



LEGEND	
	TOPSOIL PLACEMENT (200mm where reused)
	FILL MATERIAL (Min 600mm cover over marlstone rock volumes)
	CUT MATERIAL
	MARLSTONE ROCK (Placed in leap & sports pitch A)
	EXISTING GROUND
	TOPSOIL STRIP

NOTES

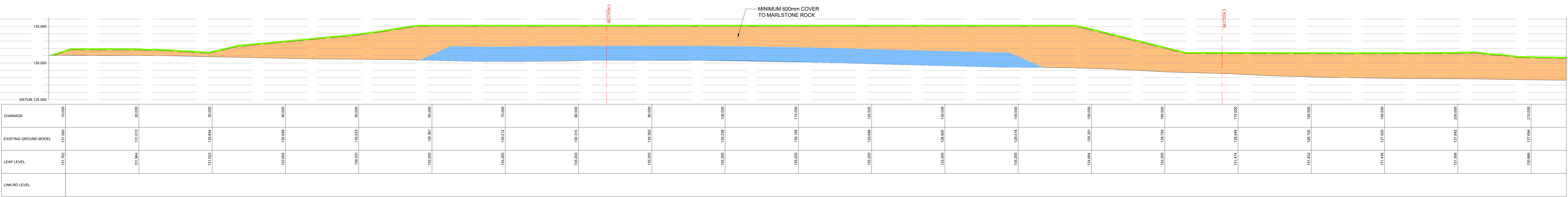
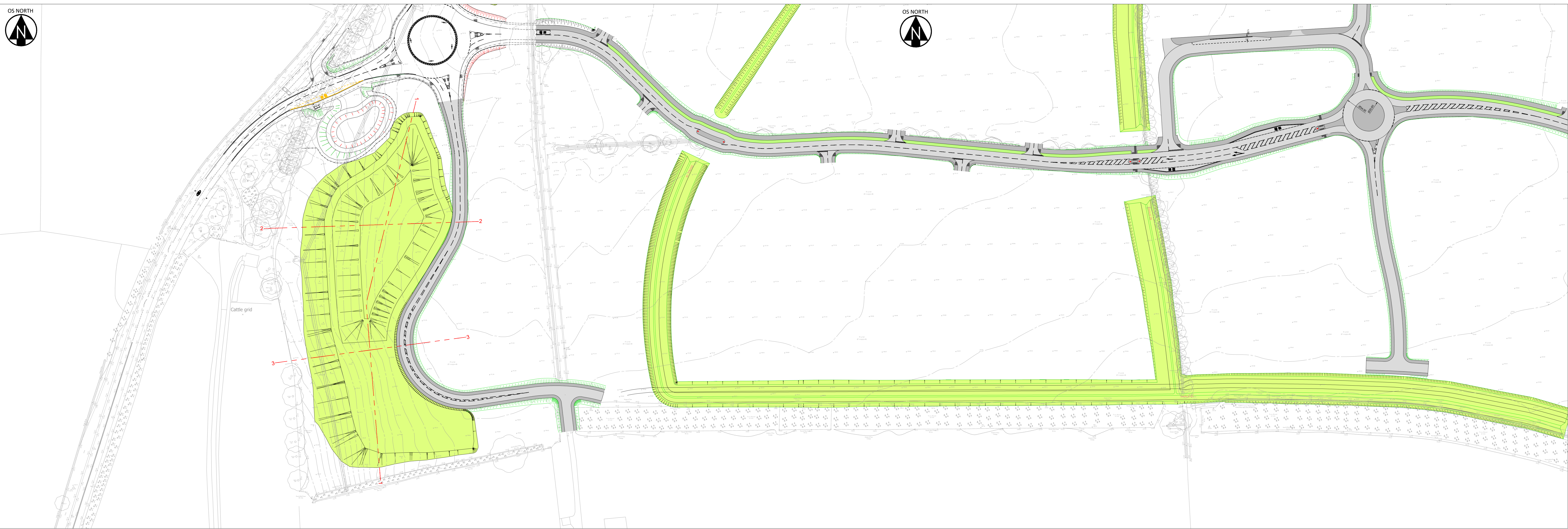
LEAP

Total fill available = 51084m³
 Fill volume consists of:
 2388m³ Topsoil
 3870m³ Marlstone Rock deposits
 44826m³ Suitable Material

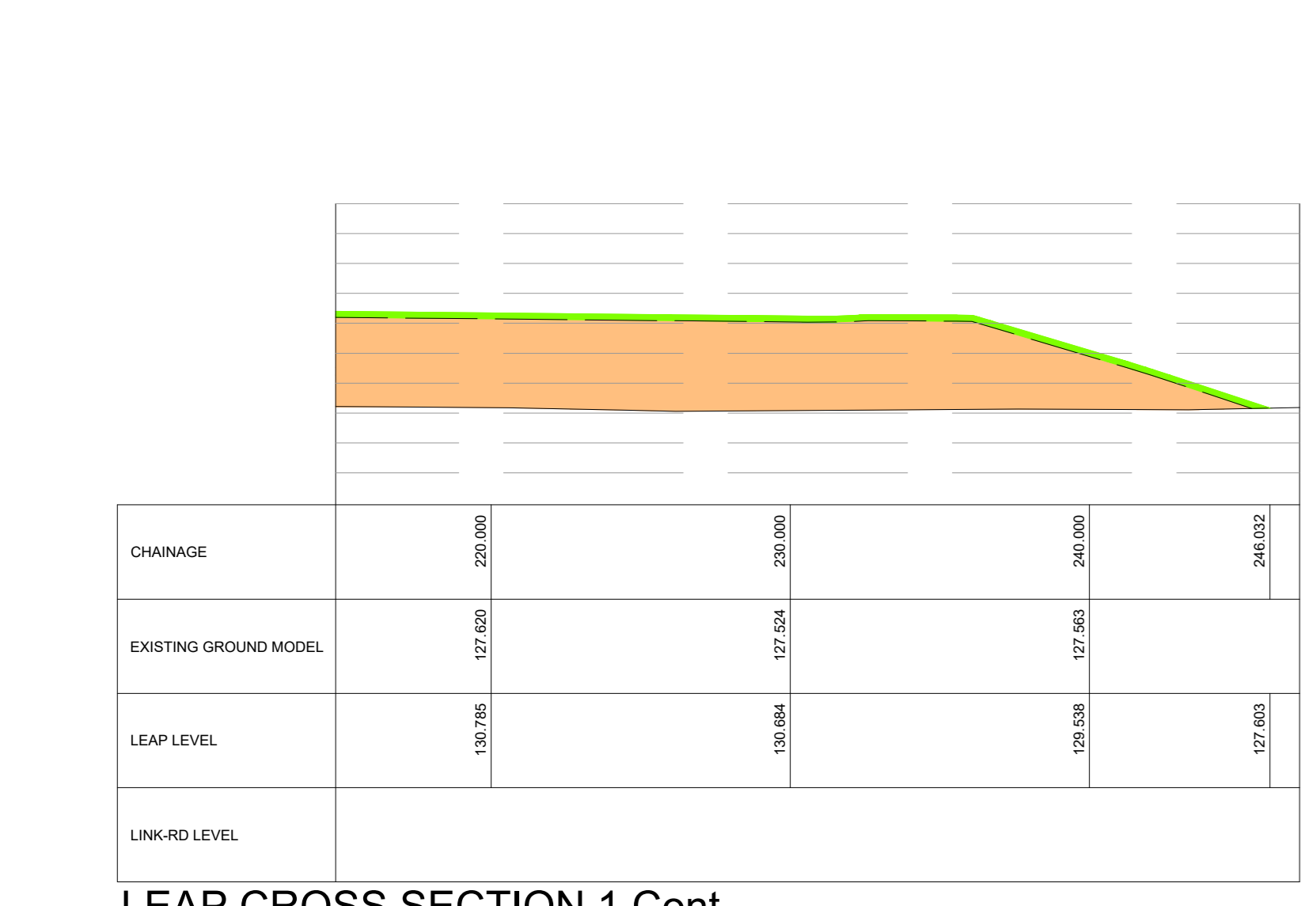
Topsoil reuse volume = 2388m³ assuming 0.2m thickness

For Sports Pitch A sections refer to drawing:
 WPF-HYD-XX-DR-C-0210
 For Sports Pitch B sections refer to drawing:
 WPF-HYD-XX-DR-C-0211

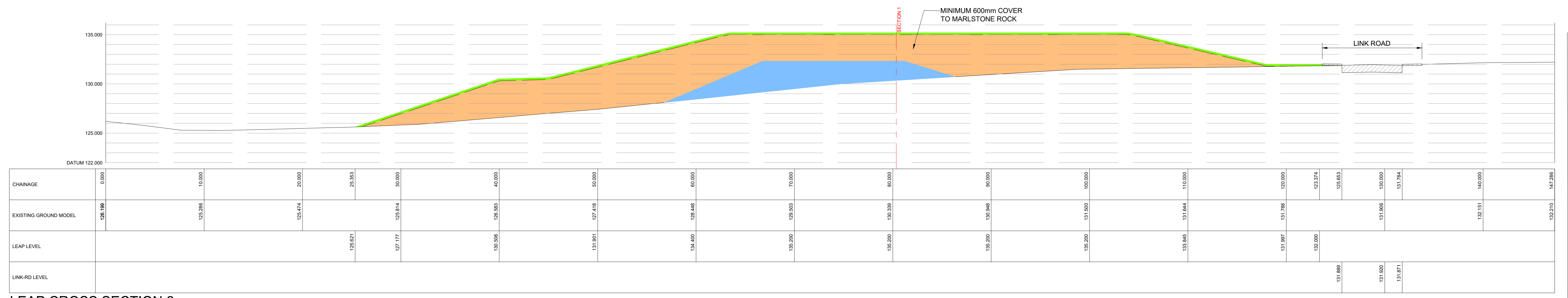
For site wide Cut & Fill Analysis refer to drawing:
 WPF-HYD-XX-DR-C-2400



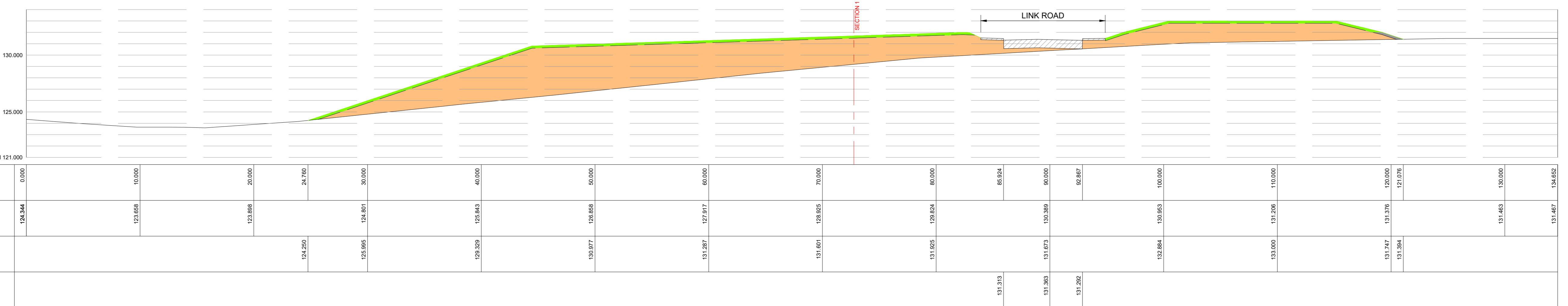
LEAP CROSS SECTION 1
SCALE 1:200



LEAP CROSS SECTION 1 Cont.,
SCALE 1:200



LEAP CROSS SECTION 2
SCALE 1:200



LEAP CROSS SECTION 3
SCALE 1:200

NOTES

REV	DATE	DESCRIPTION	BY	CHK	APP
P3	17/10/19	Amended LEAP shape and updated sections	SM	SM	BS
P2	04/07/19	Amended LEAP shape and updated sections	SM	SM	BS
P01	02/07/18	First issue	MF	SM	SM



CLIENT
L & Q ESTATES

PROJECT
WYKHAM PARK FARM
BANBURY

TITLE
CUT AND FILL ANALYSIS LEAP
SECTIONS

HYDROCK PROJECT NO. C-04841-C	SCALE @ A0 1:1000	STATUS S2
STATUS DESCRIPTION INFORMATION	REVISION P03	
DRAWING NO. / PROJECT CODE ORIGINATOR.ZONE.LEVEL.TYPICALE NUMBER WPF-HYD-XX-DR-C-0212		



LEGEND	
█	TOPSOIL PLACEMENT (200mm where reused)
█	FILL MATERIAL (Min 600mm cover over marlstone rock volumes)
█	CUT MATERIAL
█	MARLSTONE ROCK (Placed in leap & sports pitch A)
█	EXISTING GROUND
█	TOPSOIL STRIP

NOTES

REVISIONS

Rev	Date	Description	By	Ckd	App
P2	04/07/19	Amended LEAP shape and updated sections	SM	SM	BS
P01	02/07/18	First Issue	MF	SM	SM

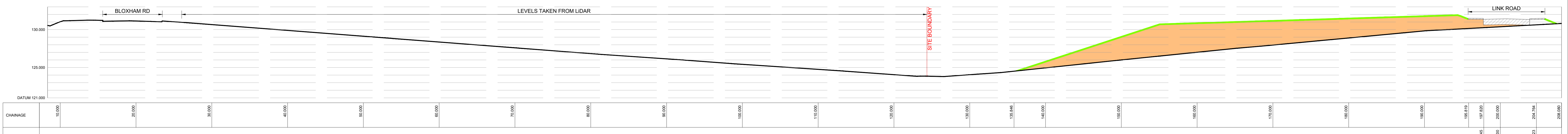
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CLIENT
L & Q ESTATES

PROJECT
**WYKHAM PARK FARM
 BANBURY**

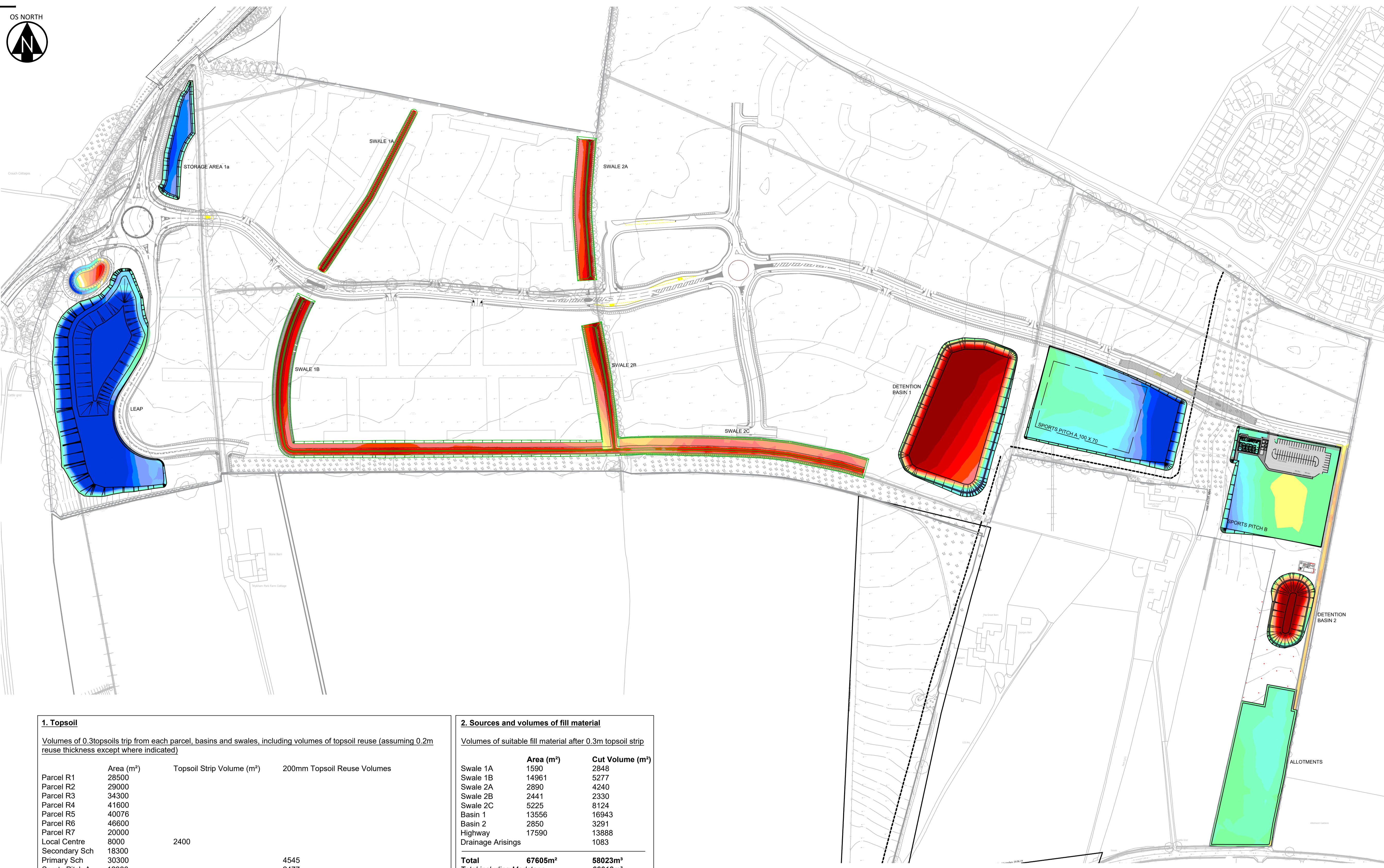
TITLE
**CUT AND FILL ANALYSIS LEAP
 SECTIONS 2**

HYDROCK PROJECT NO. C-04841-C	SCALE @ A0 1:1000
STATUS DESCRIPTION INFORMATION	STATUS S2
DRAWING NO. / PROJECT CODE / ORIGINATOR / ZONE / LEVEL / TYPE / RCDL / NUMBER WPF-HYD-XX-XX-DR-C-0213	REVISION P02



CHAINAGE	0+000	0+200	0+400	0+600	0+800	1+000	1+200	1+400	1+600	1+800	2+000
LINK-ROD LEVEL											
LEAP LEVEL											
EXISTING GROUND MODEL	131.030	131.136	130.980	129.892	129.125	128.359	127.986	128.022	128.141	128.022	124.796
									124.616	125.870	125.195
									127.000	128.000	127.248
									126.984	127.555	127.884
									127.000	127.850	127.794
									127.000	127.850	127.794

LEAP CROSS SECTION 1
 SCALE 1:200



NOTES.
 It is assumed that any cut material can be reused on site as an engineered fill material. It is likely that material from site will need to be conditioned in terms of their moisture content to ensure they can be adequately compacted within proposed earthworks.
 Topsoil strip is as advised by the geotechnical investigation report. (hydrock ref: WPF-HYD-XX-XX-RP-G-1001-P1.4-S2), this suggests topsoil thickness ranging from 0.15m to 0.4m so an average of 0.3m has been assumed.
 A CBR value of 2.5% has been used for spine road design purposes as advised in the geotechnical investigation report (wfp-hyd-xx-xx-rp-g-1001-p1.4-s2).

CUT Depth Bands

- Band 1 -0.00 - -0.20
- Band 2 -0.20 - -0.40
- Band 3 -0.40 - -0.60
- Band 4 -0.60 - -0.80
- Band 5 -0.80 - -1.00
- Band 6 -1.00 - -1.20
- Band 7 -1.20 - -1.40
- Band 8 -1.40 - -1.60
- Band 9 -1.60 - -1.80
- Band 10 -1.80 -

FILL Depth Bands

- Band 1 0.00 - 0.20
- Band 2 0.20 - 0.40
- Band 3 0.40 - 0.60
- Band 4 0.60 - 0.80
- Band 5 0.80 - 1.00
- Band 6 1.00 - 1.20
- Band 7 1.20 - 1.40
- Band 8 1.40 - 1.60
- Band 9 1.60 - 1.80
- Band 10 1.80 -

Rev	Date	Description	By	Ckd
P13	10/04/20	Added isopachytes to allotment area	SM	BS
P12	27/02/20	Adjusted Sports pitch A area and removed storage area 1b	SM	BS
P11	17/10/19	Updated LEAP area and volumes	SM	BS
P10	09/10/19	Removed swale 4a amended topsoil strip volume	SM	BS
P9	30/09/19	Split storage area 1 & removed swale 4A	SM	BS
P8	20/09/19	Cut/fill removed from parcels R1 & R4	SM	BS
P7	14/08/19	Extents of leap and Sports Pitch A updated	SM	BS
P6	01/07/19	Updated LEAP area and southern link rd connections	SM	BS
P5	19/02/19	Adjusted extent of Sports Pitch A earthworks	SM	BS
P4	07/02/19	Parcel R2, R4 & Swales updated	SM	BS
P3	07/08/18	Isopachytes updated	SM	BS
P2	16/04/18	Updated Masterplan Layout to revision Y.	SM	BS
P1	16/08/17	First Issue.	SM	BS

1. Topsoil

Volumes of 0.3m topsoil strip from each parcel, basins and swales, including volumes of topsoil reuse (assuming 0.2m reuse thickness except where indicated)

Parcel	Area (m ²)	Topsoil Strip Volume (m ³)	200mm Topsoil Reuse Volumes
Parcel R1	28500		
Parcel R2	29000		
Parcel R3	34300		
Parcel R4	41600		
Parcel R5	40076		
Parcel R6	46600		
Parcel R7	20000		
Local Centre	8000	2400	
Secondary Sch	18300		
Primary Sch	30300		4545
Sports Pitch A	12386		2477
Sports Pitch B	11237	3371	2247
Leap	17053		3410
Storage Area A	4641		781
Basin 1	13556	4067	2711
Basin 2	2850	855	570
Highway	17590	5277	
Swales	27913	8373	5421
Allotment	9014		2181
Total	408707m²	24343m³	24343m³

2. Sources and volumes of fill material

Volumes of suitable fill material after 0.3m topsoil strip

	Area (m ²)	Cut Volume (m ³)
Swale 1A	1590	2848
Swale 1B	14961	5277
Swale 2A	2890	4240
Swale 2B	2441	2330
Swale 2C	5225	8124
Basin 1	13556	16943
Basin 2	2850	3291
Highway	17590	13888
Drainage Arisings		1083
Total	67605m²	58023m³
Total including Marlstone		66018m³

3. Cut & Fill Volumes

Where reusable fill is generated the following areas have been adjusted to reduce the volume of site won material

Total reusable fill material available taken from table 2 = 66018m³

	Area (m ²)	Fill Volume required (m ³)
Sports Pitch A	12368	9108 (4125 Marlstone Rock)
Sports Pitch B	13595	2936
Leap	11941	51286 (3870 Marlstone Rock)
Storage Area 1a	2262	2688
Total	109216m²	66018m³

An allowance for a 0.2m topsoil layer has been allowed for in the above volumes
 Total volume of fill material taken from Table 2 = 66018m³

66018 - 66018 = **0m³**

4. Marlstone Rock Volumes

Volumes of contaminated material removed through swale excavation and topsoil strip

	Volume (m ³)
Swale 1B	5619
Swale 2B	1542
Southern Foul Drainage Network	834
Total Volume	7995m³

Volume stored in Sports Pitch A: 4125
 Volume Stored in Leap: 3870
Total: 7995m³

This contaminated fill has been placed within the Leap and Sports Pitch A with a minimum of 600mm cover.

5. Cut & Fill Volumes Summary

Total Volume of Topsoil Strip	24343m ³
Topsoil Reuse Volume	24343m ³
Topsoil Volume Remaining	0m ³
Site won Fill Material	66018m ³
Fill Material Reused	66018m ³
Contaminated Fill Material	7995m ³
Fill Material Remaining	0m ³

Hydrock

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 TEL: 01454 619 533 FAX: 01454 614 125 or visit www.hydrock.com

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Client: **L & Q ESTATES**

Project: **WYKHAM PARK FARM**

Hydrock Project No: **C-04841**

Drawing Title: **PRELIMINARY CUT & FILL ANALYSIS**

Status: **SO** Purpose of Issue: **INFORMATION**

Drawn:	Checked:	Scale @ A1:	Drawn Date:	First Issue:
SM	BS	As Shown	16/08/2017	16/08/2017

Drawing No. **WPF-HYD-XX-XX-DR-C-2400** Revision **P13**

Notes:
 All dimensions are to be checked on site before the commencement of works. Any discrepancies are to be reported to the Architect & Engineer for verification. Figured dimensions only are to be taken from this drawing. This drawing is to be read in conjunction with all relevant Engineers' and Service Engineers' drawings and specifications. This drawing is copyright.

Appendix B

Soil Acceptance Criteria

Table B1. Wykham Park Farm - Proposed Soil Acceptance Criteria for Clean Cover Soils in Private Gardens

Contaminant	Generic Assessment Criteria (GAC)			Source
Inorganics				
Arsenic	37			SGV report + CLEA 1.07
Beryllium	73			LQM/CIEH + CLEA 1.07
Boron	300			LQM/CIEH + CLEA 1.07
Cadmium	14			SGV report + CLEA 1.07
Chromium (III)	890			LQM/CIEH + CLEA 1.07
Chromium (VI)	6.1			LQM/CIEH + CLEA 1.07
Copper	2500			LQM/CIEH + CLEA 1.07
Lead	200			C4SL
Mercury, inorganic	170			SGV report + CLEA 1.07
Nickel	130			Hydrock + CLEA 1.07
Selenium	360			SGV report + CLEA 1.07
Vanadium	410			LQM/CIEH + CLEA 1.07
Zinc	3900			LQM/CIEH + CLEA 1.07
Cyanide (free)	790			Hydrock + CLEA 1.07
Organics				
	Soil Organic Matter (SOM)			
	1%	2.5%	6%	
Phenol (total)	290	560	1100	SGV report + CLEA 1.07
Acenaphthene	220	520	1100	LQM/CIEH + CLEA 1.07
Acenaphthylene	180	430	940	
Anthracene	2400	5500	11000	
Benz(a)anthracene	4.2	6.7	8.6	
Benzo(a)pyrene	1.5	1.5	1.5	
Benzo(b)fluoranthene	7.6	9.4	10	
Benzo(ghi)perylene	64	69	71	
Benzo(k)fluoranthene	12	14	15	
Chrysene	7.7	11	13	
Dibenz(a,h)anthracene	1.1	1.3	1.4	
Fluoranthene	290	560	900	
Fluorene	170	410	880	
Indeno(1,2,3,cd)pyrene	4.3	5.5	6.2	
Naphthalene	2.2	5.2	12	
Phenanthrene	97	220	440	
Pyrene	620	1200	2000	
Other				
pH	>5 - <9			-
Asbestos	Not present			-

Notes:

Criteria suitable for residential with plant uptake land use. This list of contaminants is not exhaustive, should the source of soils suggest additional risks are present suitable criteria should be sought.

Appendix C

Discovery Strategy

DISCOVERY STRATEGY

DISPLAY AND AWARENESS

The Discovery Strategy must be placed on the Health & Safety Notice Board and/or displayed in a prominent area where all site staff are able to consult the document at any time.

Any member of the workforce entering the site to undertake any excavation must be made aware of the potential to discover contamination and this Discovery Strategy.

HOW TO IDENTIFY POTENTIAL CONTAMINATED MATERIAL

- Looks oily and has an oily odour.
- Solvent type of odour.
- Man-made materials in fill such as paint cans, car parts, glass fragments.
- Contains fragments of white asbestos sheeting, coal/coke clinker.
- Sand bags, and or/subsurface concrete structures.
- Unusual colour e.g. Blue, red or green.
- Asbestos cement/lagging.

(Examples only – This list is not exhaustive. If in any doubt ask the Site Manager)

PROCEDURE

If unexpected evidence of contamination is found the following procedures shall be adhered, including:

All site works at the position of the suspected contamination should stop.

Site Personnel to inform the Site Manager/Agent.

Visual and olfactory observations of the condition of the ground and the extent of contamination should be made and notification shall be given to Hydrock Consultants, who will inform the Local Authority within circa 24 hours after discovery. Should the contamination be likely to affect controlled waters the Environment Agency shall also be informed.

In the presence of a suitably qualified geo-environmental engineer on behalf of the Consultant, investigation works shall commence to recover samples for testing and, using visual and olfactory observations of the condition of the ground, delineate the area over which contaminated materials are present.

Should Hydrock deem it appropriate, the affected material may be excavated and placed in a stockpile on a suitable impermeable surface. This should be suitably quarantined with no addition to, or removal of, the stockpile while chemical analysis is being undertaken. Alternatively, the material should remain in situ until laboratory test results have been obtained.

A photographic recorded should also be made of relevant observations.

Hydrock will determine an appropriate testing suite based on visual and olfactory observations.

Test results will be compared against current assessment criteria suitable for the future use of the area of the site affected.

If after testing the ground is found to be contaminated, the Local Authority and NHBC shall be informed. After consultation with the Local Authority, NHBC and if necessary the Environment Agency, materials should either be removed for disposal to a licensed waste management facility or remediated to agreed clean-up criteria.

If the evidence for contamination is severe, as if it leads to pollution of water courses, the Environment Agency shall be informed immediately as an environmental incident (see EA website).

UNEXPECTED TANKS

It is possible that underground tanks, which have not been identified by the investigations to date, may be present. The following procedures are to be adhered to if tanks are identified:

All site works at the position of the tanks should stop.

A description of the tank should be made by Hydrock including; condition and surround, along with visual and olfactory observations should any contents in the tank be apparent. A photographic record should also be made of relevant observations.

The tank's position and depth should be determined and marked on a plan of the site.

Notification shall be given to Hydrock Consultants who will inform the Local Authority within 24 hours.

During the presence of a suitably qualified geo-environmental engineer on behalf of the Consultant, investigation works should be undertaken to obtain samples of any liquid or sludge contents and to establish dimensions of the tank.

Laboratory testing will be determined by Hydrock Consultants based on visual and olfactory observations of the material.

Test results will be compared against current assessment criteria and proposals for disposal of any contents determined in agreement with the appropriate Regulatory Parties.

Emptying the tank and disposal of contents to a suitable licensed disposal facility.

Once the tank has been emptied in accordance with the above proposals, it is to be removed for disposal to a licensed waste management facility. Copies of the relevant waste consignment notes are to be forwarded to Hydrock Consultants.

Excavation and remediation of any contaminated soils in accordance with Section 5.2.

Samples of the base and sides of the resultant hole will be sampled as per the Consultant's instructions and an assessment as to whether this may have been a source for groundwater contamination made.

A report will be prepared by Hydrock and submitted to the regulatory parties, the Local Authority and the Environment Agency where groundwater may potentially have been impacted.

Appendix D

Contractor Requirements

Compliance with Legislation and Standards

The works are to be undertaken in compliance with all relevant British Standards, codes of practice, regulations, guidance and legislation.

Whilst not an exhaustive list, works shall be in compliance with the latest revision of all relevant legislation, HSE Guidelines and good working practice including, but not be limited to, the following:

- The Health and Safety at Work etc. Act 1974;
- Construction Health Safety and Welfare Regulations 1996;
- Health and Safety Executive ‘Protection of Workers and the General Public during Redevelopment of Contaminated Land’ HS (G) 66, HMSO 1991;
- The Construction, Design and Management Regulations 2015;
- The Control of Substances Hazardous to Health Regulations 2002 (COSHH Regulations);
- The Control of Asbestos Regulations, 2012; and
- BS6187:2011 ‘Code of Practice for Full and Partial Demolition’.

The Contractor is responsible for obtaining all necessary approvals, licences, consents and permits from regulatory bodies and third parties prior to commencement.

Licences, Permits and Consents

Any conditions associated planning permission should be addressed prior to carrying out the works.

It will be a requirement of the Contractor to obtain any of the necessary permits and undertake the appropriate notifications and assessments. The Contractor should only expect approvals have been sought by others where explicitly provided to the Contractor or advised in writing by the Client or Hydrock.

If treatment of the soils is to be undertaken (e.g. bioremediation of unexpected contamination), it will need to be undertaken in accordance with an appropriate Environmental Permit.

Any reuse of soils will need to be undertaken in accordance with the “Definition of Waste: Development Industry Code of Practice - Definition of Waste. Development Industry Code of Practice”, Version 2 2011 i.e. in accordance with an approved Materials Management Plan (MMP) and Qualified Person Declaration. The Contractor is responsible for the MMP.

Health and Safety Requirements

The Contractors must manage the risks in accordance with their legal requirements and all works are to be undertaken in compliance with all relevant regulations, guidance and legislation.

A Construction Phase Plan (CPP) will be required to be submitted to the Principal Designer, the Client and the LPA in advance of mobilisation to site.

The CPP will be passed to the Site Manager who will implement all Health and Safety measures on site. The Site Manager will fully induct the Site Operatives prior to commencement of any works. The CPP will be kept as an open document and will be adapted as required to during the project. This will (as a minimum) include:

- welfare arrangements, storage and security;
- air monitoring requirements (and action levels);
- traffic management plan;

- segregation of working areas and site welfare (and decontamination units if required);
- site inductions, daily safety briefings and toolbox talks;
- activity specific risk assessments;
- method statement briefings;
- daily inspection records; and
- permits to work.

During the works it will be necessary to protect the health and safety of the site personnel. General guidance on these matters is given in the Health and Safety Executive (HSE) document 'Protection of Workers and the General Public during the Redevelopment of Contaminated Land' HS (G) 66. In summary, the following measures are suggested to provide a minimum level of protection:

- all ground workers should be issued with protective clothing (including high visibility clothing), hard hats, footwear and gloves, personnel instructed as to how it should be used;
- all personnel shall wear hard hats, high visibility clothing and protective footwear at all times;
- ensure that everyone on site complies with the health and safety plan;
- take reasonable steps to ensure that only authorised persons are allowed on site (or part thereof as the case may be);
- display, where they can be easily read, any notification that has been sent to the Health and Safety Executive;
- hand washing and boot cleaning facilities shall be provided;
- no smoking except in designated areas;
- good practices relating to personal hygiene shall be adopted;
- prepare method statements for construction operations as required by the CDM Co-ordinator; and
- provide the Principal Designer with any other relevant information.

Before site operations are commenced, the necessary COSHH Assessments, Method Statements and Health and Safety Plans should be completed, approved to the Principal Designer's satisfaction and issued in accordance with the CDM Regulations.

The Health and Safety Plan should pay particular attention to the following hazards which may be encountered:

- potentially hazardous or contaminated materials used or encountered on site;
- deep excavations;
- the potential for ground gases and risks on confined spaced entry;
- working in the vicinity of existing underground or overhead services;
- working in confined spaces;
- working on, or in the vicinity of highways;
- working with materials which have the potential to contain asbestos and the risk of inhalation of asbestos fibres;
- manual handling;
- the potential for fire;
- working with electrical apparatus in the vicinity of mobile plant and the potential presence of water;

- poor lighting;
- the potential for falling/slipping/tripping and sustaining injury;
- the possibility for biological agents to be present, including, but not limited to: psittacosis, leptospirosis (Weill's disease), tetanus, legionella, human waste; and
- working in the vicinity of voids and openings.

The Contractor shall take all necessary safety precautions throughout the ground treatment operations and shall comply with the Health and Safety at Work Act 1974 or any subsequent re-enactment thereof.

The Contractor shall submit for approval all necessary method statements to the Client and the Consultant prior to commencing the works.

The Contractor shall provide details of emergency procedures. Emergency services shall be informed of the site operations prior to commencement.

All statutory records to be kept in the site manager's office and these may include (not an exhaustive list and note not all may be required):

- ASB NNLW1 – Notification of non-licensed asbestos work if the work is deemed not be requiring a licence;
- appropriate licence with regards to CAR 1012 if the work is deemed to require a licence;
- HSE Notification F10;
- Pre-construction Information Pack;
- Construction Phase Health and Safety Plan;
- Method Statements and Risk Assessments;
- Environmental Permit deployment form and associated paperwork;
- Discharge Consents for disposal of groundwater;
- competence records (including asbestos awareness training and face-fit test records
- service records;
- plant and machinery maintenance records;
- Duty of Care paperwork.

In addition, if asbestos is found during the demolition works/enablement works, it is recommended that:

- Asbestos Awareness training / briefing to be given to all staff;
- background and ongoing air dust monitoring (to include asbestos) to be undertaken to check for presence of asbestos fibres during the works; and
- licensed asbestos contractors are employed to manage the licensed asbestos controlled areas, all other operatives involved in the operations must have appropriate training to satisfy the requirements of the Control of Asbestos Regulations 2012.

Site Establishment and Security

Prior to the commencement of any works, the Contractor, in conjunction with the Client, shall establish the boundaries of the site and working areas.

The Contractor shall make adequate provision to secure the site boundary and prevent unauthorised access onto the site during the course of the works.

Prior to the commencement of any works, the Contractor, shall undertake a dilapidation survey of all adjacent features/construction including but not limited to boundary walls/ fences, adjacent footpath and road constructions etc. The survey is to be agreed with the Client or their representative prior to commencing any work on site.

The Contractor shall be responsible for all costs associated with rectification of damage to adjacent features/construction including but not limited to boundary walls/ fences, adjacent footpath and road constructions etc. resulting from the demolition works. If damage is not noted on the dilapidation survey (or the dilapidation survey is not undertaken) and damage is later reported, it is the responsibility of the Contractor to rectify.

The Contractor is to provide surveying capability as set out in this document facilitate the above.

Prior to the completion of the works the Contractor is to discuss the continuation of the site security, including the fences, with the client and acceptable arrangements for continued security are to be agreed prior to the removal of the Contractor's security provision.

Traffic Safety and Management

The Contractor shall comply in all respects with Chapter 8 of the Traffic Signs Manual for works on or affected the public highway and/or private roads forming the highway access to/from the site. The Enabling Works Contractor shall obtain all necessary consents from the Local Highway Authority for works on the public highway.

On-site access and haul routes should be provided and maintained by the Contractor in such a manner so as not to endanger either the user, those working in the vicinity of such accesses/haul routes and or the Works.

Access to the site will be agreed with the Client prior to commencement.

Suitable precautions shall be taken to prevent the spread of mud and debris on the public highways. Regular inspections of the public highway adjacent to the site shall be carried out. If deemed necessary by the Contractor, the Client or the Consultant, the highway shall be swept regularly to remove any mud, slurry or dust deposited by vehicles entering or departing the site. If the Consultant considers that significant amounts of any detritus have been deposited on the public highway then operations shall be temporarily suspended until appropriate cleaning operations have been undertaken.

The Contractor is to co-operate with other contractors if they are present during the works.

The proposed works will generate a number of vehicle movements associated with the removal of soils and delivery to site of materials. Consideration should be given to the route and the timing of these vehicle movements, to minimise risk and disturbance to sensitive locations (such as schools, residential areas).

Risks associated with the transport of soils that are potentially containing contaminated, such as dust emission, should be appropriately managed by the Contractor.

Welfare Facilities

Site cabins and welfare facilities will be established at a location to be agreed with the Client.

The Contractor is deemed to have made provision and arrangements for all temporary services associated with the welfare facilities.

Working Hours

Noisy operations i.e. the use of hydraulic breakers shall be restricted to operating times as specified by the Client and by the planning permission.

Prior to commencement the Contractor is to make contact with the Local Authority to establish if any further restrictions apply.

Mobile Plant

Mobiles plant shall be operated by suitably trained and qualified operators experienced for each item of plant. When not in use all plant shall be locked to prevent all plant shall be locked to prevent unauthorised operation.

All traffic entering or working on site shall obey a maximum 10 mph speed limit.

Fuelling of any plant shall be undertaken in a designated area and all above ground fuel storage tanks shall comply with the requirements of the Pollution Prevention Guidelines PPG2.

Specifically, any storage tanks used should:

- be sited within an oil-tight secondary containment system such as an impermeable bund;
- the secondary containment must provide storage for at least 110% of the tanks maximum capacity;
- be located within a secure area; and
- all taps and valves should be fitted with a lock and kept locked shut when not in use.

Maintenance of mobile plant should be undertaken in a designated area, unless absolutely necessary.

Waste oil, hydraulic fluid etc. should not be tipped directly or discharged on to site. Such materials shall be stored separately, in a secure bunded area, for off-site disposal. Waste oil may be a special waste and disposal shall be undertaken by a registered carrier in accordance with the Duty of Care Regulations.

A spill kit shall be kept on site in an accessible place adjacent to the designated refuelling area and used in the event of a spillage or leak.

Surveying

The Contractor shall provide full time surveying personnel and equipment to undertake the following activities and any other requirement for topographical information relating to the project that arises through the duration of the enabling works contract. The survey personnel and equipment should be capable of providing accurate levels and co-ordinates in relation to the national grid and topographical survey provided within 1 day of request.

The following key activities are covered by the requirements for surveying:

- confirmation of topographical survey on possession of the site, and setting out of the site boundary;
- confirmation of positions of existing services and site features;
- surveying the base and extent of all excavations and remaining obstructions (to be undertaken prior to backfilling);
- all setting out and levelling relating to delivery of the enabling works;
- the location of sub-structures removed;

- interim surveys to be undertaken during the infilling works to provide information on issues such as depth of excavation, progress of earthwork, quantities of materials etc.;
- the location and elevation of test samples and locations; and
- as built survey information.

A topographical survey of the site is provided in the Site Information. The Contractor is required to undertake all necessary topographical survey works to verify these levels before the commencement of the contract. Should the Contractor find any discrepancies on the drawings they are to refer the matter to the Client for verification before proceeding with the part of the works affected.

The Contractor shall undertake a topographical survey following completion of the enablement works.

All topographical surveys shall include levels at maximum 10m spacing and details of any features, changes in slope, structures, services and any other features of interest.

All of the above features shall be surveyed for line and level at the site boundary and marked on a plan. Levels shall be to Ordnance Datum and locations to National Grid. The survey shall be calibrated against existing site surveys and benchmarks in the vicinity of the site.

Testing

The Contractor shall be responsible for undertaking all testing necessary to satisfy the Consultant that the works have been carried out in accordance with and comply with the specification.

All soils and chemical testing shall be carried out by a UKAS and MCERTS accredited laboratory, with accreditation for the specific analysis, to the approval of the Consultant. The lowest level of detection shall be used for all testing. The Contractor is to submit to the Consultant the proposed levels of detection for all proposed testing.

The Contractor is to make available on site at all times a file containing all test data received for inspection by the Client or Consultant or Named Representative (NR). The Contractor is to prepare a summary table for presentation with the contractors report detailing test results and associated status.

This summary table will be in Excel format and be updated and sent to the Consultant by 10:00am every Monday. This summary will include an up to date location plan, all samples taken, tests scheduled, laboratory results received and outstanding testing.

Offsite Disposal

Materials for offsite disposal shall be sampled and analysed, by the Contractor, at rates sufficient to allow the material to be adequately categorised.

Material exported from site to landfill, or other appropriately licensed facility, shall be hauled by a registered waste carrier in accordance with the requirements of the Duty of Care Regulations, 1991 and where appropriate the Special Waste Regulations, 1996.

A transfer note shall be completed, signed and retained by all parties involved. The transfer note shall state the volume of waste, the nature of the material and statement to the chemical composition.

The waste transfer notes shall be kept by the Contractor for a period of at least 2 years.

Contamination

Contractors should be made aware of the possibility of encountering contaminants within soils or groundwater at the site (including asbestos) through 'toolbox' talks.

Safe working procedures should be implemented in accordance with CIRIA132 and good standards of personal hygiene should be observed and appropriate levels of PPE provided and utilised.

Eating, drinking and smoking should be strictly prohibited in the development site other than in designated mess areas.

The Control of Noise, Vibration and Dust Nuisance

The Contractor shall comply with the recommendations for practical measures to reduce noise and vibration set out in BS5228-1:2009 and BS5228-2:2009 and with any specific Principal Contractor requirements.

The Contractor shall take all reasonable measures to prevent dust nuisance from being generated by construction traffic, etc.

If necessary, working methods will be altered in order to ensure that the level of noise generated from the works is within published tolerable limits.

The requirements of the LPA are to be sought and undertaken.

General

No fires shall be permitted on site.

Dust Mitigation

Appropriate measures shall be implemented at all times during the demolition and enabling works to minimise any dust emissions.

Any main temporary haul roads shall, where practical to do so, be constructed of crushed hardcore products. The haul roads shall be maintained for the duration of their use to minimise any build-up of loose spoil etc.

Traffic both entering and working on site shall obey a maximum speed limit of 10 mph (unless otherwise agreed).

Mobile water bowsers and sprayers shall be available on site at all times to water unpaved haul roads and working areas. The water spray may include chemical dust suppressants or wetting agents to improve dust control.

Wagons that are to be used for the haulage of any contaminated material from site shall be appropriately sealed or sheeted to prevent the release of fugitive dust.

An adequate supply of water shall be maintained on site at all times to allow for dust suppression activities to be carried out at short notice.

Where mobile water bowsers are not effective in suppressing dust then vapour masts shall be used. Such vapour masts shall be deployed at 20m centres on the downwind side of haul roads or excavations giving rise to significant dust or emissions of odour.

Air quality and dust monitoring stations will be set up and monitored by the Contractor to record the dust concentrations during the works.

With regards to stockpiles:

- stockpiles should be kept to a minimum to reduce ‘wind whip’ causing potentially hazardous material to be blown from the pile;
- stockpiles should be placed on a suitable polythene membrane to prevent any cross contamination and care should be taken not to pierce the sheeting when placing the bulky elements of the material;
- stockpiles should be dampened down or covered to prevent dust, whilst the final choice should be made by the Contractor based on site constraints, but the options include covering with plastic/polythene membrane, or by a layer of clean soil material; and
- the drop distance from excavator bucket to stockpile will be kept as short as reasonably practicable to reduce dust.

Odour

In general terms the excavation works are not considered likely to give rise to any significant odour problems.

If highly odorous materials are encountered, which may give rise to nuisance to neighbouring properties, appropriate vapour masts shall be deployed to provide suitable odour control. Any odorous materials shall be covered at the end of each working day and any stockpiles will be located away from any sensitive areas.

Plant and machinery shall be serviced regularly to ensure that exhaust fumes are compliant with best practice and relevant regulations.

Noise

The requirements of the Local Planning Authority and BS 5228: 1997 ‘Noise and vibration control on construction sites’ shall be adhered to at all times.

All machinery shall be fitted with effective silencers and shall be serviced at regular intervals. No items of plant shall be operated with engine covers raised.

The location of any crushing plant shall take into consideration the location of neighbouring properties and other noise sensitive receptors and shall be located away from these areas and located adjacent to proposed stockpile locations where possible.

Asbestos in Soils

The Contractor for each stage of works must manage the risks in accordance with their legal requirements and will need to prepare appropriate health and safety documentation and obtain appropriate approvals, licences, consents and permits prior to commencement.

The remediation works are designed to break the source-pathway-receptor linkage with regards to contaminants within the soil. Whilst appropriate measures are required for all contaminants present, the Contractor should note the additional details provided below with regards to asbestos in the soils:

- Asbestos is a hazard to Human Health when airborne fibres are inhaled. Asbestos containing material (ACM) that is in a bound form (such as asbestos cement tiles) is a low risk where the asbestos fibres cannot become airborne. However, if lagging is present or the ACM is broken or crumbled in a dry condition the asbestos fibres could become airborne and could then be inhaled. When soil with asbestos is covered by hardstanding, buildings or a cover of clean soil or when the

soil is kept damp, the asbestos fibres are less likely to become airborne and the risk is greatly reduced.

- The Health and Safety at Work Act 1974 forms the basis of health and safety legislation in the UK. In addition, the Control of Asbestos Regulations 2012 (CAR 2012) applies throughout the UK. CAR 2012 applies if land has significant asbestos content and is relevant to any work conducted on asbestos contaminated land.
- CAR 2012 defines a 'control limit' of 0.1 fibres per cubic centimetre of air averaged over a continuous period of 4 hours. This limit is not risk based and may be much higher than the levels for control of environmental pollution.
- CAR 2012 applies even where exposure to asbestos of employees is sporadic and of low intensity and where exposure to asbestos of any employee will not exceed the control limit. In addition, the work must be of short non-continuous activities where non-friable materials are handled, or removal without deterioration of non-degraded materials in which asbestos fibres are firmly linked in a matrix.
- Lagging, broken fragments of asbestos and loose fibres have the potential to release airborne fibres in dry conditions. In addition, as the ACM and asbestos fibres have been contained in the soil for many years, the likelihood is that they would be degraded to some extent. However, if the asbestos fibres detected at the site are within a soil matrix and if this is kept damp, this should assist in minimising the risk of the release of airborne fibres.
- Given the above factors, it is possible that the works being undertaken would not be exempt from CAR 2012 licensing requirements and it is the Contractors responsibility to assess the licencing position.
- It should be noted that information presented in this document is provided to assist in managing the soil at the site which contains asbestos. Hydrock cannot be held responsible for how the control measures associated with these risks are implemented and recommend that an appropriate asbestos specialist assist with both the preparation of documents and licences and site supervision.

Task specific risk assessments and method statements should be in place, and risks and required mitigation measures communicated to all relevant personnel prior to the works commencing. Appropriate PPE and if required RPE should be provided and utilised.

Visible fragments of suspected asbestos containing materials on the site surface should be handpicked. If hand picking is being undertaken it needs to be undertaken in accordance with and Environmental Permit and ACM shall be placed in a dedicated covered and lockable skip pending off-site disposal to a suitably licensed facility. Such remediation measures will be undertaken by suitably qualified contractors and in accordance with CAR 2012.

Water Quality Controls

The Contractor shall provide for such measures as may be necessary to ensure that water, whether ground water, from precipitation or any other source does not accumulate in excavations or on sub-grades.

Adequate drainage sumps will be installed during works and cut off trenches/dewatering measures will be used as required to manage surface water run-off, to prevent any water from entering watercourses, either directly as surface water run-off, or indirectly via the surface water drainage systems.

If materials escape, appropriate the Contractor is to undertake (at their cost) appropriate remedial action as soon as possible.

Services

Service records are to be provided by the Client for information purposes within the enabling works documentation. However, the Contractor shall be responsible for liaison with the statutory service providers to ensure all service records are current and correct. The Contractor is also responsible for the safe disconnection of existing services entering the site, except those which are to remain operational.

Prior to site work commencing, the position of all services indicated as on site or offsite but close to the site boundary shall be determined and clearly identified where on site. The locations should be confirmed on site by appropriate investigation, observations and survey. Any discrepancies between the anticipated positions and confirmed locations are to be reported to the Client.

All retained manholes should be located and clearly identified on site to prevent damage. The location, depth, diameter and invert level of each manhole and the size and depth of all stream connections shall be recorded. Where drains or sewers are to be grubbed up the downstream ends should be plugged prior to commencement to prevent offsite systems becoming blocked or contaminated.

Where existing drains or sewers are to remain, CCTV surveys are to be provided by the contractor. These surveys must be undertaken on commencement prior to any physical work and on completion to demonstrate no damage has occurred.

Where damage has occurred, any remedial work must be agreed with the Client and relevant authority/owner prior to repairs commencing. The repair costs will be borne by the contractor.

All services on site that are to be retained through the works are to be positively located on site, reliance shall not be placed on existing records. Services are to be visibly marked and protected for the duration of the works. Appropriate methods are to be put in place to ensure all site staff working in the vicinity of retained services are fully briefed.

The Contractor is responsible for ensuring that all hydrant covers, stop tap boxes manhole covers and the like are raised or lowered to suit the finished levels associated with the proposed enabling works plateaus and future construction thicknesses.

Following the completion of the works, a survey plan of the location of terminated services is to be provided.

Damage to Property

All works are to be undertaken in accordance with the Party Wall etc. Act 1996.

The Contractor shall ensure that all precautions are taken in order to avoid any damage to existing property arising from the Works and shall be responsible for same in the event that any damage should arise from his failure to exercise due care.

Any adjacent structures, services and the like shall be inspected prior to commencement of the Works for evidence of existing defects and, if necessary, a dilapidation survey shall be carried out by the contractor, with the agreement of the Client, prior to works commencing on site. A re-inspection shall take place on completion of the Contract to verify that no damage or deterioration of the said structure, service or apparatus has occurred as a result of the Works. A schedule of the findings of this re-inspection shall be circulated to all parties concerned for their records.

The Contractor shall execute the works with care so as to avoid damage to existing structures and drains or other services to be retained.

All fences, trees, paths, shrubs, grassed areas and other surfaces required to be retained shall be protected by the Contractor from spillage and damage caused by site operations and upon completion of the works they shall be handed over in an undamaged and proper state to the satisfaction of the Client.

Refer to landscape architect drawings and specifications that define the areas that require protection. The Contractor shall not raise or lower the ground level beneath the spread of the branches of any tree to be retained without the approval of the Client.

Drawings and Supplied Information

Whilst efforts have been made to ensure that the information provided to the Contractor is correct and current, the Contractor is responsible for corroborating the existing information with the benefit of their site presence and to report any discrepancies encountered or anticipated to the Client immediately.

Where cutting and filling operations are to be carried out the Contractor is to undertake comparative assessments with the benefit of existing information, additional survey and their anticipated sequence of work to ensure sufficient and suitable material is available to undertake the works as proposed. Any anticipated shortfall or surplus is to be report immediately.

Photographs

A detailed dilapidation survey shall be undertaken of the site and adjacent properties including joint site boundaries, in conjunction with adjacent land owners.

Such survey shall include (but not be limited to) roads, footpaths, street lighting and road signs. A copy of the survey, including record photographs shall be provided to the Client within seven days of commencement of site works.

The Contractor is to provide on-site a digital camera and e-mail facilities to enable electronic transfer of site photographs and other information for the full duration of the contract.

Progress photographs are to be taken at least weekly across all parts of the site for inclusion within the contractor's report. Photographs are to be made available to the Consultant and the Client in electronic format should they be requested during the contract. Record photographs should be provided as part of the validation information.

Appendix E

Clean Cover System Calculation

Design Chart

- $C_c = 0.00 - 0.25 \times$ Trigger levels
 - $C_c = 0.25 - 0.50 \times$ Trigger levels
 - $C_c = 0.50 - 0.75 \times$ Trigger levels
 - $C_c = 0.75 - 1.00 \times$ Trigger levels
 - ▲ Target Guideline Value 2
 - ▲ Target Guideline Value 1
- If site specific data falls in shaded area consideration should be given to the applicability of using a cover system

