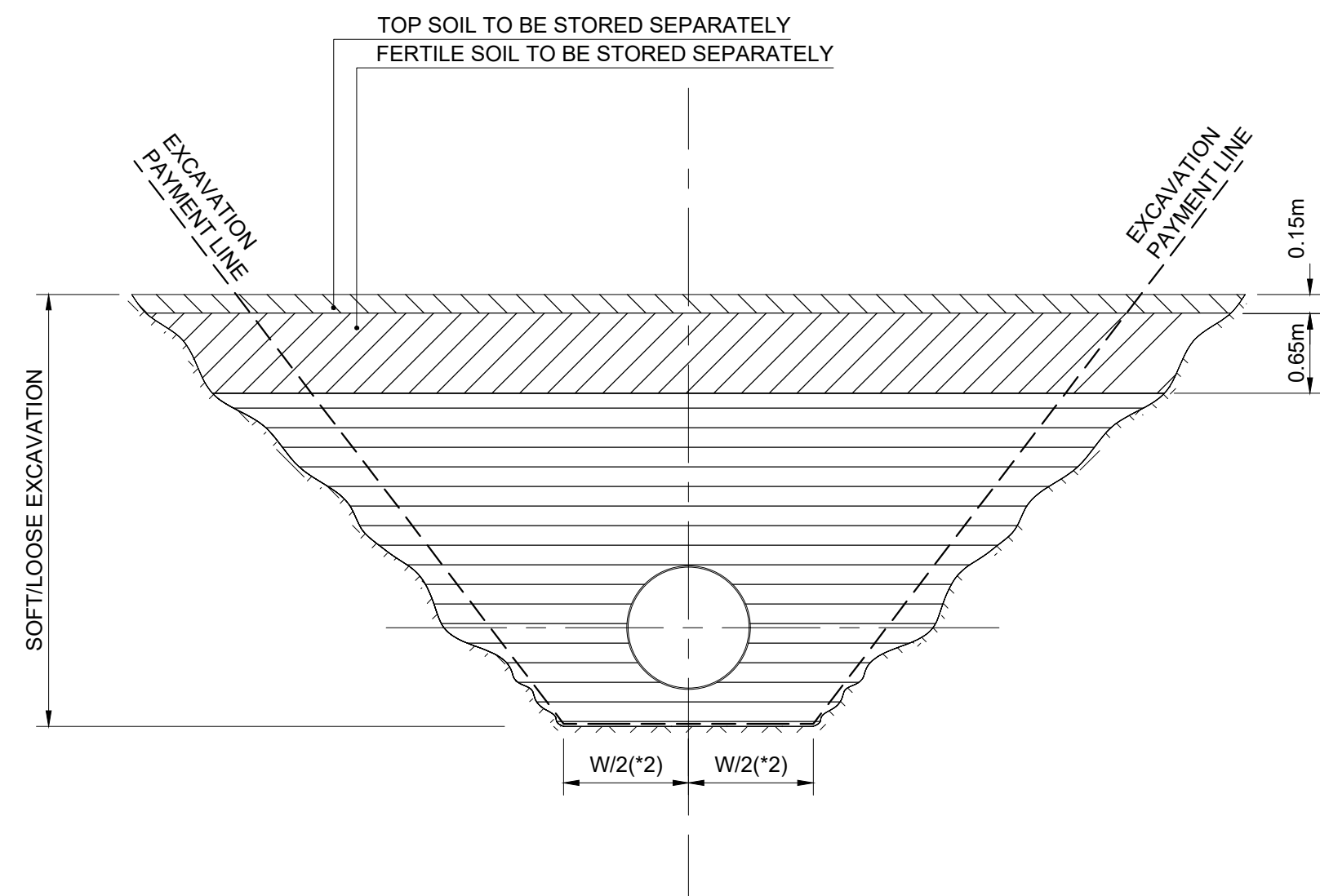
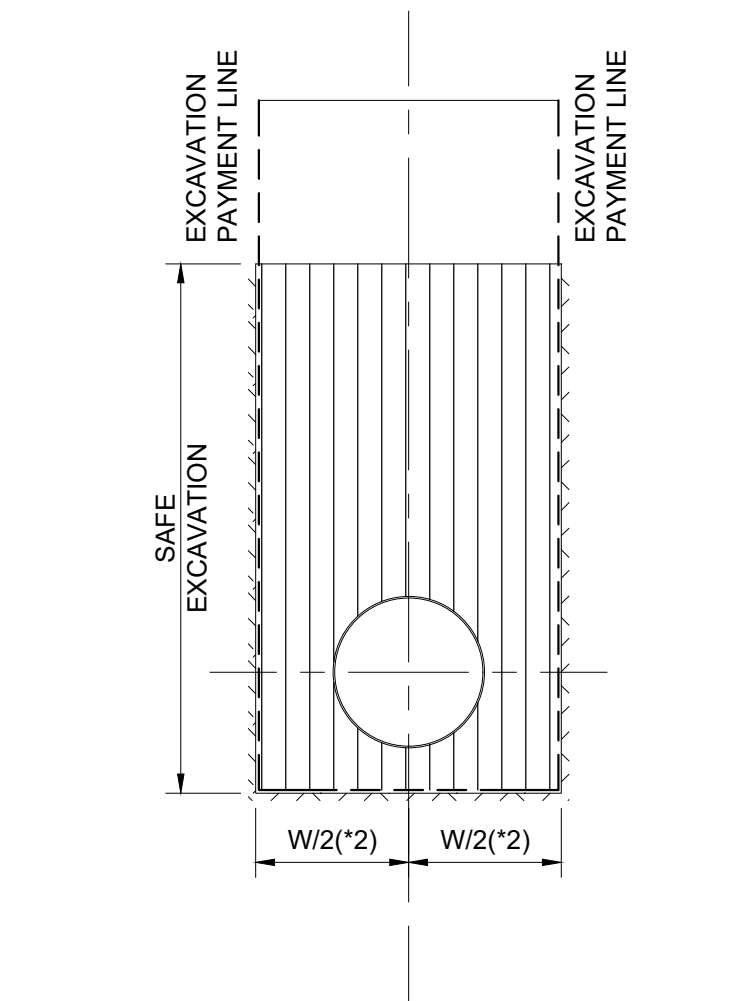
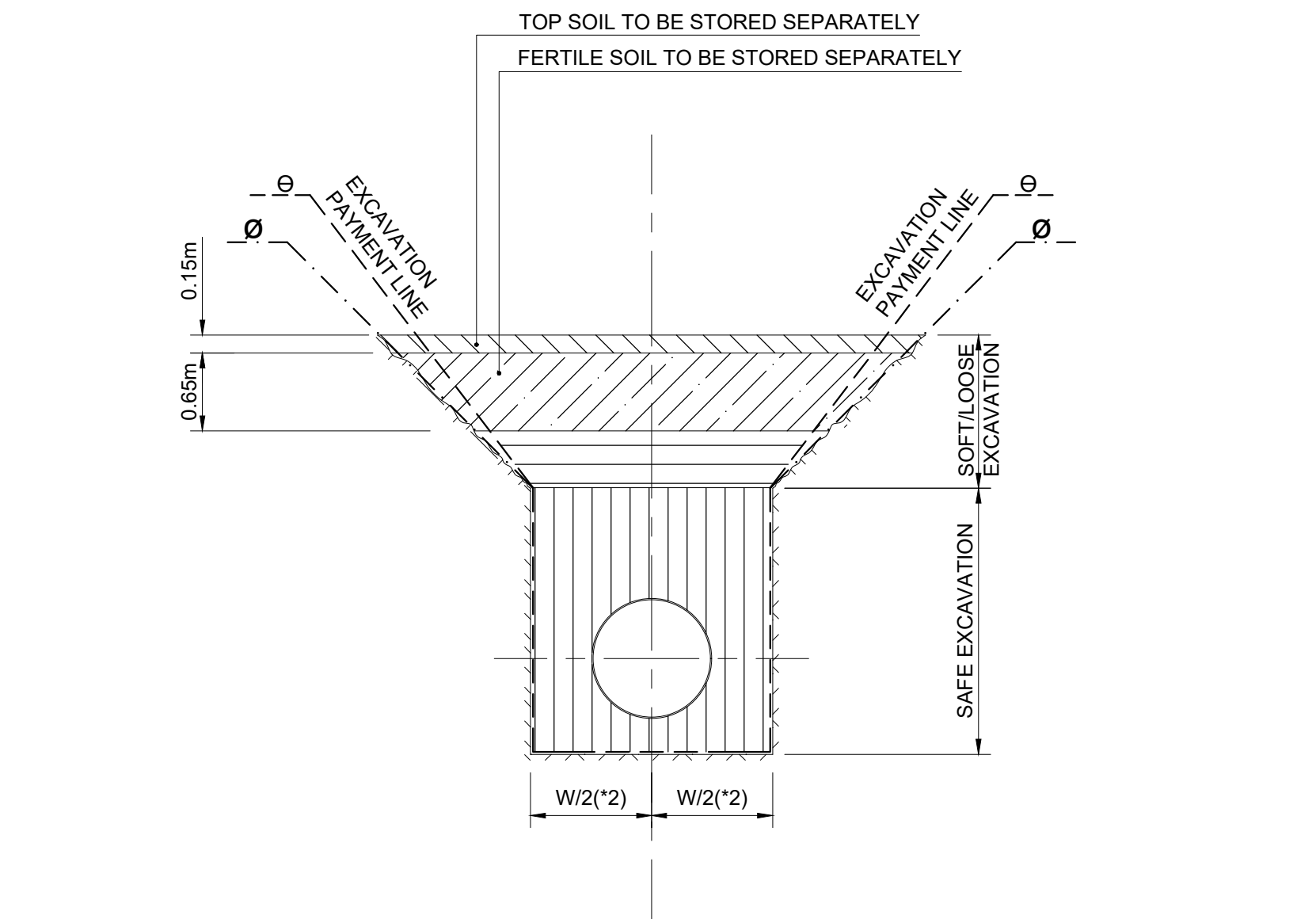
NALA LOCAL MUNICIPALITY	NMKV - 2401 - WATER	DETAILED DESIGN STAGE
MONYAKENG - NEW WATER NETWORK FOR 950 STANDS IN KHALINKOMO AND VERGENOEG		
VERGENOEG WATER LAYOUT 5 OF 6	NMKV - 2401 - WT - 0014 - 00	



WATER LAYOUT PLAN
Scale : 1:1000

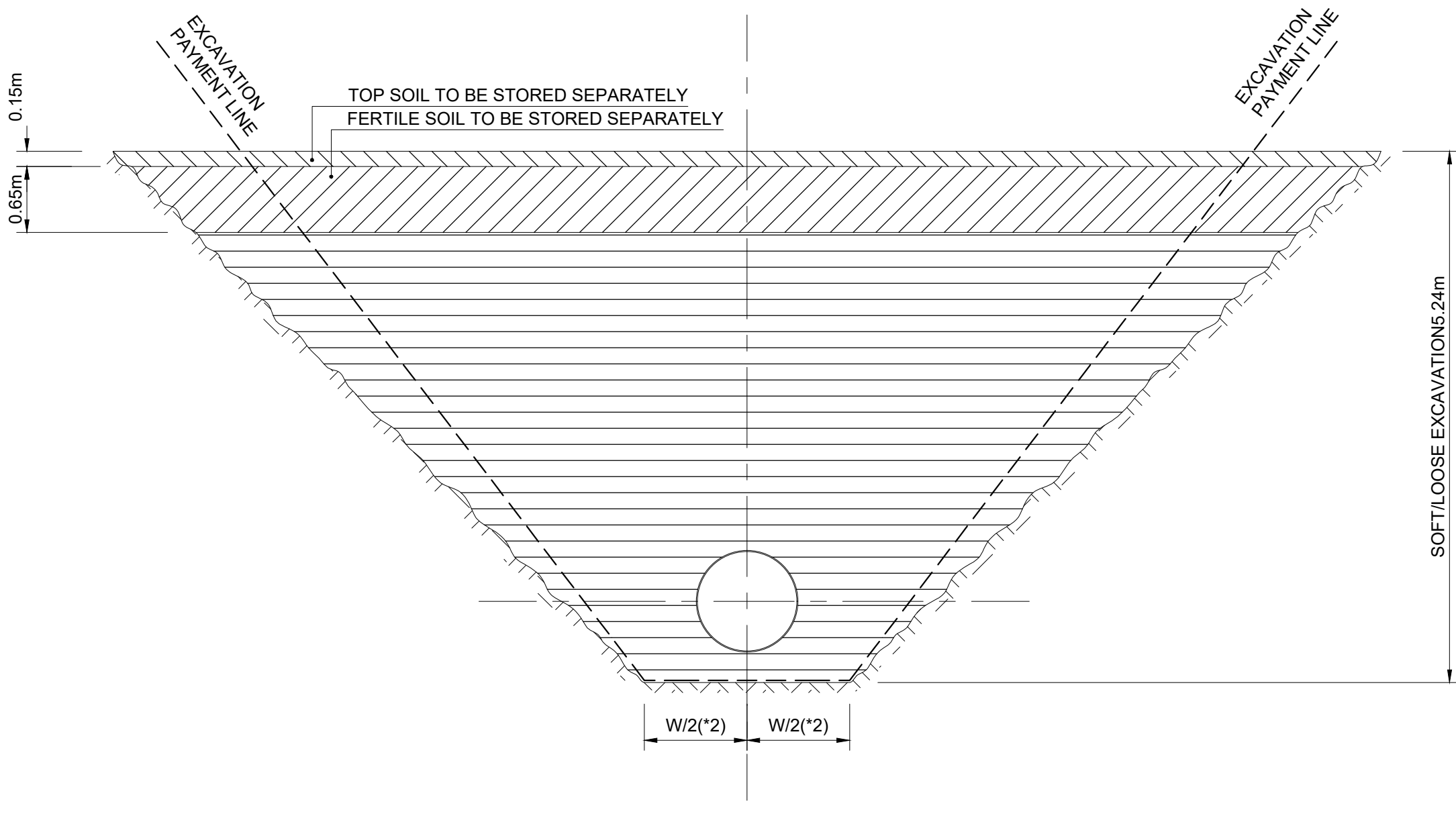
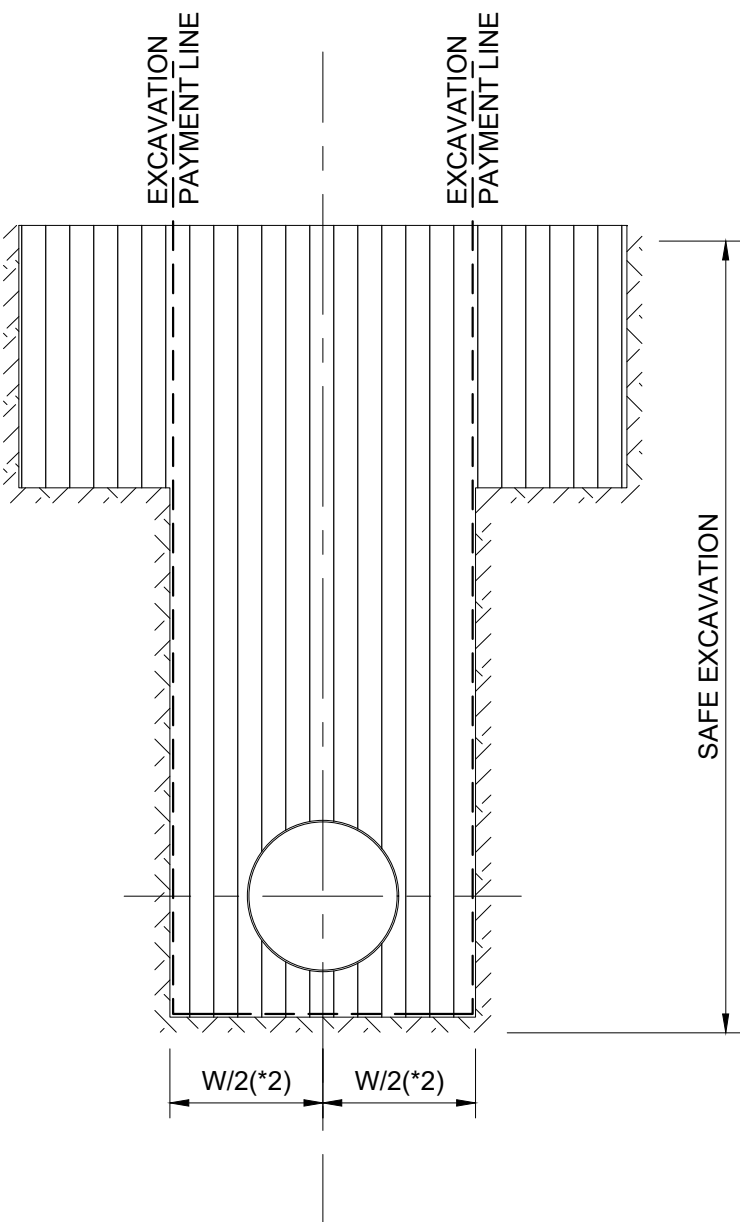
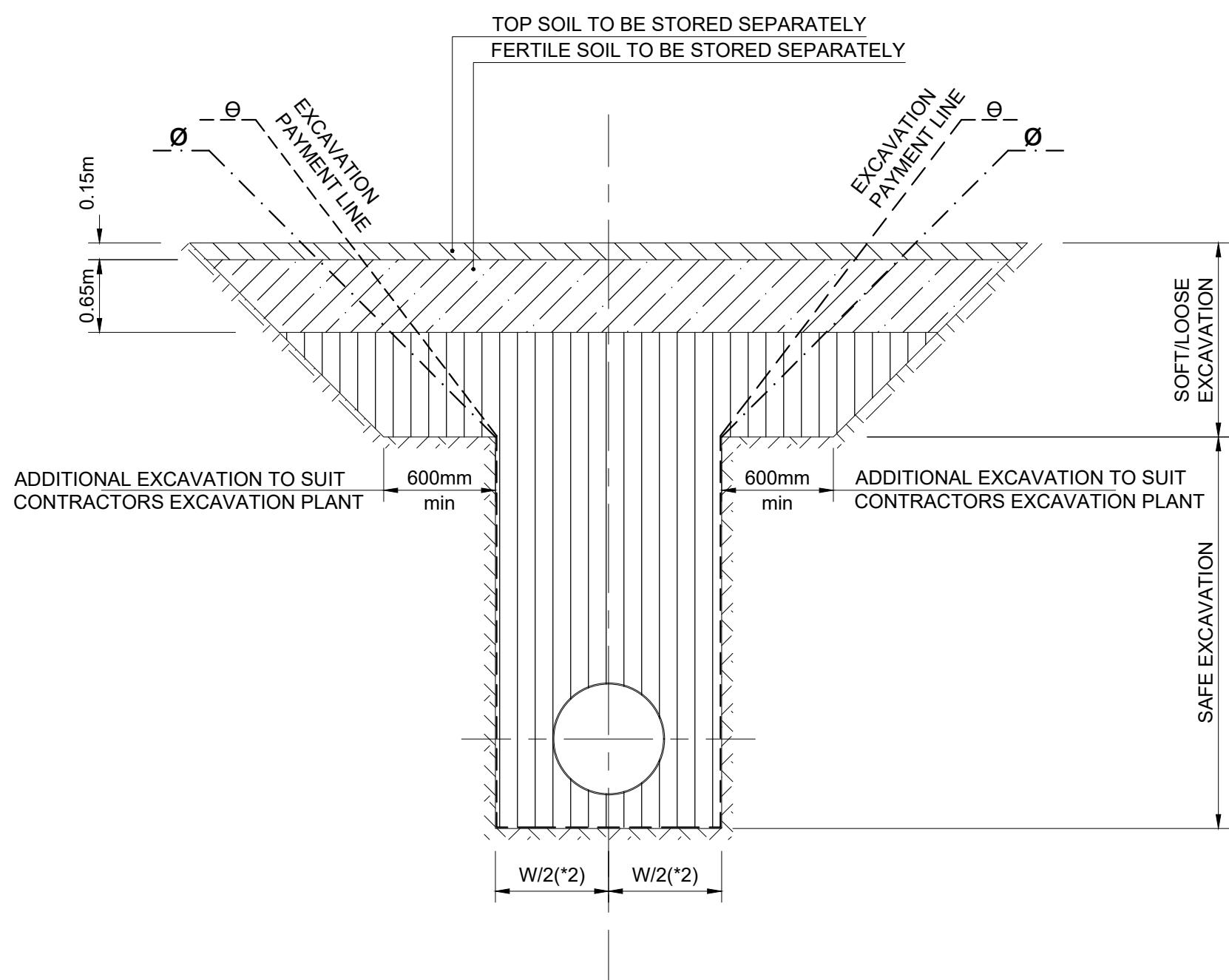
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B	20/10/23	DETAILED DESIGN REPORT DRAWINGS	MZN	MGT		CHECKED BY: S P TSHUMA				VERGENOEG WATER LAYOUT 6 OF 6			
						DESIGNED BY: M G TSHUMA							



EXCAVATION FOR SHALLOW TRENCHES (<2.5m) SEE NOTE 12

SCALE 1:50



EXCAVATION FOR DEEP TRENCHES (>2.5m) SEE NOTE 13

SCALE 1:50

NOTES:

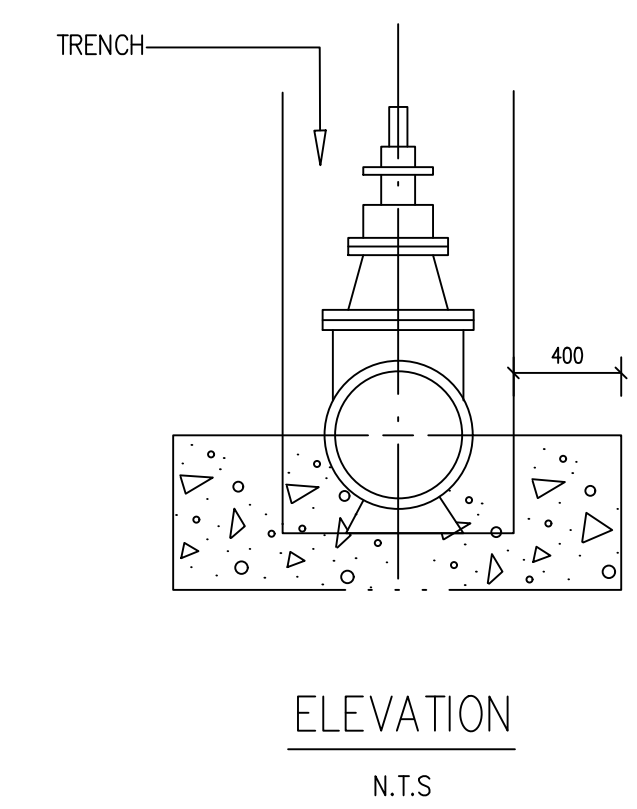
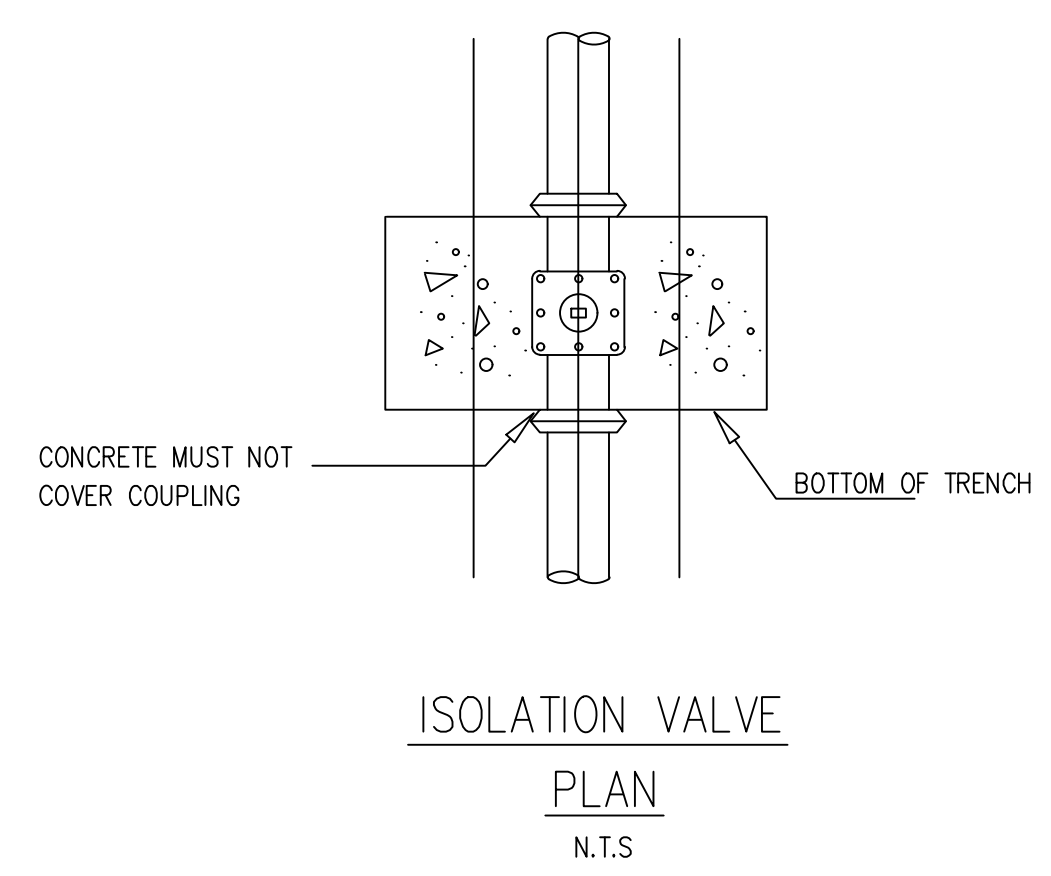
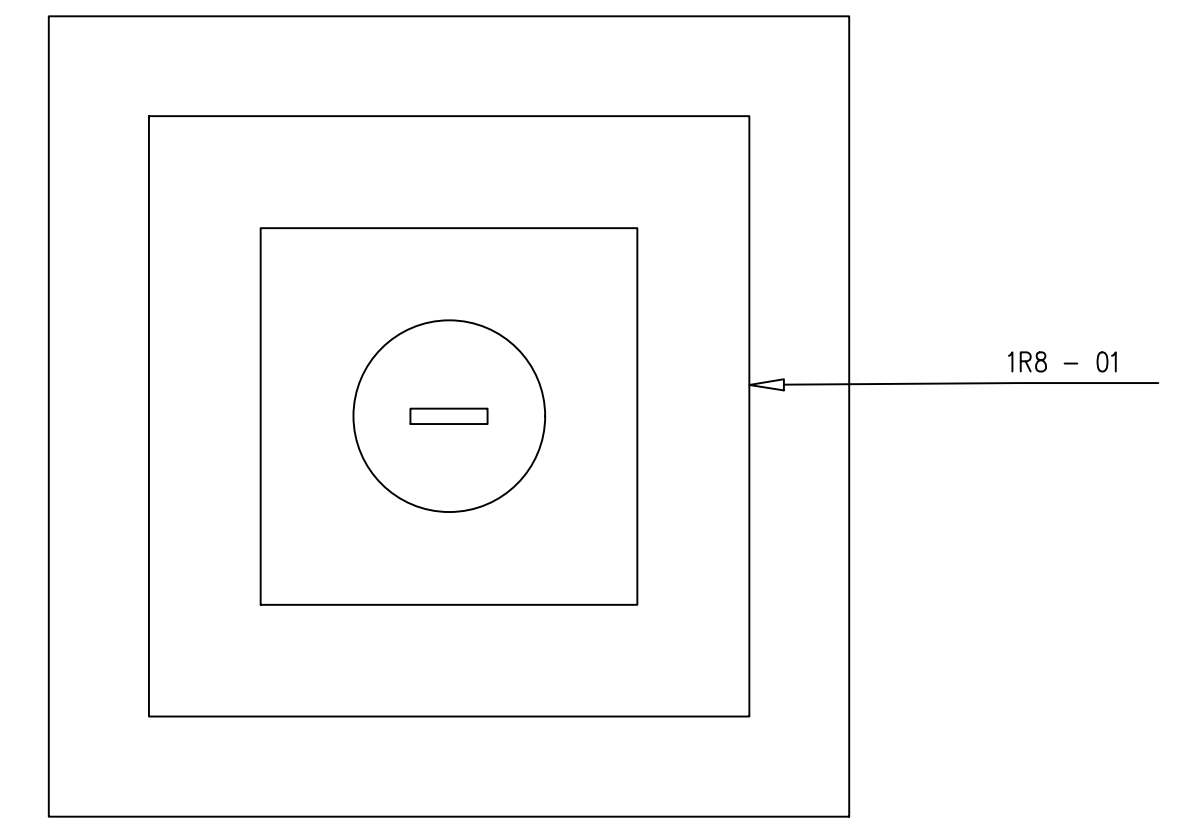
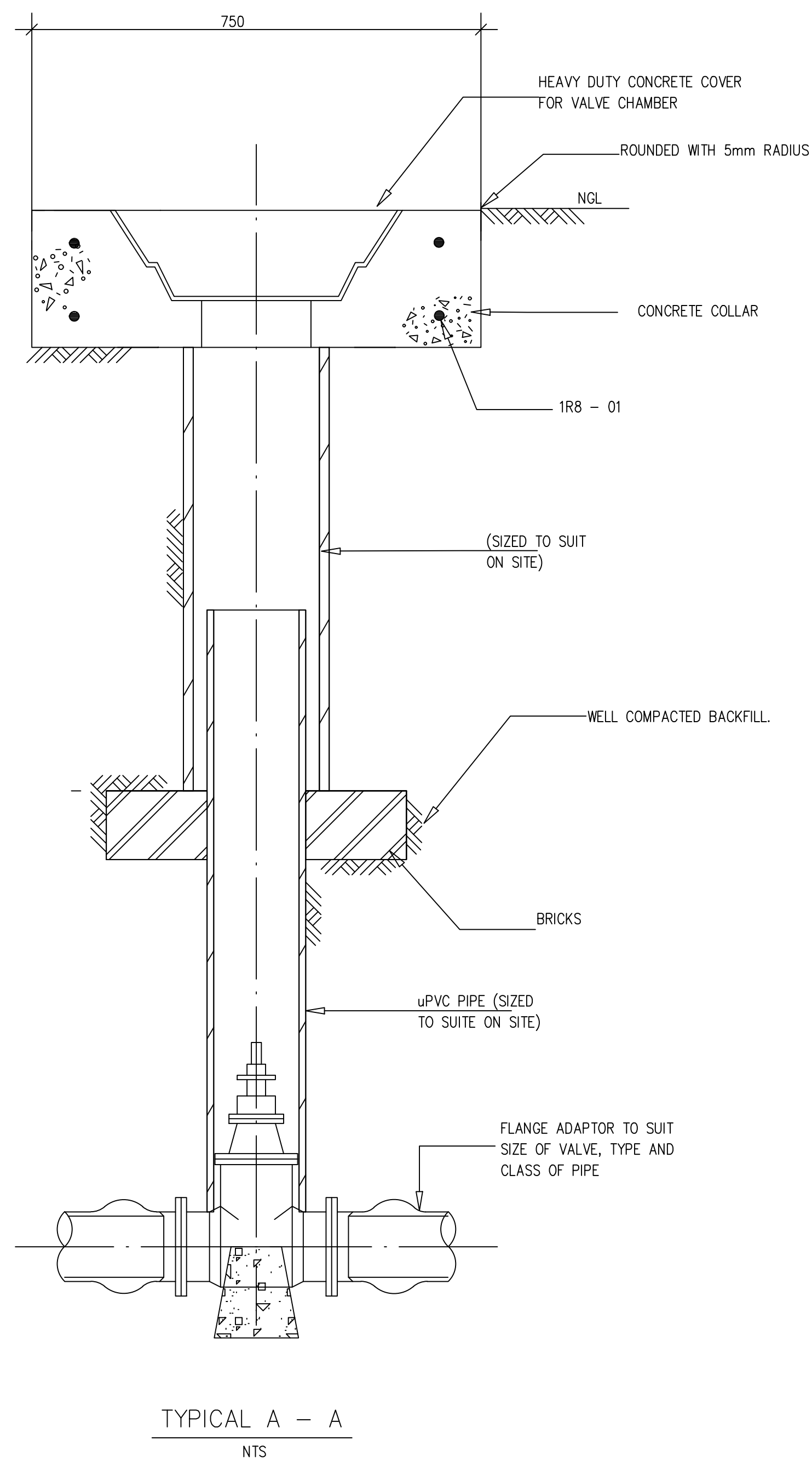
- ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE STATED. ALL LEVELS IN METRES ABOVE SEA LEVEL (mASL) UNLESS OTHERWISE STATED.
- THE TRENCH WIDTH W FOR THE PIPELINE IS DEFINED IN THE PROJECT SPECIFICATION.
- REFER TO LONG SECTION DRAWINGS FOR DEPTH OF COVER OVER THE PIPE.
- THE TOP 150mm OF SOFT EXCAVATION IS REGARDED AS TOPSOIL AND SHALL BE EXCAVATED AND STORED SEPARATELY AND REINSTATED IN THE SAME POSITION UPON BACKFILLING OF THE PIPE TRENCH.
- SOFT EXCAVATION BETWEEN 150mm AND 800mm DEPTH IS REGARDED AS FERTILE SOIL AND SHALL BE EXCAVATED AND STORED SEPARATELY AND REINSTATED IN THE SAME POSITION UPON BACKFILLING OF THE PIPE TRENCH.
- REFER TO PROJECT SPECIFICATIONS FOR THE CLASSIFICATION OF SOFT AND HARD EXCAVATION.
- SOFT EXCAVATION TO BE REUSED MAY BE STORED ALONG THE TRENCH INSIDE THE CONSTRUCTION SERVITUDE WHERE THERE IS SUFFICIENT SPACE AVAILABLE. REFER TO PROPOSED TYPICAL SERVITUDE DRAWINGS.
- HARD EXCAVATION SHALL BE REMOVED FROM SITE TO DESIGNATED SPOIL SITES IMMEDIATELY AFTER BEING EXCAVATED AND WILL NOT BE STORED WITHIN THE CONSTRUCTION SERVITUDE.
- FOR PAYMENT PURPOSES, THE QUANTITY OF EXCAVATION WILL BE CALCULATED TO THE SLOPE θ AS GIVEN IN THE PROJECT SPECIFICATIONS. THE SLOPE θ WAS BASED ON THE DEEMED SAFE EXCAVATION SLOPE, DETERMINED IN TERMS OF KNOWN GEOTECHNICAL CONDITIONS AND PARAMETERS AT THE TIME OF TENDER.
- THE TRENCH EXCAVATION SHALL BE EXCAVATED TO THE SAFE EXCAVATION SLOPE θ AS DETERMINED ON SITE AND BASED ON AN ASSESSMENT OF THE KNOWN EXISTING CONDITIONS AND GEOTECHNICAL PARAMETERS.
- FOR PAYMENT PURPOSES, ANY ADDITIONAL EXCAVATION (WHETHER POSITIVE OR NEGATIVE), BETWEEN THE SLOPES θ AND θ WILL NOT BE CONSIDERED.
- WITH RESPECT TO THE MECHANICAL EXCAVATION OF PIPE TRENCHES, A SHALLOW TRENCH IS DEFINED AS A TRENCH WITH A MAXIMUM DEPTH OF 3.50m.
- A DEEP TRENCH IS A TRENCH THAT IS DEEPER THAN A SHALLOW TRENCH.
- SAFE EXCAVATION IS EXCAVATION IN A MATERIAL THAT CAN BE EXCAVATED WITH VERTICAL SIDE SLOPES AND THAT WILL IN THE LONG TERM BE SAFE AGAINST COLLAPSE OR ANY OTHER FORM OF GEOTECHNICAL INSTABILITY.
- THE THICKNESSES OF THE TOP SOIL AND FERTILE SOIL ARE NOMINALLY AS INDICATED ON THIS DRAWING, BUT VARIES ALONG THE PIPELINE.

LEGEND:

- (*) NOTE REFERENCE
- EXCAVATION PAYMENT LINE
- - - - - SAFE SLOPE EXCAVATION LINE

FOR APPROVAL

NO.	DATE	AMENDMENTS	BY	APPROVED	 Mamadi & Company SA FIRST FLOOR SOFTBRAND THANDANANI OFFICE PARK 16 INVICTA ROAD MIDRAND 1659 TEL: 011 532 8659 EMAIL: info@mamadi.co.za	DRAWN BY : M Z NKALA		 NALA LOCAL MUNICIPALITY PRIVATE BAG X 15, PRIVATE SAC, BOTHAVILLE, 9660 TEL: +27 56 514 9200 EMAIL: mskotedi@nala.org.za	NALA LOCAL MUNICIPALITY			DETAILED DESIGN STAGE
A	28/08/23	PRELIMINARY DESIGN REPORT DRAWINGS	SPT	MGT					NMKV - 2401 - SEWER			
B	23/10/23	DETAILED DESIGN REPORT DRAWINGS	MZN	MGT								
						CHECKED BY: S P TSHUMA			MONYAKENG - NEW SEWER NETWORK FOR 950 STANDS IN KHALINKOMO AND VERGENOE			NMKV - 2401 - GD - 0004 - 00
						DESIGNED BY: M G TSHUMA			EXCAVATION FOR DEEP TRENCHES (>2.5m)			

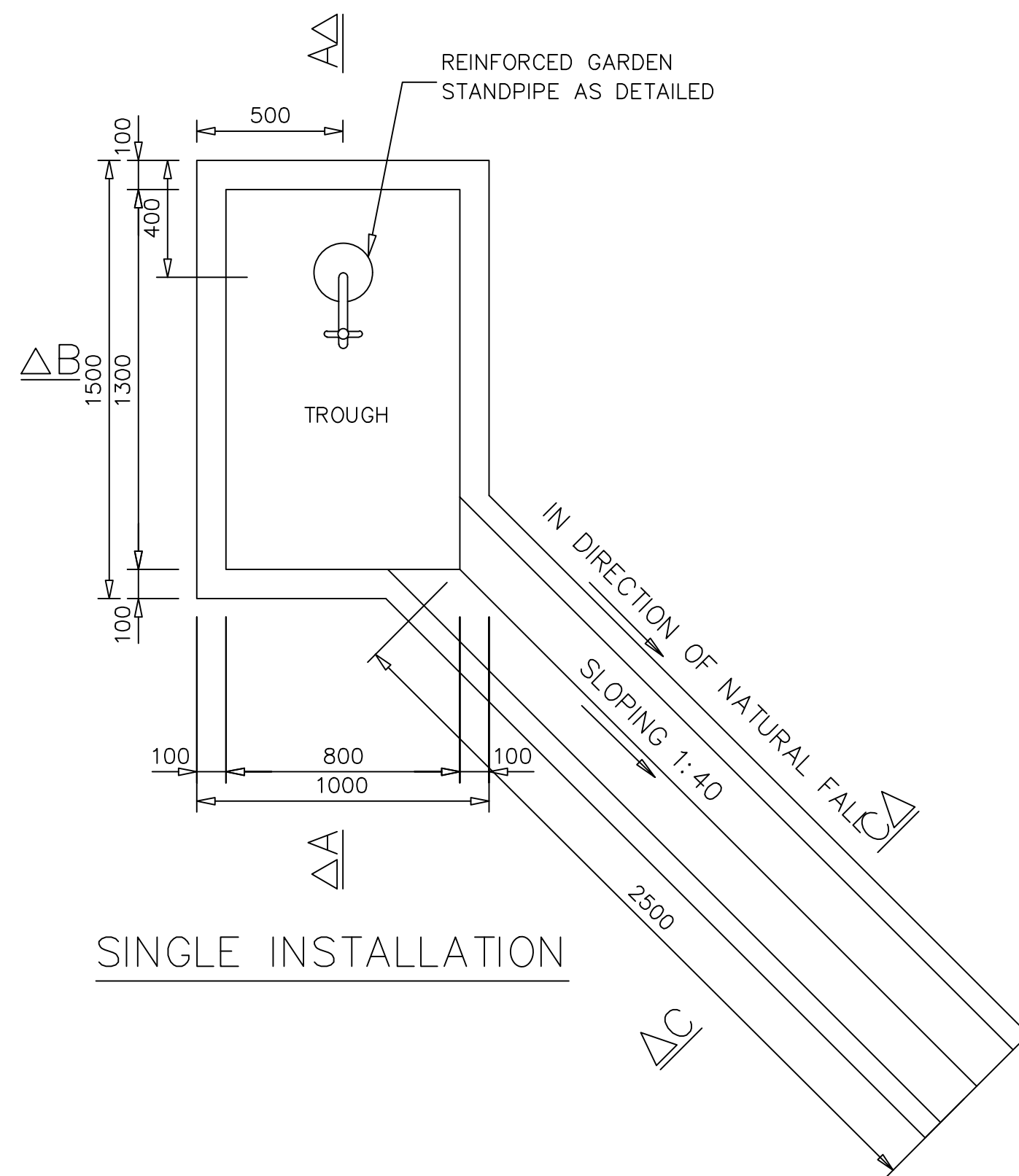


- NOTES :
- 1. CONCRETE CLASS 25/19 MPa.
 - 2. COVER FOR REINFORCEMENT 40mm

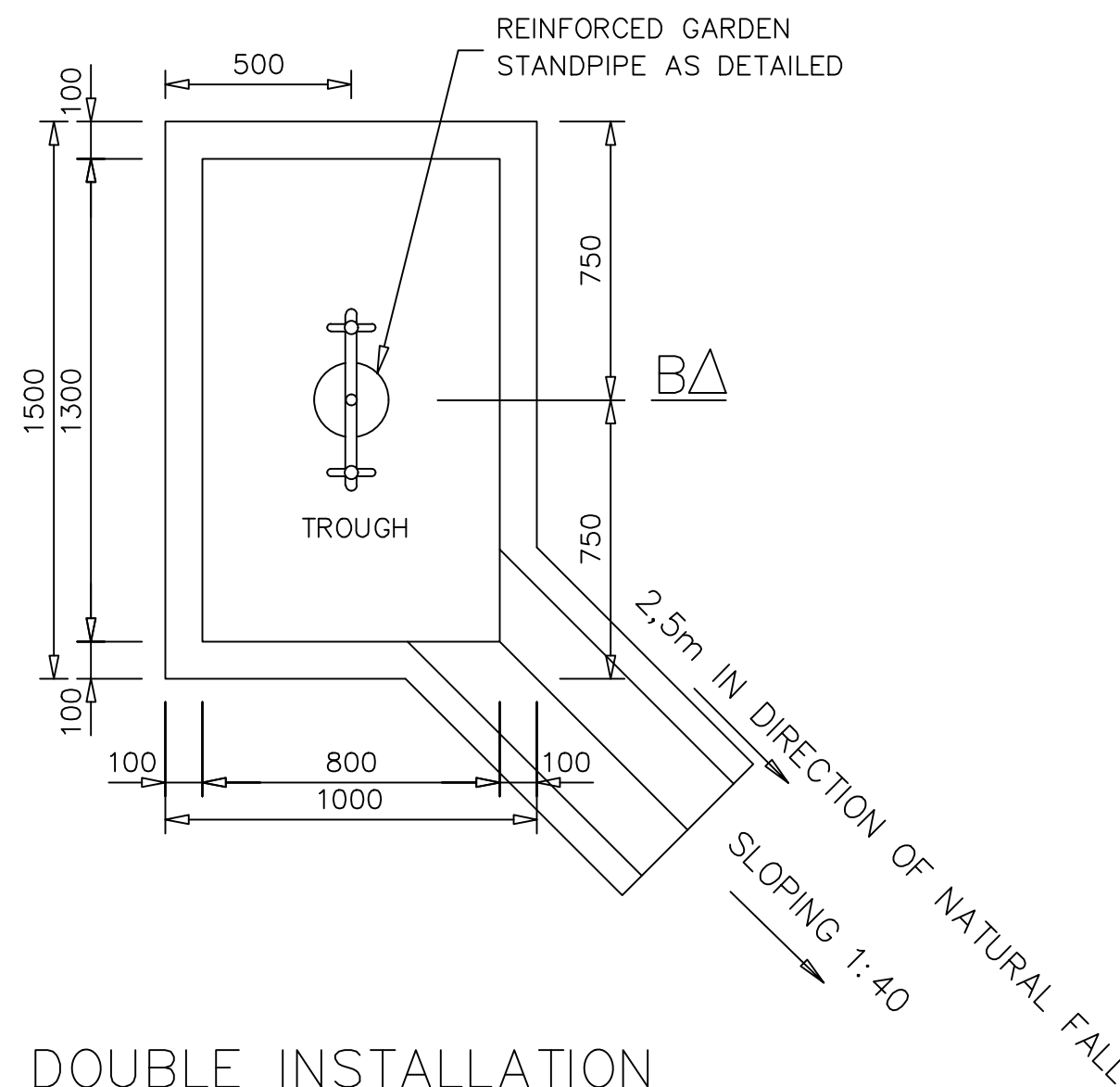
BENDING SCHEDULE						
Type Mark & size	Qty.	Cut Length mm	Shape Code	A mm	B mm	Mass kg
01 – R08	2	2 680	60	545	545	1,058

FOR APPROVAL

NO.	DATE	AMENDMENTS	BY	APPROVED	 Mamadi & Company SA	DRAWN BY : M Z NKALA		 INALA LOCAL MUNICIPALITY PRIVATE BAG X 15, PRIVAAT SAK, BOTHAVILLE, 9609 TEL: +27 56 514 9200 EMAIL: emokotedi@nala.org.za	NALA LOCAL MUNICIPALITY		NMKV - 2401 - WATER		DETAILED DESIGN STAGE		
A	28/08/23	PRELIMINARY DESIGN REPORT DRAWINGS	SPT	MGJ					MONYAKENG - NEW WATER NETWORK FOR 950 STANDS IN KHALINKOMO AND VERGENOEG					NMKV - 2401 - GD - 0005 - 00	
B	20/10/23	DETAILED DESIGN REPORT DRAWINGS	MZN	MGJ					TYPICAL ISOLATION VALVE DETAILS						
					FIRST FLOOR SOFTBRAND THANDANANI OFFICE PARK 16 INVICTA ROAD MIDRAND 1658 TEL: 011 532 8659 EMAIL: info@mamadi.co.za										

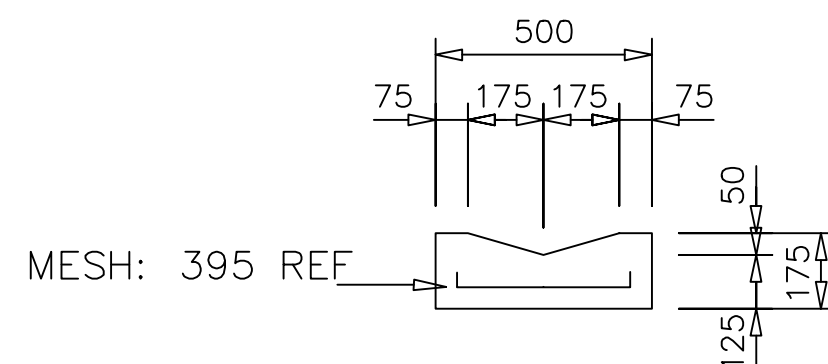


SINGLE INSTALLATION

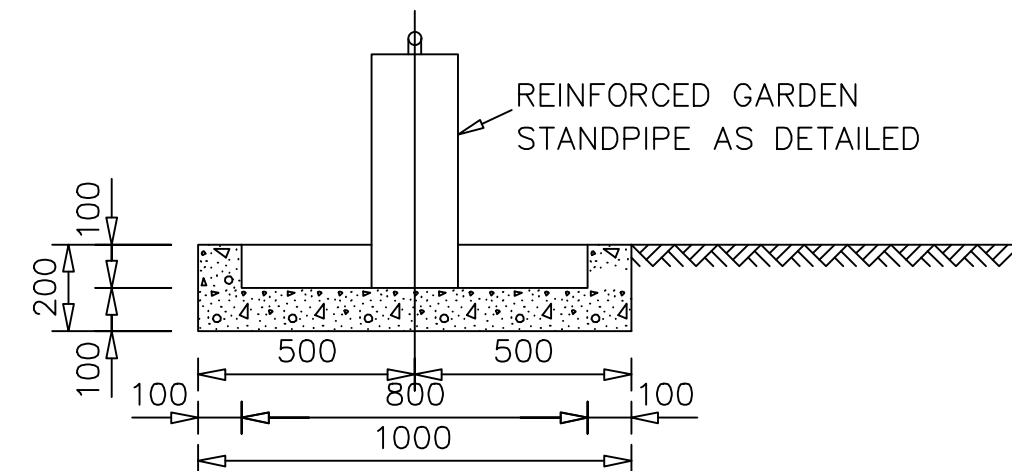


DOUBLE INSTALLATION

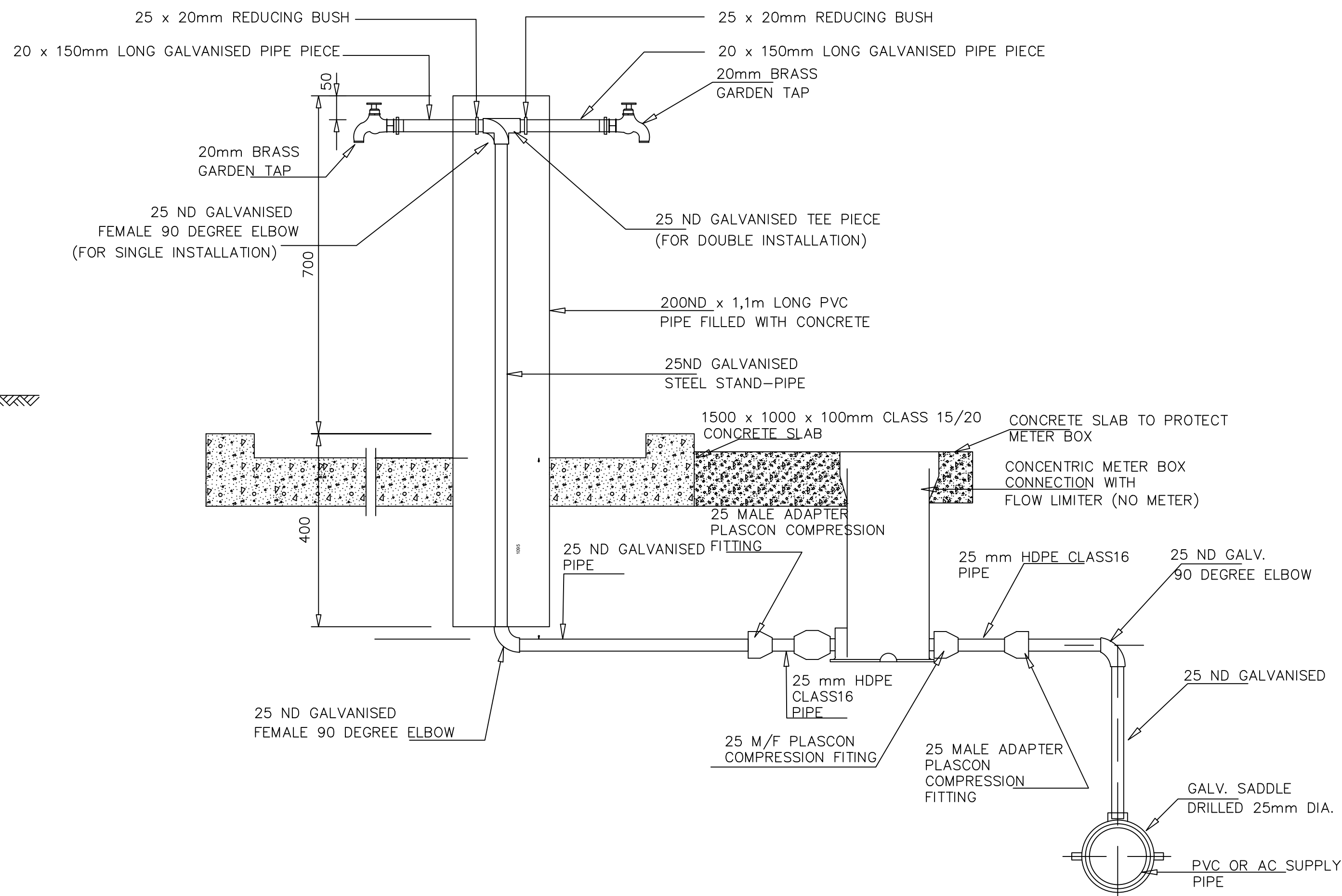
NOTE: ALL CONCRETE TO BE CLASS 15/20



SECTION C-C



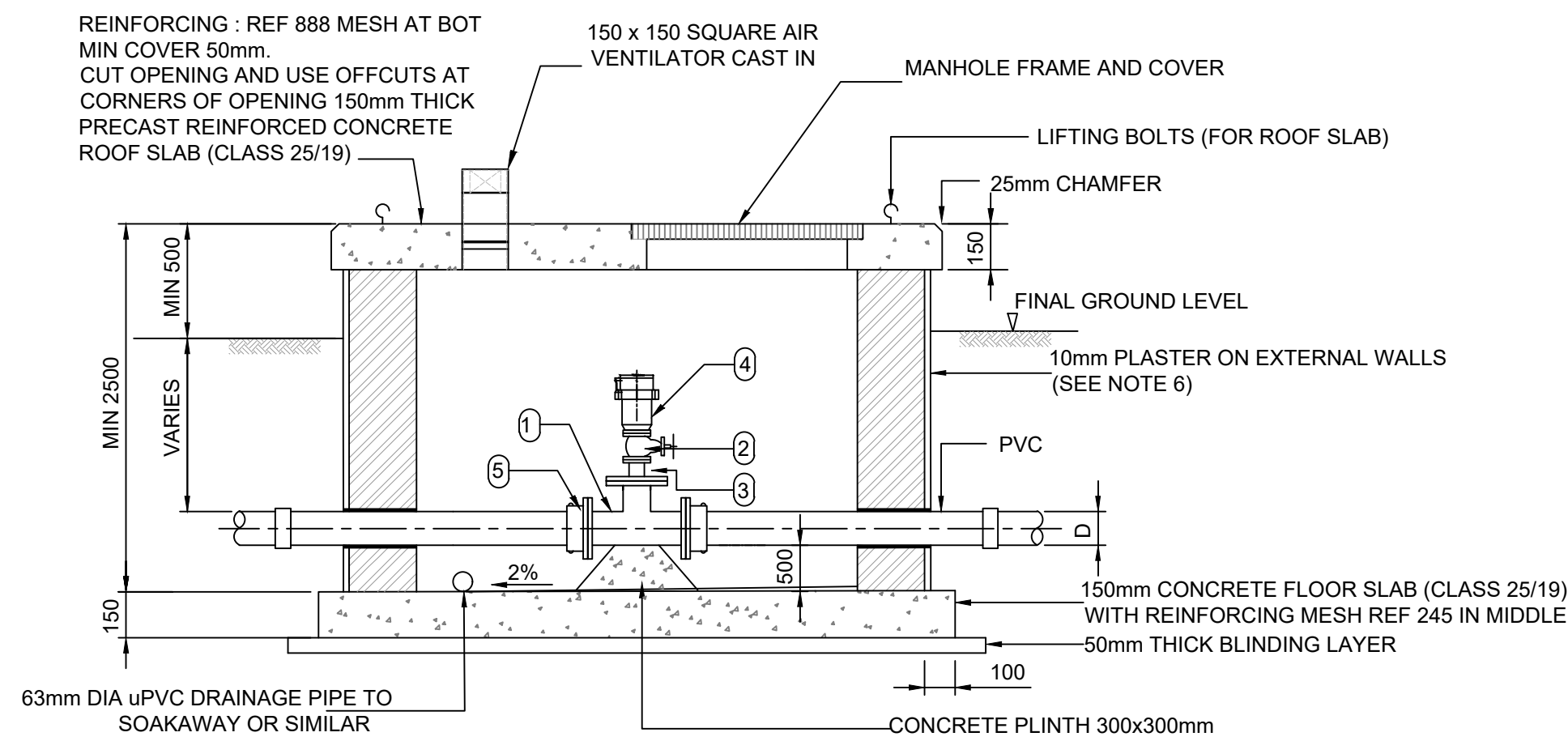
SECTION B-B



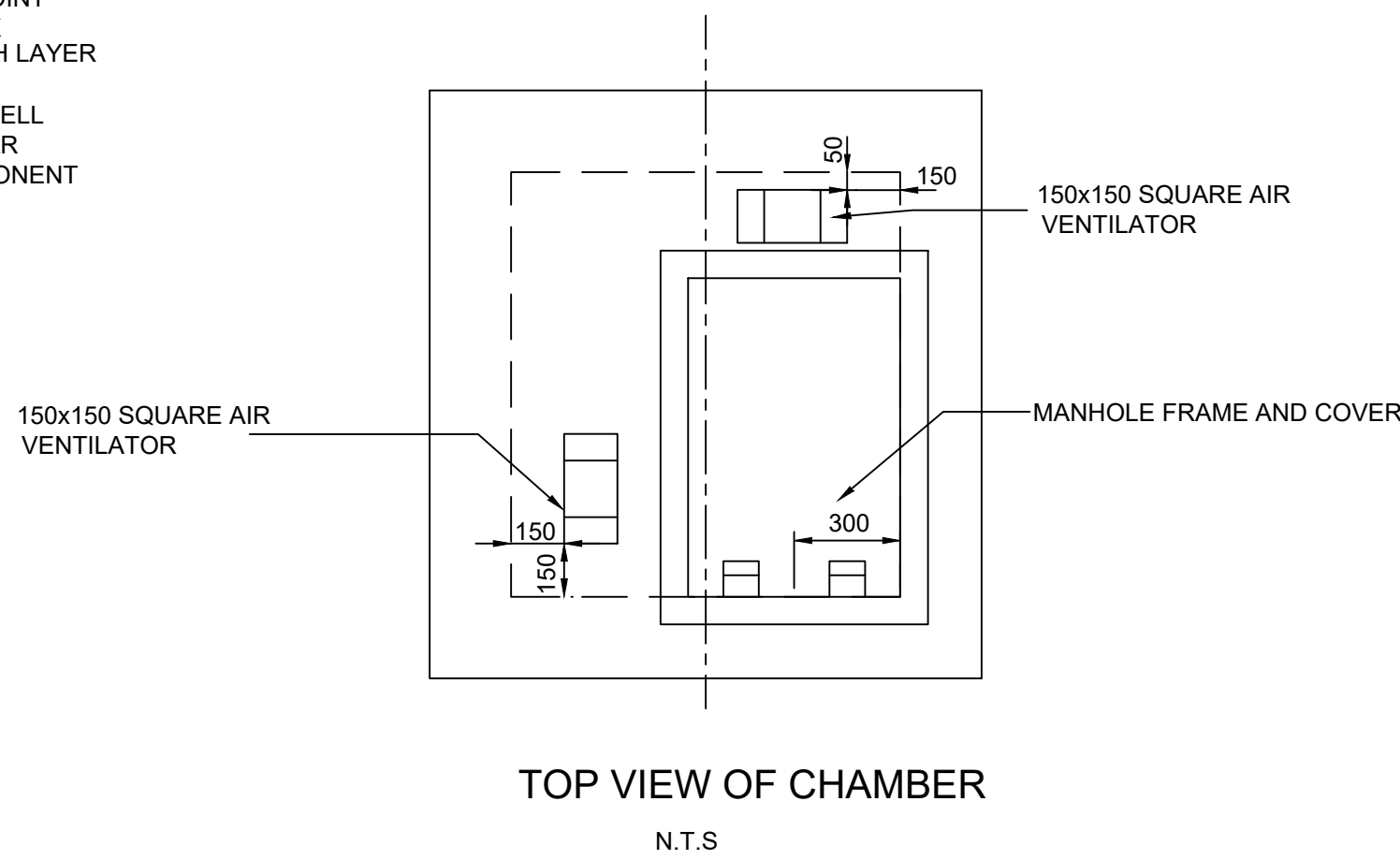
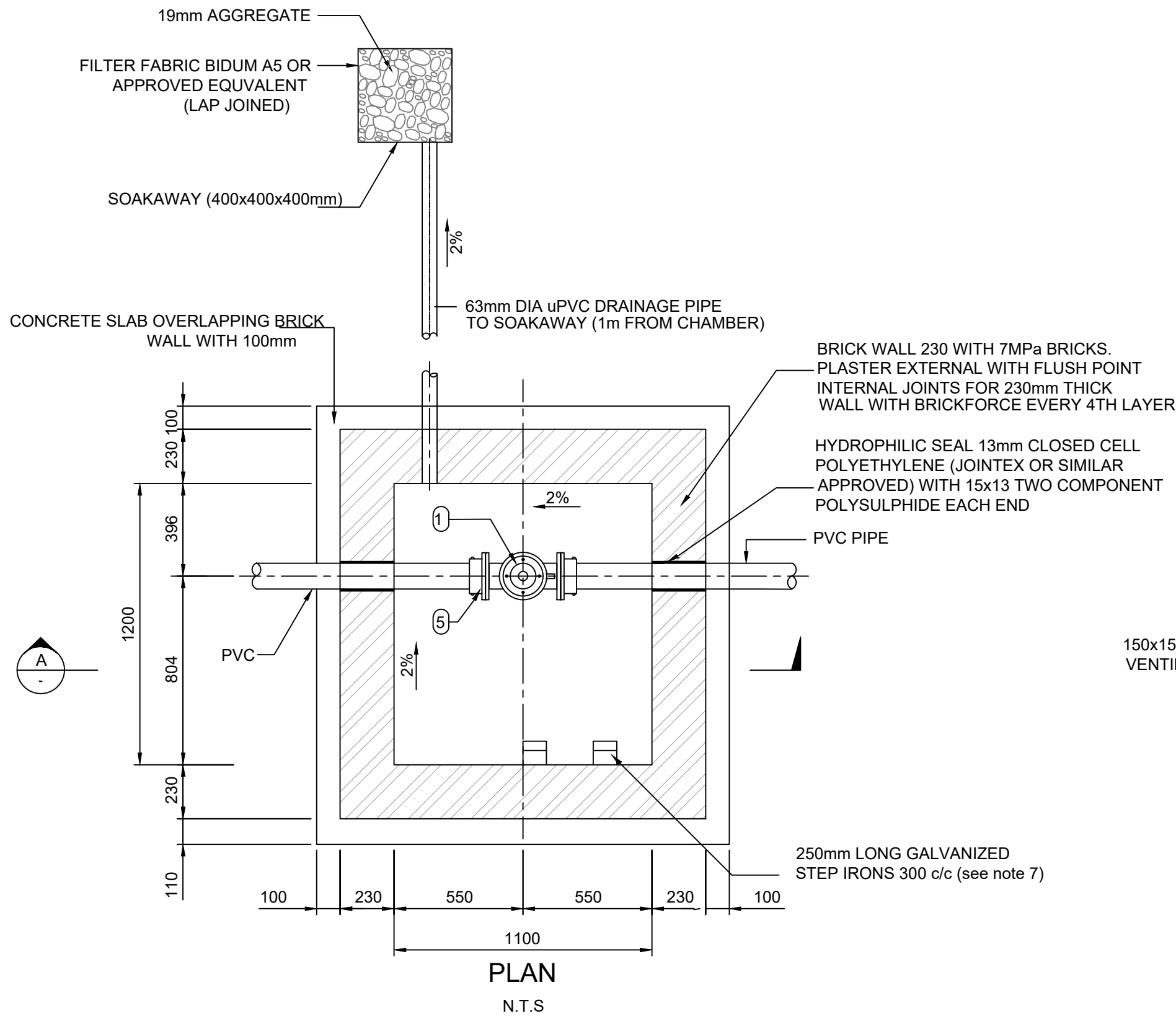
SECTION A-A

FOR APPROVAL

NO.		DATE	AMENDMENTS	BY	APPROVED													
A		28/08/23	PRELIMINARY DESIGN REPORT DRAWINGS	SPT	MG1	 Mamadi & Company SA FIRST FLOOR SOFTBRAND THANDANANI OFFICE PARK 16 INVICTA ROAD MIDRAND 1658 TEL: 011 532 8659 EMAIL: info@mamadi.co.za	DRAWN BY : M Z NKALA			 INALA LOCAL MUNICIPALITY PRIVATE BAG X 15, PRIVAT SAK, BOTHAVILLE, 9660 TEL: +27 56 514 9200 EMAIL: imokotedi@inala.org.za	NALA LOCAL MUNICIPALITY			NMKV - 2401 - WATER		DETAILED DESIGN STAGE		
B		20/10/23	DETAILED DESIGN REPORT DRAWINGS	MZN	MG1						MONYAKENG - NEW WATER NETWORK FOR 950 STANDS IN KHALINKOMO AND VERGENOE							
											TYPICAL STANDPIPE DETAILS							
																	NMKV - 2401 - GD - 0006 - 00	



SECTION A-A
N.T.S



GENERAL NOTES

1) PRIOR TO ANY WORK BEING DONE, A SURVEY OF THE EXISTING GROUND WORK, TO BE PROVIDED TO THE ENGINEER BY THE CONTRACTOR.

2) ALL WORK MUST BE DONE IN ACCORDANCE WITH THE STANDARD SANS 1200 SPECIFICATION AND THIS PROJECT'S APPLICABLE CONTRACT DOCUMENTATION.

PIPE SCHEDULE FOR PIPES OF DIAMETER 0 - 200 DN ON AIR VALVE CHAMBERS

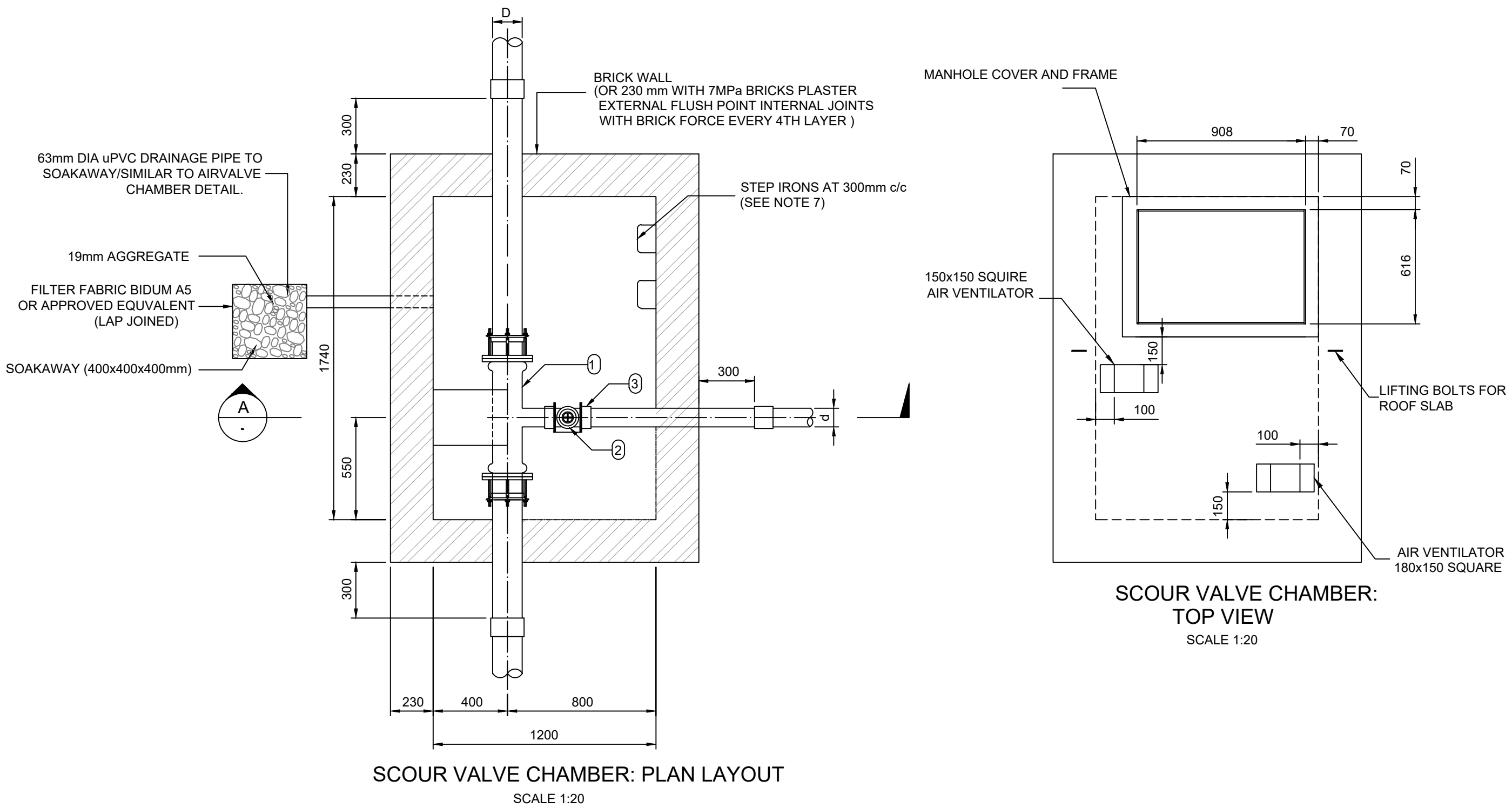
ITEM NO.	QUANTITY	DESCRIPTION	PROTECTION		MATERIAL	DIMENSION*	WORKING PRESURE (BAR)
			LINING	COATING			
①	1	FLANGED EQUAL TEE	HDG	HDG	MILD STEEL		16/25
②	1	FLANGED, NON-RISING SPINDLE CLOCKWISE CLOSING WITH HANDWHEEL RESILIENT SEAL GATE VALVE TO SANS 664	-	-	-	TO SUIT AIR VALVE SIZE	16/25
③	1	BLANK FLANGE WITH HOLE DRILLED IN CENTRE OF BLANK FLANGE, DISTANCE PIECE WELDED TO BLANK FLANGE, TOP FLANGE END TO SUIT ISOLATING VALVE	HDG	HDG	MEDIUM CLASS MILD STEEL		16/25
④	1	FLANGED COMBINATION WITH NON-SLAM MECHANISM AIR RELEASE VALVE ARI D-46 OR SIMILAR APPROVED	-	-	-	REFER TO LONGSECTION FOR AIR VALVE SIZE	16/25
⑤	1	S.G IRON FLANGE ADAPTOR	BITUMEN	BITUMEN	S.G IRON	TO SUIT PIPE SIZE	16/25

NOTES:

- ALL DIMENSIONS SHOWN ON THE DRAWING MUST BE CHECKED BY THE CONTRACTOR AND ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER.
- CORROSION PROTECTION OF STEEL PIPES, FITTINGS & COUPLINGS :
 - ALL UNDERGROUND STEEL PIPES MUST BE PROTECTED EXTERNALLY WITH A PUTTY FILLER, CORROSION PROTECTION TAPE AND PVC OUTERWRAP, "DENSO TAPE" OR SIMILAR APPROVED.
 - HDG STEEL FITTINGS IN CHAMBER TO BE DEGREASED, LIGHTLY ABRADED AND OVERCOATED WITH >90% ZINC RICH PAINT TO MIN DFT 150 MICRON
- ALL FLANGE DRILLING IS TO BE IN ACCORDANCE WITH SABS 1123 TABLE 2500/3.
- STEEL PIPES ARE TO BE TO SABS 62.
- FINAL POSITION AND DEPTH OF THE CHAMBER IS TO BE DETERMINED ON SITE BY THE ENGINEER.
- WHERE WATER TABLE IS HIGH, WHOLE CHAMBER TO BE PLASTERED AND WATER-PROOFED.
- ALL STEP IRONS TO BE 255mm LONG GALVANIZED SAINT GOBAIN OR APPROVED EQUIVALENT.

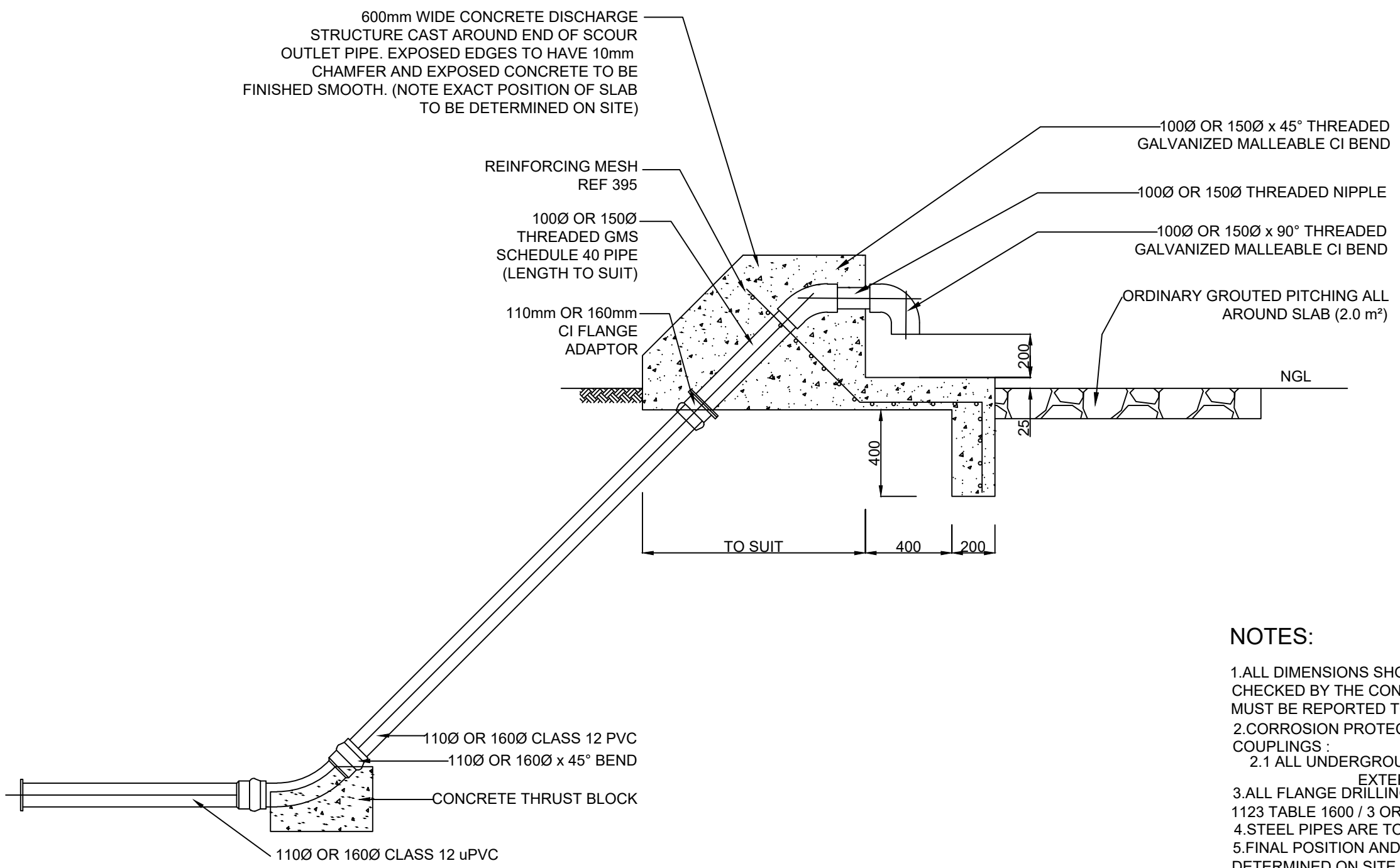
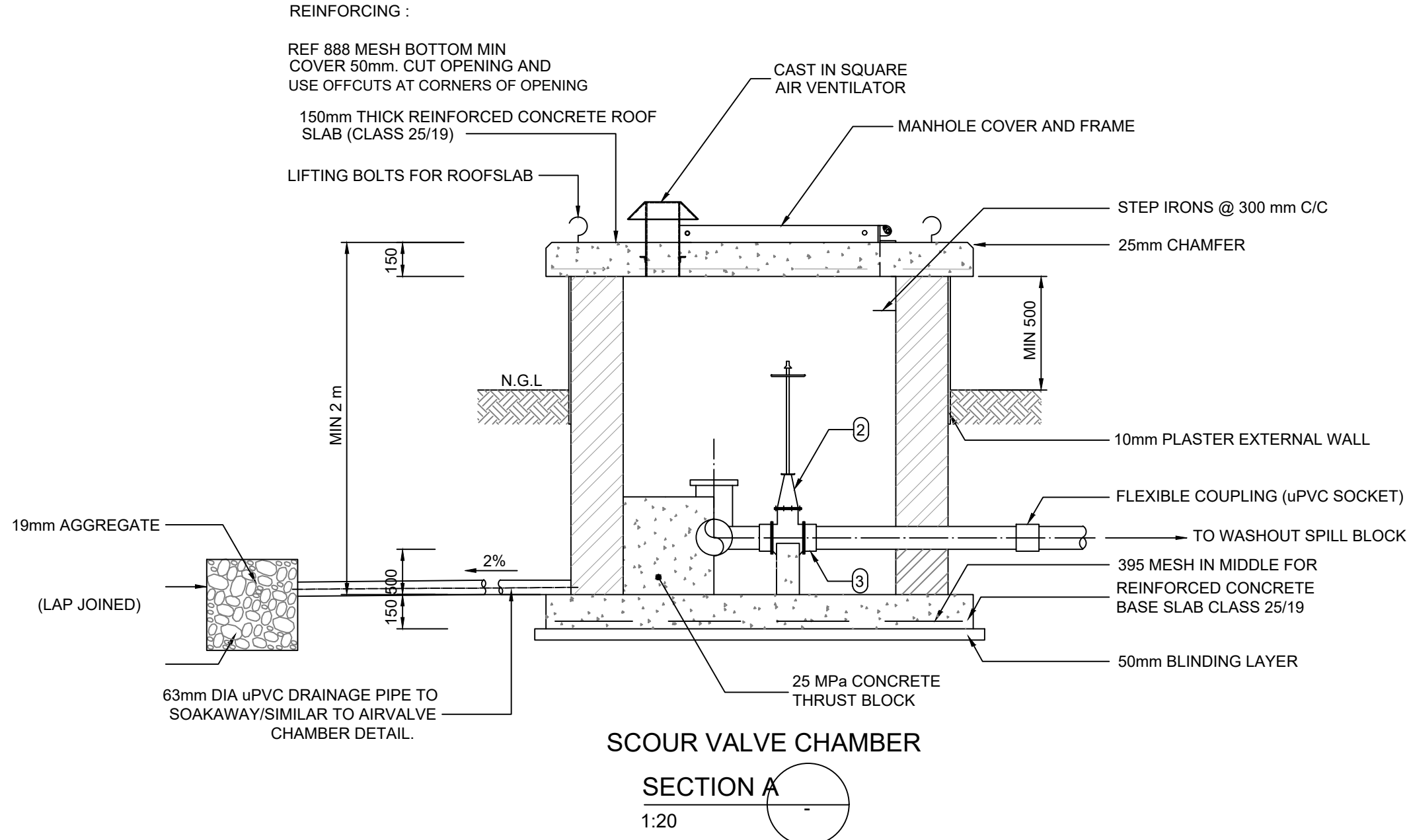
FOR APPROVAL

NO.	DATE	AMENDMENTS	BY	APPROVED	 Mamadi & Company SA FIRST FLOOR SOFTBRAND THANDANANI OFFICE PARK 16 INVICTA ROAD MIDRAND 1658 TEL: 011 532 8659 EMAIL: info@mamadi.co.za	DRAWN BY : M Z NKALA	CHECKED BY: S P TSHUMA	DESIGNED BY: M G TSHUMA	 INALA LOCAL MUNICIPALITY PRIVATE BAG X 15, PRIVAAT SAK, BOTHAVILLE, 9880 TEL: +27 56 514 9200 EMAIL: mkotedi@nala.org.za	NALA LOCAL MUNICIPALITY		
A	28/08/23	PRELIMINARY DESIGN REPORT DRAWINGS	SPT	MGJ						NMKV - 2401 - WATER		DETAILED DESIGN STAGE
B	20/10/23	DETAILED DESIGN REPORT DRAWINGS	MZN	MGJ						MONYAKENG - NEW WATER NETWORK FOR 950 STANDS IN KHALINKOMO AND VERGENOE		
										AIR VALVE CHAMBER DETAILS		



PIPE SCHEDULE FOR SCOUR VALVE CHAMBERS

ITEM NO.	QTY	DESCRIPTION	PROTECTION		MATERIAL	DIMENSION*	WORKING PRESURE (BAR)
			LINING	COATING			
①	1	FLANGE SCOUR TEE	HDG	HDG	MS	MAIN TO SUIT PIPE SIZE (D) TEE TO SUITE PIPE(d)	16/25
②	1	DOUBLE FLANGED, NON-RISING SPINDLE CLOCKWISE CLOSING WITH HANDWHEEL RESILIENT SEAL GATE VALVE TO SANS 664	HDG	HDG		TO SUIT PIPE SIZE (d) DN 100mm	16/25
③	1	SOCKETS SG FLANGE ADAPTOR	BITUMEN	BITUMEN	SG IRON	TO SUIT PIPE SIZE (d) DN 100mm	16/25
④	2	SOCKETED S.G. ADAPTOR FLANGE	BITUMEN	BITUMEN	SG IRON	TO SUIT PIPE SIZE (D)	16/25



NOTES:

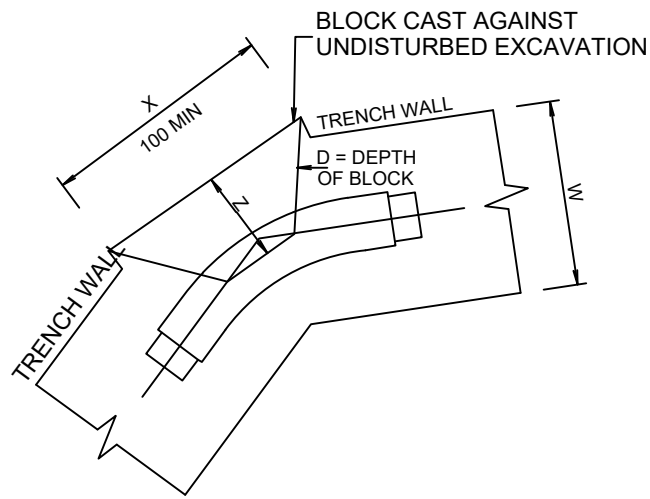
1. ALL DIMENSIONS SHOWN ON THE DRAWING MUST BE CHECKED BY THE CONTRACTOR AND ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER.
2. CORROSION PROTECTION OF STEEL PIPES, FITTINGS & COUPLINGS :
2.1 ALL UNDERGROUND STEEL PIPES MUST BE PROTECTED EXTERNALLY WITH A 'DENSO TAPE' SYSTEM
3. ALL FLANGE DRILLING IS TO BE IN ACCORDANCE WITH SANS 1123 TABLE 1600 / 3 OR 2500 / 3
4. STEEL PIPES ARE TO BE TO SABS 62
5. FINAL POSITION AND DEPTH OF CHAMBER IS TO BE DETERMINED ON SITE BY THE ENGINEER
6. WHERE WATER TABLE IS HIGH, WHOLE CHAMBER TO BE PLASTERED AND WATER-PROOFED
7. ALL STEP IRONS TO BE 255mm LONG GALVANIZED SAINT GOBAIN OR APPROVED EQUIVALENT

GENERAL NOTES

- 1) ALL AMBIGUITIES ON DRAWING MUST BE REPORTED TO THE DESIGN ENGINEER BEFORE COMMENCEMENT OF CONSTRUCTION.
- 2) PRIOR TO ANY WORK BEING DONE, A SURVEY OF THE EXISTING GROUND WORK, TO BE PROVIDED TO THE ENGINEER BY THE CONTRACTOR.
- 3) ALL WORK MUST BE DONE IN ACCORDANCE WITH THE STANDARD SANS 1200 SPECIFICATION AND THIS PROJECT'S APPLICABLE CONTRACT DOCUMENTATION.

FOR APPROVAL

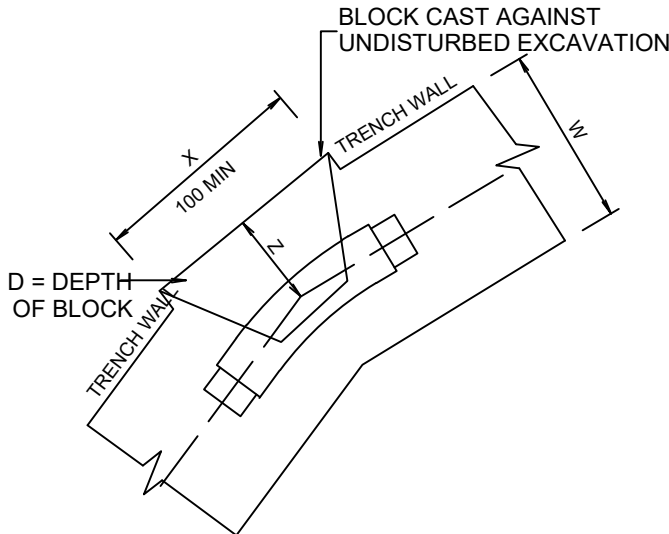
NO.	DATE	AMENDMENTS	BY	APPROVED	 Mamadi & Company SA FIRST FLOOR SOFTBRAND THANDANANI OFFICE PARK 16 INVICTA ROAD MIDRAND 1658 TEL: 011 532 8659 EMAIL: info@mamadi.co.za	DRAWN BY : M Z NKALA		 INALA LOCAL MUNICIPALITY PRIVATE BAG X 15, PRIVAT SAK, BOTHAVILLE, 9660 TEL: +27 56 514 9200 EMAIL: imokotedi@inala.org.za	NALA LOCAL MUNICIPALITY		NMKV - 2401 - WATER	DETAILED DESIGN STAGE	
A	28/08/23	PRELIMINARY DESIGN REPORT DRAWINGS	SPT	MGT		CHECKED BY: S P TSHUMA			MONYAKENG - NEW WATER NETWORK FOR 950 STANDS IN KHALINKOMO AND VERGENOE				NMKV - 2401 - GD - 0008 - 00
B	20/10/23	DETAILED DESIGN REPORT DRAWINGS	MZN	MGT		DESIGNED BY: M G TSHUMA			SCOUR VALVE CHAMBER DETAILS				



THRUST BLOCK FOR 45° BEND

NOMINAL DIAMETER Ø (mm)	DEPTH OF BLOCK D (mm)	MAXIMUM TESTING PRESSURE					
		900 kPa		1350 kPa		1800 kPa	
		X (mm)	A (m ²)	X (mm)	A (m ²)	X (mm)	A (m ²)
300	1200	450	0,49	650	0,74	850	0,98
250	1000	350	0,34	550	0,51	700	0,68
200	800	300	0,22	450	0,33	550	0,44
150	600	250	0,13	350	0,91	450	0,25
100	400	150	0,06	250	0,09	300	0,11
75	300	100	0,03	150	0,05	200	0,06
50	200	100	0,02	100	0,02	150	0,03

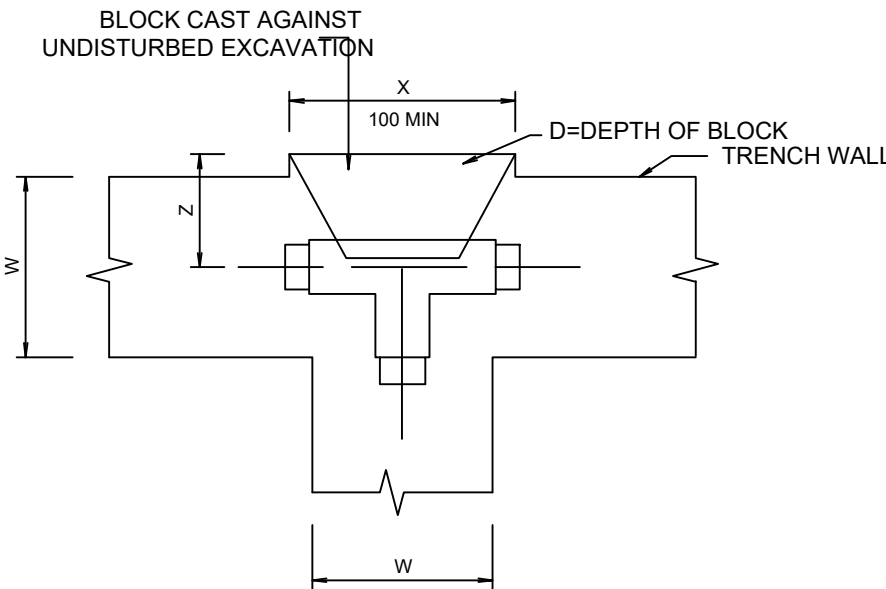
1. THIS TABLE IS VALID FOR 100 kPa EARTH BEARING PRESSURE
2. X- DIMENSION MAY BE REDUCED FOR HIGHER EARTH BEARING PRESSURES
3. Z SHALL BE THE MINIMUM OF X/2 OR W/2
4. HALF OF THE DEPTH OF THE BLOCK SHALL BE BELOW THE PIPE AXIS
5. KEEP COUPLINGS AND FLANGES 25mm CLEAR FROM CONCRETE



THRUST BLOCK FOR 22.5° AND 11.25° BEND
(X AND A TO BE HALVED FOR 11.25° BENDS)

NOMINAL DIAMETER Ø (mm)	DEPTH OF BLOCK D (mm)	MAXIMUM TESTING PRESSURE					
		900 kPa		1350 kPa		1800 kPa	
		X (mm)	A (m ²)	X (mm)	A (m ²)	X (mm)	A (m ²)
300	1200	250	0,25	350	0,38	450	0,50
250	1000	200	0,18	300	0,26	350	0,35
200	800	150	0,11	250	0,17	300	0,22
150	600	100	0,06	200	1,00	250	0,13
100	400	100	0,04	100	0,04	150	0,06
75	300	100	0,03	100	0,03	100	0,03
50	200	100	0,02	100	0,02	100	0,02

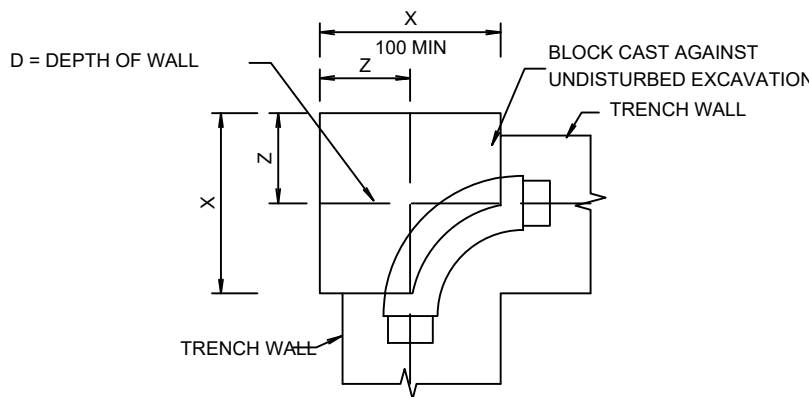
1. THIS TABLE IS VALID FOR 100 kPa EARTH BEARING PRESSURE
2. X- DIMENSION MAY BE REDUCED FOR HIGHER EARTH BEARING PRESSURES
3. Z SHALL BE THE MINIMUM OF X/2 OR W/2
4. HALF OF THE DEPTH OF THE BLOCK SHALL BE BELOW THE PIPE AXIS
- 5 KEEP COUPLINGS AND FLANGES 25mm CLEAR FROM CONCRETE



THRUST BLOCK FOR TEE
AND END CAP

NOMINAL DIAMETER Ø (mm)	DEPTH OF BLOCK D (mm)	MAXIMUM TESTING PRESSURE					
		900 kPa		1350 kPa		1800 kPa	
		X (mm)	A (m ²)	X (mm)	A (m ²)	X (mm)	A (m ²)
300	1200	550	0,64	800	0,96	1100	1,27
250	1000	450	0,44	700	0,67	900	0,89
200	800	350	0,29	550	0,43	700	0,57
150	600	300	0,16	400	0,24	550	0,32
100	400	200	0,07	300	0,11	350	0,14
75	300	150	0,04	200	0,06	300	0,08
50	200	100	0,02	150	0,03	200	0,04

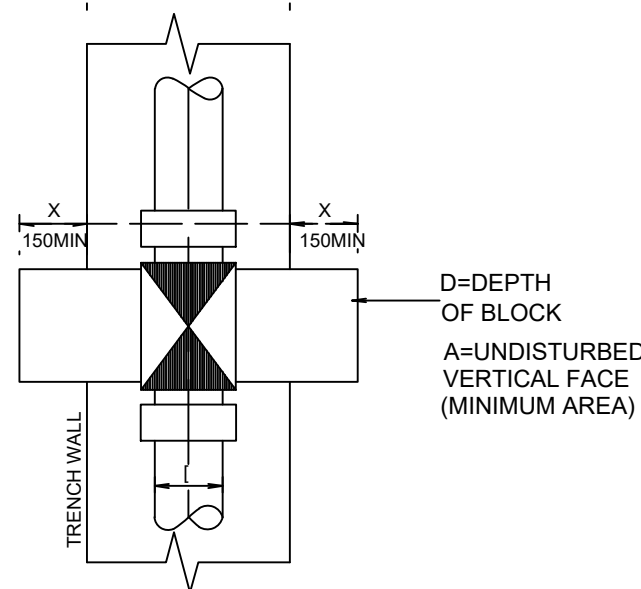
1. THIS TABLE IS VALID FOR 100 kPa EARTH BEARING PRESSURE
2. X- DIMENSION MAY BE REDUCED FOR HIGHER EARTH BEARING PRESSURES
3. Z SHALL BE THE MINIMUM OF X/2 OR W/2
4. HALF OF THE DEPTH OF THE BLOCK SHALL BE BELOW THE PIPE AXIS
5. KEEP COUPLINGS AND FLANGES 25mm CLEAR FROM CONCRETE



THRUST BLOCK FOR 90° BEND

NOMINAL DIAMETER Ø (mm)	DEPTH OF BLOCK D (mm)	MAXIMUM TESTING PRESSURE					
		900 kPa		1350 kPa		1800 kPa	
		X (mm)	A (m ²)	X (mm)	A (m ²)	X (mm)	A (m ²)
300	1200	750	0,90	1150	1,35	1550	1,81
250	1000	650	0,63	950	0,94	1250	1,26
200	800	500	0,40	750	0,60	1000	0,81
150	600	400	0,23	600	0,34	750	0,46
100	400	250	0,10	400	0,15	500	0,20
75	300	200	0,06	300	0,09	400	0,12
50	200	150	0,03	200	0,04	250	0,05

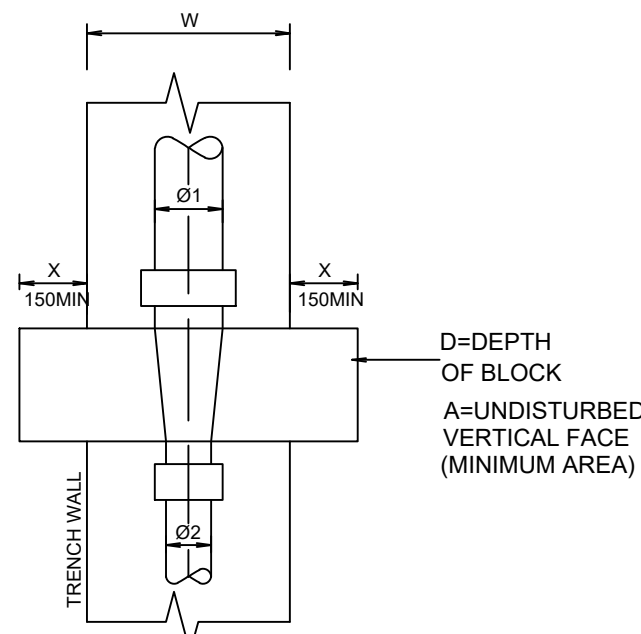
1. THIS TABLE IS VALID FOR 100 kPa EARTH BEARING PRESSURE
2. X- DIMENSION MAY BE REDUCED FOR HIGHER EARTH BEARING PRESSURES
3. Z SHALL BE THE MINIMUM OF X/2 OR W/2
4. HALF OF THE DEPTH OF THE BLOCK SHALL BE BELOW THE PIPE AXIS
5. KEEP COUPLINGS AND FLANGES 25mm CLEAR FROM CONCRETE



THRUST BLOCK FOR GATE VALVE

NOMINAL DIAMETER Ø (mm)	DEPTH OF BLOCK D (mm)	MAXIMUM TESTING PRESSURE					
		900 kPa		1350 kPa		1800 kPa	
		X (mm)	A (m ²)	X (mm)	A (m ²)	X (mm)	A (m ²)
300	500	500	0,64	850	0,96	1150	1,27
250	450	350	0,45	600	0,67	850	0,89
200	400	250	0,29	400	0,43	600	0,57
150	350	150	0,16	200	0,24	350	0,32
100	300	150	0,07	150	0,11	150	0,14
75	250	150	0,04	150	0,06	150	0,08
50	200	150	0,02	150	0,03	150	0,04

1. THIS TABLE IS VALID FOR 100 kPa EARTH BEARING PRESSURE
2. X- DIMENSION MAY BE REDUCED FOR HIGHER EARTH BEARING PRESSURES
3. X - DIMENSION SHALL BE 150mm MINIMUM
4. THE BLOCK DEPTH SHALL BE MEASURED FROM THE PIPE AXIS DOWNWARDS
5. KEEP COUPLINGS AND FLANGES 25mm CLEAR OF CONCRETE



THRUST BLOCK FOR REDUCER

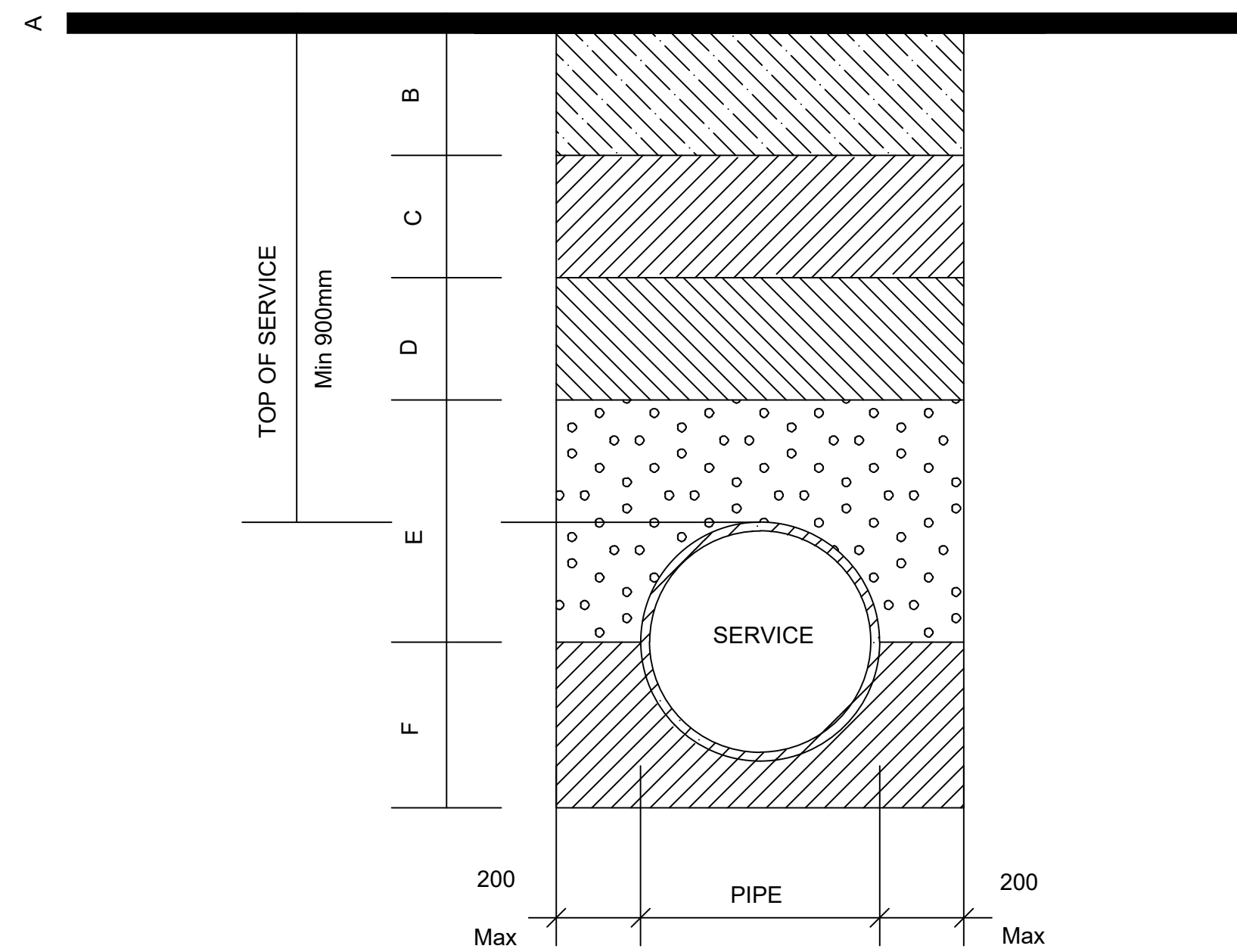
NOMINAL DIAMETER Ø1 (mm)	NOMINAL DIAMETER Ø2 (mm)	DEPTH OF BLOCK D (mm)	MAXIMUM TESTING PRESSURE					
			900 kPa		1350 kPa		1800 kPa	
			X (mm)	A (m ²)	X (mm)	A (m ²)	X (mm)	A (m ²)
300	250/200	700	250	0,35	400	0,53	550	0,71
250	200/150	650	250	0,29	350	0,43	450	0,57
200	150/100	600	200	0,22	300	0,32	400	0,43
150	100/75	500	150	0,12	200	0,18	250	0,24
100	75/50	400	150	0,06	150	0,08	150	0,11
75	50	300	100	0,03	150	0,04	150	0,05

1. THIS TABLE IS VALID FOR 100 kPa EARTH BEARING PRESSURE
2. X- DIMENSION MAY BE REDUCED FOR HIGHER EARTH BEARING PRESSURES
3. X- DIMENSION SHALL BE 150mm MINIMUM
4. HALF OF THE DEPTH OF THE BLOCK SHALL BE BELOW THE PIPE AXIS
- 5 KEEP COUPLINGS AND FLANGES 25mm CLEAR OF CONCRETE

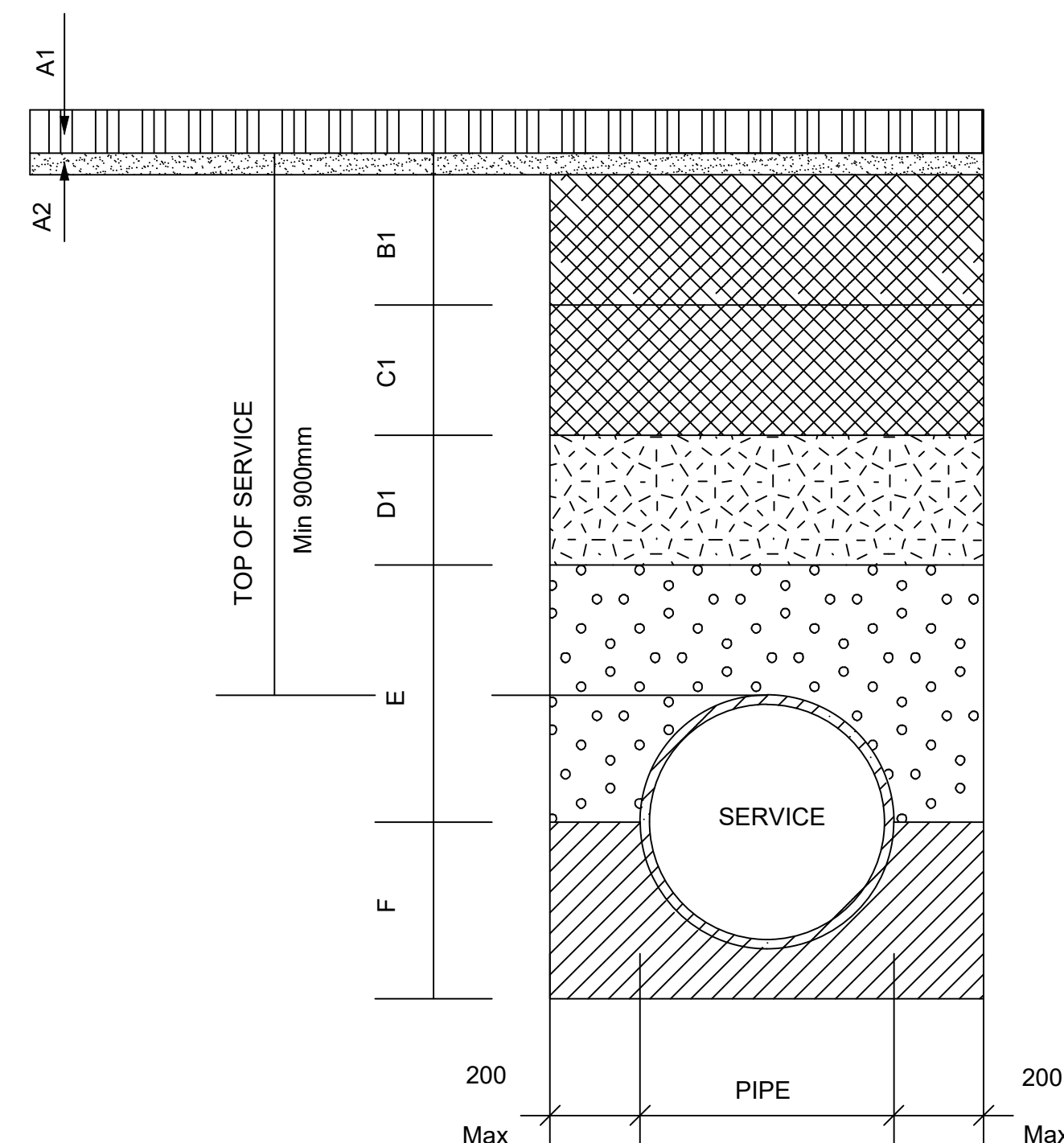
- GENERAL NOTES
- 1) ALL AMBIGUITIES ON DRAWING MUST BE REPORTED TO THE DESIGN ENGINEER BEFORE COMMENCEMENT OF CONSTRUCTION.
 - 2) PRIOR TO ANY WORK BEING DONE, A SURVEY OF THE EXISTING GROUND WORK, TO BE PROVIDED TO THE ENGINEER BY THE CONTRACTOR.
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FOR APPROVAL

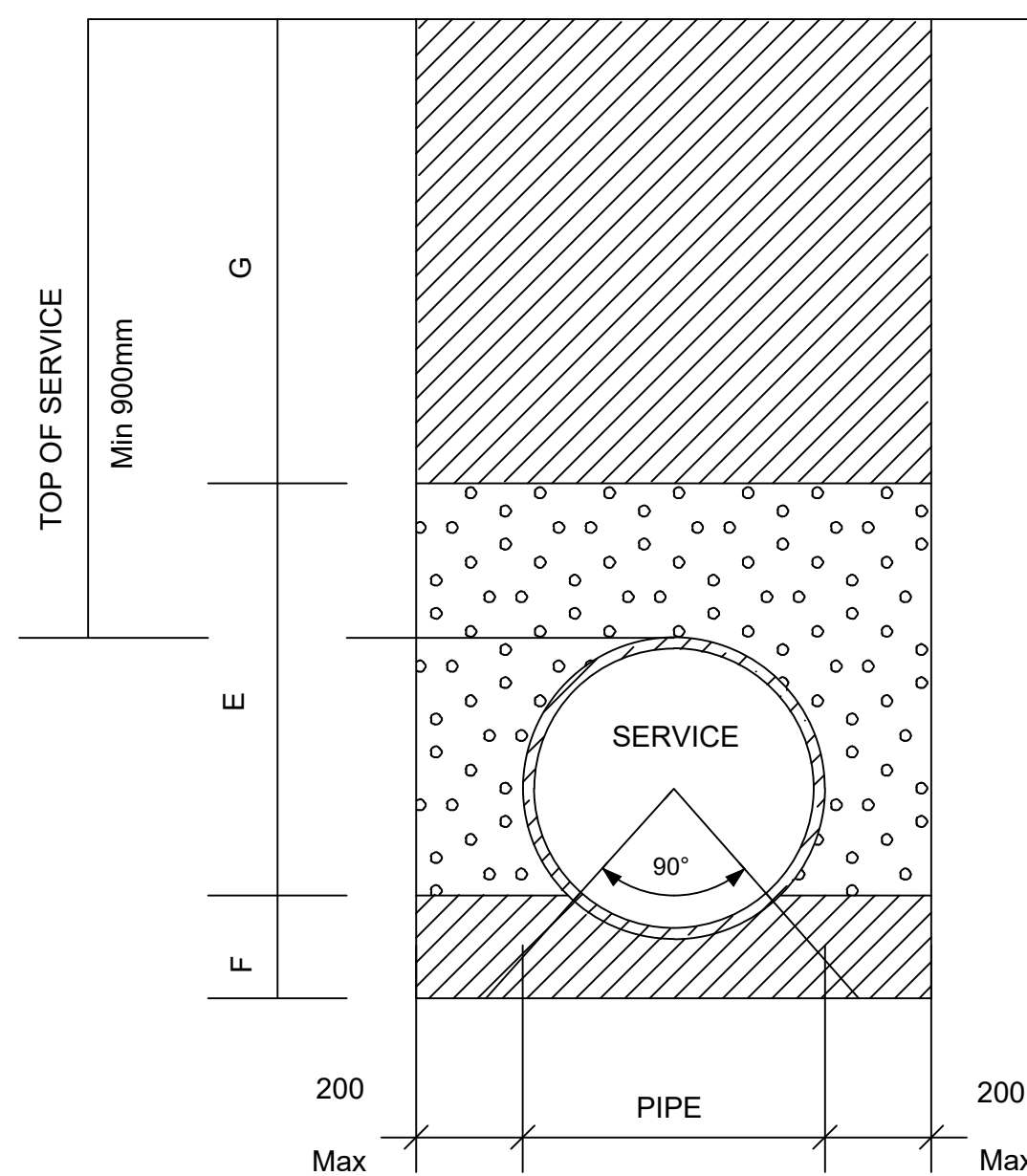
NO.	DATE	AMENDMENTS	BY	APPROVED	 Mamadi & Company SA FIRST FLOOR SOFTBRAND THANDANANI OFFICE PARK 16 INVICTA ROAD MIDRAND 1658 TEL: 011 532 8659 EMAIL: info@mamadi.co.za	DRAWN BY : M Z NKALA		 INALA LOCAL MUNICIPALITY PRIVATE BAG X 15, PRIVAT SAK, BOTHAVILLE, 9660 TEL: +27 56 514 9200 EMAIL: imokotedi@inala.org.za	NALA LOCAL MUNICIPALITY		NMKV - 2401 - WATER	DETAILED DESIGN STAGE		
A	28/08/23	PRELIMINARY DESIGN REPORT DRAWINGS	SPT	MGT					MONYAKENG - NEW WATER NETWORK FOR 950 STANDS IN KHALINKOMO AND VERGENOEG				NMKV - 2401 - GD - 0009 - 00	
B	20/10/23	DETAILED DESIGN REPORT DRAWINGS	MZN	MGT					PIPE THRUST BLOCK DETAILS					



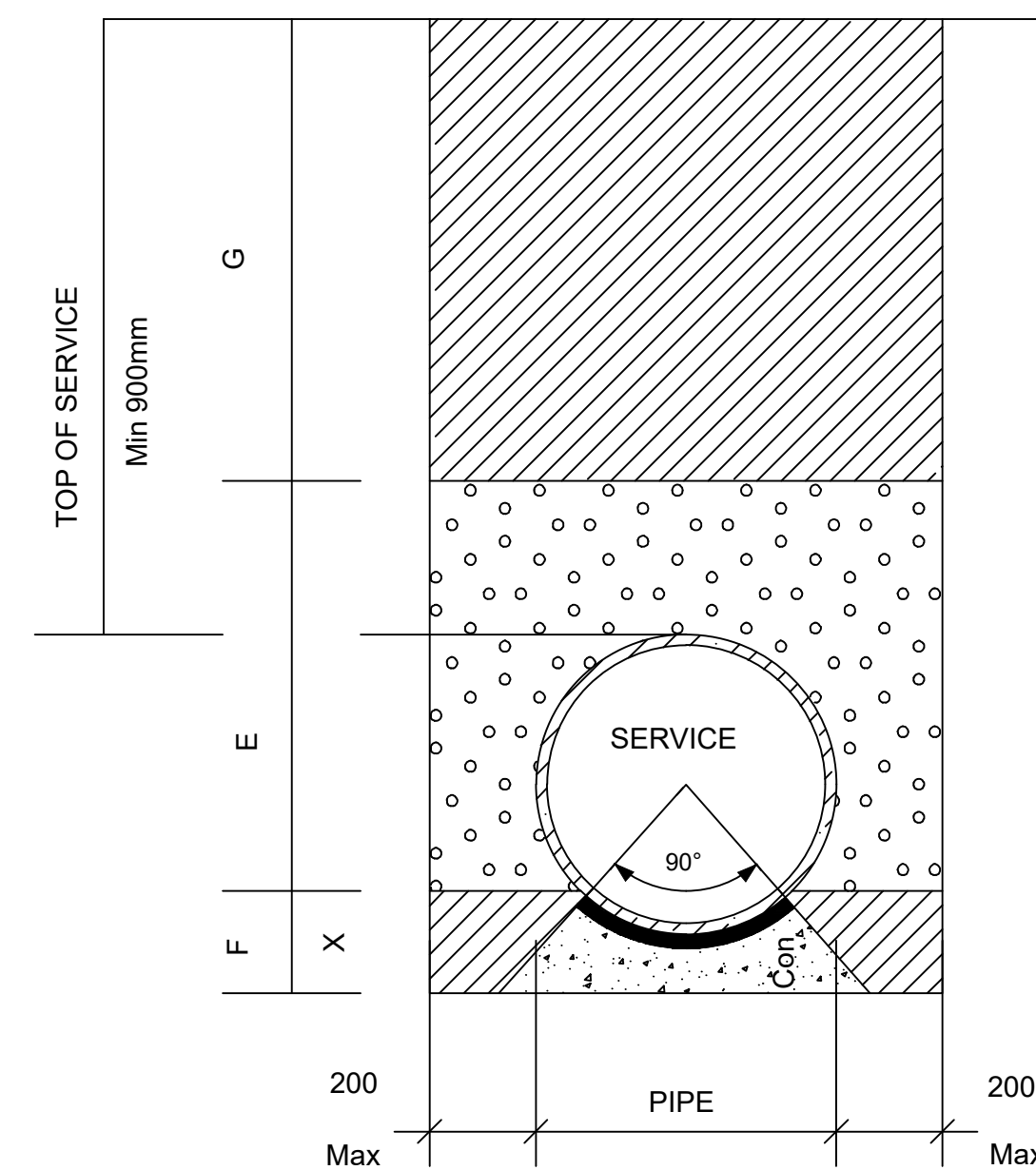
TRENCH BACKFILLING FOR SURFACED ROADS



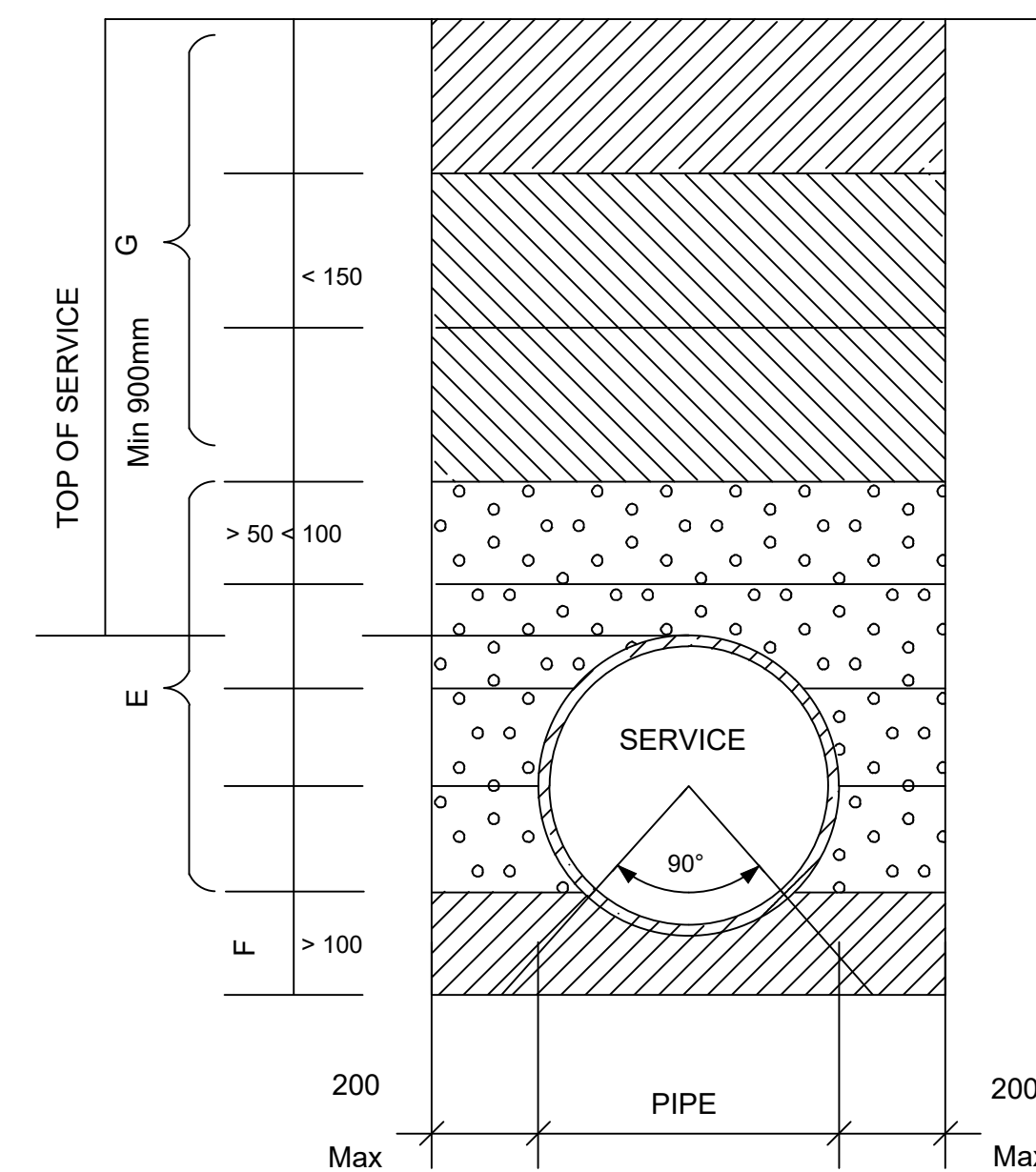
TRENCH BACKFILLING FOR PAVED FOOTWAYS



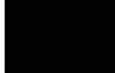
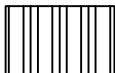
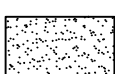
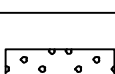
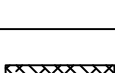
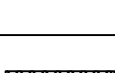
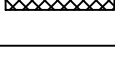
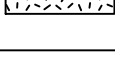
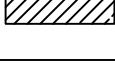
TRENCH BACKFILLING FOR CLASS C BEDDING
SABS(SANS) 1200 LB



TRENCH BACKFILLING FOR CLASS A BEDDING
SABS (SANS) 1200 LB
 X = D/4 - SUBJECT TO
 X < 75mm AND NOT > 300mm

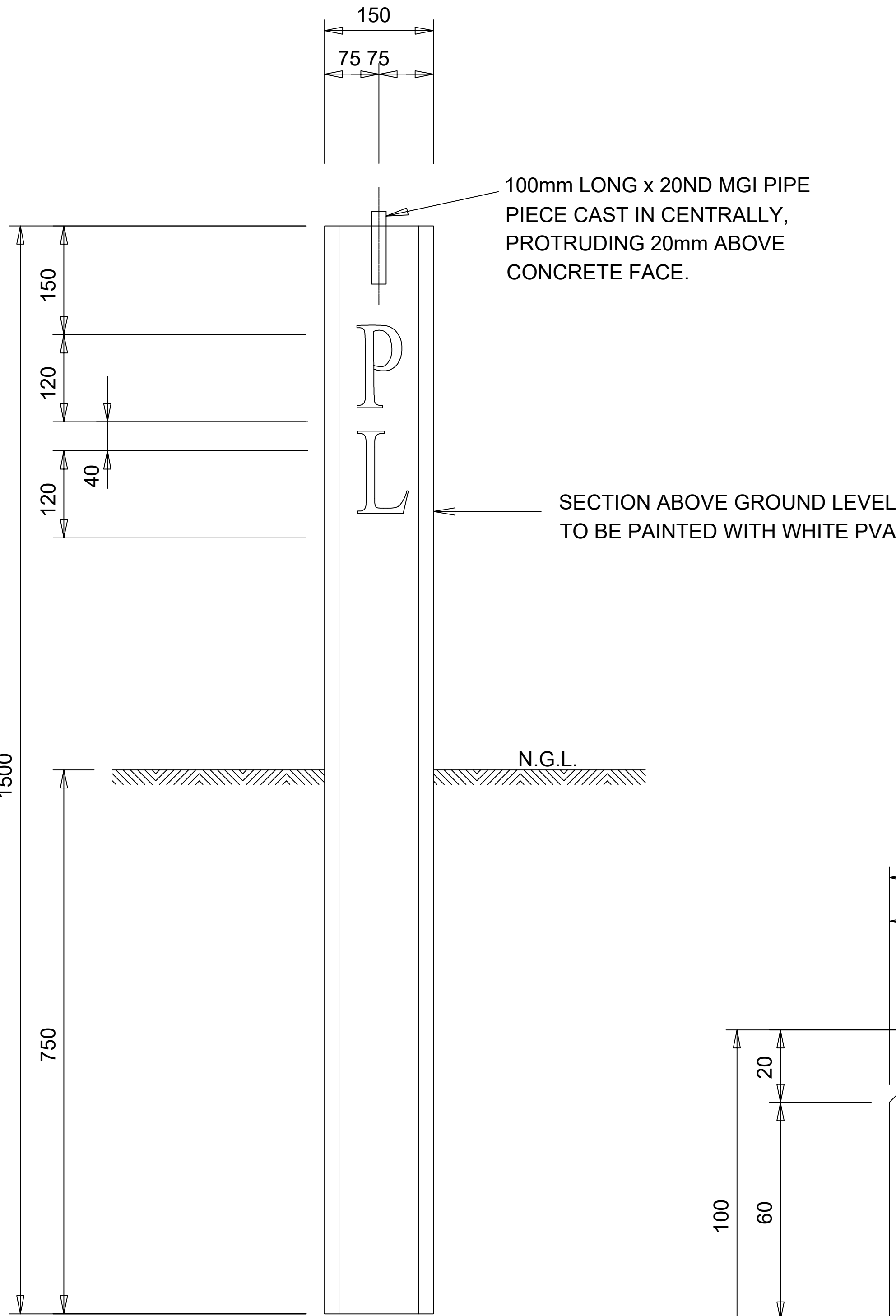


FLEXIBLE PIPE SUPPORTED ON SELECTED
GRANULAR MATERIAL
SABS (SANS) 1200 LB

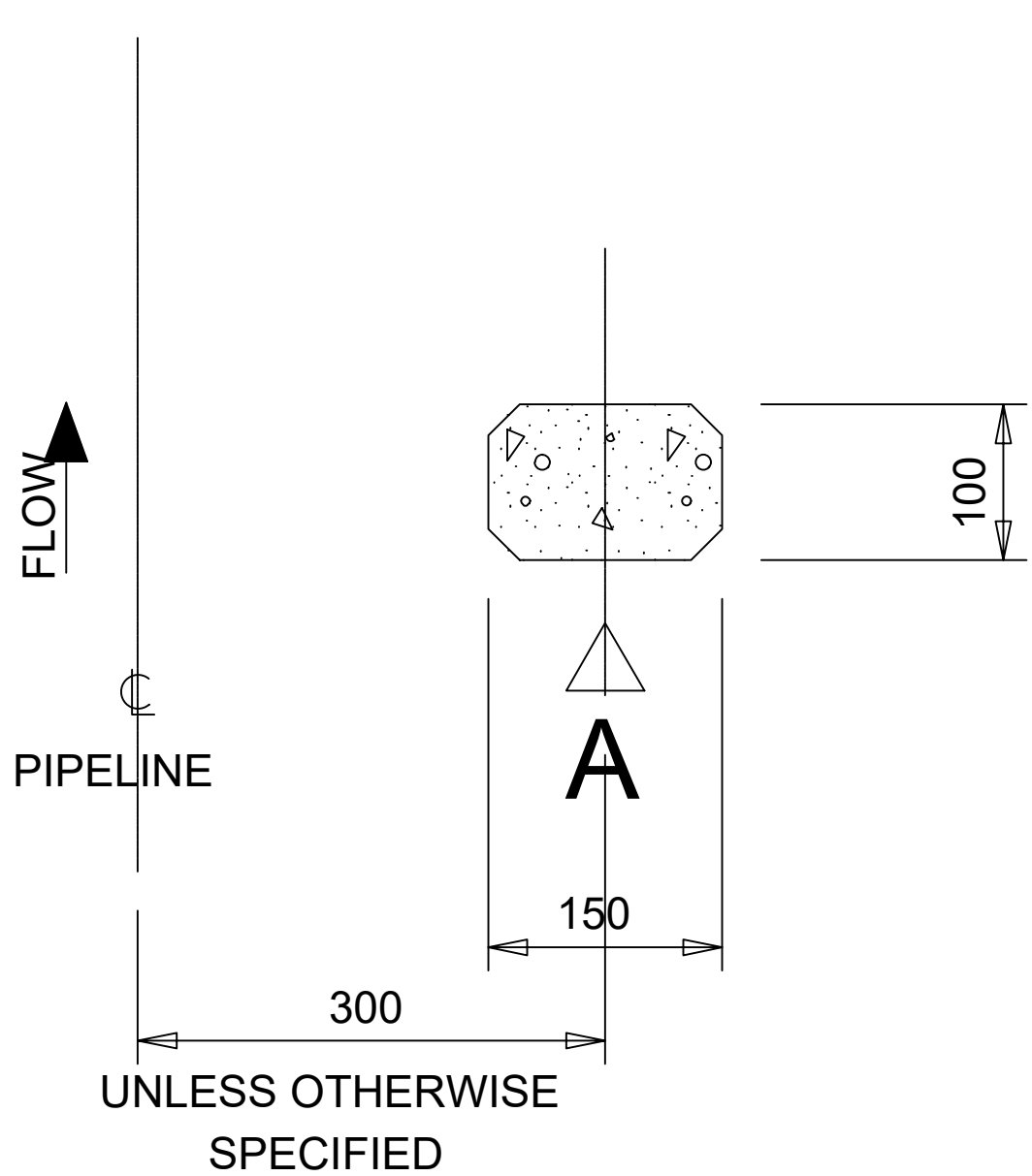
ITEM	LEGEND	MATERIAL	COMPACTION
A		MATCH EXISTING SEAL	*
A1		MATCH EXISTING PAVE	*
A2		20mm GRADED RIVER SAND	*
B		90mm CRUSHED STONE BASE TO 86% APP.	
C		125mm SUBBASE	95% Mod AASHTO (C3)
D		125mm SELECTED SUBGRADE	93% Mod AASHTO (C4)
E		SELECTED BLANKET	90% Mod AASHTO
F		SELECTED BEDDING	90% Mod AASHTO
B1		125 (G5)	95% Mod AASHTO
C1		125 (G7)	93% Mod AASHTO
D1		125 (G9)	90% Mod AASHTO
G		MAIN FILL	94% Mod AASHTO
Con		Grade 19	20 MPa Concrete

FOR APPROVAL

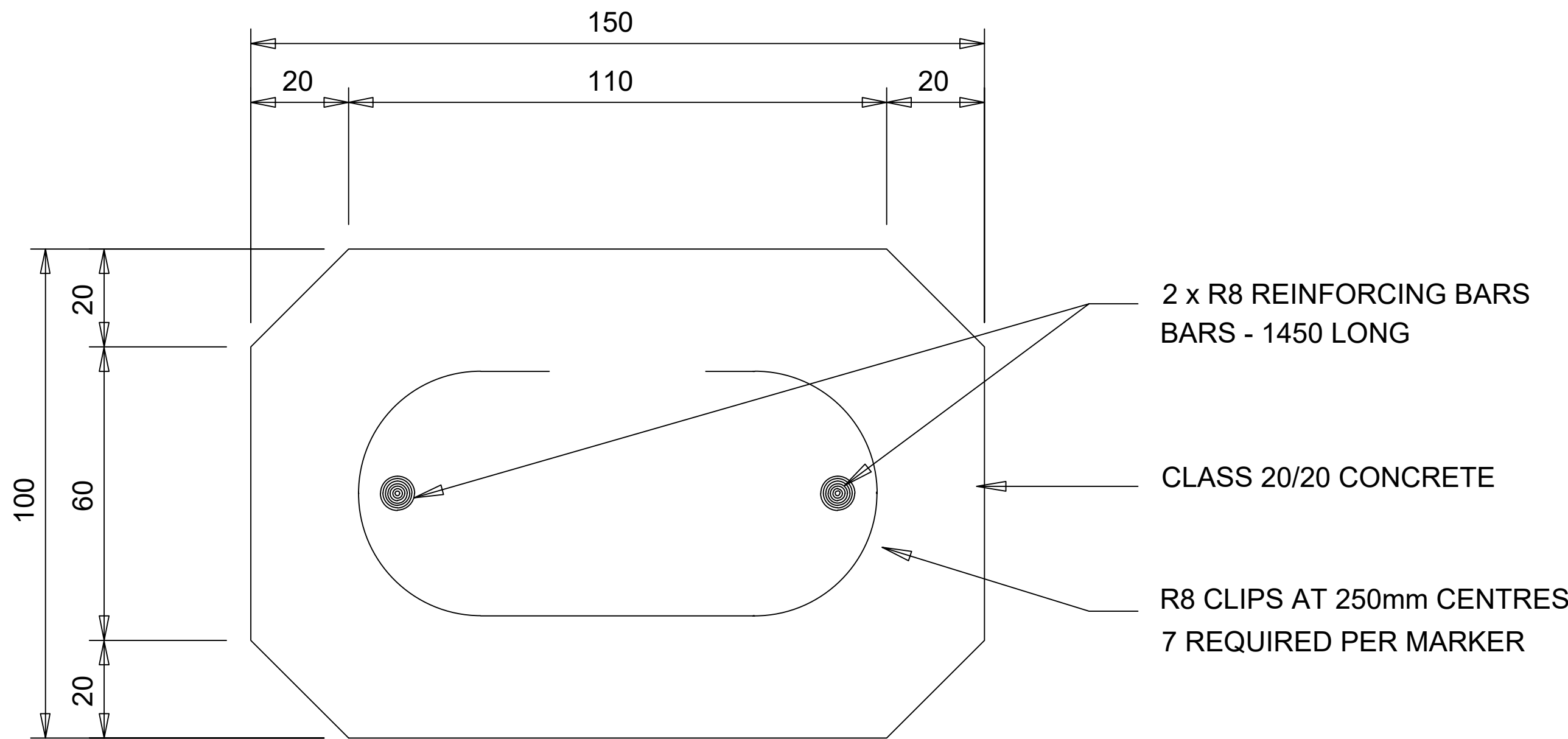
[illegible]



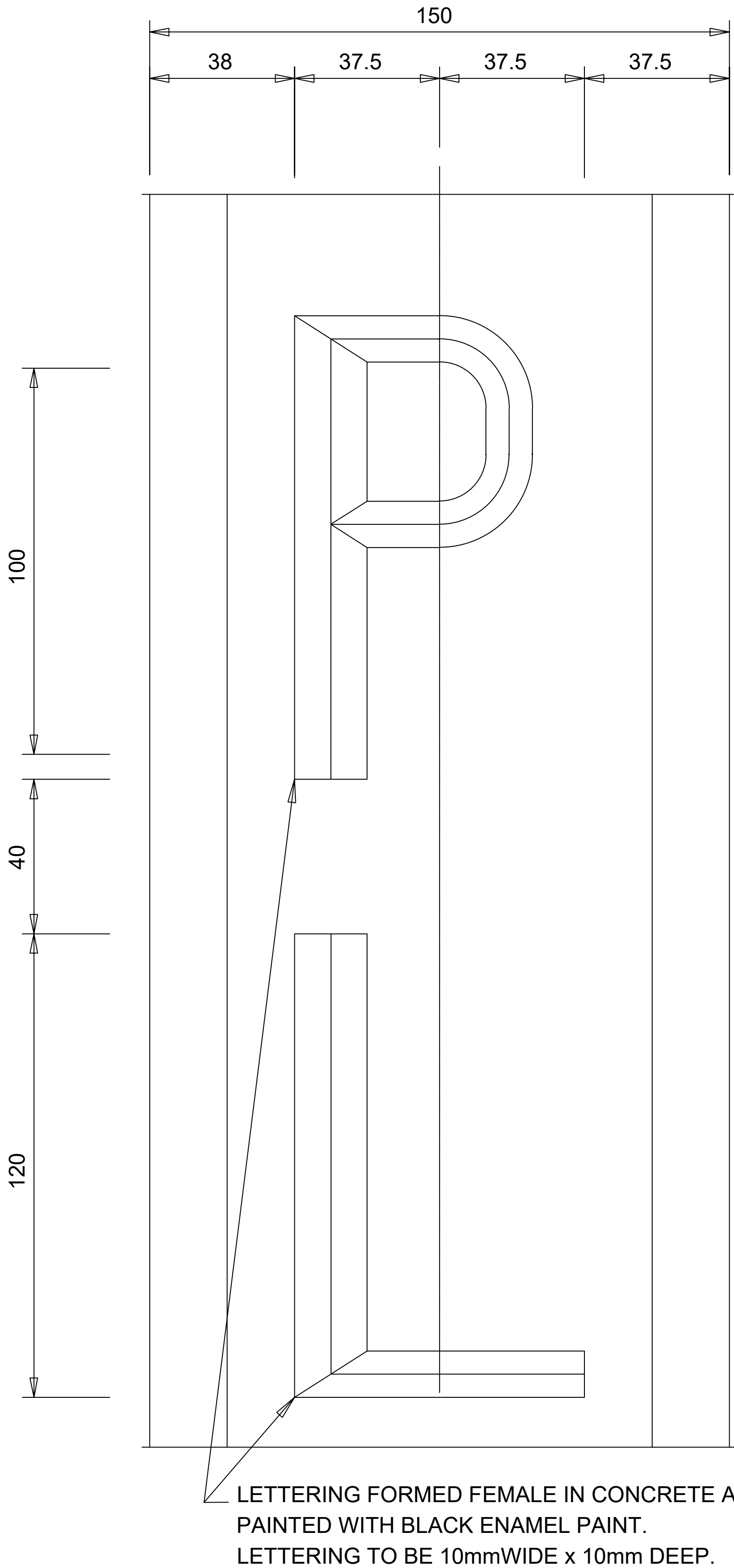
ELEVATION 'A'



PLAN
N.T.S



REINFORCEMENT DETAIL
N.T.S



LETTERING DETAILS
N.T.S

FOR APPROVAL

NO.	DATE	AMENDMENTS	BY	APPROVED	 Mamadi & Company SA	DRAWN BY : M Z NKALA		 INALA LOCAL MUNICIPALITY PRIVATE BAG X 15, PRIVAT SAK, BOTHAVILLE, 9660 TEL: +27 56 514 9200 EMAIL: imokotedi@nala.org.za	NALA LOCAL MUNICIPALITY		NMKV - 2401 - WATER		DETAILED DESIGN STAGE
A	28/08/23	PRELIMINARY DESIGN REPORT DRAWINGS	SPT	MGT					MONYAKENG - NEW WATER NETWORK FOR 950 STANDS IN KHALINKOMO AND VERGENOEG				
B	20/10/23	DETAILED DESIGN REPORT DRAWINGS	MZN	MGT					PIPELINE MARKER DETAILS				
					FIRST FLOOR SOFTBRAND THANDANANI OFFICE PARK 16 INVICTA ROAD MIDRAND 1658 TEL: 011 532 8659 EMAIL: info@mamadi.co.za								