

Foundation Works Groundwater Risk Assessment

Client: Lidl Great Britain
Ltd

Glan Llyn

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Issue No	Date	Prepared By	Technical Review	Authorised
01	10.06.25	G Jones	P Searing	G Jones



1. INTRODUCTION

Remada Ltd was commissioned by Lidl Great Britain Ltd ('the client') to prepare a Groundwater Risk Assessment for proposed retail development located to the south of Bessemer Drive, Glan Llyn, Newport, NP19 4TZ at the location indicated in **Figure 1**. This Risk Assessment has been prepared to address the comments raised by the Newport City Council in their email to Carney Sweeney dated 2nd June 2025.

As the site is in Wales, the layout of this document was designed in line with the Welsh Land Contamination Working Group's Development of Land Affected by Contamination: A Guide for Developers version 3: May 2017. This guidance represents the culmination of a co-operative effort involving the Welsh Local Government Association (WLGA) and Natural Resources Wales (NRW). For the purpose of this report, any references to the Environment Agency (EA) should be seen as interchangeable with NRW.

1.1. Proposed Development

The proposed development comprises a Lidl store, Nursery, three (3 No.) additional retail units and car park. At the time of Remada's ground investigation, the site was vacant, partly open scrubland, with the northeastern zone being used as a compound by St. Modwen Homes for the adjacent residential development.

1.2. Objectives

The objectives of this assessment are as follows:

To prepare a Groundwater Risk Assessment for piling and/or penetrative ground improvement works in accordance with the requirements of:

- Piling and Penetrative Ground Improvement Methods on Land Affected by Contamination: Guidance on Pollution Prevention, CLAIRE, March 2025, and
- Enable Condition 32 of Planning Permission 24/0782 to be discharged.

1.3. Scope of Work

The scope and layout of this document has been designed in mind of the Environment Agency's Land Contamination Risk Management guidance for land contamination reports.

The scope of the work comprised:

- An assessment of previous site investigation work on-site;
- A review of regulatory correspondence pertaining to the proposed development;
- A review of the Conceptual Site Model; and
- An assessment of the piling works against the seven scenarios stated in CLAIRE 2025.

1.4. Summary of Previous Investigations

A summary of the available reports is tabulated below:

- Phase 1 Site Investigation & Preliminary Risk Assessment (Lidl Store Zone), Glan Llyn, Newport, 1261.01.01, July 2024.
- Phase 1 Site Investigation & Preliminary Risk Assessment Glan Llyn (Disposal Land), Newport 1261.02.01, July 2024.



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- Phase 2 Ground Investigation (Lidl Store Zone) Glan Llyn, Newport 1261.03.02, September 2024.
 - Phase 2 Ground Investigation (Disposal Land), Glan Llyn, Newport, 1261.04.02, September 2024.

1.5. Limitations

The comments given in this report and the opinions expressed are based on the information reviewed and observations during site work. However, there may be conditions pertaining to the site that have not been disclosed by this assessment and therefore could not be taken into account.



2. BACKGROUND

2.1. Review of Previous Reports for Lidl Store Zone

Relevant sections of previous reports for the proposed retail store zone of the site and with regard to piling works are reproduced below.

2.1.1. Phase 1 Reports

Site Setting

The site comprises an irregular plot north of A4810 Queen's Way and west of Kings Wall Drive. At the time of writing the majority of the site is vacant scrubland, with the northeast portion being used as a compound associated with the St. Modwen Homes residential development adjoining the site to the north-east. The yard is mainly used for car parking and the storage of construction plant and materials. Soil stockpiles were noted on-site during Remada's site walkover, likely comprising earthworks from the adjacent housing development. However, no permanent structures were noted on-site.

It is understood that the proposal is to develop approximately the southern two-thirds of the site with a new Lidl retail store. The northern third of the site has been designated as disposal land upon which it is proposed to develop a new nursery and 3 No. retail units with associated car parking and landscaped areas. This Phase 1 Site Investigation & Preliminary Risk Assessment report focuses on the proposed Lidl store area of the site only.

Site History

The earliest available historical mapping of 1883 shows the site to comprise agricultural land, devoid of any structures. By 1967, the site had been redeveloped to comprise part of the wider ore stockpiling area for Spencer Steelworks. An east-west orientated conveyor bisected the northern area of the site, whilst a parallel roadway bisected the southern area of the site. Since the mapping of 2004 the site has remained vacant following the demolition of the steelworks. More recently parts of the study site have been used as a construction compound associated with the adjacent (off-site) residential development.

Mining

The site is located within an area which might not be affected by coal mining activity.

Geology / Hydrogeology

Published geological maps record that the site is underlain by superficial Tidal Flat Deposits, designated as Unproductive Strata, and bedrock of the Mercia Mudstone Group, designated as a Secondary (B) Aquifer. The site is not located within a groundwater Source Protection Zone (SPZ).

The geological, hydrogeological, water network and groundwater protection zone maps that are presented within Remada's Phase 1 reports have been reproduced as Figure 2.

2.1.2. Phase 2 Ground Investigation Reports Lidl Store

Investigation Scope - Lidl Store Area

The investigation comprised five (5 No.) window sample boreholes beneath the proposed store footprint to a depth of 7m or refusal, and four (4 No.) beneath the delivery bay, HGV access and car park area. Four (4 No.) plate bearing tests were conducted within the proposed store footprint for a raft foundation design, and eight (8 No.) DCP CBR tests were conducted in the proposed car park. Four (4 No.) ground gas monitoring visits were undertaken.

Four (4 No.) Cone Penetration Tests (CPT1 to CPT4) were carried broadly within the proposed store footprint as constrained by the activities and wastes of the construction site compound.



Made Ground was encountered from ground surface levels comprising granular material with inclusions of anthropogenic material. Made Ground was found to overly very soft to firm blueish clay over peat. The maximum extent of the peat was not confirmed during the ground investigation, though it should be noted that peat was encountered from depths as shallow as 3.70m bgl.

Investigation Scope - Third Party Disposal Land

The investigation comprised the drilling of nine (9 No.) windowless sampler boreholes ...; five (5 No.) of which were advanced within the footprint of the proposed nursery and retail units, and four (4 No.) within the proposed car park. Three (3 No.) plate bearing tests were performed; two (2 No.) of which were conducted within the proposed nursery footprint for a raft foundation design, as well as two (2 No.) DCP

Made Ground was encountered within all of the exploratory holes located within the proposed Lidl development site. Made Ground was typically encountered as reworked natural material with anthropogenic inclusions predominantly comprising demolition material with rare industrial by- products (slag). Made Ground was encountered from ground surface levels or below topsoil to depths ranging from 1.0 to 4.7m bgl, though the base of the Made Ground was not encountered within exploratory holed WS206, WS207, WS208, and WS208A.

Human Health Assessment – Lidl Store

The results of soil chemical analysis were compared to Human Health Generic Assessment Criteria for commercial land use. None of the analytes tested were detected at concentrations that exceeded the human health GAC protective of on-site workers.

Human Health Assessment – Third Party Disposal Land

The proposed development comprises three (3 No.) commercial units and a new nursery which will include a garden area. To provide a conservative risk assessment of the proposed nursery garden, the results of chemical laboratory analyses were compared separately to the GAC appropriate to a commercial redevelopment and to a residential development without the potential for the consumption of homegrown produce. None of the determinants tested for were identified at concentrations exceeding the GAC for a commercial end-use, however within all samples analysed concentration of chromium were found to exceed the GAC for a residential development. A certified clean cover layer will therefore be required within the proposed nursery garden area.

Water Resources Assessment

The results of the soil chemical analysis undertaken has identified that concentrations of metals and inorganic contaminants are within the range of typical made ground. Detectable concentrations of TPH and PAHs were encountered in some samples. However, the contaminants identified are of low solubility and mobility and as such are unlikely to present a risk to groundwater beneath the site. In addition, it should be noted that the site will be predominantly covered with the building and areas of hardstanding. Therefore, the risk of leaching of contaminants as a result of infiltration of groundwater is likely to be limited. Therefore, the risk to groundwater from contaminants within the made ground at the site is considered to be low and does not warrant further consideration.

Waste Classification

Waste Acceptance Criteria (WAC) analysis was undertaken on four samples of Made Ground. The assessment indicated that three of the four samples met the requirements for disposal in a non-hazardous landfill as stable, non-reactive hazardous waste. The sample of Made Ground recovered from exploratory hole WS102 at a depth of 1.0m bgl met the requirement for disposal in an inert landfill.

The results of the assessment indicated that contaminant concentrations within the Made Ground, were generally low though with concentrations of antimony and pH values classifying the soils as stable, non-



reactive hazardous waste suitable for disposal within a non-hazardous landfill and would classify the soils as non-hazardous with LoW Code 17 05 04 (soils and stones other than those mentioned in 17 05 03).

Geotechnical Assessment – Lidl Store

The Supplementary CPT investigation within the proposed store footprint proved a high strength soil to a depth of 1m overlying soft organic deposits to a depth to 7m bgl overlying low strength silty sand/sandy silt and low strength silty clay / clayey silt which significantly increased in strength at between 11.1m bgl and 12.4m bgl dependent upon location. CPT refusal depths were between 12.5 and 13.1m bgl. No groundwater was encountered during the initial intrusive investigation, but during the subsequent monitoring program standing water was recorded at depths of between 0.38 and 1.80m bgl

Preliminary estimated safe working loads have been tabulated but are indicative only and specialist piling contractors should be consulted with regard to the design and performance of their piled foundations.

It is considered that the floor slab should be suspended on piled foundations.

A Design Sulphate Class DS-1 is considered appropriate for buried concrete and an ACEC Class of AC-1 is considered appropriate for the location.

It is considered that the floor slab should be suspended on piled foundations.

Geotechnical Assessment - Disposal Land

The Supplementary CPT investigation within comprised one (1 No.) probe within the footprint of the proposed nursery which refused at a depth of 13.39m. The presence of compacted Made Ground that forms St Modwen's builder's compound prevented penetration of the CPT rig into the underlying natural soils. CPT logs (CPT1-CPT5) record high strength soil to a depth of 1m overlying soft organic deposits to a depth to 7m bgl overlying low strength silty sand/sandy silt and low strength silty clay / clayey silt which significantly increased in strength at between 11.1m bgl and 12.4m bgl and below 11.5m in CPT5. CPT refusal depths were between 12.5 and 13.1m bgl in CPT1-CTP4 and 13.4m in CTP5.

Preliminary estimated safe working loads have been tabulated within the report but are indicative only and specialist piling contractors should be consulted with regard to the design and performance of their piled foundations.

A Design Sulphate Class DS-1 is considered appropriate for buried concrete and an ACEC Class of AC-1 is considered appropriate for the location.

Ground Gas – Lidl Store

The results of the initial four rounds of gas monitoring visits placed the site into Characteristic Situation 5 however the monitoring wells installed within WS101 to WS103 and penetrated the pseudo-fibrous PEAT that is present beneath a layer of clay at depths 3.6 to 4.7m bgl. The results of four rounds of supplementary gas monitoring at WS301 to WS304 which were installed to a depth of 1.0m would place the site into Characteristic Situation 1. Given that the natural CLAY prevents a direct pathway for ground gas within the PEAT and the proposed building, it is recommended that Characteristic Situation 2 protection measures should be adopted.

Ground Gas – Disposal Land

The calculated GSV for monitoring wells that penetrate the underlying organic clay and PEAT below 4.2m would place the site into Characteristic Situation 2. However, the calculated GSV for WS208A which was installed to 2m bgl is less than 0.07 l/hr and would place the site into Characteristic Situation 1. Given that the natural CLAY prevents a direct pathway for ground gas with the PEAT and the proposed building, it is recommended that Characteristic Situation 2 protection measures should be adopted.

Exploratory Locations in the context of an indicative Proposed Site Layout are presented in Figure 3.



3. CONCEPTUAL SITE MODEL

From the above review ground investigation data, the plausible pollutant linkages with regard to the foundation works have been tabulated below.

Source	Pathway	Receptor		Risk	Rationale
		Primary	Secondary		
Soil Contaminants within Made Ground Asbestos / Metals As, Be, Cd, Cu, Cr (VI), Cr (III) Hg, Ni, Se, Va, Zn, Boron, TPH /PAH.	Direct contact with potentially contaminated soils in Made Ground	Groundwater within Secondary B Aquifer in Superficial Deposits	Watercourse adjacent to the site	Low	Contaminant concentrations < GAC and CPT logs record the superficial deposits as silty sand/sandy silt and silty clay / clayey silt, (hence low permeability soils).
		Bedrock Aquifer	N/A	N/A	Unproductive Strata - No receptor.
	Direct contact with potentially contaminated soils driven down in natural soils by piling	Groundwater within Secondary B Aquifer in Superficial Deposits	Watercourse adjacent to the site	Low	Contaminant concentrations < GAC and CPT logs record the superficial deposits as silty sand/sandy silt and silty clay / clayey silt, (hence low permeability soils).
		Bedrock Aquifer	N/A	N/A	Unproductive Strata - No receptor.
Cement within foundation and/or cast in situ bored piles / Controlled Modulus Columns	Direct contact with cement/liquid concrete	Groundwater within Secondary B Aquifer in Superficial Deposits	Watercourse adjacent to the site	Low	Contaminant concentrations < GAC and CPT logs record the superficial deposits as silty sand/sandy silt and silty clay / clayey silt, (hence low permeability soils).
		Bedrock Aquifer	N/A	N/A	Unproductive Strata - No receptor.

Table 1 Conceptual Site Model



4. GENERAL NOTES & TERMINOLOGY

The following notes are reproduced from CLAIRE, 2025

4.1. Differentiation between piling and ground improvement methods

Bearing piles are designed to transfer load to a competent bearing stratum, normally below a weaker layer of soil. Piles can also be used as retaining structures via contiguous pile walls, secant pile walls, or soldier pile walls (less commonly in the UK diaphragm walls can be used as retaining structures). Diaphragm walls or secant pile walls are also used to provide a barrier to contaminant migration through the ground. Diaphragm wall methods can also be used to create rectangular bearing piles (known as barrettes). Piles are also used to resist uplift forces and these are known as tension piles. Sheet piles are installed to create either temporary or permanent retaining structures, but have also been used to create gas or groundwater barriers by welding the joints.

Ground improvement techniques normally aim to improve poor ground and to improve and control the anticipated settlement of the ground under load (by densification, or by a combination of densification and addition of stiffer granular, concrete or soil mixed material) so that it is made competent to support conventional foundations, floor slabs or other structures without excessive settlement. However, some ground improvement techniques such as vibro concrete columns are closer in form to piles than to ground improvement by densification although they are installed with equipment used for ground improvement.

Ground improvement methods can densify the soil by rearranging soil particles or improve its characteristics by addition of additives such as cement or by providing inclusions in it (e.g. stone columns).

4.2. Bearing & Displacement Piles

It is most common to differentiate bearing piles based on whether they displace the soil around them (displacement) or the soil is removed and replaced with a structural material, typically concrete (replacement) (Tomlinson and Woodward, 2015).

4.2.1. Displacement Piles

Displacement piling methods involve the pile being formed by displacing soil from the space to be occupied by the pile without the removal of soil to the ground surface.

In general the mechanism of radial soil displacement causes densification of the soil surrounding the pile and generally this will lead to a reduction in permeability of the penetrated soil. The radial movement of the soil will also create a stress field in the zone of influence that will tend to make the soil close up around the pile after the driving is complete, especially in cohesive materials.

Small displacement piles comprise solid H, or I steel sections or hollow tube sections. Screw (helical) piles are also small displacement.

Displacement piles may be installed by hammering (dynamic loading), by jacking (static loading) or by vibration. A variant of static loading is the formation of screw piles by torsional loading.

Examples of displacement piles:

- Driven piles (totally preformed);
- Driven cast-in-place piles (driven casing removed);
- Screw (helical) piles; and
- Augered displacement pile



4.2.2. Replacement Piles

Replacement piles may be installed by various drilling or augering methods to form a void in the ground that is filled with concrete or grout. Diaphragm wall construction may also have implications for groundwater or ground gas risk

Examples of Replacement Piles

Bored piles

- CFA piles
- Barrettes/diaphragm walls

4.3. Vibro concrete columns

This technique involves construction of concrete columns using a bottom-feed depth vibrator to transfer loads through weak strata to a firm underlying stratum. Concrete is then pumped via a tremie pipe running through the hollow stem of the poker to the base of the column. The poker is raised and lowered into the concrete, displacing the concrete into a bulb at the base. The poker is then withdrawn at a set rate whilst concrete is pumped into the hole at a positive pressure. Once completed the columns can be trimmed and reinforcement placed. An enlarged column head can be formed by reintroducing the poker at the top of the column.

4.4. Penetrative Ground Improvement

4.4.1. Vibro compaction

Vibro compaction is executed using a vibrating probe supported by a crane, drill rig, or excavator to compact and densify the ground

4.4.2. Vibro replacement Stone Columns

This technique involves the improvement of weak soils by the installation of densely compacted columns made from gravel or similar material with a vibrator.

4.4.3. Rigid Inclusion (Controlled Modulus) Columns

Rigid inclusions are different to vibro concrete columns or piles. They are installed on a regular grid and do not transfer load to a deeper stratum but work in conjunction with the surrounding ground to reduce settlement and increase bearing capacity. A load transfer platform is then constructed over the top of the inclusions. This allows the use of spread foundations or ground bearing floor slabs.

4.4.4. Soil mixing

The soil is mixed with binder to provide a stronger and stiffer material in columns or as a mass.

4.5. Sheet Piles

Sheet piles are a displacement method used to construct temporary or permanent retaining walls. When used as a temporary wall, once the structure or excavation is complete and the sheet piles are no longer required, they are removed. Steel and plastic sheet piles are small displacement and concrete and timber are larger displacement.



5. PROPOSED FOUNDATION DESIGN & METHODOLOGY

5.1. Foundation Design

The proposed foundation designs for the Lidl store, Nursery and Third Party Retail Units all adopt piled solutions with suspended floor slabs as per the following drawings:

- Lidl Piling Layout Shear Design Drawing 25027-001
- Lidl Foundation Layout Shear Design Drawing 25027-002
- Nursery Piling Layout Shear Design Drawing 25027-003
- Nursery Foundation Layout Shear Design Drawing 25027-003
- Triple Units Piling Layout Shear Design Drawing 5027-005
- Triple Units Foundation Layout Shear Design Drawing 25027-006

None of the drawings specify the pile type, shape or diameter or depth.

The geological maps reproduced at **Figure 2** record Superficial Tidal Flat Deposits overlying the Mercia Mudstone Group. The BGS Lexicon describes Tidal Flat Deposits as consolidated soft silty clay, with layers of peat, sand and a basal gravel. A stronger, desiccated surface zone is sometimes present.

Remada's Phase 2 Ground Investigations recorded a high strength soil overlying soft organic deposits to a depth overlying low strength silty sand/sandy silt and low strength silty clay / clayey silt which significantly increased in strength at between 11.1m bgl and 12.4m bgl dependent upon location.

CPT refusal depths were between 12.5 and 13.1m bgl and therefore piles are anticipated to transfer load through the soft Superficial Deposits (Secondary B Aquifer) and bear within Mercia Mudstone Group (Unproductive Strata). Resting groundwater levels were recorded with the superficial deposits.

5.2. Methodology

At the time of writing it is not known if the piles will be driven, augered and cast in-situ or less costly ground improvement technique such as Controlled Modulus or Rigid Inclusion Columns.



6. FOUNDATION WORKS RISK ASSESSMENT

6.1. Purpose

CLAIRE 2025 states that the purpose of the FWRA is to achieve the following:

- a) Where pollutants are in the soil and have not entered groundwater, you must take all necessary and reasonable measures to:
 - prevent the input of hazardous substances into groundwater
 - Limit the entry of non-hazardous pollutants into groundwater to avoid pollution
- b) Where pollutants have already entered groundwater your priority is to take all necessary and reasonable measures to:
 - minimise further entry of contaminants where there is a defined source
 - limit the pollution of groundwater or any effect on the status of the groundwater body from the future expansion of the plume, if necessary, by actively reducing its extent

Factor	Negligible Risk	Low Risk	Moderate Risk	High Risk
Aquifer designation	Unproductive strata	Groundwater resource	Secondary	Principal
Receptor	No credible receptor	Groundwater outside SPZs (that contamination could credibly reach)	SPZ 3/total catchment zone Surface watercourse	SPZ 1 and 2 SSSI
Flow regime		Matrix intergranular flow		Fracture flow
Permeability	Very low permeability	Low permeability	High permeability	Very high permeability
Contamination	No significant contamination present	Low leachability (compare to suitable standards, EQS or DWS)	Dissolved phase in perched water	Dissolved phase in perched water NAPL
Piling/ground improvement depth	Pile toe >10 m above bottom of aquiclude	Pile toe between 5 m and 10 m from bottom of aquiclude ¹	Pile toe <5 m above bottom of aquiclude ¹	Pile extends into aquifer

1. Based on research discussed in Appendix 1 and professional judgement

SPZ - Source Protection Zone; SSSI - Site of Special Scientific Interest; EQS - Environmental Quality Standard; DWS - Drinking Water Standard; NAPL - Non Aqueous Phase Liquid

**Table 2 Foundation Works Risk Assessment Matrix for Groundwater – Initial Screening
(reproduced from CL:AIRE Table 6.2)**



6.2. General

The Piling Risk Assessment has been undertaken in accordance with CLAIRE 2025 namely *Piling and Penetrative Ground Improvement Methods on Land Affected by Contamination: Guidance on Pollution Prevention*,

In particular this risk assessment refers to the seven pollution scenarios detailed within CLAIRE 2025 which are summarised in Table 3 below.

Scenario	Details
1	Creating of preferential pathways through a low permeability layer (an aquitard) to allow potential contamination of an aquifer.
2	The Driving of solid contaminants down to an aquifer during pile driving.
3	Contamination of groundwater and, subsequently, surface waters by turbidity, support fluids, concrete, cement paste or grout;
4	Direct contact of the piles or engineered structures with contaminated soil or leachate causing degradation of pile materials (where the secondary effects are to increase the potential for contaminant migration);
5	Creation of preferential pathways, including through a low permeability layer, to allow upward migration of landfill gas, soil gas, mine gas or contaminant vapours (e.g. Volatile Organic Compounds (VOCs)) to the surface;
6	Causing off site migration of ground gas or increased vertical emissions as a result of vibration or other effects from the pile installation process;
7	Direct contact of site workers and others with contaminated soil arisings which have been brought to the surface.

Table 3 Generic Pollution Scenarios

6.3. Risk Assessment

The piling risk assessment for the replacement Lidl store and residential housing in the footprint of the former store is presented within Table 4. Risk estimation has been undertaken in line with guidance for Land Contamination Risk Management.



Pollution Scenario		Source (S) Pathway (P) Receptor (R)	Risk	Comment
1	Creating of preferential pathways through a low permeability layer (an aquitard) to allow potential contamination of an aquifer.	S Contaminated Made Ground, contaminated perched groundwater or NAPL.	Low	Piles will be installed through the Superficial Deposits, a Secondary B Aquifer and be end bearing within the Unproductive Mercia Mudstone Formation but an aquitard is not present.
		P Pile material, stone column, pile/soil interface or disturbed ground around pile.		
		R Groundwater in aquifer - typically in competent strata in which pile is founded (or at the base of ground improvement).		
2	The driving of solid contaminants down into an aquifer during pile driving.	S Contaminated Made Ground / soil or NAPL.	Low	In the worst case scenario, driven piles through Made Ground could drive contaminants down into the Superficial Deposits, a Secondary B Aquifer, however the Ground Investigation did not identify elevated concentrations of contaminants within the Made Ground.
		P Driving down of soil or NAPL in contact with the sides and butt end of the pile, or 'plugging' of an open-ended pile.		
		R Groundwater in aquifer, typically in competent strata in which pile is founded.		
3	Contamination of groundwater and, subsequently, surface waters by turbidity, support fluids, concrete, cement paste or grout;	S Concrete, cement paste or grout introduced to the ground during piling/penetrative ground improvement operations. Support fluids used to support pile bores. Turbidity caused by pile construction.	Low	In the worst case, cast in-situ or Controlled Modulus Columns would introduce 'wet' concrete into the Secondary B Aquifer. However, the fine grained soils are not considered to be highly permeable (as would a Secondary A Aquifer) and therefore the movement of groundwater around the piles is considered to be negligible.
		P Flow within highly permeable or fractured strata or voids.		
		R Groundwater and surface water. Ultimate receptor may be surface water or water abstraction well. Turbidity is a particular issue for water abstraction wells.		



4	Direct contact of the piles or engineered structures with contaminated soil or leachate causing degradation of pile materials (where the secondary effects are to increase the potential for contaminant migration);	S	Contaminated soil, waste, groundwater/leachate or NAPL	Low	The Ground Investigation did not identify elevated concentrations of contaminants within the Made Ground.
			Direct contact with pile.		
			Built development (and users).Below Ground Structures i.e. Piles.		
5	Creation of preferential pathways, including through a low permeability layer, to allow upward migration of landfill gas, soil gas, mine gas or contaminant vapours (e.g. Volatile Organic Compounds (VOCs)) to the surface;	S	Gassing (e.g. methanogenic) landfilled waste or contaminated ground. Ground with VOC contamination or contaminated groundwater.	Low	As the site is directly underlain by the Superficial Deposits, a Secondary B Aquifer a preferential pathway would not be created.
		P	Pile/stone column, pile/soil interface or disturbed ground around pile.		
		R	Buildings, Construction Workers and End Users		
6	Causing off site migration of ground gas or increased vertical emissions as a result of vibration or other effects from the pile installation process;	S	Gassing (e.g. methanogenic) landfilled waste or contaminated ground. Ground with VOC contamination or contaminated groundwater.	Low	The penetration of Peat within the Superficial Deposits, a Secondary B Aquifer, has the potential to cause gas migration, therefore driven piles or Controlled Modulus Columns should be adopted as fine grained cohesive soils will close around the pile.
		P	Through the surrounding ground.		
		R	Users of built development; structures both on and off site.		
7	Direct contact of site workers and others with contaminated soil arisings that have been brought to the surface.	S	Contaminated Made Ground /Soil.	Low	The Ground Investigation did not identify elevated concentrations of contaminants within the Made Ground.
		P	Direct contact with excavated arisings, run-off to surface waters.		
		R	Human receptors (construction workers, site users etc) and surface water.		

Table 4: Piling Groundwater Risk Assessment



7. CONSTRUCTION QA/QC

In general, all site works should be carried out under an appropriate QA/QC regime, which should be specified by the Engineer / Designer and implemented by piling/ground improvement contractor.

As the pile design is not present available it should be incorporated into a Verification Report along with details of the pile layout, types, depth, concrete details and structural engineering test requirements.



8. CONCLUSIONS

The site is underlain by low strength and the proposed Lidl Store, Nursery and Third Party Retail Units will require piles to transfer the foundation loads to end bear in competent strata at depth of 13m or so.

Whilst some Made Ground was recorded in Remada's Phase 2 Ground Investigation, it did not extend to the entire site area, and it was found to have concentrations of contaminants that were less than the Generic Assessment Criteria (GAC) for a commercial land use.

The underlying Tidal Flat Deposits are designated as a lower permeability Secondary B Aquifer and do not support significant quantities of groundwater movement. Piles would end bear within the Mercia Mudstone Group which is designated as Unproductive Strata.

The penetration of Peat by piles may give rise to ground gas and therefore driven piles or Controlled Modulus Columns that displace the soil as fine grained cohesive soils will close around the pile or column are considered present lower risk than an augered and cast in-site pile.



REFERENCES & GUIDANCE

Environment Agency, *Piling & Penetrative Ground Improvement Methods on Land Affected by Contamination*, NC/99/73, 2001.

Environment Agency, *Piling in Layered Ground: Risks to Groundwater & Archaeology*, SC020074/SR, 2006.

Piling and Penetrative Ground Improvement Methods on Land Affected by Contamination: Guidance on Pollution Prevention, CLAIRE, March 2025.



STUDY LIMITATIONS

IMPORTANT. This section should be read before reliance is placed on any of the information, opinions, advice, recommendations or conclusions contained in this report.

1. This report has been prepared by Remada, Ltd with all reasonable skill, care and diligence within the terms of the Appointment and with the resources and manpower agreed with (the 'Client'). Remada does not accept responsibility for any matters outside the agreed scope.

2. This report has been prepared for the sole benefit of the Client unless agreed otherwise in writing.

3. Unless stated otherwise, no consultations with authorities or funders or other interested third parties have been carried out. Remada is unable to give categorical assurance that the findings will be accepted by these third parties as such bodies may have published, more stringent objectives. Further work may be required by these parties.

4. All work carried out in preparing this report has used, and is based on, Remada's professional knowledge and understanding of current relevant legislation. Changes in legislation or regulatory guidance may cause the opinion or advice contained in this report to become inappropriate or incorrect. In giving opinions and advice pending changes in legislation, of which Remada is aware, have been considered. Following delivery of the report Remada has no obligation to advise the Client or any other party of such changes or their repercussions.

5. This report is only valid when used in its entirety. Any information or advice included in the report should not be relied upon until considered in the context of the whole report.

6. Whilst this report and the opinions made are to the best of Remada's belief, Remada cannot guarantee the accuracy or completeness of any information provided by third parties.

7. This report has been prepared based on the information reasonably available during the project programme. All information relevant to the scope may not have received

8. This report refers, within the limitations stated, to the condition of the site at the time of the inspections. No warranty is given as to the possibility of changes in the condition of the site since the time of the investigation.

9. The content of this report represents the professional opinion of experienced environmental consultants. Remada does not provide specialist legal or other professional advice. The advice of other professionals may be required.

10. Where intrusive investigation techniques have been employed they have been designed to provide a reasonable level of assurance on the conditions. Given the discrete nature of sampling, no investigation technique is capable of identifying all conditions present in all areas. In some cases the investigation is further limited by site operations, underground obstructions and above ground structures. Unless otherwise stated, areas beyond the boundary of the site have not been investigated.

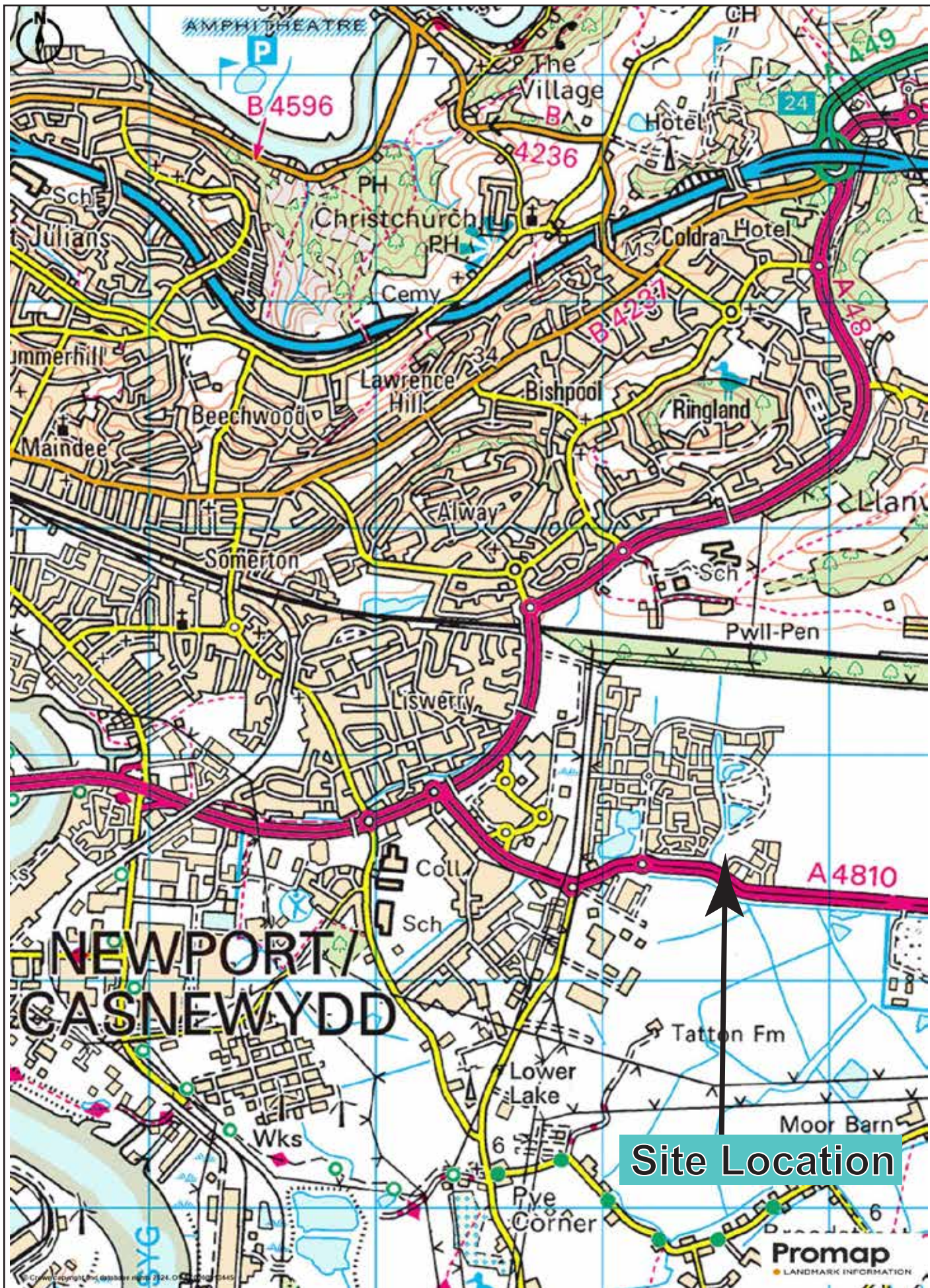
11. If below ground intrusive investigations have been conducted as part of the scope, service tracing for safe location of exploratory holes has been carried out. The location of underground services shown on any drawing in this report has been determined by visual observations and electromagnetic techniques. No guarantee can be given that all services have been identified. Additional services, structures or other below ground obstructions, not indicated on the drawing, may be present on site.

12. Unless otherwise stated the report provides no comment on the nature of building materials, operational integrity of the facility or on any regulatory compliance issues.

13. Unless otherwise stated, samples from the site (soil, groundwater, building fabric or other samples) have NOT been analysed or assessed for waste classification purposes.

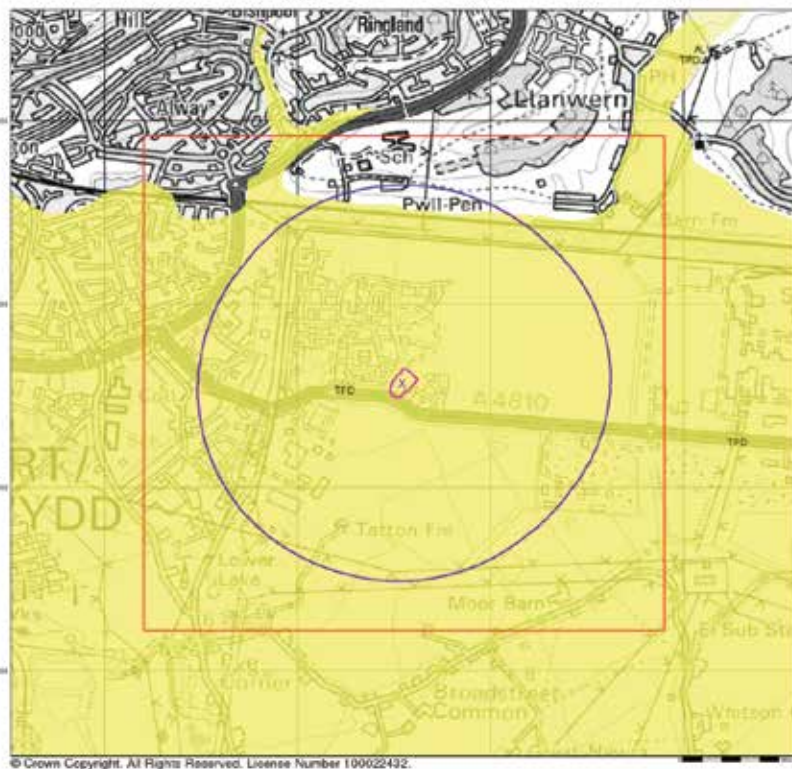


FIGURES

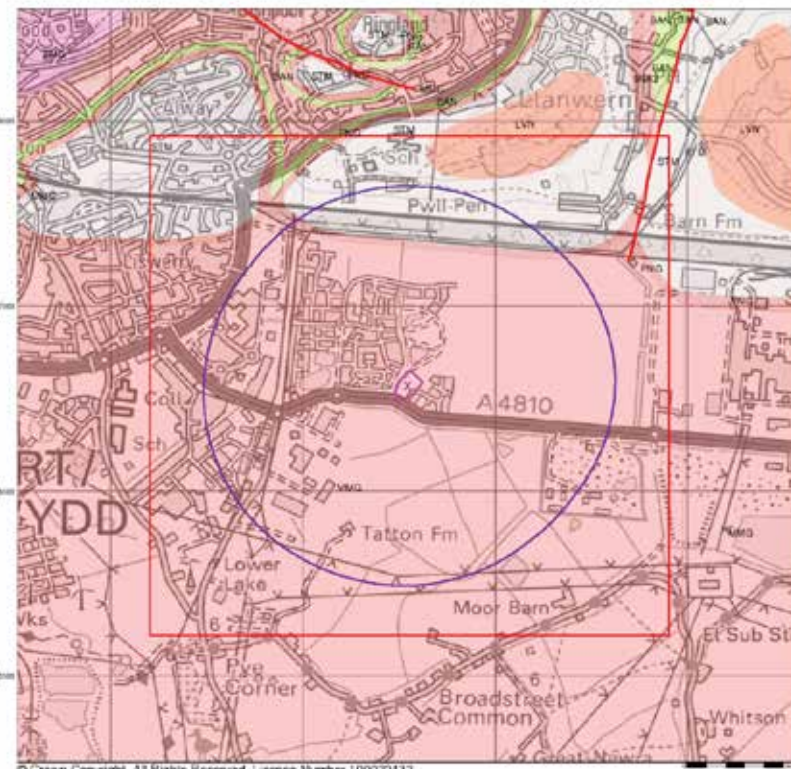


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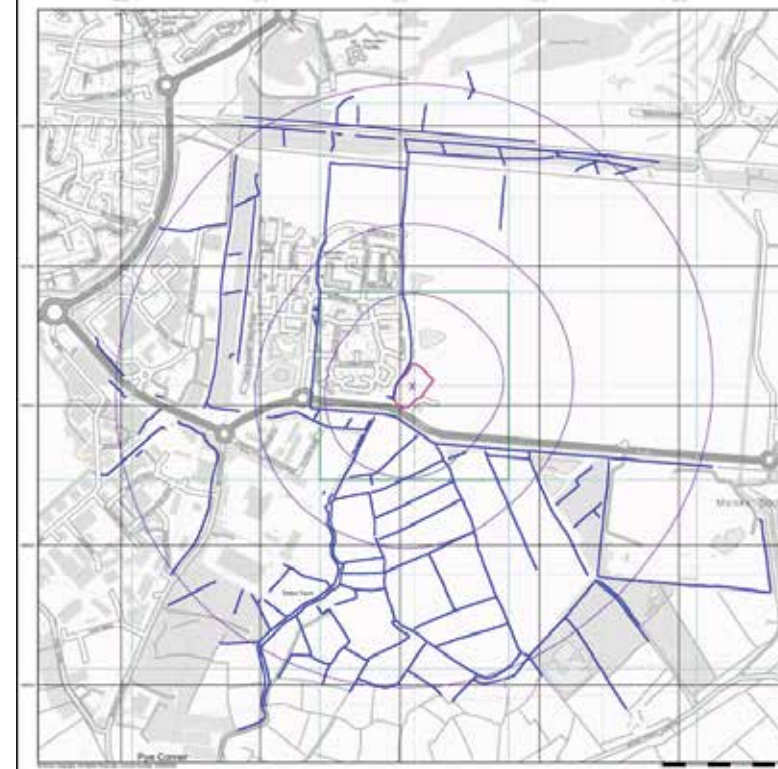
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			Glan Llyn, Newport	as shown	PD	A4
			Drawing Title	Date	Job No.	Figure No.
			Site Location Plan	08.07.24	1161	01
			Client	 		
			Lidl Great Britain Ltd			



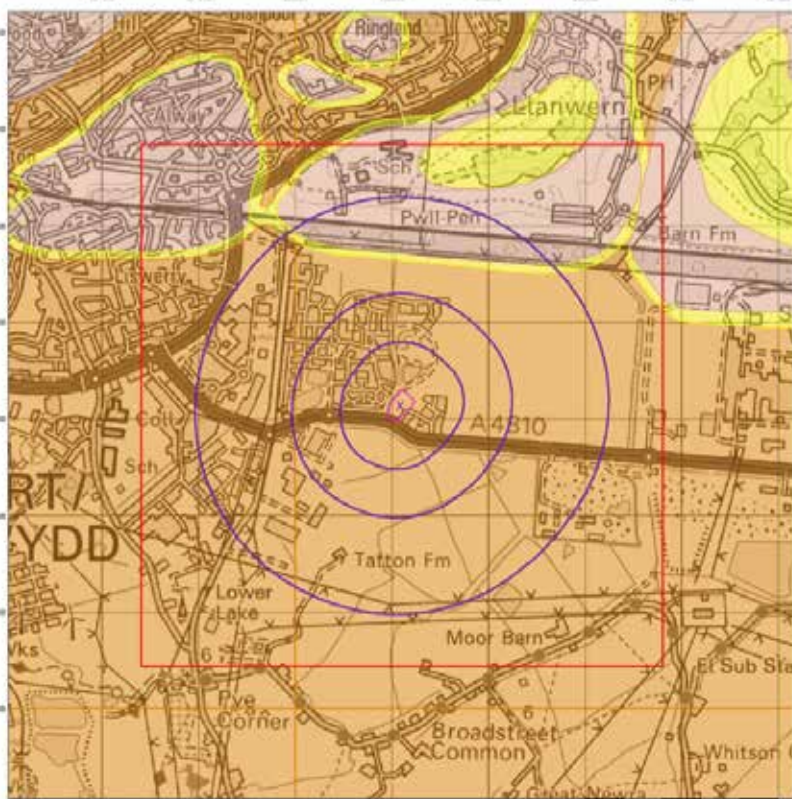
Superficial Geology - Tidal Flat Deposits



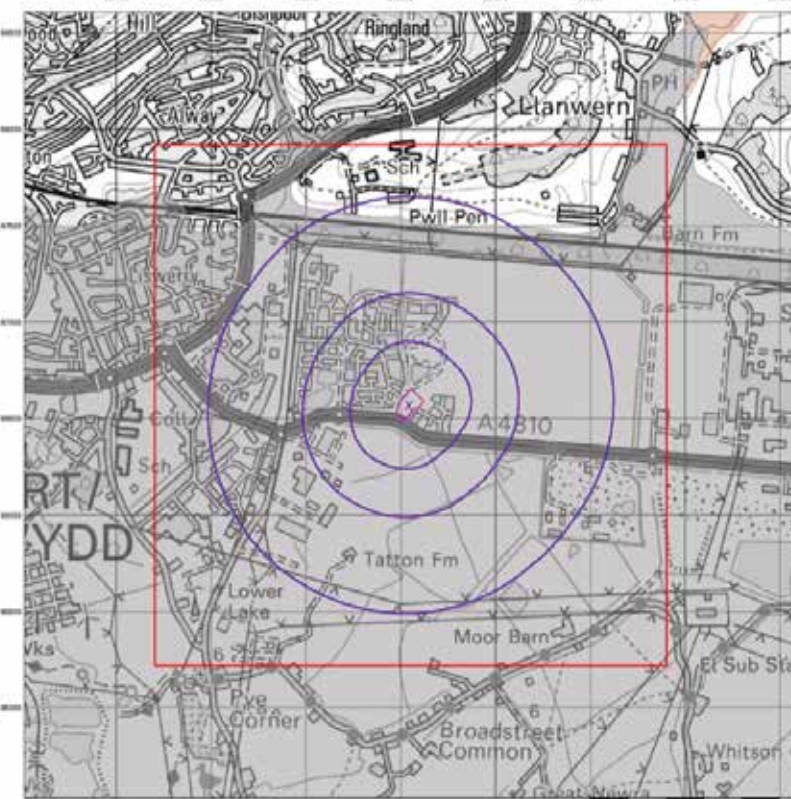
Bedrock Geology - Mercia Mudstone Group



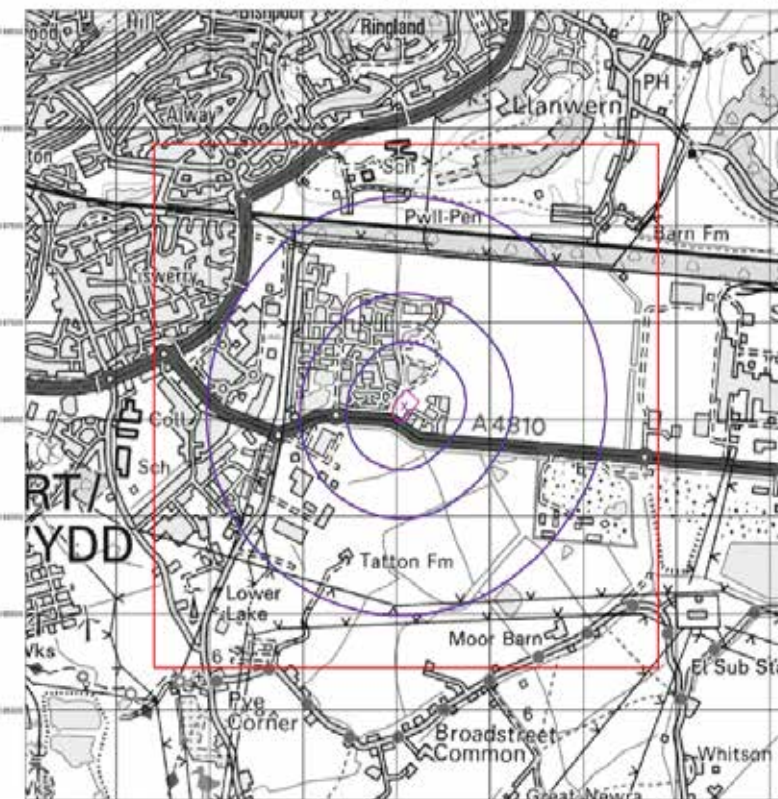
OS Water Network Map



Superficial Deposits Aquifer Map - Secondary B Aquifer



Bedrock Aquifer Map - Unproductive Strata



Groundwater Source Protection Zones Map

Legend

Notes

Maps reproduced from Remada's
Phase 1 Reports:
1261.01.01 & 1261.02.01

Consult detailed maps for legends.

Revision	Approved	Date

Project Title

Lidl Newport (Glan Llyn)

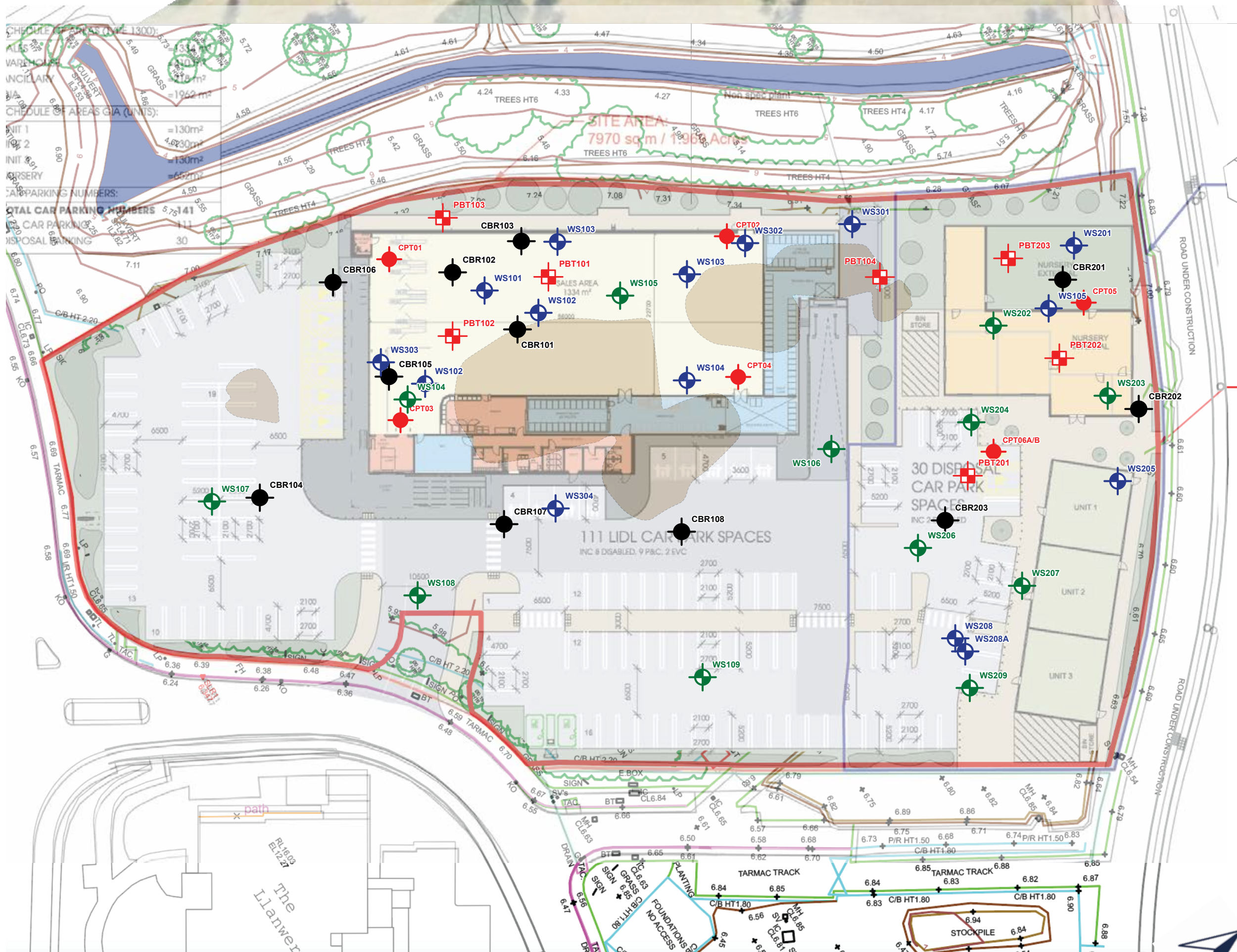
Drawing Title

Geological, Hydrogeological,
Water Network, Groundwater
Source Protection Zone Maps

Client

Lidl Great Britain Ltd

Scale	Drawn	Size
as shown	GJ	A4
Date	Job No.	Figure No.
09.06.25	1261.07	02



Legend

- WS01 Window Sample & Installation
- WS02 Window Sample
- PBT01 Plate Bearing Test
- CBR1 CBR Test
- Stockpile Location
- CPT1 Cone Penetration Test

Notes

Exploratory hole positions were restricted by the presence of on-site stockpiles, plant movements, parked cars, and materials storage areas.

Proposed Layout reproduced from HTC Architects
Proposed Site Plan - Option 14, drawing ref:
3211_F414_Rev K, dated July 2023.

Revision	Approved	Date

Project Title

Lidl Newport (Glan Llyn)

Drawing Title

Ground Investigation Locations

Client

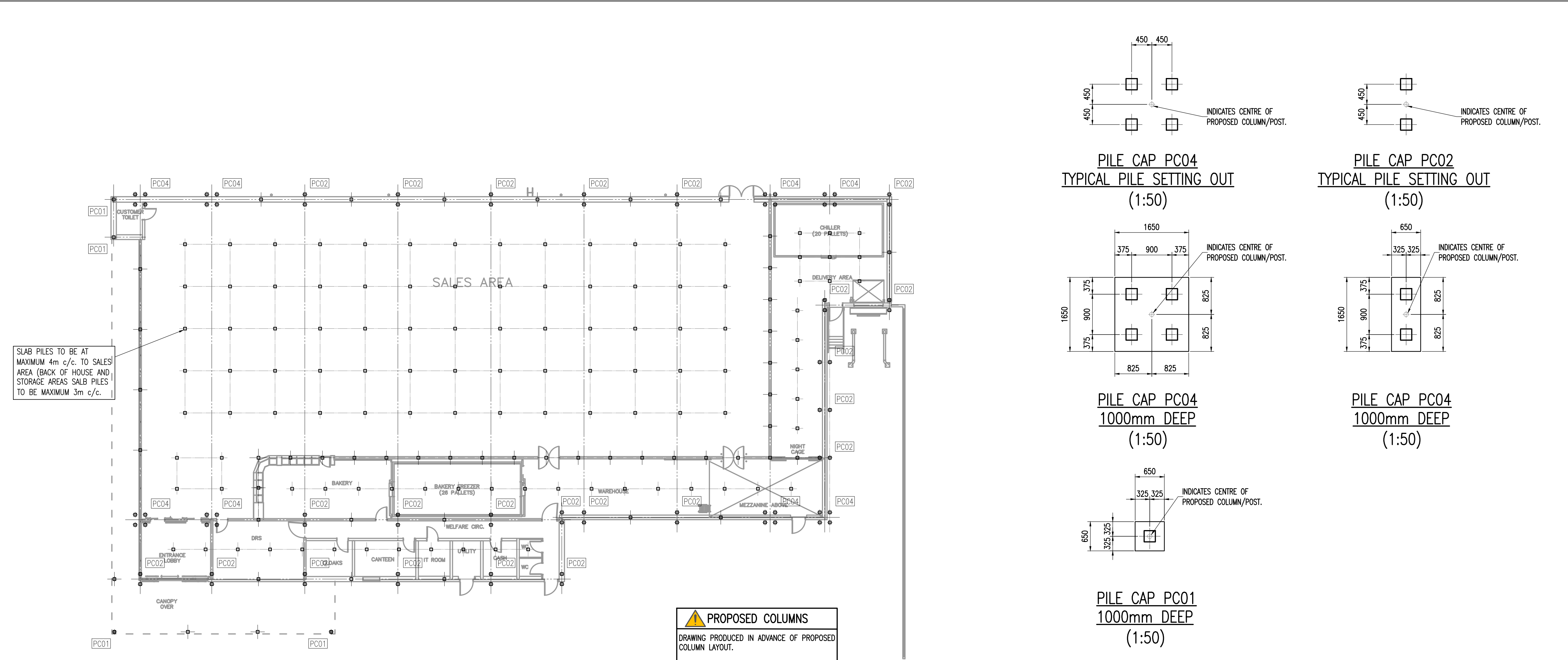
Lidl Great Britain Ltd

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Date	Job No.	Figure No.
09.06.25	1261.07	03



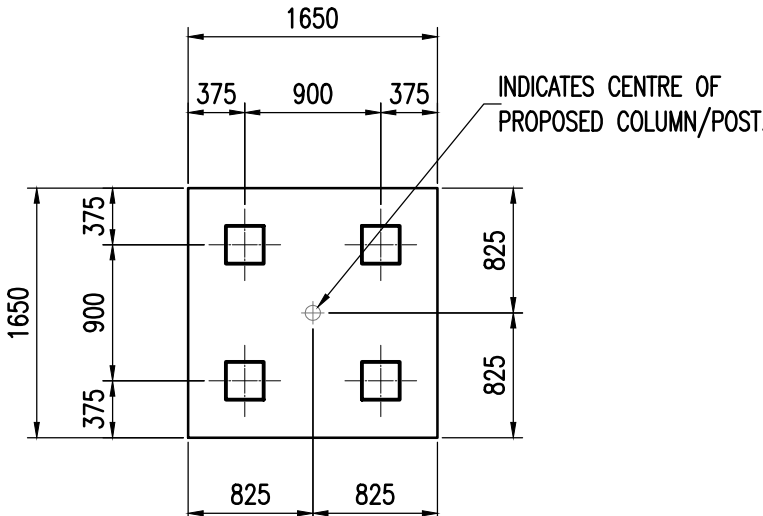
APPENDIX A

Foundation Works Risk Assessment

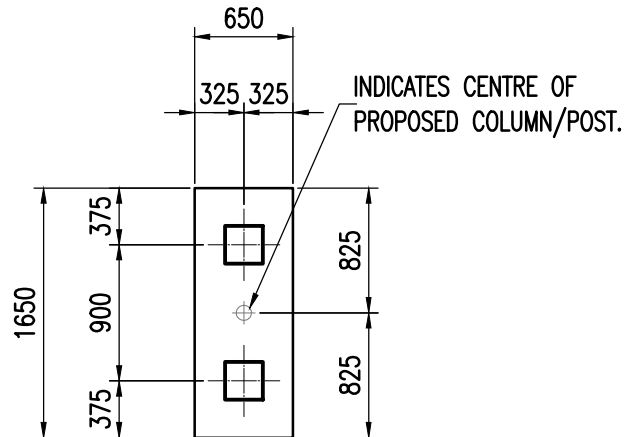


PILE CAP PC04
TYPICAL PILE SETTING OUT
(1:50)

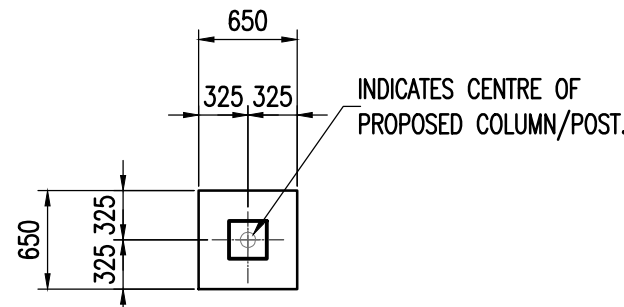
PILE CAP PC02
TYPICAL PILE SETTING OUT
(1:50)



PILE CAP PC04
1000mm DEEP
(1:50)



PILE CAP PC04
1000mm DEEP
(1:50)



PILE CAP PC01
1000mm DEEP
(1:50)

- ### NOTES
- #### GENERAL
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
 2. ALL LEVELS ARE IN METRES UNLESS NOTED OTHERWISE.
 3. DO NOT SCALE FROM THIS DRAWING. USE FIGURED DIMENSIONS ONLY.
 4. ANY DISCREPANCIES TO BE REPORTED IMMEDIATELY TO THE ENGINEER.
 5. THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS, SUBCONTRACTORS AND SPECIALISTS DRAWINGS AND SPECIFICATIONS.
 6. THIS DRAWING IS COPYRIGHT © PROPERTY OF SHEAR DESIGN LIMITED.

- #### PILED FOUNDATIONS
1. THE BASE SPECIFICATION FOR PILING WORKS SHALL BE THE SPECIFICATION FOR PILING AND EMBEDDED RETAINING WALLS (ICE) AND BS 8004 'BRITISH STANDARD OF PRACTICE FOR FOUNDATIONS'.
 2. THE SPECIALIST PILING CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF THE PILING SYSTEM AND SHALL BE DEEMED TO HAVE TAKEN STRUCTURES OR FEATURES.
 3. DUE REGARD SHALL BE TAKEN OF ALL RELEVANT INFORMATION NOTED WITHIN THE GROUND INVESTIGATION REPORT FOR THE DESIGN OF THE PILING SYSTEM. SHOULD THE PILING CONTRACTOR CONSIDER THE INFORMATION CONTAINED WITHIN THE REPORT TO BE INCONCLUSIVE OR DEFICIENT IN ANY WAY, THEN HIS TENDER MUST INCLUDE FOR ANY ADDITIONAL GROUND INVESTIGATION CONSIDERED NECESSARY.
 4. THE NATURE, EXTENT AND LEVEL OF THE PILING PLATFORM SHALL BE AGREED WITH THE PILING CONTRACTOR.
 5. SETTING OUT DIMENSIONS, AS INDICATED ON THIS DRAWING, RELATE TO THE CENTER OF THE PILES UNLESS NOTED OTHERWISE.
 6. ALL PILE CAPS ARE TO BE SET OUT SYMMETRICALLY ABOUT COLUMN CENTER LINES UNLESS NOTED OTHERWISE.
 7. ALL PILE CUT-OFF LEVELS TO BE AS INDICATED ON THE DRAWING.
 8. ALL TOP OF PILE CAP LEVELS TO BE AS INDICATED ON THE DRAWING.
 9. ALL TOP OF GROUND BEAM LEVELS TO BE AS INDICATED ON THE DRAWING.
 10. THE METHOD OF BREAKING DOWN THE PILES SHALL BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF THE WORKS. FOLLOWING 'BREAKING DOWN' THE PILE REINFORCEMENT SHALL BE LEFT PROTRUDING A MINIMUM OF 500mm AND BENT INTO THE SUPPORTED STRUCTURE.
 11. ALL PILES SHALL BE CAPABLE OF SUPPORTING ADDITIONAL FORCES DUE TO SHALL ALLOW, WITHIN THEIR DESIGN, FOR ANY NEGATIVE SKIN FRICTION DUE TO GROUND CONDITIONS.
 12. THE MAIN CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL OF ANY KNOWN OBSTRUCTIONS PRIOR TO PILING AND BACKFILLING RESULTANT EXCAVATIONS AS DIRECTED BY THE ENGINEER.
 13. SHOULD UNKNOWN OBSTRUCTIONS BE ENCOUNTERED, THEN THE ENGINEER SHALL BE INFORMED IMMEDIATELY SO THAT HE MAY CONSIDER ANY NECESSARY REMEDIAL WORK.
 14. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY BROKEN PILES. ALL PILECAPS POSITIONED CENTRALLY TO GRID LINES U.N.O.

- #### FOUNDATIONS
1. THE BASE SPECIFICATION FOR FOUNDATION WORKS SHALL BE BS 8004 'BRITISH STANDARD CODE OF PRACTICE FOR FOUNDATIONS'.
 2. FOR DETAILS OF GROUND CONDITIONS REFER TO THE RELEVANT GROUND INVESTIGATION REPORT.
 3. THE ENGINEER SHALL BE IMMEDIATELY NOTIFIED OF ANY VARIATIONS TO THE REPORTED GROUND CONDITIONS.
 4. THE ENGINEER IS TO BE INFORMED IMMEDIATELY IF FOUNDATION DEPTHS SUBSTANTIALLY EXCEED THE MINIMUM DEPTHS INDICATED UPON THE DRAWINGS.
 5. ALL OBSTRUCTIONS, OLD FOUNDATIONS, DISUSED SEWERS ETC SHALL BE REMOVED FOR THE EXTENT OF THE FOUNDATION WORKS AND BACKFILLED TO THE APPROVAL OF THE ENGINEER.
 6. ALL PILE CAPS ARE TO BE SET OUT SYMMETRICALLY ABOUT THE COLUMN CENTRE-LINES UNLESS NOTED OTHERWISE (REFER TO COLUMN LAYOUT DRAWING). ALL GROUND BEAMS ARE TO BE SET OUT TO CENTRE OF GRID LINE UNO BY OFFSETS INDICATED.
 7. TOP OF FOUNDATION LEVEL TO BE AS NOTED ON THE DRAWING.
 8. ALL CONCRETE TO BE GRADE RC35 UNO. SULPHATE CLASS TO BE DETERMINED FROM SITE INVESTIGATION REPORT.
 9. ALL BLOCKS BELOW DPC TO HAVE A MINIMUM STRENGTH OF 7N/mm² AND A MINIMUM DENSITY OF 1800 Kg/m³.
 10. ALL FORMATIONS TO IN-SITU REINFORCED CONCRETE FOUNDATIONS ARE TO RECEIVE 50mm CONCRETE BLINDING.
 11. THE BLINDING DEPTH SHALL NOT BE REGARDED AS PART OF THE DESIGNED FOUNDATION DEPTH AS NOTED ON THE DRAWINGS.
 12. EXCAVATION SIDE SUPPORT AND DISPOSAL OF GROUND WATER SHALL BE CONSIDERED UPON THE BASIS OF THE GROUND INVESTIGATION REPORT AND AN ON-SITE VISUAL INSPECTION.
 13. MINIMUM 1200 GAUGE POLYTHENE DPM TO BE USED AND LAID STRICTLY IN ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS AND LAPPED TO DPC WHERE APPLICABLE UNO.
 14. ALL COMPACTION TO BE CARRIED OUT IN ACCORDANCE WITH THE DoT SPECIFICATION.
 15. PILE TO BE CUT BACK LEAVING MIN. 500mm OF REINFORCEMENT EXPOSED WHICH IS TO BE BENT INTO THE PILECAP

SETTING OUT
REFER TO ARCHITECTURAL DRAWINGS FOR ALL SETTING OUT AND CO-ORDINATES. ALL WALL SETTING IN ACCORDANCE WITH THE ARCHITECTURAL DRAWINGS.
PILING MAT
TO BE DESIGNED IN ACCORDANCE WITH SPECIALISTS SUB-CONTRACTORS REQUIREMENTS. PILING MAT IS TO BE PLATE LOAD TESTED (REQUIREMENTS TO BE AGREED WITH CLIENT) PRIOR TO COMMENCEMENT OF PILING OPERATION AND RESULTS PASSED ONTO ENGINEER AND PILING SPECIALISTS FOR VERIFICATION.
PILING OPERATION
PILING SEQUENCE TO BE BY SPECIALIST PILING CONTRACTOR. TEMPORARY WORKS SPECIALISTS MUST TAKE ACCOUNT PILING SEQUENCE.
PILE HEADS
ALL PILES TO BE FIXED HEAD.

PROPOSED PILES
TOTAL No. OF 241 PILES TO BE 250mm SQUARE DRIVEN. 15m LENGTH.
ALL PILES TO BE DESIGNED BY PILING SPECIALISTS. ALLOWANCE TO BE MADE FOR NEGATIVE SKIN FRICTION WHEN DESIGNING PILES, FINAL TYPE AND SIZE TBC BY PILING CONTRACTOR.
PILING DESIGNER/CONTRACTOR TO MAKE SUITABLE ALLOWANCES IN THEIR DESIGN AND PROPOSALS TO ACCOUNT FOR THE ONSITE GROUND CONDITIONS. ALL PILES TO BE FIXED HEAD.
PILE LOADS: COMPRESSION = 465 KN HORIZONTAL = 45 KN NO TENSION

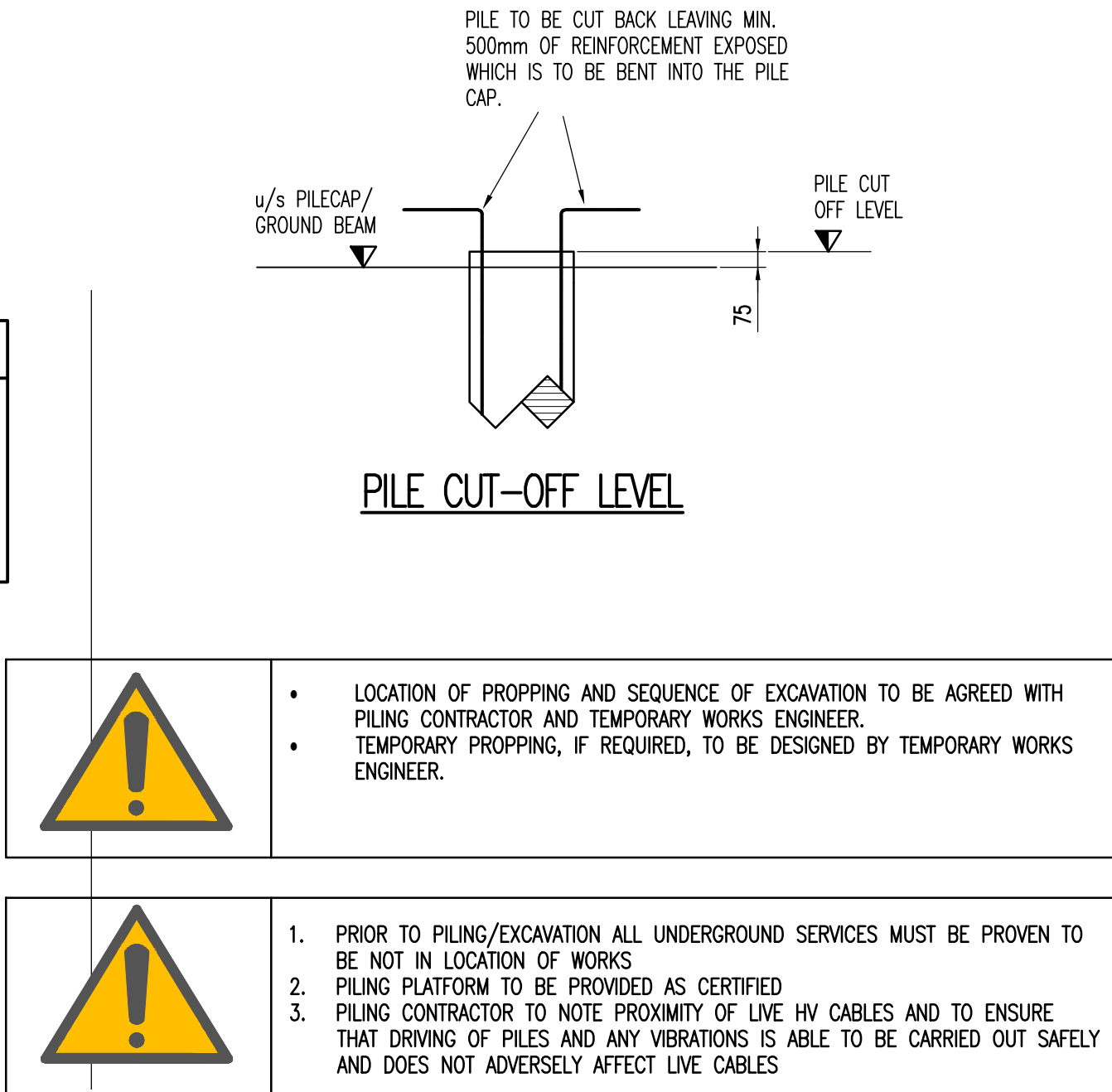
GENERAL
THE MAIN CONTRACTOR / GROUND WORK SUBCONTRACTOR IS RESPONSIBLE FOR THE REMOVAL OF ANY EXISTING FOUNDATIONS PRIOR TO THE PILING WORKS / SUBSTRUCTURE CONSTRUCTION ON SITE.
ALL PILES TO HAVE A MAXIMUM HORIZONTAL TOLERANCE OF 75mm IN ANY DIRECTION.
PILING CONTRACTOR TO SATISFY HIMSELF AS TO THE EXACT POSITION OF ANY EXISTING UNDERGROUND SERVICES.
PILING CONTRACTOR TO BE AWARE OF POSSIBLE NEGATIVE SKIN FRICTION AND TO DESIGN ACCORDINGLY.
IN ACCORDANCE WITH FINDINGS OF THE SITE INVESTIGATION, DEWATERING METHODS MAYBE BE REQUIRED. EXACT METHOD TO GROUND WORKERS DESIGN AND REQUIREMENTS.
ALL LEVELS TO BE VERIFIED ON SITE.

PILECAPS/GROUND BEAMS
TO BE GRADE RC28/35 TO CONFORM TO CLASS DS-1/AC-1 IN ACCORDANCE WITH BS 8500. REINFORCEMENT ALLOWANCE 200kg/M3
COVER TO REINFORCEMENT: PILECAPS- • 75MM COVER TO BASE AND SIDE REBAR • 50MM COVER TO TOP REBAR • 50MM TOP/BOTTOM/SIDES
RC SLABS
SLAB TO BE 250mm RC28/35 REINFORCEMENT ALLOWANCE 30kg/M3
COVER TO REINFORCEMENT: • 50mm

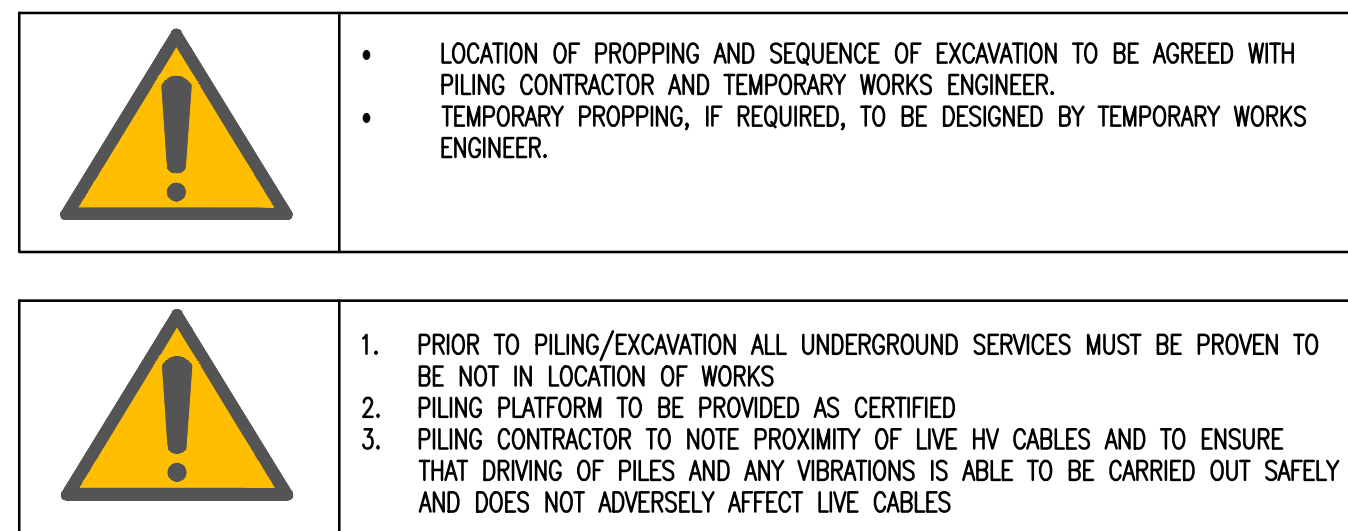
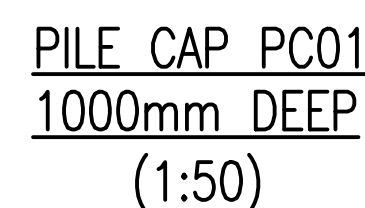
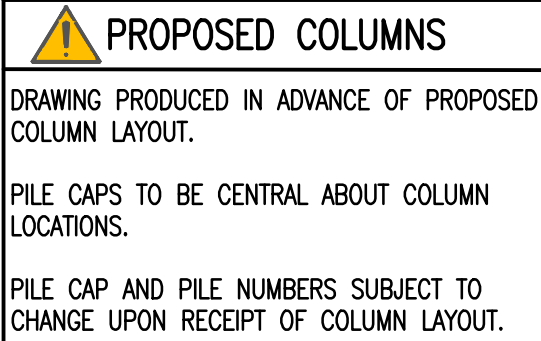
DRAINAGE
REFER TO DRAINAGE PLAN FOR ALL DRAINAGE. SEE LOCATIONS WHERE DRAINAGE IS TO PASS THROUGH FOUNDATIONS. NOTE REINFORCEMENT BARS ARE TO REMAIN INTEGRAL AND LOCALLY DISPLACED TO ACCOMMODATE DRAINAGE RUNS
SITE INVESTIGATION
THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT SITE INVESTIGATION REPORTS
BLINDING TO CONCRETE
50mm CONCRETE BLINDING BELOW ALL FOUNDATIONS

TEMPORARY WORKS
ALL TEMPORARY WORKS BY TEMPORARY WORKS DESIGNER. TEMPORARY BRACING/RESTRAINT REQUIRED TO INSTALL FRAME TO FABRICATORS REQUIREMENTS AND DESIGN.
GAS PROTECTION
ALLOWANCE TO BE MADE FOR GAS PROTECTION MEASURES TO BACK OF HOUSE AND STORAGE AREAS. CONTRACTOR MUST MAKE ALL NECESSARY ALLOWANCES FOR BELOW SLAB SUMPS, SINGLE SIZE STONE BEDDING WITH PERFORATED PIPING AND PERIMETER VENTING. ALTERNATIVELY PROPRIETARY GAS VENTING MAT TO SPECIALISTS MANUFACTURER DETAILS.
GAS MEMBRANE
GAS MEMBRANE TO BE DESIGNED, INSTALLED AND VERIFIED IN ACCORDANCE WITH BS8485.

LOADINGS
DRAWING PRODUCED IN ADVANCE OF ANY ABOVE GROUND STRUCTURAL DETAILS.
REQUIRED IMPOSED LOADINGS ASSUMED AS- SHOP FLOOR 10KN/m2 STORAGE/CHILLER 20KN/m2 SHOP CEILING 1KN/m2

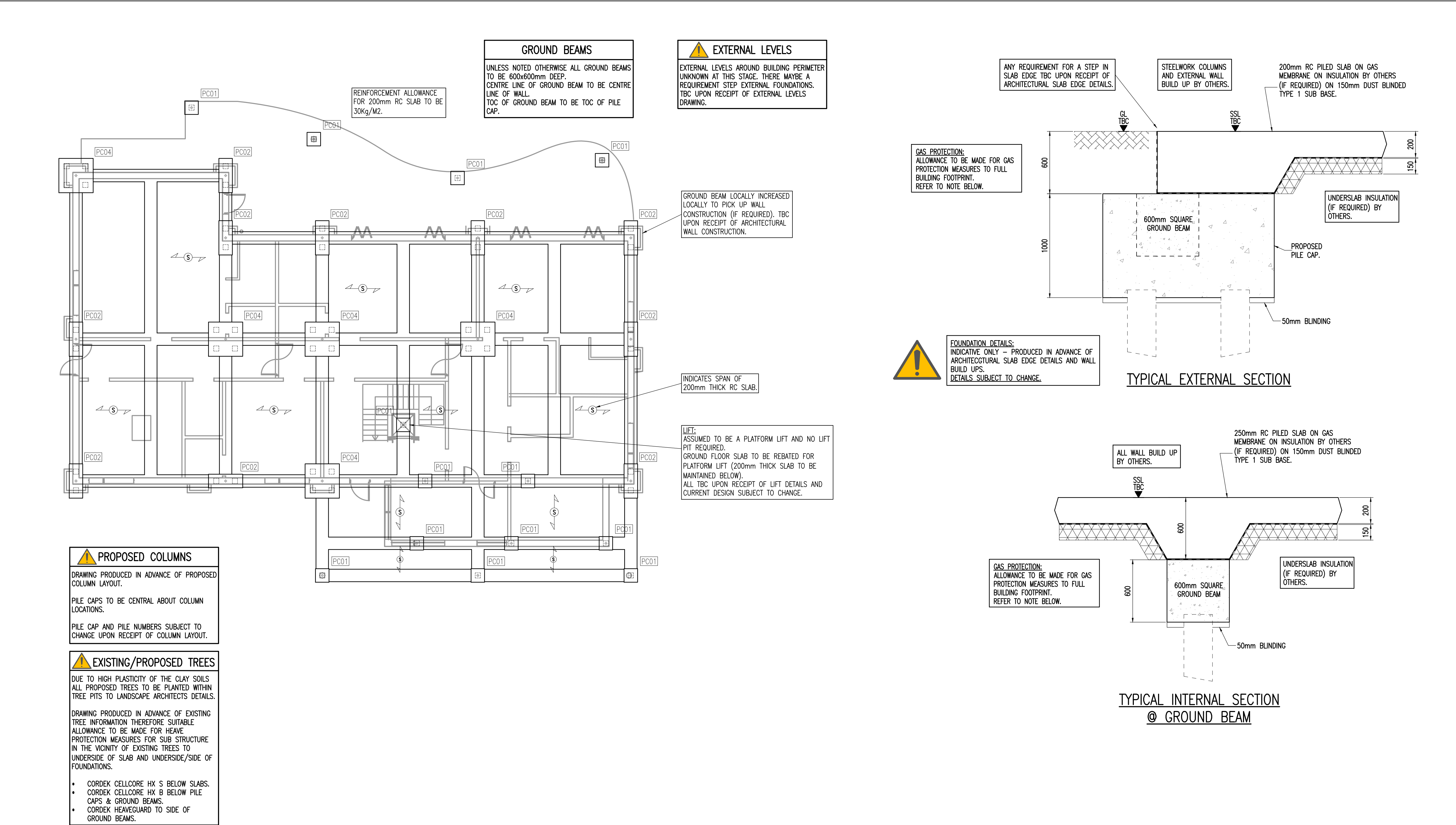


WIP				
REV	DATE	DESCRIPTION	BY	CHK
AMENDMENTS				
CLIENT: LIDL GB LTD				
PROJECT: GLAN LLYN NEWPORT				
TITLE: PROPOSED LIDL UNIT: PILING LAYOUT				
				
7 Ashtree Court - Woody Close - Cardiff Gate Business Park - Cardiff - CF23 8RW Tel: 029 2054 7000 - Fax: 029 2054 7001 - www.shear-design.com - enquiries@shear-design.com				
DRAWN: DMH	CHECKED: BH	DATE: MAR.2025	SCALE: 1:200, 1:20 @ A1	
STATUS KEY: I = INFORMATION P = PRELIMINARY A = APPROVAL CO = CONTRACT C = TENDER C = CONSTRUCTION AB = AS-BUILT				
STATUS: T	DRAWING NUMBER: 25027-001	REVISION: -		



NOTES			
GENERAL			
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.			
2. ALL LEVELS ARE IN METRES UNLESS NOTED OTHERWISE.			
3. ALL LEVELS RELATE TO ORDNANCE DATUM UNLESS NOTED OTHERWISE.			
4. DO NOT SCALE FROM THIS DRAWING. USE FIGURED DIMENSIONS ONLY.			
5. ANY DISCREPANCIES ARE TO BE REPORTED IMMEDIATELY TO THE ENGINEER.			
6. THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS, SUBCONTRACTORS AND SPECIALISTS DRAWINGS AND SPECIFICATIONS.			
7. THIS DRAWING IS COPYRIGHT © PROPERTY OF SHEAR DESIGN LIMITED.			
PILED FOUNDATIONS			
1. THE BASE SPECIFICATION FOR PILING WORKS SHALL BE THE SPECIFICATION FOR PILING AND EMBEDDED RETAINING WALLS (ICE) AND BS 8004 'BRITISH STANDARD OF PRACTICE FOR FOUNDATIONS'.			
2. THE SPECIALIST PILING CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF THE PILING SYSTEM AND SHALL BE DEEMED TO HAVE TAKEN STRUCTURES OR FEATURES.			
3. DUE REGARD SHALL BE TAKEN OF ALL RELEVANT INFORMATION NOTED WITHIN THE GROUND INVESTIGATION REPORT FOR THE DESIGN OF THE PILING SYSTEM. SHOULD THE PILING CONTRACTOR CONSIDER THE INFORMATION CONTAINED WITHIN THE REPORT TO BE INCLUSIVE OR DEFICIENT IN ANY WAY, THEN HIS TENDER MUST INCLUDE FOR ANY ADDITIONAL GROUND INVESTIGATION CONSIDERED NECESSARY.			
4. THE NATURE, EXTENT AND LEVEL OF THE PILING PLATFORM SHALL BE AGREED WITH THE PILING CONTRACTOR.			
5. SETTING OUT DIMENSIONS, AS INDICATED ON THIS DRAWING, RELATE TO THE CENTER OF THE PILES UNLESS NOTED OTHERWISE.			
6. ALL PILE CAPS ARE TO BE SET OUT SYMMETRICALLY ABOUT COLUMN CENTER LINES UNLESS NOTED OTHERWISE.			
7. ALL PILE CUT-OFF LEVELS TO BE AS INDICATED ON THE DRAWING.			
8. ALL TOP OF PILE CAP LEVELS TO BE AS INDICATED ON THE DRAWING.			
9. ALL TOP OF GROUND BEAM LEVELS TO BE AS INDICATED ON THE DRAWING.			
10. THE METHOD OF BREAKING DOWN THE PILES SHALL BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF THE WORKS. FOLLOWING 'BREAKING DOWN' THE PILE REINFORCEMENT SHALL BE LEFT PROTRUDING A MINIMUM OF 500mm AND BENT INTO THE SUPPORTED STRUCTURE.			
11. ALL PILES SHALL BE CAPABLE OF SUPPORTING ADDITIONAL FORCES DUE TO SHALL ALLOW, WITHIN THEIR DESIGN, FOR ANY NEGATIVE SKIN FRICTION DUE TO GROUND CONDITIONS.			
12. THE MAIN CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL OF ANY KNOWN OBSTRUCTIONS PRIOR TO PILING AND BACKFILLING RESULTANT EXCAVATIONS AS DIRECTED BY THE ENGINEER.			
13. SHOULD UNKNOWN OBSTRUCTIONS BE ENCOUNTERED, THEN THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY SO THAT HE MAY CONSIDER ANY NECESSARY REMEDIAL WORK.			
14. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY BROKEN PILES. ALL PILECAPS POSITIONED CENTRALLY TO GRID LINES U.N.O.			
FOUNDATIONS			
1. THE BASE SPECIFICATION FOR FOUNDATION WORKS SHALL BE BS 8004 'BRITISH STANDARD CODE OF PRACTICE FOR FOUNDATIONS'.			
2. FOR DETAILS OF GROUND CONDITIONS REFER TO THE RELEVANT GROUND INVESTIGATION REPORT.			
3. THE ENGINEER SHALL BE IMMEDIATELY NOTIFIED OF ANY VARIATIONS TO THE REPORTED GROUND CONDITIONS.			
4. THE ENGINEER IS TO BE INFORMED IMMEDIATELY IF FOUNDATION DEPTHS SUBSTANTIALLY EXCEED THE MINIMUM DEPTHS INDICATED UPON THE DRAWINGS.			
5. ALL OBSTRUCTIONS, OLD FOUNDATIONS, DISUSED SEWERS ETC SHALL BE REMOVED FOR THE EXTENT OF THE FOUNDATION WORKS AND BACKFILLED TO THE APPROVAL OF THE ENGINEER.			
6. ALL PILE CAPS ARE TO BE SET OUT SYMMETRICALLY ABOUT THE COLUMN CENTRE-LINES UNLESS NOTED OTHERWISE (REFER TO COLUMN LAYOUT DRAWING).			
7. ALL GROUND BEAMS ARE TO BE SET OUT TO CENTRE OF GRID LINE UNO BY OFFSETS INDICATED.			
8. TOP OF FOUNDATION LEVEL TO BE AS NOTED ON THE DRAWING.			
9. ALL CONCRETE TO BE GRADE RC35 UNO. SULPHATE CLASS TO BE DETERMINED FROM SITE INVESTIGATION REPORT.			
10. ALL BLOCKS BELOW DPC TO HAVE A MINIMUM STRENGTH OF 7N/mm ² AND A MINIMUM DENSITY OF 1800 Kg/m ³ .			
11. ALL FORMATIONS TO IN-SITU REINFORCED CONCRETE FOUNDATIONS ARE TO RECEIVE 50mm CONCRETE BLINDING.			
12. THE BLINDING DEPTH SHALL NOT BE REGARDED AS PART OF THE DESIGNED FOUNDATION DEPTH AS NOTED ON THE DRAWINGS.			
13. EXCAVATION SIDE SUPPORT AND DISPOSAL OF GROUND WATER SHALL BE CONSIDERED UPON THE BASIS OF THE GROUND INVESTIGATION REPORT AND AN ON-SITE VISUAL INSPECTION.			
14. MINIMUM 1200 GAUGE POLYTHENE DPM TO BE USED AND LAID STRICTLY IN ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS AND LAPPED TO DPC WHERE APPLICABLE UNO.			
15. ALL COMPACTION TO BE CARRIED OUT IN ACCORDANCE WITH THE D01 SPECIFICATION.			
16. PILE TO BE CUT BACK LEAVING MIN. 500mm OF REINFORCEMENT EXPOSED WHICH IS TO BE BENT INTO THE PILECAP			
WIP			
DRAWN: DMH			
CHECKED: BH			
DATE: MAR 2025			
SCALE: 1:100, 1:20 @ A1			
STATUS: T			
DRAWING NUMBER: 25027-003			
REVISION: -			

SETTING OUT	PROPOSED PILES	GENERAL	PILECAPS/GROUND BEAMS	DRAINAGE	TEMPORARY WORKS
REFER TO ARCHITECTURAL DRAWINGS FOR ALL SETTING OUT AND CO-ORDINATES. ALL WALL SETTING IN ACCORDANCE WITH THE ARCHITECTURAL DRAWINGS.	TOTAL No. OF 53 PILES TO BE 250mm SQUARE DRIVEN. ALL PILES TO BE DESIGNED BY PILING SPECIALISTS. ALLOWANCE TO BE MADE FOR NEGATIVE SKIN FRICTION WHEN DESIGNING PILES, FINAL TYPE AND SIZE TBC BY PILING CONTRACTOR.	THE MAIN CONTRACTOR / GROUND WORK SUBCONTRACTOR IS RESPONSIBLE FOR THE REMOVAL OF ANY EXISTING FOUNDATIONS PRIOR TO THE PILING WORKS / SUBSTRUCTURE CONSTRUCTION ON SITE. ALL PILES TO HAVE A MAXIMUM HORIZONTAL TOLERANCE OF 75mm IN ANY DIRECTION.	TO BE GRADE RC28/35 TO CONFORM TO CLASS DS-1/AC-1 IN ACCORDANCE WITH BS 8500. REINFORCEMENT ALLOWANCE 200Kg/M3 COVER TO REINFORCEMENT: PILECAPS- 75mm COVER TO BASE AND SIDE REBAR 50mm COVER TO TOP REBAR GROUND BEAMS- 50mm TOP/BOTTOM/SIDES	REFER TO DRAINAGE PLAN FOR ALL DRAINAGE. SEE LOCATIONS WHERE DRAINAGE IS TO PASS THROUGH FOUNDATIONS. NOTE REINFORCEMENT BARS ARE TO REMAIN INTEGRAL AND LOCALLY DISPLACED TO ACCOMMODATE DRAINAGE RUNS	ALL TEMPORARY WORKS BY TEMPORARY WORKS DESIGNER. TEMPORARY BRACING/RESTRAINT REQUIRED TO INSTALL FRAME TO FABRICATORS REQUIREMENTS AND DESIGN.
PILING MAT	PILING DESIGNER/CONTRACTOR TO MAKE SUITABLE ALLOWANCES IN THEIR DESIGN AND PROPOSALS TO ACCOUNT FOR THE ONSITE GROUND CONDITIONS. ALL PILES TO BE FIXED HEAD.	PILING CONTRACTOR TO SATISFY HIMSELF AS TO THE EXACT POSITION OF ANY EXISTING UNDERGROUND SERVICES.	RC SLABS	SITE INVESTIGATION	GAS PROTECTION
TO BE DESIGNED IN ACCORDANCE WITH SPECIALISTS SUB-CONTRACTORS REQUIREMENTS. PILING MAT IS TO BE PLATE LOAD TESTED (REQUIREMENTS TO BE AGREED WITH CLIENT) PRIOR TO COMMENCEMENT OF PILING OPERATION AND RESULTS PASSED ONTO ENGINEER AND PILING SPECIALISTS FOR VERIFICATION.	PILE LOADS: COMPRESSION = 465 KN HORIZONTAL = 45 KN NO TENSION	PILING CONTRACTOR TO BE AWARE OF POSSIBLE NEGATIVE SKIN FRICTION AND TO DESIGN ACCORDINGLY.	SLAB TO BE 200mm RC28/35 REINFORCEMENT ALLOWANCE 30Kg/M3 COVER TO REINFORCEMENT: 50mm	THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT SITE INVESTIGATION REPORTS	ALLOWANCE TO BE MADE FOR GAS PROTECTION MEASURES FOR FULL BUILDING FOOTPRINT. CONTRACTOR MUST MAKE ALL NECESSARY ALLOWANCES FOR BELOW SLAB SUMPS, SINGLE SIZE STONE BEDDING WITH PERFORATED PIPING AND PERMITEER VENTING. ALTERNATIVELY PROPRIETARY GAS VENTING MAT TO SPECIALISTS MANUFACTURER DETAILS.
PILING OPERATION		IN ACCORDANCE WITH FINDINGS OF THE SITE INVESTIGATION, DEWATERING METHODS MAYBE BE REQUIRED. EXACT METHOD TO GROUND WORKERS DESIGN AND REQUIREMENTS.		BLINDING TO CONCRETE	GAS MEMBRANE
PILING SEQUENCE TO BE BY SPECIALIST PILING CONTRACTOR. TEMPORARY WORKS SPECIALISTS MUST TAKE ACCOUNT PILING SEQUENCE.		ALL LEVELS TO BE VERIFIED ON SITE.		50mm CONCRETE BLINDING BELOW ALL FOUNDATIONS	GAS MEMBRANE TO BE DESIGNED, INSTALLED AND VERIFIED IN ACCORDANCE WITH BS8485.
PILE HEADS					
ALL PILES TO BE FIXED HEAD.					



- ### NOTES
- #### GENERAL
- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
 - ALL LEVELS ARE IN METRES UNLESS NOTED OTHERWISE.
 - DO NOT SCALE FROM THIS DRAWING. USE FIGURED DIMENSIONS ONLY.
 - ANY DISCREPANCIES TO BE REPORTED IMMEDIATELY TO THE ENGINEER.
 - THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS, SUBCONTRACTORS AND SPECIALISTS DRAWINGS AND SPECIFICATIONS.
 - THIS DRAWING IS COPYRIGHT © PROPERTY OF SHEAR DESIGN LIMITED.
- #### PILED FOUNDATIONS
- THE BASE SPECIFICATION FOR PILING WORKS SHALL BE THE SPECIFICATION FOR PILING AND EMBEDDED RETAINING WALLS (ICE) AND BS 8004 'BRITISH STANDARD OF PRACTICE FOR FOUNDATIONS'.
 - THE SPECIALIST PILING CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF THE PILING SYSTEM AND SHALL BE DEEMED TO HAVE TAKEN STRUCTURES OR FEATURES.
 - DUE REGARD SHALL BE TAKEN OF ALL RELEVANT INFORMATION NOTED WITHIN THE GROUND INVESTIGATION REPORT FOR THE DESIGN OF THE PILING SYSTEM. SHOULD THE PILING CONTRACTOR CONSIDER THE INFORMATION CONTAINED WITHIN THE REPORT TO BE INCONCLUSIVE OR DEFICIENT IN ANY WAY, THEN HIS TENDER MUST INCLUDE FOR ANY ADDITIONAL GROUND INVESTIGATION CONSIDERED NECESSARY.
 - THE NATURE, EXTENT AND LEVEL OF THE PILING PLATFORM SHALL BE AGREED WITH THE PILING CONTRACTOR.
 - SETTING OUT DIMENSIONS, AS INDICATED ON THIS DRAWING, RELATE TO THE CENTER OF THE PILES UNLESS NOTED OTHERWISE.
 - ALL PILE CAPS ARE TO BE SET OUT SYMMETRICALLY ABOUT COLUMN CENTER LINES UNLESS NOTED OTHERWISE.
 - ALL PILE CUT-OFF LEVELS TO BE AS INDICATED ON THE DRAWING.
 - ALL TOP OF PILE CAP LEVELS TO BE AS INDICATED ON THE DRAWING.
 - ALL TOP OF GROUND BEAM LEVELS TO BE AS INDICATED ON THE DRAWING.
 - THE METHOD OF BREAKING DOWN THE PILES SHALL BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF THE WORKS. FOLLOWING 'BREAKING DOWN' THE PILE REINFORCEMENT SHALL BE LEFT PROTRUDING A MINIMUM OF 500mm AND BENT INTO THE SUPPORTED STRUCTURE.
 - ALL PILES SHALL BE CAPABLE OF SUPPORTING ADDITIONAL FORCES DUE TO SHALL ALLOW, WITHIN THEIR DESIGN, FOR ANY NEGATIVE SKIN FRICTION DUE TO GROUND CONDITIONS.
 - THE MAIN CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL OF ANY KNOWN OBSTRUCTIONS PRIOR TO PILING AND BACKFILLING RESULTANT EXCAVATIONS AS DIRECTED BY THE ENGINEER.
 - SHOULD UNKNOWN OBSTRUCTIONS BE ENCOUNTERED, THEN THE ENGINEER SHALL BE INFORMED IMMEDIATELY SO THAT HE MAY CONSIDER ANY NECESSARY REMEDIAL WORK.
 - THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY BROKEN PILES. ALL PILECAPS POSITIONED CENTRALLY TO GRID LINES U.N.O.

- #### FOUNDATIONS
- THE BASE SPECIFICATION FOR FOUNDATION WORKS SHALL BE BS 8004 'BRITISH STANDARD CODE OF PRACTICE FOR FOUNDATIONS'.
 - FOR DETAILS OF GROUND CONDITIONS REFER TO THE RELEVANT GROUND INVESTIGATION REPORT.
 - THE ENGINEER SHALL BE IMMEDIATELY NOTIFIED OF ANY VARIATIONS TO THE REPORTED GROUND CONDITIONS.
 - THE ENGINEER IS TO BE INFORMED IMMEDIATELY IF FOUNDATION DEPTHS SUBSTANTIALLY EXCEED THE MINIMUM DEPTHS INDICATED UPON THE DRAWINGS.
 - ALL OBSTRUCTIONS, OLD FOUNDATIONS, DISUSED SEWERS ETC SHALL BE REMOVED FOR THE EXTENT OF THE FOUNDATION WORKS AND BACKFILLED TO THE APPROVAL OF THE ENGINEER.
 - ALL PILE CAPS ARE TO BE SET OUT SYMMETRICALLY ABOUT THE COLUMN CENTRE-LINES UNLESS NOTED OTHERWISE (REFER TO COLUMN LAYOUT DRAWING). ALL GROUND BEAMS ARE TO BE SET OUT TO CENTRE OF GRID LINE UNO BY OFFSETS INDICATED.
 - TOP OF FOUNDATION LEVEL TO BE AS NOTED ON THE DRAWING.
 - ALL CONCRETE TO BE GRADE RC35 UNO. SULPHATE CLASS TO BE DETERMINED FROM SITE INVESTIGATION REPORT.
 - ALL BLOCKS BELOW DPC TO HAVE A MINIMUM STRENGTH OF 7N/mm² AND A MINIMUM DENSITY OF 1800 Kg/m³.
 - ALL FORMATIONS TO IN-SITU REINFORCED CONCRETE FOUNDATIONS ARE TO RECEIVE 50mm CONCRETE BLINDING.
 - THE BLINDING DEPTH SHALL NOT BE REGARDED AS PART OF THE DESIGNED FOUNDATION DEPTH AS NOTED ON THE DRAWINGS.
 - EXCAVATION SIDE SUPPORT AND DISPOSAL OF GROUND WATER SHALL BE CONSIDERED UPON THE BASIS OF THE GROUND INVESTIGATION REPORT AND AN ON-SITE VISUAL INSPECTION.
 - MINIMUM 1200 GAUGE POLYTHENE DPM TO BE USED AND LAID STRICTLY IN ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS AND LAPPED TO DPC WHERE APPLICABLE UNO.
 - ALL COMPACTION TO BE CARRIED OUT IN ACCORDANCE WITH THE DoT SPECIFICATION.
 - PILE TO BE CUT BACK LEAVING MIN. 500mm OF REINFORCEMENT EXPOSED WHICH IS TO BE BENT INTO THE PILECAP

WIP

SETTING OUT
REFER TO ARCHITECTURAL DRAWINGS FOR ALL SETTING OUT AND CO-ORDINATES. ALL WALL SETTING IN ACCORDANCE WITH THE ARCHITECTURAL DRAWINGS.
PILING MAT
TO BE DESIGNED IN ACCORDANCE WITH SPECIALISTS SUB-CONTRACTORS REQUIREMENTS. PILING MAT IS TO BE PLATE LOAD TESTED (REQUIREMENTS TO BE AGREED WITH CLIENT) PRIOR TO COMMENCEMENT OF PILING OPERATION AND RESULTS PASSED ONTO ENGINEER AND PILING SPECIALISTS FOR VERIFICATION.
PILING OPERATION
PILING SEQUENCE TO BE BY SPECIALIST PILING CONTRACTOR. TEMPORARY WORKS SPECIALISTS MUST TAKE ACCOUNT PILING SEQUENCE.
PILE HEADS
ALL PILES TO BE FIXED HEAD.

PROPOSED PILES
TOTAL No. OF 53 PILES TO BE 250mm SQUARE DRIVEN.
ALL PILES TO BE DESIGNED BY PILING SPECIALISTS. ALLOWANCE TO BE MADE FOR NEGATIVE SKIN FRICTION WHEN DESIGNING PILES, FINAL TYPE AND SIZE TBC BY PILING CONTRACTOR.
PILING DESIGNER/CONTRACTOR TO MAKE SUITABLE ALLOWANCES IN THEIR DESIGN AND PROPOSALS TO ACCOUNT FOR THE ONSITE GROUND CONDITIONS. ALL PILES TO BE FIXED HEAD.
PILE LOADS: COMPRESSION = 465 KN HORIZONTAL = 45 KN NO TENSION

GENERAL
THE MAIN CONTRACTOR / GROUND WORK SUBCONTRACTOR IS RESPONSIBLE FOR THE REMOVAL OF ANY EXISTING FOUNDATIONS PRIOR TO THE PILING WORKS / SUBSTRUCTURE CONSTRUCTION ON SITE.
ALL PILES TO HAVE A MAXIMUM HORIZONTAL TOLERANCE OF 75mm IN ANY DIRECTION.
PILING CONTRACTOR TO SATISFY HIMSELF AS TO THE EXACT POSITION OF ANY EXISTING UNDERGROUND SERVICES.
PILING CONTRACTOR TO BE AWARE OF POSSIBLE NEGATIVE SKIN FRICTION AND TO DESIGN ACCORDINGLY.
IN ACCORDANCE WITH FINDINGS OF THE SITE INVESTIGATION, DEWATERING METHODS MAYBE BE REQUIRED. EXACT METHOD TO GROUND WORKERS DESIGN AND REQUIREMENTS.
ALL LEVELS TO BE VERIFIED ON SITE.

PILECAPS/GROUND BEAMS
TO BE GRADE RC28/35 TO CONFORM TO CLASS DS-1/AC-1 IN ACCORDANCE WITH BS 8500. REINFORCEMENT ALLOWANCE 200Kg/M3
COVER TO REINFORCEMENT: PILECAPS- 75MM COVER TO BASE AND SIDE REBAR 50MM COVER TO TOP REBAR GROUND BEAMS- 50MM TOP/BOTTOM/SIDES
RC SLABS
SLAB TO BE 200mm RC28/35 REINFORCEMENT ALLOWANCE 30Kg/M3
COVER TO REINFORCEMENT: 50mm

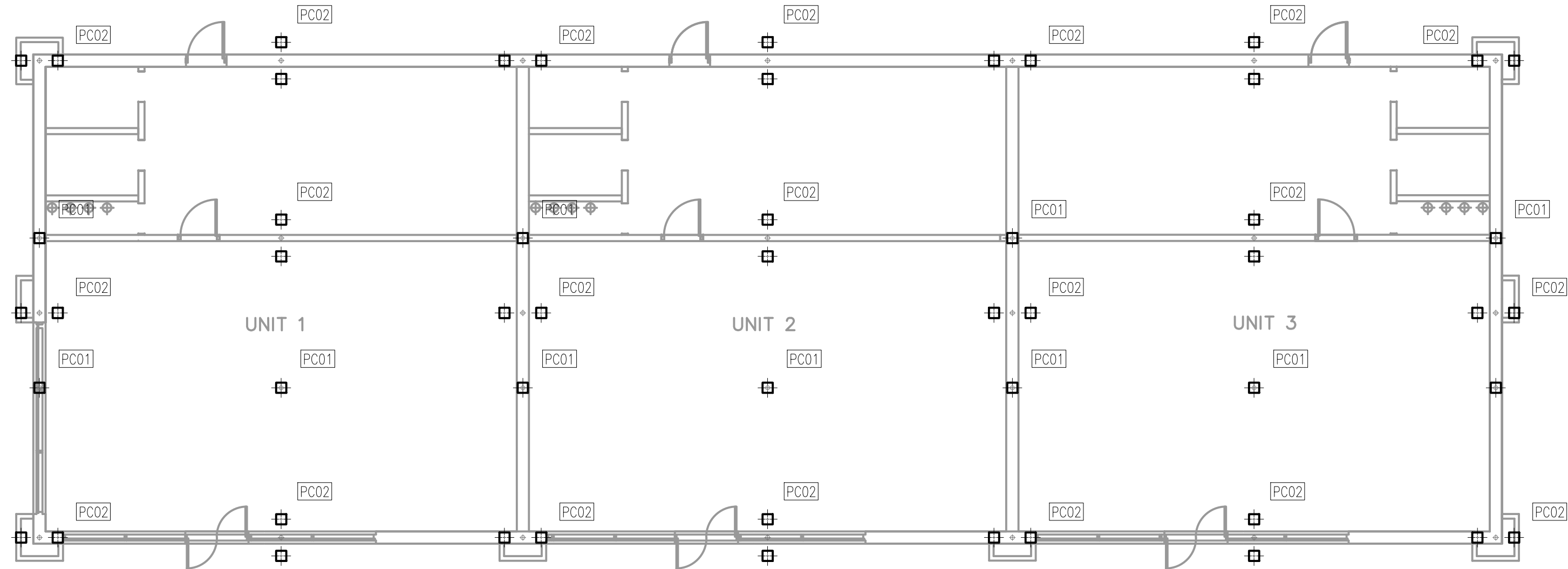
DRAINAGE
REFER TO DRAINAGE PLAN FOR ALL DRAINAGE. SEE LOCATIONS WHERE DRAINAGE IS TO PASS THROUGH FOUNDATIONS. NOTE REINFORCEMENT BARS ARE TO REMAIN INTEGRAL AND LOCALLY DISPLACED TO ACCOMMODATE DRAINAGE RUNS
SITE INVESTIGATION
THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT SITE INVESTIGATION REPORTS
BLINDING TO CONCRETE
50mm CONCRETE BLINDING BELOW ALL FOUNDATIONS

TEMPORARY WORKS
ALL TEMPORARY WORKS BY TEMPORARY WORKS DESIGNER. TEMPORARY BRACING/RESTRAINT REQUIRED TO INSTALL FRAME TO FABRICATORS REQUIREMENTS AND DESIGN.
GAS PROTECTION
ALLOWANCE TO BE MADE FOR GAS PROTECTION MEASURES FOR FULL BUILDING FOOTPRINT. CONTRACTOR MUST MAKE ALL NECESSARY ALLOWANCES FOR BELOW SLAB SUMPS, SINGLE SIZE STONE BEDDING WITH PERFORATED PIPING AND PERIMETER VENTING. ALTERNATIVELY PROPRIETARY GAS VENTING MAT TO SPECIALISTS MANUFACTURER DETAILS.
GAS MEMBRANE
GAS MEMBRANE TO BE DESIGNED, INSTALLED AND VERIFIED IN ACCORDANCE WITH BS8485.

LOADINGS
DRAWING PRODUCED IN ADVANCE OF ANY ABOVE GROUND STRUCTURAL DETAILS. REQUIRED IMPOSED LOADINGS ASSUMED AS- NURSERY 5KN/m2

	- LOCATION OF PROPPING AND SEQUENCE OF EXCAVATION TO BE AGREED WITH PILING CONTRACTOR AND TEMPORARY WORKS ENGINEER. - TEMPORARY PROPPING, IF REQUIRED, TO BE DESIGNED BY TEMPORARY WORKS ENGINEER.
	- PRIOR TO PILING/EXCAVATION ALL UNDERGROUND SERVICES MUST BE PROVEN TO BE NOT IN LOCATION OF WORKS - PILING PLATFORM TO BE PROVIDED AS CERTIFIED - PILING CONTRACTOR TO NOTE PROXIMITY OF LIVE HV CABLES AND TO ENSURE THAT DRIVING OF PILES AND ANY VIBRATIONS IS ABLE TO BE CARRIED OUT SAFELY AND DOES NOT ADVERSELY AFFECT LIVE CABLES

REV	DATE	DESCRIPTION	BY	CHK
AMENDMENTS				
CLIENT: LIDL GB LTD				
PROJECT: GLAN LLYN NEWPORT				
TITLE: PROPOSED NURSERY UNIT: FOUNDATION LAYOUT				
 Consulting Civil and Structural Engineers 7 Ashtree Court - Woody Close - Cardiff Gate Business Park - Cardiff - CF23 8RW Tel: 029 2054 7000 - Fax: 029 2054 7001 - www.shear-design.com - enquiries@shear-design.com				
DRAWN: DMH	CHECKED: BH	DATE: MAR.2025	SCALE: 1:100, 1:20 @ A1	
STATUS KEY: I = INFORMATION P = PRELIMINARY A = APPROVAL CO = CONTRACT = TENDER C = CONSTRUCTION AB = AS-BUILT				
STATUS: T	DRAWING NUMBER: 25027-004	REVISION: -		

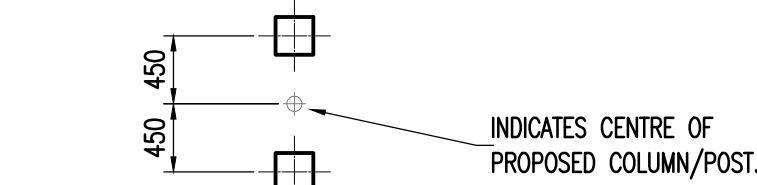


PROPOSED COLUMNS

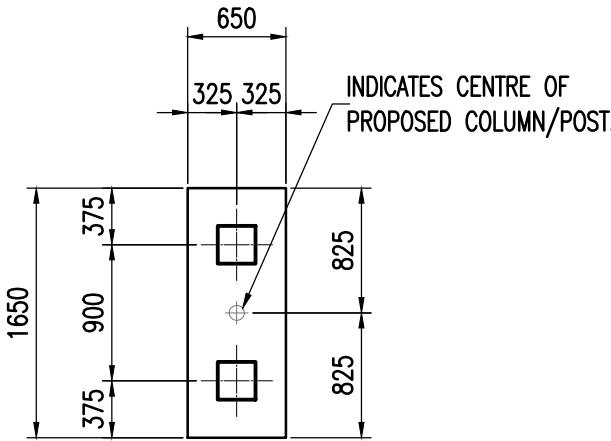
DRAWING PRODUCED IN ADVANCE OF PROPOSED COLUMN LAYOUT.

PILE CAPS TO BE CENTRAL ABOUT COLUMN LOCATIONS.

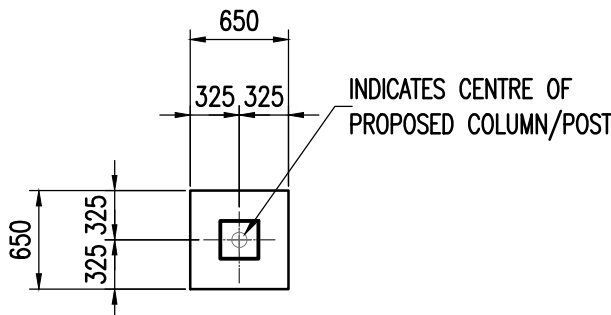
PILE CAP AND PILE NUMBERS SUBJECT TO CHANGE UPON RECEIPT OF COLUMN LAYOUT.



PILE CAP PC02
TYPICAL PILE SETTING OUT
(1:50)



PILE CAP PC04
1000mm DEEP
(1:50)



PILE CAP PC01
1000mm DEEP
(1:50)

NOTES

GENERAL

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. ALL LEVELS ARE IN METRES UNLESS NOTED OTHERWISE.
3. DO NOT SCALE FROM THIS DRAWING. USE FIGURED DIMENSIONS ONLY.
4. ANY DISCREPANCIES TO BE REPORTED IMMEDIATELY TO THE ENGINEER.
5. THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS, SUBCONTRACTORS AND SPECIALISTS DRAWINGS AND SPECIFICATIONS.
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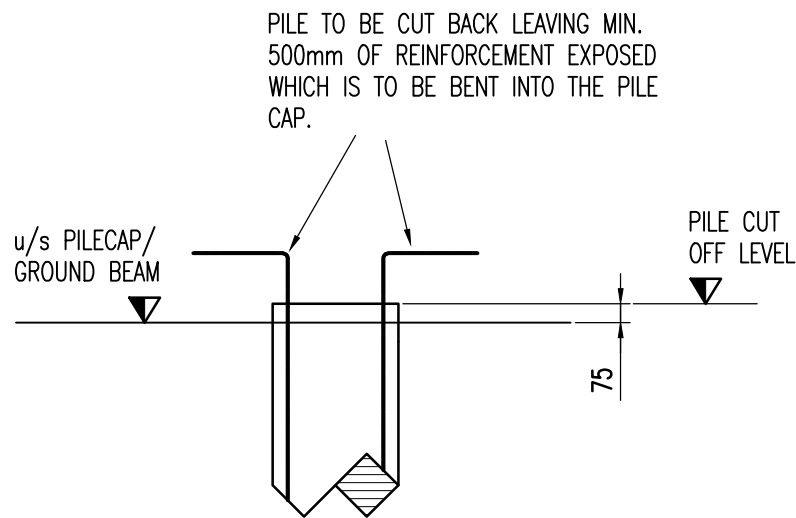
PILED FOUNDATIONS

1. THE BASE SPECIFICATION FOR PILING WORKS SHALL BE THE SPECIFICATION FOR PILING AND EMBEDDED RETAINING WALLS (ICE) AND BS 8004 'BRITISH STANDARD OF PRACTICE FOR FOUNDATIONS'.
2. THE SPECIALIST PILING CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF THE PILING SYSTEM AND SHALL BE DEEMED TO HAVE TAKEN STRUCTURES OR FEATURES.
3. DUE REGARD SHALL BE TAKEN OF ALL RELEVANT INFORMATION NOTED WITHIN THE GROUND INVESTIGATION REPORT FOR THE DESIGN OF THE PILING SYSTEM. SHOULD THE PILING CONTRACTOR CONSIDER THE INFORMATION CONTAINED WITHIN THE REPORT TO BE INCONCLUSIVE OR DEFICIENT IN ANY WAY, THEN HIS TENDER MUST INCLUDE FOR ANY ADDITIONAL GROUND INVESTIGATION CONSIDERED NECESSARY.
4. THE NATURE, EXTENT AND LEVEL OF THE PILING PLATFORM SHALL BE AGREED WITH THE PILING CONTRACTOR.
5. SETTING OUT DIMENSIONS, AS INDICATED ON THIS DRAWING, RELATE TO THE CENTER OF THE PILES UNLESS NOTED OTHERWISE.
6. ALL PILE CAPS ARE TO BE SET OUT SYMMETRICALLY ABOUT COLUMN CENTER LINES UNLESS NOTED OTHERWISE.
7. ALL PILE CUT-OFF LEVELS TO BE AS INDICATED ON THE DRAWING.
8. ALL TOP OF PILE CAP LEVELS TO BE AS INDICATED ON THE DRAWING.
9. ALL TOP OF GROUND BEAM LEVELS TO BE AS INDICATED ON THE DRAWING.
10. THE METHOD OF BREAKING DOWN THE PILES SHALL BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF THE WORKS. FOLLOWING 'BREAKING DOWN' THE PILE REINFORCEMENT SHALL BE LEFT PROTRUDING A MINIMUM OF 500mm AND BENT INTO THE SUPPORTED STRUCTURE.
11. ALL PILES SHALL BE CAPABLE OF SUPPORTING ADDITIONAL FORCES DUE TO SHALL ALLOW, WITHIN THEIR DESIGN, FOR ANY NEGATIVE SKIN FRICTION DUE TO GROUND CONDITIONS.
12. THE MAIN CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL OF ANY KNOWN OBSTRUCTIONS PRIOR TO PILING AND BACKFILLING RESULTANT EXCAVATIONS AS DIRECTED BY THE ENGINEER.
13. SHOULD UNKNOWN OBSTRUCTIONS BE ENCOUNTERED, THEN THE ENGINEER SHALL BE INFORMED IMMEDIATELY SO THAT HE MAY CONSIDER ANY NECESSARY REMEDIAL WORK.
14. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY BROKEN PILES. ALL PILECAPS POSITIONED CENTRALLY TO GRID LINES U.N.O.

FOUNDATIONS

1. THE BASE SPECIFICATION FOR FOUNDATION WORKS SHALL BE BS 8004 'BRITISH STANDARD CODE OF PRACTICE FOR FOUNDATIONS'.
2. FOR DETAILS OF GROUND CONDITIONS REFER TO THE RELEVANT GROUND INVESTIGATION REPORT.
3. THE ENGINEER SHALL BE IMMEDIATELY NOTIFIED OF ANY VARIATIONS TO THE REPORTED GROUND CONDITIONS.
4. THE ENGINEER IS TO BE INFORMED IMMEDIATELY IF FOUNDATION DEPTHS SUBSTANTIALLY EXCEED THE MINIMUM DEPTHS INDICATED UPON THE DRAWINGS.
5. ALL OBSTRUCTIONS, OLD FOUNDATIONS, DISUSED SEWERS ETC SHALL BE REMOVED FOR THE EXTENT OF THE FOUNDATION WORKS AND BACKFILLED TO THE APPROVAL OF THE ENGINEER.
6. ALL PILE CAPS ARE TO BE SET OUT SYMMETRICALLY ABOUT THE COLUMN CENTRE-LINES UNLESS NOTED OTHERWISE (REFER TO COLUMN LAYOUT DRAWING). ALL GROUND BEAMS ARE TO BE SET OUT TO CENTRE OF GRID LINE UNO BY OFFSETS INDICATED.
7. TOP OF FOUNDATION LEVEL TO BE AS NOTED ON THE DRAWING.
8. ALL CONCRETE TO BE GRADE RC35 UNO. SULPHATE CLASS TO BE DETERMINED FROM SITE INVESTIGATION REPORT.
9. ALL BLOCKS BELOW DPC TO HAVE A MINIMUM STRENGTH OF 7N/mm² AND A MINIMUM DENSITY OF 1800 Kg/m³.
10. ALL FORMATIONS TO IN-SITU REINFORCED CONCRETE FOUNDATIONS ARE TO RECEIVE 50mm CONCRETE BLINDING.
11. THE BLINDING DEPTH SHALL NOT BE REGARDED AS PART OF THE DESIGNED FOUNDATION DEPTH AS NOTED ON THE DRAWINGS.
12. EXCAVATION SIDE SUPPORT AND DISPOSAL OF GROUND WATER SHALL BE CONSIDERED UPON THE BASIS OF THE GROUND INVESTIGATION REPORT AND AN ON-SITE VISUAL INSPECTION.
13. MINIMUM 1200 GAUGE POLYTHENE DPM TO BE USED AND LAID STRICTLY IN ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS AND LAPPED TO DPC WHERE APPLICABLE UNO.
14. ALL COMPACTION TO BE CARRIED OUT IN ACCORDANCE WITH THE DoT SPECIFICATION.
15. PILE TO BE CUT BACK LEAVING MIN. 500mm OF REINFORCEMENT EXPOSED WHICH IS TO BE BENT INTO THE PILECAP

WIP



PILE CUT-OFF LEVEL

SETTING OUT
REFER TO ARCHITECTURAL DRAWINGS FOR ALL SETTING OUT AND CO-ORDINATES. ALL WALL SETTING IN ACCORDANCE WITH THE ARCHITECTURAL DRAWINGS.
PILING MAT
TO BE DESIGNED IN ACCORDANCE WITH SPECIALISTS SUB-CONTRACTORS REQUIREMENTS. PILING MAT IS TO BE PLATE LOAD TESTED (REQUIREMENTS TO BE AGREED WITH CLIENT) PRIOR TO COMMENCEMENT OF PILING OPERATION AND RESULTS PASSED ONTO ENGINEER AND PILING SPECIALISTS FOR VERIFICATION.
PILING OPERATION
PILING SEQUENCE TO BE BY SPECIALIST PILING CONTRACTOR. TEMPORARY WORKS SPECIALISTS MUST TAKE ACCOUNT PILING SEQUENCE.
PILE HEADS
ALL PILES TO BE FIXED HEAD.

PROPOSED PILES
TOTAL No. OF 53 PILES TO BE 250mm SQUARE DRIVEN.
ALL PILES TO BE DESIGNED BY PILING SPECIALISTS. ALLOWANCE TO BE MADE FOR NEGATIVE SKIN FRICTION WHEN DESIGNING PILES, FINAL TYPE AND SIZE TBC BY PILING CONTRACTOR.
PILING DESIGNER/CONTRACTOR TO MAKE SUITABLE ALLOWANCES IN THEIR DESIGN AND PROPOSALS TO ACCOUNT FOR THE ONSITE GROUND CONDITIONS. ALL PILES TO BE FIXED HEAD.
PILE LOADS: COMPRESSION = 465 KN HORIZONTAL = 45 KN NO TENSION

GENERAL
THE MAIN CONTRACTOR / GROUND WORK SUBCONTRACTOR IS RESPONSIBLE FOR THE REMOVAL OF ANY EXISTING FOUNDATIONS PRIOR TO THE PILING WORKS / SUBSTRUCTURE CONSTRUCTION ON SITE.
ALL PILES TO HAVE A MAXIMUM HORIZONTAL TOLERANCE OF 75mm IN ANY DIRECTION.
PILING CONTRACTOR TO SATISFY HIMSELF AS TO THE EXACT POSITION OF ANY EXISTING UNDERGROUND SERVICES.
PILING CONTRACTOR TO BE AWARE OF POSSIBLE NEGATIVE SKIN FRICTION AND TO DESIGN ACCORDINGLY.
IN ACCORDANCE WITH FINDINGS OF THE SITE INVESTIGATION, DEWATERING METHODS MAYBE BE REQUIRED. EXACT METHOD TO GROUND WORKERS DESIGN AND REQUIREMENTS.
ALL LEVELS TO BE VERIFIED ON SITE.

PILECAPS/GROUND BEAMS
TO BE GRADE RC28/35 TO CONFORM TO CLASS DS-1/AC-1 IN ACCORDANCE WITH BS 8500.
REINFORCEMENT ALLOWANCE 200kg/M3
COVER TO REINFORCEMENT: PILECAPS- • 75mm COVER TO BASE AND SIDE REBAR • 50mm COVER TO TOP REBAR GROUND BEAMS- • 50mm TOP/BOTTOM/SIDES
RC SLABS
SLAB TO BE 200mm RC28/35
REINFORCEMENT ALLOWANCE 45kg/M3
COVER TO REINFORCEMENT: • 50mm

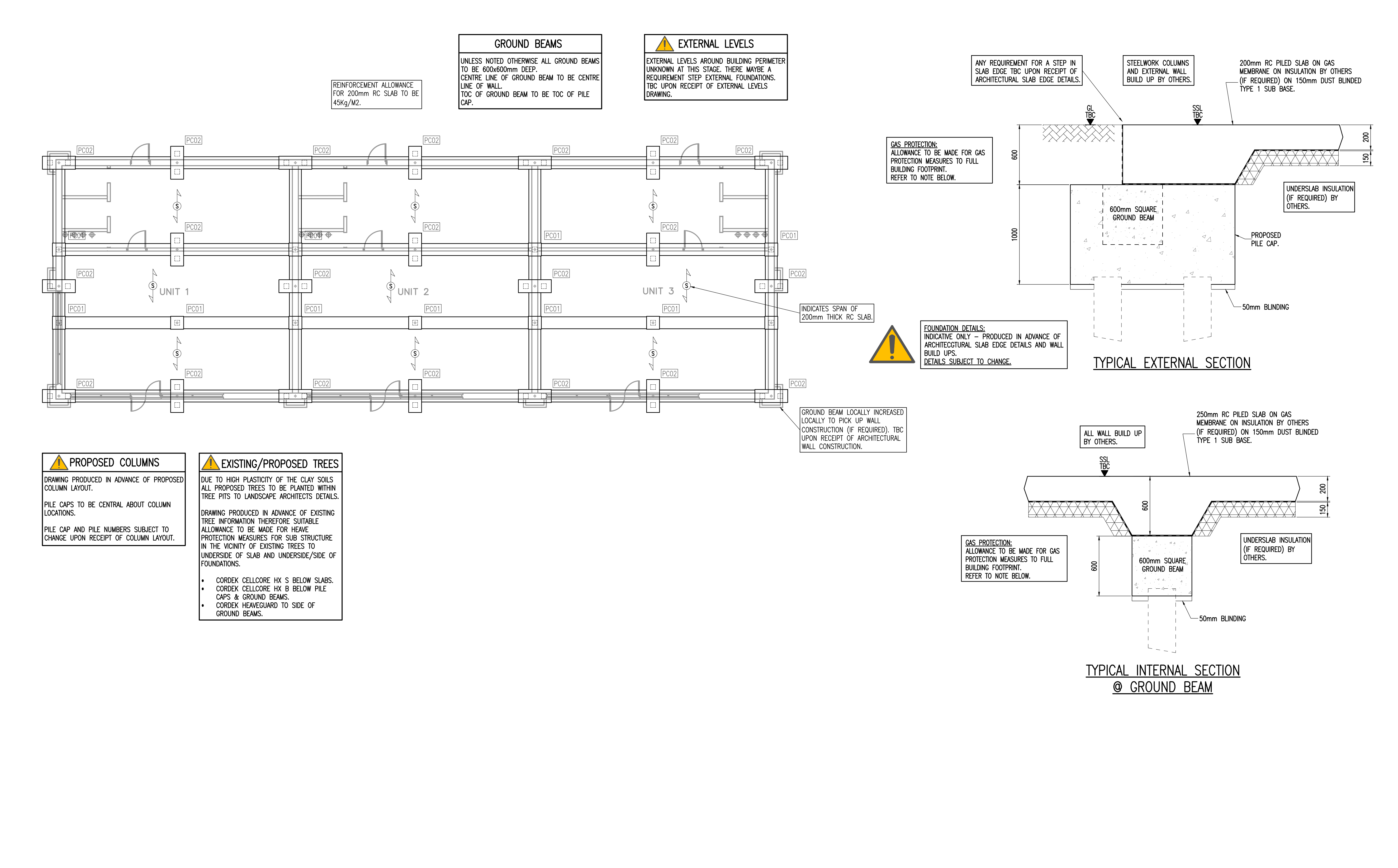
DRAINAGE
REFER TO DRAINAGE PLAN FOR ALL DRAINAGE. SEE LOCATIONS WHERE DRAINAGE IS TO PASS THROUGH FOUNDATIONS. NOTE REINFORCEMENT BARS ARE TO REMAIN INTEGRAL AND LOCALLY DISPLACED TO ACCOMMODATE DRAINAGE RUNS
SITE INVESTIGATION
THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT SITE INVESTIGATION REPORTS
BLINDING TO CONCRETE
50mm CONCRETE BLINDING BELOW ALL FOUNDATIONS

TEMPORARY WORKS
ALL TEMPORARY WORKS BY TEMPORARY WORKS DESIGNER.
TEMPORARY BRACING/RESTRAINT REQUIRED TO INSTALL FRAME TO FABRICATORS REQUIREMENTS AND DESIGN.
GAS PROTECTION
ALLOWANCE TO BE MADE FOR GAS PROTECTION MEASURES FOR FULL BUILDING FOOTPRINT. CONTRACTOR MUST MAKE ALL NECESSARY ALLOWANCES FOR BELOW SLAB SUMPS, SINGLE SIZE STONE BEDDING WITH PERFORATED PIPING AND PERIMETER VENTING. ALTERNATIVELY PROPRIETARY GAS VENTING MAT TO SPECIALISTS MANUFACTURER DETAILS.
GAS MEMBRANE
GAS MEMBRANE TO BE DESIGNED, INSTALLED AND VERIFIED IN ACCORDANCE WITH BS8485.

LOADINGS
DRAWING PRODUCED IN ADVANCE OF ANY ABOVE GROUND STRUCTURAL DETAILS.
REQUIRED IMPOSED LOADINGS ASSUMED AS-COMMERCIAL 10kN/m2

	• LOCATION OF PROPPING AND SEQUENCE OF EXCAVATION TO BE AGREED WITH PILING CONTRACTOR AND TEMPORARY WORKS ENGINEER. • TEMPORARY PROPPING, IF REQUIRED, TO BE DESIGNED BY TEMPORARY WORKS ENGINEER.
	1. PRIOR TO PILING/EXCAVATION ALL UNDERGROUND SERVICES MUST BE PROVEN TO BE NOT IN LOCATION OF WORKS 2. PILING PLATFORM TO BE PROVIDED AS CERTIFIED 3. PILING CONTRACTOR TO NOTE PROXIMITY OF LIVE HV CABLES AND TO ENSURE THAT DRIVING OF PILES AND ANY VIBRATIONS IS ABLE TO BE CARRIED OUT SAFELY AND DOES NOT ADVERSELY AFFECT LIVE CABLES

REV	DATE	DESCRIPTION	BY	CHK
AMENDMENTS				
CLIENT: LIDL GB LTD				
PROJECT: GLAN LLYN NEWPORT				
TITLE: PROPOSED TRIPLE UNIT: PILING LAYOUT				
7 Ashtree Court - Woody Close - Cardiff Gate Business Park - Cardiff - CF23 8RW Tel: 029 2054 7000 - Fax: 029 2054 7001 - www.shear-design.com - enquiries@shear-design.com				
DRAWN: DMH	CHECKED: BH	DATE: MAR.2025	SCALE: 1:100, 1:20 @ A1	
STATUS KEY: I = INFORMATION P = PRELIMINARY A = APPROVAL CO = CONTRACT C = TENDER C = CONSTRUCTION AB = AS-BUILT				
STATUS: T	DRAWING NUMBER: 25027-005	REVISION: -		



- NOTES
- GENERAL
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.

2. ALL LEVELS ARE IN METRES UNLESS NOTED OTHERWISE.

3. DO NOT SCALE FROM THIS DRAWING. USE FIGURED DIMENSIONS ONLY.

4. ANY DISCREPANCIES TO BE REPORTED IMMEDIATELY TO THE ENGINEER.

5. THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS, SUBCONTRACTORS AND SPECIALISTS DRAWINGS AND SPECIFICATIONS.

6. THIS DRAWING IS COPYRIGHT © PROPERTY OF SHEAR DESIGN LIMITED.
- PILED FOUNDATIONS
1. THE BASE SPECIFICATION FOR PILING WORKS SHALL BE THE SPECIFICATION FOR PILING AND EMBEDDED RETAINING WALLS (ICE) AND BS 8004 'BRITISH STANDARD OF PRACTICE FOR FOUNDATIONS'.

2. THE SPECIALIST PILING CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF THE PILING SYSTEM AND SHALL BE DEEMED TO HAVE TAKEN STRUCTURES OR FEATURES.

3. DUE REGARD SHALL BE TAKEN OF ALL RELEVANT INFORMATION NOTED WITHIN THE GROUND INVESTIGATION REPORT FOR THE DESIGN OF THE PILING SYSTEM. SHOULD THE PILING CONTRACTOR CONSIDER THE INFORMATION CONTAINED WITHIN THE REPORT TO BE INCONCLUSIVE OR DEFICIENT IN ANY WAY, THEN HIS TENDER MUST INCLUDE FOR ANY ADDITIONAL GROUND INVESTIGATION CONSIDERED NECESSARY.

4. THE NATURE, EXTENT AND LEVEL OF THE PILING PLATFORM SHALL BE AGREED WITH THE PILING CONTRACTOR.

5. SETTING OUT DIMENSIONS, AS INDICATED ON THIS DRAWING, RELATE TO THE CENTER OF THE PILES UNLESS NOTED OTHERWISE.

6. ALL PILE CAPS ARE TO BE SET OUT SYMMETRICALLY ABOUT COLUMN CENTER LINES UNLESS NOTED OTHERWISE.

7. ALL PILE CUT-OFF LEVELS TO BE AS INDICATED ON THE DRAWING.

8. ALL TOP OF PILE CAP LEVELS TO BE AS INDICATED ON THE DRAWING.

9. ALL TOP OF GROUND BEAM LEVELS TO BE AS INDICATED ON THE DRAWING.

10. THE METHOD OF BREAKING DOWN THE PILES SHALL BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF THE WORKS. FOLLOWING 'BREAKING DOWN' THE PILE REINFORCEMENT SHALL BE LEFT PROTRUDING A MINIMUM OF 500mm AND BENT INTO THE SUPPORTED STRUCTURE.

11. ALL PILES SHALL BE CAPABLE OF SUPPORTING ADDITIONAL FORCES DUE TO SHALL ALLOW, WITHIN THEIR DESIGN, FOR ANY NEGATIVE SKIN FRICTION DUE TO GROUND CONDITIONS.

12. THE MAIN CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL OF ANY KNOWN OBSTRUCTIONS PRIOR TO PILING AND BACKFILLING RESULTANT EXCAVATIONS AS DIRECTED BY THE ENGINEER.

13. SHOULD UNKNOWN OBSTRUCTIONS BE ENCOUNTERED, THEN THE ENGINEER SHALL BE INFORMED IMMEDIATELY SO THAT HE MAY CONSIDER ANY NECESSARY REMEDIAL WORK.

14. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY BROKEN PILES. ALL PILECAPS POSITIONED CENTRALLY TO GRID LINES U.N.O.

- FOUNDATIONS
1. THE BASE SPECIFICATION FOR FOUNDATION WORKS SHALL BE BS 8004 'BRITISH STANDARD CODE OF PRACTICE FOR FOUNDATIONS'.

2. FOR DETAILS OF GROUND CONDITIONS REFER TO THE RELEVANT GROUND INVESTIGATION REPORT.

3. THE ENGINEER SHALL BE IMMEDIATELY NOTIFIED OF ANY VARIATIONS TO THE REPORTED GROUND CONDITIONS.

4. THE ENGINEER IS TO BE INFORMED IMMEDIATELY IF FOUNDATION DEPTHS SUBSTANTIALLY EXCEED THE MINIMUM DEPTHS INDICATED UPON THE DRAWINGS.

5. ALL OBSTRUCTIONS, OLD FOUNDATIONS, DISUSED SEWERS ETC SHALL BE REMOVED FOR THE EXTENT OF THE FOUNDATION WORKS AND BACKFILLED TO THE APPROVAL OF THE ENGINEER.

6. ALL PILE CAPS ARE TO BE SET OUT SYMMETRICALLY ABOUT THE COLUMN CENTRE-LINES UNLESS NOTED OTHERWISE (REFER TO COLUMN LAYOUT DRAWING). ALL GROUND BEAMS ARE TO BE SET OUT TO CENTRE OF GRID LINE UNO BY OFFSETS INDICATED.

7. TOP OF FOUNDATION LEVEL TO BE AS NOTED ON THE DRAWING.

8. ALL CONCRETE TO BE GRADE RC35 UNO. SULPHATE CLASS TO BE DETERMINED FROM SITE INVESTIGATION REPORT.

9. ALL BLOCKS BELOW DPC TO HAVE A MINIMUM STRENGTH OF 7N/mm² AND A MINIMUM DENSITY OF 1800 Kg/m³.

10. ALL FORMATIONS TO IN-SITU REINFORCED CONCRETE FOUNDATIONS ARE TO RECEIVE 50mm CONCRETE BLINDING.

11. THE BLINDING DEPTH SHALL NOT BE REGARDED AS PART OF THE DESIGNED FOUNDATION DEPTH AS NOTED ON THE DRAWINGS.

12. EXCAVATION SIDE SUPPORT AND DISPOSAL OF GROUND WATER SHALL BE CONSIDERED UPON THE BASIS OF THE GROUND INVESTIGATION REPORT AND AN ON-SITE VISUAL INSPECTION.

13. MINIMUM 1200 GAUGE POLYTHENE DPM TO BE USED AND LAID STRICTLY IN ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS AND LAPPED TO DPC WHERE APPLICABLE UNO.

14. ALL COMPACTION TO BE CARRIED OUT IN ACCORDANCE WITH THE DoT SPECIFICATION.

15. PILE TO BE CUT BACK LEAVING MIN. 500mm OF REINFORCEMENT EXPOSED WHICH IS TO BE BENT INTO THE PILECAP

SETTING OUT REFER TO ARCHITECTURAL DRAWINGS FOR ALL SETTING OUT AND CO-ORDINATES. ALL WALL SETTING IN ACCORDANCE WITH THE ARCHITECTURAL DRAWINGS.	PROPOSED PILES TOTAL No. OF 53 PILES TO BE 250mm SQUARE DRIVEN. ALL PILES TO BE DESIGNED BY PILING SPECIALISTS. ALLOWANCE TO BE MADE FOR NEGATIVE SKIN FRICTION WHEN DESIGNING PILES, FINAL TYPE AND SIZE TBC BY PILING CONTRACTOR. PILING DESIGNER/CONTRACTOR TO MAKE SUITABLE ALLOWANCES IN THEIR DESIGN AND PROPOSALS TO ACCOUNT FOR THE ONSITE GROUND CONDITIONS. ALL PILES TO BE FIXED HEAD. PILE LOADS: COMPRESSION = 465 KN HORIZONTAL = 45 KN NO TENSION	GENERAL THE MAIN CONTRACTOR / GROUND WORK SUBCONTRACTOR IS RESPONSIBLE FOR THE REMOVAL OF ANY EXISTING FOUNDATIONS PRIOR TO THE PILING WORKS / SUBSTRUCTURE CONSTRUCTION ON SITE. ALL PILES TO HAVE A MAXIMUM HORIZONTAL TOLERANCE OF 75mm IN ANY DIRECTION. PILING CONTRACTOR TO SATISFY HIMSELF AS TO THE EXACT POSITION OF ANY EXISTING UNDERGROUND SERVICES. PILING CONTRACTOR TO BE AWARE OF POSSIBLE NEGATIVE SKIN FRICTION AND TO DESIGN ACCORDINGLY. IN ACCORDANCE WITH FINDINGS OF THE SITE INVESTIGATION, DEWATERING METHODS MAYBE BE REQUIRED. EXACT METHOD TO GROUND WORKERS DESIGN AND REQUIREMENTS. ALL LEVELS TO BE VERIFIED ON SITE.	PILECAPS/GROUND BEAMS TO BE GRADE RC28/35 TO CONFORM TO CLASS DS-1/AC-1 IN ACCORDANCE WITH BS 8500. REINFORCEMENT ALLOWANCE 200kg/M3 COVER TO REINFORCEMENT: PILECAPS- 75MM COVER TO BASE AND SIDE REBAR 50MM COVER TO TOP REBAR GROUND BEAMS- 50MM TOP/BOTTOM/SIDES	DRAINAGE REFER TO DRAINAGE PLAN FOR ALL DRAINAGE. SEE LOCATIONS WHERE DRAINAGE IS TO PASS THROUGH FOUNDATIONS. NOTE: REINFORCEMENT BARS ARE TO REMAIN INTEGRAL AND LOCALLY DISPLACED TO ACCOMMODATE DRAINAGE RUNS	TEMPORARY WORKS ALL TEMPORARY WORKS BY TEMPORARY WORKS DESIGNER. TEMPORARY BRACING/RESTRAINT REQUIRED TO INSTALL FRAME TO FABRICATORS REQUIREMENTS AND DESIGN.	LOADINGS DRAWING PRODUCED IN ADVANCE OF ANY ABOVE GROUND STRUCTURAL DETAILS. REQUIRED IMPOSED LOADINGS ASSUMED AS-COMMERCIAL 10kN/m2
PILING MAT TO BE DESIGNED IN ACCORDANCE WITH SPECIALISTS SUB-CONTRACTORS REQUIREMENTS. PILING MAT IS TO BE PLATE LOAD TESTED (REQUIREMENTS TO BE AGREED WITH CLIENT) PRIOR TO COMMENCEMENT OF PILING OPERATION AND RESULTS PASSED ONTO ENGINEER AND PILING SPECIALISTS FOR VERIFICATION.				SITE INVESTIGATION THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT SITE INVESTIGATION REPORTS	GAS PROTECTION ALLOWANCE TO BE MADE FOR GAS PROTECTION MEASURES FOR FULL BUILDING FOOTPRINT. CONTRACTOR MUST MAKE ALL NECESSARY ALLOWANCES FOR BELOW SLAB SUMPS, SINGLE SIZE: STONE BEDDING WITH PERFORATED PIPING AND PERIMETER VENTING. ALTERNATIVELY PROPRIETARY GAS VENTING MAT TO SPECIALISTS MANUFACTURER DETAILS.	
PILING OPERATION PILING SEQUENCE TO BE BY SPECIALIST PILING CONTRACTOR. TEMPORARY WORKS SPECIALISTS MUST TAKE ACCOUNT PILING SEQUENCE.			RC SLABS SLAB TO BE 200mm RC28/35 REINFORCEMENT ALLOWANCE 45kg/M3 COVER TO REINFORCEMENT: 50mm	BLINDING TO CONCRETE 50mm CONCRETE BLINDING BELOW ALL FOUNDATIONS	GAS MEMBRANE GAS MEMBRANE TO BE DESIGNED, INSTALLED AND VERIFIED IN ACCORDANCE WITH BS8485.	
PILE HEADS ALL PILES TO BE FIXED HEAD.						

- LOCATION OF PROPPING AND SEQUENCE OF EXCAVATION TO BE AGREED WITH PILING CONTRACTOR AND TEMPORARY WORKS ENGINEER.
1. PRIOR TO PILING/EXCAVATION ALL UNDERGROUND SERVICES MUST BE PROVEN TO BE NOT IN LOCATION OF WORKS

2. PILING PLATFORM TO BE PROVIDED AS CERTIFIED

3. PILING CONTRACTOR TO NOTE PROXIMITY OF LIVE HV CABLES AND TO ENSURE THAT DRIVING OF PILES AND ANY VIBRATIONS IS ABLE TO BE CARRIED OUT SAFELY AND DOES NOT ADVERSELY AFFECT LIVE CABLES

WIP

REV	DATE	DESCRIPTION	BY	CHK
AMENDMENTS				
CLIENT: LIDL GB LTD				
PROJECT: GLAN LLYN NEWPORT				
TITLE: PROPOSED TRIPLE UNIT: FOUNDATION LAYOUT				

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DRAWN: DMH	CHECKED: BH	DATE: MAR.2025	SCALE: 1:100, 1:20 @ A1
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STATUS KEY: I = INFORMATION P = PRELIMINARY A = APPROVAL CO = CONTRACT
= TENDER C = CONSTRUCTION AB = AS-BUILT

STATUS: T	DRAWING NUMBER: 25027-006	REVISION: -
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