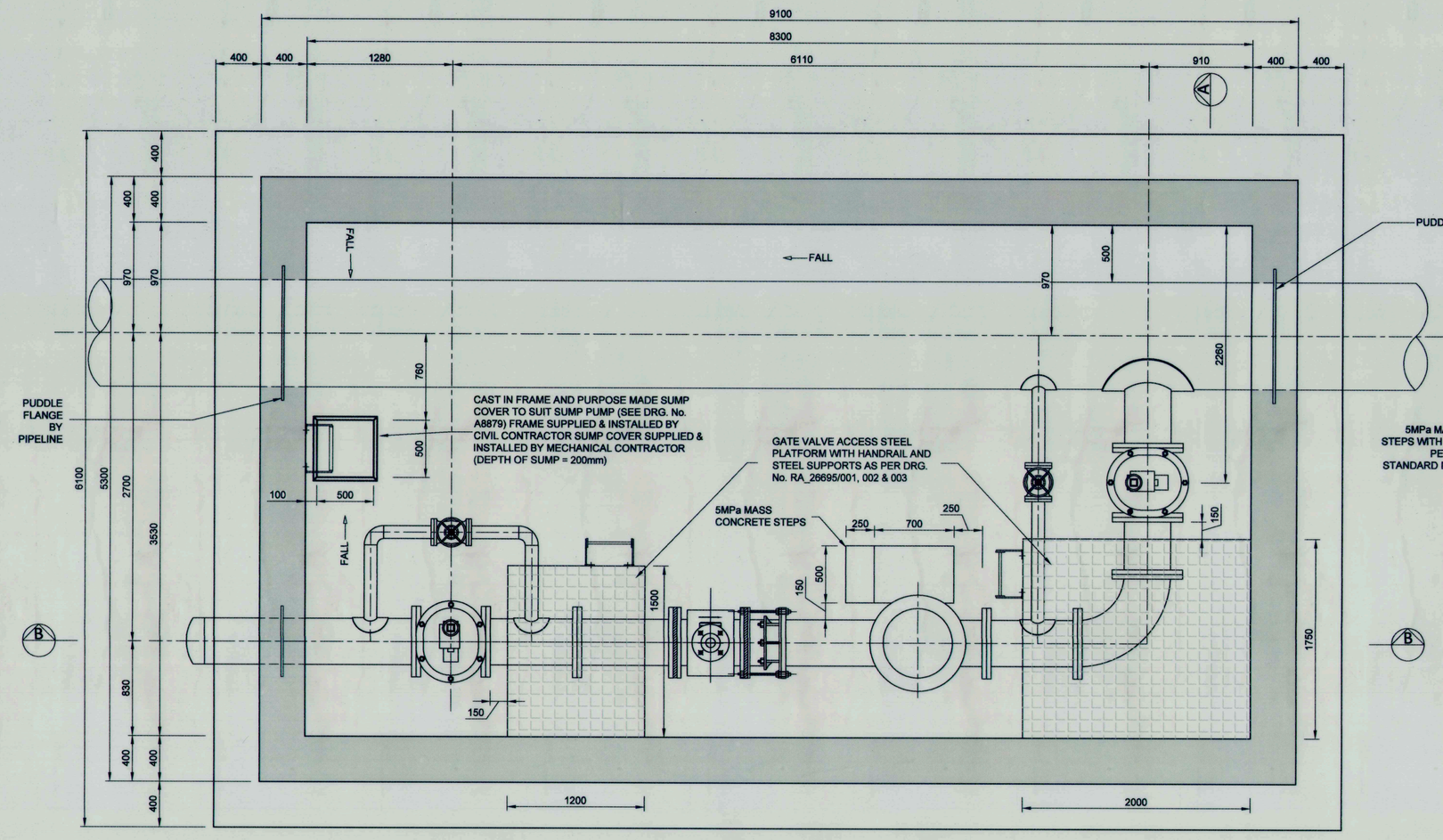

PLAN
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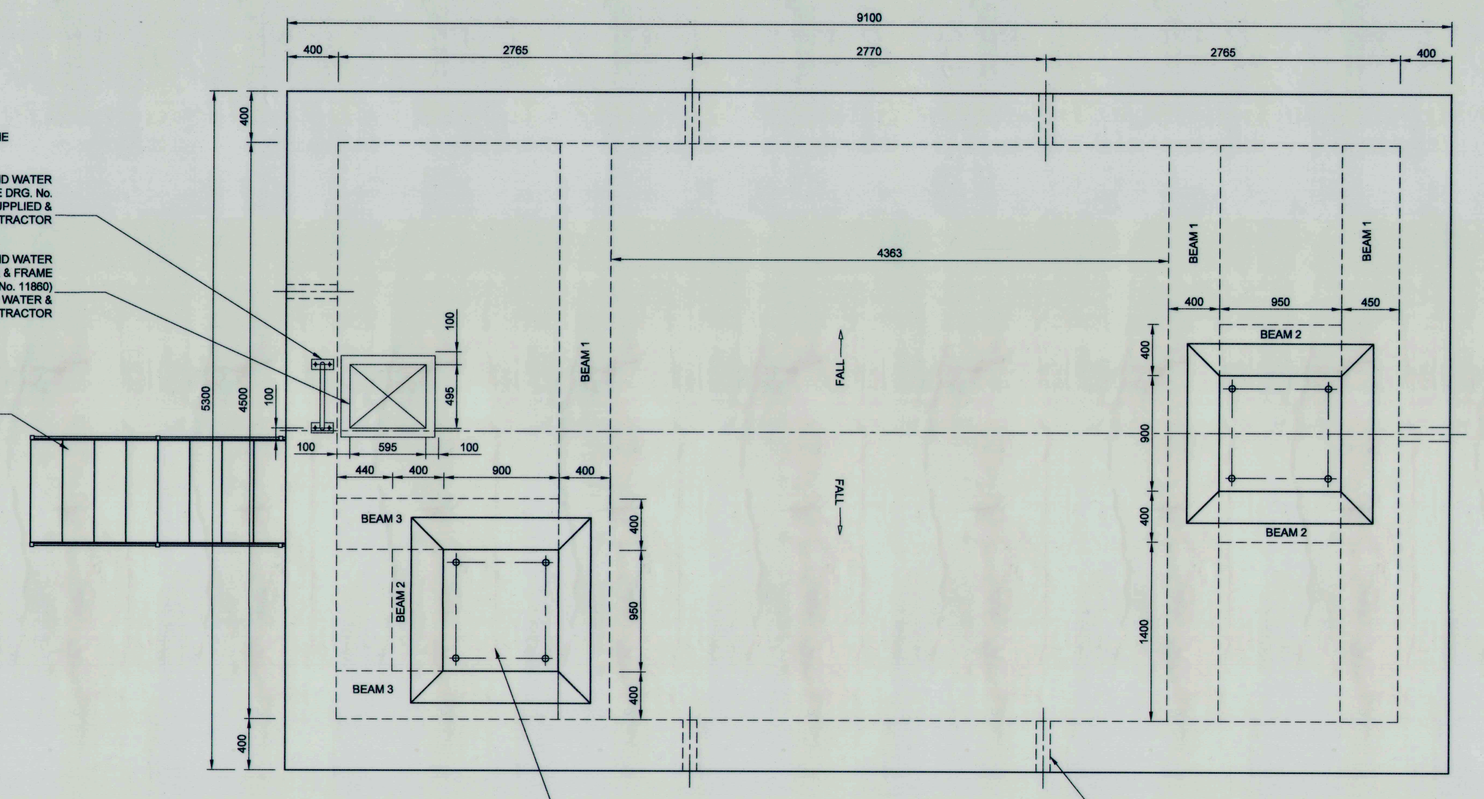
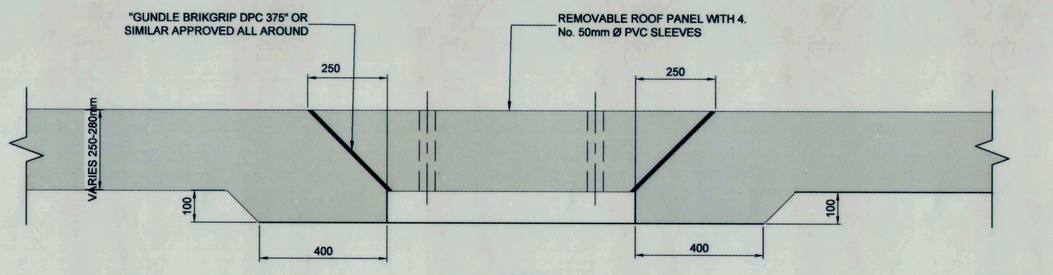


ROOF SLAB DETAILS
1:25



DETAIL 1
1:10

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

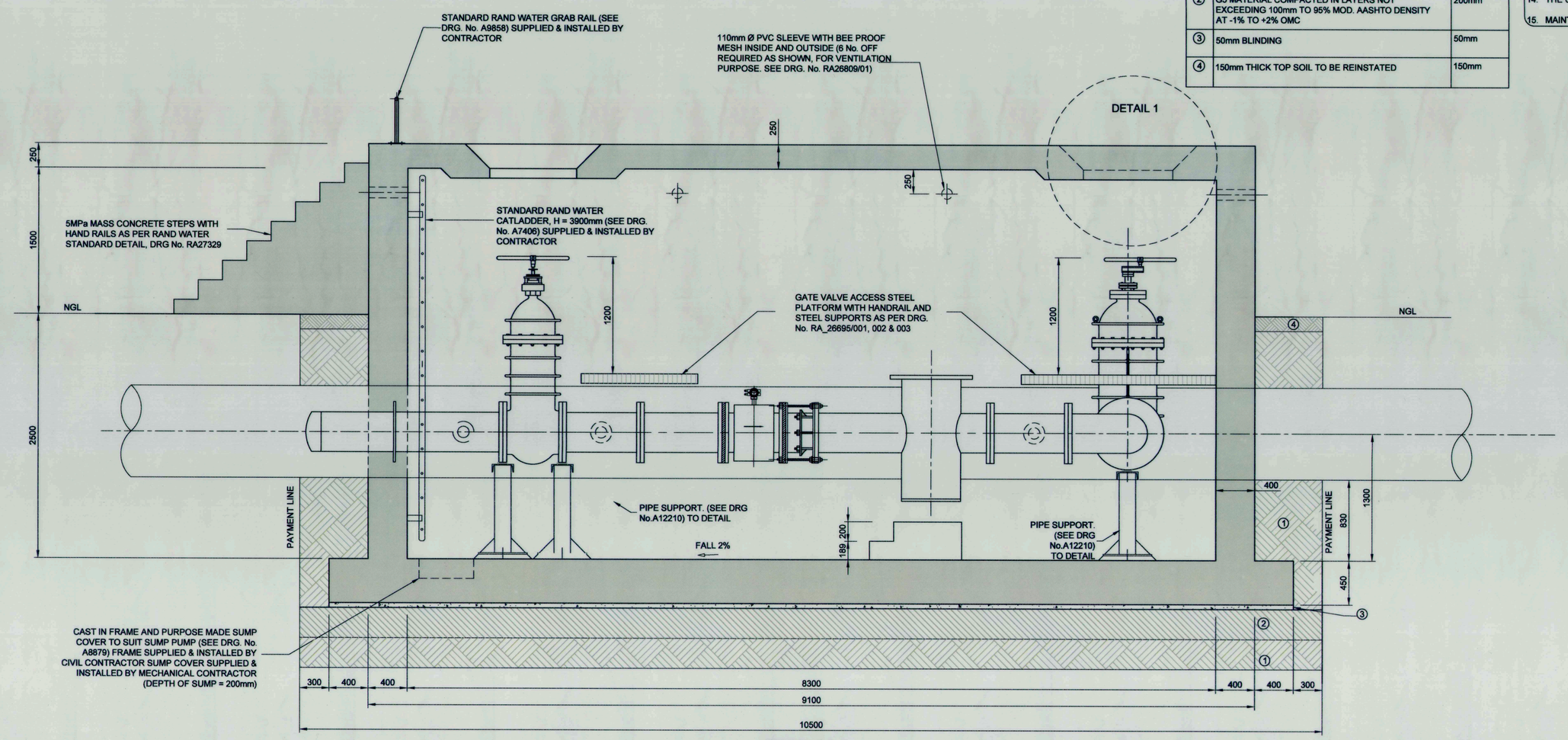
1. ONCE BACK-FILLING AND COMPACTION FOR FOUNDATION IS COMPLETED, THE CONTRACTOR SHALL PERFORM 2 IN-SITU CBR TESTS TO ESTABLISH THE STRENGTH OF THE SOIL MATTRESS. RESULTS TO BE SUBMITTED AND APPROVED BY CIVIL DESIGN ENGINEER PRIOR TO CASTING OF ANY CONCRETE.
2. UNLESS OTHERWISE DIRECTED BY THE CIVIL DESIGN 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
3. 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.
4. ERECTION METHOD STATEMENT TO BE SUBMITTED TO THE CIVIL DESIGN ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.
5. CERTIFICATE FROM THE STEEL MANUFACTURER VERIFYING STEEL GRADE TO BE SUBMITTED TO THE CIVIL DESIGN ENGINEER.

LAYER WORKS

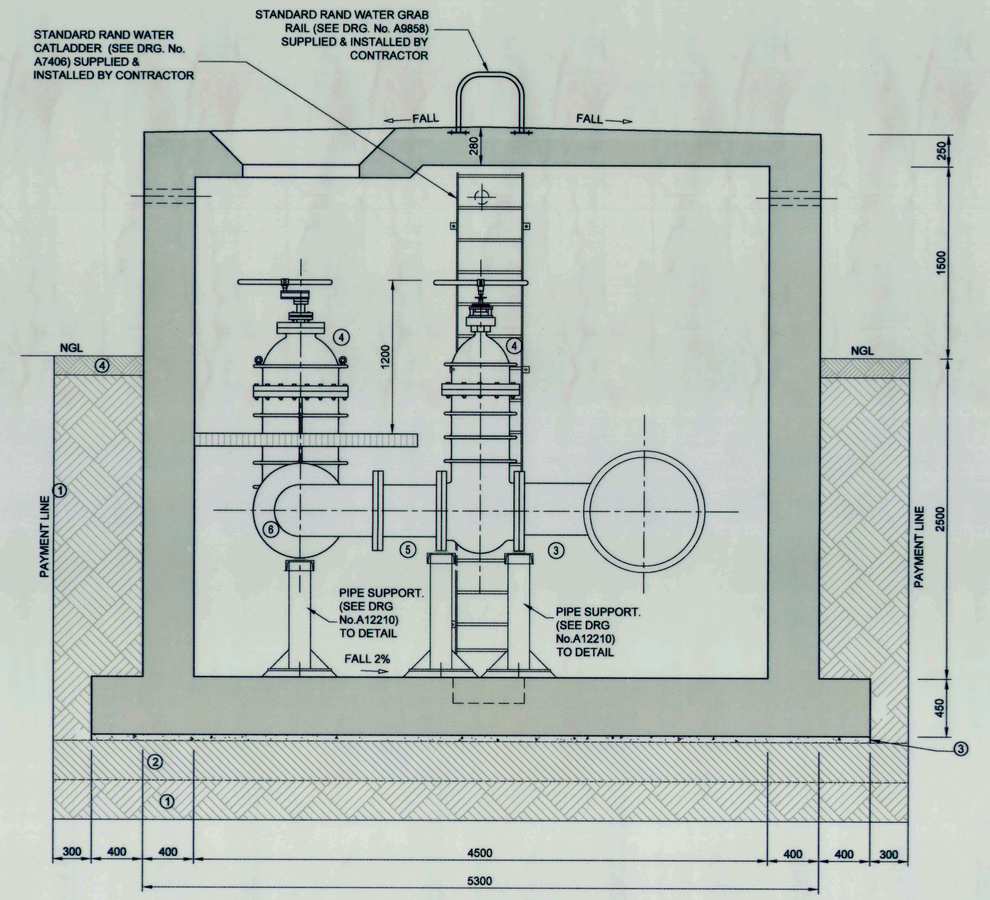
No.	LAYER DESCRIPTION	THICKNESS
1	IN-SITU BACKFILL OF SELECTED SUITABLE G7 MATERIAL FROM EXCAVATION, COMPACTED IN LAYERS NOT EXCEEDING 150mm TO 93% MOD. AASHTO DENSITY AT -1% TO +2% OMC	150mm
2	G5 MATERIAL COMPACTED IN LAYERS NOT EXCEEDING 100mm TO 95% MOD. AASHTO DENSITY AT -1% TO +2% OMC	200mm
3	50mm BLINDING	50mm
4	150mm THICK TOP SOIL TO BE REINSTATED	150mm

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. BACKFILLING SHALL COMMENCE ONLY AFTER THE CONCRETE ROOF HAS ATTAINED THE 28 DAYS COMPRESSIVE STRENGTH.
3. BACKFILL TO LAYER WORKS TABLE SPECIFICATIONS
4. SERVICES MAY BE ENCOUNTERED DURING EXCAVATIONS
5. TOP SOIL TO BE GRADED TO ENSURE THAT THE GROUND FOLLOWS THE ORIGINAL N.G.L.
6. ONLY HAND OPERATED MECHANICAL COMPACTION EQUIPMENT TO BE USED WITHIN 3M OF EXISTING WALLS
7. PRIOR TO ANY EXCAVATION THE CONTRACTOR SHALL SUBMIT TO THE CIVIL DESIGN ENGINEER FOR APPROVAL A DETAILED PROGRAM OF OPERATIONS FOR ALL EXCAVATION FUNCTIONS
8. 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.
9. 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.
10. THE SHORING METHOD ADOPTED SHALL BE COMPATIBLE WITH THE EXCAVATING, BACKFILLING AND CONSTRUCTION METHOD AND SHALL NOT RESTRICT THE INSTALLATION AND CONSTRUCTION.
11. 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.
12. 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.
13. 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.
14. THE CONTRACTOR SHALL ALLOW FOR THE REMOVAL OF TIMBERING IMMEDIATELY PRIOR TO BACKFILLING OR ON THE INSTRUCTIONS OF THE CIVIL DESIGN ENGINEER.
15. 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.



SECTION B-B
1:25



SECTION A-A
1:25

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 ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION
4. ALL LEVELS AND DIMENSIONS WILL BE CHECKED ON SITE PRIOR TO CONSTRUCTION
5. FOUNDATION EXCAVATIONS TO BE APPROVED BY THE CIVIL DESIGN ENGINEER PRIOR TO CASTING OF THE BLINDING LAYER

CONCRETE NOTES:

1. CONCRETE STRENGTH REQUIRED AT 28 DAYS:
   a) WALL & BASE : 35 MPa
   b) ROOF : 50 MPa
   c) BLINDING : 15 MPa
   d) MASS CONCRETE STAIRS : 5 MPa
2. CURING OF CONCRETE SHALL BE CARRIED OUT STRICTLY IN ACCORDANCE WITH SABS 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
5. ONLY CONCRETE COVER BLOCKS TO BE USED ON SITE
6. STRIPPING OF SHUTTERING AND PROPPING SHALL BE IN ACCORDANCE WITH SABS 1200G
7. ALL EXPOSED SHARP EDGES TO HAVE 20 x 20mm CHAMFER
8. CONCRETE FINISHES TO FLOOR TO HAVE A SMOOTH WOOD FLOATED FINISH
9. ALL CAST IN ITEMS TO BE SUPPLIED BY CONTRACTOR UNLESS OTHERWISE NOTED
10. THIS STRUCTURE SHALL BE WATER TIGHT, RIGID POLYMER MODIFIED LIQUID APPLIED WATERPROOFING MEMBRANE TO BE APPLIED TO ALL EXTERNAL FACES OF CONCRETE, TO BE APPROVED BY CIVIL DESIGN ENGINEER PRIOR TO APPLICATION
11. CONSTRUCTION JOINTS TO BE SCABBLED AND CLEANED
12. NO THROUGH TIES TO BE USED
13. STRUCTURE TO BE TESTED FOR WATER TIGHTNESS

STRUCTURAL STEEL NOTES:

1. ALL STEEL SECTIONS TO BE GRADE S355JR STEEL AND SHALL COMPLY WITH SANS 50025.
2. ALL STRUCTURAL STEEL WORK SHALL BE INSPECTED, FABRICATED AND ERECTED IN ACCORDANCE WITH SANS 2001-CS1.
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 RAILS TO BE SUPPLIED AND INSTALLED BY CONTRACTOR (REFER TO DRG. No. A7406 AND A8858)
7. ALL LARGE DIAMETER STEEL PIPES TO BE SUPPLIED AND INSTALLED BY RAND WATER
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.
12. CONSTRUCTION OF STRUCTURAL STEEL SHOULD CONFORM TO SANS 2001-CS1

REVISIONS

No	DATE	CHECKED	APPROVED	DESCRIPTION

REFERENCE DRAWINGS

NUMBER	TITLE
RA27329	DETAILS OF MASS CONCRETE STEPS
11850	STEEL FIBRE COVER & SUPPORT FRAME
A8879	DETAILS OF CAST IN FRAME VALVE CHAMBER SUMP
A9858	DETAILS OF GRAB RAIL
A12210	TYPICAL VALVE SUPPORT DETAIL
RA21953	DETAILS OF EXTERNAL CATLADDER
R029196	PIPELINE AND BOOSTERS RUSSELL ROAD DN400 FLOW METER CHAMBER ON G7 PIPELINE

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SAP No.	P.03568	CHECKED BY	
CONTRACT No.	RW4055507	D.O.M. C. TUMBARE	
DESIGNED BY	MAMABOLO JM	APPROVED	Pr Eng
DRAWN BY		REG. No.	
DATE	APRIL 2019	DATE	

PIPELINE AND BOOSTERS
RUSSELL ROAD

GENERAL ARRANGEMENTS FOR THE DN400 FLOW METER CHAMBER ON G7 PIPELINE

STATION	WKS	DOC. TYPE	S
G 1 7		D C G	A

SCALE AS SHOWN

DRG No. R029196/01

REVISION 0