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PROPOSED ROADSIDE SERVICES MARKFIELD SERVICES, MARKFIELD, LEICESTERSHIRE

FLOOD RISK ASSESSMENT

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1.0 INTRODUCTION AND DEVELOPMENT DESCRIPTION

1.1 Project Introduction and Objectives

EG On The Move Ltd. has commissioned NSugg Ltd. to undertake a Flood Risk Assessment (FRA) to support a planning application for the re-development of roadside services at Markfield Services, off Junction 22 of the M1 Motorway, near Markfield, Leicester.

This document represents a site-specific FRA for the proposed development.

1.2 Planning Policy and Guidance

This FRA has been undertaken with due regard to the following national and local planning policy and flood risk guidance.

1.2.1 National Planning Policy

The National Planning Policy Framework (NPPF)¹ and associated Planning Practice Guidance for Flood Risk and Coastal Change² aim to steer new development to areas with the lowest risk of flooding.

The NPPF recommends that development should only be allowed in areas at risk of flooding where a site-specific FRA (and the sequential and exception tests, as applicable) can demonstrate that:

- a) within the site, the most vulnerable development is located in areas of lowest flood risk, unless there are overriding reasons to prefer a different location;
- b) the development is appropriately flood resistant and resilient;
- c) it incorporates sustainable drainage systems, unless there is clear evidence that this would be inappropriate;
- d) any residual risk can be safely managed; and
- e) safe access and escape routes are included where appropriate, as part of an agreed emergency plan.

Footnote 63 of the NPPF confirms that planning applications for the following development proposals must be supported by a site-specific FRA:

- All developments in Flood Zone 2 or 3.
- Development sites in Flood Zone 1 involving:
 - Sites of 1 hectare (ha) or more;
 - Land identified by the Environment Agency as having critical drainage problems;
 - Land identified in a Strategic Flood Risk Assessment as being at increased flood risk in the future; and

¹ GOV.UK, March 2012 (last updated: February 2025), National Planning Policy Framework.

² GOV.UK, March 2014 (last updated September 2025), Planning Practice Guidance, Flood Risk and Coastal Change.

- Land that may be subject to other sources of flooding, where its development would introduce a more vulnerable use.

1.2.2 Environment Agency Policy and Guidance

The Environment Agency's guidance for FRAs³ and associated flood risk standing advice supports the NPPF and specifies the requirements for site-specific FRAs, based on the level of flood risk and the vulnerability of the proposed development to flooding.

In addition, an Environment Agency Flood Risk Activity Permit (or exemption) is required for works or structures in, under, over or within eight metres of the top of the bank of the watercourse, designated a 'main river', (or sixteen metres in the case of a tidal watercourse).

1.2.3 Local Policy and Guidance

The following documents provide local flood risk policy and guidance for development within Markfield, Leicestershire:

- Hinckley & Bosworth Borough Council's Level 1⁴ Strategic Flood Risk Assessment (SFRA) provides a summary of the local hydrology, a review of all potential sources of flood risk within the region and guidance for site-specific FRAs.
- Leicestershire County Council's 2024 Local Flood Risk Management Strategy (LFRMS) provides an overview of flood risk from local sources (surface water, groundwater and ordinary watercourses) and the local strategy for flood risk management.
- Hinckley & Bosworth Borough Council's Local Plan 2006-2026 Site Allocations and Development Management Policies DPD (adopted July 2016) sets out current local planning policy for the region. **DM Policy 7: Preventing Pollution and Flooding** includes the following relevant statements:

Adverse impacts from pollution and flooding will be prevented by ensuring that development proposals demonstrate that:

- a) It will not adversely impact the water quality, ecological value or drainage function of water bodies in the borough;*
- h) The development doesn't create or exacerbate flooding by being located away from areas of flood risk unless adequately mitigated against in line with National Policy.*

1.3 Site Location & Requirement for a Site-Specific FRA

The application site comprises the former Markfield Services, off Junction 22 of the M1 Motorway, Markfield, Leicestershire, LE67 9PP, as indicated on the Site Location Plan within Appendix 1. The site is located approximately 1.2km north-west of the village of Markfield and 13km north-west of Leicester city centre; the National Grid Reference for the centre of the site is SK 47680 11140.

³ GOV.UK, March 2014 (last updated: October 2025), Guidance – Flood Risk Assessments: applying for planning permission.

⁴ JBA Consulting, January 2025, Hinckley and Bosworth Level 1 Strategic Flood Risk Assessment, Final Report.

The total area of the application site, as indicated on the Site Location Plan (Appendix 1), is approximately 2.4 hectares. The NPPF and associated technical guidance confirms that development proposals on sites of 1 hectare or more must be accompanied by a site-specific Flood Risk Assessment.

1.4 Topography and Existing Land Use

Ordnance Survey mapping confirms that the local topography falls gently to the south-east, towards the M1 Motorway, with site levels ranging from approximately 193mAOD on the north-west boundary to approximately 190mAOD on the south-east boundary.

A topographic site survey was undertaken in January 2026; a copy of the survey and existing site layout plan are included as Appendix 2. The survey confirms site levels are influenced by the existing infrastructure and fall locally towards site drainage. Site levels range from approximately 189.8mAOD at the south-east vehicular exit to approximately 192.2mAOD on the north-west boundary.

The central and eastern parts of the site comprise a former service station, with a derelict petrol filling station in the east and former service station building on the central southern boundary. An existing hotel with associated parking and HGV parking area remains operational in the west of the site.

The site is accessed off and bound to the north by the A511; the site is bound to the east by Cliffe Lane and the roundabout Junction 22 of the M1 Motorway and bound to the south and west by undeveloped agricultural land, dense vegetation and trees.

The existing site layout and surrounding land use is presented within Figure 1.



Figure 1. Existing Land Use & Site Setting (extracted from Google Earth Pro, image dated 12/05/2025)

1.5 Ground Conditions

British Geological Survey mapping indicates that the local geology beneath the application site comprises the superficial Oadby Till Member (Diamicton) overlain by a ribbon of Alluvium aligned approximately west to east through the northern part of the site. These superficial deposits overlie interbedded sandstone, siltstone and mudstone of the Sidmouth Mudstone Member⁵.

A site-specific ground investigation was undertaken in January/February 2026 by Environmental Protection Strategies (EPS) Ltd. which included the installation of 15 boreholes to a maximum depth of 5m below ground level (mbgl). The following ground conditions are reported⁶:

- Hardstanding or topsoil overlying Made Ground, with Made Ground extending to a maximum depth of 2.3mbgl. The greatest thickness of Made Ground was generally observed in the east of the site, associated with the former petrol filling station.
- The underlying Oadby Till Member is described as variable strata of generally firm, slightly sandy, slightly gravelly Clay, and was encountered to the maximum depth of the boreholes.
- Shallow groundwater seepages were noted during the ground investigation, with rest groundwater levels ranging between 0.62mbgl and 2.20mbgl. This is considered indicative of perched groundwater within the Made Ground or at the interface of the Made Ground and underlying low permeability Clay.

Cranfield University's online Soilscape Viewer confirms the soils beneath the site are classified as Soilscape 17: slowly permeable, seasonally wet, acid loamy and clayey soils with impeded drainage.

Natural England's online MAGIC mapping confirms the site is not located within a groundwater Source Protection Zone.

1.6 Hydrological Features & Site Drainage

The application site lies within the surface water catchment of a minor ordinary watercourse, which rises approximately 500m north-west of the site and flows in a south-easterly direction along the northern site boundary. Review of the UK Centre for Ecology & Hydrology's Flood Estimation Handbook mapping confirms the watercourse has a catchment area of approximately 0.92km² upstream of the site.

The site is not located within an Internal Drainage Board (IDB) district and no other significant surface water features are identified within a 250m radius of the site.

The hydrological site setting is presented as Figure 2.

⁵ British Geological Survey, GeoIndex (Onshore) Map Viewer, accessed 18th May 2026.

⁶ EPS Ltd., 21st April 2026, Phase I & II Geo-Environmental Assessment, Markfield Services, EPS Reference: UK26.7708, Issue 1.

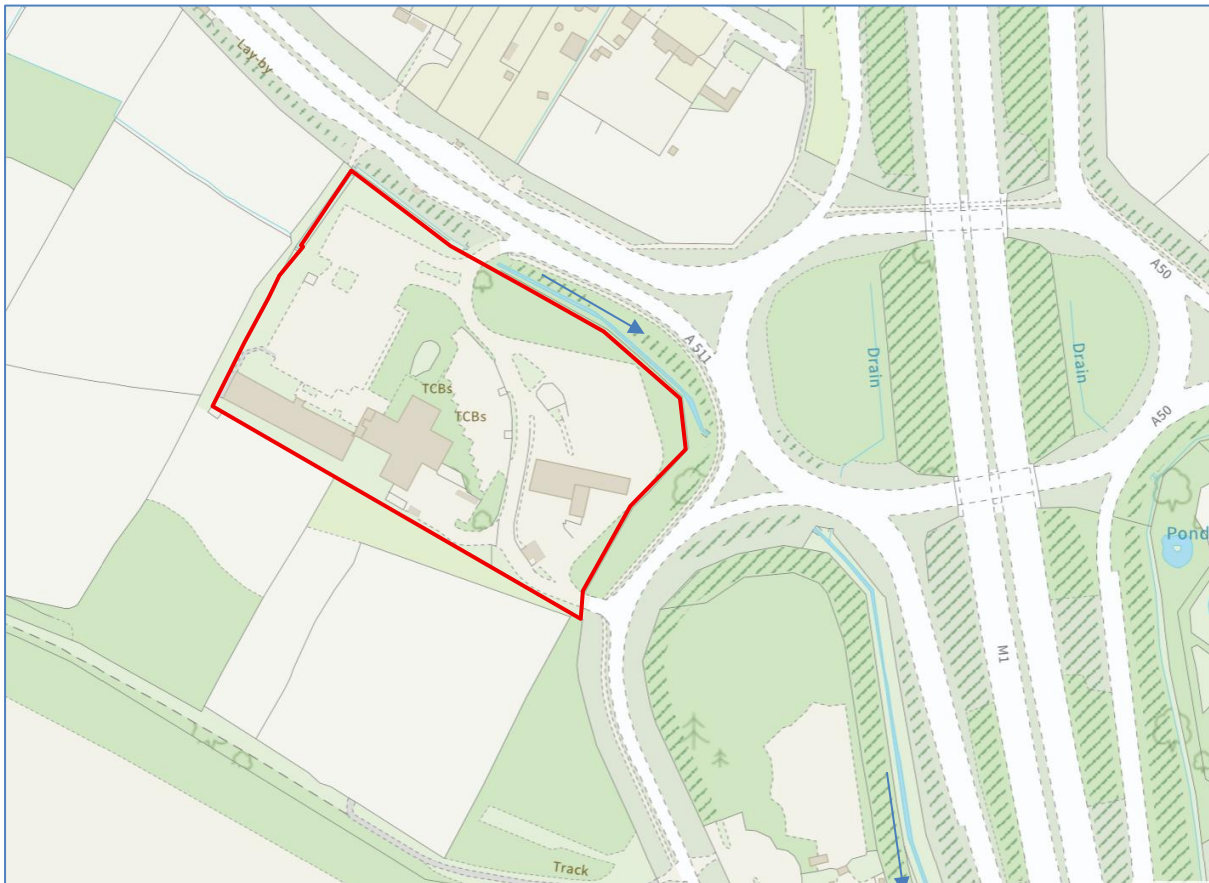


Figure 2. Hydrological Site Setting (extracted from Environment Agency Flood map for Planning)

The existing site drainage is detailed within the Drainage Strategy Report⁷, which confirms surface water drainage currently discharges unattenuated, via two outfalls, to the ordinary watercourse on the northern site boundary. Foul drainage is reported to discharge to a site septic tank located near the site entrance.

1.7 Proposed Development and Flood Risk Vulnerability Classification

The proposed development comprises the redevelopment of the former roadside services, to provide a petrol filling station with associated retail kiosk, drive-thru restaurant, drive-thru coffee shop, EV charging spaces, parking and landscaping. The existing hotel, in the south-west of the site will be retained, together with the site's existing vehicular entrance off the A511 and exit to Cliffe Lane. The proposed layout plan is included as Appendix 3.

Annex 3 of the NPPF confirms buildings used for shops, cafes, hot food takeaways and general industry have a flood risk vulnerability classification of 'less vulnerable' development. Hotels are classified as 'more vulnerable' development, with regards flood risk.

The existing hotel will be retained and the former services redeveloped; therefore, the development will not increase the flood risk vulnerability of the land use. This is discussed further in Section 2.9.

⁷ iSTRUCT Consultants Ltd., April 2026, Drainage Strategy Report, Markfield Services. Revision 01.

1.8 Climate Change

The Environment Agency's climate change allowances guidance⁸ confirms that rainfall, river flows and sea levels are predicted to increase as a result of climate change, which must be considered throughout the lifetime of the proposed development. The application site lies within the Soar Management Catchment, where peak river flows are predicted to increase by between 28% (central allowance) and 60% (upper end allowance) by the 2080s. The Environment Agency's guidance confirms the central allowance is appropriate for both less vulnerable and more vulnerable development. Appropriate allowance for climate change has been considered within the assessment of fluvial flood risk in Section 2.2.

Within the Soar Management Catchment, peak rainfall for the 1.0% annual probability event is predicted to increase between 25% (central allowance) and 40% (upper end allowance) by the 2070s. This has been considered within the assessment of surface water flood risk (refer to Section 2.3) and the development's sustainable surface water drainage strategy (refer to Section 2.10).

⁸ Environment Agency, February 2016 (last updated: May 2022), Guidance: Flood Risk Assessments: Climate Change Allowances.

2.0 FLOOD RISK ASSESSMENT

2.1 Sources of Information

In addition to the site setting and flood risk planning policy and guidance outlined in Section 1, the following sources of information have been consulted during the preparation of this FRA:

- Environment Agency online flood maps and long-term flood risk service – for information regarding surface water, groundwater, reservoir and fluvial/tidal flood risk.

All potential sources of flooding to the application site are considered.

2.2 Flood Risk from Rivers and the Sea

The application site is not coastal or in the vicinity of a tidal watercourse and is not therefore at risk of flooding from the sea.

The Environment Agency's flood map for planning presents information regarding the fluvial flood risk to the application site and is included as Figure 3 below. The flood map for planning confirms the entire application site lies within low probability Flood Zone 1, defined as land with less than 0.1% annual probability of flooding from rivers or the sea.

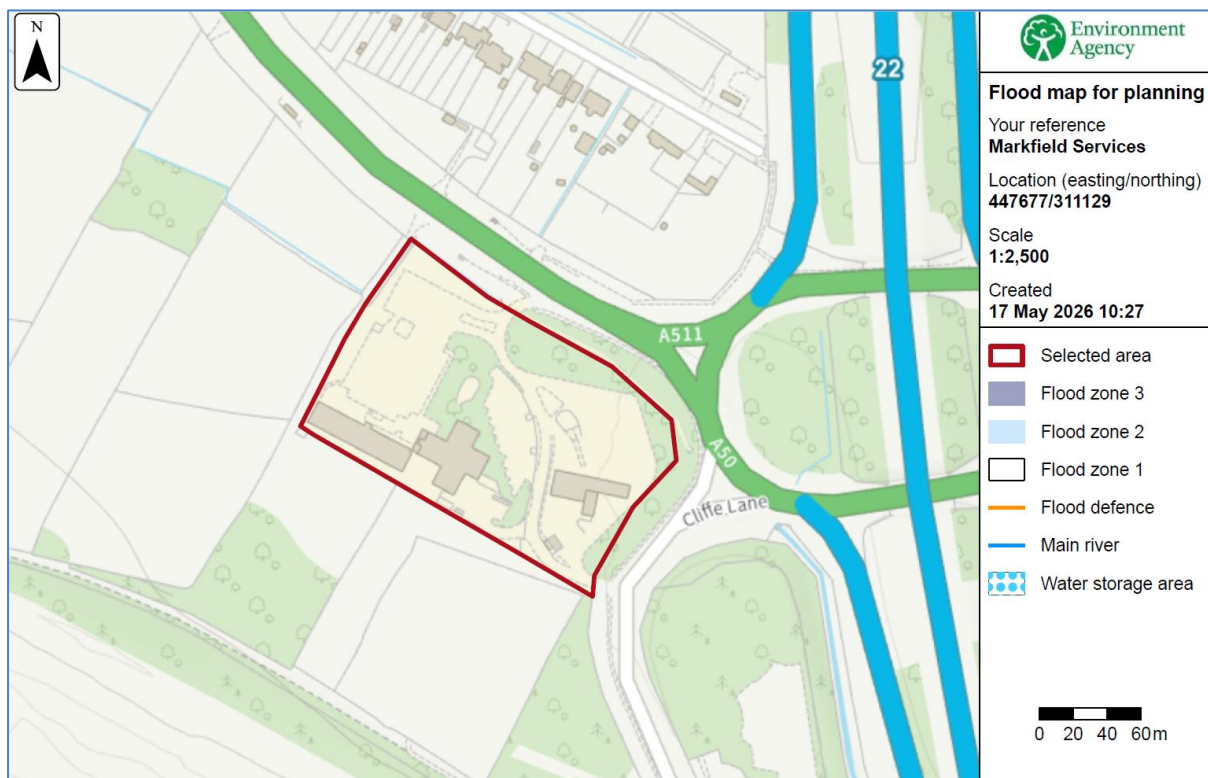


Figure 3. Environment Agency Flood Map for Planning – Flood Zone Map

Figure 4 presents the Environment Agency's flood map for planning with allowance for climate change (2070 – 2125); it shows the predicted future combined extent of Flood Zones 2 and 3 with the central climate change allowance for the 2080s for river flows. Section 1.8 of this FRA confirms the central climate allowance is appropriate for the proposed development.

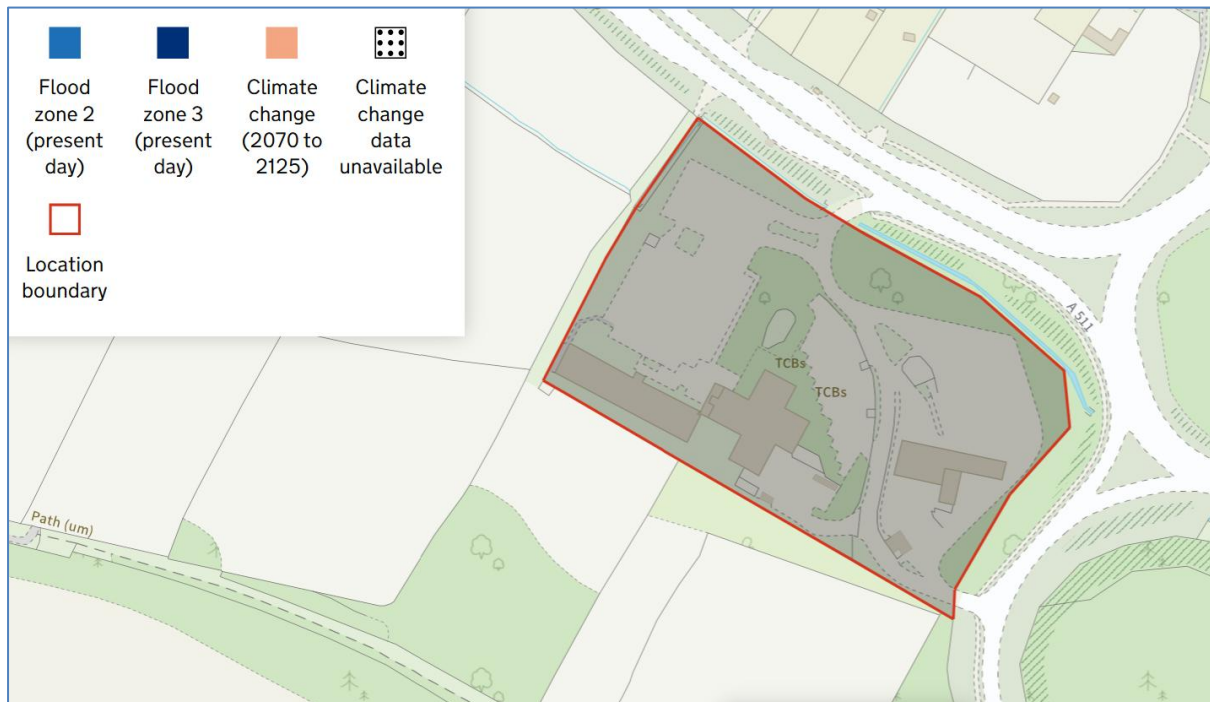


Figure 4. Environment Agency Flood Map for Planning – Climate Change (2070-2125)

Figure 4 confirms the application site remains within low probability Flood Zone 1 throughout the lifetime of the development, with appropriate allowance for climate change. Therefore, the risk of flooding to the development from rivers and the sea is very low and acceptable.

It is recognised that not all minor watercourses are included on the Environment Agency's Flood Zone map, with Flood Zones typically only defined for watercourses with a catchment area exceeding 3km². As noted in Section 1.6, the ordinary watercourse adjacent to the northern site boundary has a catchment area of approximately 0.92km² upstream of the site; flood risk from this watercourse is assessed below, in the review of surface water flood risk.

2.3 Surface Water Flood Risk

Figure 5 presents an extract of the Environment Agency's surface water flood risk map. The central and southern parts of the site have a very low risk of surface water flooding (defined as less than 0.1% annual probability of flooding).

An isolated area adjacent to the south-western boundary is shown to be at risk of surface water ponding, from incident rainfall and site-derived runoff, with no flood flow route identified. The development will benefit from a sustainable drainage strategy, as detailed in Section 2.10, to manage the risk of surface water flooding from these sources.

Figure 5 indicates that the northern and north-eastern areas of the site are at high risk of surface water flooding from the adjacent ordinary watercourse, with a potential overland flow pathway through this area of site, from north-west to south-east.

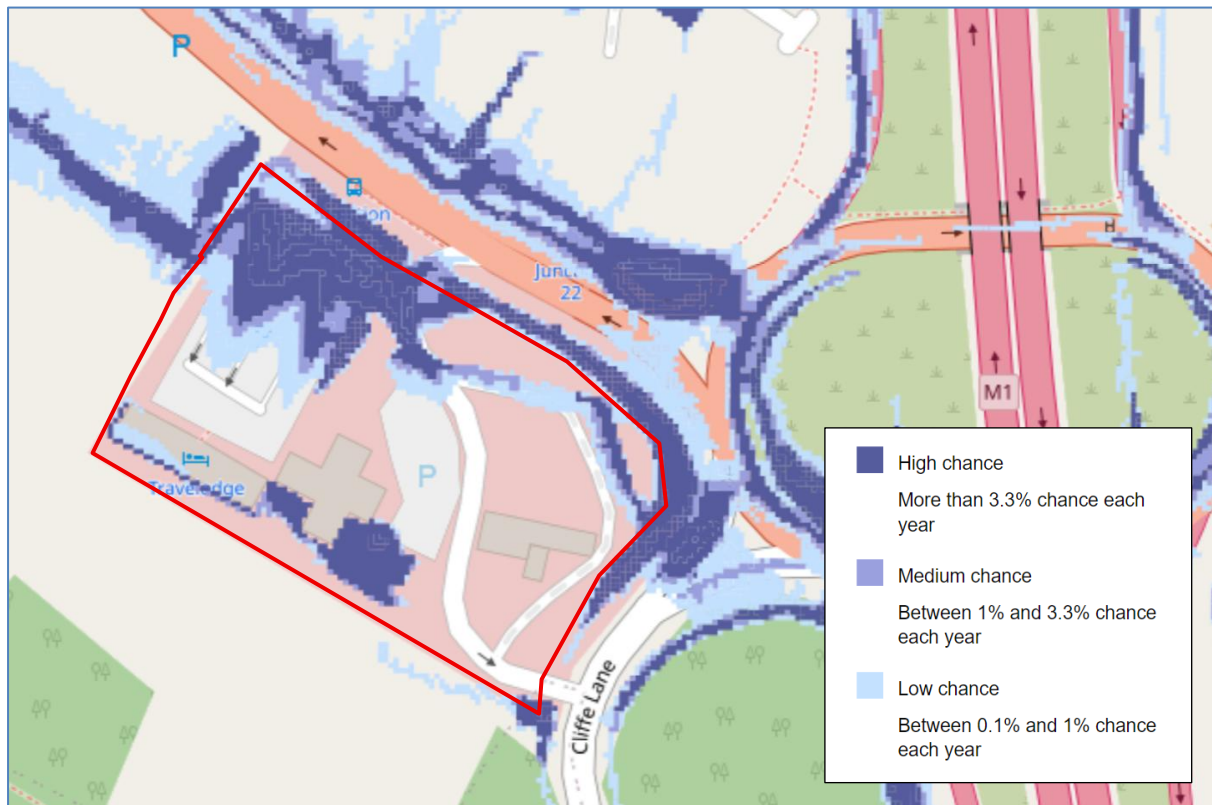


Figure 5. Environment Agency Surface Water Flood Risk Map

Figures 6 and 7 present the probability of surface water flooding to depths of 300mm and 600mm respectively.



Figure 6. Environment Agency Flood Map: Risk of Flooding from Surface Water to a Depth of 300mm

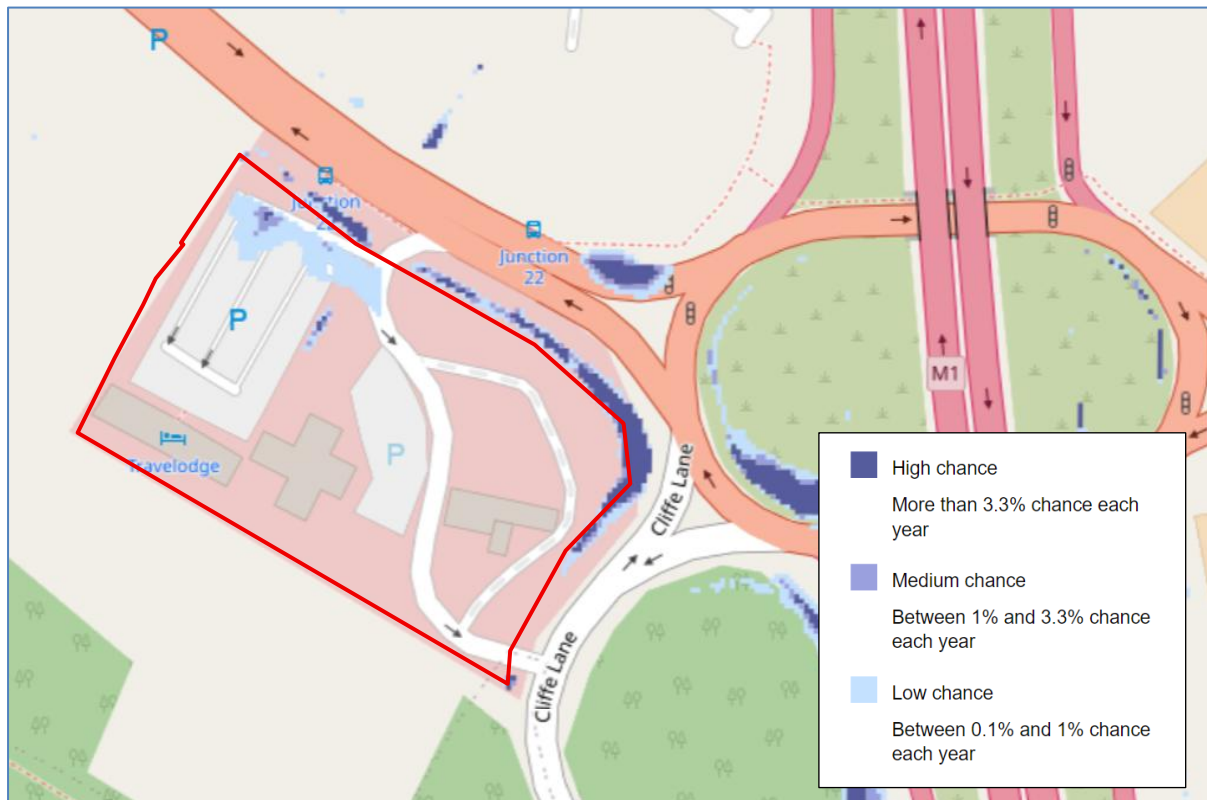


Figure 7. Environment Agency Flood Map: Risk of Flooding from Surface Water to a Depth of 600mm

Figure 6 indicates a high probability of flooding to depths of 300mm in the north-west area of existing parking; the site survey confirms this area is relatively low-lying, with site levels falling towards drainage channels. The benefit provided by the existing drainage infrastructure will not be accurately reflected on the Environment Agency's flood mapping.

Figure 7 indicates a low probability of flooding to depths of 600mm within this north-west area of the site; however, the area of potential flooding is now isolated and indicative of surface water ponding rather than an overland flow pathway. As outlined above and detailed in Section 2.10, the site will benefit from a new sustainable drainage strategy for the management of surface water flood risk from incident rainfall and site-derived runoff.

In the absence of surface water flood maps with allowance for climate change, the design surface water flood event (equivalent to the 1.0% annual probability event plus climate change) is assumed to be represented by the present day 0.1% annual probability event. The predicted extent of surface water flooding during this flood event is indicated on Figure 8. It is reiterated that this is considered worst case, due to the benefits provided by the existing and proposed site drainage systems.

Review of the design flood extent (Figure 8) against site topographic levels (Appendix 2) indicates a peak predicted design flood water level of approximately **190.90m AOD**. Review of the proposed development plan (Appendix 3) and proposed drainage layout plan (Appendix 4) confirms new development within the design flood extent is limited to the proposed drive-thru restaurant, which has a footprint of 290m² and finished floor level 190.85m AOD. Figure 8 includes the approximate footprint of the drive-thru restaurant outlined in green, and selected existing topographic levels, which are discussed below.

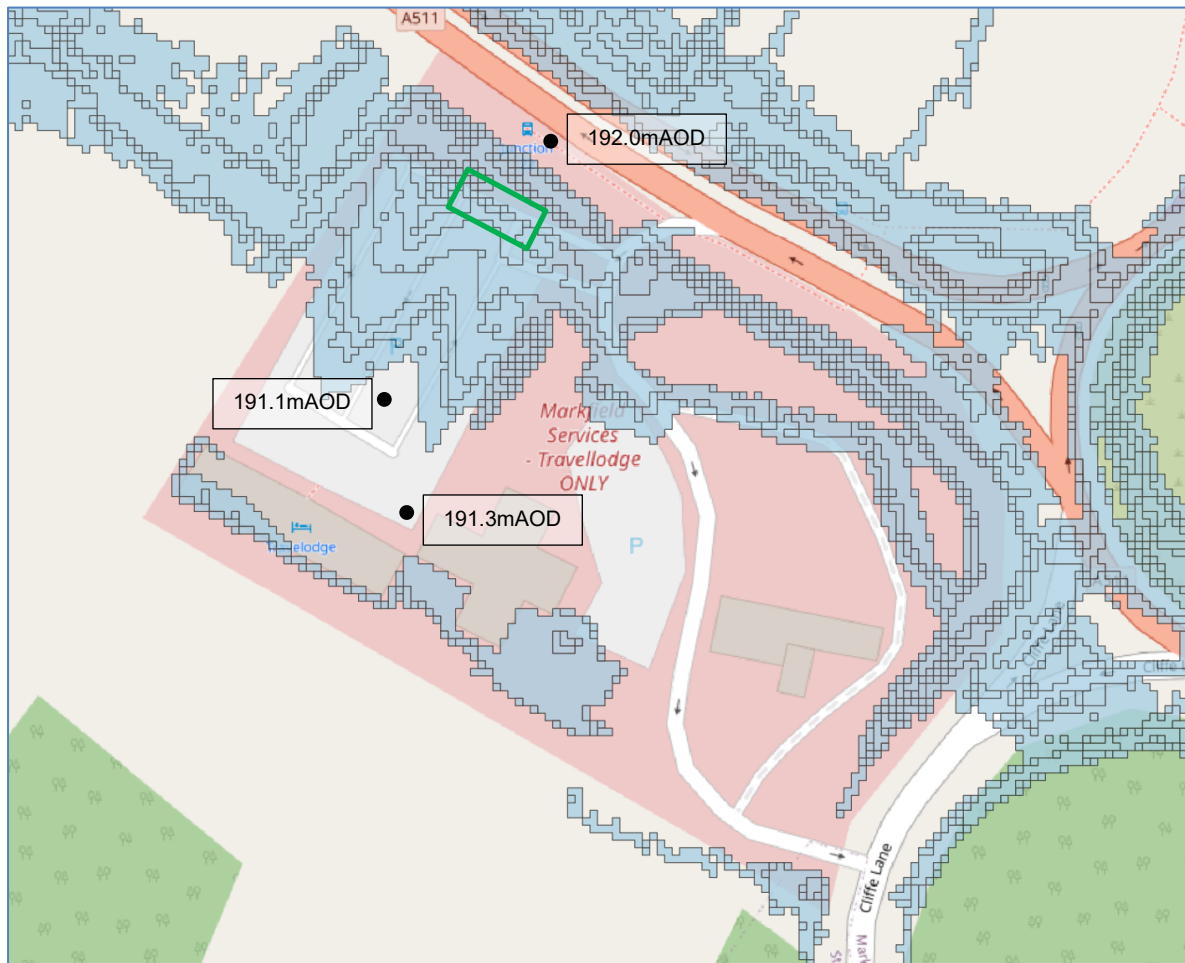


Figure 8. Environment Agency Flood Map: Predicted Surface Water Flood Extent, 0.1% Annual Probability Flood Event (Design Flood Event) & Existing Levels

Whilst the Environment Agency's surface water flood mapping is indicative only and does not accurately reflect the site-specific drainage infrastructure, it is recognised that the footprint of the proposed drive-thru could result in loss of floodplain storage and displace flood water locally. There is no significant anticipated impact on overland flow routes, with open space retained for flow to divert around the building, to the north and south.

The potential to lower site levels, to provide floodplain compensation for the development, is not feasible, due to the retention of existing development surfaces, infrastructure and established trees. The site survey (Appendix 2) and flood map (Figure 8) confirm a raised vegetated embankment immediately north of the drive-thru development, rising to the adjacent A511, with the A511 at an elevation of approximately 192.0mAOD. Site levels to the immediate south of the flood extent are significantly lower, and in the range 190.9mAOD – 191.3mAOD, as indicated on Figure 8. Therefore, it is inferred that any locally displaced flood water would extend the floodplain to the south, within the site boundary, with no increased flood risk to others.

The footprint of the proposed drive-thru development is limited to just 290m² and the development will benefit from a sustainable surface water drainage strategy (refer to Section 2.10). The drainage strategy will significantly reduce the site's current peak discharge rates to the watercourse, thereby reducing flood risk to the site and others. It is also noted in Section 2.8 below, that there is no record of flooding from surface water (or other sources) within the

application site or immediate vicinity; therefore, the flood maps are considered worst case. Notwithstanding the above, further mitigation measures are proposed to ensure the development and its users remain safe, as outlined in Section 2.10.

2.4 Groundwater Flood Risk

The Environment Agency's online Long-Term Flood Risk Service confirms the site is not within a groundwater flood alert area.

Detailed Map A4 of the Level 1 SFRA includes groundwater emergence mapping which indicates there is no risk of shallow groundwater levels or groundwater emergence across the site. Shallow groundwater (between 0.025m and 0.5m below ground level) is indicated immediately adjacent to the site, associated with the alignment of the ordinary watercourse.

Section 1.5 of this FRA confirms shallow perched groundwater was encountered between 0.62mbgl and 2.20mbgl, within the Made Ground or at the interface of the Made Ground and underlying low permeability Clay.

No below-ground (basement) development is proposed; therefore, the risk of groundwater emergence and flooding to the development is assessed as low and acceptable.

2.5 Risk of Flooding from Artificial Drainage Systems

The application site is semi-rural with no immediate surrounding built development other than the adjacent highways. Table 4-1 of the SFRA presents details of recorded sewer flooding incidences (1989 – 2024) and confirms there are no recorded incidents within the LE67 postcode district which includes the site.

The highways to the east of the site are down-gradient, and do not therefore represent a potential flood risk source in the event of drainage exceedance. The A511 to the north of the site is a dual-carriageway and is assumed to benefit from modern highways drainage. Section 2.8 confirms there is no record of surface water flooding in the area, which can result from drainage exceedance.

Therefore, the risk of flooding to the site from artificial drainage systems is assessed as low and acceptable.

2.6 Risk of Flooding due to Infrastructure Failure

Review of the Environment Agency's reservoir flood mapping confirms the site is not within the predicted flood extent of reservoirs, in the event of reservoir failure. No canals are present in the vicinity of the site.

Therefore, the risk of flooding to the application site from reservoirs and infrastructure failure is assessed as very low and acceptable.

2.7 Flood Risk Summary

Table 1 presents a summary of the flood risk to the site from all potential sources.

Table 1: Markfield Services – Potential Sources of Flooding

Potential Source	Flood Risk at Application Site	Reasoning
Fluvial Flooding	Very Low	The application site is within Flood Zone 1, with allowance for climate change. Therefore, the risk of flooding from rivers and the sea is assessed as very low and acceptable.
Tidal Flooding		
Flooding from High Groundwater	Low	Isolated, shallow perched groundwater was encountered within the Made Ground beneath the site, at between 0.62mbgl and 2.20mbgl. However, no below-ground (basement) development is proposed. Therefore, the risk of groundwater flooding to the development is assessed as low and acceptable.
Surface Water Flooding	Very Low to High	The majority of the site has a very low risk of surface water flooding (<0.1% annual probability). The north-west of the site is indicated to be at high risk of flooding associated with the adjacent ordinary watercourse, although there is no record of surface water flooding within the site or local area. Appropriate mitigation measures are detailed in Section 2.10.
Flooding from Artificial Drainage Systems	Low	There is no record of flooding from sewers within the site or locally. The site is semi-rural with the adjacent highway (dual carriageway) assumed to benefit from appropriate highways drainage. Therefore, the risk of flooding from off-site sewers and other artificial drainage systems is assessed as low and acceptable.
Flooding due to Infrastructure Failure	Very Low	The site is not within an Environment Agency reservoir flood risk area. There are no canals in the vicinity of the site.

Table 1 confirms the only significant potential source of flooding identified within the application site is surface water flooding in the north-west of the site, associated with the adjacent ordinary watercourse. This is detailed in Section 2.3, with appropriate mitigation measures outlined in Section 2.10.

2.8 Historic Flooding & Flood Warning Areas

The Environment Agency's recorded flood outlines confirm there is no record of flooding from rivers, the sea, groundwater or surface water within the site or immediate vicinity.

Table 4-1 of the SFRA confirms there is no record of property sewer flooding in the vicinity of the site (1989 – 2024).

The application site is not within an Environment Agency Flood Warning Area or Flood Alert Area.

2.9 The Sequential Test & Environment Agency Flood Zone Compatibility

As set out in the NPPF, the aim of the sequential test is to steer new development to areas with the lowest risk of flooding from any source. The development proposals are limited to the redevelopment of the existing/former Markfield Services only; therefore, it is not appropriate to consider potential alternative development sites.

In addition, it is noted that the NPPF guidance for flood risk and coastal change confirms a proportionate approach should be taken:

Where a site-specific flood risk assessment demonstrates clearly that the proposed layout, design, and mitigation measures would ensure that occupiers and users would remain safe from current and future surface water flood risk for the lifetime of the development (therefore addressing the risks identified e.g. by Environment Agency flood risk mapping), without increasing flood risk elsewhere, then the sequential test need not be applied.

This site-specific FRA confirms the only significant potential source of flooding to the site is surface water flooding. Section 2.3 confirms there would be no increase in flood risk elsewhere and the proposed mitigation measures (refer to Section 2.10) will ensure users remain safe throughout the lifetime of the development. Therefore, it is concluded that the sequential test does not apply.

The entire site lies within low probability Flood Zone 1 and Annex 3 of the NPPF confirms the development is classified as less vulnerable and more vulnerable (existing hotel only) with regards flood risk. Table 2 of the NPPF Planning Practice Guidance for Flood Risk and Coastal Change confirms that all land uses, including less vulnerable and more vulnerable developments, are appropriate and compatible in Flood Zone 1.

The sequential test has been applied within the development layout as far as practicable, with an aim of locating built development outside the area of potential surface water flooding. However, constraints from the existing development and infrastructure, retained trees and existing site access and egress routes limit development options.

2.10 Flood Risk Mitigation Measures

This site-specific FRA has reviewed all potential sources of flooding to the development and confirms a low or very low risk of flooding from all sources, with the exception of a potential risk of surface water flooding in the low-lying area of parking in the north-west of the site. This is based on Environment Agency flood mapping, which is considered worst case and not representative of the existing site drainage infrastructure; there is no record of flooding from surface water (or any source) within the site or immediate vicinity.

As outlined in Section 2.3, proposed development within the area of potential surface water flood risk is limited to a drive-thru restaurant; the flood maps and local topography indicate that any displaced flood water would be retained on site, and the development would not impede local flood flow routes. An approximate design flood water level of 190.90mAOD is inferred and the following flood risk mitigation measures are recommended based on the development proposals, site setting and the findings of this FRA:

Flood Resistant and Resilient Design

The site plan included within Appendix 4 confirms the drive-thru restaurant in the north-west of the site has a proposed finished floor level of 190.85mAOD, with external levels designed to fall away from the building towards drainage infrastructure. Therefore, the risk of internal surface water flooding of the building is considered very low. However, based on available mapping, and the inferred design flood water level of 190.90mAOD, it is recommended that flood resistant and flood resilient design be incorporated into this building to a minimum elevation of 191.20mAOD (300mm above the design flood water level). Flood resistant design should be introduced to keep flood water out, as far as practicable; such measures include low permeability construction materials, sealed or raised service entry points, anti-flood air bricks and flood proof doors. Flood resilient design aims to minimise the damage caused in the event of flooding occurring; measures include raised electrical services and water resilient floor coverings, fixtures and fittings.

Maintenance of the Ordinary Watercourse

Riparian ownership and associated responsibility for maintenance of the ordinary watercourse on the northern site boundary should be established. The ordinary watercourse channel and culverts should be maintained clear of debris and blockages to ensure the free flow of water.

Surface Water Management

The development will benefit from a sustainable drainage strategy, designed by iSTRUCT Consultants Ltd. and reported separately⁷. The drainage strategy has been designed to manage surface water runoff for all rainfall events up to and including the 100-year + 45% climate change scenario with no on-site flooding. Surface water runoff will be attenuated within below-ground cellular attenuation storage tanks, with a controlled outfall to the adjacent ordinary watercourse at a peak discharge rate of 6l/s.

The drainage strategy will reduce peak surface water discharge rates from the site to the watercourse by approximately 98%, from approximately 259l/s to 6l/s, thereby reducing the risk of surface water flooding from the watercourse both within the site and to others.

The Drainage Strategy Report includes full design details and an Operation and Maintenance Plan to ensure the drainage infrastructure operates as designed throughout the life of the development. The scheme will ensure the risk of surface water flooding to the development is appropriately managed and ensure no increased surface water flood risk to others.

3.0 SUMMARY AND CONCLUSIONS

This report represents a site-specific Flood Risk Assessment to support the proposed re-development of roadside services at Markfield Services off Junction 22 of the M1 Motorway, near Markfield, Leicester. The development will provide a petrol filling station with associated retail kiosk, drive-thru restaurant, drive-thru coffee shop, EV charging spaces, parking and landscaping. The existing hotel, in the south-west of the site will be retained, together with the site's existing vehicular entrance off the A511 and exit to Cliffe Lane.

The Environment Agency flood map for planning indicates that the application site is entirely within low probability Flood Zone 1 but extends to more than 1 hectare; therefore, a detailed site-specific FRA is required.

A review of all potential sources of flooding to the site has been undertaken and the only significant potential source is surface water flooding from the adjacent ordinary watercourse which flows along the northern site boundary. The low-lying area of existing parking in the north-west of the site is shown to have a high risk of surface water flooding associated with this watercourse. Whilst the Environment Agency flood maps will not accurately reflect the existing or proposed site drainage infrastructure, they are considered worst case and indicate a peak design flood water level of 190.90mAOD, for the 1.0% annual probability event with allowance for climate change.

Development within this area of potential surface water flooding is limited to a drive-thru restaurant; flood flow pathways will be retained around the building, and site levels indicate that any limited displacement of flood water would be retained within the site boundary with no increased flood risk to others.

The development will benefit from a sustainable surface water drainage strategy, which has been designed to manage surface water runoff for all rainfall events up to and including the 100-year + climate change scenario with no on-site flooding. The drainage strategy will reduce peak surface water discharge rates from the site to the watercourse by approximately 98%, thereby reducing the risk of surface water flooding both within the site and to others.

There is no record of surface water flooding within the site or local area; however, in accordance with current best practice, flood resistant and resilient design is recommended for the drive-thru restaurant, with measures to be incorporated to at least 191.20mAOD (300mm above the design flood water level).

In summary, this FRA concludes that, with the proposed mitigation measures, the re-development of Markfield Services, off Junction 22 of the M1 Motorway, is appropriate and sustainable with regards to flood risk.

4.0 CLOSURE

This report has been prepared by Nicola Sugg (trading style of NSugg Limited) with all reasonable skill and care, and in accordance with the services agreed with EG On The Move Ltd. Relevant information provided by EG On The Move Ltd. has been accepted in good faith as being accurate and valid. This report is based on the relevant guidance and legislation in force at the date of the report and should be reviewed if such guidance and legislation are amended or superseded.

NSugg Ltd do not warrant that the advice in this report will guarantee the availability of flood insurance either now or in the future.

It will be the owner's /occupier's responsibility to ensure the recommended flood risk mitigation measures outlined within this FRA are implemented and to maintain the site drainage system throughout the lifetime of the development.

This report is for the exclusive use of EG On The Move Ltd.; no warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from Nicola Sugg.

APPENDIX 1



- GENERAL NOTES**
1. This plan has been prepared for the submission and approval under Town and Country Planning only.
 2. Fuel installation to be fully compliant with all relevant current Licensing and Environmental Standard and Regulations.



PLANNING

PROJECT
Markfield
Former Motorway service area
Little Shaw Ln
Markfield, LE67 9PP

TITLE
LOCATION PLAN

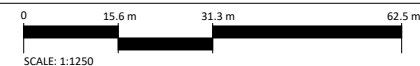
CLIENT
EG ON THE MOVE



8 Feast Field, Horsforth, Leeds, West Yorkshire, LS18 4TJ
www.jennings-design.com 01274 395422 office@jennings-design.com

Drawn: CS Check: JHI Scale: 1:1250 @ A3 Date: Jan 2026

Plan Number: **251141-01**



APPENDIX 2



GENERAL NOTES

1. This plan has been prepared for the submission and approval under Town and Country Planning only.
2. Fuel installation to be fully compliant with all relevant current Licensing and Environmental Standard and Regulations.

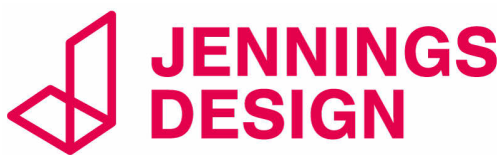


PLANNING

PROJECT
Markfield
Former Motorway service area
Little Shaw Ln
Markfield, LE67 9PP

TITLE
EXISTING SITE LAYOUT

CLIENT
EG ON THE MOVE



8 Feast Field, Horsforth, Leeds, West Yorkshire, LS18 4TJ
www.jennings-design.com 01274 395422 office@jennings-design.com

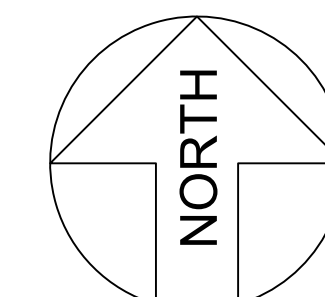
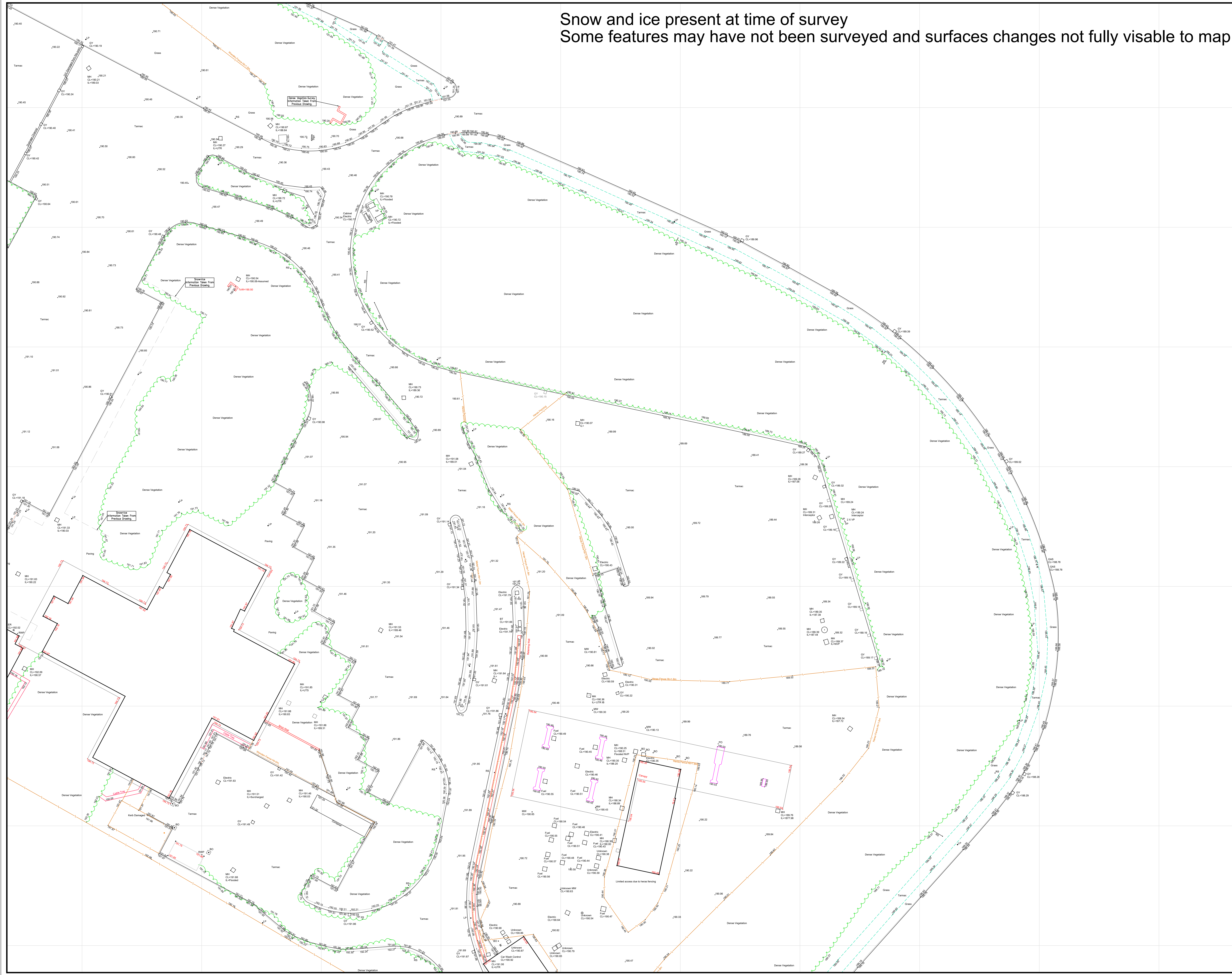
Drawn: CS Check: JHJ Scale: 1 : 500 @ A1 Date: Jan 2026

Plan Number: 251141- 02



Snow and ice present at time of survey
Some features may have not been surveyed and surfaces changes not fully visable to map

Some features may have not been surveyed and surfaces changes not fully visable to map



Topographic Legend

-----	Bottom of Bank	~~~~~	OH Electric
-----	Top of Banking	=====	Railway Line
-----	Building	-----	Road Centre
-----	Building Canopy	-----	Road Markings
-----	Concrete Base	-----	SC Hard-Hard
-----	Contour Major	-----	SC Hard-Soft
-----	Contour Minor	-----	SC Soft-Soft
-----	Fences	-----	Steps
-----	General	-----	Tree Canopy
-----	Kerb Bottom	-----	Vegetation
-----	Kerb Drop	-----	Visible Trench
-----	Kerb Top	-----	Walls
-----	OH Comms	-----	Water Edge

Topographic Abbreviations			
AV	Alt Valve	PB	Pedestrian Beacon
BV	Borehole	PBox	Post Box
BQ(H)	Boltard (Burr Bolt)	PGR	Pedestrian Guard Rail
C	Can	P	Post
Cab	Cabinet	PO	Posting
CL	Clear	R	Road Sign
CLC	Clearance	RS(L)	Right Sign (Illuminated)
Conc	Concrete	RWP	Rain Water Pipe
CP	Control Panel	RS(L)	Right Sign (Illuminated)
DFBin	Dugout Drain	SPCam	Speed Camera
DP	Down Pipe	ST	Stop Tap
EP	Electricity Pole	SUP	Street Light
ER	Earth Road	SVP	Small Vent Pipe
FFL ¹	Finished Floor Level	TBox	Telephone Box
F	Fence	Traffic	Traffic Lights
FP	Flag Pole	TOF	Top of Fence Level
GP	Gate Post	W	Wall
GV	Gas Valve	VP	Ventilators Pipe
GU	Gully	VP	Vent Pipe
I	Inspection Cover	WB	Water Bottom Level
KO	Kerb Outlet	WM	Water Meter
LP	Lamp Post	W	Wash Out
M	Manhole	WT	Window Top Level
Mer	Marker	WV	Water Valve
MP	Marker Post		
	MW	Monitoring Wet	

Measured Building Legend

	External Building Line
	Internal Building Line
	Building Overheads
	Stairs/Steps
	Doors
	Windows
	Sanitaryware
	Kitchen Furniture
	Direction of Stairs (Arrow points up)
	Direction of Sloped Ceiling (Arrow points down)
Sitr=0.0 Head=0.0	Window Sill and Head Height
	Double door
	Single door
	Window
CH=0.0	Ceiling Height
FFCH=0.0	False Ceiling Height
FFFL=0.0	Finished Floor Level

Utility Legend

	Air Line		SWD Sewer
	Alarm Cable		Survey Extents
	BAT Cable		Heating Pipe
	CTV Cable		HV Electric Cable
	Chamber Extent		Kingston Comm
	Comms Cable		Oil Pipe
	CWD Sewer		Rising Main
	Earth Wire/Tape		Traffic Control
	Electric Cable		Unknown Detection
	Fibre Optic Cable		Vent Pipe
	Fuel Line		GPR Detection
	FWD Sewer		Assumed Road
	Gas Pipe		Records Road
			Cable Riser
			Drainage
			Backdrop
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			

Utility Abbreviations			
CP	Cathodic Protection	LoS	Loss of Signal
Cut	Disconnected Utility	MDPE	Middle Density PE
DI	Ductile Iron	SI	Spun Iron
DoB	Depth of Bottom	TLC	Traffic Light Control
DoC	Depth of Cover	UDI	Unreliable Depth Info
ED	Empty Duct	uPVC	Unplasticised
EoT	End of Trace		Polyvinyl Chloride
PE	Polyethylene	UTR	Unable to Raise
HDPE	High Density PE	VC	Vitrified Clay

Manufacturer Stated Depths

- Detected Using Electromagnetic Location Methods
e.g. Any metallic pipe/cable. Accuracy $\pm 2.5\%$ of depth reading.
- Detected Using Electromagnetic Location Methods
e.g. Using a Sonde to locate drainage pipework
Accuracy $\pm 2.5\%$ of depth reading.
- Detected Using Ground Penetrating Radar
e.g. A plastic pipe or service not located by other means.
Accuracy depends on ground conditions.

25 Surveys Ltd. and their agents or partners, are not responsible for any situation, incident or loss resulting from actions or planning resulting from total reliance upon this information. The information is provided for use as a guide. Underground network information cannot be wholly guaranteed and such no guarantee or warranties are provided or intended. The information is provided "as is" identified as such, positively indicating whether it is live or dead. A service indicated as live or dead is not a guarantee of service. The fact it does not necessarily imply that it does not exist or is dead. Therefore, its presence should be anticipated. The information is not infallible and ground probing for the actual position and depth of services should be established.

If this drawing and any associated drawings should be used in conjunction with any other information, the use of this information follow the principles detailed by the Health and Safety Executive guidance HSEG 47, "Avoiding Danger from Underground Services". This information and drawings are available at www.hse.gov.uk or www.hse.gov.uk/guidance

Notes

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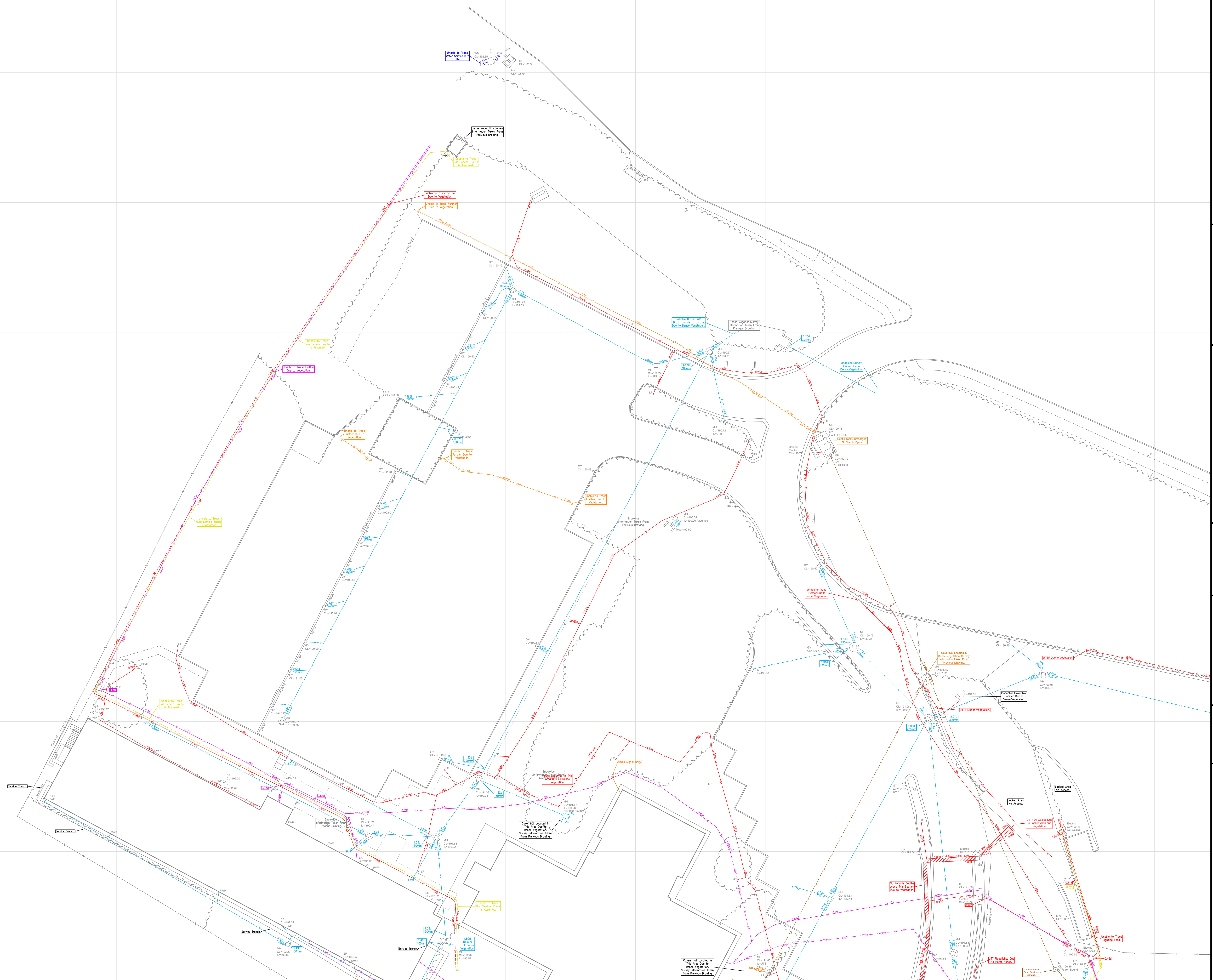
ALL LEVELS RELATED OSTN15 GRID PROJECTION.

ALL DIMENSIONS SHOULD BE VERIFIED ON SITE PRIOR TO
CONSTRUCTION.

ALL HATCHING IS FOR PRESENTATIONAL PURPOSES ONLY.

Client			
Site Location:	Travelodge Leicester Little Flow Lane Markfield LE67 9PP		
Drawing Type:	Topographical Survey		
Surveyed: DR	Drawn: DR		
Checked: ZH	Authorised: SS		
Date: 09/01/26	Scale:	1:200@A0	
			
Land, Building & Engineering Surveys www.zssurveys.com info@zssurveys.com 			
 Constructionline Member since 2014			
Project Number:		4555	
Sheet Number:		SU002	

Snow and ice present at time of survey
Some features may have not been surveyed and surfaces changes not fully visable to map



Topographic Legend

-----	Bottom of Bank	~~~~~	OH Electric
-----	Top of Banking	=====	Railway Line
=====	Building	-----	Road Centre
-----	Building Canopy	-----	Road Markings
-----	Concrete Base	-----	SC Hard/Hard
-----	Contour Major	-----	SC Hard/Soft
-----	Contour Minor	-----	SC Soft/Soft
-----	Fences	-----	Steps
-----	General	-----	Tree Canopy
-----	Kerb Bottom	-----	Vegetation
-----	Kerb Drop	-----	Visible Trench
-----	Kerb Top	-----	Walls
-----	OH Comms	-----	Water Edge

Topographic Abbreviations			
AV	Air Valve	PB	PeDESTrian Beacon
BV	Borehole	PBOX	Post Box
BO(L)	Boland (Plumbing)	PGR	Pressure Guard Rail
BS	Burn Site	PR	Parting
CB	Cabinet	PO	Posting
CL	Column	PM	Probing
CLC	Cover Level	RE	Road Sign (Unilluminated)
CP	Control Point	RWP	Rain Water Pipe
CS	Close Channel	SF	Soil Fungus (Unilluminated)
DFBIN	Dog Foult Bin	SPCam	Speed Camera
DP	Down Pipe	ST	Stop Sign
E	Electricity Pole	SV	Signpost
ER	Earth Road	SVP	Soil Vent Pipe
FLL*	Finished Floor Level	TBL	Telephone Box
FPL	Fire Protection Line	TOP	Top Of Trench
FP	Flag Pole	TOF	Top Of Fence Level
G	Gate Post	TP	Total Point
GV	Gas Valve	TVL	Telecoms Pole
GY	Gully	Vin	Vent Pipe
I	Inspection Cover	WB	Water Bottom
KO	Keel Outlet	WB-B	Water Bottom Below Level
L	Lamp Post	WM	Water Meter
M	Mainline	WMT	Water Main Tee
Mk	Marker	WT=	Window Top Level
MP	Marker Post	WV	Wall Valve
	MW	Monitoring Well	

Measured Building Legend

- External Building Line
- Internal Building Line
- Building Overheads
- Stairs/Steps
- Doors
- Windows
- Sanitaryware
- Kitchen Furniture
- Direction of Stairs (Arrow points up)
- Direction of Sloped Ceiling (Arrow points down)
- Window Sill and Head Height
- Double door
- Single door
- Window
- CH=0.00 Ceiling Height
- FCH=0.00 False Ceiling Height
- FFL=0.00 Finished Floor Level

Utility Legend

	Air Line		SWD Sewer
	Alarm Cable		Survey Extents
	BT Cable		Heating Pipe
	CATV Cable		HV Electric Cable
	Chamber Extent		Kingston Commins
	Comms Cable		Oil Pipe
	CSD Sewer		Rising Main
	Earth Wire Tape		Traffic Control
	Electric Cable		Unknown Detection
	Fibre Optic Cable		Vent Pipe
	Fuel Line		GPR Detection
	FWSD Sewer		Assumed Route
	Gas Pipe		Records Route
			Cable Riser
	Band of Cables		Drainage
	Empty Service Duct		Backdrop

Utility Abbreviations			
CP	Cathodic Protection	LoS	Loss of Signal
Cut	Disconnected Utility	MDPE	Medium Density PE
DI	Ductile Iron	SI	Spun Iron
DoB	Depth of Bottom	TLC	Traffic Light Control
DoC	Depth of Cover	UDI	Unreliable Depth Info
ED	Empty Duct		Unplasticised
EoT	End of Trace	uPVC	Polyvinyl Chloride
PE	Polyethylene	UTR	Unable to Raise
HDPE	High Density PE	VC	Vitrified Clay

Manufacturer State Depths

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- Detected using Electromagnetic Location Methods
e.g. Using a Sonde to locate drainage pipework
Accuracy $\pm 2.5\%$ of depth reading.
- Detected Using Ground Penetrating Radar
e.g. A plastic pipe or service not located by other means.
Accuracy depends on ground conditions.

CAUTION LIVE SERVICES PRESENT - EXTREME CARE
SHOULD BE TAKEN WHEN EXCAVATING

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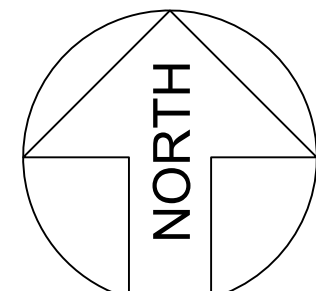
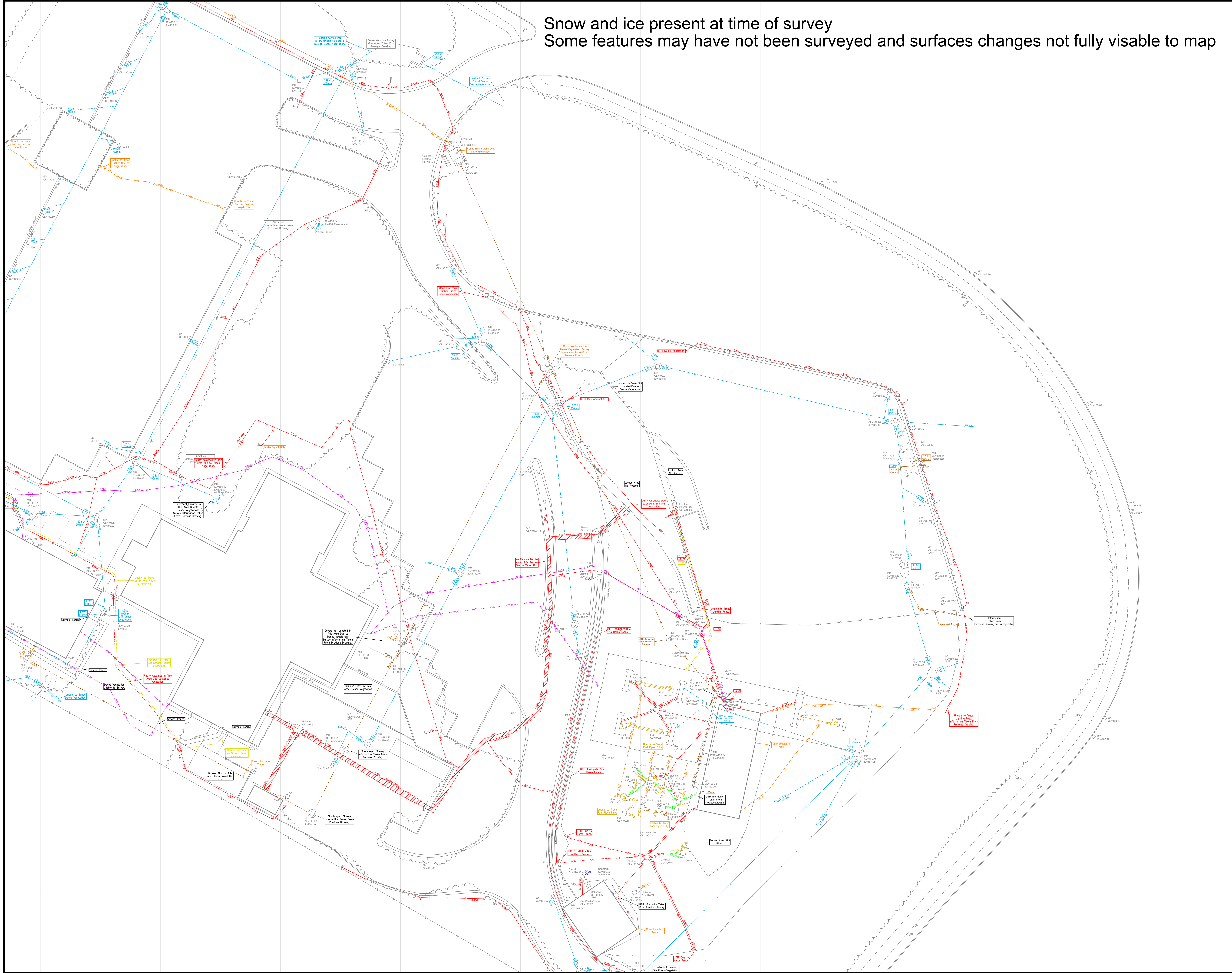
ALL LEVELS RELATED OSTN15 GRID PROJECTION.

ALL DIMENSIONS SHOULD BE VERIFIED ON SITE PRIOR TO CONSTRUCTION.

ALL HATCHING IS FOR PRESENTATIONAL PURPOSES ONLY.

Client			
Site Location:	Travelodge Leicester Little Shaw Lane Harfield LE67 9PP		
Drawing Type:	Underground Utility Survey		
Surveyed:	SL/MM	Drawn:	SL
Checked:	CR	Authorised:	SS
Date:	09/01/26	Scale:	1:200@A0
 Land, Building & Engineering Surveys www.zssurveys.com info@zssurveys.com   Constructionline			
Project Number:	4655		
Sheet Number:	UT001		

Snow and ice present at time of survey
Some features may have not been surveyed and surfaces changes not fully visible to map



Topographic Legend	
Bottom of Bank	OH Electric
Top of Bank	Railway Line
Building	Road Centre
Building Canopy	Road Markings
Concrete Base	SC Hard/Hard
Contour Major	SC Hard-Soft
Contour Minor	SC Soft-Soft
Fences	Steps
General	Tree Canopy
Kerb Bottom	Vegetation
Kerb Drop	Visible Trench
Kerb Top	Walls
OH Comms	Water Edge

Topographic Abbreviations	
AV	Air Valve
BH	Borehole
BO(L)	Box (L)
BS	Bus Stop
CB	Cabinet
CL	Cover Level
COL	Column
Conc	Concrete
DC	Drainage Channel
DFB	Dog Foul Bin
DP	Down Pipe
EP	Electricity Pole
ER	Earth Rod
FFL	Finished Floor Level
FH	Fire Hydrant
FP	Flag Pole
GP	Gate Post
GV	Gas Valve
GY	Gully
IC	Inspection Cover
KO	Kerb Outlet
LP	Lamp Post
MH	Manhole
Mx	Marker
MP	Marker Post
MW	Monitoring Well
PB	Pedestrian Beacon
PBX	Post Box
PGR	Pedestrian Guard Rail
PM	Parking Meter
PO	Post
RE	Rodding Eye
RS(L)	Road Sign (Illuminated)
RWP	Rain Water Pipe
SP(L)	Sign Post (Illuminated)
SPCam	Speed Camera
SV	Sluice Valve
ST	Stop Sign
SVP	Soil Vent Pipe
TBox	Telephone Box
TL	Traffic Light
TOF	Top of Fence Level
TOWL	Top of Wall Level
TP	Telecoms Pole
VP	Vent Pipe
WB	Waste Bin
WM	Water Meter
WO	Wash Out
WT	Window Top Level
WV	Water Valve
WW	Water Valve

Measured Building Legend	
External Building Line	OH Electric
Internal Building Line	Railway Line
Building Overheads	Road Centre
Stairs/Steps	Road Markings
Doors	SC Hard/Hard
Windows	SC Hard-Soft
Sanitaryware	SC Soft-Soft
Kitchens Furniture	Steps
Direction of Stairs (Arrow points up)	Tree Canopy
Direction of Sloped Ceiling (Arrow points down)	Vegetation
Window Sill and Head Height	Visible Trench
Double door	Walls
Single door	Water Edge
Window	

Utility Legend	
Air Line	SWD Sewer
Alarm Cable	Survey Extents
BT Cable	Heating Pipe
CATV Cable	HV Electric Cable
Chamber Extent	Kinlon Comms
Comms Cable	Oil Pipe
CWD Sewer	Rising Main
Electric Cable	Traffic Control
Fibre Optic Cable	Unknown Detection
Fuel Line	Vent Pipe
FWD Sewer	GPR Detection
Gas Pipe	Assumed Route
Band of Cables	Records Route
Empty Service Duct	Cable Riser

Utility Abbreviations	
CP	Cathodic Protection
LoS	Loss of Signal
MDPE	Middle Density PE
DI	Depth of Bottom
DoC	Depth of Cover
ED	Empty Duct
End of Trace	Unreliable Depth Info
Polyethylene	Unplasticised
HDPE	High Density PE
LoS	Loss of Signal
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DoC	Depth of Cover
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Polyethylene	Unplasticised
HDPE	High Density PE

Manufacturer Stated Depths	
Detected Using Electromagnetic Location Methods	e.g. Any metallic pipe/cable. Accuracy ± 2.5% of depth reading.
Detected Using Electromagnetic Location Methods	e.g. Using a Sonde to locate drainage pipework. Accuracy ± 2.5% of depth reading.
Detected Using Ground Penetrating Radar	e.g. A plastic pipe or service not located by other means. Accuracy depends on ground conditions.

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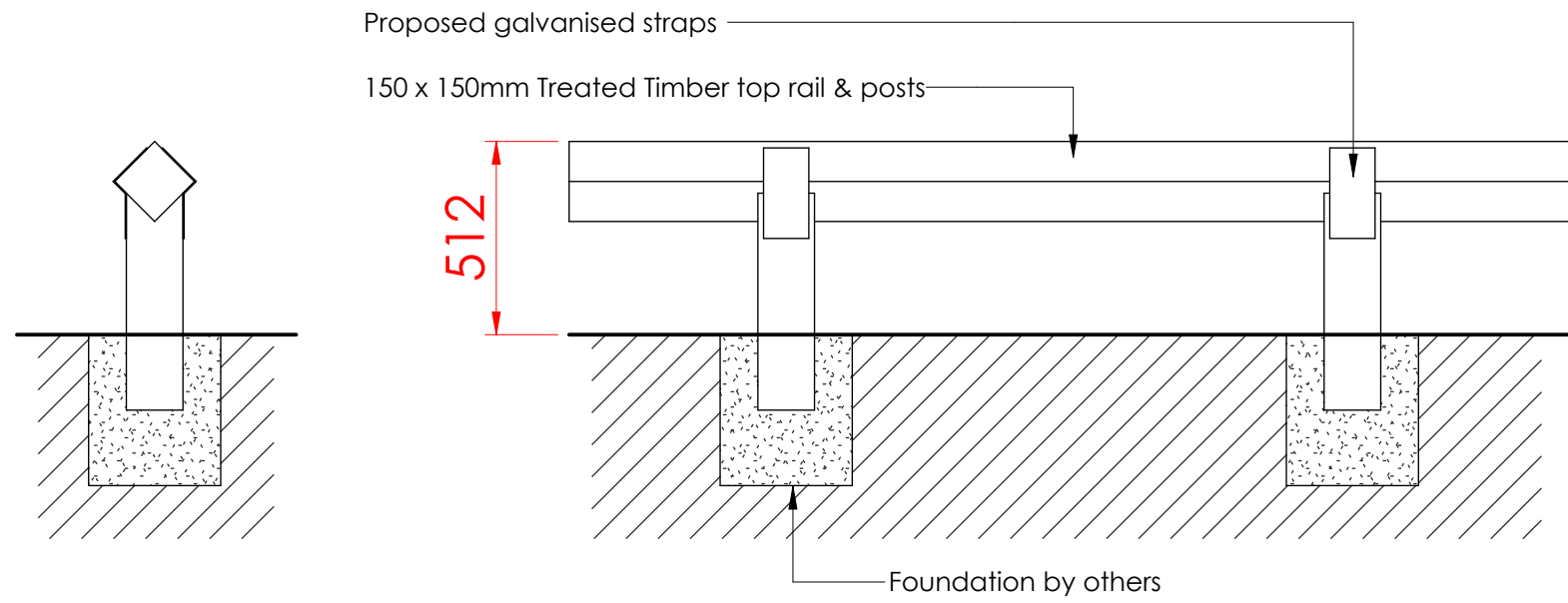
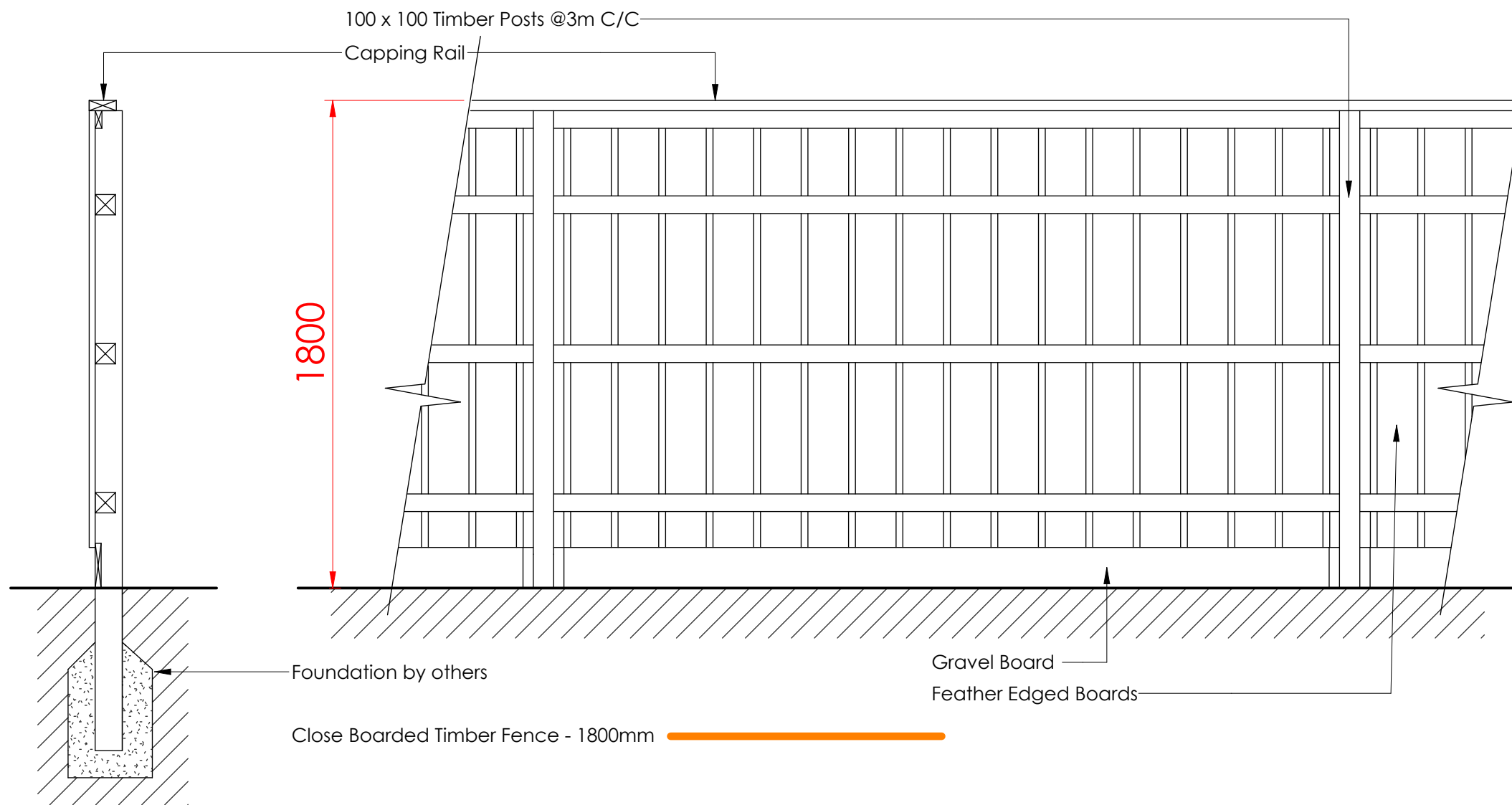
ALL LEVELS RELATED OSTN15 GRID PROJECTION.

ALL DIMENSIONS SHOULD BE VERIFIED ON SITE PRIOR TO CONSTRUCTION.

ALL HATCHING IS FOR PRESENTATIONAL PURPOSES ONLY.

Client	EG on the move
Site Location:	Travelodge Leicester Little Shaw Lane Markfield LE67 9PP
Drawing Type:	Underground Utility Survey
Surveyed:	SUMM
Checked:	CR
Date:	09/01/26
Drawn:	SL
Authorised:	SS
Scale:	1:200@A0
ZS Surveys Ltd Land, Building & Engineering Surveyors www.zssurveys.com info@zssurveys.com	
Project Number:	4655
Sheet Number:	UT002

APPENDIX 3



GENERAL SITE NOTES
BUILDING MATERIALS
Refer to Proposed Building Elevations Sheets:
• 251141 - 05 - PROPOSED KIOSK DETAILS
• 251141 - 06 - PROPOSED COFFEE DETAILS
• 251141 - 07 - PROPOSED FOOD DETAILS
LANDSCAPING
All denoted landscaped margins will either be seeded / turfed & any planting will be detailed by specialist

NOTE - ALL HIGHWAY WORKS ARE SHOWN FOR INDICATIVE PURPOSES ONLY. DETAILED DESIGN TO BE DONE BY SPECIALIST

BOUNDARY
A new 0.6m high knee rail fence is to be erected around the majority of the site as shown.

DRAINAGE
Drainage strategy to be produced by others.

FLOODLIGHTS (FL)
Floodlight positioning is as lighting design and lux level calculations together with positioning of building bulkhead lighting.
All lighting to specialist design

TANKS
3No, 75,000 litre double skin below ground fuel storage vessels

SURFACED MATERIAL
See surfacing key for all relevant surface finishes

SURFACE FINISHES:

- Denotes Red macadam Surfacing
- Denotes macadam road surfaced areas
- Denotes seeded & turfed landscape margin areas to the site perimeters (any planting to be detailed by specialist)
- Denotes in-situ cast concrete paving
- Denotes macadam Surfacing

DESIGN RISK ASSESSMENT
As an appointed designer for the project under the Construction (Design & Management) Regulations 2015 - Regulation 8 & Regulation 9, JDL have a duty to consider risk to health & safety relating to the our design & highlight any significant or unusual risks that may not be apparent to a Contractor & Principal Designer. It is assumed that the Client has employed designers & contractors who are competent & have experience working on contractors who are competent & have experience working on Petrol Filling Stations.

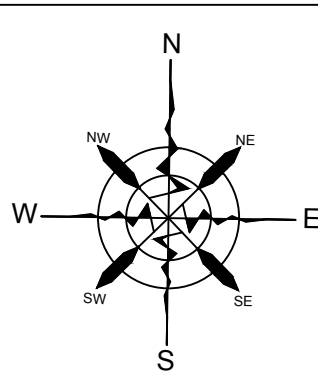
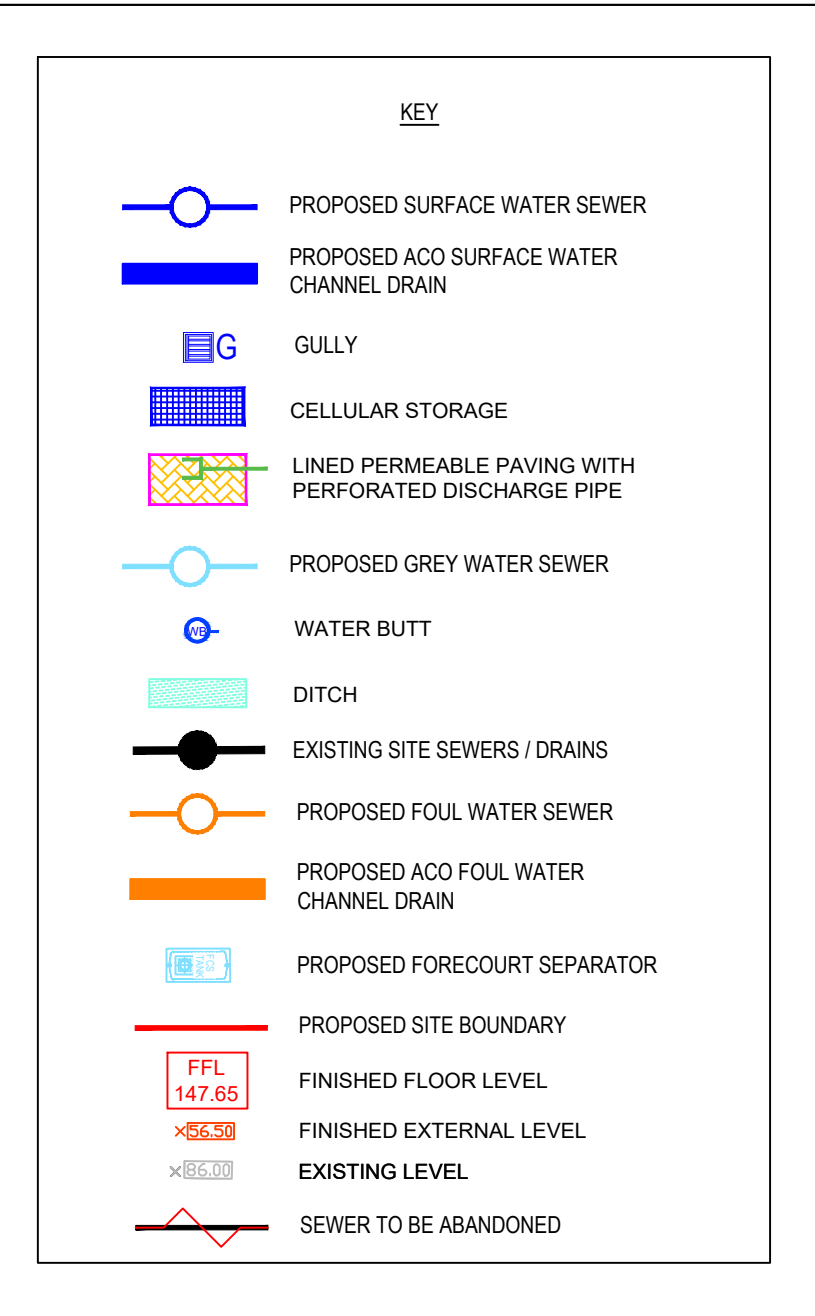
Risks are as follows;
1. BELOW GROUND SERVICES - No public utility searches or subsan survey.
2. SITE DELIVERIES - To be reviewed by EG.
3. NEW ACCESS - New site access to be formed

Property Schedule		
Red Line Boundary	5.93 acres	2.40 hectare
Building Areas		
Kiosk	737 m²	7937 ft²
Food Drive Thru	290 m²	3126 ft²
Coffee Drive Thru	172 m²	1847 ft²
Parking Schedule		
EV Hub Parking	EV Bay	12
Existing Customer Parking	Parking Bay	69
Kiosk	IDDA BAYS	2
Kiosk	HGV Parking Bays	12
Kiosk	Parking Bay	26
Kiosk	Valer Bay	2
Shared Parking	IDDA BAYS	7
shared parking	Parking Bay	76

PLANNING

PROJECT			
Markfield Former Motorway service area Little Shaw Ln Markfield, LE67 9PP			
TITLE			
PROPOSED SITE LAYOUT			
CLIENT			
EG ON THE MOVE			
8 Feast Field, Horsforth, Leeds, West Yorkshire, LS18 4TJ www.jennings-design.com 01274 395422 office@jennings-design.com			
Drawn:	CS	Check:	JHJ
Scale:	As indicated @ A1	Date:	Jan 2026
Plan Number:	251141- 04		

APPENDIX 4



SW Network 2 Manhole Schedule								
MH	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Link	IL (m)	Dia (mm)
S9	447683.180	311067.640	191.850	1.300	1200	2.000	190.550	150
S7	447641.190	311098.800	192.000	1.350	650	1.000	190.650	150
S8	447667.910	311084.040	191.700	1.430	1200	1.001	190.270	150
S10	447674.630	311084.260	191.700	1.670	1200	2.000	190.180	150
S11	447672.460	311122.060	191.650	1.350	1000	1.002	190.030	300
S12	447689.890	311112.700	191.700	2.240	1200	3.000	189.610	150
Ex-SMh-8	447708.490	311104.090	191.600	2.100	1200	1.002	189.460	300
Ex-SMh-9	447704.630	311140.670	191.200	2.190	1200	1.003	189.010	300
S13	447691.260	311157.910	191.550	2.050	1000	1.004	189.010	300
Ex-SMh-10	447722.450	311146.950	190.150	1.650	1200	5.000	189.500	225
Ex-SMh-11	447762.080	311138.070	189.400	2.340	1200	5.000	188.575	225
S14	447720.450	311046.310	190.850	2.250	1200	1.004	188.500	300
S15	447743.720	311059.900	190.450	2.180	1200	1.005	188.500	300
S16	447756.300	311082.510	189.800	1.820	1200	6.002	187.980	300
Ex-SMh-12	447767.920	311096.160	189.620	1.900	1200	6.002	187.720	300
S17	447741.020	311100.320	190.570	2.370	1200	6.003	187.720	300
Ex-SMh-13	447783.360	311114.490	189.450	2.080	1200	8.000	187.640	150
S18 FCC	447773.890	311135.780	186.000	2.100	1200	6.003	187.490	300
GW1	447713.530	311093.760	191.700	1.700	1000	6.004	187.390	400
GW2	447739.040	311078.810	190.700	2.200	1000	6.004	186.900	400
Ext-Outfall-02	447776.360	311137.160	189.000	2.135	1200	1.006	186.900	300



SW Network 1 Manhole Schedule								
MH	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Link	IL (m)	Dia (mm)
Ex-SMh-1	447620.300	311093.760	192.770	2.020	650	1.000	190.750	150
Ex-SMh-2	447629.900	311106.180	192.080	1.510	650	1.000	190.570	150
Ex-SMh-3	447618.530	311122.330	191.760	1.290	650	1.001	190.570	150
Ex-SMh-4	447628.910	311121.960	191.630	1.410	1000	2.000	190.295	150
Ex-SMh-5	447648.580	311125.430	191.670	1.350	650	1.001	190.295	150
Ex-SMh-6	447635.420	311130.970	191.260	1.230	1200	1.002	190.220	225
S1	447622.280	311173.660	190.570	1.070	1000	3.000	190.320	150
S2	447653.410	311163.660	190.610	1.410	1000	1.002	190.105	225
S3	447625.180	311204.340	190.780	1.380	1000	1.003	190.030	300
S4	447655.730	311187.920	190.750	1.697	1000	5.000	189.400	150
S5	447639.580	311214.160	190.650	1.350	650	5.000	189.053	150
S6	447662.790	311201.650	190.670	1.846	1000	6.000	188.923	150
Ex-SMh-7 FCC	447671.070	311196.970	190.670	2.098	1200	5.001	188.899	150
Outfall	447673.990	311201.740	190.250	1.772	600	5.002	188.824	225

GENERAL NOTES

- THIS DRAWING IS COPYRIGHT AND SHOULD NOT BE REPRODUCED IN WHOLE OR PART WITHOUT THE WRITTEN CONSENT OF ISTRUCT LTD.
- DO NOT SCALE FROM THIS DRAWING.
- ALL DIMENSIONS TO BE CHECKED ON SITE AND CO-ORDINATE WITH RELEVANT ARCHITECTS DRAWINGS. ANY DISCREPANCIES TO BE REPORTED TO THE ENGINEER PRIOR TO CONSTRUCTION.
- ALL DIMENSIONS IN METERS UNLESS NOTED OTHERWISE.
- ALL LEVELS IN METERS.
- SIZES HEREON SHALL NOT BE MODIFIED WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER.
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ENGINEERS DRAWINGS & SPECIFICATIONS.

NOTES

- THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ENGINEERS AND ARCHITECT'S DETAILS.
- ALL WORK IS TO BE CARRIED OUT IN ACCORDANCE WITH THE CURRENT BRITISH STANDARDS, BUILDING REGULATIONS AND DESIGN AND CONSTRUCTION GUIDANCE (DCG) OF THE CODES FOR ADOPTION (CAI).
- THE EXACT POSITION, LEVEL, SIZE AND USE OF EXISTING SEWERS TO BE CONFIRMED ON SITE. ANY DISCREPANCIES TO BE REPORTED TO THE ENGINEER PRIOR TO COMMENCEMENT OF WORKS.
- ALL UNCOVERED AND SHALLOW PIPEWORK TO BE PROTECTED AGAINST CONSTRUCTION TRAFFIC AS PART OF THE CONTRACTORS TEMPORARY WORKS REQUIREMENTS. COVER LEVELS SHOWN ARE APPROXIMATE ONLY. SUBJECT TO THE ARCHITECT'S EXTERNAL WORKS AND LANDSCAPING SCHEME.
- ALL CONNECTIONS TO ROAD GULLIES AND CHANNELS SHALL BE 150MM NOMINAL BORE PIPEWORK. CONNECTIONS TO RWPS TO BE 100MM NOMINAL BORE PIPEWORK SUBJECT TO CONFIRMATION OF RWPS SIZES AND/OR DESIGN FLOW. NO PIPE WORK TO BE DOWNSIZED IN THE DIRECTION OF FLOW. CONNECTIONS TO FOUL TERMINAL FITTINGS TO BE 100MM NOMINAL BORE PIPEWORK SUBJECT TO CONFIRMATION OF ABOVE GROUND PIPE DIAMETERS AND/OR DESIGN FLOW. NO PIPE WORK TO BE DOWNSIZED IN THE DIRECTION OF FLOW.
- PIPES CONNECTING TO ADOPTED MANHOLES UP TO AND INCLUDING 300MM DIA. TO BE VITRIFIED CLAY OR PLASTIC (PVC-U).
- PLASTIC (PVC-U) PIPES REQUIRE ADEQUATE GRANULAR BEDDING AND PIPE SURROUND FOR SUPPORT.
- ALL PIPES CONNECTING TO ADOPTED MANHOLES GREATER THAN 300MM DIA. TO BE CONCRETE.
- ALL PIPEWORK ENTERING AND EXITING MANHOLES TO BE CONNECTED WITH PIPE SOFFITS LEVEL.
- PRE-FORMED CHANNELS TO BE USED AT ALL MANHOLES.
- HIGH STRENGTH CONCRETE BRANCHING TO BE STEEL TROWELLED TO A DENSE SMOOTH FACE NEATLY SHAPED AND FINISHED TO ALL BRANCH CONNECTIONS AND LAID IN ACCORDANCE WITH THE SPECIFICATION.
- PIPE BENDS TO BE PROVIDED TO SUIT DIRECTION OF FLOW.
- ALL MANHOLE COVERS AND FRAMES TO BE DUCTILE IRON HEAVY DUTY GRADE D400 DOUBLE TRIANGULAR TO BS EN 124 UNLESS OTHERWISE NOTED. COVERS TO BE LABELLED 'FW' AND 'SW' AS APPROPRIATE.
- GULLY TOPS AND MANHOLE COVERS TO BE PROVIDED IN ACCORDANCE WITH BS EN 124.
- ALL MANHOLE COVERS LOCATED INTERNALLY, TO BE RECESSED, DOUBLE SEAL, AIRTIGHT TYPE, ALUMINIUM OR STEEL. RECESS DEPTH TO ARCHITECT'S REQUIREMENTS TO SUIT FINISHES ETC.
- ALL NEW DRAINAGE TO BE CONSTRUCTED ADJACENT NEW AND PROPOSED TREE PLANTING TO BE PROTECTED AGAINST ROOT ACTIVITY USING ROOTCONTROL. ROOT BARRIER MATERIAL BY GREEN-TECH. ALL IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.
- FIRST FLEXIBLE JOINT IN PIPES ADJACENT TO A MANHOLE SHALL BE 600MM MAX. FROM INSIDE FACE OF MANHOLE. CONNECTING TO ROCKER PIPE. FOR PIPE DIAMETERS 150MM - 450MM THE ROCKER PIPE LENGTH SHALL BE 500MM - 750MM AND FOR PIPE DIAMETERS 450MM - 675MM THE ROCKER PIPE LENGTH SHALL BE 750MM - 1000MM.
- MANHOLES WITH OUTGOING PIPES GREATER THAN 600MM DIA. SHALL BE FITTED WITH GUARD BARS, SAFETY CHAINS OR OTHER APPROVED SAFETY DEVICES.
- WHERE THE FORMATION OF A PIPE TRENCH IS ABOVE ORIGINAL GROUND LEVEL, LEVELS ARE TO BE MADE UP WITH COMPACTED DTP TYPE 2 MATERIAL OR BETTER.
- ALL PRIVATE DRIVES WHICH FALL TOWARDS A PUBLIC HIGHWAY AND EXCEED TWO PARKING BAYS IN AREA ARE TO BE PROVIDED WITH A SUITABLE GULLY OR DRAINAGE CHANNEL TO PREVENT WATER DISCHARGING ONTO THE HIGHWAY.
- ALL BURIED CONCRETE MUST CATER FOR CLASS 2 SULPHATES CONDITIONS IN ACCORDANCE WITH TABLE 1 OF BRE DIGEST 363.
- CONCRETE PROTECTION SHALL BE PROVIDED TO ALL PIPES WITH LESS THAN 300MM COVER IN PEDESTRIAN AREAS, TO ALL PIPES WITH LESS THAN 600MM COVER IN PRIVATE DRIVEWAYS NOT USED BY COMMERCIAL VEHICLES. AND TO ALL PIPES WITH LESS THAN 1200MM COVER IN ROADS OR PRIVATE DRIVEWAYS USED BY COMMERCIAL VEHICLES. WHERE CONCRETE SURROUND IS SPECIFIED FLEXIBILITY OF JOINTS IS TO BE MAINTAINED BY USING COMPRESSIBLE BITUMEN IMPREGNATED FIBREBOARD AT EACH POINT.

P01	INITIAL ISSUE - LAYOUT 251141-SK02	13.04.26	RL
Rev.	Amendments	Date	By
Revisions			
Suite E - AA Business Centre, 336-340 Dunstable Road, Luton, Bedfordshire, LU4 8JS Tel: 01582 455738 Email: info@istructconsultants.com			
Client:			
Project:			
MARKFIELD SERVICES LEICESTERSHIRE, LE67 9PP			
Title:			
DRAINAGE STRATEGY PLAN			
At original size A1			
Status:	Drawn By:	Date:	Scale:
PRELIMINARY	RDL	13.04.2026	1:400
Drawing No.:	Rev:		
26008-IST-KV-DR-C-0500	P01		

NOTE
Design is based on information provided by the client, including site topographical survey and FFL that has been set on site.
Scheme is subject to obtaining S106 connection approval from the public Sewerage Undertaker.

Care to be taken while constructing the highway and drainage, not to damage any existing boundary/retaining wall. Wall will need to be assessed prior to any construction works.



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