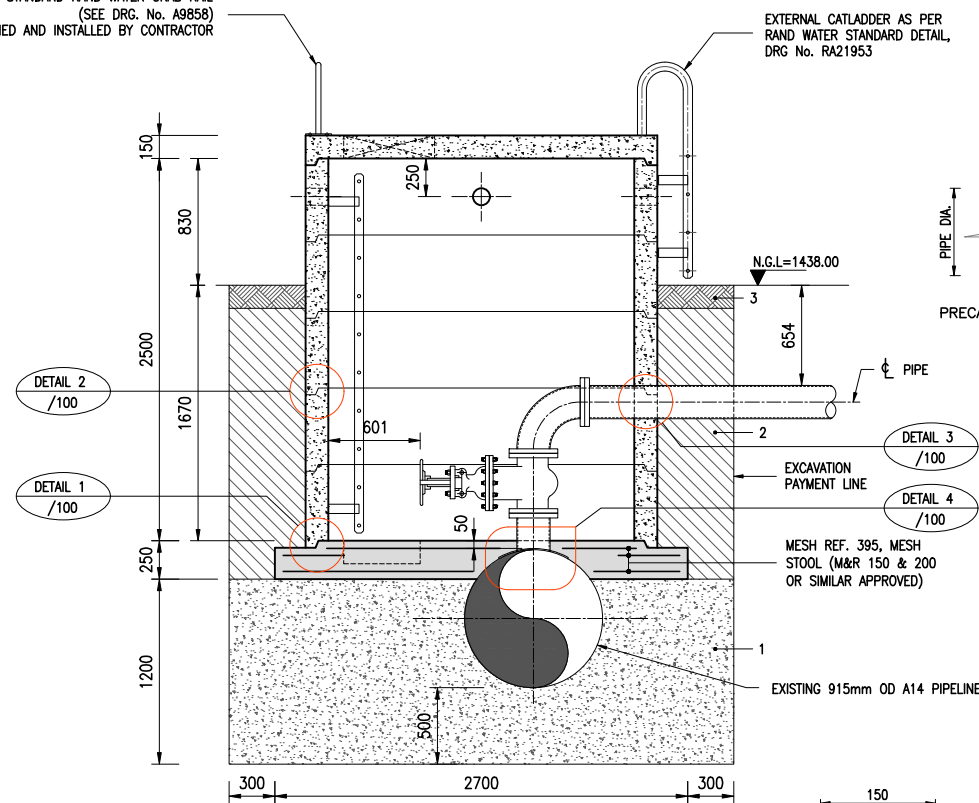
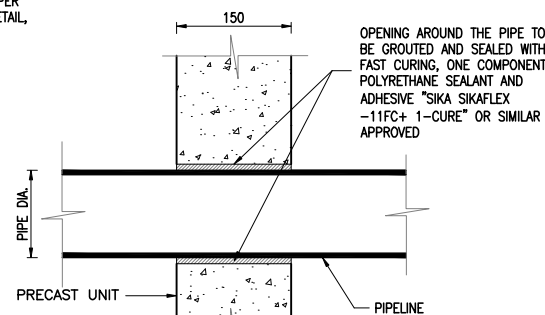


STANDARD RAND WATER GRAB RAIL
(SEE DRG. No. A9858)
SUPPLIED AND INSTALLED BY CONTRACTOR

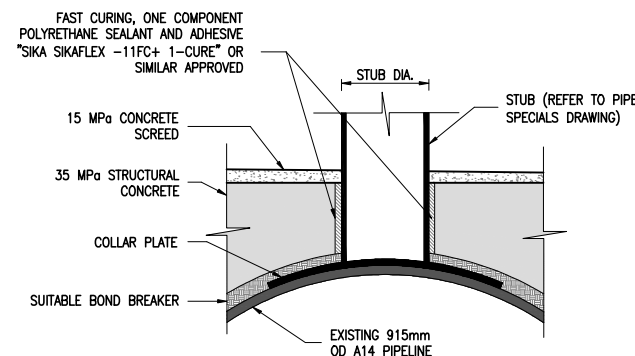


SECTION A
1:25

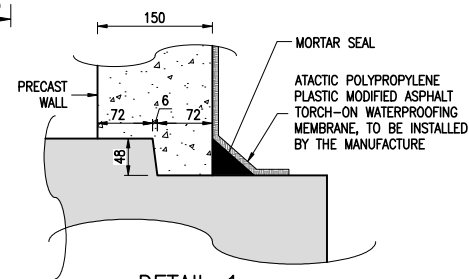
LAYER WORKS		
No.	LAYER DESCRIPTION	THICKNESS
①	15MPa MASS CONCRETE	1200mm
②	IN-SITU BACKFILL OF SELECTED SUITABLE G7 MATERIAL FROM EXCAVATION, COMPACTED IN LAYERS NOT EXCEEDING 150mm TO 93% MOD. AASHTO DENSITY AT -1% TO +2% OMC.	150mm
③	150mm THICK TOP SOIL TO BE REINSTATED	150mm



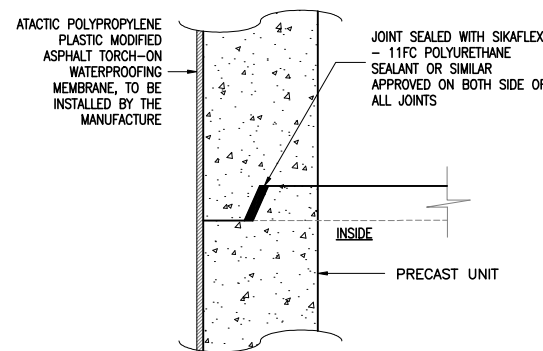
DETAIL 3
SCALE 1:5



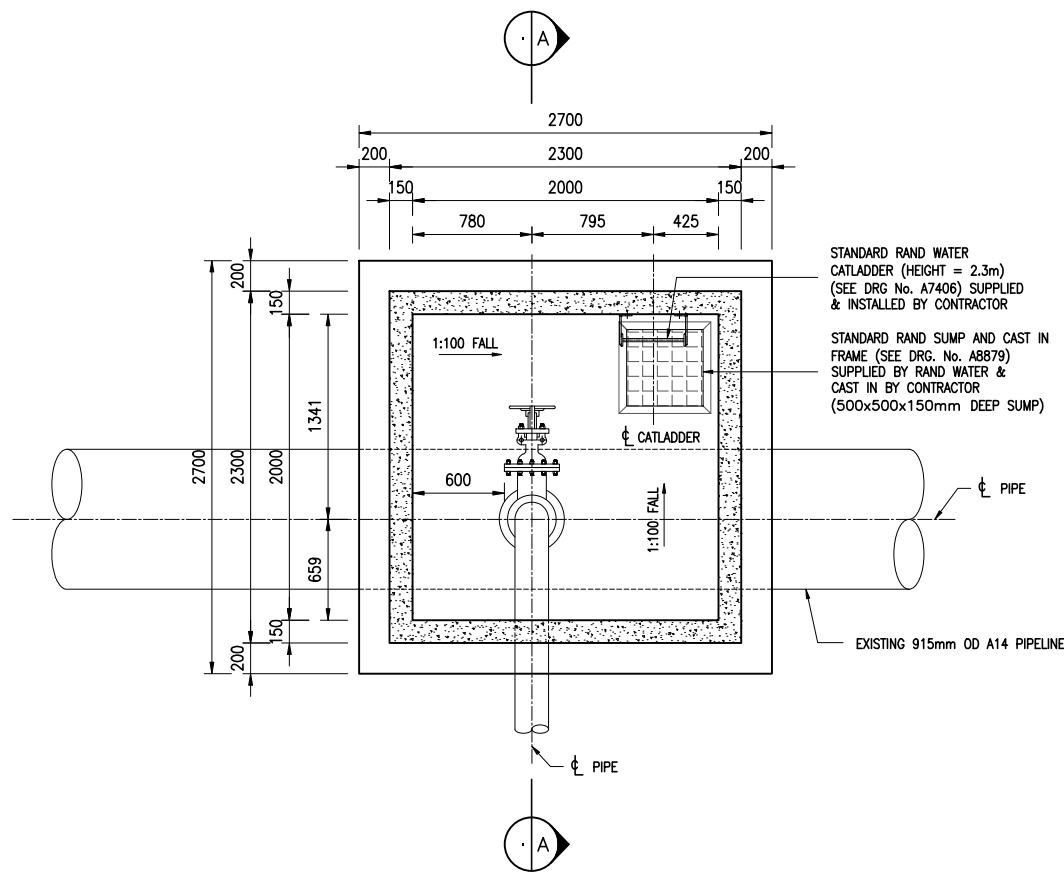
DETAIL 4
SCALE 1:5



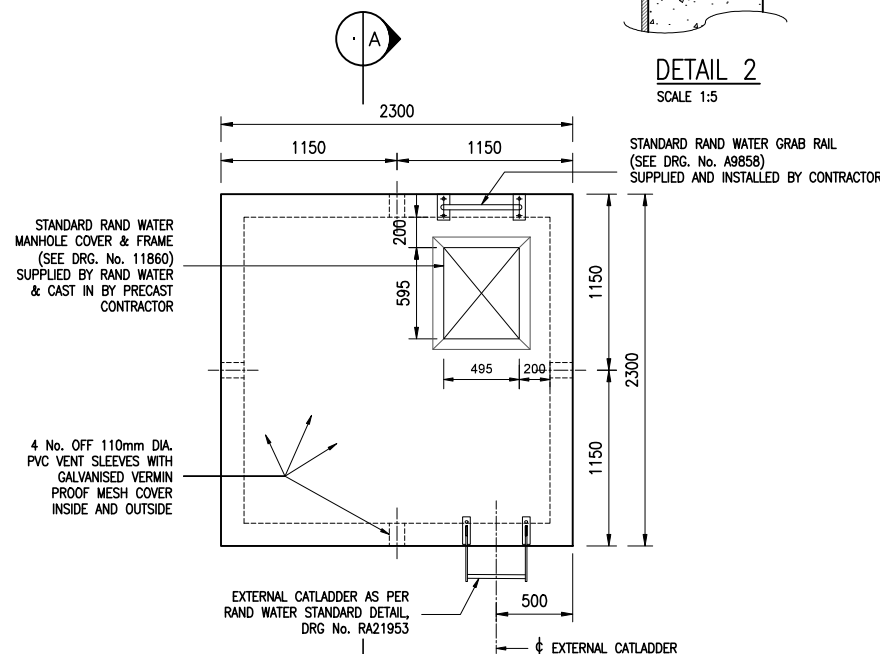
DETAIL 1
SCALE 1:5



DETAIL 2
SCALE 1:5



FLOOR PLAN
1:25



ROOF PLAN
1:25

3. UNLESS OTHERWISE DIRECTED BY THE CIVIL DESIGN ENGINEER, ONE SAMPLE SHALL BE TAKEN FROM EACH DAYS CASTING CONCRETE FOR THE PURPOSE OF COMPRESSIVE STRENGTH TESTING. THE CONTRACTOR SHALL PREPARE 6 TEST CUBES, 150mm NOMINAL SIZE, FROM EACH SAMPLE. THREE OF EACH SIX TEST CUBES SHALL BE TESTED AT 7 DAYS AFTER MAKING AND THE REMAINING THREE CUBES SHALL BE TESTED AT 28 DAYS AFTER MAKING. ALL TEST RESULTS TO BE SUBMITTED AT SPECIFIED TIME LINES TO THE CIVIL DESIGN ENGINEER FOR APPROVAL, IN ACCORDANCE WITH SANS 878
 4. WORKSHOP DRAWINGS OF STRUCTURAL STEELWORK, INCLUDING THE DESIGN OF CONNECTIONS, TO BE SUBMITTED TO THE CIVIL DESIGN ENGINEER FOR APPROVAL PRIOR TO FABRICATION. DRAWINGS SHALL BE CHECKED FOR DESIGN COMPLIANCE. NO DIMENSIONAL CHECKS WILL BE DONE. ALLOW 7 WORKING DAYS FOR APPROVAL.
 5. ERECTION METHOD STATEMENT TO BE SUBMITTED TO THE CIVIL DESIGN ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.
 6. CERTIFICATE FROM THE STEEL MANUFACTURER VERIFYING STEEL GRADE TO BE SUBMITTED TO THE CIVIL DESIGN ENGINEER.
- ADD HOLD POINT FOR GAL SURVEY AFTER THE COMPLETION OF EXCAVATION.
 - MAKE ALLOWANCE IN PROGRAM FOR INSPECTION BETWEEN EXCAVATION AND BACKFILLING

5. ONLY CONCRETE COVER BLOCKS TO BE USED ON SITE
6. CONCRETE FINISHES TO FLOOR TO HAVE A SMOOTH WOOD FLOATED FINISH
7. ALL CAST IN ITEMS TO BE SUPPLIED BY CONTRACTOR UNLESS OTHERWISE NOTED
8. THIS STRUCTURE SHALL BE WATER TIGHT
9. NO THROUGH TIES TO BE USED

STRUCTURAL STEEL NOTES:

1. ALL STEEL SECTIONS TO BE GRADE S355JR STEEL AND SHALL COMPLY WITH SANS 50023.
2. ALL STRUCTURAL STEEL WORK SHALL BE INSPECTED, FABRICATED AND ERECTED IN ACCORDANCE WITH SANS 2001-0CS1.
3. ALL WELDS SHALL CONFORM TO SANS 10162: PART 1 AND SANS 10044.
4. ELECTRODES FOR ALL WELDS SHALL BE APPROVED BY THE CIVIL DESIGN ENGINEER.
5. ALL WELDS TO BE METAL ARC WELDING EXECUTED BY QUALIFIED WELDERS. SUPPORTING DOCUMENTATION TO BE SUBMITTED TO THE CIVIL DESIGN ENGINEER.
6. CAT LADDERS AND GRAB RAIL TO BE SUPPLIED AND INSTALLED BY CONTRACTOR (REFER TO DRG. No. A7406 AND A9858)
7. ALL LARGE DIAMETER STEEL PIPES TO BE SUPPLIED AND POSITIONED BY RAND WATER AND CAST IN BY CONTRACTOR
8. VALVE SUPPORTS TO BE INSTALLED UNDER ALL VALVES
9. ALL DIMENSIONS AND LEVELS TO BE CHECKED ON SITE PRIOR TO FABRICATION OF STEEL.
10. ALL STEELWORK TO BE HOT DIPPED GALVANISED TO SANS 121-2011 (HEAVY DUTY) BY A SABS ACCREDITED GALVANISER
11. WHERE TEMPORARY BRACING OR PROPPING IS NECESSARY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN, ERECTION, MAINTENANCE AND REMOVAL OF SUCH SUPPORTS.

FOUNDATION AND EARTHWORKS:

1. THE CIVIL ENGINEER SHALL INSPECT AND APPROVE ALL EXCAVATIONS AND BACK-FILLING PRIOR TO CASTING OF THE CONCRETE BLINDING LAYER
2. BACKFILL TO LAYER WORKS TABLE SPECIFICATIONS
3. THE CONTRACTOR IS REFERRED TO THE TECHNICAL SPECIFICATION WITH REGARDS TO DEALING WITH SERVICES
4. TOP SOIL TO BE GRADED TO ENSURE THAT THE GROUND FOLLOWS THE ORIGINAL N.G.L..
5. ONLY HAND OPERATED MECHANICAL COMPACTION EQUIPMENT TO BE USED WITHIN 3M OF EXISTING PIPES AND STRUCTURES
6. PRIOR TO ANY EXCAVATION THE CONTRACTOR SHALL SUBMIT TO THE CIVIL DESIGN ENGINEER FOR APPROVAL A DETAILED PROGRAM OF OPERATIONS FOR ALL EXCAVATION FUNCTIONS
7. EXCAVATIONS SHALL BE UNDERTAKEN IN A SAFE MANNER IN COMPLIANCE WITH THE REGULATIONS PROMULGATED UNDER THE OCCUPATIONAL HEALTH AND SAFETY ACT (ACT 85 OF 1993) OR ANY AMENDMENT THEREOF.
8. IT IS EXPECTED THAT VERTICAL EXCAVATIONS WILL BE UNSTABLE. THEREFORE SAFETY PRECAUTIONS TO BE OBSERVED BY THE CONTRACTOR SHALL INCLUDE THE SLOPING OR STEPPING AND SHORING, TIMBERING OR OTHERWISE SUPPORTING THE SIDES OF THE EXCAVATIONS OR ANY OTHER PROVISION AS STIPULATED IN REGULATION 11 OF THE AFORESAID ACT.
9. THE SHORING METHOD ADOPTED SHALL BE COMPATIBLE WITH THE EXCAVATING, BACKFILLING AND CONSTRUCTION METHOD AND SHALL NOT RESTRICT THE INSTALLATION AND CONSTRUCTION.
10. SHORES SHALL BE DESIGNED TO WITHSTAND THE EARTH PRESSURES EXERTED UPON THEM FROM THE SIDE OF THE EXCAVATION WHICH SHALL INCLUDE THE SUPERIMPOSED LOADING OF CONSTRUCTION AND PIPELAYING EQUIPMENT.
11. THE CIVIL DESIGN ENGINEER MAY REQUIRE THE CONTRACTOR TO TIMBER THE SIDES OF THE EXCAVATION WHICH MAY BE CONSIDERED TO BE IN ANY WAY DANGEROUS. SUCH TIMBERING SHALL BE LEFT IN PLACE UNTIL THE COMPLETION OF THE WORK AT THE POINT AFFECTED.
12. TIMBERING SHALL CONSIST OF OPEN PLANKING, WALINGS AND SUBSTANTIAL STRUTS AND SHALL BE CARRIED OUT IN A WORKMANLIKE MANNER AND TO THE SATISFACTION OF THE CIVIL DESIGN ENGINEER.
13. THE CONTRACTOR SHALL ALLOW FOR THE REMOVAL OF TIMBERING IMMEDIATELY PRIOR TO BACKFILLING OR ON THE INSTRUCTIONS OF THE CIVIL DESIGN ENGINEER.
14. MAINTAINING THE SIDES OF THE EXCAVATIONS IN A SAFE CONDITION SHALL AT ALL TIMES BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. NO UNDER CUTTING OF THE SIDES WILL BE ALLOWED

TESTING AND QUALITY REQUIREMENTS:

NO STRUCTURE WILL BE APPROVED BY THE CIVIL DESIGN ENGINEER
WITHOUT THE SUBMISSION OF THE FOLLOWING TO THE CIVIL DESIGN
ENGINEER

1. TEST OF THE IN-SITU SOIL TO BE UNDERTAKEN PRIOR TO CONSTRUCTION, TO ESTABLISH MATERIAL PROPERTIES
2. ONCE BACK-FILLING AND COMPACTION FOR FOUNDATION IS COMPLETED, THE CONTRACTOR SHALL PERFORM 2 IN-SITU CBR TESTS TO ESTABLISH THE STRENGTH OF THE SOIL MATTRESS. RESULTS TO BE SUBMITTED AND APPROVED BY CIVIL DESIGN ENGINEER PRIOR TO CASTING OF ANY CONCRETE.

(DRG. No. RA 61224/100

NOTES

GENERAL NOTES:

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE REINFORCEMENT AND RELEVANT PIPE LAYOUT DRAWINGS
2. STRUCTURE TO BE CONSTRUCTED IN ACCORDANCE WITH SANS SPECIFICATIONS AND RAND WATER SPECIFICATIONS.
3. ALL CONCRETE MIXES AND METHOD STATEMENTS TO BE APPROVED BY THE CIVIL DESIGN ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION
4. FOUNDATION EXCAVATIONS TO BE APPROVED BY THE CIVIL DESIGN ENGINEER PRIOR TO CASTING OF THE BLINDING LAYER
5. ALL LEVELS AND DIMENSIONS WILL BE CHECKED ON SITE PRIOR TO CONSTRUCTION

CONCRETE NOTES:

1. CONCRETE STRENGTH REQUIRED AT 28 DAYS:
 - a) STRUCTURAL CONCRETE: 35 MPa
 - b) BLINDING AND SCREED: 15 MPa
 - c) MASS CONCRETE: 15 MPa
2. CURING OF CONCRETE SHALL BE CARRIED OUT STRICTLY IN ACCORDANCE WITH SANS 2001-CC1
3. STRIPPING TIMES OF SHUTTERING AND PROPPING SHALL BE IN ACCORDANCE WITH SANS 2001-CC1
4. CURING METHOD STATEMENT TO BE APPROVED BY CIVIL DESIGN ENGINEER

REVISIONS

[illegible]

REFERENCE DRAWINGS

[illegible]

ISSUED FOR INFORMATION





BOX 1127
JOHANNESBURG
2000
TEL: 682-0911

© RAND WATER 2004 All Rights Reserved

PROJECT No	P.03753	CHECKED	M MAQINA	SI J
NETWORK No			APPROVED	Maqina
CONTRACT No		LEAD ENG.	M. CHIBU	PR A
DESIGNED BY	J MAMABOLO	REG No	20150256	Pr. Eng
DRAWN BY	J MAMABOLO	DATE	01/11/2023	
DATE	AUG 2022	SECTION HEAD	C TUMBARA	

VEREENIGING PUMPING
STATION
A14 PIPELINE

GENERAL ARRANGEMENTS FOR THE A14 DN200 DIA. TIE-IN CHAMBER

STATION										WKS										DOC. TYPE										S									
V	G																			D	A	V																	
SCALE AS SHOWN																				REVISION																			
A1  RA 61224/100																				 0																			