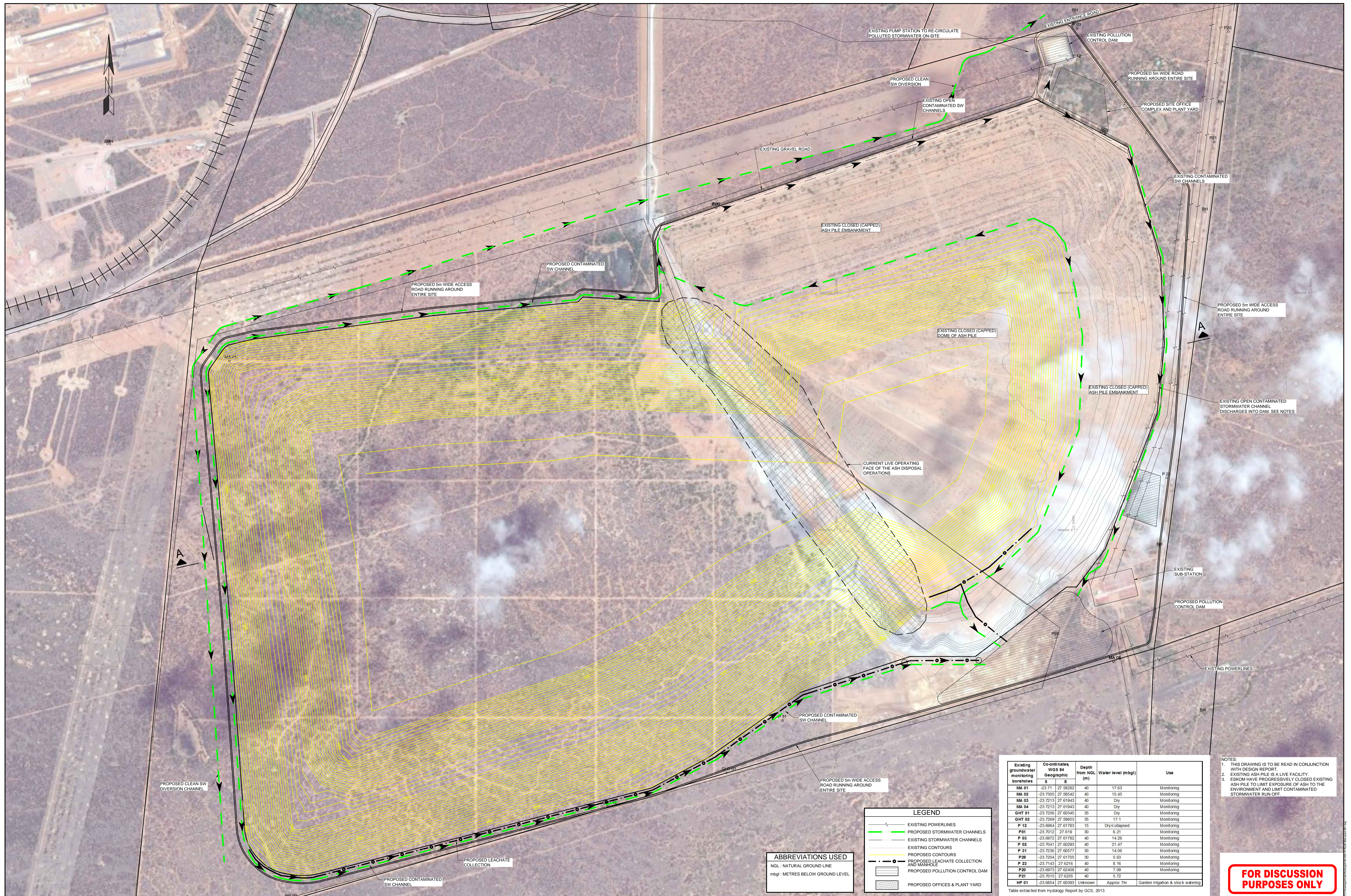


Drawing No. 3145 – C001



LEGEND

- EXISTING POWERLINES
- PROPOSED STORMWATER CHANNELS
- EXISTING STORMWATER CHANNELS
- EXISTING CONTOURS
- PROPOSED CONTOURS
- PROPOSED LEACHATE COLLECTION AND MANHOLE
- PROPOSED POLLUTION CONTROL DAM
- PROPOSED OFFICES & PLANT YARD

ABBREVIATIONS USED

NGL : NATURAL GROUND LINE
mbgl : METRES BELOW GROUND LEVEL

Existing groundwater monitoring boreholes	Co-ordinates WGS 84 Geographic	Depth from NGL (m)	Water level (mbgl)	Use
MA 01	-23 71 27 6282	40	17.63	Monitoring
MA 02	-23 7305 27 66542	40	15.45	Monitoring
MA 03	-23 7213 27 61943	40	Dry	Monitoring
MA 04	-23 7213 27 61943	40	Dry	Monitoring
GHT 01	-23 7236 27 60345	35	Dry	Monitoring
GHT 02	-23 7269 27 60653	35	17.1	Monitoring
P 12	-23 6984 27 61783	15	Dry/collapsed	Monitoring
P 01	-23 7012 27 619	30	6.21	Monitoring
P 03	-23 6972 27 61782	40	14.26	Monitoring
P 02	-23 7041 27 60293	40	21.47	Monitoring
P 31	-23 7236 27 60577	30	14.06	Monitoring
P 20	-23 7204 27 61795	30	5.63	Monitoring
P 23	-23 7143 27 6216	40	8.16	Monitoring
P 20	-23 6973 27 62408	40	7.09	Monitoring
P 21	-23 7015 27 6235	40	5.72	Monitoring
HP 01	-23 6854 27 60393	Unknown	Approx 7m	Garden irrigation & stock watering

Table extracted from Hydrology Report by GCS, 2013

NOTES:

- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH DESIGN REPORT.
- EXISTING ASH PILE IS A LIVE FACILITY.
- ESKOM HAVE PROGRESSIVELY CLOSED EXISTING ASH PILE TO LIMIT EXPOSURE OF ASH TO THE ENVIRONMENT AND LIMIT CONTAMINATED STORMWATER RUN OFF.

FOR DISCUSSION PURPOSES ONLY

REF. DRAWINGS	3145-C002	FLOOR & LEACHATE - SITE ALTERNATIVE 1	DESIGNED	L. WALLACE	CAPE TOWN 14 CENTRAL SQUARE PINELANDS 7405 P.O. BOX 35661 PINELANDS 7420 Telephone +27 21 532-0940 Facsimile +27 21 532-0950 E-MAIL jg@jg.co.za		T&G JEFFARES & GREEN (Pty) Ltd FOR CLIENT		MATIMBA ASH DISPOSAL FACILITY	CONTRACT No. :	NONE	DATE	MARCH 2015	SCALE	1:5000
	3145-C003	FLOOR & LEACHATE - SITE ALTERNATIVE 2	CHECKED	R. EMERY						DATE		TITLE	LANDFILL SITE LAYOUT	J & G DRAWING No.	3145-C001-P-RevB
	3145-C004	FLOOR & LEACHATE - SITE ALTERNATIVE 2	DRAWN	A. DE STEFANIS						DATE		CLIENT DRAWING No.	NONE	CAD FILENAME	H:\Projects\3145 - Matimba Ash Disposal\3145-C001-P-RevB\3145-C001-P-RevB.dwg
	3145-C005	TYPICAL LAYERWORKS & CONSTRUCTION DETAILS	ISSUED FOR DISCUSSION (REVISION)							DATE	2015-03-09	DATE		FILENAME	
3145-C006	TYPICAL LAYERWORKS & CONSTRUCTION DETAILS	ISSUED FOR DISCUSSION		DATE	2014-07-10	DATE		FILENAME							

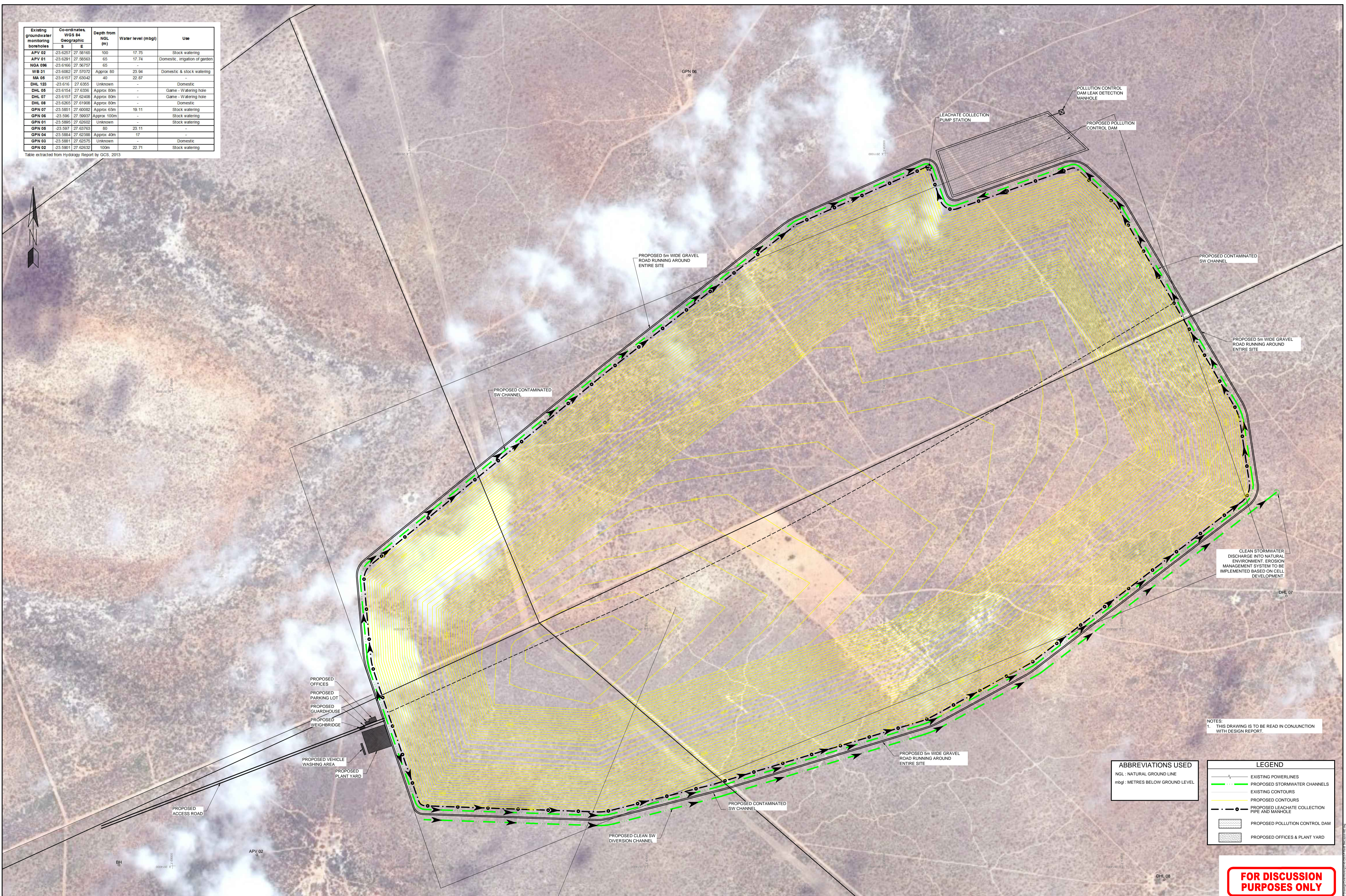
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Drawing No. 3145 – C002

Drawing No. 3145 – C003

Existing groundwater monitoring boreholes	Co-ordinates, WGS 84 Geographic S		Depth from NGL (m)	Water level (mbgl)	Use
	S	E			
APV 02	-23 6297	27 58165	100	17.75	Stock watering
APV 01	-23 6291	27 58563	65	17.74	Domestic, irrigation of garden
NGA 096	-23 6166	27 56757	65	-	-
WB 01	-23 6262	27 57072	Approx 80	23.94	Domestic & stock watering
MA 05	-23 6157	27 63042	40	22.67	-
DHL 123	-23 6116	27 6355	Unknown	-	Domestic
DHL 05	-23 6154	27 6336	Approx 80m	-	Game - Watering hole
DHL 07	-23 6157	27 62408	Approx 80m	-	Game - Watering hole
DHL 08	-23 6285	27 61908	Approx 80m	-	Domestic
GPN 07	-23 5851	27 60082	Approx 65m	19.11	Stock watering
GPN 06	-23 596	27 59537	Approx 100m	-	Stock watering
GPN 01	-23 5895	27 62502	Unknown	-	Stock watering
GPN 05	-23 597	27 63763	80	23.11	-
GPN 04	-23 5884	27 62388	Approx 40m	17	-
GPN 03	-23 5881	27 62570	Unknown	-	Domestic
GPN 02	-23 5901	27 62632	100m	22.71	Stock watering

Table extracted from Hydrology Report by GCS, 2013



NOTES:
1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH DESIGN REPORT.

ABBREVIATIONS USED		LEGEND	
NGL	: NATURAL GROUND LINE		EXISTING POWERLINES
mbgl	: METRES BELOW GROUND LEVEL		PROPOSED STORMWATER CHANNELS
			EXISTING CONTOURS
			PROPOSED CONTOURS
			PROPOSED LEACHATE COLLECTION PIPE AND MANHOLE
			PROPOSED POLLUTION CONTROL DAM
			PROPOSED OFFICES & PLANT YARD

FOR DISCUSSION PURPOSES ONLY

REF. DRAWINGS	DRG. No.'s	DESCRIPTION	DESIGNED	T. McNEIL	CAPE TOWN	Telephone	27 21 532-0940		TG JEFFARES & GREEN (Pty) Ltd	FOR CLIENT	DATE	DATE	CONTRACT No.	DATE	SCALE
	3145-C002	FLOOR & LEACHATE - SITE ALTERNATIVE 1	CHECKED	R. EMERY	14 CENTRAL SQUARE								CONTRACT No. : NONE	MARCH 2015	1:5000
	3145-C003	SITE LAYOUT - SITE ALTERNATIVE 2	DRAWN	A. DE STEFANIS	PINELANDS								J & G DRAWING No.	3145-C003-P-RevB	
	3145-C004	FLOOR & LEACHATE - SITE ALTERNATIVE 2			7405								CLIENT DRAWING No.	NONE	
	3145-C005	3D MODELS OF LANDFILL SITE ALTERNATIVES			P.O. BOX 38661								CAD FILENAME		
	3145-C006	TYPICAL LAYERWORKS & CONSTRUCTION DETAILS			PINELANDS										
	No.	AMENDMENTS	DATE	SIGNED	CHECKED	R. EMERY									

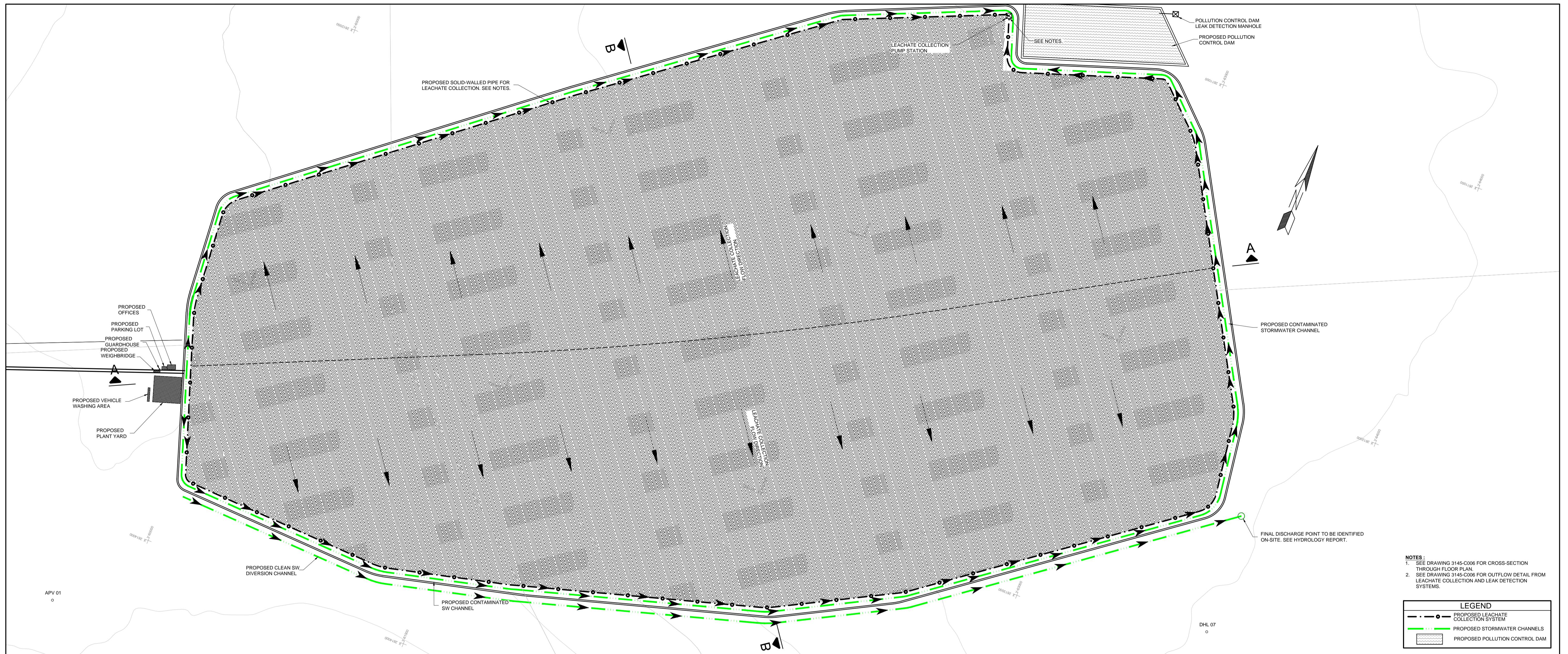
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MATIMBA ASH DISPOSAL FACILITY

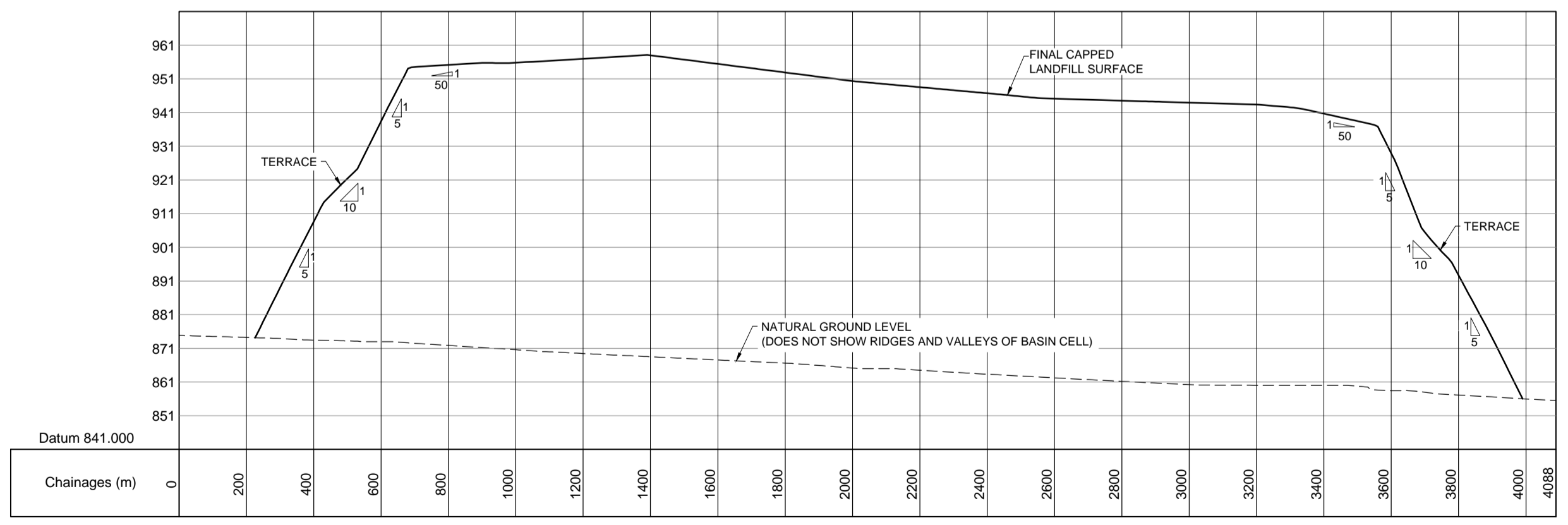
LANDFILL SITE LAYOUT SITE ALTERNATIVE 2

Drawing No. 3145 – C004

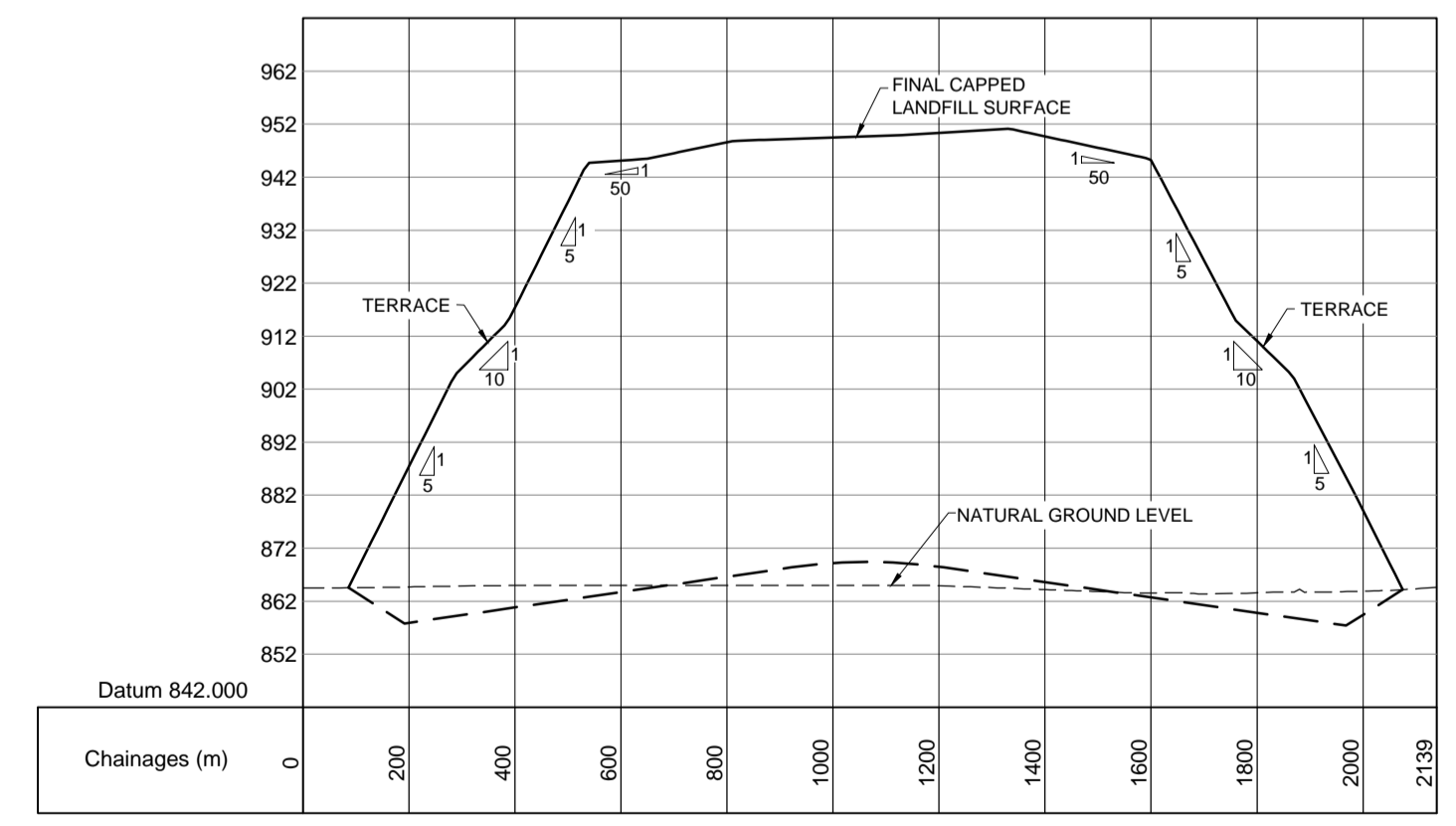


- NOTES:**
 1. SEE DRAWING 3145-C006 FOR CROSS-SECTION THROUGH FLOOR PLAN.
 2. SEE DRAWING 3145-C006 FOR OUTFLOW DETAIL FROM LEACHATE COLLECTION AND LEAK DETECTION SYSTEMS.

LEGEND	
	PROPOSED LEACHATE COLLECTION SYSTEM
	PROPOSED STORMWATER CHANNELS
	PROPOSED POLLUTION CONTROL DAM



LONGITUDINAL SECTION A - A
 HOR. SCALE 1:10 000
 VERT. SCALE 1:1000



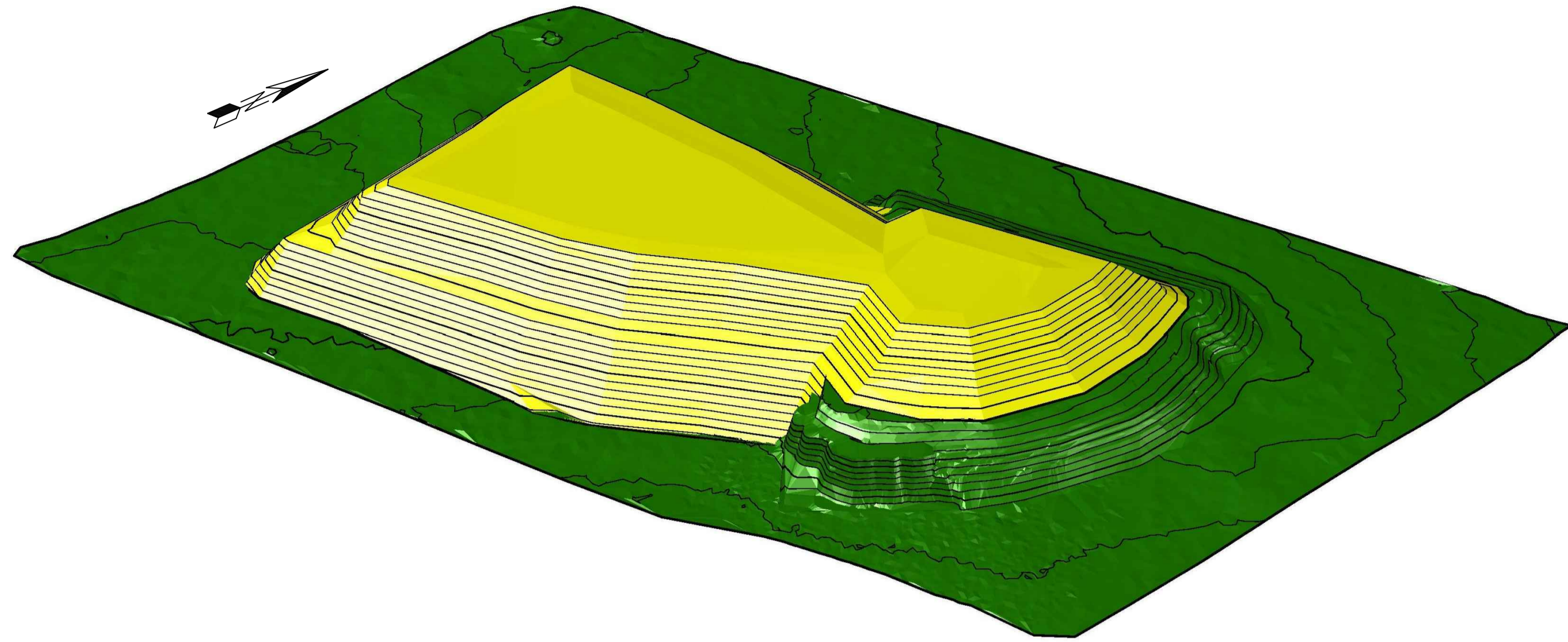
LONGITUDINAL SECTION B - B
 HOR. SCALE 1:10 000
 VERT. SCALE 1:1000

FOR DISCUSSION PURPOSES ONLY

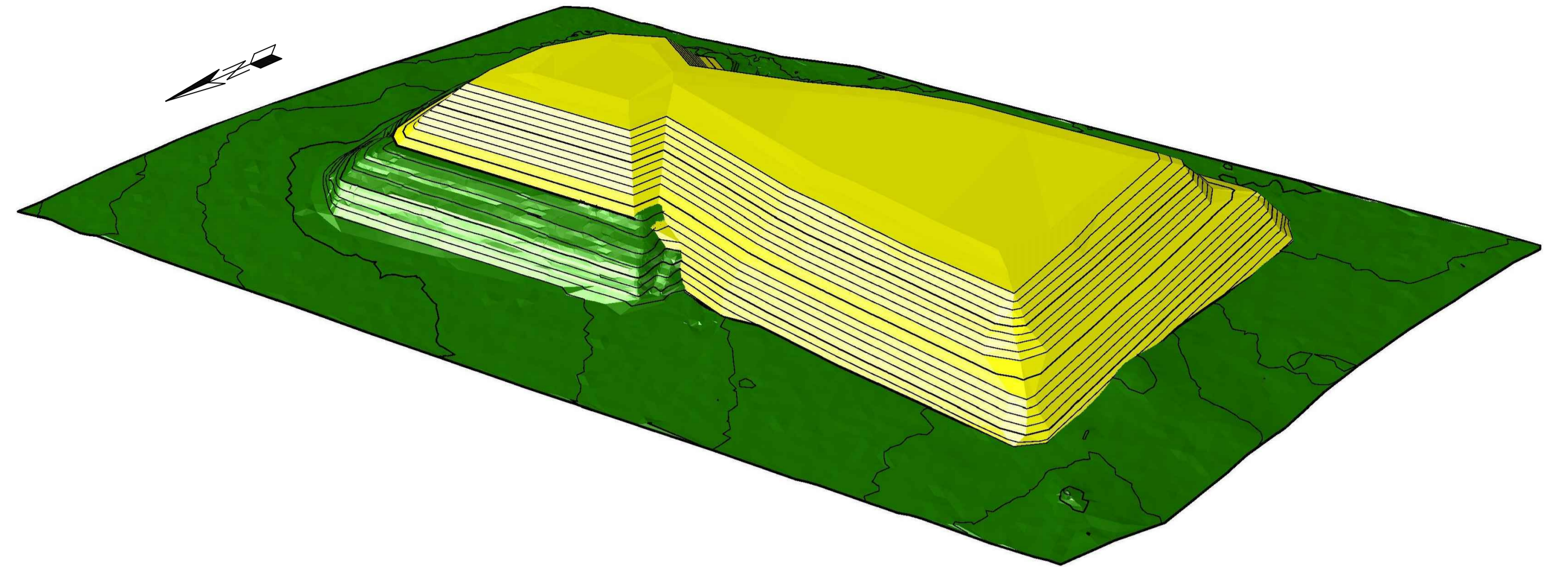
REF. DRAWINGS	DRG. No.'s	DESCRIPTION	DESIGNED	CHECKED	DRAWN	DATE	SIGNED	CHECKED
	3145-C002	FLOOR & LEACHATE - SITE ALTERNATIVE 1	T. McNEIL	R. EMERY	A. DE STEFANIS	2014-07-10		R. EMERY
	3145-C003	SITE LAYOUT - SITE ALTERNATIVE 2						
	3145-C004	FLOOR & LEACHATE - SITE ALTERNATIVE 2						
	3145-C005	3D MODELS OF LANDFILL SITE ALTERNATIVES						
	3145-C006	TYPICAL LAYERWORKS & CONSTRUCTION DETAILS						
No.		AMENDMENTS	DATE	SIGNED	CHECKED			

DESIGNED	T. McNEIL	CAPE TOWN	Telephone +27 21 532-0940		CLIENT	Royal HaskoningDHV	PROJECT	MATIMBA ASH DISPOSAL FACILITY
CHECKED	R. EMERY	14 CENTRAL SQUARE	Facsimile +27 21 532-0950		CONTRACT No.	CONTRACT No. : NONE	DATE	MARCH 2015
DRAWN	A. DE STEFANIS	7405	E-MAIL jg@jg.co.za		TITLE	FLOOR PLAN & LEACHATE COLLECTION SYSTEM - SITE ALTERNATIVE 2	SCALE	1:5000
CHECKED	R. EMERY	P.O. BOX 36661			DATE		CLIENT DRAWING No.	3145-C004-P-RevB
				© COPYRIGHT RESERVED	FILENAME		D:\Projects\3145 - Matimba Ash Disposal\3145-C004-P-RevB\FloorPlan\3145-C004.dwg	

Drawing No. 3145 – C005

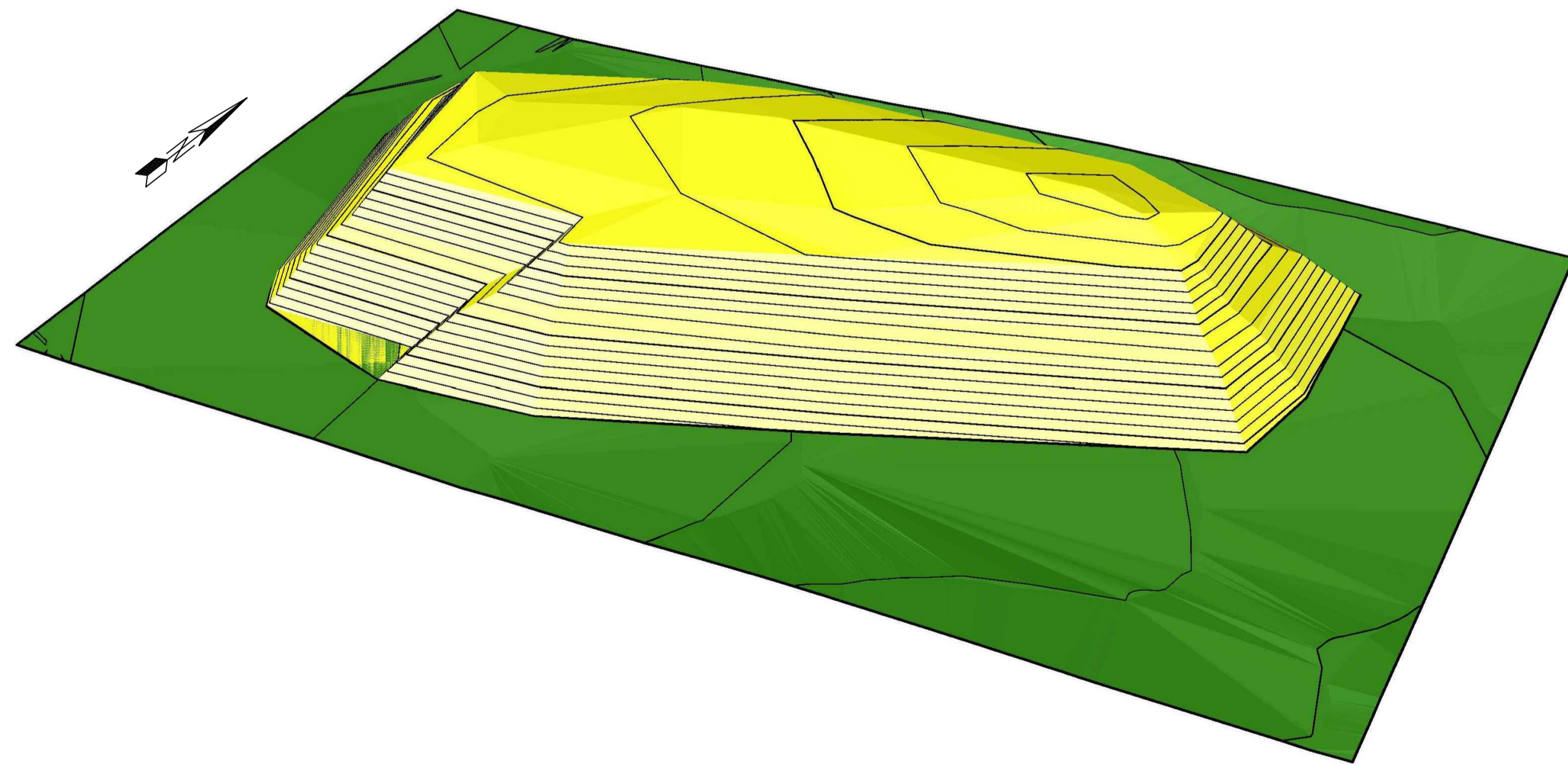


SOUTHEAST PERSPECTIVE VIEW

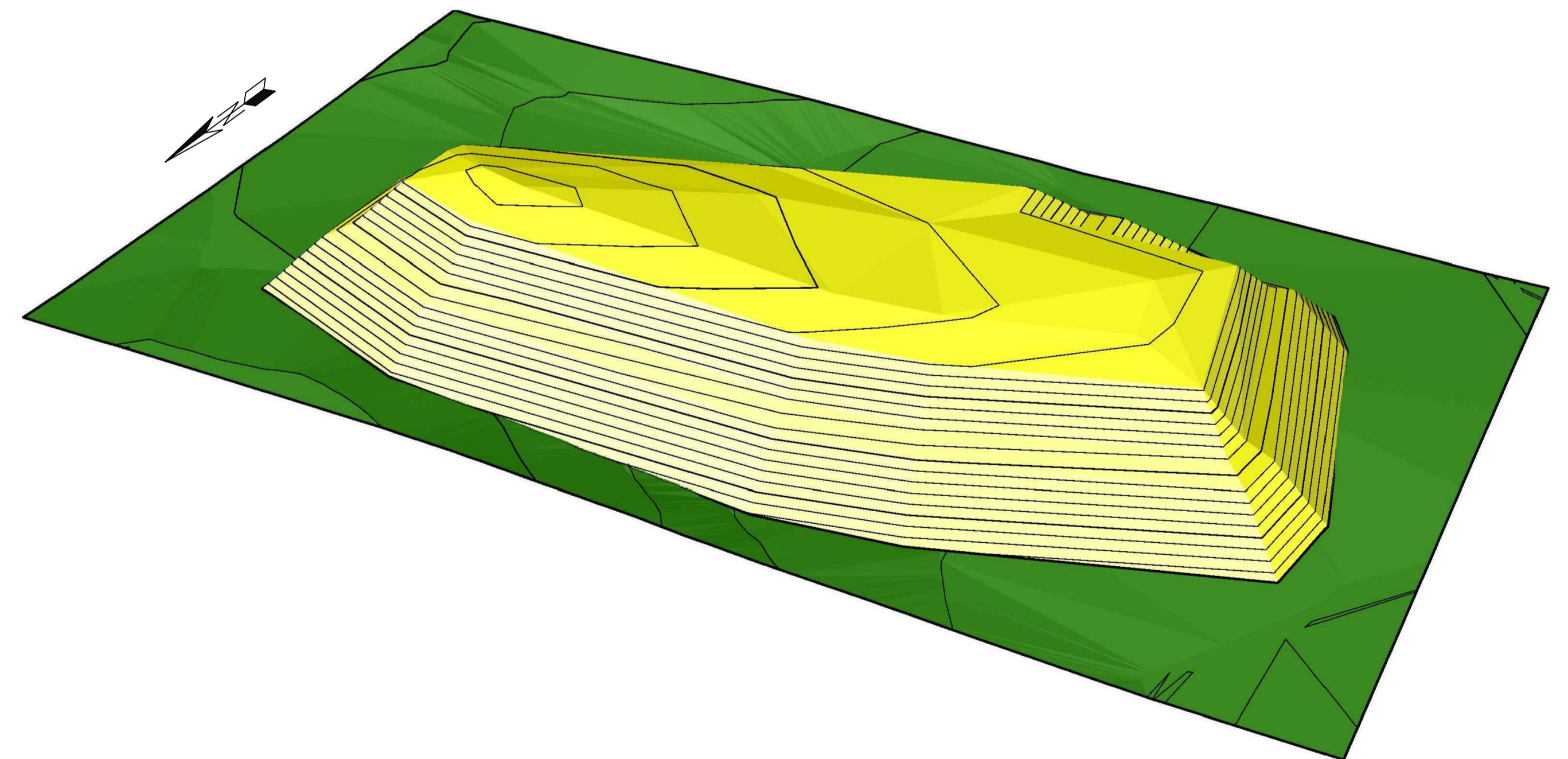


NORTHWEST PERSPECTIVE VIEW

SITE ALTERNATIVE 1
N.T.S





SOUTHEAST PERSPECTIVE VIEW





NORTHWEST PERSPECTIVE VIEW

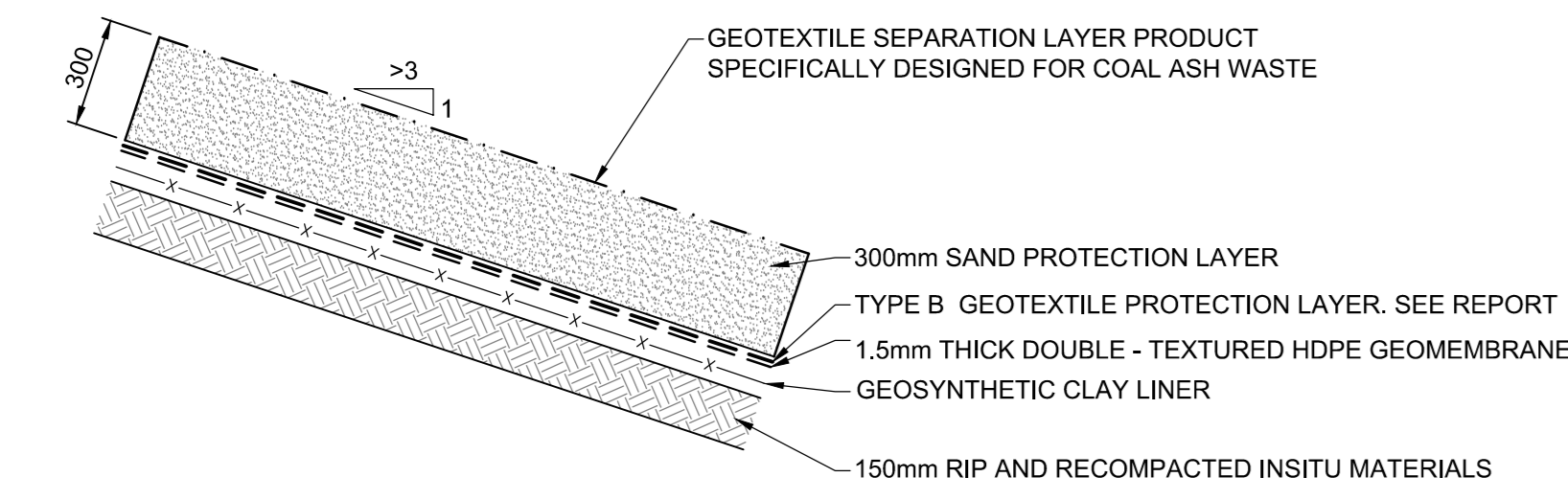
SITE ALTERNATIVE 2
N.T.S

LEGEND	
	NEW ASH DISPOSAL PILE
	EXISTING NGL AND EXISTING DISPOSAL PILE

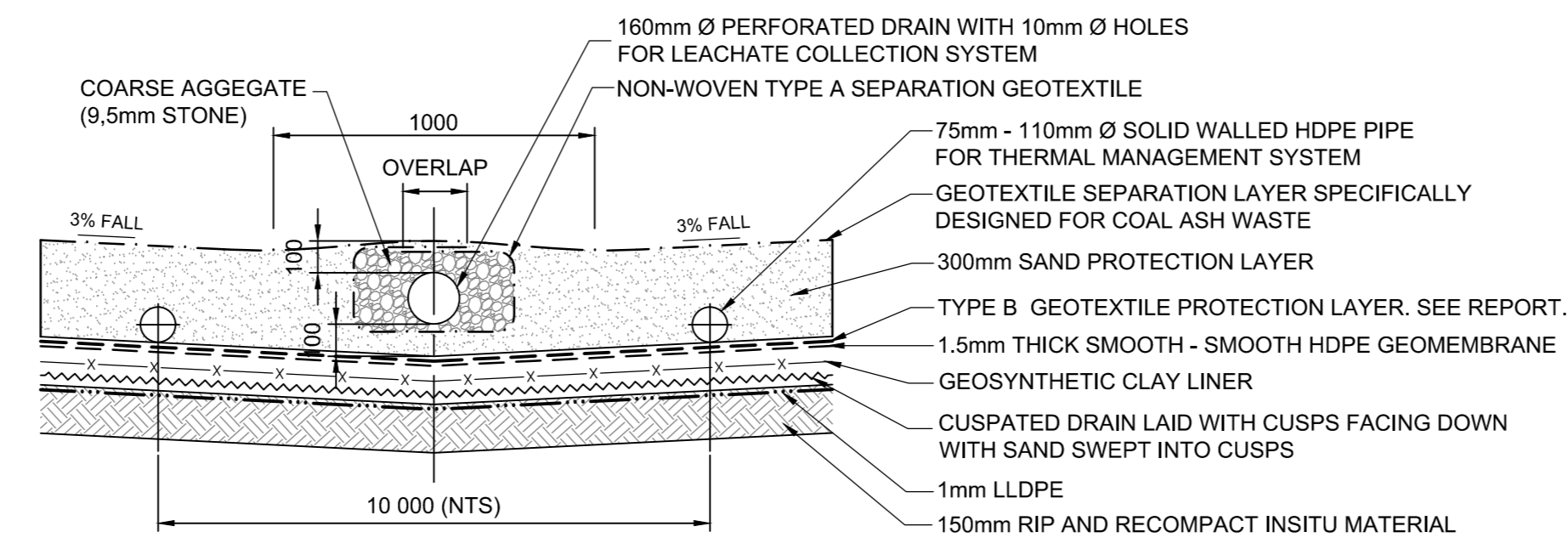
**FOR DISCUSSION
PURPOSES ONLY**

REF. DRAWINGS	DRG. No.'s	DESCRIPTION	DESIGNED	L. WALLACE	CAPE TOWN	Telephone	+27 21 532-0940	 T/G: JEFFARES & GREEN (Pty) Ltd G/F CLIENT	 MATIMBA ASH DISPOSAL FACILITY	CONTRACT No. : NONE TITLE 3D REPRESENTATIVE MODELS OF LANDFILL SITE ALTERNATIVES	DATE	MARCH 2015	SCALE	AS SHOWN
	3145-C002	FLOOR & LEACHATE - SITE ALTERNATIVE 1	CHECKED	R. EMERY	14 CENTRAL SQUARE	Facsimile	+27 21 532-0950				J & G DRAWING No.	3145-C005-P-RevA		
	3145-C003	SITE LAYOUT - SITE ALTERNATIVE 2	DRAWN	M. JACOBS	PNELANDS	E-MAIL	jjg@jjg.co.za				CLIENT DRAWING No.	NONE		
	3145-C004	FLOOR & LEACHATE - SITE ALTERNATIVE 2	No.	AMENDMENTS	DATE	SIGNED	CHECKED				R. EMERY	CAD FILENAME	H:\Projects\3145 - Matimba Ash Disposal\3D Models\3D Representative Models.dwg	
3145-C005	3D MODELS OF LANDFILL SITE ALTERNATIVES	© COPYRIGHT RESERVED												
3145-C006	TYPICAL LAYERWORKS & CONSTRUCTION DETAILS													

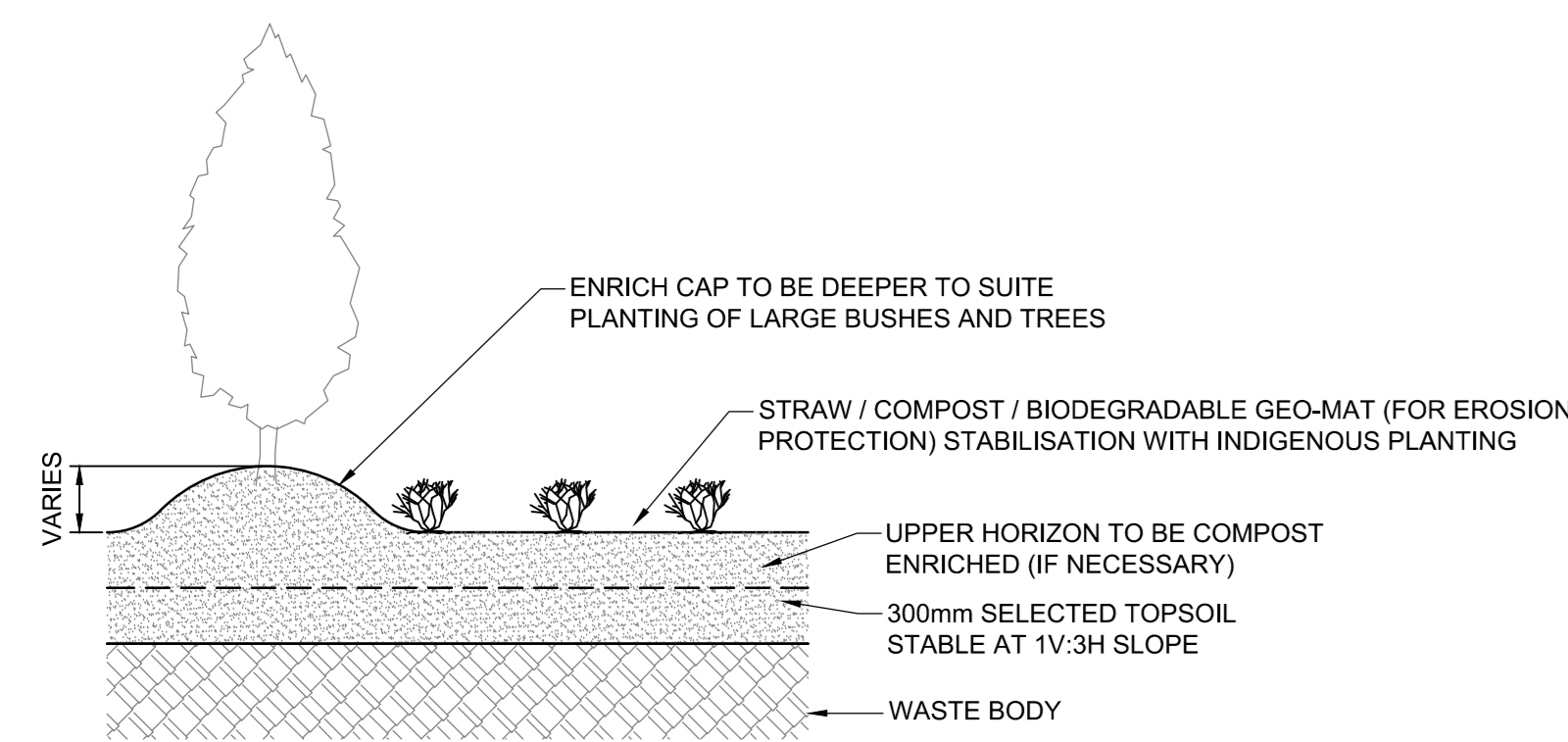
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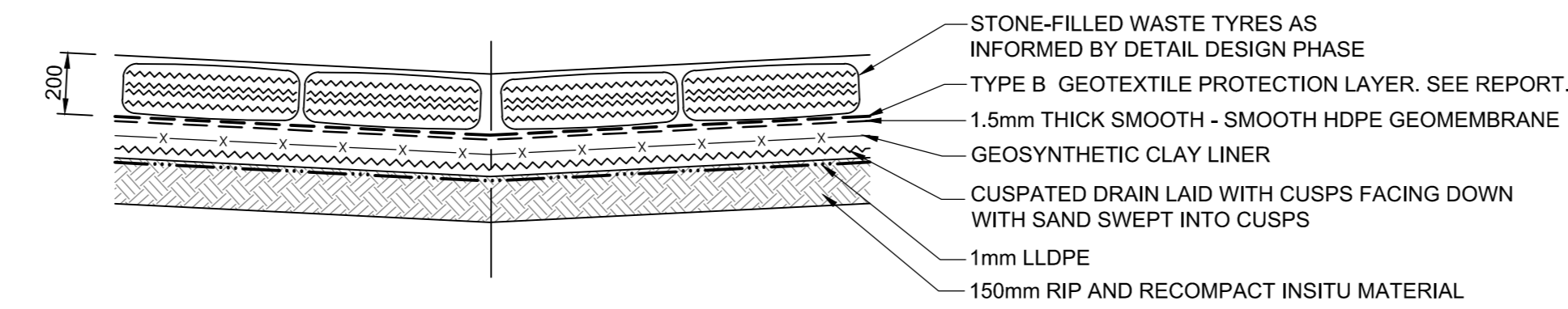
TYPICAL CROSS-SECTION OF LINING SYSTEM ON EMBANKMENT SLOPES (GREENFIELD SLOPES)
SCALE 1:20



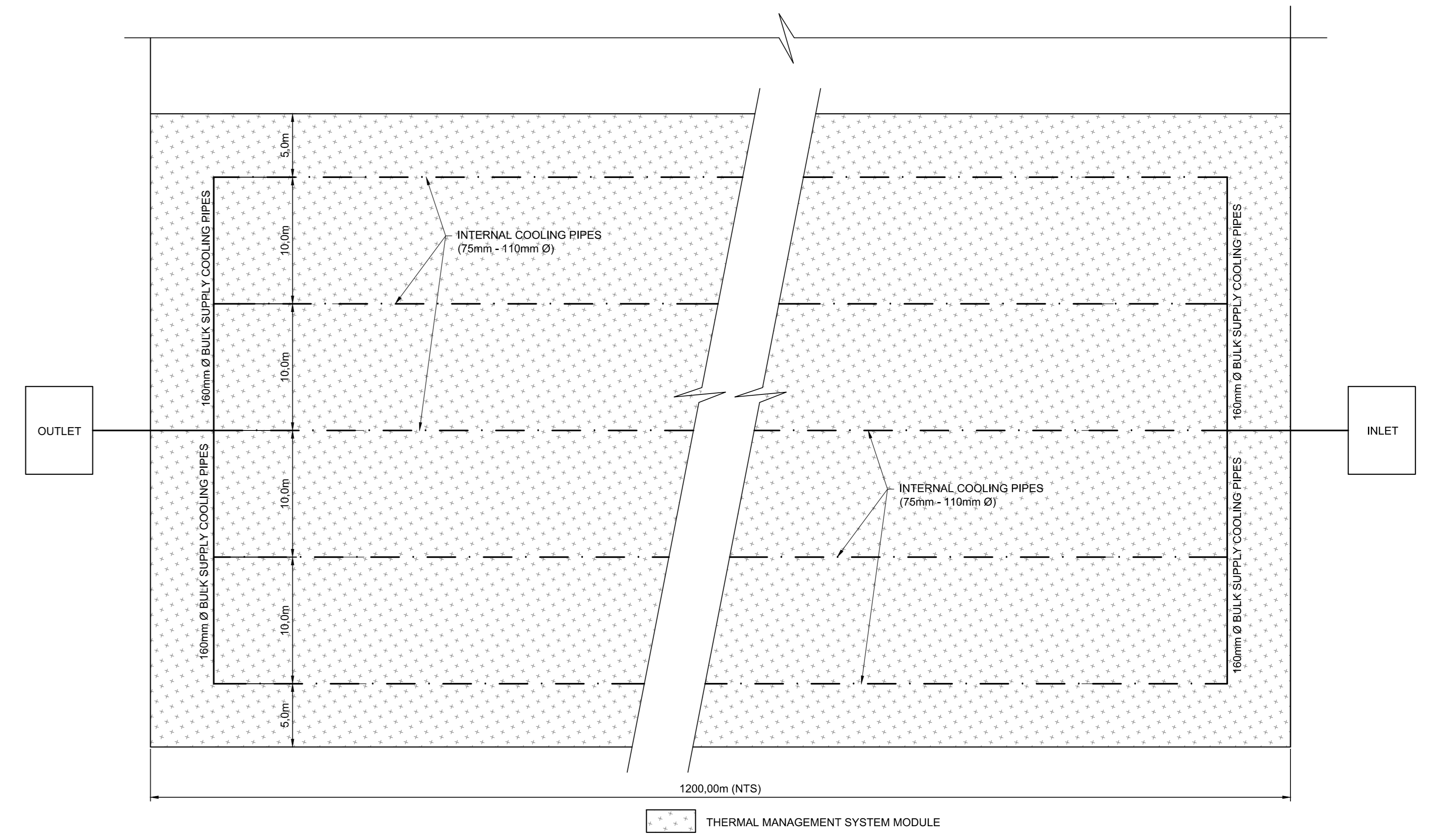
TYPICAL CROSS-SECTION OF BASAL LINING SYSTEM (GREEN FIELDS DEVELOPMENT)
SCALE 1:20



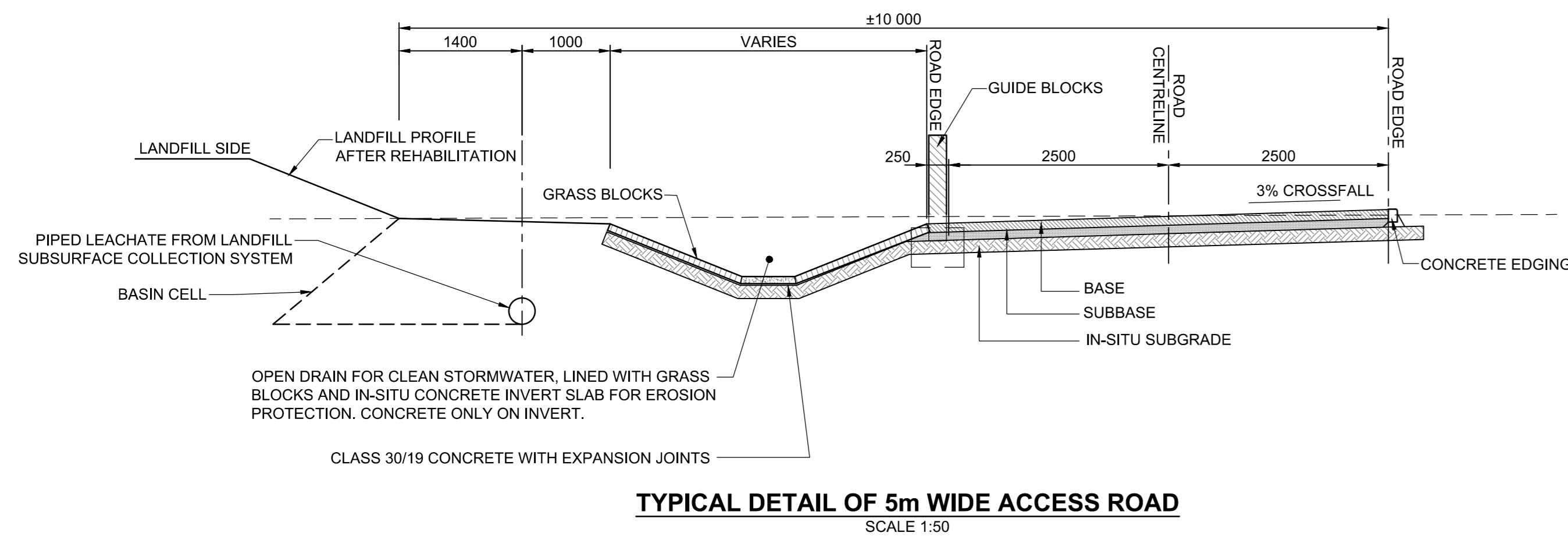
TYPICAL CAPPING LAYERWORKS FOR LANDFILL DOME AND EMBANKMENTS
SCALE 1:20



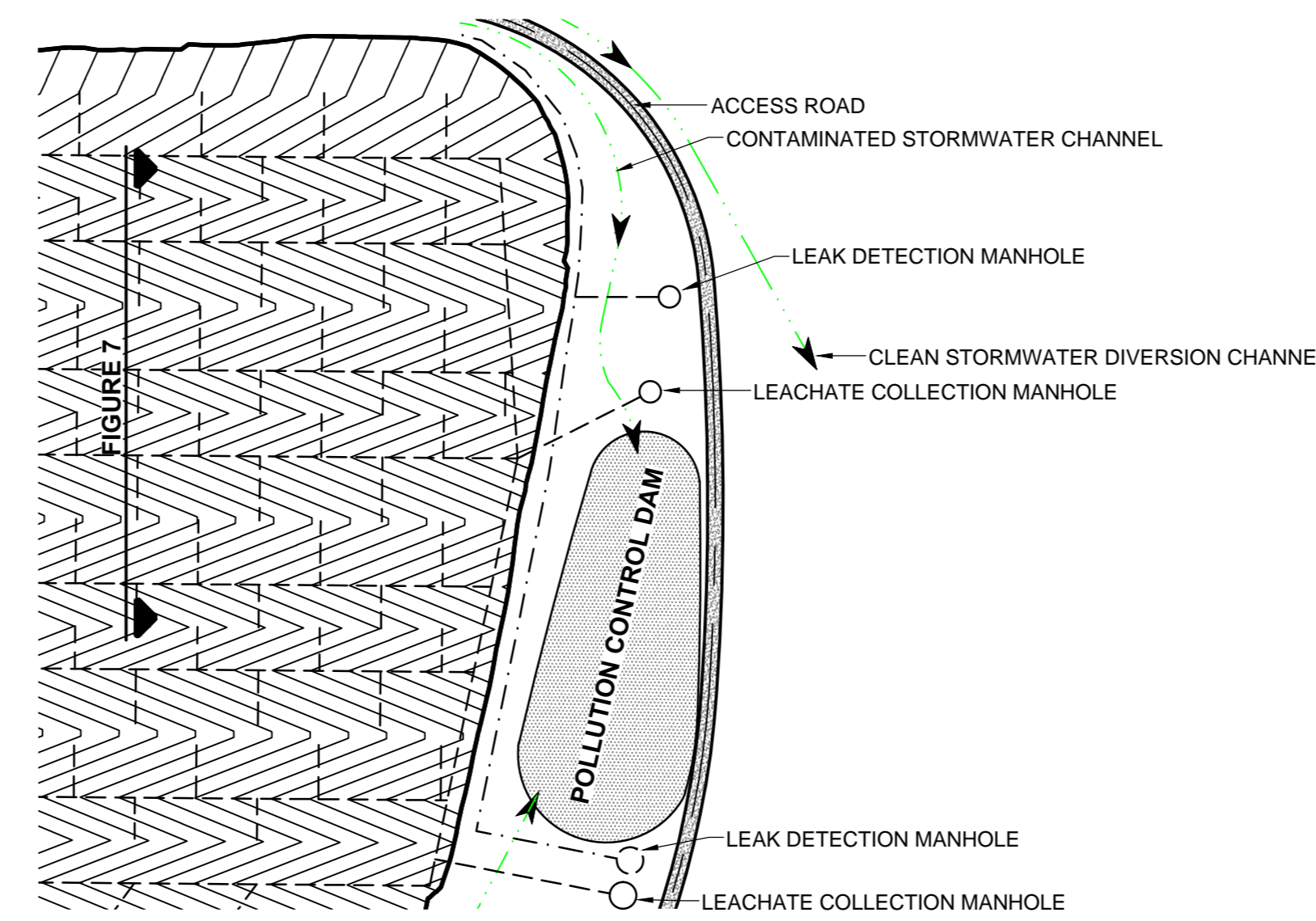
TYPICAL CROSS-SECTION OF LINING SYSTEM FOR POLLUTION CONTROL DAM
SCALE 1:20



PROPOSED THERMAL MANAGEMENT SYSTEM MODULE (LAYOUT PLAN)
SCALE 1:250



TYPICAL DETAIL OF 5m WIDE ACCESS ROAD
SCALE 1:50



TYPICAL LEACHATE COLLECTION AND LEAK DETECTION DETAIL
N.T.S.

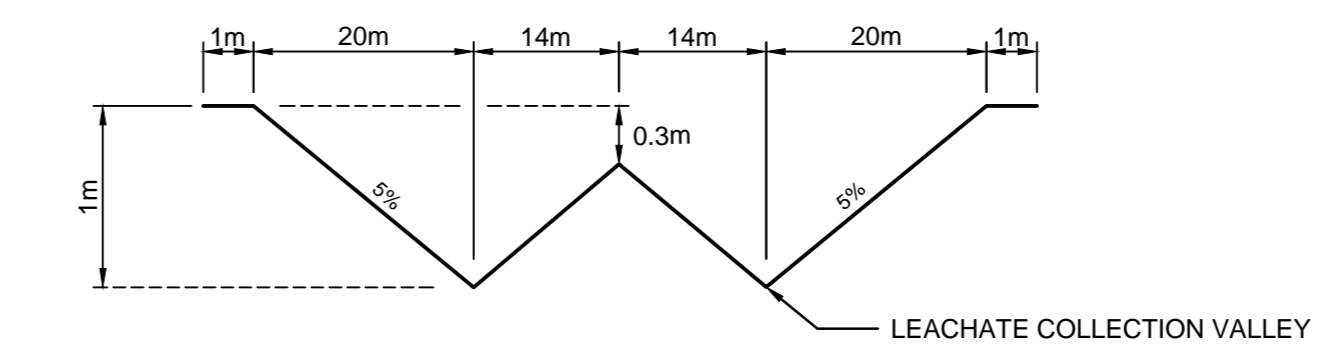
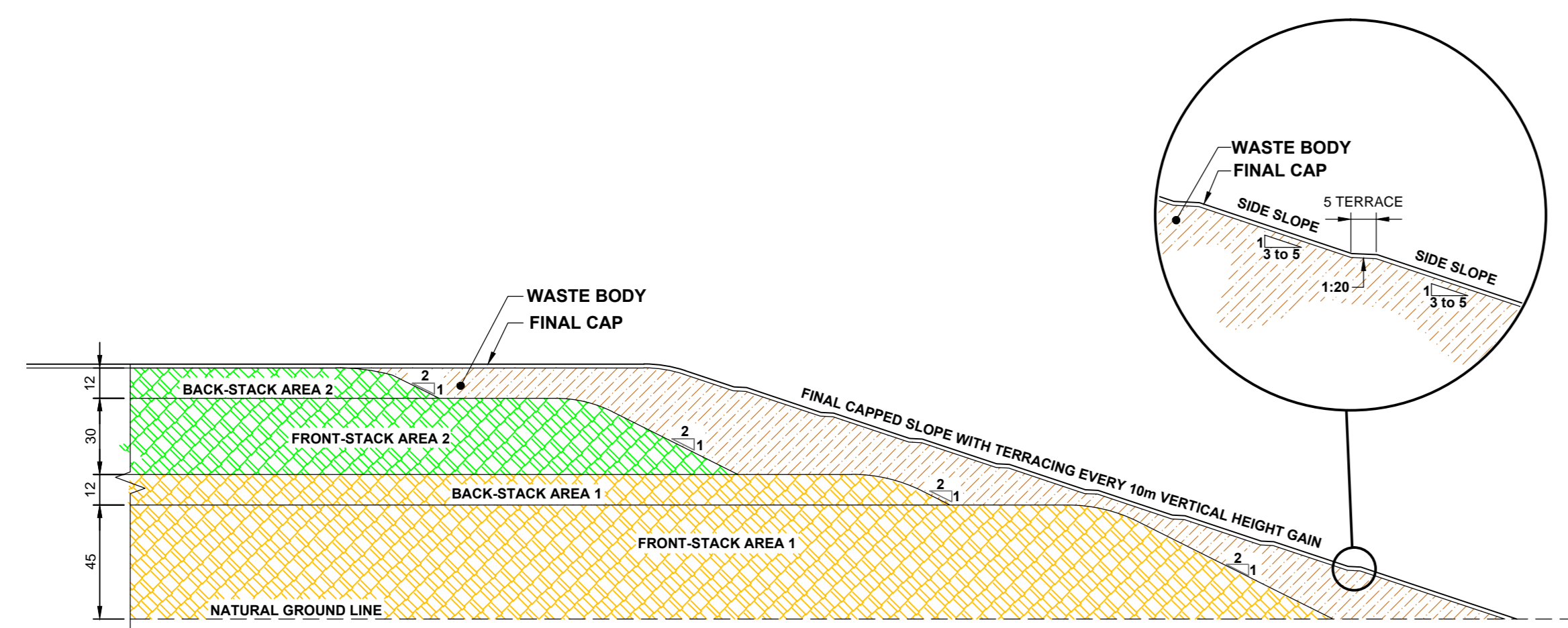


FIGURE 7 TYPICAL CROSS-SECTION THROUGH FLOOR PLAN (BASAL LINING PROFILE)
N.T.S.

NOTES:
LEAK DETECTION AND LEACHATE COLLECTION MANHOLE ARE PLACED IN CLOSE PROXIMITY TO EACH OTHER AND OCCUR ALONG THE LANDFILL TOE-LINE AT APPROXIMATELY 150m INTERVALS



ASH LANDFILL DEVELOPMENT AND FINAL CAPPING DETAIL
SCALE 1:2

NOTES:
1. 'TYPE B' GEOTEXTILE IS SIMILAR TO AN A6 NOT WOVEN GEOTEXTILE BY KAYTECH

FOR DISCUSSION PURPOSES ONLY

REF. DRAWINGS	DRG. No.'s	DESCRIPTION	DESIGNED	L. WALLACE	CAPE TOWN 14 CENTRAL SQUARE PINELANDS 7405 P.O. BOX 35661 PINELANDS 7430 Telephone: +27 21 532 0940 Facsimile: +27 21 532 0950 E-MAIL: jg@jg.co.za	 TgR JEFFARES & GREEN (Pty) Ltd FOR CLIENT	CLIENT PROJECT MATIMBA ASH DISPOSAL FACILITY	CONTRACT No. : NONE DATE MARCH 2015 SCALE AS SHOWN	TITLE TYPICAL LAYERWORKS AND CONSTRUCTION DETAILS	CLIENT DRAWING No. 3145-C006-P-RevC NONE	CAD FILENAME S:\projects\3145-Matimba Ash Disposal\3145-C006-P-RevC_Typical Layerwork and Construction Details.dwg			
	3145-C002	FLOOR & LEACHATE - SITE ALTERNATIVE 1	C	HDPE LINING TYPE CHANGED TO DOUBLE TEXTURED								2015-07-08	CHECKED	R. EMERY
	3145-C003	SITE LAYOUT - SITE ALTERNATIVE 2	B	ISSUED FOR DISCUSSION (REVISION)								2015-03-09	DRAWN	M. JACOBS
	3145-C004	FLOOR & LEACHATE - SITE ALTERNATIVE 2	A	ISSUED FOR DISCUSSION								2014-07-10		
	3145-C005	3D MODELS OF LANDFILL SITE ALTERNATIVES												
	3145-C006	TYPICAL LAYERWORKS & CONSTRUCTION DETAILS												
	No.	AMENDMENTS	DATE	SIGNED	CHECKED	R. EMERY								

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DATE

DATE

December 07, 2015