



BS 5837:2012 Arboricultural Impact Assessment

Oldlands Farm, Newlands Road, Bognor Regis PO22 6NN

Presented to Lysander Associates

Issued: September 2021

Delta-Simons Project No. 20-1543.05



Report Details

Client	Lysander Associates
Report Title	BS 5837:2012 Arboricultural Impact Assessment
Site Address	Oldlands Farm, Newlands Road, Bognor Regis PO22 6NN
Project No.	20-1543.05
Delta-Simons Contact	Charlotte Sanderson-Lewis [REDACTED]

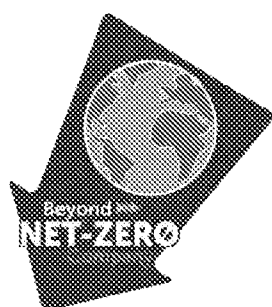
Quality Assurance

Issue No.	Status	Issue Date	Comments	Author	Technical Review	Authorised
3	Final	8 th September 2021		[REDACTED]		
				Simon Putt Arboricultural Consultant	Peter Morrell Principal Arboriculturalist	Charlotte Sanderson-Lewis Associate and Ecology Team Leader

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1.0 Introduction

1.1 Purpose and Scope of the Survey

Delta-Simons Environmental Consultants Ltd was instructed by Lysander Associates (the 'Client') to produce an Arboricultural Impact Assessment (AIA) to British Standard (BS) 5837:2012. The AIA was undertaken of land at Oldlands Farm, on Newlands Road, to the north of Bognor Regis in West Sussex (hereafter referred to as 'the Site'). The assessment was undertaken in order to inform a planning application at the Site.

The aims of the AIA were to:

- ▲ Detail foreseeable tree related issues within this Report to inform the Local Planning Authority (LPA);
- ▲ Provide an initial analysis of the impacts that the proposed development is projected to have on trees both within the Site and, where considered pertinent and where practicable, on land immediately adjacent to its boundaries; and
- ▲ Provide guidance on suitable retained tree management and mitigation for projected losses, along with advice on appropriate tree protection measures in the context of the proposed development in accordance with current guidance.

1.2 Site Description

The Site is centred at Ordnance Survey (OS) grid reference SU 94547 01837, to the north of Bognor Regis in West Sussex. The wider Site covers an area of 18.87 hectares (ha), of which the southern parcel comprises 7.00 ha, and is characterised by predominantly poor semi-improved grassland bisected and / or bounded by lengths of drainage ditches, fencing and hedgerow. In the northern extent of the Site was an area of bare ground, whilst scattered trees were found in the western area of the central field. At the south-western extent of the Site was an area of standing water, whilst scattered scrub ran inside the eastern boundary fence. A large expanse of land set to arable comprised the majority of the parcel of land to the north of the A259. In the western extent of this parcel, a poor semi-improved grassland field margin ran inside the boundary. This parcel covers an area of 11.87 ha.

The Site layout and area surveyed is shown in Figures 1a and 1b.

1.3 Proposed Development

It is understood from the drawing provided by the Client that the proposed development comprises the erection of a warehouse (Use Class B8) with ancillary office, associated vehicle parking, van storage, plant, ancillary structures, lighting, landscaping, and infrastructure works, including earthworks to facilitate a flood compensation area (Drawing 1).

1.4 Site Visit, Data Collection and Tree Plans

Further to the completion of a Tree Survey of the Site, which took place on 18th March and was updated on 27th April 2021, all tree data collected from the Site is set out in the attached tabulated Tree Survey Schedule (TSS) at Appendix B which, for ease of interpretation, should be read alongside the associated BS:5837:2012 Table 1 (as appended).

The survey identified 7 individual trees (prefixed 'T') and two groups (prefixed 'G'). The surveyed trees have been numbered accordingly on the Tree Constraints Plan (TCP) and Tree Impact Plan (TIP), as appended (see Figures 2a and 2b and Figures 3a and 3b, respectively). The TCP details the existing Site with the readily definable tree constraints, whilst the TIP also has an overlay of the development proposals along with associated projected tree related impacts. The plans are based on a topographical survey of the existing and proposed Site plans that were provided in electronic format by the Client, and for the purpose of this Report, it is assumed that these are accurate.

The results of the desk search undertaken on Arun District Council's website (Cadcorp SIS WebMap 9) on the 22nd March 2021, indicates that trees T001,002,003,004 and 005 within the proposed development Site are covered by a TPO ref TPO/BE/2/19.

2.0 Legislation in Respect of Trees and Associated Wildlife

2.1 Tree Preservation Orders and Conservation Area Designations

The Town & Country Planning Act (1990) (the Act) and associated Regulations empower LPAs to protect trees in the interests of amenity by making TPOs. The Act also afford protection for trees of over 75 mm diameter that stand within the curtilage of a CA. Subject to certain exemptions, an application must be made to the LPA in question to carry out works upon or remove trees that are subject to a TPO, whilst six weeks' notice of intentions must be given to carryout works upon or remove trees within a CA that's are not protected by a TPO.

2.2 Protected Species

2.2.1 Nesting Birds

Nesting birds are afforded statutory protection under the Wildlife and Countryside Act (1981, as amended) and their potential presence should, therefore, be considered when trimming hedges, removing climbing plants and pruning and removing trees. The breeding period for nesting birds runs from March to late July, inclusive. Hedges provide a valuable nesting sites for many bird and management should, therefore, be avoided during this period. Trees, hedges and ivy should be inspected for nests by a suitably qualified ecologist prior to pruning or removal, and any work likely to destroy or disturb active nests should be avoided until the young have fledged.

2.2.2 Bats

All bats and their roosts are protected under Section 9 of the WCA 1981(as amended) and Annex IV of the Habitats and Species Regulations 2017.

It is an offence, either deliberately or recklessly, to destroy, damage or obstruct access to any bat roost, or disturb a bat using such a place. It should be noted a roost is protected whether or not bats are present and any activity or works affecting a roost, even when bats are absent, are likely to require a Natural England European Protected Species Licence.

2.3 Felling Licenses

Subject to certain exemptions the Forestry Act (1967) requires that a 'Felling Licence' be obtained to remove growing trees amounting to more that five cubic metres of timber in a calendar quarter. Felling Licences are administered by the Forestry Commission and contravention of the associated controls can incur substantial penalties. A Felling Licence is, however, not required where tree removals are required for the purpose of implementing a development authorised by detailed (i.e. full) planning permission granted under the Act (1990).

3.0 The Tree Population

The Site is described in Section 1.0 of this Report.

As noted previously, seven individual Trees (T) and two tree Groups (G) were surveyed for the purpose of this appraisal. The surveyed trees to the south of the A259 comprised of 4 (T001-T004) mature oak *Quercus robur* and T005, a willow *Salix* spp., which has been pollarded to a height of 1.2 m with signs of new growth present. To the north of the A259 were two more individual trees (T007 and T013) and the two groups (G006 and G0011).

The oak trees in the southern parcel of the Site are large, mature trees with sizes varying from 14-15 m in height. The trees in the northern parcel are smaller low-lying trees. Detailed tree dimensions and other pertinent information, such as structural defects and physiological deficiencies, are included in the TSS at Appendix B.

In respect to the TSS, it should be noted that tree quality is categorised within the existing Site context without taking any development proposals into account. However, recommendations for works included in the TSS takes both current Site usage into consideration and the proposed Site development where there are definable development related issues with regards to specific trees.

The TSS includes a column ('Cat. Grade') listing the trees' respective retention values, where they are rated either 'A', 'B', 'C' or 'U', as per BS5837:2012 Table 1 (Appendix B). 'A' category trees are those considered to be of 'high quality' and, accordingly, the most suitable for retention, whilst 'B' category trees are those considered to be of 'moderate quality'. As detailed in Table 1 (below), two trees were categorised as high quality ('A'), three trees were categorised as moderate quality ('B'), a single tree together with two tree groups were categorised as low quality ('C'), while a single tree should be removed for management reasons regardless of the development proposals.

Table 1: BS5837-2012 Retention Categories of the Surveyed Trees

Tree Quality	Ret. Cats.	Tree/ Group Numbers	Totals
Those of a moderate or high quality that should be afforded appropriate consideration in the context of development	'A'	T002 & T003	2 Trees
	'B'	T001, T004 & T007	3 Trees
Those of a low quality that should not be considered a material constraint to development	'C'	G006, G011 & T013	1 Tree 2 Groups
Those that should be removed for management reasons regardless of site proposals	'U'	T005	1 Tree
Totals			7 Trees and 2 Tree Groups

It is understood from the drawing provided by the Client that the proposed development comprises the erection of a warehouse (Use Class B8) with ancillary office, associated vehicle parking, van storage, plant, ancillary structures, lighting, landscaping, and infrastructure works, including earthworks to facilitate a flood compensation area.

Accordingly, the TCP has been overlaid on the development plan provided by Lysander Associates (30th April 2021) in order to appraise the projected impacts that the development will potentially have on the Site trees.

3.1 Projected Arboricultural Losses Relating to the Proposals

As detailed in Table 2, below, and on the TIP, implementation of the proposed development as it stands is projected to require the removal of one moderate category tree. This removal is required to enable levelling

works for the northern parcel of the Site to be undertaken in order to create a flood compensation area. A low category tree is recommended for removal from the southern parcel of the Site for non-development reasons.

Table 2: Arboricultural Impacts of Proposed Development and Other Tree Removal Proposals

Tree Quality	Ret. Cats.	Removals necessary to implement development	Removals suggested for non-development related reasons	Total number of tree removals
Those of a moderate or high quality that should be afforded appropriate consideration in the context of development	'A'			
	'B'	T007		1 Tree
Those of a low quality that should not be considered a material constraint to development	'C'			
Those that should be removed for management reasons regardless of Site proposals	'U'		T005	1 Tree
Totals				2 Trees

3.2 Mitigation for Projected Tree Losses as Part of Site Landscaping

New tree planting is proposed as part of the landscaping plans for the Site, as indicated on the Landscape Strategy for the Site (see Figure 29, Landscape and Visual Impact Appraisal Report, Delta-Simons Report Reference: 20-1543.08). As shown, the proposals include provision for new tree planting within areas of car parking, tree and hedgerow planting around the new unit and multi-storey car park, and along the boundaries of the southern plot which are projected to mitigate for the necessary development related tree and hedgerow losses.

4.0 Summary and Conclusions

The Site is centred at Ordnance Survey (OS) grid reference SU 94547 01837, to the north of Bognor Regis in West Sussex. The wider Site covers an area of 18.87 ha, with the northern parcel predominantly arable, and the smaller southern parcel (7.00 ha), characterised by predominantly poor semi-improved grassland bisected and / or bounded by lengths of drainage ditches, fencing and hedgerow.

Seven individual trees and two groups were inspected, of which five trees are allocated a moderate to high retention value. These include four oaks (T001-T004) which are individual specimen features for long term retention and T007 which is a smaller less significant tree. Tree T005, a willow *Salix* spp., which has been pollarded to a height of 1.2 m with signs of new growth present, is deemed unsuitable for retention. The groups G006 and G011 and T013 are low-quality trees and groups.

An evaluation of the proposed development in the context of the existing Site shows that the key protected trees (T001- T004) will be retained as part of the proposals. The scheme has been designed around the moderate to high trees covered by a TPO to accommodate their long-term development.

To accommodate the flood compensation area, it will require the removal of one moderate quality tree, T007 (not protected under a TPO). The impact of tree removal to accommodate the proposed flood compensation area is considered to be low in the short to long term. The tree is relatively small and low lying and is not highly visible within the local or wider landscape.

Adjacent to T001 is a deep ditch orientated in an east to west direction. As reflected on the Tree Constraints Plan, this is seen as a natural barrier to root development beyond it (anaerobic soil conditions). Because of this, the RPA has been modified to reflect a more accurate below ground constraint which considers the restriction that the ditch offers. The annotated area considers the minimum rooting requirements for this tree as recommended within BS5827:2012.

In consideration of the above findings, it is concluded that, from the details provided to date, the Site in question can be developed as proposed, whilst retaining the majority of individual trees, in turn improving the overall quality of the tree cover by additional tree planting. However, in order to ensure successful existing tree preservation, it is essential that the retained trees are protected in strict accordance with current Government guidance and the recommendations included herein.

5.0 Recommendations for Successful Tree Retention in the Context of Development

5.1 Root Protection Areas and Construction Exclusion Zones

Adequate protection of the Root Protection Areas (RPAs) of retained trees during construction is essential to ensure their long-term viability. RPAs, which are calculated through a method provided in BS5837:2012, are ground areas that must be protected by temporary protective fencing (Specification given in Appendix C) as Construction Exclusion Zones (CEZs) throughout the development process, thereby keeping the trees' root zones free from disturbance, including compaction. Consequently, the RPA distances, as detailed in the TSS, and included on the TCP and TIP indicate the likely on-Site below-ground constraints in respect of tree roots, whilst assisting in planning for appropriate tree retention in relation to feasible development. In certain situations, such as at this Site, there is a limited degree of flexibility in the CEZ positioning, as discussed below.

The TSS includes two columns listing the RPAs of the individually surveyed trees and, where applicable, the largest of the trees in any surveyed groups as overall areas in square metres and as radial distances. The radial RPAs are indicated as blue coloured circles on the TCP and TIP. With regard to CEZs the design, materials and construction of the fencing should be appropriate for the intensity and type of site construction works, and should conform to at least section 6.2 of BS5837:2012, and should be secured by the imposition of a suitably worded planning condition. A default Temporary Protective Fencing Specification is included at Appendix C.

5.2 Underground Utilities

The installation of underground utilities in close proximity to trees can cause serious damage to their roots. As such, it is essential that utilities be routed outside RPAs unless there is no other available option, and specifics regarding these routes should be included as part of a detailed planning application. Where RPAs cannot be avoided then guidelines set out in the National Joint Utilities Group publication '*Volume 4: NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees (Issue 2) – Operatives Handbook*' should be followed (e.g. trenches of a very limited width to be hand dug or the use of directional drilling).

The services plan for this Site has been reviewed and all proposed routes are outside the RPA of key retained trees.

5.3 Arboricultural Method Statement and Tree Protection Plan

Government guidance recommends that, where considered practical by the LPA, an Arboricultural Method Statement (AMS) and a Tree Protection Plan (TPP) be prepared detailing mitigation for trees during the construction process. Essentially, the AMS and TPP describe and detail the procedures, working methods and protective measures to be used in relation to retained trees in order to ensure that they are adequately protected during the construction process.

6.0 Other Recommendations

6.1 Non-Development Related Tree Works and Recommendations

Any general management pruning works for retained trees that are stated to be non-development related, as detailed in the TSS, are recommended in accordance with prudent arboricultural management and should, therefore, be carried out regardless of any development proposals and potential changes in land usage associated with the Site. All tree works should be carried out in accordance with BS3998:2010 - Tree Work – Recommendations.

6.2 Tree Work Related Consents

No tree pruning nor removal works should commence on-Site until necessary consents have been obtained from the LPA.

6.3 Arboricultural Contractors

All tree works should be carried out by suitably qualified and experienced arboricultural contractors carrying appropriate public liability insurance cover and be implemented to the minimum current UK industry standards and in accordance with industry codes of practice. Only certificated personnel should, in accordance with The Control of Pesticides Regulations, apply any pesticides.

6.4 Contractors and Subsequently Identified Tree Defects

Tree contractors should be made aware that, should any significant tree defects become apparent during operations that would not have been immediately obvious to the surveyor, then such defects should be notified immediately to the Client and subsequently confirmed to the consultant within five working days.

6.5 New Tree Planting

All tree planting at the Site should be carried out in accordance with BS4428:1989 - Code of Practice for General Landscape Operations, BS3936-1:1992, Nursery Stock – Part 1: Specification for Trees and Shrubs and BS4043:1989, Transplanting Root-Balled Trees where applicable, or any ensuing superseding guidance where applicable.

6.6 Retained Tree Management

Any tree risk management appraisals and subsequent recommendations made in this report were based on observations and Site circumstances at the time of the survey. It should be noted that trees are dynamic living organisms with constantly changing structures, and even those evidently in good condition can succumb to damage and/ or environmental stress. In this respect, it should be noted that, under the Occupiers' Liability Act (1957 & 1984), Site occupants have a duty of care to take reasonable steps to prevent or minimise the risk of personal injury and/or damage to property from any tree located within the curtilage of the land they occupy. It is accepted that these steps should normally include commissioning a qualified and experienced arboriculturist to survey their trees in order to identify any risk of harm to persons or damage to property that they may present and, where unacceptable risks are identified, taking suitable remedial action to negate those risks.

7.0 Limitations of the Arboricultural Impact Assessment

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

This Report 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 Report. Nothing contained in this Report 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 Report 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 Report by any other person is unauthorised and such use is at the sole risk of the user. Anyone using or relying upon this Report, 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 A – CEZ Warning Sign

CEZ Warning Sign

– TREE PROTECTION AREA – KEEP OUT!

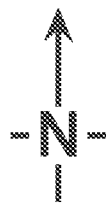
(TOWN & COUNTRY PLANNING ACT 1990)

THE TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY PLANNING
CONDITIONS, THE CONTRAVENTION OF WHICH MAY LEAD TO CRIMINAL PROSECUTION.
THE FOLLOWING MUST BE OBSERVED BY ALL PERSONNEL:

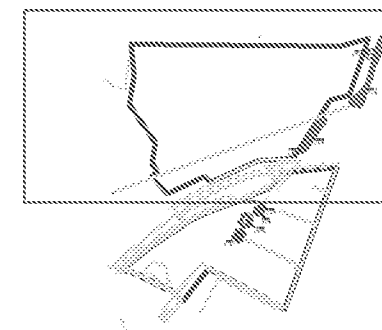
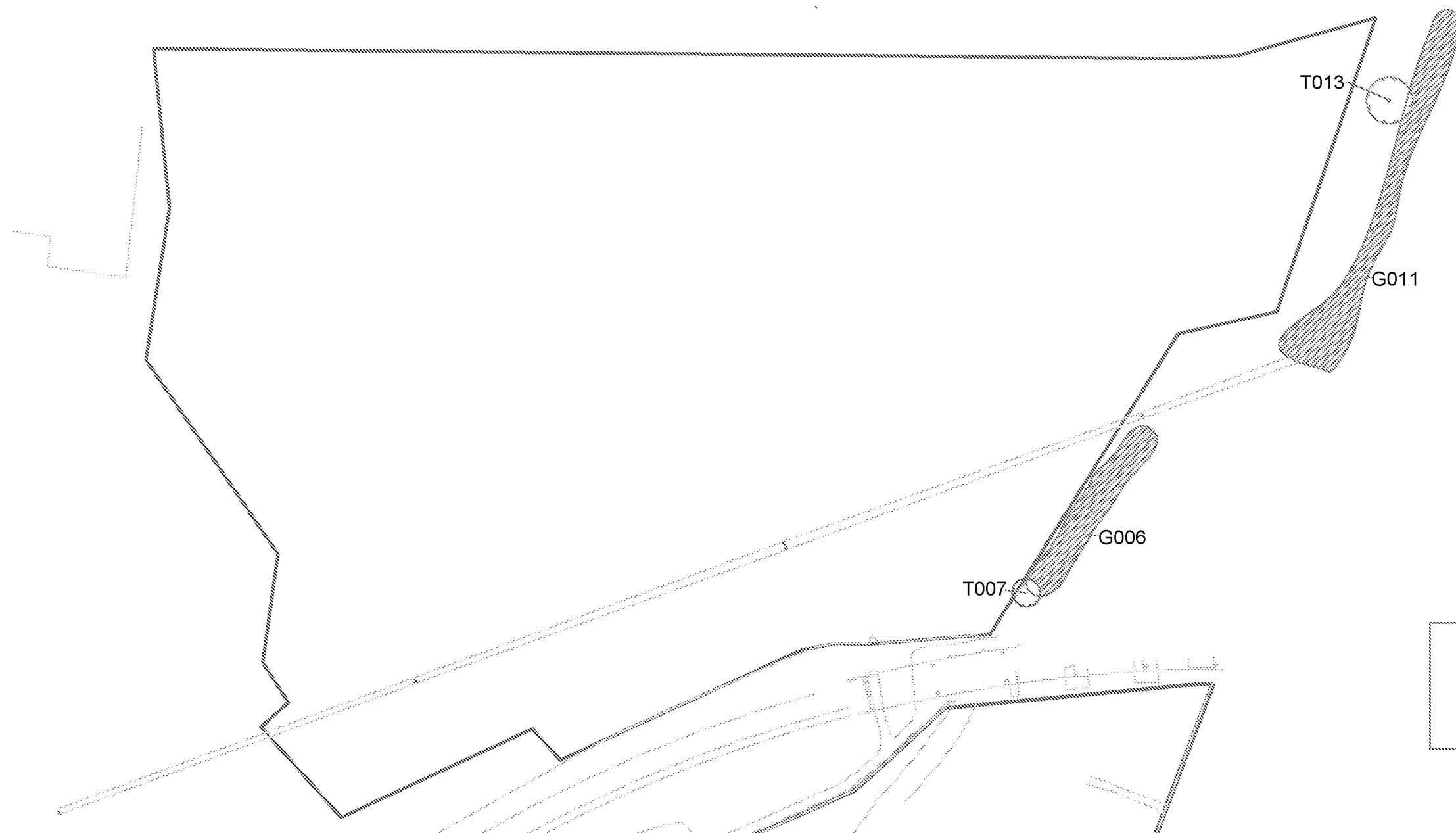
- △ THE PROTECTIVE FENCING MUST NOT BE MOVED
- △ NO PERSON SHALL ENTER THE CONSTRUCTION EXCLUSION ZONE
- △ NO MACHINE, PLANT OR VEHICLES SHALL ENTER THE EXCLUSION ZONE
- △ NO MATERIALS SHALL BE STORED IN THE EXCLUSION ZONE
- △ NO SPOIL SHALL BE DEPOSITED IN THE EXCLUSION ZONE
- △ NO EXCAVATION SHALL OCCUR IN THE EXCLUSION ZONE
- △ NO FIRES SHALL BE LIT IN THE EXCLUSION ZONE

ANY INCURSION INTO THE EXCLUSION ZONE MUST BE WITH THE
WRITTEN PERMISSION OF THE LOCAL PLANNING AUTHORITY

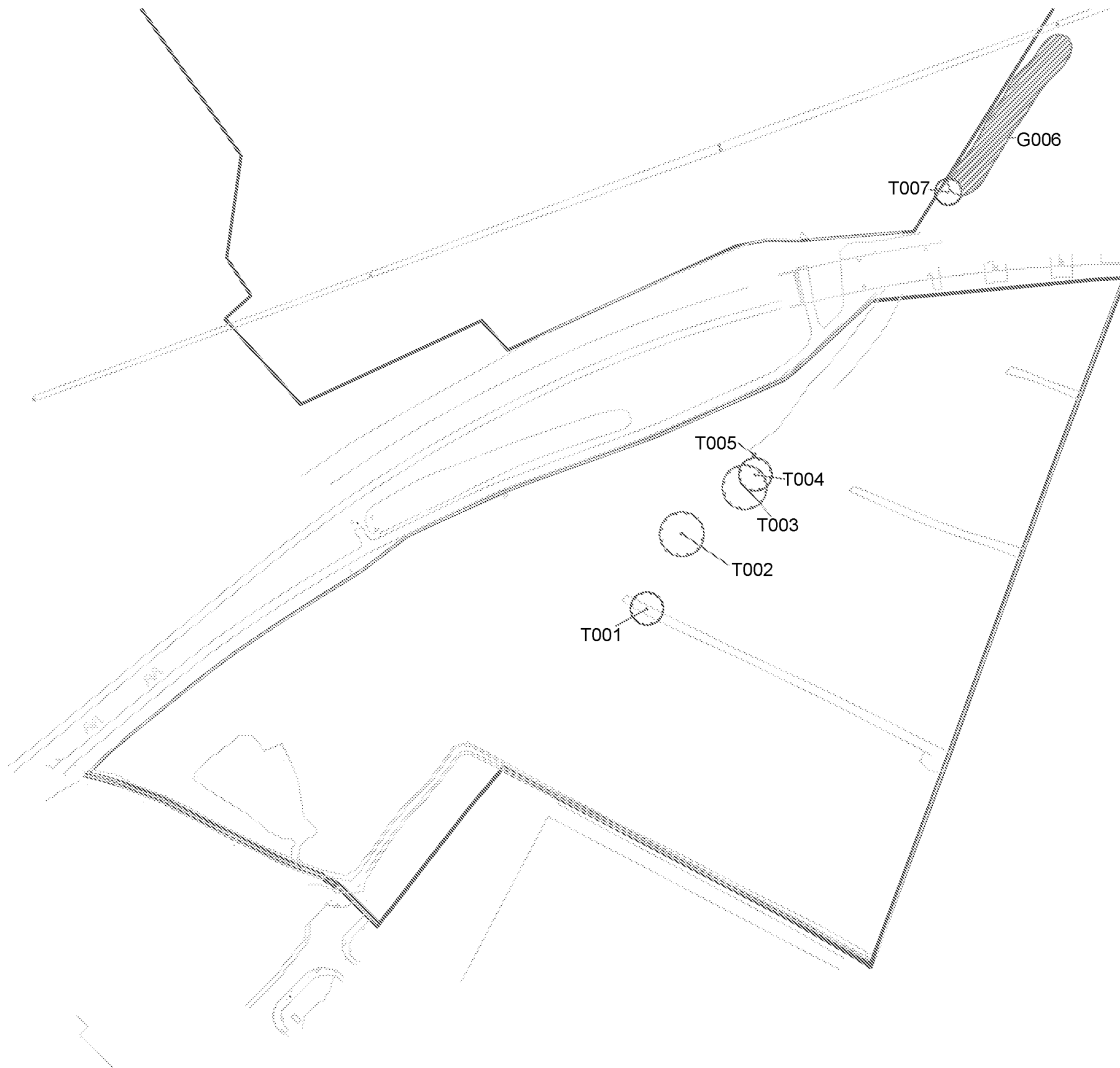
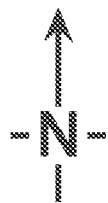
Figures 1a-b – Tree Survey



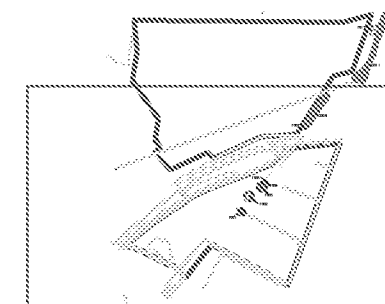
LEGEND	
	Site Boundary
 Tx/TGx	Category A: High value retention most desirable
 Tx/TGx	Category B: Moderate value retention desirable
 Tx/TGx	Category C: Lower value could be retained
 Tx/TGx	Category U: For removal



Site Plan Provided by Client

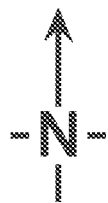


LEGEND	
	Site Boundary
Tx/TGx	Category A: High value retention most desirable
Tx/TGx	Category B: Moderate value retention desirable
Tx/TGx	Category C: Lower value could be retained
Tx/TGx	Category U: For removal

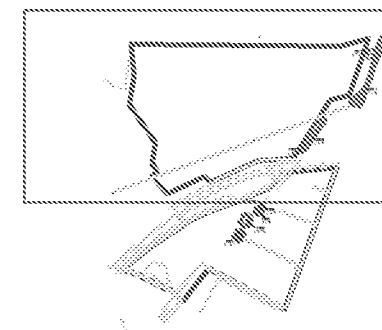


Site Plan Provided by Client

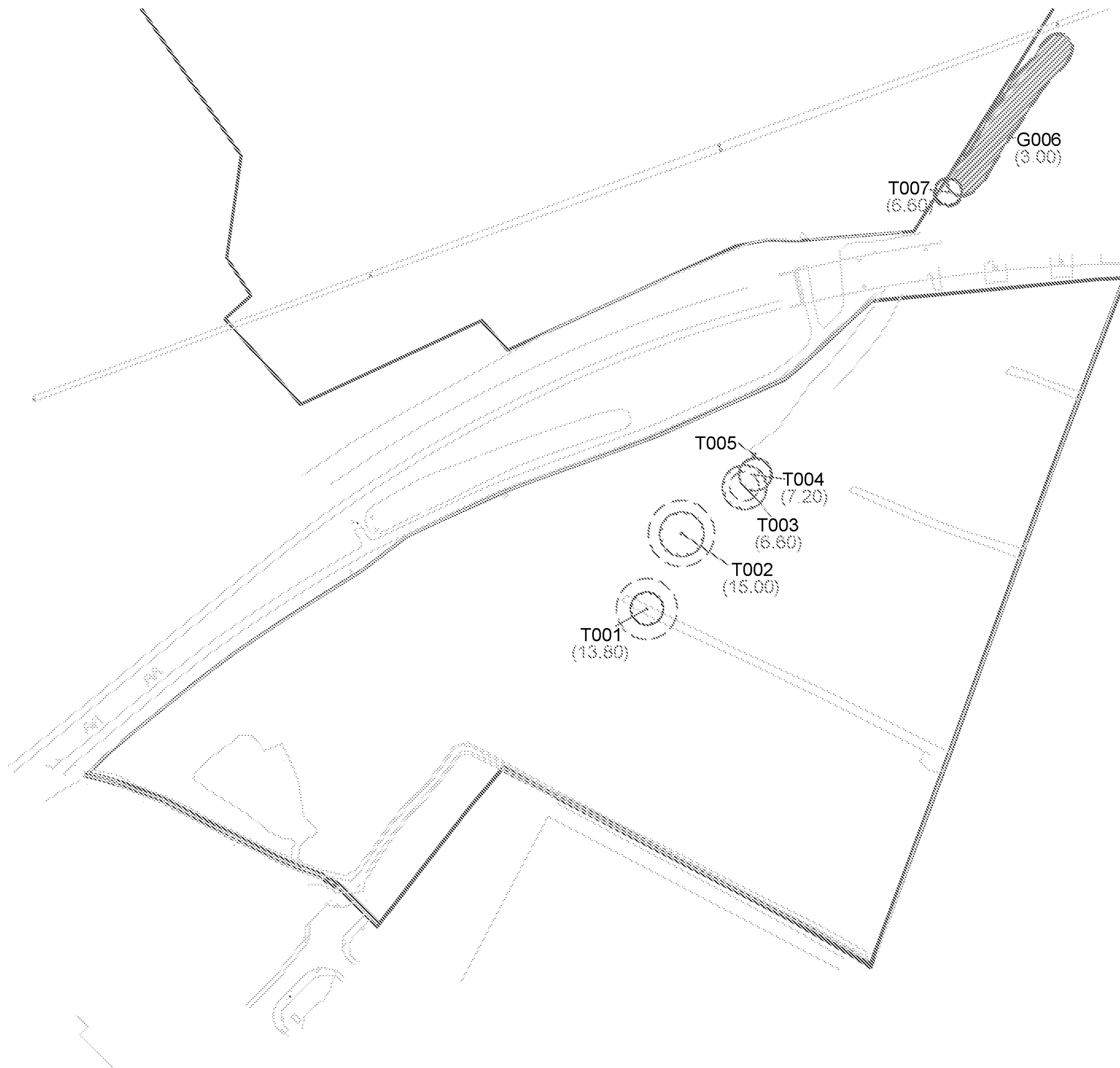
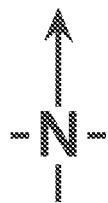
Figures 2a-b – Tree Constraints Plan



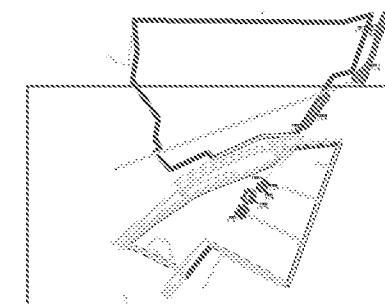
LEGEND	
	Site Boundary
 Tx/TGx	Category A: High value retention most desirable
 Tx/TGx	Category B: Moderate value retention desirable
 Tx/TGx	Category C: Lower value could be retained
 Tx/TGx	Category U: For removal
	RPA: Root Protection Area



Site Plan Provided by Client

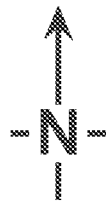


LEGEND	
	Site Boundary
	Category A: High value retention most desirable
	Category B: Moderate value retention desirable
	Category C: Lower value could be retained
	Category U: For removal
	RPA: Root Protection Area



Site Plan Provided by Client

Figures 3a-c – Tree Impact Plan



LEGEND

Site Boundary

Tx/TGx

Category A: High value
retention most desirable

Tx/TGx

Category B: Moderate value
retention desirable

Tx/TGx

Category C: Lower value
could be retained

Tx/TGx

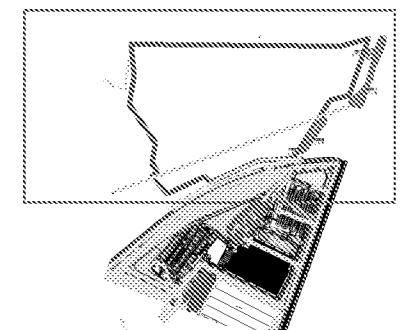
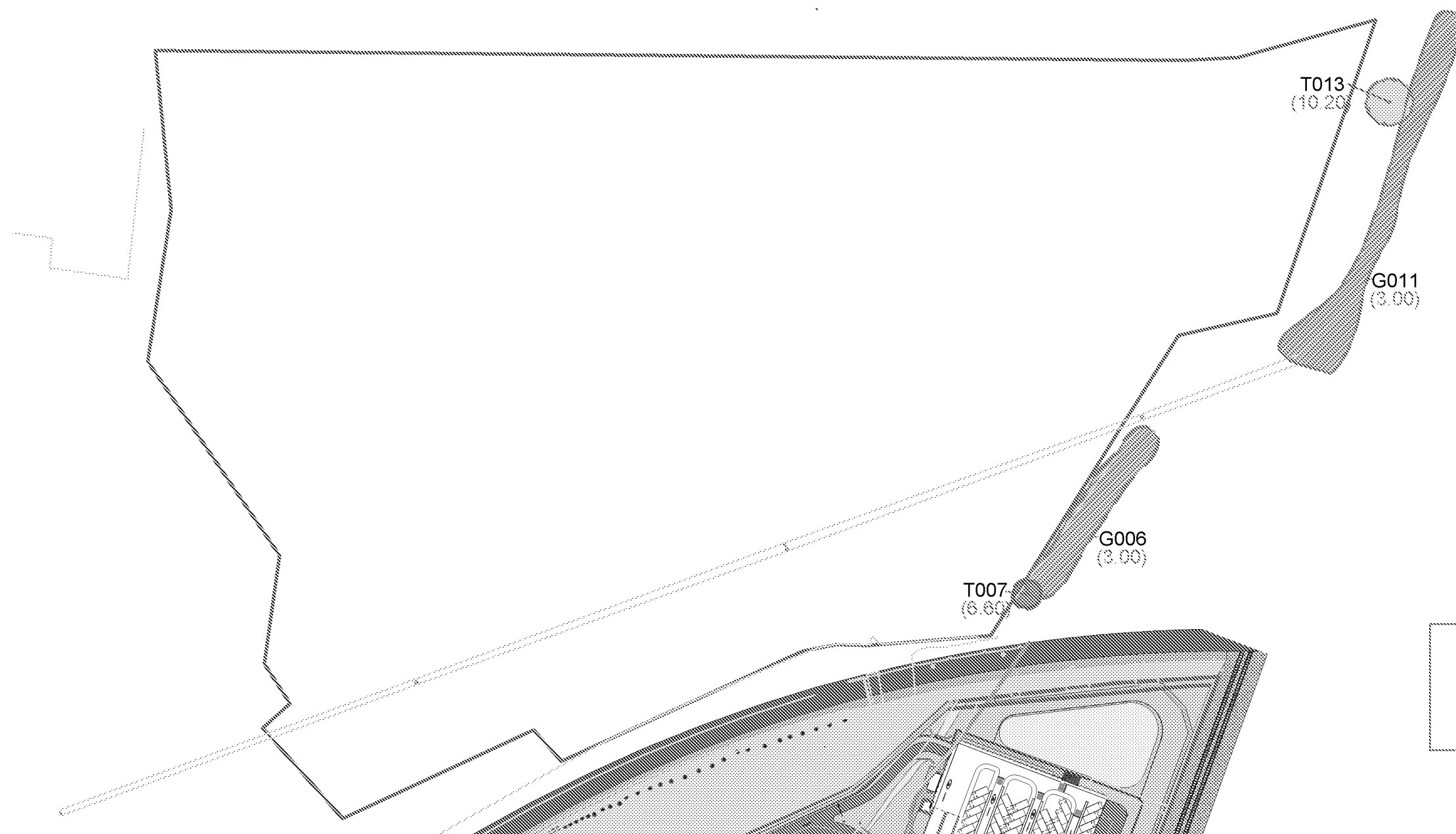
Category U: For removal

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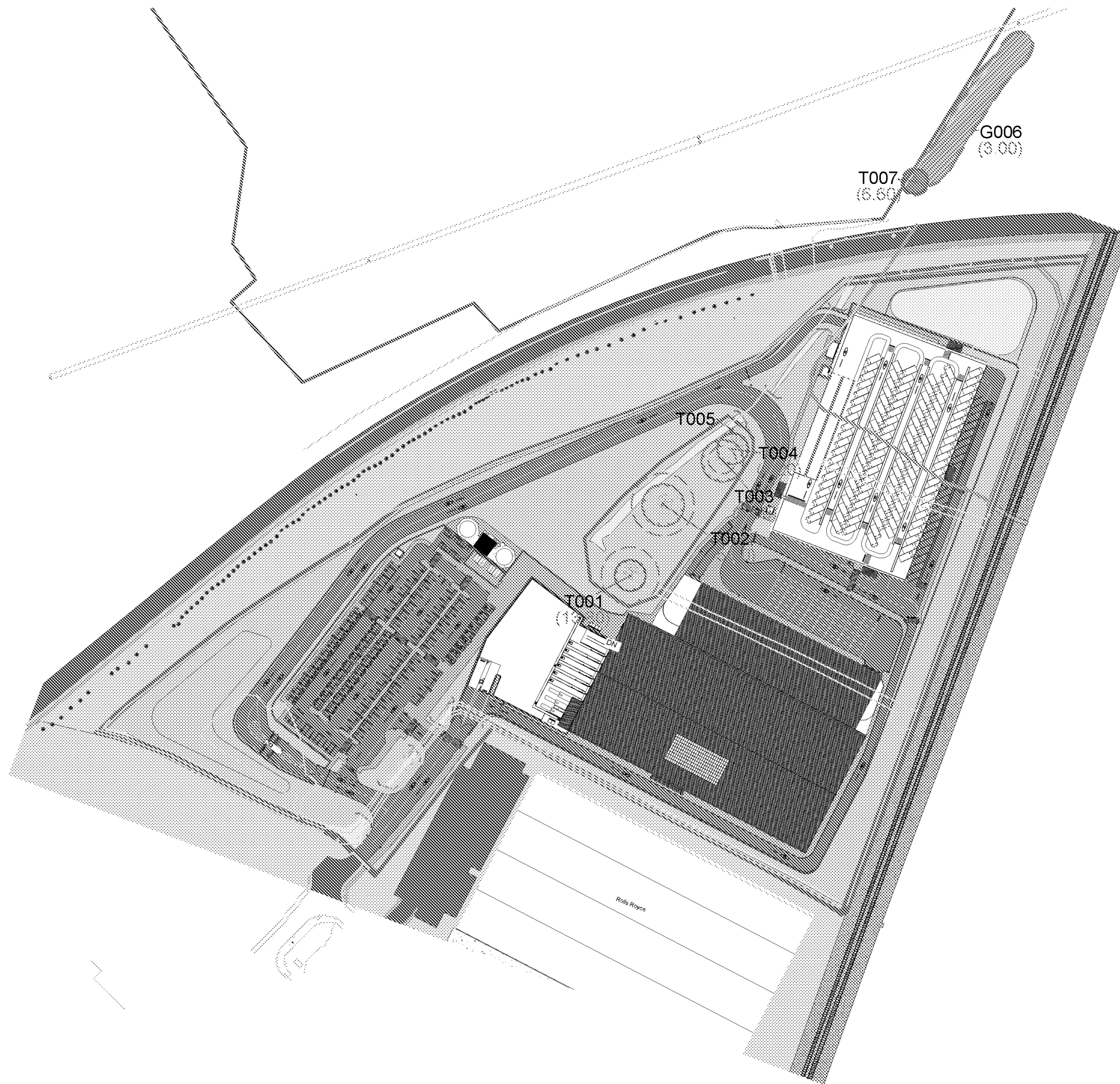
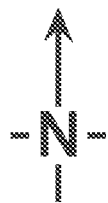
RPA: Root Protection Area

Tree Removal Required

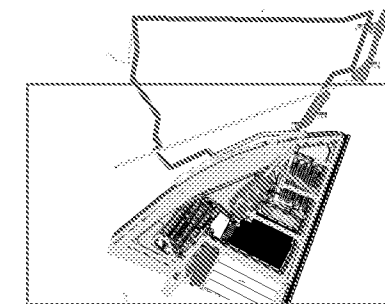
Trees to be Retained



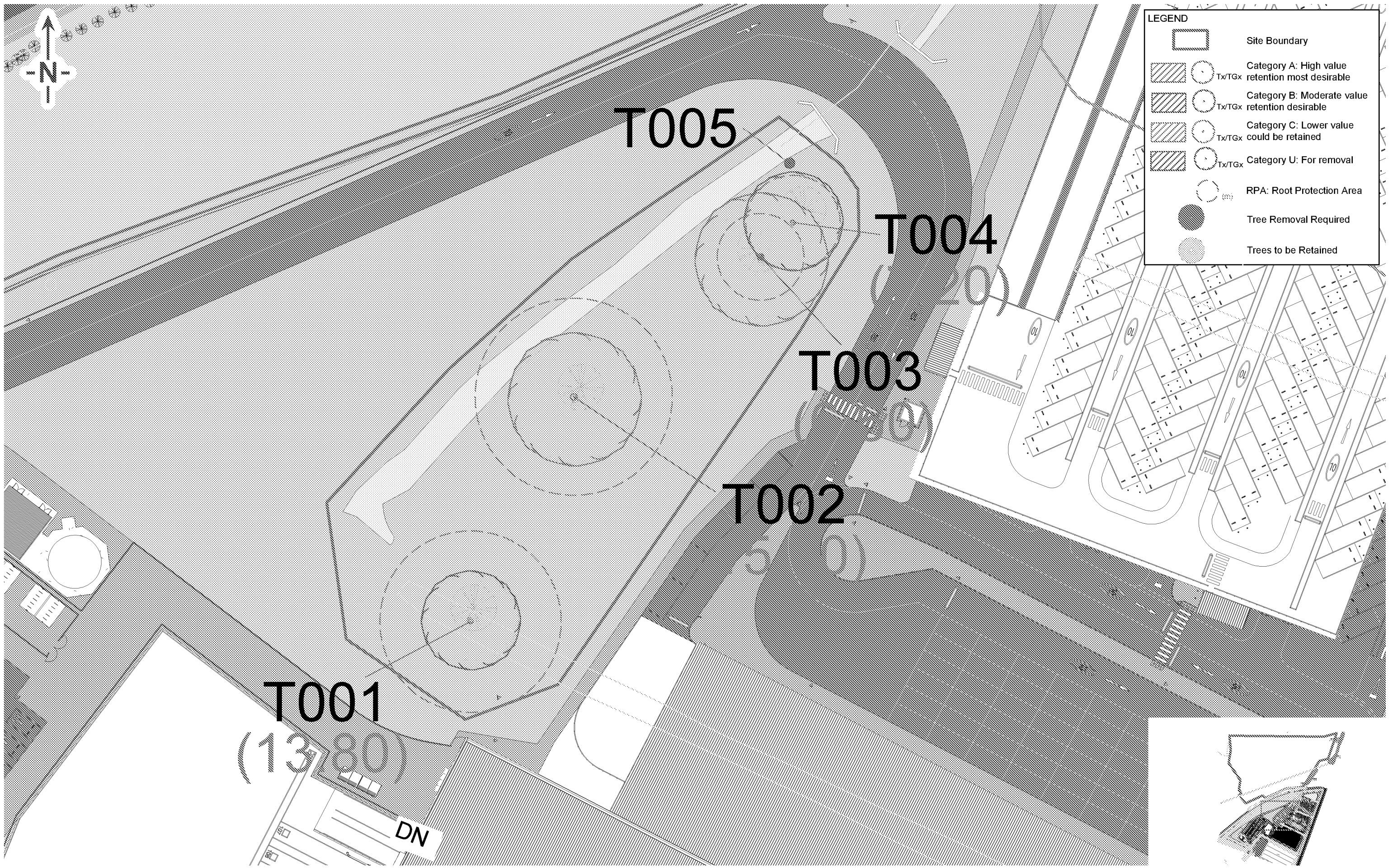
Site Plan Provided by Client



LEGEND	
	Site Boundary
	Category A: High value retention most desirable
	Category B: Moderate value retention desirable
	Category C: Lower value could be retained
	Category U: For removal
	RPA: Root Protection Area
	Tree Removal Required
	Trees to be Retained

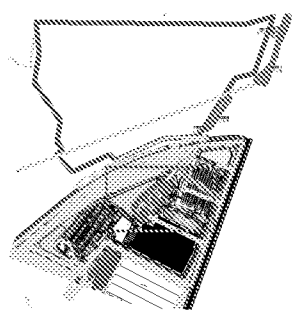


Site Plan Provided by Client



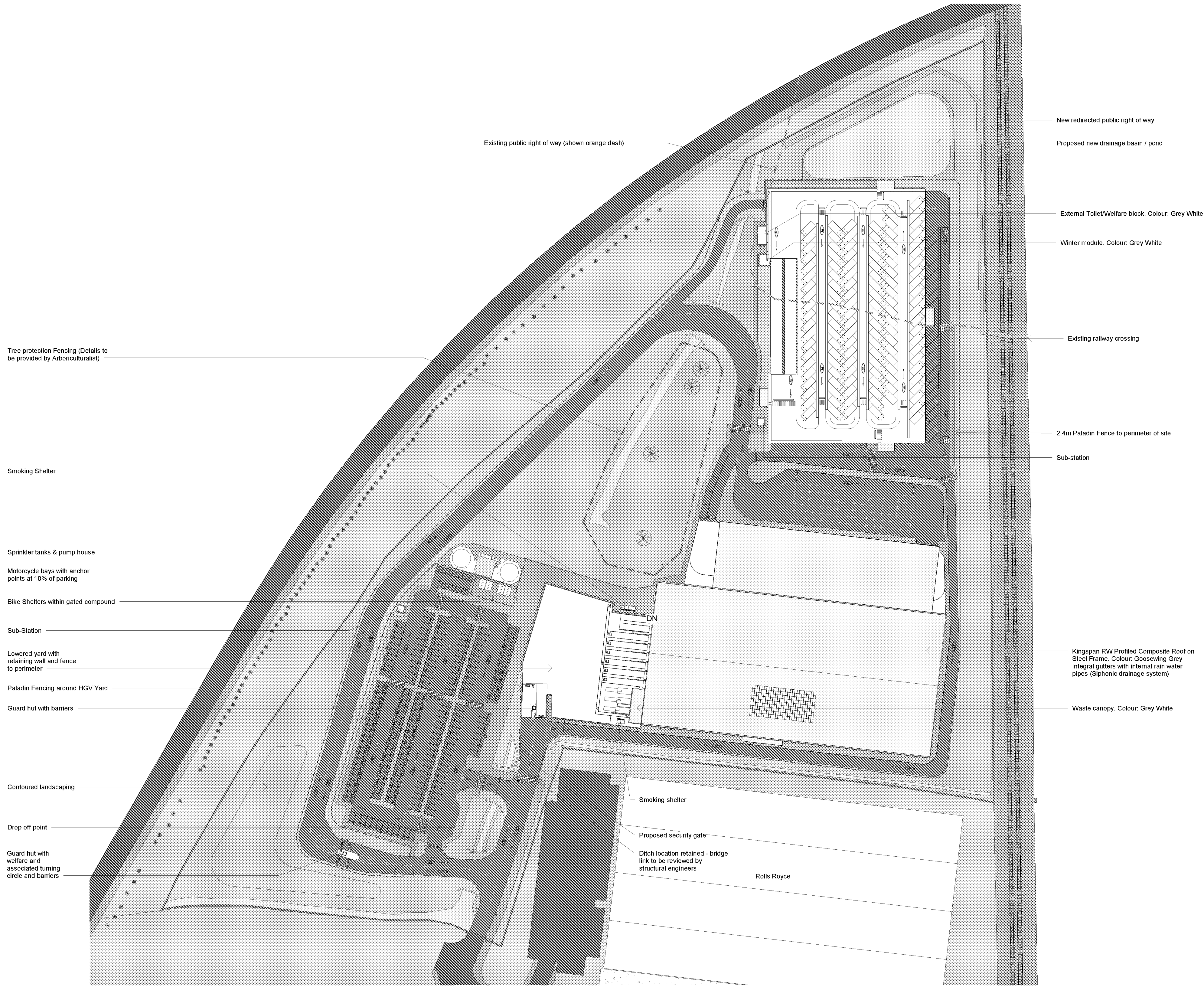
LEGEND

- Site Boundary
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- Category C: Lower value could be retained
- Category U: For removal
- RPA: Root Protection Area
- Tree Removal Required
- Trees to be Retained



Site Plan Provided by Client

Drawing 1 – Proposed Development Plan



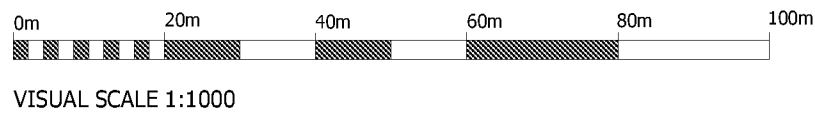
Proposed Site Plan
1 : 1000

Scale for planning purposes only
ashton smith to be notified of discrepancies in figured dimensions
Contractors must check all dimensions from site
This drawing is copyright and is for use on this site only
This drawing is to be used solely for information as entitled
For other information refer to the latest revision of any cross referenced drawing



LOCATION PLAN:

NOTES:



P0	03/09/2021	Existing Public Right of Way added
P6	07/09/2021	Amended following comments from Vectos
P7	17/05/2021	Updated following Planning Consultants comments
P1	21/05/2021	Pond relocated to North of site
P2	26/08/2021	Landscaping amended to avoid RPA following detailed design. Green wall to Van Storage added following planning officers comments
P3	27/05/2021	Updated following DWD comments and derogation review
P5	31/08/2021	Site Reference plans updated, canopy to warehouse amended

REV	DATE	DESCRIPTION

DE	GC
DE	GC
DE	GC
DE	GC

DRAWN BY	CHECK BY

PROJECT TITLE Bognor Regis					
DRAWING TITLE Proposed Site Plan					
RIBA STAGE	STATUS	PLANNING	DRAWN BY	CHECKED BY	
			DE	GC	
SHEET	SCALE	DATE	SUITABILITY	REVISION	
A1	1 : 1000	30/04/2021	S2	P7	
DRAWING NO. 21023 - ASA - V0 - XX - DR - A - PL03 - (S2 - P7)					

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Appendix A – References

References

BS4428:1989 - Code of Practice for General Landscape Operations. BSI British Standards, London.

BS3936-1:1992, Nursery Stock – Part 1: Specification for Trees and Shrubs. BSI British Standards, London.

BS3998:2010 - Tree Work - Recommendations. BSI British Standards, London.

BS4043:1989 - Transplanting Root-Balled Trees. BSI British Standards, London.

BS5837:2012 - Trees in Relation to Design, Demolition and Construction – Recommendations. BSI, London.

National House Building Council (2008). NHBC Standards Chapter 4.2 - Building Near Trees. NHBC, Amersham.

National Joint Utilities Group (2007). Volume 4: NJUG Guidelines for the Planning.

Installation and Maintenance of Utility Apparatus in Proximity to Trees (Issue 2) – Operatives Handbook.

Appendix B – BS5837:2012 Tree Schedule

BS5837:2012 Tree Schedule

Ref	Species	Measurements	Physiological Cond	Structural Cond	General Observations	Retention Category	BPA
T001	Pedunculate Oak (<i>Quercus robur</i>)	Height (m): 14 Stem Diam (mm): 1150 Spread (m): SW, 70, SE, SW Crown Clearance (m): 4 Lowest Branch (m): 3(N) Life Stage: Mature Rem. Contrib: 20+ Years	Fair	Fair	Thinning canopy to South. Water filled ditch to South.	B1,2,3	Radius: 15.8m Area: 389 sq m.
T002	Pedunculate Oak (<i>Quercus robur</i>)	Height (m): 15 Stem Diam (mm): 1600 Spread (m): 11N, 10E, 25, SW Crown Clearance (m): 3 Lowest Branch (m): 4(S) Life Stage: Mature Rem. Contrib: 40+ Years	Good	Fair	Structural fracture on southern side of northern primary branch at 3m above ground level- not significant.	A1,2,3	Radius: 25.0m Area: 707 sq m.
T003	Pedunculate Oak (<i>Quercus robur</i>)	Height (m): 14 Spread (m): SW, SE, SW, SW Crown Clearance (m): 2 Lowest Branch (m): 4(E) Life Stage: Mature Rem. Contrib: 20+ Years	Good	Fair		A1,2,3	Radius: 4.6m Area: 137 sq m.
T004	Pedunculate Oak (<i>Quercus robur</i>)	Height (m): 14 Spread (m): SW, SE, SE, SW Crown Clearance (m): 2 Lowest Branch (m): 3(W) Life Stage: Mature Rem. Contrib: 20+ Years	Fair	Fair	Die back to upper canopy - major deadwood visible	B1,2,3	Radius: 7.2m Area: 163 sq m.
T005	Weeping Willow (<i>Salix babingtonii</i>)	Height (m): 3 Stem Diam (mm): 220 Spread (m): SW, SE, SE, SW Crown Clearance (m): 1 Lowest Branch (m): 1(N) Life Stage: Mature Rem. Contrib: 10 Years	Fair	Fair	Coppice stump - severed at ground level so should die back in the short term.	U	None - due to retention category of U.
T006	Goat Willow (<i>Salix caprea</i>), Ash (<i>Fraxinus excelsior</i>), Alder (<i>Sambucus nigra</i>)	Height (m): 3 Stem Diam (mm): 250 Spread (m): SW, SE, SE, SW Crown Clearance (m): 0.5 Lowest Branch (m): 0.5(N) Life Stage: Mature Rem. Contrib: 10+ Years	Fair	Fair	Row of unmanaged trees.	C2	Radius: 15m Area: 706.93 sq m.

Ref	Species	Measurements	Physiological Cond	Structural Cond	General Observations	Retention Category	RPA
T007	Pedunculate Oak (<i>Quercus robur</i>)	Height (m): 10 Stem Diam (mm): 550 Spread (m): 7.1, 6.5, 5.1 Crown Clearance (m): 2 Lowest Branch (m): 2.5M Life Stage: Mature Rem. Contrib.: 20+ Years	Good	Fair	Very glad main stem – potential open grown specimen tree	B1	Radius: 6.6m Area: 136.87 sq.m.
G011	Hawthorn (<i>Crataegus monogyna</i>); Elder (<i>Sambucus nigra</i>); Oak (<i>Quercus robur</i>)	Height (m): 7 Stem Diam (mm): 250 Spread (m): 2.4, 2.6, 2.5, 2.1W Crown Clearance (m): 0m Lowest Branch (m): 0.1N Life Stage: Mature Rem. Contrib.: 35+ Years	Good	Fair	Scrub layer consisting of hawthorn & sporadic small tree species. Single Oak located centrally within group.	C2	Radius: 3 Area: 28 sq.m.
T013	Ash (<i>Fraxinus excelsior</i>)	Height (m): 10 Stem Diam (mm): 200 Spread (m): 3.1, 3.5, 3.5, 3.1W Crown Clearance (m): 5m Lowest Branch (m): 3.1M Life Stage: Early mature Rem. Contrib.: 30+ Years	Good	Fair	Multi stemmed tree	C1	Radius: 35.2 Area: 387 sq.m.

Table 2 – Key to Tree Schedule

Measurements	Age – Class	Overall Condition	BS 5837 2005 : Cascade Chart for Quality Assessment/Retention Category	Symbols
MS – Multi-stemmed	Y - Young	G – Good	A – High	< = less than
Ht - Height in metres	EM – Early-mature	F – Fair	B – Moderate	~ = approximately
Stem – Stem Diameter at 1.5m in mm	SM – Semi-Mature	P – Poor	C – Low	> = greater than
Crown – Crown spread in metres	M – Mature	D – Dead	R – Trees for Removal	
TD - Trunk Division (height in metres)	V - Veteran Est Yrs – estimate of years remaining (>40 years; 20 –40 years; <20 years)		Sub-categories: 1 = mainly arboricultural values 2 = mainly landscape values 3 = mainly cultural values.	

Appendix C – Temporary Protective Fencing Specification

Temporary Protective Fencing Specification

Temporary Protective Fencing Specification

- ▲ **Construction Exclusion Zones (CEZs)**, enclosed by **Temporary Protective Fencing**, as detailed below and to be agreed with the Local Planning Authority (LPA), shall:
- ▲ Be retained in place throughout the development process, as specified in the 'Temporary Protective Fencing Construction' section below and detailed in BS5837:2012 ;
- ▲ Be sited in the area(s) defined by the Root Protection Areas or, if applicable, the CEZ, as detailed on the associated Tree Plan;
- ▲ Be erected prior to any construction, demolition or excavation works and remain in place for the duration of the project;
- ▲ Preclude any delivery of site accommodation and/or materials and/or plant machinery;
- ▲ Preclude all construction related activity, with the sole exception of specified arboricultural works and any other works to be carried out under supervision that have been agreed by all parties; and
- ▲ Preclude the storage of all development related materials and substances including fuels, oils, additives, cement and/or any other deleterious substance. Any incursion into CEZs must be by prior arrangement, following consultation with the LPA.

Temporary Protective Fencing Construction

- ▲ Temporary protective fencing panels shall be weldmesh "Heras" panels of at least 2.0 m in height;
- ▲ The panels shall butt together and be securely fixed to a scaffold framework, as per 3 to 5 below;
- ▲ The scaffold framework shall comprise of upright poles of at least 3.0 m in length driven no less than 0.6 m into the ground at maximum 3.0 m centres with horizontal and diagonal poles fixed to the uprights, as per 4 to 5 below;
- ▲ The two horizontal rail poles shall be attached to the uprights at heights of 0.6 and 1.8 m with 3 no. clamps to each joint;
- ▲ The diagonal scaffold pole struts be clamped to the top rail of the scaffold framework at a 45° angle and extend back into the CEZ and clamped to a 0.7 m length of scaffold tube that shall be driven no less than 0.5 m into the ground;
- ▲ No fixing shall be made to any tree and all possible precautions shall be taken to prevent damage to tree roots when locating posts;
- ▲ A 600 mm x 300 mm warning sign reading "TREE PROTECTION AREA KEEP OUT" (see Figure A, below) shall be fixed to every 10 m length of protective fencing; and
- ▲ On completion and prior to any demolition or construction works, site preparation, excavation or delivery of plant and materials, the LPA shall inspect and approve the Temporary Protective Fencing.