

KOUGA LOCAL MUNICIPALITY KWANOMZAMO BULK WATER PIPELINE DRAWING REGISTER		
DESCRIPTION	DWG No	REV No
LOCALITY PLAN	2298-T-001	REV00
EXISTING SERVICES KEY PLAN	2298-T-002	REV00
EXISTING SERVICE LAYOUT (SHEET 1 OF 2)	2298-T-003	REV00
EXISTING SERVICE LAYOUT (SHEET 2 OF 2)	2298-T-004	REV00
PROJECT NAMEBOARD	2298-T-005	REV00
PROPOSED WATER INFRASTRUCTURE UPGRADES	2298-T-100	REV00
KEY PLAN	2298-T-101	REV00
KWANOMZAMO BULK WATER PIPELINE (SHEET 1 OF 5)	2298-T-200	REV00
KWANOMZAMO BULK WATER PIPELINE (SHEET 2 OF 5)	2298-T-201	REV00
KWANOMZAMO BULK WATER PIPELINE (SHEET 3 OF 5)	2298-T-202	REV00
KWANOMZAMO BULK WATER PIPELINE (SHEET 4 OF 5)	2298-T-203	REV00
KWANOMZAMO BULK WATER PIPELINE (SHEET 5 OF 5)	2298-T-204	REV00
HUMANSDORP WTW RESERVOIR OUTLET CHAMBER DETAILS	2298-T-300	REV00
ISOLATION AND AIR VALVE CHAMBER DETAILS	2298-T-301	REV00
AIR VALVE CHAMBER DETAILS	2298-T-302	REV00
SCOUR VALVE CHAMBER DETAILS	2298-T-303	REV00
150mm Ø PRV CHAMBER DETAILS - NEW 315mm Ø BULK PIPELINE SECTION	2298-T-304	REV00
80mm Ø PRV CHAMBER DETAILS - EXISTING 100mm Ø PIPELINE	2298-T-305	REV00
TYPICAL TRENCH DETAILS	2298-T-306	REV00
TYPICAL DETAILS - WATERCOURSE, VALVE MARKERS AND THRUST BLOCKS	2298-T-307	REV00

DRAWING SUBMISSIONS				
REV	DATE	SUBMITTED TO	STATUS	DESCRIPTION
00	MAR 2026	KOUGA LOCAL MUNICIPALITY	FOR TENDER	FIRST ISSUE



IMPLEMENTATION OF A NEW BULK WATER MAIN FROM HUMANSDORP WATER TREATMENT WORKS TO KWANOMZAMO

PROJECT STATUS					
REV	DRAWINGS AMENDED	DATE	DRAWN BY	AMENDED BY	CHECKED BY

FOR TENDER	AMENDMENTS				SCALE	SCALE ON REDUCED DRAWING	DESIGN	CH	ENGINEERING ADVICE AND SERVICES associated with ULWAZI 73 Heugh Road, Walmer P.O. Box 13867 Humewood Port Elizabeth 6013 tel/fax: (041) 581 2421		APPROVED	APPROVED		PROJECT	CONTRACT NO. 68/2026
	NO.	DATE	DESCRIPTION	APPROVED			DRAWN	EAR			ENGINEER	CLIENT		IMPLEMENTATION OF A NEW BULK WATER MAIN FROM HUMANSDORP WATER TREATMENT WORKS TO KWANOMZAMO	
							APPROVED	CH			DATE	DATE		DWG DESCRIPTION	
														COVER PAGE	



LEGEND

CADASTRAL

WETLANDS

RIVERS

EXISTING WATER PIPELINES

EXISTING SEWER PIPELINES

EXISTING FIBRE LINES



TO N2

R102 TO JEFFREYS BAY

TO ST FRANCIS BAY

KWANOMZAMO

GEELOHOUT

HUMANSDORP WTW

R330 (MR00391)

D00185

VOORTREKKER STREET (MR00390)

R330 (MR00393)

2298-T-003 (SHEET 1 OF 2)

2298-T-004 (SHEET 2 OF 2)

HUMANSDORP

TO THORNHAM

*AS BUILT - NOTES

FOR TENDER

AMENDMENTS			
NO.	DATE	DESCRIPTION	APPROVED

SCALE

SCALE ON REDUCED DRAWING



1:250



DESIGN

CH

DRAWN

EAR

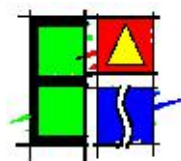
APPROVED

CH

DATE

JUNE 2025

ENGINEERING ADVICE
AND SERVICES
associated with ULWAZI
73 Heugh Road, Walmer
P.O. Box 15867
Humewood
Port Elizabeth
6013
tel/fax: (041) 581 2421



APPROVED

ENGINEER

DATE

APPROVED

CLIENT

DATE



PROJECT

IMPLEMENTATION OF A NEW BULK WATER MAIN FROM HUMANSDORP
WATER TREATMENT WORKS TO KWANOMZAMO

DWG DESCRIPTION

EXISTING SERVICES - KEY PLAN

CONTRACT NO.

68/2026

DWG NO.

2298-T-002

ISSUE



“AS BUILT” - NOTES FOR TENDER	AMENDMENTS				SCALE	SCALE ON REDUCED DRAWING	DESIGN	CH	ENGINEERING ADVICE AND SERVICES associated with ULWAZI 73 Hough Road, Walmer P.O. Box 13867 Hurmeewood Port Elizabeth 6013 tel/fax: (041) 581 2421 	APPROVED	APPROVED		PROJECT	CONTRACT NO.			
	NO.	DATE	DESCRIPTION	APPROVED	 1:500	DRAWN	EAR	IMPLEMENTATION OF A NEW BULK WATER MAIN FROM HUMANSDORP WATER TREATMENT WORKS TO KWANOMZAMO		68/2026							
						APPROVED	CH				ENGINEER		CLIENT				
						DATE	JUNE 2025				DATE		DATE	DWG DESCRIPTION	DWG NO.		
														EXISTING SERVICES LAYOUT (SHEET 1 OF 2)	2298-T-003		
														ISSUE			

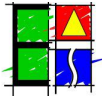
NOTES:

1. BLUE BACKGROUND WITH WHITE BLOCKS FOR NAMES OF CONSULTANTS AND CONTRACTORS.
2. NAME OF CLIENT AND PROJECT DESCRIPTION IN WHITE LETTERING ON BLUE BACKGROUND. IF REQUIRED, THE CLIENT'S LOGO CAN BE PLACED ON A WHITE BACKGROUND IN THE POSITION AS INDICATED. IF NOT REQUIRED, BACKGROUND IS BLUE.
3. THE HEIGHT OF THE BOARD CAN BE INCREASED IN 550mm INCREMENTS TO ALLOW FOR NAMES OF ADDITIONAL CONSULTANTS AND/OR CONTRACTORS EG. ELECTRICAL ETC.
4. TYPE-FACE TO BE USED SHALL BE NEO SANS OR ARIAL. IT IS RECOMMENDED THAT LETRASIGN, SELF-ADHESIVE PVC SIGN LETTERING BE USED.
5. THE BOARD MATERIAL TO BE 1mm THICK RUST RESISTANT CHROMADEK METAL OR 5mm THICK TEMPERED HARDBOARD WITH SMOOTH SURFACE.
6. THE NOTICE BOARD MUST BE MOUNTED ON A STRONG SUPPORTING WOODEN OR STEEL STRUCTURE, APPROVED BY THE ENGINEER AND MUST BE PROPERLY MAINTAINED DURING THE CONSTRUCTION PERIOD. THE BOARD MUST BE REMOVED AFTER THE RETENTION HAS BEEN PAID.
7. THE EPWP LOGO MUST ONLY BE USED IF THE PROJECT IS EPWP REGISTERED.
8. THE LOGO FOR THE CLIENT MUST BE OBTAINED ELECTRONICALLY AND PRINTED IN COLOUR ON THE NAME BOARD.
9. THE LOGO FOR THE ENGINEER MUST BE OBTAINED ELECTRONICALLY AND PRINTED IN COLOUR ON THE NAME BOARD.
10. CONTRACTOR TO PROVIDE CONTRACTORS LOGO & HAVE IT PLACED IN CORRECT LOCATION AS INDICATED.

	3575	
	3525	
550		550
200		200
650		150
150		150
150		150
175		175
550		100
25		125
550		150
		100
		75
		100
		125
		150
		100
		25

**KOUGA LOCAL MUNICIPALITY**

CONTRACT NO. 68/2026 FOR THE
IMPLEMENTATION OF A NEW BULK WATER
MAIN FROM WATER HUMANSDORP WATER
TREATMENT WORKS TO KWANOMZAMO

CONSULTING CIVIL ENGINEERS
ENGINEERING ADVICE AND SERVICES (PTY) LTD

CONTRACTOR

FOR TENDER	AMENDMENTS				SCALE N/A	SCALE ON REDUCED DRAWING 	DESIGN	CH		APPROVED	APPROVED		PROJECT	CONTRACT NO.
	NO	DATE	DESCRIPTION	APPROVED			DRAWN	EAR		ENGINEER	CLIENT		IMPLEMENTATION OF A NEW BULK WATER MAIN FROM HUMANSDORP WATER TREATMENT WORKS TO KWANOMZAMO	68/2026
							APPROVED	CH					DWG DESCRIPTION	DWG NO.
							DATE	JUNE 2025					PROJECT NAMEBOARD	2298-T-005
														ISSUE

ENGINEERING ADVICE AND SERVICES associated with ULWAZI
73 Hough Road, Walmer
P.O. Box 13807
Harcourt
Port Elizabeth
6013
tel: (041) 581 2421

LEGEND

CADASTRAL

CONTOURS

KWANOMZAMO ZONE 1 (EAST OF WATERCOURSE)

KWANOMZAMO ZONE 2 (WEST OF WATERCOURSE)

SHUKUSHUKUMA 93 + EXISTING SHUKUSHUKUMA

UPPER GOLF COURSE KWANOMZAMO 400 (POLAR PARK 553)

LOWER GOLF COURSE 153 (POLAR PARK 553)

POLAR PARK 257

BUNGALOWS

GEELHOUT EAST

GEELHOUT WEST

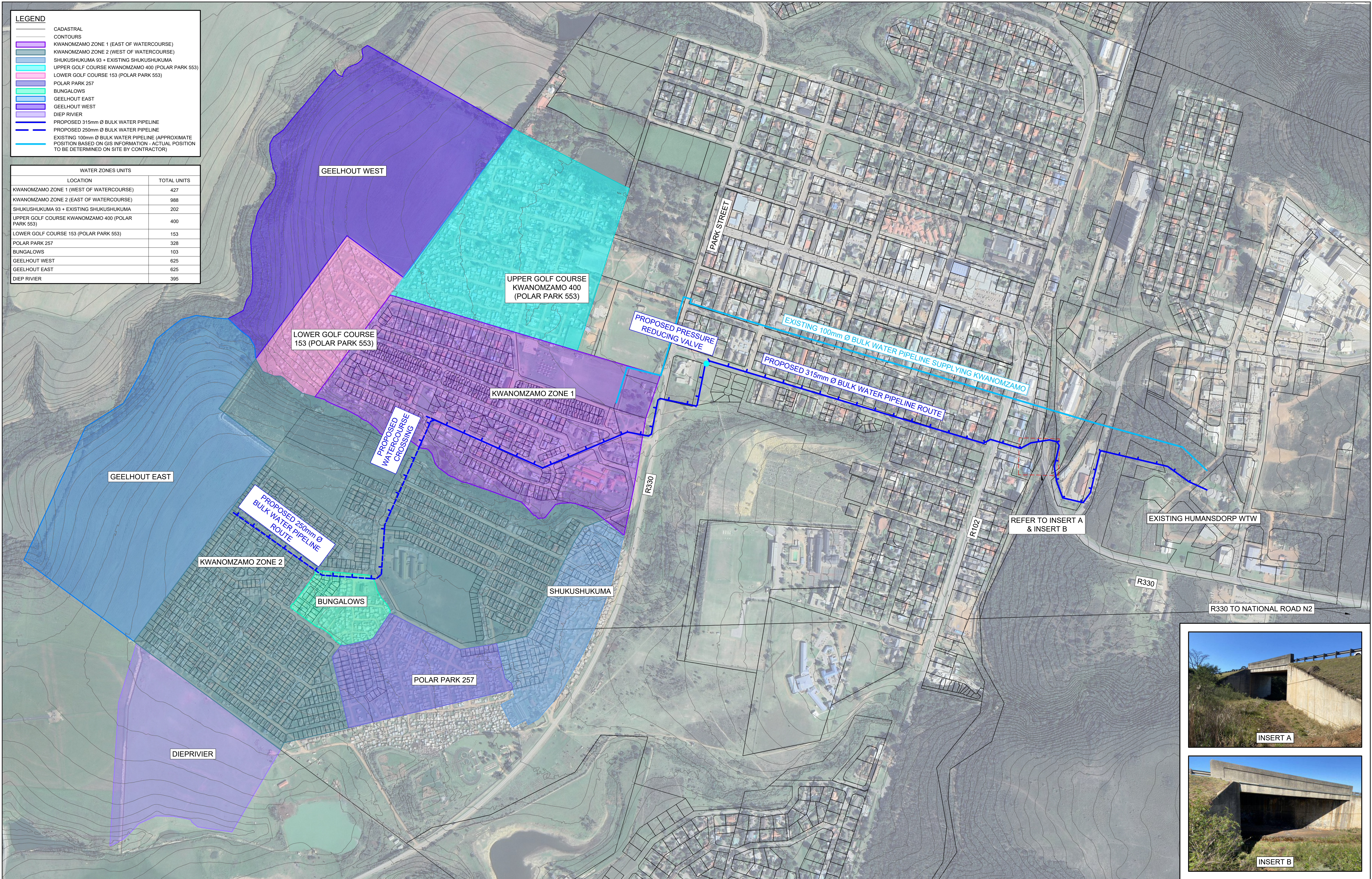
DIEP RIVIER

PROPOSED 315mm Ø BULK WATER PIPELINE

PROPOSED 250mm Ø BULK WATER PIPELINE

EXISTING 100mm Ø BULK WATER PIPELINE (APPROXIMATE POSITION BASED ON GIS INFORMATION - ACTUAL POSITION TO BE DETERMINED ON SITE BY CONTRACTOR)

WATER ZONES UNITS	
LOCATION	TOTAL UNITS
KWANOMZAMO ZONE 1 (WEST OF WATERCOURSE)	427
KWANOMZAMO ZONE 2 (EAST OF WATERCOURSE)	988
SHUKUSHUKUMA 93 + EXISTING SHUKUSHUKUMA	202
UPPER GOLF COURSE KWANOMZAMO 400 (POLAR PARK 553)	400
LOWER GOLF COURSE 153 (POLAR PARK 553)	153
POLAR PARK 257	328
BUNGALOWS	103
GEELHOUT WEST	625
GEELHOUT EAST	625
DIEP RIVIER	395



AS BUILT - NOTES

FOR TENDER

AMENDMENTS			
NO.	DATE	DESCRIPTION	APPROVED

SCALE

SCALE ON REDUCED DRAWING

DESIGN

CH

DRAWN

EAR

APPROVED

CH

DATE

JUNE 2025

ENGINEERING ADVICE AND SERVICES associated with ULWAZI

73 Hough Road, Walmer

P.O. Box 13867

Humewood

Port Elizabeth

6013

tel/fax: (041) 581 2421

APPROVED

ENGINEER

DATE

APPROVED

CLIENT

DATE

PROJECT

IMPLEMENTATION OF A NEW BULK WATER MAIN FROM HUMANSDORP WATER TREATMENT WORKS TO KWANOMZAMO

DWG DESCRIPTION

PROPOSED KWANOMZAMO WATER INFRASTRUCTURE UPGRADES & SUPPLY ZONES

CONTRACT NO.

68/2026

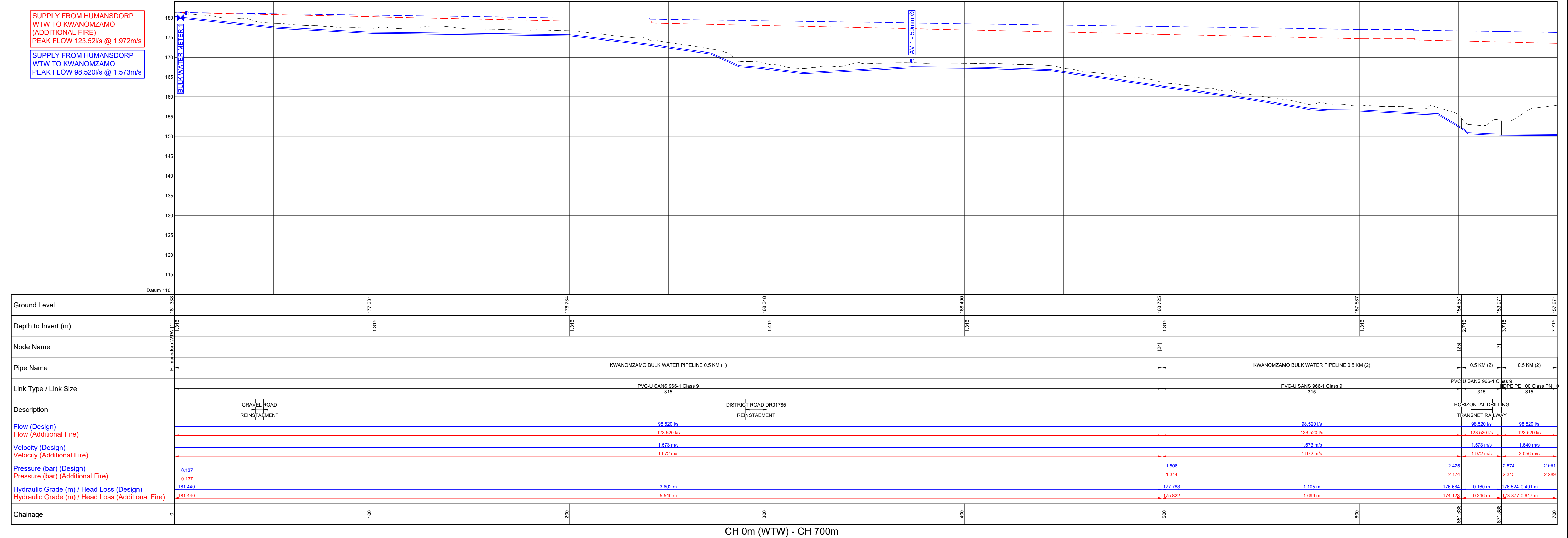
DWG NO.

2298-T-100

ISSUE



FOR TENDER		AS BUILT - NOTES		AMENDMENTS				SCALE	SCALE ON REDUCED DRAWING	DESIGN		CH	ENGINEERING ADVICE AND SERVICES associated with ULWAZI 73 Heugh Road, Walmer P.O. Box 13867 Humewood Port Elizabeth 6013 tel/fax: (041) 581 2421		APPROVED		APPROVED			PROJECT		IMPLEMENTATION OF A NEW BULK WATER MAIN FROM HUMANSDORP WATER TREATMENT WORKS TO KWANOMZAMO	CONTRACT NO.	
		NO.	DATE	DESCRIPTION	APPROVED	DRAWN				EAR	ENGINEER				CLIENT	DWG DESCRIPTION		DWG NO.						
																KWANOMZAMO BULK WATER PIPELINE COMPOSITE PLAN AND LONGSECTION - KEY PLAN		2298-T-101						
																		ISSUE						



FOR TENDER

AS BUILT - NOTES

AMENDMENTS				SCALE	SCALE ON REDUCED DRAWING	DESIGN	CH	ENGINEERING ADVICE AND SERVICES associated with ULWAZI 73 Heugh Road, Walmer P.O. Box 15867 Humewood Port Elizabeth 6013 tel/fax: (041) 581 2421	APPROVED	APPROVED	PROJECT	CONTRACT NO. 68/2026
NO.	DATE	DESCRIPTION	APPROVED									

NO.	DATE	DESCRIPTION	APPROVED

SCALE	SCALE ON REDUCED DRAWING	DESIGN	CH
(HOR) 1:1000	HORIZONTAL SCALE BAR	DRAWN	EAR
(VER) 1:500	VERTICAL SCALE BAR	APPROVED	CH
		DATE	JUNE 2025

APPROVED

ENGINEER

DATE

APPROVED

CLIENT

DATE



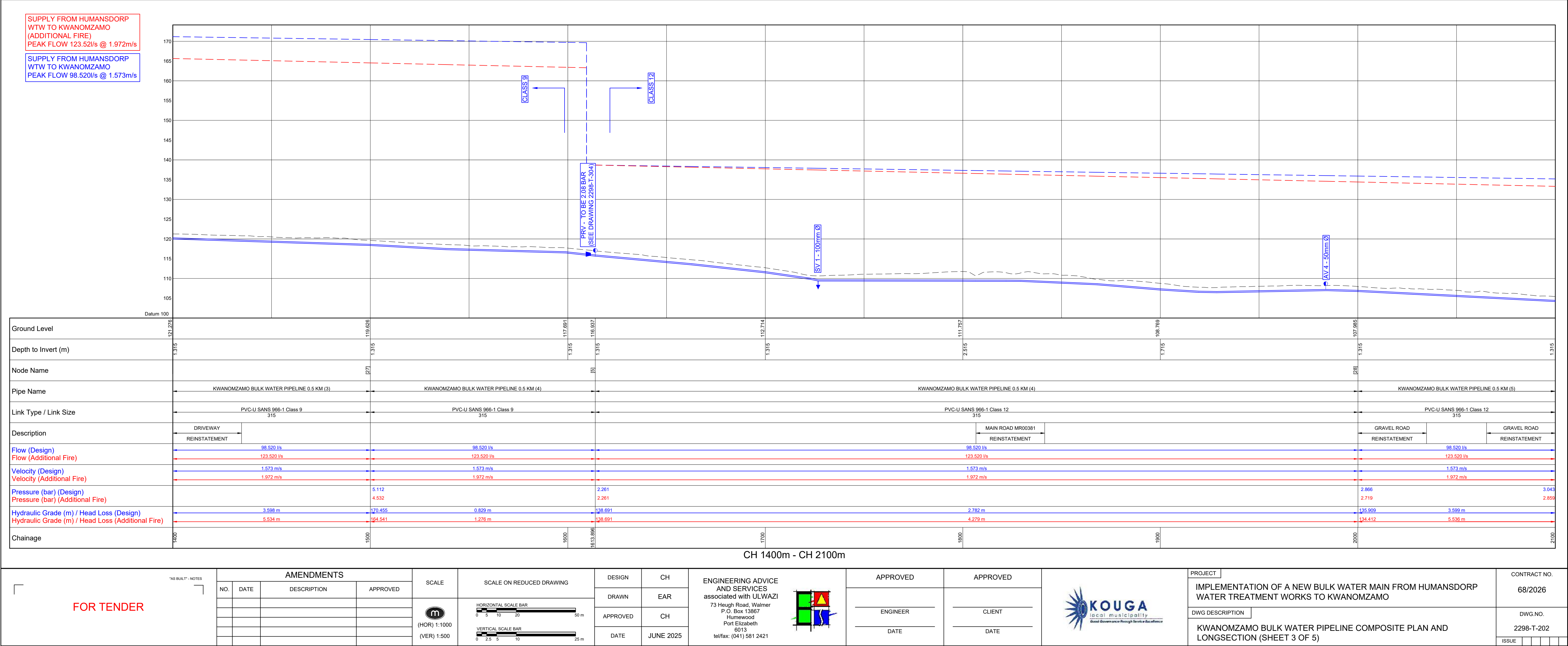
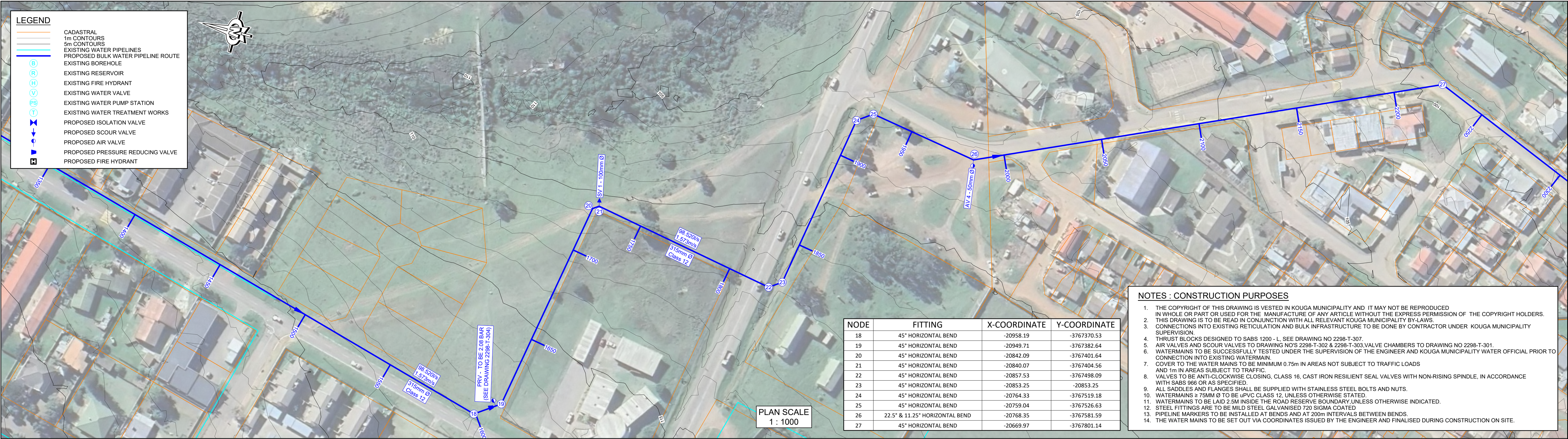
PROJECT

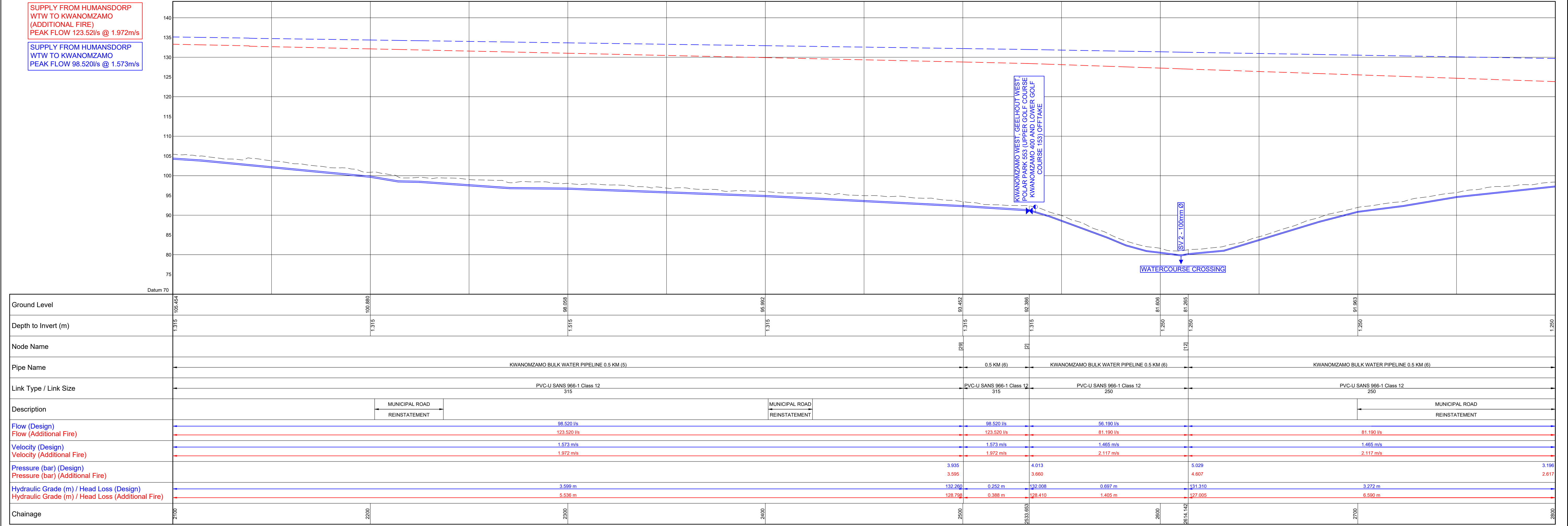
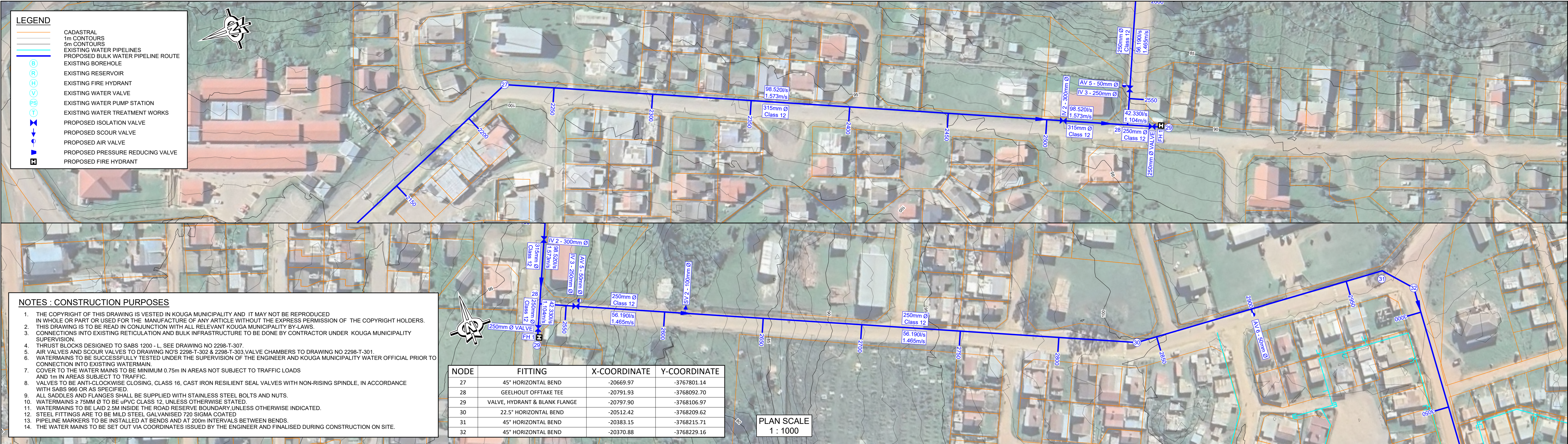
IMPLEMENTATION OF A NEW BULK WATER MAIN FROM HUMANSDORP WATER TREATMENT WORKS TO KWANOMZAMO

DWG DESCRIPTION

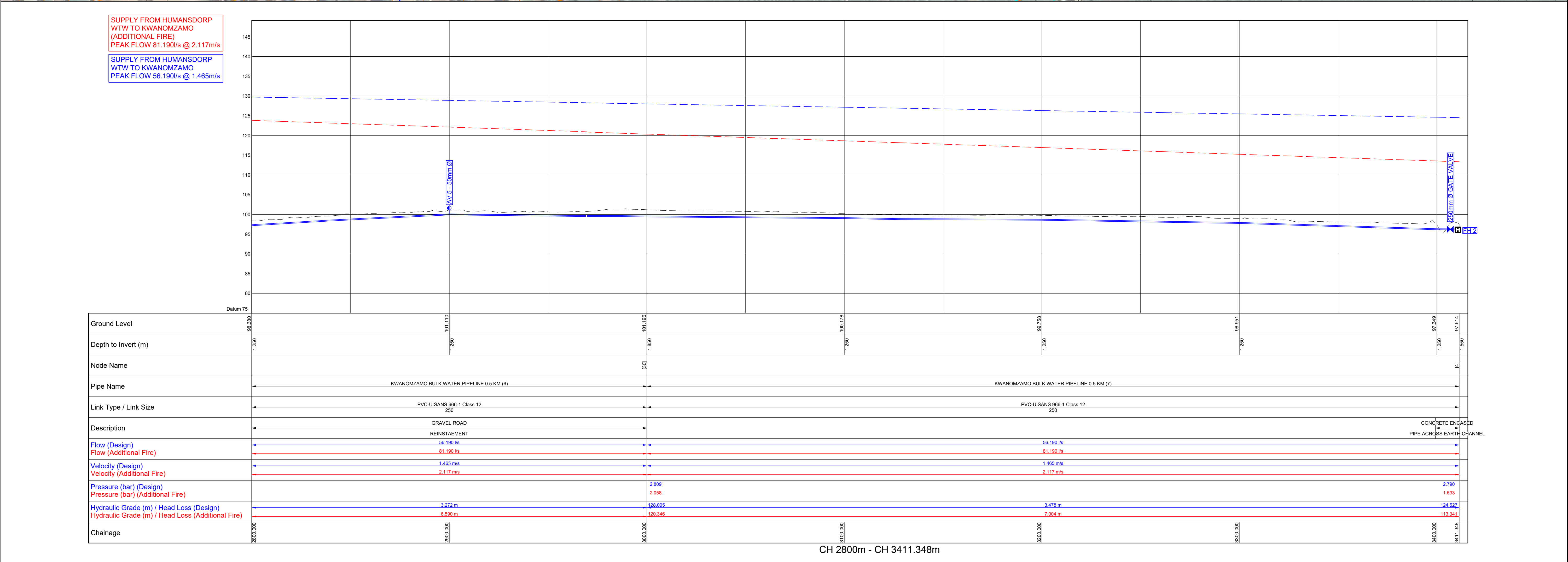
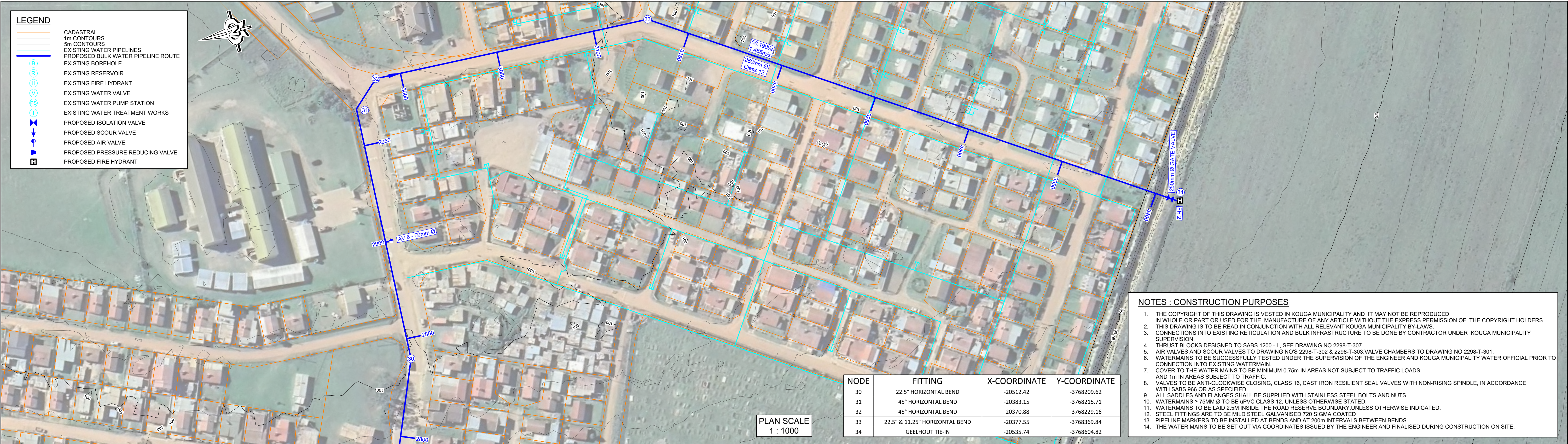
KWANOMZAMO BULK WATER PIPELINE COMPOSITE PLAN AND LONGSECTION (SHEET 1 OF 5)

ISSUE				





FOR TENDER	AMENDMENTS				SCALE (HOR) 1:1000 (VER) 1:500	SCALE ON REDUCED DRAWING HORIZONTAL SCALE BAR 0 5 10 20 50 m VERTICAL SCALE BAR 0 2.5 5 10 25 m	DESIGN	CH	ENGINEERING ADVICE AND SERVICES associated with ULWAZI 73 Heugh Road, Walmer P.O. Box 13667 Humewood Port Elizabeth 6013 tel/fax: (041) 581 2421		APPROVED	APPROVED		PROJECT	IMPLEMENTATION OF A NEW BULK WATER MAIN FROM HUMANSDORP WATER TREATMENT WORKS TO KWANOMZAMO	CONTRACT NO. 68/2026	
	NO.	DATE	DESCRIPTION	APPROVED			DRAWN	EAR			ENGINEER	CLIENT		DWG DESCRIPTION			DWG NO.
								CH									2298-T-203
								DATE			JUNE 2025						ISSUE



GENERAL NOTES APPLICABLE TO ALL MANHOLES, CHAMBERS AND STEEL PIPEWORK:

- ALL DIMENSIONS IN MILLIMETERS.
- ALL LEVELS IN M.S.L.
- 15mm SPX 120 (OR SIMILAR APPROVED) CLOSED CELL FOAM TO BE WRAPPED AROUND THE PERIMETER OF ALL PIPEWORK PASSING THROUGH BRICKWORK OR CONCRETE.
- ALL FLANGES FOR PIPES AND FITTINGS SHALL COMPLY WITH THE REQUIREMENTS OF SABS 1123/NP1600/3.
- ALL FLANGES SHALL BE T16 AND TO BE SUPPLIED COMPLETE WITH SUITABLE FULL-FACE GASKETS.
- ALL BOLTS, NUTS AND WASHERS SHALL BE STAINLESS STEEL GRADE 316L.
- ALL VALVES TO HAVE VALVE MARKERS AND BE ANTI-CLOCKWISE CLOSING CLASS 16, WITH HANDWHEEL IF IN CHAMBER, OTHERWISE WITH CAP TOP.
- ALL LEVELS AND DIMENSIONS SHALL BE CHECKED AND AGREED WITH THE ENGINEER BEFORE ANY WORK MAY COMMENCE.
- ALL STEEL PIPES AND SPECIALS TO BE MILD STEEL GALVANISED 720 SIGMA COATED.
- ALL EXCAVATIONS SHALL BE INSPECTED BY THE ENGINEER BEFORE THE PLACEMENT OF ANY CONCRETE.
- ALL FERROUS COUPLINGS, JOINTS, FLANGES, BOLTS & NUTS BURIED BELOW GROUND LEVEL, AND INSIDE CHAMBER TO BE TREATED WITH DENSO SS PRIME.
- ALL PVCu PIPES SHALL COMPLY WITH THE REQUIREMENTS OF SANS 966-1.
- REFER TO THE SCOPE OF WORK FOR CORROSION PROTECTION OF STEEL PIPES, SPECIALS AND FITTINGS AS WELL AS CI PIPES, SPECIALS, FITTINGS AND VALVES.

FOR BRICK CHAMBERS:

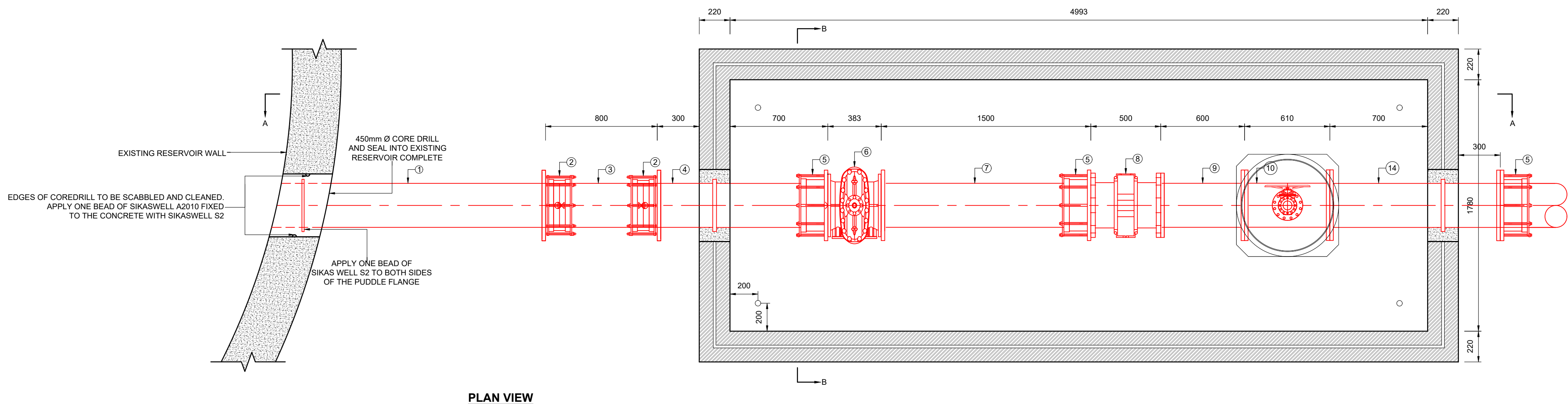
- CONCRETE SHALL BE 30 MPa/19mm.
- ALL VISIBLE CONCRETE CORNERS AND EDGES SHALL BE CHAMFERED. (25x25mm)
- ALL BRICKS SHALL BE LAID IN STRETCHER BOND AND SHALL BE NFX BURNT CLAY ENGINEERING BRICKS 28Mpa COMPLYING WITH THE REQUIREMENTS OF SABS 227. BRICKFORCE EVERY SECOND LAYER.
- TWO LAYERS OF MALTHOID SHALL BE PROVIDED BETWEEN ROOF SLAB AND BRICKWORK TO ACCOMMODATE MOVEMENT.
- 50mm COVER TO BE APPLIED TO ALL STEEL REINFORCING.
- CALCAMITE STEP - IRONS TO BE INSTALLED BELOW MANHOLE COVER AT 300mm VERTICAL CENTRES, STARTING AT 300mm ABOVE THE FLOOR LEVEL AND STAGGERED AT 300mm CENTRES HORIZONTALLY.
- CALCAMITE STEP IRON (ONLY REQUIRED IF CHAMBER DEPTH >2m)

ITEM LIST:

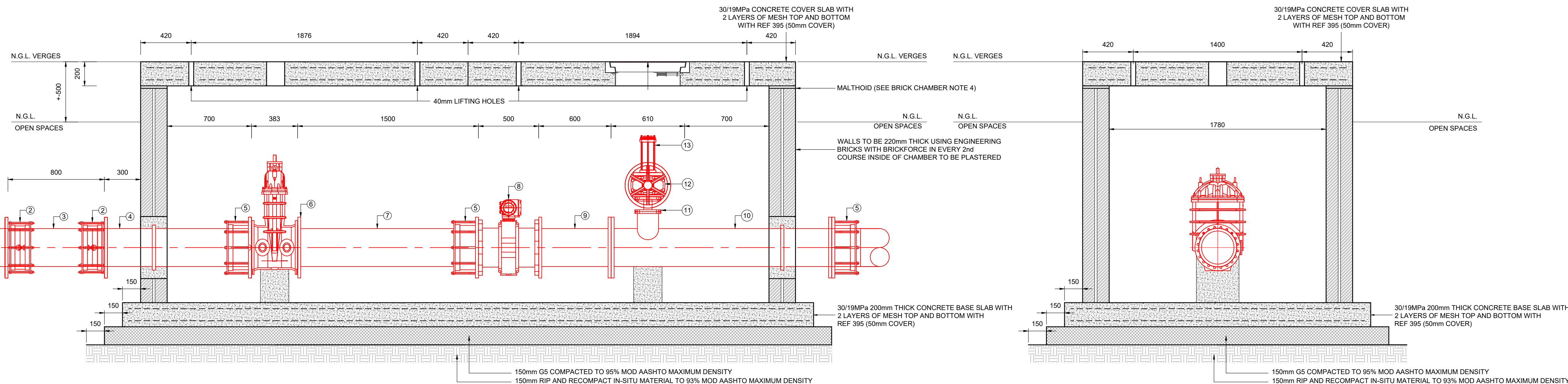
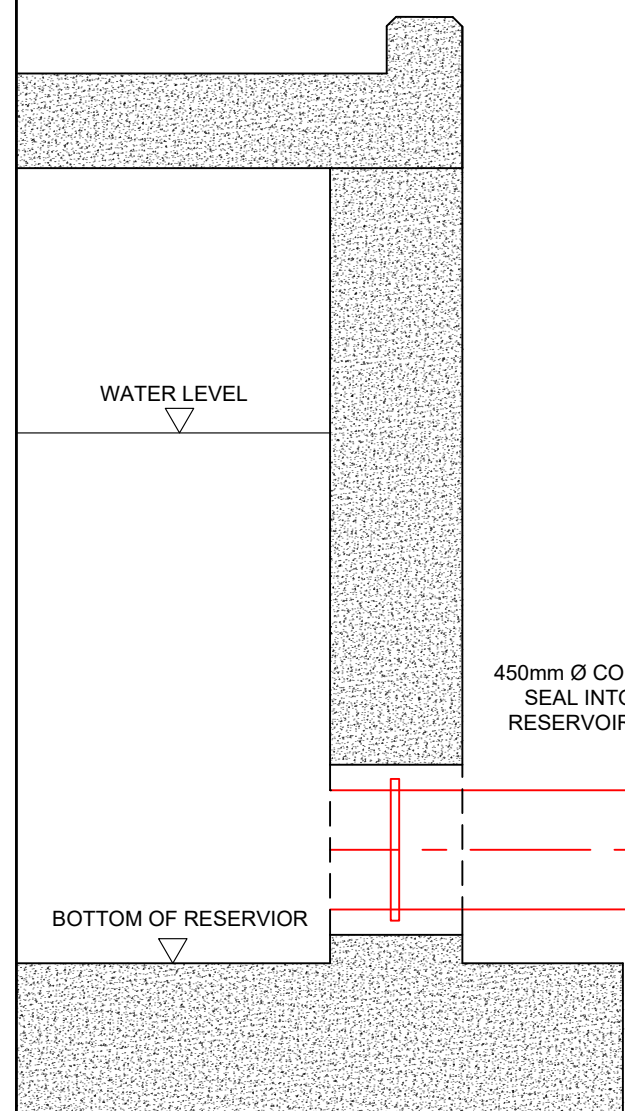
- 300mm Ø MILD STEEL GALVANISED 720 SIGMA COATED FLANGED SPOOL PIECE, WITH PUDDLE FLANGES PLACED IN CENTRE OF EXISTING RESERVOIR WALL AND TO SUIT STRAIGHT COUPLING. TOTAL LENGTH TO BE DETERMINED ON SITE.
- 300mm Ø LONG BARREL VJ STRAIGHT COUPLING.
- 300mm Ø MILD STEEL GALVANISED 720 SIGMA COATED SPOOL PIECE OPEN ON BOTH ENDS. TOTAL LENGTH = 800mm.
- 300mm Ø MILD STEEL GALVANISED 720 SIGMA COATED SPOOL PIECE FLANGED ON ONE SIDE TO SUIT STRAIGHT COUPLINGS, WITH TOTAL LENGTH = 1320mm AND PUDDLE FLANGE PLACED 810mm FROM OPEN END.
- 300mm Ø LONG BARREL VJ FLANGE ADAPTER.
- 300mm Ø GATE VALVE FLANGED, LHC CAP TOP.
- 300mm Ø MILD STEEL GALVANISED 720 SIGMA COATED SPOOL PIECE FLANGED ON ONE SIDE, WITH TOTAL LENGTH = 1500mm.
- 300mm Ø ABB (OR SIMILAR APPROVED) MAGFLOW METER.
- 300mm Ø MILD STEEL GALVANISED 720 SIGMA COATED SPOOL PIECE FLANGED ON BOTH SIDES, WITH TOTAL LENGTH = 600mm.
- 300mm Ø x 150mm Ø MILD STEEL GALVANIZED 720 SIGMA COATED REDUCING TEE, FLANGE TO FLANGE LENGTH = 1830mm AND PUDDLE FLANGE PLACED 410mm FROM OUTER FLANGE.
- 150mm Ø BLANK FLANGE x 50mm Ø MILD STEEL GALVANIZED 720 SIGMA COATED SPOOL PIECE, LENGTH = 150mm.
- 50mm Ø GATE VALVE LHC, FLANGED WITH HAND WHEEL.
- 50mm Ø VENTO-MAT-RBX AIR VALVE PN 16 OR SIMILAR APPROVED.

NOTES:

- EXACT POSITION OF CHAMBER TO BE DETERMINED ON SITE WITH ENGINEER AND KOUGA MUNICIPALITY REPRESENTATIVE.
- ALL EXISTING SERVICES TO BE EXPOSED BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF CONSTRUCTION.



PLAN VIEW



SECTION A-A

FOR TENDER

*AS BUILT - NOTES

AMENDMENTS			
NO.	DATE	DESCRIPTION	APPROVED

SCALE

SCALE ON REDUCED DRAWING

1 : 20



DESIGN

CH

DRAWN

CP

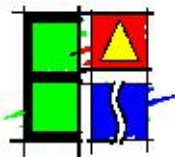
APPROVED

CH

DATE

JUNE 2025

ENGINEERING ADVICE
AND SERVICES
associated with ULWAZI
73 Heugh Road, Walmer
P.O. Box 13867
Humewood
Port Elizabeth
6013
tel/fax: (041) 581 2421



APPROVED

ENGINEER

DATE

APPROVED

CLIENT

DATE



PROJECT

IMPLEMENTATION OF A NEW BULK WATER MAIN FROM HUMANSDORP WATER TREATMENT WORKS TO KWANOMZAMO

DWG DESCRIPTION

HUMANSDORP WTW RESERVOIR OUTLET CHAMBER DETAILS

CONTRACT NO.

68/2026

DWG NO.

2298-T-300

ISSUE

GENERAL NOTES APPLICABLE TO ALL MANHOLES,
CHAMBERS AND STEEL PIPEWORK:

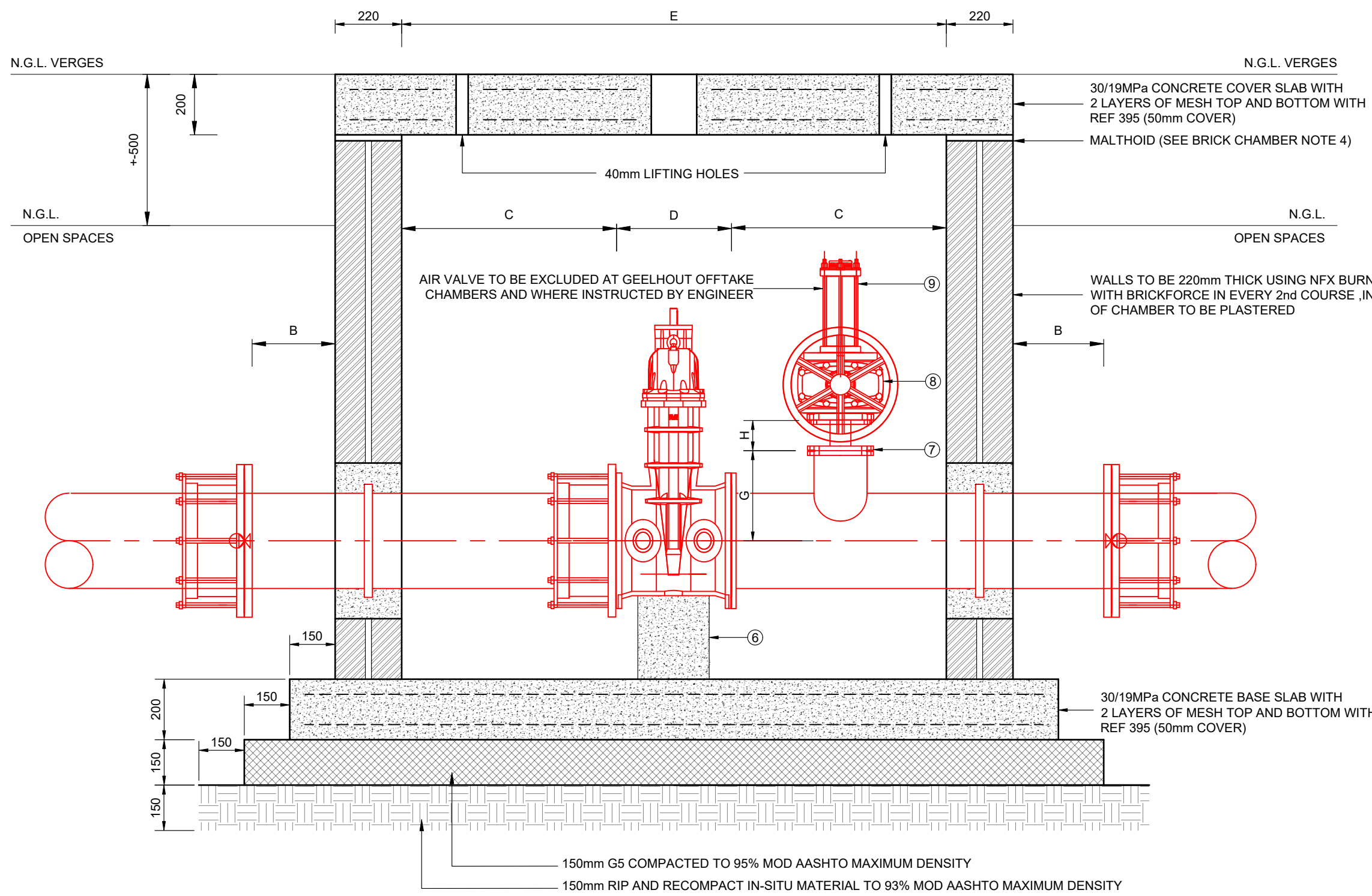
1. ALL DIMENSIONS IN MILLIMETERS.
 2. ALL LEVELS IN M.S.L.
 3. 15mm SPX 120 (OR SIMILAR APPROVED) CLOSED CELL FOAM TO BE WRAPPED AROUND THE PERIMETER OF ALL PIPEWORK PASSING THROUGH BRICKWORK OR CONCRETE.
 4. ALL FLANGES FOR PIPES AND FITTINGS SHALL COMPLY WITH THE REQUIREMENTS OF SABS 1123/NP1600/3.
 5. ALL FLANGES SHALL BE T16 AND TO BE SUPPLIED COMPLETE WITH SUITABLE FULL-FACE GASKETS.
 6. ALL BOLTS, NUTS AND WASHERS SHALL BE STAINLESS STEEL GRADE 316L.
 7. ALL VALVES TO HAVE VALVE MARKERS AND BE ANTI-CLOCKWISE CLOSING CLASS 16, WITH HANDWHEEL IF IN CHAMBER, OTHERWISE WITH CAP TOP.
 8. ALL LEVELS AND DIMENSIONS SHALL BE CHECKED AND AGREED WITH THE ENGINEER BEFORE ANY WORK MAY COMMENCE.
 9. ALL STEEL PIPES AND SPECIALS TO BE MILD STEEL GALVANISED 720 SIGMA COATED.
 10. ALL EXCAVATIONS SHALL BE INSPECTED BY THE ENGINEER BEFORE THE PLACEMENT OF ANY CONCRETE.
 11. ALL FERROUS COUPLINGS, JOINTS, FLANGES, BOLTS & NUTS BURIED BELOW GROUND LEVEL, AND INSIDE CHAMBER TO BE TREATED WITH DENSO SS PRIME.
 12. ALL PVCu PIPES SHALL COMPLY WITH THE REQUIREMENTS OF SABS 966-1.
 13. REFER TO THE SCOPE OF WORK FOR CORROSION PROTECTION OF STEEL PIPES, SPECIALS AND FITTINGS AS WELL AS CI PIPES, SPECIALS, FITTINGS AND VALVES.
- FOR BRICK CHAMBERS:
1. CONCRETE SHALL BE 30 MPA/19mm.
 2. ALL VISIBLE CONCRETE CORNERS AND EDGES SHALL BE CHAMFERED (25x25mm).
 3. ALL BRICKS SHALL BE LAID IN STRETCHER BOND AND SHALL BE NFX BURNT CLAY ENGINEERING BRICKS 28Mpa COMPLYING WITH THE REQUIREMENTS OF SABS 227. BRICKFORCE EVERY SECOND LAYER.
 4. TWO LAYERS OF MALTHOID SHALL BE PROVIDED BETWEEN ROOF SLAB AND BRICKWORK TO ACCOMMODATE MOVEMENT.
 5. 50mm COVER TO BE APPLIED TO ALL STEEL REINFORCING.
 6. CALCAMITE STEP - IRONS TO BE INSTALLED BELOW MANHOLE COVER AT 300mm VERTICAL CENTRES, STARTING AT 300mm ABOVE THE FLOOR LEVEL AND STAGGERED AT 300mm CENTRES HORIZONTALLY.
 7. CALCAMITE STEP IRON (ONLY REQUIRED IF CHAMBER DEPTH >2m).

ITEM LIST:

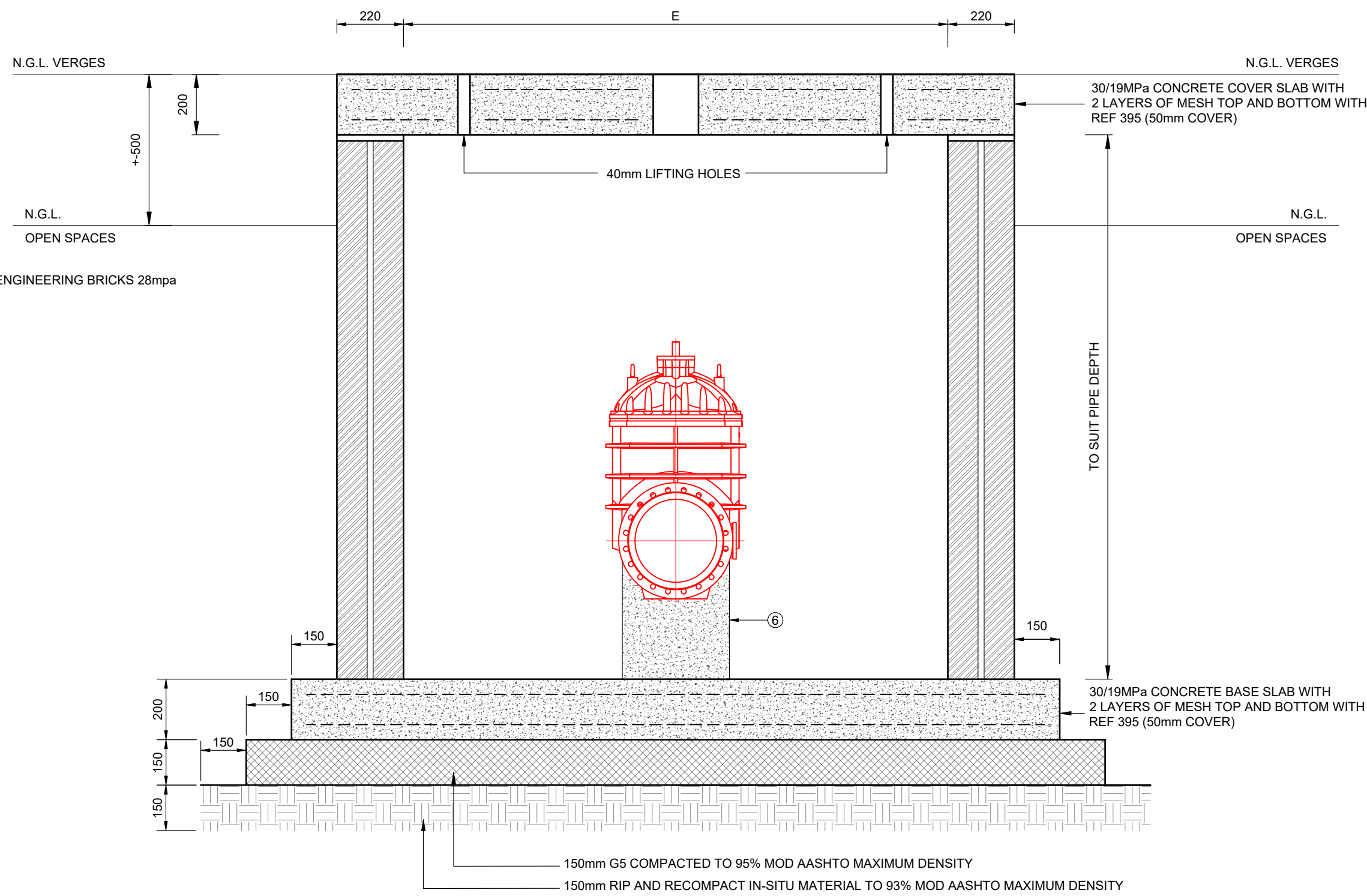
1. *UPVC PIPE Ø7mm AS PER TABLE 1 LONG BARREL V.J FLANGE ADAPTER.
2. *FITTING Ø7mm MILD STEEL GALVANISED 720 SIGMA COATED SPOOL PIECE FLANGED ON ONE SIDE, WITH TOTAL LENGTH = 820mm AND PUDDLE FLANGE CENTRALLY PLACED.
3. *FITTING Ø7mm AS PER TABLE 1 LONG BARREL V.J FLANGE ADAPTER.
4. *VALVE SIZE Ø7mm AS PER TABLE 1 GATE VALVE FLANGED, LHC CAP TOP.
5. *FITTING Ø7mm MILD STEEL GALVANISED 720 SIGMA COATED SPOOL PIECE FLANGED ON BOTH SIDES, WITH *ACCUMULATION CHAMBER Ø7mm REDUCING TEE FOR AIR VALVE. TOTAL LENGTH = 820mm AND PUDDLE FLANGE CENTRALLY PLACED.
6. CONCRETE PEDESTAL.
7. *ACCUMULATION CHAMBER Ø7mm BLANK FLANGE LENGTH = AS PER DIMENSION H mm IN TABLE 1 x *AIR VALVE Ø7mm MILD STEEL GALVANISED 720 SIGMA COATED SPOOL PIECE.
8. *AIR VALVE Ø7mm GATE VALVE LHC, FLANGED WITH HAND WHEEL.
9. *AIR VALVE Ø7mm VENTO-MAT-RBX AIR VALVE PN 16 OR SIMILAR APPROVED.

NOTES:

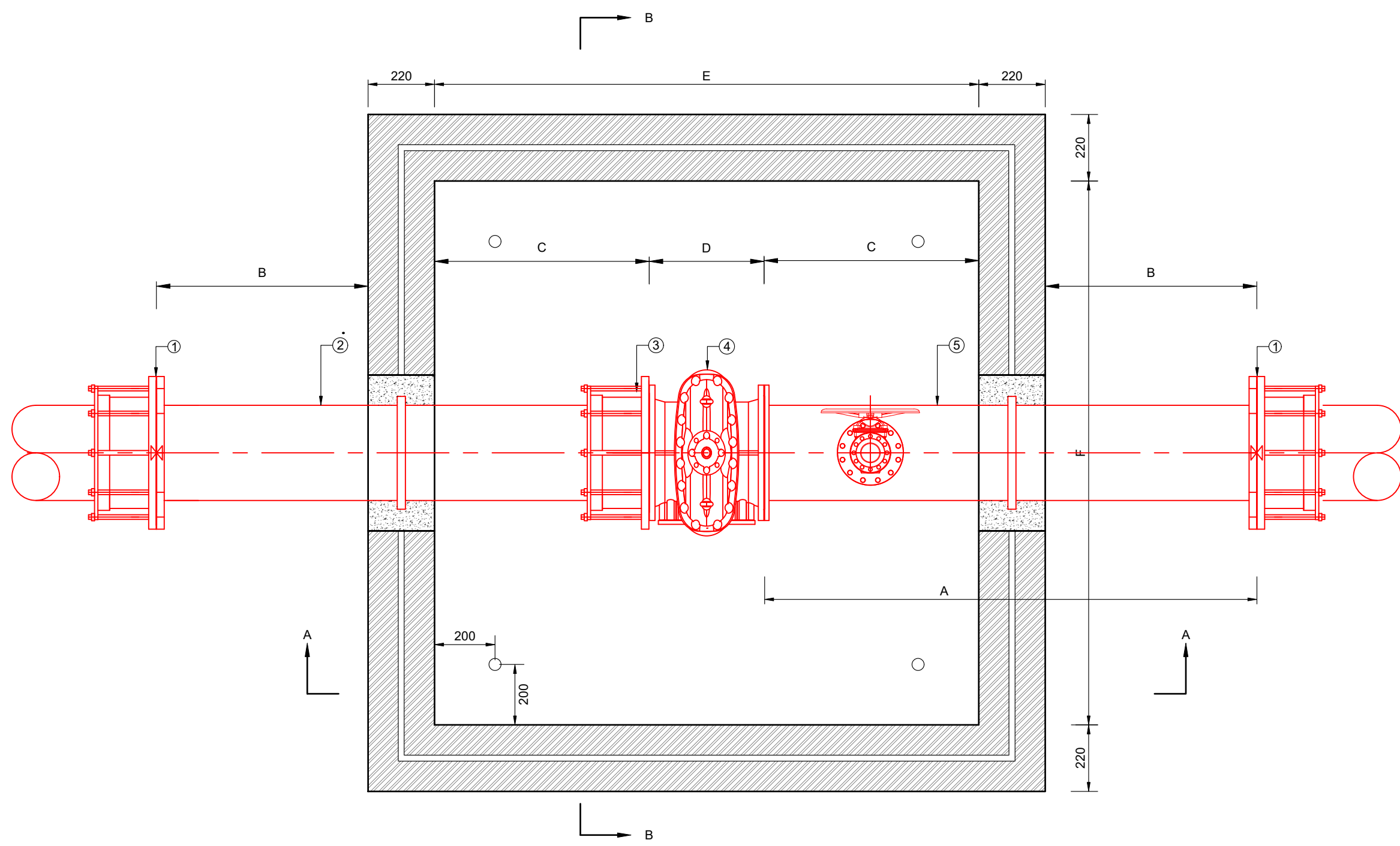
1. EXACT POSITION OF CHAMBER TO BE DETERMINED ON SITE WITH ENGINEER AND KOUGA MUNICIPALITY REPRESENTATIVE.
2. ALL EXISTING SERVICES TO BE EXPOSED BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF CONSTRUCTION.



SECTION A-A



SECTION B-B



PLAN VIEW

TABLE 1 : ISOLATION VALVE CHAMBER DIMENSIONS

u-PVC PIPE Ø (mm)	VALVE SIZE (mm Ø)	PRESSURE CLASS	FITTING Ø (mm)	ACCUMULATION CHAMBER Ø (mm)	AIR VALVE SIZE Ø (mm)	A - mm	B - mm	C - mm	D - mm	E - mm	F - mm	G - mm	H - mm	DESCRIPTION
250	250	PN16	250	150	50	1620	300	700	356	1756	1500	300	150	TYPE 1
315	300	PN16	300	200	50	1620	300	700	380	1780	1500	350	150	TYPE 2

*AS BUILT - NOTES

FOR TENDER

AMENDMENTS

NO.	DATE	DESCRIPTION	APPROVED

SCALE



1 : 15

SCALE ON REDUCED DRAWING



DESIGN

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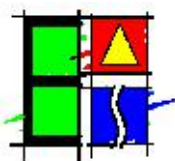
APPROVED

CH

DATE

JUNE 2025

ENGINEERING ADVICE
AND SERVICES
associated with ULWAZI
73 Heugh Road, Walmer
P.O. Box 13867
Humewood
Port Elizabeth
6013
tel/fax: (041) 581 2421



APPROVED

ENGINEER

DATE

APPROVED

CLIENT

DATE



PROJECT

IMPLEMENTATION OF A NEW BULK WATER MAIN FROM
HUMANSDORP WATER TREATMENT WORKS TO KWANOMZAMO

DWG DESCRIPTION

ISOLATION AND AIR VALVE CHAMBER DETAILS

CONTRACT NO.

68/2026

DWG NO.

2298-T-301

ISSUE

ALL DIMENSIONS IN MILLIMETERS.

ALL LEVELS IN M.S.L.

CONCRETE (OR SIMILAR APPROVED) CLOSED CELL FOAM TO BE WRAPPED AROUND THE PERIMETER OF ALL PIPEWORK PASSING THROUGH BRICKWORK OR CONCRETE.

ALL FLANGES FOR PIPES AND FITTINGS SHALL COMPLY WITH THE REQUIREMENTS OF SABS 1123/NP16003.

ALL FLANGES SHALL BE T16 AND TO BE SUPPLIED COMPLETE WITH SUITABLE GASKETS.

BOLTS, NUTS AND WASHERS SHALL BE STAINLESS STEEL GRADE 316.

ALL VALVES TO HAVE VALVE MARKERS AND BE ANTI-CLOCKWISE CLOSING CLASS 16.

WELDED JOINTS, IF IN CHARGE OF THE ENGINEER, TO BE TO THE REQUIREMENTS OF SABS 1123/NP16003.

ALL LEVELS AND DIMENSIONS SHALL BE CHECKED AND AGREED WITH THE ENGINEER BEFORE ANY WORK MAY COMMENCE.

ALL STEEL PIPES AND SPECIALS TO BE MILD STEEL GALVANISED 720 GRAMS COATED.

ALL WELDING SHALL BE INSPECTED BY THE ENGINEER BEFORE THE PLACEMENT OF ANY CONCRETE.

ALL FERRULE COUPLINGS, JOINTS, FLANGES, BOLTS & NUTS BURIED BELOW GROUND TO BE TO THE REQUIREMENTS OF SABS 1123/NP16003.

ALL PIPEWORK SHALL COMPLY WITH THE REQUIREMENTS OF SABS 986-1.

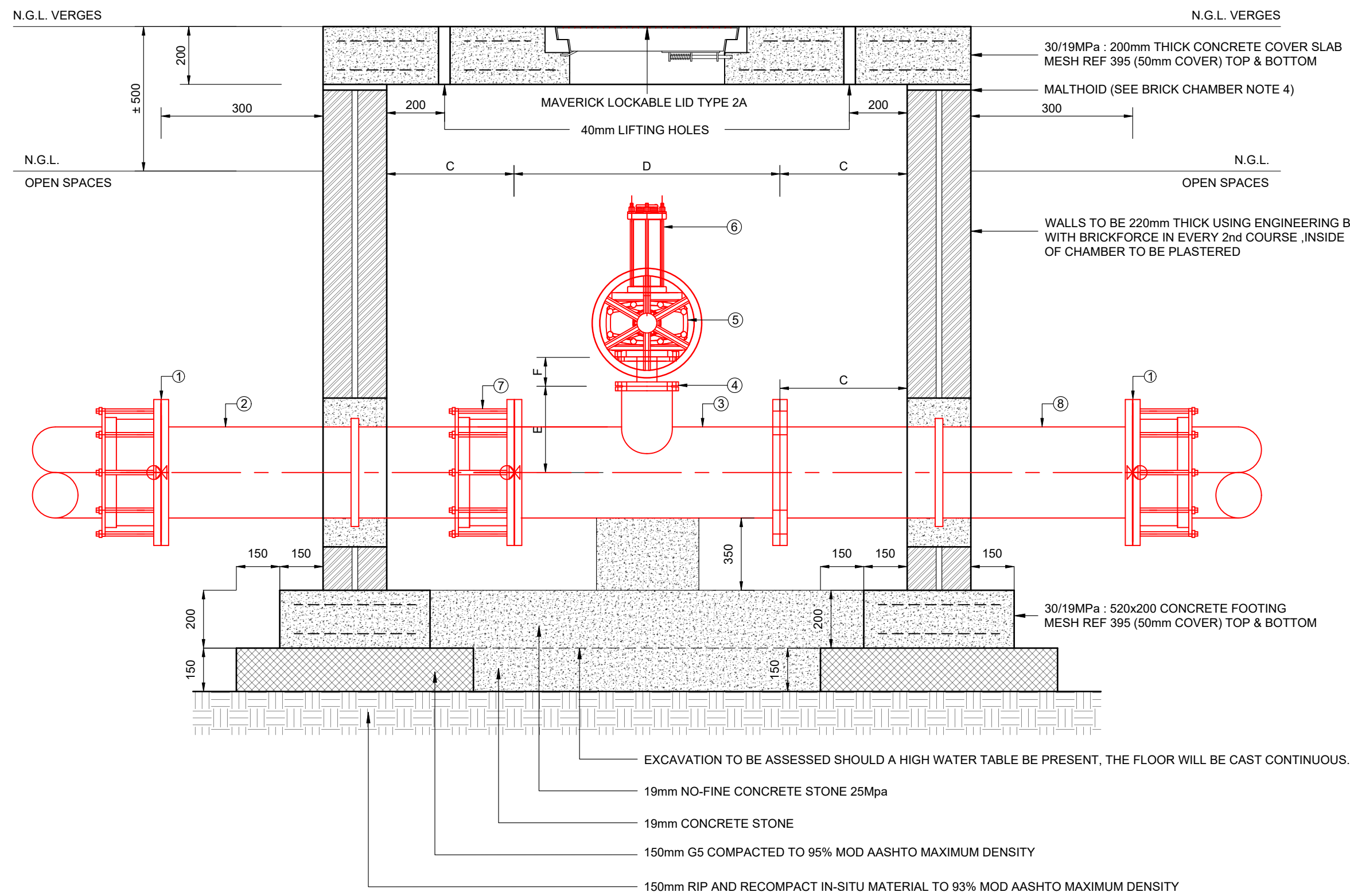
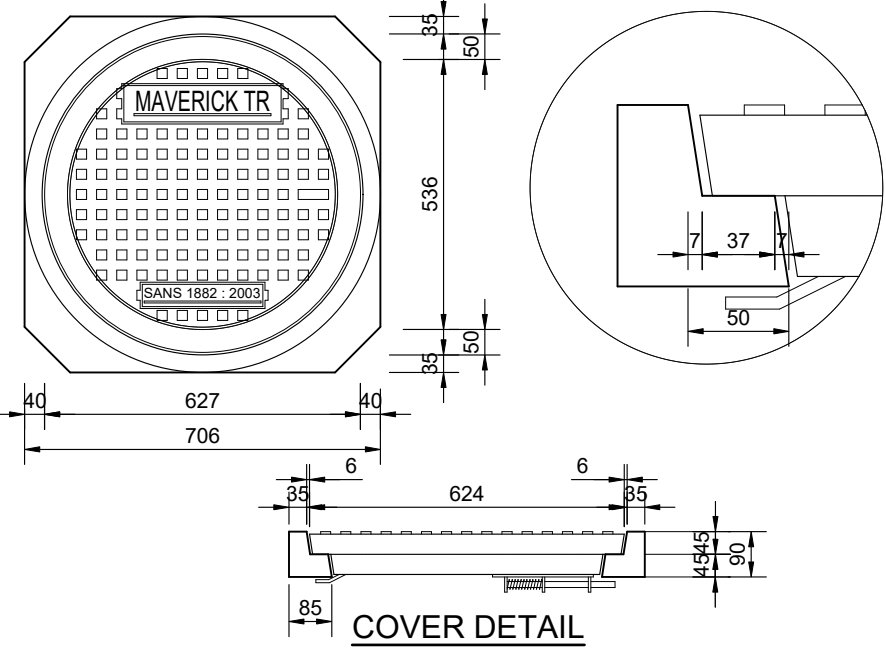
REFER TO THE SCOPE OF WORK FOR CORROSION PROTECTION OF STEEL PIPES, SPECIALS AND FITTINGS AS WELL AS CP PIPES, SPECIALS, FITTINGS AND VALVES.

- ITEM LIST:

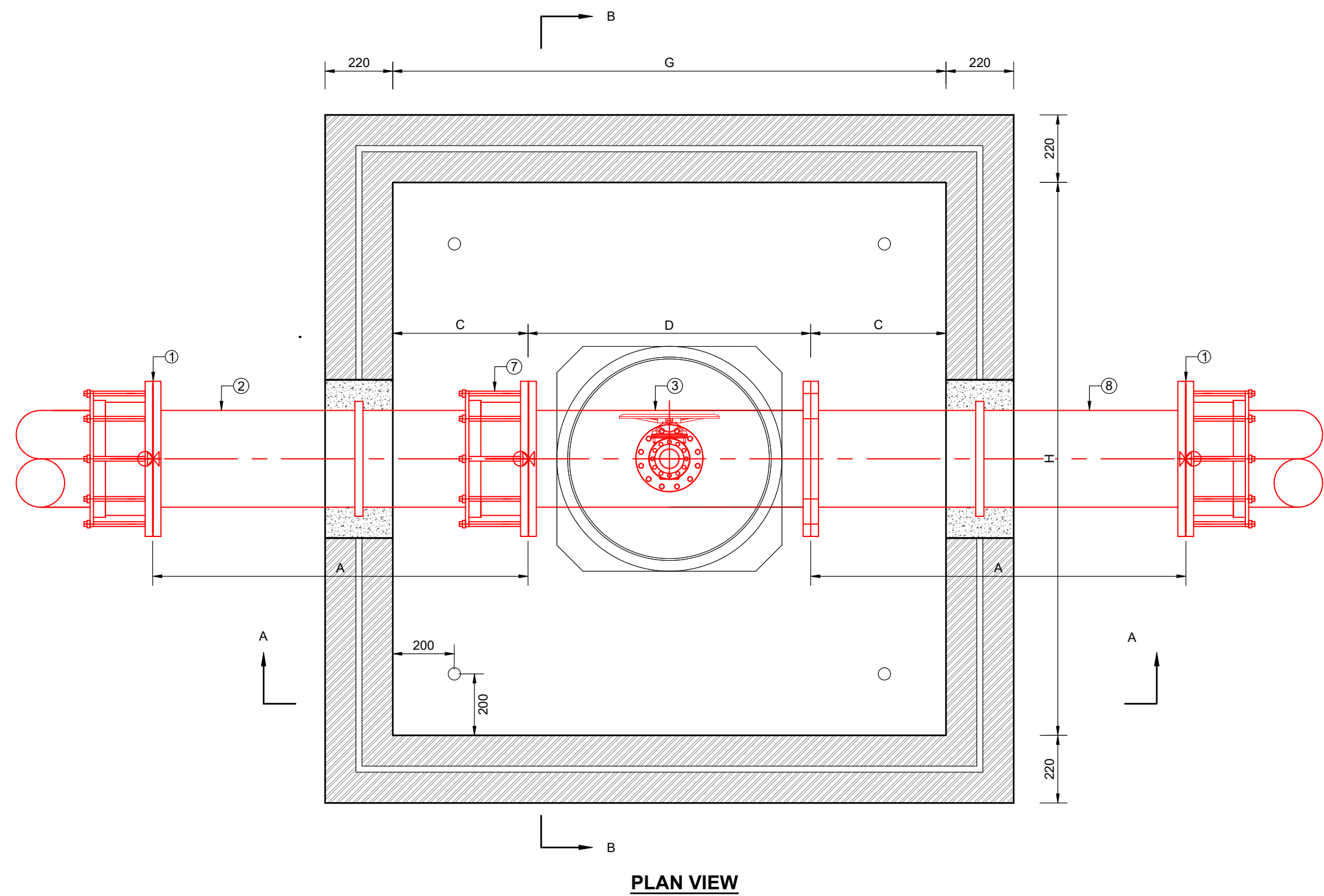
1. *UPVC PIPE Ø"mm LONG BARREL VL FLANGE ADAPTER.
2. *FITTING Ø"mm MILD STEEL GALVANIZED 720 SIGMA COATED SPOOL. PIECE OF FLANGE ONE SIDE, WITH TOTAL LENGTH = 820mm AND PUDDLE FLANGE CENTRALLY PLACED.
3. *FITTING Ø"mm x "ACCUMULATION CHAMBER Ø"mm MILD STEEL GALVANIZED 720 SIGMA COATED REDUCING TEE. FLANGE TO FLANGE LENGTH = AS PER DIMENSION D.
4. *ACCUMULATION CHAMBER Ø"mm BLANK FLANGE LENGTH = AS PER DIMENSION F mm IN TABLE 1.
5. *AIR VALVE Ø"mm MILD STEEL GALVANIZED 720 SIGMA COATED SPOOL. PIECE.
6. *AIRVALVE Ø"mm GATE VALVE LHC, FLANGED WITH HAND WHEEL.
7. *AIR VALVE Ø"mm VENT-O-MAT-RXB. AIR VALVE PN 16 OR SIMILAR APPROVED.
8. *FITTING Ø"mm LONG BARREL VL FLANGE ADAPTER.
9. *FITTING Ø"mm MILD STEEL GALVANIZED 720 SIGMA COATED SPOOL. PIECE FLANGED ON BOTH SIDES, WITH TOTAL LENGTH = 820mm AND PUDDLE FLANGE CENTRALLY PLACED.

NOTES:

1. EXACT POSITION OF CHAMBER TO BE DETERMINED ON SITE WITH ENGINEER AND KOGUA MUNICIPALITY REPRESENTATIVE.
2. ALL EXISTING SERVICES TO BE EXPOSED BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF CONSTRUCTION.



SECTION A-A



SECTION B-B

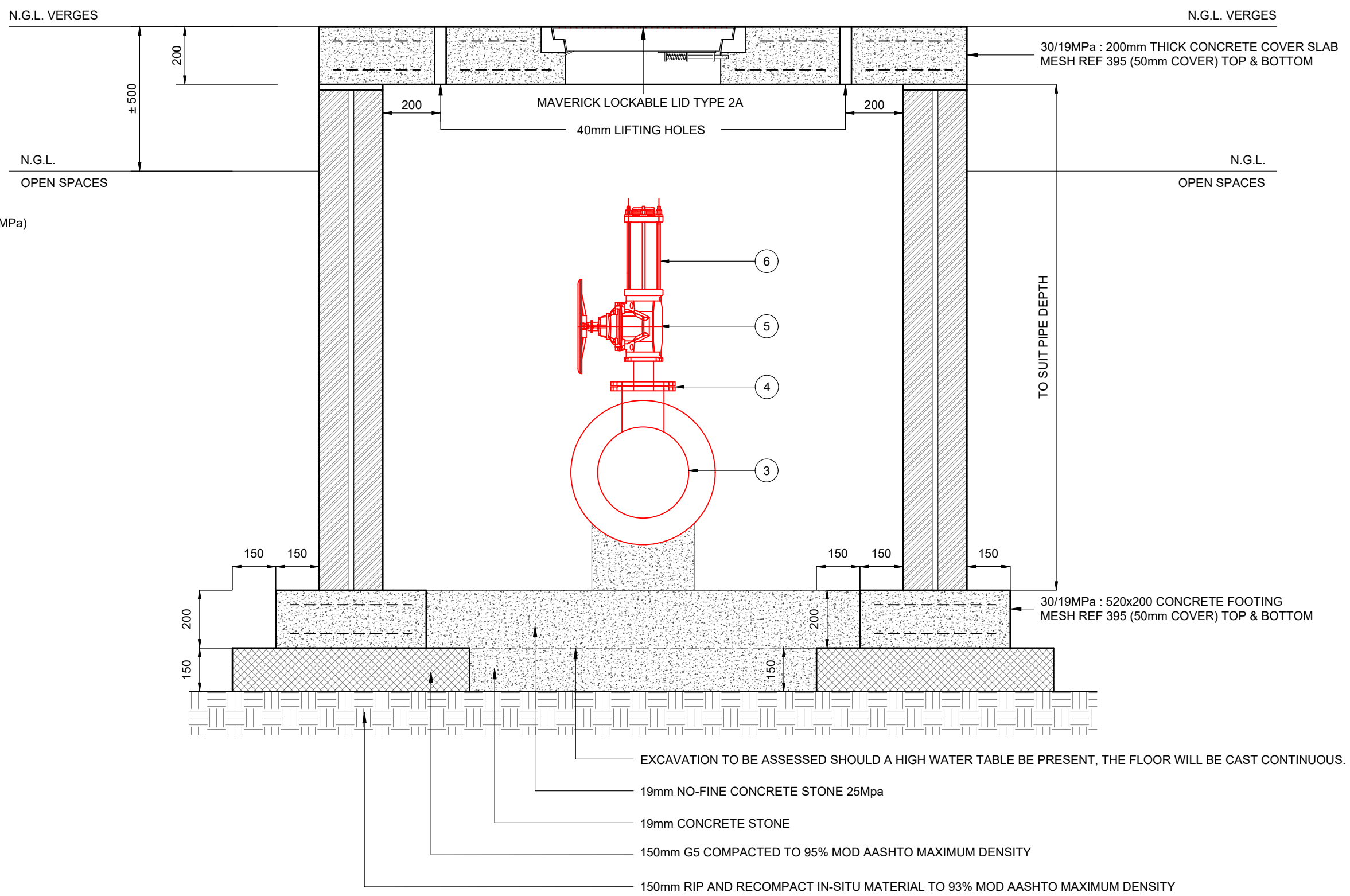


TABLE 1 : AIR VALVE CHAMBER DIMENSIONS

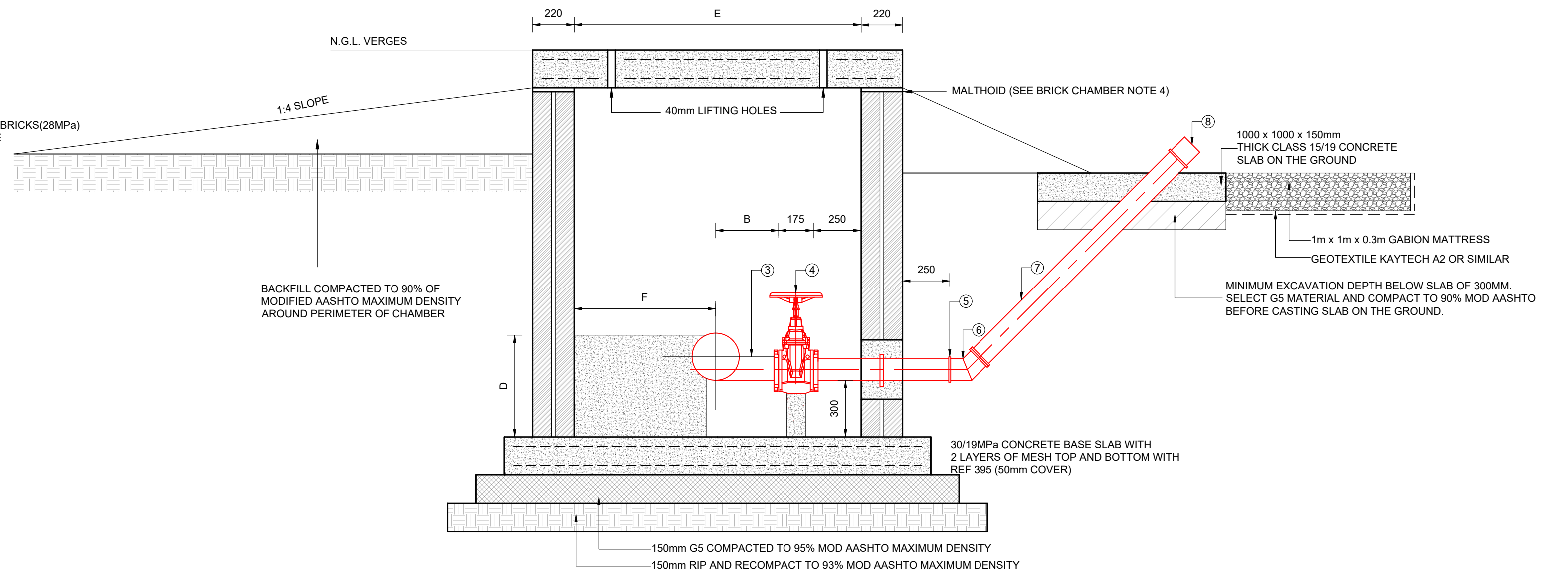
u-PVC PIPE Ø (mm)	AIR VALVE SIZE (mm Ø)	PRESSURE CLASS	FITTING Ø (mm)	ACCUMULATION CHAMBER Ø (mm)	A - mm	B - mm	C - mm	D - mm	E - mm	F - mm	G - mm	H - mm	DESCRIPTION
250	50	PN16	250	150	820	300	300	560	300	150	1160	1500	TYPE 1
315	50	PN16	300	200	820	300	300	610	350	150	1210	1500	TYPE 2

1. ALL DIMENSIONS IN MILLIMETERS.
2. ALL LEVELS IN M.S.L.
3. 15mm SPIX 120 (OR SIMILAR APPROVED) CLOSED CELL FOAM TO BE WETTED AROUND THE PERIMETER OF ALL PIPEWORK PASSING THROUGH BRICKWORK OR CONCRETE.
4. ALL FLANGES FOR PIPES AND FITTINGS SHALL COMPLY WITH THE REQUIREMENTS OF SABS 1123/NP160/3.
5. ALL FLANGES SHALL BE T16 AND TO BE SUPPLIED COMPLETE WITH SUITABLE FULL-FACE GASKETS.
6. ALL BOLTS, NUTS AND WASHERS SHALL BE STAINLESS STEEL GRADE 316L.
7. ALL VALVES TO HAVE VALVE MARKERS AND BE ANTI-CLOCKWISE CLOSING CLASS 16, WITH HANDWHEEL IF IN CHAMBER, OTHERWISE WITH CAP TOP.
8. ALL VALVES AND ANCHORS SHALL BE CHECKED, AND AGREED WITH THE ENGINEER BEFORE ANY WORK MAY COMMENCE.
9. ALL STEEL PIPES AND SPECIALS TO BE MILD STEEL GALVANISED 720 SIGMA COATED.
10. ALL EXCAVATIONS SHALL BE INSPECTED BY THE ENGINEER BEFORE THE PLACEMENT OF ANY CONCRETE.
11. ALL FERROUS COUPLINGS, JOINTS, FLANGES, BOLTS & NUTS BURIED BELOW GROUND LEVEL, AND INSIDE CHAMBER TO BE TREATED WITH DENSO SS PRIME.
12. ALL STEEL PIPES SHALL COMPLY WITH THE REQUIREMENTS OF SABS 966-1 REFER TO THE SCOPE OF WORK FOR CORROSION PROTECTION OF STEEL PIPES, SPECIALS AND FITTINGS AS WELL AS CI PIPES, SPECIALS, FITTINGS AND VALVES.

1. FOR REINFORCEMENT CHAMBERS:
 1. CONCRETE SHALL BE 30 MPa/19mm.
 2. ALL VISIBLE CONCRETE CORNERS AND EDGES SHALL BE CHAMFERED (25x25mm)
 3. ALL BRICKS SHALL BE LAID IN STRETCHER BOND AND SHALL BE NFX BURNT V-CLAY ENGINEERING BRICKS OF 190mm X 90mm X 90mm YONG WITH THE REQUIREMENT'S OF SABS 227. BRICKFACE EVERY SECOND LAYER
 4. TWO LAYERS OF MALT HOID SHALL BE PROVIDED BETWEEN ROOF SLAB AND BRICKWORK.
 5. 50mm cover to be APPLIED TO ALL STEEL REINFORCING.
 6. CALMATE STEP - IRONS TO BE INSTALLED BELOW MANHOLE COVER AT 300mm VERTICAL CENTRE. STARTING AT 300mm ABOVE THE FLOOR LEVEL AND STAGED IRONS TO BE PROVIDED AT 300mm CELLY
 7. CALMATE STEP IRON (ONLY REQUIRED IF CHAMBER DEPTH > 2m)

1. "1/2"-PVC PIPE Ø7mm LONG BARREL VJ FLANGE ADAPTOR
2. "FITTING" Ømm SPOOL PIECE FLANGED ON BOTH SIDES, WITH TOTAL LENGTH +820mm AND PUDDLE FLANGE LOCATED CENTRALLY
3. "FITTING Ø" SCOUR VALVE Ø" REDUCING SCOUR TEE, FLANGE TO FLANGE LENGTH AS PER DIMENSION A IN TABLE I
4. "SCOUR VALVE Ø7mm GATE VALVE VJ LUG FLANGE WITH HAND WHEEL
5. "SCOUR VALVE Ømm SPOOL PIECE FLANGED ON BOTH SIDES WITH TOTAL LENGTH = 850mm, PUDDLE FLANGE PLACED 360mm FROM FLANGE TO GATE VALVE
6. 100mm Ø MILD STEEL GALVANISED 720 SIGMA COATED FLANGED 45° BEND
7. 100mm Ø MILD STEEL GALVANISED 720 SIGMA COATED FLANGED SPOOL PIECE, TOTAL LENGTH = 2000mm OR TO SUIT ON SITE.
8. 100mm Ø PARRETT COUPLING
9. CONCRETE PEDESTAL
10. "FITTING Ø"mm SPOOL PIECE FLANGED ON ONE SIDE, WITH TOTAL LENGTH +820mm AND PUDDLE FLANGE LOCATED CENTRALLY

1. EXACT POSITION OF CHAMBER TO BE DETERMINED ON SITE WITH ENGINEER AND KOUGA MUNICIPALITY REPRESENTATIVE.
2. ALL EXISTING SERVICES TO BE EXPOSED BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF CONSTRUCTION.



THRUST BLOCK TO BE CAST AGAINST UNDISTURBED SOIL

D=600
Z=500
X=1000

C

B

A

FLOW DIRECTION

① ② ③

E

850

2000

1000

200

175

220

220

200

The diagram illustrates a cross-section of a manhole assembly. Key components and dimensions include:

- Top Section:** A concrete slab with two 220mm wide sections on either side of a central opening.
- Lifting Mechanism:** A red lifting device with a handle (labeled 3) and a base (labeled 4). It is connected to a chain or cable system (labeled 5 and 6).
- Dimensions:**
 - Overall width: 220mm + 220mm = 440mm.
 - Distance from centerline to the edge of the top slab: 220mm.
 - Distance between the vertical walls: 175mm.
 - Radius of the circular opening: 175mm.
 - Height of the vertical wall: 250mm.
 - Height of the base layer: 300mm.
- Labels:**
 - "MALTHOID (S)" points to the top slab.
 - "40mm LIFTING HOLES" points to the holes in the top slab.
 - "F" indicates the height of the water level.
 - "D" indicates the depth of the base layer.
 - "B" indicates the distance from the centerline to the edge of the base layer.
- Material Specifications:**
 - "150mm G5 COMPACTED TO 95% MOD AASHTO MAXIMUM DENSITY"
 - "150mm RIP AND RECOMPACT TO 93% MOD AASHTO MAXIMUM DENSITY"
 - "30/19MPa CC CONCRETE WITH 2 LAYERS OF REF 395 (50mm)"

u-PVC PIPE Ø (mm)	PRESSURE CLASS	FITING Ø (mm)	SCOUR VALVE Ø (mm)	A - mm	B - mm	C - mm	D - mm	E - mm	F - mm	DESCRIPTION
250	PN16	250	100	560	330	1160	600	1505	750	TYPE 1
315	PN16	300	100	610	460	1210	600	1635	750	TYPE 2

u-PVC PIPE Ø (mm)	PRESSURE CLASS	FITING Ø (mm)	SCOUR VALVE Ø (mm)	A - mm	B - mm	C - mm	D - mm	E - mm	F - mm	DESCRIPTION
250	PN16	250	100	560	330	1160	600	1505	750	TYPE 1
315	PN16	300	100	610	460	1210	600	1635	750	TYPE 2

[illegible]

1. ALL DIMENSIONS IN MILLIMETERS.
2. ALL LEVELS IN N M S L.
3. 15mm SPX 120 (OR SIMILAR APPROVED) CLOSED CELL FOAM TO BE WRAPPED AROUND THE PERIMETER OF ALL PIPEWORK PASSING THROUGH BRICKWORK OR CONCRETE.
4. ALL FLANGES FOR PIPES AND FITTINGS SHALL COMPLY WITH THE REQUIREMENTS OF SABS 1123NP1600/3.
5. ALL FLANGES SHALL BE TIG AND TO BE SUPPLIED COMPLETE WITH SUITABLE FULL-FACE GASKETS.
6. ALL BOLTS, NUTS AND WASHERS SHALL BE STAINLESS STEEL GRADE 316L.
7. ALL VALVES TO HAVE VALVE MARKERS AND BE ANTI-CLOCKWISE CLOSING CLASS 16, WITH HANDWHEEL IF IN CHAMBER, OTHERWISE WITH CAP TOP.
8. ALL LEVELS AND DIMENSIONS SHALL BE CHECKED AND AGREED WITH THE ENGINEER BEFORE ANY WORK MAY COMMENCE.
9. ALL STEEL PIPES AND SPECIALS TO BE MILD STEEL GALVANISED 720 SIGMA COATED
10. ALL EXCAVATIONS SHALL BE INSPECTED BY THE ENGINEER BEFORE THE PLACEMENT OF ANY CONCRETE.
11. ALL BURIED COPIES OF PIPES, FLANGES, BOLTS & NUTS BURIED BELOW GROUND LEVEL, AND INSIDE CHAMBER TO BE TREATED WITH DPMO SS PRIME.
12. ALL P/Cu/Pi PIPES SHALL COMPLY WITH THE REQUIREMENTS OF SANS 966-1
13. TO BE OF TYPE OF WORK FOR CORROSION PROTECTION OF STEEL PIPES, SPECIALS AND FITTINGS AS WELL AS CI PIPES, SPECIALS, FITTINGS AND VALVES.

1. CONCRETE SHALL BE 30 MPa/19mm.
2. ALL VISIBLE CONCRETE CORNERS AND EDGES SHALL BE CHAMFERED (25x25mm)
3. ALL BRICKS SHALL BE LAID IN STRETCHER BOND AND SHALL BE NF3 BURNT LAY ENGINEERING BRICKS 280mm COMPLYING WITH THE REQUIREMENTS OF SABS 227. BRICKWORK EVERY SECOND LAYER.
4. TWO LAYERS OF HALF BRICK SHALL BE PROVIDED BETWEEN ROOF SLAB AND BRICKWORK TO ACCOMMODATE MOVEMENT.
5. 50mm COVER TO BE APPLIED TO ALL STEEL REINFORCING.
6. CALCALMITE STEP - IRONS TO BE INSTALLED BELOW MANHOLE COVER AT 300mm VERTICAL CENTRES, STARTING AT 300mm ABOVE THE FLOOR LEVEL AND STAGGERED AT 300mm CENTRES HORIZONTALLY.
7. CALCALMITE STEP IRON (ONLY REQUIRED IF CHAMFER DEPTH >2m)

3. 315mm Ø UPVC CLASS 12 PIPE
4. 150mm x 160mm BARREL VJ FLANGE ADAPTOR TO SUITE PROPOSED 315mm Ø UPVC PIPE
5. 300mm Ø MILD STEEL GALVANISED 720 SIGMA COATED FLANGE UNEQUAL TEE PIECE, FLANGE TO FLANGE LENGTH = 610mm
6. 300mm Ø FLANGED GATE VALVE, LH, CAP TOP
7. 150mm Ø FLANGED GATE VALVE, LHC, CAP TOP
8. TYPE SA MAVERICK VALVE COVER AND FRAME
9. 150mm Ø MILD STEEL GALVANISED 720 SIGMA COATED PUDDLE PIPE, FLANGED ON ONE END, WITH PUDDLE FLANGE CENTRALLY LOCATED, FLANGE TO OPEN END LENGTH = 820mm
10. 150mm Ø SENSUS WP-DYNAMIC STRAINER
11. 150mm Ø MILD STEEL GALVANISED 720 SIGMA COATED SPOOL, SPIECE, FLANGED ON ONE END, FLANGE TO OPEN END LENGTH = 450mm
12. 150mm Ø LONG BARREL VJ FLANGE ADAPTOR TO SUIT PROPOSED 150mm Ø STEEL PIPE
13. 150mm Ø SENSUS MISTREAM METER
14. 150mm x 150mm Ø MILD STEEL GALVANISED 720 SIGMA COATED FLANGED EQUAL TEE PIECE, FLANGE TO FLANGE LENGTH = 460mm
15. 150mm Ø MILD STEEL, GALVANISED 720 SIGMA COATED SPOOL, SPIECE, FLANGED ON ONE END, FLANGE TO OPEN END LENGTH = 300mm
16. 150mm Ø CL-A VALVE PRESSURE REDUCING VALVE
17. 150mm Ø MILD STEEL GALVANISED 720 SIGMA COATED FLANGE UNEQUAL TEE PIECE, FLANGE TO FLANGE LENGTH = 460mm
18. TYPE 2A LOCKABLE MAVERICK COVER AND FRAME
19. 150mm x 80mm Ø MILD STEEL GALVANISED 720 SIGMA COATED FLANGED REDUCER, FLANGE TO FLANGE LENGTH = 180mm
20. 80mm Ø FLANGED GATE VALVE, LH, CAP TOP
21. 75mm Ø CI FLANGE ADAPTOR
22. 75mm Ø 90° UPVC CLASS 12 BEND
23. 75mm Ø UPVC CLASS 12 PIPE
24. 150mm x 150mm Ø MILD STEEL GALVANISED 720 SIGMA COATED PUDDLE PIPE, FLANGED ON BOTH ENDS, WITH PUDDLE FLANGE CENTRALLY LOCATED, FLANGE TO FLANGE LENGTH = 820mm
25. 80mm Ø MILD STEEL GALVANISED 720 SIGMA COATED SPOOL, SPIECE, FLANGED ON ONE END, FLANGE TO OPEN END LENGTH = 500mm
26. 80mm Ø LONG BARREL VJ FLANGE ADAPTOR TO SUIT PROPOSED 80mm Ø STEEL PIPE
27. 80mm Ø CL-A VALVE PRESSURE REDUCING VALVE
28. 80mm x 50mm Ø MILD STEEL, GALVANISED 720 SIGMA COATED UNEQUAL TEE PIECE, FLANGE TO FLANGE LENGTH = 460mm
29. 50mm Ø BUTTERFLY VALVE
30. 50mm Ø MILD STEEL GALVANISED 720 SIGMA COATED FLANGED STUB
31. 50mm Ø CL-A VALVE PRESSURE RELIEF VALVE
32. 50mm Ø HORZ FLANGE ADAPTOR
33. 50mm Ø HDPE PIPE (PE 100 PN 16)
34. 50mm Ø HDPE PLASSON 90° ELBOW
35. 300mm Ø x 200mm Ø MILD STEEL GALVANISED SIGMA 720 COATED REDUCING TEE FOR 50mm Ø AIR VALVE
36. 50mm Ø VERTICAL REDUCING TEE FOR APPROVED AIR VALVE
37. 50mm Ø GATE VALVE, LHC COMPLETE WITH HAND WHEEL
38. 50mm Ø MILD STEEL GALVANISED SIGMA 720 COATED STUB, FLANGE TO FLANGE LENGTH = 150mm
39. 150mm Ø UPVC CLASS 12 PIPE
40. 150mm Ø MILD STEEL GALVANISED 720 SIGMA COATED SPOOL PIECE, FLANGED ON ONE SIDE, WITH 50mm Ø REDUCING TEE FOR AIR VALVE, TOTAL LENGTH = 820mm AND PUDDLE FLANGE CENTRALLY PLACED
41. 80mm Ø MILD STEEL GALVANISED 720 SIGMA COATED SPOOL, PIECE, FLANGED ON ONE SIDE WITH 50mm Ø REDUCING TEE FOR AIR VALVE, TOTAL LENGTH = 820mm AND PUDDLE FLANGE CENTRALLY PLACED
42. 300mm Ø x 150mm Ø FBE COATED SOCKETED REDUCING TEE PIECE.

1. EXACT POSITION OF CHAMBER TO BE DETERMINED ON SITE WITH ENGINEER AND KOUGA MUNICIPALITY REPRESENTATIVE.
2. ALL EXISTING SERVICES TO BE EXPOSED BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF CONSTRUCTION.

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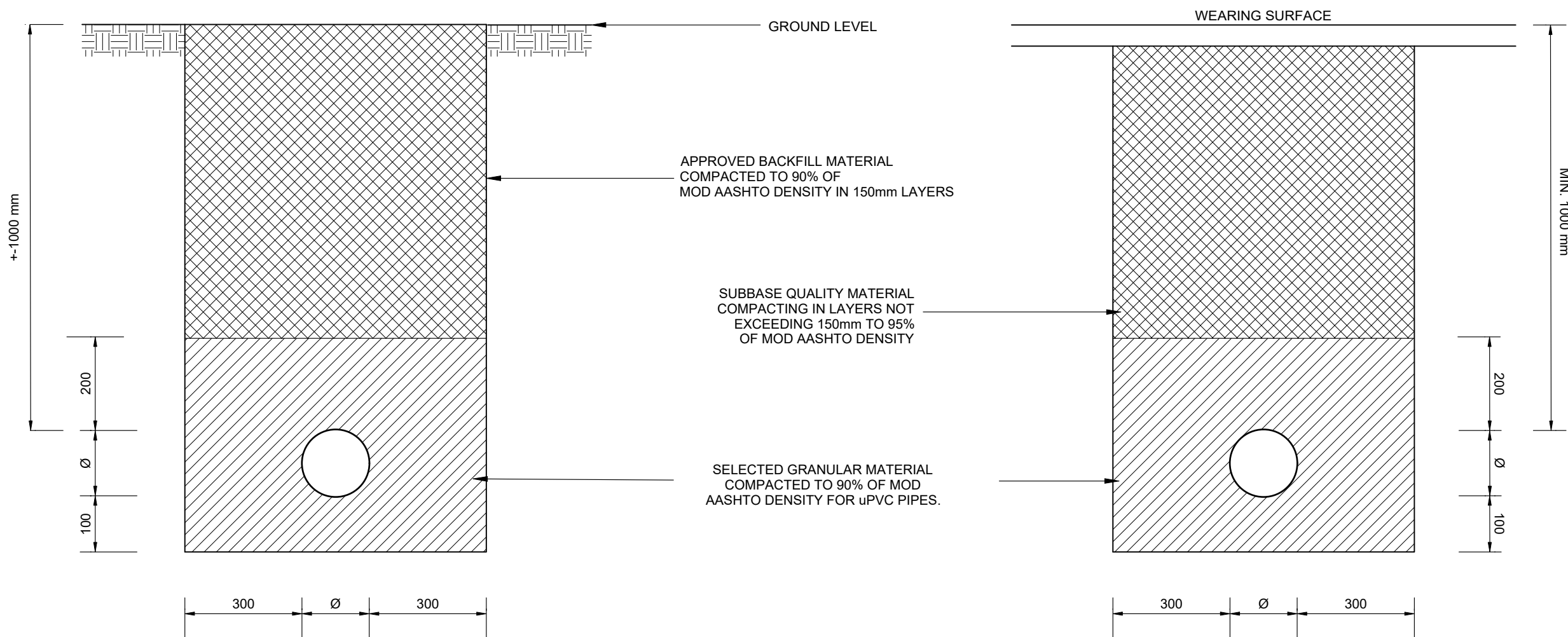
1. ALL DIMENSIONS IN MILLIMETERS.
2. ALL LEVELS IN M.S.L.
3. 15mm SPK. (OR SIMILAR APPROVED) CLOSED CELL FOAM TO BE WRAPPED AROUND THE PERIMETER OF ALL PIPEWORK PASSING THROUGH BRICKWORK OR CONCRETE.
4. ALL FLANGES FOR PIPES AND FITTINGS SHALL COMPLY WITH THE REQUIREMENTS OF SANS 1123/PM10/03.
5. ALL FLANGES SHALL BE T16 AND TO BE SUPPLIED COMPLETE WITH SUITABLE FLANGE GASKETS.
6. ALL TIGHT, NUTS AND WASHERS SHALL BE STAINLESS STEEL GRADE 316L.
7. ALL VALVES TO HAVE VALVE MARKERS AND BE ANTI-CLOCKWISE CLOSING CLASS 16, WITH HANDWHEEL IF IN CHAMBER, OTHERWISE W/ CAP.
8. ALL LEVELS AND DIMENSIONS SHALL BE CHECKED AND AGREED WITH THE ENGINEER BEFORE ANY WORK MAY COMMENCE.
9. ALL PIPES AND SPECIALS TO BE MILD STEEL. GALVANISED 720 SIGMA COATED
10. ALL EXCAVATIONS SHALL BE INSPECTED BY THE ENGINEER BEFORE ANY SPECIALS ARE SET.
11. ALL FERROUS COUPLINGS, JOINTS, FLANGES, BOLTS & NUTS BURIED BELOW GROUND LEVEL, INSIDE CHAMBER TO BE TREATED WITH DOWNSIDE SS PRIME.
12. ALL PIVOT PIPES SHALL COMPLY WITH THE REQUIREMENTS OF SANS 906-1.
13. REFER TO THE SCOPE OF WORK FOR CORROSION PROTECTION OF STEEL PIPES AND FITTINGS AS WELL AS CI PIPES, SPECIAL FITTINGS AND VALVES.

1. **FOR CRACK CHAMBERS:**
2. CONCRETE SHALL BE 30 MPa/19mm.
3. ALL VISIBLE CONCRETE CORNERS AND EDGES SHALL BE CHAMFERED (25x25mm)
4. ALL BRICKS SHALL BE LAID IN STRETCHER BOND AND SHALL BE NFX BUILDING ENGINEERING BRICKS 28Mpa COMPLYING WITH THE REQUIREMENTS OF SABS 227. BRICKFACE EVERY SECOND LAYER.
5. TWO LAYERS OF MALTHOID SHALL BE PROVIDED BETWEEN ROOF SLAB AND BRICKWORK TO ACCOMMODATE MOVEMENT.
6. 50mm COVER TO BE APPLIED TO ALL STEEL REINFORCING.
7. CALCALMITE STEP IRON SHALL BE INSTALLED BELOW MANHOLE COVER AT 300mm VERTICAL CENTRES, STARTING AT 300mm ABOVE THE FLOOR LEVEL AND STAGGERED AT 300mm CENTRES HORIZONTALLY.
7. CALCALMITE STEP IRON (ONLY REQUIRED IF CHAMBER DEPTH >2m)

1. 100mm Ø LONG BARREL VJ FLANGE ADAPTOR TO SUIT EXISTING 100mm PIPE LINE TO KIVANOMAZO
2. 100mm Ø LONG BARREL VJ FLANGE ADAPTOR TO SUITE PROPOSED 11" UPVC PIPE
3. 110mm Ø UPVC CLASS 12 PIPE
4. 100mm Ø FLANGED GATE VALVE, LHC, CAP TOP
5. 100mm Ø 40 x 80mm Ø MILD STEEL, GALVANISED 720 SIGMA COATED FLANGE, UNEQUAL TEES, FLANGE TO FLANGE LENGTH = 460mm
6. 80mm Ø FLANGED GATE VALVE, LHC, CAP TOP
7. 75mm Ø UPVC FLANGE ADAPTOR
8. 75mm Ø UPVC CLASS 12 PIPE
9. 75mm Ø 90° UPVC CLASS 12 BEND
10. 80mm Ø MILD STEEL, GALVANISED 720 SIGMA COATED PUDDLE PIPE, FLANGED ON BOTH ENDS, WITH PUDDLE FLANGE CENTRALLY LOCATED, FLANGE TO FLANGE LENGTH = 820mm
11. 80mm Ø SENSUS WP-F DYNAMIC STRAINER
12. 80mm Ø MILD STEEL, GALVANISED 720 SIGMA COATED SPOOL, SPIECE, FLANGED ON ONE END, FLANGED TO OPEN END LENGTH = 300mm
13. 80mm Ø LONG BARREL VJ FLANGE ADAPTOR TO SUIT PROPOSED 80mm STEEL PIPE
14. 80mm Ø SENSUS MEISTREMAN METER
15. 80mm Ø CL-VA-VALUE PRESSURE REDUCING VALVE
16. 80mm x 50mm Ø MILD STEEL, GALVANISED 720 SIGMA COATED FLANGE, UNEQUAL TEES, FLANGE TO FLANGE LENGTH = 460mm
17. 50mm Ø 90° ELBOW VJ FLANGE
18. 50mm Ø MILD STEEL, GALVANISED 720 SIGMA COATED FLANGED STUB
19. 50mm Ø CL-VA-VALUE PRESSURE RELIEF VALVE
20. 50mm Ø HOPE PIPE (PE 100 PN 16)
21. 50mm Ø HOPE PLASSON 90° ELBOW
22. 80mm Ø MILD STEEL, GALVANISED 720 SIGMA COATED SPOOL, PIECE, FLANGED ON BOTH SIDES, 20mm Ø MILD STEEL, GALVANISED 720 SIGMA COATED, MALE THREADED NIPPLE PLACED CENTRALLY, WITH TOTAL L = 170mm
23. 20mm Ø MILD STEEL, GALVANISED 720 SIGMA COATED FEMALE THREADED BALL VALVE
24. 20mm Ø CALFEPI INSTALLATION
25. 50mm Ø HOPE FLANGE ADAPTOR
26. 50mm Ø 40 x 50mm Ø MILD STEEL, GALVANISED SIGMA 720 COATED REDUCER TEES, PIPE, TOTAL LENGTH = 460mm.
27. 50mm Ø VENTO-MAT REX (OR SIMILAR APPROVED) AIR VALVE

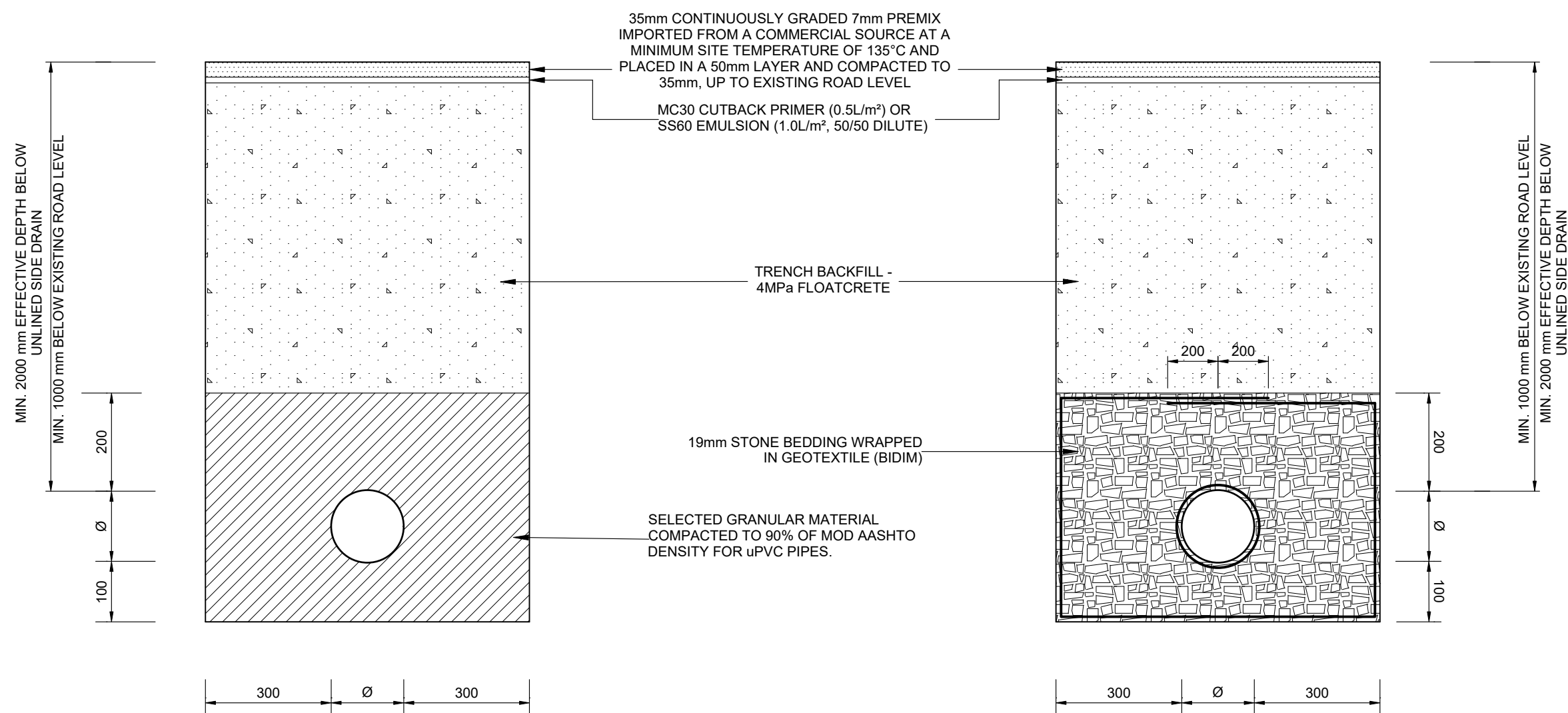
1. EXACT POSITION OF CHAMBER TO BE DETERMINED ON SITE WITH ENGINEER AND KOUGA MUNICIPALITY REPRESENTATIVE.
2. ALL EXISTING SERVICES TO BE EXPOSED BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF CONSTRUCTION.

FOR TENDER	"AS BUILT" - NOTES		AMENDMENTS		SCALE	SCALE ON REDUCED DRAWING	DESIGN	CH	ENGINEERING ADVICE AND SERVICES associated with ULWAZI 73 Heugh Road, Walmer P.O. Box 13867 Humewood Port Elizabeth 6013 tel/fax: (041) 581 2421		APPROVED	APPROVED		PROJECT NO.	IMPLEMENTATION OF A NEW BULK WATER MAIN FROM HUMANSDORP WATER TREATMENT WORKS TO KWANOMZAMO	CONTRACT NO.
	NO.	DATE	DESCRIPTION	APPROVED	 1 : 20	DRAWN	CP	ENGINEER	CLIENT	DWG NO.						
						APPROVED	CH			2298-T-305						
						DATE	JUNE 2025	DATE		ISSUE						
														DWG DESCRIPTION		
														80mm Ø PRV CHAMBER DETAILS - EXISTING 100mm Ø PIPELINE		



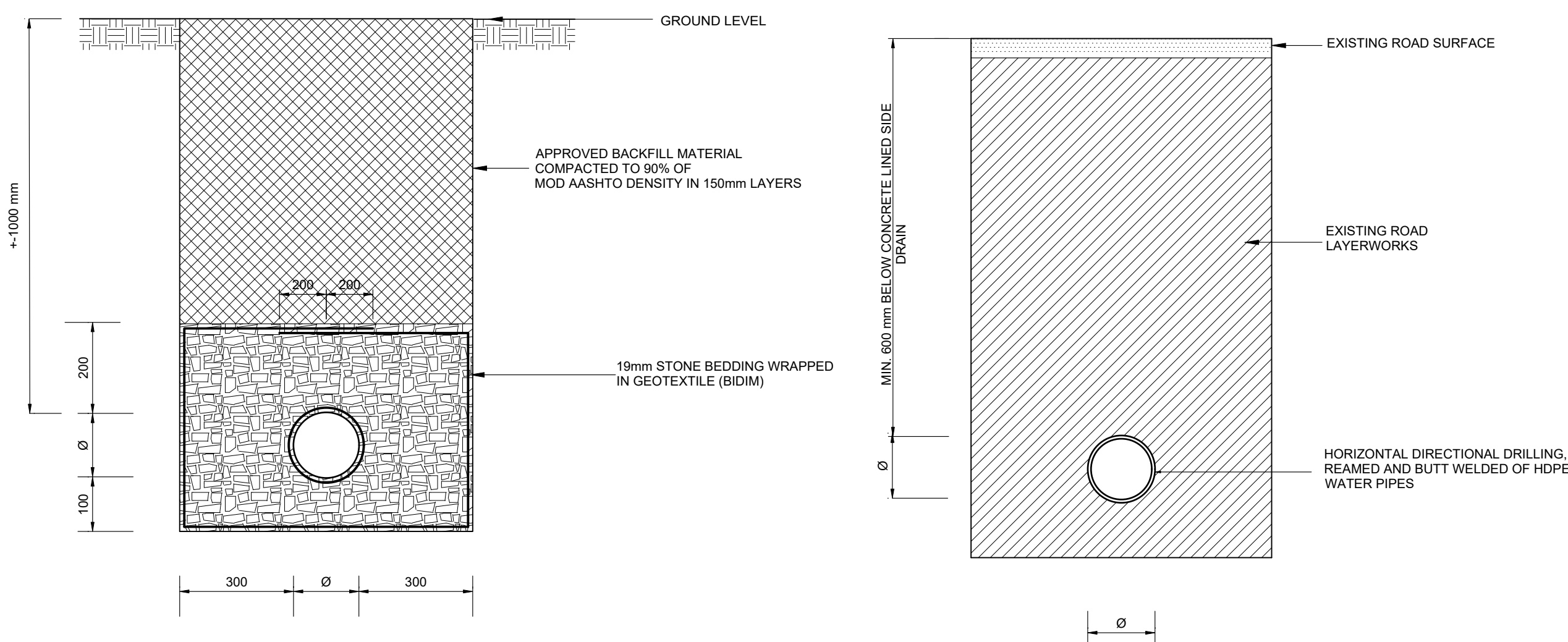
**TRENCH DETAIL FOR
PIPES IN AREAS NOT
SUBJECT TO TRAFFIC LOADS**

**TRENCH DETAIL FOR
PIPES IN AREAS SUBJECT TO
TRAFFIC LOADS (UNSURFACED)**



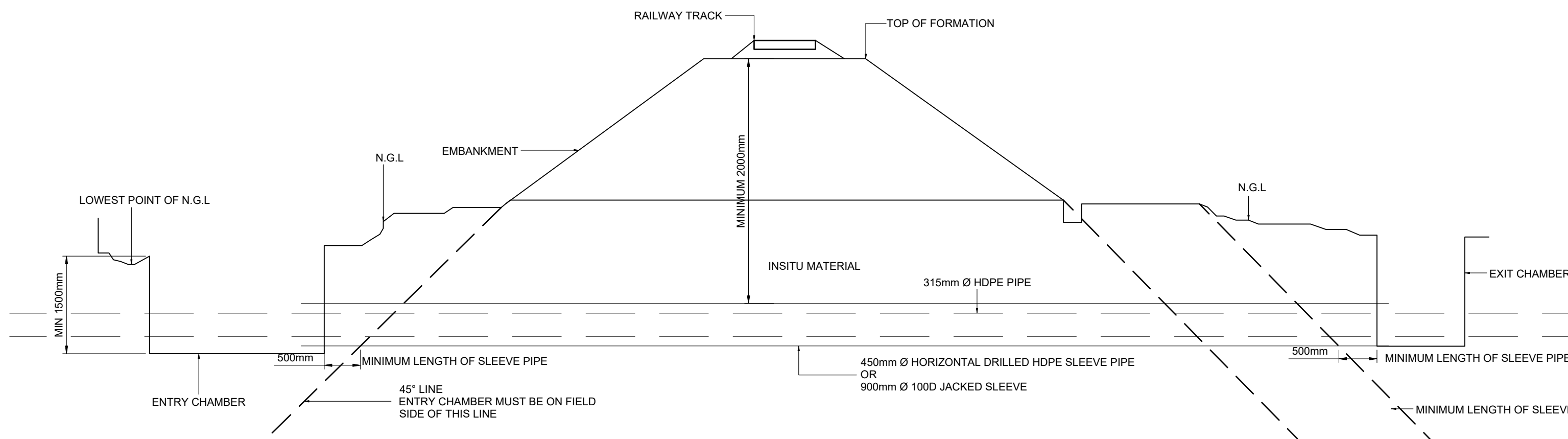
**TYPICAL TRENCH DETAIL FOR PIPES IN AREAS
SUBJECT TO TRAFFIC LOADS (SURFACED) - INCLUDING
DISTRICT AND MUNICIPAL ROADS**

**TYPICAL TRENCH DETAIL FOR PIPES IN
AREAS SUBJECT TO TRAFFIC LOADS
WITH HIGH WATER TABLE (SURFACED) - INCLUDING
DISTRICT AND MUNICIPAL ROADS**



**TYPICAL TRENCH DETAIL FOR PIPES IN
AREAS NOT SUBJECT TO TRAFFIC LOADS
WITH HIGH WATER TABLE**

**TYPICAL HORIZONTAL DRILLING (JACKING) DETAIL
FOR PIPES ACROSS DISTRICT / PROVINCIAL ROADS**



**TYPICAL TRANSNET FREIGHT RAIL
REQUIREMENTS FOR PIPE JACKING /
DIRECTIONAL DRILLING**

FOR TENDER	AMENDMENTS				SCALE	SCALE ON REDUCED DRAWING	DESIGN	CH	ENGINEERING ADVICE AND SERVICES associated with ULWAZI 73 Heugh Road, Walmer P.O. Box 13867 Humewood Port Elizabeth 6013 tel/fax: (041) 581 2421		APPROVED	APPROVED		PROJECT	CONTRACT NO.
	NO.	DATE	DESCRIPTION	APPROVED			DRAWN	CP			ENGINEER	CLIENT		IMPLEMENTATION OF A NEW BULK WATER MAIN FROM HUMANSDORP WATER TREATMENT WORKS TO KWANOMZAMO	68/2026
							APPROVED	CH			DATE	DATE		DWG DESCRIPTION	DWG NO.
							DATE	JUNE 2025						TRENCH DETAIL AND PIPE JACKING DETAIL	2298-T-306
															ISSUE

