

Contractor

CLIENT

 **KWAZULU-NATAL PROVINCE**
HEALTH
REPUBLIC OF SOUTH AFRICA



KWAZULU-NATAL PROVINCE
HEALTH
REPUBLIC OF SOUTH AFRICA

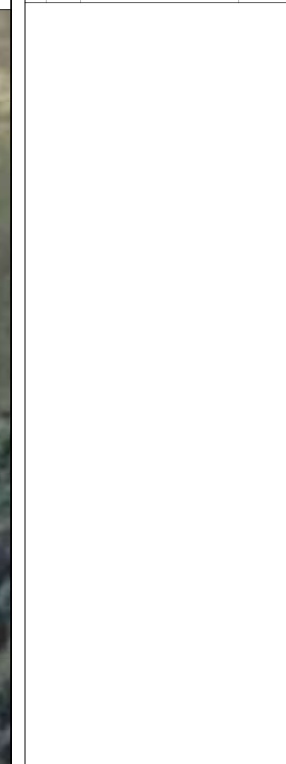
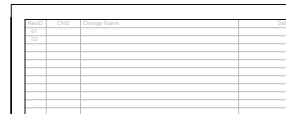
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STAGE	DETAIL DESIGN
CLIENT'S SIGNATURE	
DRAWING USAGE	

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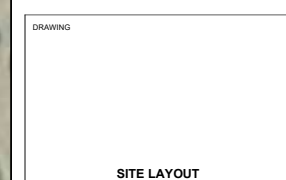
FOR TENDER



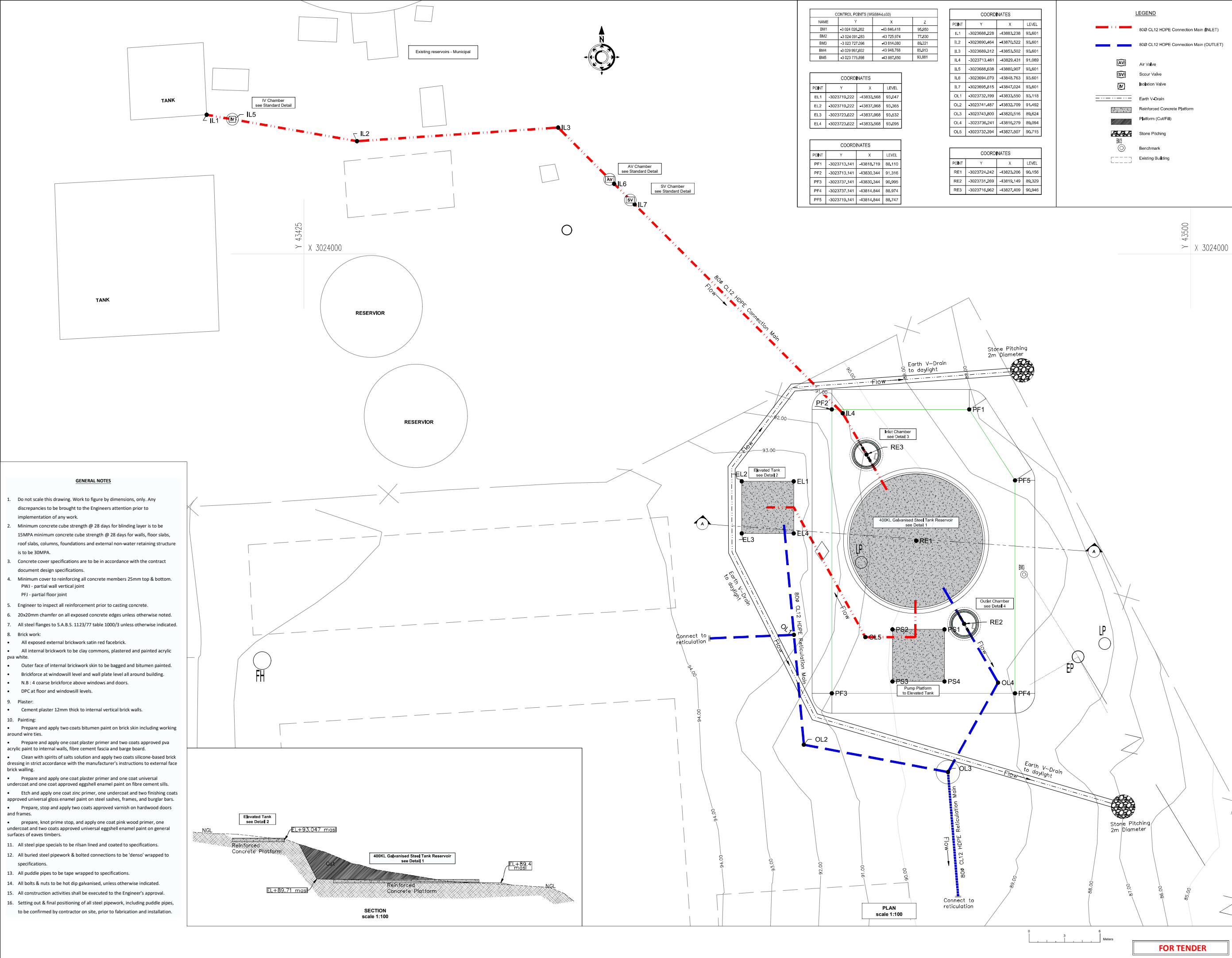
IMPLEMENTING AGENT

 **KWAZULU-NATAL PROVINCE**
HEALTH
REPUBLIC OF SOUTH AFRICA

Page 10 of 10



FOR TENDER



CONTROL POINTS (WGS84-033)			
NAME	Y	X	Z
BM1	-3 024 028,202	-43 846,418	95,950
BM2	-3 024 091,283	-43 725,974	77,230
BM3	-3 023 727,096	-43 814,080	86,221
BM4	-3 029 897,602	-43 848,758	85,213
BM5	-3 023 775,898	-43 887,650	93,861

COORDINATES			
POINT	Y	X	LEVEL
EL1	-3023719,222	-43833,568	93,047
EL2	-3023719,222	-43837,968	93,265
EL3	-3023723,622	-43837,968	93,532
EL4	-3023723,622	-43833,568	93,295

COORDINATES			
POINT	Y	X	LEVEL
PF1	-3023713,141	-43818,719	88,110
PF2	-3023713,141	-43830,344	91,316
PF3	-3023737,141	-43830,344	90,995
PF4	-3023737,141	-43814,844	88,974
PF5	-3023719,141	-43814,844	88,747

COORDINATES			
POINT	Y	X	LEVEL
IL1	-3023688,228	-43883,238	93,601
IL2	-3023690,484	-43870,522	93,601
IL3	-3023689,212	-43853,502	93,601
IL4	-3023713,461	-43829,431	91,089
IL5	-3023688,638	-43880,907	93,601
IL6	-3023694,070	-43848,763	93,601
IL7	-3023695,815	-43847,024	93,601
OL1	-3023732,199	-43833,550	93,118
OL2	-3023741,487	-43832,709	91,492
OL3	-3023743,800	-43820,516	89,624
OL4	-3023736,241	-43816,279	89,094
OL5	-3023732,294	-43827,507	90,715

COORDINATES			
POINT	Y	X	LEVEL
RE1	-3023724,242	-43823,206	90,155
RE2	-3023731,269	-43818,149	89,329
RE3	-3023716,862	-43827,409	90,946

LEGEND

- 800 CL12 HDPE Connection Main (INLET)
- 800 CL12 HDPE Connection Main (OUTLET)
- AV Air Valve
- SV Scour Valve
- IV Isolation Valve
- Earth V-Drain
- Reinforced Concrete Platform
- Platform (Cut/Fill)
- Stone Pitching
- Benchmark
- Existing Building

Project Manager: TSI CONSULTING ENG.

Urban Planners

Architects

Quantity Surveyors

Structural Engineers: TSI CONSULTING ENG.

Civil Engineers: TSI CONSULTING ENG.

Electrical Engineers

Mechanical Engineers

Landscape Architects

Contractor

CLIENT

KWAZULU-NATAL PROVINCE
HEALTH
REPUBLIC OF SOUTH AFRICA

IMPLEMENTING AGENT

KWAZULU-NATAL PROVINCE
HEALTH
REPUBLIC OF SOUTH AFRICA

PROJECT

MSELENI HOSPITAL:
72 HOUR WATER STORAGE TANK

TSI Consulting Engineers (Pty) Ltd

PO Box 902
KwaZulu
4700

Tel :
Fax :
Email : info@tsiengineers.co.za

DRAWING

GENERAL LAYOUT

STAGE: DETAIL DESIGN

CLIENT'S SIGNATURE

DRAWING USAGE

APPROVED

Client
TSI Consulting Engineers (Pty) Ltd

Drawn by Date
TSI Consulting Engineers (Pty) Ltd

Checked by Date
12/04/2023

Scale: 1:100 @ A3 SIZE

Project No: TBC

Date Drawn: 2023/04/12

Print Date: 2023/04/12

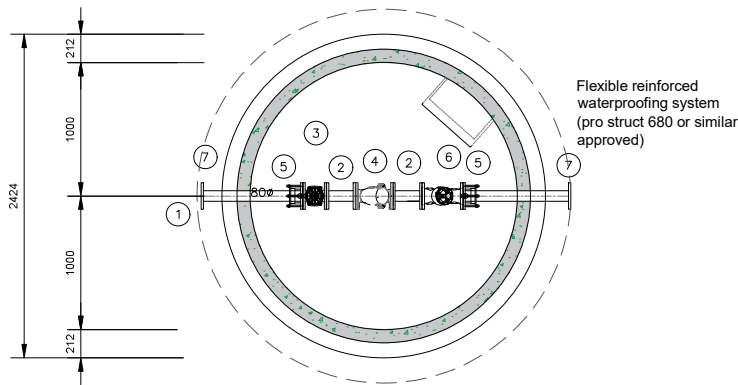
Journal ID: 1001

Revision: 00

Status: TENDER

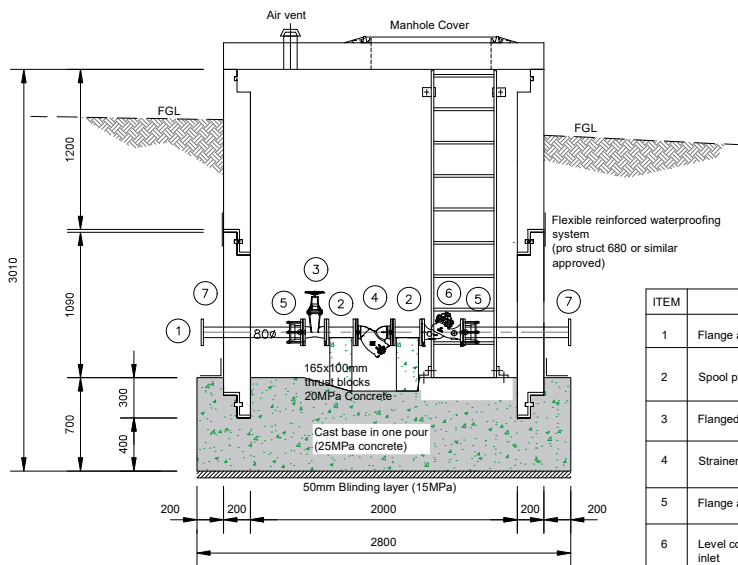
NOTES

- DO NOT SCALE THIS DRAWING. WORK TO FIGURED DIMENSIONS ONLY. ANY DISCREPANCIES TO BE BROUGHT TO THE ENGINEERS ATTENTION PRIOR TO IMPLEMENTATION OF ANY WORK.
- MINIMUM CONCRETE CUBE STRENGTH @ 28 DAYS FOR BLINDING LAYER IS TO BE 15MPa MINIMUM CONCRETE CUBE STRENGTH @ 28 DAYS FOR FLOOR SLABS, ROOF SLABS, COLUMNS, FOUNDATIONS AND EXTERNAL NON-WATER RETAINING STRUCTURE IS TO BE 35MPa.
CONCRETE COVER SPECIFICATIONS ARE TO BE IN ACCORDANCE WITH THE CONTRACT DOCUMENT DESIGN SPECIFICATIONS.
- MINIMUM COVER TO REINFORCING
FLOOR/BASE SLAB 50mm TOP & BOTTOM
WALLS - EARTH FACE 40mm
WATER FACE 50mm
ROOF SLAB - SOFFIT 50mm
- TOP 40mm
COLUMNS 50mm
- PWJ - PARTIAL WALL VERTICAL JOINT PFJ - PARTIAL FLOOR JOINT
- ENGINEER TO INSPECT ALL REINFORCEMENT PRIOR TO CASTING CONCRETE.
- 20x20mm CHAMFER ON ALL EXPOSED CONCRETE EDGES UNLESS OTHERWISE NOTED.
- ALL STEEL FLANGES TO S.A.B.S. 1123/77 TABLE 1600/3 UNLESS OTHERWISE INDICATED.
- ALL STEEL PIPE SPECIALS TO BE RILSAN LINED AND COATED TO SPECIFICATIONS.
- ALL BURIED STEEL PIPEWORK & BOLTED CONNECTIONS TO BE 'DENSO' WRAPPED TO SPECIFICATION
- ALL PUDDLE PIPE TO BE TAPE WRAPPED TO SPECIFICATION.
- ALL BOLTS & NUTS TO BE HOT DIP GALVANISED, UNLESS OTHERWISE INDICATED
- ALL CONSTRUCTION ACTIVITIES SHALL BE EXECUTED TO THE ENGINEERS APPROVAL.
- SETTING OUT & FINAL POSITIONING OF ALL STEEL PIPEWORK, INCLUDING PUDDLE PIPES, TO BE CONFIRMED BY CONTRACTOR ON SITE, PRIOR TO FABRICATION AND INSTALLATION.



INLET CHAMBER [DN2500mm Manhole]

PLAN
SCALE 1:25



INLET CHAMBER [DN2500mm Manhole]

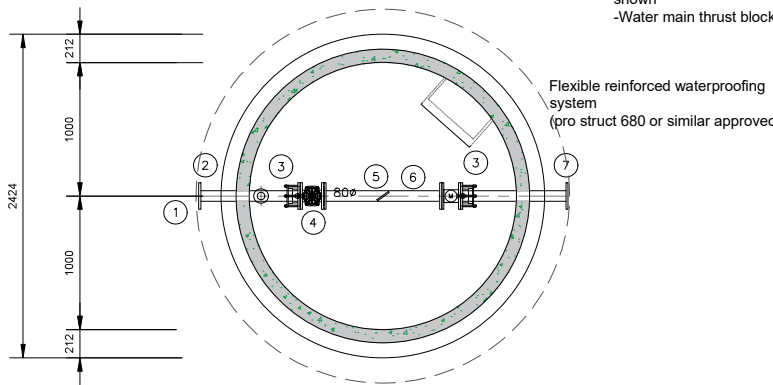
SECTION
SCALE 1:25

DETAIL 3

NOTES

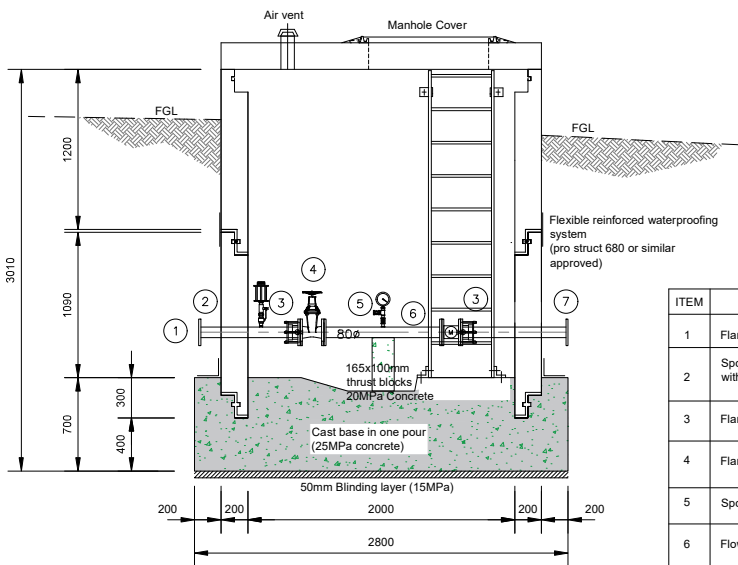
- Position of ventilator pipes to be decided on site refer to detail.
- Roof slab to be 150mm above NGL in undeveloped areas and to be in undeveloped areas and to be 50mm above NGL in developed areas
- 50mm above ngl in developed areas water main thrust block not shown
- Water main thrust block not shown

Flexible reinforced waterproofing system (pro struct 680 or similar approved)



OUTLET CHAMBER [DN2500mm Manhole]

PLAN
SCALE 1:25



OUTLET CHAMBER [DN2500mm Manhole]

SECTION
SCALE 1:25

DETAIL 4

NOTES

- Position of ventilator pipes to be decided on site refer to detail.
- Roof slab to be 150mm above NGL in undeveloped areas and to be in undeveloped areas and to be 50mm above NGL in developed areas
- 50mm above ngl in developed areas water main thrust block not shown
- Water main thrust block not shown

Flexible reinforced waterproofing system (pro struct 680 or similar approved)

CLASS 16 OUTLET CHAMBER DETAILS

ITEM	DESCRIPTION	QTY	Diameter, Length
1	Flange adaptor steel to UPVC.	1	80mmØ
2	Spool pipe connection to reservoir outlet, F.O.E. Fitted with Air Valve as shown	2	80mmØ, ±730mm Long to suit
3	Flange adaptor	2	80mmØ
4	Flanged RSV Non-rising spindle gate valve	1	80mmØ
5	Spool pipe, F.O.E fitted with Pressure Gauge	1	80mmØ
6	Flow Meter	1	80mmØ
7	Spool pipe connection to reticulation, F.O.E	1	80mmØ, +/-750mm to suit

FOR TENDER

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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Project Manager **TSI CONSULTING ENG.**

Urban Planners

Architects

Quantity Surveyors

Structural Engineers **TSI CONSULTING ENG.**

Civil Engineers **TSI CONSULTING ENG.**

Electrical Engineers

Mechanical Engineers

Landscape Architects

Contractor

CLIENT



IMPLEMENTING AGENT



PROJECT
**MSELENI HOSPITAL:
72 HOUR WATER STORAGE
TANK**



TSI Consulting Engineers (Pty) Ltd

PO Box 902

KwaZulu

4750

Tel :

Fax :

Email : info@tsiconsigners.co.za

DRAWING

**DETAILS 3 & 4: INLET AND OUTLET
CHAMBER**

STAGE **DETAIL DESIGN**

CLIENT'S SIGNATURE

DRAWING USAGE

APPROVED Client

TSI Consulting Engineers (Pty) Ltd

Drawn by Date

Checked by Date

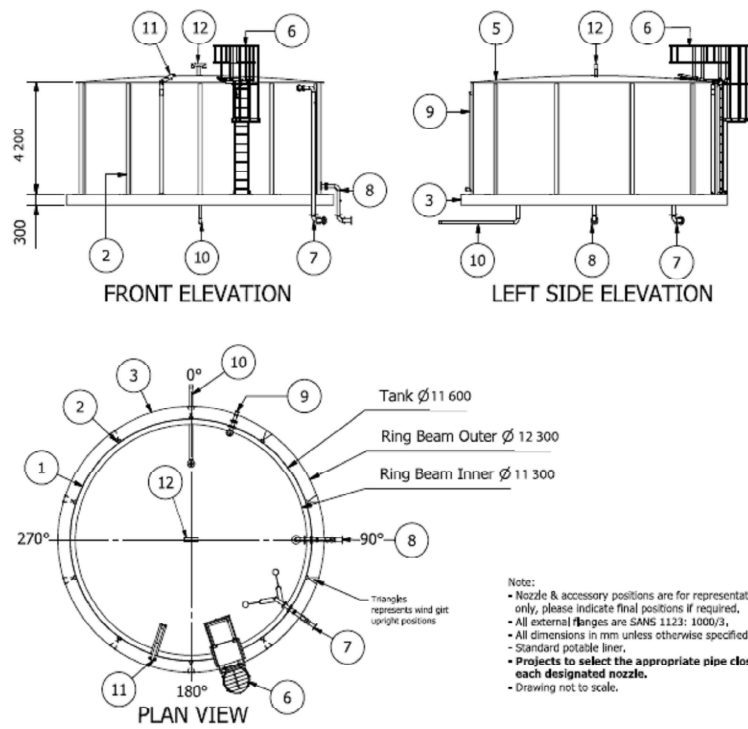
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Project No. TBC

Date Drawn 2023/04/12

Print date 2023/04/12

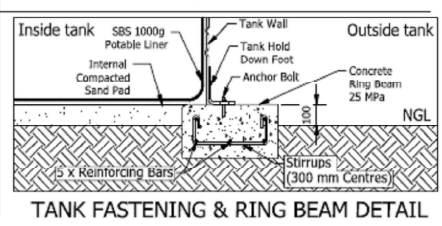
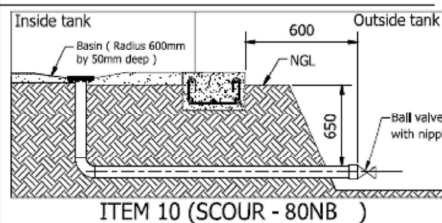
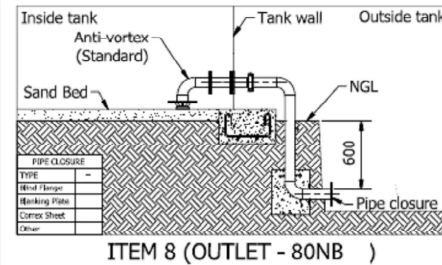
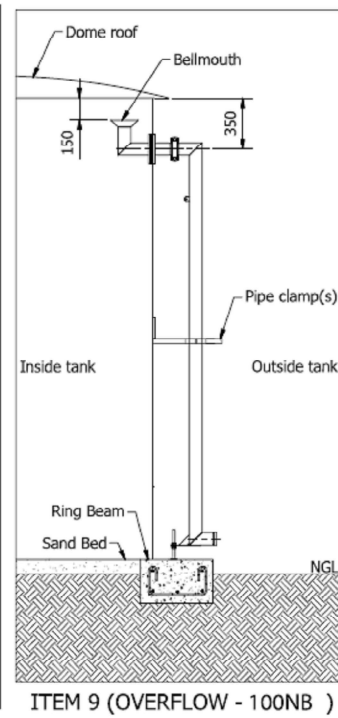
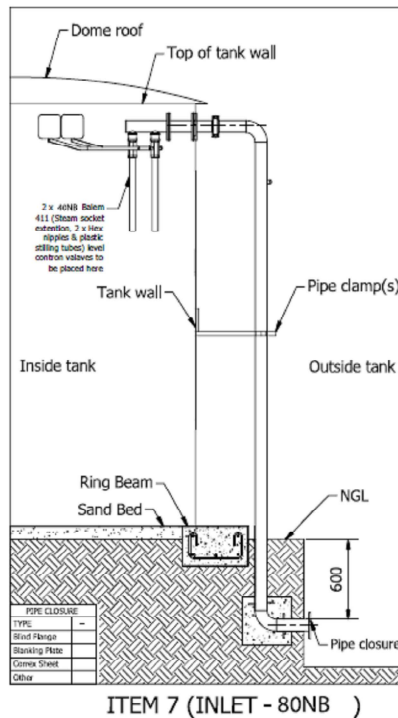
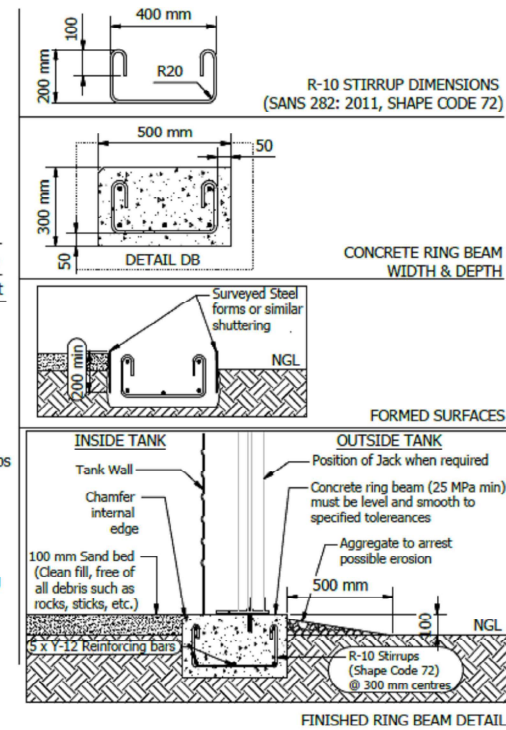
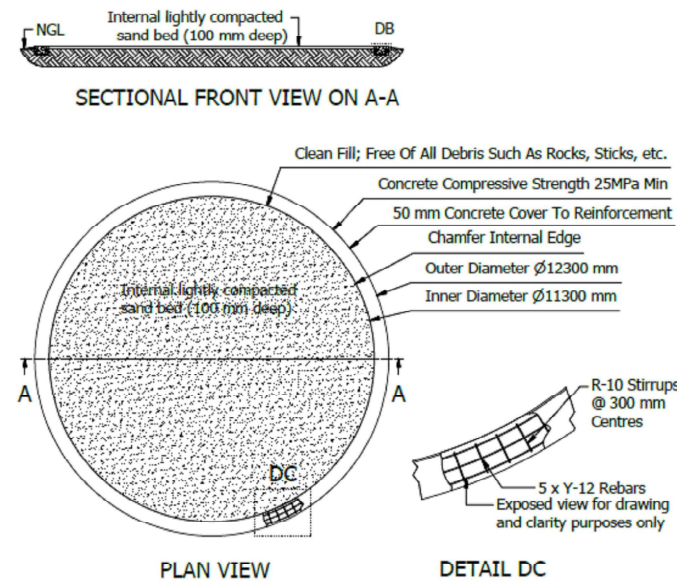
Layout ID 1003 Revision 00 Status TENDER



PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	Tank Wall Panels	Zincalume Steel Panels, Steel Grade G300, with AZ150 Heavy Duty Coating.
2	17	Wind Girts	Wind Girts are made from 2.4 mm hot dipped galvanised sheet metal. Punched and bent into profile.
3	1	Concrete Ring Beam	Reinforced, 25MPa min.
4	1	Truss Set (not shown)	Made from SHS (300 MPa min) and EA steel. Hot dipped galvanised after fabrication.
5	1	Dome Roof	Zincalume corrugated sheets, 0.47 mm thick, Grade G550, with AZ150 coating.
6	1	Tank Access	Fixed, internal & external ladders, safety cage, platform, access hatch and hand rails.
7	1	Inlet - 80NB	Internal dual valve adaptor, 2 x Balem 411 float control valves (2 x Steam socket extensions, 2 x hex nipples & 2 x plastic stilling tubes), external downpipe (terminates below ground), ext flange complete with pipe closure & pipe clamp(s).
8	1	Outlet - 80NB	Internal anti-vortex (Standard), external downpipe (terminates below ground), ext flange complete with pipe closure.
9	1	Overflow - 100NB	Internal bellmouth, external downpipe with grooved termination complete with pipe clamp(s).
10	1	Scour - 80NB	Internal flange, external threaded female socket with nipple and ball valve.
11	1	Water Level Indicator	S Rings
12	2	Ventilator	Static, 76 x 76 SHS.

TANK & ACCESSORIES GA - ST17/04

ST17 CONCRETE RING BEAM - NOT TO SCALE



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Project Manager	TSI CONSULTING ENG.
Urban Planners	
Architects	
Quantity Surveyors	
Structural Engineers	TSI CONSULTING ENG.
Civil Engineers	TSI CONSULTING ENG.
Electrical Engineers	
Mechanical Engineers	
Landscape Architects	
Contractor	
CLIENT	

IMPLEMENTING AGENT	

PROJECT	MSELENI HOSPITAL 72 HOUR WATER STORAGE TANK
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TSI Consulting Engineers (Pty) Ltd	
PO Box 902 Kokstad 4750	Tel : Fax : Email : info@tsiconsulting.co.za

DRAWING	
DETAILS 1: 400KL RESERVOIR	

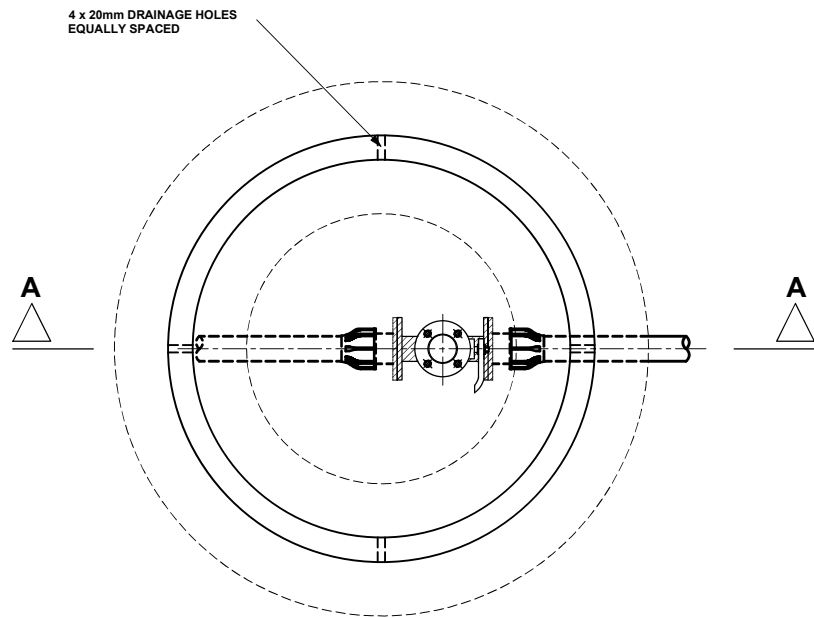
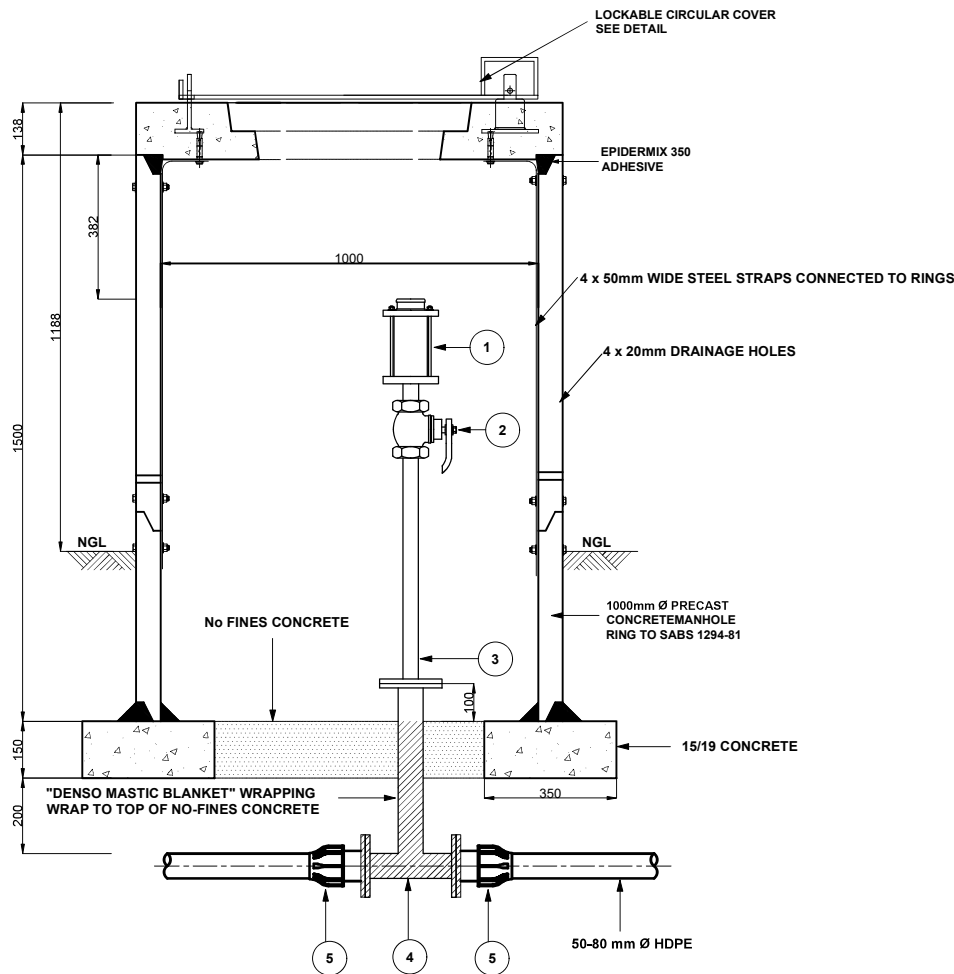
STAGE	DETAIL DESIGN
CLIENT'S SIGNATURE	
DRAWING USAGE	

APPROVED	Client	Project No.
	Team	TBC
Drawn by Date	2023/04/12	Date Drawn
TSI Engineers (Pty) Ltd		2023/04/12
Checked by Date	2023/04/12	Print date
2023/04/12		2023/04/12
Scale	NTS	@ A1 SIZE

Layout ID	Revision	Status
1003	00	TENDER

FOR TENDER

FOR TENDER



FITTINGS SCHEDULE FOR PIPES

ITEM No.	DIA.	DESCRIPTION	No. OFF
1	25 (50)	VENT-O-MAT AIR VALVE 025-RBX-16-1-1 OR 050-RBX-16-1-1	1
2	25 (50)	GLEN BALL VALVE	1
3	25 (50)	GMS STRAIGHT, THREADED ONE END, FLANGED ONE END 600mm, CONFIRM LENGTH ON SITE	1
4	50	EQUAL TEE, FLANGED ALL ENDS. T 450mm LONG	1
5	50	COMPRESSION FLANGE ADAPTER	2
6	50-80	COMPRESSION REDUCER	2

NOTES

- The Contractor shall excavate each trench such that the width conforms to the requirements of Subclause 5.2 of SABS 1200 DB or as shown in the drawing.
- The Contractor shall prepare the trench bottom in accordance with the requirements of SABS 1200 DB, apply bedding and fill according to SABS 1200 LB awing LB-2
- No bedding shall be laid until the Engineer has approved the trench, measured the depth if necessary, and authorized pipe laying to proceed.
- In the placing of bedding, all voids under the overhang of the pipes shall be filled and the compaction shall be carried out uniformly on each side of the pipe so as not to cause any lateral or vertical displacement of the pipe.
- Bedding shall be carried out as pipe laying proceeds, and shall be completed before the acceptance test is carried out.
- Pipes and fittings shall be fitted with spigot and socket rubber ring joints and shall comply with the relevant requirements of SABS 966.
- The degree of compaction attained for bedding (other than concrete and the material over the top of the pipeline) shall be 90 % of modified AASHTO maximum density (see 6.1).
- The Engineer may order density tests to be carried out to determine the density and grading of the bedding.
- The tests may be carried out by the sand replacement method or, where the grading of the bedding is such that the particle size is not less than 0,075 mm and not more than 2 mm, by use of a dynamic cone penetrometer. If the density is below that specified, the Engineer may order removal and recompaction.
- As the work proceeds, pipelines shall be tested in convenient lengths by means of test equipment supplied by the Contractor. Each test shall be carried out in the presence of the Engineer or his representative.
- The Contractor shall be responsible for carrying out all tests and for all expenses incurred in this connection.
- The hydraulic test shall be repeated until the Engineer is satisfied that the section under test complies with the said requirement.

- ALL DIMENSIONS IN MILLIMETRES
- CONCRETE TO BE CLASS 15/19 UNLESS OTHERWISE SPECIFIED
- COVER TO REINFORCEMENT TO BE 40mm
- AIR VALVE TO BE POSITIONED ABOVE NGL
- ALL FLANGES TO MINIMUM 1 600 kPA OR TO SUIT PIPE CLASS
- ALL THREADS TO BSP STANDARDS
- ALL BURIED FITTINGS AND HINGES TO BE WRAPPED IN "DENSO MASTIC BLANKET" TAPE
- ALL STEEL COMPONENTS INCLUDING BOLTS GALVANISED TO ISO 1461 : 2000
- ALL WELDS TO BE FULL PENETRATION TO BS 534 AND FILLET WELD TO BE 80% OF WALL THICKNESS OR WITH A MINIMUM OF 5mm

Project Manager
Urban Planners
Architects
Quantity Surveyors -
Structural Engineers - TSI CONSULTING ENG.
Civil Engineers - TSI CONSULTING ENG.
Electrical Engineers
Mechanical Engineers
Landscape Architects -
Contractor

CLIENT

IMPLIMENTING AGENT

PROJECT
MSELENI HOSPITAL: 72 HOUR WATER STORAGE TANK



TSI Consulting Engineers (Pty) Ltd
PO Box 902
Kokstad
4700

DRAWING
DETAIL: AIR VALVE DETAILS FOR 50-80 DIA

STAGE		DESIGN DEVELOPMENT	
CLIENT'S SIGNATURE			
DRAWING USAGE:			
APPROVED		Client Tenant	
Drawn by Date			
TSI CONSULTING ENGINEERS			
Checked by Date			
Scale:		@ A1 SIZE	
1:100, 1:50			
		Project No. MSEL001	
		Date Drawn: 2023/03/22	
		Print date: 2023/03/22	
Layout ID		Revision	Status
1005		00	FOR TENDER

ITEM No.	DIA.	DESCRIPTION	No. OFF
①	75-80	GATE VALVE CLASS 16	1
②	50-80	* COMPRESSION FLANGE ADAPTER FOR HDPE PIPES	1

1000

LOCKABLE CIRCULAR COVER
SEE DETAIL

EPIDERMIX 350
ADHESIVE

NGL

1000mm Ø PRECAST
CONCRETE MANHOLE
RING TO SABS 1294-81
(500mm + 250mm)

19mm NO FINES
CONCRETE

FOOTING FOR RING
REFER DETAIL A

250mm uPVC
(CLASS 12)

"DENSO MASTIC BLANKET"
WRAPPING

50/63/75 mm Ø HDPE PIPE

CONCRETE GRADE 15/19
ANCHOR BLOCK

VARIES DEPENDING ON VALVE

1

2

150

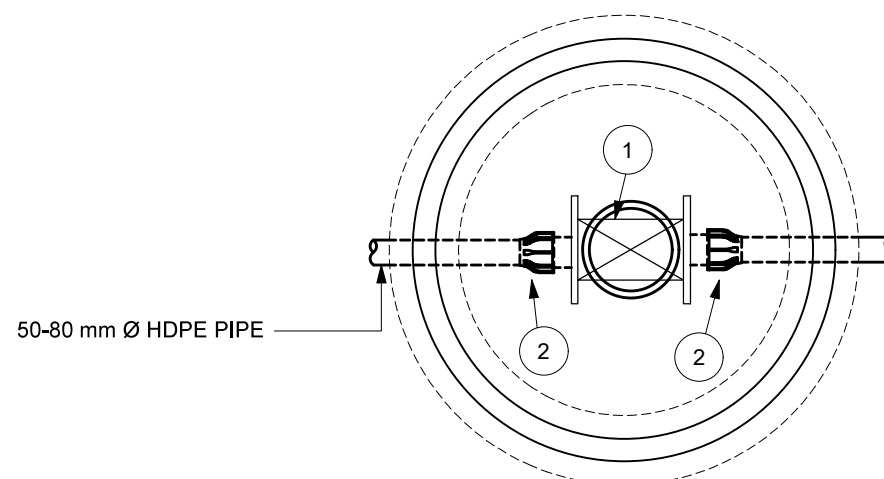
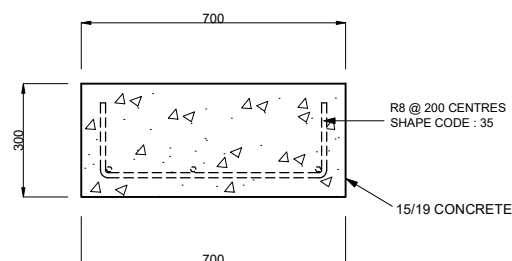
500

750

150

200

100



- The Contractor shall excavate each trench such that the width conforms to the requirements of Subclause 5.2 of SABS 1200 DB or as shown in the drawing.

- The Contractor shall prepare the trench bottom in accordance with the requirements of SABS 1200 DB, apply bedding and fill according to SABS 1200 LB and LB-2

- No bedding shall be laid until the Engineer has approved the trench, measured the depth if necessary, and authorized pipe laying to proceed.

- In the placing of bedding, all voids under the overhang of the pipes shall be filled and the compaction shall be carried out uniformly on each side of the pipe so as not to cause any lateral or vertical displacement of the pipe.

- Bedding shall be carried out as pipe laying proceeds, and shall be completed before the acceptance test is carried out.

- Pipes and fittings shall be fitted with spigot and socket rubber ring joints and shall comply with the relevant requirements of SABS 966.

- The degree of compaction attained for bedding (other than concrete and the material over the top of the pipeline) shall be 90 % of modified AASHTO maximum density (see 6.1).

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- The Contractor shall be responsible for carrying out all tests and for all expenses incurred in this connection.

- The hydraulic test shall be repeated until the Engineer is satisfied that the section under test complies with the said requirement.

Project Manager	
Urban Planners	
Architects	
Quantity Surveyors	-
Structural Engineers	- TSI CONSULTING ENG.
Civil Engineers	- TSI CONSULTING ENG.
Electrical Engineers	
Mechanical Engineers	
Landscape Architects	-
Contractor	

IMPLIMENTING AGENT

 **KWAZULU-NATAL PROVINCE**
HEALTH
REPUBLIC OF SOUTH AFRICA



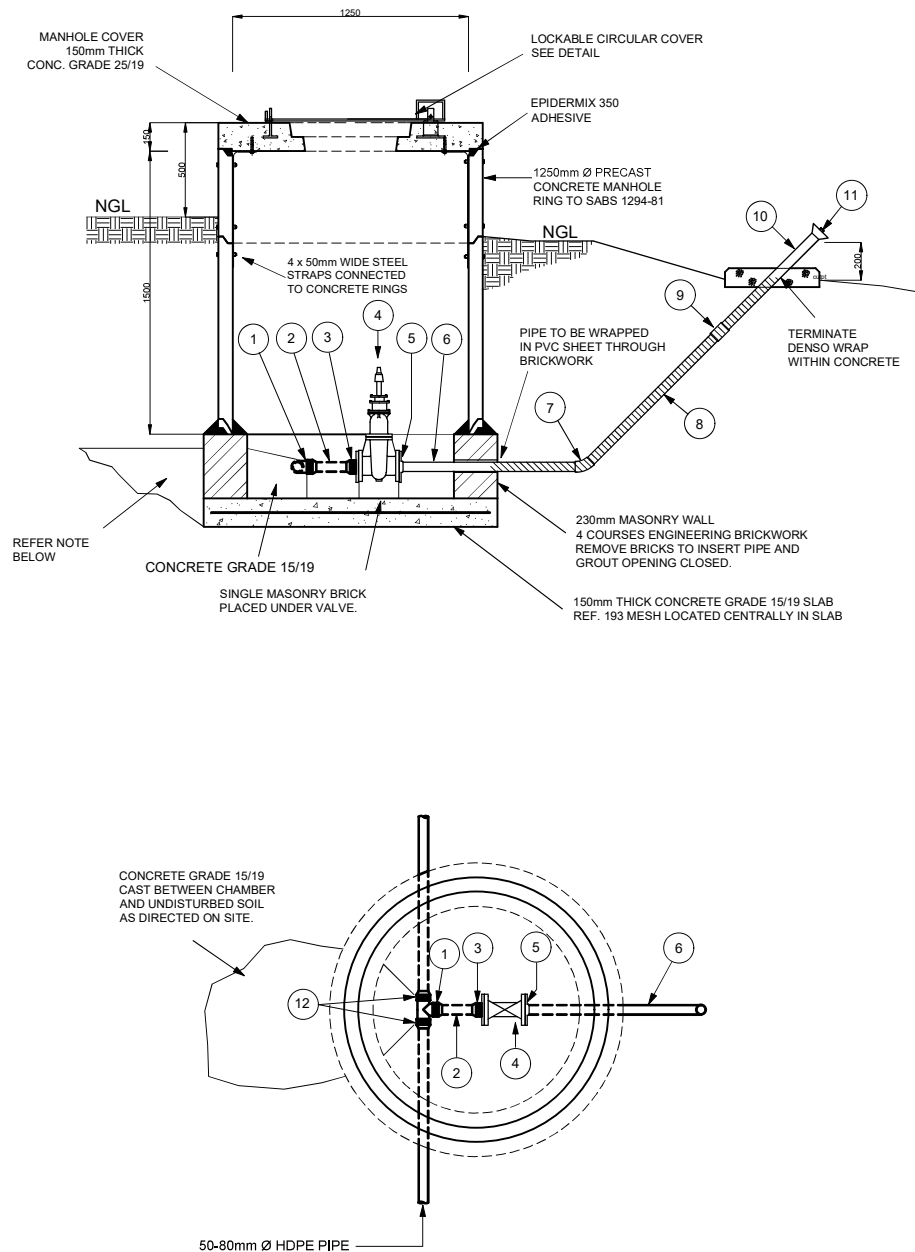
PO Box 902
Kokstad
4700

STAGE	DESIGN DEVELOPMENT
CLIENT'S SIGNATURE	
DRAWING USAGE	

APPROVED	Client	Project No MSEL001
	Tenant	
Drawn by Date TSI CONSULTING ENGINEERS		Date Drawn: 2023/03/22
Checked by Date		Print date: 2023/03/22
Scale: 1:100, 1:50	@ A1 SIZE	

Layout ID 1006	Revision 00	Status FOR TENDER
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FITTINGS SCHEDULE FOR PIPES			
ITEM No.	DIA.	DESCRIPTION	No. OFF
①	50	50 Ø EQUAL TEE, HDPE COMPRESSION FITTING	1
②	50	HDPE STRAIGHT PIPE, CLASS 10 220mm LONG	1
③	50	FLANGE ADAPTOR HDPE COMPRESSION FITTING	1
④	50	WATERWORKS GATE VALVE TO SABS 664	1
⑤	50	FLANGE ADAPTOR FOR THREADED GMS PIPE	1
⑥	50	GMS STRAIGHT PIPE, THREADED BOTH ENDS 900mm LONG, CONFIRM LENGTH ON SITE	1
⑦	50	GMS ELBOW, FOR THREADED GMS PIPE	1
⑧	50	GMS STRAIGHT PIPE, THREADED BOTH ENDS 1120mm LONG, CONFIRM LENGTH ON SITE	1
⑨	50	COUPLING, FOR THREADED GMS PIPE	1
⑩	50	GMS STRAIGHT PIPE THREADED BOTH ENDS 800mm, CONFIRM LENGTH ON SITE	1
⑪	50	JET DISPERSER	1
⑫	50-80	COMPRESSION REDUCER	2



NOTES

- The Contractor shall excavate each trench such that the width conforms to the requirements of Subclause 5.2 of SABS 1200 DB or as shown in the drawing.
- The Contractor shall prepare the trench bottom in accordance with the requirements of SABS 1200 DB, apply bedding and fill according to SABS 1200 LB awing LB-2
- No bedding shall be laid until the Engineer has approved the trench, measured the depth if necessary, and authorized pipe laying to proceed.
- In the placing of bedding, all voids under the overhang of the pipes shall be filled and the compaction shall be carried out uniformly on each side of the pipe so as not to cause any lateral or vertical displacement of the pipe.
- Bedding shall be carried out as pipe laying proceeds, and shall be completed before the acceptance test is carried out.
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- ALL DIMENSIONS IN MILLIMETRES
- CONCRETE TO BE CLASS 15/19 UNLESS OTHERWISE SPECIFIED
- COVER TO REINFORCEMENT TO BE 40mm
- AIR VALVE TO BE POSITIONED ABOVE NGL
- ALL FLANGES TO MINIMUM 1 600 kPA OR TO SUIT PIPE CLASS
- ALL THREADS TO BSP STANDARDS
- ALL BURIED FITTINGS AND HINGES TO BE WRAPPED IN "DENSO MASTIC BLANKET" TAPE
- ALL STEEL COMPONENTS INCLUDING BOLTS GALVANISED TO ISO 1461 : 2000
- ALL WELDS TO BE FULL PENETRATION TO BS 534 AND FILLET WELD TO BE 80% OF WALL THICKNESS OR WITH A MINIMUM OF 5mm

Project Manager
Urban Planners
Architects
Quantity Surveyors -
Structural Engineers - TSI CONSULTING ENG.
Civil Engineers - TSI CONSULTING ENG.
Electrical Engineers
Mechanical Engineers
Landscape Architects -
Contractor



PROJECT
**MSELENI HOSPITAL:
72 HOUR WATER STORAGE TANK**



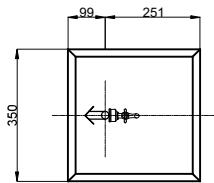
TSI Consulting Engineers (Pty) Ltd
PO Box 902
Kokstad
4700

DRAWING
**DETAIL: 50-80 DIA SCOUR VALVE TYPICAL
DETAILS**

STAGE **DESIGN DEVELOPMENT**
CLIENT'S SIGNATURE
DRAWING USAGE

APPROVED	Client Tenant	Project No MSEL001
Drawn by Date TSI CONSULTING ENGINEERS	Checked by Date	Date Drawn: 2023/03/22
Scale: 1:100, 1:50 @ A1 SIZE		Print date: 2023/03/22

Layout ID 1007	Revision 00	Status FOR TENDER
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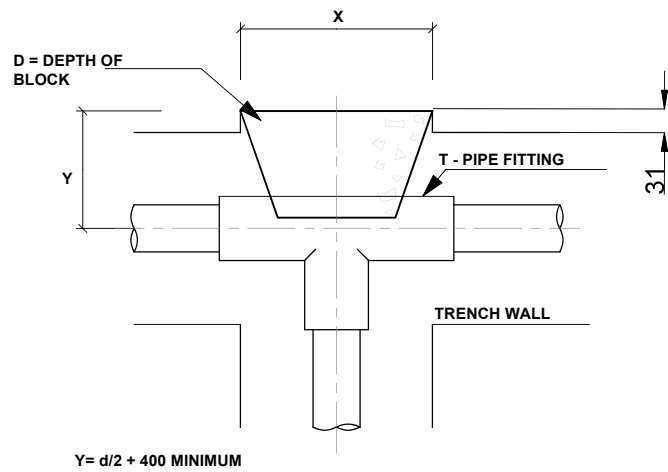


FITTINGS SCHEDULE		
ITEM	DESCRIPTION	No. OFF
1	3/4" "COBRA" 108-20 TAP WITH 3/4" BSP UNION	1
2	1800mm LONG Y FENCE STANDARD TIE TO GALVANISED IRON PIPE WITH No. 2 CABLE TIES	1
3	22mm GALVINISED IRON PIPE 1200mm LONG, THREADED BOTH ENDS	1
4	20mm GMS ELBOW	2
5	20mm x 3/4" COMPRESSION MALE ADAPTOR	4
6	15mm "ELASTER" TYPE V110 CLASSIC WATER METER	1
7	20/19 CONCRETE BLOCK ON HAND STAMPED INSITU COMPACTED MATERIAL	1
8	20mm Ø HDPE PE 80 PN10 PIPE	10m
9	50/63/75/90mm COMPRESSION SADDLE WITH 20mm OFFTAKE	1
10	"ELSTER KENT" B100 310mm x 200mm STANDARD PLASTIC METER BOX WITH BASEPLATE, LOCKING DEVICE, BRASS 3/4" FEMALE CONNECTORS AND 1 KEY PER 25 BOXES	1
11	FLOW CONTROL DEVICE ("SMARTFLO")	1
12	20mm x 3/4" 45° MALE COMPRESSION ELBOW	2

NOTES

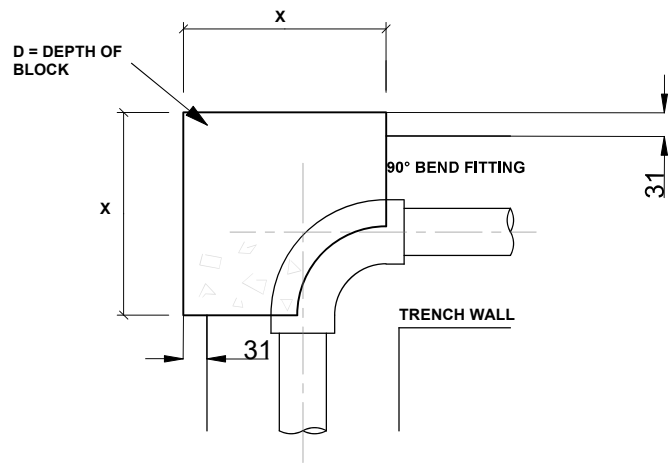
- The Contractor shall excavate each trench such that the width conforms to the requirements of Subclause 5.2 of SABS 1200 DB or as shown in the drawing.
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Mechanical Engineers											
Landscape Architects -											
Contractor											
CLIENT KWAZULU-NATAL PROVINCE HEALTH REPUBLIC OF SOUTH AFRICA											
IMPLIMENTING AGENT KWAZULU-NATAL PROVINCE HEALTH REPUBLIC OF SOUTH AFRICA											
PROJECT MSELENI HOSPITAL: 72 HOUR WATER STORAGE TANK											
TSI Consulting Engineers (Pty) Ltd PO Box 902 Kokstad 4700											
DRAWING DETAIL: YARD TAP DETAILS WITH FLOW CONTROLLER											
STAGE DESIGN DEVELOPMENT CLIENT'S SIGNATURE DRAWING USAGE											
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Client											
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Project No: MSEL001	Date Drawn: 2023/03/22										
Print date: 2023/03/22											
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Layout ID</td> <td style="width: 30%;">Revision</td> <td style="width: 40%;">Status</td> </tr> <tr> <td style="text-align: center;">1008</td> <td style="text-align: center;">00</td> <td style="text-align: center;">FOR TENDER</td> </tr> </table>	Layout ID	Revision	Status	1008	00	FOR TENDER					
Layout ID	Revision	Status									
1008	00	FOR TENDER									



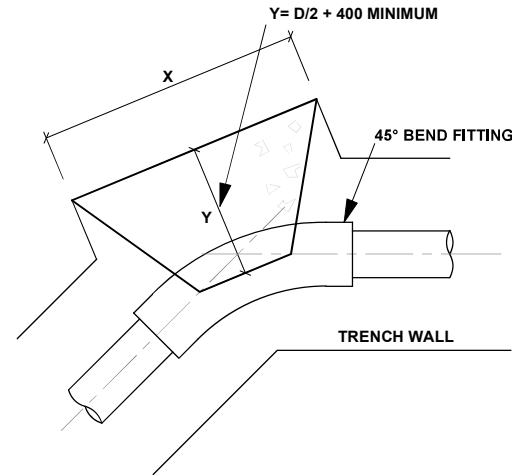
TEE CONNECTION THRUST BLOCK
FOR PRESSURE PIPELINE

PIPE (mm)	X (mm)	D (mm)
50	300	150
75	300	150
80	400	200
110	500	250
160	600	300



90° BEND THRUST BLOCK
FOR PRESSURE PIPELINE

PIPE (mm)	X (mm)	D (mm)
50	560	225
75	560	225
80	650	300
110	730	375
160	825	450

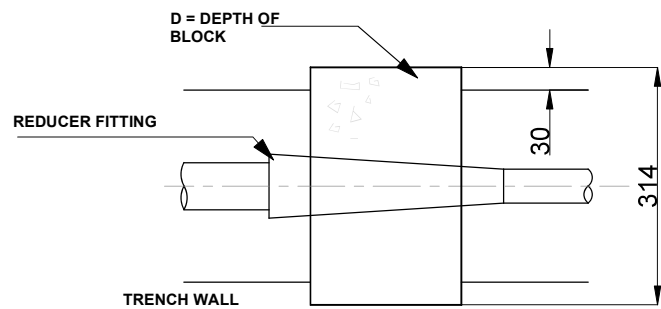


45°/22.5° BEND THRUST BLOCK
FOR PRESSURE PIPELINE

PIPE (mm)	X (mm)	D (mm)
50	300	150
75	300	150
80	400	200
110	500	250
160	600	300

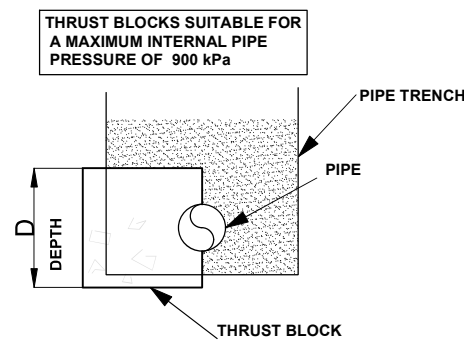
NOTES

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REDUCER CONNECTION THRUST BLOCK
FOR PRESSURE PIPELINE

PIPE (mm)	X (mm)	D (mm)
80	700	300
110	700	300
160	700	300



TYPICAL SECTION

- BACKSIDE OF THRUST BLOCK TO BE ON UNDISTURBED GROUND.
- CONCRETE GRADE 15/19 FOR ALL THRUST BLOCKS.
- d = PIPE Ø

Project Manager
Urban Planners
Architects
Quantity Surveyors
Structural Engineers
Civil Engineers
Electrical Engineers
Mechanical Engineers
Landscape Architects
Contractor

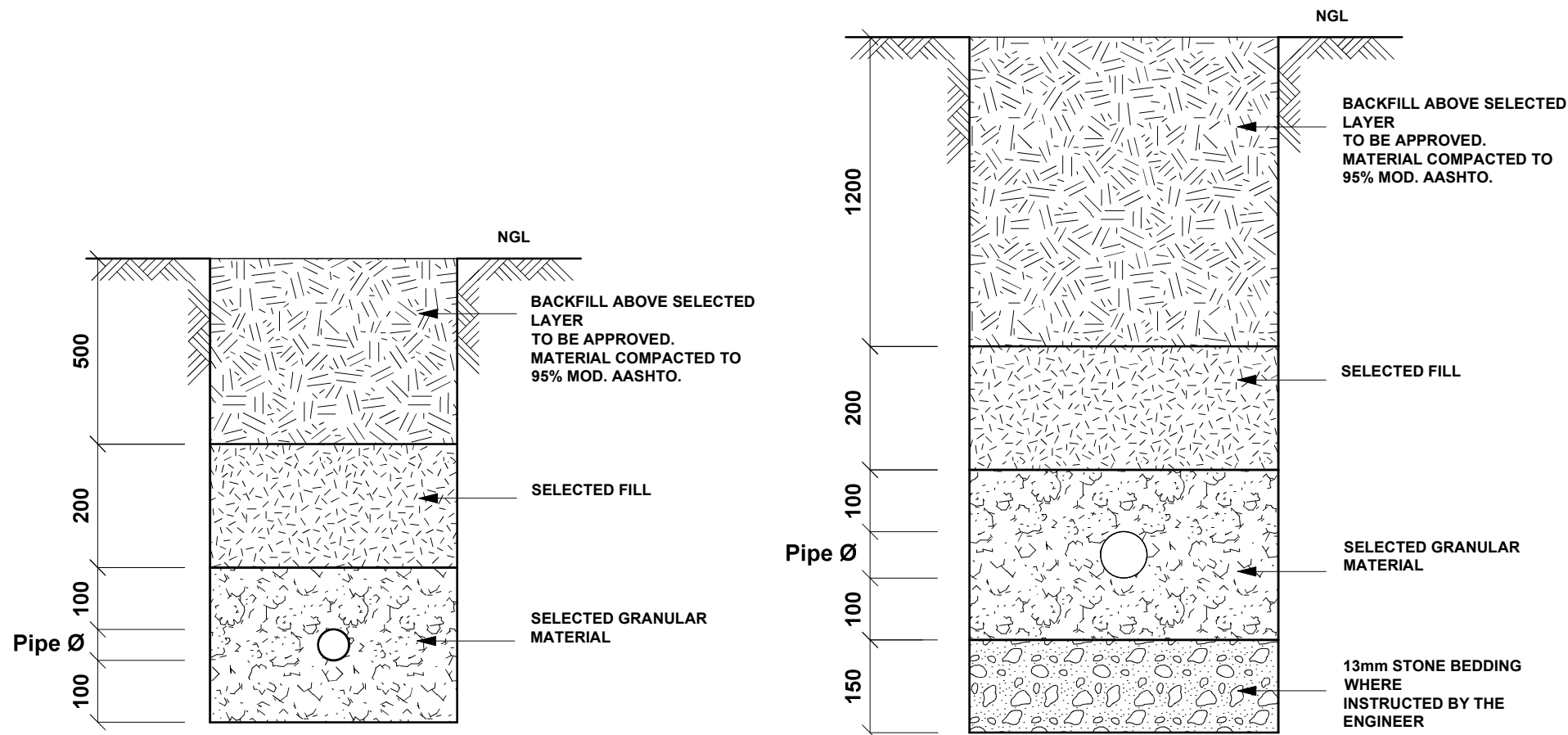
CLIENT
IMPLIMENTING AGENT
PROJECT
MSELENI HOSPITAL: 72 HOUR WATER STORAGE TANK



TSI Consulting Engineers (Pty) Ltd
PO Box 902
Kokstad
4700

DRAWING
DETAIL: THRUST BLOCK

STAGE		DESIGN DEVELOPMENT	
CLIENT'S SIGNATURE			
DRAWING USAGE			
APPROVED		Client Tenant	
Drawn by		Date	
TSI CONSULTING ENGINEERS			
Checked by		Date	
Scale:	1:100, 1:50	@ A1 SIZE	
		Project No MSEL001	
		Date Drawn: 2023/03/22	
		Print date: 2023/03/22	
Layout ID		Revision	Status
1009	00	FOR TENDER	



**BEDDING DETAIL FOR RETICULATION PIPES
UP TO 75mm Ø COVER 800mm**

**BEDDING DETAIL FOR SECONDARY BULK PIPELINES
50mm Ø TO 160mm Ø COVER 1500mm**

NOTES

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- ALL THREADS TO BSP STANDARDS
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Project Manager
Urban Planners
Architects
Quantity Surveyors -
Structural Engineers - TSI CONSULTING ENG.
Civil Engineers - TSI CONSULTING ENG.
Electrical Engineers
Mechanical Engineers
Landscape Architects -
Contractor

CLIENT

IMPLIMENTING AGENT

PROJECT
MSELENI HOSPITAL: 72 HOUR WATER STORAGE TANK



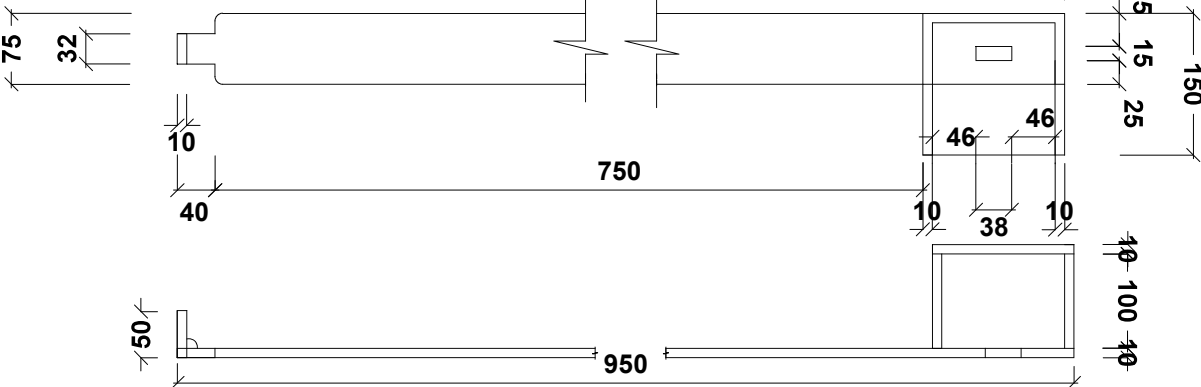
TSI Consulting Engineers (Pty) Ltd
PO Box 902
Kokstad
4700

DRAWING
DETAIL: TYPICAL BEDDING

STAGE	DESIGN DEVELOPMENT
CLIENT'S SIGNATURE	
DRAWING USAGE	

APPROVED	Client Tenant	Project No MSEL001
Drawn by TSI CONSULTING ENGINEERS	Date 2023/03/22	Date Drawn 2023/03/22
Checked by	Date	Print date 2023/03/22
Scale 1:100, 1:50	@ A1 SIZE	

Layout ID 1010	Revision 00	Status FOR TENDER
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- NOTES**
- 1: THESE UNITS TO BE PROVIDED FOR MAN HOLES AND WHERE EVER ELSE ORDERED BY ENGINEER.
 - 2: ALL COMPONENTS TO BE MILD STEEL HOT DIPPED GALVANISED.
 - 3: 14 Ø HOLE IN ITEM B TO SUIT ABUS PADLOCK.
 - 4: ASSEMBLY TO BE PLACED CENTRALLY ACROSS MANHOLE/OPENING.
 - 5: ALL CORNERS TO BE 10mm Ø RADIUS AS SHOWN.
 - 6: ALL DIMENSIONS IN MILLIMETERS.

Project Manager	
Urban Planners	
Architects	
Quantity Surveyors	-
Structural Engineers	- TSI CONSULTING ENG.
Civil Engineers	- TSI CONSULTING ENG.
Electrical Engineers	
Mechanical Engineers	
Landscape Architects	-
Contractor	

CLIENT

 **KWAZULU-NATAL PROVINCE**
HEALTH
REPUBLIC OF SOUTH AFRICA

IMPLIMENTING AGENT

 **KWAZULU-NATAL PROVINCE**
HEALTH
REPUBLIC OF SOUTH AFRICA

PROJECT	MSELENI HOSPITAL: 72 HOUR WATER STORAGE TANK
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TSI Consulting Engineers (Pty) Ltd
PO Box 902
Kokstad
4700

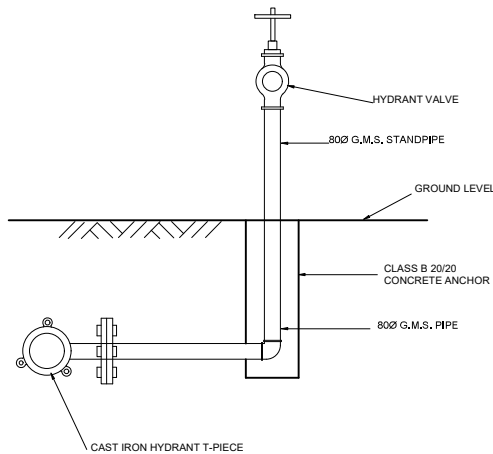
DRAWING

DETAIL: LOCKING BAR

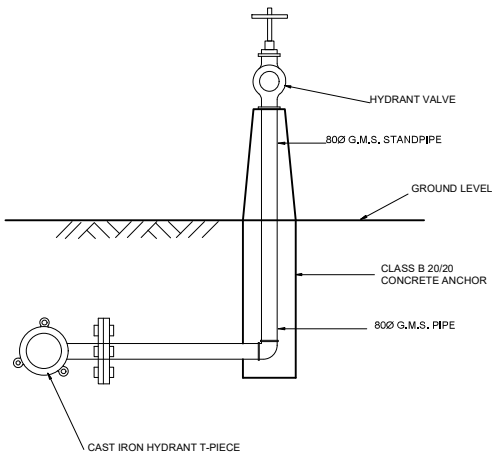
STAGE	DESIGN DEVELOPMENT
CLIENT'S SIGNATURE	
DRAWING USAGE	

APPROVED	Client	Project No MSEL001
	Tenant	
Drawn by Date TSI CONSULTING ENGINEERS Checked by Date		Date Drawn: 2023/03/22
Scale:	1:100, 1:50	Print date: 2023/03/22
@ A1 SIZE		

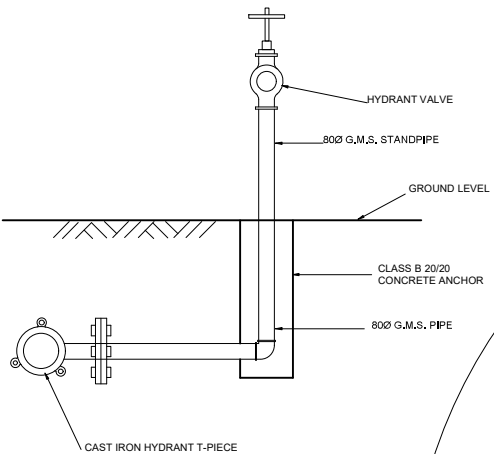
Layout ID 1011	Revision 00	Status FOR TENDER
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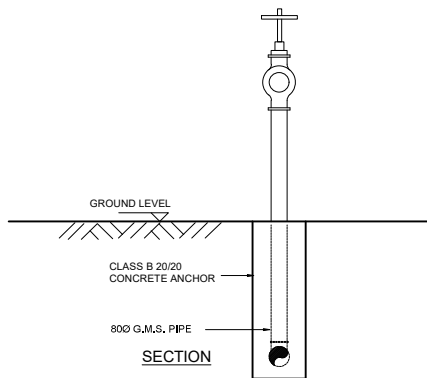
ELEVATION



ELEVATION



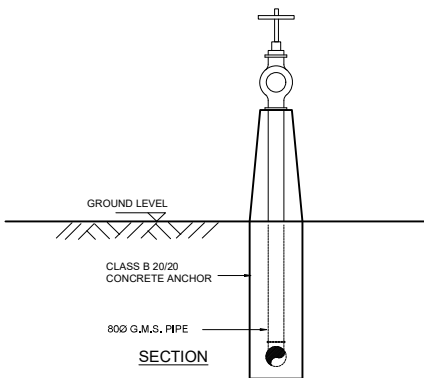
ELEVATION



SECTION

NOTE: G.M.S. PIPEWORK UNDER GROUND TO BE PLASTERED.
WRAPPED WITH DENSO TAPE OR SIMILAR APPROVED.

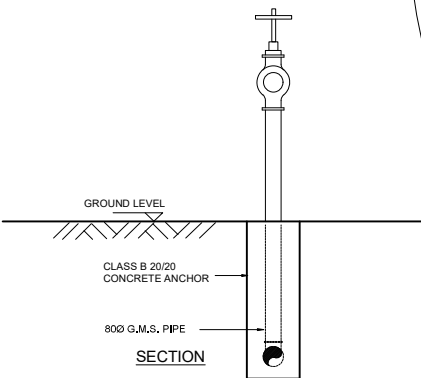
TYPICAL DETAIL OF FIRE HYDRANT



SECTION

NOTE: G.M.S. PIPEWORK UNDER GROUND TO BE PLASTERED.
WRAPPED WITH DENSO TAPE OR SIMILAR APPROVED.

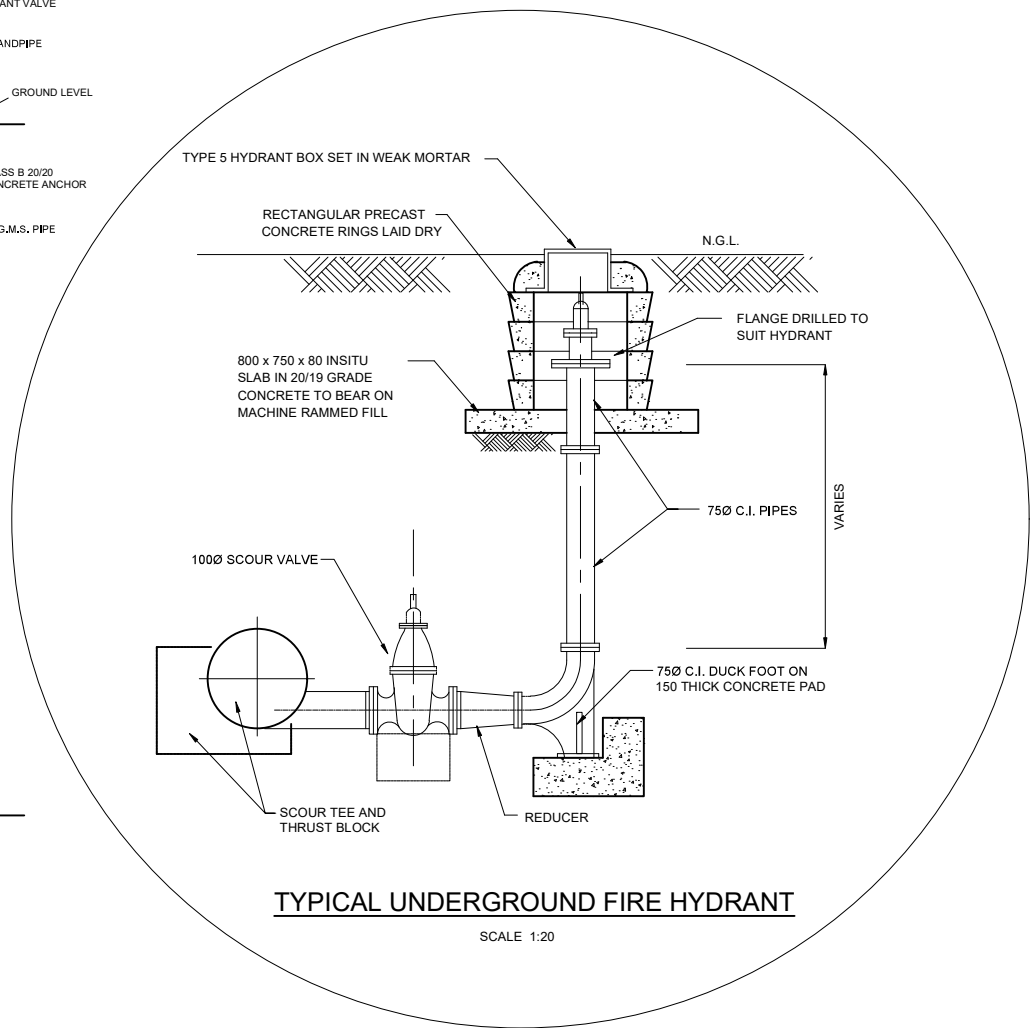
TYPICAL DETAIL OF FIRE HYDRANT
WITH CONCRETE SURROUND



SECTION

NOTE: G.M.S. PIPEWORK UNDER GROUND TO BE PLASTERED.
WRAPPED WITH DENSO TAPE OR SIMILAR APPROVED.

TYPICAL DETAIL OF FIRE HYDRANT



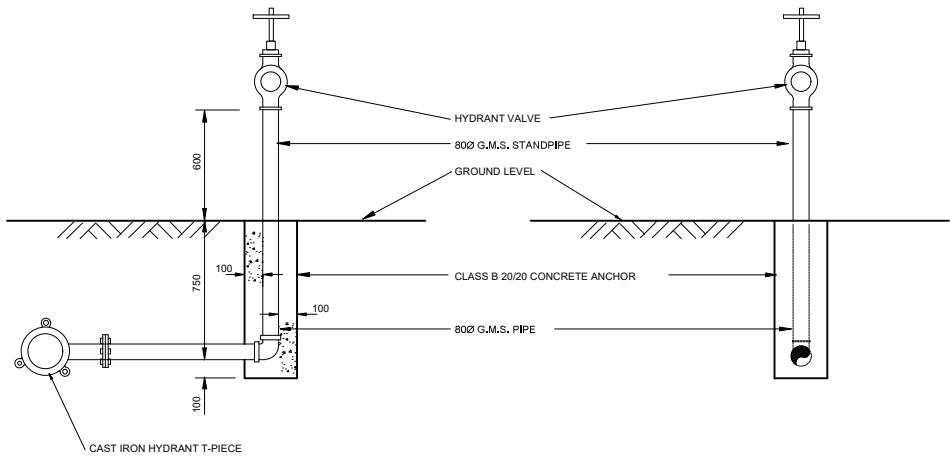
TYPICAL UNDERGROUND FIRE HYDRANT

SCALE 1:20

NOTES

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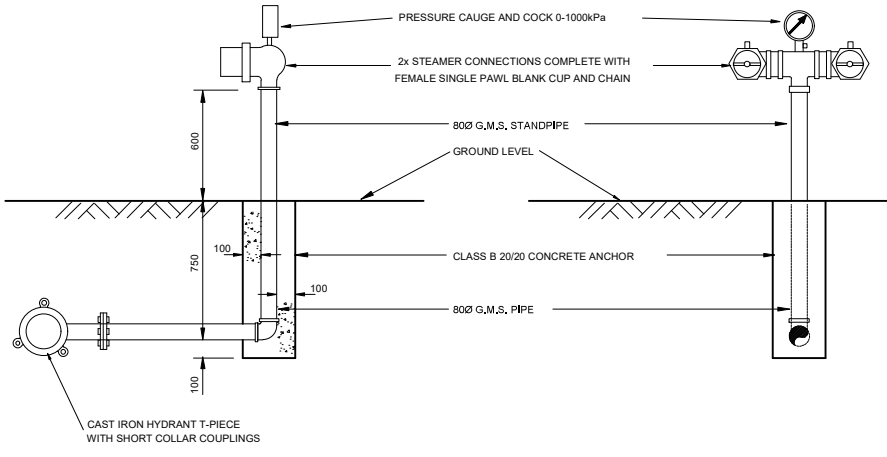
ELEVATION

SCALE 1:20

SECTION

TYPICAL DETAIL OF FIRE HYDRANT

NOTE: G.M.S. PIPEWORK UNDER GROUND TO BE PLASTERED.
WRAPPED WITH DENSO TAPE OR SIMILAR APPROVED.



ELEVATION

SCALE 1:20

SECTION

TYPICAL DETAIL OF TWIN BOOSTER

Project Manager
Urban Planners
Architects
Quantity Surveyors
Structural Engineers
Civil Engineers
Electrical Engineers
Mechanical Engineers
Landscape Architects
Contractor

CLIENT

IMPLIMENTING AGENT


PROJECT
MSELENI HOSPITAL: 72 HOUR WATER STORAGE TANK


TSI Consulting Engineers (Pty) Ltd PO Box 902 Kokstad 4700

DRAWING
DETAIL: FIRE HYDRANTS

STAGE		DESIGN DEVELOPMENT	
CLIENT'S SIGNATURE			
DRAWING USAGE			
APPROVED		Client Tenant	Project No MSEL001 Date Drawn 2023/03/22 Print date: 2023/03/22
Drawn by Date TSI CONSULTING ENGINEERS			
Checked by Date			
Scale: 1:20	@ A1 SIZE		
Layout ID 1012		Revision 00	Status FOR TENDER