NEW STORMWATER MANHOLES & FIELD INLETS (WGS84 Lo31)

MANHOLE NO.	TYPE	X - COORDINATE	Y - COORDINATE
SMH1	MANHOLE	3 312 712.978	-4 311.448
SMH2	FIELD INLET	3 312 744.201	-4 294.100
SMH3	MANHOLE	3 312 760.603	-4 271.612
SMH4	MANHOLE	3 312 758.896	-4 263.716
SMH5	MANHOLE	3 312 765.747	-4 249.482
SMH6	MANHOLE	3 312 770.631	-4 234.597
SMH7	MANHOLE	3 312 770.726	-4 220.747
SMH8	MANHOLE	3 312 755.998	-4 210.876
SMH9	MANHOLE	3 312 742.399	-4 197.175
SMH10	MANHOLE	3 312 686.427	-4 155.923
SMH11	EXISTING MANHOLE	3 312 691.309	-4 126.145
SMH2.1	FIELD INLET	3 312 654.901	-4 206.243
SMH2.2	MANHOLE	3 312 652.874	-4 204.747
SMH2.3	MANHOLE	3 312 661.153	-4 193.496
SMH2.4	MANHOLE	3 312 679.447	-4 199.126
SMH2.5	MANHOLE	3 312 708.303	-4 219.818
SMH2.6	MANHOLE	3 312 719.765	-4 204.267
SMH3.1	FIELD INLET	3 312 738.677	-4 265.673

EXISTING CHAMBERS (WGS84 Lo31)

MANHOLE NO.	TYPE	X - COORDINATE	Y - COORDINATE	REFERENCE DRAWING
C1	OUTLET CHAMBER (RESERVOIR 1)	3 312 709.739	-4 225.946	60591/006
C2	OUTLET CHAMBER (RESERVOIR 1)	3 312 701.580	-4 219.903	60591/006
C3	INLET CHAMBER (RESERVOIR 1)	3 312 697.422	-4 304.509	60591/006
C4	SCOUR CHAMBER (RESERVOIR 1)	3 312 683.343	-4 289.232	60591/006
C5	SCOUR CHAMBER (RESERVOIR 1)	3 312 648.886	-4 263.7900	60591/006
C6	CLAIRWOOD CROSS CONNECTION CHAMBER	3 312 661.363	-4 283.357	60591/006
C7	OUTLET CHAMBER (RESERVOIR 2)	3 312 817.891	-4 305.524	60591/007
C8	SCOUR CHAMBER (RESERVOIR 2)	3 312 773.069	-4 272.680	60591/007
C9	VALVE CHAMBER (RESERVOIR 1)	3 312 780.533	-4 231.861	60591/007
C10	VALVE CHAMBER (RESERVOIR 2)	3 312 785.434	-4 239.400	60591/007
C11	OFFTAKE CHAMBER	3 312 666.727	-4 157.689	60591/007

NEW CHAMBERS (WGS84 Lo31)

CHAMBER NAME	X - COORDINATE	Y - COORDINATE	REFERENCE DRAWING
DN350 METER CHAMBER	3 312 626.253	-4 225.296	60591/ 008
DN400 METER CHAMBER (RES 2)	3 312 774.205	- 4 262.341	60591/ 009
DN300 METER CHAMBER (RES 1)	3 312 716.991	-4 231.612	60591/ 010
INLET CHAMBER (RESERVOIR 2)	3 312 747.453	- 4 300.641	60591/ 012
CROSS CONNECTION CHAMBER (MOBENI BACKUP FEED)	3 312 609.778	-4 246.299	60591/ 011
AIR VALVE CHAMBER (DN450 WATER MAIN - INCOMING LINE)	3 312 654.478	-4 195.659	60591/ 013
AIR VALVE CHAMBER (DN450 WATER MAIN - BACKUP SUPPLY LINE)	3 312 601.017	-4 239.698	60591/ 013

LEGEND:

- EXISTING AC PIPELINE
- EXISTING STEEL PIPELINE
- NEW WATER PIPELINE
- WATERMAIN TO BE ABANDONED
- NEW STRUCTURAL FEATURE
- NEW STORMWATER PIPE
- NEW STORMWATER CHANNEL
- EXISTING STORMWATER PIPE
- NEW ACCESS ROAD
- NEW FENCE
- NEW STORMWATER MANHOLE
- NEW STORMWATER FIELD INLET
- NEW METER
- TAPER
- V VALVE
- CV CONTROL VALVE
- BV BUTTERFLY VALVE
- AV AIR VALVE

MOBENI RESERVOIR NO.1

MOBENI RESERVOIR NO.2

EXISTING DN450 AC WATER PIPELINE - BACKUP SUPPLY FROM WOODLANDS 1 & 2 RESERVOIR TO BE DECOMMISSIONED

TIE INTO EXISTING DN450 AC PIPELINE

GLANVILLE ROAD

NEW REROUTED DN450 STEEL WATERMAIN BACKUP FEED FROM WOODLANDS 1 & 2 RESERVOIR. REFER TO DWG 60591/005

NEW PERIMETER FENCING. REFER TO DWG 60591/018

EXISTING DN450 CROSS CONNECTION CHAMBER TO BE REMOVED

EXISTING AC PIPELINE TO BE DECOMMISSIONED

EXISTING DN375 AC WATER MAIN TO BE DECOMMISSIONED

EXISTING DN450xDN375 TAPER

EXISTING AC PIPELINE TO BE DECOMMISSIONED

NEW LOW LEVEL BOUNDARY GABION WALL. REFER TO DWG 60591/044

EXISTING DN450xDN300 TEE

EXISTING DN450xDN300 TEE

NEW DN450 STEEL WATER MAIN

NEW CROSS CONNECTION CHAMBER FOR BACKUP SUPPLY FROM WOODLANDS RESERVOIR 1 & 2. REFER TO DWG 60591/011

EXISTING DN300 AC WATER MAIN TO BE DECOMMISSIONED

NEW DN450 STEEL PIPELINE

NEW 450mm CLASS 100D CONCRETE STORMWATER PIPE

EXISTING STORMWATER MANHOLE TO BE REMOVED

EXISTING DN450 AC WATER PIPELINE

NEW 450mm CLASS 100D CONCRETE STORMWATER PIPE

PROPOSED GABION RETAINING WALL. REFER TO DWG 60591/042

PROPOSED DN450 TEE WITH END CAP FOR FUTURE RESERVOIR

EXISTING PORTION OF RESERVOIR TO BE DEMOLISHED

EXISTING ELECTRICAL PYLON

CONTAINER

CONTAINER

CONTAINER

NEW INLET CHAMBER. REFER TO DWG 60591/012

NEW PORTION OF RESERVOIR TO BE CONSTRUCTED

NEW 450mm CLASS 100D CONCRETE STORMWATER PIPE

NEW 315mm HDuPVC STORMWATER PIPE

NEW 450mm HDPE SCOUR PIPE

EXISTING OVERFLOW CHAMBER

EXISTING BUILDING TO BE REMOVED

EXISTING SHED TO BE REMOVED

EXISTING DN225 AC WATER MAIN

EXISTING DN50 HDPE WATER MAIN

NEW TELEMETRY ROOM

EXISTING BUILDING

EXISTING DN450 STEEL PIPE

EXISTING DN750xDN450 TAPER

EXISTING DN750 STEEL WATER MAIN - OUTGOING

NEW DN400 METER CHAMBER REFER TO DWG 60591/009

EXISTING DN750xDN600 TAPER

NEW 450mm CLASS 100D CONCRETE STORMWATER PIPE

NEW 450mm CLASS 100D CONCRETE STORMWATER PIPE

EXISTING DN600 STEEL WATER MAIN - OUTGOING

EXISTING DN450 STEEL WATER MAIN - FEED TO CLAIRWOOD HOSPITAL

NEW STORMWATER CHANNEL. REFER TO DETAILS ON DWG 60591/016

EXISTING DN450 AC WATER MAIN - INCOMING FROM WOODLANDS RESERVOIR 3 & 4

EXISTING VALVE CHAMBER TO BE DECOMMISSIONED & BURIED

EXISTING DN450 OUTLET PIPEWORK

EXISTING DN450 AC OUTLET TO BE DECOMMISSIONED

EXISTING DN450 OUTLET PIPEWORK

EXISTING DN450 AC OUTLET TO BE REPLACE WITH STEELPIPELINE. REFER TO DWG 60591/005

NEW 450mm CLASS 100D CONCRETE STORMWATER PIPE

EXISTING GATE TO BE REPLACED. REFER TO DWG 60591/018

NEW 315mm HDuPVC STORMWATER PIPE

TIE INTO EXISTING DN450 STEEL PIPELINE

EXISTING BUILDING

EXISTING DN450 STEEL WATER MAIN - OUTGOING

NEW DN300 METER CHAMBER. REFER TO DWG 60591/012

NEW ACCESS ROAD. REFER TO DWG 60591/021 FOR LAYERWORKS DETAILS

EXISTING VALVE HOUSE

NEW 450mm CLASS 100D CONCRETE STORMWATER PIPE

NEW 450mm CLASS 100D CONCRETE STORMWATER PIPE

NEW 450mm CLASS 100D CONCRETE STORMWATER PIPE

NEW 450mm CLASS 100D CONCRETE STORMWATER PIPE

NEW ATTENUATION TANK VOLUME = 67.5m³. REFER TO DWG 60591/016 FOR DETAILS

NEW 450MM CLASS 100D CONCRETE STORMWATER PIPE

NEW AIR VALVE CHAMBER REFER TO DWG 60591/013

NEW DN350 METER CHAMBER. REFER TO DWG 60591/008

NEW DN450 STEEL WATER MAIN. REFER TO DWG 60591/005

NEW AIR VALVE CHAMBER REFER TO DWG 60591/013

NEW 450mm CLASS 100D CONCRETE STORMWATER PIPE

TIE INTO EXISTING STEEL PIPELINE

NEW 450mm CLASS 100D CONCRETE STORMWATER PIPE

EXISTING DN1200 STEEL TRUNK WATER MAIN FROM WOODLANDS RESERVOIR 3 & 4

NEW 450mm CLASS 100D CONCRETE STORMWATER PIPE

ALAMEIN AVENUE

EXISTING STORMWATER MANHOLE

EXISTING STORMWATER KERB INLET

TIE IN TO EXISTING STORMWATER MANHOLE. INVERT LEVEL TO BE CONFIRMED DURING CONSTRUCTION

EXISTING 300mm CONCRETE STORMWATER PIPE

EXISTING 300mm CONCRETE STORMWATER PIPE

EXISTING STORMWATER MANHOLE

ALAMEIN AVENUE

SWMH1 SWMH2 SWMH2.1 SWMH2.2 SWMH2.3 SWMH2.4 SWMH2.5 SWMH2.6 SWMH3 SWMH3.1 SWMH4 SWMH5 SWMH6 SWMH7 SWMH8 SWMH9 SWMH10 SWMH11

C1 C2 C3 C4 C5 C6 C7 C8 C9 C10 C11

-4 200 3 312 600

-4 100 3 312 700

WATER DESIGN BRANCH

REDUCED PLAN USE SCALE BELOW

0 10 20 30 40 50 60 70

70mm ON ORIGINAL PLAN

CONSULTANT:

NAIDU CONSULTING

1st Floor
No.5, The Boulevard
West Way Office Park
Westville, Durban
Tel : +27 (0) 31 265 6007
Fax : +27 (0) 31 265 6011
Email: info@naiduconsulting.com

26/09/2025

Drawing No.: D724-52-1000- REV 0

FOR TENDER

REFERENCE DRAWINGS (D724-52-...)

DWG No.	TITLE/DESCRIPTION
1000	SITE LAYOUT
1001	EARTHWORKS LAYOUT
1002	EARTHWORKS SECTIONS
1003	EARTHWORKS SECTIONS
5100	WATER PIPELINE LONG SECTIONS
5250	RESERVOIR 1 VALVE CHAMBERS
5251	RESERVOIR 2 VALVE CHAMBERS
5252	DN350 METER CHAMBER
5253	DN400 METER CHAMBER
5254	DN300 METER CHAMBER
5255	CROSS CONNECTION CHAMBER
5256	DN300 INLET CHAMBER (RESERVOIR 2)
5257	AIR VALVE CHAMBER DETAILS
5258	TYPICAL VALVE CHAMBER DETAILS
4000	STORMWATER LAYOUT
4250	STORMWATER DETAILS
4100	STORMWATER PIPELINE LONG SECTIONS
5502	1m TO 8m GABION WALL
5504	LOW LEVEL WALL
2900	ACCESS ROAD LAYERWORKS DETAILS
STANDARD DRAWINGS	
5400	ACCESS GATE AND FENCE DETAILS
5401	MANHOLE COVER DETAILS
5402	GRP ACCESS LADDER DETAILS
5403	TRENCH DETAILS
5404	STEEL DOOR AND AIR VENT DETAILS

Revision	Date	Description
0	09/2025	ISSUED FOR TENDER

NORTH POINT

Contract No. 32547 - 5W

Project No. X8388

Planning Unit: WATER AND SANITATION

Ward No.: 64

Project Title: MOBENI 2 RESERVOIR ASSOCIATED WORKS

Drawing Title: SITE LAYOUT

Scale : 1:300

Designed : T. Moodley | Date : 09/2025

Checked : A. Goorun | Drawn: T Moodley

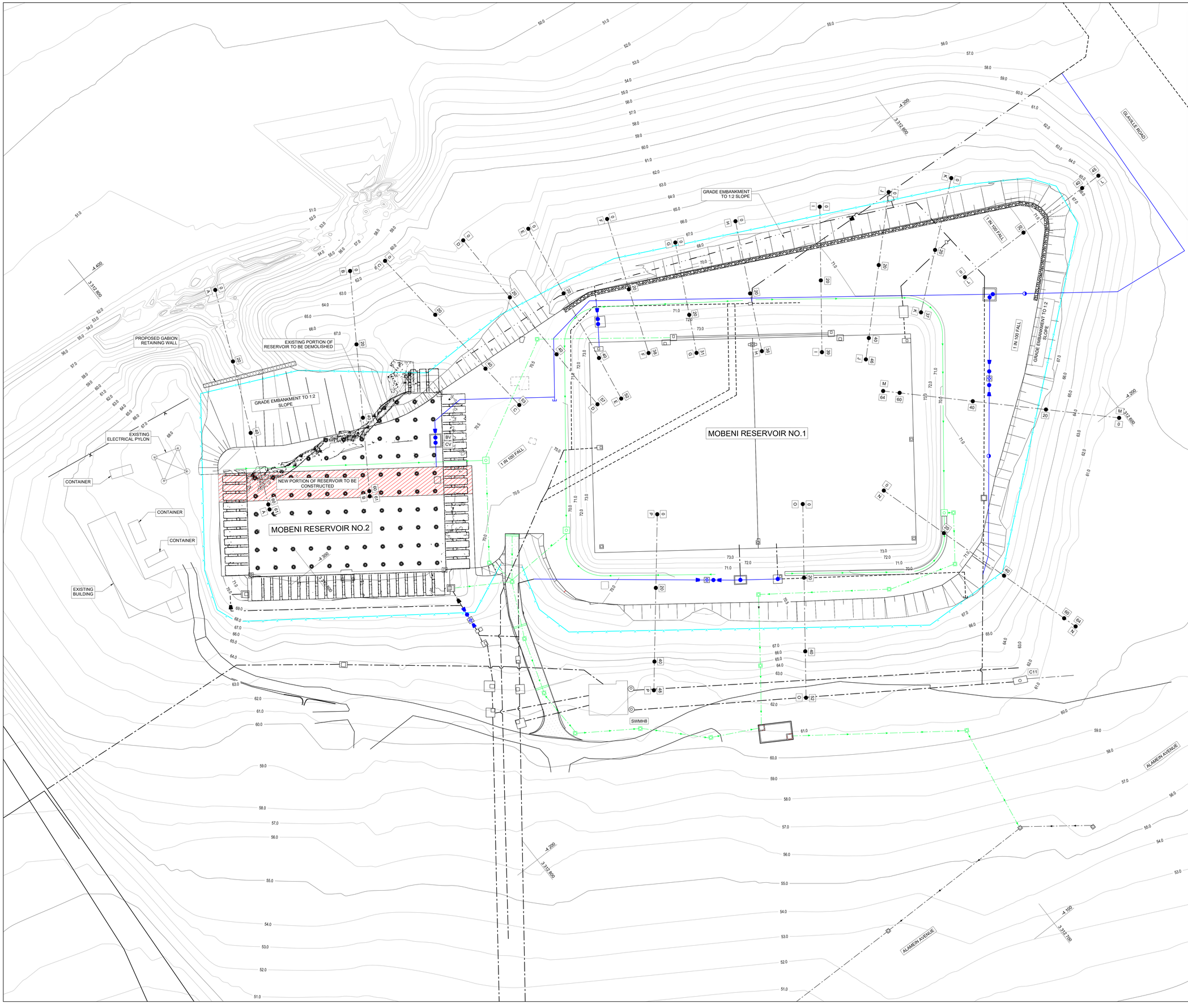
Area Engineer

Manager (Water Design)

Deputy Head (Engineering)

E. MSWELI - Head (W & S)

Drawing No. 60591/001 | Sheet 1 of 1 | Rev. 0



LEGEND:

- EXISTING AC PIPELINE
- EXISTING STEEL PIPELINE
- NEW WATER PIPELINE
- WATERMAIN TO BE ABANDONED
- NEW STRUCTURAL FEATURE
- NEW STORMWATER PIPE
- NEW STORMWATER CHANNEL
- EXISTING STORMWATER PIPE
- NEW ACCESS ROAD
- NEW FENCE
- NEW STORMWATER MANHOLE
- NEW STORMWATER FIELD INLET
- NEW METER
- TAPER
- V VALVE
- CV CONTROL VALVE
- BV BUTTERFLY VALVE
- AV AIR VALVE

ETHEKWINI WATER AND SANITATION

WATER DESIGN BRANCH

REDUCED PLAN USE SCALE BELOW

0 10 20 30 40 50 60 70

70mm ON ORIGINAL PLAN

CONSULTANT:

NAIDU CONSULTING

1st Floor
No.5, The Boulevard
West Way Office Park
Westville, Durban
Tel : +27 (0) 31 265 6007
Fax : +27 (0) 31 265 6011
Email: info@naiduconsulting.com

26/09/2025

Drawing No.: D724-52-1001- REV 0

FOR TENDER

REFERENCE DRAWINGS (D724-52-...)

DWG No.	TITLE/DESCRIPTION
1000	SITE LAYOUT
1001	EARTHWORKS LAYOUT
1002	EARTHWORKS SECTIONS
1003	EARTHWORKS SECTIONS
5100	WATER PIPELINE LONG SECTIONS
5250	RESERVOIR 1 VALVE CHAMBERS
5251	RESERVOIR 2 VALVE CHAMBERS
5252	DN350 METER CHAMBER
5253	DN400 METER CHAMBER
5254	DN300 METER CHAMBER
5255	CROSS CONNECTION CHAMBER
5256	DN300 INLET CHAMBER (RESERVOIR 2)
5257	AIR VALVE CHAMBER DETAILS
5258	TYPICAL VALVE CHAMBER DETAILS
4000	STORMWATER LAYOUT
4250	STORMWATER DETAILS
4100	STORMWATER PIPELINE LONG SECTIONS
STANDARD DRAWINGS	
5400	ACCESS GATE AND FENCE DETAILS
5401	MANHOLE COVER DETAILS
5402	GRP ACCESS LADDER DETAILS
5403	TRENCH DETAILS
5404	STEEL DOOR AND AIR VENT DETAILS

Revision	Date	Description
0	09/2025	ISSUED FOR TENDER

NORTH POINT

Contract No. 32547 - 5W

Project No. X8388

Planning Unit
WATER AND SANITATION

Ward No.
64

Project Title
MOBENI 2 RESERVOIR ASSOCIATED WORKS

Drawing Title
EARTHWORKS LAYOUT

Scale : 1:300

Designed : T. Moodley	Date : 09/2025
Checked : A. Goorun	Drawn: T Moodley

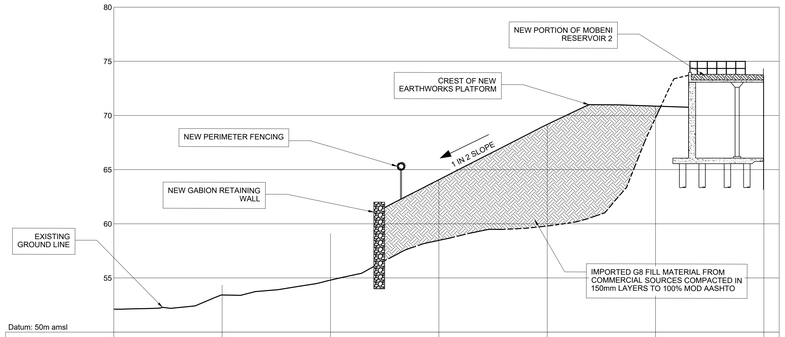
Area Engineer

Manager (Water Design)

Deputy Head (Engineering)

E. MSWELI - Head (W & S)

Drawing No.	Sheet	Rev.
60591/002	1 of 1	0

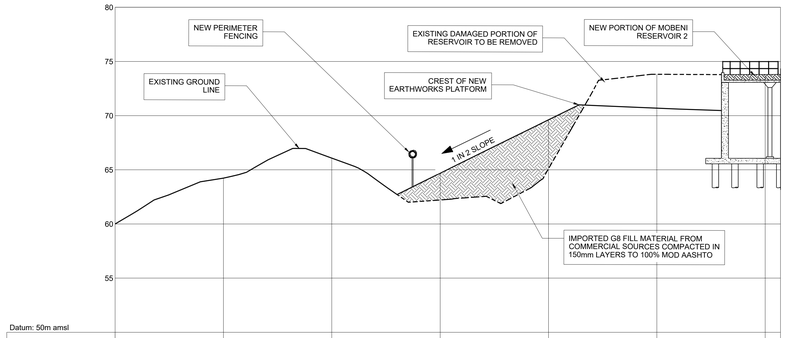


Datum: 50m amsl

Chainage (m)	10	20	30	40	50	60
EGL (m amsl)	53,430	54,808	64,470	59,799	69,762	73,745
FGL (m amsl)	53,430	54,808	64,066	69,171	70,864	70,004
Cut/Fill Depth (m)	0,000	0,000	5,096	9,372	1,081	-3,742

SECTION A-A

Scale:
Hor 1:200
Ver 1:200



Datum: 50m amsl

Chainage (m)	10	20	30	40	50	60
EGL (m amsl)	64,226	66,661	62,214	65,097	73,617	73,613
FGL (m amsl)	64,226	66,661	64,689	69,613	70,872	70,467
Cut/Fill Depth (m)	0,000	0,000	2,475	4,516	-3,144	-3,306

SECTION B-B

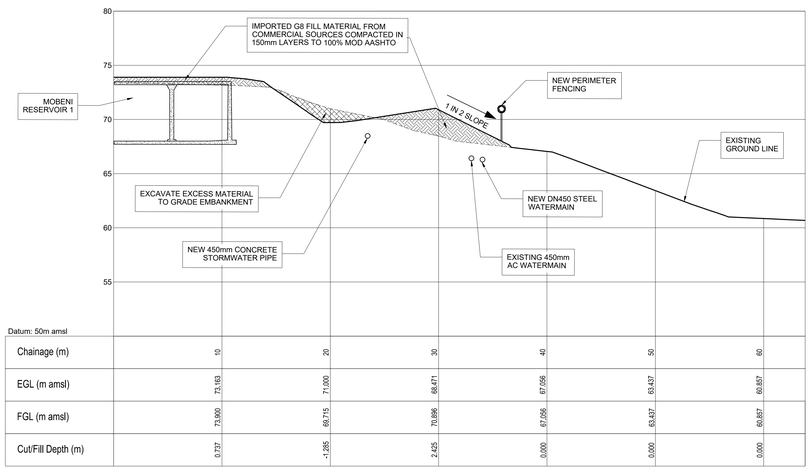
Scale:
Hor 1:200
Ver 1:200

LEGEND:

- EXISTING GROUND LINE
- FINISHED GROUND LINE
- CUT
- FILL

NOTES:

1. Standards & References
   1.1. All earthworks shall comply with SANS 1200 D (Earthworks), SANS 1200 DB (Pipe Trenches), and the Project Specifications.
2. Survey Control & Setting Out
   2.1. Establish site control and submit setting-out data for review before works commence.
   2.2. Levels are to ±20 mm tolerance on platforms and ±30 mm elsewhere unless noted otherwise.
   2.3. The Contractor shall provide as-built survey of final platform, batters, drains and stockpiles.
3. Existing Services (proving & protection)
   3.1. Verify all services on site by records, scanning and hand-excavated trial holes before bulk excavation.
4. Site Clearance & Topsoil
   4.1. Clear vegetation, deleterious material and obstructions within the works footprint.
   4.2. Strip topsoil to a nominal depth of 150 mm (or as directed) for reuse, and stockpile separately. The Contractor shall ensure that all necessary erosion control measures are practiced.
5. Cut, Fill & Platform Construction
   5.1. The Contractor shall conduct bulk earthworks activities as per the Engineers drawings.
   5.2. All fill material shall be graded and compacted in 150mm layers to 100% MOD AASHTO density.
   5.3. All bulk earthworks activities must be inspected and approved by the Geotechnical Engineer.
6. Materials
   6.1. All imported material for the grading of the new earthworks platform and embankments shall be G8 material or better.
   6.2. All imported material shall be inspected and approved by the Geotechnical Engineer prior for use onsite.

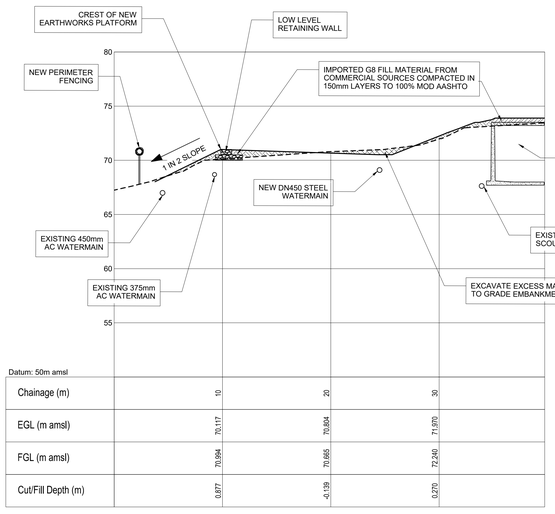


Datum: 50m amsl

Chainage (m)	10	20	30	40	50	60
EGL (m amsl)	73,183	71,000	68,471	67,056	63,437	60,657
FGL (m amsl)	73,600	69,715	70,896	67,056	63,437	60,657
Cut/Fill Depth (m)	0,737	-1,285	2,425	0,000	0,000	0,000

SECTION N-N

Scale:
Hor 1:200
Ver 1:200

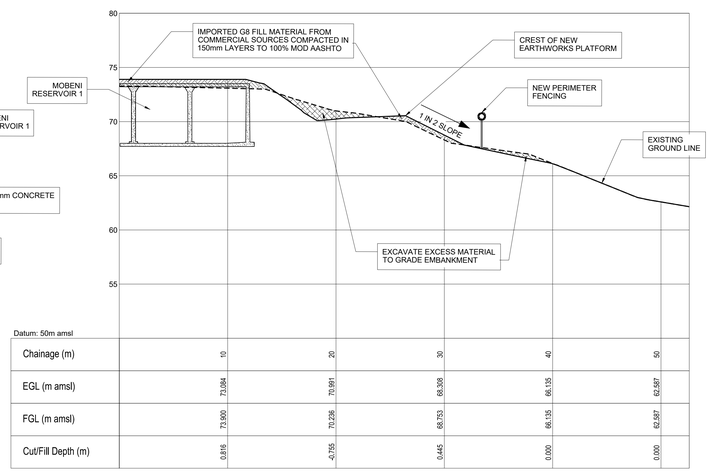


Datum: 50m amsl

Chainage (m)	10	20	30
EGL (m amsl)	70,117	70,804	71,970
FGL (m amsl)	70,994	70,665	72,240
Cut/Fill Depth (m)	0,877	-0,139	0,270

SECTION I-I

Scale:
Hor 1:200
Ver 1:200

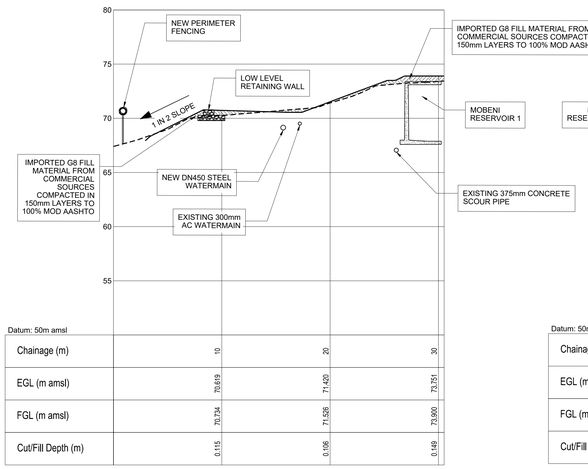


Datum: 50m amsl

Chainage (m)	10	20	30	40	50
EGL (m amsl)	73,084	70,991	68,308	66,135	62,587
FGL (m amsl)	73,900	70,236	68,753	66,135	62,587
Cut/Fill Depth (m)	0,816	-0,755	0,445	0,000	0,000

SECTION O-O

Scale:
Hor 1:200
Ver 1:200

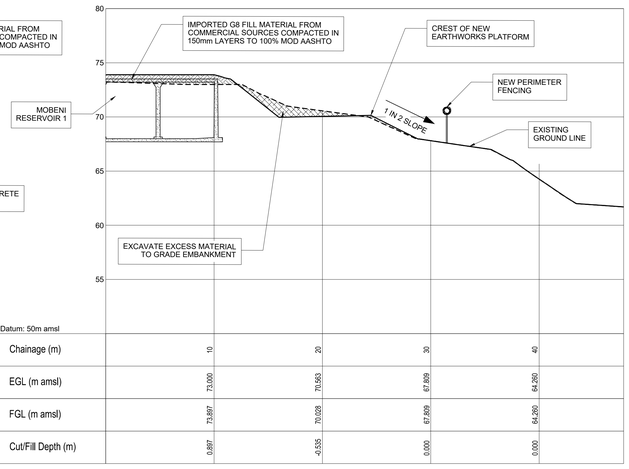


Datum: 50m amsl

Chainage (m)	10	20	30
EGL (m amsl)	70,619	71,420	73,751
FGL (m amsl)	70,734	71,526	73,900
Cut/Fill Depth (m)	0,115	0,106	0,149

SECTION G-G

Scale:
Hor 1:200
Ver 1:200

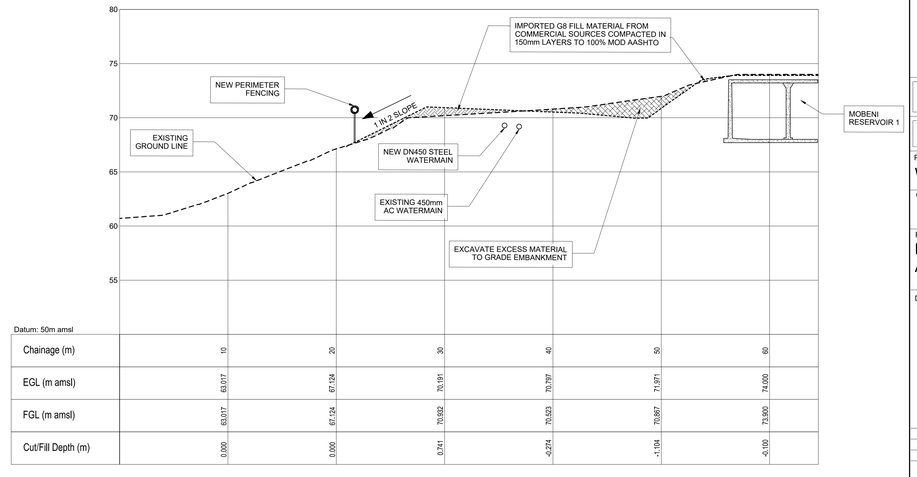


Datum: 50m amsl

Chainage (m)	10	20	30	40
EGL (m amsl)	73,000	70,563	67,809	64,260
FGL (m amsl)	73,897	70,028	67,809	64,260
Cut/Fill Depth (m)	0,897	-0,535	0,000	0,000

SECTION P-P

Scale:
Hor 1:200
Ver 1:200



Datum: 50m amsl

Chainage (m)	10	20	30	40	50	60
EGL (m amsl)	63,017	67,124	70,191	70,797	71,971	74,000
FGL (m amsl)	63,017	67,124	70,932	70,523	70,867	73,900
Cut/Fill Depth (m)	0,000	0,000	0,741	-0,274	-1,104	-0,100

SECTION M-M

Scale:
Hor 1:200
Ver 1:200

ETHEKWINI WATER AND SANITATION

WATER DESIGN BRANCH

REDUCED PLAN USE SCALE BELOW

0 10 20 30 40 50 60 70

70mm ON ORIGINAL PLAN

CONSULTANT:
NAIDU CONSULTING
1st Floor
No.5, The Boulevard
West Way Office Park
Westville, Durban
Tel : +27 (0) 31 265 6007
Fax : +27 (0) 31 265 6011
Email: info@naiduconsulting.com

26/09/2025

Drawing No.: D724-52-1002- REV 0

FOR TENDER

REFERENCE DRAWINGS (D724-52-...)

DWG No.	TITLE/DESCRIPTION
1000	SITE LAYOUT
1001	EARTHWORKS LAYOUT
1002	EARTHWORKS SECTIONS
1003	EARTHWORKS SECTIONS
5100	WATER PIPELINE LONG SECTIONS
5250	RESERVOIR 1 VALVE CHAMBERS
5251	RESERVOIR 2 VALVE CHAMBERS
5252	DN350 METER CHAMBER
5253	DN400 METER CHAMBER
5254	DN300 METER CHAMBER
5255	CROSS CONNECTION CHAMBER
5256	DN300 INLET CHAMBER (RESERVOIR 2)
5257	AIR VALVE CHAMBER DETAILS
5258	TYPICAL VALVE CHAMBER DETAILS
4000	STORMWATER LAYOUT
4250	STORMWATER DETAILS
4100	STORMWATER PIPELINE LONG SECTIONS
STANDARD DRAWINGS	
5400	ACCESS GATE AND FENCE DETAILS
5401	MANHOLE COVER DETAILS
5402	GRP ACCESS LADDER DETAILS
5403	TRENCH DETAILS
5404	STEEL DOOR AND AIR VENT DETAILS

Revision	Date	Description
0	09/2025	ISSUED FOR TENDER

NORTH POINT

Contract No. 32547 - 5W

Project No. X8388

Planning Unit
WATER AND SANITATION

Ward No.
64

Project Title
MOBENI 2 RESERVOIR ASSOCIATED WORKS

Drawing Title
EARTHWORKS SECTIONS

Scale : As Shown

Designed : T. Moodley | Date : 09/2025

Checked : A. Goorun | Drawn: T Moodley

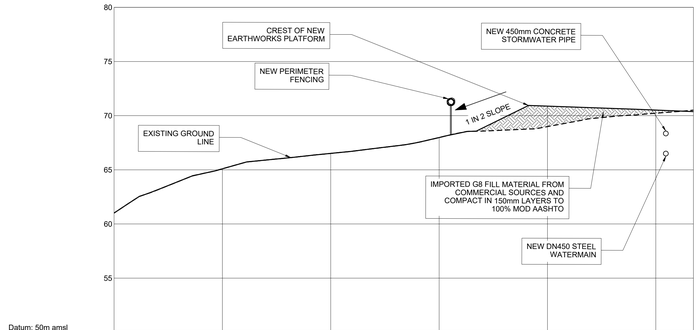
Area Engineer

Manager (Water Design)

Deputy Head (Engineering)

E. MSWELI - Head (W & S)

Drawing No. 60591/003 | Sheet 1 of 1 | Rev. 0

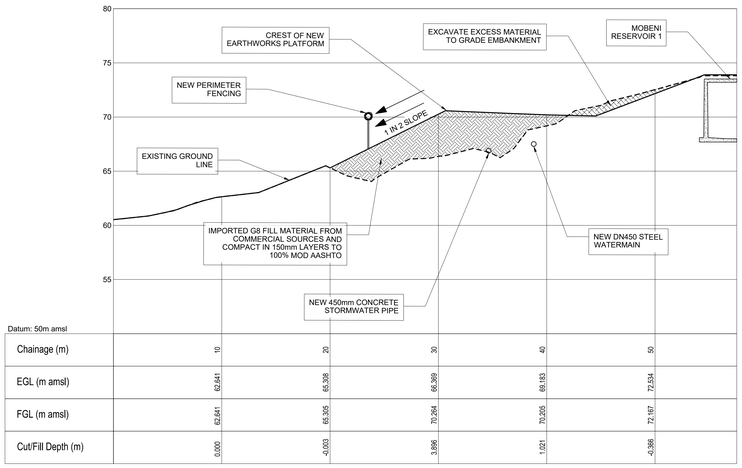


Datum: 50m amsl

Chainage (m)	10	20	30	40	50
EGL (m amsl)	65,097	66,515	67,982	68,991	70,224
FGL (m amsl)	65,097	66,515	70,883	70,515	
Cut/Fill Depth (m)	0,000	0,000	1,891	0,291	

SECTION C-C

Scale:
Hor 1:200
Ver 1:200

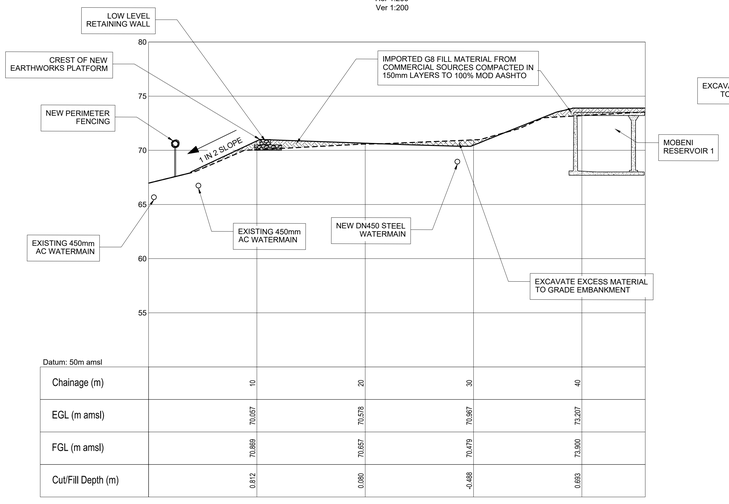


Datum: 50m amsl

Chainage (m)	10	20	30	40	50
EGL (m amsl)	62,641	65,308	66,399	68,183	72,534
FGL (m amsl)	62,641	65,305	70,284	70,205	72,167
Cut/Fill Depth (m)	0,000	-0,003	3,896	1,021	-0,366

SECTION D-D

Scale:
Hor 1:200
Ver 1:200

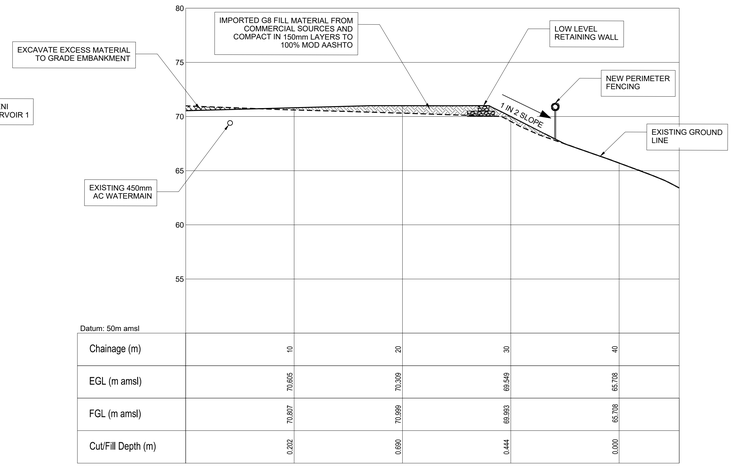


Datum: 50m amsl

Chainage (m)	10	20	30	40
EGL (m amsl)	70,057	70,578	70,967	73,207
FGL (m amsl)	70,869	70,657	70,479	73,900
Cut/Fill Depth (m)	0,812	0,080	-0,488	0,693

SECTION J-J

Scale:
Hor 1:200
Ver 1:200

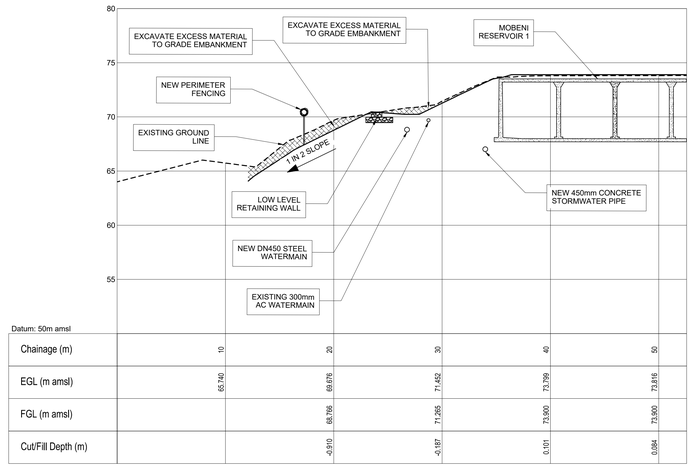


Datum: 50m amsl

Chainage (m)	10	20	30	40
EGL (m amsl)	70,605	70,309	69,549	65,708
FGL (m amsl)	70,807	70,999	69,993	65,708
Cut/Fill Depth (m)	0,202	0,690	0,444	0,000

SECTION L-L

Scale:
Hor 1:200
Ver 1:200

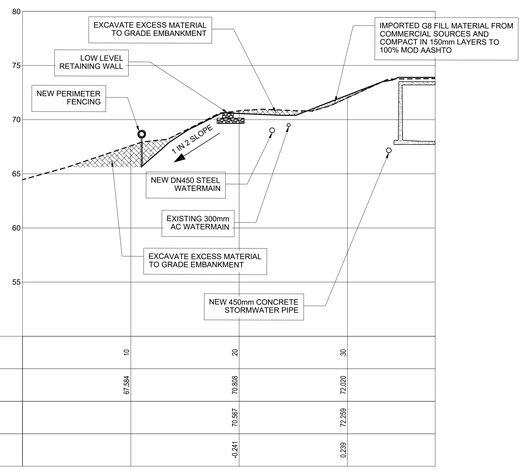


Datum: 50m amsl

Chainage (m)	10	20	30	40	50
EGL (m amsl)	65,740	69,676	71,452	73,799	73,816
FGL (m amsl)		68,766	71,265	73,900	73,900
Cut/Fill Depth (m)		-0,910	-0,187	0,101	0,084

SECTION E-E

Scale:
Hor 1:200
Ver 1:200

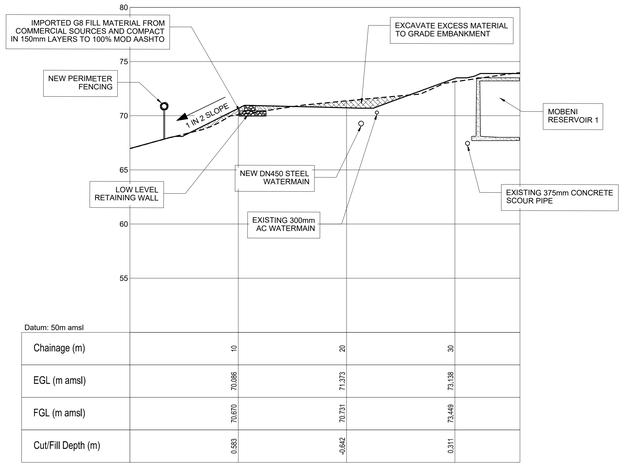


Datum: 50m amsl

Chainage (m)	10	20	30
EGL (m amsl)	67,584	70,868	72,200
FGL (m amsl)		70,667	72,259
Cut/Fill Depth (m)		-0,241	0,239

SECTION F-F

Scale:
Hor 1:200
Ver 1:200

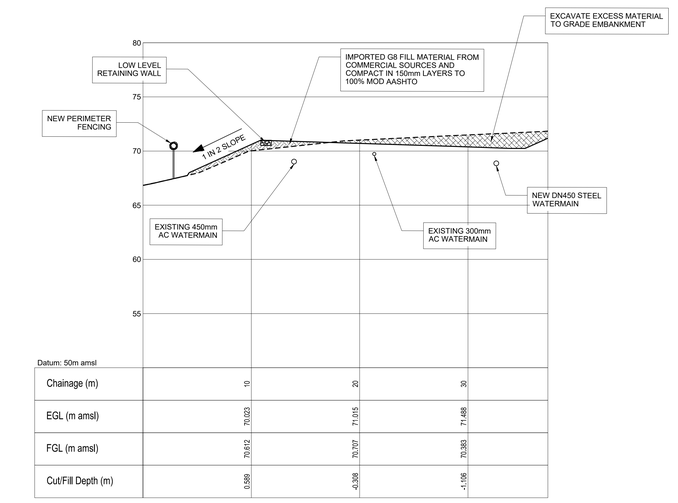


Datum: 50m amsl

Chainage (m)	10	20	30
EGL (m amsl)	70,086	71,373	73,138
FGL (m amsl)	70,670	70,731	73,449
Cut/Fill Depth (m)	0,583	-0,642	0,311

SECTION H-H

Scale:
Hor 1:200
Ver 1:200



Datum: 50m amsl

Chainage (m)	10	20	30
EGL (m amsl)	70,023	71,015	71,488
FGL (m amsl)	70,612	70,707	70,383
Cut/Fill Depth (m)	0,589	-0,308	-1,105

SECTION K-K

Scale:
Hor 1:200
Ver 1:200

LEGEND:

- EXISTING GROUND LINE
- NEW GROUND LINE
- CUT
- FILL

NOTES:

1. Standards & References
   1.1. All earthworks shall comply with SANS 1200 D (Earthworks), SANS 1200 DB (Pipe Trenches), and the Project Specifications.
2. Survey Control & Setting Out
   2.1. Establish site control and submit setting-out data for review before works commence.
   2.2. Levels are to ±20 mm tolerance on platforms and ±30 mm elsewhere unless noted otherwise.
   2.3. The Contractor shall provide as-built survey of final platform, batters, drains and stockpiles.
3. Existing Services (proving & protection)
   3.1. Verify all services on site by records, scanning and hand-excavated trial holes before bulk excavation.
4. Site Clearance & Topsoil
   4.1. Clear vegetation, deleterious material and obstructions within the works footprint.
   4.2. Strip topsoil to a nominal depth of 150 mm (or as directed) for reuse, and stockpile separately. The Contractor shall ensure that all necessary erosion control measures are practiced.
5. Cut, Fill & Platform Construction
   5.1. The Contractor shall conduct bulk earthworks activities as per the Engineers drawings.
   5.2. All fill material shall be graded and compacted in 150mm layers to 100% MOD AASHTO density.
   5.3. All bulk earthworks activities must be inspected and approved by the Geotechnical Engineer.
6. Materials
   6.1. All imported material for the grading of the new earthworks platform and embankments shall be G8 material or better.
   6.2. All imported material shall be inspected and approved by the Geotechnical Engineer prior for use onsite.

ETHEKWINI WATER AND SANITATION

WATER DESIGN BRANCH

REDUCED PLAN USE SCALE BELOW

0 10 20 30 40 50 60 70

70mm ON ORIGINAL PLAN

CONSULTANT:

NAIDU CONSULTING

1st Floor
No.5, The Boulevard
West Way Office Park
Westville, Durban
Tel : +27 (0) 31 265 6007
Fax : +27 (0) 31 265 6011
Email: info@naiduconsulting.com

26/09/2025

Drawing No.: D724-52-1003- REV 0

FOR TENDER

REFERENCE DRAWINGS (D724-52-...)

DWG No.	TITLE/DESCRIPTION
1000	SITE LAYOUT
1001	EARTHWORKS LAYOUT
1002	EARTHWORKS SECTIONS
1003	EARTHWORKS SECTIONS
5100	WATER PIPELINE LONG SECTIONS
5250	RESERVOIR 1 VALVE CHAMBERS
5251	RESERVOIR 2 VALVE CHAMBERS
5252	DN350 METER CHAMBER
5253	DN400 METER CHAMBER
5254	DN300 METER CHAMBER
5255	CROSS CONNECTION CHAMBER
5256	DN300 INLET CHAMBER (RESERVOIR 2)
5257	AIR VALVE CHAMBER DETAILS
5258	TYPICAL VALVE CHAMBER DETAILS
4000	STORMWATER LAYOUT
4250	STORMWATER DETAILS
4100	STORMWATER PIPELINE LONG SECTIONS
STANDARD DRAWINGS	
5400	ACCESS GATE AND FENCE DETAILS
5401	MANHOLE COVER DETAILS
5402	GRP ACCESS LADDER DETAILS
5403	TRENCH DETAILS
5404	STEEL DOOR AND AIR VENT DETAILS

Revision	Date	Description
0	09/2025	ISSUED FOR TENDER

NORTH POINT

Contract No. 32547 - 5W

Project No. X8388

Planning Unit
WATER AND SANITATION

Ward No.
64

Project Title
MOBENI 2 RESERVOIR ASSOCIATED WORKS

Drawing Title
EARTHWORKS SECTIONS

Scale : As Shown

Designed : T. Moodley	Date : 09/2025
Checked : A. Goorun	Drawn: T Moodley

Area Engineer

Manager (Water Design)

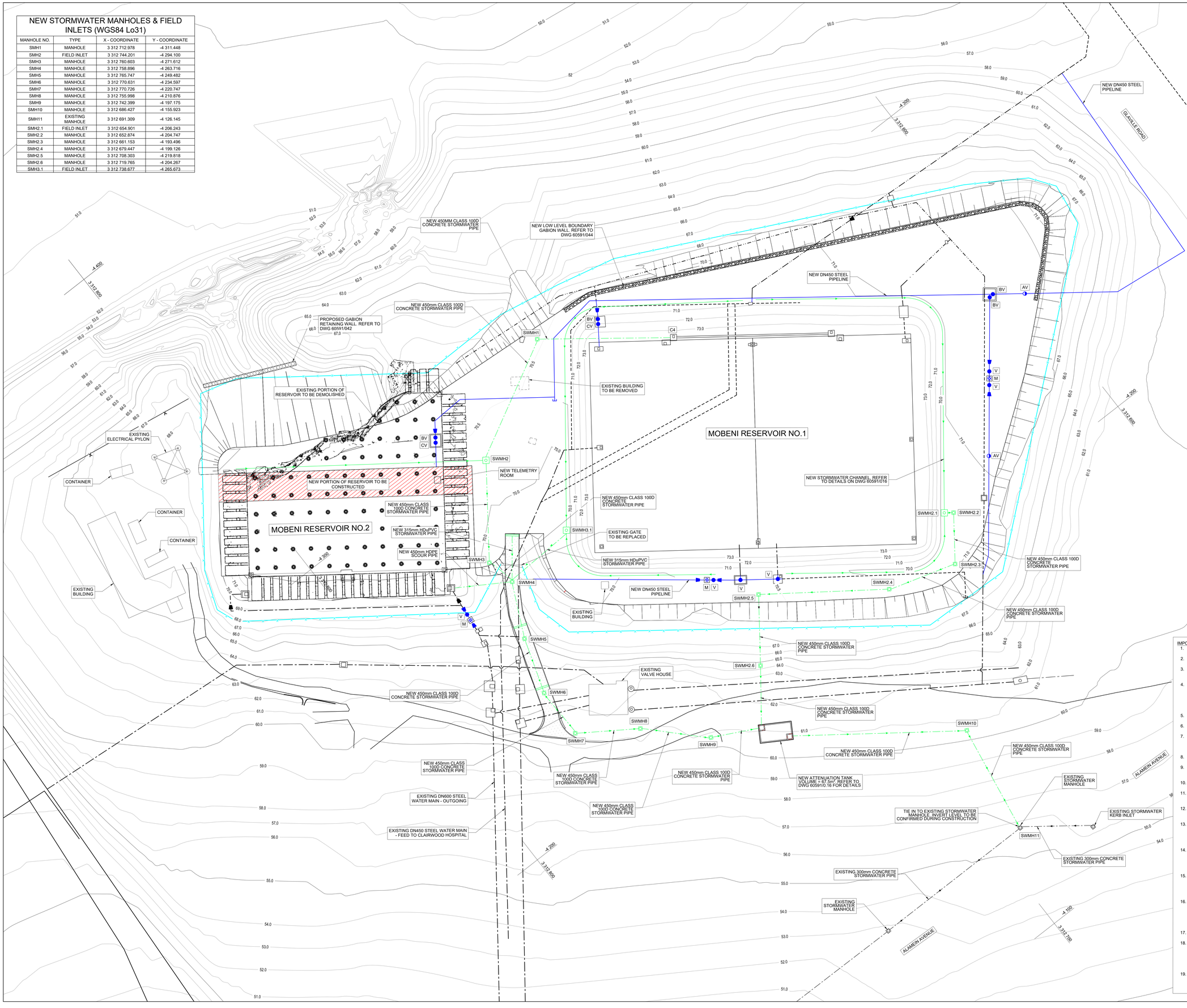
Deputy Head (Engineering)

E. MSWELI - Head (W & S)

Drawing No.	Sheet	Rev.
60591/004	1 of 1	0

NEW STORMWATER MANHOLES & FIELD INLETS (WGS84 Lo31)

MANHOLE NO.	TYPE	X - COORDINATE	Y - COORDINATE
SMH1	MANHOLE	3 312 712.978	-4 311.448
SMH2	FIELD INLET	3 312 744.201	-4 294.100
SMH3	MANHOLE	3 312 760.603	-4 271.612
SMH4	MANHOLE	3 312 758.896	-4 263.716
SMH5	MANHOLE	3 312 765.747	-4 249.482
SMH6	MANHOLE	3 312 770.631	-4 234.597
SMH7	MANHOLE	3 312 770.726	-4 220.747
SMH8	MANHOLE	3 312 755.998	-4 210.876
SMH9	MANHOLE	3 312 742.399	-4 197.175
SMH10	MANHOLE	3 312 686.427	-4 155.923
SMH11	EXISTING MANHOLE	3 312 691.309	-4 126.145
SMH2.1	FIELD INLET	3 312 654.901	-4 206.243
SMH2.2	MANHOLE	3 312 652.874	-4 204.747
SMH2.3	MANHOLE	3 312 661.153	-4 193.496
SMH2.4	MANHOLE	3 312 679.447	-4 199.126
SMH2.5	MANHOLE	3 312 708.303	-4 219.818
SMH2.6	MANHOLE	3 312 719.765	-4 204.267
SMH3.1	FIELD INLET	3 312 738.677	-4 265.673



LEGEND:

- EXISTING AC PIPELINE
- EXISTING STEEL PIPELINE
- NEW WATER PIPELINE
- WATERMAIN TO BE ABANDONED
- NEW STRUCTURAL FEATURE
- NEW STORMWATER PIPE
- NEW STORMWATER CHANNEL
- EXISTING STORMWATER PIPE
- NEW ACCESS ROAD
- NEW FENCE
- NEW STORMWATER MANHOLE
- NEW STORMWATER FIELD INLET
- NEW METER
- TAPER
- V VALVE
- CV CONTROL VALVE
- BV BUTTERFLY VALVE
- AV AIR VALVE

IMPORTANT NOTES:

1. ALL WORKS TO BE CARRIED OUT IN ACCORDANCE WITH SANS 1200 SERIES.
2. ALL PRODUCTS TO CARRY THE RELEVANT SABS APPROVAL.
3. THE CONTRACTOR IS TO CONFIRM ALL LEVEL AND SETTING OUT INFORMATION PRIOR TO CONSTRUCTION.
4. MANHOLE STEPS SHALL COMPLY WITH THE REQUIREMENTS OF SABS 1294 IF OF MALLEABLE STEEL. THEY SHALL BE GALVANISED TO SABS 763 AND AFTER INSTALLATION THEY SHALL BE PAINTED WITH 2 COATS OF BITUMINOUS PAINT.
5. EXISTING SERVICES TO BE APPROVED PRIOR TO CONSTRUCTION.
6. SURVEY AND DESIGN INFORMATION IS BASED ON WGS84 CO-ORDINATE SYSTEM.
7. ALL DIMENSIONS TO BE CONFIRMED ON SITE PRIOR TO ANY CONSTRUCTION BEING DONE. REFER ANY DISCREPANCIES TO THE SITE ENGINEER.
8. FOR GRADES 1:10 OR STEEPER ANCHOR BLOCKS TO BE USED.
9. ALL MANHOLES/CATCHPITS COVERS AND FRAMES ON TRAFFICKED AREAS TO BE CAST IN IRON HEAVY DUTY.
10. ALL HD UPVC PIPES ARE TO BE CLASS 34 UNLESS OTHERWISE SPECIFIED.
11. ALL PIPES TO BE LAID ON FLEXIBLE PIPE BEDDING CLASS UNLESS OTHERWISE SPECIFIED.
12. ALL BACKFILL TO BE COMPACTED TO 95% MOD AASHTO UNLESS OTHERWISE SPECIFIED.
13. INTERLOCKING JOINTS BETWEEN PRECAST MANHOLE SECTIONS TO BE MADE WATERTIGHT WITH APPROVED SEALANT IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.
14. ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH THE ENVIRONMENTAL AND OCCUPATIONAL HEALTH AND SAFETY ACT (LATEST REVISION) AND THE CONSTRUCTION REGULATIONS.
15. ALL TEMPORARY WORKS TO BE DESIGNED, DETAILED SUPERVISED AND CERTIFIED BY A COMPETENT PERSON OR PROFESSIONAL ENGINEER AND DEFINED IN THE OHS ACT.
16. THE WORKS WILL BE INSPECTED FROM TIME TO TIME BY THE CONSULTING ENGINEER TO ASCERTAIN THAT THE CONTRACTOR IS CARRYING OUT THE WORKS IN GENERAL CONFORMITY WITH THE ENGINEERS DRAWINGS.
17. ALL STORMWATER DRAINAGE MUST BE PIPED TO CHAMBERS AS SHOWN.
18. THE OWNER MUST BE AWARE OF THIS FACT AND MUST ACCEPT THAT ALL DRAINAGE FROM THE RESERVOIR SITE WILL BE TAKEN AWAY TO PIPEWORK AND CHAMBERS WHICH REQUIRE MAINTENANCE.
19. THIS DRAWING IS TO READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS.

ETHEKWINI WATER AND SANITATION

WATER DESIGN BRANCH

REDUCED PLAN USE SCALE BELOW

0 10 20 30 40 50 60 70

70mm ON ORIGINAL PLAN

CONSULTANT:

NAIDU CONSULTING

1st Floor
No.5, The Boulevard
West Way Office Park
Westville, Durban
Tel : +27 (0) 31 265 6007
Fax : +27 (0) 31 265 6011
Email: info@naiduconsulting.com

26/09/2025

Drawing No.: D724-52-4000- REV 0

FOR TENDER

REFERENCE DRAWINGS (D724-52-...)

DWG No.	TITLE/DESCRIPTION
1000	SITE LAYOUT
1001	EARTHWORKS LAYOUT
1002	EARTHWORKS SECTIONS
1003	EARTHWORKS SECTIONS
5100	WATER PIPELINE LONG SECTIONS
5250	RESERVOIR 1 VALVE CHAMBERS
5251	RESERVOIR 2 VALVE CHAMBERS
5252	DN350 METER CHAMBER
5253	DN400 METER CHAMBER
5254	DN300 METER CHAMBER
5255	CROSS CONNECTION CHAMBER
5256	DN300 INLET CHAMBER (RESERVOIR 2)
5257	AIR VALVE CHAMBER DETAILS
5258	TYPICAL VALVE CHAMBER DETAILS
4000	STORMWATER LAYOUT
4250	STORMWATER DETAILS
4100	STORMWATER PIPELINE LONG SECTIONS
5502	1m TO 8m GABION WALL
5504	LOW LEVEL WALL
STANDARD DRAWINGS	
5400	ACCESS GATE AND FENCE DETAILS
5401	MANHOLE COVER DETAILS
5402	GRP ACCESS LADDER DETAILS
5403	TRENCH DETAILS
5404	STEEL DOOR AND AIR VENT DETAILS

Revision	Date	Description
0	09/2025	ISSUED FOR TENDER

NORTH POINT

Contract No. 32547 - 5W

Project No. X8388

Planning Unit
WATER AND SANITATION

Ward No.
64

Project Title
MOBENI 2 RESERVOIR ASSOCIATED WORKS

Drawing Title
STORMWATER MANAGEMENT LAYOUT

Scale : 1:300

Designed : T. Moodley | Date : 09/2025

Checked : A. Goorun | Drawn: T Moodley

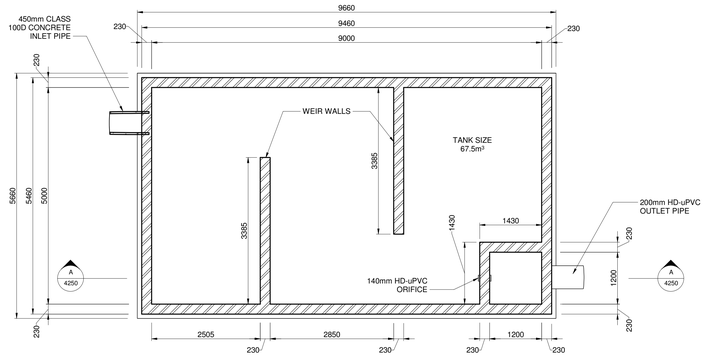
Area Engineer

Manager (Water Design)

Deputy Head (Engineering)

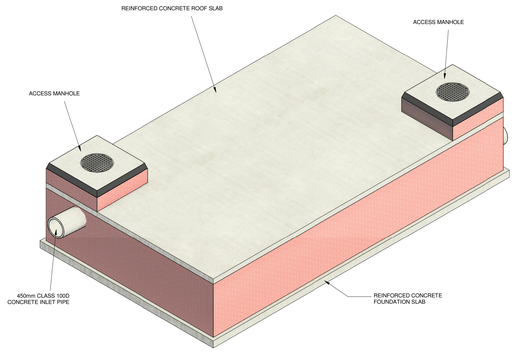
E. MSWELI - Head (W & S)

Drawing No. 60591/015 | Sheet 1 of 1 | Rev. 0



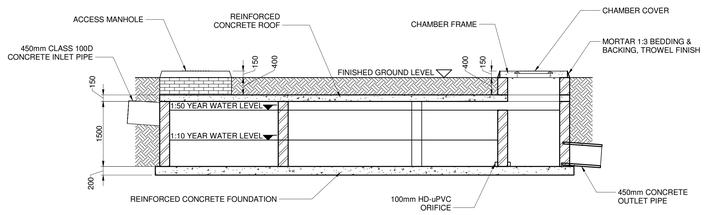
PLAN VIEW - ATTENUATION TANK

SCALE 1:50



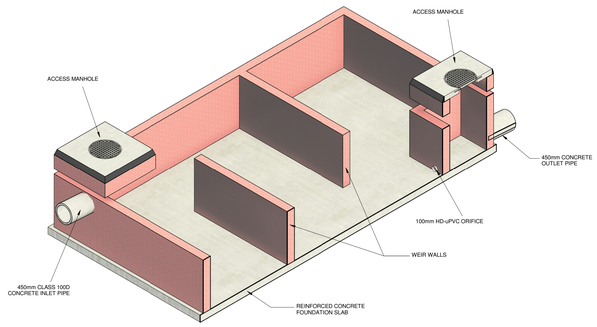
ISOMETRIC VIEW 1 - ATTENUATION TANK

SCALE 1:50



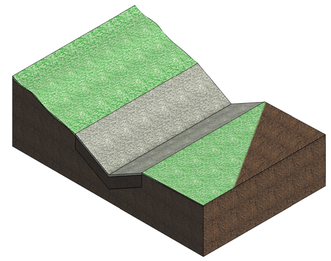
SECTIONAL ELEVATION A-A

SCALE 1:50



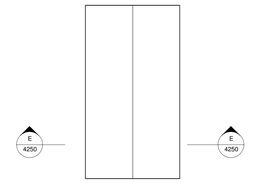
ISOMETRIC VIEW 2 - ATTENUATION TANK

SCALE 1:50



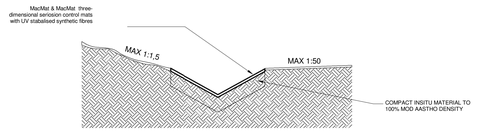
ISOMETRIC VIEW 2 - V DRAIN

SCALE 1:25



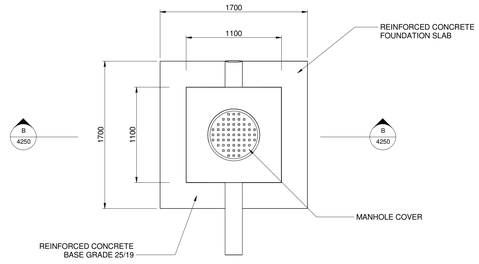
PLAN VIEW - 1000mm V DRAIN

SCALE 1:25



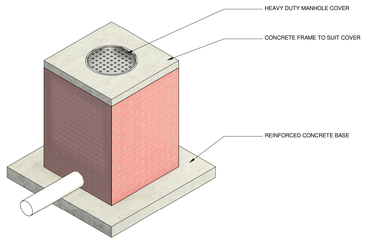
SECTIONAL ELEVATION E-E

SCALE 1:25



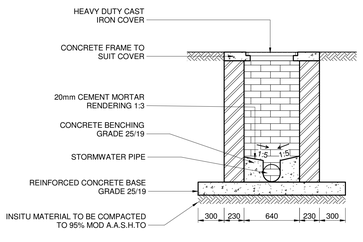
PLAN VIEW - TYPICAL MANHOLE

SCALE 1:25



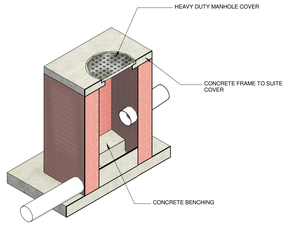
ISOMETRIC VIEW 1 - TYPICAL MANHOLE

SCALE 1:25



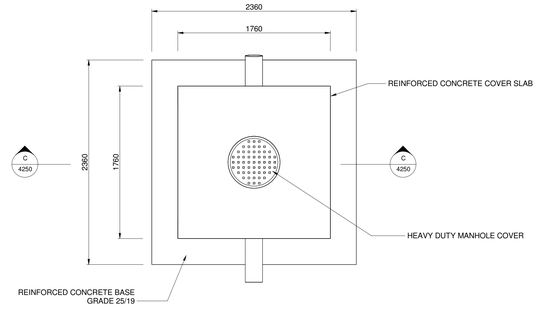
SECTIONAL ELEVATION B-B

SCALE 1:25



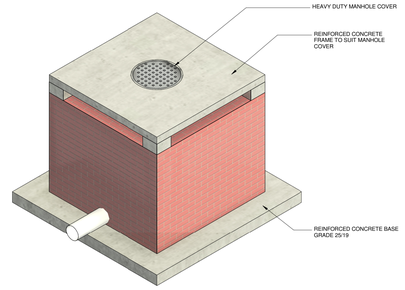
ISOMETRIC VIEW 2 - TYPICAL MANHOLE

SCALE 1:25



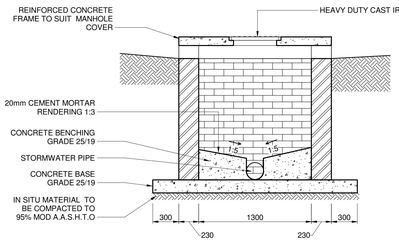
PLAN VIEW - TYPICAL FIELD INLET

SCALE 1:25



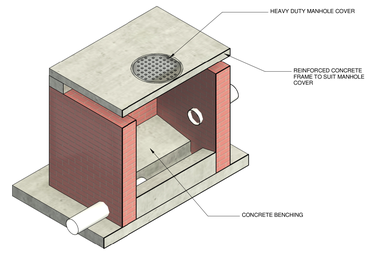
ISOMETRIC VIEW 1 - FIELD INLET

SCALE 1:25



SECTIONAL ELEVATION C-C

SCALE 1:25



ISOMETRIC VIEW 1 - FIELD INLET

SCALE 1:25

eThekwini
Water
Services

Water Design Branch

ETHEKWINI MUNICIPALITY

Reduced Plan use Scale Below

0 10 20 30 40 50 60 70

70mm on original plan

Consultant:

NAIDU CONSULTING

1st Floor
No.5, The Boulevard
West Way Office Park
Westville, Durban
Tel : +27 (0) 31 265 6007
Fax : +27 (0) 31 265 6011
Email: info@naiduconsulting.com

26/09/2025

Consultant Drawing No.: D724-52- 4250-0

FOR TENDER

REFERENCE DRAWINGS (D724-52-...)

Ref Drg	Description
1000	Site Layout
1001	Earthworks Layout
1002	Earthworks Sections
1003	Earthworks Sections
5100	Water Pipeline Long Sections
5250	Reservoir 1 Valve Chambers
5251	Reservoir 2 Valve Chambers
5252	DN350 Meter Chamber
5253	DN400 Meter Chamber
5254	DN300 Meter Chamber
5255	Cross Connection Chamber
5256	DN500 Inlet Chamber (Reservoir 2)
5257	Air Valve Chamber Details
5258	Typical Valve Chamber Details
4000	Stormwater Layout
4250	Stormwater Details
4100	Stormwater Pipeline Long Sections
Standard Drawings	
5400	Access Gate and Fence Details
5401	Manhole Cover Details
5402	GRP Access Ladder Details
5403	Trench Details
5404	Steel Door and Air Vent Details

Revision	Date	Description
0	09 / 2025	ISSUED FOR TENDER

Contract No.: 32547 - 5W

Project No.: X8388

Planning Unit: Water & Sanitation

Ward No.: 64

Project Title: MOBENI RESERVOIR ASSOCIATED WORKS

Drawing Title: STORMWATER DETAILS

Scales:	AS SHOWN		
Paper Size:	A0		
Designed:	T. Moodley	Date:	09/2025
Checked:	A. Goorun	Drawn:	T. Moodley

Area Engineer (W.O.)

Manager (W.D.)

Director (Water)

E Mowell - Head: Water & Sanitation Unit

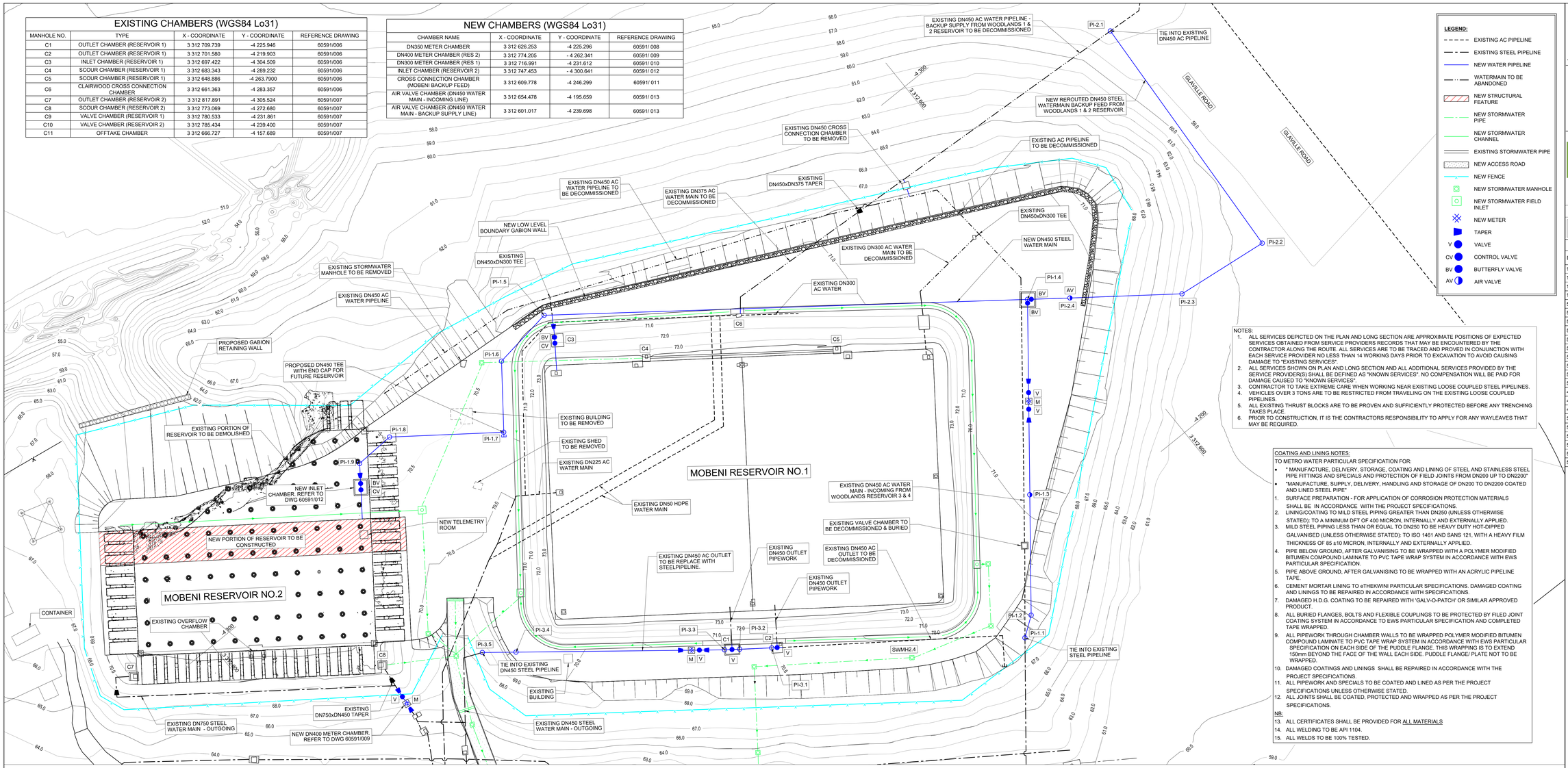
Drawing No.	Sheet	Rev
60591/016	1 of 1	0

EXISTING CHAMBERS (WGS84 Lo31)

MANHOLE NO.	TYPE	X - COORDINATE	Y - COORDINATE	REFERENCE DRAWING
C1	OUTLET CHAMBER (RESERVOIR 1)	3 312 709.739	-4 225.946	60591/006
C2	OUTLET CHAMBER (RESERVOIR 1)	3 312 701.580	-4 219.903	60591/006
C3	INLET CHAMBER (RESERVOIR 1)	3 312 697.422	-4 304.509	60591/006
C4	SCOUR CHAMBER (RESERVOIR 1)	3 312 683.343	-4 289.232	60591/006
C5	SCOUR CHAMBER (RESERVOIR 1)	3 312 648.886	-4 263.7900	60591/006
C6	CLAIRWOOD CROSS CONNECTION CHAMBER	3 312 661.363	-4 283.357	60591/006
C7	OUTLET CHAMBER (RESERVOIR 2)	3 312 817.891	-4 305.524	60591/007
C8	SCOUR CHAMBER (RESERVOIR 2)	3 312 773.069	-4 272.680	60591/007
C9	VALVE CHAMBER (RESERVOIR 1)	3 312 780.533	-4 231.861	60591/007
C10	VALVE CHAMBER (RESERVOIR 2)	3 312 785.434	-4 239.400	60591/007
C11	OFFTAKE CHAMBER	3 312 666.727	-4 157.689	60591/007

NEW CHAMBERS (WGS84 Lo31)

CHAMBER NAME	X - COORDINATE	Y - COORDINATE	REFERENCE DRAWING
DN350 METER CHAMBER	3 312 626.253	-4 225.296	60591/ 008
DN400 METER CHAMBER (RES 2)	3 312 774.205	- 4 262.341	60591/ 009
DN300 METER CHAMBER (RES 1)	3 312 716.991	-4 231.612	60591/ 010
INLET CHAMBER (RESERVOIR 2)	3 312 747.453	- 4 300.641	60591/ 012
CROSS CONNECTION CHAMBER (MOBENI BACKUP FEED)	3 312 609.778	-4 246.299	60591/ 011
AIR VALVE CHAMBER (DN450 WATER MAIN - INCOMING LINE)	3 312 654.478	-4 195.659	60591/ 013
AIR VALVE CHAMBER (DN450 WATER MAIN - BACKUP SUPPLY LINE)	3 312 601.017	-4 239.698	60591/ 013



LEGEND:

- EXISTING AC PIPELINE
- EXISTING STEEL PIPELINE
- NEW WATER PIPELINE
- WATERMAIN TO BE ABANDONED
- NEW STRUCTURAL FEATURE
- NEW STORMWATER PIPE
- NEW STORMWATER CHANNEL
- EXISTING STORMWATER PIPE
- NEW ACCESS ROAD
- NEW FENCE
- NEW STORMWATER MANHOLE
- NEW STORMWATER FIELD INLET
- NEW METER
- TAPER
- V VALVE
- CV CONTROL VALVE
- BV BUTTERFLY VALVE
- AV AIR VALVE

NOTES:

1. ALL SERVICES DEPICTED ON THE PLAN AND LONG SECTION ARE APPROXIMATE POSITIONS OF EXPECTED SERVICES OBTAINED FROM SERVICE PROVIDERS RECORDS THAT MAY BE ENCOUNTERED BY THE CONTRACTOR ALONG THE ROUTE. ALL SERVICES ARE TO BE TRACED AND PROVED IN CONJUNCTION WITH EACH SERVICE PROVIDER NO LESS THAN 14 WORKING DAYS PRIOR TO EXCAVATION TO AVOID CAUSING DAMAGE TO "EXISTING SERVICES".
2. ALL SERVICES SHOWN ON PLAN AND LONG SECTION AND ALL ADDITIONAL SERVICES PROVIDED BY THE SERVICE PROVIDER(S) SHALL BE DEFINED AS "KNOWN SERVICES". NO COMPENSATION WILL BE PAID FOR DAMAGE CAUSED TO "KNOWN SERVICES".
3. CONTRACTOR TO TAKE EXTREME CARE WHEN WORKING NEAR EXISTING LOOSE COUPLED STEEL PIPELINES.
4. VEHICLES OVER 3 TONS ARE TO BE RESTRICTED FROM TRAVELING ON THE EXISTING LOOSE COUPLED PIPELINES.
5. ALL EXISTING THRUST BLOCKS ARE TO BE PROVEN AND SUFFICIENTLY PROTECTED BEFORE ANY TRENCHING TAKES PLACE.
6. PRIOR TO CONSTRUCTION, IT IS THE CONTRACTORS RESPONSIBILITY TO APPLY FOR ANY WAYLEAVES THAT MAY BE REQUIRED.

COATING AND LINING NOTES:

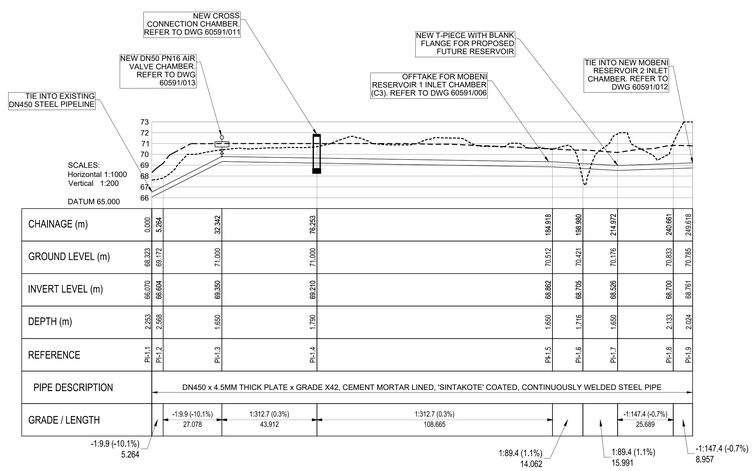
TO METRO WATER PARTICULAR SPECIFICATION FOR:

- " MANUFACTURE, DELIVERY, STORAGE, COATING AND LINING OF STEEL AND STAINLESS STEEL PIPE FITTINGS AND SPECIALS AND PROTECTION OF FIELD JOINTS FROM DN200 UP TO DN2200"
- "MANUFACTURE, SUPPLY, DELIVERY, HANDLING AND STORAGE OF DN200 TO DN2200 COATED AND LINED STEEL PIPE"

1. SURFACE PREPARATION - FOR APPLICATION OF CORROSION PROTECTION MATERIALS SHALL BE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
2. LINING/COATING TO MILD STEEL PIPING GREATER THAN DN250 (UNLESS OTHERWISE STATED); TO A MINIMUM DFT OF 400 MICRON, INTERNALLY AND EXTERNALLY APPLIED.
3. MILD STEEL PIPING LESS THAN OR EQUAL TO DN250 TO BE HEAVY DUTY HOT-DIPPED GALVANISED (UNLESS OTHERWISE STATED): TO ISO 1461 AND SANS 121, WITH A HEAVY FILM THICKNESS OF 85 ±10 MICRON, INTERNALLY AND EXTERNALLY APPLIED.
4. PIPE BELOW GROUND, AFTER GALVANISING TO BE WRAPPED WITH A POLYMER MODIFIED BITUMEN COMPOUND LAMINATE TO PVC TAPE WRAP SYSTEM IN ACCORDANCE WITH EWS PARTICULAR SPECIFICATION.
5. PIPE ABOVE GROUND, AFTER GALVANISING TO BE WRAPPED WITH AN ACRYLIC PIPELINE TAPE.
6. CEMENT MORTAR LINING TO eTHEKWINI PARTICULAR SPECIFICATIONS. DAMAGED COATING AND LININGS TO BE REPAIRED IN ACCORDANCE WITH SPECIFICATIONS.
7. DAMAGED H.D.G. COATING TO BE REPAIRED WITH 'GALV-O-PATCH' OR SIMILAR APPROVED PRODUCT.
8. ALL BURIED FLANGES, BOLTS AND FLEXIBLE COUPLINGS TO BE PROTECTED BY FILED JOINT COATING SYSTEM IN ACCORDANCE TO EWS PARTICULAR SPECIFICATION AND COMPLETED TAPE WRAPPED.
9. ALL PIPEWORK THROUGH CHAMBER WALLS TO BE WRAPPED PQLYMER MODIFIED BITUMEN COMPOUND LAMINATE TO PVC TAPE WRAP SYSTEM IN ACCORDANCE WITH EWS PARTICULAR SPECIFICATION ON EACH SIDE OF THE PUDDLE FLANGE. THIS WRAPPING IS TO EXTEND 150mm BEYOND THE FACE OF THE WALL EACH SIDE. PUDDLE FLANGE/ PLATE NOT TO BE WRAPPED.
10. DAMAGED COATINGS AND LININGS SHALL BE REPAIRED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
11. ALL PIPEWORK AND SPECIALS TO BE COATED AND LINED AS PER THE PROJECT SPECIFICATIONS UNLESS OTHERWISE STATED.
12. ALL JOINTS SHALL BE COATED, PROTECTED AND WRAPPED AS PER THE PROJECT SPECIFICATIONS.

NB:

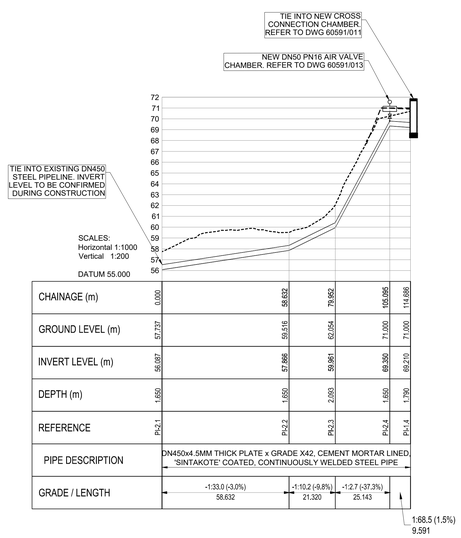
13. ALL CERTIFICATES SHALL BE PROVIDED FOR ALL MATERIALS
14. ALL WELDING TO BE API 1104.
15. ALL WELDS TO BE 100% TESTED.



CHAINAGE (m)	0.000	5.264	32.342	76.253	184.618	188.880	214.972	240.661	249.618
GROUND LEVEL (m)	68.323	69.172	71.000	71.000	70.512	70.421	70.176	70.833	70.785
INVERT LEVEL (m)	66.070	66.684	69.350	69.210	68.862	68.705	68.526	68.700	68.761
DEPTH (m)	2.253	2.568	1.650	1.790	1.650	1.716	1.650	2.133	2.024
REFERENCE	Pi1-1	Pi1-2	Pi1-3	Pi1-4	Pi1-5	Pi1-6	Pi1-7	Pi1-8	Pi1-9
PIPE DESCRIPTION	DN450 x 4.5MM THICK PLATE x GRADE X42, CEMENT MORTAR LINED, 'SINTAKOTE' COATED, CONTINUOUSLY WELDED STEEL PIPE								
GRADE / LENGTH	-1:9.9 (-10.1%) 5.264	-1:9.9 (-10.1%) 27.078	1:312.7 (0.3%) 43.912	1:312.7 (0.3%) 108.665	1:89.4 (1.1%) 14.062		1:89.4 (1.1%) 15.991	-1:147.4 (-0.7%) 25.689	-1:147.4 (-0.7%) 8.957

LONG SECTION - MAIN WATER SUPPLY FROM WOODLANDS 3 & 4

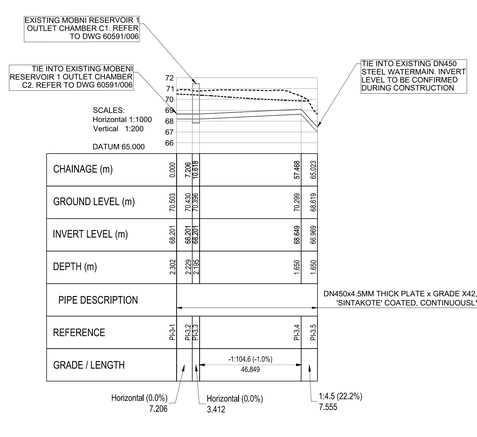
SCALE AS SHOWN



CHAINAGE (m)	0.000	58.632	79.952	165.095	184.686
GROUND LEVEL (m)	57.737	59.516	62.054	71.000	71.000
INVERT LEVEL (m)	56.087	57.866	59.961	69.350	69.210
DEPTH (m)	1.650	1.650	2.093	1.650	1.790
REFERENCE	Pi2-1	Pi2-2	Pi2-3	Pi2-4	Pi1-4
PIPE DESCRIPTION	DN450x4.5MM THICK PLATE x GRADE X42, CEMENT MORTAR LINED, 'SINTAKOTE' COATED, CONTINUOUSLY WELDED STEEL PIPE				
GRADE / LENGTH	-1:33.0 (-3.0%) 58.632		-1:10.2 (-9.8%) 21.320	-1:2.7 (-37.3%) 25.143	1:68.5 (1.5%) 9.591

LONG SECTION - BACK UP SUPPLY FROM WOODLANDS 1 & 2

SCALE AS SHOWN



CHAINAGE (m)	0.000	7.206	10.618	57.468	65.023
GROUND LEVEL (m)	70.503	70.430	70.356	70.299	68.819
INVERT LEVEL (m)	68.201	68.201	68.201	68.649	68.969
DEPTH (m)	2.302	2.229	2.155	1.650	1.850
PIPE DESCRIPTION	DN450x4.5MM THICK PLATE x GRADE X42, CEMENT MORTAR LINED, 'SINTAKOTE' COATED, CONTINUOUSLY WELDED STEEL PIPE				
REFERENCE	Pi3-1	Pi3-2		Pi3-4	Pi3-5
GRADE / LENGTH	Horizontal (0.0%) 7.206		-1:104.6 (-1.0%) 46.849		1:4.5 (22.2%) 7.555

LONG SECTION - MOBENI RESERVOIR 1 OUTLET PIPELINE

SCALE AS SHOWN

POINTS OF INTERSECTION. WGS84 Lo31

MANHOLE NO.	X - COORDINATE	Y - COORDINATE
PI-1.1	3 312 656.890	-4 186.641
PI-1.2	3 312 652.617	-4 189.715
PI-1.3	3 312 635.843	-4 210.972
PI-1.4	3 312 608.641	-4 245.443
PI-1.5	3 312 695.366	-4 310.917
PI-1.6	3 312 709.285	-4 308.912
PI-1.7	3 312 718.949	-4 296.172
PI-1.8	3 312 739.585	-4 311.446
PI-1.9	3 312 748.534	-4 311.057
PI-2.1	3 312 556.243	-4 280.684
PI-2.2	3 312 559.669	-4 222.152
PI-2.3	3 312 580.847	-4 224.614
PI-2.4	3 312 601.015	-4 239.702
PI-3.1	3 312 702.584	-4 220.601
PI-3.2	3 312 708.350	-4 224.924
PI-3.3	3 312 711.089	-4 226.955
PI-3.4	3 312 747.859	-4 255.986
PI-3.5	3 312 753.788	-4 260.669

ETHEKWINI WATER AND SANITATION

WATER DESIGN BRANCH

REDUCED PLAN USE SCALE BELOW

0 10 20 30 40 50 60 70

70mm ON ORIGINAL PLAN

CONSULTANT:

NAIDU CONSULTING

1st Floor
No.5, The Boulevard
West Way Office Park
Westville, Durban
Tel : +27 (0) 31 265 6007
Fax : +27 (0) 31 265 6011
Email: info@naiduconsulting.com

26/09/2025

Drawing No.: D724-52-5100- REV 0

FOR TENDER

REFERENCE DRAWINGS (D724-52-...)

DWG No.	TITLE/DESCRIPTION
1000	SITE LAYOUT
1001	EARTHWORKS LAYOUT
1002	EARTHWORKS SECTIONS
1003	EARTHWORKS SECTIONS
5100	WATER PIPELINE LONG SECTIONS
5250	RESERVOIR 1 VALVE CHAMBERS
5251	RESERVOIR 2 VALVE CHAMBERS
5252	DN350 METER CHAMBER
5253	DN400 METER CHAMBER
5254	DN300 METER CHAMBER
5255	CROSS CONNECTION CHAMBER
5256	DN300 INLET CHAMBER (RESERVOIR 2)
5257	AIR VALVE CHAMBER DETAILS
5258	TYPICAL VALVE CHAMBER DETAILS
4000	STORMWATER LAYOUT
4250	STORMWATER DETAILS
4100	STORMWATER PIPELINE LONG SECTIONS
STANDARD DRAWINGS	
5400	ACCESS GATE AND FENCE DETAILS
5401	MANHOLE COVER DETAILS
5402	GRP ACCESS LADDER DETAILS
5403	TRENCH DETAILS
5404	STEEL DOOR AND AIR VENT DETAILS

Revision	Date	Description
0	09/2025	ISSUED FOR TENDER

NORTH POINT

Contract No. 32547 - 5W

Project No. X8388

Planning Unit
WATER AND SANITATION

Ward No.
64

Project Title
MOBENI 2 RESERVOIR ASSOCIATED WORKS

Drawing Title
WATER PIPELINE LONG SECTIONS

Scale : As Shown

Designed : T. Moodley | Date : 09/2025

Checked : A. Goorun | Drawn: T Moodley

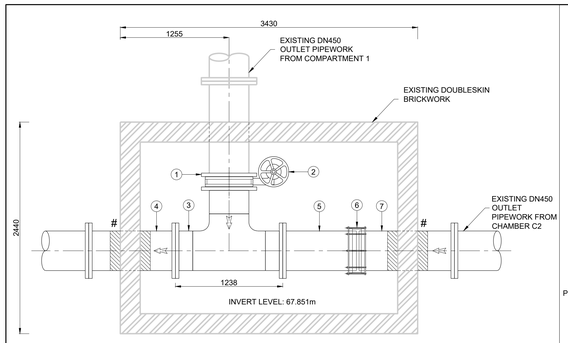
Area Engineer

Manager (Water Design)

Deputy Head (Engineering)

E. MSWELI - Head (W & S)

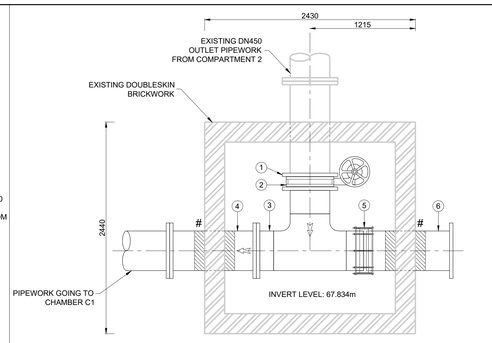
Drawing No. 60591/005 | Sheet 1 of 1 | Rev. 0



PLAN - OUTLET BRICK CHAMBER C1 - PIPEWORK DETAILS
RESERVOIR 1 COMPARTMENT 1
SCALE 1:25

PIPEWORK AND FITTINGS SCHEDULE (OUTLET CHAMBER C1)
ALL FITTINGS TO PN16, FLANGES TO SANS 1123 1600/3 & PIPEWORK TO X42/ SANS 719

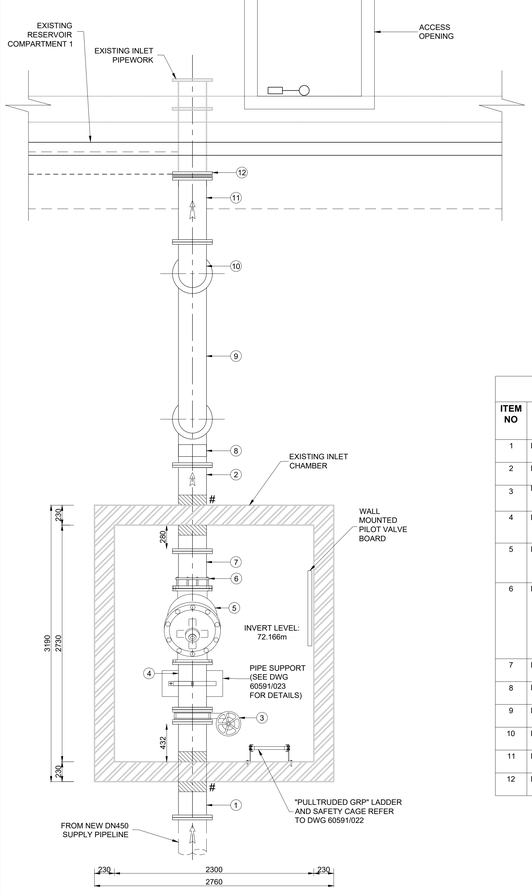
ITEM NO	NOM DIA	DESCRIPTION	WALL THK	LINING	COATING	FACE TO FACE	No. OF
1	DN450	CUT IN AND WELD NEW FLANGES TO EXISTING STEEL PIPE. SANS 1123 - TABLE 1600/3		SFE	SFE		1
2	DN450	WAFER BUTTERFLY VALVE AND GEARBOX, PN16, HAND WHEEL - OPERATED, COMPLETE WITH NUTS, BOLTS, GASKETS, WASHERS & MATCHING FLANGES		FBE	FBE	114	1
3	DN450	(ANSI) B16.9 EQUAL TEE, WITH 270mm LONG SPOOL PIECE WELDED ON ALL ENDS. FF 1238mm & CF 626mm F.A.R. BRANCH FLANGE TO MATCH ITEM 2 (LENGTHS TO BE VERIFIED ON SITE).	4.5	SFE	SFE	1238	1
4	DN450	SPOOL PIPE FF 1000mm, B.E.F. (LENGTH TO BE VERIFIED ON SITE).	4.5	SFE	SFE	1000	1
5	DN450	SPOOL PIECE 850mm LONG, F.O.E, OTHER END PLAIN END COATED (PE)	4.5	SFE	SFE	850	1
6	DN450	VJ COUPLING (SUPPLIED WITH NUTS, BOLTS AND WASHERS)		FBE	FBE	--	1
7	DN450	SPOOL PIECE 1100mm LONG, F.O.E, OTHER END PLAIN END COATED (PE)	4.5	SFE	SFE	1100	1



PLAN - OUTLET BRICK CHAMBER C2 - PIPEWORK DETAILS
RESERVOIR 1 COMPARTMENT 1
SCALE 1:25

PIPEWORK AND FITTINGS SCHEDULE (OUTLET CHAMBER C2)
ALL FITTINGS TO PN16, FLANGES TO SANS 1123 1600/3 & PIPEWORK TO X42/ SANS 719

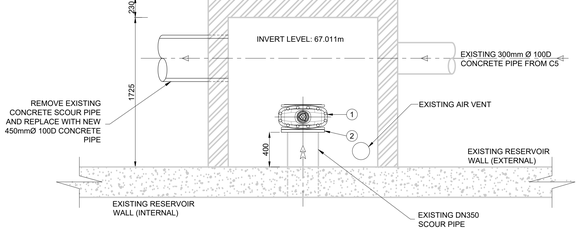
ITEM NO	NOM DIA	DESCRIPTION	WALL THK	LINING	COATING	FACE TO FACE	No. OF
1	DN450	CUT IN AND WELD NEW FLANGES TO EXISTING STEEL PIPE. SANS 1123 - TABLE 1600/3		SFE	SFE		1
2	DN450	WAFER BUTTERFLY VALVE AND GEARBOX, PN16, HAND WHEEL - OPERATED, COMPLETE WITH NUTS, BOLTS, GASKETS, WASHERS & MATCHING FLANGES		FBE	FBE	114	1
3	DN450	(ANSI) B16.9 EQUAL TEE, WITH 270mm LONG SPOOL PIECE WELDED ON ALL ENDS. FF 1238mm & CF 626mm. BRANCH END FLANGED & FLANGE TO MATCH ITEM 2. ONE OTHER END TO BE FLANGED & ONE END TO BE PLAIN END COATED. (LENGTHS TO BE VERIFIED ON SITE).	4.5	SFE	SFE	1238	1
4	DN450	SPOOL PIPE FF 1000mm, B.E.F. (LENGTH TO BE VERIFIED ON SITE).	4.5	SFE	SFE	1000	1
5	DN450	VJ COUPLING (SUPPLIED WITH NUTS, BOLTS AND WASHERS)		FBE	FBE	--	1
6	DN450	SPOOL PIECE 1000mm LONG, F.O.E, OTHER END PLAIN END COATED (PE)	4.5	SFE	SFE	1000	1



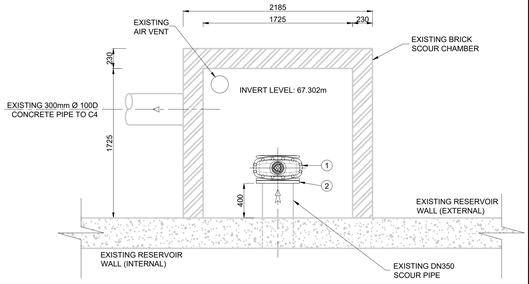
PLAN
INLET BRICK CHAMBER C3 - PIPEWORK DETAILS
RESERVOIR 1 COMPARTMENT 1
SCALE 1:25

PIPEWORK AND FITTINGS SCHEDULE (INLET CHAMBER C3)
ALL FITTINGS TO PN16, FLANGES TO SANS 1123 1600/3 & PIPEWORK TO X42/ SANS 719

ITEM NO	NOM DIA	DESCRIPTION	WALL THK	LINING	COATING	FACE TO FACE	No. OF
1	DN300	SPOOL PIECE, B.E.F., ONE FLANGE TO MATCH ITEM 3. (FINAL LENGTH TO BE DETERMINED ON SITE PRIOR TO FABRICATING).	4.5	SFE	SFE	1100	1
2	DN300	SPOOL PIECE, B.E.F. (FINAL LENGTH TO BE DETERMINED ON SITE PRIOR TO FABRICATING).	4.5	SFE	SFE	1000	1
3	DN300	BUTTERFLY VALVE TO BE SUPPLIED IN ACCORDANCE TO METRO WATER PARTICULAR SPECIFICATION.	""	--	FBE	78	1
4	DN300	SPOOL PIECE, B.E.F. ONE FLANGE TO MATCH ITEM 3 & THE OTHER FLANGE TO MATCH ITEM 5 (FINAL LENGTH TO BE DETERMINED ON SITE PRIOR TO FABRICATING).	4.5	SFE	SFE	550	1
5	DN300	SOLENOID CONTROL VALVE (ELECTRONIC LEVEL CONTROL) SUPPLIED WITH AUXILIARY CONTROL SYSTEM COMPRISING OF SOLENOID PILOT AND OPENING AND CLOSING SPEED CONTROLS	--	FBE	FBE	850	1
6	DN300	RESTRAINED EPOXY COATED AND LINED FLANGE ADAPTOR TO METRO WATER AND PROJECT SPECIFICATIONS. (TO APPROVAL BY METRO WATER). DESIGN OF RESTRAINING FLANGE ADAPTOR IS WITH AN OVERALL LENGTH OF +160mm. RESTRAINING BOLTS FROM THE FLANGE ON THE VALVE ADJACENT TO FLANGE ADAPTOR TO BE TAKEN THROUGH TO THE FLANGE OF ITEM 5 c/w NUTS AND WASHERS BOTH SIDES OF FLANGE.	--	FBE	FBE	<160	1
7	DN300	SPOOL PIECE, F.O.E, OTHER END PLAIN END COATED. (FINAL LENGTH TO BE DETERMINED ON SITE PRIOR TO FABRICATING).	4.5	SFE	SFE	360	1
8	DN300	45° (ANSI) B16.9 BEND WITH 200MM LONG SPOOL PIECE WELDED ON BOTH ENDS, B.E.F	4.5	SFE	SFE		1
9	DN300	STRAIGHT PIPE , B.E.F. (FINAL LENGTH TO BE DETERMINED ON SITE PRIOR TO FABRICATING).	4.5	SFE	SFE	1680	1
10	DN300	45° (ANSI) B16.9 BEND WITH 200MM LONG SPOOL PIECE WELDED ON BOTH ENDS, B.E.F	4.5	SFE	SFE		1
11	DN300	SPOOL PIECE, B.E.F. (FINAL LENGTH TO BE DETERMINED ON SITE PRIOR TO FABRICATING).	4.5	SFE	SFE	740	1
12	DN300	CUT IN AND WELD NEW FLANGES TO EXISTING STEEL PIPE. SANS 1123 - TABLE 1600/3	4.5	SFE	SFE		1



SCOUR CHAMBER C4 - PIPEWORK DETAILS
RESERVOIR 1 COMPARTMENT 1
SCALE 1:25



SCOUR CHAMBER C5 - PIPEWORK DETAILS
RESERVOIR 1 COMPARTMENT 2
SCALE 1:25

PLAN
SCOUR CHAMBERS

PIPEWORK AND FITTINGS SCHEDULE (SCOUR & OUTLET CHAMBER C4 & C5)
ALL FITTINGS TO PN16, FLANGES TO SANS 1123 1600/3 & PIPEWORK TO X42/ SANS 719

ITEM NO	NOM DIA	DESCRIPTION	WALL THK	LINING	COATING	FACE TO FACE	No. OF
1	DN350	WEDGE GATE VALVE COMPLETE WITH EXTENDED SPINDLE		FBE	FBE	282	2
2	DN350	CUT IN AND WELD NEW FLANGES TO EXISTING STEEL PIPE. SANS 1123 - TABLE 1600/3		SFE	SFE		2

PLAN
CROSS CONNECTION CHAMBER C6 - PIPEWORK DETAILS
CLAIRWOOD HOSPITAL PIPELINE
SCALE 1:25

PIPEWORK AND FITTINGS SCHEDULE (CLAIRWOOD HOSPITAL CROSS CONNECTION CHAMBER C6)
ALL FITTINGS TO PN16, FLANGES TO SANS 1123 1600/3 & PIPEWORK TO X42/ SANS 719

ITEM NO	NOM DIA	DESCRIPTION	WALL THK	LINING	COATING	FACE TO FACE	No. OF
1	DN300	SPOOL PIECE, B.E.F., ONE FLANGE TO MATCH ITEM 2.	4.5	SFE	SFE	900	1
2	DN300	SPOOL PIECE, F.O.E, OTHER END PLAIN END COATED. (FINAL LENGTH TO BE DETERMINED ON SITE PRIOR TO FABRICATING).	4.5	SFE	SFE	350	1
3	DN300	RESTRAINED EPOXY COATED AND LINED FLANGE ADAPTOR TO METRO WATER AND PROJECT SPECIFICATIONS. (TO APPROVAL BY METRO WATER). DESIGN OF RESTRAINING FLANGE ADAPTOR IS WITH AN OVERALL LENGTH OF +160mm. RESTRAINING BOLTS FROM THE FLANGE ON THE VALVE ADJACENT TO FLANGE ADAPTOR TO BE TAKEN THROUGH TO THE FLANGE OF ITEM 5 c/w NUTS AND WASHERS BOTH SIDES OF FLANGE.	""	FBE	FBE	<160	1
4	DN300	WEDGE GATE VALVE COMPLETE WITH EXTENDED SPINDLE		FBE	FBE	380	1
5	DN300	SPOOL PIECE, B.E.F., ONE FLANGE TO MATCH ITEM 4.	--	SFE	SFE	930	1
6	DN300	90° (ANSI) B16.9 LONG RADIUS BEND, B.E.F	--	SFE	SFE		1

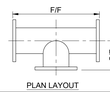
WRAP SECTION OF PIPE WITH A POLYMER MODIFIED BITUMEN COMPOUND LAMINATE TO PVC TAPE WRAP SYSTEM:

1.) PRIME WITH APPROVED PRIMER IN ACCORDANCE WITH EWS SPECIFCATIONS AND LET CURE FOR 30 MINUTES.

2.) WRAP WITH A POLYMER MODIFIED BITUMEN COMPOUND LAMINATE TO PVC TAPE WRAP SYSTEM, THIS WRAPPING TO EXTEND 150mm FROM THE FACE OF THE WALL ON EACH SIDE. PUDDLE FLANGE NOT TO BE WRAPPED IN ACCORDANCE WITH EWS SPECIFCATIONS

ABBREVIATIONS :

ID	-	INSIDE DIAMETER
DN	-	DIAMETER NOMINAL
OD	-	OUTSIDE DIAMETER
MS	-	MILD STEEL
SS	-	STAINLESS STEEL
SFE	-	SOLVENT FREE EPOXY
FBE	-	FUSION BONDED EPOXY
CML	-	CEMENT MORTAR LINED
SNT	-	SINTAKOTE
RSN	-	RILSAN
F/F	-	FACE TO FACE DIMENSION
C/F	-	CENTER TO FACE DIMENSION
FOE	-	FLANGED ONE END
BEF	-	BOTH ENDS FLANGED
FAR	-	FLANGED ALL ROUND
LRB	-	LONG RADIUS BEND
MRB	-	MEDUM RADIUS BEND
SRB	-	SHORT RADIUS BEND
HDG	-	HOT DIPPED GALVANIZED
P.E.C	-	PLAIN ENDED COATED
P.F	-	PUDDLE FLANGE
P.T	-	PUDDLE PLATE
R.F	-	RESTRAINING FLANGE
FRL	-	FINAL ROAD LEVEL
NGL	-	NATURAL GROUND LEVEL
FFL	-	FINISH FLOOR LEVEL



PLAN LAYOUT

PIPEWORK NOTES:

1. ALL PIPEWORK TO BE MILD STEEL UNLESS OTHERWISE STATED. ALL MATERIAL TO BE SANS APPROVED.
2. THE CONTRACTOR SHALL VERIFY THE DIMENSIONS OF ALL PIPEWORK AND ADVISE THE ENGINEER OF ANY DISCREPANCIES PRIOR TO FABRICATION.
3. ALL FLANGES AND RESTRAINING FLANGES SHALL BE RATED AND DRILLED TO SANS 1123, TABLE AS SPECIFIED IN PIPEWORK AND FITTINGS SCHEDULE.
   - 3.1. THRUST PUDDLE FLANGES SHALL MATCH PIPEWORK FLANGES TO SANS 1123 AND SHALL BE UNDRILLED.
   - 3.2. WHERE PUDDLE PLATES ARE REQUIRED OVER THRUST PUDDLE FLANGES, THE THICKNESS AND OUTSIDE DIAMETER SHALL BE SPECIFIED IN PIPEWORK AND FITTINGS SCHEDULE.
   - 3.3. ENSURE THERE IS AT LEAST 75mm COVER BETWEEN THE REINFORCING BARS AND PUDDLE FLANGE/ PLATE.
4. ALL BOLTS AND TIE BOLTS TO BE GRADE 4.8. BOLTS, NUTS AND WASHERS SHALL BE HOT DIPPED GALVANISED TO SANS 121/ ISO 1461, WITH A HEAVY FILM THICKNESS OF 85 ±10 MICRON.
5. ALL MILD STEEL ITEMS (APART FROM PIPING/PIPE FITTINGS) TO BE HEAVY DUTY HOT DIPPED GALVANIZED TO ISO 1461 AND SANS 121,WITH A HEAVY FILM THICKNESS OF 85 ±10 MICRO INTERNALLY AND EXTERNALLY APPLIED.
6. ALL PIPE FITTINGS TO BE CHECKED ON SITE, ANY DISCREPANCIES TO BE REPORTED TO THE ENGINEER PRIOR TO INSTALLATION.
7. ALL PIPES LESS THAN OR EQUAL TO DN150 TO BE FABRICATED IN ACCORDANCE WITH SANS 62 - 1 (MEDIUM CLASS) UNLESS OTHERWISE SPECIFIED.
8. ALL MILD STEEL PIPEWORK AND FITTINGS GREATER THAN DN150 TO BE FABRICATED IN ACCORDANCE WITH SANS 719 EDITION 3.1 2008 AND WELDED IN ACCORDANCE WITH API 1104. PIPEWORK GRADE AND WALL THICKNESS SHALL MATCH SCHEDULE OF FITTINGS TABLE.
9. ALL STAINLESS STEEL PIPE AND FITTINGS TO BE GRADE 316L AND WALL THICKNESS SHALL MATCH SCHEDULE OF FITTINGS TABLE.
10. RESTRAINING FLANGE ADAPTOR USE MINIMUM 4. No GRADE 4.8 RESTRAINING BOLTS, EQUALLY SPACED AROUND CIRCUMFERENCE OF FLANGES UNLESS OTHER SHOWN UNDER ITEM DESCRIPTION. NOTE: ALL THE BOLTS FROM THE FLANGE ON THE VALVE ADJACENT TO A RESTRAINING FLANGE TO BE TAKEN THROUGH TO THE RESTRAINING FLANGE WITH NUTS AND WASHERS BOTH SIDES OF RESTRAINING FLANGE.
11. ALL BURIED FLANGES TO BE CATHODICALLY BONDED INSULATED CABLE THERMALLY WELDED TO PIPE AS DIRECTED BY CATHODIC SPECIALIST.
12. THE PRESSURE RATINGS OF ALL PIPEWORK, FITTINGS, FLANGES, VALVES & METERS SHALL BE AS INDICATED IN THE SCHEDULES OF FITTINGS.
13. ALL MILD STEEL PIPEWORK, COLLARS, WRAPPERS AND CROTCH PLATES TO BE MANUFACTURED FROM MINIMUM GRADE X42 STEEL AND WELDED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
14. BACKFILL MATERIAL TO BE COMPACTED TO 95% MOD. AASHTO IN MAX. 150mm LAYERS & 97% MOD AASHTO IN 150mm LAYERS WHERE THE PIPE IS LOCATED UNDER A PAVED ROAD SURFACE.
15. ALL PIPEWORK, VALVES AND FITTING SHALL COMPLY WITH PROJECT SPECIFICATION.
16. DIMENSIONS OF ALL PIPES, FITTINGS AND SPECIALS SCHEDULED ABOVE ARE FOR INFORMATION PURPOSES ONLY AND TO BE VERIFIED ON SITE PRIOR TO MANUFACTURE.
17. THE USE OF PROPRIETARY NAMES IN NO WAY INDICATES PREFERENCE FOR A PARTICULAR PRODUCT. RATHER, THIS USAGE IS TO ILLUSTRATE TO THE TENDERER THE TYPE AND NATURE OF PRODUCT SOUGHT BY METRO WATER. EQUIPMENT WITH SIMILAR MATERIALS OF CONSTRUCTIONS, SIMILAR FUNCTIONALITY AND NO MATERIAL DEVIATION FROM THE PRODUCT USED FOR ILLUSTRATIVE PURPOSES WILL BE DEEMED TO BE "SIMILAR APPROVED".

COATING AND LINING NOTES:

TO METRO WATER PARTICULAR SPECIFICATION FOR:

- " MANUFACTURE, DELIVERY, STORAGE, COATING AND LINING OF STEEL AND STAINLESS STEEL PIPE FITTINGS AND SPECIALS AND PROTECTION OF FIELD JOINTS FROM DN200 UP TO DN2200"
- "MANUFACTURE, SUPPLY, DELIVERY, HANDLING AND STORAGE OF DN200 TO DN2200 COATED AND LINED STEEL PIPE"

18. SURFACE PREPARATION - FOR APPLICATION OF CORROSION PROTECTION MATERIALS SHALL BE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
19. LINING/COATING TO MILD STEEL PIPING GREATER THAN DN250 (UNLESS OTHERWISE STATED); TO A MINIMUM DFT OF 400micron, INTERNALLY AND EXTERNALLY APPLIED.
20. 17. MILD STEEL PIPING LESS THAN OR EQUAL TO DN250 TO BE HEAVY DUTY HOT-DIPPED GALVANISED (UNLESS OTHERWISE STATED); TO ISO 1461 AND SANS 121, WITH A HEAVY FILM THICKNESS OF 85 ±10 MICRON, INTERNALLY AND EXTERNALLY APPLIED.
21. PIPE BELOW GROUND, AFTER GALVANISING TO BE WRAPPED WITH A POLYMER MODIFIED BITUMEN COMPOUND LAMINATE TO PVC TAPE WRAP SYSTEM IN ACCORDANCE WITH EWS PARTICULAR SPECIFICATION.
    - 21.1. PIPE ABOVE GROUND, AFTER GALVANISING TO BE WRAPPED WITH AN ACRYLIC PIPELINE TAPE.
22. CEMENT MORTAR LINING TO eTHEKWINI PARTICULAR SPECIFICATIONS. DAMAGED COATING AND LININGS TO BE REPAIRED IN ACCORDANCE WITH SPECIFICATIONS.
23. DAMAGED H.D.G. COATING TO BE REPAIRED WITH 'GALV-O-PATCH' OR SIMILAR APPROVED PRODUCT.
24. ALL BURIED FLANGES, BOLTS AND FLEXIBLE COUPLINGS TO BE PROTECTED BY FILED JOINT COATING SYSTEM IN ACCORDANCE TO EWSPARTICULAR SPECIFICATION AND COMPLETED TAPE WRAPPED.
25. ALL PIPEWORK THROUGH CHAMBER WALLS TO BE WRAPPED POLYMER MODIFIED BITUMEN COMPOUND LAMINATE TO PVC TAPE WRAP SYSTEM IN ACCORDANCE WITH EWS PARTICULAR SPECIFICATION ON EACH SIDE OF THE PUDDLE FLANGE. THIS WRAPPING IS TO EXTEND 150mm BEYOND THE FACE OF THE WALL EACH SIDE. PUDDLE FLANGE/ PLATE NOT TO BE WRAPPED.
26. DAMAGED COATINGS AND LININGS SHALL BE REPAIRED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
27. ALL PIPEWORK AND SPECIALS TO BE COATED AND LINED AS PER THE PROJECT SPECIFICATIONS UNLESS OTHERWISE STATED.
28. ALL JOINTS SHALL BE COATED, PROTECTED AND WRAPPED AS PER THE PROJECT SPECIFICATIONS.

NB:

29. ALL CERTIFICATES SHALL BE PROVIDED FOR ALL MATERIALS
30. ALL WELDING TO BE API 1104.
31. ALL WELDS TO BE 100% TESTED.

eTHEKWINI WATER SERVICES

WATER DESIGN BRANCH

REDUCED PLAN USE SCALE BELOW
0 10 20 30 40 50 60 70
70mm ON ORIGINAL PLAN

CONSULTANT:

NAIDU CONSULTING
1st Floor
No.5, The Boulevard
West Way Office Park
Westville, Durban
Tel : +27 (0) 31 265 6007
Fax : +27 (0) 31 265 6011
Email: info@naiduconsulting.com

Signature
26/09/2025
Date

Drawing No.: D724-52-5250- REV 0

FOR TENDER

REFERENCE DRAWINGS (D724-52-...)

DWG No.	TITLE/DESCRIPTION
1000	SITE LAYOUT
1001	EARTHWORKS LAYOUT
1002	EARTHWORKS SECTIONS
1003	EARTHWORKS SECTIONS
5100	WATER PIPELINE LONG SECTIONS
5250	RESERVOIR 1 VALVE CHAMBERS
5251	RESERVOIR 2 VALVE CHAMBERS
5252	DN350 METER CHAMBER
5253	DN400 METER CHAMBER
5254	DN300 METER CHAMBER
5255	CROSS CONNECTION CHAMBER
5256	DN300 INLET CHAMBER (RESERVOIR 2)
5257	AIR VALVE CHAMBER DETAILS
5258	TYPICAL VALVE CHAMBER DETAILS
4000	STORMWATER LAYOUT
4250	STORMWATER DETAILS
4100	STORMWATER PIPELINE LONG SECTIONS
STANDARD DRAWINGS	
5400	ACCESS GATE AND FENCE DETAILS
5401	MANHOLE COVER DETAILS
5402	GRP ACCESS LADDER DETAILS
5403	TRENCH DETAILS
5404	STEEL DOOR AND AIR VENT DETAILS

Revision	Date	Descrption
0	09 / 2025	ISSUED FOR TENDER

Contract No.: 32547 - 5W

Project No.: X8388

Planning Unit: Water & Sanitation Unit

Ward No.: 64

Project Title:
MOBENI 2 RESERVOIR ASSOCIATED WORKS

Drawing Title:
RESERVOIR 1 INLET, OUTLET & SCOUR CHAMBERS AND OTHER ASSOCIATED VALVE CHAMBERS

Scales : As Shown
Paper Size : A0
Designed : T Moodley | Date : 09/2025
Checked : A. Goorun | Drawn : N. Adams

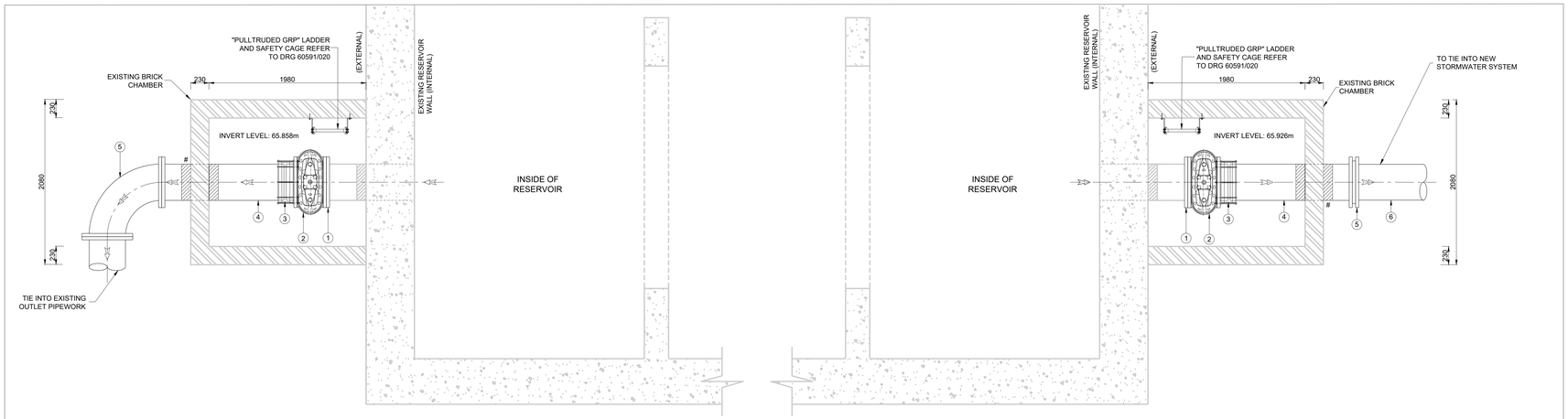
Area Engineer (W.O)

Manager (W.D.)

Director (Water)

E.Msweli - Head:Water & Sanitation Unit

Drawing No. 60591/006 | Sheet 1 of 1 | Rev. 0



PLAN
OUTLET BRICK CHAMBER C7 - PIPEWORK DETAILS
RESERVOIR 2
SCALE 1:25

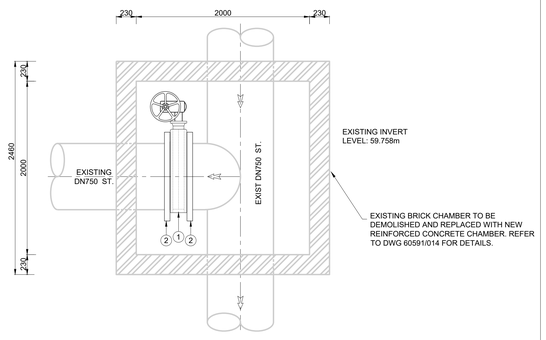
PIPEWORK AND FITTINGS SCHEDULE (OUTLET CHAMBER C7)
ALL FITTINGS TO PN16, FLANGES TO SANS 1123 1600/3 & PIPEWORK TO X42/ SANS 719

ITEM NO	NOM DIA	DESCRIPTION	WALL THK	LINING	COATING	FACE TO FACE	No. OF
1	DN450	CUT IN AND WELD NEW FLANGES TO EXISTING STEEL PIPE. SANS 1123 - TABLE 1600/3	4.5	SFE	SFE		1
2	DN450	WEDGE GATE VALVE COMPLETE WITH EXTENDED SPINDLE		FBE	FBE		1
3	DN450	COUPLING WITH MATCHING FLANGE, NUTS, BOLTS & WASHERS		FBE	FBE	202	1
4	DN450	SPOOL PIPE FF 1540mm, F.O.E. (LENGTH TO BE VERIFIED ON SITE).	4.5	SFE	SFE	1540	1
5	DN450	90° (ANSI) B16.9 LONG RADIUS BEND, B.E.F	4.5	SFE	SFE		

PLAN
RESERVOIR 2
SCOUR BRICK CHAMBER C8 - PIPEWORK DETAILS
SCALE 1:25

PIPEWORK AND FITTINGS SCHEDULE (SCOUR CHAMBER C8)
ALL FITTINGS TO PN16, FLANGES TO SANS 1123 1600/3 & PIPEWORK TO X42/ SANS 719

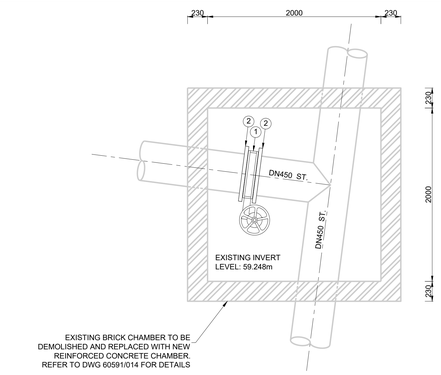
ITEM NO	NOM DIA	DESCRIPTION	WALL THK	LINING	COATING	FACE TO FACE	No. OF
1	DN450	CUT IN AND WELD NEW FLANGES TO EXISTING STEEL PIPE. SANS 1123 - TABLE 1600/3	4.5	SFE	SFE	1000	1
2	DN450	WEDGE GATE VALVE COMPLETE WITH EXTENDED SPINDLE		FBE	FBE		1
3	DN450	COUPLING WITH MATCHING FLANGE, NUTS, BOLTS & WASHERS		FBE	FBE	202	1
4	DN450	SPOOL PIECE 1540mm LONG, F.O.E, OTHER END PLAIN END COATED (PE)	4.5	SFE	SFE	1540	1
5	DN450	STEEL BACKING FLANGE		SFE	SFE		1
6	DN450	CLASS 10 HDPE SPOOL PIECE TO TIE INTO NEW STORMWATER SYSTEM. LENGTH TO BE VERIFIED ONSITE		-	-	10000	1



PLAN
RESERVOIR 2
BRICK VALVE CHAMBER C10 - PIPEWORK DETAILS
SCALE 1:25

PIPEWORK AND FITTINGS SCHEDULE (CHAMBER C10)
ALL FITTINGS TO PN16, FLANGES TO SANS 1123 1600/3

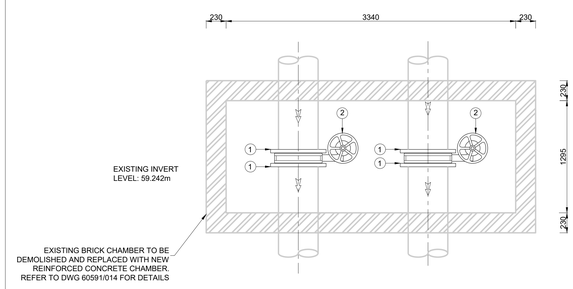
ITEM NO	NOM DIA	DESCRIPTION	WALL THK	LINING	COATING	FACE TO FACE	No. OF
1	D750	BUTTERFLY VALVE WITH SPINDLE AND HAND WHEEL, COMPLETE TO BS 5155/ EN593 AND METRO WATER SPECIFICATIONS. VALVE TO BE INSTALLED THAT DISC IS HORIZONTAL TO FLOW.			FBE		1
2	DN750	CUT IN AND WELD NEW FLANGES TO EXISTING STEEL PIPES. SANS 1123 - TABLE 1600/3 - FLANGES TO MATCH ITEM 1.			FBE		2



PLAN
RESERVOIR 2
BRICK CHAMBER C9 - PIPEWORK DETAILS
SCALE 1:25

PIPEWORK AND FITTINGS SCHEDULE (CHAMBER C9)
ALL FITTINGS TO PN16, FLANGES TO SANS 1123 1600/3 & PIPEWORK TO X42/ SANS 719

ITEM NO	NOM DIA	DESCRIPTION	WALL THK	LINING	COATING	FACE TO FACE	No. OF
1	DN450	BUTTERFLY VALVE WITH SPINDLE AND HAND WHEEL, COMPLETE TO BS 5155/ EN593 AND METRO WATER SPECIFICATIONS. VALVE TO BE INSTALLED THAT DISC IS HORIZONTAL TO FLOW.			FBE		1
2	DN450	CUT IN AND WELD NEW FLANGES TO EXISTING STEEL PIPES. SANS 1123 - TABLE 1600/3 - FLANGES TO MATCH ITEM 1.			FBE		2



PLAN
OFFTAKE CHAMBER - SUPPLY FROM WOODLANDS 3 & 4
BRICK CHAMBER C11 - PIPEWORK DETAILS
SCALE 1:25

PIPEWORK AND FITTINGS SCHEDULE (CHAMBER C11)
ALL FITTINGS TO PN16, FLANGES TO SANS 1123 1600/3 & PIPEWORK TO X42/ SANS 719

ITEM NO	NOM DIA	DESCRIPTION	WALL THK	LINING	COATING	FACE TO FACE	No. OF
1	DN450	CUT IN AND WELD NEW FLANGES TO EXISTING STEEL PIPE. SANS 1123 - TABLE 1600/3		SFE	SFE		4
2	DN450	BUTTERFLY VALVE AND GEARBOX, PN16, HAND WHEEL - OPERATED, COMPLETE WITH NUTS, BOLTS, GASKETS, WASHERS & MATCHING FLANGES		FBE	FBE		2

PIPEWORK NOTES:

1. ALL PIPEWORK TO BE MILD STEEL UNLESS OTHERWISE STATED. ALL MATERIAL TO BE SANS APPROVED.
2. THE CONTRACTOR SHALL VERIFY THE DIMENSIONS OF ALL PIPEWORK AND ADVISE THE ENGINEER OF ANY DISCREPANCIES PRIOR TO FABRICATION.
3. ALL FLANGES AND RESTRAINING FLANGES SHALL BE RATED AND DRILLED TO SANS 1123, TABLE AS SPECIFIED IN PIPEWORK AND FITTINGS SCHEDULE.
   3.1. THRUST PUDDLE FLANGES SHALL MATCH PIPEWORK FLANGES TO SANS 1123 AND SHALL BE UNDRILLED.
   3.2. WHERE PUDDLE PLATES ARE REQUIRED OVER THRUST PUDDLE FLANGES, THE THICKNESS AND OUTSIDE DIAMETER SHALL BE SPECIFIED IN PIPEWORK AND FITTINGS SCHEDULE.
   3.3. ENSURE THERE IS AT LEAST 75mm COVER BETWEEN THE REINFORCING BARS AND PUDDLE FLANGE/ PLATE.
4. ALL BOLTS AND TIE BOLTS TO BE GRADE 4.8. BOLTS, NUTS AND WASHERS SHALL BE HOT DIPPED GALVANISED TO SANS 121/ ISO 1461, WITH A HEAVY FILM THICKNESS OF 85 ±10 MICRON.
5. ALL MILD STEEL ITEMS (APART FROM PIPING/PIPE FITTINGS) TO BE HEAVY DUTY HOT DIPPED GALVANIZED TO ISO 1461 AND SANS 121,WITH A HEAVY FILM THICKNESS OF 85 ±10 MICRO INTERNALLY AND EXTERNALLY APPLIED.
6. ALL PIPE FITTINGS TO BE CHECKED ON SITE, ANY DISCREPANCIES TO BE REPORTED TO THE ENGINEER PRIOR TO INSTALLATION.
7. ALL PIPES LESS THAN OR EQUAL TO DN150 TO BE FABRICATED IN ACCORDANCE WITH SANS 62 - 1 (MEDIUM CLASS) UNLESS OTHERWISE SPECIFIED.
8. ALL MILD STEEL PIPEWORK AND FITTINGS GREATER THAN DN150 TO BE FABRICATED IN ACCORDANCE WITH SANS 719 EDITION 3.1 2008 AND WELDED IN ACCORDANCE WITH API 1104. PIPEWORK GRADE AND WALL THICKNESS SHALL MATCH SCHEDULE OF FITTINGS TABLE.
9. ALL STAINLESS STEEL PIPE AND FITTINGS TO BE GRADE 316L AND WALL THICKNESS SHALL MATCH SCHEDULE OF FITTINGS TABLE.
10. RESTRAINING FLANGE ADAPTOR USE MINIMUM 4 No GRADE 4.8 RESTRAINING BOLTS, EQUALLY SPACED AROUND CIRCUMFERENCE OF FLANGES UNLESS OTHER SHOWN UNDER ITEM DESCRIPTION. NOTE: ALL THE BOLTS FROM THE FLANGE ON THE VALVE ADJACENT TO A RESTRAINING FLANGE TO BE TAKEN THROUGH TO THE RESTRAINING FLANGE WITH NUTS AND WASHERS BOTH SIDES OF RESTRAINING FLANGE.
11. ALL BURIED FLANGES TO BE CATHODICALLY BONDED INSULATED CABLE THERMALLY WELDED TO PIPE AS DIRECTED BY CATHODIC SPECIALIST .
12. THE PRESSURE RATINGS OF ALL PIPEWORK, FITTINGS, FLANGES, VALVES & METERS SHALL BE AS INDICATED IN THE SCHEDULES OF FITTINGS.
13. ALL MILD STEEL PIPEWORK, COLLARS, WRAPPERS AND CROTCH PLATES TO BE MANUFACTURED FROM MINIMUM GRADE X42 STEEL AND WELDED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
14. BACKFILL MATERIAL TO BE COMPACTED TO 95% MOD. AASHTO IN MAX. 150mm LAYERS & 97% MOD AASHTO IN 150mm LAYERS WHERE THE PIPE IS LOCATED UNDER A PAVED ROAD SURFACE.
15. ALL PIPEWORK, VALVES AND FITTING SHALL COMPLY WITH PROJECT SPECIFICATION.
16. DIMENSIONS OF ALL PIPES, FITTINGS AND SPECIALS SCHEDULED ABOVE ARE FOR INFORMATION PURPOSES ONLY AND TO BE VERIFIED ON SITE PRIOR TO MANUFACTURE.
17. THE USE OF PROPRIETARY NAMES IN NO WAY INDICATES PREFERENCE FOR A PARTICULAR PRODUCT. RATHER, THIS USAGE IS TO ILLUSTRATE TO THE TENDERER THE TYPE AND NATURE OF PRODUCT SOUGHT BY METRO WATER. EQUIPMENT WITH SIMILAR MATERIALS OF CONSTRUCTIONS, SIMILAR FUNCTIONALITY AND NO MATERIAL DEVIATION FROM THE PRODUCT USED FOR ILLUSTRATIVE PURPOSES WILL BE DEEMED TO BE "SIMILAR APPROVED".

COATING AND LINING NOTES:
TO METRO WATER PARTICULAR SPECIFICATION FOR:

- " MANUFACTURE, DELIVERY, STORAGE, COATING AND LINING OF STEEL AND STAINLESS STEEL PIPE FITTINGS AND SPECIALS AND PROTECTION OF FIELD JOINTS FROM DN200 UP TO DN2200"
- "MANUFACTURE, SUPPLY, DELIVERY, HANDLING AND STORAGE OF DN200 TO DN2200 COATED AND LINED STEEL PIPE"

18. SURFACE PREPARATION - FOR APPLICATION OF CORROSION PROTECTION MATERIALS SHALL BE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
19. LINING/COATING TO MILD STEEL PIPING GREATER THAN DN250 (UNLESS OTHERWISE STATED): TO A MINIMUM DFT OF 400microns, INTERNALLY AND EXTERNALLY APPLIED.
20. MILD STEEL PIPING LESS THAN OR EQUAL TO DN250 TO BE HEAVY DUTY HOT-DIPPED GALVANISED (UNLESS OTHERWISE STATED): TO ISO 1461 AND SANS 121, WITH A HEAVY FILM THICKNESS OF 85 ±10 MICRON, INTERNALLY AND EXTERNALLY APPLIED.
21. PIPE BELOW GROUND, AFTER GALVANISING TO BE WRAPPED WITH A POLYMER MODIFIED BITUMEN COMPOUND LAMINATE TO PVC TAPE WRAP SYSTEM IN ACCORDANCE WITH EWS PARTICULAR SPECIFICATION.
   21.1. PIPE ABOVE GROUND, AFTER GALVANISING TO BE WRAPPED WITH AN ACRYLIC PIPELINE TAPE.
22. CEMENT MORTAR LINING TO eTHEKWINI PARTICULAR SPECIFICATIONS. DAMAGED COATING AND LININGS TO BE REPAIRED IN ACCORDANCE WITH SPECIFICATIONS.
23. DAMAGED H.D.G. COATING TO BE REPAIRED WITH 'GALV-O-PATCH' OR SIMILAR APPROVED PRODUCT.
24. ALL BURIED FLANGES, BOLTS AND FLEXIBLE COUPLINGS TO BE PROTECTED BY FILED JOINT COATING SYSTEM IN ACCORDANCE TO EWSPARTICULAR SPECIFICATION AND COMPLETED TAPE WRAPPED.
25. ALL PIPEWORK THROUGH CHAMBER WALLS TO BE WRAPPED POLYMER MODIFIED BITUMEN COMPOUND LAMINATE TO PVC TAPE WRAP SYSTEM IN ACCORDANCE WITH EWS PARTICULAR SPECIFICATION ON EACH SIDE OF THE PUDDLE FLANGE. THIS WRAPPING IS TO EXTEND 150mm BEYOND THE FACE OF THE WALL EACH SIDE. PUDDLE FLANGE/ PLATE NOT TO BE WRAPPED.
26. DAMAGED COATINGS AND LININGS SHALL BE REPAIRED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
27. ALL PIPEWORK AND SPECIALS TO BE COATED AND LINED AS PER THE PROJECT SPECIFICATIONS UNLESS OTHERWISE STATED.
28. ALL JOINTS SHALL BE COATED, PROTECTED AND WRAPPED AS PER THE PROJECT SPECIFICATIONS.

NB:

29. ALL CERTIFICATES SHALL BE PROVIDED FOR ALL MATERIALS
30. ALL WELDING TO BE API 1104.
31. ALL WELDS TO BE 100% TESTED.

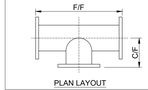
WRAP SECTION OF PIPE WITH A POLYMER MODIFIED BITUMEN COMPOUND LAMINATE TO PVC TAPE WRAP SYSTEM:

1.) PRIME WITH APPROVED PRIMER IN ACCORDANCE WITH EWS SPECIFICATIONS AND LET CURE FOR 30 MINUTES.

2.) WRAP WITH A POLYMER MODIFIED BITUMEN COMPOUND LAMINATE TO PVC TAPE WRAP SYSTEM, THIS WRAPPING TO EXTEND 150mm FROM THE FACE OF THE WALL ON EACH SIDE. PUDDLE FLANGE NOT TO BE WRAPPED IN ACCORDANCE WITH EWS SPECIFICATIONS

ABBREVIATIONS :

ID	-	INSIDE DIAMETER
DN	-	DIAMETER NOMINAL
OD	-	OUTSIDE DIAMETER
MS	-	MILD STEEL
SS	-	STAINLESS STEEL
SFE	-	SOLVENT FREE EPOXY
FBE	-	FUSION BONDED EPOXY
CML	-	CEMENT MORTAR LINED
SNT	-	SINTAKOTE
RSN	-	RILSAN
F/F	-	FACE TO FACE DIMENSION
C/F	-	CENTER TO FACE DIMENSION
FOE	-	FLANGED ONE END
BEF	-	BOTH ENDS FLANGED
FAR	-	FLANGED ALL ROUND
LRB	-	LONG RADIUS BEND
MRB	-	MEDUM RADIUS BEND
SRB	-	SHORT RADIUS BEND
HDG	-	HOT DIPPED GALVANIZED
P.E.C	-	PLAIN ENDED COATED
P.F	-	PUDDLE FLANGE
P.T	-	PUDDLE PLATE
R.F	-	RESTRAINING FLANGE
FRL	-	FINAL ROAD LEVEL
NGL	-	NATURAL GROUND LEVEL
FFL	-	FINISH FLOOR LEVEL



PLAN LAYOUT

eTHEKWINI WATER SERVICES
WATER DESIGN BRANCH

REDUCED PLAN USE SCALE BELOW
0 10 20 30 40 50 60 70
70mm ON ORIGINAL PLAN

CONSULTANT:
NAIDU CONSULTING
1st Floor
No.5, The Boulevard
West Way Office Park
Westville, Durban
Tel : +27 (0) 31 265 6007
Fax : +27 (0) 31 265 6011
Email: info@naiduconsulting.com

Signature
26/09/2025
Date

Drawing No.: D724-52-5251- REV 0

FOR TENDER

REFERENCE DRAWINGS (D724-52-...)

DWG No.	TITLE/DESCRIPTION
1000	SITE LAYOUT
1001	EARTHWORKS LAYOUT
1002	EARTHWORKS SECTIONS
1003	EARTHWORKS SECTIONS
5100	WATER PIPELINE LONG SECTIONS
5250	RESERVOIR 1 VALVE CHAMBERS
5251	RESERVOIR 2 VALVE CHAMBERS
5252	DN350 METER CHAMBER
5253	DN400 METER CHAMBER
5254	DN300 METER CHAMBER
5255	CROSS CONNECTION CHAMBER
5256	DN300 INLET CHAMBER (RESERVOIR 2)
5257	AIR VALVE CHAMBER DETAILS
5258	TYPICAL VALVE CHAMBER DETAILS
4000	STORMWATER LAYOUT
4250	STORMWATER DETAILS
4100	STORMWATER PIPELINE LONG SECTIONS
STANDARD DRAWINGS	
5400	ACCESS GATE AND FENCE DETAILS
5401	MANHOLE COVER DETAILS
5402	GRP ACCESS LADDER DETAILS
5403	TRENCH DETAILS
5404	STEEL DOOR AND AIR VENT DETAILS

Revision	Date	Descrption
0	09 / 2025	ISSUED FOR TENDER

Contract No. 32547 - 5W

Project No. X8388

Planning Unit: Water & Sanitation Unit

Ward No. 64

Project Title: MOBENI 2 RESERVOIR ASSOCIATED WORKS

Drawing Title: REHABILITATION OF STEEL PIPEWORK IN BRICK CHAMBERS AT RESERVOIR 2

Scales : As Shown
Paper Size : A0
Designed : T Moodley | Date : 09/2025
Checked : A. Goorun | Drawn : N. Adams

Area Engineer (W.O)

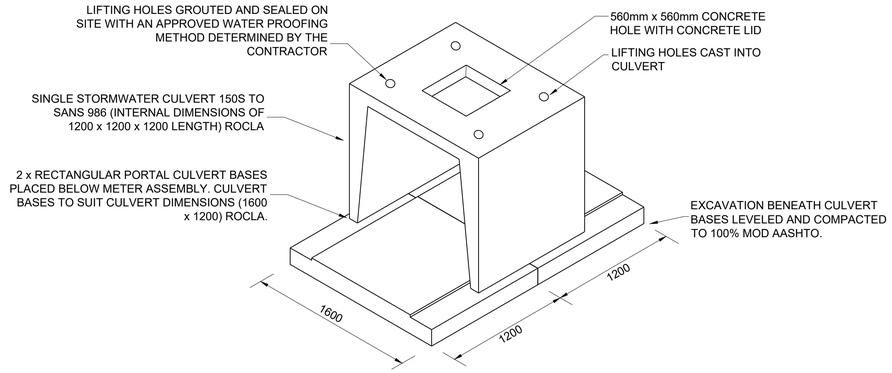
Manager (W.D.)

Director (Water)

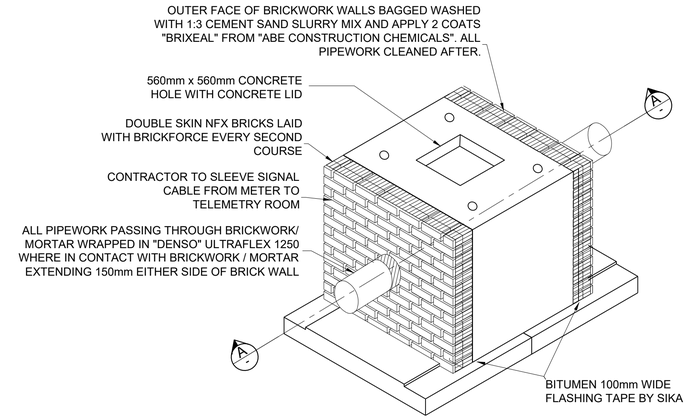
E.Msweli - Head:Water & Sanitation Unit

Drawing No. 60591/007 | Sheet 1 of 1 | Rev. 0

CONTRACTOR TO PROVIDE FINAL FABRICATION DETAILS AND SHOP DRAWINGS FOR APPROVAL BY THE ENGINEER PRIOR TO FABRICATION



ISOMETRIC VIEW OF TYPE 1 CULVERT AND CULVERT BASE ARRANGEMENT
N.T.S



NFX BRICK WALL END CLOSING DETAIL FOR TYPE 1 AND TYPE 2 METER PROTECTION CULVERT
N.T.S

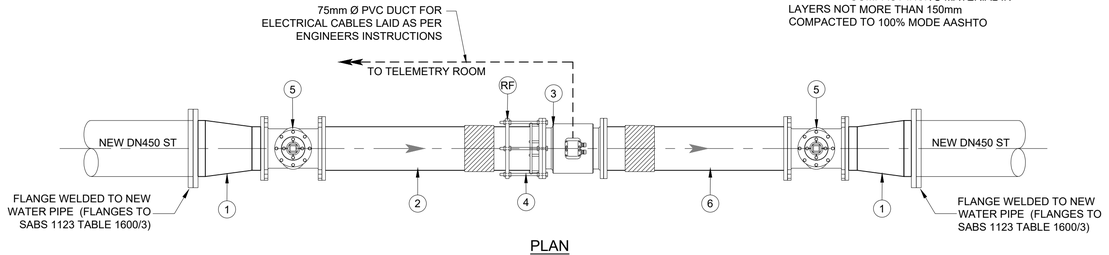
CULVERT TYPE	METER SIZE RANGE	WHERE TO USE
TYPE 1	DN150 - DN300	UNDER ROADS OR PAVED AREAS SUBJECT TO TRAFFIC LOADING
TYPE 1	DN350 - DN400	ALL METER INSTALLATIONS
TYPE 2	DN450 - DN600	ALL METER INSTALLATIONS

GENERAL NOTES

PIPEWORK

1. ALL PIPEWORK MILD STEEL UNLESS OTHERWISE STATED.
2. THE CONTRACTOR SHALL VERIFY THE DIMENSIONS OF ALL PIPEWORK AND ADVISE THE ENGINEER OF ANY DISCREPANCIES PRIOR TO FABRICATION.
3. ALL PIPES GREATER THAN AND INCLUDING DN100, FITTED TO EQUIPMENT OR FITTINGS, OR WHERE SPECIFICALLY INDICATED SHALL BE FLANGED TO SANS 1123:2007 (TABLE 3) OR BS EN 1092 : 1-2007 WHERE SANS 1123:2007 (TABLE 3) DOES NOT APPLY OR AS SPECIFIED ON THE DRAWINGS. SHOULD THE RESPECTIVE FLANGE DRILLING NOT BE COVERED IN THE ABOVE SPECIFICATIONS THE RESIDENT ENGINEER SHALL BE CONSULTED FOR THE APPROPRIATE SPECIFICATION, BEFORE PROCURING ANY VALVES OR FLANGES.
4. SURFACE PREPARATION FOR APPLICATION OF CORROSION PROTECTION MATERIALS SHALL BE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
5. DAMAGED COATINGS AND LININGS SHALL BE REPAIRED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
6. ALL PIPEWORK AND SPECIALS COATED AND LINED AS PER THE PROJECT SPECIFICATIONS.
7. ALL JOINTS SHALL BE COATED, PROTECTED AND WRAPPED AS PER THE PROJECT SPECIFICATIONS.
8. THE PRESSURE RATINGS OF ALL PIPEWORK, FLANGES AND VALVES, SHALL BE AS INDICATED IN THE SCHEDULES OF FITTINGS.
9. ALL MILD STEEL PIPEWORK, COLLARS, WRAPPERS AND CROTCH PLATES MANUFACTURED FROM MINIMUM GRADE X42 STEEL AND WELDED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
10. ALL BENDS FABRICATED AND DIMENSIONED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.

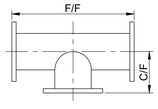
SECTION A - A
SCALE 1:25



PLAN
SCALE 1:25

ABBREVIATIONS :

ID	-	INSIDE DIAMETER
DN	-	DIAMETER NOMINAL
OD	-	OUTSIDE DIAMETER
MS	-	MILD STEEL
SS	-	STAINLESS STEEL
SFE	-	SOLVENT FREE EPOXY
FBE	-	FUSION BONDED EPOXY
CML	-	CEMENT MORTAR LINED
SNT	-	SINTAKOTE
RSN	-	RILSAN
F/F	-	FACE TO FACE DIMENSION
C/F	-	CENTER TO FACE DIMENSION
FOE	-	FLANGED ONE END
BEF	-	BOTH ENDS FLANGED
FAR	-	FLANGED ALL ROUND
LRB	-	LONG RADIUS BEND
MRB	-	MEDUM RADIUS BEND
SRB	-	SHORT RADIUS BEND
HDG	-	HOT DIPPED GALVANIZED
P.E.C	-	PLAIN ENDED COATED
P.F	-	PUDDLE FLANGE
P.T	-	PUDDLE PLATE
R.F	-	RESTRAINING FLANGE
FRL	-	FINAL ROAD LEVEL
NGL	-	NATURAL GROUND LEVEL
FFL	-	FINISH FLOOR LEVEL



PLAN LAYOUT

PIPEWORK AND FITTINGS SCHEDULE (PN16)

ITEM No.	NOM DIA	DESCRIPTION	F/F	No. OF
1	DN450 x DN350	CONCENTRIC REDUCER TO ANSI B16.9, FBE WITH 100mm LONG SPOOL PIECE ON EACH END.	581	2
2	DN350	SPOOL PIECE, F.O.E, FLANGE TO MATCH ITEM 5, OTHER END PLAIN ENDED COATED (PE) COMPLETE WITH RESTRAINING FLANGE (R.F) TO SANS 1123 2500/3, (R.F. PLACEMENT & FINAL LENGTH OF PIPE TO BE DETERMINED ON SITE PRIOR TO FABRICATION). (SEE ITEM 4 FOR DETAILS)	1800	1
3	DN350	INLINE FLANGED KROHNE ULTRASONIC METER COMPLETE WITH SIGNAL TRANSMITTER, CONVERTER AND TRANSMITTER CABLE. PN16	500	1
4	DN350	RESTRAINED FLANGE ADAPTOR (KAMFLEX, VIKING JOHNSON) TO SUIT STEEL SPOOL PIPE. FLANGE TO MATCH ITEM 3. NOTE RF: ANCHORING OR RESTRAINING FLANGE TO BE WELDED APPROXIMATELY 300mm FROM PLAIN END OF ITEM 2. RESTRAINING FLANGE ADAPTOR TO USE MINIMUM OF 4 NUMBER GRADE 4.8 RESTRAINING BOLTS, EQUALLY SPACED AROUND CIRCUMFERENCE OF FLANGES. RESTRAINING FLANGE TO MANUFACTURERS SPECIFICATION AND APPROVED BY THE EMPLOYER'S REPRESENTATIVE.		1
5	DN350	PN16 WEDGE GATE VALVE COMPLETE WITH EXTENDED SPINDLE	470	2
6	DN350	SPOOL PIPE, B.E.F. ONE FLANGE TO MATCH ITEM 3 & ONE FLANGE TO MATCH ITEM 5. (FINAL LENGTH TO BE VERIFIED ON SITE).	1500	1

NOTES:
ALL SPECIALS EPOXY COATED (S.F.E) TO PROJECT SPECIFICATIONS UNLESS OTHERWISE STATED. ALL PIPE TO SANS 719, GRADE X42, 4.5mm THICK.
ALL FLANGES TO TABLE 1600/3 (SANS 1123 - 2011).
IF FACE TO FACE DIMENSION OF FITTINGS DIFFER TO ACTUAL THE CONTRACTOR MUST INFORM THE ENGINEER PRIOR TO PIPE FABRICATION.

eTHEKWINI WATER SERVICES

WATER DESIGN BRANCH

REDUCED PLAN USE SCALE BELOW
0 10 20 30 40 50 60 70
70mm ON ORIGINAL PLAN

CONSULTANT:
NAIDU CONSULTING
1st Floor
No.5, The Boulevard
West Way Office Park
Westville, Durban
Tel : +27 (0) 31 265 6007
Fax : +27 (0) 31 265 6011
Email: info@naiduconsulting.com

Signature
26/09/2025
Date

Drawing No.: D724-52-5252- REV 0

FOR TENDER

REFERENCE DRAWINGS (D724-52-...)

DWG No.	TITLE/DESCRIPTION
1000	SITE LAYOUT
1001	EARTHWORKS LAYOUT
1002	EARTHWORKS SECTIONS
1003	EARTHWORKS SECTIONS
5100	WATER PIPELINE LONG SECTIONS
5250	RESERVOIR 1 VALVE CHAMBERS
5251	RESERVOIR 2 VALVE CHAMBERS
5252	DN350 METER CHAMBER
5253	DN400 METER CHAMBER
5254	DN300 METER CHAMBER
5255	CROSS CONNECTION CHAMBER
5256	DN300 INLET CHAMBER (RESERVOIR 2)
5257	AIR VALVE CHAMBER DETAILS
5258	TYPICAL VALVE CHAMBER DETAILS
4000	STORMWATER LAYOUT
4250	STORMWATER DETAILS
4100	STORMWATER PIPELINE LONG SECTIONS
STANDARD DRAWINGS	
5400	ACCESS GATE AND FENCE DETAILS
5401	MANHOLE COVER DETAILS
5402	GRP ACCESS LADDER DETAILS
5403	TRENCH DETAILS
5404	STEEL DOOR AND AIR VENT DETAILS

Revision	Date	Description
0	09 / 2025	ISSUED FOR TENDER

Contract No. 32547 - 5W

Project No. X8388

Planning Unit: Water & Sanitation Unit

Ward No. 64

Project Title: MOBENI 2 RESERVOIR ASSOCIATED WORKS

Drawing Title: DN350 INLINE METER CHAMBER ASSEMBLY DETAILS - ON INCOMING PIPELINE

Scales : As Shown
Paper Size : A1
Designed : T Moodley | Date : 09/2025
Checked : A. Goorun | Drawn : T. Moodley

Area Engineer

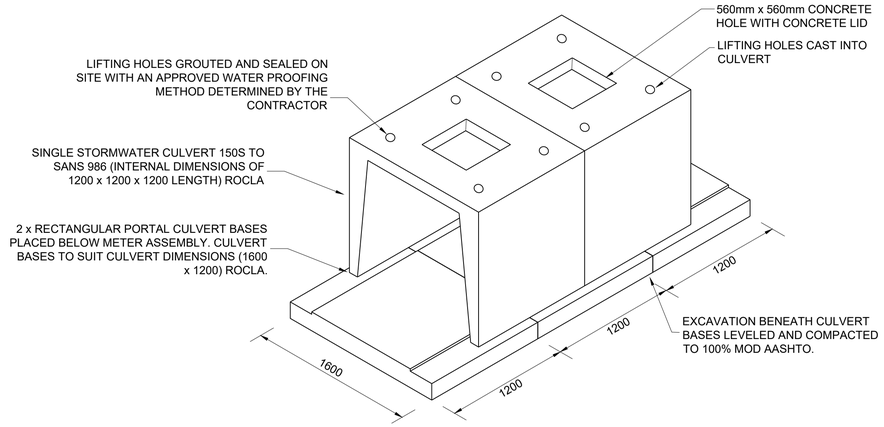
Manager (Water Design)

Deputy Head (Engineering)

E.Msweli - Head:Water & Sanitation Unit

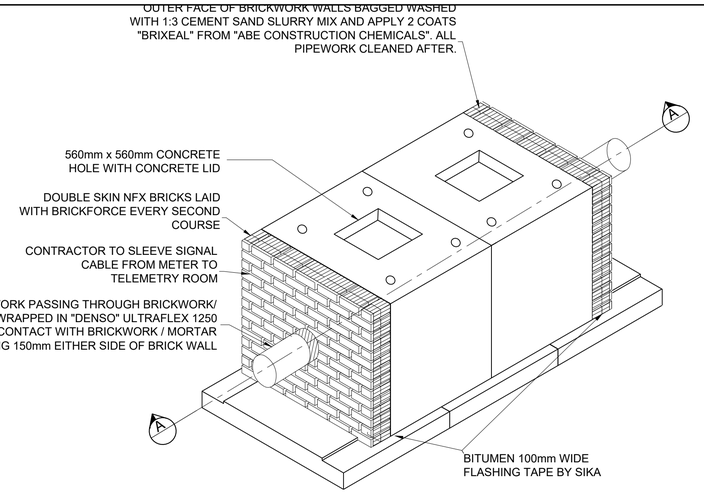
Drawing No. 60591/008 | Sheet 1 of 1 | Rev. 0

CONTRACTOR TO PROVIDE FINAL FABRICATION DETAILS AND SHOP DRAWINGS FOR APPROVAL BY THE ENGINEER PRIOR TO FABRICATION



ISOMETRIC VIEW OF TYPE 1 CULVERT AND CULVERT BASE ARRANGEMENT
N.T.S

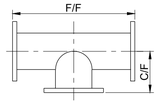
CULVERT TYPE	METER SIZE RANGE	WHERE TO USE
TYPE 1	DN150 - DN300	UNDER ROADS OR PAVED AREAS SUBJECT TO TRAFFIC LOADING
TYPE 1	DN350 - DN400	ALL METER INSTALLATIONS
TYPE 2	DN450 - DN600	ALL METER INSTALLATIONS



NFX BRICK WALL END CLOSING DETAIL FOR TYPE 1 AND TYPE 2 METER PROTECTION CULVERT
N.T.S

ABBREVIATIONS :

ID	-	INSIDE DIAMETER
DN	-	DIAMETER NOMINAL
OD	-	OUTSIDE DIAMETER
MS	-	MILD STEEL
SS	-	STAINLESS STEEL
SFE	-	SOLVENT FREE EPOXY
FBE	-	FUSION BONDED EPOXY
CML	-	CEMENT MORTAR LINED
SNT	-	SINTAKOTE
RSN	-	RILSAN
F/F	-	FACE TO FACE DIMENSION
C/F	-	CENTER TO FACE DIMENSION
FOE	-	FLANGED ONE END
BEF	-	BOTH ENDS FLANGED
FAR	-	FLANGED ALL ROUND
LRB	-	LONG RADIUS BEND
MRB	-	MEDUM RADIUS BEND
SRB	-	SHORT RADIUS BEND
HDG	-	HOT DIPPED GALVANIZED
P.E.C	-	PLAIN ENDED COATED
P.F	-	PUDDLE FLANGE
P.T	-	PUDDLE PLATE
R.F	-	RESTRAINING FLANGE
FRL	-	FINAL ROAD LEVEL
NGL	-	NATURAL GROUND LEVEL
FFL	-	FINISH FLOOR LEVEL

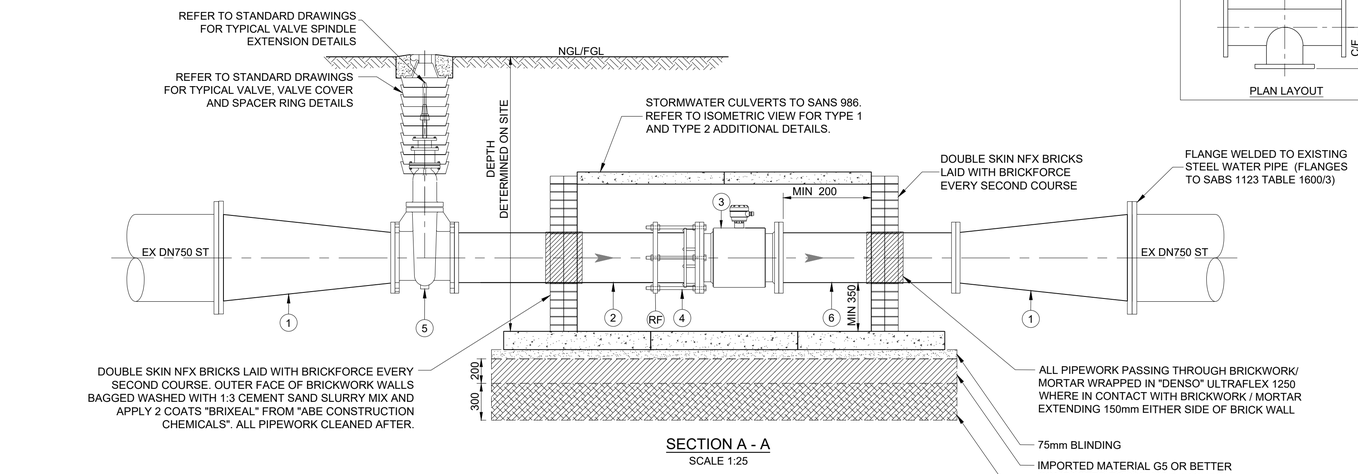


PLAN LAYOUT

GENERAL NOTES

PIPEWORK

1. ALL PIPEWORK MILD STEEL UNLESS OTHERWISE STATED.
2. THE CONTRACTOR SHALL VERIFY THE DIMENSIONS OF ALL PIPEWORK AND ADVISE THE ENGINEER OF ANY DISCREPANCIES PRIOR TO FABRICATION.
3. ALL PIPES GREATER THAN AND INCLUDING DN100, FITTED TO EQUIPMENT OR FITTINGS, OR WHERE SPECIFICALLY INDICATED SHALL BE FLANGED TO SANS 1123:2007 (TABLE 3) OR BS EN 1092 : 1-2007 WHERE SANS 1123:2007 (TABLE 3) DOES NOT APPLY OR AS SPECIFIED ON THE DRAWINGS. SHOULD THE RESPECTIVE FLANGE DRILLING NOT BE COVERED IN THE ABOVE SPECIFICATIONS THE RESIDENT ENGINEER SHALL BE CONSULTED FOR THE APPROPRIATE SPECIFICATION, BEFORE PROCURING ANY VALVES OR FLANGES.
4. SURFACE PREPARATION FOR APPLICATION OF CORROSION PROTECTION MATERIALS SHALL BE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
5. DAMAGED COATINGS AND LININGS SHALL BE REPAIRED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
6. ALL PIPEWORK AND SPECIALS COATED AND LINED AS PER THE PROJECT SPECIFICATIONS.
7. ALL JOINTS SHALL BE COATED, PROTECTED AND WRAPPED AS PER THE PROJECT SPECIFICATIONS.
8. THE PRESSURE RATINGS OF ALL PIPEWORK, FLANGES AND VALVES, SHALL BE AS INDICATED IN THE SCHEDULES OF FITTINGS.
9. ALL MILD STEEL PIPEWORK, COLLARS, WRAPPERS AND CROTCH PLATES MANUFACTURED FROM MINIMUM GRADE X42 STEEL AND WELDED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
10. ALL BENDS FABRICATED AND DIMENSIONED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.



SECTION A - A
SCALE 1:25

PLAN
SCALE 1:25

PIPEWORK AND FITTINGS SCHEDULE (PN16)

ITEM No.	NOM DIA	DESCRIPTION	F/F	No. OF
1	DN750 x DN400	CONCENTRIC REDUCER TO ANSI B16.9, BEF	1400	2
2	DN400	SPOOL PIECE, F.O.E, OTHER END PLAIN ENDED COATED (PE) COMPLETE WITH RESTRAINING FLANGE (R.F) TO SANS 1123 2500/3, (R.F. PLACEMENT & FINAL LENGTH OF PIPE TO BE DETERMINED ON SITE PRIOR TO FABRICATION). (SEE ITEM 4 FOR DETAILS)	2000	1
3	DN400	INLINE FLANGED KROHNE ULTRASONIC METER COMPLETE WITH SIGNAL TRANSMITTER, CONVERTER AND TRANSMITTER CABLE. PN16	650	1
4	DN400	RESTRAINED FLANGE ADAPTOR (KAMFLEX, VIKING JOHNSON) TO SUIT STEEL SPOOL PIPE. FLANGE TO MATCH ITEM 3. NOTE RF: ANCHORING OR RESTRAINING FLANGE TO BE WELDED APPROXIMATELY 300mm FROM PLAIN END OF ITEM 2. RESTRAINING FLANGE ADAPTOR TO USE MINIMUM OF 4 NUMBER GRADE 4.8 RESTRAINING BOLTS, EQUALLY SPACED AROUND CIRCUMFERENCE OF FLANGES. RESTRAINING FLANGE TO MANUFACTURERS SPECIFICATION AND APPROVED BY THE EMPLOYER'S REPRESENTATIVE.		1
5	DN400	PN16 WEDGE GATE VALVE COMPLETE WITH EXTENDED SPINDLE	485	1
6	DN400	SPOOL PIPE, B.E.F. ONE FLANGE TO MATCH ITEM 3. (FINAL LENGTH TO BE VERIFIED ON SITE).	1445	1

NOTES:
ALL SPECIALS EPOXY COATED (S.F.E) TO PROJECT SPECIFICATIONS UNLESS OTHERWISE STATED. ALL PIPE TO SANS 719, GRADE X42, 4.5mm THICK.
ALL FLANGES TO TABLE 1600/3 (SANS 1123 - 2011).
IF FACE TO FACE DIMENSION OF FITTINGS DIFFER TO ACTUAL THE CONTRACTOR MUST INFORM THE ENGINEER PRIOR TO PIPE FABRICATION.

eTHEKWINI WATER SERVICES

WATER DESIGN BRANCH

REDUCED PLAN USE SCALE BELOW
0 10 20 30 40 50 60 70
70mm ON ORIGINAL PLAN

CONSULTANT:

NAIDU CONSULTING
1st Floor
No.5, The Boulevard
West Way Office Park
Westville, Durban
Tel : +27 (0) 31 265 6007
Fax : +27 (0) 31 265 6011
Email: info@naiduconsulting.com

Signature

26/09/2025
Date

Drawing No.: D724-52-5253- REV 0

FOR TENDER

REFERENCE DRAWINGS (D724-52-...)

DWG No.	TITLE/DESCRIPTION
1000	SITE LAYOUT
1001	EARTHWORKS LAYOUT
1002	EARTHWORKS SECTIONS
1003	EARTHWORKS SECTIONS
5100	WATER PIPELINE LONG SECTIONS
5250	RESERVOIR 1 VALVE CHAMBERS
5251	RESERVOIR 2 VALVE CHAMBERS
5252	DN350 METER CHAMBER
5253	DN400 METER CHAMBER
5254	DN300 METER CHAMBER
5255	CROSS CONNECTION CHAMBER
5256	DN300 INLET CHAMBER (RESERVOIR 2)
5257	AIR VALVE CHAMBER DETAILS
5258	TYPICAL VALVE CHAMBER DETAILS
4000	STORMWATER LAYOUT
4250	STORMWATER DETAILS
4100	STORMWATER PIPELINE LONG SECTIONS
STANDARD DRAWINGS	
5400	ACCESS GATE AND FENCE DETAILS
5401	MANHOLE COVER DETAILS
5402	GRP ACCESS LADDER DETAILS
5403	TRENCH DETAILS
5404	STEEL DOOR AND AIR VENT DETAILS

Revision	Date	Description
0	09 / 2025	ISSUED FOR TENDER

Contract No. 32547 - 5W

Project No. X8388

Planning Unit: Water & Sanitation Unit

Ward No. 64

Project Title: MOBENI 2 RESERVOIR ASSOCIATED WORKS

Drawing Title: DN400 INLINE METER CHAMBER ASSEMBLY DETAILS- RESERVOIR 2 OUTLET

Scales : As Shown
Paper Size : A1
Designed : T Moodley | Date : 09/2025
Checked : A. Goorun | Drawn : T. Moodley

Area Engineer (W.O)

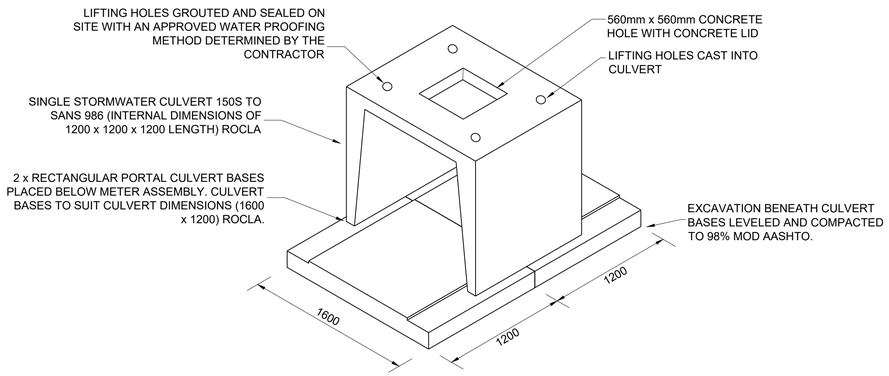
Manager (W.D.)

Director (Water)

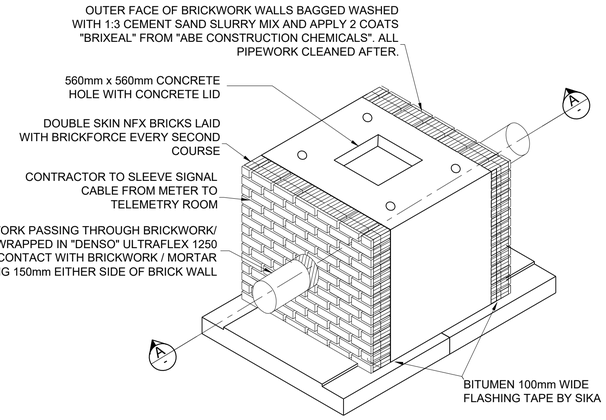
E.Msweli - Head:Water & Sanitation Unit

Drawing No. 60591/009 | Sheet 1 of 1 | Rev. 0

CONTRACTOR TO PROVIDE FINAL FABRICATION DETAILS AND SHOP DRAWINGS FOR APPROVAL BY THE ENGINEER PRIOR TO FABRICATION



ISOMETRIC VIEW OF TYPE 1 CULVERT AND CULVERT BASE ARRANGEMENT
N.T.S



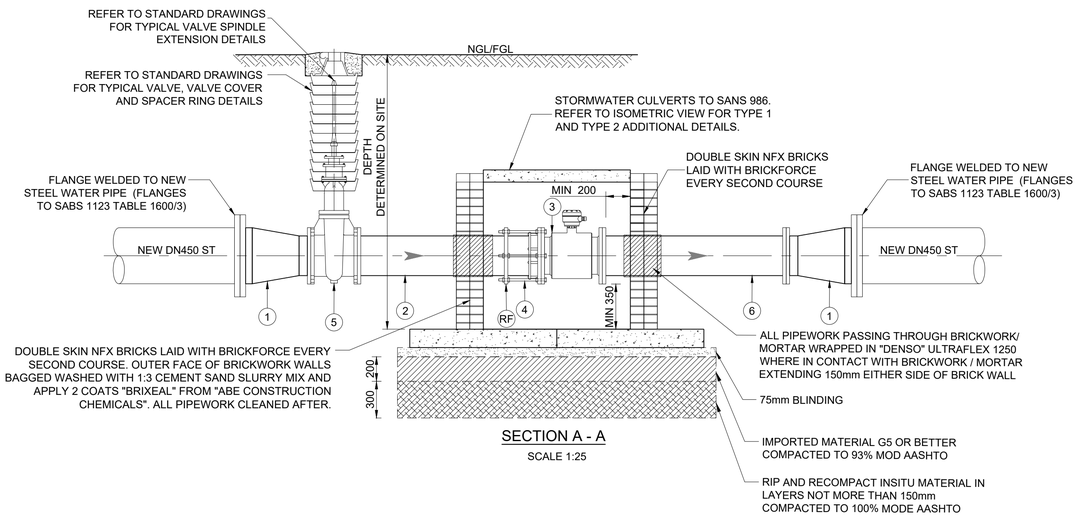
NFX BRICK WALL END CLOSING DETAIL FOR TYPE 1 AND TYPE 2 METER PROTECTION CULVERT
N.T.S

CULVERT TYPE	METER SIZE RANGE	WHERE TO USE
TYPE 1	DN150 - DN300	UNDER ROADS OR PAVED AREAS SUBJECT TO TRAFFIC LOADING
TYPE 1	DN350 - DN400	ALL METER INSTALLATIONS
TYPE 2	DN450 - DN600	ALL METER INSTALLATIONS

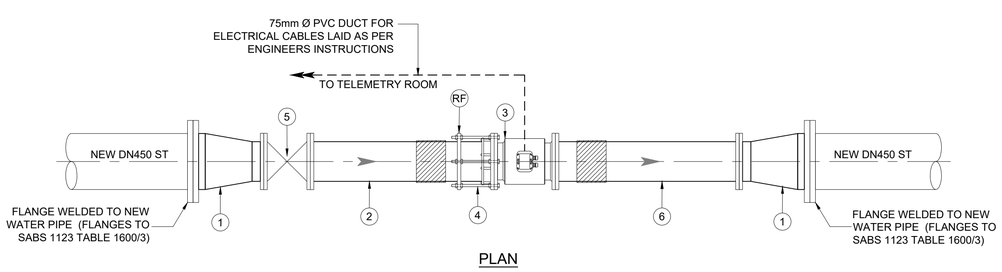
GENERAL NOTES

PIPEWORK

1. ALL PIPEWORK MILD STEEL UNLESS OTHERWISE STATED.
2. THE CONTRACTOR SHALL VERIFY THE DIMENSIONS OF ALL PIPEWORK AND ADVISE THE ENGINEER OF ANY DISCREPANCIES PRIOR TO FABRICATION.
3. ALL PIPES GREATER THAN AND INCLUDING DN100, FITTED TO EQUIPMENT OR FITTINGS, OR WHERE SPECIFICALLY INDICATED SHALL BE FLANGED TO SANS 1123:2007 (TABLE 3) OR BS EN 1092 : 1-2007 WHERE SANS 1123:2007 (TABLE 3) DOES NOT APPLY OR AS SPECIFIED ON THE DRAWINGS. SHOULD THE RESPECTIVE FLANGE DRILLING NOT BE COVERED IN THE ABOVE SPECIFICATIONS THE RESIDENT ENGINEER SHALL BE CONSULTED FOR THE APPROPRIATE SPECIFICATION, BEFORE PROCURING ANY VALVES OR FLANGES.
4. SURFACE PREPARATION FOR APPLICATION OF CORROSION PROTECTION MATERIALS SHALL BE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
5. DAMAGED COATINGS AND LININGS SHALL BE REPAIRED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
6. ALL PIPEWORK AND SPECIALS COATED AND LINED AS PER THE PROJECT SPECIFICATIONS.
7. ALL JOINTS SHALL BE COATED, PROTECTED AND WRAPPED AS PER THE PROJECT SPECIFICATIONS.
8. THE PRESSURE RATINGS OF ALL PIPEWORK, FLANGES AND VALVES, SHALL BE AS INDICATED IN THE SCHEDULES OF FITTINGS.
9. ALL MILD STEEL PIPEWORK, COLLARS, WRAPPERS AND CROTCH PLATES MANUFACTURED FROM MINIMUM GRADE X42 STEEL AND WELDED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
10. ALL BENDS FABRICATED AND DIMENSIONED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.



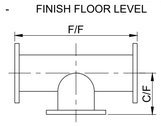
SECTION A - A
SCALE 1:25



PLAN
SCALE 1:25

ABBREVIATIONS :

ID	-	INSIDE DIAMETER
DN	-	DIAMETER NOMINAL
OD	-	OUTSIDE DIAMETER
MS	-	MILD STEEL
SS	-	STAINLESS STEEL
SFE	-	SOLVENT FREE EPOXY
FBE	-	FUSION BONDED EPOXY
CML	-	CEMENT MORTAR LINED
SNT	-	SINTAKOTE
RSN	-	RILSAN
F/F	-	FACE TO FACE DIMENSION
C/F	-	CENTER TO FACE DIMENSION
FOE	-	FLANGED ONE END
BEF	-	BOTH ENDS FLANGED
FAR	-	FLANGED ALL ROUND
LRB	-	LONG RADIUS BEND
MRB	-	MEDUM RADIUS BEND
SRB	-	SHORT RADIUS BEND
HDG	-	HOT DIPPED GALVANIZED
P.E.C	-	PLAIN ENDED COATED
P.F	-	PUDDLE FLANGE
P.T	-	PUDDLE PLATE
R.F	-	RESTRAINING FLANGE
FRL	-	FINAL ROAD LEVEL
NGL	-	NATURAL GROUND LEVEL
FFL	-	FINISH FLOOR LEVEL



PLAN LAYOUT

PIPEWORK AND FITTINGS SCHEDULE (PN16)

ITEM No.	NOM DIA	DESCRIPTION	F/F	No. OF
1	DN450 x DN300	CONCENTRIC REDUCER TO ANSI B16.9, FBE WITH 100mm LONG SPOOL PIECE ON EACH END.	580	2
2	DN300	SPOOL PIECE, F.O.E, OTHER END PLAIN ENDED COATED (PE) COMPLETE WITH RESTRAINING FLANGE (R.F) TO SANS 1123 2500/3, (R.F. PLACEMENT & FINAL LENGTH OF PIPE TO BE DETERMINED ON SITE PRIOR TO FABRICATION). (SEE ITEM 4 FOR DETAILS)	1500	1
3	DN300	INLINE FLANGED KROHNE ULTRASONIC METER (TIDALFLUX 2300 F) COMPLETE WITH SIGNAL TRANSMITTER, CONVERTER AND TRANSMITTER CABLE. PN16	500	1
4	DN300	RESTRAINED FLANGE ADAPTOR (KAMFLEX, VIKING JOHNSON) TO SUIT STEEL SPOOL PIPE. FLANGE TO MATCH ITEM 3. NOTE RF: ANCHORING OR RESTRAINING FLANGE TO BE WELDED APPROXIMATELY 300mm FROM PLAIN END OF ITEM 2. RESTRAINING FLANGE ADAPTOR TO USE MINIMUM OF 4 NUMBER GRADE 4.8 RESTRAINING BOLTS, EQUALLY SPACED AROUND CIRCUMFERENCE OF FLANGES. RESTRAINING FLANGE TO MANUFACTURERS SPECIFICATION AND APPROVED BY THE EMPLOYER'S REPRESENTATIVE.		1
5	DN300	PN16 WEDGE GATE VALVE COMPLETE WITH EXTENDED SPINDLE	380	1
6	DN300	SPOOL PIPE, B.E.F. ONE FLANGE TO MATCH ITEM 3. (FINAL LENGTH TO BE VERIFIED ON SITE).	1500	1

NOTES:
ALL SPECIALS EPOXY COATED (S.F.E) TO PROJECT SPECIFICATIONS UNLESS OTHERWISE STATED. ALL PIPE TO SANS 719, GRADE X42, 4.5mm THICK.
ALL FLANGES TO TABLE 1600/3 (SANS 1123 - 2011).
IF FACE TO FACE DIMENSION OF FITTINGS DIFFER TO ACTUAL THE CONTRACTOR MUST INFORM THE ENGINEER PRIOR TO PIPE FABRICATION.

eTHEKWINI WATER SERVICES

WATER DESIGN BRANCH

CONSULTANT:
NAIDU CONSULTING
1st Floor
No.5, The Boulevard
West Way Office Park
Westville, Durban
Tel : +27 (0) 31 265 6007
Fax : +27 (0) 31 265 6011
Email: info@naiduconsulting.com

REDUCED PLAN USE SCALE BELOW
0 10 20 30 40 50 60 70
70mm ON ORIGINAL PLAN

26/09/2025

Drawing No.: D724-52-5254- REV 0

FOR TENDER

REFERENCE DRAWINGS (D724-52-...)

DWG No.	TITLE/DESCRIPTION
1000	SITE LAYOUT
1001	EARTHWORKS LAYOUT
1002	EARTHWORKS SECTIONS
1003	EARTHWORKS SECTIONS
5100	WATER PIPELINE LONG SECTIONS
5250	RESERVOIR 1 VALVE CHAMBERS
5251	RESERVOIR 2 VALVE CHAMBERS
5252	DN350 METER CHAMBER
5253	DN400 METER CHAMBER
5254	DN300 METER CHAMBER
5255	CROSS CONNECTION CHAMBER
5256	DN300 INLET CHAMBER (RESERVOIR 2)
5257	AIR VALVE CHAMBER DETAILS
5258	TYPICAL VALVE CHAMBER DETAILS
4000	STORMWATER LAYOUT
4250	STORMWATER DETAILS
4100	STORMWATER PIPELINE LONG SECTIONS
STANDARD DRAWINGS	
5400	ACCESS GATE AND FENCE DETAILS
5401	MANHOLE COVER DETAILS
5402	GRP ACCESS LADDER DETAILS
5403	TRENCH DETAILS
5404	STEEL DOOR AND AIR VENT DETAILS

Revision	Date	Description
0	09 / 2025	ISSUED FOR TENDER

Contract No.: 32547 - 5W

Project No.: X8388

Planning Unit: Water & Sanitation Unit

Ward No.: 64

Project Title:
MOBENI 2 RESERVOIR ASSOCIATED WORKS

Drawing Title:
DN300 INLINE METER CHAMBER ASSEMBLY DETAILS - RESERVOIR 1 OUTLET

Scales : As Shown
Paper Size : A1
Designed : T. Moodley | Date : 09/2025
Checked : A. Goorun | Drawn : N. Adams

Area Engineer (W.O)

Manager (W.D.)

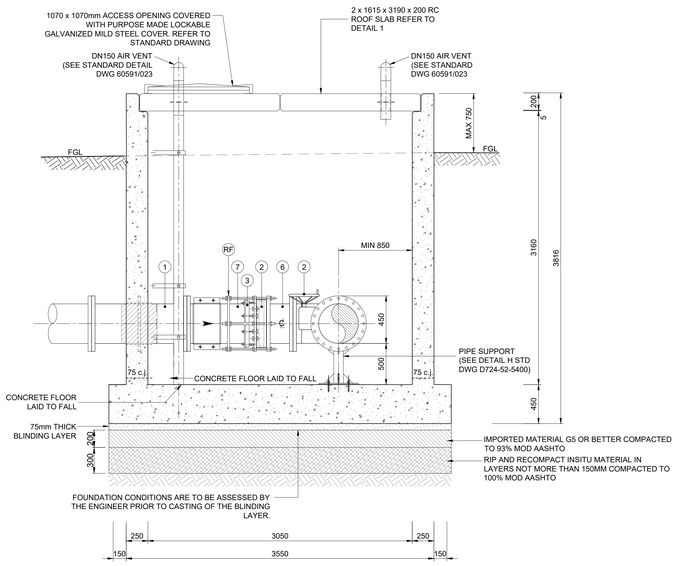
Director (Water)

E.Msweli - Head:Water & Sanitation Unit

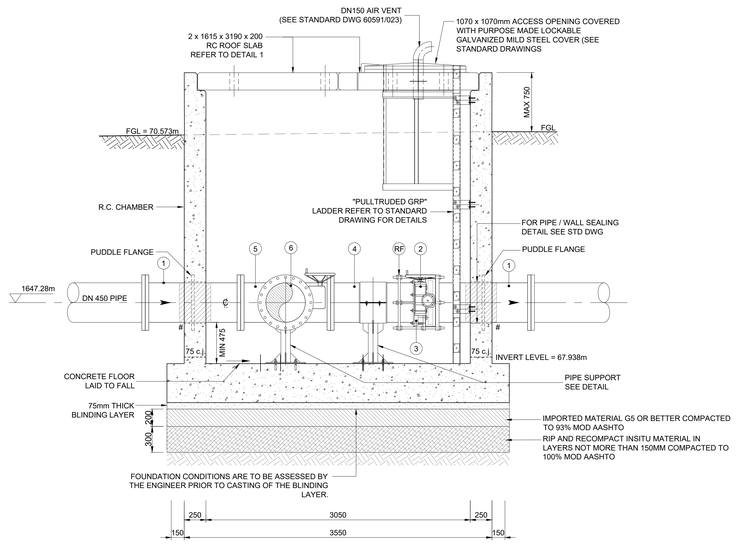
Drawing No.: 60591/010 | Sheet: 1 of 1 | Rev.: 0

PIPEWORK AND FITTINGS SCHEDULE
ALL FITTINGS TO PN16, FLANGES TO SANS 1123 1600/3 & PIPEWORK TO X42/ SANS 719

ITEM NO	NOM DIA	DESCRIPTION	WALL THK	LINING	COATING	FACE TO FACE	No. OF
1	DN450	SPOOL PIECE, B.E.F. (FINAL LENGTH TO BE TO BE DETERMINED ON SITE PRIOR TO FABRICATING).	4.5	SFE	SFE	1100	3
2	DN450	BUTTERFLY VALVE AND GEARBOX, PN16, HAND WHEEL - OPERATED, COMPLETE WITH NUTS, BOLTS, GASKETS, WASHERS & MATCHING FLANGES	--	FBE	FBE	114	2
3	DN450	RESTRAINED EPOXY COATED AND LINED FLANGE ADAPTOR TO METRO WATER AND PROJECT SPECIFICATIONS. (TO APPROVAL BY METRO WATER). DESIGN OF RESTRAINING FLANGE ADAPTOR IS WITH AN OVERALL LENGTH OF <160mm. RESTRAINING BOLTS FROM THE FLANGE ON THE VALVE ADJACENT TO FLANGE ADAPTOR TO BE TAKEN THROUGH TO THE FLANGE OF ITEM 2 C/W NUTS AND WASHERS BOTH SIDES OF FLANGE.	--	--	FBE	<160	2
4	DN450	SPOOL PIECE, F.O.E, OTHER END PLAIN ENDED (PE) COMPLETE WITH RESTRAINING FLANGE (R.F) TO SANS 1123 1600/3, (R.F. PLACEMENT & FINAL LENGTH OF PIPE TO BE DETERMINED ON SITE PRIOR TO FABRICATING). RF: RESTRAINED FLANGE ADAPTOR (KAMFLEX, VIKING JOHNSON) TO SUIT STEEL SPOOL PIPE. FLANGE TO MATCH ITEM 2. NOTE RF: ANCHORING OR RESTRAINING FLANGE TO BE WELDED APPROXIMATELY 300mm FROM PLAIN END OF ITEM 4. RESTRAINING FLANGE ADAPTOR MINIMUM OF 4 NUMBER GRADE 4.8 RESTRAINING BOLTS TO BE USED, EQUALLY SPACED AROUND CIRCUMFERENCE OF FLANGES.	4.5	SFE	SFE	1060	1
5	DN450	(ANSI) B16.9 EQUAL TEE, WITH 100mm LONG SPOOL PIECE WELDED ON ALL ENDS. FF 1040mm & CF 526mm F.A.R. (LENGTHS TO BE VERIFIED ON SITE).	--	SFE	SFE	1040	1
6	DN450	SPOOL PIECE, B.E.F. (FINAL LENGTH TO BE TO BE DETERMINED ON SITE PRIOR TO FABRICATING).	--	SFE	SFE	300	1
7	DN450	SPOOL PIECE, F.O.E, OTHER END PLAIN ENDED (PE) COMPLETE WITH RESTRAINING FLANGE (R.F) TO SANS 1123 1600/3, (R.F. PLACEMENT & FINAL LENGTH OF PIPE TO BE DETERMINED ON SITE PRIOR TO FABRICATING). RF: RESTRAINED FLANGE ADAPTOR (KAMFLEX, VIKING JOHNSON) TO SUIT STEEL SPOOL PIPE. FLANGE TO MATCH ITEM 2. NOTE RF: ANCHORING OR RESTRAINING FLANGE TO BE WELDED APPROXIMATELY 300mm FROM PLAIN END OF ITEM 7. RESTRAINING FLANGE ADAPTOR MINIMUM OF 4 NUMBER GRADE 4.8 RESTRAINING BOLTS TO BE USED, EQUALLY SPACED AROUND CIRCUMFERENCE OF FLANGES.	4.5	SFE	SFE	300	1



SECTION B-B
SCALE 1:25



SECTION A-A
SCALE 1:25

PIPEWORK NOTES:

1. ALL PIPEWORK TO BE MILD STEEL UNLESS OTHERWISE STATED. ALL MATERIAL TO BE SANS APPROVED.
2. THE CONTRACTOR SHALL VERIFY THE DIMENSIONS OF ALL PIPEWORK AND ADVISE THE ENGINEER OF ANY DISCREPANCIES PRIOR TO FABRICATION.
3. ALL FLANGES AND RESTRAINING FLANGES SHALL BE RATED AND DRILLED TO SANS 1123, TABLE AS SPECIFIED IN PIPEWORK AND FITTINGS SCHEDULE.
   - 3.1. THRUST PUDDLE FLANGES SHALL MATCH PIPEWORK FLANGES TO SANS 1123 AND SHALL BE UNDRILLED.
   - 3.2. WHERE PUDDLE PLATES ARE REQUIRED OVER THRUST PUDDLE FLANGES, THE THICKNESS AND OUTSIDE DIAMETER SHALL BE SPECIFIED IN PIPEWORK AND FITTINGS SCHEDULE.
   - 3.3. ENSURE THERE IS AT LEAST 75mm COVER BETWEEN THE REINFORCING BARS AND PUDDLE FLANGE/ PLATE.
4. ALL BOLTS AND TIE BOLTS TO BE GRADE 4.8. BOLTS, NUTS AND WASHERS SHALL BE HOT DIPPED GALVANISED TO SANS 121/ ISO 1461, WITH A HEAVY FILM THICKNESS OF 85 ±10 MICRON.
5. ALL MILD STEEL ITEMS (APART FROM PIPING/PIPE FITTINGS) TO BE HEAVY DUTY HOT DIPPED GALVANIZED TO ISO 1461 AND SANS 121,WITH A HEAVY FILM THICKNESS OF 85 ±10 MICRO INTERNALLY AND EXTERNALLY APPLIED.
6. ALL PIPE FITTINGS TO BE CHECKED ON SITE, ANY DISCREPANCIES TO BE REPORTED TO THE ENGINEER PRIOR TO INSTALLATION.
7. ALL PIPES LESS THAN OR EQUAL TO DN150 TO BE FABRICATED IN ACCORDANCE WITH SANS 62 - 1 (MEDIUM CLASS) UNLESS OTHERWISE SPECIFIED.
8. ALL MILD STEEL PIPEWORK AND FITTINGS GREATER THAN DN150 TO BE FABRICATED IN ACCORDANCE WITH SANS 719 EDITION 3.1 2008 AND WELDED IN ACCORDANCE WITH API 1104. PIPEWORK GRADE AND WALL THICKNESS SHALL MATCH SCHEDULE OF FITTINGS TABLE.
9. ALL STAINLESS STEEL PIPE AND FITTINGS TO BE GRADE 316L AND WALL THICKNESS SHALL MATCH SCHEDULE OF FITTINGS TABLE.
10. RESTRAINING FLANGE ADAPTOR USE MINIMUM 4. No GRADE 4.8 RESTRAINING BOLTS, EQUALLY SPACED AROUND CIRCUMFERENCE OF FLANGES UNLESS OTHER SHOWN UNDER ITEM DESCRIPTION. NOTE: ALL THE BOLTS FROM THE FLANGE ON THE VALVE ADJACENT TO A RESTRAINING FLANGE TO BE TAKEN THROUGH TO THE RESTRAINING FLANGE WITH NUTS AND WASHERS BOTH SIDES OF RESTRAINING FLANGE.
11. ALL BURIED FLANGES TO BE CATHODICALLY BONDED INSULATED CABLE THERMALLY WELDED TO PIPE AS DIRECTED BY CATHODIC SPECIALIST
12. THE PRESSURE RATINGS OF ALL PIPEWORK, FITTINGS, FLANGES, VALVES & METERS SHALL BE AS INDICATED IN THE SCHEDULES OF FITTINGS.
13. ALL MILD STEEL PIPEWORK, COLLARS, WRAPPERS AND CROTCH PLATES TO BE MANUFACTURED FROM MINIMUM GRADE X42 STEEL AND WELDED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
14. BACKFILL MATERIAL TO BE COMPACTED TO 95% MOD. AASHTO IN MAX. 150mm LAYERS & 97% MOD AASHTO IN 150mm LAYERS WHERE THE PIPE IS LOCATED UNDER A PAVED ROAD SURFACE.
15. ALL PIPEWORK, VALVES AND FITTING SHALL COMPLY WITH PROJECT SPECIFICATION.
16. DIMENSIONS OF ALL PIPES, FITTINGS AND SPECIALS SCHEDULED ABOVE ARE FOR INFORMATION PURPOSES ONLY AND TO BE VERIFIED ON SITE PRIOR TO MANUFACTURE.
17. THE USE OF PROPRIETARY NAMES IN NO WAY INDICATES PREFERENCE FOR A PARTICULAR PRODUCT. RATHER, THIS USAGE IS TO ILLUSTRATE TO THE TENDERER THE TYPE AND NATURE OF PRODUCT SOUGHT BY METRO WATER. EQUIPMENT WITH SIMILAR MATERIALS OF CONSTRUCTIONS, SIMILAR FUNCTIONALITY AND NO MATERIAL DEVIATION FROM THE PRODUCT USED FOR ILLUSTRATIVE PURPOSES WILL BE DEEMED TO BE "SIMILAR APPROVED".

COATING AND LINING NOTES:

TO METRO WATER PARTICULAR SPECIFICATION FOR:

- " MANUFACTURE, DELIVERY, STORAGE, COATING AND LINING OF STEEL AND STAINLESS STEEL PIPE FITTINGS AND SPECIALS AND PROTECTION OF FIELD JOINTS FROM DN200 UP TO DN2200"
- "MANUFACTURE, SUPPLY, DELIVERY, HANDLING AND STORAGE OF DN200 TO DN2200 COATED AND LINED STEEL PIPE"

18. SURFACE PREPARATION - FOR APPLICATION OF CORROSION PROTECTION MATERIALS SHALL BE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
19. LINING/COATING TO MILD STEEL PIPING GREATER THAN DN250 (UNLESS OTHERWISE STATED): TO A MINIMUM DFT OF 400micron, INTERNALLY AND EXTERNALLY APPLIED.
20. MILD STEEL PIPING LESS THAN OR EQUAL TO DN250 TO BE HEAVY DUTY HOT-DIPPED GALVANISED (UNLESS OTHERWISE STATED): TO ISO 1461 AND SANS 121, WITH A HEAVY FILM THICKNESS OF 85 ±10 MICRON, INTERNALLY AND EXTERNALLY APPLIED.
21. PIPE BELOW GROUND, AFTER GALVANISING TO BE WRAPPED WITH A POLYMER MODIFIED BITUMEN COMPOUND LAMINATE TO PVC TAPE WRAP SYSTEM IN ACCORDANCE WITH EWS PARTICULAR SPECIFICATION.
   - 21.1. PIPE ABOVE GROUND, AFTER GALVANISING TO BE WRAPPED WITH AN ACRYLIC PIPELINE TAPE.
22. CEMENT MORTAR LINING TO eTHEKWINI PARTICULAR SPECIFICATIONS. DAMAGED COATING AND LININGS TO BE REPAIRED IN ACCORDANCE WITH SPECIFICATIONS.
23. DAMAGED H.D.G. COATING TO BE REPAIRED WITH 'GALV-O-PATCH' OR SIMILAR APPROVED PRODUCT.
24. ALL BURIED FLANGES, BOLTS AND FLEXIBLE COUPLINGS TO BE PROTECTED BY FILED JOINT COATING SYSTEM IN ACCORDANCE TO EWSPARTICULAR SPECIFICATION AND COMPLETED TAPE WRAPPED.
25. ALL PIPEWORK THROUGH CHAMBER WALLS TO BE WRAPPED POLYMER MODIFIED BITUMEN COMPOUND LAMINATE TO PVC TAPE WRAP SYSTEM IN ACCORDANCE WITH EWS PARTICULAR SPECIFICATION ON EACH SIDE OF THE PUDDLE FLANGE. THIS WRAPPING IS TO EXTEND 150mm BEYOND THE FACE OF THE WALL EACH SIDE. PUDDLE FLANGE/ PLATE NOT TO BE WRAPPED.
26. DAMAGED COATINGS AND LININGS SHALL BE REPAIRED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
27. ALL PIPEWORK AND SPECIALS TO BE COATED AND LINED AS PER THE PROJECT SPECIFICATIONS UNLESS OTHERWISE STATED.
28. ALL JOINTS SHALL BE COATED, PROTECTED AND WRAPPED AS PER THE PROJECT SPECIFICATIONS.

NB:

29. ALL CERTIFICATES SHALL BE PROVIDED FOR ALL MATERIALS
30. ALL WELDING TO BE API 1104.
31. ALL WELDS TO BE 100% TESTED.

ABBREVIATIONS :

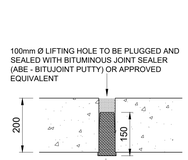
ID	-	INSIDE DIAMETER
DN	-	DIAMETER NOMINAL
OD	-	OUTSIDE DIAMETER
MS	-	MILD STEEL
SS	-	STAINLESS STEEL
SFE	-	SOLVENT FREE EPOXY
FBE	-	FUSION BONDED EPOXY
CML	-	CEMENT MORTAR LINED
SNT	-	SINTAKOTE
RSN	-	RILSAN
F/F	-	FACE TO FACE DIMENSION
C/F	-	CENTER TO FACE DIMENSION
FOE	-	FLANGED ONE END
BEF	-	BOTH ENDS FLANGED
FAR	-	FLANGED ALL ROUND
LRB	-	LONG RADIUS BEND
MRB	-	MEDUM RADIUS BEND
SRB	-	SHORT RADIUS BEND
HDG	-	HOT DIPPED GALVANIZED
P.E.C	-	PLAIN ENDED COATED
P.F	-	PUDDLE FLANGE
P.T	-	PUDDLE PLATE
R.F	-	RESTRAINING FLANGE
FRL	-	FINAL ROAD LEVEL
NGL	-	NATURAL GROUND LEVEL
FFL	-	FINISH FLOOR LEVEL



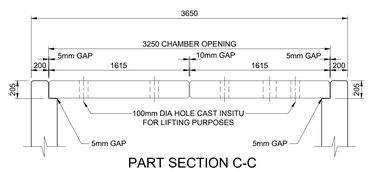
PLAN LAYOUT

CONCRETE AND GENERAL NOTES

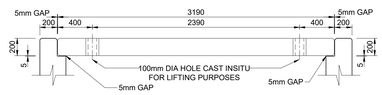
A. ALL LEVELS TO BE CONFIRMED ON SITE.
B. ENGINEER TO INSPECT AND APPROVE FOUNDING MATERIAL BEFORE BLINDING IS CAST.
C. ALL EXPOSED EDGES ARE CHAMFERED 25x25.
D. GENERAL COVER TO ALL REINFORCING IS 50mm.
E. ENSURE THERE IS AT LEAST 75mm COVER BETWEEN THE REINFORCING BARS AND PUDDLE FLANGE.
F. CONSTRUCTION JOINTS ARE WELL CLEANED & SCABBLED TO EXPOSE FRESH AGGREGATE AND THOROUGHLY WETTED BEFORE THE NEXT LIFT IS POURED. CONSTRUCTION JOINTS TO HAVE SIKASWELL S-2 OR SIMILAR APPROVED BEAD CENTRALLY PLACED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
G. CONCRETE DISTANCE BLOCKS FOR POSITIONING REINFORCEMENT NEED TO BE MADE AT LEAST 3 WEEKS PRIOR TO REINFORCEMENT BEING FIXED, IN ORDER TO ALLOW FOR SUFFICIENT MOIST-CURING TIME.
H. NO ACCESS OPENINGS OTHER THAN THOSE INDICATED ON DRAWINGS WILL BE ALLOWED.
I. NO WIRE TIES BETWEEN WALL SHUTTERS WILL BE PERMITTED. FERRULE HOLES TO BE FREE OF FORMERS WITHIN 40mm OF SHUTTER.
J. WORKING SPACE AROUND THE CHAMBER NOT TO EXCEED 1000mm.
K. REINFORCED CONCRETE SHALL BE WATERTIGHT TO SABS 12009 S.5.11
L. CONCRETE GRADE
   - BLINDING : 15/19
   - MASS CONCRETE : 20/19
   - CONCRETE OTHERWISE STATED : 25/19 UNLESS
   - SCREED : 1:3 (CEMENT /SAND)
M. WHERE APPLICABLE, AIR VENTS, LIFTING HOLES, LIFTING HOOKS, STEP IRONS AND DI COVER & FRAME WERE PRE- INSTALLED AT THE MANUFACTURER PRIOR TO DELIVERY ON SITE.
N. BACKFILL MATERIAL AROUND STRUCTURE TO BE COMPACTED TO MINIMUM 95% MODIFIED AASHTO MAXIMUM DENSITY IN MAXIMUM 150mm LAYERS.
O. ON COMPLETION OF THE CHAMBERS, PAINT ALL EXPOSED ABOVE GROUND CHAMBER WALLS AND ROOF SLABS WITH 2 COATS OF WHITE ROAD MARKING PAINT. THEREAFTER, STENCIL ON THE CHAMBER IDENTIFICATION NUMBER TO BE ADVISED BY THE ENGINEER.
P. SIGNAGE INSTRUCTIONS FOR USE 800 x 600 HEAVY DUTY PVC SIGN BOARD FIXED TO THE INSIDE OF THE CHAMBER AS PER THE ENGINEERS INSTRUCTIONS



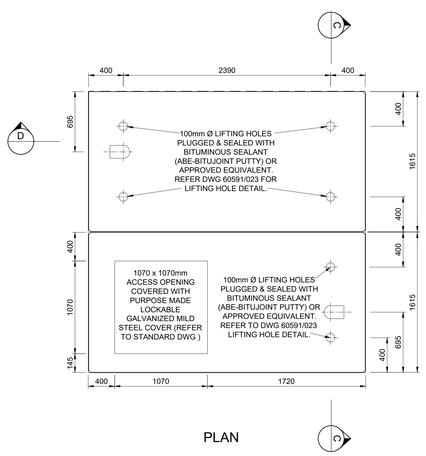
DETAIL A
N.T.S



PART SECTION C-C
THROUGH ROOF SLAB



PART SECTION D-D
THROUGH ROOF SLAB



PLAN

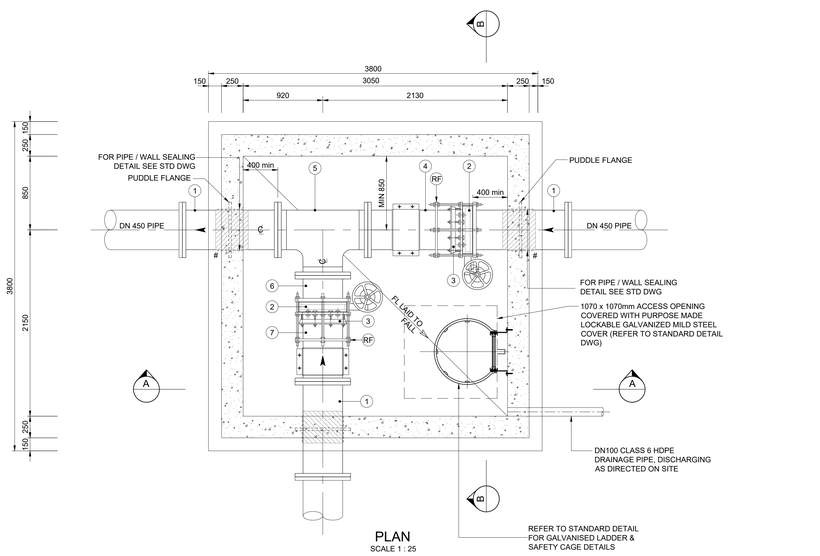
DETAIL 1

ROOF SLAB DETAIL
CROSS CONNECTION CHAMBER
SCALE 1 : 25

WRAP SECTION OF PIPE WITH A POLYMER MODIFIED BITUMEN COMPOUND LAMINATE TO PVC TAPE WRAP SYSTEM:

1.) PRIME WITH APPROVED PRIMER IN ACCORDANCE WITH EWS SPECIFCATIONS AND LET CURE FOR 30 MINUTES.

2.) WRAP WITH A POLYMER MODIFIED BITUMEN COMPOUND LAMINATE TO PVC TAPE WRAP SYSTEM. THIS WRAPPING TO EXTEND 150mm FROM THE FACE OF THE WALL ON EACH SIDE. PUDDLE FLANGE NOT TO BE WRAPPED IN ACCORDANCE WITH EWS SPECIFCATIONS



PLAN
SCALE 1 : 25

ETHEKWINI WATER AND SANITATION

WATER DESIGN BRANCH

REDUCED PLAN USE SCALE BELOW

0 10 20 30 40 50 60 70

70mm ON ORIGINAL PLAN

CONSULTANT:

NAIDU CONSULTING

1st Floor
No.5, The Boulevard
West Way Office Park
Westville, Durban
Tel : +27 (0) 31 265 6007
Fax : +27 (0) 31 265 6011
Email: info@naiduconsulting.com

Signature

26/09/2025
Date

Drawing No.: D724-52-5255- REV 0

FOR TENDER

REFERENCE DRAWINGS (D724-52-...)

DWG No.	TITLE/DESCRIPTION
1000	SITE LAYOUT
1001	EARTHWORKS LAYOUT
1002	EARTHWORKS SECTIONS
1003	EARTHWORKS SECTIONS
5100	WATER PIPELINE LONG SECTIONS
5250	RESERVOIR 1 VALVE CHAMBERS
5251	RESERVOIR 2 VALVE CHAMBERS
5252	DN350 METER CHAMBER
5253	DN400 METER CHAMBER
5254	DN300 METER CHAMBER
5255	CROSS CONNECTION CHAMBER
5256	DN300 INLET CHAMBER (RESERVOIR 2)
5257	AIR VALVE CHAMBER DETAILS
5258	TYPICAL VALVE CHAMBER DETAILS
4000	STORMWATER LAYOUT
4250	STORMWATER DETAILS
4100	STORMWATER PIPELINE LONG SECTIONS
STANDARD DRAWINGS	
5400	ACCESS GATE AND FENCE DETAILS
5401	MANHOLE COVER DETAILS
5402	GRP ACCESS LADDER DETAILS
5403	TRENCH DETAILS
5404	STEEL DOOR AND AIR VENT DETAILS

Revision	Date	Description
0	09 / 2025	ISSUED FOR TENDER

Contract No. 32547 - 5W

Project No. X8388

Planning Unit
WATER AND SANITATION

Ward No.
64

Project Title
MOBENI 2 RESERVOIR ASSOCIATED WORKS

Drawing Title
DN450 CROSS CONNECTION CHAMBER MOBENI/WOODLANDS 1 & 2

Scale : As Shown	Paper Size : A0
Designed : T. Moodley	Date : 09/2025
Checked : A. Goorun	Drawn: N. Adams

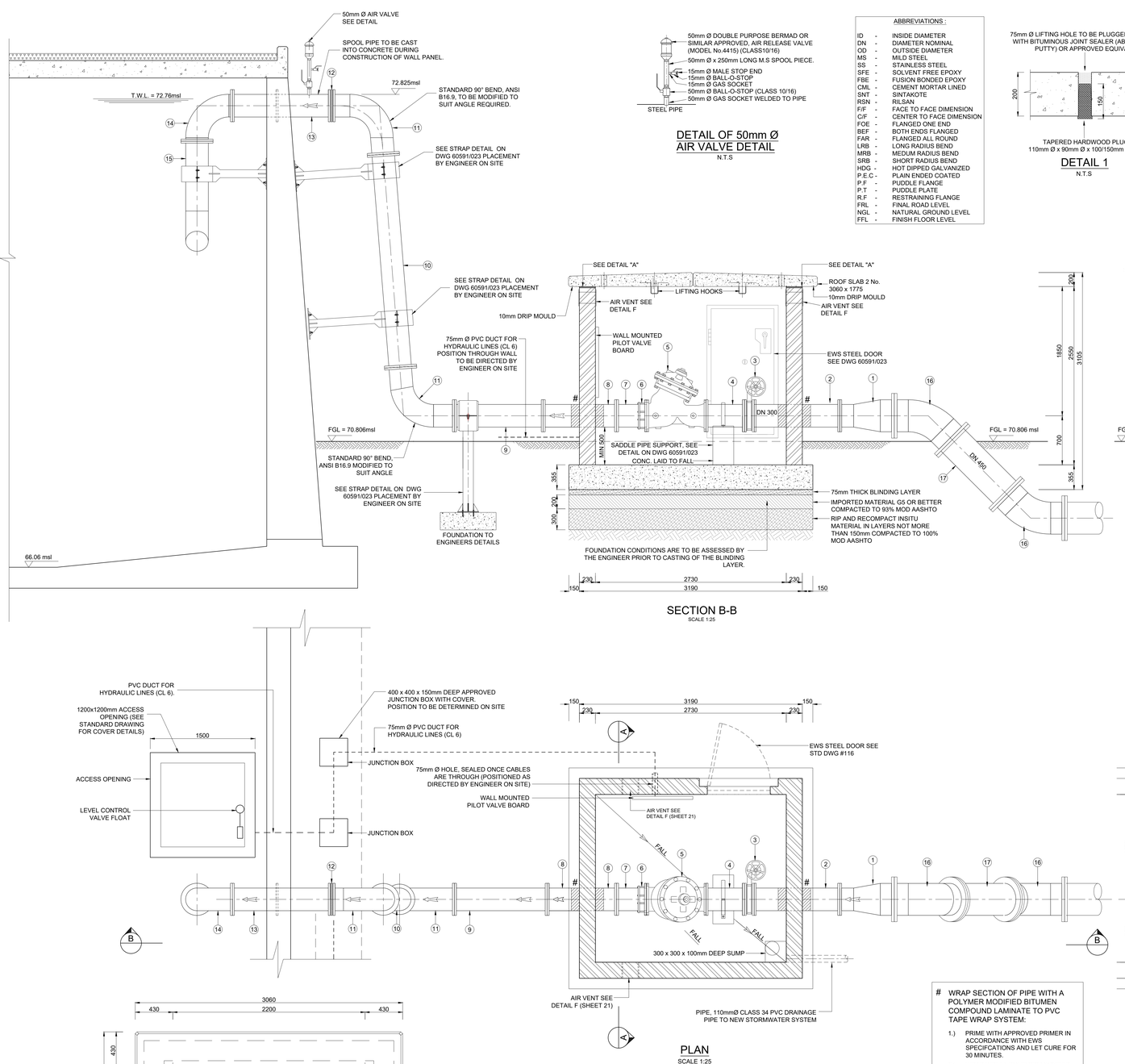
Area Engineer

Manager (Water Design)

Deputy Head (Engineering)

E. MSWELI - Head (W & S)

Drawing No. 60591/011 | Sheet 1 of 1 | Rev. 0

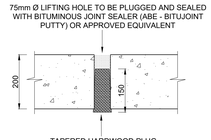


DETAIL OF 50mm Ø AIR VALVE DETAIL

N.T.S

ABBREVIATIONS :

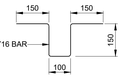
ID	-	INSIDE DIAMETER
DN	-	DIAMETER NOMINAL
OD	-	OUTSIDE DIAMETER
MS	-	MILD STEEL
SS	-	STAINLESS STEEL
SFE	-	SOLVENT FREE EPOXY
FBE	-	FUSION BONDED EPOXY
CML	-	CEMENT MORTAR LINED
SNT	-	SINTAKOTE
RSN	-	RILSAN
F/F	-	FACE TO FACE DIMENSION
C/F	-	CENTER TO FACE DIMENSION
FOE	-	FLANGED ONE END
BEF	-	BOTH ENDS FLANGED
FAR	-	FLANGED ALL ROUND
LRB	-	LONG RADIUS BEND
MRB	-	MEDIUM RADIUS BEND
SRB	-	SHORT RADIUS BEND
HDG	-	HOT DIPPED GALVANIZED
P.E.C	-	PLAIN ENDED COATED
P.F	-	PUDDLE FLANGE
P.T	-	PUDDLE PLATE
R.F	-	RESTRAINING FLANGE
FRL	-	FINAL ROAD LEVEL
NGL	-	NATURAL GROUND LEVEL
FFL	-	FINISH FLOOR LEVEL



DETAIL 1

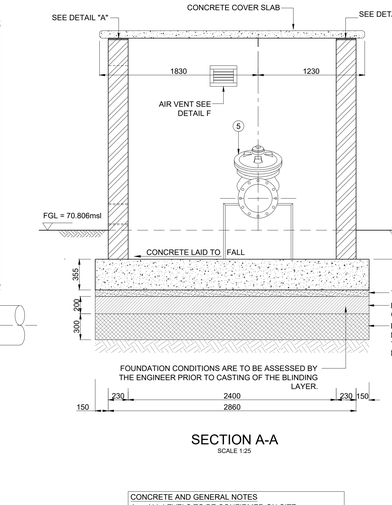
N.T.S

NOTE:
LIFTING HOOK TO BE HOT DIP GALVANISED PRIOR TO FIXING.



LIFTING HOOKS DETAILS

SCALE 1:10



SECTION A-A

SCALE 1:25

SECTION B-B

SCALE 1:25

PLAN

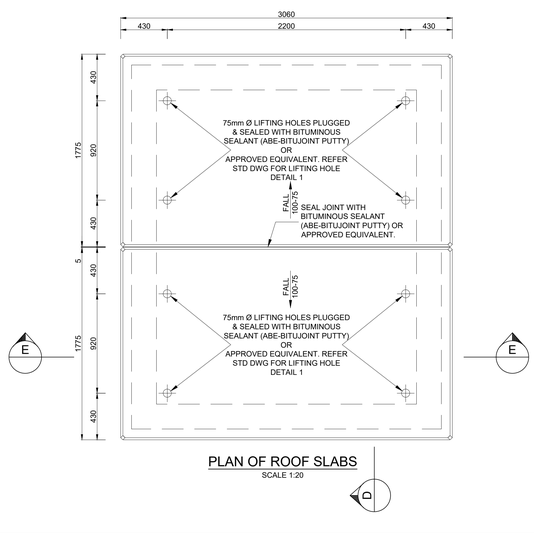
SCALE 1:25

CONCRETE AND GENERAL NOTES

A. ALL LEVELS TO BE CONFIRMED ON SITE.
B. ENGINEER TO INSPECT AND APPROVE FOUNDING MATERIAL BEFORE BLINDING IS CAST.
C. ALL EXPOSED EDGES ARE CHAMFERED 25x25.
D. GENERAL COVER TO ALL REINFORCING IS 50mm.
E. ENSURE THERE IS AT LEAST 75mm COVER BETWEEN THE REINFORCING BARS AND PUDDLE FLANGE.
F. CONSTRUCTION JOINTS ARE WELL CLEANED & SCABBLED TO EXPOSE FRESH AGGREGATE AND THOROUGHLY WETTED BEFORE THE NEXT LIFT IS POURED. CONSTRUCTION JOINTS TO HAVE SIKASWELL S-2 OR SIMILAR APPROVED BEAD CENTRALLY PLACED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
G. CONCRETE DISTANCE BLOCKS FOR POSITIONING REINFORCEMENT NEED TO BE MADE AT LEAST 3 WEEKS PRIOR TO REINFORCEMENT BEING FIXED, IN ORDER TO ALLOW FOR SUFFICIENT MOIST-CURING TIME.
H. NO ACCESS OPENINGS OTHER THAN THOSE INDICATED ON DRAWINGS WILL BE ALLOWED.
I. NO WIRE TIES BETWEEN WALL SHUTTERS WILL BE PERMITTED. FERRULE HOLES TO BE FREE OF FORMERS WITHIN 40mm OF SHUTTER.
J. WORKING SPACE AROUND THE CHAMBER NOT TO EXCEED 1000mm.
K. REINFORCED CONCRETE SHALL BE WATERTIGHT TO SABS 1200V 5.5.11
L. CONCRETE GRADE
BLINDING : 15/19
MASS CONCRETE : 20/19
CONCRETE OTHERWISE STATED : 25/19 UNLESS
SCREED : 1:3 (CEMENT /SAND)
M. WHERE APPLICABLE, AIR VENTS, LIFTING HOLES, LIFTING HOOKS, STEP IRONS AND DI COVER & FRAME WERE PRE- INSTALLED AT THE MANUFACTURER PRIOR TO DELIVERY ON SITE.
N. BACKFILL MATERIAL AROUND STRUCTURE TO BE COMPACTED TO MINIMUM 95% MODIFIED AASHTO MAXIMUM DENSITY IN MAXIMUM 150mm LAYERS.
O. ON COMPLETION OF THE CHAMBERS, PAINT ALL EXPOSED ABOVE GROUND CHAMBER WALLS AND ROOF SLABS WITH 2 COATS OF WHITE ROAD MARKING PAINT. THEREAFTER, STENCIL ON THE CHAMBER IDENTIFICATION NUMBER TO BE ADVISED BY THE ENGINEER.
P. SIGNAGE INSTRUCTIONS FOR USE 800 x 600 HEAVY DUTY PVC SIGN BOARD FIXED TO THE INSIDE OF THE CHAMBER AS PER THE ENGINEERS INSTRUCTIONS

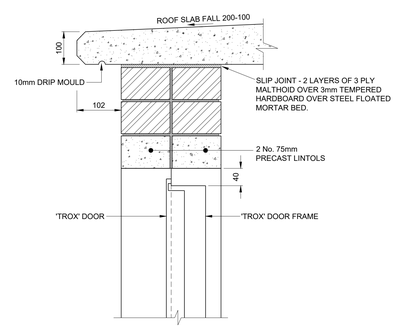
WRAP SECTION OF PIPE WITH A POLYMER MODIFIED BITUMEN COMPOUND LAMINATE TO PVC TAPE WRAP SYSTEM:.

1.) PRIME WITH APPROVED PRIMER IN ACCORDANCE WITH EWS SPECIFCATIONS AND LET CURE FOR 30 MINUTES.
2.) WRAP WITH A POLYMER MODIFIED BITUMEN COMPOUND LAMINATE TO PVC TAPE WRAP SYSTEM, THIS WRAPPING TO EXTEND 150mm FROM THE FACE OF THE WALL ON EACH SIDE. PUDDLE FLANGE NOT TO BE WRAPPED IN ACCORDANCE WITH EWS SPECIFCATIONS



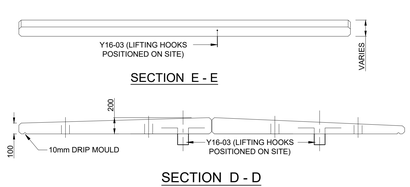
PLAN OF ROOF SLABS

SCALE 1:20



DETAIL 'A'

SCALE 1:5



PIPEWORK NOTES:

1. ALL PIPEWORK TO BE MILD STEEL UNLESS OTHERWISE STATED. ALL MATERIAL TO BE SANS APPROVED.
2. THE CONTRACTOR SHALL VERIFY THE DIMENSIONS OF ALL PIPEWORK AND ADVISE THE ENGINEER OF ANY DISCREPANCIES PRIOR TO FABRICATION.
3. ALL FLANGES AND RESTRAINING FLANGES SHALL BE RATED AND DRILLED TO SANS 1123, TABLE AS SPECIFIED IN PIPEWORK AND FITTINGS SCHEDULE.
   3.1. THRUST PUDDLE FLANGES SHALL MATCH PIPEWORK FLANGES TO SANS 1123 AND SHALL BE UNDRILLED.
   3.2. WHERE PUDDLE PLATES ARE REQUIRED OVER THRUST PUDDLE FLANGES, THE THICKNESS AND OUTSIDE DIAMETER SHALL BE SPECIFIED IN PIPEWORK AND FITTINGS SCHEDULE.
   3.3. ENSURE THERE IS AT LEAST 75mm COVER BETWEEN THE REINFORCING BARS AND PUDDLE FLANGE/ PLATE.
4. ALL BOLTS AND TIE BOLTS TO BE GRADE 4.8. BOLTS, NUTS AND WASHERS SHALL BE HOT DIPPED GALVANISED TO SANS 121/ ISO 1461, WITH A HEAVY FILM THICKNESS OF 85 ±10 MICRON.
5. ALL MILD STEEL ITEMS (APART FROM PIPING/PIPE FITTINGS) TO BE HEAVY DUTY HOT DIPPED GALVANIZED TO ISO 1461 AND SANS 121,WITH A HEAVY FILM THICKNESS OF 85 ±10 MICRO INTERNALLY AND EXTERNALLY APPLIED.
6. ALL PIPE FITTINGS TO BE CHECKED ON SITE, ANY DISCREPANCIES TO BE REPORTED TO THE ENGINEER PRIOR TO INSTALLATION.
7. ALL PIPES LESS THAN OR EQUAL TO DN150 TO BE FABRICATED IN ACCORDANCE WITH SANS 62 - 1 (MEDIUM CLASS) UNLESS OTHERWISE SPECIFIED.
8. ALL MILD STEEL PIPEWORK AND FITTINGS GREATER THAN DN150 TO BE FABRICATED IN ACCORDANCE WITH SANS 719 EDITION 3.1 2008 AND WELDED IN ACCORDANCE WITH API 1104. PIPEWORK GRADE AND WALL THICKNESS SHALL MATCH SCHEDULE OF FITTINGS TABLE.
9. ALL STAINLESS STEEL PIPE AND FITTINGS TO BE GRADE 316L AND WALL THICKNESS SHALL MATCH SCHEDULE OF FITTINGS TABLE.
10. RESTRAINING FLANGE ADAPTOR USE MINIMUM 4. No GRADE 4.8 RESTRAINING BOLTS, EQUALLY SPACED AROUND CIRCUMFERENCE OF FLANGES UNLESS OTHER SHOWN UNDER ITEM DESCRIPTION. NOTE: ALL THE BOLTS FROM THE FLANGE ON THE VALVE ADJACENT TO A RESTRAINING FLANGE TO BE TAKEN THROUGH TO THE RESTRAINING FLANGE WITH NUTS AND WASHERS BOTH SIDES OF RESTRAINING FLANGE.
11. ALL BURIED FLANGES TO BE CATHODICALLY BONDED INSULATED CABLE THERMALLY WELDED TO PIPE AS DIRECTED BY CATHODIC SPECIALIST .
12. THE PRESSURE RATINGS OF ALL PIPEWORK, FITTINGS, FLANGES, VALVES & METERS SHALL BE AS INDICATED IN THE SCHEDULES OF FITTINGS.
13. ALL MILD STEEL PIPEWORK, COLLARS, WRAPPERS AND CROTCH PLATES TO BE MANUFACTURED FROM MINIMUM GRADE X42 STEEL AND WELDED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
14. BACKFILL MATERIAL TO BE COMPACTED TO 95% MOD. AASHTO IN MAX. 150mm LAYERS & 97% MOD AASHTO IN 150mm LAYERS WHERE THE PIPE IS LOCATED UNDER A PAVED ROAD SURFACE.
15. ALL PIPEWORK, VALVES AND FITTING SHALL COMPLY WITH PROJECT SPECIFICATION.
16. DIMENSIONS OF ALL PIPES, FITTINGS AND SPECIALS SCHEDULED ABOVE ARE FOR INFORMATION PURPOSES ONLY AND TO BE VERIFIED ON SITE PRIOR TO MANUFACTURE.
17. THE USE OF PROPRIETARY NAMES IN NO WAY INDICATES PREFERENCE FOR A PARTICULAR PRODUCT. RATHER, THIS USAGE IS TO ILLUSTRATE TO THE TENDERER THE TYPE AND NATURE OF PRODUCT SOUGHT BY METRO WATER. EQUIPMENT WITH SIMILAR MATERIALS OF CONSTRUCTIONS, SIMILAR FUNCTIONALITY AND NO MATERIAL DEVIATION FROM THE PRODUCT USED FOR ILLUSTRATIVE PURPOSES WILL BE DEEMED TO BE "SIMILAR APPROVED".

COATING AND LINING NOTES:

TO METRO WATER PARTICULAR SPECIFICATION FOR:

- " MANUFACTURE, DELIVERY, STORAGE, COATING AND LINING OF STEEL AND STAINLESS STEEL PIPE FITTINGS AND SPECIALS AND PROTECTION OF FIELD JOINTS FROM DN200 UP TO DN2200"
- "MANUFACTURE, SUPPLY, DELIVERY, HANDLING AND STORAGE OF DN200 TO DN2200 COATED AND LINED STEEL PIPE"

18. SURFACE PREPARATION - FOR APPLICATION OF CORROSION PROTECTION MATERIALS SHALL BE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
19. LINING/COATING TO MILD STEEL PIPING GREATER THAN DN250 (UNLESS OTHERWISE STATED): TO A MINIMUM DFT OF 400micron, INTERNALLY AND EXTERNALLY APPLIED.
20. MILD STEEL PIPING LESS THAN OR EQUAL TO DN250 TO BE HEAVY DUTY HOT-DIPPED GALVANISED (UNLESS OTHERWISE STATED): TO ISO 1461 AND SANS 121, WITH A HEAVY FILM THICKNESS OF 85 ±10 MICRON. INTERNALLY AND EXTERNALLY APPLIED.
21. PIPE BELOW GROUND, AFTER GALVANISING TO BE WRAPPED WITH A POLYMER MODIFIED BITUMEN COMPOUND LAMINATE TO PVC TAPE WRAP SYSTEM IN ACCORDANCE WITH EWS PARTICULAR SPECIFICATION.
   21.1. PIPE ABOVE GROUND, AFTER GALVANISING TO BE WRAPPED WITH AN ACRYLIC PIPELINE TAPE.
22. CEMENT MORTAR LINING TO eTHEKWINI PARTICULAR SPECIFICATIONS. DAMAGED COATING AND LININGS TO BE REPAIRED IN ACCORDANCE WITH SPECIFICATIONS.
23. DAMAGED H.D.G. COATING TO BE REPAIRED WITH 'GALV-O-PATCH' OR SIMILAR APPROVED PRODUCT.
24. ALL BURIED FLANGES, BOLTS AND FLEXIBLE COUPLINGS TO BE PROTECTED BY FILED JOINT COATING SYSTEM IN ACCORDANCE TO EWS PARTICULAR SPECIFICATION AND COMPLETED TAPE WRAPPED.
25. ALL PIPEWORK THROUGH CHAMBER WALLS TO BE WRAPPED POLYMER MODIFIED BITUMEN COMPOUND LAMINATE TO PVC TAPE WRAP SYSTEM IN ACCORDANCE WITH EWS PARTICULAR SPECIFICATION ON EACH SIDE OF THE PUDDLE FLANGE. THIS WRAPPING IS TO EXTEND 150mm BEYOND THE FACE OF THE WALL EACH SIDE. PUDDLE FLANGE/ PLATE NOT TO BE WRAPPED.
26. DAMAGED COATINGS AND LININGS SHALL BE REPAIRED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
27. ALL PIPEWORK AND SPECIALS TO BE COATED AND LINED AS PER THE PROJECT SPECIFICATIONS UNLESS OTHERWISE STATED.
28. ALL JOINTS SHALL BE COATED, PROTECTED AND WRAPPED AS PER THE PROJECT SPECIFICATIONS.

NB:

29. ALL CERTIFICATES SHALL BE PROVIDED FOR ALL MATERIALS
30. ALL WELDING TO BE API 1104.
31. ALL WELDS TO BE 100% TESTED.

PIPEWORK AND FITTINGS SCHEDULE
ALL FITTINGS TO PN16, FLANGES TO SANS 1123 1600/3 & PIPEWORK TO X42/ SANS 719

ITEM NO	NOM DIA	DESCRIPTION	WALL THK	LINING	COATING	FACE TO FACE	No. OF
1	DN450 x DN300	(ANSI) B16.9 CONCENTRIC REDUCER WITH 200mm LONG SPOOL PIECE WELDED ON BOTH ENDS, B.E.F.	4.5	SFE	SFE	781	1
2	DN300	SPOOL PIECE, B.E.F. ONE FLANGE TO MATCH ITEM 3 (FINAL LENGTH TO BE DETERMINED ON SITE PRIOR TO FABRICATING).	4.5	SFE	SFE	1365	1
3	DN300	BUTTERFLY VALVE TO BE SUPPLIED IN ACCORDANCE TO METRO WATER PARTICULAR SPECIFICATION	--	--	--	--	1
4	DN300	SPOOL PIECE, B.E.F. ONE FLANGE TO MATCH ITEM 3 & THE OTHER FLANGE TO MATCH ITEM 5 (FINAL LENGTH TO BE DETERMINED ON SITE PRIOR TO FABRICATING).	4.5	SFE	SFE	550	1
5	DN300	ELECTRONIC SOLENOID REDUCED PORT LEVEL CONTROL VALVE COMPLETE WITH AUXILIARY CONTROL SYSTEM COMPRISING OF SOLENOID PILOT AND OPENING AND CLOSING SPEED CONTROLS	--	FBE	FBE	850	1
6	DN300	RESTRAINED EPOXY COATED AND LINED FLANGE ADAPTOR TO METRO WATER AND PROJECT SPECIFICATIONS. (TO APPROVAL BY METRO WATER). DESIGN OF RESTRAINING FLANGE ADAPTOR IS WITH AN OVERALL LENGTH OF <160mm. RESTRAINING BOLTS FROM THE FLANGE ON THE VALVE ADJACENT TO FLANGE ADAPTOR TO BE TAKEN THROUGH TO THE FLANGE OF ITEM 5 c/w NUTS AND WASHERS BOTH SIDES OF FLANGE.	--	FBE	FBE	<160	1
7	DN300	SPOOL PIECE, F.O.E, OTHER END PLAIN END COATED. (FINAL LENGTH TO BE DETERMINED ON SITE PRIOR TO FABRICATING).	4.5	SFE	SFE	400	1
8	DN300	SPOOL PIPE FF 1050mm, B.E.F. (LENGTH TO BE VERIFIED ON SITE).	4.5	SFE	SFE	1050	1
9	DN300	STRAIGHT PIPE , B.E.F. (FINAL LENGTH TO BE DETERMINED ON SITE PRIOR TO FABRICATING).	4.5	SFE	SFE	1270	1
10	DN300	STRAIGHT PIPE , B.E.F. (FINAL LENGTH TO BE DETERMINED ON SITE PRIOR TO FABRICATING).	4.5	SFE	SFE	3050	1
11	DN300	(ANSI) B16.9 SPECIAL: 90° LONG RADIUS BEND (MODIFIED TO 86°) WELDED TO 300mm SPOOL PIECE EACH END, B.E.F. FINAL ANGLE AND LENGTHS TO BE CONFIRMED ON SITE.	4.5	SFE	SFE		2
12	DN300	INSULATION GASKET FOR ELECTRICAL DISCONTINUITY COMPLETE WITH NYLON SLEEVE AND WASHERS	--	--	--	--	1
13	DN300	SPOOL PIECE WITH SANS 1123 1600/3 THRUST PUDDLE FLANGE (P.F) PLACED 640mm FROM DOWNSTREAM FLANGE END AND WITH 50mm Ø BSP SOCKET 300mm FROM UPSTREAM END OF FLANGE (PLACED AT CROWN OF PIPE), B.E.F. (FINAL LENGTH TO BE DETERMINED ON SITE PRIOR TO FABRICATING). ITEM TO BE CAST INTO CONCRETE DURING CONSTRUCTION OF WALL PANEL.	4.5	SFE	SFE	1200	1
14	DN300	(ANSI) B16.9 SPECIAL: 45° RADIUS BEND WELDED TO 100mm SPOOL PIECE EACH END, B.E.F. NB: 316 SS BOLTS AND NUTS COMPLETE WITH NYLON SLEEVES AND WASHERS.	4.5	SFE	SFE	-	1
15	DN300	STRAIGHT PIPE (CUT TO SUIT), F.O.E. WITH 45° BEND ON THE OTHER END. NB: 316 SS BOLTS AND NUTS COMPLETE WITH NYLON SLEEVES AND WASHERS.	4.5	SFE	SFE	1000	1
16	DN450	45° (ANSI) B16.9 BEND WITH 200mm LONG SPOOL PIECE WELDED ON BOTH ENDS, B.E.F	4.5	SFE	SFE		2
17	DN450	STRAIGHT PIPE , B.E.F. (FINAL LENGTH TO BE DETERMINED ON SITE PRIOR TO FABRICATING).	4.5	SFE	SFE	1100	1

ETHEKWINI WATER AND SANITATION

ETHEKWINI MUNICIPALITY

WATER DESIGN BRANCH

REDUCED PLAN USE SCALE BELOW

0 10 20 30 40 50 60 70

70mm ON ORIGINAL PLAN

CONSULTANT:

NAIDU CONSULTING
1st Floor
No.5, The Boulevard
West Way Office Park
Westville, Durban
Tel : +27 (0) 31 265 6007
Fax : +27 (0) 31 265 6011
Email: info@naiduconsulting.com

26/09/2025

Drawing No.: D724-51- 5256 REV 0

FOR TENDER

REFERENCE DRAWINGS (D724-52-...)

DWG No.	TITLE/DESCRIPTION
1000	SITE LAYOUT
1001	EARTHWORKS LAYOUT
1002	EARTHWORKS SECTIONS
1003	EARTHWORKS SECTIONS
5100	WATER PIPELINE LONG SECTIONS
5250	RESERVOIR 1 VALVE CHAMBERS
5251	RESERVOIR 2 VALVE CHAMBERS
5252	DN350 METER CHAMBER
5253	DN400 METER CHAMBER
5254	DN300 METER CHAMBER
5255	CROSS CONNECTION CHAMBER
5256	DN300 INLET CHAMBER (RESERVOIR 2)
5257	AIR VALVE CHAMBER DETAILS
5258	TYPICAL VALVE CHAMBER DETAILS
4000	STORMWATER LAYOUT
4250	STORMWATER DETAILS
4100	STORMWATER PIPELINE LONG SECTIONS
STANDARD DRAWINGS	
5400	ACCESS GATE AND FENCE DETAILS
5401	MANHOLE COVER DETAILS
5402	GRP ACCESS LADDER DETAILS
5403	TRENCH DETAILS
5404	STEEL DOOR AND AIR VENT DETAILS

Revision	Date	Description
0	09 / 2025	ISSUED FOR TENDER

Contract No. 32547 - 5W

Project No. X8388

Planning Unit: WATER AND SANITATION

Ward No.: 64

Project Title: MOBENI 2 RESERVOIR ASSOCIATED WORKS

Drawing Title: RESERVOIR 2 - DN300 INLET PIPEWORK, CHAMBER AND ASSOCIATED DETAILS

Scale : As Shown	Paper Size : A0
Designed : T. Moodley	Date : 09/2025
Checked : A. Goorun	Drawn: T. Moodley

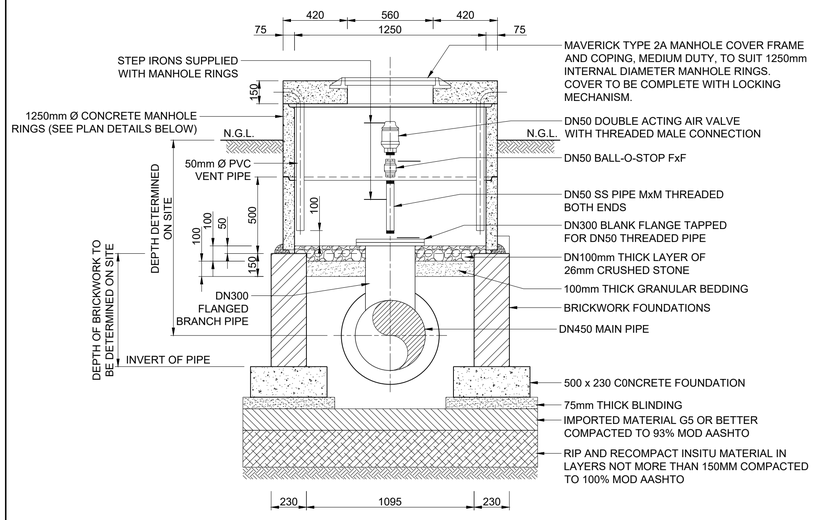
Area Engineer

Manager (Water Design)

Deputy Head (Engineering)

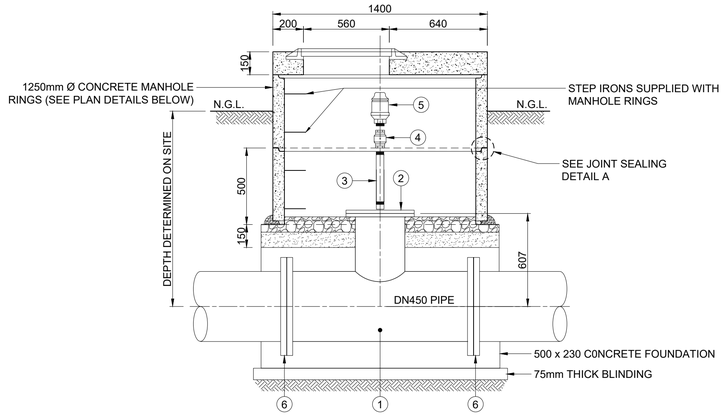
E. MSWELI - Head (W & S)

Drawing No.	Sheet	Rev.
60591/012	1 of 1	0



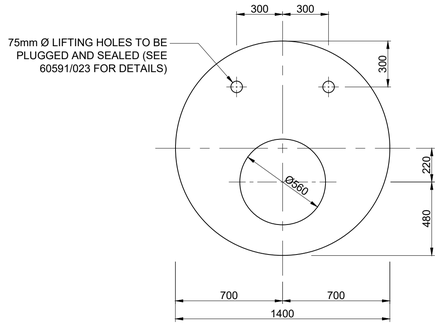
SECTION A-A

SCALE 1:20



SECTION B-B

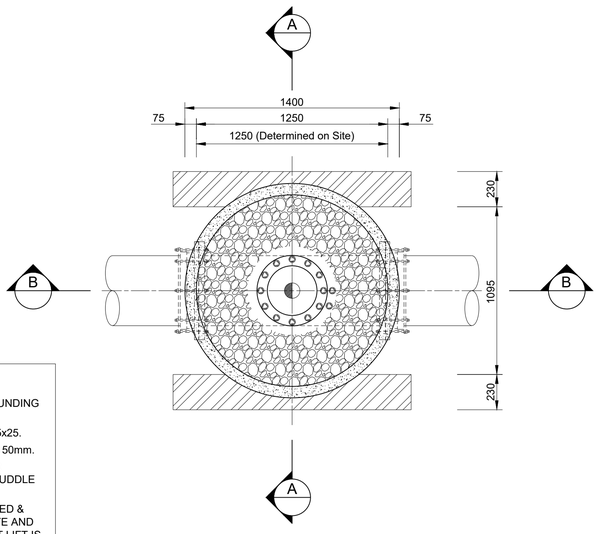
SCALE 1:20



PLAN

MANHOLE CONCRTE ROOF SLAB DETAILS

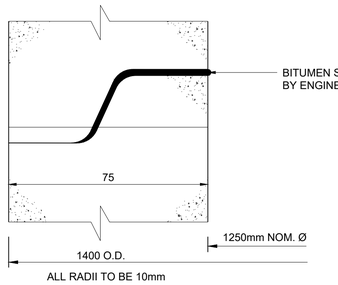
SCALE 1:20



PLAN

DN450 PIPELINE WITH DN50 AV (1250mm I.D. MANHOLE RINGS)

SCALE 1:20



DETAIL A

JOINT SEALING DETAIL

CONCRETE AND GENERAL NOTES

A. ALL LEVELS TO BE CONFIRMED ON SITE.

B. ENGINEER TO INSPECT AND APPROVE FOUNDING MATERIAL BEFORE BLINDING IS CAST.

C. ALL EXPOSED EDGES ARE CHAMFERED 25x25.

D. GENERAL COVER TO ALL REINFORCING IS 50mm.

E. ENSURE THERE IS AT LEAST 75mm COVER BETWEEN THE REINFORCING BARS AND PUDDLE FLANGE.

F. CONSTRUCTION JOINTS ARE WELL CLEANED & SCABBLED TO EXPOSE FRESH AGGREGATE AND THOROUGHLY WETTED BEFORE THE NEXT LIFT IS POURED. CONSTRUCTION JOINTS TO HAVE SIKASWELL S-2 OR SIMILAR APPROVED BEAD CENTRALLY PLACED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.

G. CONCRETE DISTANCE BLOCKS FOR POSITIONING REINFORCEMENT NEED TO BE MADE AT LEAST 3 WEEKS PRIOR TO REINFORCEMENT BEING FIXED, IN ORDER TO ALLOW FOR SUFFICIENT MOIST-CURING TIME.

H. NO ACCESS OPENINGS OTHER THAN THOSE INDICATED ON DRAWINGS WILL BE ALLOWED.

I. NO WIRE TIES BETWEEN WALL SHUTTERS WILL BE PERMITTED. FERRULE HOLES TO BE FREE OF FORMERS WITHIN 40mm OF SHUTTER.

J. WORKING SPACE AROUND THE CHAMBER NOT TO EXCEED 1000mm.

K. REINFORCED CONCRETE SHALL BE WATERTIGHT TO SABS 1200G 5.5.11

L. CONCRETE GRADE

BLINDING	:	15/19
MASS CONCRETE	:	20/19
CONCRETE OTHERWISE STATED	:	25/19 UNLESS
SCREED	:	1:3 (CEMENT /SAND)

M. WHERE APPLICABLE, AIR VENTS, LIFTING HOLES, LIFTING HOOKS, STEP IRONS AND DI COVER & FRAME WERE PRE- INSTALLED AT THE MANUFACTURER PRIOR TO DELIVERY ON SITE.

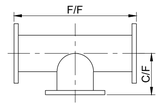
N. BACKFILL MATERIAL AROUND STRUCTURE TO BE COMPACTED TO MINIMUM 95% MODIFIED AASHTO MAXIMUM DENSITY IN MAXIMUM 150mm LAYERS.

O. ON COMPLETION OF THE CHAMBERS, PAINT ALL EXPOSED ABOVE GROUND CHAMBER WALLS AND ROOF SLABS WITH 2 COATS OF WHITE ROAD MARKING PAINT. THEREAFTER, STENCIL ON THE CHAMBER IDENTIFICATION NUMBER TO BE ADVISED BY THE ENGINEER.

P. SIGNAGE INSTRUCTIONS FOR USE 800 x 600 HEAVY DUTY PVC SIGN BOARD FIXED TO THE INSIDE OF THE CHAMBER AS PER THE ENGINEERS INSTRUCTIONS

ABBREVIATIONS :

ID	-	INSIDE DIAMETER
DN	-	DIAMETER NOMINAL
OD	-	OUTSIDE DIAMETER
MS	-	MILD STEEL
SS	-	STAINLESS STEEL
SFE	-	SOLVENT FREE EPOXY
FBE	-	FUSION BONDED EPOXY
CML	-	CEMENT MORTAR LINED
SNT	-	SINTAKOTE
RSN	-	RILSAN
F/F	-	FACE TO FACE DIMENSION
C/F	-	CENTER TO FACE DIMENSION
FOE	-	FLANGED ONE END
BEF	-	BOTH ENDS FLANGED
FAR	-	FLANGED ALL ROUND
LRB	-	LONG RADIUS BEND
MRB	-	MEDUM RADIUS BEND
SRB	-	SHORT RADIUS BEND
HDG	-	HOT DIPPED GALVANIZED
P.E.C	-	PLAIN ENDED COATED
P.F	-	PUDDLE FLANGE
P.T	-	PUDDLE PLATE
R.F	-	RESTRAINING FLANGE
FRL	-	FINAL ROAD LEVEL
NGL	-	NATURAL GROUND LEVEL
FFL	-	FINISH FLOOR LEVEL



PLAN LAYOUT

PIPEWORK NOTES:

1. ALL PIPEWORK TO BE MILD STEEL UNLESS OTHERWISE STATED. ALL MATERIAL TO BE SANS APPROVED.
2. THE CONTRACTOR SHALL VERIFY THE DIMENSIONS OF ALL PIPEWORK AND ADVISE THE ENGINEER OF ANY DISCREPANCIES PRIOR TO FABRICATION.
3. ALL FLANGES AND RESTRAINING FLANGES SHALL BE RATED AND DRILLED TO SANS 1123, TABLE AS SPECIFIED IN PIPEWORK AND FITTINGS SCHEDULE.
   - 3.1. THRUST PUDDLE FLANGES SHALL MATCH PIPEWORK FLANGES TO SANS 1123 AND SHALL BE UNDRILLED.
   - 3.2. WHERE PUDDLE PLATES ARE REQUIRED OVER THRUST PUDDLE FLANGES, THE THICKNESS AND OUTSIDE DIAMETER SHALL BE SPECIFIED IN PIPEWORK AND FITTINGS SCHEDULE.
   - 3.3. ENSURE THERE IS AT LEAST 75mm COVER BETWEEN THE REINFORCING BARS AND PUDDLE FLANGE/ PLATE.
4. ALL BOLTS AND TIE BOLTS TO BE GRADE 4.8. BOLTS, NUTS AND WASHERS SHALL BE HOT DIPPED GALVANISED TO SANS 121/ ISO 1461, WITH A HEAVY FILM THICKNESS OF 85 ±10 MICRON.
5. ALL MILD STEEL ITEMS (APART FROM PIPING/PIPE FITTINGS) TO BE HEAVY DUTY HOT DIPPED GALVANIZED TO ISO 1461 AND SANS 121,WITH A HEAVY FILM THICKNESS OF 85 ±10 MICRO INTERNALLY AND EXTERNALLY APPLIED.
6. ALL PIPE FITTINGS TO BE CHECKED ON SITE, ANY DISCREPANCIES TO BE REPORTED TO THE ENGINEER PRIOR TO INSTALLATION.
7. ALL PIPES LESS THAN OR EQUAL TO DN150 TO BE FABRICATED IN ACCORDANCE WITH SANS 62 - 1 (MEDIUM CLASS) UNLESS OTHERWISE SPECIFIED.
8. ALL MILD STEEL PIPEWORK AND FITTINGS GREATER THAN DN150 TO BE FABRICATED IN ACCORDANCE WITH SANS 719 EDITION 3.1 2008 AND WELDED IN ACCORDANCE WITH API 1104. PIPEWORK GRADE AND WALL THICKNESS SHALL MATCH SCHEDULE OF FITTINGS TABLE.
9. ALL STAINLESS STEEL PIPE AND FITTINGS TO BE GRADE 316L AND WALL THICKNESS SHALL MATCH SCHEDULE OF FITTINGS TABLE.
10. RESTRAINING FLANGE ADAPTOR USE MINIMUM 4. No GRADE 4.8 RESTRAINING BOLTS, EQUALLY SPACED AROUND CIRCUMFERENCE OF FLANGES UNLESS OTHER SHOWN UNDER ITEM DESCRIPTION. NOTE: ALL THE BOLTS FROM THE FLANGE ON THE VALVE ADJACENT TO A RESTRAINING FLANGE TO BE TAKEN THROUGH TO THE RESTRAINING FLANGE WITH NUTS AND WASHERS BOTH SIDES OF RESTRAINING FLANGE.
11. ALL BURIED FLANGES TO BE CATHODICALLY BONDED INSULATED CABLE THERMALLY WELDED TO PIPE AS DIRECTED BY CATHODIC SPECIALIST .
12. THE PRESSURE RATINGS OF ALL PIPEWORK, FITTINGS, FLANGES, VALVES & METERS SHALL BE AS INDICATED IN THE SCHEDULES OF FITTINGS.
13. ALL MILD STEEL PIPEWORK, COLLARS, WRAPPERS AND CROTCH PLATES TO BE MANUFACTURED FROM MINIMUM GRADE X42 STEEL AND WELDED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
14. BACKFILL MATERIAL TO BE COMPACTED TO 95% MOD. AASHTO IN MAX. 150mm LAYERS & 97% MOD AASHTO IN 150mm LAYERS WHERE THE PIPE IS LOCATED UNDER A PAVED ROAD SURFACE.
15. ALL PIPEWORK, VALVES AND FITTING SHALL COMPLY WITH PROJECT SPECIFICATION.
16. DIMENSIONS OF ALL PIPES, FITTINGS AND SPECIALS SCHEDULED ABOVE ARE FOR INFORMATION PURPOSES ONLY AND TO BE VERIFIED ON SITE PRIOR TO MANUFACTURE.
17. THE USE OF PROPRIETARY NAMES IN NO WAY INDICATES PREFERENCE FOR A PARTICULAR PRODUCT. RATHER, THIS USAGE IS TO ILLUSTRATE TO THE TENDERER THE TYPE AND NATURE OF PRODUCT SOUGHT BY METRO WATER. EQUIPMENT WITH SIMILAR MATERIALS OF CONSTRUCTIONS, SIMILAR FUNCTIONALITY AND NO MATERIAL DEVIATION FROM THE PRODUCT USED FOR ILLUSTRATIVE PURPOSES WILL BE DEEMED TO BE "SIMILAR APPROVED".

COATING AND LINING NOTES:

TO METRO WATER PARTICULAR SPECIFICATION FOR:

- " MANUFACTURE, DELIVERY, STORAGE, COATING AND LINING OF STEEL AND STAINLESS STEEL PIPE FITTINGS AND SPECIALS AND PROTECTION OF FIELD JOINTS FROM DN200 UP TO DN2200"
- "MANUFACTURE, SUPPLY, DELIVERY, HANDLING AND STORAGE OF DN200 TO DN2200 COATED AND LINED STEEL PIPE"

18. SURFACE PREPARATION - FOR APPLICATION OF CORROSION PROTECTION MATERIALS SHALL BE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
19. LINING/COATING TO MILD STEEL PIPING GREATER THAN DN250 (UNLESS OTHERWISE STATED): TO A MINIMUM DFT OF 400micron, INTERNALLY AND EXTERNALLY APPLIED.
20. MILD STEEL PIPING LESS THAN OR EQUAL TO DN250 TO BE HEAVY DUTY HOT-DIPPED GALVANISED (UNLESS OTHERWISE STATED): TO ISO 1461 AND SANS 121, WITH A HEAVY FILM THICKNESS OF 85 ±10 MICRON, INTERNALLY AND EXTERNALLY APPLIED.
21. PIPE BELOW GROUND, AFTER GALVANISING TO BE WRAPPED WITH A POLYMER MODIFIED BITUMEN COMPOUND LAMINATE TO PVC TAPE WRAP SYSTEM IN ACCORDANCE WITH EWS PARTICULAR SPECIFICATION.
    - 21.1. PIPE ABOVE GROUND, AFTER GALVANISING TO BE WRAPPED WITH AN ACRYLIC PIPELINE TAPE.
22. CEMENT MORTAR LINING TO eTHEKWINI PARTICULAR SPECIFICATIONS. DAMAGED COATING AND LININGS TO BE REPAIRED IN ACCORDANCE WITH SPECIFICATIONS.
23. DAMAGED H.D.G. COATING TO BE REPAIRED WITH 'GALV-O-PATCH' OR SIMILAR APPROVED PRODUCT.
24. ALL BURIED FLANGES, BOLTS AND FLEXIBLE COUPLINGS TO BE PROTECTED BY FILED JOINT COATING SYSTEM IN ACCORDANCE TO EWSPARTICULAR SPECIFICATION AND COMPLETED TAPE WRAPPED.
25. ALL PIPEWORK THROUGH CHAMBER WALLS TO BE WRAPPED POLYMER MODIFIED BITUMEN COMPOUND LAMINATE TO PVC TAPE WRAP SYSTEM IN ACCORDANCE WITH EWS PARTICULAR SPECIFICATION ON EACH SIDE OF THE PUDDLE FLANGE. THIS WRAPPING IS TO EXTEND 150mm BEYOND THE FACE OF THE WALL EACH SIDE. PUDDLE FLANGE/ PLATE NOT TO BE WRAPPED.
26. DAMAGED COATINGS AND LININGS SHALL BE REPAIRED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
27. ALL PIPEWORK AND SPECIALS TO BE COATED AND LINED AS PER THE PROJECT SPECIFICATIONS UNLESS OTHERWISE STATED.
28. ALL JOINTS SHALL BE COATED, PROTECTED AND WRAPPED AS PER THE PROJECT SPECIFICATIONS.

NB:

29. ALL CERTIFICATES SHALL BE PROVIDED FOR ALL MATERIALS
30. ALL WELDING TO BE API 1104.
31. ALL WELDS TO BE 100% TESTED.

DN450 PIPEWORK AND FITTINGS SCHEDULE (PN16)

ITEM NO	NOM DIA	DESCRIPTION	DIMENSIONS (mm)				No. OF
			A	B	C	F/F	
1	DN450 x DN300	FABRICATED REDUCING TEE, F.A.R. CF = 607mm (CF TO SUIT INVERT OF PIPE)				1220	1
2	DN300	BLANK FLANGE WITH DN50 TAPPED HOLE CENTRALLY PLACED.					1
3	DN50	SS PIPE MxM THREADED BOTH ENDS					1
4	DN50	BALL-O-STOP FxF					1
5	DN50	DOUBLE ACTING AIR VALVE WITH THREADED MALE CONNECTION.					1
6	DN450	FLANGE					2

NOTES:
ALL SPECIALS TO BE EPOXY COATED & LINED (S.F.E) TO PROJECT SPECIFICATIONS UNLESS OTHERWISE STATED.
ALL PIPE TO BE GRADE X42, 4.5mm THICK.
ALL FLANGES TO BE TO TABLE 1600/3 (SANS 1123 - 2011).
IF FACE TO FACE DIMENSION OF FITTINGS DIFFER TO ACTUAL, THE CONTRACTOR MUST INFORM THE ENGINEER PRIOR TO PIPE FABRICATION.

eTHEKWINI WATER SERVICES

WATER DESIGN BRANCH

ETHEKWINI MUNICIPALITY

REDUCED PLAN USE SCALE BELOW

0 10 20 30 40 50 60 70

70mm ON ORIGINAL PLAN

CONSULTANT:

NAIDU CONSULTING

1st Floor
No.5, The Boulevard
West Way Office Park
Westville, Durban
Tel : +27 (0) 31 265 6007
Fax : +27 (0) 31 265 6011
Email: info@naiduconsulting.com

26/09/2025

Drawing No.: D724-52-5257- REV 0

FOR TENDER

REFERENCE DRAWINGS (D724-52-...)

DWG No.	TITLE/DESCRIPTION
1000	SITE LAYOUT
1001	EARTHWORKS LAYOUT
1002	EARTHWORKS SECTIONS
1003	EARTHWORKS SECTIONS
5100	WATER PIPELINE LONG SECTIONS
5250	RESERVOIR 1 VALVE CHAMBERS
5251	RESERVOIR 2 VALVE CHAMBERS
5252	DN350 METER CHAMBER
5253	DN400 METER CHAMBER
5254	DN300 METER CHAMBER
5255	CROSS CONNECTION CHAMBER
5256	DN300 INLET CHAMBER (RESERVOIR 2)
5257	AIR VALVE CHAMBER DETAILS
5258	TYPICAL VALVE CHAMBER DETAILS
4000	STORMWATER LAYOUT
4250	STORMWATER DETAILS
4100	STORMWATER PIPELINE LONG SECTIONS
STANDARD DRAWINGS	
5400	ACCESS GATE AND FENCE DETAILS
5401	MANHOLE COVER DETAILS
5402	GRP ACCESS LADDER DETAILS
5403	TRENCH DETAILS
5404	STEEL DOOR AND AIR VENT DETAILS

Revision	Date	Descrption
0	09 / 2025	ISSUED FOR TENDER

Contract No.: 32547 - 5W

Project No.: X8388

Planning Unit: Water & Sanitation Unit

Ward No.: 64

Project Title:

MOBENI 2 RESERVOIR ASSOCIATED WORKS

Drawing Title:

TYPICAL DN50 AIR VALVE ASSEMBLY ON DN450 WATER PIPELINE & CHAMBER DETAILS

Scales : As Shown

Paper Size : A1

Designed : T. Moodley | Date : 09/2025

Checked : A. Goorun | Drawn : T. Moodley

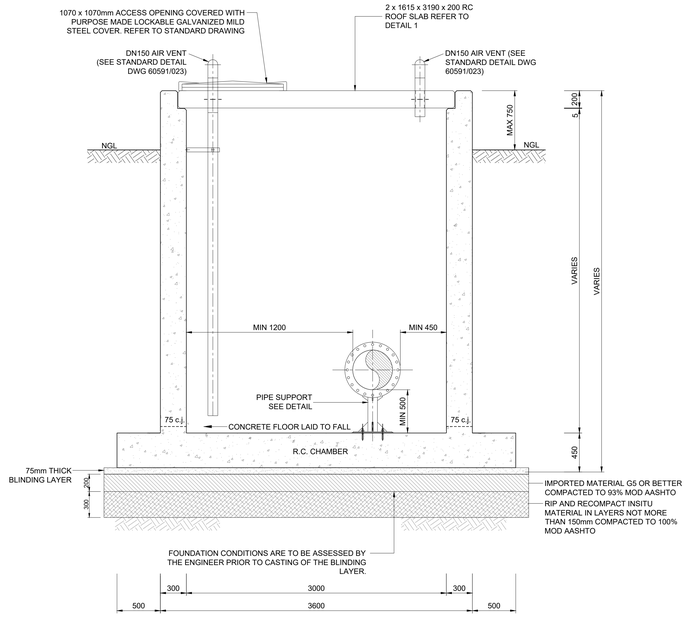
Area Engineer (W.O)

Manager (W.D.)

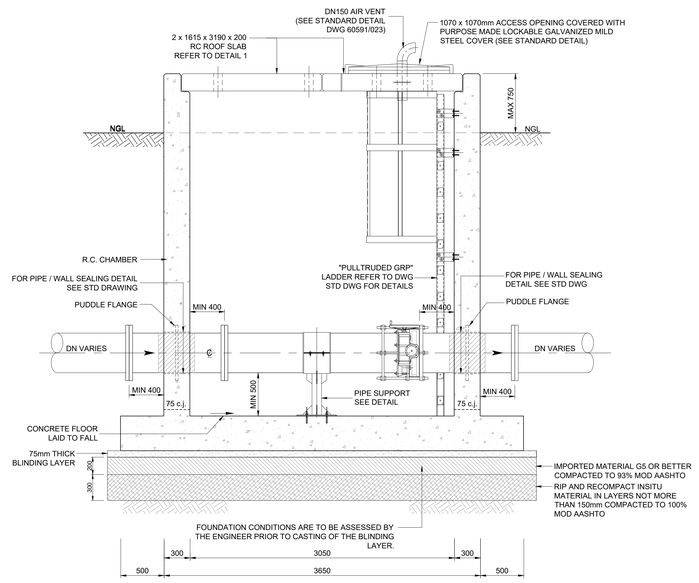
Director (Water)

E.Msweli - Head:Water & Sanitation Unit

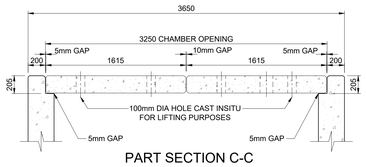
Drawing No.: 60591/013 | Sheet: 1 of 1 | Rev.: 0



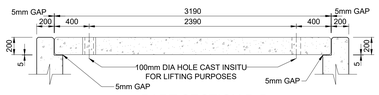
SECTION B-B
SCALE 1:25



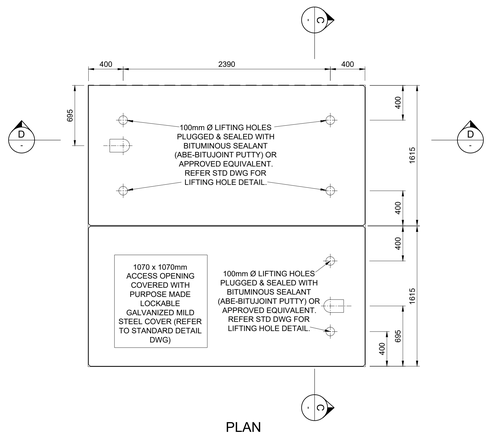
SECTION A-A
SCALE 1:25



PART SECTION C-C
THROUGH ROOF SLAB

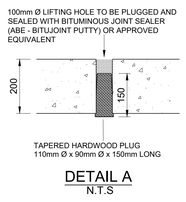


PART SECTION D-D
THROUGH ROOF SLAB

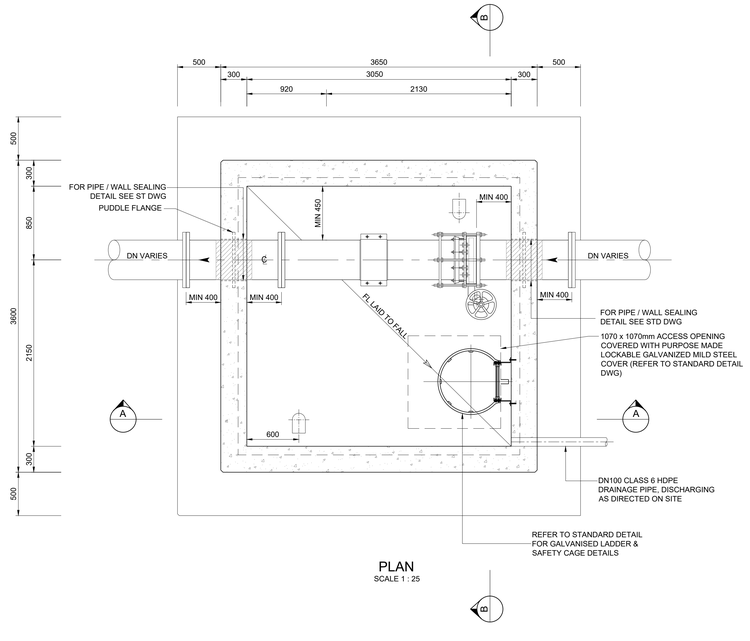


PLAN

DETAIL 1
ROOF SLAB DETAIL
(ISOLATING VALVE CHAMBER)
SCALE 1 : 25



DETAIL A
N.T.S



PLAN
SCALE 1 : 25

PIPEWORK NOTES:

1. ALL PIPEWORK TO BE MILD STEEL UNLESS OTHERWISE STATED. ALL MATERIAL TO BE SANS APPROVED.
2. THE CONTRACTOR SHALL VERIFY THE DIMENSIONS OF ALL PIPEWORK AND ADVISE THE ENGINEER OF ANY DISCREPANCIES PRIOR TO FABRICATION.
3. ALL FLANGES AND RESTRAINING FLANGES SHALL BE RATED AND DRILLED TO SANS 1123, TABLE AS SPECIFIED IN PIPEWORK AND FITTINGS SCHEDULE.
   - 3.1. THRUST PUDDLE FLANGES SHALL MATCH PIPEWORK FLANGES TO SANS 1123 AND SHALL BE UNDRILLED.
   - 3.2. WHERE PUDDLE PLATES ARE REQUIRED OVER THRUST PUDDLE FLANGES, THE THICKNESS AND OUTSIDE DIAMETER SHALL BE SPECIFIED IN PIPEWORK AND FITTINGS SCHEDULE.
   - 3.3. ENSURE THERE IS AT LEAST 75mm COVER BETWEEN THE REINFORCING BARS AND PUDDLE FLANGE/ PLATE.
4. ALL BOLTS AND TIE BOLTS TO BE GRADE 4.8. BOLTS, NUTS AND WASHERS SHALL BE HOT DIPPED GALVANISED TO SANS 121/ ISO 1461, WITH A HEAVY FILM THICKNESS OF 85 ±10 MICRON.
5. ALL MILD STEEL ITEMS (APART FROM PIPING/PIPE FITTINGS) TO BE HEAVY DUTY HOT DIPPED GALVANIZED TO ISO 1461 AND SANS 121,WITH A HEAVY FILM THICKNESS OF 85 ±10 MICRO INTERNALLY AND EXTERNALLY APPLIED.
6. ALL PIPE FITTINGS TO BE CHECKED ON SITE, ANY DISCREPANCIES TO BE REPORTED TO THE ENGINEER PRIOR TO INSTALLATION.
7. ALL PIPES LESS THAN OR EQUAL TO DN150 TO BE FABRICATED IN ACCORDANCE WITH SANS 62 - 1 (MEDIUM CLASS) UNLESS OTHERWISE SPECIFIED.
8. ALL MILD STEEL PIPEWORK AND FITTINGS GREATER THAN DN150 TO BE FABRICATED IN ACCORDANCE WITH SANS 719 EDITION 3.1 2008 AND WELDED IN ACCORDANCE WITH API 1104. PIPEWORK GRADE AND WALL THICKNESS SHALL MATCH SCHEDULE OF FITTINGS TABLE.
9. ALL STAINLESS STEEL PIPE AND FITTINGS TO BE GRADE 316L AND WALL THICKNESS SHALL MATCH SCHEDULE OF FITTINGS TABLE.
10. RESTRAINING FLANGE ADAPTOR USE MINIMUM 4. No GRADE 4.8 RESTRAINING BOLTS, EQUALLY SPACED AROUND CIRCUMFERENCE OF FLANGES UNLESS OTHER SHOWN UNDER ITEM DESCRIPTION. NOTE: ALL THE BOLTS FROM THE FLANGE ON THE VALVE ADJACENT TO A RESTRAINING FLANGE TO BE TAKEN THROUGH TO THE RESTRAINING FLANGE WITH NUTS AND WASHERS BOTH SIDES OF RESTRAINING FLANGE.
11. ALL BURIED FLANGES TO BE CATHODICALLY BONDED INSULATED CABLE THERMALLY WELDED TO PIPE AS DIRECTED BY CATHODIC SPECIALIST .
12. THE PRESSURE RATINGS OF ALL PIPEWORK, FITTINGS, FLANGES, VALVES & METERS SHALL BE AS INDICATED IN THE SCHEDULES OF FITTINGS.
13. ALL MILD STEEL PIPEWORK, COLLARS, WRAPPERS AND CROTCH PLATES TO BE MANUFACTURED FROM MINIMUM GRADE X42 STEEL AND WELDED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
14. BACKFILL MATERIAL TO BE COMPACTED TO 95% MOD. AASHTO IN MAX. 150mm LAYERS & 97% MOD AASHTO IN 150mm LAYERS WHERE THE PIPE IS LOCATED UNDER A PAVED ROAD SURFACE.
15. ALL PIPEWORK, VALVES AND FITTING SHALL COMPLY WITH PROJECT SPECIFICATION.
16. DIMENSIONS OF ALL PIPES, FITTINGS AND SPECIALS SCHEDULED ABOVE ARE FOR INFORMATION PURPOSES ONLY AND TO BE VERIFIED ON SITE PRIOR TO MANUFACTURE.
17. THE USE OF PROPRIETARY NAMES IN NO WAY INDICATES PREFERENCE FOR A PARTICULAR PRODUCT. RATHER, THIS USAGE IS TO ILLUSTRATE TO THE TENDERER THE TYPE AND NATURE OF PRODUCT SOUGHT BY METRO WATER. EQUIPMENT WITH SIMILAR MATERIALS OF CONSTRUCTIONS, SIMILAR FUNCTIONALITY AND NO MATERIAL DEVIATION FROM THE PRODUCT USED FOR ILLUSTRATIVE PURPOSES WILL BE DEEMED TO BE "SIMILAR APPROVED".

COATING AND LINING NOTES:

TO METRO WATER PARTICULAR SPECIFICATION FOR:

- " MANUFACTURE, DELIVERY, STORAGE, COATING AND LINING OF STEEL AND STAINLESS STEEL PIPE FITTINGS AND SPECIALS AND PROTECTION OF FIELD JOINTS FROM DN200 UP TO DN2200"
- "MANUFACTURE, SUPPLY, DELIVERY, HANDLING AND STORAGE OF DN200 TO DN2200 COATED AND LINED STEEL PIPE"

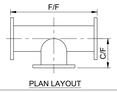
18. SURFACE PREPARATION - FOR APPLICATION OF CORROSION PROTECTION MATERIALS SHALL BE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
19. LINING/COATING TO MILD STEEL PIPING GREATER THAN DN250 (UNLESS OTHERWISE STATED): TO A MINIMUM DFT OF 400micron, INTERNALLY AND EXTERNALLY APPLIED.
20. MILD STEEL PIPING LESS THAN OR EQUAL TO DN200 TO BE HEAVY DUTY HOT-DIPPED GALVANISED (UNLESS OTHERWISE STATED): TO ISO 1461 AND SANS 121, WITH A HEAVY FILM THICKNESS OF 85 ±10 MICRON, INTERNALLY AND EXTERNALLY APPLIED.
21. PIPE BELOW GROUND, AFTER GALVANISING TO BE WRAPPED WITH A POLYMER MODIFIED BITUMEN COMPOUND LAMINATE TO PVC TAPE WRAP SYSTEM IN ACCORDANCE WITH EWS PARTICULAR SPECIFICATION.
    - 21.1. PIPE ABOVE GROUND, AFTER GALVANISING TO BE WRAPPED WITH AN ACRYLIC PIPELINE TAPE.
22. CEMENT MORTAR LINING TO eTHEKWINI PARTICULAR SPECIFICATIONS. DAMAGED COATING AND LININGS TO BE REPAIRED IN ACCORDANCE WITH SPECIFICATIONS.
23. DAMAGED H.D.G. COATING TO BE REPAIRED WITH 'GALV-O-PATCH' OR SIMILAR APPROVED PRODUCT.
24. ALL BURIED FLANGES, BOLTS AND FLEXIBLE COUPLINGS TO BE PROTECTED BY FILED JOINT COATING SYSTEM IN ACCORDANCE TO EWSPARTICULAR SPECIFICATION AND COMPLETED TAPE WRAPPED.
25. ALL PIPEWORK THROUGH CHAMBER WALLS TO BE WRAPPED POLYMER MODIFIED BITUMEN COMPOUND LAMINATE TO PVC TAPE WRAP SYSTEM IN ACCORDANCE WITH EWS PARTICULAR SPECIFICATION ON EACH SIDE OF THE PUDDLE FLANGE. THIS WRAPPING IS TO EXTEND 150mm BEYOND THE FACE OF THE WALL EACH SIDE. PUDDLE FLANGE/ PLATE NOT TO BE WRAPPED.
26. DAMAGED COATINGS AND LININGS SHALL BE REPAIRED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
27. ALL PIPEWORK AND SPECIALS TO BE COATED AND LINED AS PER THE PROJECT SPECIFICATIONS UNLESS OTHERWISE STATED.
28. ALL JOINTS SHALL BE COATED, PROTECTED AND WRAPPED AS PER THE PROJECT SPECIFICATIONS.

NB:

29. ALL CERTIFICATES SHALL BE PROVIDED FOR ALL MATERIALS
30. ALL WELDING TO BE API 1104.
31. ALL WELDS TO BE 100% TESTED.

ABBREVIATIONS :

ID	-	INSIDE DIAMETER
DN	-	DIAMETER NOMINAL
OD	-	OUTSIDE DIAMETER
MS	-	MILD STEEL
SS	-	STAINLESS STEEL
SFE	-	SOLVENT FREE EPOXY
FBE	-	FUSION BONDED EPOXY
CML	-	CEMENT MORTAR LINED
SNT	-	SINTAKOTE
RSN	-	RILSAN
F/F	-	FACE TO FACE DIMENSION
C/F	-	CENTER TO FACE DIMENSION
FOE	-	FLANGED ONE END
BEF	-	BOTH ENDS FLANGED
FAR	-	FLANGED ALL ROUND
LRB	-	LONG RADIUS BEND
MRB	-	MEDUM RADIUS BEND
SRB	-	SHORT RADIUS BEND
HDG	-	HOT DIPPED GALVANIZED
P.E.C	-	PLAIN ENDED COATED
P.F	-	PUDDLE FLANGE
P.T	-	PUDDLE PLATE
R.F	-	RESTRAINING FLANGE
FRL	-	FINAL ROAD LEVEL
NGL	-	NATURAL GROUND LEVEL
FFL	-	FINISH FLOOR LEVEL



PLAN LAYOUT

CONCRETE AND GENERAL NOTES

A. ALL LEVELS TO BE CONFIRMED ON SITE.
B. ENGINEER TO INSPECT AND APPROVE FOUNDING MATERIAL BEFORE BLINDING IS CAST.
C. ALL EXPOSED EDGES ARE CHAMFERED 25x25.
D. GENERAL COVER TO ALL REINFORCING IS 50mm.
E. ENSURE THERE IS AT LEAST 75mm COVER BETWEEN THE REINFORCING BARS AND PUDDLE FLANGE.
F. CONSTRUCTION JOINTS ARE WELL CLEANED & SCABBLED TO EXPOSE FRESH AGGREGATE AND THOROUGHLY WETTED BEFORE THE NEXT LIFT IS POURED. CONSTRUCTION JOINTS TO HAVE SIKASWELL S-2 OR SIMILAR APPROVED BEAD CENTRALLY PLACED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
G. CONCRETE DISTANCE BLOCKS FOR POSITIONING REINFORCEMENT NEED TO BE MADE AT LEAST 3 WEEKS PRIOR TO REINFORCEMENT BEING FIXED, IN ORDER TO ALLOW FOR SUFFICIENT MOIST-CURING TIME.
H. NO ACCESS OPENINGS OTHER THAN THOSE INDICATED ON DRAWINGS WILL BE ALLOWED.
I. NO WIRE TIES BETWEEN WALL SHUTTERS WILL BE PERMITTED. FERRULE HOLES TO BE FREE OF FORMERS WITHIN 40mm OF SHUTTER.
J. WORKING SPACE AROUND THE CHAMBER NOT TO EXCEED 1000mm.
K. REINFORCED CONCRETE SHALL BE WATERTIGHT TO SABS 1200G 5.5.11
L. CONCRETE GRADE
   - BLINDING : 15/19
   - MASS CONCRETE : 20/19
   - CONCRETE OTHERWISE STATED : 25/19 UNLESS
   - SCREED : 1:3 (CEMENT /SAND)
M. WHERE APPLICABLE, AIR VENTS, LIFTING HOLES, LIFTING HOOKS, STEP IRONS AND DI COVER & FRAME WERE PRE- INSTALLED AT THE MANUFACTURER PRIOR TO DELIVERY ON SITE.
N. BACKFILL MATERIAL AROUND STRUCTURE TO BE COMPACTED TO MINIMUM 95% MODIFIED AASHTO MAXIMUM DENSITY IN MAXIMUM 150mm LAYERS.
O. ON COMPLETION OF THE CHAMBERS, PAINT ALL EXPOSED ABOVE GROUND CHAMBER WALLS AND ROOF SLABS WITH 2 COATS OF WHITE ROAD MARKING PAINT. THEREAFTER, STENCIL ON THE CHAMBER IDENTIFICATION NUMBER TO BE ADVISED BY THE ENGINEER.
P. SIGNAGE INSTRUCTIONS FOR USE 800 x 600 HEAVY DUTY PVC SIGN BOARD FIXED TO THE INSIDE OF THE CHAMBER AS PER THE ENGINEERS INSTRUCTIONS

ETHEKWINI WATER AND SANITATION

WATER DESIGN BRANCH

REDUCED PLAN USE SCALE BELOW

0 10 20 30 40 50 60 70

70mm ON ORIGINAL PLAN

CONSULTANT:

NAIDU CONSULTING
1st Floor
No.5, The Boulevard
West Way Office Park
Westville, Durban
Tel : +27 (0) 31 265 6007
Fax : +27 (0) 31 265 6011
Email: info@naiduconsulting.com

26/09/2025

Drawing No.: D724-51- 5258 REV 0

FOR TENDER

REFERENCE DRAWINGS (D724-52-...)

DWG No.	TITLE/DESCRIPTION
1000	SITE LAYOUT
1001	EARTHWORKS LAYOUT
1002	EARTHWORKS SECTIONS
1003	EARTHWORKS SECTIONS
5100	WATER PIPELINE LONG SECTIONS
5250	RESERVOIR 1 VALVE CHAMBERS
5251	RESERVOIR 2 VALVE CHAMBERS
5252	DN350 METER CHAMBER
5253	DN400 METER CHAMBER
5254	DN300 METER CHAMBER
5255	CROSS CONNECTION CHAMBER
5256	DN300 INLET CHAMBER (RESERVOIR 2)
5257	AIR VALVE CHAMBER DETAILS
5258	TYPICAL VALVE CHAMBER DETAILS
4000	STORMWATER LAYOUT
4250	STORMWATER DETAILS
4100	STORMWATER PIPELINE LONG SECTIONS
STANDARD DRAWINGS	
5400	ACCESS GATE AND FENCE DETAILS
5401	MANHOLE COVER DETAILS
5402	GRP ACCESS LADDER DETAILS
5403	TRENCH DETAILS
5404	STEEL DOOR AND AIR VENT DETAILS

Revision	Date	Description
0	09 / 2025	ISSUED FOR TENDER

Contract No. 32547 - 5W

Project No. X8388

Planning Unit: WATER AND SANITATION

Ward No.: 64

Project Title: MOBENI 2 RESERVOIR ASSOCIATED WORKS

Drawing Title: TYPICAL VALVE CHAMBER DETAILS

Scale : As Shown	Paper Size : A0
Designed : T. Moodley	Date : 09/2025
Checked : A. Goorun	Drawn: T. Moodley

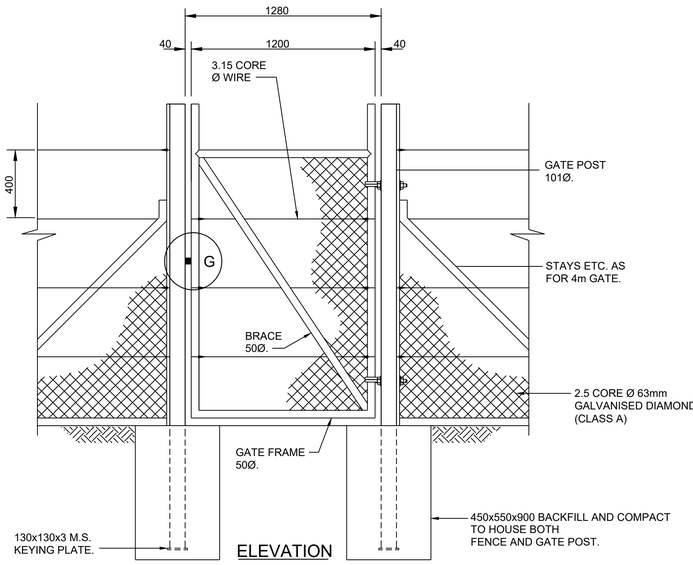
Area Engineer

Manager (Water Design)

Deputy Head (Engineering)

E. MSWELI - Head (W & S)

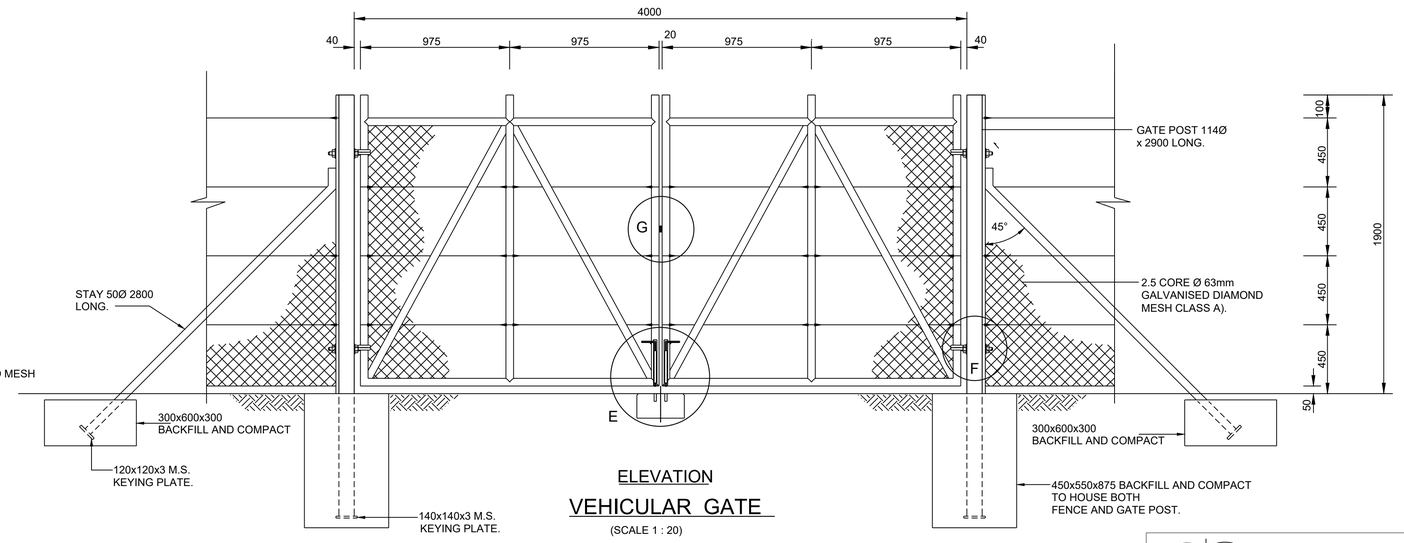
Drawing No. 60591/014 | Sheet 1/1 | Rev. 0



ELEVATION

PEDESTRIAN GATE

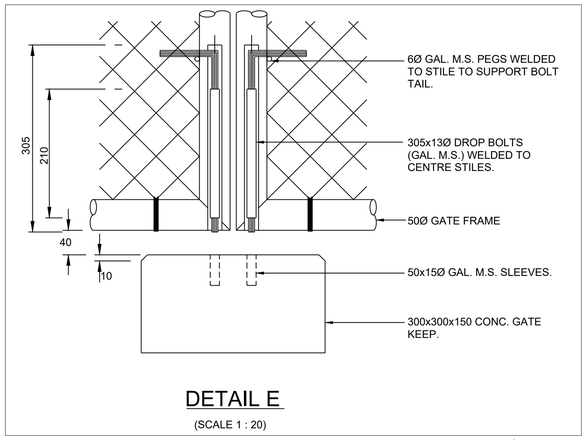
(SCALE 1 : 20)



ELEVATION

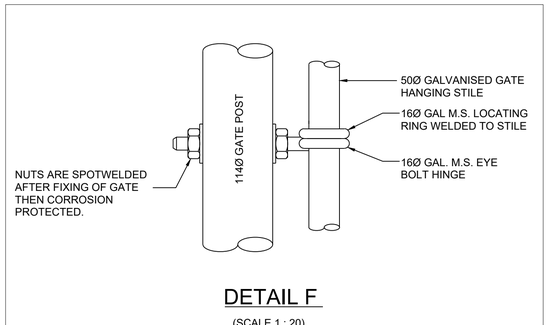
VEHICULAR GATE

(SCALE 1 : 20)



DETAIL E

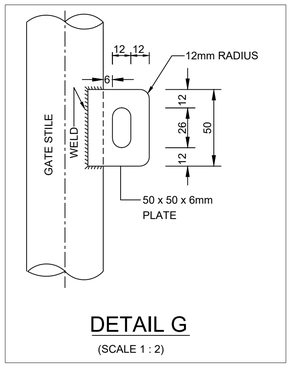
(SCALE 1 : 20)



DETAIL F

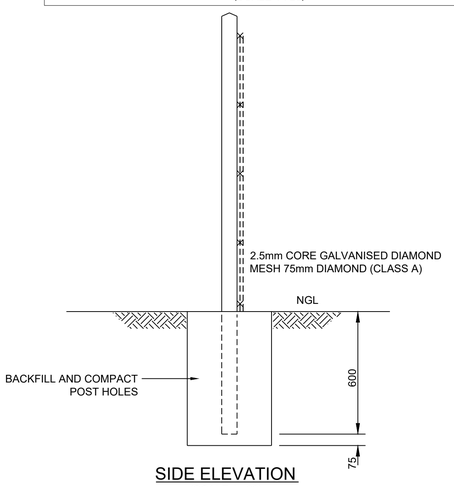
(SCALE 1 : 20)

ALL METAL IS HOT-DIP GALVANISED.



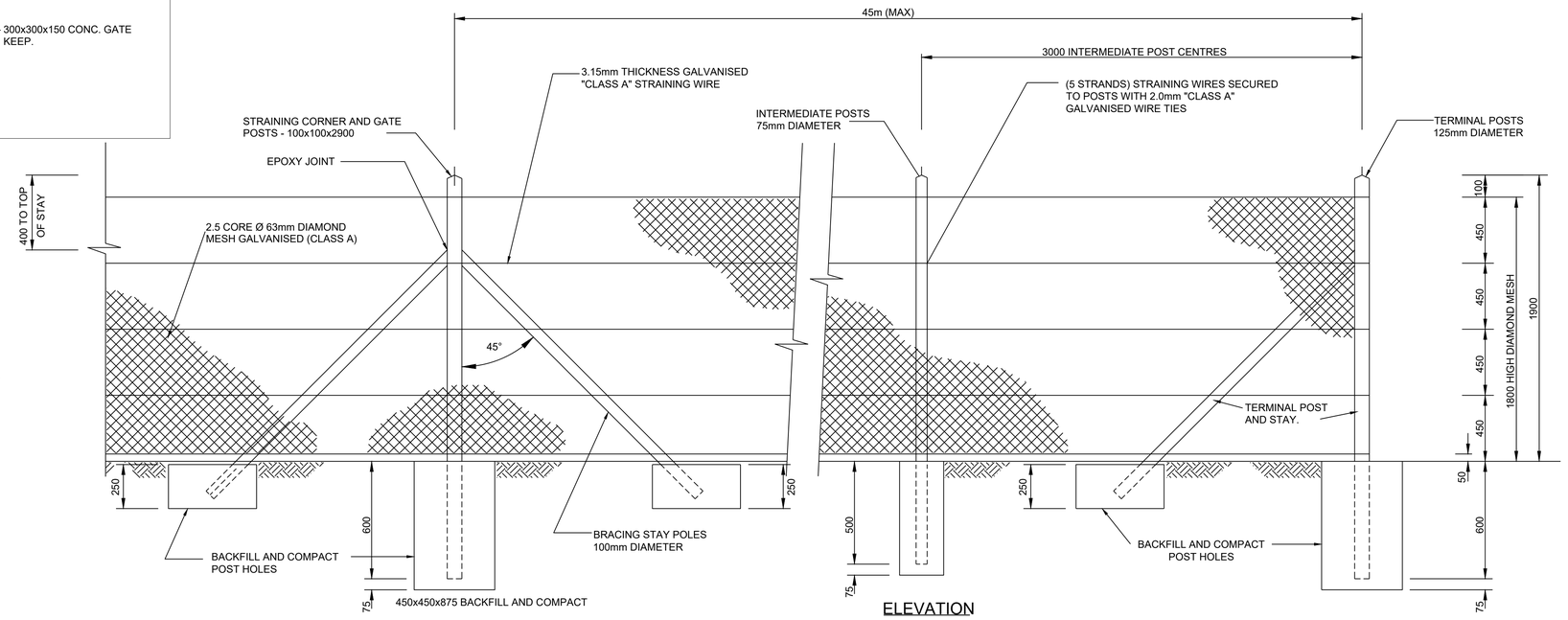
DETAIL G

(SCALE 1 : 2)



SIDE ELEVATION

(SCALE 1 : 20)



ELEVATION

WIRE MESH FENCE

(SCALE 1 : 20)

eTHEKWINI WATER
SERVICES

WATER DESIGN BRANCH

ETHEKWINI MUNICIPALITY

REDUCED PLAN USE SCALE BELOW

0 10 20 30 40 50 60 70

70mm ON ORIGINAL PLAN

CONSULTANT:

NAIDU CONSULTING

1st Floor
No.5, The Boulevard
West Way Office Park
Westville, Durban
Tel : +27 (0) 31 265 6007
Fax : +27 (0) 31 265 6011
Email: info@naiduconsulting.com

26/09/2025

Drawing No.: D724-52-5400- REV 0

FOR TENDER

REFERENCE DRAWINGS (D724-52-...)

DWG No.	TITLE/DESCRIPTION
1000	SITE LAYOUT
1001	EARTHWORKS LAYOUT
1002	EARTHWORKS SECTIONS
1003	EARTHWORKS SECTIONS
5100	WATER PIPELINE LONG SECTIONS
5250	RESERVOIR 1 VALVE CHAMBERS
5251	RESERVOIR 2 VALVE CHAMBERS
5252	DN350 METER CHAMBER
5253	DN400 METER CHAMBER
5254	DN300 METER CHAMBER
5255	CROSS CONNECTION CHAMBER
5256	DN300 INLET CHAMBER (RESERVOIR 2)
5257	AIR VALVE CHAMBER DETAILS
5258	TYPICAL VALVE CHAMBER DETAILS
4000	STORMWATER LAYOUT
4250	STORMWATER DETAILS
4100	STORMWATER PIPELINE LONG SECTIONS
STANDARD DRAWINGS	
5400	ACCESS GATE AND FENCE DETAILS
5401	MANHOLE COVER DETAILS
5402	GRP ACCESS LADDER DETAILS
5403	TRENCH DETAILS
5404	STEEL DOOR AND AIR VENT DETAILS

Revision	Date	Description
0	09 / 2025	ISSUED FOR TENDER
A	07 / 2025	ISSUED FOR INFORMATION

Contract No.: 32547 - 5W

Project No.: X8388

Planning Unit: Water & Sanitation Unit

Ward No.: 64

Project Title:

MOBENI 2 RESERVOIR ASSOCIATED WORKS

Drawing Title:

STANDARD DETAILS DIAMOND RAZOR WIRE MESH FENCE DETAIL

Scales : As Shown
Paper Size : A1
Designed : T. Moodley | Date : 09/2025
Checked : A. Gorun | Drawn : N. Adams

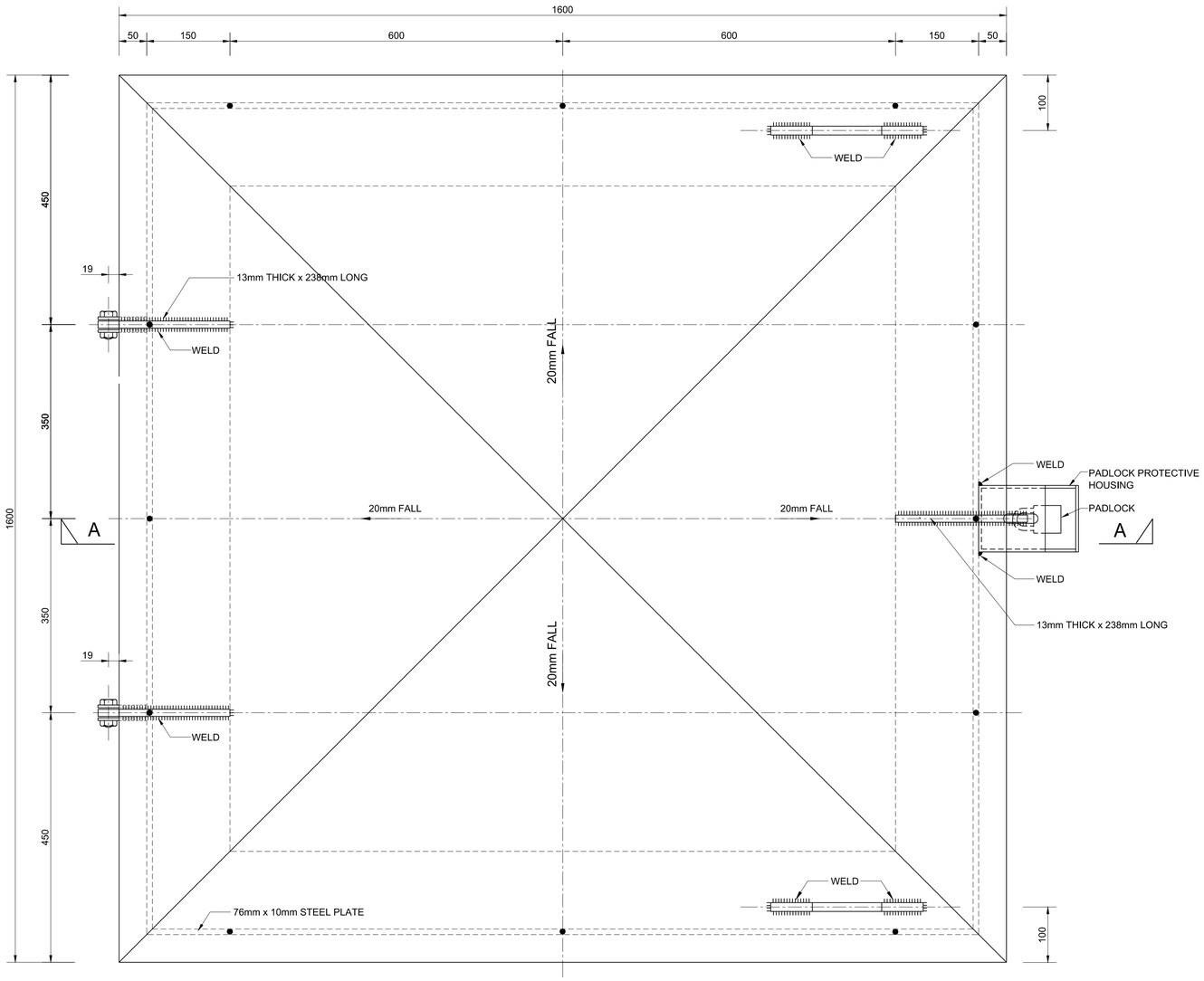
Area Engineer (W.O)

Manager (W.D.)

Director (Water)

E.Msweli - Head:Water & Sanitation Unit

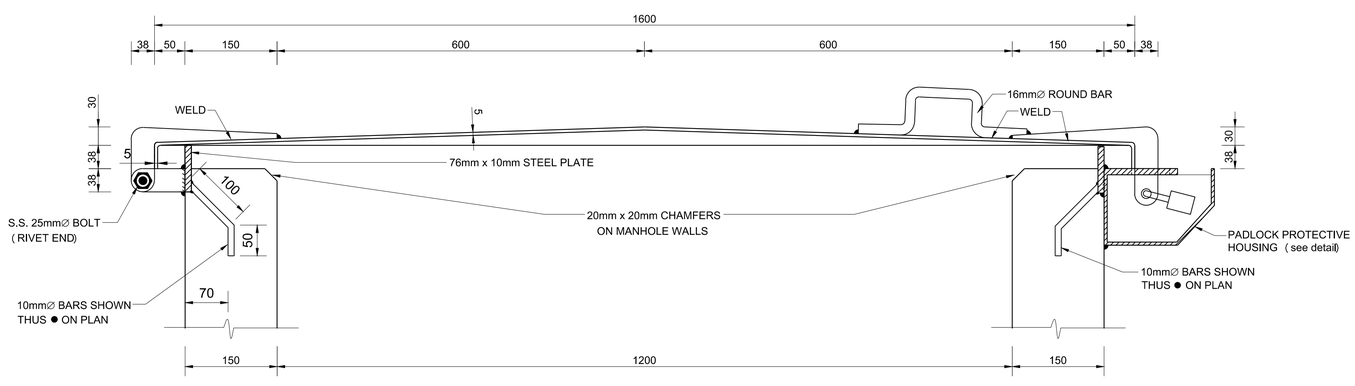
Drawing No. 60591/018 | Sheet 1 of 1 | Rev. 0



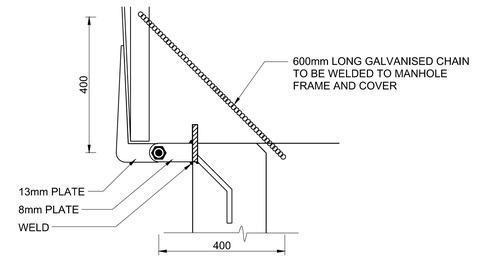
PLAN
SCALE 1:5

NOTE:

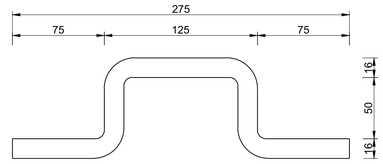
1. FRAME AND COVER TO BE MANUFACTURED FROM HOT DIP GALVANISED MILD STEEL
2. ALL WELDS 6mm FILLET.



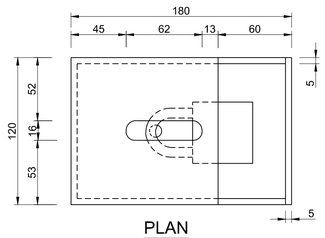
SECTION A - A
SCALE 1:5



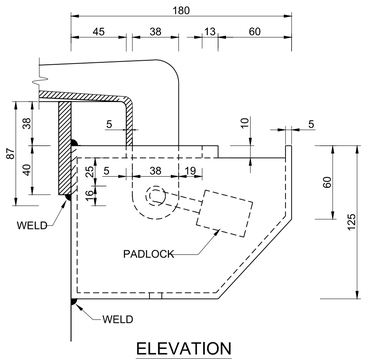
DETAIL SHOWING CHAIN
N.T.S.



DETAIL OF HANDLE (2 OFF)
SCALE 1:2



PLAN



ELEVATION

DETAIL OF PADLOCK PROTECTIVE HOUSING
SCALE 1:2

eTHEKWINI WATER SERVICES

WATER DESIGN BRANCH

REDUCED PLAN USE SCALE BELOW

0 10 20 30 40 50 60 70

70mm ON ORIGINAL PLAN

CONSULTANT:

NAIDU CONSULTING
1st Floor
No.5, The Boulevard
West Way Office Park
Westville, Durban
Tel : +27 (0) 31 265 6007
Fax : +27 (0) 31 265 6011
Email: info@naiduconsulting.com

26/09/2025

Drawing No.: D724-52-5401- REV 0

FOR TENDER

REFERENCE DRAWINGS (D724-52-...)

DWG No.	TITLE/DESCRIPTION
1000	SITE LAYOUT
1001	EARTHWORKS LAYOUT
1002	EARTHWORKS SECTIONS
1003	EARTHWORKS SECTIONS
5100	WATER PIPELINE LONG SECTIONS
5250	RESERVOIR 1 VALVE CHAMBERS
5251	RESERVOIR 2 VALVE CHAMBERS
5252	DN350 METER CHAMBER
5253	DN400 METER CHAMBER
5254	DN300 METER CHAMBER
5255	CROSS CONNECTION CHAMBER
5256	DN300 INLET CHAMBER (RESERVOIR 2)
5257	AIR VALVE CHAMBER DETAILS
5258	TYPICAL VALVE CHAMBER DETAILS
4000	STORMWATER LAYOUT
4250	STORMWATER DETAILS
4100	STORMWATER PIPELINE LONG SECTIONS
STANDARD DRAWINGS	
5400	ACCESS GATE AND FENCE DETAILS
5401	MANHOLE COVER DETAILS
5402	GRP ACCESS LADDER DETAILS
5403	TRENCH DETAILS
5404	STEEL DOOR AND AIR VENT DETAILS

Revision	Date	Description
0	09 / 2025	ISSUED FOR TENDER
A	07 / 2025	ISSUED FOR INFORMATION

Contract No.: 32547 - 5W

Project No.: X8388

Planning Unit: Water & Sanitation Unit

Ward No.: 64

Project Title:
MOBENI 2 RESERVOIR ASSOCIATED WORKS

Drawing Title:
STANDARD DETAILS HINGED MILD STEEL COVER AND FRAME FOR 1200 x 1200mm OPENING

Scales : As Shown
Paper Size : A1
Designed : T. Moodley
Date : 09/2025
Checked : A. Goorun
Drawn : N. Adams

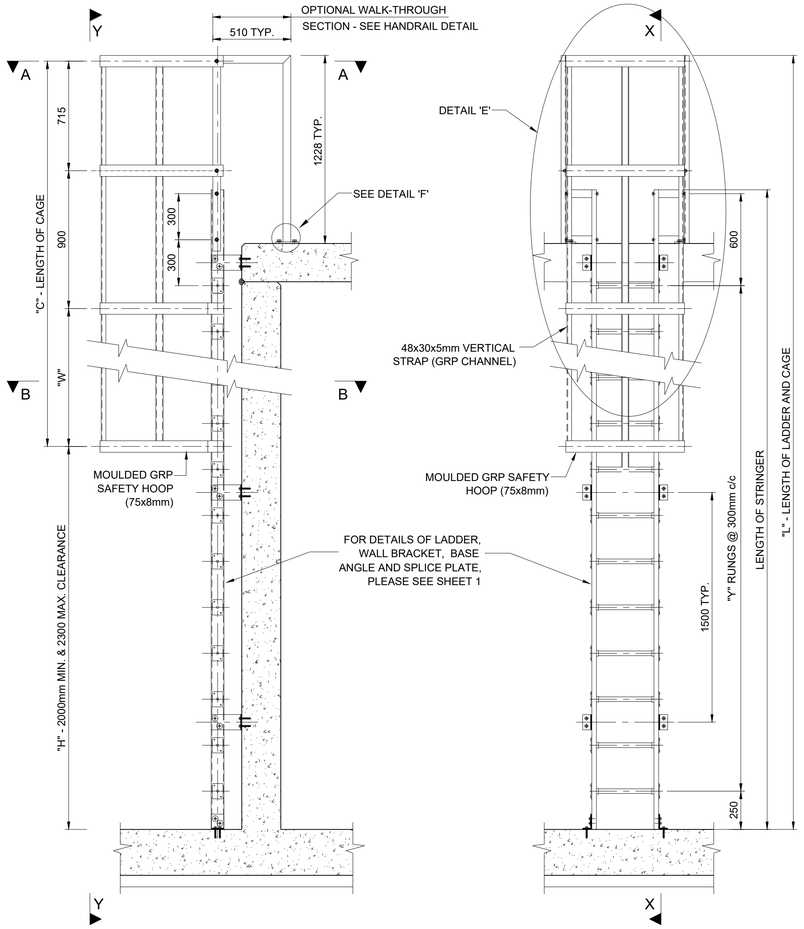
Area Engineer (W.O)

Manager (W.D.)

Director (Water)

E.Msweli - Head:Water & Sanitation Unit

Drawing No.: 60591/019
Sheet: 1 of 1
Rev.: 0

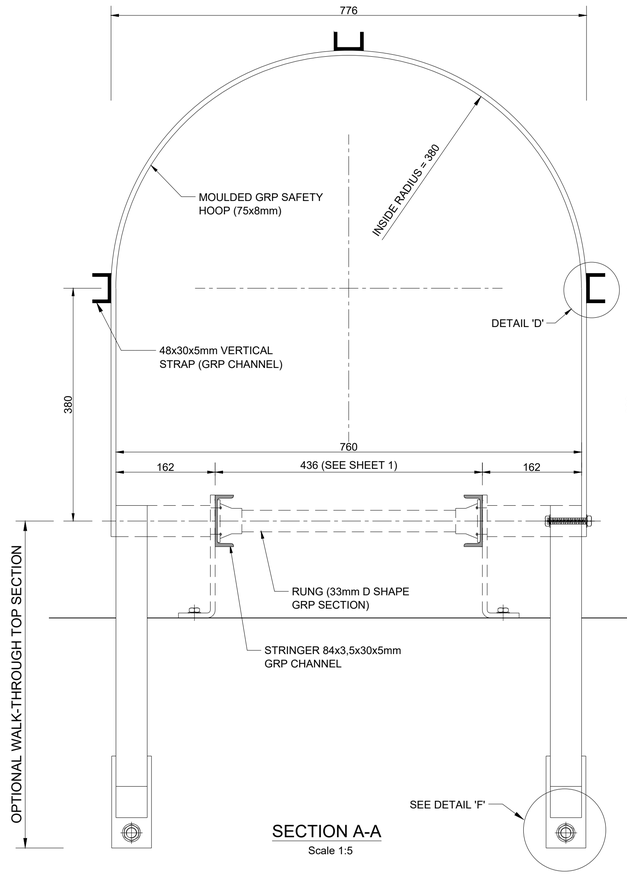


SECTION X-X

SECTION Y-Y

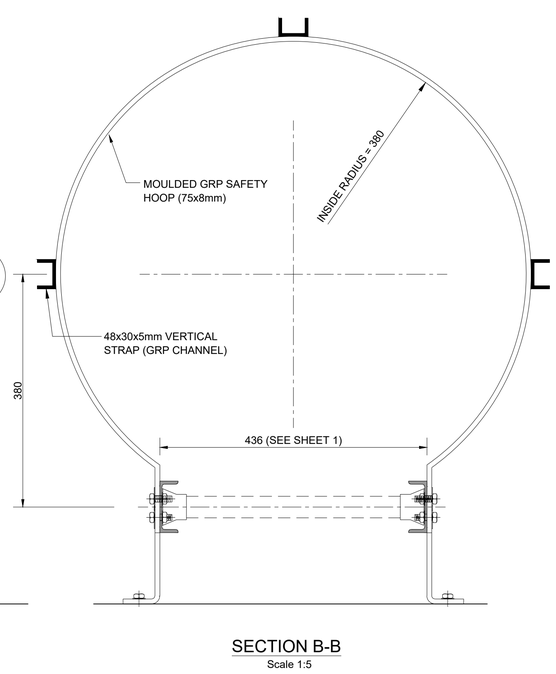
SECTIONAL VIEWS ON ACCESS LADDER

Scale 1:20



SECTION A-A

Scale 1:5

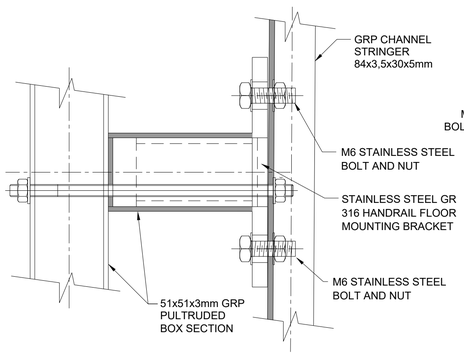


SECTION B-B

Scale 1:5

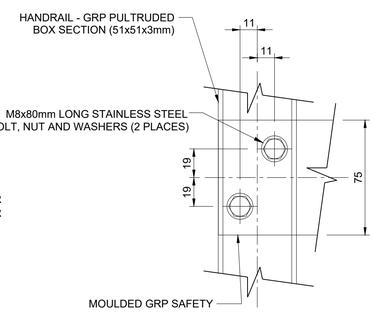
NOTES :

1. FOR DETAILS OF LADDER, WALL BRACKETS,BASE ANGLE (IF REQUIRED) AND SPLICE PLATE, PLEASE SEE SHEET 1.
2. THE WALK-THROUGH TOP SECTION FITTED AS AN OPTION WHEN REQUIRED OR AS DIRECTED BY THE ENGINEER / TECHNICIAN.
3. PULTRUDED PROFILES MANUFACTURED WITH AN ISO POLYESTER RESIN AND E-GLASS FIBER.
4. THE COLOUR OF THE STYLES AND CAGE HOOPS ARE GOLDEN YELLOW.
5. THE COLOUR OF THE RUNGS AND THE CAGE STRAPS ARE CLOUD GREY.
6. ALL BOLTS, NUTS AND FENDER WASHERS USED TO MANUFACTURE THE PRODUCT MUST BE STAINLESS STEEL GRADE 316.
7. LEGEND "L" = HEIGHT TO TOP OF FLOOR PLUS 1228mm.
   "C" = ("L" - "H") WHERE "H" = 2000mm MIN. AND 2300mm MAX.
   "W" = 900mm OR 600mm (WHERE 900mm IS TYPICAL HEIGHT AND 600mm IS USED IN ORDER TO AVOID COINCIDENCE BETWEEN SAFETY HOOPS AND WALL BRACKETS.) EXCEPT FOR THE TWO TOPMOST SPACES (715mm & 900mm) WHICH HAVE FIXED HEIGHTS.
8. THE TOTAL NUMBER OF SPACES ("W") BETWEEN SAFETY HOOPS ARE DEPENDENT ON THE LENGTH OF "C".



SECTION Z-Z

Scale 1:2

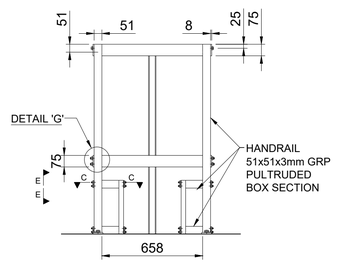


DETAIL 'G'

Scale 1:2

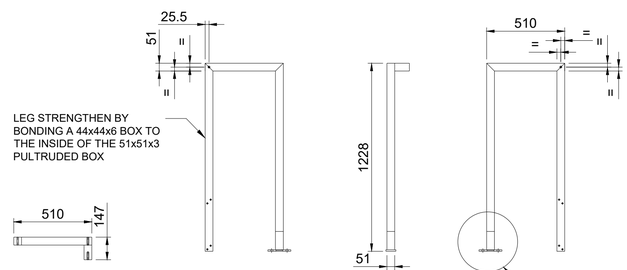
HANDRAIL NOTES :

1. CORNERS JOINED BY INTERNAL INSERTS AND AN EPOXY ADHESIVE.
2. COLOUR OF HANDRAIL: YELLOW
3. STAINLESS STEEL GRADE 316 BOLTS, NUTS AND WASHERS USED TO FIX THE HANDRAIL TO THE CAGE, STRINGER AND STAINLESS STEEL FOOT PIECE.
4. NOTE THAT THE OTHER HANDRAIL IS A MIRROR COPY OP THIS HANDRAIL.
5. FIXING DETAILS DETERMINED BY SUPPLIER.



DETAIL 'E'

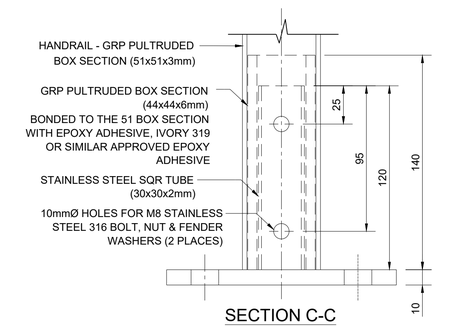
Scale 1:20



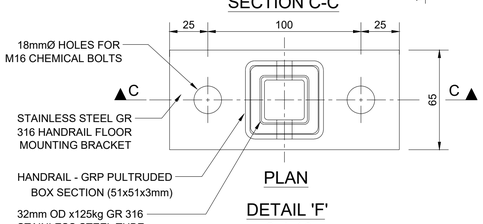
PLAN VIEW | SIDE VIEW | FRONT VIEW | SIDE VIEW

SAFETY CAGE HANDRAIL DETAIL

Scale 1:20



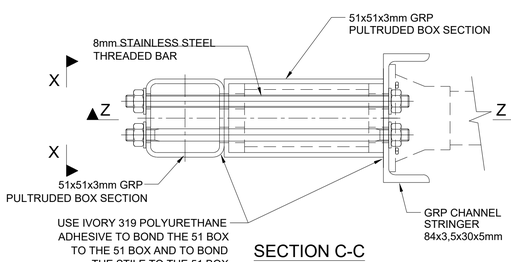
SECTION C-C



PLAN

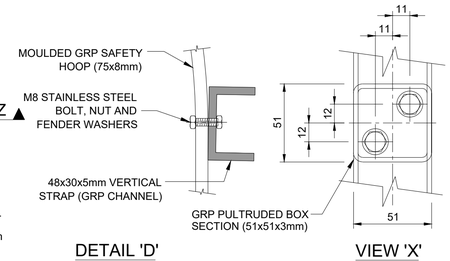
DETAIL 'F'

Scale 1:2



SECTION C-C

Scale 1:2



DETAIL 'D' | VIEW 'X'

Scale 1:2

eTHEKWINI WATER SERVICES

WATER DESIGN BRANCH

REDUCED PLAN USE SCALE BELOW

0 10 20 30 40 50 60 70

70mm ON ORIGINAL PLAN

CONSULTANT:

NAIDU CONSULTING

1st Floor
No.5, The Boulevard
West Way Office Park
Westville, Durban
Tel : +27 (0) 31 265 6007
Fax : +27 (0) 31 265 6011
Email: info@naiduconsulting.com

26/09/2025

Drawing No.: D724-52-5402- REV 0

FOR TENDER

REFERENCE DRAWINGS (D724-52-...)

DWG No.	TITLE/DESCRIPTION
1000	SITE LAYOUT
1001	EARTHWORKS LAYOUT
1002	EARTHWORKS SECTIONS
1003	EARTHWORKS SECTIONS
5100	WATER PIPELINE LONG SECTIONS
5250	RESERVOIR 1 VALVE CHAMBERS
5251	RESERVOIR 2 VALVE CHAMBERS
5252	DN350 METER CHAMBER
5253	DN400 METER CHAMBER
5254	DN300 METER CHAMBER
5255	CROSS CONNECTION CHAMBER
5256	DN300 INLET CHAMBER (RESERVOIR 2)
5257	AIR VALVE CHAMBER DETAILS
5258	TYPICAL VALVE CHAMBER DETAILS
4000	STORMWATER LAYOUT
4250	STORMWATER DETAILS
4100	STORMWATER PIPELINE LONG SECTIONS
STANDARD DRAWINGS	
5400	ACCESS GATE AND FENCE DETAILS
5401	MANHOLE COVER DETAILS
5402	GRP ACCESS LADDER DETAILS
5403	TRENCH DETAILS
5404	STEEL DOOR AND AIR VENT DETAILS

Revision	Date	Description
0	09 / 2025	ISSUED FOR TENDER
A	01/07/2025	ISSUED FOR INFORMATION

Contract No.: 32547 - 5W

Project No.: X8388

Planning Unit: Water & Sanitation Unit

Ward No.: 64

Project Title:

MOBENI 2 RESERVOIR ASSOCIATED WORKS

Drawing Title:

STANDARD DETAILS GRP ACCESS LADDER SAFETY CAGE PLAN, SECTION AND DETAILS

Scales :	As Shown	
Paper Size :	A1	
Designed :	T. Moodley	Date : 09/2025
Checked :	A. Goorun	Drawn : N. Adams

Area Engineer (W.O)

Manager (W.D.)

Director (Water)

E.Msweli - Head:Water & Sanitation Unit

Drawing No.	Sheet	Rev.
60591/020	2 of 2	0

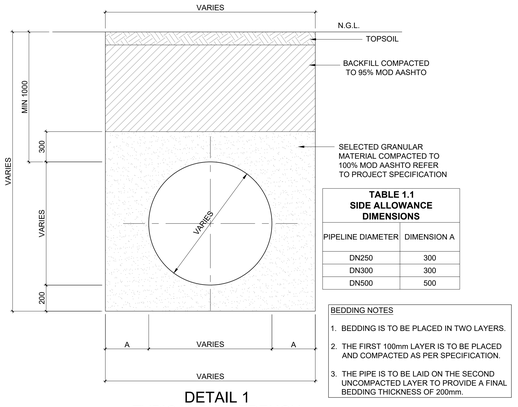


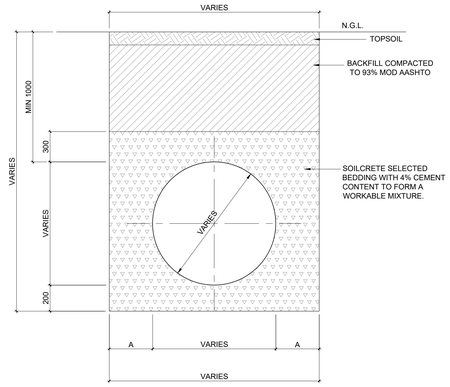
TABLE 1.1
SIDE ALLOWANCE DIMENSIONS

PIPELINE DIAMETER	DIMENSION A
DN250	300
DN300	300
DN500	500

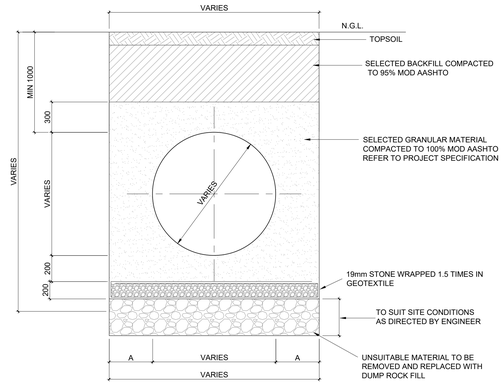
BEDDING NOTES

1. BEDDING IS TO BE PLACED IN TWO LAYERS.
2. THE FIRST 100mm LAYER IS TO BE PLACED AND COMPACTED AS PER SPECIFICATION.
3. THE PIPE IS TO BE LAID ON THE SECOND UNCOMPACTED LAYER TO PROVIDE A FINAL BEDDING THICKNESS OF 200mm.

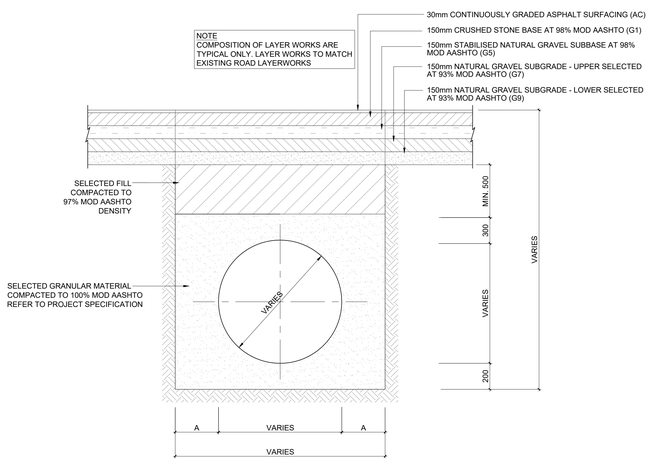
DETAIL 1
TYPICAL PIPE TRENCH
SCALE 1:25



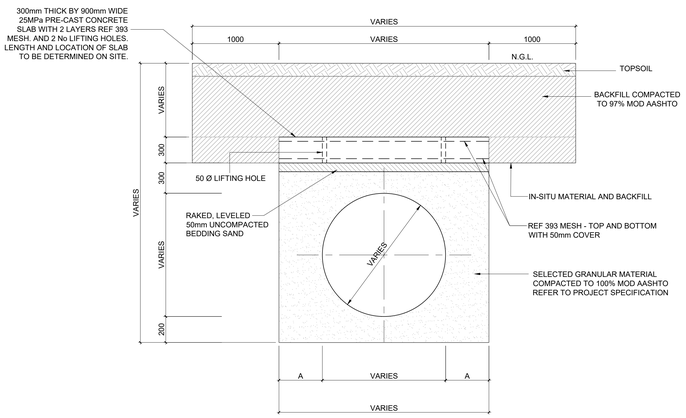
DETAIL 2
TYPICAL PIPE TRENCH WITH SOILCRETE BEDDING
SCALE 1:25



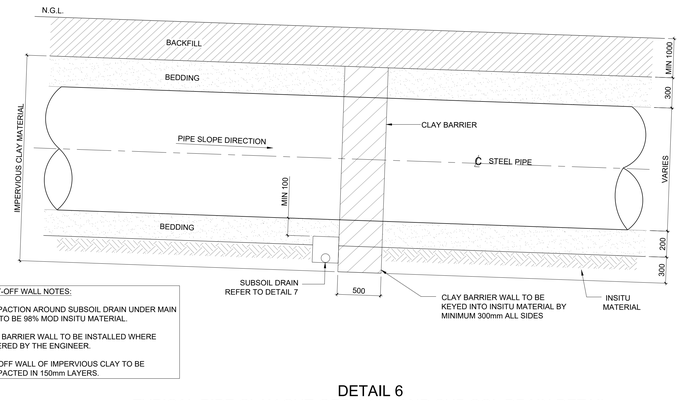
DETAIL 3
TYPICAL STONE BEDDING DETAIL
SCALE 1:25



DETAIL 4
TYPICAL ROAD CROSSING TRENCH DETAIL
SCALE 1:25



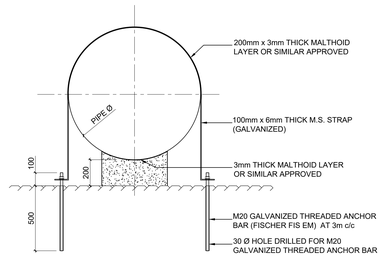
DETAIL 5
TYPICAL PIPE PROTECTION
(OCCURRENCES OF BELOW MINIMUM COVER)
SCALE 1:25



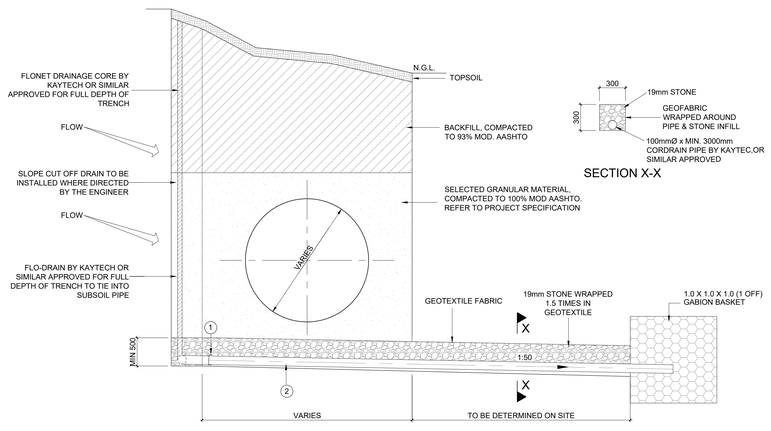
CLAY CUT-OFF WALL NOTES:

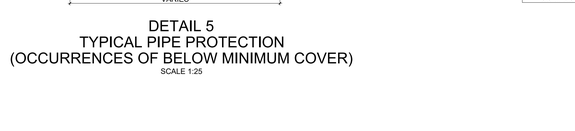
1. COMPACTION AROUND SUBSOIL DRAIN UNDER MAIN PIPE TO BE 98% MOD INSITU MATERIAL.
2. CLAY BARRIER WALL TO BE INSTALLED WHERE ORDERED BY THE ENGINEER.
3. CUT-OFF WALL OF IMPERVIOUS CLAY TO BE COMPACTED IN 150mm LAYERS.

DETAIL 6
TYPICAL PIPE CLAY CUT-OFF WALL AND SUB SOL DRAIN DETAIL
SCALE 1:25



DETAIL 9
PIPE ANCHORAGE DETAIL
SCALE 1:10





SECTION X-X

TABLE 7.1
PIPEWORK SCHEDULE

ITEM	DESCRIPTION
1	110mmØ END CAP
2	100mmØ x MIN. 3000mm CORDRAIN PIPE BY KAYTEC OR SIMILAR APPROVED WITH 19mm STONE WRAPPED 1.5 TIMES IN GEOTEXTILE

DRAINAGE NOTES:

1. SUBSOIL DRAINAGE PIPE TO BE INSTALLED AT LOW POINTS AND WHERE INSTRUCTED BY THE ENGINEER.
2. GABION BASKET TO BE POSITIONED AT DAYLIGHT POSITION & WRAPPED IN A4 GEOTEXTILE.
3. 100mmØ HDPE TO BE LAID WITH 1 : 50 CONSTANT FALL INTO GABION BASKET.
4. MAX TRENCH WIDTH FOR 100mmØ PIPE TO BE DETERMINED ON SITE BY THE ENGINEER.
5. SUBSOIL PIPE TRENCH TO BE BACKFILLED WITH SELECTED BACKFILL AND COMPACTED TO 90% MOD AASHTO DENSITY.
6. DRAINAGE DETAIL IS SUBJECT TO APPROVAL ON SITE BY THE ENGINEER.

DETAIL 7
TYPICAL PIPE SUBSOIL AND SLOPE CUT OFF DRAIN DETAIL
SCALE 1:25

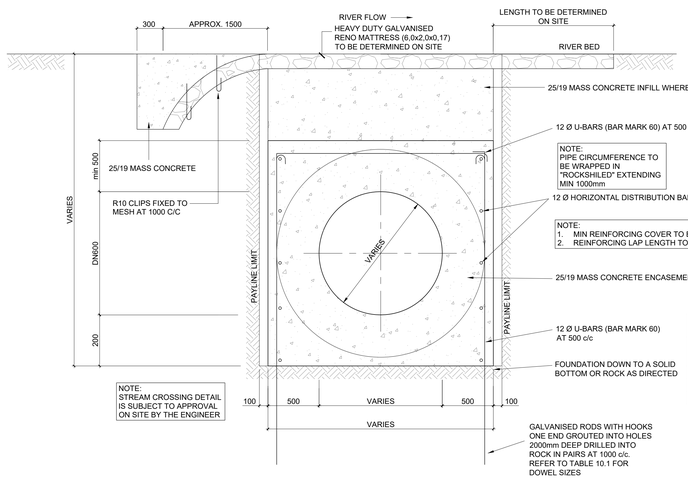
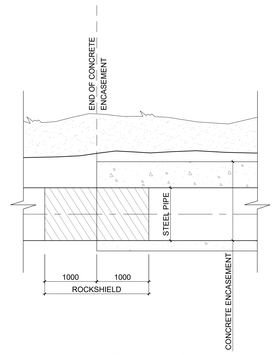


TABLE 8.1
GALVANISED DOWEL SIZES

PIPELINE DIAMETER	DOWEL DIAMETER	DRILLED HOLE DIAMETER
DN250	16 Ø	25 Ø
DN250	16 Ø	25 Ø
DN600	32 Ø	40 Ø

DETAIL 8 TYPICAL STREAM CROSSING SECTIONAL DETAIL
SCALE 1:25



ROCKSHIELD DETAIL
(INDICATING TREATMENT OF PIPE WITH ROCKSHIELD (TAPE WRAP) AT TRANSITION FROM CONCRETE ENCASEMENT TO SOIL)

CONCRETE AND GENERAL NOTES

A. ALL LEVELS TO BE CONFIRMED ON SITE.
B. ENGINEER TO INSPECT AND APPROVE FOUNDING MATERIAL BEFORE BLINDING IS CAST.
C. ALL EXPOSED EDGES ARE CHAMFERED 25x25.
D. GENERAL COVER TO ALL REINFORCING IS 50mm.
E. ENSURE THERE IS AT LEAST 75mm COVER BETWEEN THE REINFORCING BARS AND PUDDLE FLANGE.
F. CONSTRUCTION JOINTS ARE WELL CLEANED & SCABBLED TO EXPOSE FRESH AGGREGATE AND THOROUGHLY WETTED BEFORE THE NEXT LIFT IS POURED. CONSTRUCTION JOINTS TO HAVE SIKASWELL S-2 OR SIMILAR APPROVED BEAD CENTRALLY PLACED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
G. CONCRETE DISTANCE BLOCKS FOR POSITIONING REINFORCEMENT NEED TO BE MADE AT LEAST 3 WEEKS PRIOR TO REINFORCEMENT BEING FIXED, IN ORDER TO ALLOW FOR SUFFICIENT MOIST-CURING TIME.
H. NO ACCESS OPENINGS OTHER THAN THOSE INDICATED ON DRAWINGS WILL BE ALLOWED.
I. NO WIRE TIES BETWEEN WALL SHUTTERS WILL BE PERMITTED. FERRULE HOLES TO BE FREE OF FORMERS WITHIN 40mm OF SHUTTER.
J. WORKING SPACE AROUND THE CHAMBER NOT TO EXCEED 1000mm.
K. REINFORCED CONCRETE SHALL BE WATERTIGHT TO SABS 12000 5.5.11
L. CONCRETE GRADE
   BLINDING : 15/19
   MASS CONCRETE : 20/19
   CONCRETE OTHERWISE STATED : 25/19 UNLESS
   SCREED : 1:3 (CEMENT /SAND)
M. WHERE APPLICABLE, AIR VENTS, LIFTING HOLES, LIFTING HOOKS, STEP IRONS AND DI COVER & FRAME WERE PRE- INSTALLED AT THE MANUFACTURER PRIOR TO DELIVERY ON SITE.
N. BACKFILL MATERIAL AROUND STRUCTURE TO BE COMPACTED TO MINIMUM 95% MODIFIED AASHTO MAXIMUM DENSITY IN MAXIMUM 150mm LAYERS.
O. ON COMPLETION OF THE CHAMBERS, PAINT ALL EXPOSED ABOVE GROUND CHAMBER WALLS AND ROOF SLABS WITH 2 COATS OF WHITE ROAD MARKING PAINT. THEREAFTER, STENCIL ON THE CHAMBER IDENTIFICATION NUMBER TO BE ADVISED BY THE ENGINEER.
P. SIGNAGE INSTRUCTIONS FOR USE 800 x 600 HEAVY DUTY PVC SIGN BOARD FIXED TO THE INSIDE OF THE CHAMBER AS PER THE ENGINEERS INSTRUCTIONS

FINISHING NOTES

Q. FORMED CONCRETE SURFACES FINISHES
   Q.1. HIDDEN SURFACES ARE EXTERNAL SURFACES BURIED, ALL OTHER SURFACES INCLUDING INSIDE OF THE CHAMBER TO BE EXPOSED SURFACES
      VISIBLE SURFACES : SMOOTH
      CONCEALED SURFACES : ROUGH
R. UNFORMED CONCRETE SURFACES FINISHES
      TOP OF BLINDING : WOOD FLOAT
      TOP OF FLOOR : STEEL FLOAT
      TOP OF SLABS : STEEL FLOAT

ETHEKWINI
WATER SERVICES

WATER DESIGN BRANCH

REDUCED PLAN USE SCALE BELOW
0 10 20 30 40 50 60 70
70mm ON ORIGINAL PLAN

CONSULTANT:

NAIDU CONSULTING
1st Floor
No.3, The Boulevard
West Way Office Park
Westville, Durban
Tel : +27 (0) 31 265 6007
Fax : +27 (0) 31 265 6011
Email: info@naiduconsulting.com

26/09/2025

Drawing No.: D724-52-5403- REV 0

FOR TENDER

REFERENCE DRAWINGS (D724-52-...)

DWG No.	TITLE/DESCRIPTION
1000	SITE LAYOUT
1001	EARTHWORKS LAYOUT
1002	EARTHWORKS SECTIONS
1003	EARTHWORKS SECTIONS
5100	WATER PIPELINE LONG SECTIONS
5250	RESERVOIR 1 VALVE CHAMBERS
5251	RESERVOIR 2 VALVE CHAMBERS
5252	DN350 METER CHAMBER
5253	DN400 METER CHAMBER
5254	DN300 METER CHAMBER
5255	CROSS CONNECTION CHAMBER
5256	DN300 INLET CHAMBER (RESERVOIR 2)
5257	AIR VALVE CHAMBER DETAILS
5258	TYPICAL VALVE CHAMBER DETAILS
4000	STORMWATER LAYOUT
4250	STORMWATER DETAILS
4100	STORMWATER PIPELINE LONG SECTIONS
STANDARD DRAWINGS	
5400	ACCESS GATE AND FENCE DETAILS
5401	MANHOLE COVER DETAILS
5402	GRP ACCESS LADDER DETAILS
5403	TRENCH DETAILS
5404	STEEL DOOR AND AIR VENT DETAILS

Revision	Date	Descrption
0	09 / 2025	ISSUED FOR TENDER
A	07 / 2025	ISSUED FOR INFORMATION

Contract No.: 32547 - 5W

Project No.: X8388

Planning Unit: Water & Sanitation Unit

Ward No.: 64

Project Title: MOBENI 2 RESERVOIR ASSOCIATED WORKS

Drawing Title: STANDARD DETAILS TYPICAL TRENCH DETAILS

Scales : As Shown
Paper Size : A0
Designed : T Moodley | Date : 09/2025
Checked : A. Goorun | Drawn : N. Adams

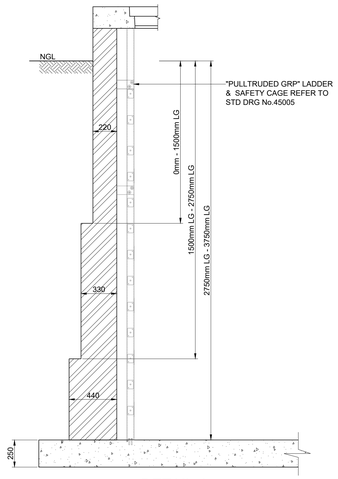
Area Engineer (W.O)

Manager (W.D.)

Director (Water)

E.Msweli - Head:Water & Sanitation Unit

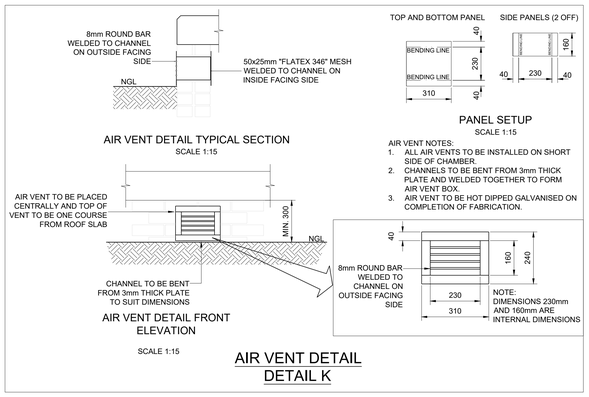
Drawing No.: 60591/022 | Sheet: 1 of 1 | Rev.: 0



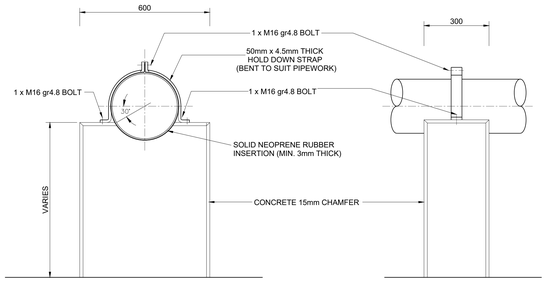
DETAIL J

STANDARD DETAIL ON VARYING BRICK THICKNESS FOR DIFFERENT DEPTHS

SCALE 1 : 20

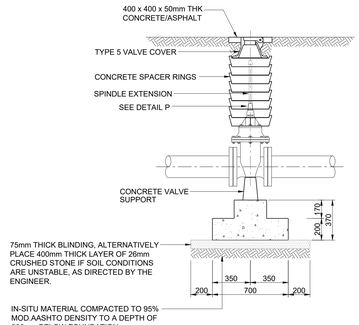


AIR VENT DETAIL
DETAIL K



SADDLE PIPE SUPPORT DETAIL

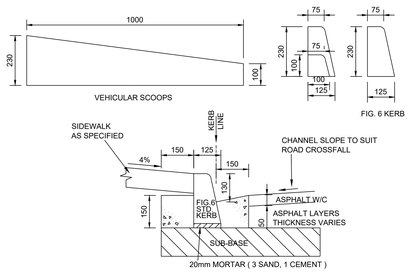
DETAIL 4



DETAIL M

TYPICAL VALVE AND SPACER RING DETAILS

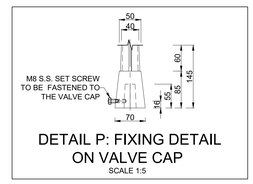
SCALE 1:20



BARRIER KERB WITH CAST IN SITU CHANNEL

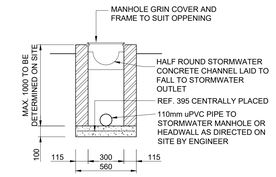
DETAIL P: KERB DETAIL

SCALE 1:10



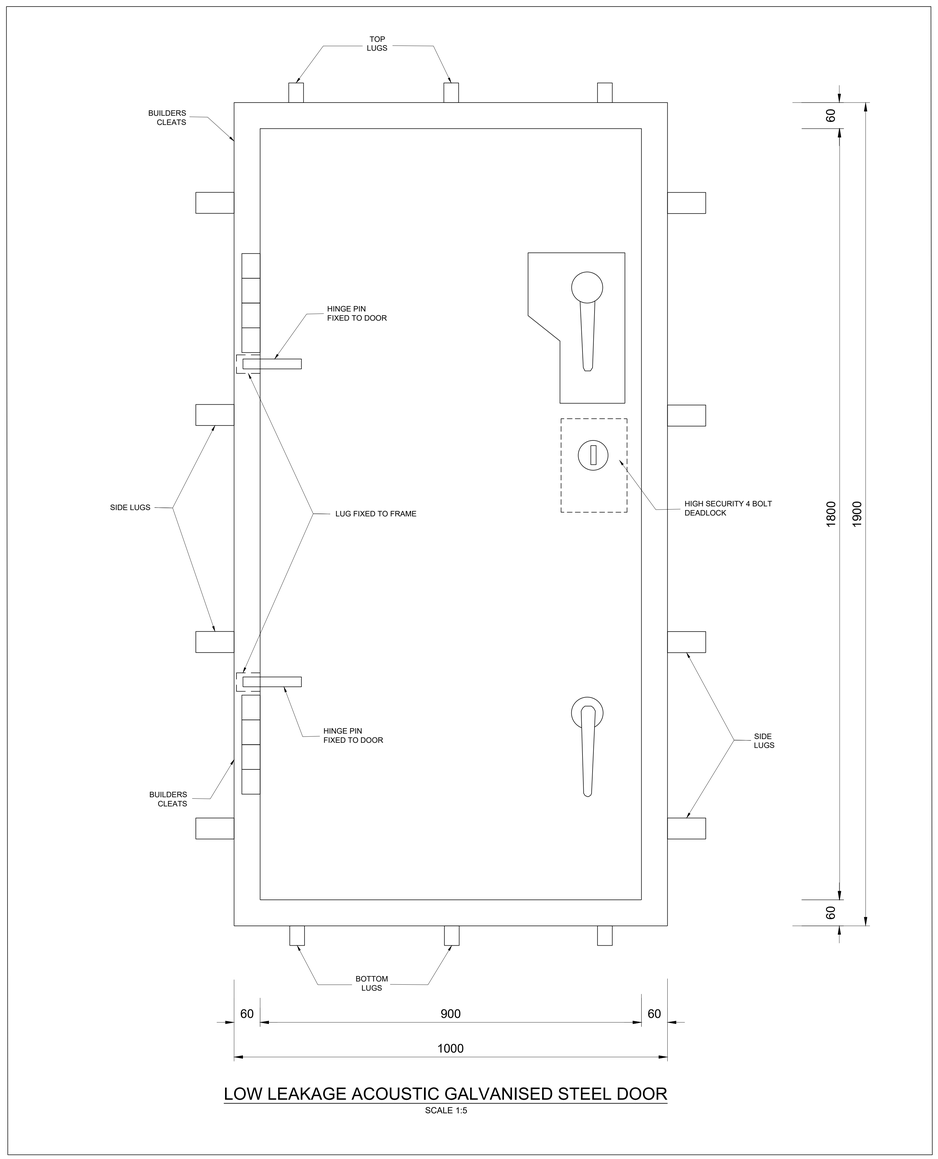
DETAIL P: FIXING DETAIL ON VALVE CAP

SCALE 1:5



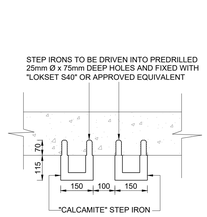
DETAIL O: BRICKWORK CATCH PIT DETAILS

SCALE 1:20



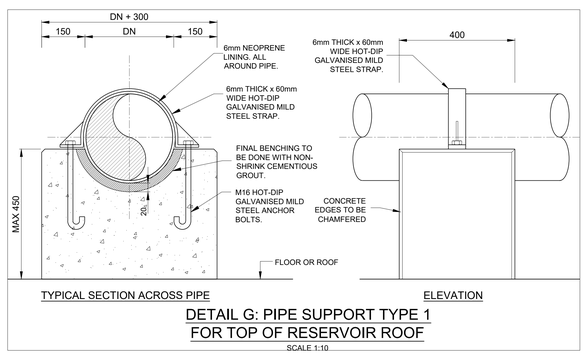
LOW LEAKAGE ACOUSTIC GALVANISED STEEL DOOR

SCALE 1:5



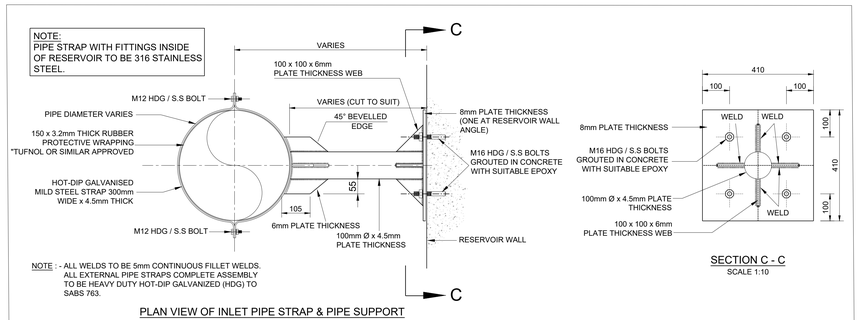
STEP IRON DETAIL

SCALE 1:10



DETAIL G: PIPE SUPPORT TYPE 1 FOR TOP OF RESERVOIR ROOF

SCALE 1:10



PLAN VIEW OF INLET PIPE STRAP & PIPE SUPPORT DETAIL - UP TO DN400

SCALE 1:10

SECTION C - C

SCALE 1:10

DETAIL H: PIPE SUPPORT TYPE 2

CONCRETE AND GENERAL NOTES

A. ALL LEVELS TO BE CONFIRMED ON SITE.

B. ENGINEER TO INSPECT AND APPROVE FOUNDING MATERIAL BEFORE BLINDING IS CAST.

C. ALL EXPOSED EDGES ARE CHAMFERED 25x25.

D. GENERAL COVER TO ALL REINFORCING IS 50mm.

E. ENSURE THERE IS AT LEAST 75mm COVER BETWEEN THE REINFORCING BARS AND PUDDLE FLANGE.

F. CONSTRUCTION JOINTS ARE WELL CLEANED & SCABBLED TO EXPOSE FRESH AGGREGATE AND THOROUGHLY WETTED BEFORE THE NEXT LIFT IS POURED. CONSTRUCTION JOINTS TO HAVE SIKASWELL S-2 OR SIMILAR APPROVED BEAD CENTRALLY PLACED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.

G. CONCRETE DISTANCE BLOCKS FOR POSITIONING REINFORCEMENT NEED TO BE MADE AT LEAST 3 WEEKS PRIOR TO REINFORCEMENT BEING FIXED, IN ORDER TO ALLOW FOR SUFFICIENT MOIST-CURING TIME.

H. NO ACCESS OPENINGS OTHER THAN THOSE INDICATED ON DRAWINGS WILL BE ALLOWED.

I. NO WIRE TIES BETWEEN WALL SHUTTERS WILL BE PERMITTED. FERRULE HOLES TO BE FREE OF FORMERS WITHIN 40mm OF SHUTTER.

J. WORKING SPACE AROUND THE CHAMBER NOT TO EXCEED 1000mm.

K. REINFORCED CONCRETE SHALL BE WATERTIGHT TO SABS 1200G 5.5.11

L. CONCRETE GRADE

BLINDING	:	15/19
MASS CONCRETE	:	20/19
CONCRETE OTHERWISE STATED	:	25/19 UNLESS
SCREED	:	1:3 (CEMENT /SAND)

M. WHERE APPLICABLE, AIR VENTS, LIFTING HOLES, LIFTING HOOKS, STEP IRONS AND DI COVER & FRAME WERE PRE- INSTALLED AT THE MANUFACTURER PRIOR TO DELIVERY ON SITE.

N. BACKFILL MATERIAL AROUND STRUCTURE TO BE COMPACTED TO MINIMUM 95% MODIFIED AASHTO MAXIMUM DENSITY IN MAXIMUM 150mm LAYERS.

O. ON COMPLETION OF THE CHAMBERS, PAINT ALL EXPOSED ABOVE GROUND CHAMBER WALLS AND ROOF SLABS WITH 2 COATS OF WHITE ROAD MARKING PAINT. THEREAFTER, STENCIL ON THE CHAMBER IDENTIFICATION NUMBER TO BE ADVISED BY THE ENGINEER.

P. SIGNAGE INSTRUCTIONS FOR USE 800 x 600 HEAVY DUTY PVC SIGN BOARD FIXED TO THE INSIDE OF THE CHAMBER AS PER THE ENGINEERS INSTRUCTIONS

FINISHING NOTES

Q. FORMED CONCRETE SURFACES FINISHES

Q.1. HIDDEN SURFACES ARE EXTERNAL SURFACES BURIED, ALL OTHER SURFACES INCLUDING INSIDE OF THE CHAMBER TO BE EXPOSED SURFACES

VISIBLE SURFACES	:	SMOOTH
CONCEALED SURFACES	:	ROUGH

R. UNFORMED CONCRETE SURFACES FINISHES

TOP OF BLINDING	:	WOOD FLOAT
TOP OF FLOOR	:	STEEL FLOAT
TOP OF SLABS	:	STEEL FLOAT

eTHEKWINI WATER SERVICES

WATER DESIGN BRANCH

REDUCED PLAN USE SCALE BELOW

0 10 20 30 40 50 60 70

70mm ON ORIGINAL PLAN

CONSULTANT:

NAIDU CONSULTING
1st Floor
No.5, The Boulevard
West Way Office Park
Westville, Durban
Tel : +27 (0) 31 265 6007
Fax : +27 (0) 31 265 6011
Email: info@naiduconsulting.com

26/09/2025

Drawing No.: D724-52-5404- REV 0

FOR TENDER

REFERENCE DRAWINGS (D724-52-...)

DWG No.	TITLE/DESCRIPTION
1000	SITE LAYOUT
1001	EARTHWORKS LAYOUT
1002	EARTHWORKS SECTIONS
1003	EARTHWORKS SECTIONS
5100	WATER PIPELINE LONG SECTIONS
5250	RESERVOIR 1 VALVE CHAMBERS
5251	RESERVOIR 2 VALVE CHAMBERS
5252	DN350 METER CHAMBER
5253	DN400 METER CHAMBER
5254	DN300 METER CHAMBER
5255	CROSS CONNECTION CHAMBER
5256	DN300 INLET CHAMBER (RESERVOIR 2)
5257	AIR VALVE CHAMBER DETAILS
5258	TYPICAL VALVE CHAMBER DETAILS
4000	STORMWATER LAYOUT
4250	STORMWATER DETAILS
4100	STORMWATER PIPELINE LONG SECTIONS
STANDARD DRAWINGS	
5400	ACCESS GATE AND FENCE DETAILS
5401	MANHOLE COVER DETAILS
5402	GRP ACCESS LADDER DETAILS
5403	TRENCH DETAILS
5404	STEEL DOOR AND AIR VENT DETAILS

Revision	Date	Description
0	09 / 2025	ISSUED FOR TENDER
A	07 / 2025	ISSUED FOR INFORMATION

Contract No.: 32547 - 5W

Project No.: X8388

Planning Unit: Water & Sanitation Unit

Ward No.: 64

Project Title: MOBENI 2 RESERVOIR ASSOCIATED WORKS

Drawing Title: STEEL DOOR, AIR VENT, AND OTHER STANDARD DETAILS

Scales :	As Shown		
Paper Size :	A0		
Designed :	A. Goorun	Date :	09/2025
Checked :	T Moodley	Drawn :	N. Adams

Area Engineer (W.O)

Manager (W.D.)

Director (Water)

E.Msweli - Head:Water & Sanitation Unit

Drawing No.	Sheet	Rev.
60591/023	1 of 1	0