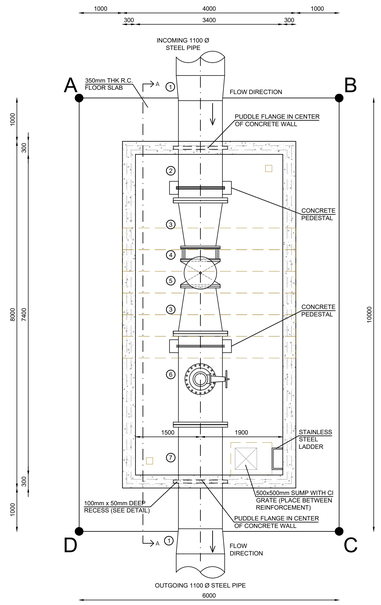
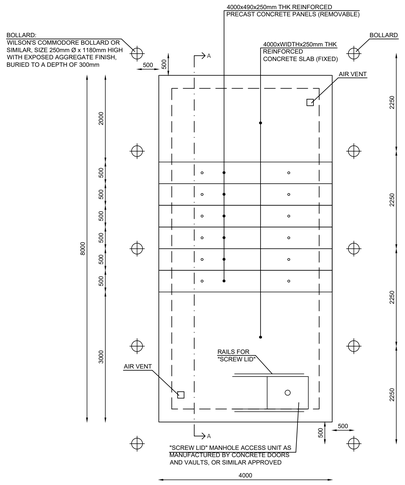
FLOOR PLAN
Scale 1:50

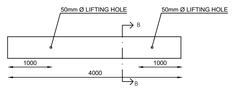


ROOF PLAN
Scale 1:50

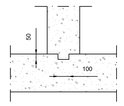


SECTION B
Scale 1:50

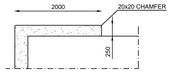
PLAN
REMOVABLE ROOF PANELS
Scale 1:50



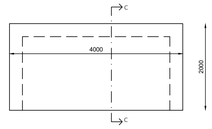
RECESS IN FLOOR
Scale 1:20



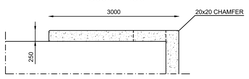
SECTION C
Scale 1:50



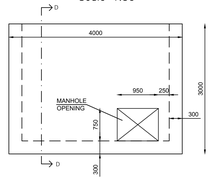
PLAN
FIXED ROOF PANEL 1
Scale 1:50



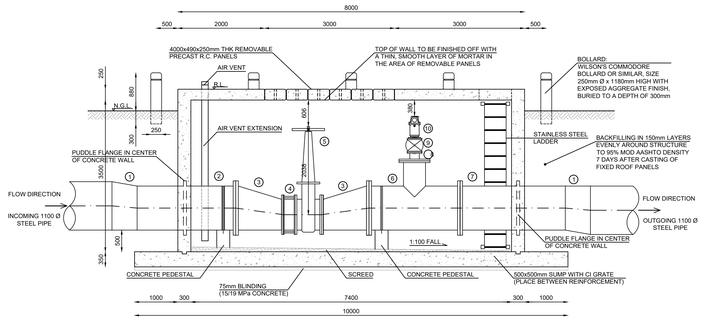
SECTION D
Scale 1:50



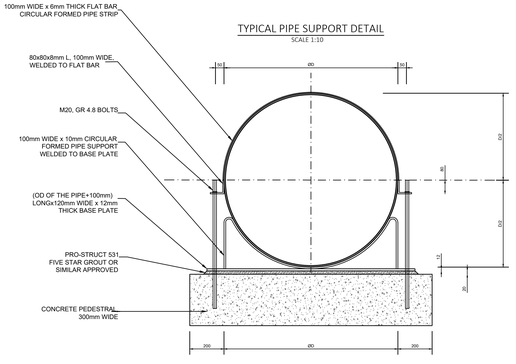
PLAN
FIXED ROOF PANEL 2
Scale 1:50



SECTION A
Scale 1:50



TYPICAL PIPE SUPPORT DETAIL
SCALE 1:10



STEEL FLANGES

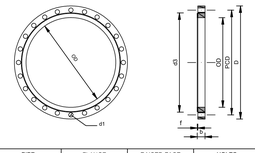


TABLE	PIPE NB (mm)	PIPE OD (mm)	FLANGE D (mm)	FLANGE b (mm)	RAISED FACE d3 (mm)	RAISED FACE f (mm)	HOLES No.	HOLES d1 (mm)	BOLT size	PCD
SABS1123 1600/3	100	114.3	220.0	14.0	158.0	3.0	8	18.0	M16	180.0
	150	165.1	285.0	18.0	212.0	3.0	8	22.0	M20	240.0
	200	219.1	340.0	22.0	268.0	3.0	12	22.0	M20	295.0
	250	273.0	405.0	25.0	320.0	3.0	12	26.0	M24	355.0
	300	323.9	460.0	28.0	378.0	4.0	12	26.0	M24	410.0
	400	406.4	580.0	35.0	490.0	4.0	16	26.0	M24	525.0
	450	457.2	640.0	40.0	550.0	4.0	20	26.0	M24	585.0
	500	508.0	715.0	40.0	610.0	4.0	20	33.0	M30	650.0
	600	609.6	840.0	50.0	725.0	5.0	20	33.0	M30	770.0
	700	711.2	910.0	55.0	795.0	5.0	24	33.0	M30	840.0
	800	812.8	1025.0	65.0	900.0	5.0	24	39.0	M36	950.0
	900	914.4	1125.0	70.0	1000.0	5.0	28	39.0	M36	1050.0
	1000	1016.0	1255.0	75.0	1115.0	5.0	28	39.0	M36	1170.0
SABS1123 2500/3	150	165.1	300.0	30.0	218.0	3.0	8	26.0	M24	250.0
	250	273.0	425.0	30.0	335.0	3.0	12	26.0	M24	370.0
	350	355.6	555.0	35.0	450.0	4.0	16	33.0	M30	490.0
BS4504 25/3	700	711.2	960.0	74.0	820.0	5.0	24	42.0	M39	875.0

ITEM NR.	DESCRIPTION	NO. OFF	DIMENSIONS
1	1100 Ø x 1000 Ø ECCENTRIC STEEL REDUCER. BOTH ENDS BEVELLED	2	580
2	1000 Ø x 2335mm LONG STEEL PIPE WITH PUDDLE FLANGE (FLANGED TO SANS 1123 - 1600/3). UPSTREAM END BEVELLED. DOWNSTREAM END FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	1245 1090
3	1000 Ø x 700 Ø ECCENTRIC STEEL REDUCER. BOTH ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	2	1070
4	700 Ø STEEL COUPLING SUCH AS KLAMFLEX DISMANTLING JOINT OR SIMILAR APPROVED. PN16. FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	275
5	700 Ø VOSA GATE VALVE, PN16, OR SIMILAR APPROVED WITH HAND WHEEL AND ANTI-CLOCKWISE CLOSING TO SANS 664. NON RISING STEM. BOTH ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	610
6	1000 Ø x 500 Ø STEEL TEE WITH ALL ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	1050 1050 1050
7	1000 Ø x 3400mm LONG STEEL PIPE WITH PUDDLE FLANGE (FLANGED TO SANS 1123 - 1600/3). DOWNSTREAM END BEVELLED. UPSTREAM END FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	1310 2090
8	200 Ø STEEL SPACER BETWEEN BRANCH FLANGE & VALVE MADE UP BY 200mm LONG STUB MOUNTED IN CENTER OF SPECIAL FLANGE (BRANCH NB. 500 Ø) WITH STUB (AIR VALVE NB, 200 Ø) FLANGED & DRILLED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	200
9	200 Ø VOSA GATE VALVE, PN16, OR SIMILAR APPROVED WITH HAND WHEEL AND ANTI-CLOCKWISE CLOSING TO SANS 664. NON RISING STEM. BOTH ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	317
10	200 Ø VAG DUOJET AUTOMATIC AIR RELEASE & VACUUM BREAK VALVE SINGLE-CHAMBER TYPE, PN16, OR SIMILAR APPROVED, FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	505

CHAMBERS C.03-C.04 COORDINATES LIST OF THE NATURAL GROUND LEVEL (N.G.L) AND ROOF LEVEL (R.F)

CH.	N.G.L	R.L.
03	+1361.49	+1361.70
04	+1338.37	+1339.15

CHAMBER C.03 COORDINATES LIST OF THE BOUNDARY OF THE FOUNDATION SLAB

NAME	X	Y
A	91296.644	2842731.318
B	91291.906	2842734.999
C	91298.041	2842742.896
D	91302.799	2842739.214

THE X AND Y CO-ORDINATES OF THE INFORMATION INDICATED ON THIS DRAWING ARE BASED ON THE WORLD GEODETIC SYSTEM 1984 ELLIPSOID (WGS84)

CHAMBER C.04 COORDINATES LIST OF THE BOUNDARY OF THE FOUNDATION SLAB

NAME	X	Y
A	91019.023	2842991.891
B	91017.587	2842986.066
C	91007.878	2842988.458
D	91009.314	2842994.284

THE X AND Y CO-ORDINATES OF THE INFORMATION INDICATED ON THIS DRAWING ARE BASED ON THE WORLD GEODETIC SYSTEM 1984 ELLIPSOID (WGS84)

NOTES AND SPECIFICATIONS

GENERAL
1. ALL MATERIAL AND WORKMANSHIP MUST COMPLY WITH THE REQUIREMENTS OF THE LATEST RELEVANT SANS STANDARD.
2. ALL DIMENSIONS ARE IN mm (UNLESS OTHERWISE SPECIFIED).
3. DO NOT SCALE FROM THESE DRAWINGS.
4. ALL DIMENSIONS MUST BE CHECKED AND APPROVED ON SITE.
5. ALL CONSTRUCTION TO BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR MUNICIPAL CIVIL ENGINEERING WORKS, THIRD EDITION 2005 AND THE STANDARD COT DETAIL DRAWINGS.
6. THIS DRAWING MUST BE READ IN CONJUNCTION WITH THE STANDARD DRAWINGS (IF APPLICABLE).
7. THIS DRAWING MUST BE READ IN CONJUNCTION WITH THE STANDARD SPECIFICATIONS FOR MUNICIPAL CIVIL ENGINEERING WORKS, SERIES 4.
8. THE SIGNATURE OR INITIALS ON THIS DRAWING, OF ANY DIRECTOR OF THE WATER AND SANITATION DEPARTMENT, IN NO WAY, REMOVES ANY RESPONSIBILITY WHATSOEVER FROM THE CONSULTANT.
9. THE CONSULTANT REMAINS RESPONSIBLE TO ENSURE THAT ALL THE GUIDELINES, STANDARD DRAWINGS, STANDARDS AND SPECIFICATIONS OF THE WATER AND SANITATION DEPARTMENT HAVE BEEN MET AND ARE COMPLIED WITH.
10. FINAL POSITION OF SERVICES TO BE DETERMINED ON SITE.

PARTICULAR:
1. CONCRETE USED IN CONSTRUCTION OF THE STRUCTURE TO BE CLASS 30/19 MPa
2. CONCRETE SURFACE FINISH SHALL BE STEEL-FLOATED FINISH ON TOP OF ROOF SLAB AND WALLS OFF-SHUTTER, BASE FINISHED WITH STRAIGHT EDGE AND SCREED WITH STEEL FLOAT FINISH.
3. SCREED 1:CEMENT CEM 1:5 RIVER SAND
4. DEGREE OF ACCURACY FOR PRECAST PLANKS TO BE I AND ALL OTHER II OF SANS 1200G
5. WHERE HIGH WATER TABLE IS ENCOUNTERED, 3 COATS OF A HEAVY WATERPROOFING COMPOUND SUCH AS ABE SUPER LAYKOLD SHALL BE APPLIED TO EXTERIOR WALLS

CONSTRUCTION PROCEDURE
1. CLEAR SITE, EXCAVATE TO REQUIRED DEPTH AND CONSTRUCT 75mm THK CLASS 15/19 MPa BLINDING LAYER
2. FIX FLOOR SLAB & WALL STARTER BARS AND CAST FLOOR SLAB.
3. FIX WALL REINFORCEMENT BEFORE CASTING WALL
4. PLACE FORM WORK FOR FIXED ROOF PANELS, FIX STEEL AND CAST CONCRETE
5. CURE ALL CONCRETE FOR 5 DAYS

CONSTRUCTION MANAGEMENT AND USE OF DRAWINGS:
CONSTRUCTION MANAGEMENT:
1. THE COUNCIL SHALL APPOINT OR PROVIDE AN APPROPRIATELY QUALIFIED AND EXPERIENCED FOREMAN TO MANAGE AND SUPERVISE THE CONSTRUCTION OF THE RESERVOIR SHOWN ON THESE CONSTRUCTION DRAWINGS.
2. THE FOREMAN SHALL STUDY, INTERPRET AND APPLY THE DETAILS AND INSTRUCTIONS PROVIDED ON THE DRAWINGS, WHILST AT THE SAME TIME SUPERVISE THE CONSTRUCTION OF THE WORKS ON A DAILY BASIS.
3. NO DEVIATION FROM THE DRAWINGS DETAILS AND INSTRUCTIONS ARE PERMITTED.
4. SHOULD THE FOREMAN HAVE QUESTIONS ABOUT THE DRAWINGS OR CONSTRUCTION, HE SHOULD CONTACT THE COUNCIL'S ENGINEER IN CHARGE OF THE PROJECT.

CONSTRUCTION MONITORING:
1. AS THE CONSULTING ENGINEER HAS NOT BEEN APPOINTED TO PERFORM THE CONSTRUCTION MONITORING DUTIES, HE CANNOT TAKE ANY RESPONSIBILITY FOR THE SUCCESSFUL AND CORRECT EXECUTION OF THE WORKS ACCORDING TO THE CONSTRUCTION DRAWINGS.
2. THE FULL RESPONSIBILITY FOR SUPERVISING THE EXECUTION OF THE WORKS LIES WITH THE FOREMAN OF THE PROJECT.

DESIGN CRITERIA:
- SOIL DENSITY = 1800kg/mc
- SOIL K-ACTIVE = 0.4
- MAX. WATER TABLE = 1.0 BELOW NGL.
- LIVELOAD
  VEHICLE ON ROOF ≤ 4500kg GVM
  i.e 6 kPa LL OR 2 x 14kN PL 1.0m APART
- SAFE BEARING PRESSURE OF GROUND ≥ 100kPa

PEDESTAL REINFORCEMENT:
1. CONCRETE USED IN CONSTRUCTION OF THE STRUCTURE TO BE CLASS 30/19 MPa
2. SCREED: 1:CEMENT CEM 1:5 RIVER SAND
3. ARMORING TO BE USED: REBARS Y12-200 ON BOTH SIDES

CITY OF TSHWANE
IGNITING EXCELLENCE
PO BOX 1022
PRETORIA
0001

CITY OF TSHWANE
SERVICES INFRASTRUCTURE DEPARTMENT
WATER AND SANITATION DIVISION

AMENDMENTS

NR	DATE	APPROVED	DESCRIPTION	PAR

WATER AND SANITATION
FOR INTERNAL APPROVAL - RECEIVED SIGN WHEN APPLICABLE

	NAME	Prof. Reg. No	SIGNATURE	DATE
DIRECTOR: WATER AND SANITATION - PLANNING				
REGIONAL DIRECTOR: (1,2,3,4,5,6 or 7)				
DIRECTOR: SYSTEM DEVELOPMENT				
DIRECTOR: BULK WATER				
DIRECTOR: INFRASTRUCTURE PROVISION				
DIRECTOR: WASTE WATER TREATMENT				

CONSULTANT DETAIL

DPT CIVIL & STRUCTURAL JV
POSTNET SUITE 453
SINOVILLE CONER
PRIVATE BAG X504
SINOVILLE
0129
TEL: 012 567 7381
FAX: 012 567 1996
E-MAIL: info@ditshimega.co.za

I, Z.D RANTA Prof Reg Nr. 201170066
HEREBY CERTIFY THAT THE SERVICES WILL\ HAVE BEEN INSTALLED ACCORDING TO NOTE 9 OF THE ABOVE NOTES AND TO THE DRAWING

SIGNATURE DATE

CONSULTANT DRAWING NUMBER:

0 REVISION

	NAME	Pr Eng.	Prof Reg No:	SIGNATURE	DATE
DESIGNED	Z.D RANTA	Pr Eng.	201170066		
DRAWN	K.MOLEMA				
CHECKED	Z.D RANTA	Pr Tech.	201170066		
INFORMATION OFFICE CHECKED					
DESIGN OFFICE APPROVAL	Z.D RANTA	Pr Eng.	201170066		

CONTRACT No:

PROJECT No.

SHEET No. 2543IES-196

PAPER SIZE: A0

SCALE: as shown

DATE: 2025-06-10

LOCATION OF PROJECT:
ZANDFONTEIN

DESCRIPTION OF PROJECT:
BULK DISTRIBUTION NETWORK
CHAMBERS C.03 - C.04
REINFORCED CONCRETE VALVES CHAMBER LAYOUT
(8.0m L x 4.0m W x 3.5m H)

WBS No. :

COT DRAWING NUMBER:

0 REVISION

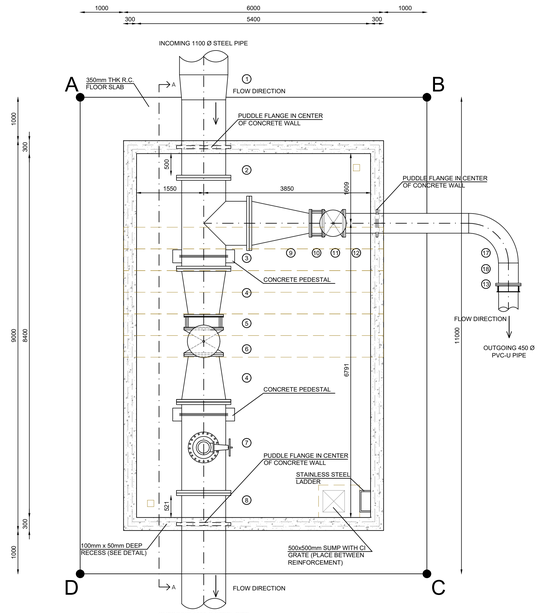
PROJECT STATUS
RECEIVED SIGN WHEN APPLICABLE

○ CONCEPT DRAWING ◉ TENDER DRAWING ○ APPROVED CONSTRUCTION DRAWING ○ AS BUILT DRAWING

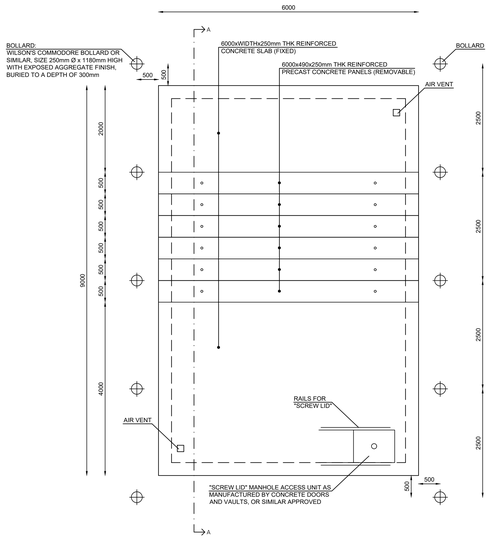
PROJECT ENGINEER of COT:
NAME: Pr Eng. Prof Reg No:
SIGNATURE: DATE:

INSPECTOR OF WORKS of COT:
NAME: Pr Eng. Prof Reg No:
SIGNATURE: DATE:

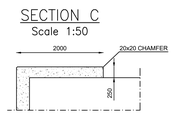
FLOOR PLAN
Scale 1:50



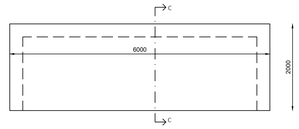
ROOF PLAN
Scale 1:50



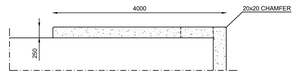
SECTION C
Scale 1:50



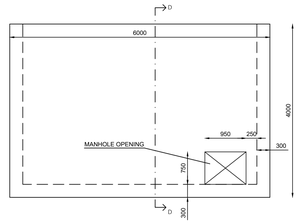
PLAN
FIXED ROOF PANEL 1
Scale 1:50



SECTION D
Scale 1:50

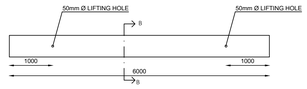


PLAN
FIXED ROOF PANEL 2
Scale 1:50

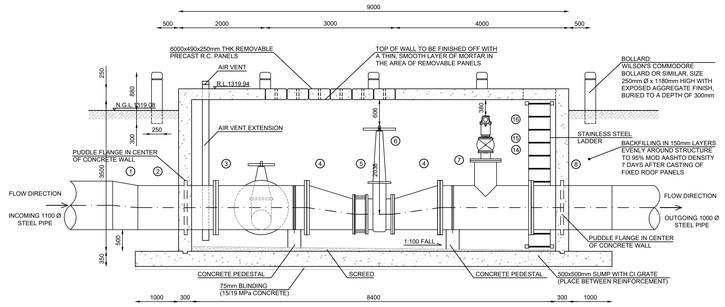


SECTION B
Scale 1:50

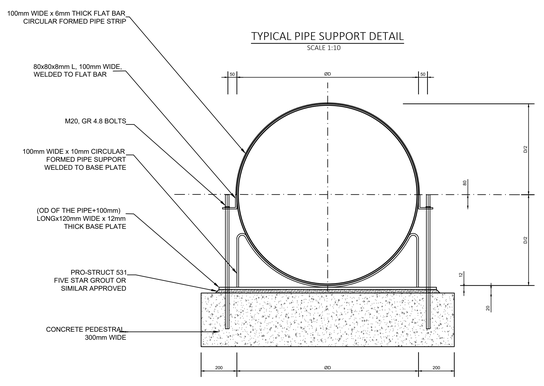
PLAN
REMOVABLE ROOF PANELS
Scale 1:50



SECTION A
Scale 1:50



TYPICAL PIPE SUPPORT DETAIL
SCALE 1:10



STEEL FLANGES

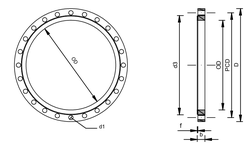


TABLE	NB (mm)	PIPE OD (mm)	FLANGE D (mm)	FLANGE b (mm)	RAISED FACE d3 (mm)	RAISED FACE f (mm)	HOLES No.	HOLES d1 (mm)	BOLT size	PCD
SABS1123 1600/3	100	114.3	220.0	14.0	158.0	3.0	8	18.0	M16	180.0
	150	165.1	285.0	18.0	212.0	3.0	8	22.0	M20	240.0
	200	219.1	340.0	22.0	268.0	3.0	12	22.0	M20	295.0
	250	273.0	405.0	25.0	320.0	3.0	12	26.0	M24	355.0
	300	323.9	460.0	28.0	378.0	4.0	12	26.0	M24	410.0
	400	406.4	580.0	35.0	490.0	4.0	16	26.0	M24	525.0
	450	457.2	640.0	40.0	550.0	4.0	20	26.0	M24	585.0
	500	508.0	715.0	40.0	610.0	4.0	20	33.0	M30	650.0
	600	609.6	840.0	50.0	725.0	5.0	20	33.0	M30	770.0
	700	711.2	910.0	55.0	795.0	5.0	24	33.0	M30	840.0
	800	812.8	1025.0	65.0	900.0	5.0	24	39.0	M36	950.0
	900	914.4	1125.0	70.0	1000.0	5.0	28	39.0	M36	1050.0
	1000	1016.0	1255.0	75.0	1115.0	5.0	28	39.0	M36	1170.0
SABS1123 2500/3	150	165.1	300.0	30.0	218.0	3.0	8	26.0	M24	250.0
	250	273.0	425.0	30.0	335.0	3.0	12	26.0	M24	370.0
	350	355.6	555.0	35.0	450.0	4.0	16	33.0	M30	490.0
BS4504 25/3	700	711.2	960.0	74.0	820.0	5.0	24	42.0	M39	875.0

ITEM NR.	DESCRIPTION	NO. OFF	DIMENSIONS
1	1100 Ø x 1000 Ø ECCENTRIC STEEL REDUCER. BOTH ENDS BEVELLED	1	580
2	1000 Ø x 1815mm LONG STEEL PIPE WITH PUDDLE FLANGE (FLANGED TO SANS 1123 - 1600/3). UPSTREAM END BEVELLED. DOWNSTREAM END FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	725 1090
3	1000 Ø x 1000 Ø STEEL TEE WITH ALL ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	1050 1050 1050
4	1000 Ø x 700 Ø ECCENTRIC STEEL REDUCER. BOTH ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	2	1070
5	700 Ø STEEL COUPLING SUCH AS KLAMFLEX DISMANTLING JOINT OR SIMILAR APPROVED, PN16. FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	275
6	700 Ø VOSA GATE VALVE, PN16, OR SIMILAR APPROVED WITH HAND WHEEL AND ANTI-CLOCKWISE CLOSING TO SANS 664. NON RISING STEM. BOTH ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	610
7	1000 Ø x 500 Ø STEEL TEE WITH ALL ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	1050 1050 1050
8	1000 Ø x 1905mm LONG STEEL PIPE WITH PUDDLE FLANGE (FLANGED TO SANS 1123 - 1600/3). DOWNSTREAM END BEVELLED. UPSTREAM END FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	755 1150
9	1000 Ø x 450 Ø ECCENTRIC STEEL REDUCER. BOTH ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	1425
10	450 Ø STEEL COUPLING SUCH AS KLAMFLEX DISMANTLING JOINT OR SIMILAR APPROVED, PN16. FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	275
11	450 Ø VOSA GATE VALVE, PN16, OR SIMILAR APPROVED WITH HAND WHEEL AND ANTI-CLOCKWISE CLOSING TO SANS 664. NON RISING STEM. BOTH ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	485
12	450 Ø x 2880mm LONG STEEL PIPE WITH PUDDLE FLANGE (FLANGED TO SANS 1123 - 1600/3). DOWNSTREAM END BEVELLED. UPSTREAM END FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	765 2115
13	450 Ø STEEL COUPLING SUCH AS KLAMFLEX RANGER FLANGE ADAPTOR OR SIMILAR APPROVED, PN16. FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	170
14	200 Ø STEEL SPACER BETWEEN BRANCH FLANGE & VALVE MADE UP BY 200mm LONG STUB MOUNTED IN CENTER OF SPECIAL FLANGE (BRANCH NB, 500 Ø) WITH STUB (AIR VALVE NB, 200 Ø) FLANGED & DRILLED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	200
15	200 Ø VOSA GATE VALVE, PN16, OR SIMILAR APPROVED WITH HAND WHEEL AND ANTI-CLOCKWISE CLOSING TO SANS 664. NON RISING STEM. BOTH ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	317
16	200 Ø VAG DUOJET AUTOMATIC AIR RELEASE & VACUUM BREAK VALVE SINGLE-CHAMBER TYPE, PN16, OR SIMILAR APPROVED, FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	500
17	450 Ø x 90° STEEL BEND WITH BOTH ENDS BEVELLED	1	915 915
18	450 Ø STEEL STRAIGHT, UPSTREAM END BEVELLED, DOWNSTREAM END FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	500

CHAMBER C.05
COORDINATES LIST OF THE BOUNDARY OF THE FOUNDATION SLAB

NAME	X	Y
A	90881.2018	2843404.5105
B	90873.2198	2843405.0468
C	90873.9572	2843416.0221
D	90881.9392	2843415.4857

THE X AND Y CO-ORDINATES OF THE INFORMATION INDICATED ON THIS DRAWING ARE BASED ON THE WORLD GEODETIC SYSTEM 1984 ELLIPSOID (WGS84)

RECESS IN FLOOR
Scale 1:20

NOTES AND SPECIFICATIONS

GENERAL
1. ALL MATERIAL AND WORKMANSHIP MUST COMPLY WITH THE REQUIREMENTS OF THE LATEST RELEVANT SANS STANDARD.
2. ALL DIMENSIONS ARE IN mm (UNLESS OTHERWISE SPECIFIED).
3. DO NOT SCALE FROM THESE DRAWINGS.
4. ALL DIMENSIONS MUST BE CHECKED AND APPROVED ON SITE.
5. ALL CONSTRUCTION TO BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR MUNICIPAL CIVIL ENGINEERING WORKS, THIRD EDITION 2005 AND THE STANDARD COT DETAIL DRAWINGS.
6. THIS DRAWING MUST BE READ IN CONJUNCTION WITH THE STANDARD DRAWINGS.(IF APPLICABLE).
7. THIS DRAWING MUST BE READ IN CONJUNCTION WITH THE STANDARD SPECIFICATIONS FOR MUNICIPAL CIVIL ENGINEERING WORKS, SERIES 4.
8. THE SIGNATURE OR INITIALS ON THIS DRAWING, OF ANY DIRECTOR OF THE WATER AND SANITATION DEPARTMENT, IN NO WAY, REMOVES ANY RESPONSIBILITY WHATSOEVER FROM THE CONSULTANT.
9. THE CONSULTANT REMAINS RESPONSIBLE TO ENSURE THAT ALL THE GUIDELINES, STANDARD DRAWINGS, STANDARDS AND SPECIFICATIONS OF THE WATER AND SANITATION DEPARTMENT HAVE BEEN MET AND ARE COMPLIED WITH.
10. FINAL POSITION OF SERVICES TO BE DETERMINED ON SITE.

PARTICULAR:
1. CONCRETE USED IN CONSTRUCTION OF THE STRUCTURE TO BE CLASS 30/19 MPa
2. CONCRETE SURFACE FINISH SHALL BE STEEL-FLOATED FINISH ON TOP OF ROOF SLAB AND WALLS OFF-SHUTTER, BASE FINISHED WITH STRAIGHT EDGE AND SCREED WITH STEEL FLOAT FINISH.
3. SCREED 1:CEMENT CEM 1:5 RIVER SAND
4. DEGREE OF ACCURACY FOR PRECAST PLANKS TO BE I AND ALL OTHER II OF SANS 1200G
5. WHERE HIGH WATER TABLE IS ENCOUNTERED, 3 COATS OF A HEAVY WATERPROOFING COMPOUND SUCH AS ABE SUPER LAYKOLD SHALL BE APPLIED TO EXTERIOR WALLS

CONSTRUCTION PROCEDURE
1. CLEAR SITE, EXCAVATE TO REQUIRED DEPTH AND CONSTRUCT 75mm THK CLASS 15/19 MPa BLINDING LAYER
2. FIX FLOOR SLAB & WALL STARTER BARS AND CAST FLOOR SLAB
3. FIX WALL REINFORCEMENT BEFORE CASTING WALL
4. PLACE FORM WORK FOR FIXED ROOF PANELS. FIX STEEL AND CAST CONCRETE
5. CURE ALL CONCRETE FOR 5 DAYS

CONSTRUCTION MANAGEMENT AND USE OF DRAWINGS:
CONSTRUCTION MANAGEMENT:
1. THE COUNCIL SHALL APPOINT OR PROVIDE AN APPROPRIATELY QUALIFIED AND EXPERIENCED FOREMAN, TO MANAGE AND SUPERVISE THE CONSTRUCTION OF THE RESERVOIR SHOWN ON THESE CONSTRUCTION DRAWINGS.
2. THE FOREMAN SHALL STUDY, INTERPRET AND APPLY THE DETAILS AND INSTRUCTIONS PROVIDED ON THE DRAWINGS, WHILST AT THE SAME TIME SUPERVISE THE CONSTRUCTION OF THE WORKS ON A DAILY BASIS.
3. NO DEVIATION FROM THE DRAWINGS DETAILS AND INSTRUCTIONS ARE PERMITTED.
4. SHOULD THE FOREMAN HAVE QUESTIONS ABOUT THE DRAWINGS OR CONSTRUCTION, HE SHOULD CONTACT THE COUNCIL'S ENGINEER IN CHARGE OF THE PROJECT.

CONSTRUCTION MONITORING:
1. AS THE CONSULTING ENGINEER HAS NOT BEEN APPOINTED TO PERFORM THE CONSTRUCTION MONITORING DUTIES, HE CANNOT TAKE ANY RESPONSIBILITY FOR THE SUCCESSFUL AND CORRECT EXECUTION OF THE WORKS ACCORDING TO THE CONSTRUCTION DRAWINGS.
2. THE FULL RESPONSIBILITY FOR SUPERVISING THE EXECUTION OF THE WORKS LIES WITH THE FOREMAN OF THE PROJECT.

DESIGN CRITERIA:
- SOIL DENSITY = 1800kg/mc
- SOIL K-ACTIVE = 0,4
- MAX. WATER TABLE = 1.0 BELOW NGL.
- LIVELOAD
  VEHICLE ON ROOF ≤ 4500kg GVM
  i.e 6 kPa LL OR 2 x 14kN PL 1.0m APART
- SAFE BEARING PRESSURE OF GROUND ≥ 100kPa

PEDESTAL REINFORCEMENT:
1. CONCRETE USED IN CONSTRUCTION OF THE STRUCTURE TO BE CLASS 30/19 MPa
2. SCREED 1:CEMENT CEM 1:5 RIVER SAND
3. ARMORING TO BE USED: REBARS Y12-200 ON BOTH SIDES

CITY OF TSHWANE
IGNITING EXCELLENCE
PO BOX 1022
PRETORIA
0001

CITY OF TSHWANE
SERVICES INFRASTRUCTURE DEPARTMENT
WATER AND SANITATION DIVISION

AMENDMENTS

NR	DATE	APPROVED	DESCRIPTION	PAR

WATER AND SANITATION
FOR INTERNAL APPROVAL - RECEIVED SIGN WHEN APPLICABLE

DIRECTOR: WATER AND SANITATION - PLANNING
NAME _____ Prof. Reg. No _____ SIGNATURE _____ DATE _____

REGIONAL DIRECTOR: (1,2,3,4,5,6 or 7)
NAME _____ Prof. Reg. No _____ SIGNATURE _____ DATE _____

DIRECTOR: SYSTEM DEVELOPMENT
NAME _____ Prof. Reg. No _____ SIGNATURE _____ DATE _____

DIRECTOR: BULK WATER
NAME _____ Prof. Reg. No _____ SIGNATURE _____ DATE _____

DIRECTOR: INFRASTRUCTURE PROVISION
NAME _____ Prof. Reg. No _____ SIGNATURE _____ DATE _____

DIRECTOR: WASTE WATER TREATMENT
NAME _____ Prof. Reg. No _____ SIGNATURE _____ DATE _____

CONSULTANT DETAIL

DPT CIVIL & STRUCTURAL
DPT CIVIL AND STRUCTURAL JV
POSTNET SUITE 453
SINOVILLE CONER
PRIVATE BAG X504
SINOVILLE
0129
TEL: 012 567 7381
FAX: 012 567 1996
E-MAIL: info@ditshimega.co.za

I, Z.D RANTA Prof Reg Nr 201170066
HEREBY CERTIFY THAT THE SERVICES WILL\ HAVE BEEN INSTALLED ACCORDING TO NOTE 9 OF THE ABOVE NOTES AND TO THE DRAWING

SIGNATURE _____ DATE _____

CONSULTANT DRAWING NUMBER: _____ 0 REVISION

DESIGNED
NAME: Z.D RANTA Pr Eng. Prof Reg No: 201170066
SIGNATURE: _____ DATE: _____

DRAWN
NAME: K.MOLEMA Prof Reg No: _____
SIGNATURE: _____ DATE: _____

CHECKED
NAME: Z.D RANTA Pr Tech. Prof Reg No: 201170066
SIGNATURE: _____ DATE: _____

INFORMATION OFFICE CHECKED
NAME: _____ Prof Reg No: _____
SIGNATURE: _____ DATE: _____

DESIGN OFFICE APPROVAL
NAME: Z.D RANTA Pr Eng. Prof Reg No: 201170066
SIGNATURE: _____ DATE: _____

CONTRACT No: _____
PROJECT No. _____
SHEET No. 2543IES-197a
PAPER SIZE: A0
SCALE: as shown
DATE: 2025-06-10

LOCATION OF PROJECT:
ZANDFONTEIN

DESCRIPTION OF PROJECT:
BULK DISTRIBUTION NETWORK
CHAMBER C.05
REINFORCED CONCRETE VALVES CHAMBER LAYOUT
(9.0m L x 6.0m W x 3.5m H)

WBS No. : _ _____ _ _ _____ _ _ _____

COT DRAWING NUMBER: _ _____ _ _ _____ _ _ _____ 0 REVISION

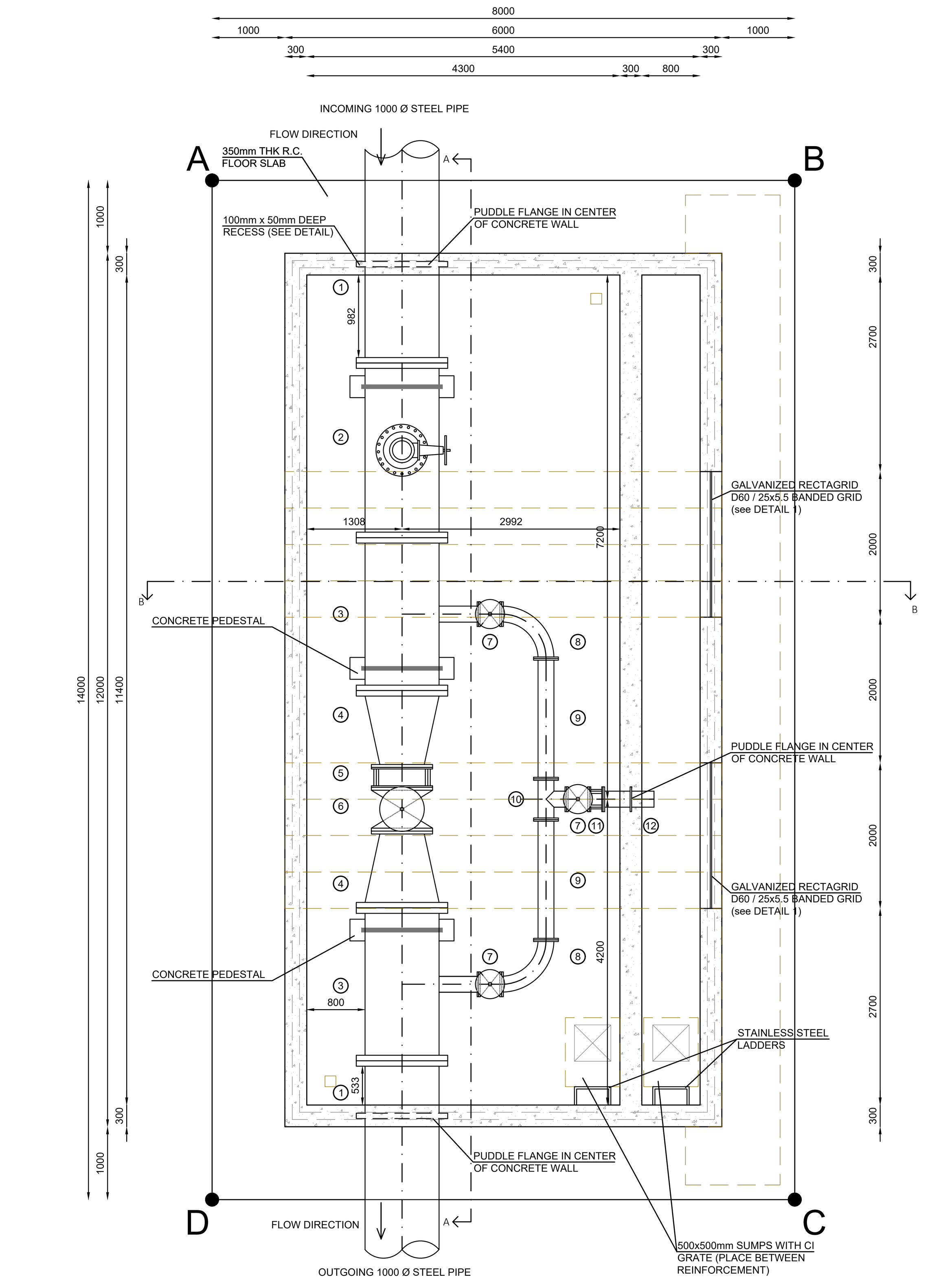
PROJECT STATUS
RECEIVED SIGN WHEN APPLICABLE

○ CONCEPT DRAWING ● TENDER DRAWING ○ APPROVED CONSTRUCTION DRAWING ○ AS BUILT DRAWING

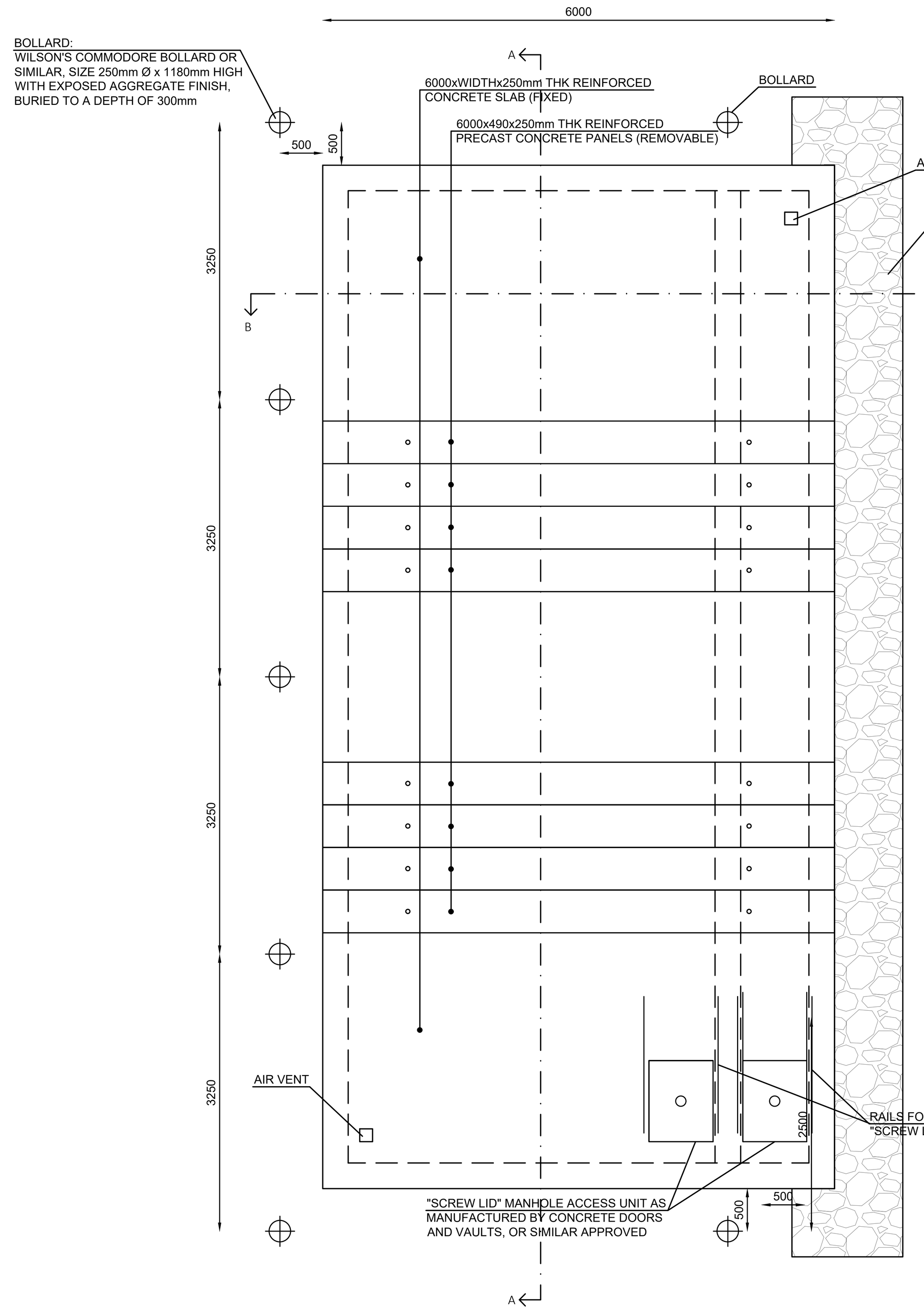
PROJECT ENGINEER of COT:
NAME: _____ Pr Eng. Prof Reg No: _____
SIGNATURE: _____ DATE: _____

INSPECTOR OF WORKS of COT:
NAME: _____ Pr Eng. Prof Reg No: _____
SIGNATURE: _____ DATE: _____

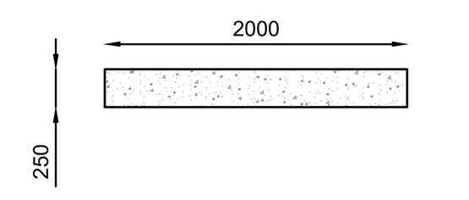
FLOOR PLAN
Scale 1:50



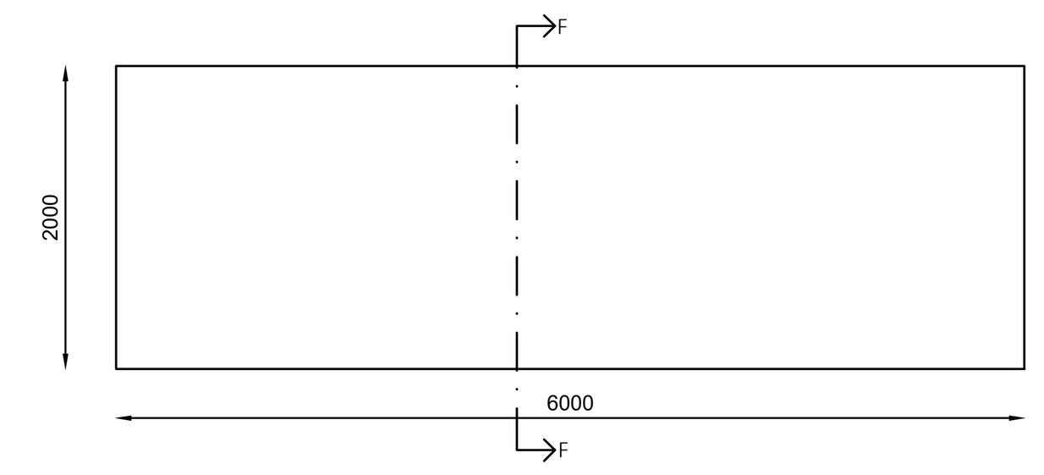
ROOF PLAN
Scale 1:50



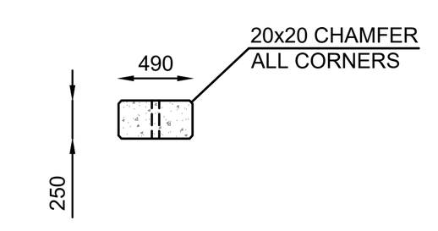
SECTION F
Scale 1:50



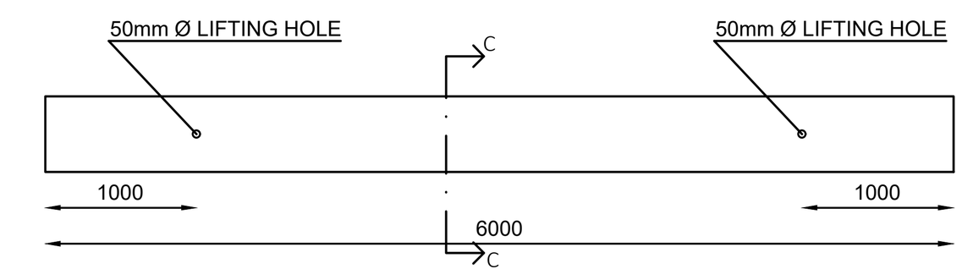
PLAN FIXED ROOF PANEL 3
Scale 1:50



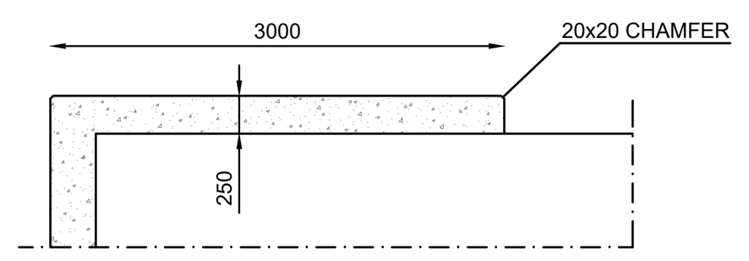
SECTION C
Scale 1:50



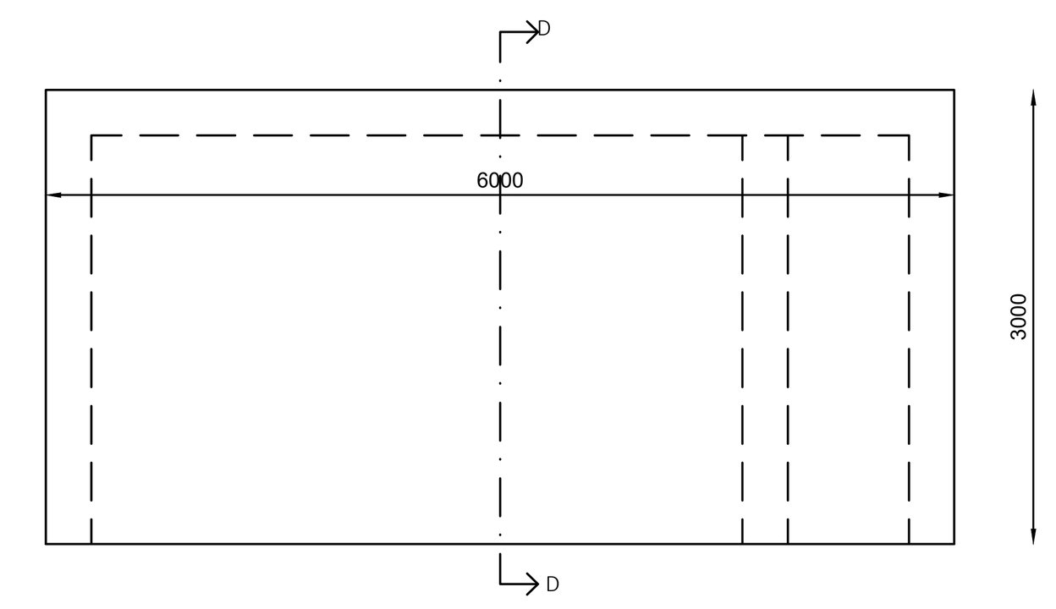
PLAN REMOVABLE ROOF PANELS
Scale 1:50



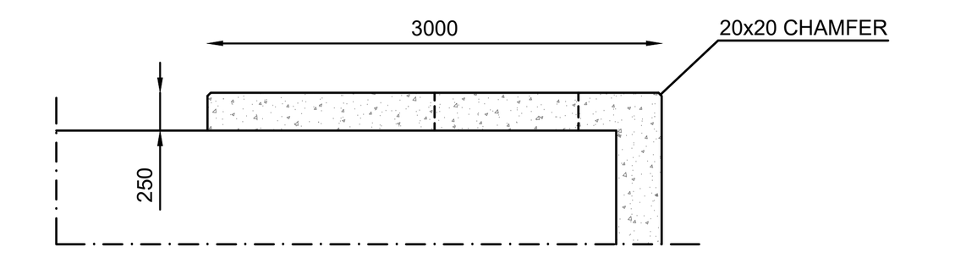
SECTION D
Scale 1:50



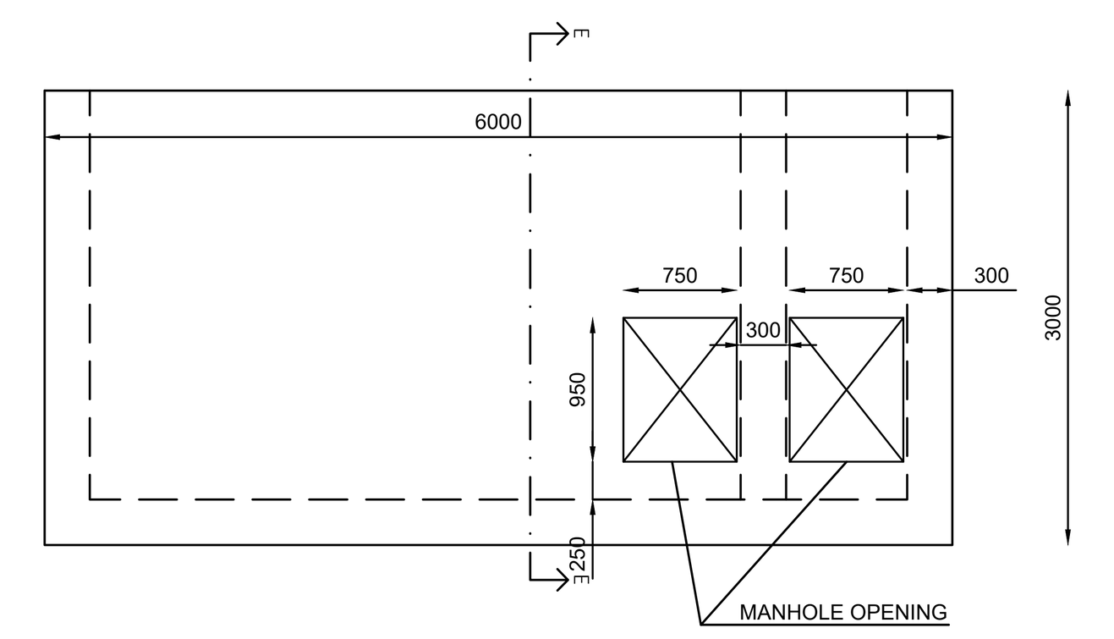
PLAN FIXED ROOF PANEL 1
Scale 1:50



SECTION E
Scale 1:50



PLAN FIXED ROOF PANEL 2
Scale 1:50



STEEL FLANGES

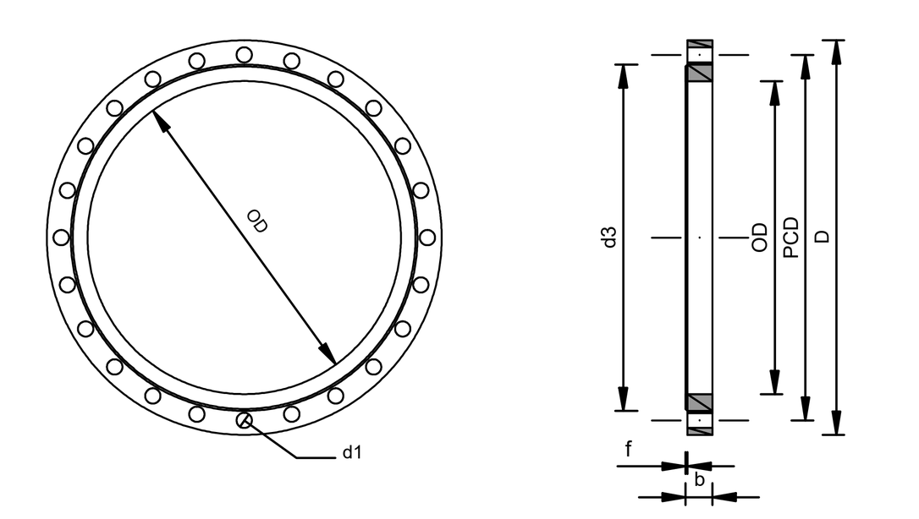
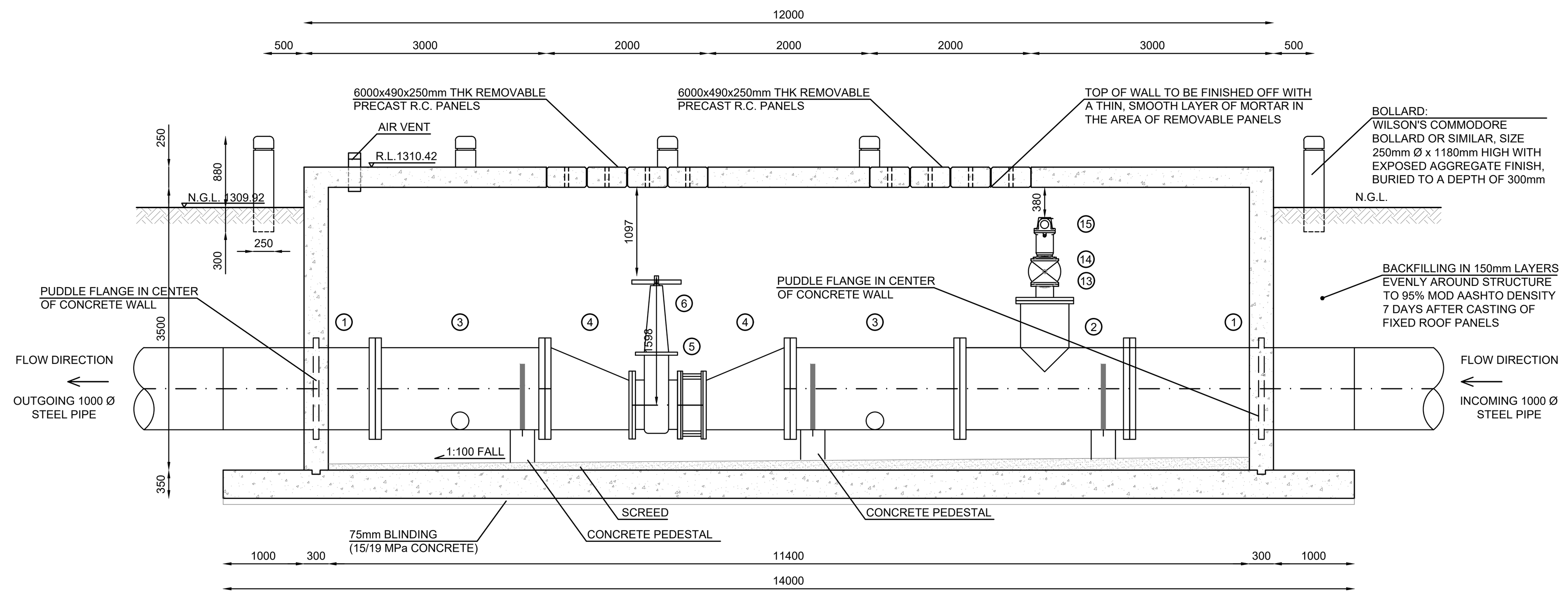
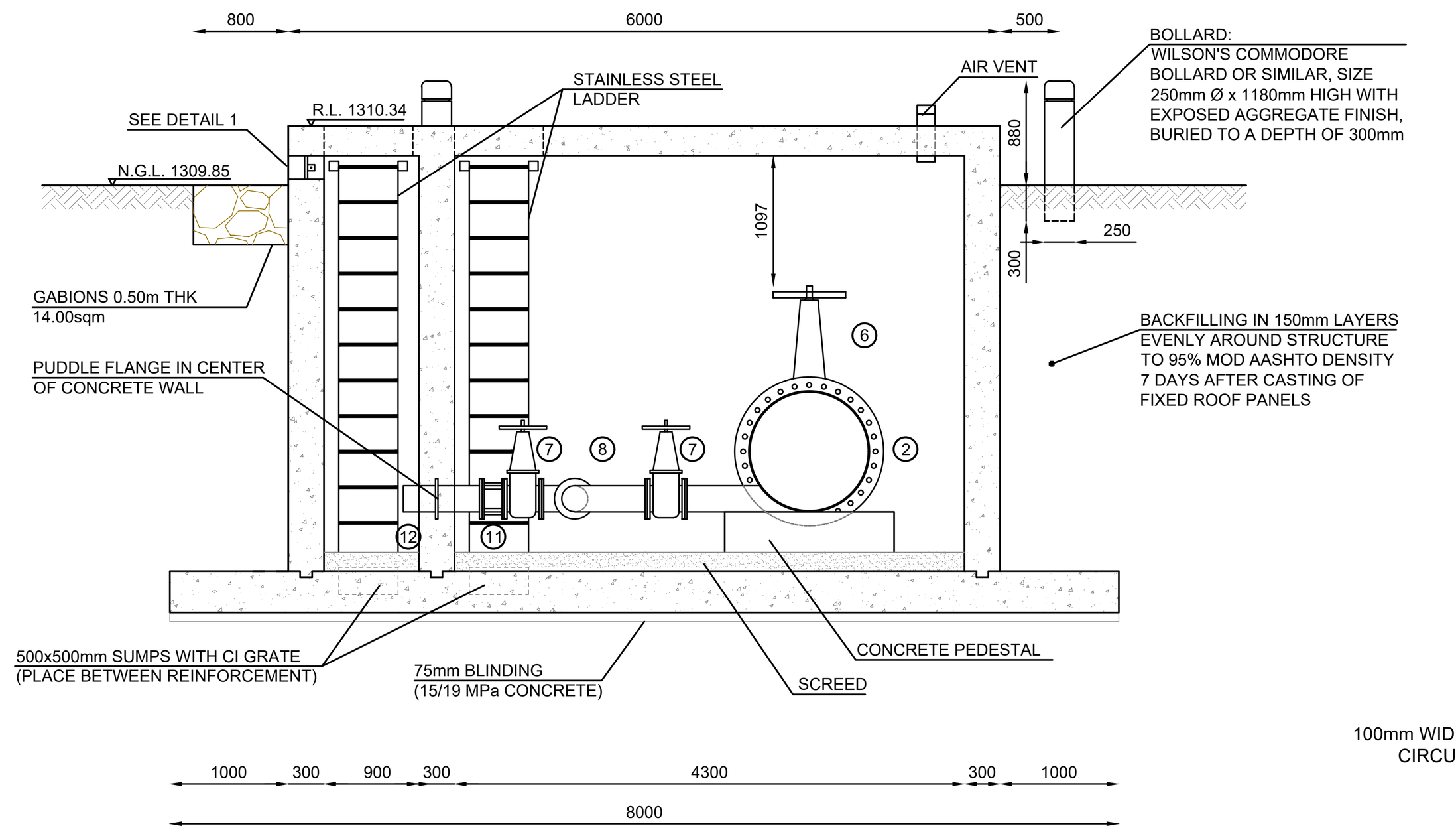


TABLE	PIPE		FLANGE		RAISED FACE		HOLES		BOLT	PCD
	NB (mm)	OD (mm)	D (mm)	b (mm)	d3 (mm)	f (mm)	No.	d1 (mm)	size	
SABS1123 1600/3	100	114.3	220.0	14.0	158.0	3.0	8	18.0	M16	180.0
	150	165.1	285.0	18.0	212.0	3.0	8	22.0	M20	240.0
	200	219.1	340.0	22.0	268.0	3.0	12	22.0	M20	295.0
	250	273.0	405.0	25.0	320.0	3.0	12	26.0	M24	355.0
	300	323.9	460.0	28.0	378.0	4.0	12	26.0	M24	410.0
	400	406.4	580.0	35.0	490.0	4.0	16	26.0	M24	525.0
	450	457.2	640.0	40.0	550.0	4.0	20	26.0	M24	585.0
	500	508.0	715.0	40.0	610.0	4.0	20	33.0	M30	650.0
	600	609.6	840.0	50.0	725.0	5.0	20	33.0	M30	770.0
	700	711.2	910.0	55.0	795.0	5.0	24	33.0	M30	840.0
	800	812.8	1025.0	65.0	900.0	5.0	24	39.0	M36	950.0
	900	914.4	1125.0	70.0	1000.0	5.0	28	39.0	M36	1050.0
	1000	1016.0	1255.0	75.0	1115.0	5.0	28	39.0	M36	1170.0
SABS1123 2500/3	150	165.1	300.0	30.0	218.0	3.0	8	26.0	M24	250.0
	250	273.0	425.0	30.0	335.0	3.0	12	26.0	M24	370.0
	350	355.6	555.0	35.0	450.0	4.0	16	33.0	M30	490.0
BS4504 25/3	700	711.2	960.0	74.0	820.0	5.0	24	42.0	M39	875.0

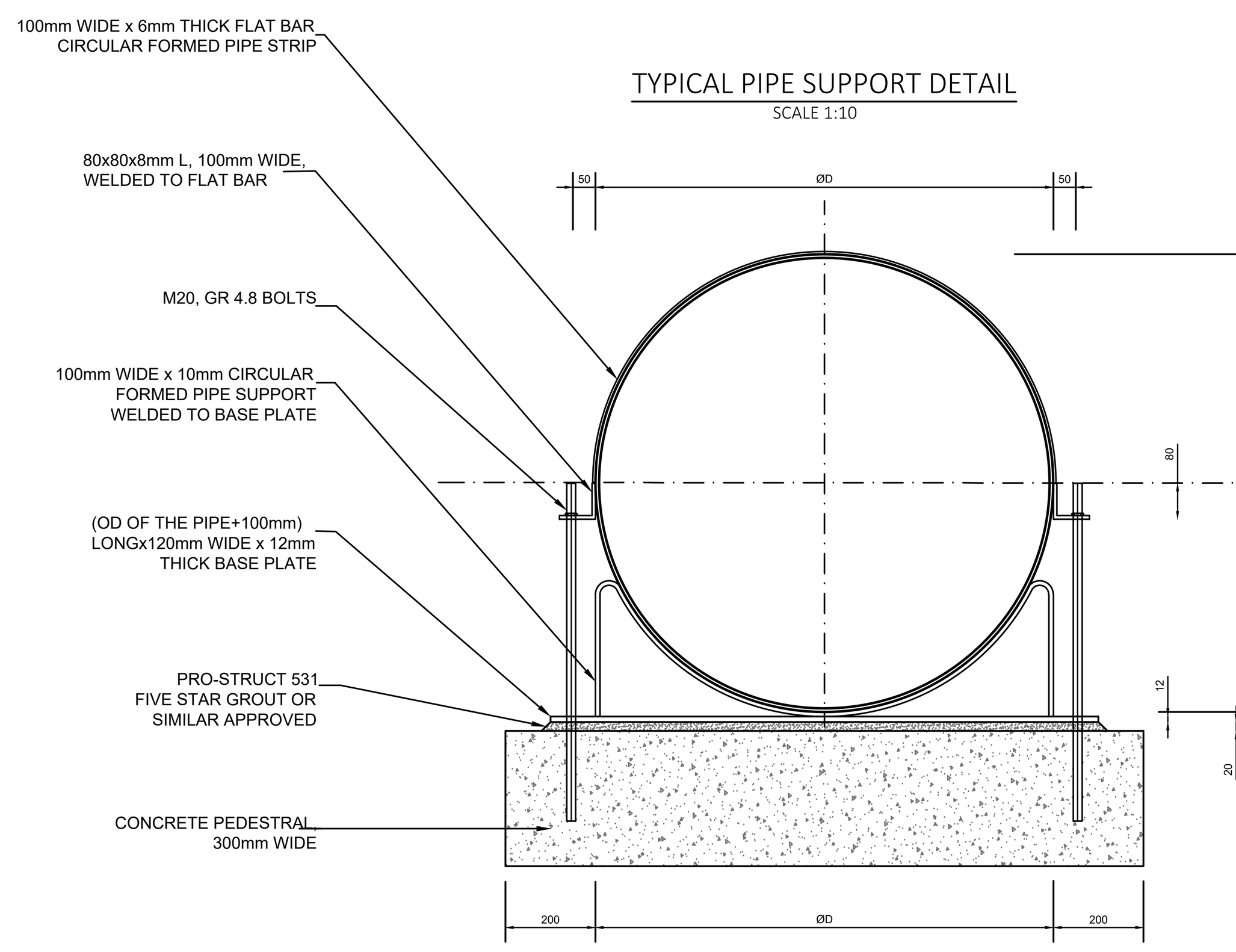
SECTION A
Scale 1:50



SECTION B
Scale 1:50



TYPICAL PIPE SUPPORT DETAIL
SCALE 1:10



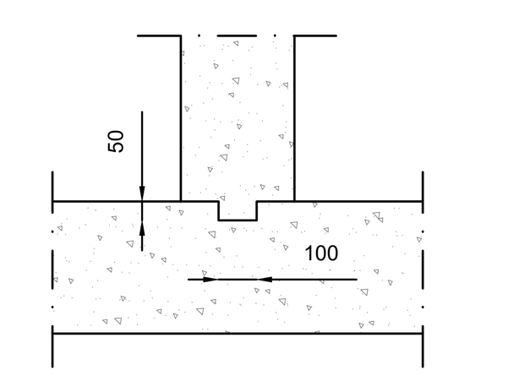
ITEM NR.	DESCRIPTION	NO. OFF	DIMENSIONS
1	1000 Ø x 2358mm LONG STEEL PIPE WITH PUDDLE FLANGE (FLANGED TO SANS 1123 - 1600/3). UPSTREAM END BEVELLED. DOWNSTREAM END FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	2	2358, 1150
2	1000 Ø x 500 Ø STEEL TEE WITH ALL ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	1050, 1050, 1050
3	1000 Ø x 200 Ø STEEL SCOUR WITH ALL ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	2	1050, 1050, 1050
4	1000 Ø x 600 Ø ECCENTRIC STEEL REDUCER. BOTH ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	2	1070
5	600 Ø STEEL COUPLING SUCH AS KLAMFLEX DISMANTLING JOINT OR SIMILAR APPROVED, PN16. FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	275
6	600 Ø VOSA GATE VALVE, PN16, OR SIMILAR APPROVED WITH HAND WHEEL AND ANTI-CLOCKWISE CLOSING TO SANS 664. NON RISING STEM. BOTH ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	600
7	200 Ø VOSA GATE VALVE, PN16, OR SIMILAR APPROVED WITH HAND WHEEL AND ANTI-CLOCKWISE CLOSING TO SANS 664. NON RISING STEM. BOTH ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	3	317
8	200 Ø x 90° STEEL BEND WITH ALL ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	2	610, 610
9	200 Ø STEEL STRAIGHT. BOTH ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	2	1652
10	200 Ø x 200 Ø STEEL TEE WITH ALL ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	280, 280, 280
11	200 Ø STEEL COUPLING SUCH AS KLAMFLEX DISMANTLING JOINT OR SIMILAR APPROVED, PN16. FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	185
12	200 Ø x 700mm LONG STEEL PIPE WITH PUDDLE FLANGE (FLANGED TO SANS 1123 - 1600/3). DOWNSTREAM END PLAIN. UPSTREAM END FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	383, 317
13	200 Ø STEEL SPACER BETWEEN BRANCH FLANGE & VALVE MADE UP BY 200mm LONG STUB MOUNTED IN CENTER OF SPECIAL FLANGE (BRANCH NB, 500 Ø) WITH STUB (AIR VALVE NB, 200 Ø) FLANGED & DRILLED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	200
14	200 Ø VOSA GATE VALVE, PN16, OR SIMILAR APPROVED WITH HAND WHEEL AND ANTI-CLOCKWISE CLOSING TO SANS 664. NON RISING STEM. BOTH ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	317
15	200 Ø VAG DUOJET AUTOMATIC AIR RELEASE & VACUUM BREAK VALVE SINGLE-CHAMBER TYPE, PN16, OR SIMILAR APPROVED, FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	505

CHAMBER C.06 COORDINATES LIST OF THE BOUNDARY OF THE FOUNDATION SLAB

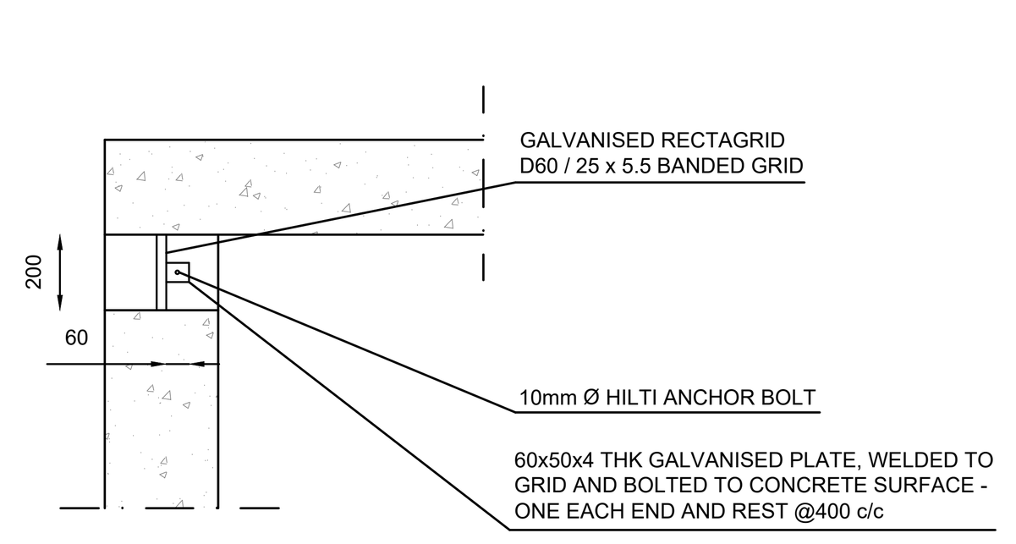
NAME	X	Y
A	90926.007	2843755.245
B	90926.404	2843763.235
C	90940.387	2843762.540
D	90939.990	2843754.550

THE X AND Y CO-ORDINATES OF THE INFORMATION INDICATED ON THIS DRAWING ARE BASED ON THE WORLD GEODETIC SYSTEM 1984 ELLIPSOID (WGS84)

RECESS IN FLOOR
Scale 1:20



DETAIL 1
Scale 1:20



NOTES AND SPECIFICATIONS

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3. SCREED: 1 CEMENT CEM 1:5 RIVER SAND
4. DEGREE OF ACCURACY FOR PRECAST PLANKS TO BE I AND ALL OTHER II OF SANS 1200G
5. WHERE HIGH WATER TABLE IS ENCOUNTERED, 3 COATS OF A HEAVY WATERPROOFING COMPOUND SUCH AS ABE SUPER LAYKOLD SHALL BE APPLIED TO EXTERIOIR WALLS

CONSTRUCTION PROCEDURE
1. CLEAR SITE, EXCAVATE TO REQUIRED DEPTH AND CONSTRUCT 75mm THK CLASS 15/19 MPa BLINDING LAYER
2. FIX FLOOR SLAB & WALL STARTER BARS AND CAST FLOOR SLAB
3. FIX WALL REINFORCEMENT BEFORE CASTING WALL
4. PLACE FORM WORK FOR FIXED ROOF PANELS, FIX STEEL AND CAST CONCRETE
5. CURE ALL CONCRETE FOR 5 DAYS

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CONSTRUCTION MANAGEMENT:
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CONSTRUCTION MONITORING:
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2. THE FULL RESPONSABILITY FOR SUPERVISING THE EXECUTION OF THE WORKS LIES WITH THE FOREMAN OF THE PROJECT.

DESIGN CRITERIA:
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- SOIL K-ACTIVE = 0,4
- MAX. WATER TABLE = 1,0 BELOW NGL.
- LIVELOAD
  VEHICLE ON ROOF ≤ 4500kg GVM
  i.e 6 kPa LL OR 2 x 14kN PL 1,0m APART
- SAFE BEARING PRESSURE OF GROUND ≥ 100kPa

PEDESTAL REINFORCEMENT:
1. CONCRETE USED IN CONSTRUCTION OF THE STRUCTURE TO BE CLASS 30/19 MPa
2. SCREED: 1 CEMENT CEM 1:5 RIVER SAND
3. ARMORING TO BE USED: REBARS Y12-200 ON BOTH SIDES

CITY OF TSHWANE
IGNITING EXCELLENCE
PO BOX 1022
PRETORIA
0001
CITY OF TSHWANE
SERVICES INFRASTRUCTURE DEPARTMENT
WATER AND SANITATION DIVISION

AMENDMENTS

NR	DATE	APPROVED	DESCRIPTION	PAR

WATER AND SANITATION
FOR INTERNAL APPROVAL - RECEIVED SIGN WHEN APPLICABLE

DIRECTOR: WATER AND SANITATION - PLANNING
NAME Prof. Reg. No SIGNATURE DATE

REGIONAL DIRECTOR: (1,2,3,4,5,6 or 7)
NAME Prof. Reg. No SIGNATURE DATE

DIRECTOR: SYSTEM DEVELOPMENT
NAME Prof. Reg. No SIGNATURE DATE

DIRECTOR: BULK WATER
NAME Prof. Reg. No SIGNATURE DATE

DIRECTOR: INFRASTRUCTURE PROVISION
NAME Prof. Reg. No SIGNATURE DATE

DIRECTOR: WASTE WATER TREATMENT
NAME Prof. Reg. No SIGNATURE DATE

CONSULTANT DETAIL

DPT
CIVIL & STRUCTURAL JV
DPT CIVIL AND STRUCTURAL JV
POSTNET SUITE 453
SINOVILLE CONER
PRIVATE BAG X504
SINOVILLE
0129
TEL: 012 567 7381
FAX: 012 567 1996
E-MAIL: info@ditshimega.co.za

I, Z.D RANTA Prof Reg Nr 201170066
HEREBY CERTIFY THAT THE SERVICES WILL\ HAVE BEEN INSTALLED ACCORDING TO NOTE 9 OF THE ABOVE NOTES AND TO THE DRAWING

SIGNATURE DATE

CONSULTANT DRAWING NUMBER:

0 REVISION

DESIGNED
NAME: Z.D RANTA Pr Eng. Prof Reg No: 201170066
SIGNATURE: DATE:

DRAWN
NAME: K.MOLEMA Prof Reg No:
SIGNATURE: DATE:

CHECKED
NAME: Z.D RANTA Pr Tech. Prof Reg No: 201170066
SIGNATURE: DATE:

INFORMATION OFFICE CHECKED
NAME: Prof Reg No:
SIGNATURE: DATE:

DESIGN OFFICE APPROVAL
NAME: Z.D RANTA Pr Eng. Prof Reg No: 201170066
SIGNATURE: DATE:

CONTRACT No:

PROJECT No.

SHEET No. 2543IES-197b

PAPER SIZE: A0

SCALE: as shown

DATE: 2025-06-10

LOCATION OF PROJECT:
ZANDFONTEIN

DESCRIPTION OF PROJECT:
BULK DISTRIBUTION NETWORK
CHAMBER C.06
REINFORCED CONCRETE VALVES CHAMBER LAYOUT
(12.0m L x 6.0m W x 3.5m H)

WBS No. :

COT DRAWING NUMBER:

0 REVISION

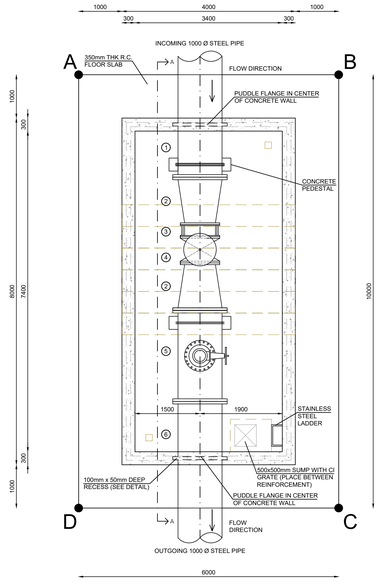
PROJECT STATUS
RECEIVED SIGN WHEN APPLICABLE

CONCEPT DRAWING | TENDER DRAWING | APPROVED CONSTRUCTION DRAWING | AS BUILT DRAWING

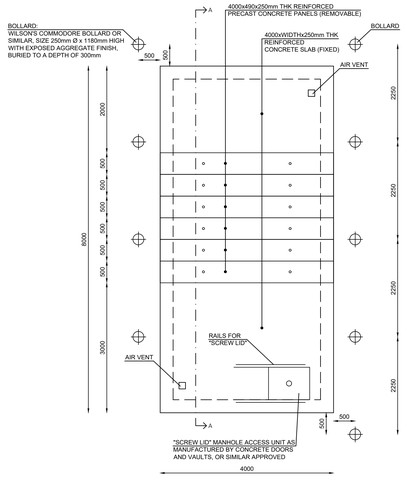
PROJECT ENGINEER of COT:
NAME: Pr Eng. Prof Reg No:
SIGNATURE: DATE:

INSPECTOR OF WORKS of COT:
NAME: Pr Eng. Prof Reg No:
SIGNATURE: DATE:

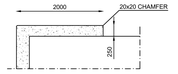
FLOOR PLAN
Scale 1:50



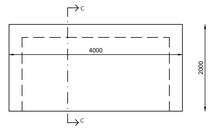
ROOF PLAN
Scale 1:50



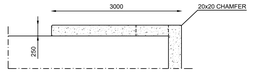
SECTION C
Scale 1:50



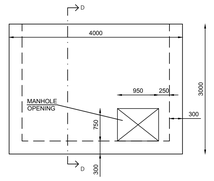
PLAN
FIXED ROOF PANEL 1
Scale 1:50



SECTION D
Scale 1:50

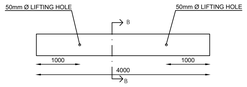


PLAN
FIXED ROOF PANEL 2
Scale 1:50

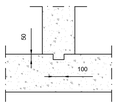


SECTION B
Scale 1:50

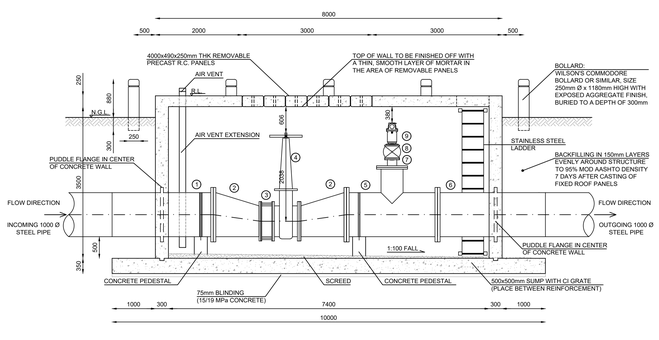
PLAN
REMOVABLE ROOF PANELS
Scale 1:50

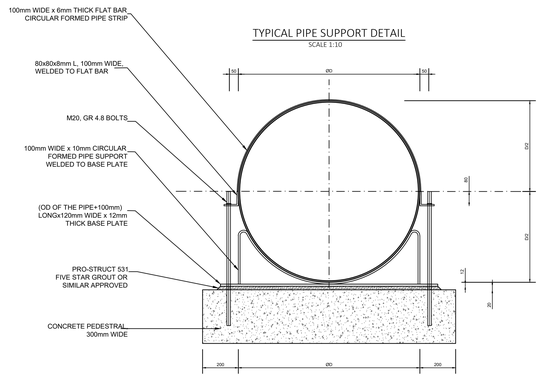


RECESS IN FLOOR
Scale 1:20



SECTION A
Scale 1:50





TYPICAL PIPE SUPPORT DETAIL
SCALE 1:10

STEEL FLANGES

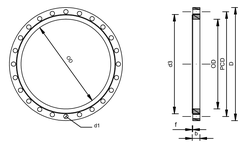


TABLE	PIPE NB (mm)	PIPE OD (mm)	FLANGE D (mm)	FLANGE b (mm)	RAISED FACE d3 (mm)	RAISED FACE f (mm)	HOLES No.	HOLES d1 (mm)	BOLT size	PCD
SABS1123 1600/3	100	114.3	220.0	14.0	158.0	3.0	8	18.0	M16	180.0
	150	165.1	285.0	18.0	212.0	3.0	8	22.0	M20	240.0
	200	219.1	340.0	22.0	268.0	3.0	12	22.0	M20	295.0
	250	273.0	405.0	25.0	320.0	3.0	12	26.0	M24	355.0
	300	323.9	460.0	28.0	378.0	4.0	12	26.0	M24	410.0
	400	406.4	580.0	35.0	490.0	4.0	16	26.0	M24	525.0
	450	457.2	640.0	40.0	550.0	4.0	20	26.0	M24	585.0
	500	508.0	715.0	40.0	610.0	4.0	20	33.0	M30	650.0
	600	609.6	840.0	50.0	725.0	5.0	20	33.0	M30	770.0
	700	711.2	910.0	55.0	795.0	5.0	24	33.0	M30	840.0
	800	812.8	1025.0	65.0	900.0	5.0	24	39.0	M36	950.0
	900	914.4	1125.0	70.0	1000.0	5.0	28	39.0	M36	1050.0
	1000	1016.0	1255.0	75.0	1115.0	5.0	28	39.0	M36	1170.0
SABS1123 2500/3	150	165.1	300.0	30.0	218.0	3.0	8	26.0	M24	250.0
	250	273.0	425.0	30.0	335.0	3.0	12	26.0	M24	370.0
	350	355.6	555.0	35.0	450.0	4.0	16	33.0	M30	490.0
BS4504 25/3	700	711.2	960.0	74.0	820.0	5.0	24	42.0	M39	875.0

ITEM NR.	DESCRIPTION	NO. OFF	DIMENSIONS
1	1000 Ø x 2365mm LONG STEEL PIPE WITH PUDDLE FLANGE (FLANGED TO SANS 1123 - 1600/3). UPSTREAM END BEVELLED. DOWNSTREAM END FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	1215, 1150
2	1000 Ø x 700 Ø ECCENTRIC STEEL REDUCER, BOTH ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	2	1070
3	700 Ø STEEL COUPLING SUCH AS KLAMFLEX DISMANTLING JOINT OR SIMILAR APPROVED, PN16. FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	275
4	700 Ø VOSA GATE VALVE, PN16, OR SIMILAR APPROVED WITH HAND WHEEL AND ANTI-CLOCKWISE CLOSING TO SANS 664. NON RISING STEM. BOTH ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	610
5	1000 Ø x 500 Ø STEEL TEE WITH ALL ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	1050, 1050, 1050
6	1000 Ø x 3490mm LONG STEEL PIPE WITH PUDDLE FLANGE (FLANGED TO SANS 1123 - 1600/3). DOWNSTREAM END BEVELLED. UPSTREAM END FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	1340, 2150
7	200 Ø STEEL SPACER BETWEEN BRANCH FLANGE & VALVE MADE UP BY 200mm LONG STUB MOUNTED IN CENTER OF SPECIAL FLANGE (BRANCH NB. 500 Ø) WITH STUB (AIR VALVE NB, 200 Ø) FLANGED & DRILLED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	200
8	200 Ø VOSA GATE VALVE, PN16, OR SIMILAR APPROVED WITH HAND WHEEL AND ANTI-CLOCKWISE CLOSING TO SANS 664. NON RISING STEM. BOTH ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	317
9	200 Ø VAG DUOJET AUTOMATIC AIR RELEASE & VACUUM BREAK VALVE SINGLE-CHAMBER TYPE, PN16, OR SIMILAR APPROVED, FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	350

CHAMBERS C.07-C.08-C.09 COORDINATES LIST OF THE NATURAL GROUND LEVEL (N.G.L) AND ROOF LEVEL (R.F)

CH.	N.G.L	R.L
07	+1312.21	+1313.518
08	+1312.45	+1313.52
09	+1311.42	+1312.05

CHAMBER C.07 COORDINATES LIST OF THE BOUNDARY OF THE FOUNDATION SLAB

NAME	X	Y
A	91132.6011	2843744.7897
B	91132.8988	2843750.7823
C	91142.8865	2843750.2862
D	91142.5888	2843744.2936

THE X AND Y CO-ORDINATES OF THE INFORMATION INDICATED ON THIS DRAWING ARE BASED ON THE WORLD GEODETIC SYSTEM 1984 ELLIPSOID (WGS84)

CHAMBER C.08 COORDINATES LIST OF THE BOUNDARY OF THE FOUNDATION SLAB

NAME	X	Y
A	91306.6290	2843775.3128
B	91306.5758	2843781.3125
C	91316.5754	2843781.4011
D	91316.6286	2843775.4013

THE X AND Y CO-ORDINATES OF THE INFORMATION INDICATED ON THIS DRAWING ARE BASED ON THE WORLD GEODETIC SYSTEM 1984 ELLIPSOID (WGS84)

CHAMBER C.09 COORDINATES LIST OF THE BOUNDARY OF THE FOUNDATION SLAB

NAME	X	Y
A	91806.6218	2843779.7407
B	91806.5580	2843785.7404
C	91816.5577	2843785.8290
D	91816.6214	2843779.8292

THE X AND Y CO-ORDINATES OF THE INFORMATION INDICATED ON THIS DRAWING ARE BASED ON THE WORLD GEODETIC SYSTEM 1984 ELLIPSOID (WGS84)

NOTES AND SPECIFICATIONS

GENERAL
1. ALL MATERIAL AND WORKMANSHIP MUST COMPLY WITH THE REQUIREMENTS OF THE LATEST RELEVANT SANS STANDARD.
2. ALL DIMENSIONS ARE IN mm (UNLESS OTHERWISE SPECIFIED).
3. DO NOT SCALE FROM THESE DRAWINGS.
4. ALL DIMENSIONS MUST BE CHECKED AND APPROVED ON SITE.
5. ALL CONSTRUCTION TO BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR MUNICIPAL CIVIL ENGINEERING WORKS, THIRD EDITION 2005 AND THE STANDARD COT DETAIL DRAWINGS.
6. THIS DRAWING MUST BE READ IN CONJUNCTION WITH THE STANDARD DRAWINGS.(IF APPLICABLE).
7. THIS DRAWING MUST BE READ IN CONJUNCTION WITH THE STANDARD SPECIFICATIONS FOR MUNICIPAL CIVIL ENGINEERING WORKS, SERIES 4.
8. THE SIGNATURE OR INITIALS ON THIS DRAWING, OF ANY DIRECTOR OF THE WATER AND SANITATION DEPARTMENT, IN NO WAY, REMOVES ANY RESPONSIBILITY WHATSOEVER FROM THE CONSULTANT.
9. THE CONSULTANT REMAINS RESPONSIBLE TO ENSURE THAT ALL THE GUIDELINES, STANDARD DRAWINGS, STANDARDS AND SPECIFICATIONS OF THE WATER AND SANITATION DEPARTMENT HAVE BEEN MET AND ARE COMPLIED WITH.
10. FINAL POSITION OF SERVICES TO BE DETERMINED ON SITE.

PARTICULAR:
1. CONCRETE USED IN CONSTRUCTION OF THE STRUCTURE TO BE CLASS 30/19 MPa
2. CONCRETE SURFACE FINISH SHALL BE STEEL-FLOATED FINISH ON TOP OF ROOF SLAB AND WALLS OFF-SHUTTER, BASE FINISHED WITH STRAIGHT EDGE AND SCREED WITH STEEL FLOAT FINISH.
3. SCREED 1:3 CEMENT:CEM 1:5 RIVER SAND
4. DEGREE OF ACCURACY FOR PRECAST PLANKS TO BE I AND ALL OTHER II OF SANS 1200G
5. WHERE HIGH WATER TABLE IS ENCOUNTERED, 3 COATS OF A HEAVY WATERPROOFING COMPOUND SUCH AS ABE SUPER LAYKOLD SHALL BE APPLIED TO EXTERIOR WALLS

CONSTRUCTION PROCEDURE
1. CLEAR SITE, EXCAVATE TO REQUIRED DEPTH AND CONSTRUCT 75mm THK CLASS 15/19 MPa BLINDING LAYER
2. FIX FLOOR SLAB & WALL STARTER BARS AND CAST FLOOR SLAB
3. FIX WALL REINFORCEMENT BEFORE CASTING WALL
4. PLACE FORM WORK FOR FIXED ROOF PANELS. FIX STEEL AND CAST CONCRETE
5. CURE ALL CONCRETE FOR 5 DAYS

CONSTRUCTION MANAGEMENT AND USE OF DRAWINGS:
CONSTRUCTION MANAGEMENT:
1. THE COUNCIL SHALL APPOINT OR PROVIDE AN APPROPRIATELY QUALIFIED AND EXPERIENCED FOREMAN, TO MANAGE AND SUPERVISE THE CONSTRUCTION OF THE RESERVOIR SHOWN ON THESE CONSTRUCTION DRAWINGS.
2. THE FOREMAN SHALL STUDY, INTERPRET AND APPLY THE DETAILS AND INSTRUCTIONS PROVIDED ON THE DRAWINGS, WHILST AT THE SAME TIME SUPERVISE THE CONSTRUCTION OF THE WORKS ON A DAILY BASIS.
3. NO DEVIATION FROM THE DRAWINGS DETAILS AND INSTRUCTIONS ARE PERMITTED.
4. SHOULD THE FOREMAN HAVE QUESTIONS ABOUT THE DRAWINGS OR CONSTRUCTION, HE SHOULD CONTACT THE COUNCIL'S ENGINEER IN CHARGE OF THE PROJECT.

CONSTRUCTION MONITORING:
1. AS THE CONSULTING ENGINEER HAS NOT BEEN APPOINTED TO PERFORM THE CONSTRUCTION MONITORING DUTIES, HE CANNOT TAKE ANY RESPONSIBILITY FOR THE SUCCESSFUL AND CORRECT EXECUTION OF THE WORKS ACCORDING TO THE CONSTRUCTION DRAWINGS.
2. THE FULL RESPONSIBILITY FOR SUPERVISING THE EXECUTION OF THE WORKS LIES WITH THE FOREMAN OF THE PROJECT.

DESIGN CRITERIA:
- SOIL DENSITY = 1800kg/mc
- SOIL K-ACTIVE = 0,4
- MAX. WATER TABLE = 1,0 BELOW NGL.
- LIVELOAD
  VEHICLE ON ROOF ≤ 4500kg GVM
  i.e 6 kPa LL OR 2 x 1kN PL 1.0m APART
- SAFE BEARING PRESSURE OF GROUND ≥ 100kPa

PEDESTAL REINFORCEMENT:
1. CONCRETE USED IN CONSTRUCTION OF THE STRUCTURE TO BE CLASS 30/19 MPa
2. SCREED: 1 CEMENT CEM 1:5 RIVER SAND
3. ARMORING TO BE USED: REBARS Y12-200 ON BOTH SIDES

CITY OF TSHWANE
IGNITING EXCELLENCE
PO BOX 1022
PRETORIA
0001

CITY OF TSHWANE
SERVICES INFRASTRUCTURE DEPARTMENT
WATER AND SANITATION DIVISION

AMENDMENTS

NR	DATE	APPROVED	DESCRIPTION	PAR

WATER AND SANITATION
FOR INTERNAL APPROVAL - RECEIVED SIGN WHEN APPLICABLE

DIRECTOR: WATER AND SANITATION - PLANNING
NAME ____ Prof. Reg. No ____ SIGNATURE ____ DATE ____

REGIONAL DIRECTOR: (1,2,3,4,5,6 or 7)
NAME ____ Prof. Reg. No ____ SIGNATURE ____ DATE ____

DIRECTOR: SYSTEM DEVELOPMENT
NAME ____ Prof. Reg. No ____ SIGNATURE ____ DATE ____

DIRECTOR: BULK WATER
NAME ____ Prof. Reg. No ____ SIGNATURE ____ DATE ____

DIRECTOR: INFRASTRUCTURE PROVISION
NAME ____ Prof. Reg. No ____ SIGNATURE ____ DATE ____

DIRECTOR: WASTE WATER TREATMENT
NAME ____ Prof. Reg. No ____ SIGNATURE ____ DATE ____

CONSULTANT DETAIL

DPT
CIVIL & STRUCTURAL JV

DPT CIVIL AND STRUCTURAL JV
POSTNET SUITE 453
SINOVILLE CONER
PRIVATE BAG X504
SINOVILLE
0129
TEL: 012 567 7381
FAX: 012 567 1996
E-MAIL: info@ditshimega.co.za

I, Z.D RANTA Prof Reg Nr 201170066
HEREBY CERTIFY THAT THE SERVICES WILL HAVE BEEN INSTALLED ACCORDING TO NOTE 9 OF THE ABOVE NOTES AND TO THE DRAWING

SIGNATURE ____ DATE ____

CONSULTANT DRAWING NUMBER: ____ 0 REVISION

DESIGNED
NAME: Z.D RANTA Pr Eng. Prof Reg No: 201170066
SIGNATURE: ____ DATE: ____

DRAWN
NAME: K.MOLEMA Prof Reg No: ____
SIGNATURE: ____ DATE: ____

CHECKED
NAME: Z.D RANTA Pr Tech. Prof Reg No: 201170066
SIGNATURE: ____ DATE: ____

INFORMATION OFFICE CHECKED
NAME: ____ Prof Reg No: ____
SIGNATURE: ____ DATE: ____

DESIGN OFFICE APPROVAL
NAME: Z.D RANTA Pr Eng. Prof Reg No: 201170066
SIGNATURE: ____ DATE: ____

CONTRACT No: ____
PROJECT No. ____
SHEET No. 2543IES-198
PAPER SIZE: A0
SCALE: as shown
DATE: 2025-06-10

LOCATION OF PROJECT:
ZANDFONTEIN

DESCRIPTION OF PROJECT:
BULK DISTRIBUTION NETWORK
CHAMBERS C.07 - C.08 - C.09
REINFORCED CONCRETE VALVES CHAMBER LAYOUT
(8.0m L x 4.0m W x 3.5m H)

WBS No. : __ __ __ __ __ __ __

COT DRAWING NUMBER: __ __ __ __ __ __ __ 0 REVISION

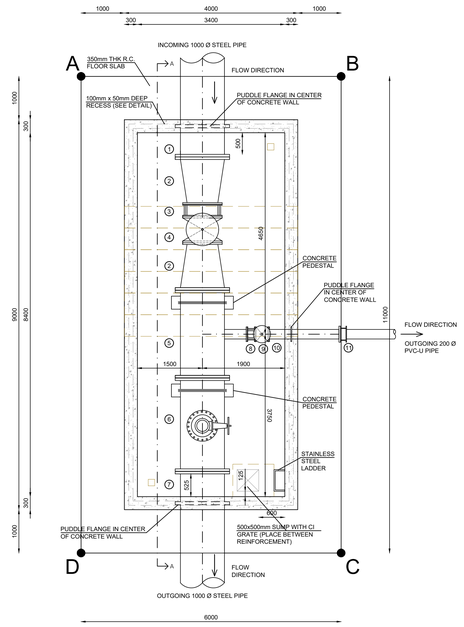
PROJECT STATUS
RECEIVED SIGN WHEN APPLICABLE

○ CONCEPT DRAWING ● TENDER DRAWING ○ APPROVED CONSTRUCTION DRAWING ○ AS BUILT DRAWING

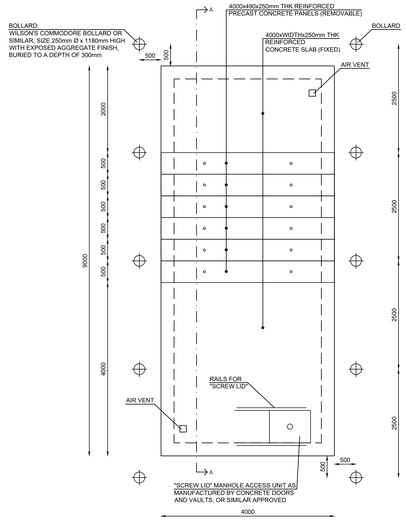
PROJECT ENGINEER of COT:
NAME: ____ Pr Eng. Prof Reg No: ____
SIGNATURE: ____ DATE: ____

INSPECTOR OF WORKS of COT:
NAME: ____ Pr Eng. Prof Reg No: ____
SIGNATURE: ____ DATE: ____

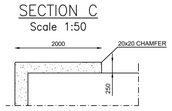
FLOOR PLAN
Scale 1:50



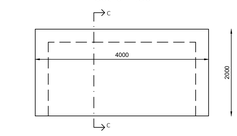
ROOF PLAN
Scale 1:50



SECTION C
Scale 1:50



PLAN
FIXED ROOF PANEL 1
Scale 1:50



SECTION D
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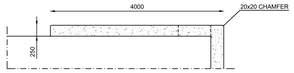
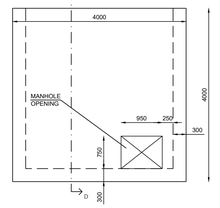
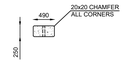


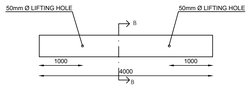
PLAN
FIXED ROOF PANEL 2
Scale 1:50



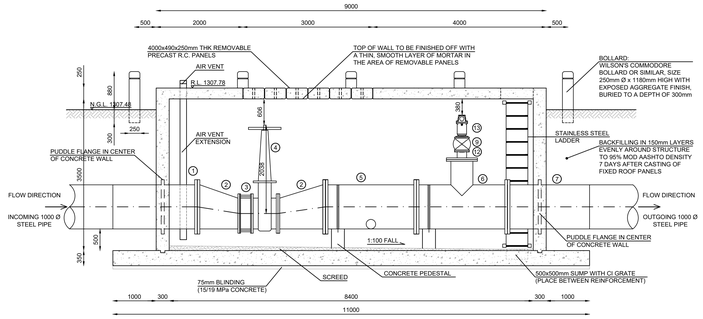
SECTION B
Scale 1:50



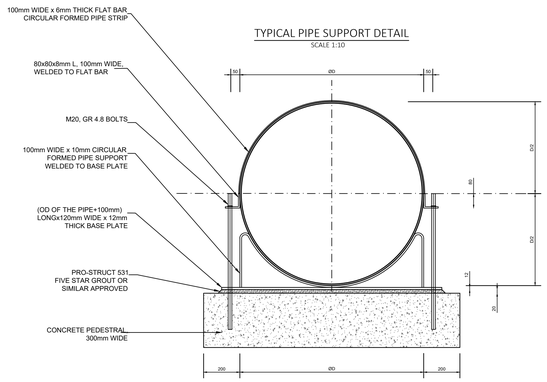
PLAN
REMOVABLE ROOF PANELS
Scale 1:50



SECTION A
Scale 1:50



TYPICAL PIPE SUPPORT DETAIL
SCALE 1:10



STEEL FLANGES

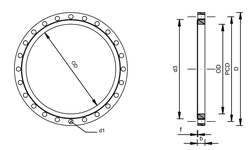


TABLE	PIPE NB (mm)	PIPE OD (mm)	FLANGE D (mm)	FLANGE b (mm)	RAISED FACE d3 (mm)	RAISED FACE f (mm)	HOLES No.	HOLES d1 (mm)	BOLT size	PCD
SABS1123 1600/3	100	114.3	220.0	14.0	158.0	3.0	8	18.0	M16	180.0
	150	165.1	285.0	18.0	212.0	3.0	8	22.0	M20	240.0
	200	219.1	340.0	22.0	268.0	3.0	12	22.0	M20	295.0
	250	273.0	405.0	25.0	320.0	3.0	12	26.0	M24	355.0
	300	323.9	460.0	28.0	378.0	4.0	12	26.0	M24	410.0
	400	406.4	580.0	35.0	490.0	4.0	16	26.0	M24	525.0
	450	457.2	640.0	40.0	550.0	4.0	20	26.0	M24	585.0
	500	508.0	715.0	40.0	610.0	4.0	20	33.0	M30	650.0
	600	609.6	840.0	50.0	725.0	5.0	20	33.0	M30	770.0
	700	711.2	910.0	55.0	795.0	5.0	24	33.0	M30	840.0
	800	812.8	1025.0	65.0	900.0	5.0	24	39.0	M36	950.0
	900	914.4	1125.0	70.0	1000.0	5.0	28	39.0	M36	1050.0
	1000	1016.0	1255.0	75.0	1115.0	5.0	28	39.0	M36	1170.0
SABS1123 2500/3	150	165.1	300.0	30.0	218.0	3.0	8	26.0	M24	250.0
	250	273.0	425.0	30.0	335.0	3.0	12	26.0	M24	370.0
	350	355.6	555.0	35.0	450.0	4.0	16	33.0	M30	490.0
BS4504 25/3	700	711.2	960.0	74.0	820.0	5.0	24	42.0	M39	875.0

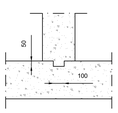
ITEM NR.	DESCRIPTION	NO. OFF	DIMENSIONS
1	1000 Ø x 1885mm LONG STEEL PIPE WITH PUDDLE FLANGE (FLANGED TO SANS 1123 - 1600/3). UPSTREAM END BEVELLED. DOWNSTREAM END FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	725, 1160
2	1000 Ø x 700 Ø ECCENTRIC STEEL REDUCER. BOTH ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	2	1070
3	700 Ø STEEL COUPLING SUCH AS KLAMFLEX DISMANTLING JOINT OR SIMILAR APPROVED, PN16. FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	275
4	700 Ø VOSA GATE VALVE, PN16, OR SIMILAR APPROVED WITH HAND WHEEL AND ANTI-CLOCKWISE CLOSING TO SANS 664. NON RISING STEM. BOTH ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	610
5	1000 Ø x 200 Ø STEEL SCOUR WITH ALL ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	1000, 1050, 1050
6	1000 Ø x 500 Ø STEEL TEE WITH ALL END'S FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	1000, 1050, 1050
7	1000 Ø x 1910mm LONG STEEL PIPE WITH PUDDLE FLANGE (FLANGED TO SANS 1123 - 1600/3). DOWNSTREAM END BEVELLED. UPSTREAM END FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	750, 1160
8	200 Ø STEEL COUPLING SUCH AS KLAMFLEX DISMANTLING JOINT OR SIMILAR APPROVED, PN16. FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	185
9	200 Ø VOSA GATE VALVE, PN16, OR SIMILAR APPROVED WITH HAND WHEEL AND ANTI-CLOCKWISE CLOSING TO SANS 664. NON RISING STEM. BOTH ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	2	317
10	200 Ø x 1650mm LONG STEEL PIPE WITH PUDDLE FLANGE (FLANGED TO SANS 1123 - 1600/3). BOTH END FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	498, 1152
11	200 Ø STEEL COUPLING SUCH AS KLAMFLEX RANGER FLANGE ADAPTOR OR SIMILAR APPROVED, PN16. FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	135
12	200 Ø STEEL SPACER BETWEEN BRANCH FLANGE & VALVE MADE UP BY 200mm LONG STUB MOUNTED IN CENTER OF SPECIAL FLANGE (BRANCH NB, 500 Ø) WITH STUB (AIR VALVE NB, 200 Ø) FLANGED & DRILLED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	200
13	200 Ø VAG DUOJET AUTOMATIC AIR RELEASE & VACUUM BREAK VALVE SINGLE-CHAMBER TYPE PN16, OR SIMILAR APPROVED, FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	505

CHAMBER C.10
COORDINATES LIST OF THE BOUNDARY OF THE FOUNDATION SLAB

NAME	X	Y
A	92182.9817	2843889.8574
B	92180.6849	2843895.4004
C	92190.8470	2843899.6113
D	92193.1438	2843894.0683

THE X AND Y CO-ORDINATES OF THE INFORMATION INDICATED ON THIS DRAWING ARE BASED ON THE WORLD GEODETIC SYSTEM 1984 ELLIPSOID (WGS84)

RECESS IN FLOOR
Scale 1:20



NOTES AND SPECIFICATIONS

GENERAL
1. ALL MATERIAL AND WORKMANSHIP MUST COMPLY WITH THE REQUIREMENTS OF THE LATEST RELEVANT SANS STANDARD.
2. ALL DIMENSIONS ARE IN mm (UNLESS OTHERWISE SPECIFIED).
3. DO NOT SCALE FROM THESE DRAWINGS.
4. ALL DIMENSIONS MUST BE CHECKED AND APPROVED ON SITE.
5. ALL CONSTRUCTION TO BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR MUNICIPAL CIVIL ENGINEERING WORKS, THIRD EDITION 2005 AND THE STANDARD COT DETAIL DRAWINGS.
6. THIS DRAWING MUST BE READ IN CONJUNCTION WITH THE STANDARD DRAWINGS.(IF APPLICABLE).
7. THIS DRAWING MUST BE READ IN CONJUNCTION WITH THE STANDARD SPECIFICATIONS FOR MUNICIPAL CIVIL ENGINEERING WORKS, SERIES 4.
8. THE SIGNATURE OR INITIALS ON THIS DRAWING, OF ANY DIRECTOR OF THE WATER AND SANITATION DEPARTMENT, IN NO WAY, REMOVES ANY RESPONSIBILITY WHATSOEVER FROM THE CONSULTANT.
9. THE CONSULTANT REMAINS RESPONSIBLE TO ENSURE THAT ALL THE GUIDELINES, STANDARD DRAWINGS, STANDARDS AND SPECIFICATIONS OF THE WATER AND SANITATION DEPARTMENT HAVE BEEN MET AND ARE COMPLIED WITH.
10. FINAL POSITION OF SERVICES TO BE DETERMINED ON SITE.

PARTICULAR:
1. CONCRETE USED IN CONSTRUCTION OF THE STRUCTURE TO BE CLASS 30/19 MPa
2. CONCRETE SURFACE FINISH SHALL BE STEEL-FLOATED FINISH ON TOP OF ROOF SLAB AND WALLS OFF-SHUTTER, BASE FINISHED WITH STRAIGHT EDGE AND SCREED WITH STEEL FLOAT FINISH.
3. SCREED 1:CEMENT:CEM 1:5 RIVER SAND
4. DEGREE OF ACCURACY FOR PRECAST PLANKS TO BE I AND ALL OTHER II OF SANS 1200G
5. WHERE HIGH WATER TABLE IS ENCOUNTERED, 3 COATS OF A HEAVY WATERPROOFING COMPOUND SUCH AS ABE SUPER LAYKOLD SHALL BE APPLIED TO EXTERIOR WALLS

CONSTRUCTION PROCEDURE
1. CLEAR SITE, EXCAVATE TO REQUIRED DEPTH AND CONSTRUCT 75mm THK CLASS 15/19 MPa BLINDING LAYER
2. FIX FLOOR SLAB & WALL STARTER BARS AND CAST FLOOR SLAB
3. FIX WALL REINFORCEMENT BEFORE CASTING WALL
4. PLACE FORM WORK FOR FIXED ROOF PANELS. FIX STEEL AND CAST CONCRETE
5. CURE ALL CONCRETE FOR 5 DAYS

CONSTRUCTION MANAGEMENT AND USE OF DRAWINGS:
CONSTRUCTION MANAGEMENT:
1. THE COUNCIL SHALL APPOINT OR PROVIDE AN APPROPRIATELY QUALIFIED AND EXPERIENCED FOREMAN, TO MANAGE AND SUPERVISE THE CONSTRUCTION OF THE RESERVOIR SHOWN ON THESE CONSTRUCTION DRAWINGS.
2. THE FOREMAN SHALL STUDY, INTERPRET AND APPLY THE DETAILS AND INSTRUCTIONS PROVIDED ON THE DRAWINGS, WHILST AT THE SAME TIME SUPERVISE THE CONSTRUCTION OF THE WORKS ON A DAILY BASIS.
3. NO DEVIATION FROM THE DRAWINGS DETAILS AND INSTRUCTIONS ARE PERMITTED.
4. SHOULD THE FOREMAN HAVE QUESTIONS ABOUT THE DRAWINGS OR CONSTRUCTION, HE SHOULD CONTACT THE COUNCIL'S ENGINEER IN CHARGE OF THE PROJECT.

CONSTRUCTION MONITORING:
1. AS THE CONSULTING ENGINEER HAS NOT BEEN APPOINTED TO PERFORM THE CONSTRUCTION MONITORING DUTIES, HE CANNOT TAKE ANY RESPONSIBILITY FOR THE SUCCESSFUL AND CORRECT EXECUTION OF THE WORKS ACCORDING TO THE CONSTRUCTION DRAWINGS.
2. THE FULL RESPONSIBILITY FOR SUPERVISING THE EXECUTION OF THE WORKS LIES WITH THE FOREMAN OF THE PROJECT.

DESIGN CRITERIA:
- SOIL DENSITY = 1800kg/mc
- SOIL K-ACTIVE = 0,4
- MAX. WATER TABLE = 1,0 BELOW NGL
- LIVELOAD VEHICLE ON ROOF ≤ 4500kg GVM i.e 6 kPa LL OR 2 x 14kN PL 1,0m APART
- SAFE BEARING PRESSURE OF GROUND ≥ 100kPa

PEDESTAL REINFORCEMENT:
1. CONCRETE USED IN CONSTRUCTION OF THE STRUCTURE TO BE CLASS 30/19 MPa
2. SCREED: 1 CEMENT CEM 1:5 RIVER SAND
3. ARMORING TO BE USED: REBARS Y12-200 ON BOTH SIDES

CITY OF TSHWANE
IGNITING EXCELLENCE

PO BOX 1022
PRETORIA
0001

CITY OF TSHWANE

SERVICES INFRASTRUCTURE DEPARTMENT
WATER AND SANITATION DIVISION

AMENDMENTS

NR	DATE	APPROVED	DESCRIPTION	PAR

WATER AND SANITATION
FOR INTERNAL APPROVAL - RECEIVED SIGN WHEN APPLICABLE

DIRECTOR: WATER AND SANITATION - PLANNING
NAME _____ SIGNATURE _____ DATE _____

REGIONAL DIRECTOR: (1,2,3,4,5,6 or 7)
NAME _____ Prof. Reg. No _____ SIGNATURE _____ DATE _____

DIRECTOR: SYSTEM DEVELOPMENT
NAME _____ Prof. Reg. No _____ SIGNATURE _____ DATE _____

DIRECTOR: BULK WATER
NAME _____ Prof. Reg. No _____ SIGNATURE _____ DATE _____

DIRECTOR: INFRASTRUCTURE PROVISION
NAME _____ Prof. Reg. No _____ SIGNATURE _____ DATE _____

DIRECTOR: WASTE WATER TREATMENT
NAME _____ Prof. Reg. No _____ SIGNATURE _____ DATE _____

CONSULTANT DETAIL

DPT
CIVIL & STRUCTURAL JV

DPT CIVIL AND STRUCTURAL JV
POSTNET SUITE 453
SINOVILLE CONER
PRIVATE BAG X504
SINOVILLE
0129
TEL: 012 567 7381
FAX: 012 567 1996
E-MAIL: info@ditshimega.co.za

I, Z.D RANTA Prof Reg Nr 201170066
HEREBY CERTIFY THAT THE SERVICES WILL\ HAVE BEEN INSTALLED ACCORDING TO NOTE 9 OF THE ABOVE NOTES AND TO THE DRAWING

SIGNATURE _____ DATE _____

CONSULTANT DRAWING NUMBER: _____ 0 REVISION

DESIGNED
NAME: Z.D RANTA Pr Eng. Prof Reg No: 201170066
SIGNATURE: _____ DATE: _____

DRAWN
NAME: K.MOLEMA Prof Reg No: _____
SIGNATURE: _____ DATE: _____

CHECKED
NAME: Z.D RANTA Pr Tech. Prof Reg No: 201170066
SIGNATURE: _____ DATE: _____

INFORMATION OFFICE CHECKED
NAME: _____ Prof Reg No: _____
SIGNATURE: _____ DATE: _____

DESIGN OFFICE APPROVAL
NAME: Z.D RANTA Pr Eng. Prof Reg No: 201170066
SIGNATURE: _____ DATE: _____

CONTRACT No: _____
PROJECT No. _____
SHEET No. 2543IES-199
PAPER SIZE: A0
SCALE: as shown
DATE: 2025-06-10

LOCATION OF PROJECT:
ZANDFONTEIN

DESCRIPTION OF PROJECT:
BULK DISTRIBUTION NETWORK
CHAMBERS C.10
REINFORCED CONCRETE VALVES CHAMBER LAYOUT
(9.0m L x 4.0m W x 3.5m H)

WBS No. : _ _____ _ _ _____ _ _

COT DRAWING NUMBER: _ _____ _ _ _____ _ _ 0 REVISION

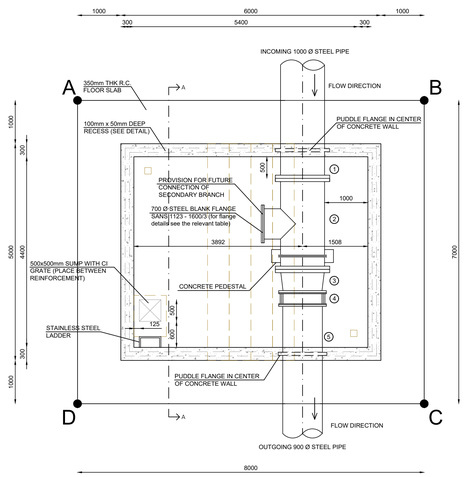
PROJECT STATUS
RECEIVED SIGN WHEN APPLICABLE

○ CONCEPT DRAWING ◉ TENDER DRAWING ○ APPROVED CONSTRUCTION DRAWING ○ AS BUILT DRAWING

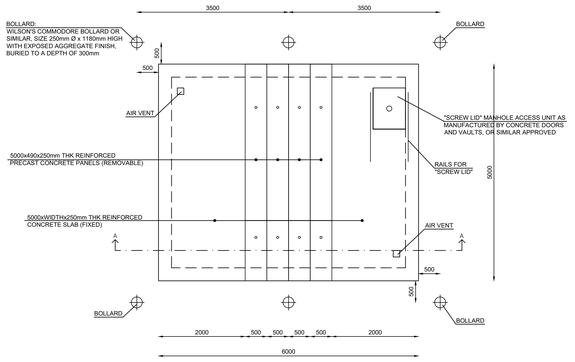
PROJECT ENGINEER of COT:
NAME: _____ Pr Eng. Prof Reg No: _____
SIGNATURE: _____ DATE: _____

INSPECTOR of WORKS of COT:
NAME: _____ Pr Eng. Prof Reg No: _____
SIGNATURE: _____ DATE: _____

FLOOR PLAN
Scale 1:50

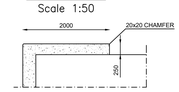


ROOF PLAN
Scale 1:50

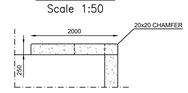


SECTION B
Scale 1:50

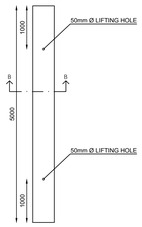
SECTION C
Scale 1:50



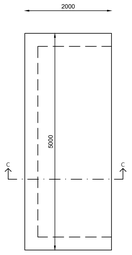
SECTION D
Scale 1:50



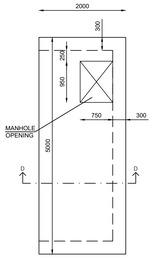
PLAN
REMOVABLE ROOF PANELS
Scale 1:50



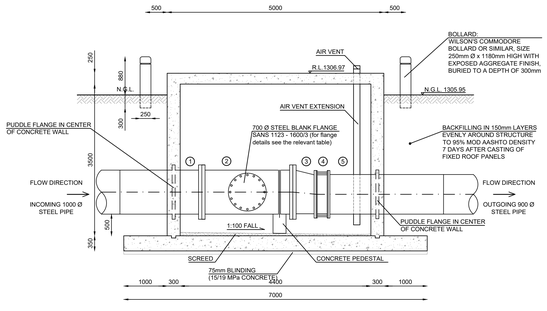
PLAN
FIXED ROOF PANEL 2
Scale 1:50



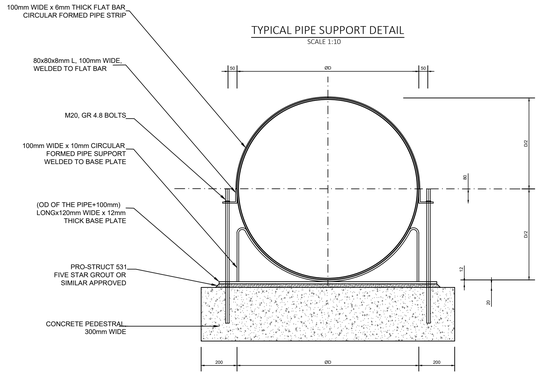
PLAN
FIXED ROOF PANEL 1
Scale 1:50



SECTION A
Scale 1:50



TYPICAL PIPE SUPPORT DETAIL
SCALE 1:10



STEEL FLANGES

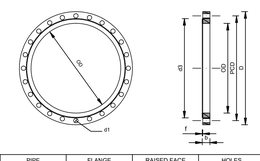


TABLE	NB (mm)	PIPE OD (mm)	D (mm)	FLANGE b (mm)	RAISED FACE d3 (mm)	RAISED FACE f (mm)	HOLES No.	HOLES d1 (mm)	BOLT size	PCD
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	300	323.9	460.0	28.0	378.0	4.0	12	26.0	M24	410.0
	400	406.4	580.0	35.0	490.0	4.0	16	26.0	M24	525.0
	450	457.2	640.0	40.0	550.0	4.0	20	26.0	M24	585.0
	500	508.0	715.0	40.0	610.0	4.0	20	33.0	M30	650.0
	600	609.6	840.0	50.0	725.0	5.0	20	33.0	M30	770.0
	700	711.2	910.0	55.0	795.0	5.0	24	33.0	M30	840.0
	800	812.8	1025.0	65.0	900.0	5.0	24	39.0	M36	950.0
	900	914.4	1125.0	70.0	1000.0	5.0	28	39.0	M36	1050.0
	1000	1016.0	1255.0	75.0	1115.0	5.0	28	39.0	M36	1170.0
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BS4504 25/3	700	711.2	960.0	74.0	820.0	5.0	24	42.0	M39	875.0

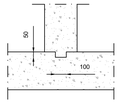
ITEM NR.	DESCRIPTION	NO. OFF	DIMENSIONS
1	1000 Ø x 1890mm LONG STEEL PIPE WITH PUDDLE FLANGE (FLANGED TO SANS 1123 - 1600/3). UPSTREAM END BEVELLED. DOWNSTREAM END FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	725, 1165
2	1000 Ø x 700 Ø STEEL TEE WITH ALL ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	1000, 1050, 1050
3	1000 Ø x 900 Ø ECCENTRIC STEEL REDUCER. BOTH ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	560
4	900 Ø STEEL COUPLING SUCH AS KLAMFLEX DISMANTLING JOINT OR SIMILAR APPROVED, PN16. FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	275
5	900 Ø x 3190mm LONG STEEL PIPE WITH PUDDLE FLANGE (FLANGED TO SANS 1123 - 1600/3). DOWNSTREAM END BEVELLED. UPSTREAM END FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	1040, 2150

CHAMBER C.11
COORDINATES LIST OF THE
BOUNDARY OF THE FOUNDATION SLAB

NAME	X	Y
A	92227.4908	2843932.5459
B	92219.5275	2843933.3116
C	92220.1975	2843940.2795
D	92228.1605	2843939.5138

THE X AND Y CO-ORDINATES OF THE INFORMATION INDICATED ON THIS DRAWING ARE BASED ON THE WORLD GEODETIC SYSTEM 1984 ELLIPSOID (WGS84)

RECESS IN FLOOR
Scale 1:20



NOTES AND SPECIFICATIONS

GENERAL
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2. ALL DIMENSIONS ARE IN mm (UNLESS OTHERWISE SPECIFIED).
3. DO NOT SCALE FROM THESE DRAWINGS.
4. ALL DIMENSIONS MUST BE CHECKED AND APPROVED ON SITE.
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10. FINAL POSITION OF SERVICES TO BE DETERMINED ON SITE.

PARTICULAR:
1. CONCRETE USED IN CONSTRUCTION OF THE STRUCTURE TO BE CLASS 30/19 MPa
2. CONCRETE SURFACE FINISH SHALL BE STEEL-FLOATED FINISH ON TOP OF ROOF SLAB AND WALLS OFF-SHUTTER, BASE FINISHED WITH STRAIGHT EDGE AND SCREED WITH STEEL FLOAT FINISH.
3. SCREED 1:CEMENT CEM 1:5 RIVER SAND
4. DEGREE OF ACCURACY FOR PRECAST PLANKS TO BE I AND ALL OTHER II OF SANS 1200G
5. WHERE HIGH WATER TABLE IS ENCOUNTERED, 3 COATS OF A HEAVY WATERPROOFING COMPOUND SUCH AS ABE SUPER LAYKOLD SHALL BE APPLIED TO EXTERIOR WALLS

CONSTRUCTION PROCEDURE
1. CLEAR SITE, EXCAVATE TO REQUIRED DEPTH AND CONSTRUCT 75mm THK CLASS 15/19 MPa BLINDING LAYER
2. FIX FLOOR SLAB & WALL STARTER BARS AND CAST FLOOR SLAB
3. FIX WALL REINFORCEMENT BEFORE CASTING WALL
4. PLACE FORM WORK FOR FIXED ROOF PANELS. FIX STEEL AND CAST CONCRETE
5. CURE ALL CONCRETE FOR 5 DAYS

CONSTRUCTION MANAGEMENT AND USE OF DRAWINGS:
CONSTRUCTION MANAGEMENT:
1. THE COUNCIL SHALL APPOINT OR PROVIDE AN APPROPRIATELY QUALIFIED AND EXPERIENCED FOREMAN, TO MANAGE AND SUPERVISE THE CONSTRUCTION OF THE RESERVOIR SHOWN ON THESE CONSTRUCTION DRAWINGS.
2. THE FOREMAN SHALL STUDY, INTERPRET AND APPLY THE DETAILS AND INSTRUCTIONS PROVIDED ON THE DRAWINGS, WHILST AT THE SAME TIME SUPERVISE THE CONSTRUCTION OF THE WORKS ON A DAILY BASIS.
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1. AS THE CONSULTING ENGINEER HAS NOT BEEN APPOINTED TO PERFORM THE CONSTRUCTION MONITORING DUTIES, HE CANNOT TAKE ANY RESPONSIBILITY FOR THE SUCCESSFUL AND CORRECT EXECUTION OF THE WORKS ACCORDING TO THE CONSTRUCTION DRAWINGS.
2. THE FULL RESPONSIBILITY FOR SUPERVISING THE EXECUTION OF THE WORKS LIES WITH THE FOREMAN OF THE PROJECT.

DESIGN CRITERIA:
- SOIL DENSITY = 1800kg/mc
- SOIL K-ACTIVE = 0,4
- MAX. WATER TABLE = 1,0 BELOW NGL.
- LIVELOAD VEHICLE ON ROOF ≤ 4500kg GVM i.e 6 kPa LL OR 2 x 1kN PL 1,2m APART
- SAFE BEARING PRESSURE OF GROUND ≥ 100kPa

PEDESTAL REINFORCEMENT:
1. CONCRETE USED IN CONSTRUCTION OF THE STRUCTURE TO BE CLASS 30/19 MPa
2. SCREED: 1 CEMENT CEM 1:5 RIVER SAND
3. ARMORING TO BE USED: REBARS Y12-200 ON BOTH SIDES

CITY OF TSHWANE
IGNITING EXCELLENCE
PO BOX 1022
PRETORIA
0001

CITY OF TSHWANE
SERVICES INFRASTRUCTURE DEPARTMENT
WATER AND SANITATION DIVISION

AMENDMENTS

NR	DATE	APPROVED	DESCRIPTION	PAR

WATER AND SANITATION
FOR INTERNAL APPROVAL - RECEIVED SIGN WHEN APPLICABLE

DIRECTOR: WATER AND SANITATION - PLANNING
NAME Prof. Reg. No SIGNATURE DATE

REGIONAL DIRECTOR: (1,2,3,4,5,6 or 7)
NAME Prof. Reg. No SIGNATURE DATE

DIRECTOR: SYSTEM DEVELOPMENT
NAME Prof. Reg. No SIGNATURE DATE

DIRECTOR: BULK WATER
NAME Prof. Reg. No SIGNATURE DATE

DIRECTOR: INFRASTRUCTURE PROVISION
NAME Prof. Reg. No SIGNATURE DATE

DIRECTOR: WASTE WATER TREATMENT
NAME Prof. Reg. No SIGNATURE DATE

CONSULTANT DETAIL

DPT CIVIL AND STRUCTURAL JV
POSTNET SUITE 453
SINOVILLE CONER
PRIVATE BAG X504
SINOVILLE
0129
TEL: 012 567 7381
FAX: 012 567 1996
E-MAIL: info@ditshimega.co.za

I, Z.D RANTA Prof Reg Nr. 201170066
HEREBY CERTIFY THAT THE SERVICES WILL\ HAVE BEEN INSTALLED ACCORDING TO NOTE 9 OF THE ABOVE NOTES AND TO THE DRAWING

SIGNATURE DATE

CONSULTANT DRAWING NUMBER: 0 REVISION

DESIGNED	NAME: Z.D RANTA Pr Eng.	Prof Reg No: 201170066	SIGNATURE: DATE:
DRAWN	NAME: K.MOLEMA	Prof Reg No:	SIGNATURE: DATE:
CHECKED	NAME: Z.D RANTA Pr Tech.	Prof Reg No: 201170066	SIGNATURE: DATE:
INFORMATION OFFICE CHECKED	NAME:	Prof Reg No:	SIGNATURE: DATE:
DESIGN OFFICE APPROVAL	NAME: Z.D RANTA Pr Eng.	Prof Reg No: 201170066	SIGNATURE: DATE:

CONTRACT No:
PROJECT No.
SHEET No. 2543IES-200
PAPER SIZE: A0
SCALE: as shown
DATE: 2025-06-10

LOCATION OF PROJECT:
ZANDFONTEIN

DESCRIPTION OF PROJECT:
BULK DISTRIBUTION NETWORK
CHAMBER C.11
REINFORCED CONCRETE VALVES CHAMBER LAYOUT
(6.0m L x 5.0m W x 3.5m H)

WBS No. :

COT DRAWING NUMBER: 0 REVISION

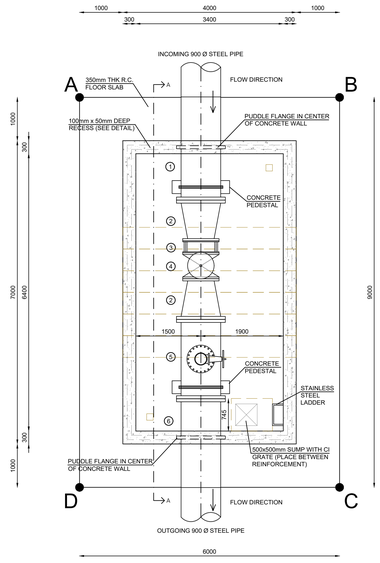
PROJECT STATUS
RECEIVED SIGN WHEN APPLICABLE

○ CONCEPT DRAWING ◉ TENDER DRAWING ○ APPROVED CONSTRUCTION DRAWING ○ AS BUILT DRAWING

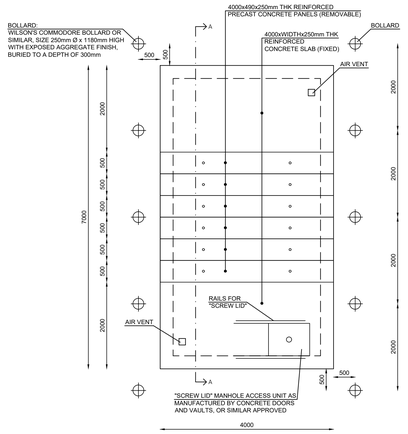
PROJECT ENGINEER of COT:
NAME: Pr Eng. Prof Reg No:
SIGNATURE: DATE:

INSPECTOR of WORKS of COT:
NAME: Pr Eng. Prof Reg No:
SIGNATURE: DATE:

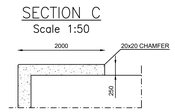
FLOOR PLAN
Scale 1:50



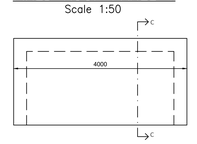
ROOF PLAN
Scale 1:50



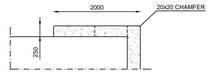
SECTION C
Scale 1:50



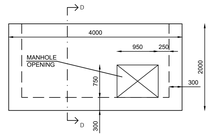
PLAN
FIXED ROOF PANEL 1
Scale 1:50



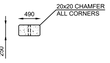
SECTION D
Scale 1:50



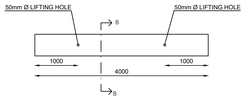
PLAN
FIXED ROOF PANEL 2
Scale 1:50



SECTION B
Scale 1:50



PLAN
REMOVABLE ROOF PANELS
Scale 1:50



NOTES AND SPECIFICATIONS

GENERAL
1. ALL MATERIAL AND WORKMANSHIP MUST COMPLY WITH THE REQUIREMENTS OF THE LATEST RELEVANT SANS STANDARD.
2. ALL DIMENSIONS ARE IN mm (UNLESS OTHERWISE SPECIFIED).
3. DO NOT SCALE FROM THESE DRAWINGS.
4. ALL DIMENSIONS MUST BE CHECKED AND APPROVED ON SITE.
5. ALL CONSTRUCTION TO BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR MUNICIPAL CIVIL ENGINEERING WORKS, THIRD EDITION 2005 AND THE STANDARD COT DETAIL DRAWINGS.
6. THIS DRAWING MUST BE READ IN CONJUNCTION WITH THE STANDARD DRAWINGS.(IF APPLICABLE).
7. THIS DRAWING MUST BE READ IN CONJUNCTION WITH THE STANDARD SPECIFICATIONS FOR MUNICIPAL CIVIL ENGINEERING WORKS, SERIES 4.
8. THE SIGNATURE OR INITIALS ON THIS DRAWING, OF ANY DIRECTOR OF THE WATER AND SANITATION DEPARTMENT, IN NO WAY, REMOVES ANY RESPONSIBILITY WHATSOEVER FROM THE CONSULTANT.
9. THE CONSULTANT REMAINS RESPONSIBLE TO ENSURE THAT ALL THE GUIDELINES, STANDARD DRAWINGS, STANDARDS AND SPECIFICATIONS OF THE WATER AND SANITATION DEPARTMENT HAVE BEEN MET AND ARE COMPLIED WITH.
10. FINAL POSITION OF SERVICES TO BE DETERMINED ON SITE.

PARTICULAR:
1. CONCRETE USED IN CONSTRUCTION OF THE STRUCTURE TO BE CLASS 30/19 MPa
2. CONCRETE SURFACE FINISH SHALL BE STEEL-FLOATED FINISH ON TOP OF ROOF SLAB AND WALLS OFF-SHUTTER, BASE FINISHED WITH STRAIGHT EDGE AND SCREED WITH STEEL FLOAT FINISH.
3. SCREED: 1 CEMENT:CEM 1:5 RIVER SAND
4. DEGREE OF ACCURACY FOR PRECAST PLANKS TO BE I AND ALL OTHER II OF SANS 1200G
5. WHERE HIGH WATER TABLE IS ENCOUNTERED, 3 COATS OF A HEAVY WATERPROOFING COMPOUND SUCH AS ABE SUPER LAYKOLD SHALL BE APPLIED TO EXTERIOR WALLS

CONSTRUCTION PROCEDURE
1. CLEAR SITE, EXCAVATE TO REQUIRED DEPTH AND CONSTRUCT 75mm THK CLASS 15/19 MPa BLINDING LAYER
2. FIX FLOOR SLAB & WALL STARTER BARS AND CAST FLOOR SLAB
3. FIX WALL REINFORCEMENT BEFORE CASTING WALL
4. PLACE FORM WORK FOR FIXED ROOF PANELS. FIX STEEL AND CAST CONCRETE
5. CURE ALL CONCRETE FOR 5 DAYS

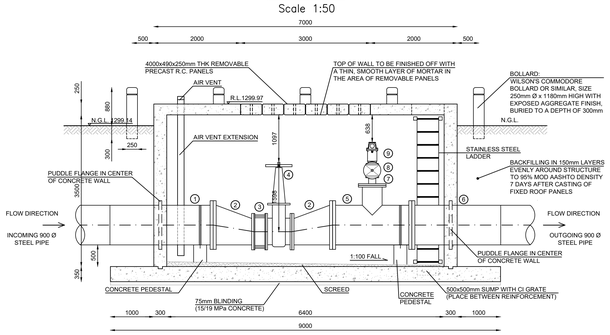
CONSTRUCTION MANAGEMENT AND USE OF DRAWINGS:
CONSTRUCTION MANAGEMENT:
1. THE COUNCIL SHALL APPOINT OR PROVIDE AN APPROPRIATELY QUALIFIED AND EXPERIENCED FOREMAN, TO MANAGE AND SUPERVISE THE CONSTRUCTION OF THE RESERVOIR SHOWN ON THESE CONSTRUCTION DRAWINGS.
2. THE FOREMAN SHALL STUDY, INTERPRET AND APPLY THE DETAILS AND INSTRUCTIONS PROVIDED ON THE DRAWINGS, WHILST AT THE SAME TIME SUPERVISE THE CONSTRUCTION OF THE WORKS ON A DAILY BASIS.
3. NO DEVIATION FROM THE DRAWINGS DETAILS AND INSTRUCTIONS ARE PERMITTED.
4. SHOULD THE FOREMAN HAVE QUESTIONS ABOUT THE DRAWINGS OR CONSTRUCTION, HE SHOULD CONTACT THE COUNCIL'S ENGINEER IN CHARGE OF THE PROJECT.

CONSTRUCTION MONITORING:
1. AS THE CONSULTING ENGINEER HAS NOT BEEN APPOINTED TO PERFORM THE CONSTRUCTION MONITORING DUTIES, HE CANNOT TAKE ANY RESPONSIBILITY FOR THE SUCCESSFUL AND CORRECT EXECUTION OF THE WORKS ACCORDING TO THE CONSTRUCTION DRAWINGS.
2. THE FULL RESPONSIBILITY FOR SUPERVISING THE EXECUTION OF THE WORKS LIES WITH THE FOREMAN OF THE PROJECT.

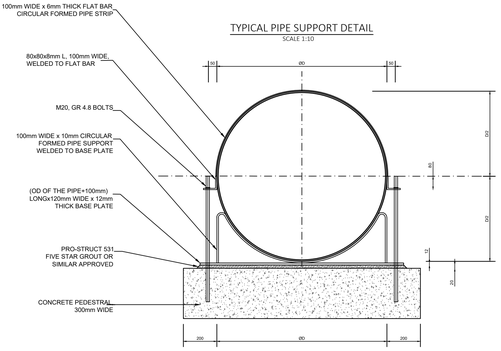
DESIGN CRITERIA:
- SOIL DENSITY = 1800kg/mc
- SOIL K-ACTIVE = 0,4
- MAX. WATER TABLE = 1.0 BELOW NGL.
- LIVELOAD
  VEHICLE ON ROOF ≤ 4500kg GVM
  i.e 6 kPa LL OR 2 x 14kN PL 1.0m APART
- SAFE BEARING PRESSSURE OF GROUND ≥ 100kPa

PEDESTAL REINFORCEMENT:
1. CONCRETE USED IN CONSTRUCTION OF THE STRUCTURE TO BE CLASS 30/19 MPa
2. SCREED: 1 CEMENT CEM 1:5 RIVER SAND
3. ARMORING TO BE USED: REBARS Y12-200 ON BOTH SIDES

SECTION A
Scale 1:50



TYPICAL PIPE SUPPORT DETAIL
SCALE 1:10



STEEL FLANGES

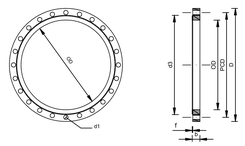


TABLE	PIPE NB (mm)	PIPE OD (mm)	FLANGE D (mm)	FLANGE b (mm)	RAISED FACE d3 (mm)	RAISED FACE f (mm)	HOLES No.	HOLES d1 (mm)	BOLT size	PCD
SABS1123 1600/3	100	114.3	220.0	14.0	158.0	3.0	8	18.0	M16	180.0
	150	165.1	285.0	18.0	212.0	3.0	8	22.0	M20	240.0
	200	219.1	340.0	22.0	268.0	3.0	12	22.0	M20	295.0
	250	273.0	405.0	25.0	320.0	3.0	12	26.0	M24	355.0
	300	323.9	460.0	28.0	378.0	4.0	12	26.0	M24	410.0
	400	406.4	580.0	35.0	490.0	4.0	16	26.0	M24	525.0
	450	457.2	640.0	40.0	550.0	4.0	20	26.0	M24	585.0
	500	508.0	715.0	40.0	610.0	4.0	20	33.0	M30	650.0
	600	609.6	840.0	50.0	725.0	5.0	20	33.0	M30	770.0
	700	711.2	910.0	55.0	795.0	5.0	24	33.0	M30	840.0
	800	812.8	1025.0	65.0	900.0	5.0	24	39.0	M36	950.0
	900	914.4	1125.0	70.0	1000.0	5.0	28	39.0	M36	1050.0
	1000	1016.0	1255.0	75.0	1115.0	5.0	28	39.0	M36	1170.0
SABS1123 2500/3	150	165.1	300.0	30.0	218.0	3.0	8	26.0	M24	250.0
	250	273.0	425.0	30.0	335.0	3.0	12	26.0	M24	370.0
	350	355.6	555.0	35.0	450.0	4.0	16	33.0	M30	490.0
BS4504 25/3	700	711.2	960.0	74.0	820.0	5.0	24	42.0	M39	875.0

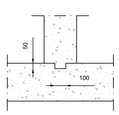
ITEM NR.	DESCRIPTION	NO. OFF	DIMENSIONS
1	900 Ø x 2380mm LONG STEEL PIPE WITH PUDDLE FLANGE (FLANGED TO SANS 1123 - 1600/3). UPSTREAM END BEVELLED. DOWNSTREAM END FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	1220, 1160
2	900 Ø x 600 Ø ECCENTRIC STEEL REDUCER, BOTH ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	2	940
3	600 Ø STEEL COUPLING SUCH AS KLAMFLEX DISMANTLING JOINT OR SIMILAR APPROVED, PN16. FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	275
4	600 Ø VOSA GATE VALVE, PN16, OR SIMILAR APPROVED WITH HAND WHEEL AND ANTI-CLOCKWISE CLOSING TO SANS 664. NON RISING STEM. BOTH ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	600
5	900 Ø x 450 Ø STEEL TEE WITH ALL ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	815, 815, 815
6	900 Ø x 4050mm LONG STEEL PIPE WITH PUDDLE FLANGE (FLANGED TO SANS 1123 - 1600/3). DOWNSTREAM END BEVELLED. UPSTREAM END FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	895, 3155
7	150 Ø STEEL SPACER BETWEEN BRANCH FLANGE & VALVE MADE UP BY 200mm LONG STUB MOUNTED IN CENTER OF SPECIAL FLANGE (BRANCH NB, 450 Ø) WITH STUB (AIR VALVE NB, 150 Ø) FLANGED & DRILLED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	200
8	150 Ø VOSA GATE VALVE, PN16, OR SIMILAR APPROVED WITH HAND WHEEL AND ANTI-CLOCKWISE CLOSING TO SANS 664. NON RISING STEM. BOTH ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	280
9	150 Ø VAG DUOJET AUTOMATIC AIR RELEASE & VACUUM BREAK VALVE SINGLE-CHAMBER TYPE, PN16, OR SIMILAR APPROVED, FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	500

CHAMBER C.12
COORDINATES LIST OF THE BOUNDARY OF THE FOUNDATION SLAB

NAME	X	Y
A	92249.6587	2844188.0709
B	92243.6862	2844188.6452
C	92244.5477	2844197.6038
D	92250.5202	2844197.0295

THE X AND Y CO-ORDINATES OF THE INFORMATION INDICATED ON THIS DRAWING ARE BASED ON THE WORLD GEODETIC SYSTEM 1984 ELLIPSOID (WGS84)

RECESS IN FLOOR
Scale 1:20



CITY OF TSHWANE
IGNITING EXCELLENCE
PO BOX 1022
PRETORIA
0001

CITY OF TSHWANE
SERVICES INFRASTRUCTURE DEPARTMENT
WATER AND SANITATION DIVISION

AMENDMENTS

NR	DATE	APPROVED	DESCRIPTION	PAR

WATER AND SANITATION
FOR INTERNAL APPROVAL - RECEIVED SIGN WHEN APPLICABLE

DIRECTOR: WATER AND SANITATION - PLANNING
NAME Prof. Reg. No SIGNATURE DATE

REGIONAL DIRECTOR: (1,2,3,4,5,6 or 7)
NAME Prof. Reg. No SIGNATURE DATE

DIRECTOR: SYSTEM DEVELOPMENT
NAME Prof. Reg. No SIGNATURE DATE

DIRECTOR: BULK WATER
NAME Prof. Reg. No SIGNATURE DATE

DIRECTOR: INFRASTRUCTURE PROVISION
NAME Prof. Reg. No SIGNATURE DATE

DIRECTOR: WASTE WATER TREATMENT
NAME Prof. Reg. No SIGNATURE DATE

CONSULTANT DETAIL

DPT CIVIL & STRUCTURAL JV

DPT CIVIL AND STRUCTURAL JV
POSTNET SUITE 453
SINOVILLE CONER
PRIVATE BAG X504
SINOVILLE
0129
TEL: 012 567 7381
FAX: 012 567 1996
E-MAIL: info@ditshimega.co.za

I, Z.D RANTA Prof Reg Nr. 201170066
HEREBY CERTIFY THAT THE SERVICES WILL\ HAVE BEEN INSTALLED ACCORDING TO NOTE 9 OF THE ABOVE NOTES AND TO THE DRAWING

SIGNATURE DATE

CONSULTANT DRAWING NUMBER:

0 REVISION

DESIGNED
NAME: Z.D RANTA Pr Eng. Prof Reg No: 201170066
SIGNATURE: DATE:

DRAWN
NAME: K.MOLEMA Prof Reg No:
SIGNATURE: DATE:

CHECKED
NAME: Z.D RANTA Pr Tech. Prof Reg No: 201170066
SIGNATURE: DATE:

INFORMATION OFFICE CHECKED
NAME: Prof Reg No:
SIGNATURE: DATE:

DESIGN OFFICE APPROVAL
NAME: Z.D RANTA Pr Eng. Prof Reg No: 201170066
SIGNATURE: DATE:

CONTRACT No:

PROJECT No.

SHEET No.
2543IES-201

PAPER SIZE:
A0

SCALE:
as shown

DATE:
2025-06-10

LOCATION OF PROJECT:
ZANDFONTEIN

DESCRIPTION OF PROJECT:
BULK DISTRIBUTION NETWORK
CHAMBER C.12
REINFORCED CONCRETE VALVES CHAMBER LAYOUT
(7.0m L x 4.0m W x 3.5m H)

WBS No. :

COT DRAWING NUMBER:

0 REVISION

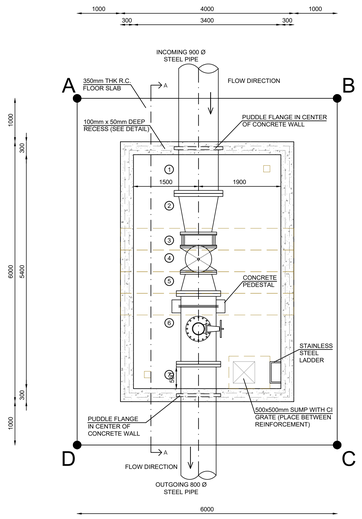
PROJECT STATUS
RECEIVED SIGN WHEN APPLICABLE

CONCEPT DRAWING	TENDER DRAWING	APPROVED CONSTRUCTION DRAWING	AS BUILT DRAWING
○	◉	○	○

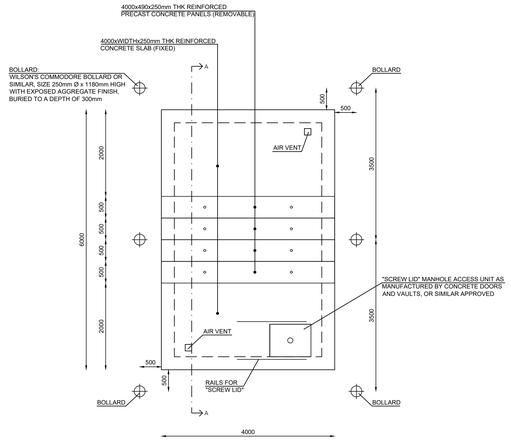
PROJECT ENGINEER of COT:
NAME: Pr Eng. Prof Reg No:
SIGNATURE: DATE:

INSPECTOR of WORKS of COT:
NAME: Pr Eng. Prof Reg No:
SIGNATURE: DATE:

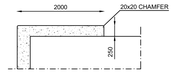
FLOOR PLAN
Scale 1:50



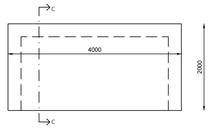
ROOF PLAN
Scale 1:50



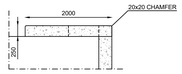
SECTION C
Scale 1:50



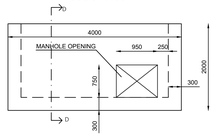
PLAN
FIXED ROOF PANEL 1
Scale 1:50



SECTION D
Scale 1:50

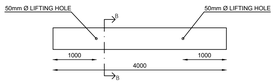


PLAN
FIXED ROOF PANEL 2
Scale 1:50

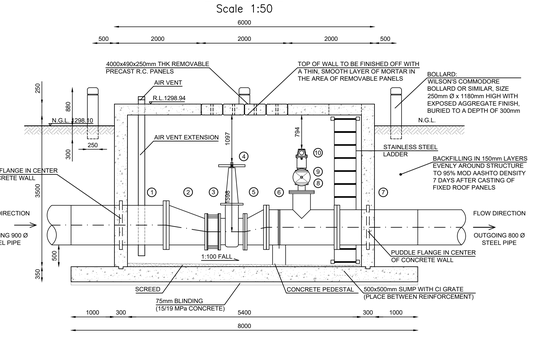


SECTION B
Scale 1:50

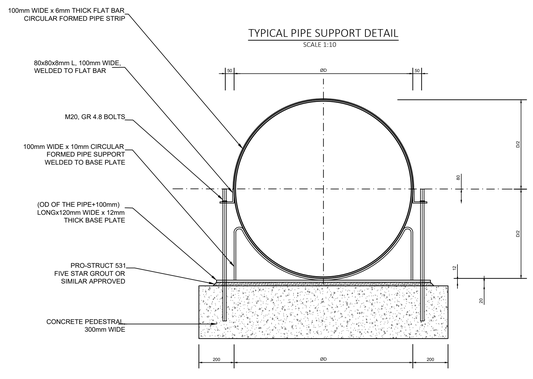
PLAN
REMOVABLE ROOF PANELS
Scale 1:50



SECTION A
Scale 1:50



TYPICAL PIPE SUPPORT DETAIL
SCALE 1:10



STEEL FLANGES

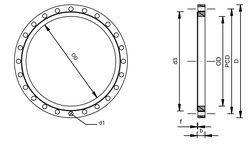


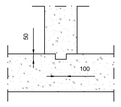
TABLE	NB (mm)	PIPE OD (mm)	FLANGE D (mm)	FLANGE b (mm)	RAISED FACE d3 (mm)	RAISED FACE t (mm)	HOLES No.	HOLES d1 (mm)	BOLT size	PCD
SABS1123 1600/3	100	114.3	220.0	14.0	158.0	3.0	8	18.0	M16	180.0
	150	165.1	285.0	18.0	212.0	3.0	8	22.0	M20	240.0
	200	219.1	340.0	22.0	268.0	3.0	12	22.0	M20	295.0
	250	273.0	405.0	25.0	320.0	3.0	12	26.0	M24	355.0
	300	323.9	460.0	28.0	378.0	4.0	12	26.0	M24	410.0
	400	406.4	580.0	35.0	490.0	4.0	16	26.0	M24	525.0
	450	457.2	640.0	40.0	550.0	4.0	20	26.0	M24	585.0
	500	508.0	715.0	40.0	610.0	4.0	20	33.0	M30	650.0
	600	609.6	840.0	50.0	725.0	5.0	20	33.0	M30	770.0
	700	711.2	910.0	55.0	795.0	5.0	24	33.0	M30	840.0
	800	812.8	1025.0	65.0	900.0	5.0	24	39.0	M36	950.0
	900	914.4	1125.0	70.0	1000.0	5.0	28	39.0	M36	1050.0
	1000	1016.0	1255.0	75.0	1115.0	5.0	28	39.0	M36	1170.0
SABS1123 2500/3	150	165.1	300.0	30.0	218.0	3.0	8	26.0	M24	250.0
	250	273.0	425.0	30.0	335.0	3.0	12	26.0	M24	370.0
	350	355.6	555.0	35.0	450.0	4.0	16	33.0	M30	490.0
BS4504 25/3	700	711.2	960.0	74.0	820.0	5.0	24	42.0	M39	875.0

CHAMBER C.13
COORDINATES LIST OF THE BOUNDARY OF THE FOUNDATION SLAB

NAME	X	Y
A	91945.4065	2844331.8729
B	91943.6030	2844326.1504
C	91935.9729	2844327.7920
D	91937.7764	2844334.2776

THE X AND Y CO-ORDINATES OF THE INFORMATION INDICATED ON THIS DRAWING ARE BASED ON THE WORLD GEODETIC SYSTEM 1984 ELLIPSOID (WGS84)

RECESS IN FLOOR
Scale 1:20



ITEM NR.	DESCRIPTION	NO. OFF	DIMENSIONS
1	900 Ø x 2200mm LONG STEEL PIPE WITH PUDDLE FLANGE (FLANGED TO SANS 1123 - 1600/3); UPSTREAM END BEVELLED, DOWNSTREAM END FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	1050 1150
2	900 Ø x 600 Ø ECCENTRIC STEEL REDUCER, BOTH ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	940
3	600 Ø STEEL COUPLING SUCH AS KLAMFLEX DISMANTLING JOINT OR SIMILAR APPROVED, PN16, FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	275
4	600 Ø VOSA GATE VALVE, PN16, OR SIMILAR APPROVED WITH HAND WHEEL AND ANTI-CLOCKWISE CLOSING TO SANS 664. NON RISING STEM. BOTH ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	600
5	800 Ø x 600 Ø ECCENTRIC STEEL REDUCER, BOTH ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	485
6	800 Ø x 400 Ø STEEL TEE WITH ALL ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	815 815 815
7	800 Ø x 1860mm LONG STEEL PIPE WITH PUDDLE FLANGE (FLANGED TO SANS 1123 - 1600/3). DOWNSTREAM END BEVELLED. UPSTREAM END FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	710 1150
8	150 Ø STEEL SPACER BETWEEN BRANCH FLANGE & VALVE MADE UP BY 200mm LONG STUB MOUNTED IN CENTER OF SPECIAL FLANGE (BRANCH NB, 400 Ø) WITH STUB (AIR VALVE NB, 150 Ø) FLANGED & DRILLED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	200
9	150 Ø VOSA GATE VALVE, PN16, OR SIMILAR APPROVED WITH HAND WHEEL AND ANTI-CLOCKWISE CLOSING TO SANS 664. NON RISING STEM. BOTH ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	280
10	150 Ø VAG DUOJET AUTOMATIC AIR RELEASE & VACUUM BREAK VALVE SINGLE-CHAMBER TYPE, PN16, OR SIMILAR APPROVED, FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	565

NOTES AND SPECIFICATIONS

GENERAL
1. ALL MATERIAL AND WORKMANSHIP MUST COMPLY WITH THE REQUIREMENTS OF THE LATEST RELEVANT SANS STANDARD.
2. ALL DIMENSIONS ARE IN mm (UNLESS OTHERWISE SPECIFIED).
3. DO NOT SCALE FROM THESE DRAWINGS.
4. ALL DIMENSIONS MUST BE CHECKED AND APPROVED ON SITE.
5. ALL CONSTRUCTION TO BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR MUNICIPAL CIVIL ENGINEERING WORKS, THIRD EDITION 2005 AND THE STANDARD COT DETAIL DRAWINGS.
6. THIS DRAWING MUST BE READ IN CONJUNCTION WITH THE STANDARD DRAWINGS.(IF APPLICABLE).
7. THIS DRAWING MUST BE READ IN CONJUNCTION WITH THE STANDARD SPECIFICATIONS FOR MUNICIPAL CIVIL ENGINEERING WORKS, SERIES 4.
8. THE SIGNATURE OR INITIALS ON THIS DRAWING, OF ANY DIRECTOR OF THE WATER AND SANITATION DEPARTMENT, IN NO WAY, REMOVES ANY RESPONSIBILITY WHATSOEVER FROM THE CONSULTANT.
9. THE CONSULTANT REMAINS RESPONSIBLE TO ENSURE THAT ALL THE GUIDELINES, STANDARD DRAWINGS, STANDARDS AND SPECIFICATIONS OF THE WATER AND SANITATION DEPARTMENT HAVE BEEN MET AND ARE COMPLIED WITH.
10. FINAL POSITION OF SERVICES TO BE DETERMINED ON SITE.

PARTICULAR:
1. CONCRETE USED IN CONSTRUCTION OF THE STRUCTURE TO BE CLASS 30/19 MPa
2. CONCRETE SURFACE FINISH SHALL BE STEEL-FLOATED FINISH ON TOP OF ROOF SLAB AND WALLS OFF-SHUTTER, BASE FINISHED WITH STRAIGHT EDGE AND SCREED WITH STEEL FLOAT FINISH.
3. SCREED 1 CEMENT:CEM 1:5 RIVER SAND
4. DEGREE OF ACCURACY FOR PRECAST PLANKS TO BE I AND ALL OTHER II OF SANS 1200G
5. WHERE HIGH WATER TABLE IS ENCOUNTERED, 3 COATS OF A HEAVY WATERPROOFING COMPOUND SUCH AS ABE SUPER LAYKOLD SHALL BE APPLIED TO EXTERIOR WALLS

CONSTRUCTION PROCEDURE
1. CLEAR SITE, EXCAVATE TO REQUIRED DEPTH AND CONSTRUCT 75mm THK CLASS 15/19 MPa BLINDING LAYER
2. FIX FLOOR SLAB & WALL STARTER BARS AND CAST FLOOR SLAB
3. FIX WALL REINFORCEMENT BEFORE CASTING WALL
4. PLACE FORM WORK FOR FIXED ROOF PANELS, FIX STEEL AND CAST CONCRETE
5. CURE ALL CONCRETE FOR 5 DAYS

CONSTRUCTION MANAGEMENT AND USE OF DRAWINGS:
CONSTRUCTION MANAGEMENT:
1. THE COUNCIL SHALL APPOINT OR PROVIDE AN APPROPRIATELY QUALIFIED AND EXPERIENCED FOREMAN, TO MANAGE AND SUPERVISE THE CONSTRUCTION OF THE RESERVOIR SHOWN ON THESE CONSTRUCTION DRAWINGS.
2. THE FOREMAN SHALL STUDY, INTERPRET AND APPLY THE DETAILS AND INSTRUCTIONS PROVIDED ON THE DRAWINGS, WHILST AT THE SAME TIME SUPERVISE THE CONSTRUCTION OF THE WORKS ON A DAILY BASIS.
3. NO DEVIATION FROM THE DRAWINGS DETAILS AND INSTRUCTIONS ARE PERMITTED.
4. SHOULD THE FOREMAN HAVE QUESTIONS ABOUT THE DRAWINGS OR CONSTRUCTION, HE SHOULD CONTACT THE COUNCIL'S ENGINEER IN CHARGE OF THE PROJECT.

CONSTRUCTION MONITORING:
1. AS THE CONSULTING ENGINEER HAS NOT BEEN APPOINTED TO PERFORM THE CONSTRUCTION MONITORING DUTIES, HE CANNOT TAKE ANY RESPONSIBILITY FOR THE SUCCESSFUL AND CORRECT EXECUTION OF THE WORKS ACCORDING TO THE CONSTRUCTION DRAWINGS.
2. THE FULL RESPONSIBILITY FOR SUPERVISING THE EXECUTION OF THE WORKS LIES WITH THE FOREMAN OF THE PROJECT.

DESIGN CRITERIA:
- SOIL DENSITY = 1800kg/mc
- SOIL K-ACTIVE = 0,4
- MAX. WATER TABLE = 1,0 BELOW NGL.
- LIVELOAD VEHICLE ON ROOF ≤ 4500kg GVM i.e 6 kPa LL OR 3 x 1kN PL 1,0m APART
- SAFE BEARING PRESSURE OF GROUND ≥ 100kPa

PEDESTAL REINFORCEMENT:
1. CONCRETE USED IN CONSTRUCTION OF THE STRUCTURE TO BE CLASS 30/19 MPa
2. SCREED: 1 CEMENT CEM 1:5 RIVER SAND
3. ARMORING TO BE USED: REBARS Y12-200 ON BOTH SIDES

CITY OF TSHWANE
IGNITING EXCELLENCE
PO BOX 1022
PRETORIA
0001

CITY OF TSHWANE
SERVICES INFRASTRUCTURE DEPARTMENT
WATER AND SANITATION DIVISION

AMENDMENTS

NR	DATE	APPROVED	DESCRIPTION	PAR

WATER AND SANITATION
FOR INTERNAL APPROVAL - RECEIVED SIGN WHEN APPLICABLE

DIRECTOR: WATER AND SANITATION - PLANNING
NAME _____ Prof. Reg. No _____ SIGNATURE _____ DATE _____

REGIONAL DIRECTOR: (1,2,3,4,5,6 or 7)
NAME _____ Prof. Reg. No _____ SIGNATURE _____ DATE _____

DIRECTOR: SYSTEM DEVELOPMENT
NAME _____ Prof. Reg. No _____ SIGNATURE _____ DATE _____

DIRECTOR: BULK WATER
NAME _____ Prof. Reg. No _____ SIGNATURE _____ DATE _____

DIRECTOR: INFRASTRUCTURE PROVISION
NAME _____ Prof. Reg. No _____ SIGNATURE _____ DATE _____

DIRECTOR: WASTE WATER TREATMENT
NAME _____ Prof. Reg. No _____ SIGNATURE _____ DATE _____

CONSULTANT DETAIL

DPT
CIVIL & STRUCTURAL JV

DPT CIVIL AND STRUCTURAL JV
POSTNET SUITE 453
SINOVILLE CONER
PRIVATE BAG X504
SINOVILLE
0129
TEL: 012 567 7381
FAX: 012 567 1996
E-MAIL: info@ditshimega.co.za

I, Z.D RANTA Prof Reg Nr. 201170066
HEREBY CERTIFY THAT THE SERVICES WILL\ HAVE BEEN INSTALLED ACCORDING TO NOTE 9 OF THE ABOVE NOTES AND TO THE DRAWING

SIGNATURE _____ DATE _____

CONSULTANT DRAWING NUMBER: _____ 0 REVISION

DESIGNED
NAME: Z.D RANTA Pr Eng. Prof Reg No: 201170066
SIGNATURE: _____ DATE: _____

DRAWN
NAME: K.MOLEMA Prof Reg No: _____
SIGNATURE: _____ DATE: _____

CHECKED
NAME: Z.D RANTA Pr Tech. Prof Reg No: 201170066
SIGNATURE: _____ DATE: _____

INFORMATION OFFICE CHECKED
NAME: _____ Prof Reg No: _____
SIGNATURE: _____ DATE: _____

DESIGN OFFICE APPROVAL
NAME: Z.D RANTA Pr Eng. Prof Reg No: 201170066
SIGNATURE: _____ DATE: _____

CONTRACT No: _____
PROJECT No. _____
SHEET No. 2543IES-202
PAPER SIZE: A0
SCALE: as shown
DATE: 2025-06-10

LOCATION OF PROJECT:
ZANDFONTEIN

DESCRIPTION OF PROJECT:
BULK DISTRIBUTION NETWORK
CHAMBER C.13
REINFORCED CONCRETE VALVES CHAMBER LAYOUT
(6.0m L x 4.0m W x 3.5m H)

WBS No. : _ _____ _ _ _ _ _ _

COT DRAWING NUMBER: _ _____ _ _ _ _ _ _ 0 REVISION

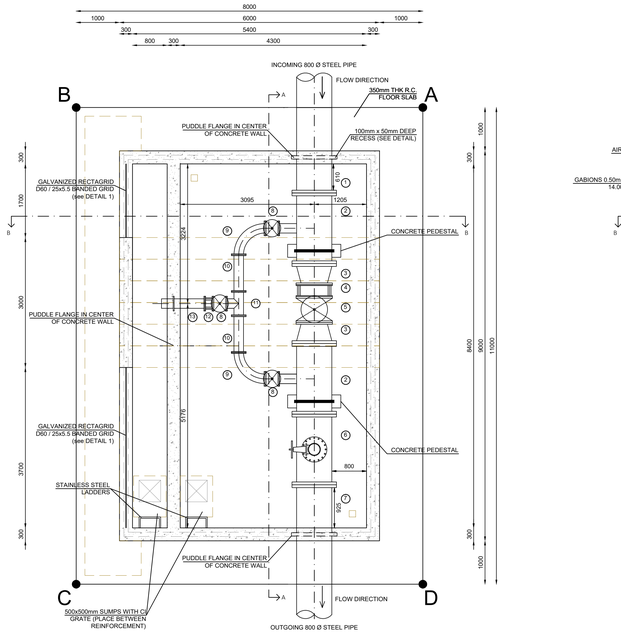
PROJECT STATUS
RECEIVED SIGN WHEN APPLICABLE

○ CONCEPT DRAWING ● TENDER DRAWING ○ APPROVED CONSTRUCTION DRAWING ○ AS BUILT DRAWING

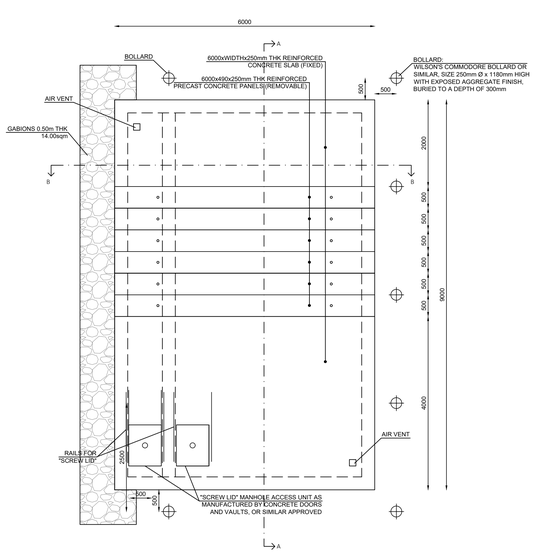
PROJECT ENGINEER of COT:
NAME: _____ Pr Eng. Prof Reg No: _____
SIGNATURE: _____ DATE: _____

INSPECTOR of WORKS of COT:
NAME: _____ Pr Eng. Prof Reg No: _____
SIGNATURE: _____ DATE: _____

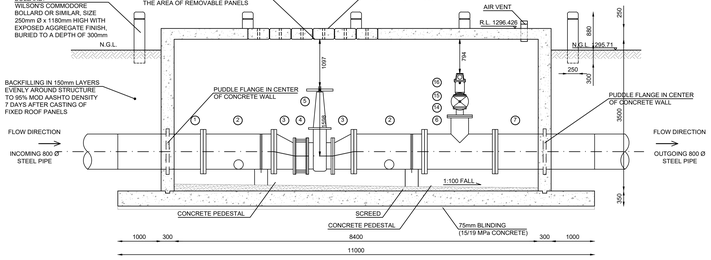
FLOOR PLAN
Scale 1:50



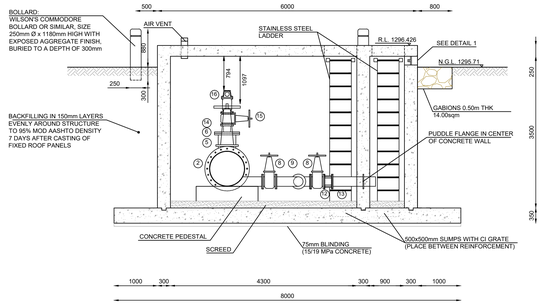
ROOF PLAN
Scale 1:50



SECTION A
Scale 1:50

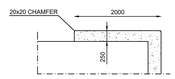


SECTION B
Scale 1:50

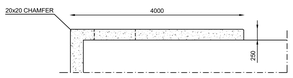


SECTION C
Scale 1:50

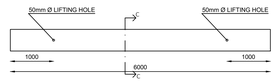
SECTION D
Scale 1:50



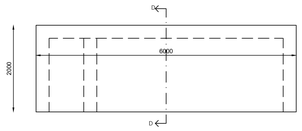
SECTION E
Scale 1:50



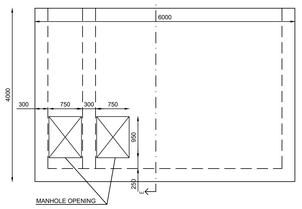
PLAN
REMOVABLE ROOF PANELS
Scale 1:50



PLAN
FIXED ROOF PANEL 1
Scale 1:50



PLAN
FIXED ROOF PANEL 2
Scale 1:50



STEEL FLANGES

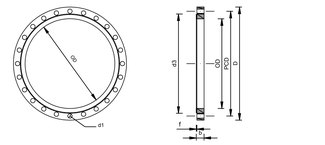


TABLE	NB (mm)	OD (mm)	D (mm)	b (mm)	d3 (mm)	f (mm)	No.	d1 (mm)	BOLT size	PCD
SABS1123 1600/3	100	114.3	220.0	14.0	158.0	3.0	8	18.0	M16	180.0
	150	165.1	285.0	18.0	212.0	3.0	8	22.0	M20	240.0
	200	219.1	340.0	22.0	268.0	3.0	12	22.0	M20	295.0
	250	273.0	405.0	25.0	320.0	3.0	12	26.0	M24	355.0
	300	323.9	460.0	28.0	378.0	4.0	12	26.0	M24	410.0
	400	406.4	580.0	35.0	490.0	4.0	16	26.0	M24	525.0
	450	457.2	640.0	40.0	550.0	4.0	20	26.0	M24	585.0
	500	508.0	715.0	40.0	610.0	4.0	20	33.0	M30	650.0
	600	609.6	840.0	50.0	725.0	5.0	20	33.0	M30	770.0
	700	711.2	910.0	55.0	795.0	5.0	24	33.0	M30	840.0
	800	812.8	1025.0	65.0	900.0	5.0	24	39.0	M36	950.0
	900	914.4	1125.0	70.0	1000.0	5.0	28	39.0	M36	1050.0
	1000	1016.0	1255.0	75.0	1115.0	5.0	28	39.0	M36	1170.0
SABS1123 2500/3	150	165.1	300.0	30.0	218.0	3.0	8	26.0	M24	250.0
	250	273.0	425.0	30.0	335.0	3.0	12	26.0	M24	370.0
	350	355.6	555.0	35.0	450.0	4.0	16	33.0	M30	490.0
BS4504 25/3	700	711.2	960.0	74.0	820.0	5.0	24	42.0	M39	875.0

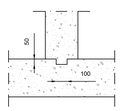
ITEM NR.	DESCRIPTION	NO. OFF	DIMENSIONS
1	800 Ø x 1975mm LONG STEEL PIPE WITH PUDDLE FLANGE (FLANGED TO SANS 1123 - 1600/3). UPSTREAM END BEVELLED. DOWNSTREAM END FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	825 1150
2	800 Ø x 200 Ø STEEL SCOUR WITH ALL ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	2	815 815 815
3	800 Ø x 600 Ø ECCENTRIC STEEL REDUCER. BOTH ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	2	485
4	600 Ø STEEL COUPLING SUCH AS KLAMFLEX DISMANTLING JOINT OR SIMILAR APPROVED. PN16. FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	275
5	600 Ø VOSA GATE VALVE, PN16, OR SIMILAR APPROVED WITH HAND WHEEL AND ANTI-CLOCKWISE CLOSING TO SANS 664. NON RISING STEM. BOTH ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	600
6	800 Ø x 400 Ø STEEL TEE WITH ALL ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	815 815 815
7	800 Ø x 2290mm LONG STEEL PIPE WITH PUDDLE (FLANGED TO SANS 1123 - 1600/3). DOWNSTREAM END BEVELLED. UPSTREAM END FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	2	1140 1150
8	200 Ø VOSA GATE VALVE, PN16, OR SIMILAR APPROVED WITH HAND WHEEL AND ANTI-CLOCKWISE CLOSING TO SANS 664. NON RISING STEM. BOTH ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	3	317
9	200 Ø x 90° STEEL BEND WITH ALL ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	2	610 610
10	200 Ø STEEL STRAIGHT. BOTH ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	2	848
11	200 Ø x 200 Ø STEEL TEE WITH ALL ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	200 280 280
12	200 Ø STEEL COUPLING SUCH AS KLAMFLEX DISMANTLING JOINT OR SIMILAR APPROVED. PN16. FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	185
13	200 Ø x 1000mm LONG STEEL PIPE WITH PUDDLE FLANGE (FLANGED TO SANS 1123 - 1600/3). DOWNSTREAM END PLAIN. UPSTREAM END FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	720 280
14	150 Ø STEEL SPACER BETWEEN BRANCH FLANGE & VALVE MADE UP BY 200mm LONG STUB MOUNTED IN CENTER OF SPECIAL FLANGE (BRANCH NB, 400 Ø) WITH STUB (AIR VALVE NB, 150 Ø) FLANGED & DRILLED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	200
15	150 Ø VOSA GATE VALVE, PN16, OR SIMILAR APPROVED WITH HAND WHEEL AND ANTI-CLOCKWISE CLOSING TO SANS 664. NON RISING STEM. BOTH ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	200
16	150 Ø VAG DUOJET AUTOMATIC AIR RELEASE & VACUUM BREAK VALVE SINGLE-CHAMBER TYPE, PN16, OR SIMILAR APPROVED, FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	300

CHAMBER C.14
COORDINATES LIST OF THE BOUNDARY OF THE FOUNDATION SLAB

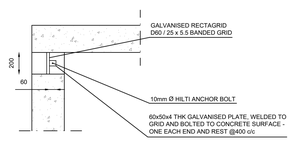
NAME	X	Y
A	91940.8506	2844619.6031
B	91932.8605	2844620.0010
C	91933.3389	2844630.9908
D	91941.3290	2844630.5929

THE X AND Y CO-ORDINATES OF THE INFORMATION INDICATED ON THIS DRAWING ARE BASED ON THE WORLD GEODETIC SYSTEM 1984 ELLIPSOID (WGS84)

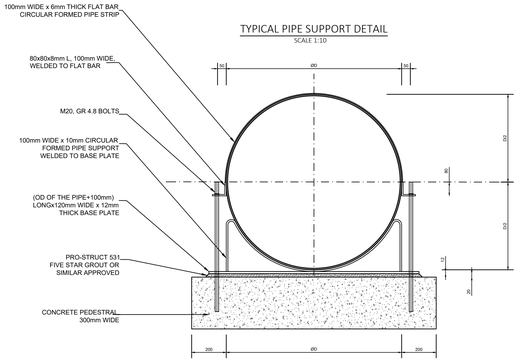
RECESS IN FLOOR
Scale 1:20



DETAIL 1
Scale 1:20



TYPICAL PIPE SUPPORT DETAIL
SCALE 1:10



NOTES AND SPECIFICATIONS

GENERAL
1. ALL MATERIAL AND WORKMANSHIP MUST COMPLY WITH THE REQUIREMENTS OF THE LATEST RELEVANT SANS STANDARD.
2. ALL DIMENSIONS ARE IN mm (UNLESS OTHERWISE SPECIFIED).
3. DO NOT SCALE FROM THESE DRAWINGS.
4. ALL DIMENSIONS MUST BE CHECKED AND APPROVED ON SITE.
5. ALL CONSTRUCTION TO BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR MUNICIPAL CIVIL ENGINEERING WORKS, THIRD EDITION 2005 AND THE STANDARD COT DETAIL DRAWINGS.
6. THIS DRAWING MUST BE READ IN CONJUNCTION WITH THE STANDARD DRAWINGS.(IF APPLICABLE).
7. THIS DRAWING MUST BE READ IN CONJUNCTION WITH THE STANDARD SPECIFICATIONS FOR MUNICIPAL CIVIL ENGINEERING WORKS, SERIES 4.
8. THE SIGNATURE OR INITIALS ON THIS DRAWING, OF ANY DIRECTOR OF THE WATER AND SANITATION DEPARTMENT, IN NO WAY, REMOVES ANY RESPONSIBILITY WHATSOEVER FROM THE CONSULTANT.
9. THE CONSULTANT REMAINS RESPONSIBLE TO ENSURE THAT ALL THE GUIDELINES, STANDARD DRAWINGS, STANDARDS AND SPECIFICATIONS OF THE WATER AND SANITATION DEPARTMENT HAVE BEEN MET AND ARE COMPLIED WITH.
10. FINAL POSITION OF SERVICES TO BE DETERMINED ON SITE.

PARTICULAR:
1. CONCRETE USED IN CONSTRUCTION OF THE STRUCTURE TO BE CLASS 30/19 MPa
2. CONCRETE SURFACE FINISH SHALL BE STEEL-FLOATED FINISH ON TOP OF ROOF SLAB AND WALLS OFF-SHUTTER, BASE FINISHED WITH STRAIGHT EDGE AND SCREED WITH STEEL FLOAT FINISH.
3. SCREED 1 CEMENT:CEM I:5 RIVER SAND
4. DEGREE OF ACCURACY FOR PRECAST PLANKS TO BE I AND ALL OTHER II OF SANS 1200G
5. WHERE HIGH WATER TABLE IS ENCOUNTERED, 3 COATS OF A HEAVY WATERPROOFING COMPOUND SUCH AS ABE SUPER LAYKOLD SHALL BE APPLIED TO EXTERIOR WALLS

CONSTRUCTION PROCEDURE
1. CLEAR SITE, EXCAVATE TO REQUIRED DEPTH AND CONSTRUCT 75mm THK CLASS 15/19 MPa BLINDING LAYER
2. FIX FLOOR SLAB & WALL STARTER BARS AND CAST FLOOR SLAB
3. FIX WALL REINFORCEMENT BEFORE CASTING WALL
4. PLACE FORM WORK FOR FIXED ROOF PANELS. FIX STEEL AND CAST CONCRETE
5. CURE ALL CONCRETE FOR 5 DAYS.

CONSTRUCTION MANAGEMENT AND USE OF DRAWINGS:
CONSTRUCTION MANAGEMENT:
1. THE COUNCIL SHALL APPOINT OR PROVIDE AN APPROPRIATELY QUALIFIED AND EXPERIENCED FOREMAN, TO MANAGE AND SUPERVISE THE CONSTRUCTION OF THE RESERVOIR SHOWN ON THESE CONSTRUCTION DRAWINGS.
2. THE FOREMAN SHALL STUDY, INTERPRET AND APPLY THE DETAILS AND INSTRUCTIONS PROVIDED ON THE DRAWINGS, WHILST AT THE SAME TIME SUPERVISE THE CONSTRUCTION OF THE WORKS ON A DAILY BASIS.
3. NO DEVIATION FROM THE DRAWINGS DETAILS AND INSTRUCTIONS ARE PERMITTED.
4. SHOULD THE FOREMAN HAVE QUESTIONS ABOUT THE DRAWINGS OR CONSTRUCTION, HE SHOULD CONTACT THE COUNCIL'S ENGINEER IN CHARGE OF THE PROJECT.

CONSTRUCTION MONITORING:
1. AS THE CONSULTING ENGINEER HAS NOT BEEN APPOINTED TO PERFORM THE CONSTRUCTION MONITORING DUTIES, HE CANNOT TAKE ANY RESPONSIBILITY FOR THE SUCCESSFUL AND CORRECT EXECUTION OF THE WORKS ACCORDING TO THE CONSTRUCTION DRAWINGS.
2. THE FULL RESPONSIBILITY FOR SUPERVISING THE EXECUTION OF THE WORKS LIES WITH THE FOREMAN OF THE PROJECT.

DESIGN CRITERIA:
- SOIL DENSITY = 1800kg/mc
- SOIL K-ACTIVE = 0,4
- MAX. WATER TABLE = 1,0 BELOW NGL.
- LIVELOAD VEHICLE ON ROOF ≤ 4500kg GVM i.e 6 kPa LL OR 2 x 1kN PL 1,0m APART
- SAFE BEARING PRESSURE OF GROUND ≥ 100kPa

PEDESTAL REINFORCEMENT:
1. CONCRETE USED IN CONSTRUCTION OF THE STRUCTURE TO BE CLASS 30/19 MPa
2. SCREED: 1 CEMENT:CEM I:5 RIVER SAND
3. ARMORING TO BE USED: REBARS Y12-200 ON BOTH SIDES

CITY OF TSHWANE
IGNITING EXCELLENCE
PO BOX 1022
PRETORIA
0001

CITY OF TSHWANE
SERVICES INFRASTRUCTURE DEPARTMENT
WATER AND SANITATION DIVISION

AMENDMENTS

NR	DATE	APPROVED	DESCRIPTION	PAR

WATER AND SANITATION
FOR INTERNAL APPROVAL - RECEIVED SIGN WHEN APPLICABLE

DIRECTOR: WATER AND SANITATION - PLANNING
NAME _____ Prof. Reg. No _____ SIGNATURE _____ DATE _____

REGIONAL DIRECTOR: (1,2,3,4,5,6 or 7)
NAME _____ Prof. Reg. No _____ SIGNATURE _____ DATE _____

DIRECTOR: SYSTEM DEVELOPMENT
NAME _____ Prof. Reg. No _____ SIGNATURE _____ DATE _____

DIRECTOR: BULK WATER
NAME _____ Prof. Reg. No _____ SIGNATURE _____ DATE _____

DIRECTOR: INFRASTRUCTURE PROVISION
NAME _____ Prof. Reg. No _____ SIGNATURE _____ DATE _____

DIRECTOR: WASTE WATER TREATMENT

CONSULTANT DETAIL

DPT
CIVIL & STRUCTURAL JV

DPT CIVIL AND STRUCTURAL JV
POSTNET SUITE 453
SINOVILLE CONER
PRIVATE BAG X504
SINOVILLE
0129
TEL: 012 567 7381
FAX: 012 567 1996
E-MAIL: info@ditshimega.co.za

I, Z.D RANTA Prof Reg Nr. 201170066
HEREBY CERTIFY THAT THE SERVICES WILL HAVE BEEN INSTALLED ACCORDING TO NOTE 9 OF THE ABOVE NOTES AND TO THE DRAWING

SIGNATURE _____ DATE _____

CONSULTANT DRAWING NUMBER: _____ 0

DESIGNED
NAME: Z.D RANTA Pr Eng. Prof Reg No: 201170066
SIGNATURE: _____ DATE: _____

DRAWN
NAME: K.MOLEMA Prof Reg No: _____
SIGNATURE: _____ DATE: _____

CHECKED
NAME: Z.D RANTA Pr Tech. Prof Reg No: 201170066
SIGNATURE: _____ DATE: _____

INFORMATION OFFICE CHECKED
NAME: _____ Prof Reg No: _____
SIGNATURE: _____ DATE: _____

DESIGN OFFICE APPROVAL
NAME: Z.D RANTA Pr Eng. Prof Reg No: 201170066
SIGNATURE: _____ DATE: _____

CONTRACT No: _____
PROJECT No. _____
SHEET No. 2543IES-203
PAPER SIZE: A0
SCALE: as shown
DATE: 2025-06-10

LOCATION OF PROJECT:
ZANDFONTEIN

DESCRIPTION OF PROJECT:
BULK DISTRIBUTION NETWORK
CHAMBER C.14
REINFORCED CONCRETE VALVES CHAMBER LAYOUT
(9.0m L x 6.0m W x 3.5m H)

WBS No. : _ _____ _ _ _____ _ _ _____ _ _

COT DRAWING NUMBER: _ _____ _ _ _____ _ _ _____ _ _ 0

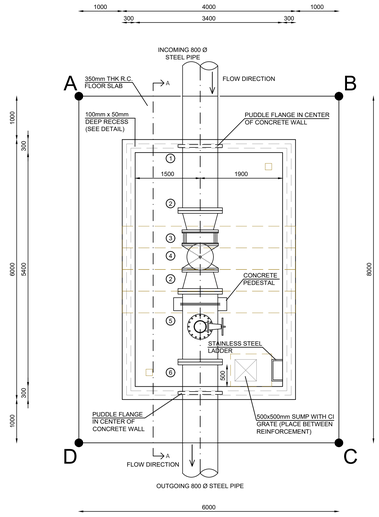
PROJECT STATUS
RECEIVED SIGN WHEN APPLICABLE

CONCEPT DRAWING ○ | TENDER DRAWING ● | APPROVED CONSTRUCTION DRAWING ○ | AS BUILT DRAWING ○

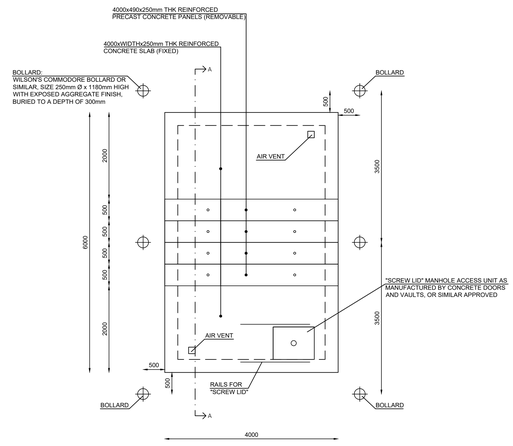
PROJECT ENGINEER of COT:
NAME: _____ Pr Eng. Prof Reg No: _____
SIGNATURE: _____ DATE: _____

INSPECTOR OF WORKS of COT:
NAME: _____ Pr Eng. Prof Reg No: _____

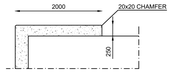
FLOOR PLAN
Scale 1:50



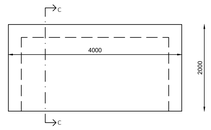
ROOF PLAN
Scale 1:50



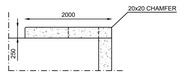
SECTION C
Scale 1:50



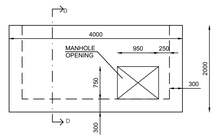
PLAN
FIXED ROOF PANEL 1
Scale 1:50



SECTION D
Scale 1:50

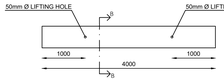


PLAN
FIXED ROOF PANEL 2
Scale 1:50

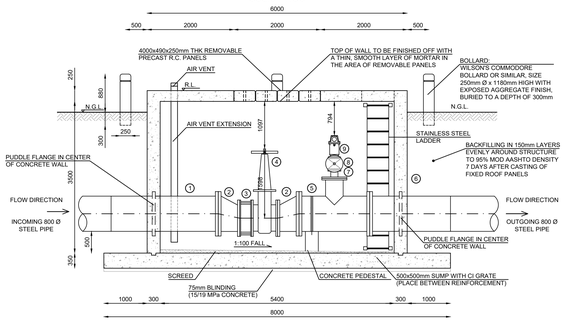


SECTION B
Scale 1:50

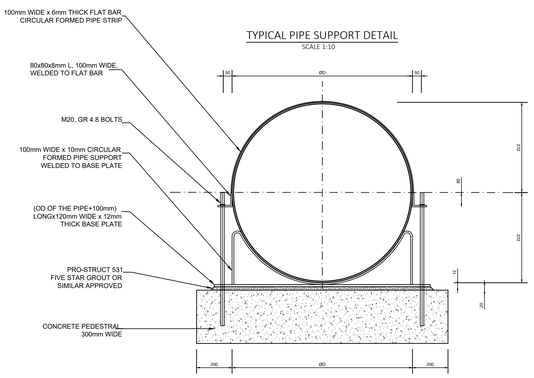
PLAN
REMOVABLE ROOF PANELS
Scale 1:50



SECTION A
Scale 1:50



TYPICAL PIPE SUPPORT DETAIL
SCALE 1:10



STEEL FLANGES

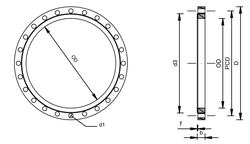


TABLE	PIPE NB (mm)	PIPE OD (mm)	FLANGE D (mm)	FLANGE b (mm)	RAISED FACE d3 (mm)	RAISED FACE f (mm)	HOLES No.	HOLES d1 (mm)	BOLT size	PCD
SABS1123 1600/3	100	114.3	220.0	14.0	158.0	3.0	8	18.0	M16	180.0
	150	165.1	285.0	18.0	212.0	3.0	8	22.0	M20	240.0
	200	219.1	340.0	22.0	268.0	3.0	12	22.0	M20	295.0
	250	273.0	405.0	25.0	320.0	3.0	12	26.0	M24	355.0
	300	323.9	460.0	28.0	378.0	4.0	12	26.0	M24	410.0
	400	406.4	580.0	35.0	490.0	4.0	16	26.0	M24	525.0
	450	457.2	640.0	40.0	550.0	4.0	20	26.0	M24	585.0
	500	508.0	715.0	40.0	610.0	4.0	20	33.0	M30	650.0
	600	609.6	840.0	50.0	725.0	5.0	20	33.0	M30	770.0
	700	711.2	910.0	55.0	795.0	5.0	24	33.0	M30	840.0
	800	812.8	1025.0	65.0	900.0	5.0	24	39.0	M36	950.0
	900	914.4	1125.0	70.0	1000.0	5.0	28	39.0	M36	1050.0
	1000	1016.0	1255.0	75.0	1115.0	5.0	28	39.0	M36	1170.0
SABS1123 2500/3	150	165.1	300.0	30.0	218.0	3.0	8	26.0	M24	250.0
	250	273.0	425.0	30.0	335.0	3.0	12	26.0	M24	370.0
	350	355.6	555.0	35.0	450.0	4.0	16	33.0	M30	490.0
BS4504 25/3	700	711.2	960.0	74.0	820.0	5.0	24	42.0	M39	875.0

ITEM NR.	DESCRIPTION	NO. OFF	DIMENSIONS
1	800 Ø x 2640mm LONG STEEL PIPE WITH PUDDLE FLANGE (FLANGED TO SANS 1123 - 1600/3). UPSTREAM END BEVELLED. DOWNSTREAM END FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	1490 1150
2	800 Ø x 600 Ø ECCENTRIC STEEL REDUCER. BOTH ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	2	485
3	600 Ø STEEL COUPLING SUCH AS KLAMFLEX DISMANTLING JOINT OR SIMILAR APPROVED. PN16. FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	275
4	600 Ø VOSA GATE VALVE, PN16, OR SIMILAR APPROVED WITH HAND WHEEL AND ANTI-CLOCKWISE CLOSING TO SANS 664. NON RISING STEM. BOTH ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	600
5	800 Ø x 400 Ø STEEL TEE WITH ALL ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	815 815 815
6	800 Ø x 1880mm LONG STEEL PIPE WITH PUDDLE FLANGE (FLANGED TO SANS 1123 - 1600/3). DOWNSTREAM END BEVELLED. UPSTREAM END FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	715 1165
7	150 Ø STEEL SPACER BETWEEN BRANCH FLANGE & VALVE MADE UP BY 200mm LONG STUB MOUNTED IN CENTER OF SPECIAL FLANGE (BRANCH NB. 400 Ø) WITH STUB (AIR VALVE NB. 150 Ø) FLANGED & DRILLED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	200
8	150 Ø VOSA GATE VALVE, PN16, OR SIMILAR APPROVED WITH HAND WHEEL AND ANTI-CLOCKWISE CLOSING TO SANS 664. NON RISING STEM. BOTH ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	280
9	150 Ø VAG DUOJET AUTOMATIC AIR RELEASE & VACUUM BREAK VALVE SINGLE-CHAMBER TYPE, PN16, OR SIMILAR APPROVED. FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	650

CHAMBERS C.15 - C.16 COORDINATES LIST OF THE NATURAL GROUND LEVEL (N.G.L) AND ROOF LEVEL (R.F)

CH.	N.G.L	R.L
15	+1298.68	+1298.91
16	+1306.44	+1307.34

CHAMBER C.15 COORDINATES LIST OF THE BOUNDARY OF THE FOUNDATION SLAB

NAME	X	Y
A	91954.3737	2845121.0678
B	91948.3804	2845121.3520
C	91948.7593	2845129.3431
D	91954.7536	2845129.0589

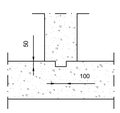
THE X AND Y CO-ORDINATES OF THE INFORMATION INDICATED ON THIS DRAWING ARE BASED ON THE WORLD GEODETIC SYSTEM 1984 ELLIPSOID (WGS84)

CHAMBER C.16 COORDINATES LIST OF THE BOUNDARY OF THE FOUNDATION SLAB

NAME	X	Y
A	91978.0556	2845620.5067
B	91972.0624	2845620.7909
C	91972.4413	2845628.7819
D	91978.4346	2845628.4977

THE X AND Y CO-ORDINATES OF THE INFORMATION INDICATED ON THIS DRAWING ARE BASED ON THE WORLD GEODETIC SYSTEM 1984 ELLIPSOID (WGS84)

RECESS IN FLOOR
Scale 1:20



NOTES AND SPECIFICATIONS

GENERAL
1. ALL MATERIAL AND WORKMANSHIP MUST COMPLY WITH THE REQUIREMENTS OF THE LATEST RELEVANT SANS STANDARD.
2. ALL DIMENSIONS ARE IN mm (UNLESS OTHERWISE SPECIFIED).
3. DO NOT SCALE FROM THESE DRAWINGS.
4. ALL DIMENSIONS MUST BE CHECKED AND APPROVED ON SITE.
5. ALL CONSTRUCTION TO BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR MUNICIPAL CIVIL ENGINEERING WORKS, THIRD EDITION 2005 AND THE STANDARD COT DETAIL DRAWINGS.
6. THIS DRAWING MUST BE READ IN CONJUNCTION WITH THE STANDARD DRAWINGS.(IF APPLICABLE).
7. THIS DRAWING MUST BE READ IN CONJUNCTION WITH THE STANDARD SPECIFICATIONS FOR MUNICIPAL CIVIL ENGINEERING WORKS, SERIES 4.
8. THE SIGNATURE OR INITIALS ON THIS DRAWING, OF ANY DIRECTOR OF THE WATER AND SANITATION DEPARTMENT, IN NO WAY, REMOVES ANY RESPONSIBILITY WHATSOEVER FROM THE CONSULTANT.
9. THE CONSULTANT REMAINS RESPONSIBLE TO ENSURE THAT ALL THE GUIDELINES, STANDARD DRAWINGS, STANDARDS AND SPECIFICATIONS OF THE WATER AND SANITATION DEPARTMENT HAVE BEEN MET AND ARE COMPLIED WITH.
10. FINAL POSITION OF SERVICES TO BE DETERMINED ON SITE.

PARTICULAR:
1. CONCRETE USED IN CONSTRUCTION OF THE STRUCTURE TO BE CLASS 30/19 MPa
2. CONCRETE SURFACE FINISH SHALL BE STEEL-FLOATED FINISH ON TOP OF ROOF SLAB AND WALLS OFF-SHUTTER, BASE FINISHED WITH STRAIGHT EDGE AND SCREED WITH STEEL FLOAT FINISH.
3. SCREED 1 CEMENT:CEM 1:5 RIVER SAND
4. DEGREE OF ACCURACY FOR PRECAST PLANKS TO BE I AND ALL OTHER II OF SANS 1200G
5. WHERE HIGH WATER TABLE IS ENCOUNTERED, 3 COATS OF A HEAVY WATERPROOFING COMPOUND SUCH AS ABE SUPER LAYKOLD SHALL BE APPLIED TO EXTERIOR WALLS

CONSTRUCTION PROCEDURE
1. CLEAR SITE, EXCAVATE TO REQUIRED DEPTH AND CONSTRUCT 75mm THK CLASS 15/19 MPa BLINDING LAYER
2. FIX FLOOR SLAB & WALL STARTER BARS AND CAST FLOOR SLAB
3. FIX WALL REINFORCEMENT BEFORE CASTING WALL
4. PLACE FORM WORK FOR FIXED ROOF PANELS. FIX STEEL AND CAST CONCRETE
5. CURE ALL CONCRETE FOR 5 DAYS

CONSTRUCTION MANAGEMENT AND USE OF DRAWINGS:
CONSTRUCTION MANAGEMENT:
1. THE COUNCIL SHALL APPOINT OR PROVIDE AN APPROPRIATELY QUALIFIED AND EXPERIENCED FOREMAN, TO MANAGE AND SUPERVISE THE CONSTRUCTION OF THE RESERVOIR SHOWN ON THESE CONSTRUCTION DRAWINGS.
2. THE FOREMAN SHALL STUDY, INTERPRET AND APPLY THE DETAILS AND INSTRUCTIONS PROVIDED ON THE DRAWINGS, WHILST AT THE SAME TIME SUPERVISE THE CONSTRUCTION OF THE WORKS ON A DAILY BASIS.
3. NO DEVIATION FROM THE DRAWINGS DETAILS AND INSTRUCTIONS ARE PERMITTED.
4. SHOULD THE FOREMAN HAVE QUESTIONS ABOUT THE DRAWINGS OR CONSTRUCTION, HE SHOULD CONTACT THE COUNCIL'S ENGINEER IN CHARGE OF THE PROJECT.

CONSTRUCTION MONITORING:
1. AS THE CONSULTING ENGINEER HAS NOT BEEN APPOINTED TO PERFORM THE CONSTRUCTION MONITORING DUTIES, HE CANNOT TAKE ANY RESPONSIBILITY FOR THE SUCCESSFUL AND CORRECT EXECUTION OF THE WORKS ACCORDING TO THE CONSTRUCTION DRAWINGS.
2. THE FULL RESPONSIBILITY FOR SUPERVISING THE EXECUTION OF THE WORKS LIES WITH THE FOREMAN OF THE PROJECT.

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- SOIL K-ACTIVE = 0,4
- MAX. WATER TABLE = 1.0 BELOW NGL.
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3. ARMORING TO BE USED: REBARS Y12-200 ON BOTH SIDES

CITY OF TSHWANE
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0001

CITY OF TSHWANE
SERVICES INFRASTRUCTURE DEPARTMENT
WATER AND SANITATION DIVISION

AMENDMENTS

NR	DATE	APPROVED	DESCRIPTION	PAR

WATER AND SANITATION
FOR INTERNAL APPROVAL - RECEIVED SIGN WHEN APPLICABLE

DIRECTOR: WATER AND SANITATION - PLANNING
NAME _____ SIGNATURE _____ DATE _____

REGIONAL DIRECTOR: (1,2,3,4,5,6 or 7)
NAME _____ Prof. Reg. No _____ SIGNATURE _____ DATE _____

DIRECTOR: SYSTEM DEVELOPMENT
NAME _____ Prof. Reg. No _____ SIGNATURE _____ DATE _____

DIRECTOR: BULK WATER
NAME _____ Prof. Reg. No _____ SIGNATURE _____ DATE _____

DIRECTOR: INFRASTRUCTURE PROVISION
NAME _____ Prof. Reg. No _____ SIGNATURE _____ DATE _____

DIRECTOR: WASTE WATER TREATMENT
NAME _____ Prof. Reg. No _____ SIGNATURE _____ DATE _____

CONSULTANT DETAIL

DPT
CIVIL & STRUCTURAL JV

DPT CIVIL AND STRUCTURAL JV
POSTNET SUITE 453
SINOVILLE CONER
PRIVATE BAG X504
SINOVILLE
0129
TEL: 012 567 7381
FAX: 012 567 1996
E-MAIL: info@ditshimega.co.za

I, Z.D RANTA Prof Reg Nr. 201170066
HEREBY CERTIFY THAT THE SERVICES WILL\ HAVE BEEN INSTALLED ACCORDING TO NOTE 9 OF THE ABOVE NOTES AND TO THE DRAWING

SIGNATURE _____ DATE _____

CONSULTANT DRAWING NUMBER: _____ 0 REVISION

DESIGNED
NAME: Z.D RANTA Pr Eng. Prof Reg No: 201170066
SIGNATURE: _____ DATE: _____

DRAWN
NAME: K.MOLEMA Prof Reg No: _____
SIGNATURE: _____ DATE: _____

CHECKED
NAME: Z.D RANTA Pr Tech. Prof Reg No: 201170066
SIGNATURE: _____ DATE: _____

INFORMATION OFFICE CHECKED
NAME: _____ Prof Reg No: _____
SIGNATURE: _____ DATE: _____

DESIGN OFFICE APPROVAL
NAME: Z.D RANTA Pr Eng. Prof Reg No: 201170066
SIGNATURE: _____ DATE: _____

CONTRACT No: _____
PROJECT No. _____
SHEET No. 2543IES-204
PAPER SIZE: A0
SCALE: as shown
DATE: 2025-06-10

LOCATION OF PROJECT:
ZANDFONTEIN

DESCRIPTION OF PROJECT:
BULK DISTRIBUTION NETWORK
CHAMBER C.15-C.16
REINFORCED CONCRETE VALVES CHAMBER LAYOUT
(6.0m L x 4.0m W x 3.5m H)

WBS No. : _ _____ _ _ _____ _ _ _____

COT DRAWING NUMBER: _ _____ _ _ _____ _ _ _____ 0 REVISION

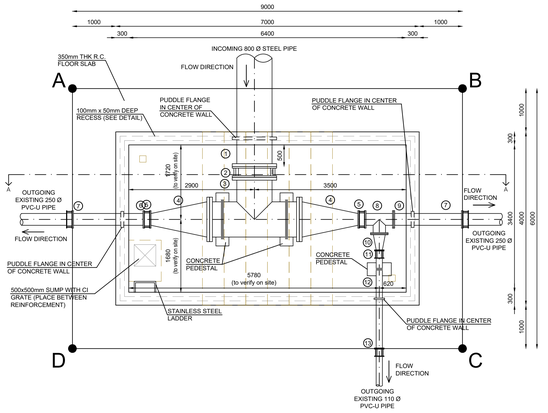
PROJECT STATUS
RECEIVED SIGN WHEN APPLICABLE

○ CONCEPT DRAWING ◉ TENDER DRAWING ○ APPROVED CONSTRUCTION DRAWING ○ AS BUILT DRAWING

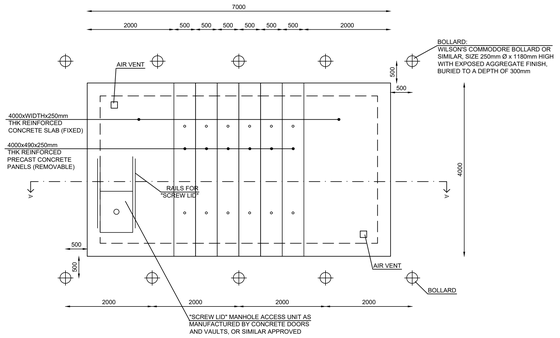
PROJECT ENGINEER of COT:
NAME: _____ Pr Eng. Prof Reg No: _____
SIGNATURE: _____ DATE: _____

INSPECTOR OF WORKS of COT:
NAME: _____ Pr Eng. Prof Reg No: _____
SIGNATURE: _____ DATE: _____

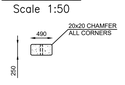
FLOOR PLAN
Scale 1:50



ROOF PLAN
Scale 1:50



SECTION B
Scale 1:50



SECTION C
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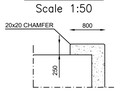

SECTION D
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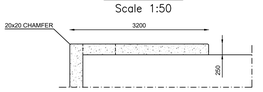
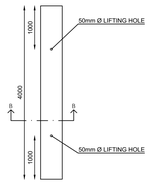
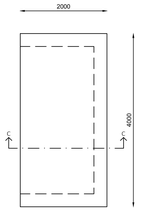


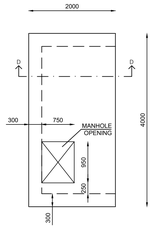
PLAN REMOVABLE ROOF PANELS
Scale 1:50



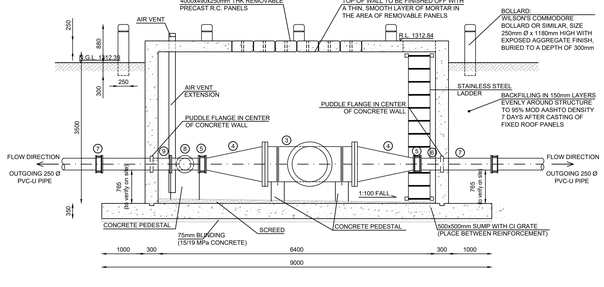
PLAN FIXED ROOF PANEL 1
Scale 1:50



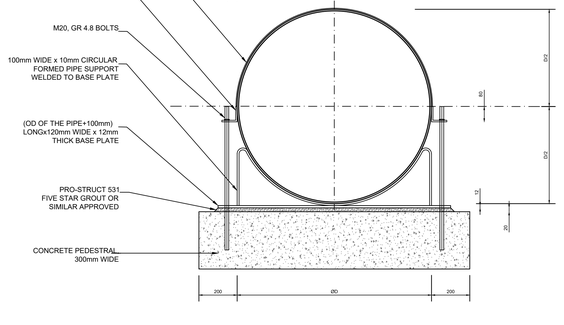
PLAN FIXED ROOF PANEL 2
Scale 1:50



SECTION A
Scale 1:50



TYPICAL PIPE SUPPORT DETAIL
SCALE 1:10



STEEL FLANGES

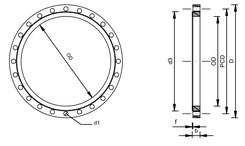


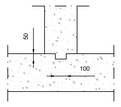
TABLE	NB (mm)	PIPE OD (mm)	FLANGE D (mm)	FLANGE b (mm)	RAISED FACE d3 (mm)	RAISED FACE f (mm)	HOLES No.	HOLES d1 (mm)	BOLT size	PCD
SABS1123 1600/3	100	114.3	220.0	14.0	158.0	3.0	8	18.0	M16	180.0
	150	165.1	285.0	18.0	212.0	3.0	8	22.0	M20	240.0
	200	219.1	340.0	22.0	268.0	3.0	12	22.0	M20	295.0
	250	273.0	405.0	25.0	320.0	3.0	12	26.0	M24	355.0
	300	323.9	460.0	28.0	378.0	4.0	12	26.0	M24	410.0
	400	406.4	580.0	35.0	490.0	4.0	16	26.0	M24	525.0
	450	457.2	640.0	40.0	550.0	4.0	20	26.0	M24	585.0
	500	508.0	715.0	40.0	610.0	4.0	20	33.0	M30	650.0
	600	609.6	840.0	50.0	725.0	5.0	20	33.0	M30	770.0
	700	711.2	910.0	55.0	795.0	5.0	24	33.0	M30	840.0
	800	812.8	1025.0	65.0	900.0	5.0	24	39.0	M36	950.0
	900	914.4	1125.0	70.0	1000.0	5.0	28	39.0	M36	1050.0
	1000	1016.0	1255.0	75.0	1115.0	5.0	28	39.0	M36	1170.0
SABS1123 2500/3	150	165.1	300.0	30.0	218.0	3.0	8	26.0	M24	250.0
	250	273.0	425.0	30.0	335.0	3.0	12	26.0	M24	370.0
	350	355.6	555.0	35.0	450.0	4.0	16	33.0	M30	490.0
BS4504 25/3	700	711.2	960.0	74.0	820.0	5.0	24	42.0	M39	875.0

CHAMBER C.17
COORDINATES LIST OF THE BOUNDARY OF THE FOUNDATION SLAB

NAME	X	Y
A	91973.3488	2845836.6331
B	91964.0081	2845834.9007
C	91962.9139	2845840.8060
D	91972.2546	2845842.5325

THE X AND Y CO-ORDINATES OF THE INFORMATION INDICATED ON THIS DRAWING ARE BASED ON THE WORLD GEODETIC SYSTEM 1984 ELLIPSOID (WGS84)

RECESS IN FLOOR
Scale 1:20



ITEM NR.	DESCRIPTION	NO. OFF	DIMENSIONS
1	800 Ø x 1865mm LONG STEEL PIPE WITH PUDDLE FLANGE (FLANGED TO SANS 1123 - 1600/3). UPSTREAM END BEVELLED. DOWNSTREAM END FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	715 1150
2	800 Ø STEEL COUPLING SUCH AS KLAMFLEX DISMANTLING JOINT OR SIMILAR APPROVED, PN16. FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	250
3	800 Ø x 800 Ø STEEL TEE WITH ALL ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	970 970 970
4	800 Ø x 250 Ø CONCENTRIC STEEL REDUCER, BOTH ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	2	1375
5	250 Ø STEEL COUPLING SUCH AS KLAMFLEX DISMANTLING JOINT OR SIMILAR APPROVED, PN16. FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	2	195
6	250 Ø x 2460mm LONG STEEL PIPE WITH PUDDLE FLANGE (FLANGED TO SANS 1123 - 1600/3). BOTH END FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	810 1650
7	250 Ø STEEL COUPLING SUCH AS KLAMFLEX RANGER FLANGE ADAPTOR OR SIMILAR APPROVED, PN16. FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	2	140
8	250 Ø x 250 Ø STEEL TEE WITH ALL ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	330 330 330
9	250 Ø x 2800mm LONG STEEL PIPE WITH PUDDLE FLANGE (FLANGED TO SANS 1123 - 1600/3). BOTH END FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	650 2150
10	250 Ø x 100 Ø CONCENTRIC STEEL REDUCER, BOTH ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	385
11	100 Ø STEEL COUPLING SUCH AS KLAMFLEX DISMANTLING JOINT OR SIMILAR APPROVED, PN16. FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	165
12	100 Ø x 2685mm LONG STEEL PIPE WITH PUDDLE FLANGE (FLANGED TO SANS 1123 - 1600/3). BOTH END FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	595 2040
13	100 Ø STEEL COUPLING SUCH AS KLAMFLEX RANGER FLANGE ADAPTOR OR SIMILAR APPROVED, PN16. FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	130

NOTES AND SPECIFICATIONS

GENERAL
1. ALL MATERIAL AND WORKMANSHIP MUST COMPLY WITH THE REQUIREMENTS OF THE LATEST RELEVANT SANS STANDARD.
2. ALL DIMENSIONS ARE IN mm (UNLESS OTHERWISE SPECIFIED).
3. DO NOT SCALE FROM THESE DRAWINGS.
4. ALL DIMENSIONS MUST BE CHECKED AND APPROVED ON SITE.
5. ALL CONSTRUCTION TO BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR MUNICIPAL CIVIL ENGINEERING WORKS, THIRD EDITION 2005 AND THE STANDARD COT DETAIL DRAWINGS.
6. THIS DRAWING MUST BE READ IN CONJUNCTION WITH THE STANDARD DRAWINGS.(IF APPLICABLE).
7. THIS DRAWING MUST BE READ IN CONJUNCTION WITH THE STANDARD SPECIFICATIONS FOR MUNICIPAL CIVIL ENGINEERING WORKS, SERIES 4.
8. THE SIGNATURE OR INITIALS ON THIS DRAWING, OF ANY DIRECTOR OF THE WATER AND SANITATION DEPARTMENT, IN NO WAY, REMOVES ANY RESPONSIBILITY WHATSOEVER FROM THE CONSULTANT.
9. THE CONSULTANT REMAINS RESPONSIBLE TO ENSURE THAT ALL THE GUIDELINES, STANDARD DRAWINGS, STANDARDS AND SPECIFICATIONS OF THE WATER AND SANITATION DEPARTMENT HAVE BEEN MET AND ARE COMPLIED WITH.
10. FINAL POSITION OF SERVICES TO BE DETERMINED ON SITE.

PARTICULAR:
1. CONCRETE USED IN CONSTRUCTION OF THE STRUCTURE TO BE CLASS 30/19 MPa
2. CONCRETE SURFACE FINISH SHALL BE STEEL-FLOATED FINISH ON TOP OF ROOF SLAB AND WALLS OFF-SHUTTER, BASE FINISHED WITH STRAIGHT EDGE AND SCREED WITH STEEL FLOAT FINISH.
3. SCREED 1 CEMENT:CEM 1 5 RIVER SAND
4. DEGREE OF ACCURACY FOR PRECAST PLANKS TO BE I AND ALL OTHER II OF SANS 1200G
5. WHERE HIGH WATER TABLE IS ENCOUNTERED, 3 COATS OF A HEAVY WATERPROOFING COMPOUND SUCH AS ABE SUPER LAYKOLD SHALL BE APPLIED TO EXTERIOR WALLS

CONSTRUCTION PROCEDURE
1. CLEAR SITE, EXCAVATE TO REQUIRED DEPTH AND CONSTRUCT 75mm THK CLASS 15/19 MPa BLINDING LAYER
2. FIX FLOOR SLAB & WALL STARTER BARS AND CAST FLOOR SLAB
3. FIX WALL REINFORCEMENT BEFORE CASTING WALL
4. PLACE FORM WORK FOR FIXED ROOF PANELS. FIX STEEL AND CAST CONCRETE
5. CURE ALL CONCRETE FOR 5 DAYS

CONSTRUCTION MANAGEMENT AND USE OF DRAWINGS:
CONSTRUCTION MANAGEMENT:
1. THE COUNCIL SHALL APPOINT OR PROVIDE AN APPROPRIATELY QUALIFIED AND EXPERIENCED FOREMAN, TO MANAGE AND SUPERVISE THE CONSTRUCTION OF THE RESERVOIR SHOWN ON THESE CONSTRUCTION DRAWINGS.
2. THE FOREMAN SHALL STUDY, INTERPRET AND APPLY THE DETAILS AND INSTRUCTIONS PROVIDED ON THE DRAWINGS, WHILST AT THE SAME TIME SUPERVISE THE CONSTRUCTION OF THE WORKS ON A DAILY BASIS.
3. NO DEVIATION FROM THE DRAWINGS DETAILS AND INSTRUCTIONS ARE PERMITTED.
4. SHOULD THE FOREMAN HAVE QUESTIONS ABOUT THE DRAWINGS OR CONSTRUCTION, HE SHOULD CONTACT THE COUNCIL'S ENGINEER IN CHARGE OF THE PROJECT.

CONSTRUCTION MONITORING:
1. AS THE CONSULTING ENGINEER HAS NOT BEEN APPOINTED TO PERFORM THE CONSTRUCTION MONITORING DUTIES, HE CANNOT TAKE ANY RESPONSIBILITY FOR THE SUCCESSFUL AND CORRECT EXECUTION OF THE WORKS ACCORDING TO THE CONSTRUCTION DRAWINGS.
2. THE FULL RESPONSIBILITY FOR SUPERVISING THE EXECUTION OF THE WORKS LIES WITH THE FOREMAN OF THE PROJECT.

DESIGN CRITERIA:
- SOIL DENSITY = 1800kg/mc
- SOIL K-ACTIVE = 0,4
- MAX. WATER TABLE = 1.0 BELOW NGL.
- LIVELOAD VEHICLE ON ROOF ≤ 4500kg GVM i.e 6 kPa LL OR 2 x 14kN PL 1.0m APART
- SAFE BEARING PRESSURE OF GROUND ≥ 100kPa

PEDESTAL REINFORCEMENT:
1. CONCRETE USED IN CONSTRUCTION OF THE STRUCTURE TO BE CLASS 30/19 MPa
2. SCREED: 1 CEMENT CEM 1:5 RIVER SAND
3. ARMORING TO BE USED: REBARS Y12-200 ON BOTH SIDES

CITY OF TSHWANE
IGNITING EXCELLENCE
PO BOX 1022
PRETORIA
0001

CITY OF TSHWANE
SERVICES INFRASTRUCTURE DEPARTMENT
WATER AND SANITATION DIVISION

AMENDMENTS

NR	DATE	APPROVED	DESCRIPTION	PAR

WATER AND SANITATION
FOR INTERNAL APPROVAL - RECEIVED SIGN WHEN APPLICABLE

DIRECTOR: WATER AND SANITATION - PLANNING
NAME Prof. Reg. No SIGNATURE DATE

REGIONAL DIRECTOR: (1,2,3,4,5,6 or 7)
NAME Prof. Reg. No SIGNATURE DATE

DIRECTOR: SYSTEM DEVELOPMENT
NAME Prof. Reg. No SIGNATURE DATE

DIRECTOR: BULK WATER
NAME Prof. Reg. No SIGNATURE DATE

DIRECTOR: INFRASTRUCTURE PROVISION
NAME Prof. Reg. No SIGNATURE DATE

DIRECTOR: WASTE WATER TREATMENT
NAME Prof. Reg. No SIGNATURE DATE

CONSULTANT DETAIL

DPT CIVIL & STRUCTURAL JV
POSTNET SUITE 453
SINOVILLE CONER
PRIVATE BAG X504
SINOVILLE
0129
TEL: 012 567 7381
FAX: 012 567 1996
E-MAIL: info@ditshimega.co.za

I, Z.D RANTA Prof Reg Nr. 201170066
HEREBY CERTIFY THAT THE SERVICES WILL\ HAVE BEEN INSTALLED ACCORDING TO NOTE 9 OF THE ABOVE NOTES AND TO THE DRAWING

SIGNATURE DATE

CONSULTANT DRAWING NUMBER:

0 REVISION

DESIGNED
NAME: Z.D RANTA Pr Eng. Prof Reg No: 201170066
SIGNATURE: DATE:

DRAWN
NAME: K.MOLEMA Prof Reg No:
SIGNATURE: DATE:

CHECKED
NAME: Z.D RANTA Pr Tech. Prof Reg No: 201170066
SIGNATURE: DATE:

INFORMATION OFFICE CHECKED
NAME: Prof Reg No:
SIGNATURE: DATE:

DESIGN OFFICE APPROVAL
NAME: Z.D RANTA Pr Eng. Prof Reg No: 201170066
SIGNATURE: DATE:

CONTRACT No:

PROJECT No.

SHEET No. 2543IES-205

PAPER SIZE: A0

SCALE: as shown

DATE: 2025-06-10

LOCATION OF PROJECT:
ZANDFONTEIN

DESCRIPTION OF PROJECT:
BULK DISTRIBUTION NETWORK
CHAMBER C.17
REINFORCED CONCRETE VALVES CHAMBER
LAYOUT (7.0m L x 4.0m W x 3.5m H)

WBS No. :

COT DRAWING NUMBER:

0 REVISION

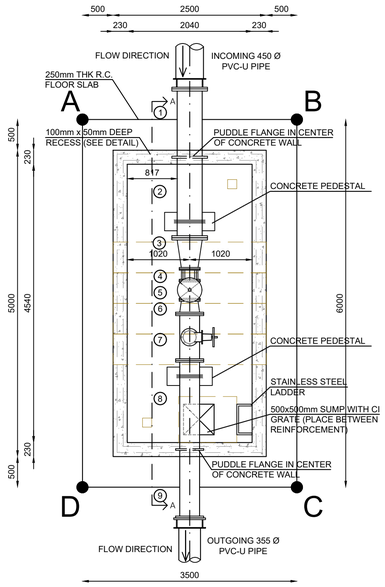
PROJECT STATUS
RECEIVED SIGN WHEN APPLICABLE

CONCEPT DRAWING ○ TENDER DRAWING ◉ APPROVED CONSTRUCTION DRAWING ○ AS BUILT DRAWING ○

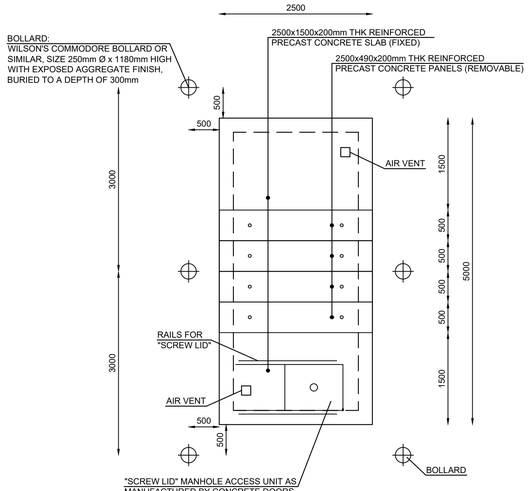
PROJECT ENGINEER of COT:
NAME: Pr Eng. Prof Reg No:
SIGNATURE: DATE:

INSPECTOR OF WORKS of COT:
NAME: Pr Eng. Prof Reg No:
SIGNATURE: DATE:

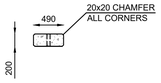
FLOOR PLAN
Scale 1:50



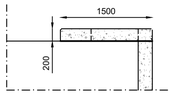
ROOF PLAN
Scale 1:50



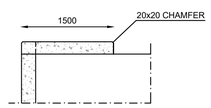
SECTION B
Scale 1:50



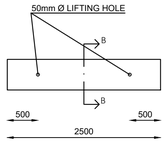
SECTION C
Scale 1:50



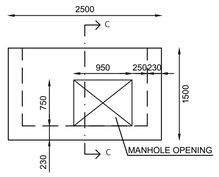
SECTION D
Scale 1:50



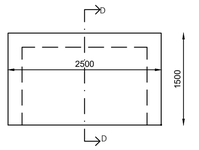
PLAN REMOVABLE ROOF PANELS
Scale 1:50



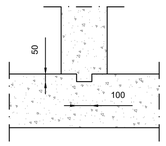
PLAN FIXED ROOF PANEL 2
Scale 1:50



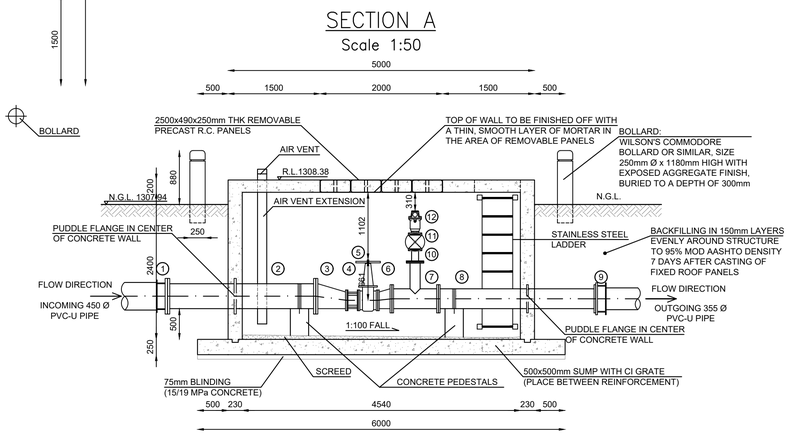
PLAN FIXED ROOF PANEL 1
Scale 1:50



RECESS IN FLOOR
Scale 1:20



SECTION A
Scale 1:50



STEEL FLANGES

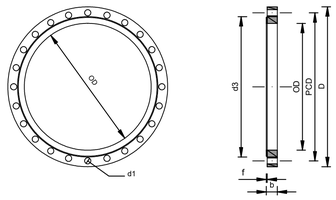
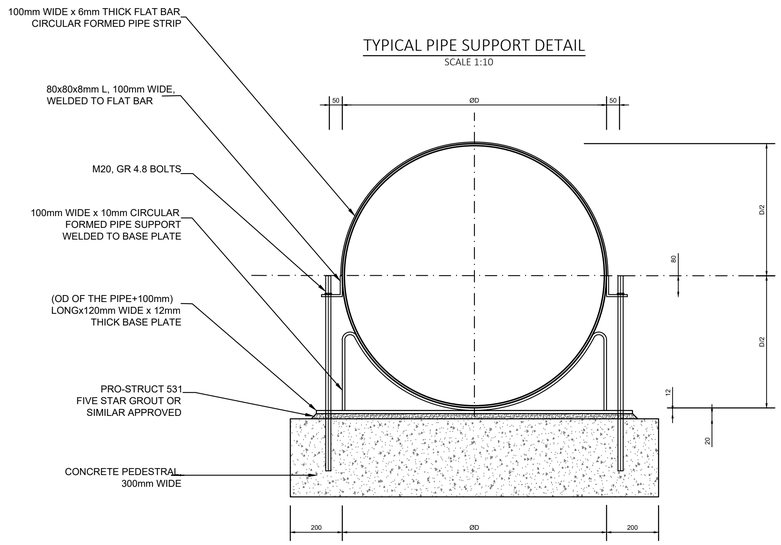


TABLE	PIPE NB (mm)	PIPE OD (mm)	FLANGE D (mm)	FLANGE b (mm)	RAISED FACE d3 (mm)	RAISED FACE f (mm)	HOLES No.	HOLES d1 (mm)	BOLT SIZE	PCD
SABS1123 1600/3	100	114.3	220.0	14.0	158.0	3.0	8	18.0	M16	180.0
	150	165.1	285.0	18.0	212.0	3.0	8	22.0	M20	240.0
	200	219.1	340.0	22.0	268.0	3.0	12	22.0	M20	295.0
	250	273.0	405.0	25.0	320.0	3.0	12	26.0	M24	355.0
	300	323.9	460.0	28.0	378.0	4.0	12	26.0	M24	410.0
	400	406.4	580.0	35.0	490.0	4.0	16	26.0	M24	525.0
	450	457.2	640.0	40.0	550.0	4.0	20	26.0	M24	585.0
	500	508.0	715.0	40.0	610.0	4.0	20	33.0	M30	650.0
	600	609.6	840.0	50.0	725.0	5.0	20	33.0	M30	770.0
	700	711.2	910.0	55.0	795.0	5.0	24	33.0	M30	840.0
	800	812.8	1025.0	65.0	900.0	5.0	24	39.0	M36	950.0
	900	914.4	1125.0	70.0	1000.0	5.0	28	39.0	M36	1050.0
	1000	1016.0	1255.0	75.0	1115.0	5.0	28	39.0	M36	1170.0
SABS1123 2500/3	150	165.1	300.0	30.0	218.0	3.0	8	26.0	M24	250.0
	250	273.0	425.0	30.0	335.0	3.0	12	26.0	M24	370.0
	350	355.6	555.0	35.0	450.0	4.0	16	33.0	M30	490.0
BS4504 25/3	700	711.2	960.0	74.0	820.0	5.0	24	42.0	M39	875.0

TYPICAL PIPE SUPPORT DETAIL
SCALE 1:10



CHAMBER C.18 COORDINATES LIST OF THE BOUNDARY OF THE FOUNDATION SLAB

NAME	X	Y
A	90525.6169	2843656.4362
B	90525.4752	2843652.9390
C	90519.4802	2843653.1818
D	90519.6218	2843656.6789

THE X AND Y CO-ORDINATES OF THE INFORMATION INDICATED ON THIS DRAWING ARE BASED ON THE WORLD GEODETIC SYSTEM 1984 ELLIPSOID (WGS84)

ITEM NR.	DESCRIPTION	NO. OFF	DIMENSIONS
1	400 Ø STEEL COUPLING SUCH AS KLAMFLEX RANGER FLANGE ADAPTOR OR SIMILAR APPROVED, PN16. FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	
2	400 Ø x 2430mm LONG STEEL PIPE WITH PUDDLE FLANGE (FLANGED TO SANS 1123 - 1600/3). BOTH ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	1115, 1315
3	400 Ø x 200 Ø ECCENTRIC STEEL REDUCER. BOTH ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	
4	200 Ø STEEL COUPLING SUCH AS KLAMFLEX DISMANTLING JOINT OR SIMILAR APPROVED, PN16. FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	
5	200 Ø VOSA GATE VALVE, PN16, OR SIMILAR APPROVED WITH HAND WHEEL AND ANTI-CLOCKWISE CLOSING TO SANS 664. NON RISING STEM. BOTH ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	317
6	300 Ø x 200 Ø ECCENTRIC STEEL REDUCER. BOTH ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	230
7	300 Ø x 150 Ø STEEL TEE WITH ALL ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	600, 380, 380
8	300 Ø x 2570mm LONG STEEL PIPE WITH PUDDLE FLANGE (FLANGED TO SANS 1123 - 1600/3). BOTH ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	1455, 1115
9	300 Ø STEEL COUPLING SUCH AS KLAMFLEX RANGER FLANGE ADAPTOR OR SIMILAR APPROVED, PN16. FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	170
10	100 Ø STEEL SPACER BETWEEN BRANCH FLANGE & VALVE MADE UP BY 200mm LONG STUB MOUNTED IN CENTER OF SPECIAL FLANGE (BRANCH NB, 150 Ø) WITH STUB (AIR VALVE NB, 100 Ø) FLANGED & DRILLED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	200
11	100 Ø VOSA GATE VALVE, PN16, OR SIMILAR APPROVED WITH HAND WHEEL AND ANTI-CLOCKWISE CLOSING TO SANS 664. NON RISING STEM. BOTH ENDS FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	254
12	100 Ø VAG DUOJET AUTOMATIC AIR RELEASE & VACUUM BREAK VALVE SINGLE-CHAMBER TYPE, PN16, OR SIMILAR APPROVED, FLANGED TO SANS 1123 - 1600/3 (for flange details see the relevant table)	1	380

NOTES AND SPECIFICATIONS

GENERAL
1. ALL MATERIAL AND WORKMANSHIP MUST COMPLY WITH THE REQUIREMENTS OF THE LATEST RELEVANT SANS STANDARD.
2. ALL DIMENSIONS ARE IN mm (UNLESS OTHERWISE SPECIFIED).
3. DO NOT SCALE FROM THESE DRAWINGS.
4. ALL DIMENSIONS MUST BE CHECKED AND APPROVED ON SITE.
5. ALL CONSTRUCTION TO BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR MUNICIPAL CIVIL ENGINEERING WORKS, THIRD EDITION 2005 AND THE STANDARD COT DETAIL DRAWINGS.
6. THIS DRAWING MUST BE READ IN CONJUNCTION WITH THE STANDARD DRAWINGS.(IF APPLICABLE).
7. THIS DRAWING MUST BE READ IN CONJUNCTION WITH THE STANDARD SPECIFICATIONS FOR MUNICIPAL CIVIL ENGINEERING WORKS, SERIES 4.
8. THE SIGNATURE OR INITIALS ON THIS DRAWING, OF ANY DIRECTOR OF THE WATER AND SANITATION DEPARTMENT, IN NO WAY, REMOVES ANY RESPONSIBILITY WHATSOEVER FROM THE CONSULTANT.
9. THE CONSULTANT REMAINS RESPONSIBLE TO ENSURE THAT ALL THE GUIDELINES, STANDARD DRAWINGS, STANDARDS AND SPECIFICATIONS OF THE WATER AND SANITATION DEPARTMENT HAVE BEEN MET AND ARE COMPLIED WITH.
10. FINAL POSITION OF SERVICES TO BE DETERMINED ON SITE.

PARTICULAR:
1. CONCRETE USED IN CONSTRUCTION OF THE STRUCTURE TO BE CLASS 30/19 MPa
2. CONCRETE SURFACE FINISH SHALL BE STEEL-FLOATED FINISH ON TOP OF ROOF SLAB AND WALLS OFF-SHUTTER, BASE FINISHED WITH STRAIGHT EDGE AND SCREED WITH STEEL FLOAT FINISH.
3. SCREED: 1 CEMENT CEM 1:5 RIVER SAND
4. DEGREE OF ACCURACY FOR PRECAST PLANKS TO BE I AND ALL OTHER II OF SANS 1200G
5. WHERE HIGH WATER TABLE IS ENCOUNTERED, 3 COATS OF A HEAVY WATERPROOFING COMPOUND SUCH AS ABE SUPER LAYKOLD SHALL BE APPLIED TO EXTERIOIR WALLS

CONSTRUCTION PROCEDURE
1. CLEAR SITE, EXCAVATE TO REQUIRED DEPTH AND CONSTRUCT 75mm THK CLASS 15/19 MPa BLINDING LAYER
2. FIX FLOOR SLAB & WALL STARTER BARS AND CAST FLOOR SLAB
3. FIX WALL REINFORCEMENT BEFORE CASTING WALL.
4. PLACE FORM WORK FOR FIXED ROOF PANELS, FIX STEEL AND CAST CONCRETE
5. CURE ALL CONCRETE FOR 5 DAYS

CONSTRUCTION MANAGEMENT AND USE OF DRAWINGS:
CONSTRUCTION MANAGEMENT:
1. THE COUNCIL SHALL APPOINT OR PROVIDE AN APPROPRIATELY QUALIFIED AND EXPERIENCED FOREMAN, TO MANAGE AND SUPERVISE THE CONSTRUCTION OF THE RESERVOIR SHOWN ON THESE CONSTRUCTION DRAWINGS.
2. THE FOREMAN SHALL STUDY, INTERPRET AND APPLY THE DETAILS AND INSTRUCTIONS PROVIDED ON THE DRAWINGS, WHILST AT THE SAME TIME SUPERVISE THE CONSTRUCTION OF THE WORKS ON A DAILY BASIS.
3. NO DEVIATION FROM THE DRAWINGS DETAILS AND INSTRUCTIONS ARE PERMITTED.
4. SHOULD THE FOREMAN HAVE QUESTIONS ABOUT THE DRAWINGS OR CONSTRUCTION, HE SHOULD CONTACT THE COUNCIL'S ENGINEER IN CHARGE OF THE PROJECT.

CONSTRUCTION MONITORING:
1. AS THE CONSULTING ENGINEER HAS NOT BEEN APPOINTED TO PERFORM THE CONSTRUCTION MONITORING DUTIES, HE CANNOT TAKE ANY RESPONSABILITY FOR THE SUCCESSFUL AND CORRECT EXECUTION OF THE WORKS ACCORDING TO THE CONSTRUCTION DRAWINGS.
2. THE FULL RESPONSABILITY FOR SUPERVISING THE EXECUTION OF THE WORKS LIES WITH THE FOREMAN OF THE PROJECT.

DESIGN CRITERIA:
- SOIL DENSITY = 1800kg/mc
- SOIL K-ACTIVE = 0,4
- MAX. WATER TABLE = 1,0 BELOW NGL.
- LIVELOAD
  VEHICLE ON ROOF ≤ 4500kg GVM
  i.e 6 kPa LL OR 2 x 14kN PL 1,0m APART
- SAFE BEARING PRESSURE OF GROUND ≥ 100kPa

PEDESTAL REINFORCEMENT:
1. CONCRETE USED IN CONSTRUCTION OF THE STRUCTURE TO BE CLASS 30/19 MPa
2. SCREED: 1 CEMENT CEM 1:5 RIVER SAND
3. ARMORING TO BE USED: REBARS Y12-200 ON BOTH SIDES

CITY OF TSHWANE
METRO MUNICIPALITY

PO BOX 1022
PRETORIA
0001

CITY OF TSHWANE

SERVICES INFRASTRUCTURE DEPARTMENT
WATER AND SANITATION DIVISION

MR DUMISILE GUBUZA
DIVICIONAL HEAD

SIGNATURE | Prof.Reg. No | DATE

AMENDMENTS

NR	DATE	APPROVED	DESCRIPTION	PAR

WATER AND SANITATION
FOR INTERNAL APPROVAL - RECEIVED SIGN WHEN APPLICABLE

	NAME	Prof. Reg. No	SIGNATURE	DATE
DIRECTOR: WATER AND SANITATION - PLANNING				
REGIONAL DIRECTOR: (1,2,3,4,5,6 or 7)				
DIRECTOR: SYSTEM DEVELOPMENT				
DIRECTOR: BULK WATER				
DIRECTOR: INFRASTRUCTURE PROVISION				
DIRECTOR: WASTE WATER TREATMENT				

CONSULTANT DETAIL

DPT CIVIL AND STRUCTURAL JV
POSTNET SUITE 453
SINOVILLE CORNER X504
SINOVILLE
0129
TEL: (012) 567 7831
FAX: (012) 567 1997
E-MAIL: info@ditshimega.co.za

I, Z.D RANTA Prof Reg Nr. 201170066
HEREBY CERTIFY THAT THE SERVICES WILL\ HAVE BEEN INSTALLED ACCORDING TO NOTE 9 OF THE ABOVE NOTES AND TO THE DRAWING

SIGNATURE | DATE

CONSULTANT DRAWING NUMBER: 2017/SMI/10/01-SRL-011

REVISION: 0

DESIGNED
NAME: Z.D RANTA Pr Eng. Prof Reg No: 201170066
SIGNATURE: DATE:

DRAWN
NAME: K.MOLEMA Prof Reg No:
SIGNATURE: DATE:

CHECKED
NAME: Z.D RANTA Pr Eng. Prof Reg No: 201170066
SIGNATURE: DATE:

INFORMATION OFFICE CHECKED
NAME: Pr Eng. Prof Reg No:
SIGNATURE: DATE:

DESIGN OFFICE APPROVAL
NAME: Z.D RANTA Pr Eng. Prof Reg No: 201170066
SIGNATURE: DATE:

CONTRACT No:
PROJECT No.
SHEET No. 2543IES-206
PAPER SIZE: A1
SCALE: 1:1000
DATE: 2025-06-10
WBS No. :
COT DRAWING NUMBER:
REVISION: 0

LOCATION OF PROJECT:
ZANDFONTEIN

DESCRIPTION OF PROJECT:
BULK DISTRIBUTION NETWORK
CHAMBER C.18
REINFORCED CONCRETE VALVES CHAMBER LAYOUT
(5.0m L x 2.5m W x 2.4m H)

PROJECT STATUS
RECEIVED SIGN WHEN APPLICABLE

CONCEPT DRAWING | TENDER DRAWING | APPROVED CONSTRUCTION DRAWING | AS BUILT DRAWING

PROJECT ENGINEER of COT:
NAME: Pr Eng. Prof Reg No:
SIGNATURE: DATE:

INSPECTOR of WORKS of COT:
NAME: Pr Eng. Prof Reg No:
SIGNATURE: DATE: