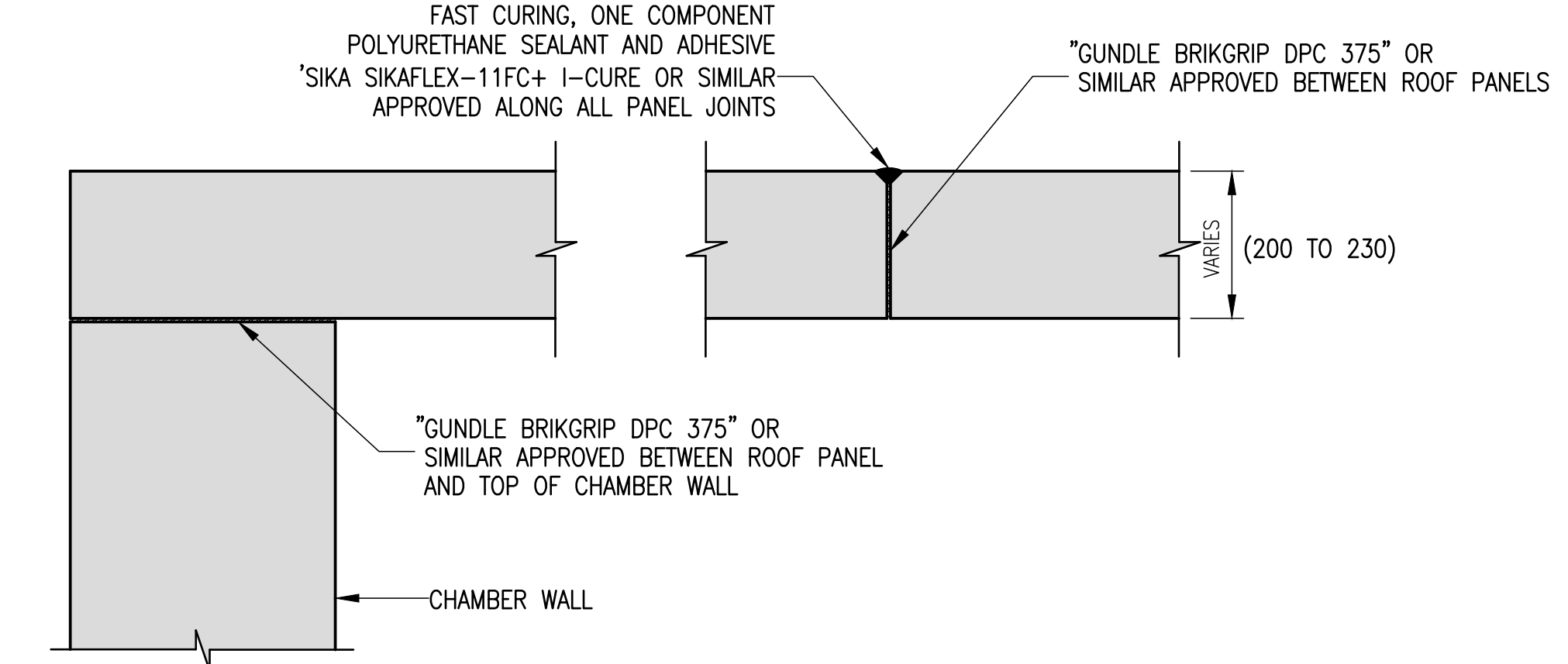
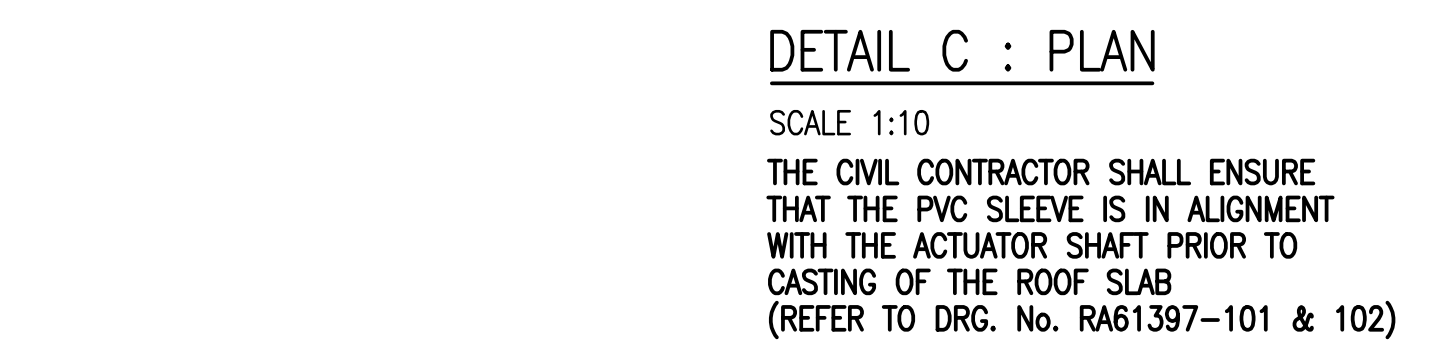
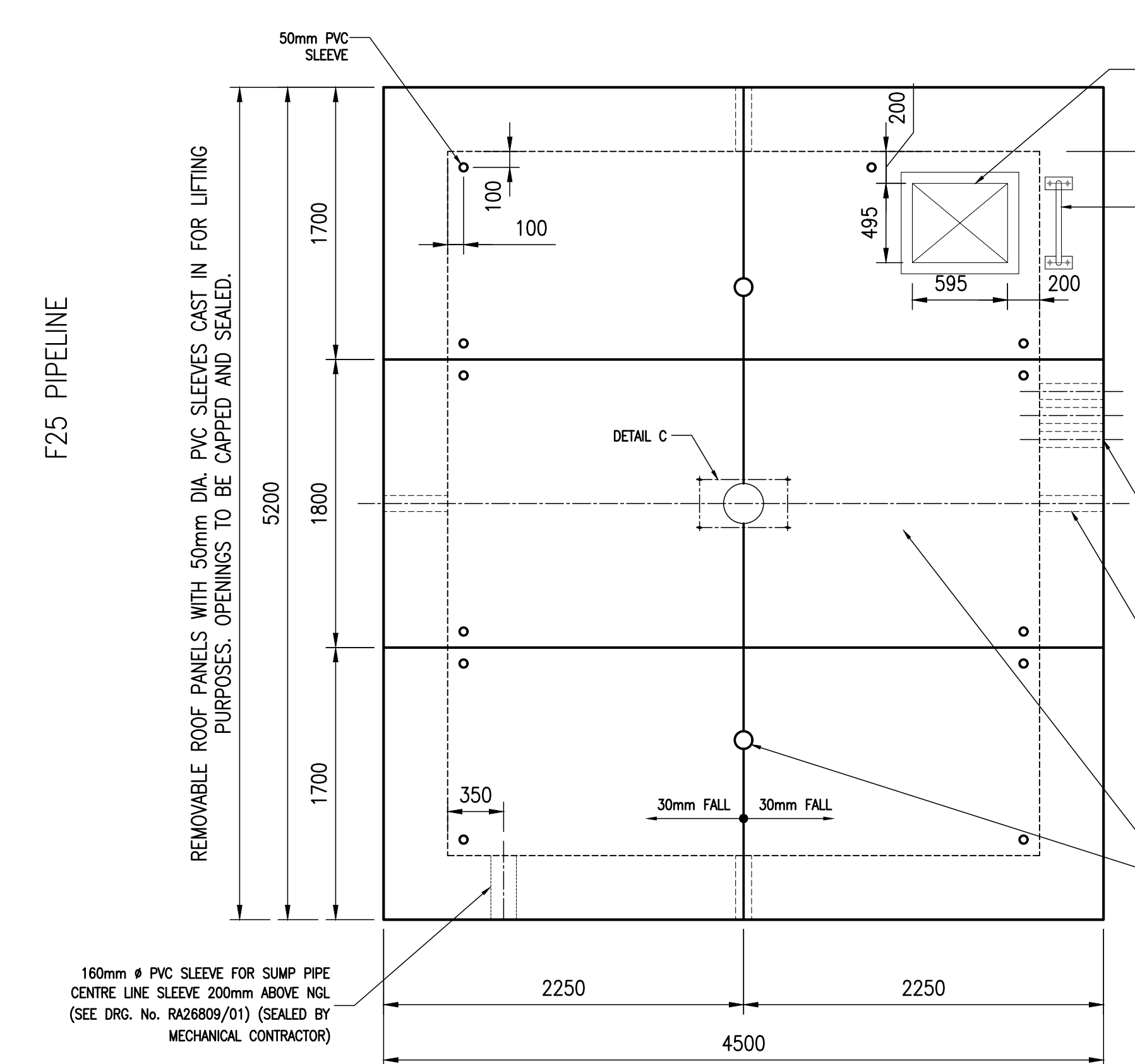


LAYER WORKS		
No.	LAYER DESCRIPTION	THICKNESS
①	Q5 MATERIAL COMPACTED IN LAYERS NOT EXCEEDING 100mm TO 95% MOD. ASHTO DENSITY AT -1% TO +2% OMC	100mm
②	50mm BLINDING	50mm
③	BACKFILL OF Q7 MATERIAL FROM A COMMERCIAL SOURCE, COMPACTED IN LAYERS NOT EXCEEDING 150mm TO 93% MOD. ASHTO DENSITY AT -1% TO +2% OMC	150mm
④	150mm THICK LAYER OF TO SOIL TO BE RE-INSTATED	150mm
⑤	RIP AND RE-COMPACT IN-SITU LAYER TO 93% MOD. ASHTO DENSITY	150mm



- 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
 - TEST OF THE IN-SITU SOIL TO BE UNDERTAKEN PRIOR TO CONSTRUCTION, TO ESTABLISH MATERIAL PROPERTIES
 - ONCE BACK-FILLING AND COMPACTION FOR FOUNDATION IS COMPLETED, THE CONTRACTOR SHALL PERFORM 2 IN-SITU COR TESTS TO ESTABLISH THE STRENGTH OF THE SOIL MATRESS. RESULTS TO BE SUBMITTED AND APPROVED BY CIVIL DESIGN ENGINEER PRIOR TO CASTING OF ANY CONCRETE.
 - 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
 - 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.
 - ERECTION METHOD STATEMENT TO BE SUBMITTED TO THE CIVIL DESIGN ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.
 - CERTIFICATE FROM THE STEEL MANUFACTURER VERIFYING STEEL GRADE TO BE SUBMITTED TO THE CIVIL DESIGN ENGINEER.

- FOUNDATION AND EARTHWORKS:**
- THE CIVIL ENGINEER SHALL INSPECT AND APPROVE ALL EXCAVATIONS AND BACK-FILLING PRIOR TO CASTING OF THE CONCRETE BLINDING LAYER
 - BACKFILL TO LAYER WORKS TABLE SPECIFICATIONS
 - THE CONTRACTOR IS REFERRED TO THE TECHNICAL SPECIFICATION WITH REGARDS TO DEALING WITH SERVICES
 - TOP SOIL TO BE GRADED TO ENSURE THAT THE GROUND FOLLOWS THE ORIGINAL N.G.L.
 - ONLY HAND OPERATED MECHANICAL COMPACTION EQUIPMENT TO BE USED WITHIN 3M OF EXISTING PIPES AND STRUCTURES
 - PRIOR TO ANY EXCAVATION THE CONTRACTOR SHALL SUBMIT TO THE CIVIL DESIGN ENGINEER FOR APPROVAL A DETAILED PROGRAM OF OPERATIONS FOR ALL EXCAVATION FUNCTIONS
 - EXCAVATIONS SHALL BE UNDERTAKEN IN A SAFE MANNER IN COMPLIANCE WITH THE REGULATIONS FORMULATED UNDER THE OCCUPATIONAL HEALTH AND SAFETY ACT (ACT 85 OF 1993) OR ANY AMENDMENT THEREOF.
 - 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.
 - THE SHORING METHOD ADOPTED SHALL BE COMPATIBLE WITH THE EXCAVATING, BACKFILLING AND CONSTRUCTION METHOD AND SHALL NOT RESTRICT THE INSTALLATION AND CONSTRUCTION.
 - 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
 - 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.
 - TIMBERING SHALL CONSIST OF OPEN PLANKING, WALNINGS AND SUBSTANTIAL STRUTS AND SHALL BE CARRIED OUT IN A WORKMANLIKE MANNER AND TO THE SATISFACTION OF THE CIVIL DESIGN ENGINEER.
 - THE CONTRACTOR SHALL ALLOW FOR THE REMOVAL OF TIMBERING IMMEDIATELY PRIOR TO BACKFILLING OR ON THE INSTRUCTIONS OF THE CIVIL DESIGN ENGINEER.
 - 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

- STRUCTURAL STEEL NOTES:**
- ALL STEEL SECTIONS TO BE GRADE S355JR STEEL AND SHALL COMPLY WITH SANS 5002.
 - ALL STRUCTURAL STEEL WORK SHALL BE INSPECTED, FABRICATED AND ERECTED IN ACCORDANCE WITH SANS 2001-C51.
 - ALL WELDS SHALL CONFORM TO SANS 10162: PART 1 AND SANS 10044.
 - ELECTRODES FOR ALL WELDS SHALL BE APPROVED BY THE CIVIL DESIGN ENGINEER.
 - ALL WELDS TO BE METAL ARC WELDING EXECUTED BY QUALIFIED WELDERS. SUPPORTING DOCUMENTATION TO BE SUBMITTED TO THE CIVIL DESIGN ENGINEER.
 - CAT LADDERS AND GRAB RAIL TO BE SUPPLIED AND INSTALLED BY CONTRACTOR (REFER TO DRG. No. A7406 AND A8858)
 - ALL LARGE DIAMETER STEEL PIPES TO BE SUPPLIED AND POSITIONED BY RAND WATER AND CAST IN BY CONTRACTOR
 - VALVE SUPPORTS TO BE INSTALLED UNDER ALL VALVES
 - ALL DIMENSIONS AND LEVELS TO BE CHECKED ON SITE PRIOR TO FABRICATION OF STEEL.
 - ALL STEELWORK TO BE HOT DIPPED GALVANISED TO SANS 121-2011 (HEAVY DUTY) BY A SABS ACCREDITED GALVANISER
 - WHERE TEMPORARY BRACING OR PROPPING IS NECESSARY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN, ERECTION, MAINTENANCE AND REMOVAL OF SUCH SUPPORTS.
 - ALL WORKSHOP DETAIL DRAWINGS OF STRUCTURAL STEEL WORK THAT ALIGNS TO CHAMBER DIMENSIONS TO BE SUBMITTED TO THE DESIGN FOR APPROVAL PRIOR TO FABRICATION.
 - CONSTRUCTION OF STRUCTURAL STEEL SHOULD CONFORM TO SANS 2001-C51

DRG No. R061397-200

GENERAL NOTES:

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

CONCRETE NOTES:

- CONCRETE STRENGTH REQUIRED AT 28 DAYS:
a) STRUCTURAL CONCRETE : 35 MPa
b) BLINDING AND SCREED : 15 MPa
c) MASS CONCRETE STEPS : 15 MPa
- CURING OF CONCRETE SHALL BE CARRIED OUT STRICTLY IN ACCORDANCE WITH SANS 2001-CC1
- STRIPPING TIMES OF SHUTTERING AND PROPPING SHALL BE IN ACCORDANCE WITH SANS 2001-CC1
- CURING METHOD STATEMENT TO BE APPROVED BY CIVIL DESIGN ENGINEER
- ONLY CONCRETE COVER BLOCKS OF THE SAME STRENGTH TO BE USED ON SITE
- CONCRETE FINISHES TO FLOOR TO HAVE A SMOOTH WOOD FLOATED FINISH
- ALL CAST IN ITEMS TO BE SUPPLIED BY CONTRACTOR UNLESS OTHERWISE NOTED
- THIS STRUCTURE SHALL BE WATER TIGHT
- NO THROUGH TIES TO BE USED
- 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
- ALL EXPOSED SHARP EDGES TO HAVE 20 x 20mm CHAMFER
- NO BOX-OUTS FOR PIPE OPENINGS. THE PIPE SPECIAL WITH THE FLANGES MUST BE IN PLACE PRIOR TO CASTING CONCRETE
- ALL SHUTTERING AND FORMWORK MUST BE DESIGNED AND PLACED TO SUIT THE CONSTRUCTION JOINTS INDICATED ON THE DRAWINGS.
- CONCRETE POURS MUST BE AS PER THE CONSTRUCTION JOINTS LAYOUT ON THIS DRAWING.

REVISIONS

No.	DATE	CHECKED	APPROVED	DESCRIPTION
0	2023-07-11	JM	MC	ISSUED FOR CONSTRUCTION

REFERENCE DRAWINGS

NUMBER	TITLE
11860	STEEL FIBRE CONCRETE MANHOLE
A12210	VALVE SUPPORT
A8858	DETAILS OF GRAB RAIL
A8879	SUMP COVER AND FRAME
RA27329	DETAILS OF EXTERNAL MASS CONCRETE ACCESS STEPS
RA26895/001-003	GATE VALVE ACCESS STEEL PLATFORM
A7406	STANDARD GALVANIZED CATLADDER
RA61395	SURVEY DRAWING
RA61397-01	PIPE SPECIALS
RA61397-100-101	SUMP PUMP AND ACTUATOR DETAILS
RA61397-201	CHAMBER REINFORCEMENT DETAILS
RA61397-202	CHAMBER REINFORCEMENT DETAILS
2915HLS01	HYDRAULIC LONG SECTION FOR Q5 PIPELINE

RAND WATER

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SAP No. P.OXXX CHECKED BY [Signature]
CONTRACT No. RWXXXXXX D.O.M. c. TUNABE
DESIGNED BY K. SUKKHU APPROVED [Signature] Pr Eng
DRAWN BY K. SUKKHU REC. No. 20150256 DATE 18/07/2023
DATE 2023/07/11

EIKENHOF TO WATerval
WATerval RESERVOIR SITE
CHAMBER GENERAL ARRANGEMENT
FOR DN1000 SLUICE GATE VALVE
FOR CROSS CONNECTION
BETWEEN F25 & Q5 PIPELINE
AT CHAINAGE 4996.44

STATION	WKS	DOC. TYPE	S
E I K	F 2 5	& [] [] []	D I C G A

SCALE 1:25

DRG No.R061397-200

REVISION