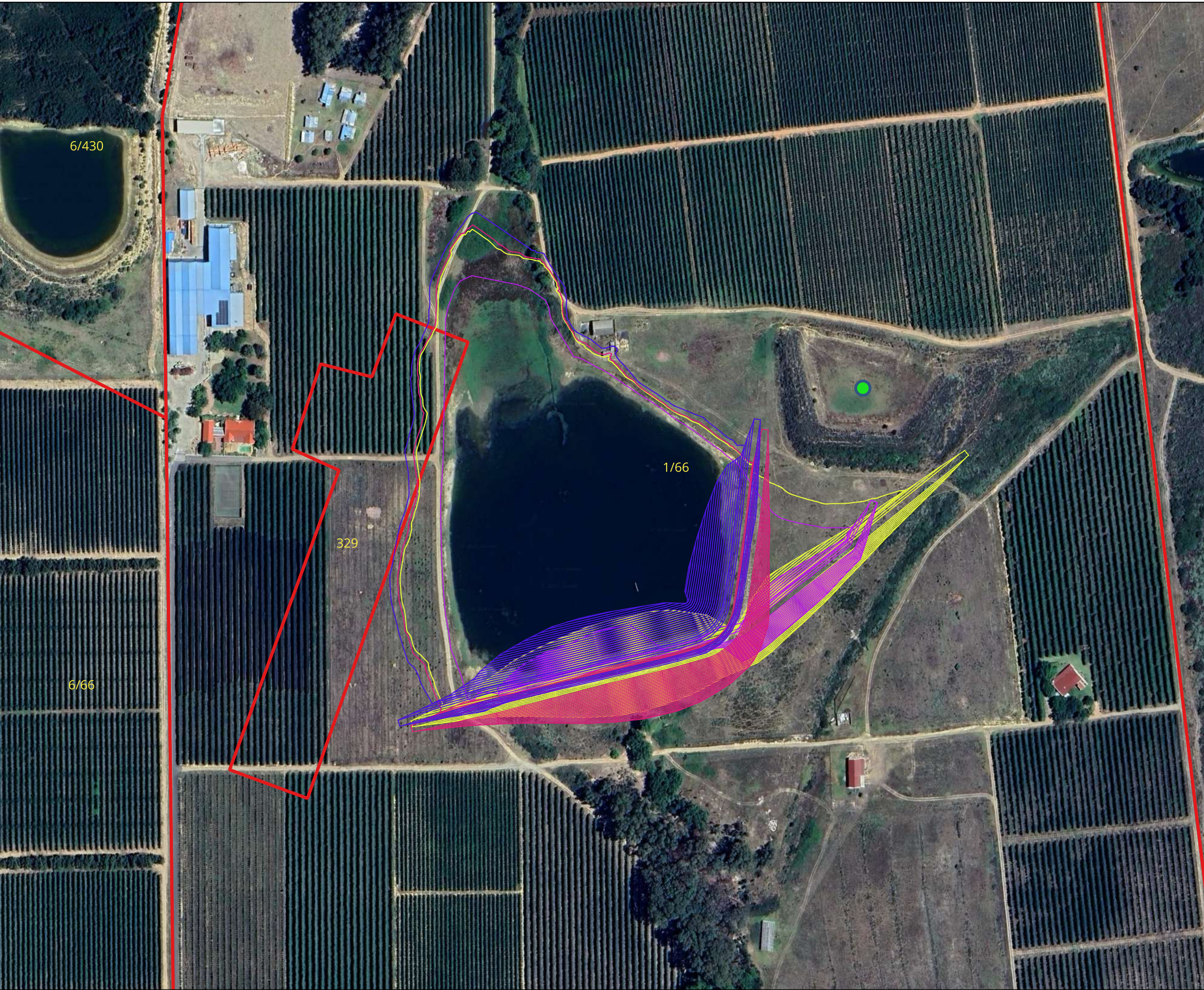


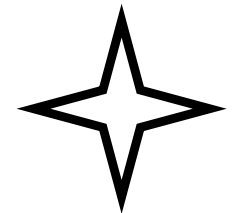
# PROPOSED EXPANSION OF MODDERAS DAM, TULBAGH

## ALTERNATIVES



### Legend

- Dam Expansion Option 1 - Embankment
- Dam Expansion Option 1 - FSL
- Dam Expansion Option 2 - Embankment
- Dam Expansion Option 2 - FSL
- Dam Expansion Option 3 - Embankment
- Dam Expansion Option 3 - FSL
- Dam Expansion Option 4 - Embankment
- Dam Expansion Option 4 - FSL
- Dam D2
- ▭ Properties



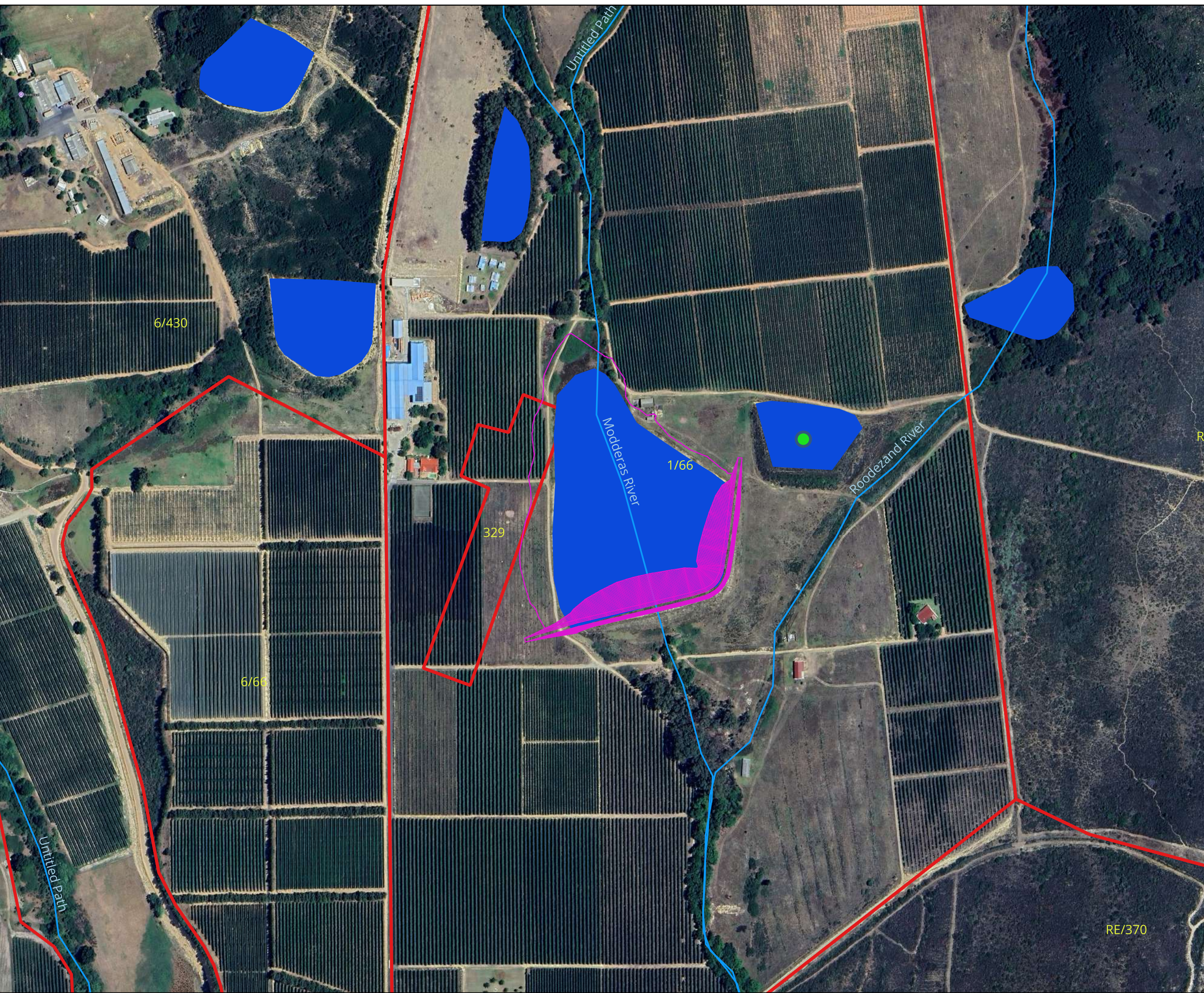
Datum: WGS84  
Projection: Geographic

Scale: 1:3 000 (on A3)

Date: September  
2025

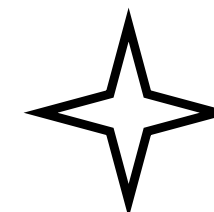
# PROPOSED EXPANSION OF MODDERAS DAM, TULBAGH

## PREFERRED ALTERNATIVE SITE PLAN



### Legend

- Dam Expansion Option 1 - Embankment
- Dam Expansion Option 1 - FSL
- rivers
- Dam D2
- Inland water
- Properties
- Natural Vegetation.km



Datum: WGS84  
Projection: Geographic

Scale: 1:5 000 (on A3)

Date: September  
2025



RE/370



PLAN LAYOUT  
SCALE 1:1000

**NOTES: MODDERAS DAM - OPTION 1**

- GENERAL:**
1. NON-OVERSPILL CREST LEVEL: 255.0 msl
  2. FULL SUPPLY LEVEL: 254.1 msl
  3. FREEBOARD: 1.5 m
  4. WATER SURFACE AREA AT FSL: 5.5 ha
  5. GROSS CAPACITY: 310 000 m<sup>3</sup>
  6. CREST LENGTH: 387 m
  7. CREST WIDTH: 4.0 m
  8. MAXIMUM WALL HEIGHT: 15.1 m
  9. UPSTREAM SLOPE: 1V:3H
  10. DOWNSTREAM SLOPE: 1V:2H
  11. MINIMUM BASIN LEVEL: 243.0 msl
  12. DOWNSTREAM TOE LEVEL: 240.5 msl

- ADDITIONAL NOTES**
- A. ALL DIMENSIONS IN METRES UNLESS OTHERWISE SHOWN.
  - B. ALL LEVELS IN METRES ABOVE SEA LEVEL (msl)
  - C. CONTOUR INTERVAL 1 m
  - D. PROJECTION: WGS 84 - Lc19

- ABBREVIATIONS**
- NGL - NATURAL GROUND LEVEL
  - FSL - FULL SUPPLY LEVEL
  - NOC - NON-OVERSPILL CREST
  - TP - TEST-PIT POSITION (i.e. TP 2)
  - RDF - RECOMMENDED DESIGN FLOOD
  - SEF - SAFETY EVALUATION FLOOD
  - TBC - TO BE CONFIRMED

SURVEY BENCHMARKS CO-ORDINATES			
NAME	Y	X	Z
M1	-11575.050	3675956.400	254.000
M2	-11600.370	3676156.530	240.258
M3	-11716.250	3675987.740	253.432

No.	DATE	REVISION DESCRIPTION	HBCE CONSULT. ENG.
A	28/03/2025	INFORMATION	

**INFORMATION**

**GENERAL NOTES**  
 NO DIMENSION OR LEVEL TO BE SCALED OFF THIS DRAWING.  
 ALL DIMENSIONS AND LEVELS TO BE CONFIRMED ON SITE PRIOR TO MANUFACTURING AND CONSTRUCTION.  
 THE POSITION OF ALL EXISTING SERVICES ARE TO BE OBTAINED FROM LOCAL AUTHORITIES AND/OR OWNER, IF UNKNOWN THE EXACT POSITION SHALL BE DETERMINED BY CAREFUL HAND EXCAVATION.

CLIENT:  
**MODDERAS BOERDERY**



**ENLARGEMENT OF MODDERAS DAM**

**PLAN LAYOUT OF EMBANKMENT AND SPILLWAY**

AS SHOWN    SCALE:    DRAWING SIZE: A1

DESIGNED BY: J. MBENGA	DRAWN BY: W du PLESSIS
CHECKED BY: J. MBENGA	DATE: 28/03/2025
PROJECT NO: DJH305	DWG NO: DJH305-03
REVISION: A	



### Legend

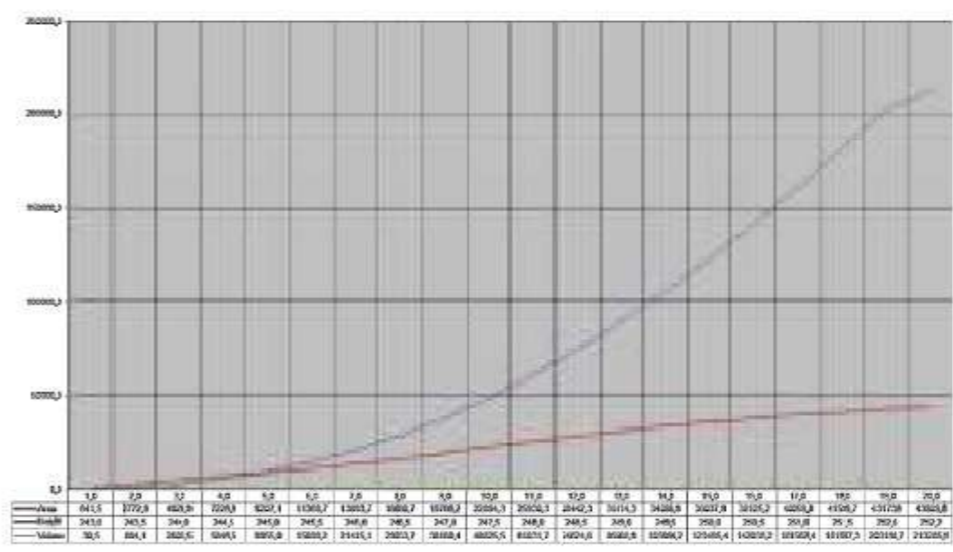
- DK 1
- Control Bench Mark
- Fence
- Track
- Sloot
- Trees
- Bush
- Canal
- Garden Crese Wall
- Edge Tare Road
- Centreline Tare Road
- Manhole
- Cadastral Boundary
- Embankment

Volume Calculation Table			
CONTOUR VALUE	AREA m <sup>2</sup>	TOTAL VOLUME	REMARK
243,0	643,5	30,5	
243,5	2772,9	884,1	
244,0	4924,9	2808,5	
244,5	7226,9	5846,5	
245,0	9207,1	9955,0	
245,5	11369,7	15093,2	
246,0	13893,7	23435,1	
246,5	16660,7	29053,7	
247,0	19766,2	38160,4	
247,5	22894,3	48825,5	
248,0	25930,3	60031,7	
248,5	28942,3	71624,8	
249,0	31434,3	83588,9	
249,5	34086,9	105864,2	
250,0	35037,9	123495,4	
250,5	38125,2	142038,2	
251,0	40059,8	161582,4	
251,5	41599,7	183997,3	
252,0	43173,8	203390,7	
252,2	43909,6	218285,9	

Full Supply Level [FSL]      252,2      m  
 Volume at FSL      213286      m<sup>3</sup>  
 Area at FSL      43910      m<sup>2</sup>  
 Dam wall crest height      253,8      m  
 Dam wall toe height      240,3      m  
 Dam wall Face Board      1,57      m  
 Dam wall length      303,0      m



FSL = 252.23



System WG 84/19 (local based Geoid)				
Bench Mark Coordinates				
Sta	Y	X	Z	Descip
M 1	-11575.049	3575956.396	254.000	lpc
M 2	-11600.372	3576156.532	240.208	lpc
M 3	-11716.249	3575907.743	253.432	lpc

### Project Survey:

Farm 1/66

### Description of Survey:

Topo Survey of Proposed Dam Area

### Area:

Tulbagh

Coordinate System: WG 84/19	
Survey Based on: WG 84/19	RL From: IPG 1
Surveyor:	B. West
Compiled by:	B. West
Date:	Sept 2024
Drawing number:	ModR_01
Sheet Number:	1
Scale:	1 : 1 000



P.o. Box 383  
 WORCESTER  
 6849  
 Email:  
 bwsurveymobile@gmail.com  
 Phone: 083 398 3025