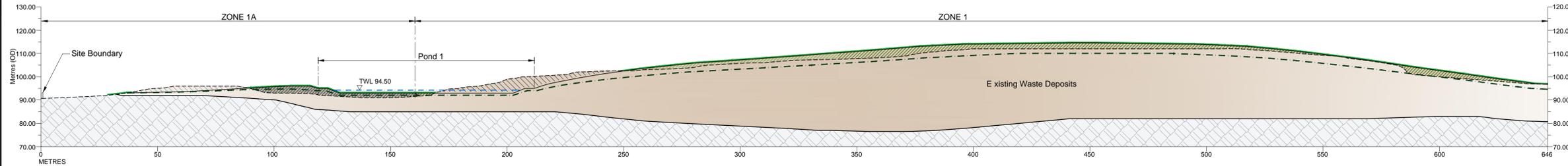
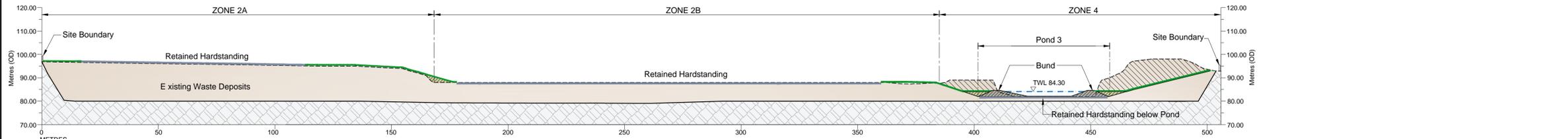


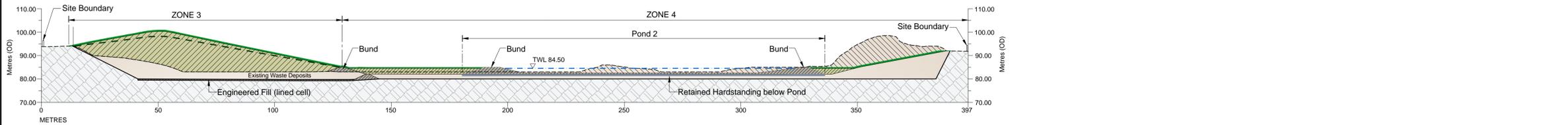
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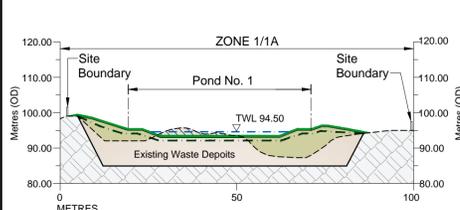
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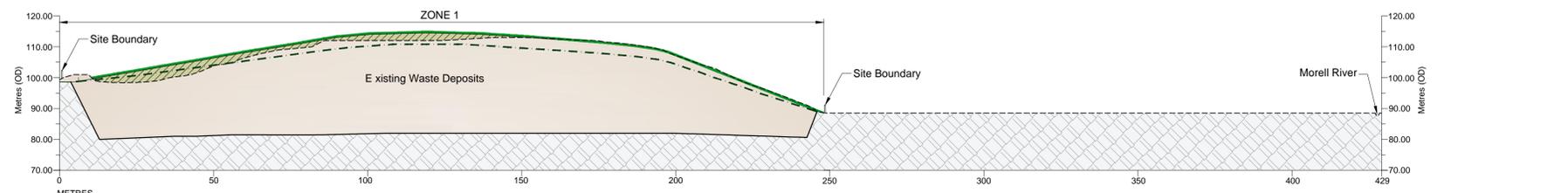
SECTION B-B'



SECTION C-C'



SECTION D-D'



SECTION E-E'

KEY:

- Existing Ground Profile
- Base of Waste Profile
- Remediation Capping Profile
- Retained Hardstanding Restoration Profile
- Post Settlement Surface Profile
- Pond Top Water Level
- Existing Waste Deposits
- Areas of Cut (Waste)
- Areas of Fill
- Areas of Fill (Engineered)
- Natural Strata

- NOTE:**
- For location of sections see Drawing No's. 32EW5604-00-001 (Figure 4.1), 32EW5604-00-022 (Figure 4.4) and 32EW5604-00-023 (Figure 4.5).
 - Levels to metres OD (Malin Head).



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Rev	Rev. Date	Purpose of revision	Drawn	Checked	Rev'd	Appr'd



Project
KERDIFFSTOWN LANDFILL
REMEDIATION PROJECT

Drawing title
FIGURE 4.6
CROSS SECTIONS
FOR THE PROPOSED PROJECT
(SHEET 1 OF 2)

Drawing status
EIAR SUBMISSION

Scale	1:1000 @ A1	DETAILS SHOWN ARE NOT FOR CONSTRUCTION PURPOSES HENCE DRAWING SHOULD NOT BE SCALED
Jacobs No.	32EW5604	
Client no.	6286	

Drawing number	32EW5604-00-024	Rev	2
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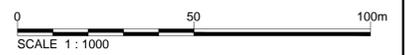
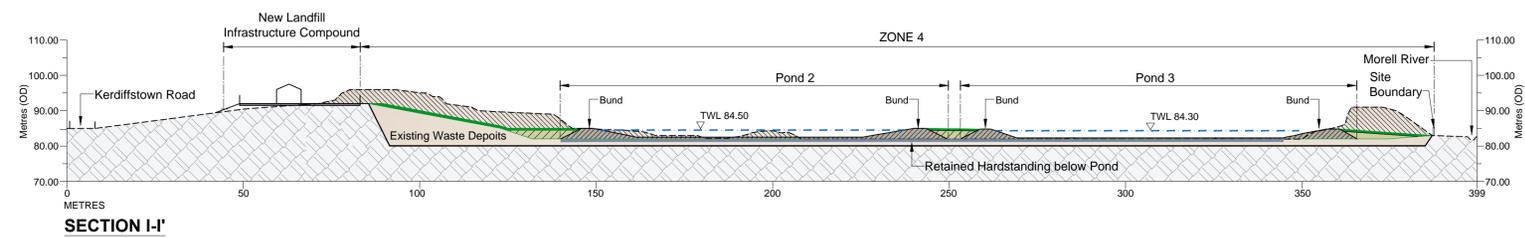
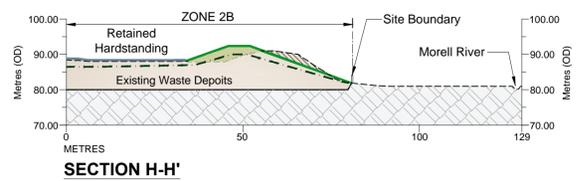
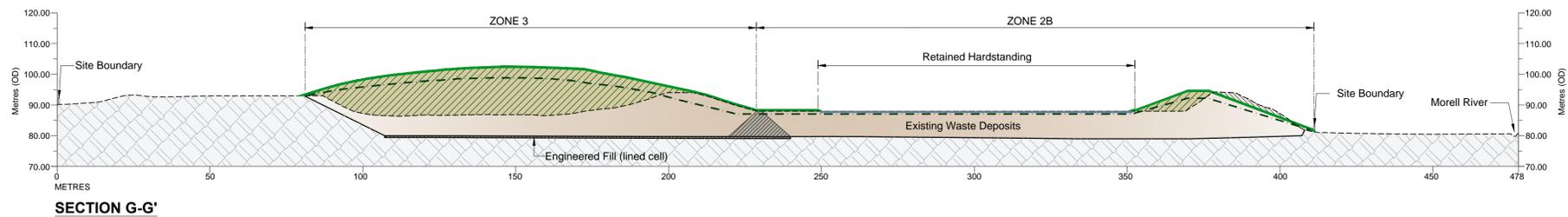
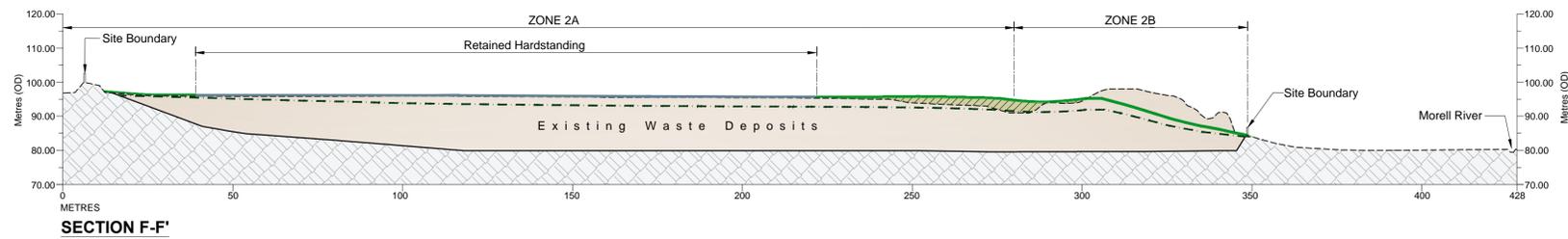
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KEY:

- Existing Ground Profile
- Base of Waste Profile
- Remediation Capping Profile
- Retained Hardstanding Restoration Profile
- Post Settlement Surface Profile
- Pond Top Water Level
- Existing Waste Deposits
- Areas of Cut (Waste)
- Areas of Fill (Engineered)
- Natural Strata

1. For location of sections see Drawing No's. 32EW5604-00-001 (Figure 4.1), 32EW5604-00-022 (Figure 4.4) and 32EW5604-00-023 (Figure 4.5).
2. All Levels to metres OD (Malin Head).



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Project
**KERRIFFSTOWN LANDFILL
 REMEDIATION PROJECT**

Drawing title
**FIGURE 4.7
 CROSS SECTIONS
 FOR THE PROPOSED PROJECT
 (SHEET 2 OF 2)**

Drawing status
EIAR SUBMISSION

Scale 1:2000 @A1
 Jacobs No. 32EW5604
 Client no. 6286

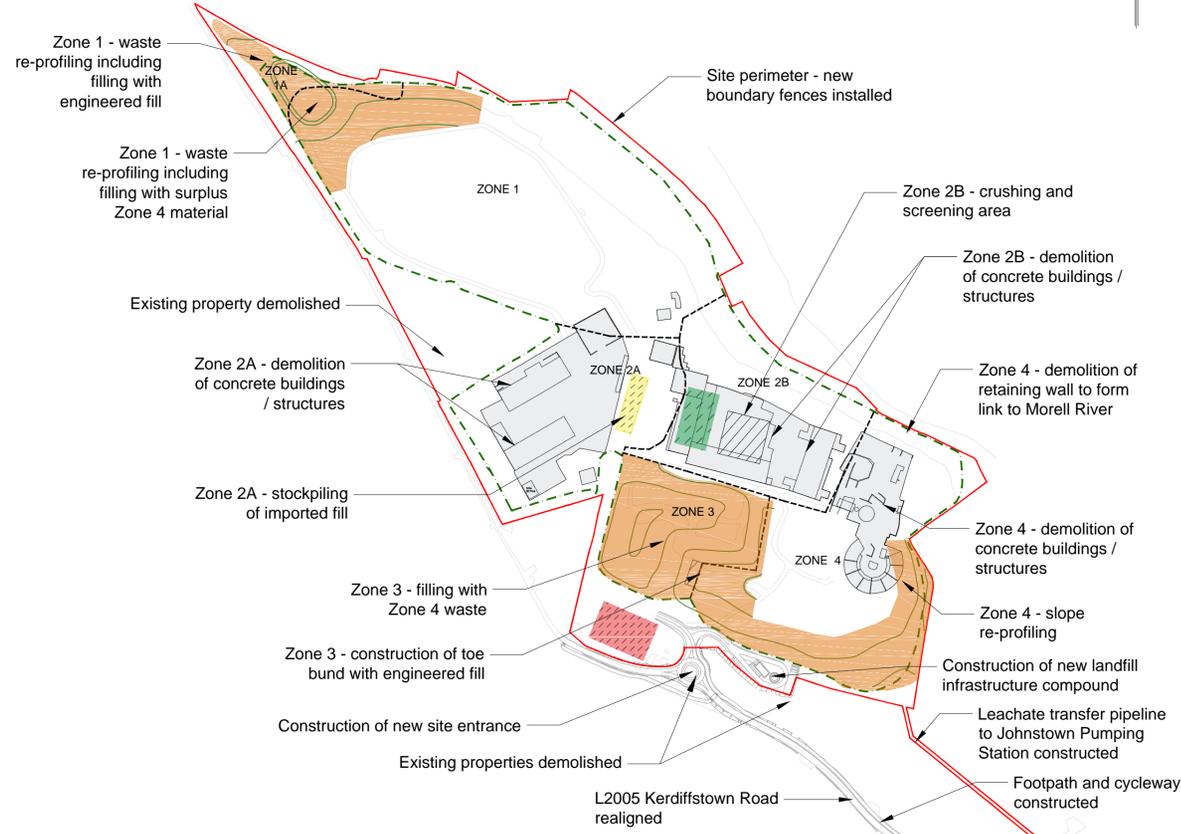
Drawing number
32EW5604-00-025

Rev
2

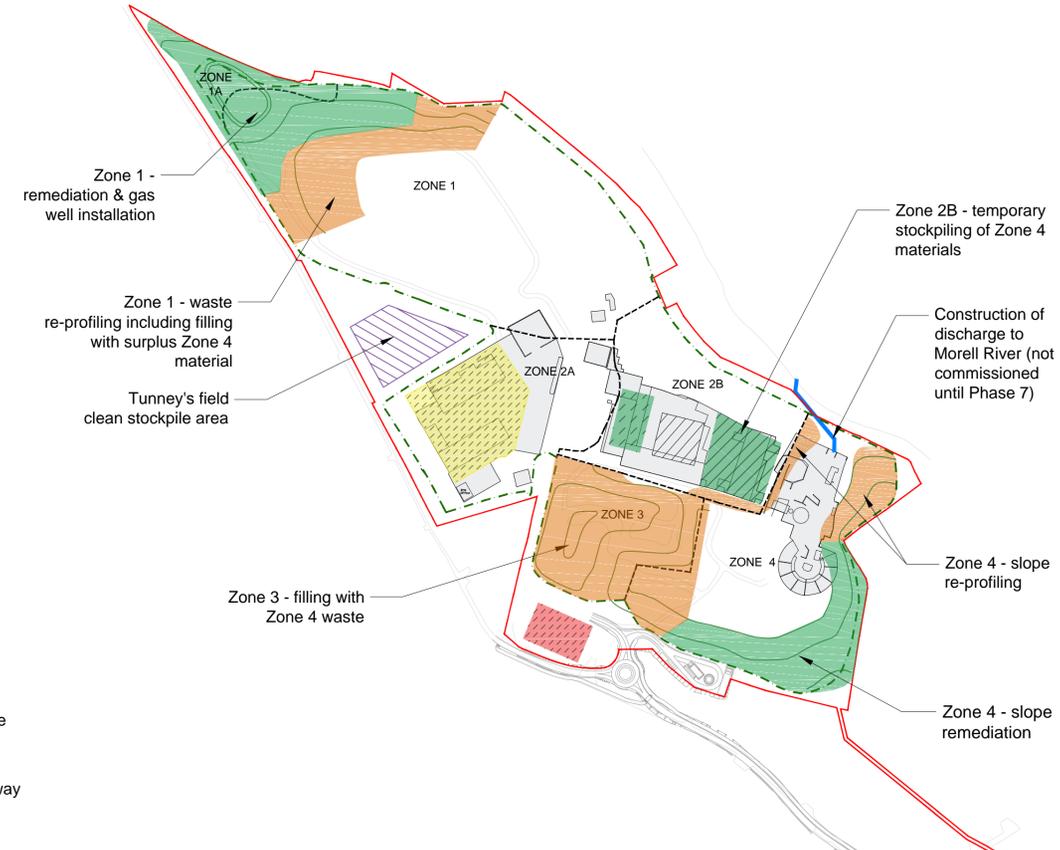
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PHASE 1



PHASE 2



PHASE 3



PHASE 4



KEY:

- Licence Boundary
- Inferred Zone Boundary
- Remediated Waste Extents
- Re-profiled Waste
- Completed Remediation
- Pond
- Retained Concrete Hardstanding
- Site Won Subsoil Stockpile
- Imported Fill Stockpiles
- Processed Concrete Stockpiles
- Crushing and Screening Area
- Clean Fill Stockpiles
- Indicative Remediation Contours

- NOTES:**
- Outline phasing and time periods subject to detailed design and procurement.
 - For existing site contours see Drawing No. 32EW5604-00-001 (FIGURE 4.1).
 - For re-profiled site contours see Drawing No. 32EW5604-00-020 (FIGURE 4.2).
 - For final remediation contours see Drawing No. 32EW5604-00-022 (FIGURE 4.4).
 - For detailed description of Zones refer to Chapters 3 and 12 of the E.I.A.R.

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2	07/08/2017	E.I.A.R. SUBMISSION	AR	CD	CD	RR
1	30/06/2017	E.I.A.R. SUBMISSION	KMA	CD	CD	RR
0	7/12/2016	DRAFT E.I.A.R. SUBMISSION	DM	JB	CD	RR

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Drawing title: **FIGURE 4.8
 OUTLINE REMEDIATION PHASING
 (SHEET 1 OF 2)**

Drawing status: **E.I.A.R. SUBMISSION**

Scale: **NTS @ A1** (DETAILS SHOWN ARE NOT FOR CONSTRUCTION PURPOSES, HENCE DRAWING SHOULD NOT BE SCALED)

Jacobs No.: **32EW5604**

Client no.: **6286**

Drawing number: **32EW5604-00-027** Rev: **2**

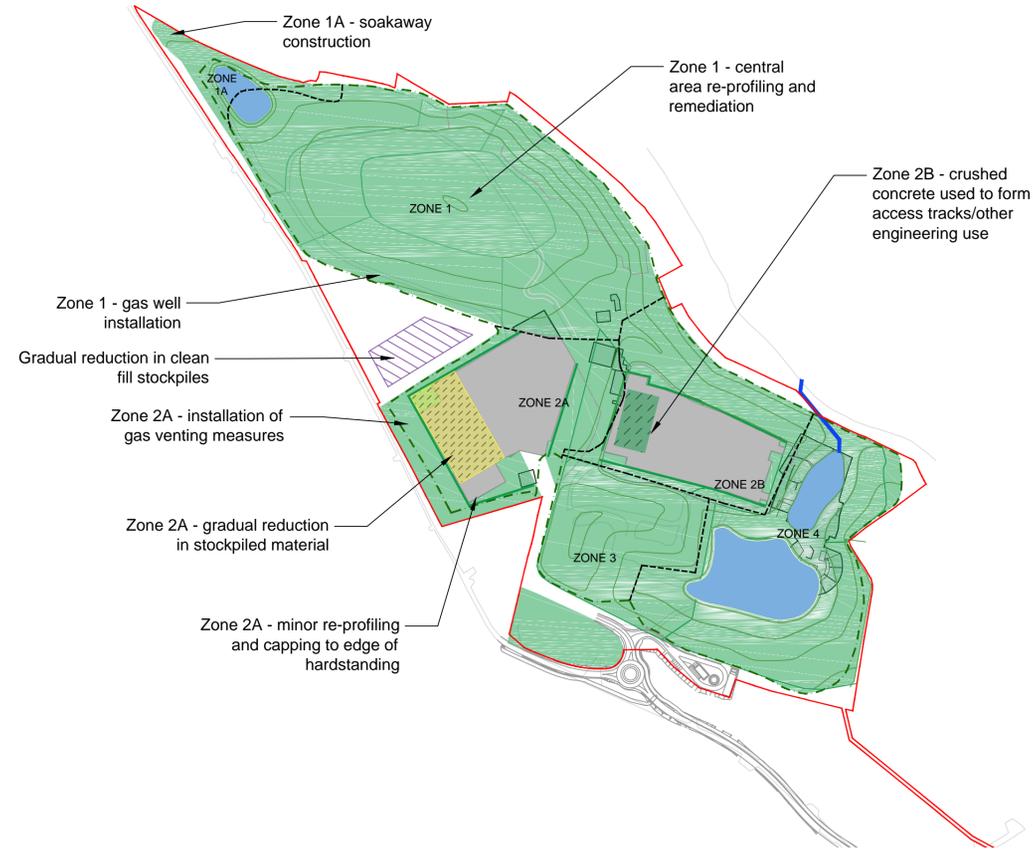
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PHASE 5



PHASE 6



PHASE 7



PHASE 8



KEY:

- Licence Boundary
- Park Boundary
- Remediated Waste Extents
- Inferred Zone Boundary
- Re-profiled Waste
- Completed Remediation
- Pond
- Retained Concrete Hardstanding
- Site Won Subsoil Stockpile
- Imported Fill Stockpiles
- Processed Concrete Stockpiles
- Crushing and Screening Area
- Clean Fill Stockpiles
- Indicative Remediation Contours
- Informal Access Path
- Maintenance Access Track

- NOTES:**
1. Outline phasing and time periods subject to detailed design and procurement.
 2. For existing site contours see Drawing No. 32EW5604-00-001 (FIGURE 4.1).
 3. For re-profiled site contours see Drawing No. 32EW5604-00-020 (FIGURE 4.2).
 4. For final remediation contours see Drawing No. 32EW5604-00-022 (FIGURE 4.4).
 5. For detailed planting schedule see Drawing No. 32EW5604-00-047 (FIGURE 4.20)
 6. For detailed description of Zones refer to Chapters 3 and 12 of the E.I.A.R.

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**KERDIFFSTOWN LANDFILL
REMEDIATION PROJECT**

Drawing title
**FIGURE 4.9
OUTLINE REMEDIATION PHASING
(SHEET 2 OF 2)**

Drawing status
EIAR SUBMISSION

Scale	NTS @A1	DETAILS SHOWN ARE NOT FOR CONSTRUCTION PURPOSES HENCE DRAWING SHOULD NOT BE SCALED
Jacobs No.	32EW5604	
Client no.	6286	

Drawing number	32EW5604-00-028	Rev	2
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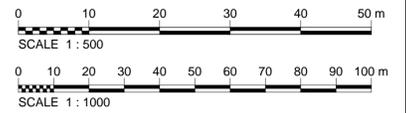
32EW5604-00-029-3

FIGURE 4.10

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- KEY:**
- Proposed Permanent CPO Boundary
 - Proposed Temporary CPO Boundary
 - Area Excluded from CPO
 - Residential Receptor
 - Commercial Receptor
 - Indicative Extents of Street Lighting for New Roundabout
 - Over Run Area

- NOTES:**
1. To be read in conjunction with Drawings No's 32EW5604-00-030 (Figure 4.11) and 32EW5604-00-031 (Figure 4.12).
 2. All levels to metres OD (Malin Head).
 3. For details of commercial and residential receptors, refer to Chapter 3 of the EIAR.
 4. The design of the roundabout is in accordance with the National Roads Authority Design Manual for Roads and Bridges (NRA DMRB) (volume 6, Section 2, Part 3, TD 16/07 - Geometric Design of Roundabouts).
 5. All other roads have been designed in accordance with the Design Manual for Urban Roads and Streets (DMURS).
 6. Restriction on path/cycleway width refer to Drawing No. 32EW5604-00-030 (Figure 4.11).



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3	07/08/2017	EIAR SUBMISSION	AR	CD	CD	RR
2	30/06/2017	EIAR SUBMISSION	KMA	CD	CD	RR
1	03/05/2017	PATH EXTENDED CPO BOUNDARY UPDATE	AR	DM	CD	RR
0	16/03/2017	DRAFT EIAR SUBMISSION	AR	DM	CD	RR

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**KERDIFFSTOWN LANDFILL
REMEDATION PROJECT**

Drawing title
**FIGURE 4.10
NEW SITE ACCESS PROPOSED
ROAD LAYOUT**

Drawing status
EIAR SUBMISSION

AS SHOWN @ A1 (DETAILS SHOWN ARE NOT FOR CONSTRUCTION PURPOSES HENCE DRAWING SHOULD NOT BE SCALED)

Jacobs No. 32EW5604

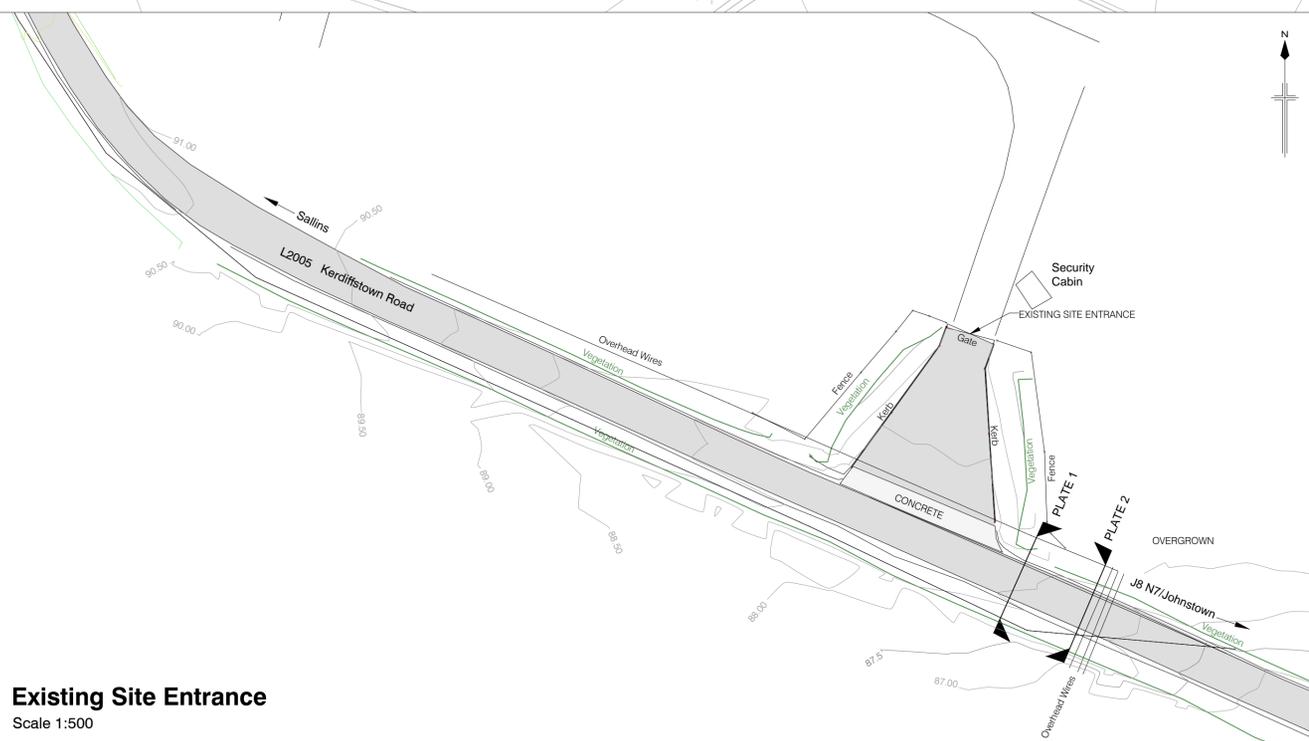
Client no. 6286

Drawing number
32EW5604-00-029

Rev
3

Proposed Road Layout

Scale 1:1000



Existing Site Entrance

Scale 1:500



PLATE 1: Looking East



PLATE 2: Looking West

See Drawing No. 32EW5604-00-030 for details

Existing site entrance (see inset)

See Drawing No. 32EW5604-00-030 for pedestrian crossing details

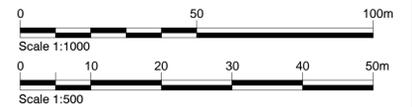
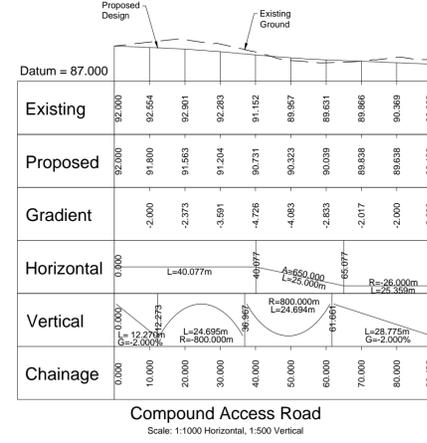
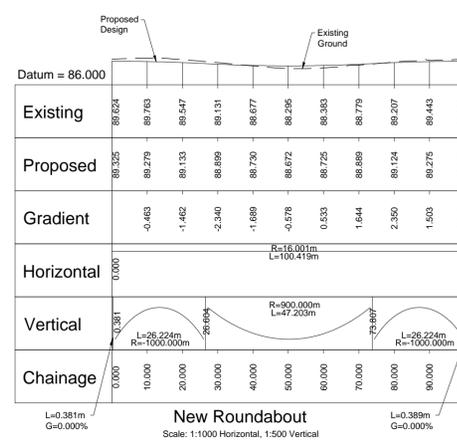
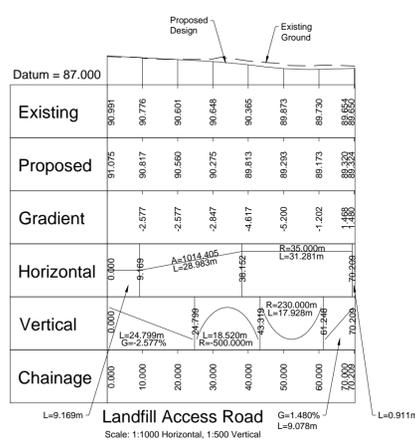
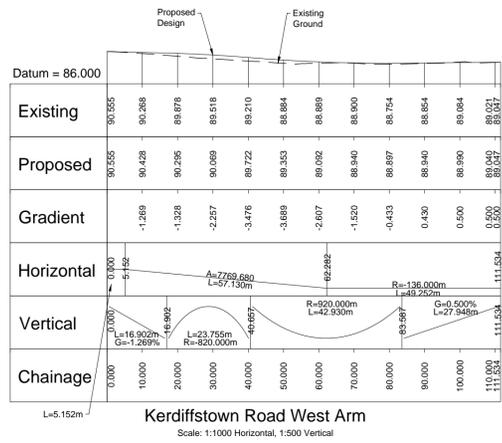
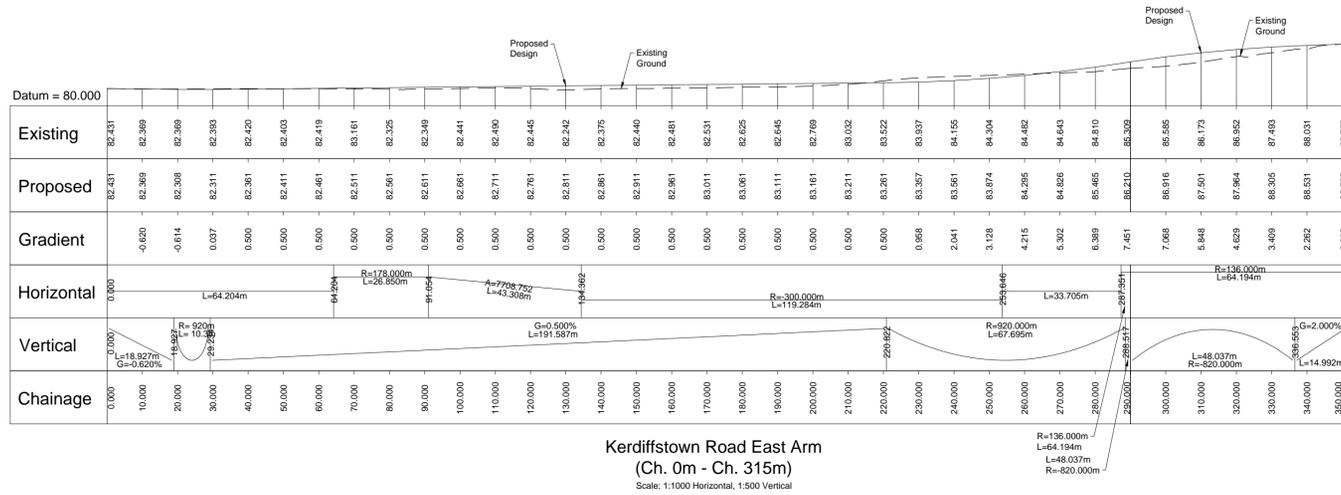
See Note 6

See Drawing No. 32EW5604-00-030 for pedestrian crossing details

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KEY:
 Proposed Profile
 Existing Ground Profile

NOTES:
 1. All levels to metres OD (Malin Head)
 2. For layout of roads refer to Drawing No. 32EW5604-00-029 (Figure 4.10).



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Drawing title: **FIGURE 4.12 SITE ACCESS FOR THE PROPOSED PROJECT**

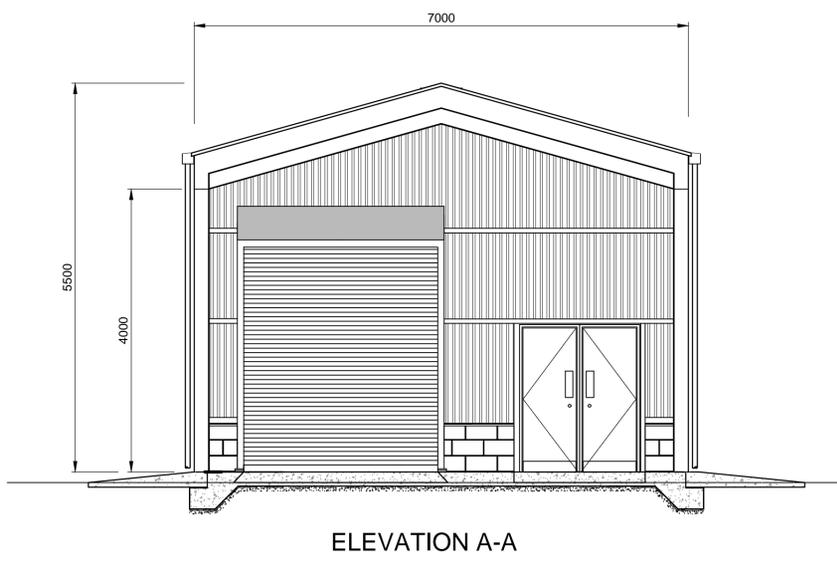
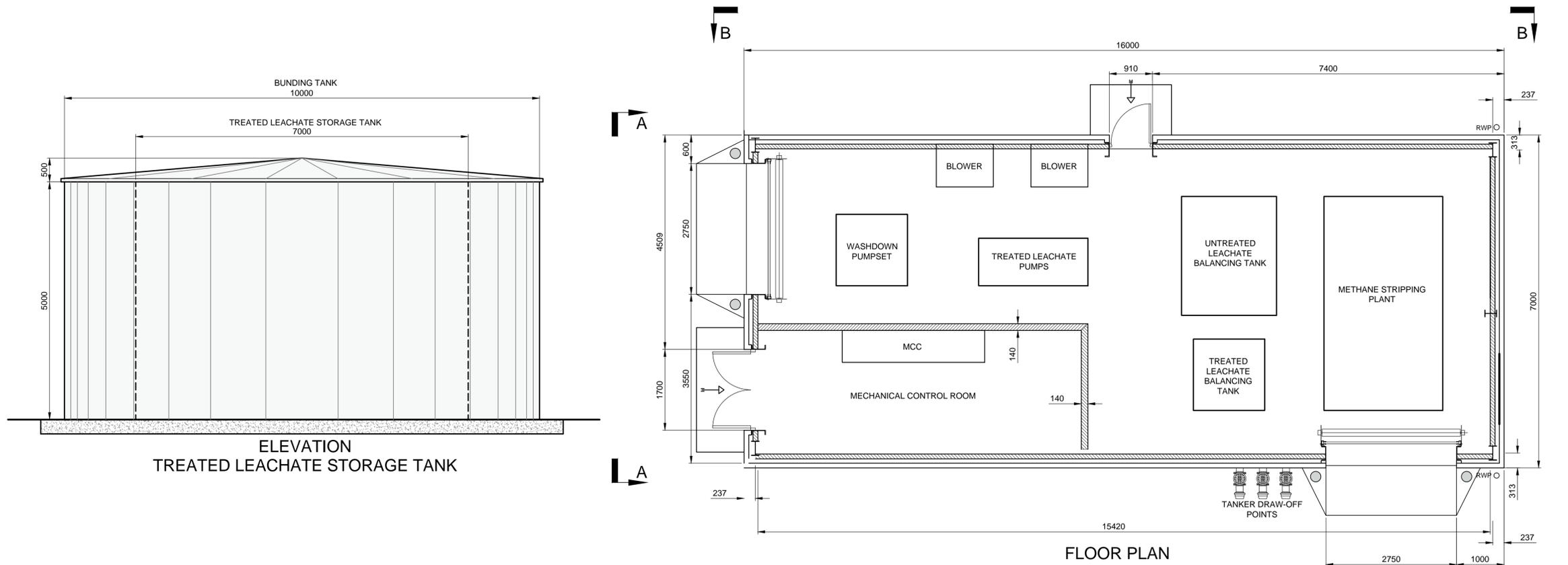
Drawing status: **EIAR SUBMISSION**

Jacobs No. **32EW5604**
 Client no. **6286**

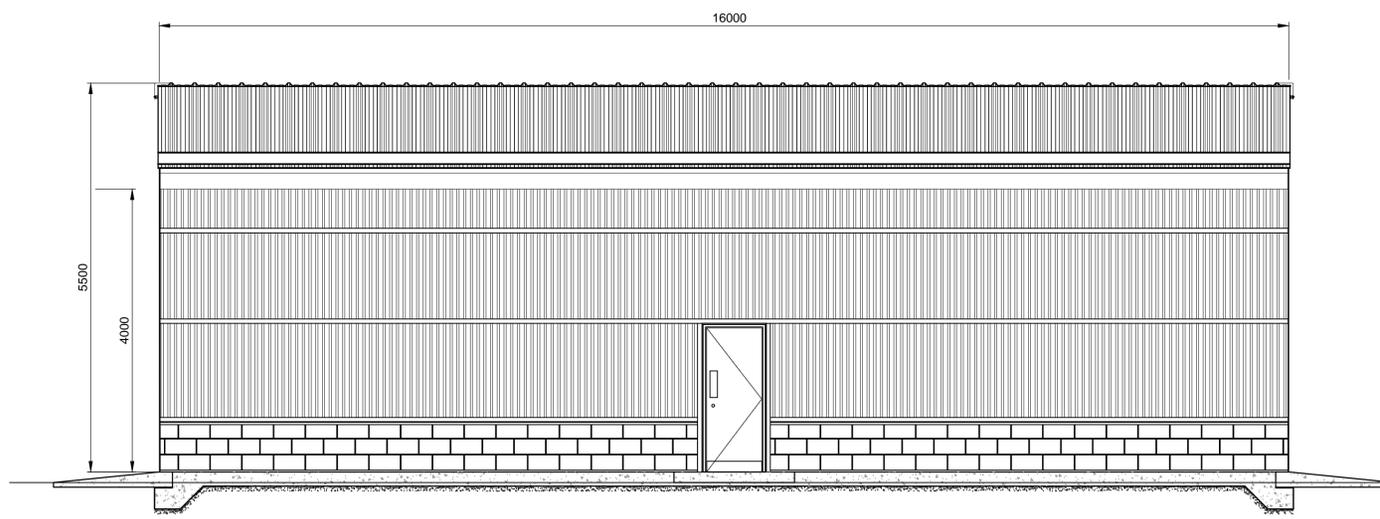
Drawing number: **32EW5604-00-031** Rev **2**

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- NOTES:
1. All dimensions in millimetres unless otherwise stated.
 2. Layout of internal infrastructure is indicative only.



ELEVATION A-A



ELEVATION B-B



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2	07/08/2017	EIAR SUBMISSION	AR	CD	CD	RR
1	30/06/2017	EIAR SUBMISSION	KMA	CD	CD	RR
0	26/09/2016	DRAFT EIS SUBMISSION	AR	ND	CD	RR

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Project
**KERDIFFSTOWN LANDFILL
 REMEDIATION PROJECT**

Drawing title
**FIGURE 4.14
 LEACHATE MANAGEMENT BUILDING
 LAYOUT AND ELEVATIONS**

Drawing status
EIAR SUBMISSION

Jacobs No. 32EW5604
 Client no. 6286

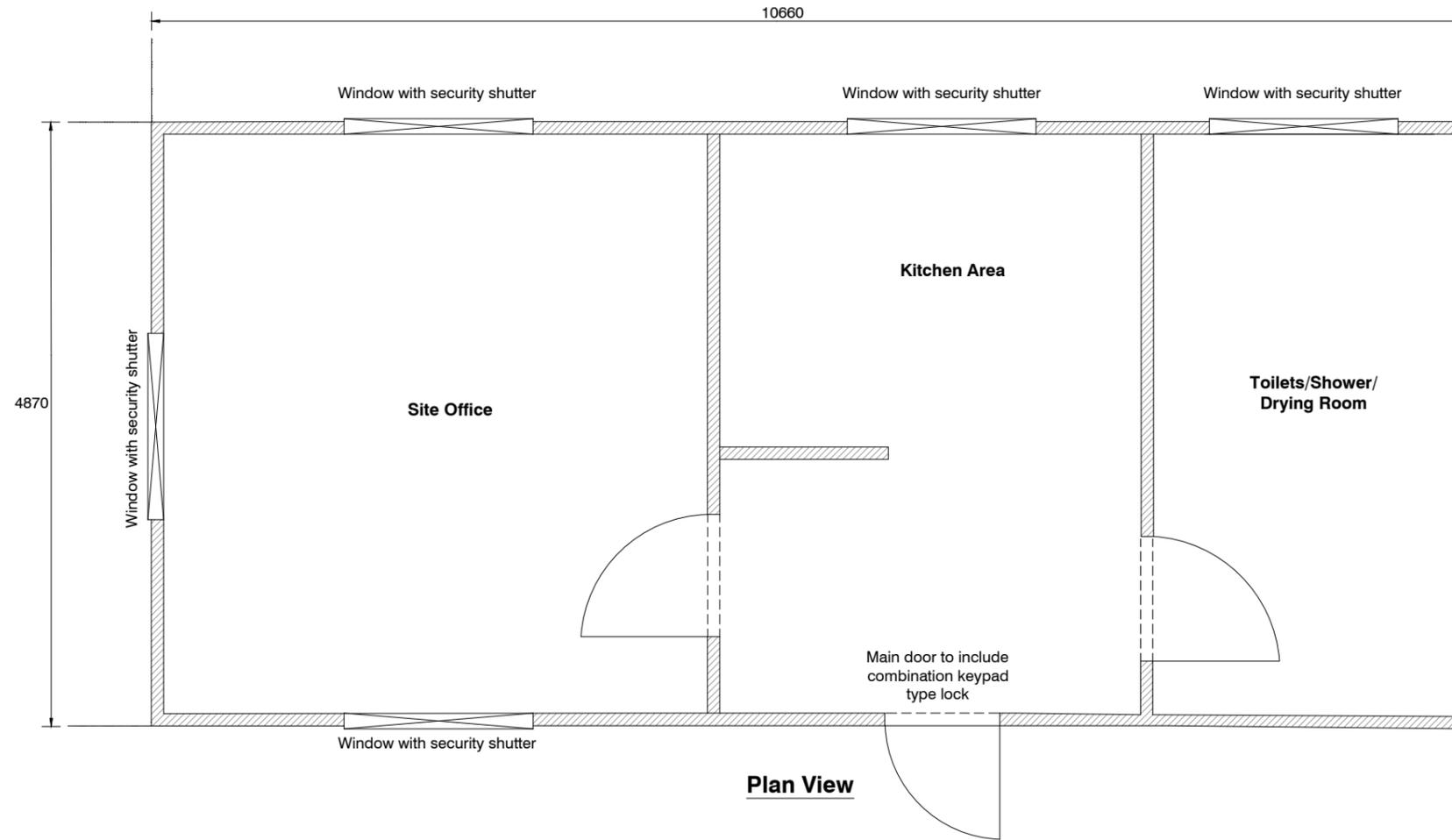
Drawing number
32EW5604-00-033

Rev
2

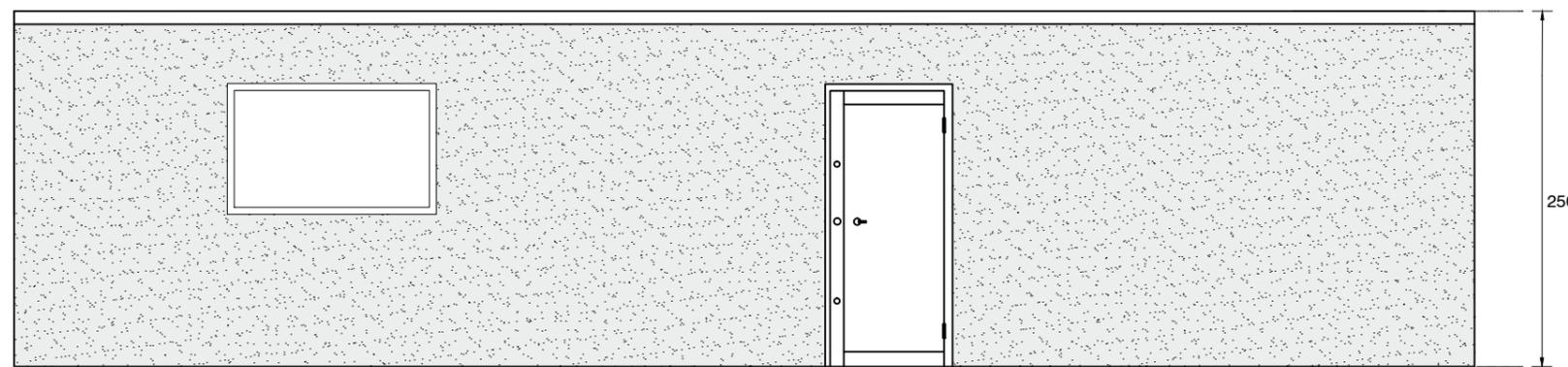
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NOTE:

1. All dimensions in millimetres unless stated otherwise.
2. Layout shown is indicative and will be confirmed during detailed design.



Plan View



Elevation



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Project
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 REMEDIATION PROJECT

Drawing title
FIGURE 4.15
 SITE OFFICE BUILDING LAYOUT
 AND ELEVATION

Drawing status
 EIAR SUBMISSION

Scale
 1:50 @A3

Jacobs No.
 32EW5604

Client no.
 6286

Drawing number
 32EW5604-00-034

Rev
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KEY:

	Licence Boundary
	Untreated Leachate Transfer Pipe System
	Treated Leachate Transfer Pipe System
	Untreated Leachate Transfer Pipe System (Zone 1)
	Emission to Sewer
	Leachate Monitoring Well.

- NOTES:**
- For details of The Leachate Management System refer to Drawing No.32EW5604-00-037. (In Leachate Management Plan).
 - Pumping from Zone 1 initiated when monitoring confirms presence of leachate.
 - Leachate Monitoring Wells to be adapted from existing boreholes: BH61, BH63, BH64 and BH38.



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1	30/06/2017	EIAR SUBMISSION	KMA	CD	CD	RR
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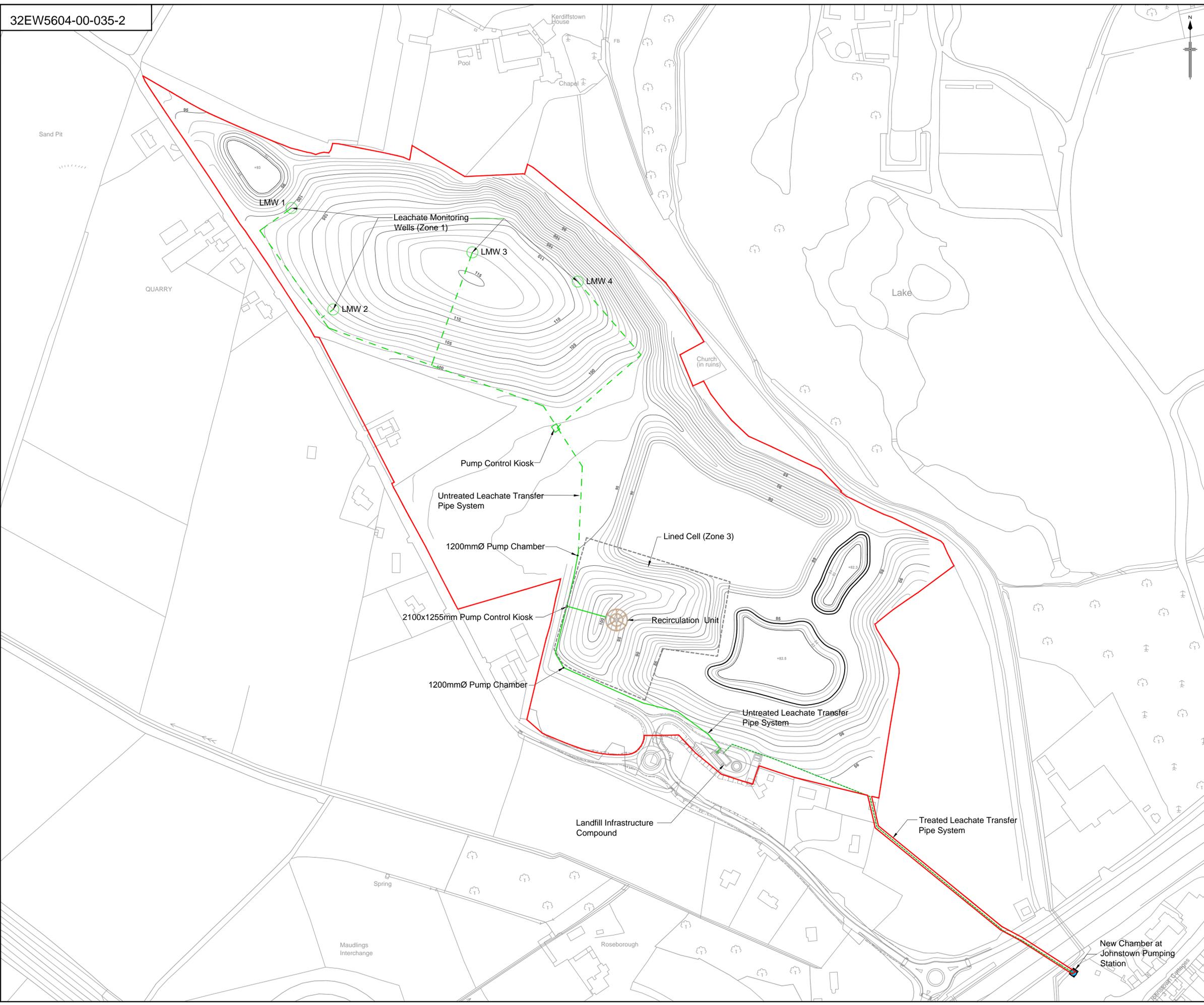
Drawing title
**FIGURE 4.16
 OUTLINE LEACHATE MANAGEMENT PLAN
 FOR THE PROPOSED PROJECT**

Drawing status
EIAR SUBMISSION

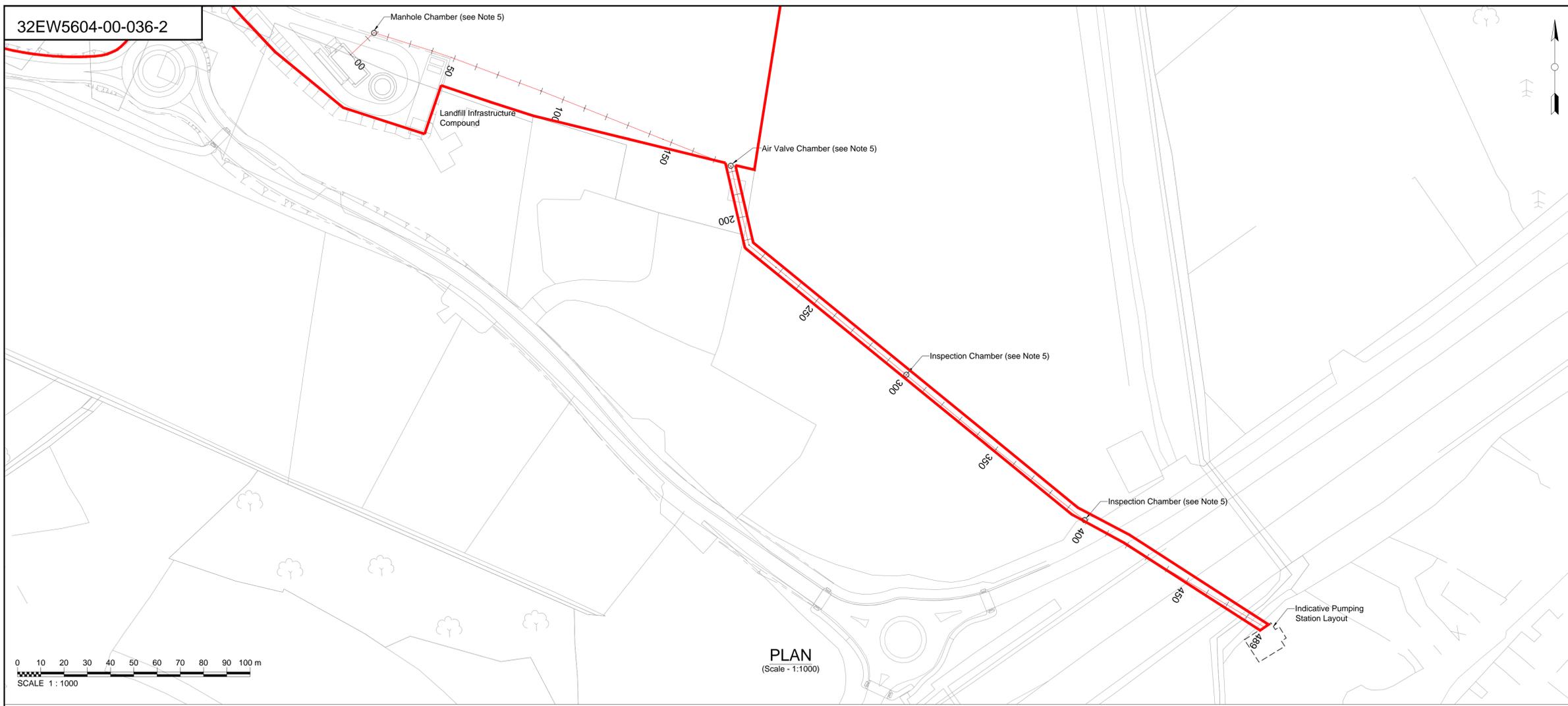
Jacobs No. 1:2000 @ A1
 Client no. 32EW5604
 Drawing number 6286

32EW5604-00-035 Rev **2**

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32EW5604-00-036-2



PLAN
(Scale - 1:1000)

FIGURE 4.17

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- KEY:**
- Licence Boundary
 - Existing Ground Profile
 - Indicative Level of Leachate Pipeline
 - Indicative Chamber Location

- NOTES:**
1. Ground profile based on topographical survey dated February 2016.
 2. Final line and level of leachate pipe is subject to detailed design following arrangement for connection by Irish Water.
 3. Levels of Johnstown pumping station taken from design drawings provided by KCC, dated November 2005.
 4. All dimensions in metres unless stated otherwise.
 5. Airtight seals to be provided to all pipework entries in all chambers.
 6. Profile shown over N7 and Morell River is interpolated from DTM data and site observations



Chainage (m)	Existing Levels (mAOD)	Invert Level (mAOD)/Chainage (m)	Pipe Gradient (1:X)	Cover (m) [Min Cover Pipe Run]	Pipe Material
0000	91.613	90.36/0.00		1.17 [1.12]	160mmø MDPE Pipe Rising Main
0010	91.552	89.94/13.70	1:33	1.12 [1.12]	
0020	91.094		1:19		
0030	90.508	88.57/1.18	1:2	1.18 [1.09]	
0040	89.808	88.24/1.12	1:84	1.12 [1.06]	
0050	89.399		-1:25		
0060	89.253	87.99/1.18	-1:57	1.20 [1.18]	
0070	89.262		1:22		
0080	89.762	88.77/1.19	1:48	1.19 [1.09]	
0090	90.043	89.65/1.11	1:33	1.11 [1.09]	
0100	90.089	89.12/1.09	1:14	1.11 [1.09]	
0110	90.314		1:29		160mmø MDPE Pipe Gravity Main
0120	90.837		1:30		
0130	91.721		1:29		
0140	92.642	90.78/1.46	1:30	2.04 [1.25]	
0150	92.913		1:29		
0160	92.876		1:30		
0170	92.824	91.44/1.77	1:29	1.25 [1.25]	
0180	92.726		1:29		
0190	92.549		1:29		
0200	92.261		1:29		
0210	91.844	90.38/2.12	1:29	1.27 [1.27]	
0220	91.310		1:29		
0230	90.594	88.96/2.32	1:29	1.38 [1.27]	
0240	90.080		1:29		
0250	89.751		1:29		
0260	89.487		1:29		
0270	89.160		1:29		
0280	88.792	87.28/2.82	1:29	1.33 [1.29]	
0290	88.473		1:29		
0300	88.230		1:29		
0310	87.924		1:29		
0320	87.793		1:29		
0330	87.572	82.85/3.79	1:29	1.41 [1.22]	
0340	86.971		1:29		
0350	86.386	82.49/3.98	1:29	1.29 [1.29]	
0360	85.736		1:29		
0370	84.912		1:29		
0380	84.339		1:29		
0390	83.962		1:29		
0400	83.858		1:29		
0410	83.846		1:29		
0420	83.833		1:29		
0430	83.976		1:29		
0440	84.452		1:29		
0450	84.516		1:29		
0460	84.552		1:29		
0470	84.438		1:29		
0480	84.212		1:29		
0490			1:29		
0494			1:29		

LONG SECTION
(Scale - 1:1000 H; 1:200 V)

Rev	Rev. Date	Purpose of revision	Drawn	Checked	Rev'd	Apprv'd
2	7/08/2017	EIAR SUBMISSION	AR	CD	CD	RR
1	30/06/2017	EIAR SUBMISSION	KMA	CD	CD	RR
0	20/09/2016	DRAFT EIS SUBMISSION	KA	CD	CD	RR

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Client: **Kildare County Council**
Comhairle Contae Chill Dara

Project: **KERDIFFSTOWN LANDFILL REMEDIATION PROJECT**

Drawing title: **FIGURE 4.17 LEACHATE MANAGEMENT FOR THE PROPOSED PROJECT- PIPELINE ROUTE AND LONG SECTION**

Drawing status: **EIAR SUBMISSION**

Jacobs No. 32EW5604
Client no. 6286
Drawing number 32EW5604-00-036
Rev 2

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KEY:

- Licence Boundary
- Inferred Zone Boundary
- Remediated Waste Extents
- Active Extraction Well - Zones 1 and 3 (Detail 1)
- Perimeter Gas Monitoring Borehole (Detail 2)
- Perimeter Venting Trench
- Zone 1 Carrier Main
- Zone 3 Carrier Main
- 63mm Collection Pipework from Wells to Manifold
- Manifold
- Existing Perimeter Gas Monitoring Borehole
- In-Waste Gas Monitoring Borehole (Subject to Remediation/Development works)

NOTES:

1. For detailed description of Zones, refer to Chapters 3 and 12 of the EIAR
2. All levels to metres OD (Main Head)

Zone	Description	Gas management
1	Primarily MSW with high methane generation.	Vertical extraction wells, linked to active extraction and flaring.
1A	C&D wastes (hard core, plastic, wood); lower methane generation than Zone 1.	Due to proximity to Zone 1, some wells installed linked to the active extraction system.
2A	Mixed MSW and C&D with some isolated areas of high methane where wastes thickest.	Gas collection layer under low permeability capping, linked to perimeter vent trench. Vent trench installed with vents which can be converted to include vertical stacks and cowls if required. Vent trench can also be adapted to include bio-oxidation layer if required.
2B	C&D waste with some MSW (low methane)	As Zone 2A.
3	Lined cell principally MSW, and fire wastes with high methane generation.	Vertical extraction wells, linked to active extraction and flaring. Extraction lines independent to that of Zone 1 to provide gas field flexibility.
4	Above ground mounds and bunds (C&D or processed waste), majority of which are to be removed during remediation, anticipated limited gas generation.	Natural methane oxidation within capping expected to further limit any fugitive releases of gas, bringing emissions to acceptable levels.
5	Waste largely absent (to be confirmed by GI)	None proposed but to be confirmed following GI, and on-going monitoring.

Table for carrier main falls:

Stable ground, fall and gas flow in same direction	Minimum pipework fall
Stable ground, fall and gas flow in opposite direction	1 in 100
Over fill, fall and gas flow in same direction	1 in 50
Over fill, fall and gas flow in opposite direction	1 in 50
Over fill, fall and gas flow in opposite direction	1 in 25



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2	07/08/2017	EIAR SUBMISSION	AR	CD	CD	RR
1	30/06/2017	EIAR SUBMISSION	KMA	CD	CD	RR
0	24/10/2016	EIS SUBMISSION	AR	SC	CD	RR



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**KERDIFFSTOWN LANDFILL
REMEDIATION PROJECT**

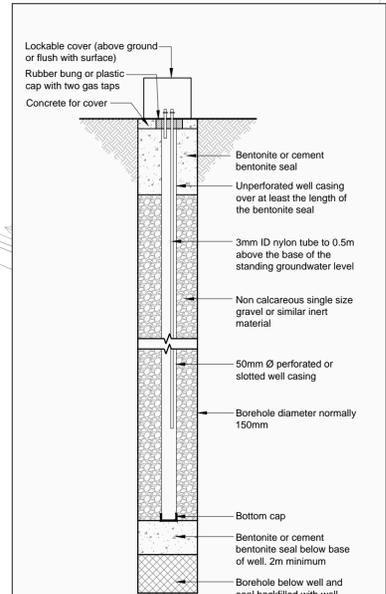
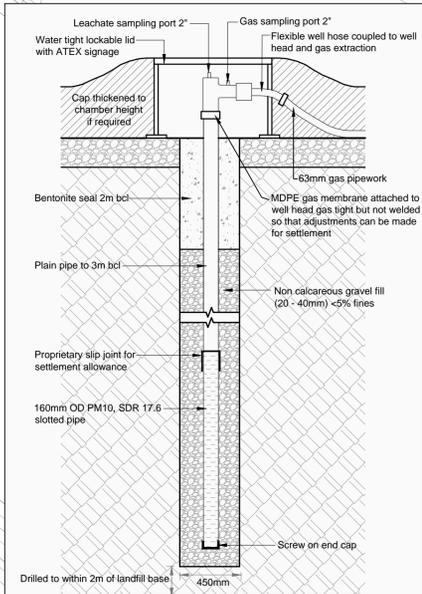
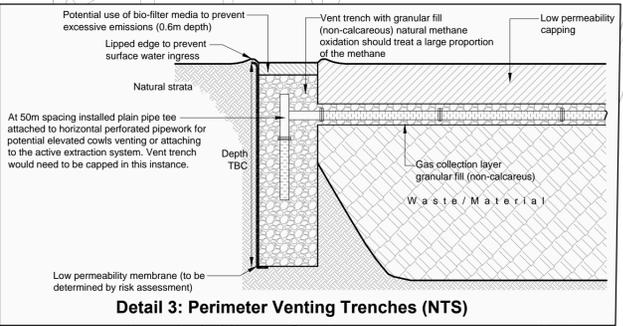
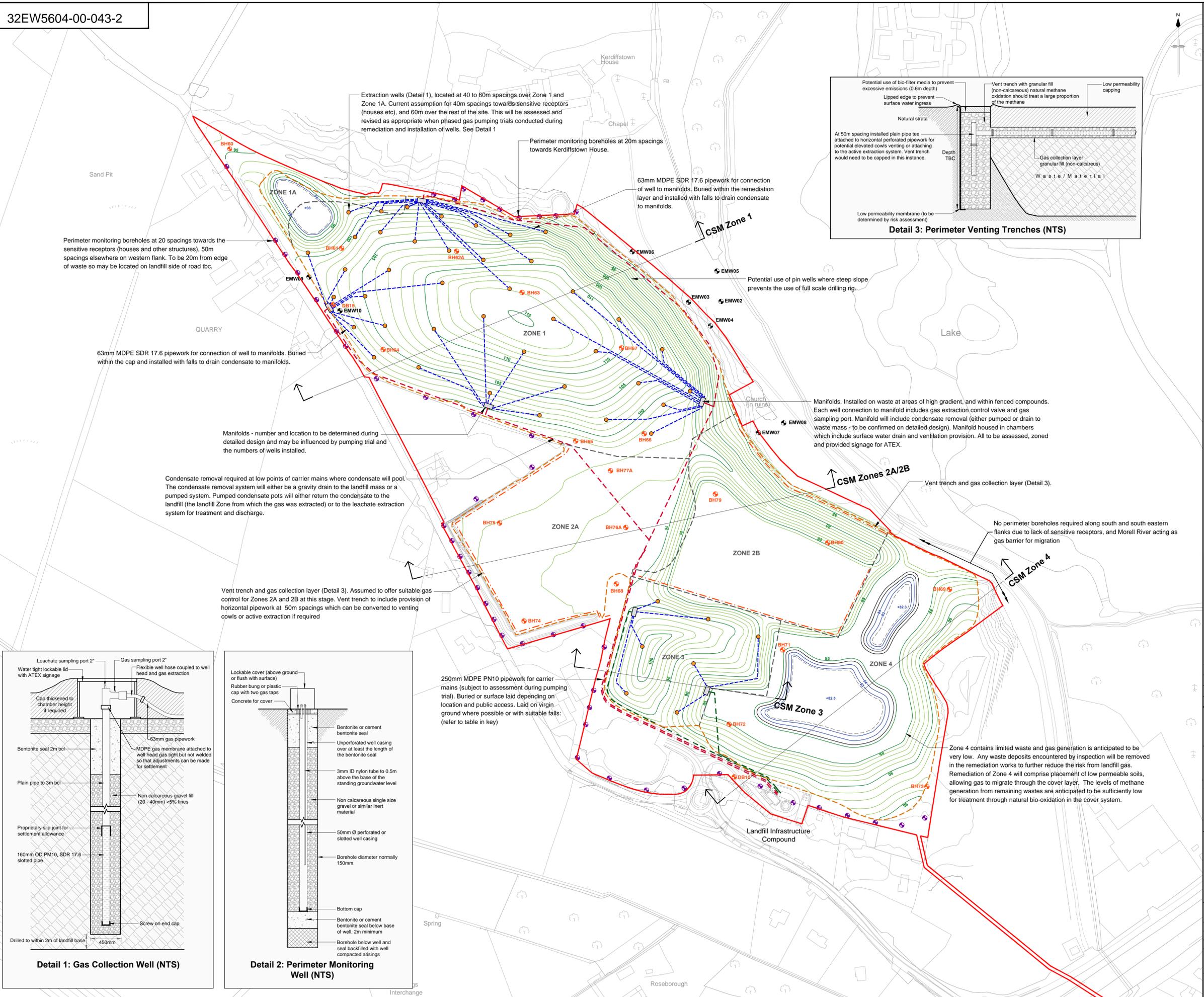
Drawing title
**FIGURE 4.18
OUTLINE LANDFILL GAS MANAGEMENT PLAN
FOR THE PROPOSED PROJECT**

Drawing status
EIAR SUBMISSION

Scale
1:2000 @A1 (DETAILS SHOWN ARE NOT FOR CONSTRUCTION PURPOSES HENCE DRAWING SHOULD NOT BE SCALED)

Jacobs No. 32EW5604
Client no. 6286
Drawing number 32EW5604-00-043
Rev 2

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Detail 1: Gas Collection Well (NTS)

Detail 2: Perimeter Monitoring Well (NTS)

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KEY:

- Licence boundary
- Approximate extent of existing rock armour
- Proposed storage pond
- Proposed ditch/open channel
- Proposed infiltration swale/trench
- Proposed underground pipework
- Proposed manhole / chamber
- Proposed outfall
- Direction of flows
- Proposed soakaway
- Surface water emission point
- Ground emission point
- Existing Cops (mature trees)
- GL Ground Level
- TWL Top Water Level
- BWL Bottom Water Level

- NOTES:**
1. All levels are to metres OD (Main Head) unless stated otherwise.
 2. All dimensions are in millimetres unless stated otherwise.
 3. This drawing should be read in conjunction with the Surface Water Management Plan.
 4. The size and shape of the proposed soakaway is to be confirmed during detailed design phase.
 5. The size and general arrangement of culvert between Pond 2 and Pond 3 is to be confirmed during detailed design phase.
 6. For section details refer to Drawings 32EW5604-00-045 and 32EW5604-00-046. (In Surface Water Management Plan).
 7. Drainage from upgraded road will tie into the existing road.



2	07/08/2017	AIAR SUBMISSION	AR	CD	CD	RR
1	30/06/2017	EIAR SUBMISSION	KMA	CD	CD	RR
0	14/12/2016	EIS SUBMISSION	VT	PHC	AHK	RR
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 REMEDIATION PROJECT

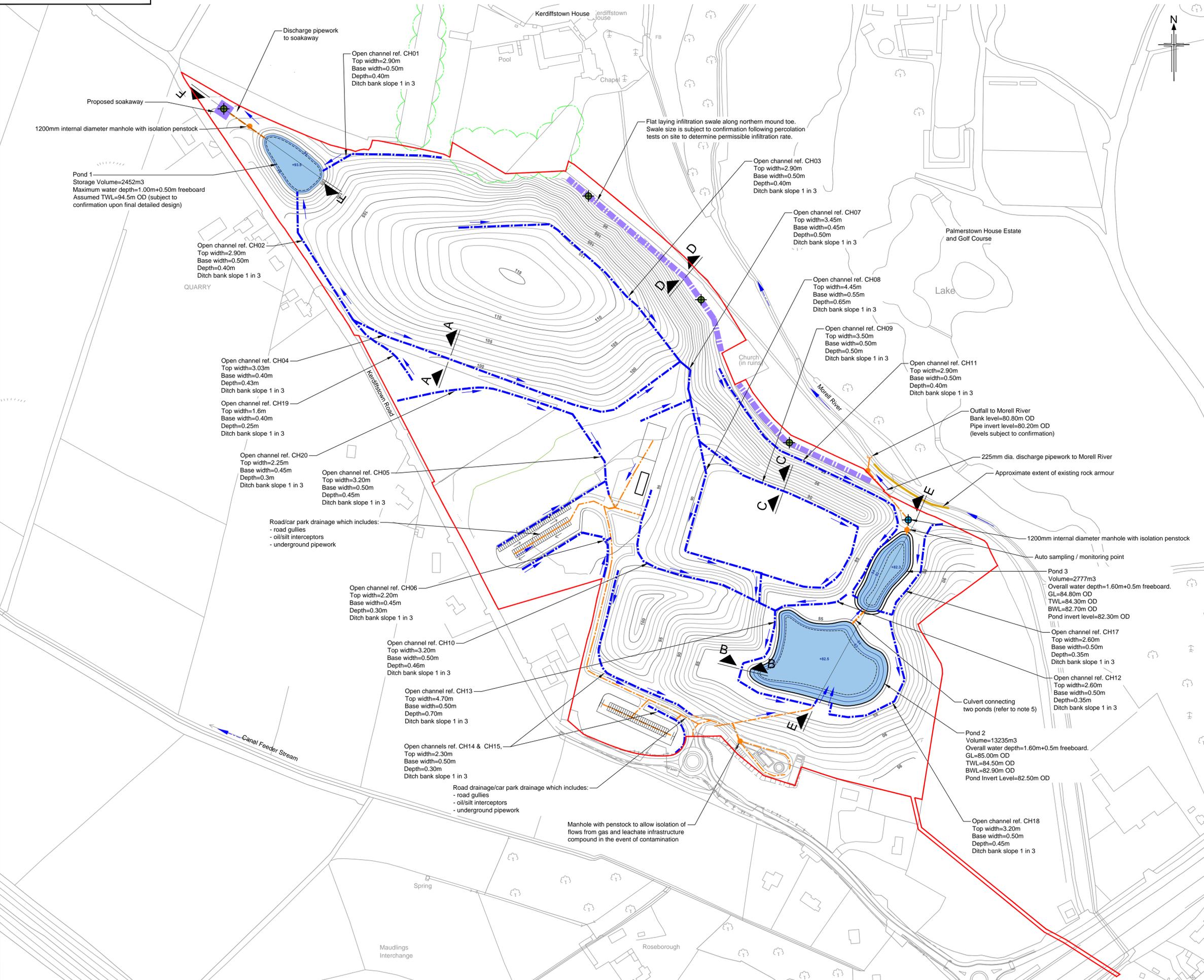
Drawing title
 FIGURE 4.19
 SURFACE WATER MANAGEMENT
 FOR THE PROPOSED PROJECT
 OUTLINE DRAINAGE LAYOUT

Drawing status
 EIAR SUBMISSION

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