

Nuvu Developments Ltd
Former Jacksons Brickworks, Ten Acres Lane
Canal Corridor Protection Measures

Rev A

February 2024

Contaminated Land, Brownfield & Environmental Contracting



REPORT TITLE: Canal Corridor Protection Measures

REPORT NUMBER: Rev A

CLIENT NAME: Nuvu Developments Ltd

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Table of Contents

1.0	Introduction	1
	1.1 Appointments	1
	1.2 Rochdale Canal.....	1
	1.3 Document Purpose	2
2.0	Protection Measures During Remediation	4
	2.1 Surface Water Runoff	4
	2.2 Water Levels	4
	2.3 Existing Drainage Infrastructure	5
	2.4 Silt Management.....	5
	2.5 Dust and Windblown Debris.....	5
	2.6 Land Stability and Structural Integrity	6
	2.7 Emergency Procedures.....	7
	2.8 Potential Disruption.....	7
3.0	Protection Measures Post Remediation	9
	3.1 Surface Water Runoff	9

Appendices

Appendix A	Drawings
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1.0 Introduction

1.1 Appointments

- 1.1.1 Vertase FLI Ltd (VertaseFLI) was employed by Nuvu Developments Ltd ('the Client') to undertake pre-contract services to address the requirements of outstanding pre-commencement planning conditions associated with proposed land remediation works at the former Jackson's Brickworks, off Ten Acres Lane, Newton Heath, Manchester ('the Site').
- 1.1.2 The northern boundary of the Site is formed by the Rochdale Canal, which runs from Manchester to Sowerby Bridge, West Yorkshire. The land forming the canal and its towpath are the property of Canal & Rivers Trust. The length of the Site fronting the canal is approximately 780m.

1.2 Rochdale Canal

- 1.2.1 The Rochdale canal was constructed in the late 1790's and early 1800's. Canals at this time were generally excavated to between 4ft and 6ft (1.22m and 1.83m) and the current maximum boat draught for passage on the Rochdale canal is 3ft 9inches (1.14m). Due to the age of the canal, exact details with respect to its construction and lining are unavailable.
- 1.2.2 Boreholes and trial pits excavated along the northern boundary of the Site as part of previous investigations undertaken by others have recorded the presence of Glacial Till to depths greater than 3m below ground level. Therefore, in the absence of information relating to the lining of the canal (i.e. the presence of an engineered clay liner), it is considered likely that the canal is, at the very least, naturally clay lined (i.e., it has been excavated as a cutting into natural low permeability clay).
- 1.2.3 The assumption that shallow groundwater present beneath the Site is not in hydraulic connectivity with the surface water in the canal is supported by the difference in water levels in the canal relative to those recorded in boreholes located on Site that are screened within the Made Ground.

- 1.2.4 Furthermore, in previous site investigations works undertaken by Wardell Armstrong, it was reported that contaminants present within the surface water of the canal are not consistent with those present in shallow groundwater samples obtained from Site boreholes screened in the Made Ground.

1.3 Document Purpose

- 1.3.1 The purpose of this document is to provide sufficient information to satisfy Condition 18 of Planning Permission 129197/FO/2021 granted by MCC. The wording of this condition is reproduced in paragraph 1.3.2 below:

- 1.3.2 *Prior to the commencement of on-site remediation works, finalised details of measures intended to protect the canal corridor from pollution and contamination, including:*

- *How surface water is to be captured, treated and disposed of and measures to deal with any contaminated water to avoid any adverse impact on the canal.*
- *Management of water levels on the site to prevent water discharge into the canal during the works.*
- *Any existing drains identified on the site should be blocked off prior to the remediation of the site.*
- *Any measures including a buffer zone or physical boundary such as sandbags, silt fence, silt trench, earth bund along the sites frontage with the canal, and minimising stockpiles of materials within the site, and covering any stockpiles to avoid mobilisation due to rainfall.*
- *Measures are also necessary to reduce dust and windblown debris from the site with suitable dust suppression techniques.*
- *Full details of the proposed mitigation works intended to safeguard land stability and structural integrity of the canal should be provided.*

Shall be submitted to and approved in writing by the Local Planning Authority. The development shall be implemented in accordance with the approved canal protection measures.

- 1.3.3 The proposed canal protection measures to address the requirements of this condition are detailed in Section 2.0.

2.0 Protection Measures During Remediation

2.1 Surface Water Runoff

- 2.1.1 In its pre-remediation condition, there is currently the possibility that contaminants may enter the canal via surface water runoff due to the topography of the site which falls towards the canal. It has been noted during previous site walkovers that some seepages are visible along the length of the Site fronting the canal towpath.
- 2.1.2 During the remediation works, the management of surface water runoff (including the seepages observed) shall be undertaken in accordance with the temporary surface water drainage strategy prepared to address Condition 14 of Planning Permission 129197/FO/2021, which includes:
- A physical earth bund barrier and surface water collection trench shall be constructed to intercept surface water runoff along the northern site boundary fronting the canal tow path. The location and extent of this is illustrated in Drawing D4744_21 (Appendix A).
 - Surface water shall be pumped from the collection trench, on an as required basis, to a suitable storage area on site located away from the site boundary for testing, treatment and disposal via consented discharge.
 - The integrity of the physical earth bund barrier and surface water collection trench shall be inspected regularly, and any defects rectified immediately.

2.2 Water Levels

- 2.2.1 During the remediation works, water levels on Site shall be monitored and managed to prevent water levels from rising to an extent that they discharge into the canal. Water encountered within excavations and low points on the Site will be pumped to an on-Site water treatment plant to reduce contaminant concentrations to acceptable levels prior to consented discharge.
- 2.2.2 The water treatment plant will be located on an impermeable bunded pad. The pad and bund will be subject to repair as required to ensure

that there is no further risk to Controlled Waters receptors in the event of system failure. Any build-up of rainwater or spillage water will be retained within the bund and passed through the treatment plant for consented discharge.

2.3 Existing Drainage Infrastructure

- 2.3.1 Any existing redundant drains and other connections / preferential pathways to the canal shall be identified, traced and decommissioned within the Site boundary at the commencement of the remediation works. Any drains that are blocked off at the Site boundary shall be surveyed for inclusion on an as-built drawing in the final completion report.

2.4 Silt Management

- 2.4.1 The surface water runoff measures described in Section 2.1 are also intended to manage silt runoff. The water treatment plant shall include siltation tanks to promote silt deposition prior to ongoing treatment and consented discharge. The potential for any erosion of the physical earth bund barrier contributing to silt runoff shall be minimised by appropriate design (shallow slope angles) and seeding of the bund if necessary.

2.5 Dust and Windblown Debris

- 2.5.1 Primary dust-generating activities are identified to include demolition, on-site vehicle movements, tipping of materials from vehicles, tipping of materials from vehicles, materials treatment operations (including screening, crushing, turning and stockpiling) and reinstatement activities.
- 2.5.2 During the remediation works, the management of dust and windblow debris shall be undertaken in accordance with the Construction Management Plan (CMP) and Construction Environmental Management Plan (CEMP) prepared to address Condition 3 and Condition 4 of Planning Permission 129197/FO/2021, respectively. These procedures are:

- The use and maintenance of good quality site roads and the suppression of dust on haul roads through the implementation of a tractor and bowser to dampen down running surfaces.
- Enforcing speed limits for site plant along site access and haulage roads.
- Using dust suppression misters / spray bars during treatment works as required.
- Suspending dust-generating activities during unfavourable weather conditions (e.g. high winds) or if dust is identified beyond the Site boundaries.
- Undertaking dust-generating activities at locations away from the Site boundary and sensitive receptors wherever possible.
- Minimise the tipping height from which materials are dropped from excavator buckets onto the ground or into lorries.
- Use of modern and properly maintained mobile plant.
- Implementation and maintenance of wheel washing facilities to minimise deposition of mud / dust on the public highway.
- Ongoing assessment of dust generation and its impact on neighbouring land throughout the working day by the VertaseFLI Site Manager and Environmental Engineer.
- The use of site inductions and toolbox talks to maintain an awareness of the importance of minimising and managing dust generation amongst the plant operators and labourers.

2.6 Land Stability and Structural Integrity

2.6.1 To safeguard the stability and structural integrity of the canal during the remediation works, the following mitigation measures shall be employed:

- A suitable stand off from the edge of the towpath closest to the Site boundary will be established. This is to be agreed on site with the Clients engineer/representative and The Canal and River Trust.

- Excavations closest to the canal are anticipated to be predominantly shallow (1mbgl turnover) and will include suitable batters to be edge of the Site/agreed standoff from the tow path.
- Where deeper excavations are required close to the site boundary with the canal tow path, (currently envisaged as one small section of Made Ground), excavations will be overseen by the VertaseFLI in house temporary works supervisor to ensure that any risks are identified and that appropriate mitigation measures are employed. Visual inspections of the canal will be undertaken daily by the VertaseFLI Site Manager and/or Environmental Engineer.

2.7 Emergency Procedures

- 2.7.1 As part of the VertaseFLI Integrated Management System (IMS), there is a requirement to prepare emergency plans to respond to pollution incidents that could occur during the implementation of land remediation works. In the unlikely event that pollution of the canal was to occur during the remediation works, and that the pollution was a result of the remediation works, emergency procedures would be implemented.
- 2.7.2 VertaseFLI shall retain the appropriate equipment on site to implement emergency plans to respond to a pollution event throughout the works. These include absorbent booms, fence booms and mobile pumping equipment.
- 2.7.3 Emergency plans will be effectively communicated to the Site team as part of the Site inductions and shall undergo continuous review as the works progress.

2.8 Potential Disruption

- 2.8.1 It is acknowledged that the Environment Agency, in their first review of the information submitted to discharge condition 18 of planning permission 129197/FO/2021 with respect to canal corridor protection, raised concerns over the impact of potential disruption over the course of the enabling works, on the temporary surface water drainage system.

- 2.8.2 While the Environment Agency did not specify examples of the potential disruption foreseen, it has been interpreted to include events such as accidental damage to the earth bund barrier, temporary loss of storage volume and or flow within the surface water interception trench (e.g., as a result of accidental material deposition or siltation) and heavy rainfall events leading to greater than expected volumes of surface water runoff.
- 2.8.3 With regard to accidental damage of the earth bund barrier and surface water interception trench, as discussed in Section 2.1 , the integrity of the bund and trench shall be inspected regularly, and any defects rectified immediately.
- 2.8.4 The storage volume within the surface water interception trench, which shall be at least $\sim 800\text{m}^3$ based on the minimum dimensions of the trench, will be sufficient to capture all likely surface water runoff from a daily rainfall event. Notwithstanding this, intercepted surface water within the trench shall be pumped on a frequent basis for treatment and consented discharge, thus increasing the daily capacity of the trench if required.

3.0 Protection Measures Post Remediation

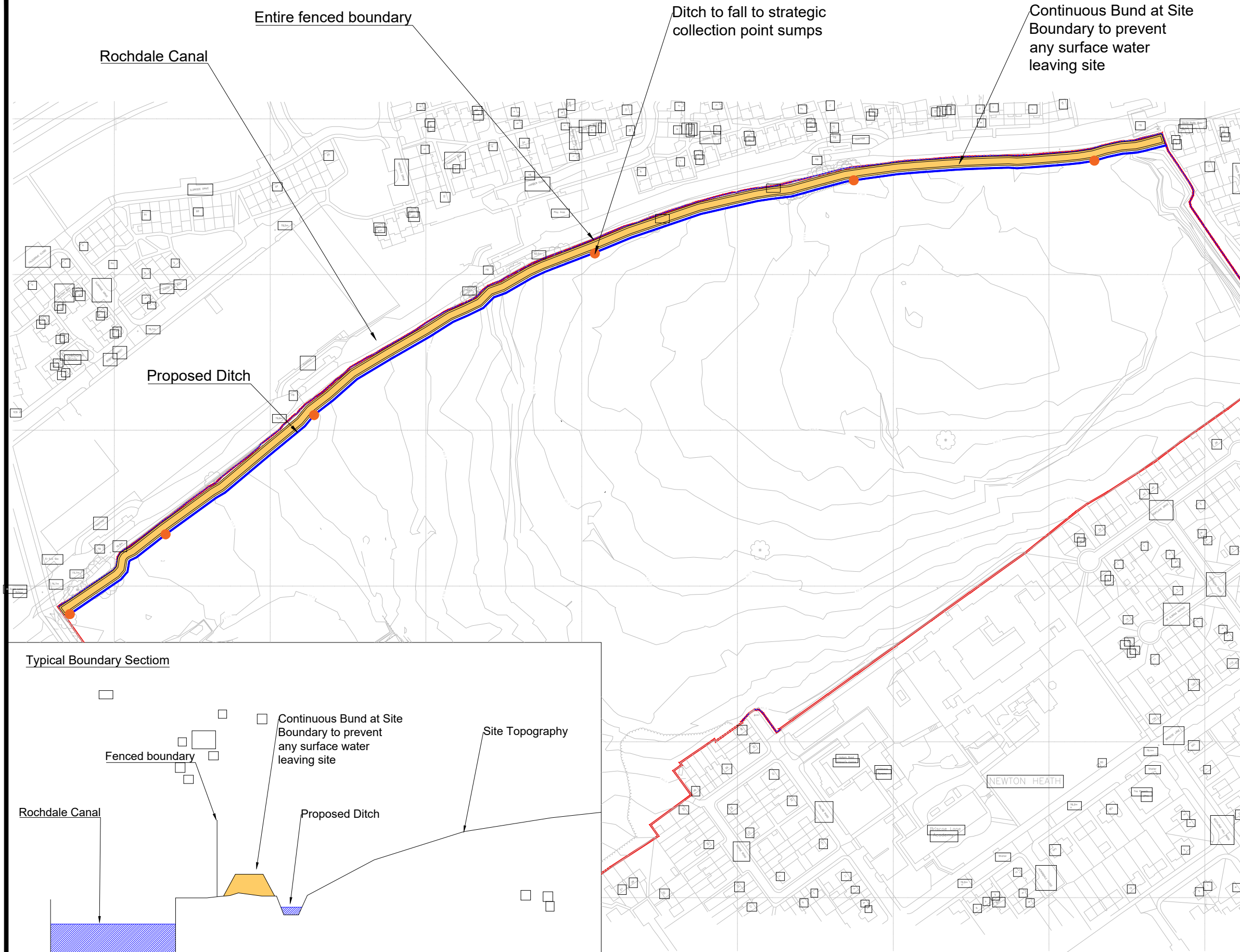
3.1 Surface Water Runoff

- 3.1.1 As noted in Section 2.1 , in its pre-remediation condition, there is currently the possibility that contaminants may enter the canal via surface water runoff due to the topography of the site which falls towards the canal.
- 3.1.2 During previous site walkovers, some seepages have been observed along the length of the Site fronting the canal towpath. However, in the long term, this potential contaminant linkage shall be addressed via the remediation and redevelopment of the Site as discussed in the VertaseFLI Detailed Quantitative Assessment of Risks prepared to address Condition 6 of Planning Permission 129197/FO/2021. Condition 6 was discharged under application CDN/23/0731 on 29th December 2023.
- 3.1.3 The remediation strategy for the Site is described in the VertaseFLI Remediation Options Appraisal and Remediation Strategy prepared to address Condition 7 of Planning Permission 129197/FO/2021. While the Condition 7 details are to be agreed under a separate discharge application (CDN/24/0060), the proposed remediation works for the site broadly comprise: (i) those implemented pre-construction (contaminant source reduction and pathway interruption); and (ii) those implemented during construction (primarily pathway interruption, including placement of a clean cover system and hardstanding to reduce infiltration of surface water into the underlying Made Ground).
- 3.1.4 The land reprofiling and placement of the clean cover system and hardstanding shall minimise surface water from coming into contact with any residual Made Ground containing elevated concentrations of contaminants. Therefore, in the post-remediation condition, surface water runoff shall not contain elevated concentrations of dissolved contaminants.
- 3.1.5 Furthermore, the requirement for a permanent surface water drainage system to manage surface water runoff as part of the development is established through conditions associated with the planning permission

for the development (application number 133700/FO/2022). These conditions have the dual purpose of (i) preventing infiltration of surface water into the ground where residual Made Ground with elevated concentrations of contaminants remains to prevent mobilisation of contamination (Condition 13 of 133700/FO/2022); and (ii) preventing flooding and the pollution of Controlled Waters (Condition 19 of 133700/FO/2022).

Appendix A

Drawings



Key

- Site Boundary
- Perimeter Bund
- Ditch
- Proposed Collection Point

FIRST ISSUE

16-11-2023

Rev.	Description	Revised By	Date
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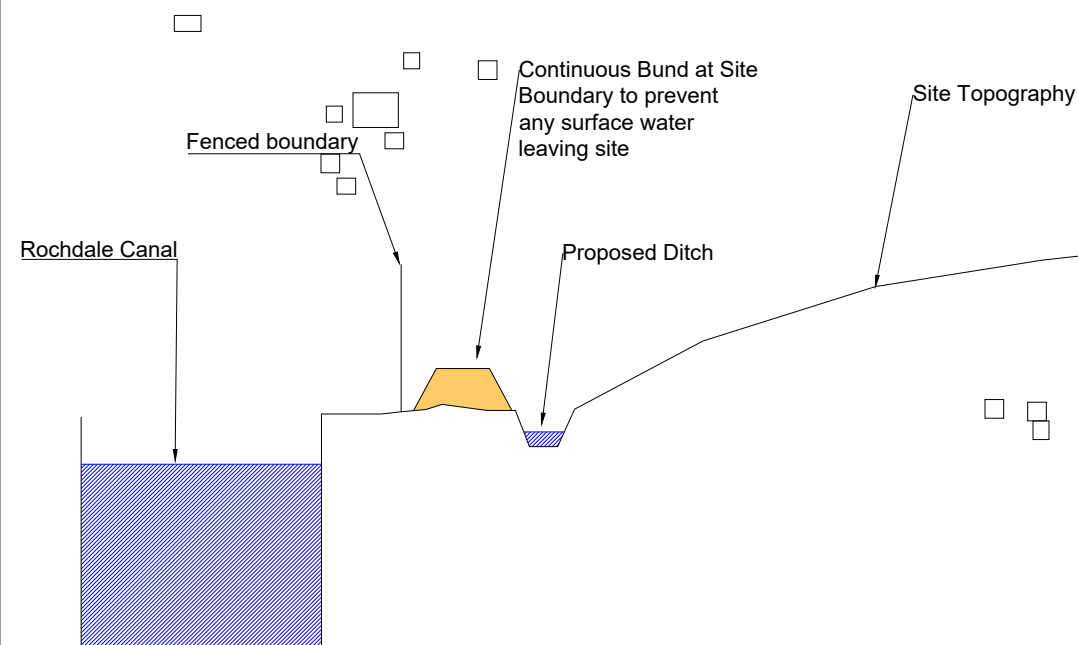


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Typical Boundary Section



Site Address:

Ten Acres Lane
Manchester
M40 2SP

Rev:

Title: Canal Protection Measures

Client: Your Housing Group Ltd

Drawn: JGL	Checked: SE	Approved: SE
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Dwg: D4744_21	Contract: 4744YOU	Scale: 1:2500
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