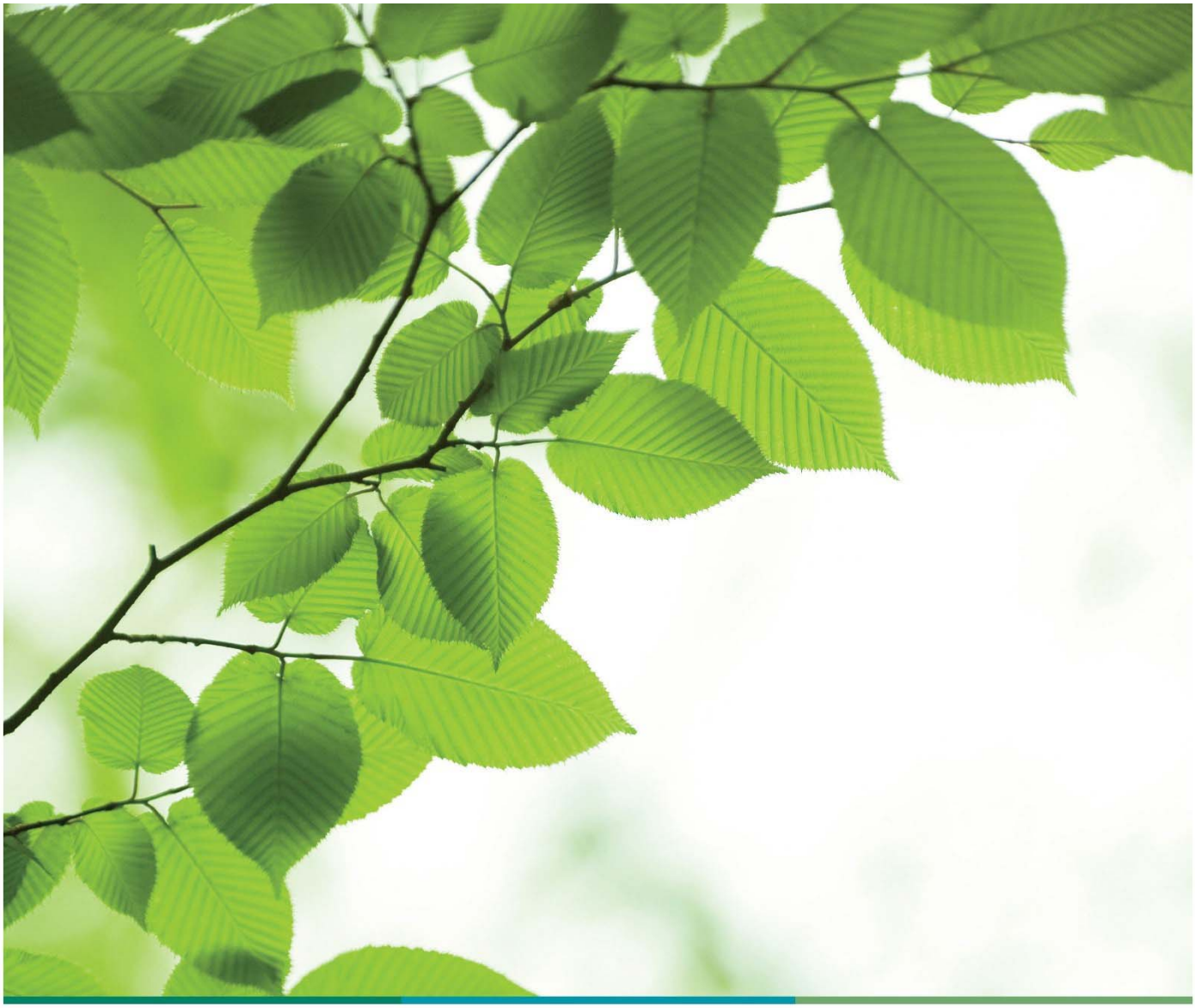


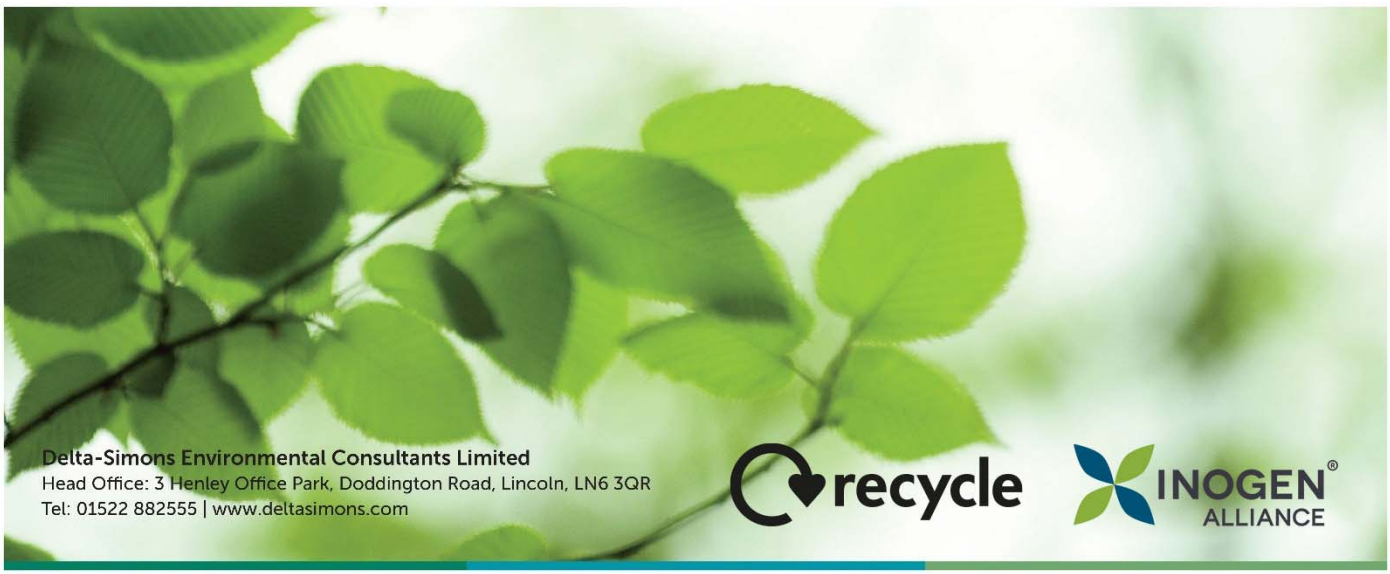
Arboricultural Method Statement for Enabling and Construction Phases of Work

Banbury 200 Site, Southam Road, Banbury, OX16 3AE

Presented to **Lysander**

Issued: November 2021

Delta-Simons Project No. 21-1553.02



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Report Details

Client	Lysander
Report Title	Arboricultural Method Statement for Enabling and Construction Phases of Work
Site Address	Southam Road, Banbury, OX16 3AE
Project No.	21-1553.02
Delta-Simons Contact	Catherine Bywood (Catherine.bywood@deltasimons.com)

Quality Assurance

Issue No.	Status	Issue Date	Comments	Author	Technical Review	Authorised
6	Final	5th November 2021				
				Catherine Bywood Arboriculturist	**Pete Morrell Principal Arboriculturist**	**Pete Morrell Principal Arboriculturist**

About us

Delta-Simons is a trusted, multidisciplinary environmental consultancy, focused on delivering the best possible project outcomes for customers. Specialising in Environment, Health & Safety and Sustainability, Delta-Simons provide support and advice within the property development, asset management, corporate and industrial markets. Operating from across the UK we employ over 180 environmental professionals, bringing experience from across the private consultancy and public sector markets.

As part of Lucion Services, our combined team of 500 in the UK has a range of specialist skill sets in over 50 environmental consultancy specialisms including asbestos, hazardous materials, ecology, air and water services, geo-environmental and sustainability amongst others.

Delta-Simons is proud to be a founder member of the Inogen Environmental Alliance, enabling us to efficiently deliver customer projects worldwide by calling upon over 5000 resources in our global network of consultants, each committed to providing superior EH&S and sustainability consulting expertise to our customers. Through Inogen we can offer our Clients more consultants, with more expertise in more countries than traditional multinational consultancy.

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Table of Contents

Figures

Drawings

Appendices

1.0 Introduction

1.1 Purpose and Scope of the Method Statement

Delta-Simons Environmental Consultants Limited ("Delta-Simons") was instructed by Lysander (the "Client") to produce an Arboricultural Method Statement (AMS) to British Standard BS5837:2012. This AMS has been prepared for trees within and immediately beyond the boundary of land east of Ruscote Avenue in Banbury, Oxfordshire (hereafter referred to as 'the Site'). The Delta-Simons Tree Survey (completed 11th January 2021 and 29th March 2021, report reference 21-1553.02) has been used to inform this Statement.

This AMS covers the Enabling and Construction Phases of Works for the conversion of the Site for the storage of operational vehicles, together with elevational and Site alterations, associated parking, welfare facilities, vehicle barrier and associated infrastructure. The Site location is shown in Figure 1. The proposed development plan is included as the base plan for Figures 2a-d.

The purpose of this AMS is to assist with the preservation of trees shown to be retained at, and adjacent to, the Site. Trees can readily be retained and protected during the proposed development by ensuring that the tree protection methods, construction techniques and working practices are adhered to. This document provides this information; principles that are approved and enforced by the Local Planning Authority (LPA), Cherwell District Council (CDC).

1.2 AMS Summary

The following points are explained and qualified in more detail within this Report, and this summary is intended for reference only. Any actions consequent to this summary should be discussed with the Arboriculturalist at Delta-Simons before being undertaken in order to prevent a potential breach of tree protection legislation, whether by planning condition, area planning designation or specific tree preservation order (which may apply to individual trees or groups).

This document will give Site-specific instructions on the methods required to protect the existing tree stock agreed to be retained. These methods are set out in a logical sequence of operations and include:

- Pre-construction meeting: To review the AMS and ensure all relevant parties are familiar with its content, show the trees concerned and where protection will be required;
- Tree protection fencing and exclusion signage: To BS 5837:2012 or other agreed approach if required;
- Ground protection: Techniques to avoid compaction, disturbance or contamination of the tree root environment;
- Groundworks, foundations and services: Methods to allow building operations including service routing and special measures where Root Protection Areas (RPA) are unavoidably breached. To include specialist construction methods such as piling for foundations, no-dig solutions for footpaths and paved areas, where permissible, in proximity to trees without damage to the tree, from root damage, or to the buildings, either from roots or from ground desiccation and heave;
- Erection of scaffolding for construction;
- General tree care measures and awareness; and
- Site monitoring to be undertaken by the Arboriculturalist at agreed intervals through the Site preparation and construction process.

The British Standard recommendations are made for appropriate barriers to exclude construction from RPA: The RPA for each tree is provided in the Tree Survey Schedule (Appendices A & B).

It should be noted that this is a Site-specific AMS produced solely for the physical protection of those trees identified within the Tree Survey and is not relevant to any other site or situation. This Report has been compiled from data achieved during a Tree Survey by Delta-Simons on 11th January 2021 for the eastern half of the Site and 29th March 2021 for the western half.

2.0 Root Protection Areas

As the majority of tree roots are found in the upper metre of soil, development works, including for example even shallow excavation and soil compaction can adversely affect the health of trees in close proximity. Trees differ in their tolerance to root loss or disturbance, according to their age, species and/ or condition. All protection works within this document are in accordance with BS5837:2012 *'Trees in Relation to Design, Demolition and Construction – Recommendations'*

Based on the tree survey data, RPAs have been determined for every retained tree as shown in the Tree Survey (Appendices A & B). The RPAs are designed to protect at least a functional minimum of tree root mass in order to ensure that the trees survive the construction process. The RPA has been used to inform the Construction Exclusion Zone (CEZ), the area to be protected during development by the use of ground protection and specialised construction techniques, outlined below.

From the assessment undertaken, the following tree needs specific consideration in this AMS:

- **T10 –** This tree lies beyond the southern Site boundary and has an RPA that extends into the proposed footpath around the new utilities area;
- **T13 –** This tree lies beyond the southern Site boundary and has a canopy and RPA that extends into the working area for the new fence installation;
- **TG14, T15 and T16** – These trees lie in the south of the Site where a new parking layout and EV charging cables are proposed;
- **T17 and TG20 –** These trees lie beyond the south-western Site boundary and have RPAs that extends into the working area for the new fence installation;
- **T28, T29, TG30, T31, T32 and T33** – These trees and groups have canopies and RPAs extending into the working area of the car park; and
- **T35-T37 –** These trees have RPAs and canopies that extend into an area where the old bike shelter and hardstanding are to be removed.

3.0 Methodology

The following sequences are governed by operational constraints and subject to change. The Site Arboriculturalist must be noted of any changes to this schedule.

3.1 Sequenced Methods of Construction and Tree Protection

Pre-Development Stage

3.1.1 Pre-Commencement

An on-Site meeting will be held if required, with all relevant parties; including the developer, Site Arboriculturalist, Architect and LPA representative. The purpose of this meeting is to record Site features including tree condition, to agree tree works (detailed below), location of permanent and temporary access, location of Site storage, the location of ground protection barriers and the timing of Site operations.

3.1.2 Completion of Agreed Tree Works

All tree work is to conform to BS3998:2010 'Tree Work' and to current arboricultural best practice. Tree works are to be undertaken by a professional and specialist arboricultural contractor, who carries the appropriate experience and insurance cover and following formal approval from the LPA.

The following works are specifically proposed:

- **T13 –** Crown lifted to 4 m to give clearance for the removal of hardstanding and the installation of the new boundary fence
- **TG14, T15, T16, T29, TG30, T31, T32, and T33** – These trees will be removed to facilitate the development
- **T35-37** – Crowns to be lifted if required to allow clearance of 4 m for the removal of the bike shelter and clearance for machinery for hard surface removal.
- Remove the single tree in **TG26** and **T34** which both have poor form

3.1.3 Tree Protection Barriers

Tree protection barriers will be erected in order to exclude the CEZ from significant construction activity. All construction work will be undertaken from the existing hard and soft surfaces. It is the responsibility of everyone engaged in the construction process to respect the tree protection measures and observe the necessary precautions within and adjacent to them.

Inside the exclusion area of the development, the following shall apply:

- No mechanical excavation without approval from the LPA;
- No excavation by any other means without Arboricultural Site supervision;
- No hand digging without a written Method Statement having first been approved by the Site Arboriculturist;
- No ground level changes whatsoever;
- No storage of plant or materials;
- No storage or handling of any chemicals;
- If 360-degree excavators are to be used during construction, at no time is the excavating arm to encroach over the position of the protection barriers;
- No vehicular access;
- No fires should be lit within 10 metres of the nearest point of the canopy of any retained tree;
- No equipment, signage, fencing, tree protection barriers, materials, components, vehicles or structures shall be attached to or supported by a retained tree; and

- No mixing of cement or use of other materials or substances shall take place within tree RPA or tree CEZ, nor in proximity to tree RPA or tree CEZ, since leakage or displacement of those materials or substances could cause them to enter tree RPA or tree CEZ.

Following the authorised tree works, TPF will be erected in accordance with BS5837:2012 that comprises 2 m tall welded mesh panels on rubber feet. The fence panels should be joined together using a minimum of two anti-tamper couplers, installed so they can only be removed from inside the fence.

The distance between the fence couplers should be at least 1 m and should be uniform throughout the fence. The panels should be supported on the inner side by stabiliser struts mounted on a block tray. (See Appendix C).

It may be necessary to remove part of the existing vegetation from under the canopy of the tree or remove over-hanging branches prior to erecting the barriers. Any works of this nature are to be carried out by hand.

The barriers will be erected prior to any works on-Site in the vicinity of retained trees, including enabling works or the delivery of machinery, materials, plant or equipment to the Site or any adjacent land. The barriers will remain in situ until final completion or until a time agreed by the LPA and Contractor.

Boundary fencing in the south-west will act as tree protection fencing for T17-TG20. This is due for replacement as part of the design so once installed the new fence will continue to act as tree protection fencing. Additionally existing fencing dividing the Site will act as tree protection fencing for T38-T45 during the construction phase.

Weather-proof signs shall be fixed to the outside of the fence with words such as 'CONSTRUCTION EXCLUSION ZONE – NO ACCESS AND NO STORAGE OR WORKING WITHIN THIS AREA'. (See Appendix D).

All operatives and other relevant personnel are to be informed of the role of the exclusion barriers and their importance. A copy of the TPP will be displayed on-Site at all times during the construction process.

The location of the protection barriers is indicated on Figures 2a-d. The position of the barriers is to be marked out with biodegradable marker paint on-Site and agreed with appropriate representatives from the LPA and the Site Contractor.

Construction of hardstanding, paths and parking bays will be undertaken as part of the Construction Stage.

3.1.4 Temporary Ground Protection Method and Specification

In the unlikely event that it is required, the Contractor, Site Arboriculturist, and the LPA will liaise over measures for vehicular or pedestrian access for construction operations to be located within a tree's RPA. In such a case, a combination of barriers and ground protection should be adopted to form the CEZ. The objective is to minimise soil compaction.

- Example 1 - For pedestrian movements only, a single thickness of scaffold boards places either on top of a driven scaffold frame, so as to form a suspended walkway, or on top of a compression-resistant layer (e.g.) 100 mm depth of woodchip), laid on to a geotextile membrane (see Appendix E);
- Example 2 - For pedestrian-operated plant up to a gross weight of two tonnes, proprietary inter-linked ground protection boards placed on top of a compression-resistant layer (e.g. 150 mm depth of woodchip), laid onto a geotextile membrane; and
- Example 3 - For wheeled or tracked construction traffic exceeding two tonnes gross weight, an alternative system (e.g. proprietary systems or pre-cast reinforced concrete slabs) to an engineering specification designed in conjunction with arboricultural advice, to accommodate the likely loading to which it will be subjected.

The Ground Guards temporary road system can be used on construction sites to protect virgin ground from erosion and damage by construction vehicles. Ground Guards are usually installed as a construction 'haul' roadway consisting of a parallel track of 2.4 m x 1.2 m panels with a 1.2 m space in between. Where a temporary 'haul' roadway must pass near to trees, the following extra precautions must be taken in order to spread the loading applied to the track way:

- Edge rails of 200 x 50 mm sawn timber or un-treated sleepers should be installed where the track way will pass over exposed retained tree RPA's. These should be installed on either side of the track way using either 50 x 50 x 500 mm timber stakes of 500 mm steel pins spaced at 1.5 m intervals;
- A layer of geotextile membrane should then be laid over the area of ground to have the track way installed upon it;
- A base layer of Ground Guards should be laid over the top of the geotextile membrane at least three boards wide between the installed timber edging;
- A minimum layer of at least 150 mm deep coarse, preferably green wood chippings should be laid as a compressible layer over the top of the Ground Guards; and
- The twin surface Ground Guard track way can then be laid over the top of the wood chippings.

3.1.5 Underground and above-ground utility apparatus

Mechanical trenching for the installation of underground apparatus and drainage severs any roots present and can change the local soil hydrology in a way that adversely affects the health of the tree. For this reason, particular care should be taken in the routeing and methods of installation of all underground apparatus. Wherever possible, apparatus should be routed outside RPAs. Where this is not possible, it is preferable to keep apparatus together in common ducts. Inspection chambers should be sited outside the RPA.

If underground apparatus is to pass within the RPA, detailed plans showing the proposed routeing should be drawn up in conjunction with the project arboriculturist so that roots can be retained and protected in accordance with the National Joint Utilities Guide, Volume 4 (see Appendix F).

3.1.6 Existing and Replacement Hard Surfaces

The existing tarmacadam surface in the west of the Site is in a poor state of repair and requires replacement. Sections are also to be removed with new landscaped areas replacing the hard surfacing in the RPA of T13, T22, and T35 -T38. Reasonable notice will be given to the LPA as to the date of commencement of any removal of hard standing surfaces adjacent to the retained trees as part of the enabling works. This will provide the LPA with the opportunity to visit the Site and ensure that all tree protection methods are in place.

The following approach will be adopted:

- Arboriculturalist to be in attendance to monitor and supervise the works;
- Surface to be removed using a toothless bucket with machine located outside the RPA and working away from the RPA;
- Excavator to only be operated from hardstanding; and
- Only tarmac surface to be removed, no other material to be excavated without specific permissions from CDC Tree Officer.

3.1.7 Groundworks

- Spoil, including soil and rubble will be removed from the Site and not stored against any protection barriers or over any ground protection;
- A minor incursion into the RPA of T28 is required to create the new footpath and also into the RPA of T10 to create a footpath around the utilities area, both pieces of work will impact under 20% of the RPAs. Any excavations will be completed from outside the RPA working backwards away from the trees;
- If roots with a diameter between 25 – 50 mm diameter are found, then they are to be pruned to a side root, or suitable point, with secateurs; or
- If a major root (50 mm plus) is found, it is to be wrapped in hessian and hand dug around the roots and casing placed at the side of it; and
- For the construction of the replacement fencing in the RPA of T13, T17 and TG20 existing post holes will be reused where possible and any new post holes within an RPA will be dug by hand.

3.1.8 Lighting, CCTV and EV Charging Installation

- Lighting and CCTV columns have been designed to avoid the RPAs of trees as much as possible (Drawing 1). Where new lighting columns and cables are required, they have been be positioned at the edge of the RPA of T6 and T8 within areas of existing hardstanding, where it is anticipated that limited roots are present; and
- EV cable routes have been positioned outside the RPAs of trees and whilst close to the RPAs of T40-T45 all charging points lay outside the trees RPAs (Drawing 2).

It is understood existing service routes are present along the access road into the Site from Southam Road in the south-east. These require further investigation, however, should new cables or pipework be required this would be positioned to minimise disturbance in the RPAs of on and off-Site trees and any excavations would be supervised.

3.1.9 Drainage Installation

Whilst existing drainage works extend into the RPAs of trees, any proposed drainage works at the Site have been designed to avoid works within the RPAs of trees (Drawing 3).

3.1.10 Dismantling Protection Barriers and Landscaping Works

- It is anticipated that the barriers will remain in place until the landscaping stage of works;
- A minimum of seven days' notice will be given to the LPA prior to the dismantling of the protection barriers;
- Prior to any landscaping works taking place on-Site, the Site Arboriculturist will inspect the RPA for signs of ground compaction and brief the landscaping contractors to working practices to be employed within RPAs; and
- Once the barriers have been removed all landscaping works undertaken will avoid soil re-grading and disturbance within the CEZ, and no soil levels will be altered after the protection barriers have been removed.

3.1.11 Soft Landscaping within the RPA

- All works will conform to BS 4428:1989 Code of practice for general landscape operations (excluding hard surfaces);
- Sensitive ground preparation must be carried out in the RPA's to ensure root damage is avoided;
- Heavy machinery i.e. a rotovator, is not permitted and only clearance of vegetation or turf by hand (or a light mechanical turf stripper), is acceptable;
- Soil levelling must be carried out by hand;
- Should soil become compacted or have poor structure, which may hinder the development of newly planted flora, advice can be sought from the Arboriculturist in regard to de-compaction works using 'air-spade' technology and 'vertimulching' techniques; and
- Trench planting should be avoided in the RPA to avoid damage to roots. Plants must be bedded individually.

4.0 Communications/Monitoring

In order to ensure that the principles of tree protection set out in the statement are adhered to, the contact details of the key individuals involved with these works, and the tasks that require monitoring should be set out. These details should be retained by all relevant parties and available on-Site at all times. Relevant parties will be advised of any changes in personnel or contractor during the development process.

Before construction begins written confirmation that the Site contractor or its agents agree to comply in full with the principles set out within this Method Statement will be lodged with the LPA.

Specific Contacts are identified as follows:

- **Developers Arboriculturalist**: Pete Morrell, Delta-Simons
  Pete.Morrell@deltasimons.com 07824 445051

4.1 Monitoring

Monitoring of all trees on-Site and immediately adjacent to the Site will be undertaken by the developer's arboriculturalist. This will take the form of Arboricultural Protection Site Inspections:

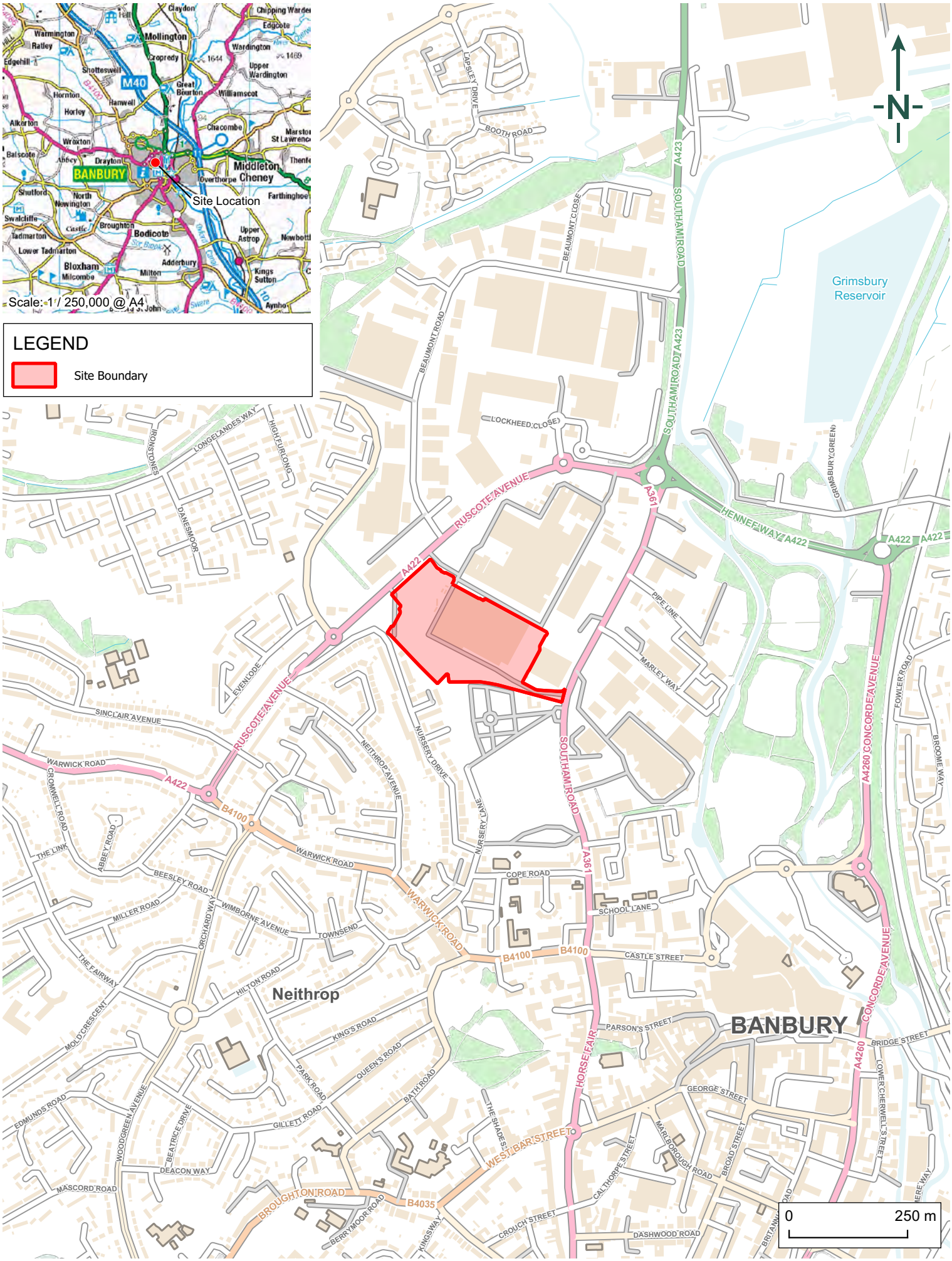
- Site inspections will be completed at regular intervals for the entire duration of on-Site external operations;
- Adherence to the approved Arboricultural Method Statement and any incidents will be monitored and recorded; and
- A Reporting Form (Appendix G) will be produced following each visit by the Developers Arboriculturalist and distributed to the LPA and Site contractor.

5.0 Limitations of the Arboricultural Method Statement

The recommendations contained in this Method Statement represent Delta-Simons' professional opinions, based upon the information referred to in Section 1.0 of this Method Statement, exercising the duty of care required of an experienced Environmental Consultant.

This Method Statement was prepared by Delta-Simons for the sole and exclusive use of the Client and for the specific purpose for which Delta-Simons was instructed as defined in Section 1.1 of this Method Statement. Nothing contained in this Method Statement shall be construed to give any rights or benefits to anyone other than the Client and Delta-Simons, and all duties and responsibilities undertaken are for the sole and exclusive benefit of the Client and not for the benefit of any other party. In particular, Delta-Simons does not intend, without its written consent, for this Method Statement to be disseminated to anyone other than the Client or to be used or relied upon by anyone other than the Client. Use of the Method Statement by any other person is unauthorised and such use is at the sole risk of the user. Anyone using or relying upon this Method Statement, other than the Client, agrees by virtue of its use to indemnify and hold harmless Delta-Simons from and against all claims, losses and damages (of whatsoever nature and howsoever or whensoever arising), arising out of or resulting from the performance of the work by the Consultant.

Figure 1 – Site Location Map



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Service Layer Credits: Contains OS data @ Crown Copyright and Database Right 2019

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TITLE:
Site Location Map
Banbury 200, Southam Road
Banbury

DRAWN BY:	SCALE (@A4):	PROJECT NO:
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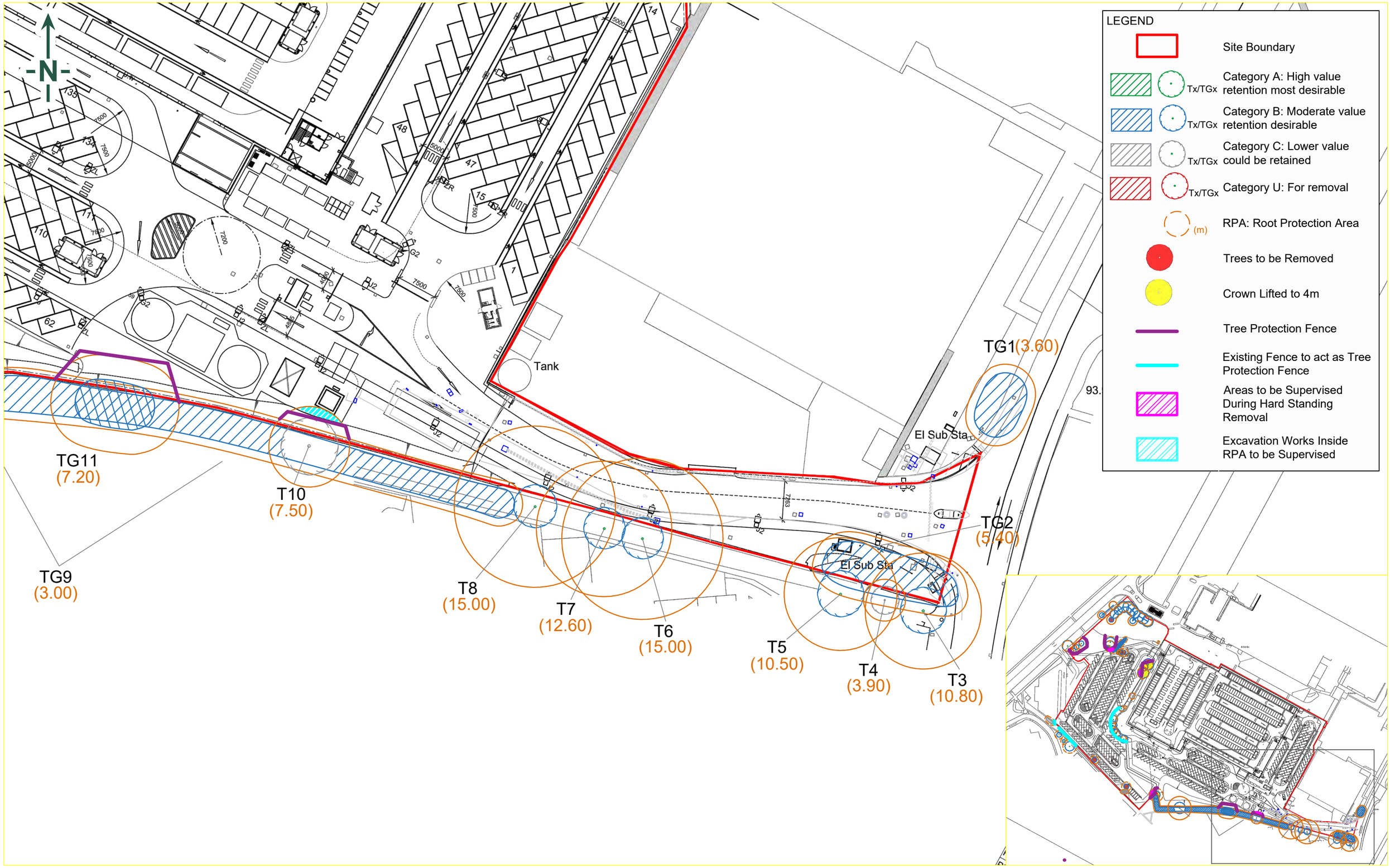
DATE:		
05 August 2021		

Figures 2a-d – Tree Protection Plan



Site Plan Provided by Client

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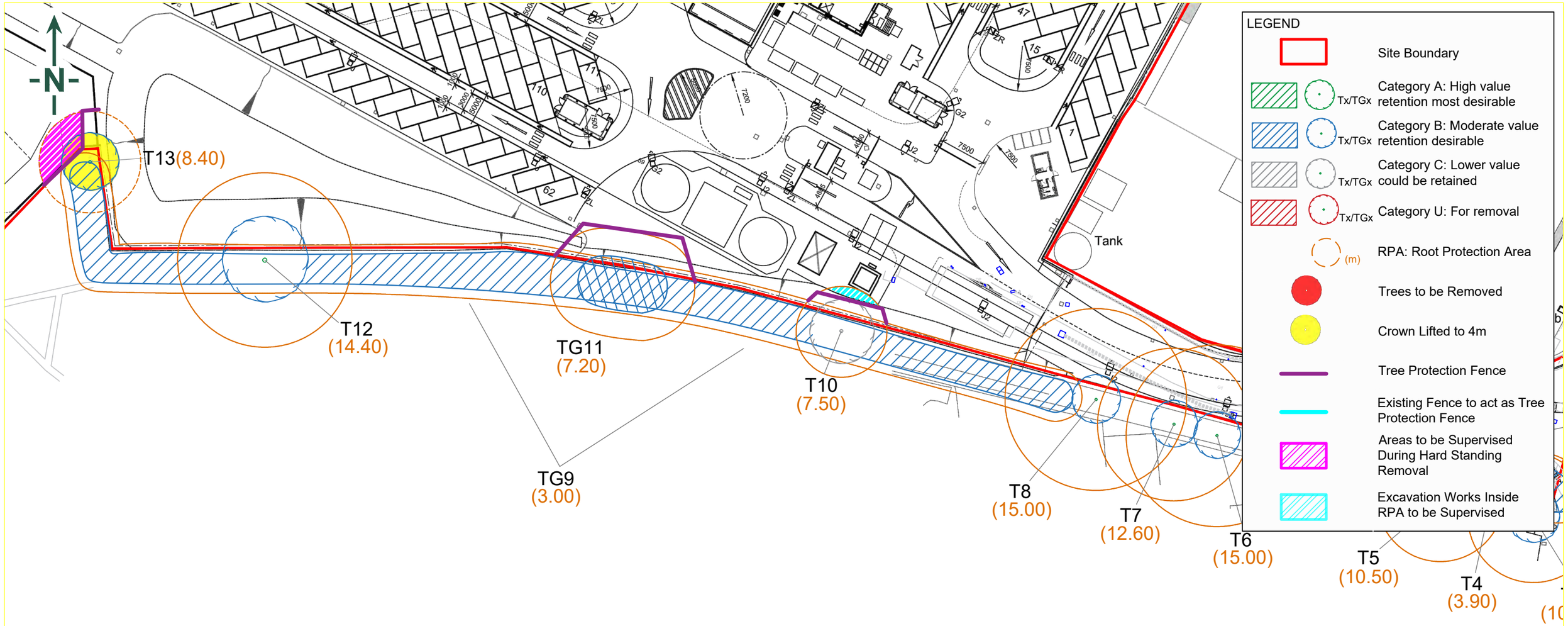
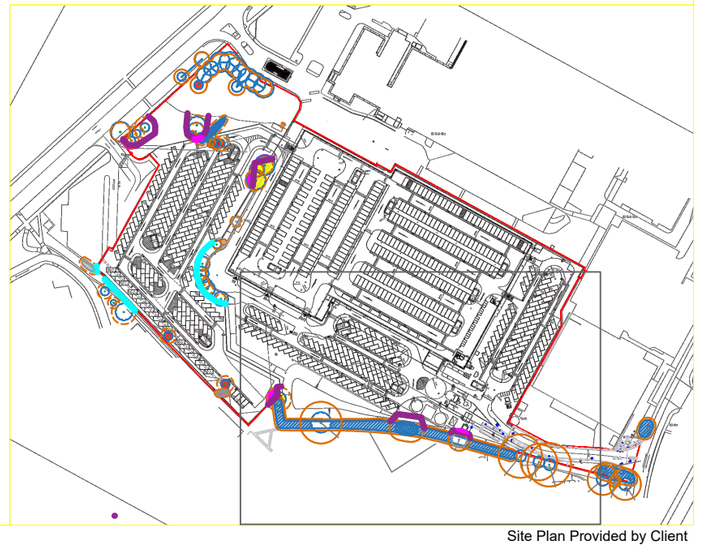
TITLE:
Tree Protection Plan
Banbury 200, Southam Road
Banbury

DRAWN BY: YA	SCALE: Not to Scale	PROJECT NO: 21-1553.02
CHECKED BY: OS	REVISION: 1	FIGURE NO: 2a
DATE: 04 November 2021		





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TITLE:
Tree Protection Plan
Banbury 200, Southam Road
Banbury

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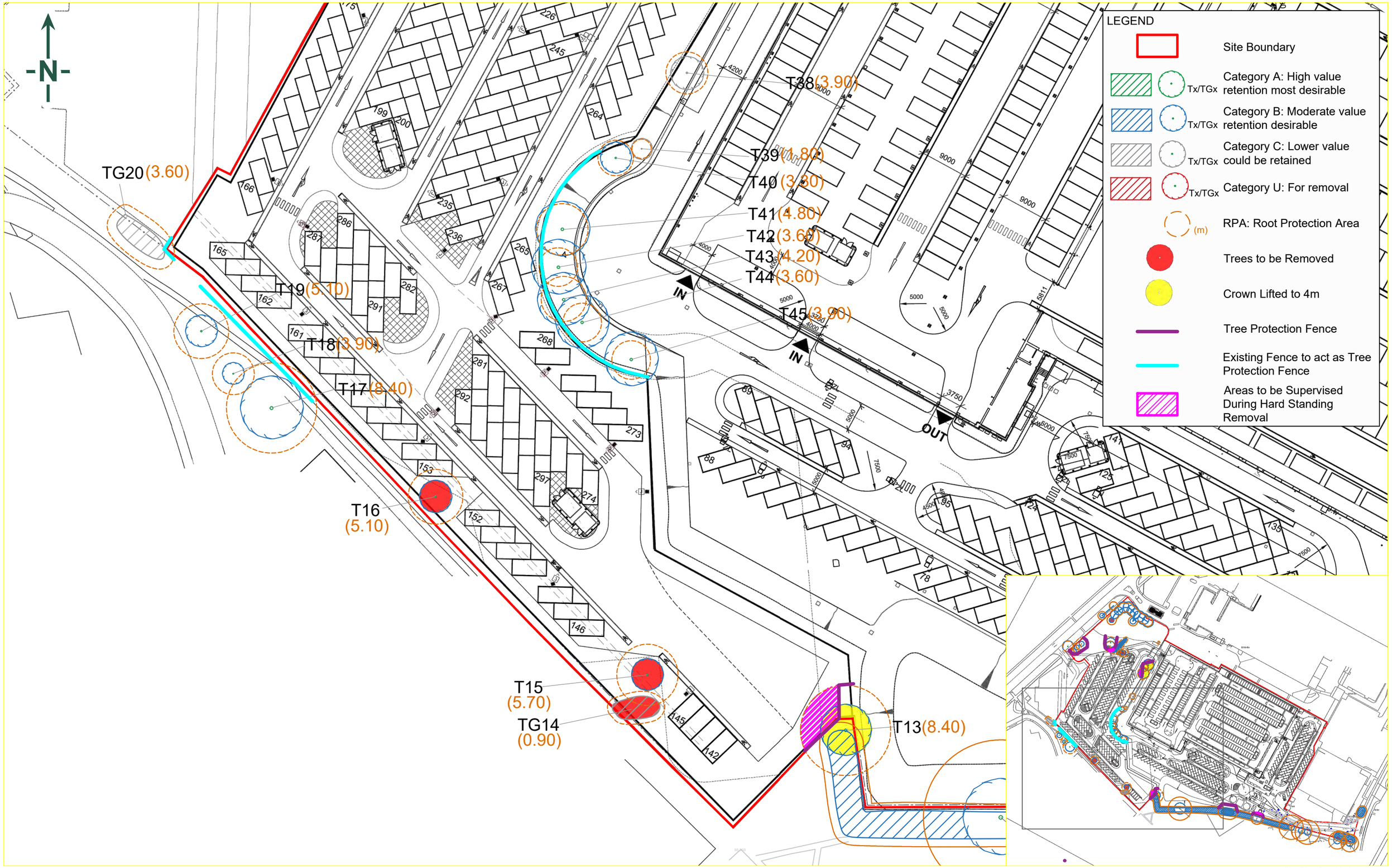

Site Plan Provided by Client

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TITLE:
Tree Protection Plan
Banbury 200, Southam Road
Banbury

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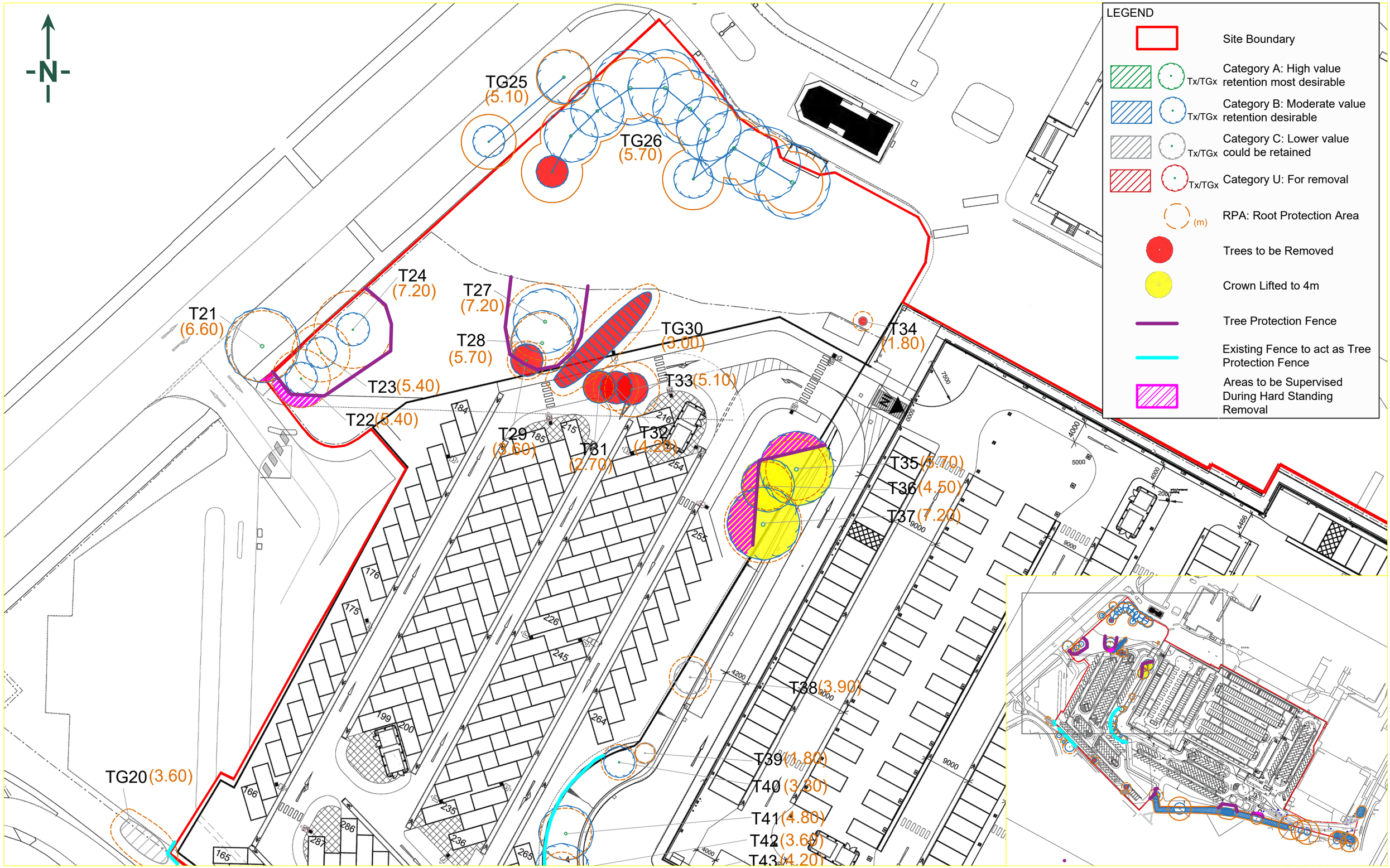

Site Plan Provided by Client

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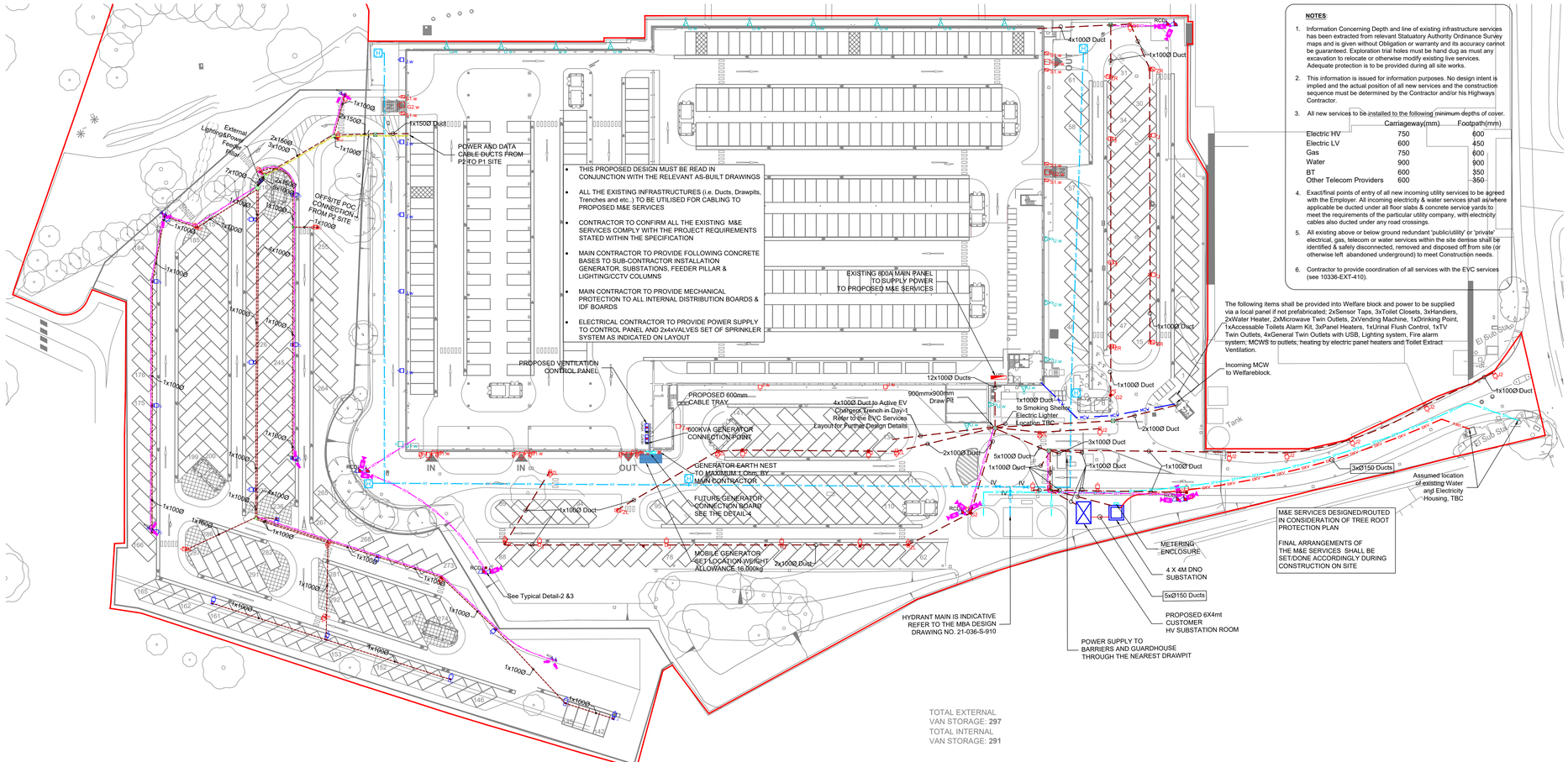
TITLE:
Tree Protection Plan
Banbury 200, Southam Road
Banbury

DRAWN BY: YA	SCALE: Not to Scale	PROJECT NO: 21-1553.02
CHECKED BY: OS	REVISION: 1	FIGURE NO: 2d
DATE: 04 November 2021		

Drawing 1 – External Services Layout



1 EXTERNAL
M&E SERVICES LAYOUT

1:500

NOTES:

1. Information Concerning Depth and line of existing infrastructure services has been extracted from relevant Statuatory Authority Ordinance Survey maps and is given without Obligation or warranty and its accuracy cannot be guaranteed. Exploration trial holes must be hand dug as must any excavation to relocate or otherwise modify existing live services. Adequate protection is to be provided during all site works.
2. This information is issued for information purposes. No design intent is implied and the actual position of all new services and the construction sequence must be determined by the Contractor and/or his Highways Contractor.
3. All new services to be installed to the following minimum depths of cover.

	Carriageway(mm)	Footpath(mm)
Electric HV	750	600
Electric LV	600	450
Gas	750	600
Water	900	900
BT	600	350
Other Telecom Providers	600	350

4. Exact/final points of entry of all new incoming utility services to be agreed with the Employer. All incoming electricity & water services shall as/where applicable be ducted under all floor slabs & concrete service yards to meet the requirements of the particular utility company, with electricity cables also ducted under any road crossings.
5. All existing above or below ground redundant 'public/utility' or 'private' electrical, gas, telecom or water services within the site demise shall be identified & safely disconnected, removed and disposed off from site (or otherwise left abandoned underground) to meet Construction needs.
6. Contractor to provide coordination of all services with the EVC services (see 10336-EXT-410).

TYPICAL HV SUBSTATION HOUSING

Revisions

Rev.	By	Date	Description	Chk
A	CC	13.08.21	Amended layout title	GPH
B	JSP	25.10.21	Updated to suit the latest plan.	CC
C	CC	02.11.21	Updated to suit the latest plan.	JSP
D	CC	04.11.21	Updated to suit the latest plan.	JSP

LEGEND:-

- Proposed MCW Valve Pit (Unless noted otherwise)
- Proposed Hydrant Valve Pit (Unless noted otherwise)
- Proposed Inspection Pit. (Size as noted)
- FP (EVC NO) Feeder Pillar for EVC
- BT Proposed BT chamber.
- Column mounted light. (See drawing "10252-PL-100" for more information.)
- Proposed 13A Fused Spur
- M Proposed MCW Meter
- T Thrust Block
- H Proposed Hydrant Position.
- TP+N isolator (rated as shown)
- SP+N isolator (rated as shown)
- TX 3m x 3m Transformer compound.
- SP+N distribution board
- TP+N distribution board
- MCW MDPE Barrier Pipe Mains Cold Water proposed route.
- HT HPPE Barrier Pipe Hydrant Main proposed route
- LP GAS Low Pressure Gas Main proposed route.
- MP GAS Medium Pressure Gas Main proposed route.
- BT BT ducts proposed route.
- Ducts proposed route (sized as shown)
- Proposed Precast Trench with composite lid.
- 150mm underground LV Duct (No. INDICATED)
- 2x100mm Underground CCTV Duct
- 150mm Underground LV Generator Duct
- H Proposed HV Turning Pit
- L Potential Future LV Sub feeder Left as Turning Pit
- FFP Precast Concrete Trench cable Feeder Pits
- Indicative position of CCTV exterior camera mounted on column by end user's contractor. Main Contractor to provide containment, Twin 13A RCD metal clad socket, column & base to each location (column & base to be confirmed by end user). (Final number, type and direction to be decided by end user's Security contractor).
- RCD Twin 13A Metalclad RCD Socket for CCTV media converter (exact position on column TBC).
- Drawpit
- TP&N ISOLATOR (Rated as shown)

Note

1. Incoming Utility services connection points for Gas/Water/Telecoms & Electricity to be confirmed by developer.
2. Hydrant Main to be fitted with thrust blocks at every change of direction irrespective of Anchor tite fixings or ground conditions.
3. Each Hydrant to be fitted with pressure reducing Valve.
4. Location of Transformers and LV Panels to be carefully coordinated with MHE and operations layout.
5. Main Contractor to be responsible for any concrete bases/Builderswork required for Utility meters.
6. External Lighting to be carefully coordinated with HGV /Car parking and Landscaping layouts.
7. Transformer compound to be Fenced with Double Lockable gates.
8. Electrical Contractor to provide Lighting column details to Main Contractor to enable sleeves/concrete to be designed/installed.
9. Draw Pit to be included to all CCTV locations.
10. To be read in conjunction with 10336-EXT-410 & 411 for EVC details.
11. Main Contractor to allow additional 1x100mm duct from nearest Draw Pit to serve CCTV cameras on Lighting columns.
12. Main Contractor to provide power for CCTV camera media converters at positions indicated on drawing.
13. Main Contractor to confirm with End user's security contractor, suitability of lighting columns for camera mounting.
14. All the exposed cables at first 2 meters from the AFFL inside building must be covered with an appropriate mechanical protection (i.e. cable ladder/tray cover, etc..), and also Armco barrier on where the forklift/vehicle being operated.

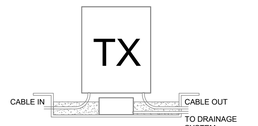
- 13A MASTERSEAL TSSO, 30mA RCD
- EARTH NEST
- 2xCOMPARTMENT CCTV CABLE TRUNKING SIZE AS INDICATED ON LAYOUT
- CCTV/ACS ELECTRICAL RISER
- CCTV STAINLESS STEEL CONDUIT
- 2x100mm UNDERGROUND CCTV DUCT
- CABLE TRAY UNDER CANOPY SIZE AS INDICATED
- Waterproof Break Glass Call Point
- Waterproof Strobe/Sounder
- Fire Alarm Interface

TYPICAL-6 TRANSFORMER DETAIL (TX)

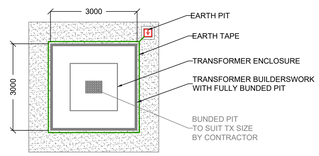
TYPICAL-7 MP/LP GAS METER HOUSING

TYPICAL-8 PACKAGED ELECTRICAL SUBSTATION

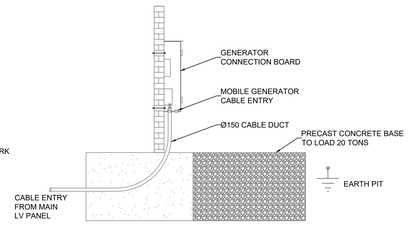
SIDE VIEW



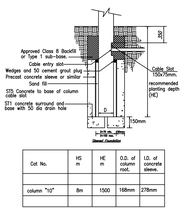
PLAN VIEW



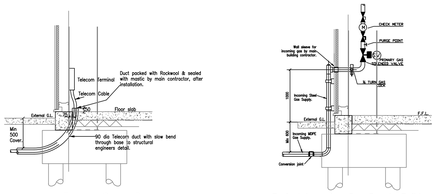
5 DETAIL
TYPICAL TRANFORMER BUILDERSWORK WITH FULLY BUNDED PIT NTS



4 DETAIL
TYPICAL GENERATOR CONNECTION DETAIL FOR MAIN BUILDING MAIN LV PANEL NTS

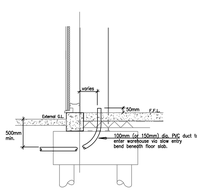


TYPICAL LIGHTING COLUMN BASE DETAIL.

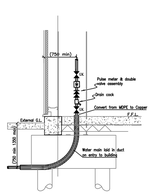


Typical Incoming Telecom Supply Builders Work.

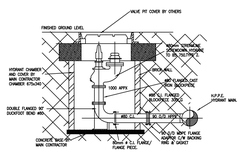
Typical Incoming Gas Supply Builders Work.



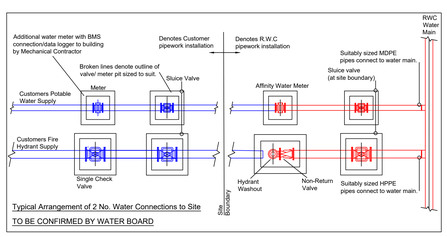
Typical Cable Duct Entry Detail



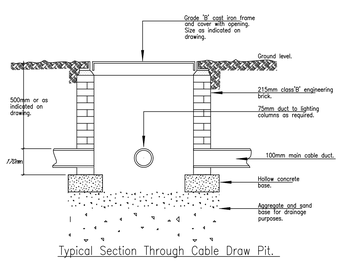
Typical Incoming Water Supplies Builders Work.



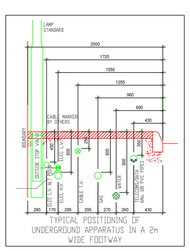
TYPICAL DETAIL OF FIRE HYDRANT PIT.



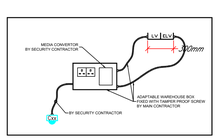
Typical Arrangement of 2 No. Water Connections to Site
TO BE CONFIRMED BY WATER BOARD



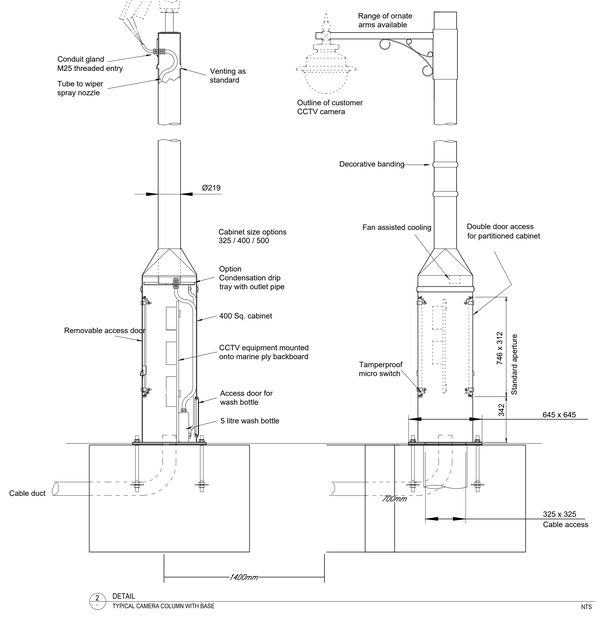
Typical Section Through Cable Draw Pit.



TYPICAL POSITIONING OF UNDERGROUND APPARATUS IN A 2m WIDE FOOTWAY



3 DETAIL
TYPICAL CCTV CABLING THROUGH CONVERTOR FROM TRUNKING NTS



2 DETAIL
TYPICAL CAMERA COLUMN WITH BASE NTS

CDM DESIGNER RISK INFORMATION

In addition to the hazards/risks normally associated with the types of work detailed on this drawing NOTE THE FOLLOWING:

- CONSTRUCTION
  - N/A
- MAINTENANCE/CLEANING
  - N/A
- DECOMMISSIONING/DEMOLITION
  - N/A

It is assumed that all works will be carried out by a contractor competent under CDM 2015 working to an approved method statement

Client

LYSANDER

Architect

S+SA ARCHITECTS

Project Address

Banbury 200 Site,
Southam Road,
Banbury

Drawing Title

EXTERNAL
M&E SERVICES LAYOUT

KTA
KELLY TAYLOR & ASSOCIATES
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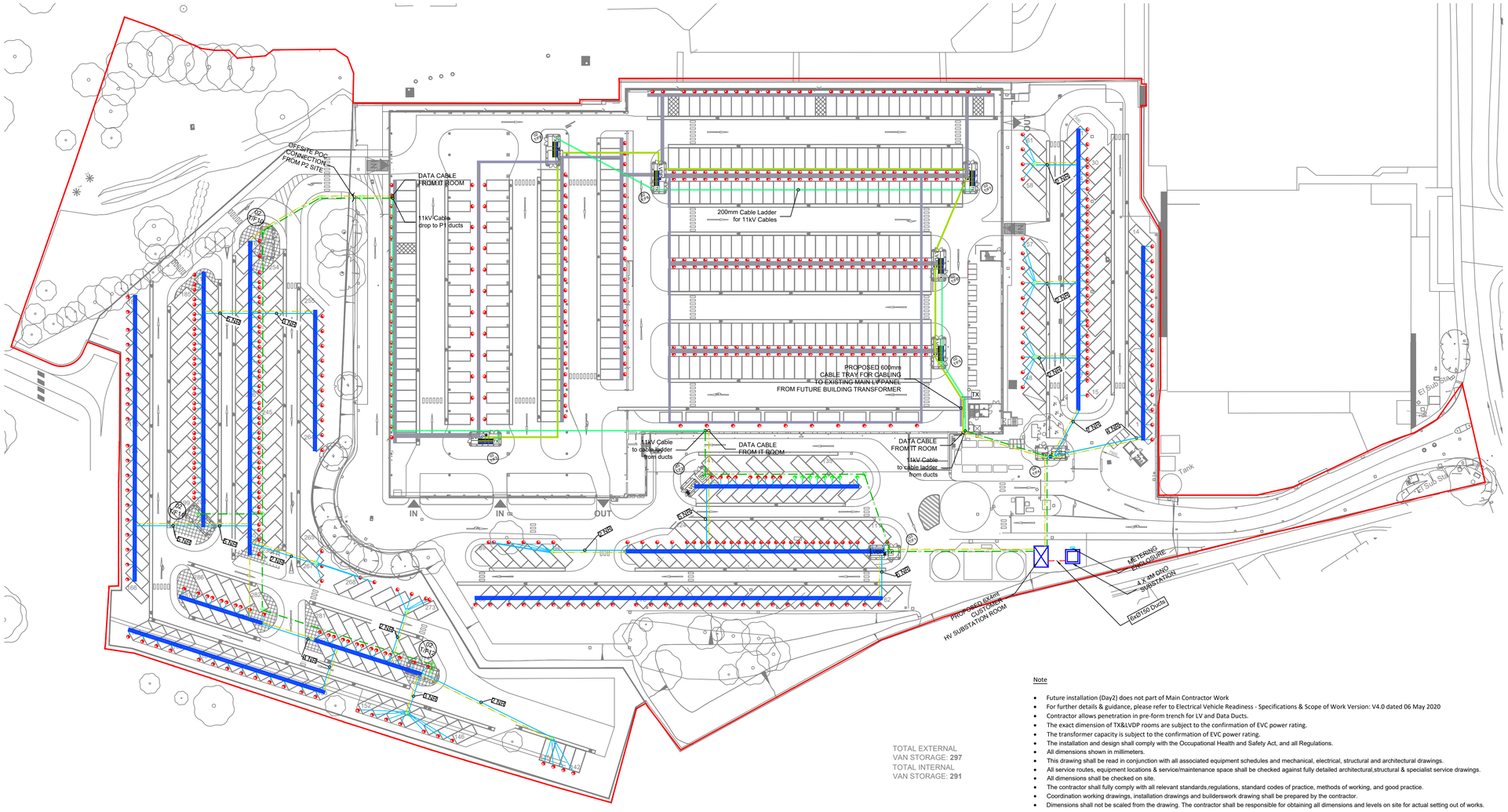
INFORMATION

Drawn by	Checked by	Authorised by
CC	GPH	GPH
Scale	Size	Date
1:250	A0	Aug'21

Drawing no. 10336-EXT-400 Rev. D

Drawing 2 – EVC Services Layout



1 EXTERNAL & INTERNAL GROUND FLOOR EVC SERVICES LAYOUT 1:500

TOTAL EXTERNAL VAN STORAGE: **297**
TOTAL INTERNAL VAN STORAGE: **291**

Notes:-

1. Information Concerning Depth and line of existing infrastructure services has been extracted from relevant Statuatory Authority Ordinance Survey maps and is given without Obligation or warranty and its accuracy cannot be guaranteed. Exploration trial holes must be hand dug as must any excavation to relocate or otherwise modify existing live services.
   Adequate protection is to be provided during all site works.
2. All new services to be installed to the following approximate depths of cover.

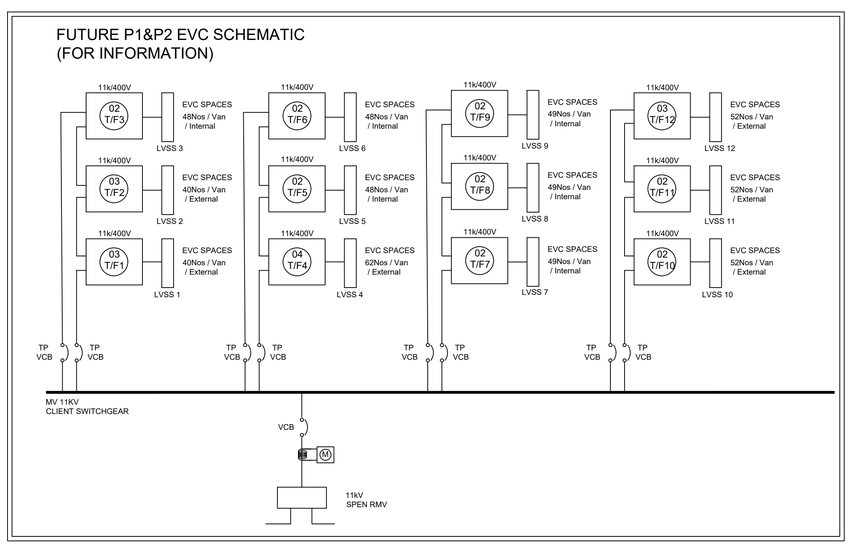
	Carriageway(mm)	Footpath(mm)
Electric HV	750	600
Electric LV	600	450
Gas	750	600
Water	900	600
BT	600	350
Vodafone	600	350

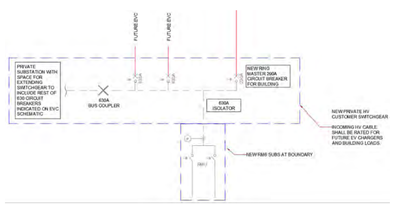
3. Exact/final points of entry of all new incoming utility services to be agreed with the Employer and/or End User. All incoming electricity & water services shall as/where applicable be ducted under all floor slabs & concrete service yards to meet the requirements of the particular utility company, with electricity cables also ducted under any road crossings.
4. All existing above or below ground redundant 'public/utility' or 'private' electrical, gas, telecom or water services within the site demise shall be identified & safely disconnected, removed and disposed off from site (or otherwise left abandoned underground) to meet Construction needs.

Note

- Future installation (Day2) does not part of Main Contractor Work
- For further details & guidance, please refer to Electrical Vehicle Readiness - Specifications & Scope of Work Version: V4.0 dated 06 May 2020
- Contractor allows penetration in pre-form trench for LV and Data Ducts.
- The exact dimension of TX&LVDP rooms are subject to the confirmation of EVC power rating.
- The transformer capacity is subject to the confirmation of EVC power rating.
- The installation and design shall comply with the Occupational Health and Safety Act, and all Regulations.
- All dimensions shown in millimeters.
- This drawing shall be read in conjunction with all associated equipment schedules and mechanical, electrical, structural and architectural drawings.
- All service routes, equipment locations & service/maintenance space shall be checked against fully detailed architectural,structural & specialist service drawings.
- All dimensions shall be checked on site.
- The contractor shall fully comply with all relevant standards,regulations, standard codes of practice, methods of working, and good practice.
- Coordination working drawings, installation drawings and builderswork drawing shall be prepared by the contractor.
- Dimensions shall not be scaled from the drawing. The contractor shall be responsible for obtaining all dimensions and levels on site for actual setting out of works.

LEGEND	
	Existing HV Duct
	Existing LV Duct
	Existing British Telecoms
	Proposed Building Welfare Duct
	Proposed Street Lighting Duct
	Proposed High Voltage Route
	Proposed BT Route
	150mm underground LV Duct (No. INDICATED)
	100mm underground LV Duct
	150mm underground MV Duct (D# - DENOTES No OF DUCTS)
	100mm underground Data Duct
	100mm Data Cable Trunk/Basket
	1000mm x 500mm Cable Trench complete with cover suitble for heavy vehicle crossing
	Low Voltage Cable Ladder
	Drawpit
	Future TPN&E Busbars
TX	Transformer 11kV/400V with close coupled RMU
TX	Future Transformer 11kV/400V with close coupled RMU
LVDP	Future LV Dist. Panel
	Future Generator Connection Point
	Future Charger Location
	Active Charger Location
	Earth Rod





2 DETAIL
TYPICAL P2 HV INTAKE SUBSTATION SCHEMATIC NTS

Schedule of P1&P2 Transformers (for information only)

No.	Location	5kW Chargers	50kW Chargers	Qty's of TX's	Comments
1	Site Welfare	N/A	N/A	1	550kVA
2	Van Overnight Parking	275kVA	2750kVA	9	
3	Van Overnight Parking	225kVA	2250kVA	2	
4	Van Overnight Parking	350kVA	3500kVA	1	
5	Associates Parking	N/A	N/A	0	
6	Van Staging & Loading	N/A	N/A	0	
7	HGV	N/A	N/A	0	
	Deck Area	N/A	N/A	0	

Revisions

Rev.	By	Date	Description	Chk
A	CC	13.08.21	Amended layout title	GPH
B	JSP	25.10.21	Updated to suit the latest plan	CC
C	CC	04.11.21	Updated to suit the latest plan	GPH

Specific Notes:

1. All the exposed cables at first 2 meters from the AFFL inside building must be covered with an appropriate mechanical protection (i.e. cable ladder/tray cover, etc..), and also Armco barrier on where the forklift/vehicle being operated.
2. All coloured underground ducting is to be installed as part of these works.
3. All sizes are indicative and the contractor is to undertaken a full electrical design to confirm all service sizes.
4. This drawing only relates to the EV charging services and no other service ducts have been detailed.
5. Sufficient space shall be allocated for future Transformers and LV panels. Their locations shall be carefully coordinated with the operations layout.
6. Transformer compounds to be fenced with double lockable gates.
7. All services detailed in colour are to be installed in during construction.
8. Future LV panels and TX's to have 2no drawpits installed in during construction.
9. HV ducting to have drawpits installed in accordance with local codes and guidelines to ensure future installation of cabling
10. Standby Temporary Generator connection point to be installed on the external facade of the LVDP, to accommodate the installation of a mobile generator in the event of a power failure.
11. All underground trenching covers are to suitable rated for heavy vehicle movement in accordance with BS EN 124 or equivalent.
12. Underground cable trenches can be either GRP or concrete in construction.
13. The developer is to size the underground trenching in accordance with the typical detail section.
14. All the ducting underground to be finalised with/into drawpit/trench.
15. All coloured cable ladder is to be installed as part of these works.
16. Contractor allows penetration in pre-form trench for LV and Data Ducts.
17. For the installation typical details, refer to the drawing no. "10336-EXT-411 EVC TYPICAL DETAILS"
18. All containment (ladder/tray/basket and etc..) at the Internal Area high level shall be confirmed prior to starting the installation.

CDM DESIGNER RISK INFORMATION

In addition to the hazards/risks normally associated with the types of work detailed on this drawing NOTE THE FOLLOWING:

- CONSTRUCTION
  N/A
- MAINTENANCE/CLEANING
  N/A
- DECOMMISSIONING/DEMOLITION
  N/A

It is assumed that all works will be carried out by a contractor competent under CDM 2015 working to an approved method statement

Client
LYSANDER

Architect
SHSA ARCHITECTS

Project Address
Banbury 200 Site,
Southam Road,
Banbury

Drawing Title
External & Internal
EVC Services Layout

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INFORMATION

Drawn by	Checked by	Authorised by
CC	GPH	JDG
Scale	**Size**	**Date**
1:500	A0	Aug'21

Drawing no. 10336-EXT-410 Rev. C

Drawing 3 – Proposed Drainage Layout