



**Anchor 6 (Pty)Ltd**  
**Nr. 3 Nightjar Circle**  
**Sable Hill Waterfront Estates**  
**KAMEELFONTEIN**

**15-Nov-24**

**ATTENTION MR. KABOLS LE RICHE**

**RE: DEVELOPMENT OF SHEEP FEEDLOT ON VROLYKHEID 1/177**

**1. APPOINTMENT**

We hereby confirm our appointment for the design of a sheep feedlot on the farm. Vrolykheid 1/177 in the Western Cape.

LOCATION: Vrolykheid 1/177 LON 22° 37' 16,8" E  
LAT 33° 21' 22,6" S

**2. RESPONSIBILITIES PENS**

- (i) Layout of sheep pens according to geometry of farm and design criteria.
- (ii) Placing of pens in relation to contours, erf boundaries, river, roads and other existing infra structure on farm.
- (iii) Design of earthworks and soil modification.
- (iv) Hydraulic design of runoff retention.
- (v) Design of retention dams with dewatering mechanisms.
- (vi) Pollution control prevention measures to be applied to feedlot.
- (v) Producing a drawing that contains above and other design criteria specification.  
See attached Drawing No K 2554/C1 -00B

**3. DESIGN CRITERIA**

**3.1 Pollution Control**

The Pollution control measures used in the design were based on an intensive ground water quality report issued by Environmentek of C S I R

**(i) Slopes**

The slopes across the feedlot pens, manure collecting passages and storage areas as well as the drainage channels allowed for optimum, efficient flow during periods of high rain fall and prevent ponding and or erosion.

Slope in pens 2%

Slope in drainage channels 1,85%.

**(ii) Retention Dams**

The capacity of the retention dams were calculated for the worst scenario from figures obtained from the S.A. Weather Bureau and other weather stations close to this particular location. We have added 40% to these figures to minimize the risk for very high intensity showers.

Return period 1:50 years.

Max intensity in mm per hour ie 100mm/h

The Rational Method was used for these calculations. A typical sheet for one of the pen position on the farm ie position C is attached.

The retention/detention ponds are left to evaporate and overflow of these will be captured via constructed overflow systems in an irrigation dam. The water from this dam will be used to irrigate the cultivated fields of the farm. No effluent runoff from the feedlot into "neighbour" properties is allowed.

(iii) **Seepage penetration in ground water.**

The surface of the areas subjected to manure will be treated by means of mechanical cement stabilization to prevent seepage ie  
3% cement stabilization in top 150 mm layer.

(iv) **Stormwater control**

Stormwater arising on the land abutting the pens and manure storage areas will be channelled away to prevent "clean" stormwater to be contaminated.

**4. BOUNDARIES, BUILDING LINES AND SERVITUDES**

Pens were placed to comply with:

- (i) Building line to boundary 30m
- (ii) Pen to top of river embankment 32m
- (iii) Escrow line servitudes if applicable

**5. MANURE HANDLING**

(i) **Volumes/weight**

The volume of anticipated manure production was calculated at 0.6 kg per lamb per day and a density of 1 ton per m<sup>3</sup>

(ii) **Storage Areas**

The size of areas were calculated to accommodate the anticipated production accepting that the pens will be cleaned once a year and the stored manure will be spread on the cultivated ± 38 ha of fields of the said farm as fertilizer.

**6. SIZES OF FACILITIES**

The proposed feedlot is design to accommodate 6 000 lambs.

- (i) Density = 1,5 m<sup>2</sup> per lamb
- (ii) Area
  - Position A pen area 3 800 m<sup>2</sup>
  - Position B pen area 3 150 m<sup>2</sup>
  - Position C Pen area 3 150 m<sup>2</sup>
- (iii) Handling and shearing 100 m<sup>2</sup>
- (iv) Feed process and storage 400 m<sup>2</sup>

**7. CONCLUSION**


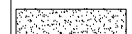





We trust that this report will be in accordance with what is required by the authorities responsible for the granting of permission for the development and operation of the proposed feedlot.

Regards

  
J J B VAN NIEKERK Pr Eng 760393


NOTES

1. PENS - POSITION A = 4028m<sup>2</sup>  
- POSITION B = 3400m<sup>2</sup>  
- POSITION C = 3400m<sup>2</sup>  
- TOTAL = 16208m<sup>2</sup>
2. MANURE PASSAGE - POSITION A = 1640m<sup>2</sup>  
- POSITION B = 2090m<sup>2</sup>  
- POSITION C = 1474m<sup>2</sup>  
- TOTAL = 6204m<sup>2</sup>
3. MANURE STORAGE AREA - POSITION A = 400m<sup>2</sup>  
- POSITION B = 400m<sup>2</sup>  
- POSITION C = 400m<sup>2</sup>  
- TOTAL = 1200m<sup>2</sup>
4. RETENTION PONDS - POSITION A = 2x70 = 140m<sup>2</sup>  
- POSITION B = 120m<sup>2</sup>  
- POSITION C = 120m<sup>2</sup>  
- TOTAL = 380m<sup>2</sup>
5. IRRIGATION DAM - POSITION A = 2150m<sup>2</sup>
6. IRRIGATION FIELDS - 38ha

-  NEW PROPOSED BUILDINGS
-  RETENTION PONDS
-  MANURE STORAGE AREA
-  STORM WATER BERM
-  SHEEP RACE
-  CLEAN WATER RUN-OFF (STORM WATER)
-  EXISTING ESKOM LINE

FOR INFORMATION ONLY

NO.	REVISIONS	DRAWN	DATE
L	POSITION C UPDATED	SR	16/11/24
K	DRAWING UPDATED POSITION C RACE'S	SR	23/10/24
J	DRAWING UPDATED	SR	21/10/24
I	NOTES UPDATED	SR	13/10/24
H	SITE UPDATED	SR	06/10/24
G	SECTION SADDLED	SR	29/09/24
F	SITE LAYOUT UPDATED	SR	15/09/24
E	SITE LAYOUT UPDATED	SR	03/09/24
D	DRAWING UPDATED	SR	25/08/24
C	SITE LAYOUT CHANGED	SR	25/08/24
B	VEHICLE TRACKING ADDED	SR	20/08/24
A	ISSUED FOR INFORMATION	SR	11/08/24

CONSULTANT: **CONSULTING ENGINEERS (PTY) LTD**  
 27 Veld Street, Glen Marais P.O. Box 3346 KEMPTON PARK 1620 SOUTH AFRICA  
 BURMEISTER VAN NEKERK Tel: +27 82 567 5681 e-mail: jvn@bvno.co.za

DESIGNED	JVN/SR	08/24	DRAWN	SR	08/24
CHECKED			APPROVED PROJECT CO-ORDINATOR		
APPROVED:			PR. ENGINEER		
APPROVED:			CLIENT		


CLIENT:  
  
**VROLYKHEID 177**  
 WESTERN CAPE  
 TEL: +27 (0)

DISCIPLINE: CIVIL

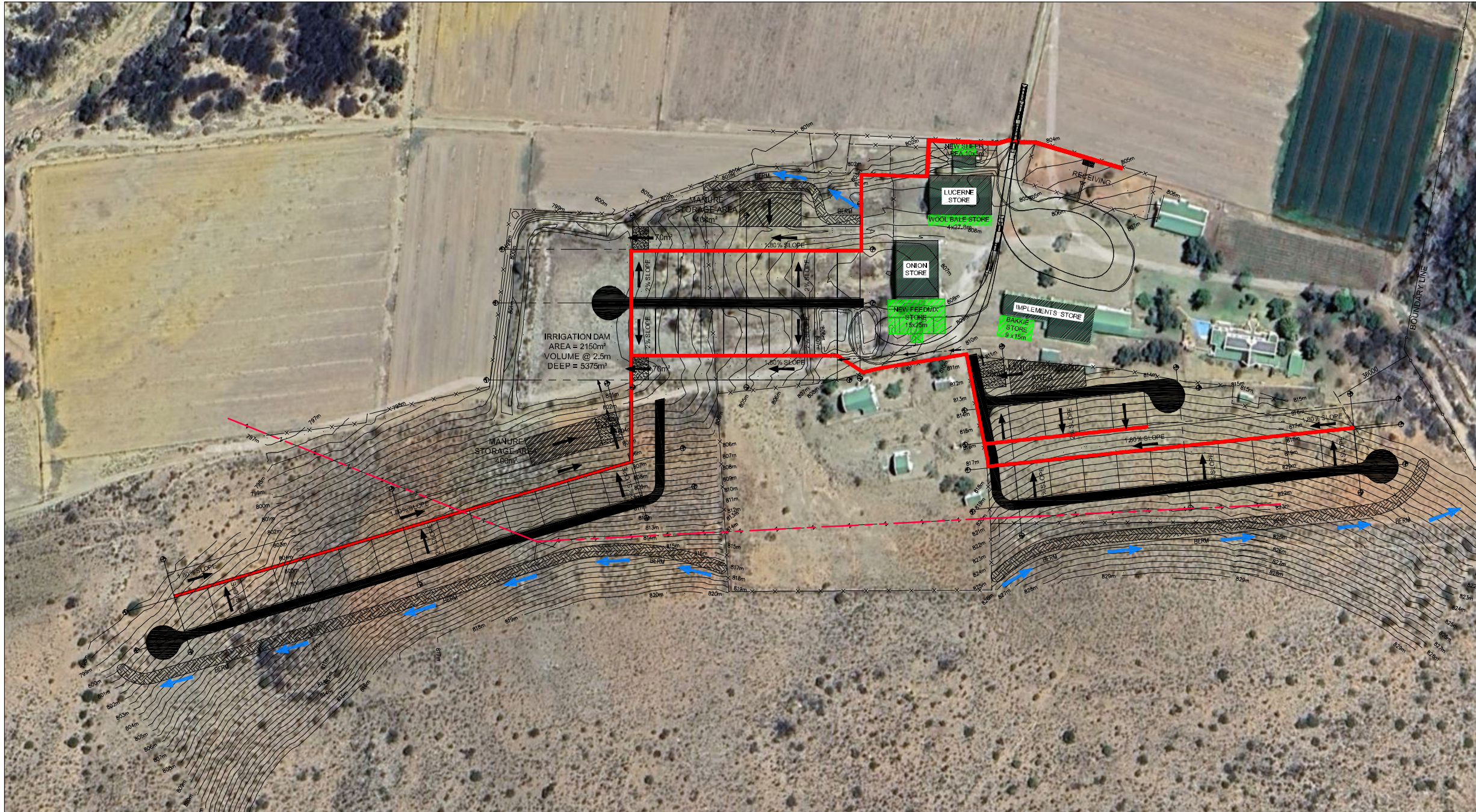
PROJECT TITLE:  
  
**VROLYKHEID 177**  
**SHEEP FEED LOT**

DRAWING TITLE:  
  
**SITE LAYOUT**  
**OPTION B**

SCALE: 1:1000 A1

CONSULTANT DRAWING NO.: K2594/C1-00-B REV. 

CLIENT DRAWING NO.: REV. 

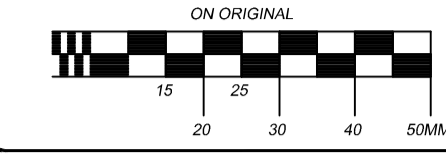




ALL DIMENSIONS AND LEVELS ARE TO BE VERIFIED ON SITE BY THE CONTRACTOR BEFORE COMMENCING

THE COPYRIGHT IN THIS DRAWING, INCLUDING THE DESIGN AND DETAILS SHOWN HEREON, IS RESERVED BY THE ENGINEER.

THIS DRAWING IS NOT TO BE USED IN WHOLE OR PART OTHER THAN FOR THE INTENDED PURPOSE AND PROJECT, AS DEFINED ON THIS DRAWING. REFER TO THE CONTRACT FOR FULL TERMS AND CONDITIONS.



- NOTES:**
- GENERAL:
1. NO DIMENSIONS TO BE SCALED.
  2. ALL CONCRETE TO BE 25MPa/19mm UNLESS SPECIFIED OTHERWISE.
  3. CONCRETE TO BE CURED FOR A MINIMUM OF 28 DAYS BY AN APPROVED METHOD.
  4. DRAWING TO BE READ IN CONJUNCTION WITH ARCHITECT'S DRAWING.
  5. ALL SETTING OUT DIMENSIONS AND LEVELS TO BE CHECKED ON SITE BY CONTRACTOR.
  6. ABBREVIATIONS: T - TOP FACE; STG - STAGGERED; ALT - ALTERNATE; NF - NEAR FACE; FF - FAR FACE; BF - BOTH FACE; HB - HOLLOW BLOCKS.
  7. CONTRACTOR IS TO PROVIDE ALL BLOCKS AND STUOLS TO ENSURE CORRECT POSITIONING OF TOP AND BOTTOM REINFORCING DURING POURING.
  8. TWO LAYERS OF MALTHOD TO BE PLACED ON TOP OF BRICKWORK BEFORE SLABS AND BEAMS ARE CAST TO FORM HORIZONTAL JOINT.
  9. DEEP "D" IN PLASTER AT CONCRETE-BRICKWORK INTERFACE.
  10. WATERPROOFING TO SPECIALIST DETAIL (OTHERS) - WATERPROOFING TO BE COMPLETED BY SPECIALIST.
  11. USE BRICKFORCE OF LADDER TYPE COMPRISING MAIN WIRES OF NOT LESS THAN 2.0mm DIA. BRICKFORCE TO BE MANUFACTURED FROM PRE-GALVANISED WIRE (CLASS A GALVANISING IN ACCORDANCE WITH SABS 935).
  12. INFILL CONCRETE IN REINFORCED CORES AND CAVITIES (15mm STONE) - 20MPa.
  13. ALL WORK TO BE DONE TO THE RELEVANT SABS CODES WITH SPECIAL REFERENCE TO SABS 1200 & WHERE REQUIREMENTS MAY VARY.
  14. ALL REINFORCEMENT TO BE INSPECTED BY THE ENGINEER PRIOR TO CONCRETING.
  15. CONTRACTOR TO PROVIDE PROOF OF CONCRETE STRENGTH.
  16. USE CLASS 1 MORTAR ON STRUCTURAL LOAD BEARING BRICKWORK ELSE CLASS 2.
  17. PROPPING OF SLAB TO BE NOT MORE THAN 1500cc IN ONE DIRECTION AND 1000cc IN THE OPPOSITE DIRECTION.
  18. BRICKFORCE EVERY COURSE ABOVE LINTOL HEIGHT TO WALL PLATE.
  19. USE BUTTERFLY WALL TIES AT 800cc HORZ. TO LAST THREE COURSES OF LOAD BEARING BRICKWORK BELOW SLAB OR ROOF.
  20. ALL WORK TO COMPLY WITH NATIONAL BUILDING REGULATIONS AND SPECIFICATIONS AS SET OUT BY THE NATIONAL HOME BUILDERS REGISTRATION COUNCIL.
  21. ENGINEER NOT RESPONSIBLE FOR CHECKING OF LEVELS OR SETTING OUT.
- SLAB:**
1. SHUTTER WORK TO REMAIN IN PLACE FOR 21 DAYS (MIN).
  2. NO BRICKWORK ON SLAB OR BEAMS PRIOR TO PROPS BEING REMOVED.
- FOUNDATIONS:**
1. CONCRETE IN FOUNDATION TO BE 25 MPa.
  2. AFTER 28 DAYS - CONCRETE GRADE 25/19.
  3. BACKFILLING BEHIND RETAINING WALLS AND UNDER SURFACE BED TO BE COMPACTED IN LAYERS NOT EXCEEDING 150mm THICK TO 93% MOD. AASHTO. (USE GS (P-12) OR SIMILAR).
  4. CONCRETE COVER TO FOUNDATIONS - 50mm.
  5. BRICKFORCE EVERY THIRD COURSE IN FOUNDATION BRICKWORK.
  6. SITE DRAINAGE: SITE TO BE DRAINED AS TO ENSURE THAT WATER CANNOT POND AGAINST OR NEAR THE STRUCTURE. THE SURFACE OF THE GROUND IMMEDIATELY ADJACENT TO THE BUILDING TO FALL 75mm OVER THE FIRST 1.5m. ANY PAVING SHALL BE SIMILARLY SLOPED.
  7. ALL FOUNDATION WALLS AND OTHER LOAD BEARING WALLS TO BE CONSTRUCTED WITH LOAD BEARING BRICKS.
  8. CONTRACTOR TO SUPPLY DCPS IN FOUNDATION TRENCH (4 MIN) TO ENGINEERS APPROVAL PRIOR TO PLACING CONCRETE.
  9. CONTRACTOR RESPONSIBLE OF COMPACTION ON ALL FILL AREAS.
  10. SURFACE BEDS: PROVIDE DCPS TO ENGINEERS FOR RECORD PURPOSES.
  11. FOUNDATION WALLS EXCEEDING 1.0M ABOVE N.G.L. TO BE CONSTRUCTED AS 330MM REINFORCED RETAINING WALLS.

CLIENT

MR. K. Le Riche



Approved By

*O. Huistra*

Prepared By	Checked By	Reviewed By
OH	OH	OH

Project

PROPOSED NEW LOW WATER CROSSING KLAARSTROOM

Description

LAYOUT PLAN AND SECTIONS

Scale	AS SHOWN	Date	FEB 2025
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Project No	Dwg. No	Rev
TO - 950	02	

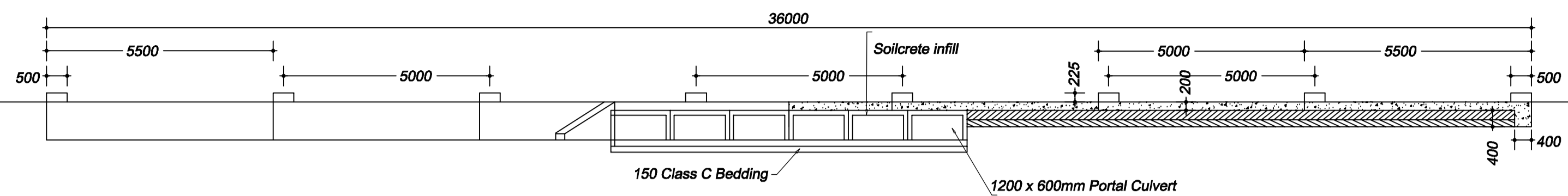
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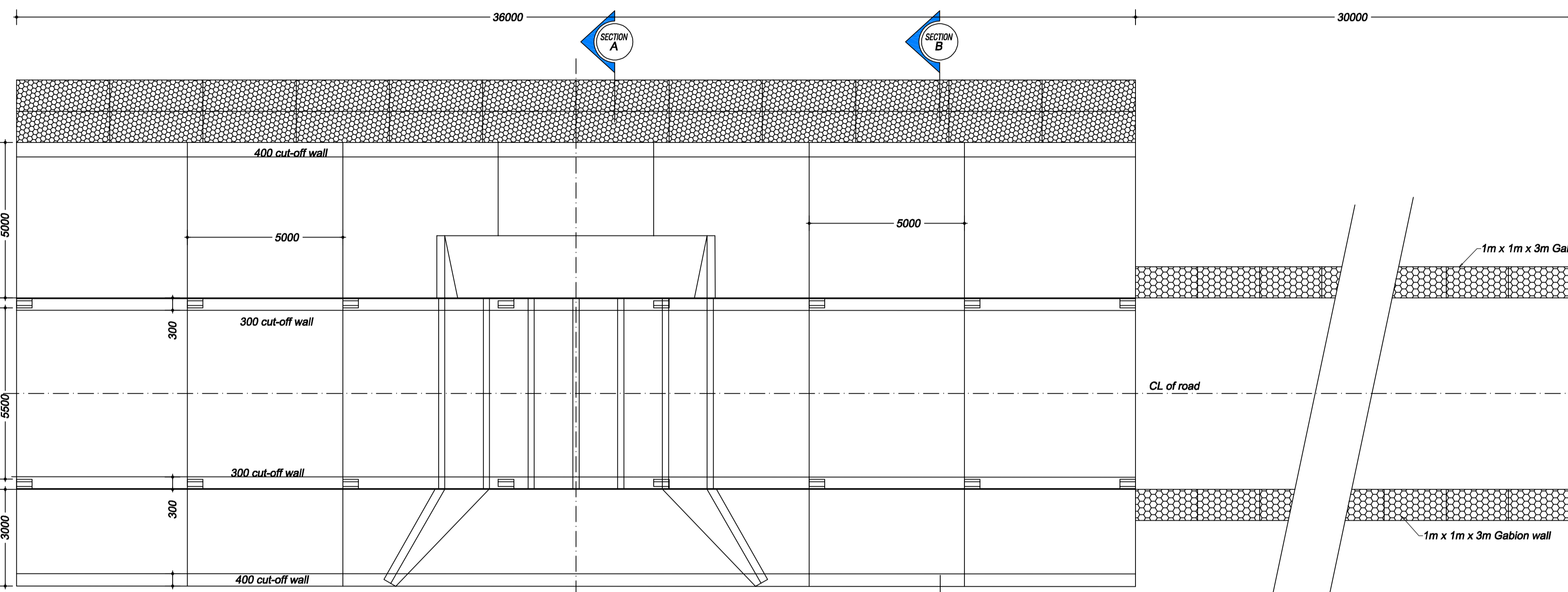
ON ORIGINAL

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  - ENGINEER NOT RESPONSIBLE FOR CHECKING OF LEVELS OR SETTING OUT.
- SLAB:**
- SHUTTER WORK TO REMAIN IN PLACE FOR 21 DAYS (1 MIN).
  - NO BRICKWORK ON SLAB OR BEAMS PRIOR TO PROPS BEING REMOVED.
- FOUNDATIONS:**
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  - CONTRACTOR RESPONSIBLE OF COMPACTION ON ALL FILL AREAS.
  - SURFACE BEDS, PROVIDE DCPS TO ENGINEERS FOR RECORD PURPOSES.
  - FOUNDATION WALLS EXCEEDING 1.0M ABOVE N.G.L. TO BE CONSTRUCTED AS 300MM REINFORCED RETAINING WALLS.

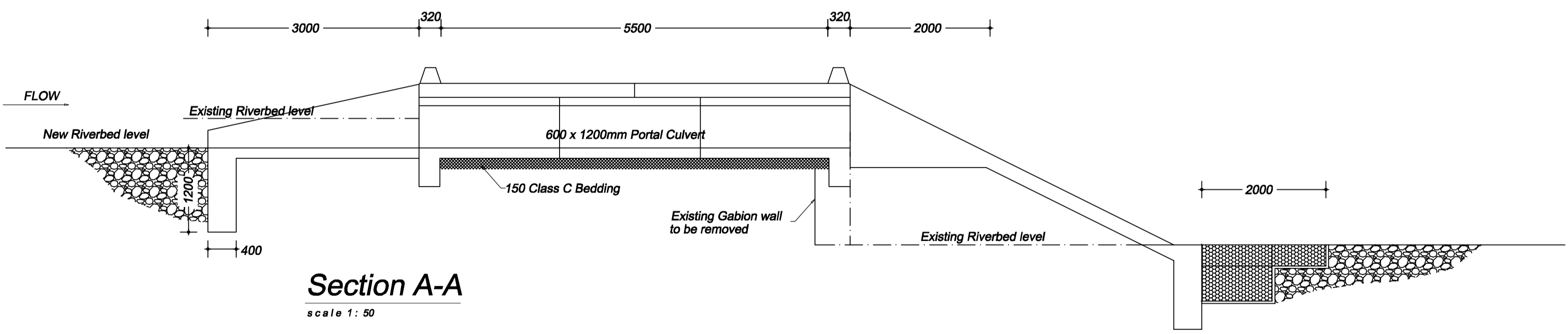


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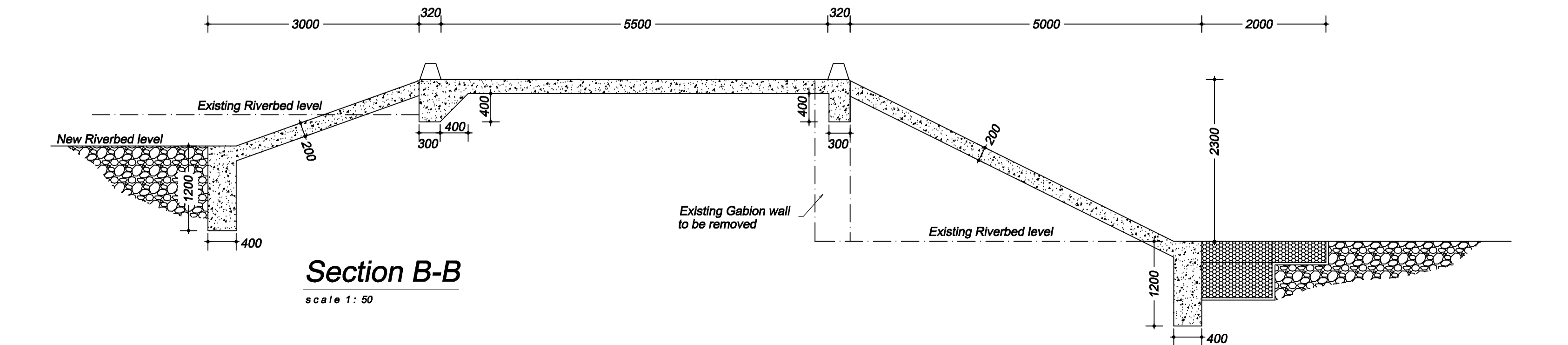
**SECTION**  
scale 1: 100



**LAYOUT**  
scale 1: 100



**Section A-A**  
scale 1: 50



**Section B-B**  
scale 1: 50

CLIENT

MR. K. Le Riche



Approved By

Prepared By OH	Checked By OH	Reviewed By OH
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Project

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Scale	AS SHOWN	Date	FEB 2025
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Project No	TO - 950	Dwg. No	01	Rev	
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