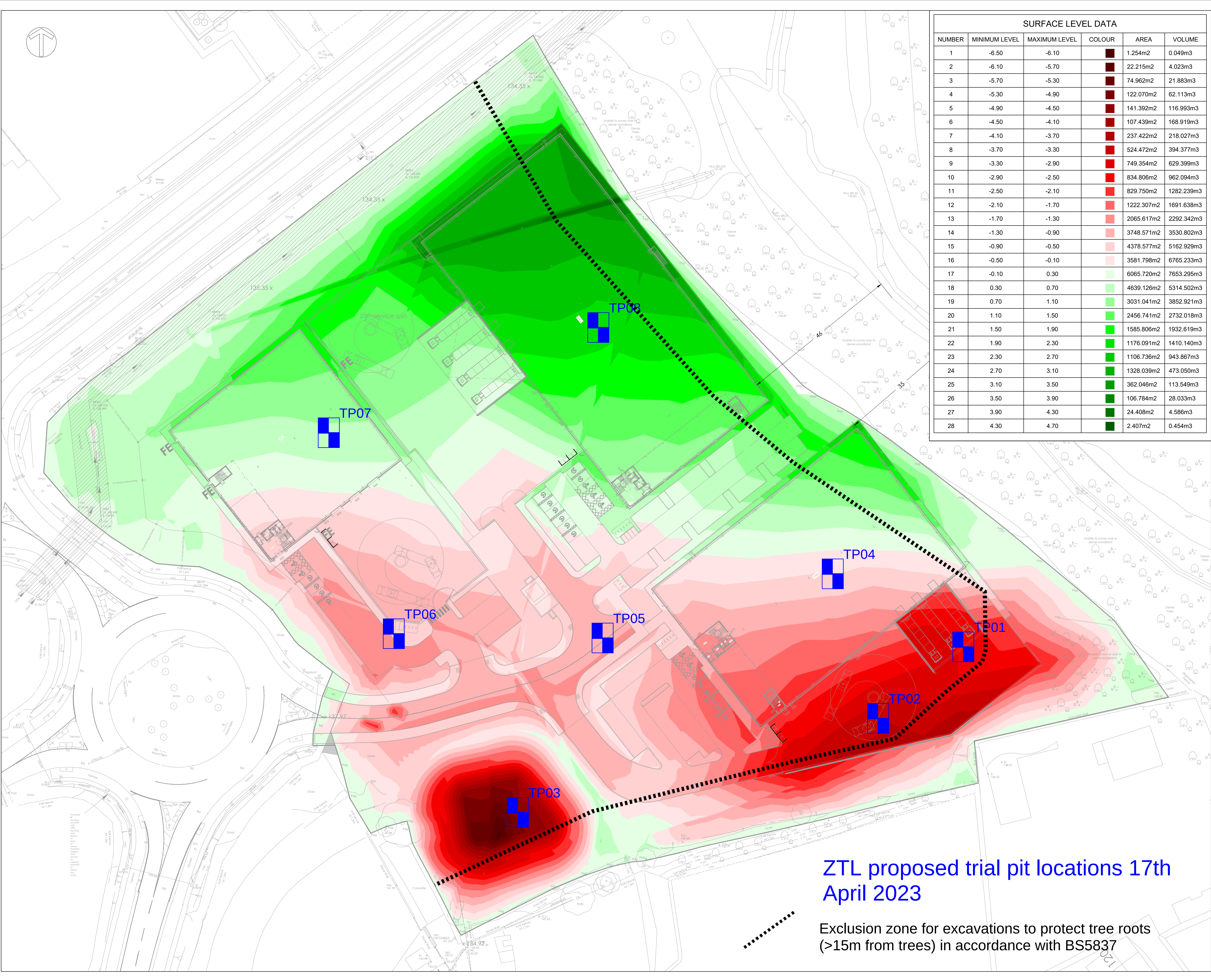




SURFACE LEVEL DATA					
NUMBER	MINIMUM LEVEL	MAXIMUM LEVEL	COLOUR	AREA	VOLUME
1	-6.50	-6.10		1.254m2	0.049m3
2	-6.10	-5.70		22.215m2	4.023m3
3	-5.70	-5.30		74.962m2	21.883m3
4	-5.30	-4.90		122.070m2	62.113m3
5	-4.90	-4.50		141.392m2	116.993m3
6	-4.50	-4.10		107.439m2	168.919m3
7	-4.10	-3.70		237.422m2	218.027m3
8	-3.70	-3.30		524.472m2	394.377m3
9	-3.30	-2.90		749.354m2	629.399m3
10	-2.90	-2.50		834.806m2	962.094m3
11	-2.50	-2.10		829.750m2	1282.239m3
12	-2.10	-1.70		1222.307m2	1691.638m3
13	-1.70	-1.30		2065.617m2	2292.342m3
14	-1.30	-0.90		3748.571m2	3530.802m3
15	-0.90	-0.50		4378.577m2	5162.929m3
16	-0.50	-0.10		3581.798m2	6765.233m3
17	-0.10	0.30		6065.720m2	7653.295m3
18	0.30	0.70		4639.126m2	5314.502m3
19	0.70	1.10		3031.041m2	3852.921m3
20	1.10	1.50		2456.741m2	2732.018m3
21	1.50	1.90		1585.806m2	1932.619m3
22	1.90	2.30		1176.091m2	1410.140m3
23	2.30	2.70		1106.736m2	943.867m3
24	2.70	3.10		1328.039m2	473.050m3
25	3.10	3.50		362.046m2	113.549m3
26	3.50	3.90		106.784m2	28.033m3
27	3.90	4.30		24.408m2	4.586m3
28	4.30	4.70		2.407m2	0.454m3

ZTL proposed trial pit locations 17th April 2023

Exclusion zone for excavations to protect tree roots (>15m from trees) in accordance with BS5837

Do Not Scale

DESIGN REVIEW

Design review by: ** Checked by: **

Residual hazards:

Health, Safety & Environmental Notes

NOTES

Assumptions:

- Material Bulking Factor of 1.0 (No Bulking applied) unless specified otherwise.
- No S.G.M (Site Generated Material including site clearance volumes or demolition arisings) has been included in Cut/Fill volume calculations.
- Areas estimated from topographical survey by Greenhatch All volumes stated are estimates based on stated assumptions.
- Based on the laboratory results, the top 1m depth of the colliery spoil may be too wet in places to be incorporated in the earthworks and Engineered Fill unless it is dried/modified (by the addition of Lime or Portland Cement).
- Hence a provisional allowance of 70% of the top metre of Colliery Spoil material has been provisionally allowed within the Earthworks models as requiring stabilisation when/if utilised as engineered fill

Top Soil Strip:

- Assumed thickness = **0.550m**
250mm Top Soil
300mm Non reusable material
to be taken from site

Site Area = 40738m²

Area Volume = 22406m³ (No Bulking applied)

Construction Thicknesses & Areas:

- Footways = **0.220m** deep
- Highways = **0.525m** deep
- Landscaping = **0.300m** deep
- Buildings = **0.500m** deep
- Yard = **0.515m** deep

Cut/Fill Volumes:

Volume between Existing Formation and Proposed Formation levels

- Total Cut = **25208m³** (No Bulking applied)
- Total Fill = **22533m³**
- Attenuation Tank Volume = **1300m³**

Notes:

- Contractor to explore suitability of soils for stabilisation by Lime or Portland Cement given recorded Sulphate Content
- The Contractor is explore options with their Specialist Groundworks sub-contractor to re-use all suitable material where possible.
- Proper selection and control will be required as part of the works in order to use the materials on the site.
- The material should not be allowed to deteriorate during excavation and compaction and must be sufficiently protected from traffic after placement.

10.03.23	Cut & Fill volumes changed to reflect change in Top Soil strip	OCB	JS	P3
17.02.23	Cut and Fill volumes updated to reflect changes in proposed levels - Tender Issue	OCB	JS	P2
03.02.23	Initial Issue	OCB	JS	P1
Date	Description	By	Chk	Rev

ADEPT

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Farsley, Leeds, LS28 5UJ
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Project

Dearne Valley Parkway

Title

Cut and Fill Analysis Stage 1

Client

G

GREGORY
PROPERTY GROUP

Scale @ A1	Initial author	Initial checker	Approver	Initial Date			
1:500	OCB	JS	RP	Jan' 23			
Status	S5	Purpose	Tender	Adept Ref			
				00.23009			
Project Number	Originator	Volume	Level	Type	Role	Dwg. No.	Rev.
00.23009	ACE-00	ZZ	DR	C	03300		P3

Risk Assessment / Method Statement (RAMS)

Contract No.		Site/Location:	
Description of activity:	Excavation of trial holes		
SECTION A (TO BE COMPLETED BY THE SITE SUPERVISOR)		Site or task specific hazards & control measures	

When identifying hazards & determining controls the Supervisor shall consider routine & non routine elements of the activity, access to the workforce, liaison with other contractors or visitors, capabilities of personnel, hazards outside the workplace, hazards associated with the specific task, site, equipment, materials, environment, emergency arrangements and legal obligations. In all cases the residual risk shall be reduced to as low as is reasonably practicable. Section A will be reviewed by the Supervisor and updated as works progress or changes occur.

Significant Hazard	Who may be harmed	Initial Likelihood 1-5	Initial Severity 1-5	Initial Risk H. M. L.	Control Measures	Action By	Residual Risk L. I.
Tree protection Risk of damaging protected trees	Environment	3	3	M	Do not operate mobile plant within 15m of protected trees. Root Protection Zone indicated on ZTL's Proposed Trial Pit Location Drawing to be observed. Ensure barriers (example photo below) are in place as defined by the PC. Exclusion zone to extend 3 meters beyond the spread of canopy or branches. 	Site Supervisor	I

Likelihood evaluation		Severity (consequence) evaluation	
0 = no chance of happening		0 = no harmful consequences whatsoever	
1 = very unlikely to happen		1 = very minor consequences with little or no harm (no significant injuries and / or damage)	
2 = small chance of happening		2 = notable consequences with small amount of harm (very minor injuries and / or damage)	
3 = reasonable chance of happening		3 = moderate consequences with notable harm (e.g. lost time injury and / or notable damage)	
4 = good chance of happening		4 = severe consequences with significant harm (e.g. major injury and / or significant damage)	
5 = almost certain chance of happening		5 = very severe consequences with devastating harm (e.g. fatality(ies) and / or very serious damage)	

Risk Evaluation key:

0 - 1	Insignificant	I	There is little or no chance of harm occurring and, if it does, the consequences are minor.
2 - 4	Low	L	There is a slight chance harm occurring and, if it does, the consequences are minor.
5 - 9	Medium	M	There is a chance of harm occurring and, if it does, the consequences are moderate.
10 +	High	H	There is a chance of harm occurring and, if it does, the consequences are severe.

Residual risk level is the level of risk that remains after control measures are implemented. The level of residual risk must always be Low (L) or insignificant (I). If it is not then further control measures are necessary.

Hazard means anything that can cause harm.

Risk is the likelihood, high or low, that someone will be harmed by the hazard combined with the **severity** of the harm should it happen.

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SECTION B**Generic hazards & control measures**

All works shall be carried out in accordance with the ZTL work procedures, current legislation and industry codes of practice.

Significant hazard:	Initial likelihood 1-5	Initial severity 1-5	Initial risk HML	Control measures	Action by	Residual risk L I
Contact with underground services causing explosion, asphyxiation, burns, electrocution or flooding. Contact with underground services causing damage and interruption of essential provision of utility service to third parties.	4	5	H	Service location drawings to be consulted to establish approximate locations of known services. Pipe & cable locating equipment (e.g. CAT / Genny) to be used to locate services precisely. Where practicable and with the consent of the owner, services will be isolated. Existing features such as valve covers, inspection chambers, sub-stations, lamp posts, loose backfill material, marker tape, surface scars etc... to be evaluated as an indication of buried services. All known service locations will be conspicuously marked on the surface. Permit to Dig system to be implemented. Where practicable vacuum excavation methods will be used to expose and identify services. No mechanical digging or cutting to take place within 500mm of any services. Where required, road saw (or similar) to be the only permitted mechanical means to cut road / footpath surface or other hard surfacing material. Road saw blade to be set to cut to a depth equal to tarmac thickness only. Trial cuts to be made where there are no known services to establish tarmac thickness. Non-conductive spades/shovels to be used. No picks or pointed tools to be used. CAT & Genny scanning to continue periodically throughout all excavation work. Exposed services to be protected with suitable cover where practicable. Suspended services to be temporarily supported.	Site Supervisor	L
Risk of impact injuries from debris flying from disc cutting wheel when cutting hard surface.	2	4	M	Impermeable barrier to be erected between work face and areas where pedestrians may be trafficking. Suitable PPE to be worn by the operator of road saw and any other work party member in the guarded zone.	Site Supervisor	L
High noise and vibration levels when using mechanical cutting device. Risk of noise induced hearing loss and HAVS	5	4	H	Operatives to wear hearing protection. Saw operator to wear gloves. Vibration exposure durations to be monitored and recorded to ensure exposure limits are not exceeded.	Site Supervisor	L
Risk of falling or of others driving plant / vehicles into open excavations.	3	4	M	All open excavations to be suitably guarded. Excavations to be backfilled at the earliest opportunity	Site Supervisor or	L
Risk of collapse of excavation walls causing crush injuries.	1*	5	L*	Risk levels are generally low or not significant due to typically shallow depth of services. *For deeper trial holes excavation walls will be battered or stepped back to a safe angle as excavation work proceeds.	Site Supervisor	I
Impact or crush injuries to operatives due to contact with mobile plant operating in close proximity.	3	5	H	Banksman / signaller to assist the operators of mobile plant whilst movements are taking place. Plant to be fitted with equipment to maintain 360° vision (e.g. rear view & wing mirrors or rear facing CCTV cameras). Operatives to wear high visibility outer clothing. Standard dumpers – driver to dismount and stand at a safe distance during loading of dumper skip by mechanical means.	Site Supervisor	L

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SECTION C**Environmental hazards & control measures**

All works shall be carried out in accordance with the ZTL environmental management system, current legislation and industry codes of practice.

Significant Hazard:	Initial Likelihood 1-5	Initial Severity 1-5	Initial Risk H. M. L	Control Measures	Action By	Residual Risk L. I.
Environmental spills	3	3	M	Spill kits to be provided at environmentally sensitive locations. Drip trays to be used when storing or refuelling equipment containing fuels / oils All fuels & oils to be stored where any spills will be contained (e.g. within an impermeable bund, or mobile fuel bowser with a secondary containment system (double skin bund). No fuels/hazardous substances to be stored close to S.W. drains/gullies or any open watercourses.	Site Supervisor	I
Airborne dust generated by site operations Risk of exposure to respirable silica dust.	4	4	M	Controlled by damping down with water Speed restrictions on site Road sweeping of hard surfaces as required All dust suppression methods will be done in a controlled manner in order that enough water is used to suppress the dust but not excessive quantities that causes run off. Operatives to be provided with and will wear suitable respiratory protection (RPE) with fp3 rated filters. RPE to be face fit tested.	Site Supervisor	L
Litter/ Waste Management	3	3	M	A high standard of housekeeping shall be maintained at all times. Waste to be minimised by re-cycling / reusing materials where practicable. All waste & packaging will be disposed of as it is generated Waste materials will not be burned on site.	Site Supervisor	L
Energy wastage	4	2	M	Shut down plant when not in use. Ensure plant is well maintained and free from defects.	Site Supervisor	I
Excessive noise nuisance when saw cutting.	5	1	L	Saw cutting to be limited to an absolute minimum.	Site Supervisor	I

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SECTION D		PPE requirements					
Type of PPE							
High visibility clothing Spec: EN 471	Safety Helmet Spec: EN 397	Safety boots Spec: EN 20345	Hearing protection Spec: EN352	Eye protection Spec: EN166	R.P.E. Spec: EN149 APF: - FFP3	Gloves Spec: EN388	Other (please specify):
Tick where required							
							
Remarks / further information							
Class 3 when working in highway			When disc cutting	When disc cutting	When using floor saw. RPE to be face fit tested.	When using floor saw, When disc cutting	

SECTION E	Competence requirements
Site Manager / Supervisor – Will hold SMSTS / SSSTS qualification or equivalent Will be qualified in first aid Plant operators – Will hold relevant CPCS or NPORS qualification for mobile plant Operatives – Will hold relevant CSCS qualifications and will be trained and competent to carry out the work activities described in this document	

SECTION F	Method Statement
Resources:	
Cable Avoidance Tool, Genny, barriers / fencing, floor saw (if reqd.), excavator (if required), hand tools.	
Method of working:	
Prior to any works taking place: Study existing service drawings and note positions of all underground apparatus. Conduct visual survey for evidence of buried services. Survey areas with CAT & Genny and mark any services that may affect proposed works. Through hard surfaces: Cut with a road saw. Remove surface material with excavator and load into dumper. Transport to stockpile remote from excavation. Vacuum excavator: Remove the spoil and expose the buried services (see separate RAMS). Hand digging: Use spades and shovels only applying gentle pressure. (never spike into the ground) Continue until service is exposed. Note - Excavate alongside the service rather than directly above it. Final exposure of the service can be by horizontal digging to ensure the force applied to hand tools can be controlled more effectively. Record the data from the trial hole and backfill with service installation methods. If the trial hole needs to be left open, guard of with interlocking barriers and place signs.	

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SECTION G**Records of Review of This Assessment**

I confirm that the general principles of prevention have been considered when preparing this risk assessment - the following hierarchy of control has been used (1) Eliminate, (2) Reduce, (3) Isolate, (4) Control, (5) Personal Protective Equipment

Assessment of site or task specific hazards by:	Name:		Signature:		Date:	
Assessment reviewed by:	Name:		Further control required?*	Y	N	Date:
Assessment reviewed by:	Name:		Further control required?*	Y	N	Date:
Assessment reviewed by:	Name:		Further control required?*	Y	N	Date:
Assessment reviewed by:	Name:		Further control required?*	Y	N	Date:

*Delete as appropriate. If further control measures are required then they should be recorded in Section A, B or C of this document.

SECTION H**Communication & Acknowledgement Records**

Acknowledgement: to be completed by all those involved with or affected by the work activity.

I confirm that I have had the contents of this document explained to me and have understood the requirements of the risk assessment.

Name	Signature	Date	Comments

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SECTION H

Communication & Acknowledgement Records

Acknowledgement: to be completed by all those involved with or affected by the work activity.

I confirm that I have had the contents of this document explained to me and have understood the requirements of the risk assessment.

[illegible]

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