

SECTION D – INFRASTRUCTURE & OPERATION

Sub-Section	Title	Location of Information
D.1	Infrastructure	WLA p.20 and Attachment D.1 EIS Vol.1, Section 2.5
D.2	Facility Operation	WLA p.21 and Attachment D.2 EIS Vol.1, Section 2.6
D.3	Liner System	WLA p.21 and Attachment D.3
D.4	Leachate Management	WLA p.22 and Attachment D.4
D.5	Landfill Gas Management	WLA p.22-23 and Attachment D.5
D.6	Capping System	WLA p.24 and Attachment D.6

Figure No.	Title	Scale	Size
D.1a	Proposed C, D & E Waste Recovery Facility and Existing Conditions on Lagoons	1:2500	A3
D.1b	Proposed Facility Infrastructure during Capping and Land Reclamation Operations (Schematic)	1:2,500	A3
D.1c	Proposed C, D & E Waste Recovery Facility Infrastructure	1:800	A3
D.1d	Proposed Site Reception Detail	1:400	A3
D.1e	Bunded Fuel Tanks Lading Area, Quarantine & Skip Area Details	1:200	A3

ATTACHMENT D.1

INFRASTRUCTURE

*For inspection purposes only.
Consent of copyright owner required for any other use.*

D.1 INFRASTRUCTURE AND OPERATION

This attachment contains the appropriate documentation related to the infrastructure and operation of the proposed Facility. The information provided below follows the sequence and headings established in Table D.1 of the waste licence application. Refer to Figure D.1a to Figure D.1e attached at the end of this attachment for further details.

D.1.a Site Security Arrangements Including Gates and Fencing

A new entrance to the site will be used for access. A security gate will be placed here which will be locked outside operational hours. Fencing around the site boundary will be repaired or replaced as required. Full details of the Site Security for the C,D&E Waste Recovery Facility are outlined in Section 2.5 of the EIS (Volume 1).

D.1.b Designs for Site Roads

Areas of hardstand and hardcore will be used on the site. Haul roads will be identified by appropriate signage. Full details of the access road for the C,D&E Waste Recovery Facility are outlined in Section 2.5 of the EIS (Volume 1).

D.1.c Design of Hardstanding Areas

Hardstand areas will be placed at the entrance, car parking areas and around site office buildings. Full details of the proposed hardstanding area are outlined in Section 2.5 of the EIS (Volume 1).

D.1.d Plant

Plant used to operate the site will include: Loading Shovels, Excavators, Grizzly, Jaw crusher, Screener. Full details of the all plant for the C,D&E Waste Recovery Facility are outlined in Section 2.5 of the EIS (Volume 1).

D.1.e Wheel-wash

A wheel wash unit will be installed on-site to clean vehicles entering and leaving the site. Full details of the wheel wash for the facility are outlined in Section 2.5 of the EIS (Volume 1).

D.1.f Laboratory Facilities

External off- site commercial accredited laboratories will be used.

D.1.g Design and Location of Fuel Storage Areas

Fuel storage will consist of two 5,000 litre tanks with appropriate bunding, Full details of fuel storage areas for the Facility are outlined in Section 2.5 of the EIS (Volume 1).

D.1.h Waste Quarantine Areas

A bunded waste quarantine area will be constructed on-site to secure suspect non-inert waste prior to removal. Full details of the waste quarantine area for the C,D&E Waste Recovery Facility are outlined in Section 2.5 of the EIS (Volume 1).

D.1.i Waste Inspection Areas

Waste will be inspected by means of CCTV system at the weighbridge prior to entrance. If permission is granted further inspection will take place once the load has been tipped. Full details of the waste inspection for the C,D&E Waste Recovery Facility are outlined in Section 2.4 and 2.6 of the EIS (Volume 1).

D.1.j Traffic Control

All traffic entering the site will be directed towards the weigh bridge for inspection and weighing. If permission is granted the vehicle will proceed through the wheel wash towards the processing area where it will deposit its load for further inspection. The vehicle will leave the site passing through the wheelwash and over the weighbridge before exiting.

D.1.k Sewerage and Surface Water Drainage Infrastructure

Details of all sewage and surface water drainage are outlined in section 2.5 of the EIS (Volume 1).

D.1.l All Other Services

Details of all on-site services are outlined in section 2.5 of the EIS (Volume 1).

D.1.m Plant Sheds, Garages and Equipment Compound

There will be no Plant Sheds, Garages and Equipment Compounds on-site.

D.1.n Site Accommodation

There will be two porta-cabins on-site. One will be used as a site office, canteen, and toilet facility. The second will be used as an office building at the weighbridge.

D.1.o Fire Control System, Including Water Supply

Full details of the water supply system for the Facility are outlined in Section 2.5 of the EIS (Volume 1).

D.1.p Civic Amenity Facilities

Not Applicable. There will be no civic amenity facility present on-site.

D.1.q Any Other Waste Recovery Infrastructure

Details of all the Construction and Demolition Waste Infrastructure for the Facility are outlined in Section 2.5 of the EIS (Volume 1).

D.1.r Composting Infrastructure

Not Applicable. No composting will be carried out at the Facility.

D.1.s Construction and Demolition Waste Infrastructure

Details of the Construction and Demolition Waste Infrastructure for the C,D&E Waste Recovery Facility are outlined in Section 2.5 of the EIS (Volume 1).

D.1.t Incineration Infrastructure (if applicable)

Not applicable.

D.1.u Any Other Infrastructure

Not Applicable

ATTACHMENT D.2
FACILITY OPERATION

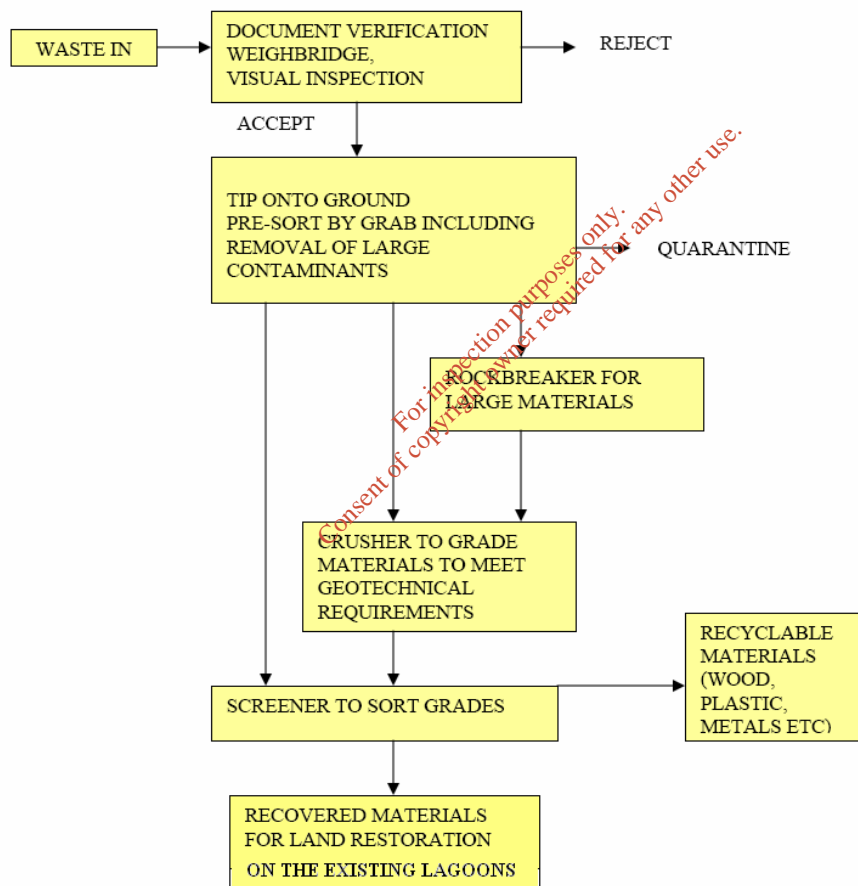
*For inspection purposes only.
Consent of copyright owner required for any other use.*

D.2 FACILITY OPERATION

D.2.a Unit Operations

Waste accepted at the facility will be placed in different stockpiles for crushing or sorting at the processing area or if suitable for use in the capping and restoration works will be placed directly on the waste surface. A primary sorting unit will sort material into fines and oversize material which is crushed and passed through a screened for final grading. Refer to Section 2.6 of the EIS (Volume 1) for the operation of the C,D&E Waste Recovery Facility. Refer to attached Figures D.1a to D.1e for layout of the Facility.

D.2.b Flow Diagram



Refer to Section 2.6 of the EIS (Volume 1) for the process involved at the facility.

D.2.c Potential Emissions

Potential emissions include dust from the processing of the accepted waste, noise from the operating equipment and fuel spillages. Refer to Section 7 Water, Section 9 Air and Section 10 Noise of the EIS (Volume 1) for information regarding potential emissions.

D.2.d Laboratory Facility Activities

Not Applicable. Testing will be carried out off-site

D.2.e Incineration Facilities

Not Applicable

*For inspection purposes only.
Consent of copyright owner required for any other use.*

ATTACHMENT D.3

LINER SYSTEM

*For inspection purposes only.
Consent of copyright owner required for any other use.*

D.3 LINER SYSTEM

A liner system is not applicable as the proposed application is not for a landfill.

*For inspection purposes only.
Consent of copyright owner required for any other use.*

ATTACHMENT D.4
LEACHATE MANAGEMENT

*For inspection purposes only.
Consent of copyright owner required for any other use.*

D.4 LEACHATE MANAGEMENT

A leachate management system in the form of what is accepted as Best Practice for modern engineered landfills for household, commercial or industrial wastes is not applicable as this application is not for any new landfill activities. Any leachate formed in the existing landfill either runs off or migrates vertically downward through the very low permeability previously deposited wastes. The existing landfill was given planning permission in 1973 and was licensed by the Agency in 1999. As capping progresses the runoff will be from the surface of the cap or shallow subsurface flow above the waste surface. Because of the permeability contrast between the underlying wastes and the granular capping materials nearly all of the runoff will be shallow subsurface flow in the 2metre cap (See Attachment D.6 for further details on the cap design).

Surface water runoff that is currently in the unfilled ponds at the site (See Figure D.1a) that is lying on the surface of the wastes in lagoons will be removed from the site over time as restoration works progress. A lined Surface Water Management Pond (SWMP) will be formed on the surface of the wastes in the area delineated as Cell 10 on Figure D.1a. This new surface water management pond will be used to collect runoff from the waste surface during and post capping operations. The collected surface water runoff will be pumped to the IDA sewer or will be released to the estuary, Lough Mahon, depending on its quality. As capping progresses the quality of runoff is expected to improve. At some point in the future following completion of the capping operations it is proposed to release the surface water runoff to the estuary. A shut off valve and sampling manhole will be installed on the discharge from the proposed Surface Water Management Pond.

The surface water presently contained in the unfilled cells 13 to 15 will also pumped out over time and discharged to the IDA sewer. These ponds will be reclaimed with inert engineered materials and will not contain wastes thus no leachate manage system is required per see.

ATTACHMENT D.5
LANDFILL GAS MANAGEMENT

*For inspection purposes only.
Consent of copyright owner required for any other use.*

D.5 LANDFILL GAS MANAGEMENT

A landfill gas management system is not applicable as the proposed application is not for a landfill. No harmful gas emissions will be generated from the proposed material which shall be inert.

*For inspection purposes only.
Consent of copyright owner required for any other use.*

ATTACHMENT D.6

CAPPING SYSTEM

*For inspection purposes only.
Consent of copyright owner required for any other use.*

D.6 CAPPING SYSTEM

Details of the proposed capping system, including timing, are provided in the sections below.

D.6a Has the daily cover been specified?

Not Applicable

D.6b Has the intermediate cover been specified?

Not Applicable

D.6c Has the temporary capping been specified?

Not Applicable

D.6d Has the Capping System been designed and does it meet the requirements of the Landfill Directive Annex 1 (3.3)?

Not Applicable

D.6e Does the Capping System include a flexible membrane liner?

The cap includes a geotextile layer, see below.

D.6f Have all capping materials been specified?

The capping material will conform to engineering standards and will conform to engineering and environmental legislation standards. The material will consist of fill material class 1C (NRA Specification for Road Works), general soil fill and recovered inert material. For full details of capping material to be used refer to Section 2.4.2 of the EIS (Volume 1). Inert secondary fill from the process conforming to a technical specification for general fill will be used to cap the site. This will be placed on a daily basis to an eventual depth of 2 metres except in some areas where a greater thickness will be placed to fill depressions, ponds etc. to make a graded cap on the existing waste cells. For further details refer to section 2.4.2 of the EIS (Volume 1). A geotextile such as Terram 1000 or similar will be placed between the waste and processed C,D&E material.

D.6g Has a Method Statement for construction been produced?

A method statement will be prepared contractor prior to commencement of the capping activities and after the field trials described in the Golder Associates (UK) Ltd April 2006

report (number 04522630.503) entitled *Ground Improvement Scheme Phase 2 Area Field Trial Mitsui Denman Site Little Island Cork*. are completed. This report was submitted to the Agency and should be on the IPPC Licence Register No. P0389-01 file.

D.6h Has a Quality Control Plan been produced?

Refer to the Operating Procedures in Appendix 2 Volume 2 of the EIS.

D.6i Has a Quality Assurance Plan been produced?

Refer to the Operating Procedures in Appendix 2 Volume 2 of the EIS.

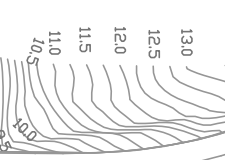
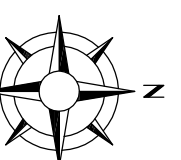
D.6j Has a programme for monitoring landfill stability been developed?

An annual survey will be carried out.

D.6k Has a programme for monitoring landfill settlement been developed?

An annual survey will be carried out. And geotechnical instrumentation such as settlement plates, horizontal inclinometers and piezometers will also be installed and monitored.

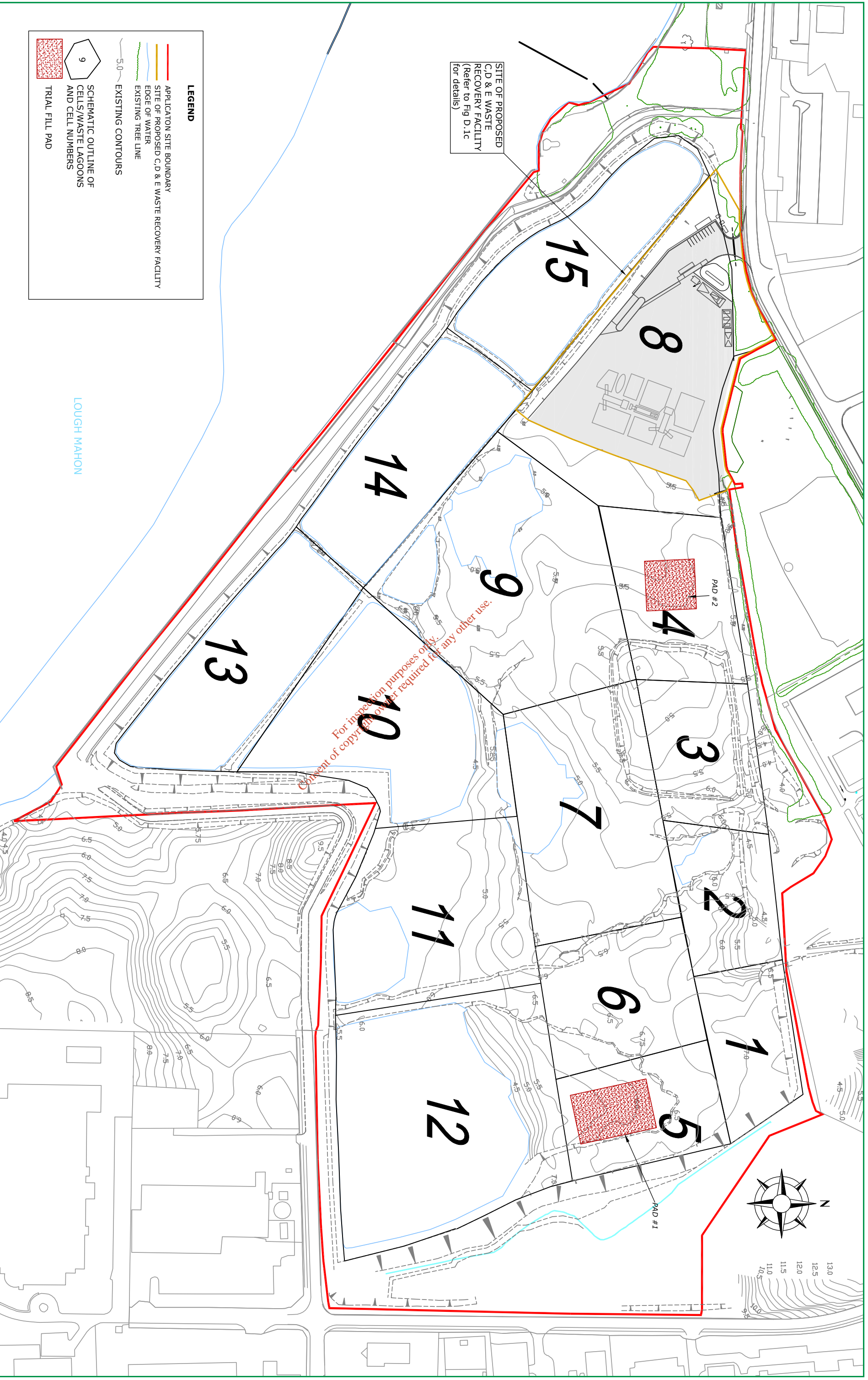
For inspection purposes only.
Consent of copyright owner required for any other use.



SITE OF PROPOSED
C,D & E WASTE
RECOVERY FACILITY
(Refer to Fig D.1c
for details)

LEGEND

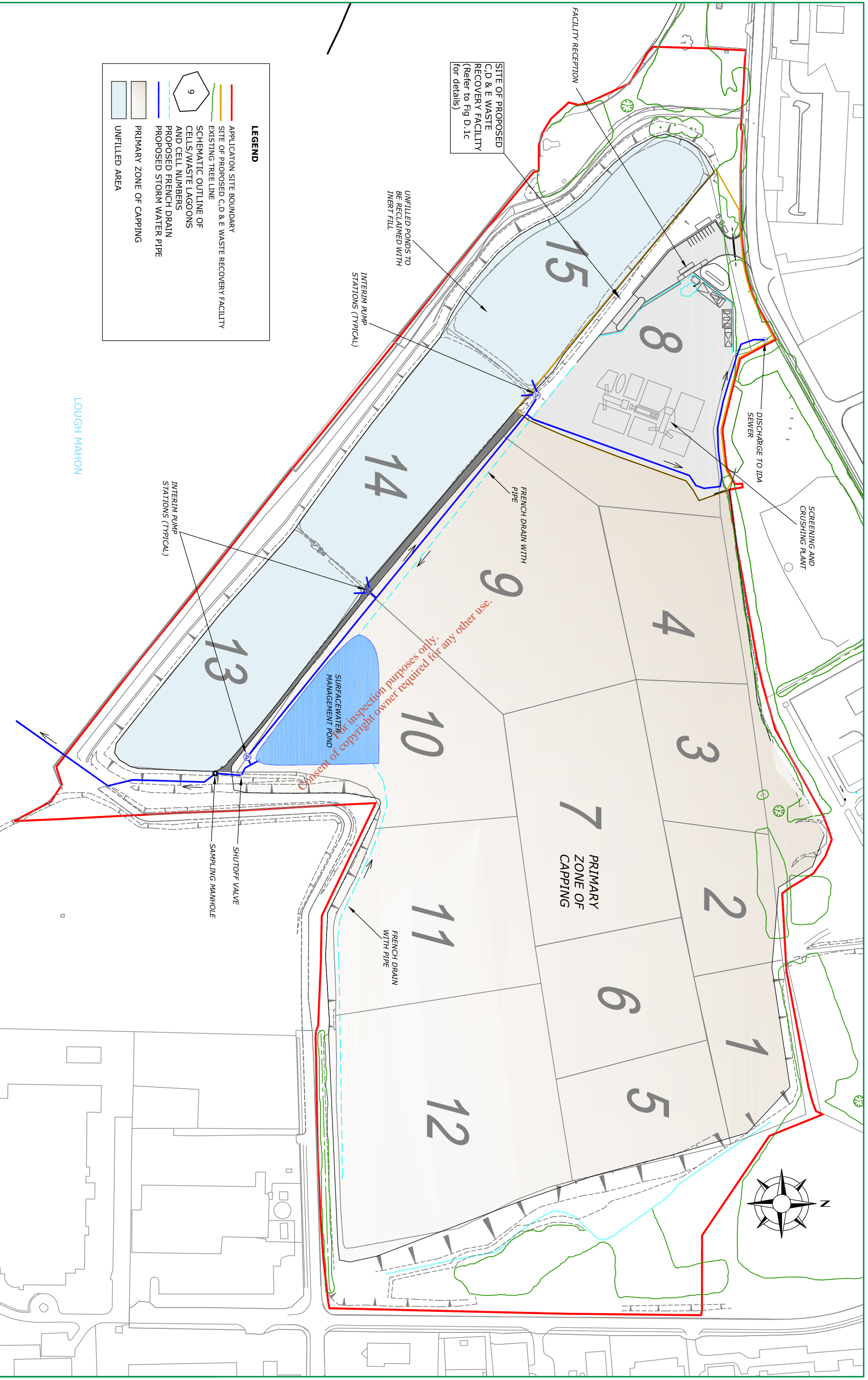
- APPLICATION SITE BOUNDARY
- SITE OF PROPOSED C,D & E WASTE RECOVERY FACILITY
- EDGE OF WATER
- EXISTING TREE LINE
- 5.0 EXISTING CONTOURS
- 9 SCHEMATIC OUTLINE OF CELLS/WASTE LAGOONS AND CELL NUMBERS
- TRIAL FILL PAD



LOUGH MAHON

<p>Client: THORNBUSH HOLDINGS Ltd.</p>		<p>Project number: 07507120021</p>		<p>Created by: CC</p>		<p>Issue to: ISSUE TO CLIENT</p>		<p>Date: May '08</p>		<p>Revision: A</p>		<p>Title: PROPOSED C,D & E WASTE RECOVERY FACILITY AND EXISTING CONDITIONS ON LAGOONS</p>		<p>Figure No.: D.1a</p>	
<p>Location: WALLINGSTOWN, LITTLE ISLAND, CO. CORK</p>		<p>File Location: GRAPHICS\2 LAND DEVELOPMENT (AUTOCAD)\THORNBUSH\W.LAD.1a</p>		<p>Checked by: DK</p>		<p>Issue to: ISSUE TO EPA</p>		<p>Date: May '08</p>		<p>Revision: B</p>		<p>Title: PROPOSED C,D & E WASTE RECOVERY FACILITY AND EXISTING CONDITIONS ON LAGOONS</p>		<p>Figure No.: D.1a</p>	
<p>Project: WASTE LICENCE APPLICATION</p>		<p>ORDNANCE SURVEY IRELAND LICENCE NUMBER: AR0056008</p>		<p>Reviewed by: GP</p>		<p>Scale: 1:1,250 A1 1:2,500 A3</p>									

Golder Associates
TOWN CENTRE HOUSE, DUBLIN ROAD, MAAS CO. KILDARE
TEL: 045 874411 - FAX: 045 874549 - WWW.GOLDER.COM

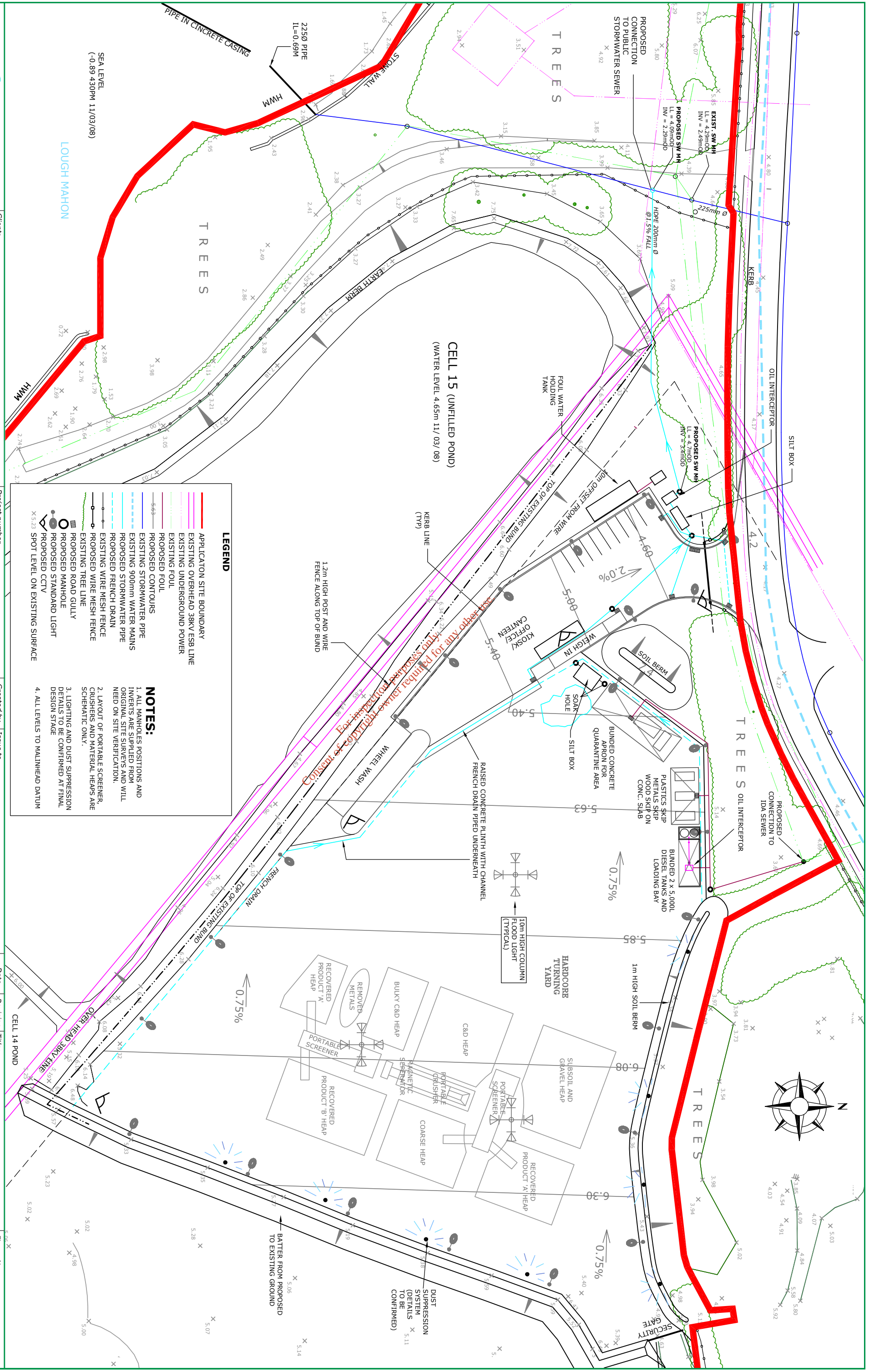


LEGEND

- APPLICATION SITE BOUNDARY
- SITE OF PROPOSED C, D & E WASTE RECOVERY FACILITY
- EXISTING TREE LINE
- SCHEMATIC OUTLINE OF CELLS/WASTE LAGOONS AND CELL NUMBERS
- PROPOSED FRENCH DRAIN
- PROPOSED STORM WATER PIPE
- PRIMARY ZONE OF CAPPING
- UNFILLED AREA

<p>Client: THORNBUSH HOLDINGS Ltd.</p>		<p>Project number: 07507120021</p>		<p>Created by: CC</p>		<p>Issue to: ISSUE TO CLIENT</p>		<p>Date: May '08</p>		<p>Revision: A</p>		<p>Title: PROPOSED FACILITY INFRASTRUCTURE DURING CAPPING AND LAND RECLAMATION OPERATIONS(SCHEMATIC)</p>		<p>Figure No.: D.1b</p>	
<p>Location: WALLINGSTOWN, LITTLE ISLAND, CO. CORK</p>		<p>File Location: GRAPHICS\2 LAND DEVELOPMENT (AUTOCAD)\THORNBUSH\WLA.D.1b</p>		<p>Checked by: DK</p>		<p>Issue to: ISSUE TO EPA</p>		<p>Date: May '08</p>		<p>Revision: B</p>		<p>Scale: 1:1,250 A1 1:2,500 A3</p>			
<p>Project: WASTE LICENCE APPLICATION</p>		<p>ORDNANCE SURVEY IRELAND LICENCE NUMBER: AR0056008</p>		<p>Reviewed by: GP</p>											





LEGEND

- APPLICATION SITE BOUNDARY
- EXISTING OVERHEAD 38KV ESB LINE
- EXISTING UNDERGROUND POWER
- EXISTING FOUL
- PROPOSED FOU L
- PROPOSED CONTOURS
- EXISTING 900mm WATER MAINS
- PROPOSED 900mm WATER MAINS
- PROPOSED STORMWATER PIPE
- EXISTING FRENCH DRAIN
- PROPOSED FRENCH DRAIN
- EXISTING WIRE MESH FENCE
- PROPOSED WIRE MESH FENCE
- EXISTING TREE LINE
- PROPOSED ROAD GULLY
- PROPOSED MANHOLE
- PROPOSED STANDARD LIGHT
- PROPOSED CCTV
- SPOT LEVEL ON EXISTING SURFACE

NOTES:

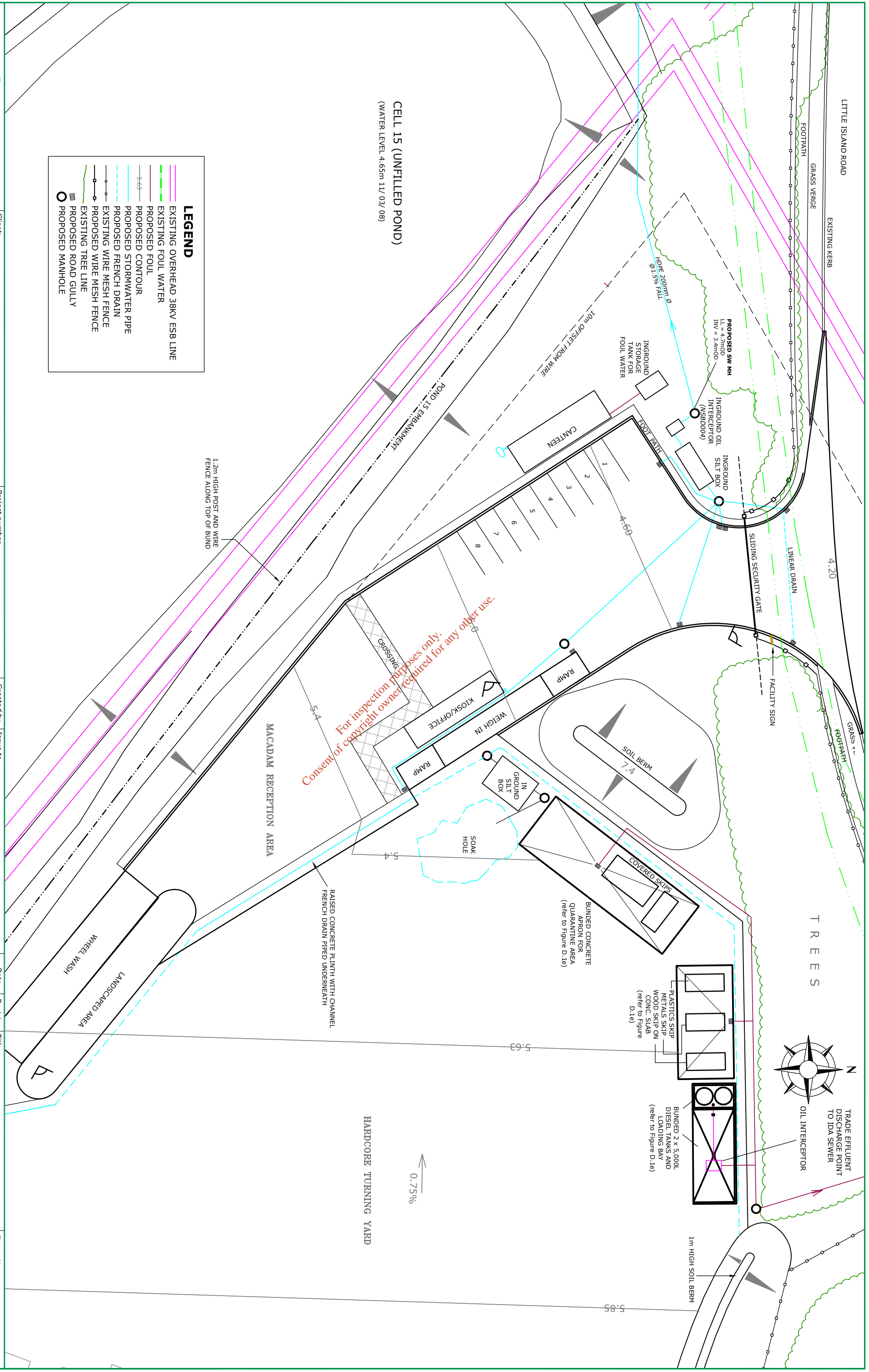
1. ALL MANHOLES POSITIONS AND INVERTS ARE SUPPLIED FROM ORIGINAL SITE SURVEYS AND WILL NEED ON SITE VERIFICATION.
2. LAYOUT OF PORTABLE SCRENER, CRUSHERS AND MATERIAL HEAPS ARE SCHEMATIC ONLY.
3. LIGHTING AND DUST SUPPRESSION DETAILS TO BE CONFIRMED AT FINAL DESIGN STAGE
4. ALL LEVELS TO MALINHEAD DATUM

<p>Client: THORNBUSH HOLDINGS Ltd.</p> <p>Location: WALLINGSTOWN, LITTLE ISLAND, CO. CORK</p> <p>Project: WASTE LICENCE APPLICATION</p>		<p>Project number: 07507120021</p> <p>File Location: GRAPHICS\2 LAND DEVELOPMENT (AUTOCAD)\THORNBUSH\WLA\D.L.C</p> <p>ORDNANCE SURVEY IRELAND LICENCE NUMBER: AR0056008</p>		<p>Created by: CC</p> <p>Checked by: DK</p> <p>Reviewed by: GP</p>		<p>Issue to: ISSUE TO CLIENT</p> <p>Issue to: ISSUE TO EPA</p>		<p>Date: May '08</p> <p>Revision: A</p> <p>Revision: B</p>		<p>Title: PROPOSED C,D & E WASTE RECOVERY FACILITY INFRASTRUCTURE</p> <p>Scale: 1:400 A1 1:800 A3</p>		<p>Figure No.:</p> <p>D.1c</p>	
--	--	--	--	---	--	--	--	---	--	---	--	--	--



TOWN CENTRE HOUSE, DUBLIN ROAD, MAAS CO. KILDARE
 TEL: 045 874411 - FAX: 045 875459 - WWW.GOLDER.COM

SEA LEVEL
 (-0.89 430PM 11/03/08)



CELL 15 (UNFILLED POND)
(WATER LEVEL 4.65m 11/ 03/ 08)

LEGEND

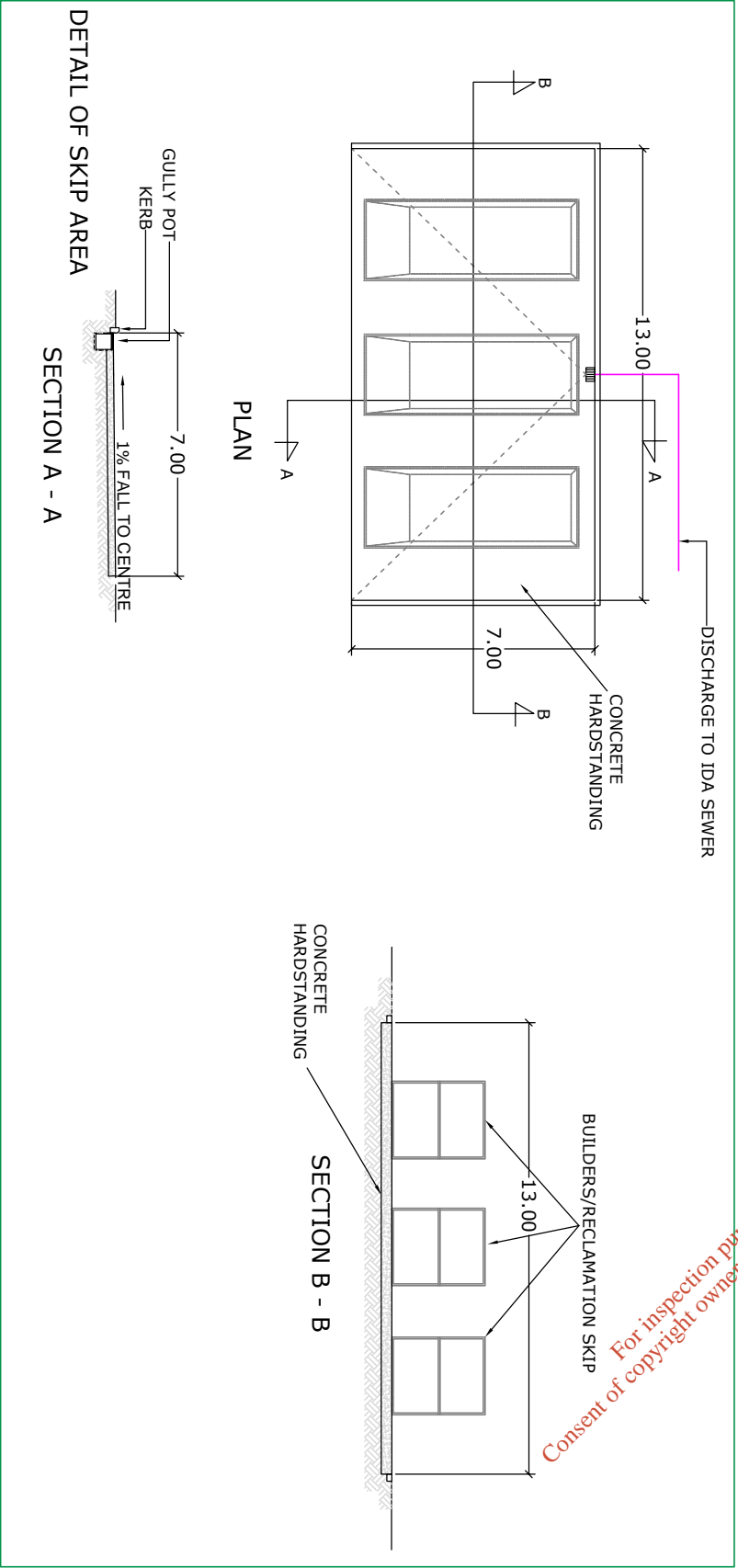
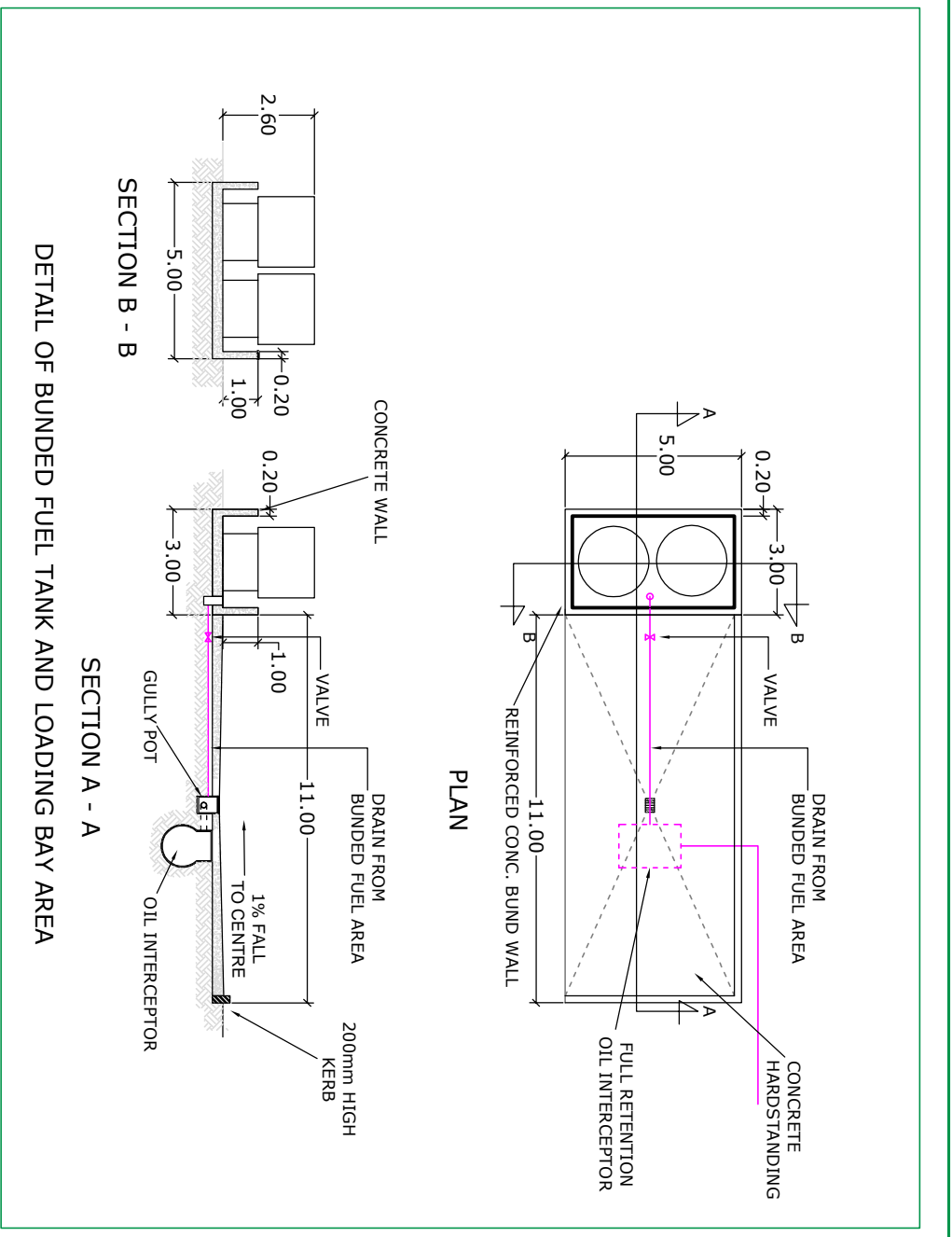
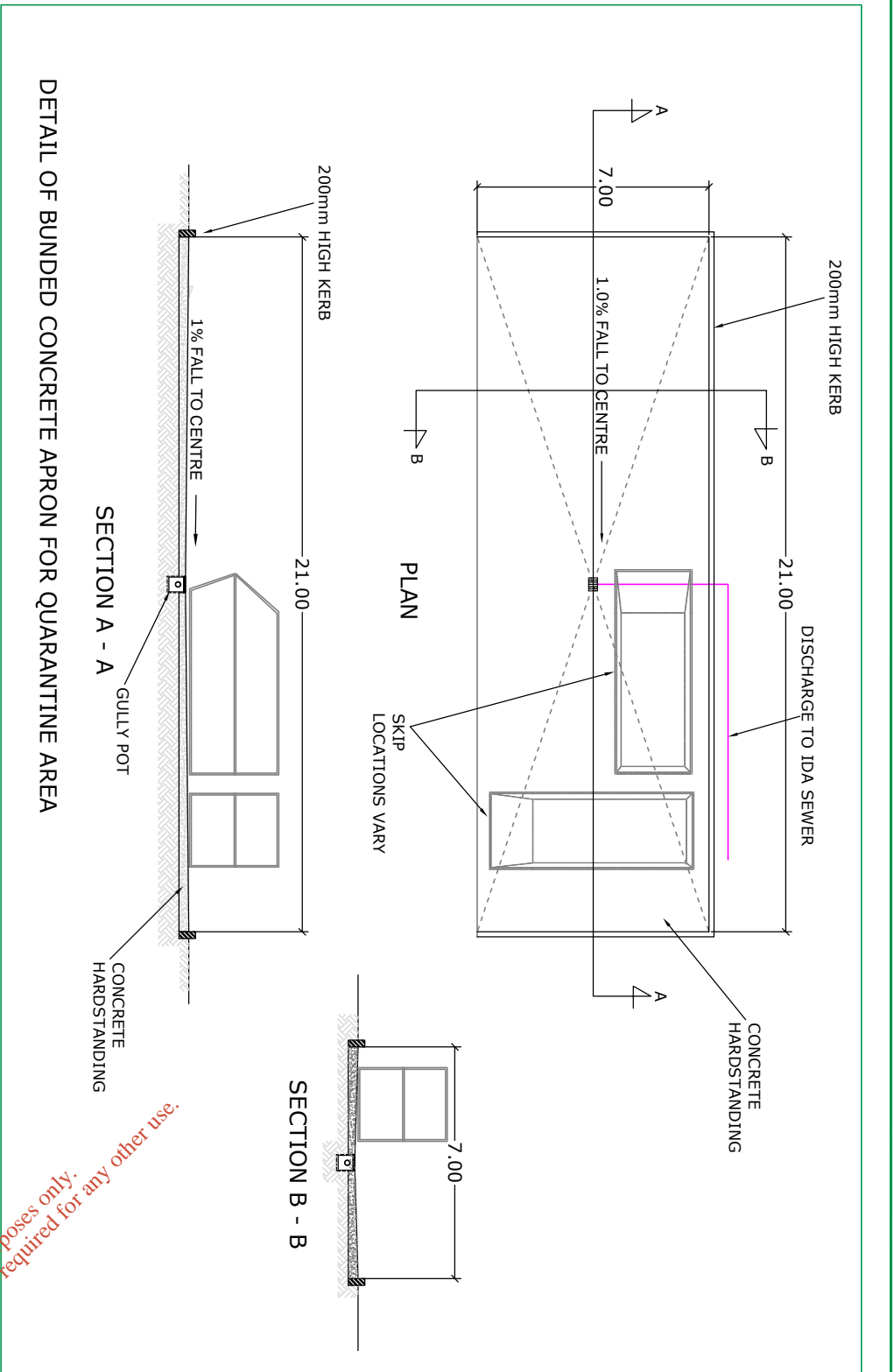
- EXISTING OVERHEAD 38KV ESB LINE
- EXISTING FOUL WATER
- PROPOSED FOUL
- PROPOSED CONTOUR
- PROPOSED STORMWATER PIPE
- PROPOSED FRENCH DRAIN
- EXISTING WIRE MESH FENCE
- PROPOSED WIRE MESH FENCE
- EXISTING TREE LINE
- PROPOSED ROAD GULLY
- PROPOSED MANHOLE

For inspection purposes only.
Consent of copyright owner required for any other use.

<p>Client: THORNBUSH HOLDINGS Ltd.</p>		<p>Project number: 07507120021</p>		<p>Created by: CC</p>		<p>Issue to: EIS ISSUE TO CLIENT</p>		<p>Date: May '08</p>		<p>Revision: A</p>		<p>Title: PROPOSED SITE RECEPTION</p>		<p>Figure No:</p>	
<p>Location: WALLINGSTOWN, LITTLE ISLAND, CO. CORK</p>		<p>File Location: GRAPHICS\2 LAND DEVELOPMENT (AUTOCAD)\THORNBUSH\WLA\D1.D</p>		<p>Checked by: DK</p>		<p>EIS ISSUE TO EPA</p>		<p>May '08</p>		<p>B</p>		<p>DETAIL</p>		<p>D.1d</p>	
<p>Project: WASTE LICENCE APPLICATION</p>		<p>ORDNANCE SURVEY IRELAND LICENCE NUMBER: AR0056008</p>		<p>Reviewed by: GP</p>		<p>Scale: 1:200 A1 1:400 A3</p>									



TOWN CENTRE HOUSE, DUBLIN ROAD, MAAS, CO. KILDARE
TEL.: 045 874411 - FAX: 045 874549 - WWW.GOLDER.COM



NOTE:
All banded areas will be unroofed. Hooded skips, where shown, will be placed on concrete areas for holding waste awaiting final destination.

For inspection purposes only. Consent of copyright owner required for any other use.

<p>Golder Associates</p> <p>TOWN CENTRE HOUSE, DUBLIN ROAD, MAAS, CO. KILDARE TEL.: 045 874411 - FAX: 045 874549 - www.golder.com</p>		<p>Client: THORNBUSH HOLDINGS Ltd.</p> <p>Location: WALLINGSTOWN, LITTLE ISLAND, CO. CORK</p> <p>Project: WASTE LICENCE APPLICATION</p>	<p>Project number: 07507120021</p> <p>File Location: GRAPHICS\2 LAND DEVELOPMENT (AUTOCAD)\THORNBUSH\WLAND.1e</p> <p>ORDNANCE SURVEY IRELAND LICENCE NUMBER AR0056008</p>	<p>Created by: GF</p> <p>Checked by: DK</p> <p>Reviewed by: GP</p>	<p>Issue to: ISSUE TO CLIENT</p> <p>ISSUE TO EPA</p>	<p>Date: May '08</p> <p>May '08</p>	<p>Issue: A</p> <p>B</p>	<p>Title: BUNDED FUEL TANKS LOADING AREA, QUARANTINE & SKIP AREA DETAILS</p> <p>Scale: 1:100A1 1:200A3</p>	<p>Figure No. D.1e</p>
--	--	--	--	--	--	-------------------------------------	--------------------------	--	-------------------------------