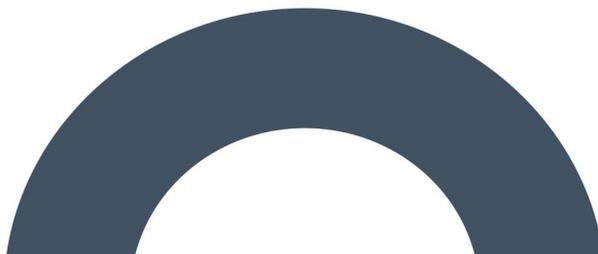


Biodiversity Management Plan

TUS Moylish to City Active
Travel Scheme





DOCUMENT DETAILS

Client: **Limerick City & County Council.**

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1. INTRODUCTION

This report sets out the general biodiversity management measures and recommendations to help enhance biodiversity along the proposed cycleway active travel development from TUS Moylish Campus to Limerick City on Cratloe Road, Sexton Street North, High Road, Belfield Court and Belfield Gardens, Co. Limerick.

The route is located within the existing built road infrastructure, associated footpaths, and grassland strips with street tree and flowerbed planting. This busy urban environment is of low ecological sensitivity due to the heavily modified nature of the site. The proposed cycleway scheme forms part of the strategic urban and transport planning for Limerick and has been identified to provide safe, more coherent, direct, attractive, and comfortable facilities to encourage cycling as a sustainable transport option.

The site location is provided in Figure 1-1. The Landscape Plan as prepared by Limerick City & County Council (July 2022) included in **Appendix 1** of this report which includes a series of measures to help retain the existing trees and habitats which provide some potential foraging and commuting networks for wildlife and to enhance biodiversity.

A Tree Survey Report (June 2022) was prepared by Independent Tree Surveys Ltd. to provide an arboricultural assessment of the 90 trees, of those 74 were street trees and 16 were trees that are growing in some of the private gardens along the proposed route to input into the design and planning of the new development. A total of 25 trees are proposed to be felled as a result of the proposed development. The Tree Survey Report accompanies this planning application and the Tree Protection Plan Drawings included as an appendix to that report is included as **Appendix 2** to this Biodiversity Management Plan.

A dedicated tree survey of the 25 trees to be removed was carried out in July 2022 by Claire Stephens (B.Sc. Env, Qualifying CIEEM) of MKO. An emergence/activity survey for bats was carried out by Claire Stephens and Neansaí O' Donovan (B.Sc., Qualifying CIEEM). A Bat Survey Report (MKO, July 2022) accompanies this planning application which outlines the results of the Bat Survey (2022). This survey was carried out to identify the potential for roosting bats on the site. It was found that the vast majority of trees showed negligible to low potential.

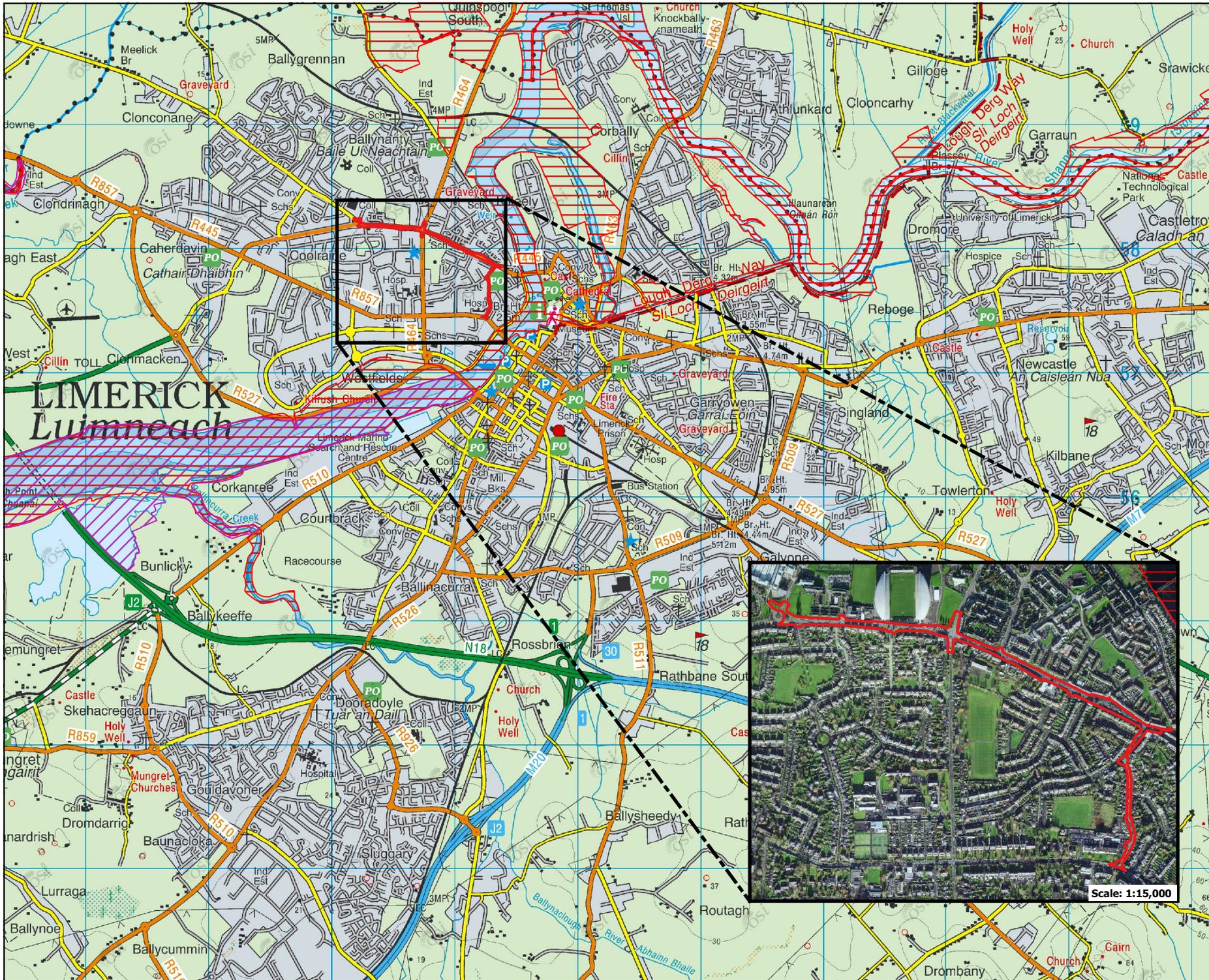
No bat roosts were identified within the boundary of the proposed development and no roosting site of National Importance (i.e., site greater than 100 individuals) was recorded. Bat activity within the site was dominated by Common pipistrelle. This species is widespread across Ireland.

The Biodiversity Management Plan also provides additional measures for enhancing existing biodiversity that will help maintain connectivity between habitats within the site and the wider landscape. The plan provides for the erection of public information signage. This aims to inform the public of the species to be found within the site as well as the ongoing management measures being implemented within the site that forms part of the active travel scheme route which is accessible to the public. The plan considers the national All-Ireland Pollinator Plan 2021-2025 priorities, which although relate to broader strategies, aims to prevent biodiversity degradation and provide enhancement where opportunities exist. The Limerick Development Plan 2022 – 2028 was reviewed as part of this assessment. The focus of this Biodiversity Management Plan is to secure the future management, maintenance, and enhancement of the habitats within and adjacent to the proposed cycle route within Limerick City. In addition public education will be facilitated through erection of signage along the route.

1.1

Statement of Authority

A baseline ecological survey was undertaken on the on the 23rd of July 2020 and on the 4th of July 2022 by Claire Stephens (B.Sc. Env, Qualifying CIEEM) of MKO. Claire is an experienced ecologist with 4 years' professional ecological consultancy experience. This report has been prepared by Claire Stephens. One dusk bat emergence and activity survey was undertaken on the evening of the 4th of July by Claire Stephens and Neansaí O' Donovan (B.Sc., Qualifying CIEEM). This report has been reviewed by Sarah Mullen (B.Sc., Ph.D., ACIEEM) who has 6 years' experience in ecological consultancy.



Map Legend

-  Site Boundary
-  Special Area of Conservation
-  Special Protection Area



Drawing Title

Site Location

Project Title	
TUS to City Active Travel Scheme	
Drawn By	Checked By
CS	SM
Project No.	Drawing No.
200436	Figure 1-1
Scale	Date
1:40000	21.07.2022



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2. MANAGEMENT AND ENHANCEMENT MEASURES

The following subsections describe the biodiversity management measures that will be undertaken along the TUS Moylish Campus to Limerick City Active Travel scheme. The measures included are practical and easy to maintain for the future which is important in achieving cost effective and relevant management actions. Management will focus on the maintenance of the existing treeline and individual trees/scattered tree habitat and existing linear ornamental hedging along the route. The proposal will include the for grassland enhancement and planting of areas of wildflower meadows, native hedgerows along the development and the addition of specimen trees to provide and maintain connections between the site and sites of higher ecological significance in the wider area.

2.1 Construction Phase Measures

The following measures will be implemented during the construction phase of the development for the protection of the habitats adjacent to the development footprint:

- The site boundary will be securely fenced off prior to construction activities to avoid potential for impact on the existing street trees and scattered trees to be maintained. There will be no construction access outside these fenced areas.
- The Tree Protection Plan prepared by Independent Tree Surveys Ltd. which is included as **Appendix 2** to this report will be adhered to and implemented prior to works taking place onsite. This includes for the erection of tree protective fencing and or hoarding to prevent the construction work and vehicles encroaching into the root protection areas of the existing trees being retained. The tree protection measures will be overseen and directed on-site by a dedicated site arborist. The arborist should also make regular visits to the site during the construction process to ensure compliance and be available to provide advice and guidance where necessary.
- Trees that are located adjacent to the site will be adequately protected in accordance with the relevant guidelines (British Standard BS 5837: 2012 Trees in relation to design, demolition, and construction.)
- Construction activity will follow best practice to avoid run off or any impacts of construction in the areas outside the site.
- Stripped topsoil will be stored for use in the landscaping of the development.
- The removal of vegetation within the proposed development site will comply with the requirements of the Wildlife Act 1976-2021.

2.2 Grassland Management and Enhancement

The proposed grassed areas will be reseeded with a mix of areas of both short cut floral lawns and pollinator friendly wildflower seed mixes. Wildflower areas will be managed as follows:

- Cutting will not take place before characteristic annual, biennial or short-lived perennial plant species which depend on seed production have set seed (for example yellow rattle (*Rhinanthus minor*). Continued early grass cutting is known to reduce species richness. For this reason, cutting will be undertaken in August of each year. This will promote late-flowering species such as devil's bit scabious (*Succisa pratensis*) (Crofts, and Jefferson, (eds), 2009).
- Grass cut in the wildflower meadow each year will always be removed immediately and not left to decay on site. Where vegetation is left on site, changes in the botanical composition of the grassland may ensue. Excess vegetation left on site may also suppress low growing species and reduce species-richness. The removal of vegetation off the

- grassland will also help to impoverish the soil/ reduce nutrients and thereby suppress competitive grass species and enhance floral diversity.
- There will be no use of herbicides or artificial fertilisers during the management of the wildflower meadow.

2.3 Preservation and Enhancement of Linear Features

The proposed development has been designed to provide for the maintenance and protection of the existing treelines, individual trees and tree groups as well as ornamental hedgerows along the proposed cycleway route. These will be safeguarded by the erection of protective fencing as shown within the Tree Survey Report (June 2022) prepared by Independent Tree Surveys Ltd. which accompanies this planning application. No impacts on these linear features during the operational stage of the development are anticipated.

In addition to the retention of the majority of the existing trees, the landscape plan also proposes for the planting of additional linear features including native hedgerows and shrub and herbaceous planting and specimen trees along the route of the proposed cycle way area which will further help maintain connectivity between the site and the wider landscape.

Planting will use native and naturalised species where possible throughout. Enhancement of existing ornamental hedgerows along private boundaries will be undertaken with the planting of a new native hedge along stretches of the proposed scheme utilising species including native blackthorn, hawthorn, guelder rose, dog rose and holly.

Ornamental street trees will include species flowering in early spring species including Cherry Plum (*Prunus cerasifera*) and Wild Cherry (*Prunus avium*). New planting will be checked annually for damage and dead branches will be removed and weeds cleared. Cutting of treelines or hedgerows for maintenance within the land management area will be undertaken in line with the Wildlife Acts. All wild birds, their eggs, young and nests are protected under the Wildlife Act 1976-2021.

2.4 Faunal habitat enhancement measures

In order to enhance the urban environment habitat within the cycleway scheme boundary for wildlife, the following wildlife enhancement measures are proposed:

Bat boxes

As outlined within the Landscape Plan (**Appendix 1**) bat boxes will be provided along suitable areas of treelines throughout the site. While no roosting bats were identified within the site boundary during the survey undertaken in July 2022, this will provide greater potential for the establishment of roosting bats in the area. Bat boxes will be similar to the general purpose Schwegler IFF type bat boxes and will have a southerly orientation and be positioned at least 2m from the ground, away from artificial lighting. They will be placed adjacent to vegetation features such as treelines to ensure they are close to existing flight paths and can avoid wide open spaces (Collins, 2016). An appropriately qualified ecologist should advise on the locations at which bat boxes should be erected. An example of a suitable Schwegler IFF type bat box is provided in Plate 2-1.



Plate 2-1 Example of Schwegler IFF type bat box suitable for roosting bat species, open at the bottom allowing droppings to fall out so it does not need cleaning.

Bird boxes

As outlined within the Landscape Plan (**Appendix 1**) bird boxes will be erected along the existing semi-mature trees within the existing habitat and on the newly planted native tree species within the landscaped areas to facilitate common and widespread species such as blue tit and robin. An appropriately qualified ecologist should advise on the locations at which bird boxes should be erected. Examples of suitable bird boxes are shown here in Plate 2-2 below.



Plate 2-2 Tree creeper nest box design (left) and blue tit nest box design (right)

2.5

Public Information Signage

It is recommended to erect educational signage around the site to enhance awareness of local biodiversity and to inform the public about the biodiversity management measures within the site. The educational signage will:

- Highlight local habitats and species of interest by providing a list of plant and animal species known to occur in the area as well as information on these species.
- Highlight the importance of management measures/restricted cutting of the wildflower meadow for the long-term maintenance of this habitat type and floral diversity.
- Encourage community engagement in biodiversity conservation and management.

Plate 2 provides an example of suitable public information signage.



Plate 2-3 Example of information signage to be erected on site identifying that the area is being 'Managed for Biodiversity'

3.

CONCLUSION

The proposed development has been designed to secure the protection of existing green infrastructure within the development site within an existing urban highly modified environment. This includes tree line and scattered tree habitat along the road side maintain grass verges.

This Biodiversity Management Plan outlines how the development contributes to the protection and enhancement of existing green infrastructure within the site through maintenance of existing important features such as individual semi-mature street trees and tree line and through the provision of measures to further enhance biodiversity and green infrastructure throughout the site. These measures include the introduction of native hedgerow along large stretches of the route, specimen tree planting and the provision of areas of wildflower meadow containing pollinator friendly species which will be subject to a limited cutting regime. Existing amenity lawn areas will be enhanced to include such wildflower meadows or shorter floral lawns with wildflower mix incorporated to enhance the visual amenity and favour pollinators. These measures will increase habitat connectivity with the wider landscape and provide refuges for native species including pollinators.

In addition to the above, community information signage will help to provide a better understanding of the biodiversity in the area and management practices required to maintain the habitat in its optimal quality.

BIBLIOGRAPHY

All-Ireland Pollinator Plan 2021-2025. National Biodiversity Data Centre Series No. 25, Waterford. March 2021.

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Collins, J. (ed.) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn.). The Bat Conservation Trust, London.

Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (Habitats Directive) and Directive 2009/147/EC (codified version of Directive 79/409/EEC as amended) (Birds Directive) – transposed into Irish law as European Communities (Birds and Natural Habitats) Regulations 2011 (SI 477/2011).



APPENDIX 1

LANDSCAPE PLAN



NORTH

TUS MOYLISH

OLD CRATLOE ROAD

BROOKVILLE AVENUE

Specimen Tree
Short Floral Lawn
Existing Trees
Bat Box
Bird Box
Tree to be Removed

Crossing

Shrub Planting
Bulb Planting

Native Hedge
Specimen Tree
Wildflower Meadow
Cycletrack

Rain Garden

Raised Table

Bus Stop
Crossing

Specimen Tree

Raised Table

Cycletrack
Footpath

Crossing

Increased Soft Landscape Zone around Existing Tree

THOMOND PARK

MAYORSTONE UPPER

Soft Landscape Legend:

- Red line boundary
- Existing trees to be retained & protected
Refer to Independent Tree Surveys drawings for details
- Existing trees to be removed
Refer to Independent Tree Surveys drawings for details
- Native Short Cut Floral Lawn of Irish Provenance:
'Short Cut Wildflower Mixture' (DW01 by 'Design by Nature') or equal and approved
- Native Hedge planting:
Planted on low mound in a double staggered row, 4no. /lin.m. (60-100cm tall with post and wire fence at centre):
10% Guelder rose: *Viburnum opulus*, b/fr, 80-100cm
20% Hawthorn: *Crataegus monogyna*, b/fr, 80-100cm
10% Blackthorn: *Prunus spinosa*, b/fr, 100-120cm
10% Dog Rose: *Rosa canina*, b/fr, 60-80cm
30% Holly: *Ilex aquifolium*, t/b, 60-80cm
10% Spindle: *Euonymus europaeus*/r, 60-80cm
10% Cherry Plum: *Prunus cerasifera*, b/fr, 100-120cm
Under-planted with 20% Hart's Tongue Fern: *Asplenium scolopendrum*, 20% Hard Fern: *Blechnum spicant*, 30% Bloody Cranes-bill: *Geranium sanguineum*, 20% Wild Strawberry: *Fragaria vesca* and 10% Ivy: *Hedera hibernica* all 1L planted at 3no./m² and seeded with native wildflower mix of Irish Provenance:
'Hedgerow Wildflower Mixture' (suitable for light shade - EC04 by 'Design by Nature') or equal and approved.
- Specimen tree planting to include the following species:
(all min. 2.0m clear stem)
Columbar Oak: *Quercus robur* 'Fastigiata Koster', r/b, 18-20cm girth
Hornbeam: *Carpinus betulus* 'Frans Fontain', r/b, 18-20cm girth
Ornamental Pear: *Pyrus calleryana* 'Chanticleer', r/b, 18-20cm girth
Wild Cherry: *Prunus avium* 'Plena', r/b, 18-20cm girth
Beech: *Fagus sylvatica*, r/b, 20-25cm girth
Oak: *Quercus robur*, r/b, 20-25cm girth
Scots Pine: *Pinus sylvestris*, r/b, 18-20cm girth
Walnut: *Juglans regia*, r/b, 18-20cm girth
Sweet Chestnut: *Castanea sativa*, r/b, 18-20cm girth
Cherry Plum: *Prunus cerasifera*, r/b, 16-18cm girth

- Shrub & Herbaceous planting:
To include the following pollinator mix species (but not limited to):
(typical plant sizes and planting density shown)
Sarcococca confusa, c/g, 3L, 3/sq.m
Berberis darwinii, c/g, 3L, 3/sq.m
Mahonia x media 'Charity', c/g, 5L, 3/sq.m
Ribes nigrum, c/g, 3L, 3/sq.m
Geranium 'Sweet Heidi', c/g, 2L, 4/sq.m
Buddleja davidii, c/g, 3L, 3/sq.m
Fuchsia 'Gem', c/g, 2L, 3/sq.m
Ribes rubrum, c/g, 3L, 3/sq.m
Erica carnea 'Nathalie', c/g, 2L, 3/sq.m
Bergenia 'Summertime', c/g, 2L, 3/sq.m
Lavandula angustifolia 'Imperial Gem', c/g, 2L, 3/sq.m
Laurus nobilis f. *angustifolia*, c/g, 10L, 3/sq.m
Rosmarinus officinalis 'Sissinghurst Blue', c/g, 2L, 3/sq.m
- Bulb planting:
Daffodil: *Narcissus* 'Golden Echo', bulb, 18/sq.m
Daffodil: *Narcissus* 'Tete-a-Tete', 18/sq.m
Wood Anemone: *Anemone nemorosa*, 18/sq.m
Snake's head fritillary: *Fritillaria meleagris*, 12/sq.m
Bluebell: *Hyacinthoides non-scripta*, 18/sq.m

- Native wildflower meadow of Irish Provenance:
'Biodiversity Wildflower Meadow Mixture' (suitable for light shade - WF02 by 'Design by Nature') or equal and approved
- Swale / Bio-retention Area
- Bird box locations
- Bat box locations

Note: Refer to Engineer's drawings for details.



Typical tree planting

- Footpath / Cycletrack - Refer to Engineer's drawings for details
- Road / Road Markings - Refer to Engineer's drawings for details
- Coloured Road Surfaces / Tactile Pavings and Crossings - Refer to Engineer's drawings for details



Typical native hedgerow Bird box Typical wildflower meadow

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DATE	REV.	BY	CH.	DESCRIPTION

Comhairle Cathrach
In Conradh Limerick
Limerick City
& County Council

Transport & Mobility
Merchants Quay
Limerick

DATE: 2022-07-29
SCALE: 1:500
DRAWN: MS
CHECKED: MS
JOB NO: LCC190003

PROJECT:
TUS Moylish to City
Active Travel Scheme
Part B Planning

DRAWING TITLE:
Landscape Plan 1/4

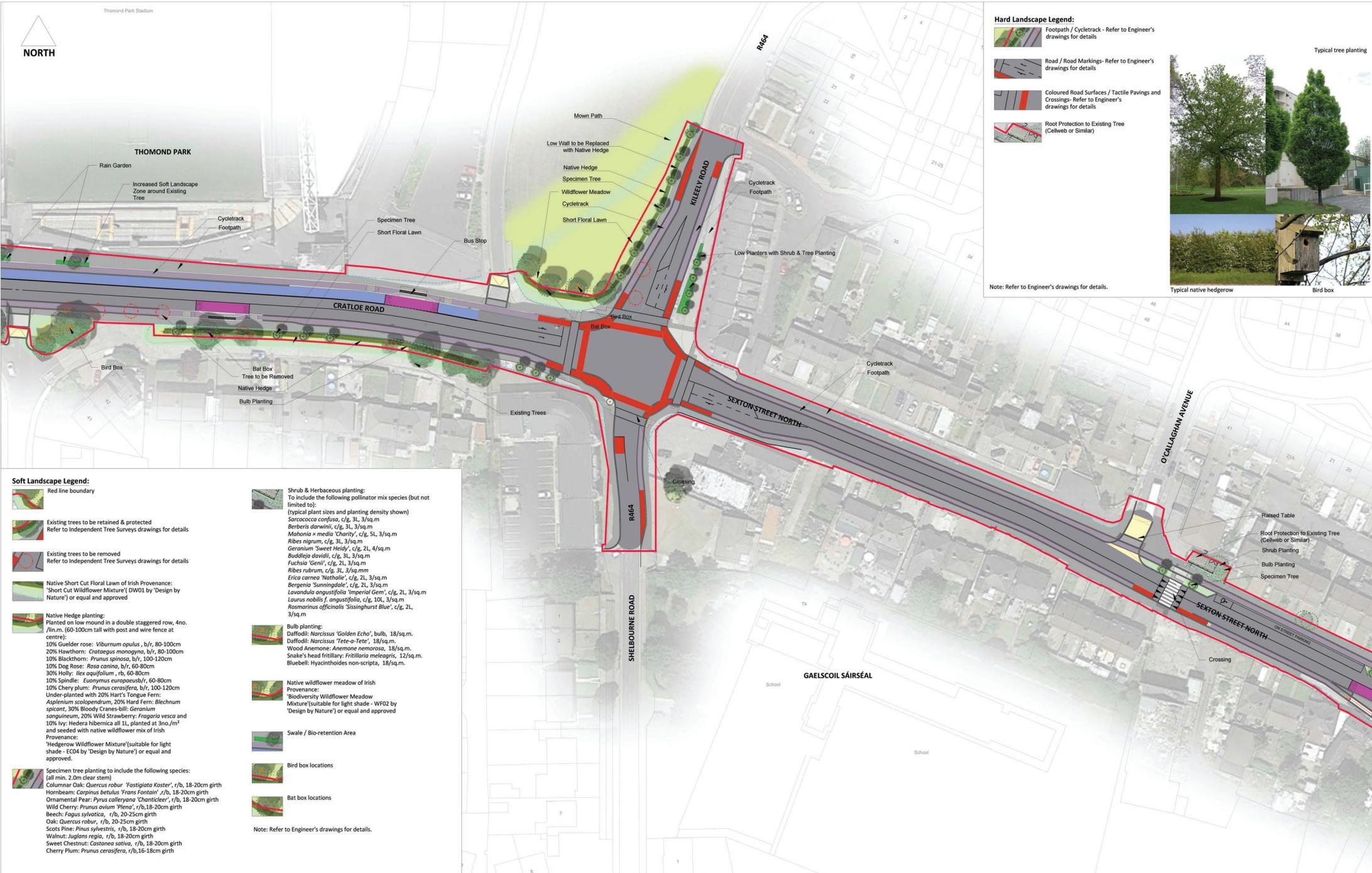
DRAWING NO:
LP01

SHEET SIZE:
A1

REVISION:
00



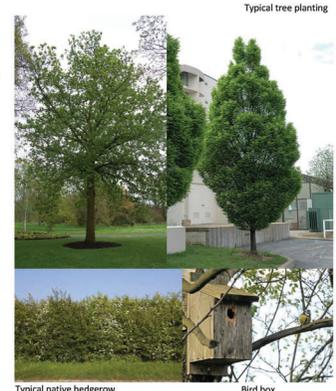
Thomond Park Stadium



Hard Landscape Legend:

- Footpath / Cycletrack - Refer to Engineer's drawings for details
- Road / Road Markings- Refer to Engineer's drawings for details
- Coloured Road Surfaces / Tactile Pavings and Crossings- Refer to Engineer's drawings for details
- Root Protection to Existing Tree (Cellweb or Similar)

Note: Refer to Engineer's drawings for details.



Soft Landscape Legend:

- Red line boundary
- Existing trees to be retained & protected
Refer to Independent Tree Surveys drawings for details
- Existing trees to be removed
Refer to Independent Tree Surveys drawings for details
- Native Short Cut Floral Lawn of Irish Provenance:
"Short Cut Wildflower Mixture" DW01 by "Design by Nature)" or equal and approved
- Native Hedge planting:
Planted on low mound in a double staggered row, 4no./lin.m. (60-100cm tall with post and wire fence at centre):
10% Guelder rose: *Viburnum opulus*, b/r, 80-100cm
20% Hawthorn: *Crataegus monogyna*, b/r, 80-100cm
10% Blackthorn: *Prunus spinosa*, b/r, 100-120cm
10% Dog Rose: *Rosa canina*, b/r, 60-80cm
30% Holly: *Ilex aquifolium*, rb, 60-80cm
10% Spindle: *Euonymus europaeus*, b/r, 60-80cm
10% Cherry plum: *Prunus cerasifera*, b/r, 100-120cm
Under-planted with 20% Hart's Tongue Fern: *Asplenium scolopendrium*, 20% Hard Fern: *Blechnum spicant*, 30% Bloody Cranes-bill: *Geranium sanguineum*, 20% Wild Strawberry: *Fragaria vesca* and 10% Ivy: *Hedera hibernica* all 1L, planted at 3no./m² and seeded with native wildflower mix of Irish Provenance:
"Hedgerow Wildflower Mixture"(suitable for light shade - EC04 by "Design by Nature)" or equal and approved.
- Specimen tree planting to include the following species: (all min. 2.0m clear stem)
Columnar Oak: *Quercus robur* 'Fastigiata Koster', r/b, 18-20cm girth
Hornbeam: *Carpinus betulus* 'Frans Fontain', r/b, 18-20cm girth
Ornamental Pear: *Pyrus calleryana* 'Chanticleer', r/b, 18-20cm girth
Wild Cherry: *Prunus avium* 'Pleni', r/b, 18-20cm girth
Beech: *Fagus sylvatica*, r/b, 20-25cm girth
Oak: *Quercus robur*, r/b, 20-25cm girth
Scots Pine: *Pinus sylvestris*, r/b, 18-20cm girth
Walnut: *Juglans regia*, r/b, 18-20cm girth
Sweet Chestnut: *Castanea sativa*, r/b, 18-20cm girth
Cherry Plum: *Prunus cerasifera*, r/b, 16-18cm girth
- Shrub & Herbaceous planting:
To include the following pollinator mix species (but not limited to):
(typical plant sizes and planting density shown)
Sarcococca confusa, c/g, 3L, 3/sq.m
Berberis darwinii, c/g, 2L, 3/sq.m
Mahonia x media 'Charity', c/g, 5L, 3/sq.m
Ribes nigrum, c/g, 3L, 3/sq.m
Geranium 'Sweet Heidi', c/g, 2L, 4/sq.m
Buxifolia davidii, c/g, 3L, 3/sq.m
Fuchsia 'Genii', c/g, 2L, 3/sq.m
Ribes rubrum, c/g, 3L, 3/sq.m
Erica carnea 'Nathalie', c/g, 2L, 3/sq.m
Bergenia 'Sunningdale', c/g, 2L, 3/sq.m
Lavandula angustifolia 'Imperial Gem', c/g, 2L, 3/sq.m
Laurus nobilis f. *angustifolia*, c/g, 10L, 3/sq.m
Rosmarinus officinalis 'Sissinghurst Blue', c/g, 2L, 3/sq.m
- Bulb planting:
Daffodil: *Narcissus 'Golden Echo'*, bulb, 18/sq.m.
Daffodil: *Narcissus 'Tete-a-Tete'*, 18/sq.m.
Wood Anemone: *Anemone nemorosa*, 18/sq.m.
Snake's head fritillary: *Fritillaria meleagris*, 12/sq.m.
Bluebell: *Hyacinthoides non-scripta*, 18/sq.m.
- Native wildflower meadow of Irish Provenance:
Biodiversity Wildflower Meadow Mixture (suitable for light shade - WF02 by "Design by Nature)" or equal and approved
- Swale / Bio-retention Area
- Bird box locations
- Bat box locations

Note: Refer to Engineer's drawings for details.

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Transport & Mobility
Merchants Quay
Limerick

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CHECKED: MS
JOB NO: LCC190003

PROJECT:
TUS Moylish to City
Active Travel Scheme
STAGE:
Part 8 Planning

DRAWING TITLE:
Landscape Plan 2/4

DRAWING NO.:
LP01

SHEET SIZE:
A1

REVISION:
00



- Hard Landscape Legend:**
- Footpath / Cycletrack - Refer to Engineer's drawings for details
 - Road / Road Markings- Refer to Engineer's drawings for details
 - Coloured Road Surfaces / Tactile Pavings and Crossings- Refer to Engineer's drawings for details



- Soft Landscape Legend:**
- Red line boundary
 - Existing trees to be retained & protected
Refer to Independent Tree Surveys drawings for details
 - Existing trees to be removed
Refer to Independent Tree Surveys drawings for details
 - Native Short Cut Floral Lawn of Irish Provenance:
'Short Cut Wildflower Mixture' (DW01 by 'Design by Nature') or equal and approved
 - Native Hedge planting:
Planted on low mound in a double staggered row, 4no./lin.m. (60-100cm tall with post and wire fence at centre):
10% Gaelder rose: *Viburnum opulus*, b/r, 80-100cm
20% Hawthorn: *Crataegus monogyna*, b/r, 80-100cm
10% Blackthorn: *Prunus spinosa*, b/r, 100-120cm
10% Dog Rose: *Rosa canina*, b/r, 60-80cm
30% Holly: *Ilex aquifolium*, t/b, 60-80cm
10% Spindle: *Euonymus europaeus*, b/r, 60-80cm
10% Cherry plum: *Prunus cerasifera*, b/r, 100-120cm
Under-planted with 20% Hart's Tongue Fern: *Asplenium scolopendrum*, 20% Hard Fern: *Blechnum spicant*, 30% Bloody Cranes-bill: *Geranium sanguineum*, 20% Wild Strawberry: *Fragaria vesca* and 10% Ivy: *Hedera hibernica* all 1L, planted at 3no./m² and seeded with native wildflower mix of Irish Provenance:
'Hedgerow Wildflower Mixture' (suitable for light shade - EC04 by 'Design by Nature') or equal and approved.
 - Specimen tree planting to include the following species: (all min. 2.0m clear stem)
Columnar Oak: *Quercus robur* 'Fastigiata Koster', t/b, 18-20cm girth
Hornbeam: *Carpinus betulus* 'Frans Fontain', t/b, 18-20cm girth
Ornamental Pear: *Pyrus calleryana* 'Chanticleer', t/b, 18-20cm girth
Wild Cherry: *Prunus avium* 'Plena', t/b, 18-20cm girth
Beech: *Fagus sylvatica*, t/b, 20-25cm girth
Oak: *Quercus robur*, t/b, 20-25cm girth
Scots Pine: *Pinus sylvestris*, t/b, 18-20cm girth
Walnut: *Juglans regia*, t/b, 18-20cm girth
Sweet Chestnut: *Castanea sativa*, t/b, 18-20cm girth
Cherry Plum: *Prunus cerasifera*, t/b, 16-18cm girth
 - Shrub & Herbaceous planting:
To include the following pollinator mix species (but not limited to):
(typical plant sizes and planting density shown)
Sarcococca confusa, c/g, 3L, 3/sq.m
Berberis darwinii, c/g, 3L, 3/sq.m
Mahonia x media 'Charity', c/g, 5L, 3/sq.m
Ribes nigrum, c/g, 3L, 3/sq.m
Geranium 'Sweet Heidi', c/g, 2L, 4/sq.m
Buddleja davidii, c/g, 3L, 3/sq.m
Fuchsia 'Genii', c/g, 2L, 3/sq.m
Ribes rubrum, c/g, 3L, 3/sq.m
Erica carnea 'Nathalie', c/g, 2L, 3/sq.m
Bergenia 'Sunningdale', c/g, 2L, 3/sq.m
Lavandula angustifolia 'Imperial Gem', c/g, 2L, 3/sq.m
Laurus nobilis f. *angustifolia*, c/g, 10L, 3/sq.m
Rosmarinus officinalis 'Sissinghurst Blue', c/g, 2L, 3/sq.m
 - Bulb planting:
Daffodil: *Narcissus* 'Golden Echo', bulb, 18/sq.m
Daffodil: *Narcissus* 'Tete-a-Tete', 18/sq.m
Wood Anemone: *Anemone nemorosa*, 18/sq.m
Snake's head fritillary: *Fritillaria meleagris*, 12/sq.m
Bluebell: *Hyacinthoides non-scripta*, 18/sq.m
 - Native wildflower meadow of Irish Provenance:
'Biodiversity Wildflower Meadow Mixture' (suitable for light shade - WF02 by 'Design by Nature') or equal and approved
 - Swale / Bio-retention Area
 - Bird box locations
 - Bat box locations
- Note: Refer to Engineer's drawings for details.

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REVISIONS

DATE	REV.	BY	CH.	DESCRIPTION

Transport & Mobility
 Merchants Quay
 Limerick

DATE: 2022-07-29
 SCALE: 1:500
 DRAWN: MS
 CHECKED: MS
 JOB NO: LCC190003

PROJECT:
 TUS Moylish to City
 Active Travel Scheme
STAGE:
 Part 8 Planning
DRAWING TITLE:
 Landscape Plan 3/4

DRAWING NO:
 LP01

SHEET SIZE:
 A1

REVISION:
 00



Soft Landscape Legend:

- Red line boundary
- Existing trees to be retained & protected
Refer to Independent Tree Surveys drawings for details
- Existing trees to be removed
Refer to Independent Tree Surveys drawings for details
- Native Short Cut Floral Lawn of Irish Provenance: 'Short Cut Wildflower Mixture' DW01 by 'Design by Nature' or equal and approved
- Native Hedge planting:
Planted on low mound in a double staggered row, 4no./lin.m. (60-100cm tall with post and wire fence at centre):
10% Guelder rose: *Viburnum opulus*, b/r, 80-100cm
20% Hawthorn: *Crataegus monogyna*, b/r, 80-100cm
10% Blackthorn: *Prunus spinosa*, b/r, 100-120cm
10% Dog Rose: *Rosa canina*, b/r, 60-80cm
30% Holly: *Ilex aquifolium*, r/b, 60-80cm
10% Spindle: *Eunymus europaeus*, b/r, 60-80cm
10% Chery plum: *Prunus cerasifera*, b/r, 100-120cm
Under-planted with 20% Hart's Tongue Fern: *Asplenium scolopendrium*, 20% Hard Fern: *Blechnum spicatum*, 20% Bloody Crane-bill: *Geranium sanguineum*, 20% Wild Strawberry: *Fragaria vesca* and 10% Ivy: *Hedera hibernica* all 1L, planted at 3no./m² and seeded with native wildflower mix of Irish Provenance: 'Hedgerow Wildflower Mixture' (suitable for light shade - WF02 by 'Design by Nature') or equal and approved.
- Specimen tree planting to include the following species: (all min. 2.0m clear stem)
Columnar Oak: *Quercus robur* 'Fastigiata Koster', r/b, 18-20cm girth
Hornbeam: *Carpinus betulus* 'Frans Fontain' r/b, 18-20cm girth
Ornamental Pear: *Pyrus calleryana* 'Chanticleer', r/b, 18-20cm girth
Wild Cherry: *Prunus avium* 'Plena', r/b, 18-20cm girth
Beech: *Fagus sylvatica*, r/b, 20-25cm girth
Oak: *Quercus robur*, r/b, 20-25cm girth
Scots Pine: *Pinus sylvestris*, r/b, 18-20cm girth
Walnut: *Juglans regia*, r/b, 18-20cm girth
Sweet Chestnut: *Castanea sativa*, r/b, 18-20cm girth
Cherry Plum: *Prunus cerasifera*, r/b, 18-20cm girth
- Shrub & Herbaceous planting:
To include the following pollinator mix species (but not limited to):
(typical plant sizes and planting density shown)
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Berberis darwinii, c/g, 3L, 3/sq.m
Mahonia x media 'Charity', c/g, 5L, 3/sq.m
Ribes nigrum, c/g, 3L, 3/sq.m
Geranium 'Sweet Heidi', c/g, 2L, 4/sq.m
Buddleja davidii, c/g, 3L, 3/sq.m
Fuchsia 'Genii', c/g, 2L, 3/sq.m
Ribes rubrum, c/g, 3L, 3/sq.m
Erica carnea 'Nathalia', c/g, 2L, 3/sq.m
Bergenia 'Sunningdale', c/g, 2L, 3/sq.m
Lavandula angustifolia 'Imperial Gem', c/g, 2L, 3/sq.m
Laurus nobilis f. *angustifolia*, c/g, 10L, 3/sq.m
Rosmarinus officinalis 'Sissinghurst Blue', c/g, 2L, 3/sq.m
- Bulb planting:
Daffodil: *Narcissus* 'Golden Echo', bulb, 18/sq.m
Daffodil: *Narcissus* 'Tete-a-Tete', 18/sq.m
Wood Anemone: *Anemone nemorosa*, 18/sq.m
Snake's head fritillary: *Fritillaria meleagris*, 12/sq.m
Bluebell: *Hyacinthoides non-scripta*, 18/sq.m
- Native wildflower meadow of Irish Provenance: 'Biodiversity Wildflower Meadow Mixture' (suitable for light shade - WF02 by 'Design by Nature') or equal and approved
- Swale / Bio-retention Area
- Bird box locations
- Bat box locations

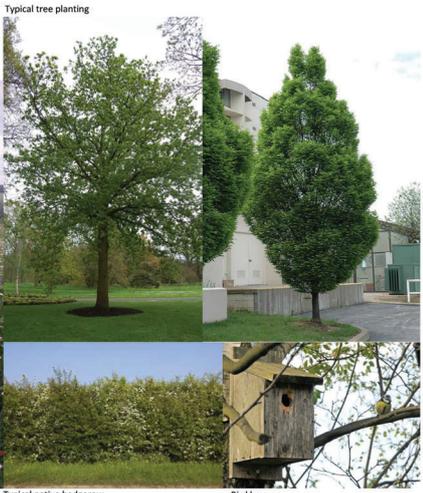
Hard Landscape Legend:

- Footpath / Cycletrack - Refer to Engineer's drawings for details
- Road / Road Markings - Refer to Engineer's drawings for details
- Coloured Road Surfaces / Tactile Pavings and Crossings - Refer to Engineer's drawings for details

Note: Refer to Engineer's drawings for details.



Typical wildflower meadow



Typical native hedgerow



Bird box

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REVISIONS

NO.	DATE	REV.	BY	CH.	DESCRIPTION

Transport & Mobility
 Merchants Quay
 Limerick
 DATE: 2022-07-29
 SCALE: 1:500
 DRAWN: MS
 CHECKED: MS
 JOB NO: LC190003

PROJECT:
 TUS Moylish to City
 Active Travel Scheme
 STAGE:
 Part 8 Planning
DRAWING TITLE:
 Landscape Plan 4/4

 DRAWING NO:
 LP05
 SHEET SIZE: REVISION
 A1 00



APPENDIX 2

TREE PROTECTION PLAN



LEGEND

- Root Protection Area
- Tree Canopy
- Tree Stem & Category Colour
- Tree Tag Number & Category
- Tree to be removed

Category A Trees (high value)

Category B Trees (moderate value)

Category C Trees (low value)

Category U Trees (unsuitable for retention)

Tree Protection Fence Indicative Line

New hard surfacing to be undertaken with Cellular Confinement System (CCS) where levels allow

Should site levels dictate that soil excavation within a trees RPA is necessary, CCS will not be used and the excavation will be restricted to the absolute minimum to facilitate the works.

NOTES:
Please see Tree Survey Report for further detail.
All drawings to be read in conjunction with the consulting architects and engineers drawings.

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Project Name: LIT to Limerick City Centre Cycle Scheme

Drawing Title: Tree Protection Plan

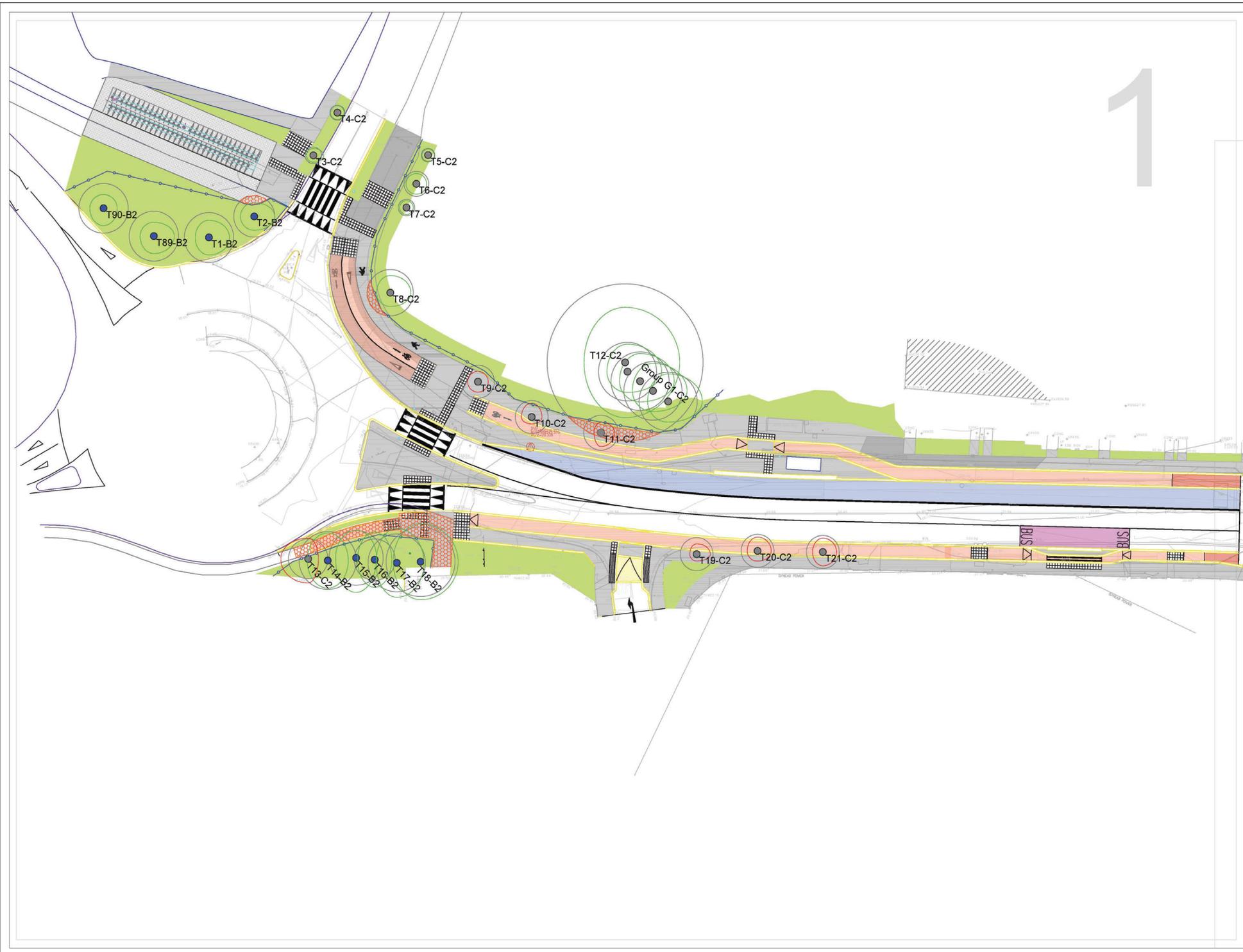
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Client: Limerick City & County Council

Agent:

Date: 20/06/2022

Scale: Not to Scale



LEGEND

- Root Protection Area
- Tree Canopy
- Tree Stem & Category Colour
- Tree Tag Number & Category
- Tree to be removed
- Category A Trees (high value)
- Category B Trees (moderate value)
- Category C Trees (low value)
- Category U Trees (unsuitable for retention)
- Tree Protection Fence Indicative Line
- New hard surfacing to be undertaken with a Cellular Confinement System (CCS) where levels allow. Should site levels dictate that soil excavation within a Tree RPA is necessary, CCS will not be used and the excavation will be restricted to the absolute minimum to facilitate the works.

NOTES:
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Project Name: LIT to Limerick City Centre Cycle Scheme

Drawing Title: Tree Protection Plan

Drawing Number: 22027_TPP_sheet 1

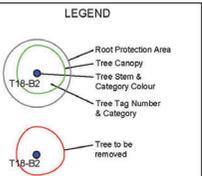
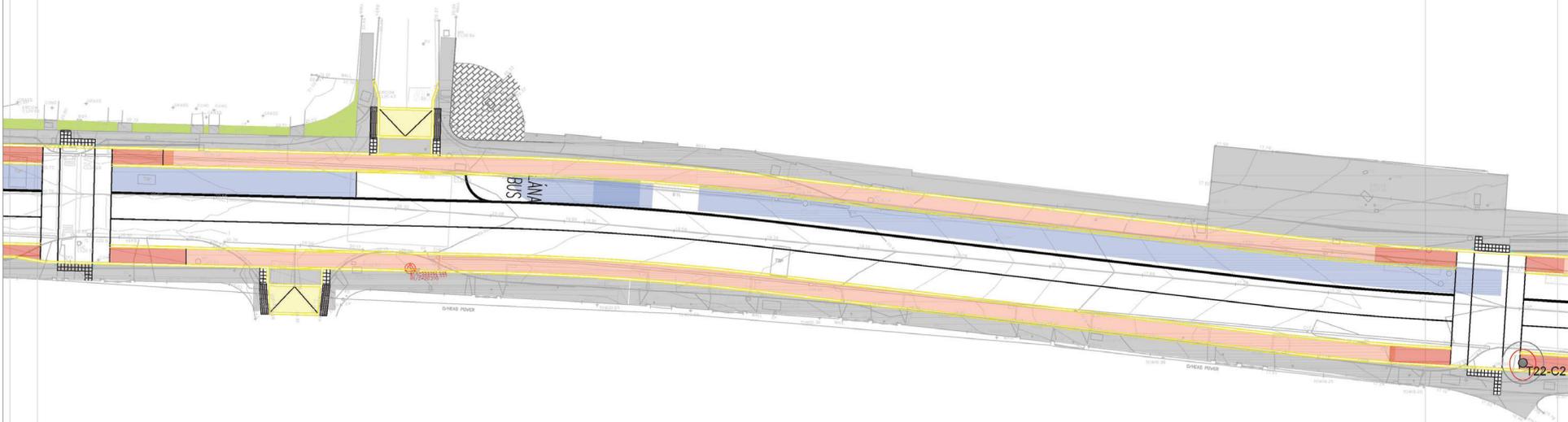
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Agent:

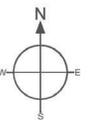
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Scale: 1:250@A1

2



- Category A Trees (high value)
- Category B Trees (moderate value)
- Category C Trees (low value)
- Category U Trees (unsuitable for retention)
- Tree Protection Fence Indicative Line
- New hard surfacing to be undertaken with Cellular Confinement System (CCS) where levels allow. Should site levels dictate that soil excavation within a tree RPA is necessary, CCS will not be used and the excavation will be restricted to the absolute minimum to facilitate the works.



NOTES:
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Project Name: LIT to Limerick City Centre Cycle Scheme

Drawing Title: Tree Protection Plan

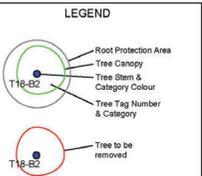
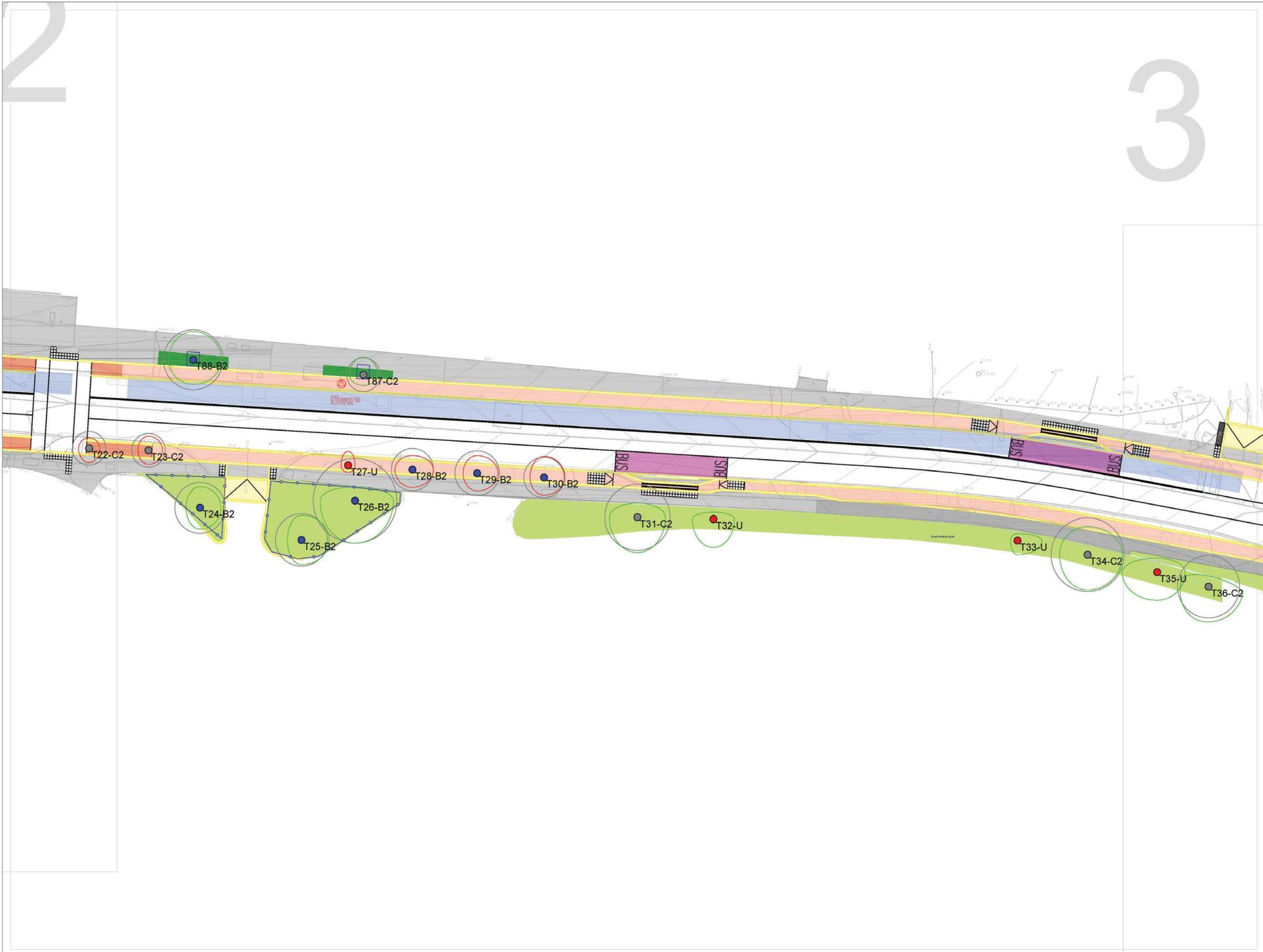
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Client: Limerick City & County Council

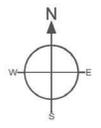
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Date: 20/06/2022

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- Category A Trees (high value)
- Category B Trees (moderate value)
- Category C Trees (low value)
- Category U Trees (unsuitable for retention)
- Tree Protection Fence Indicative Line
- New hard surfacing to be undertaken with Cellular Confinement System (CCS) where levels allow. Should site levels dictate that soil excavation within a tree RPA is necessary, CCS will not be used and the excavation will be restricted to the absolute minimum to facilitate the works.



NOTES:
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Project Name: LIT to Limerick City Centre Cycle Scheme

Drawing Title: Tree Protection Plan

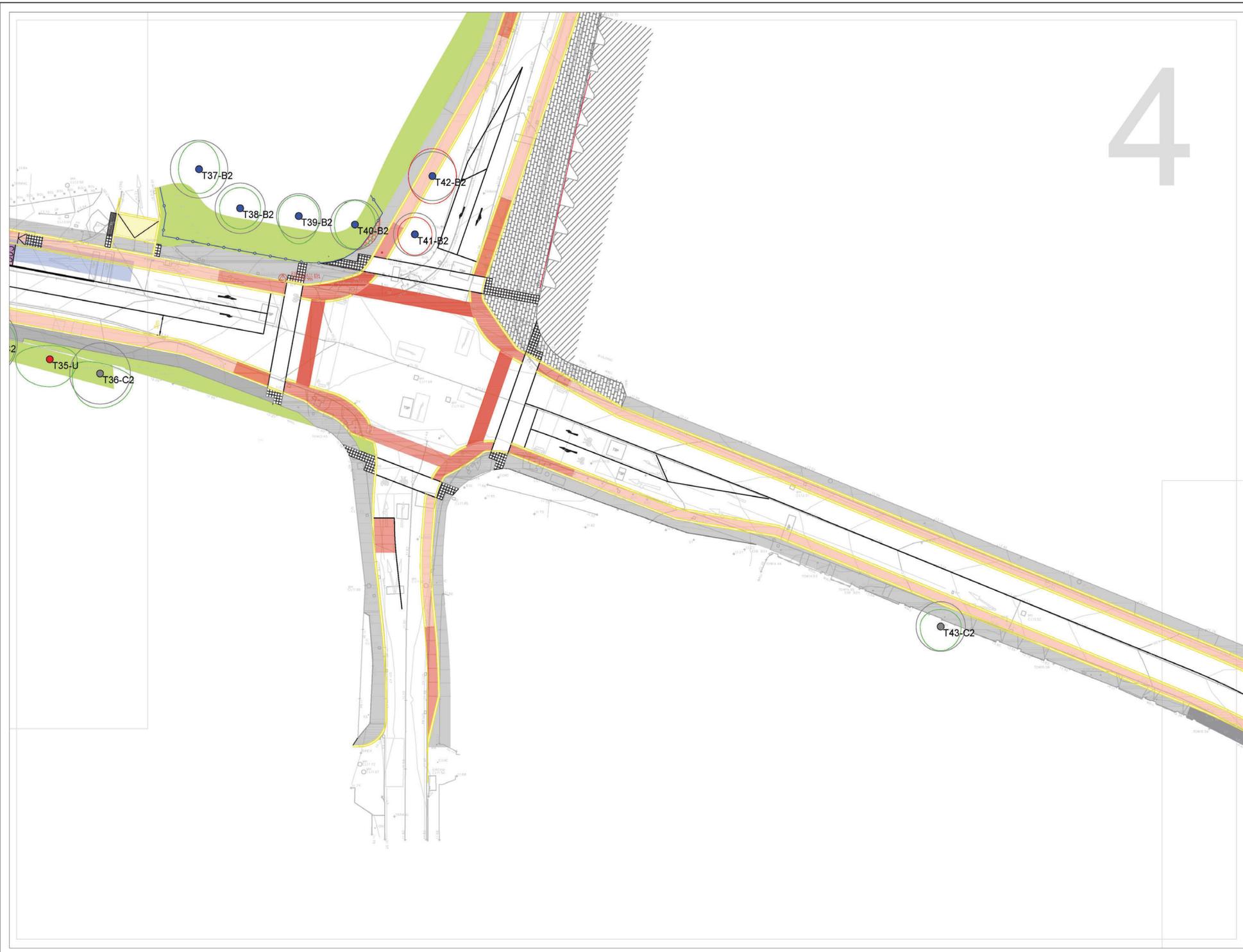
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Client: Limerick City & County Council

Agent:

Date: 20/06/2022

Scale: 1:250@A1



LEGEND

- Root Protection Area
- Tree Canopy
- Tree Stem & Category Colour
- Tree Tag Number & Category
- Tree to be removed
- Category A Trees (high value)
- Category B Trees (moderate value)
- Category C Trees (low value)
- Category U Trees (unsuitable for retention)
- Tree Protection Fence Indicative Line
- New hard surfacing to be undertaken with Cellular Confinement System (CCS) where levels allow

Should site levels dictate that soil excavation within a tree RPA is necessary, CCS will not be used and the excavation will be restricted to the absolute minimum to facilitate the works.

NOTES:
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Project Name: LIT to Limerick City Centre Cycle Scheme

Drawing Title: Tree Protection Plan

Drawing Number: 22027_TPP_sheet 4

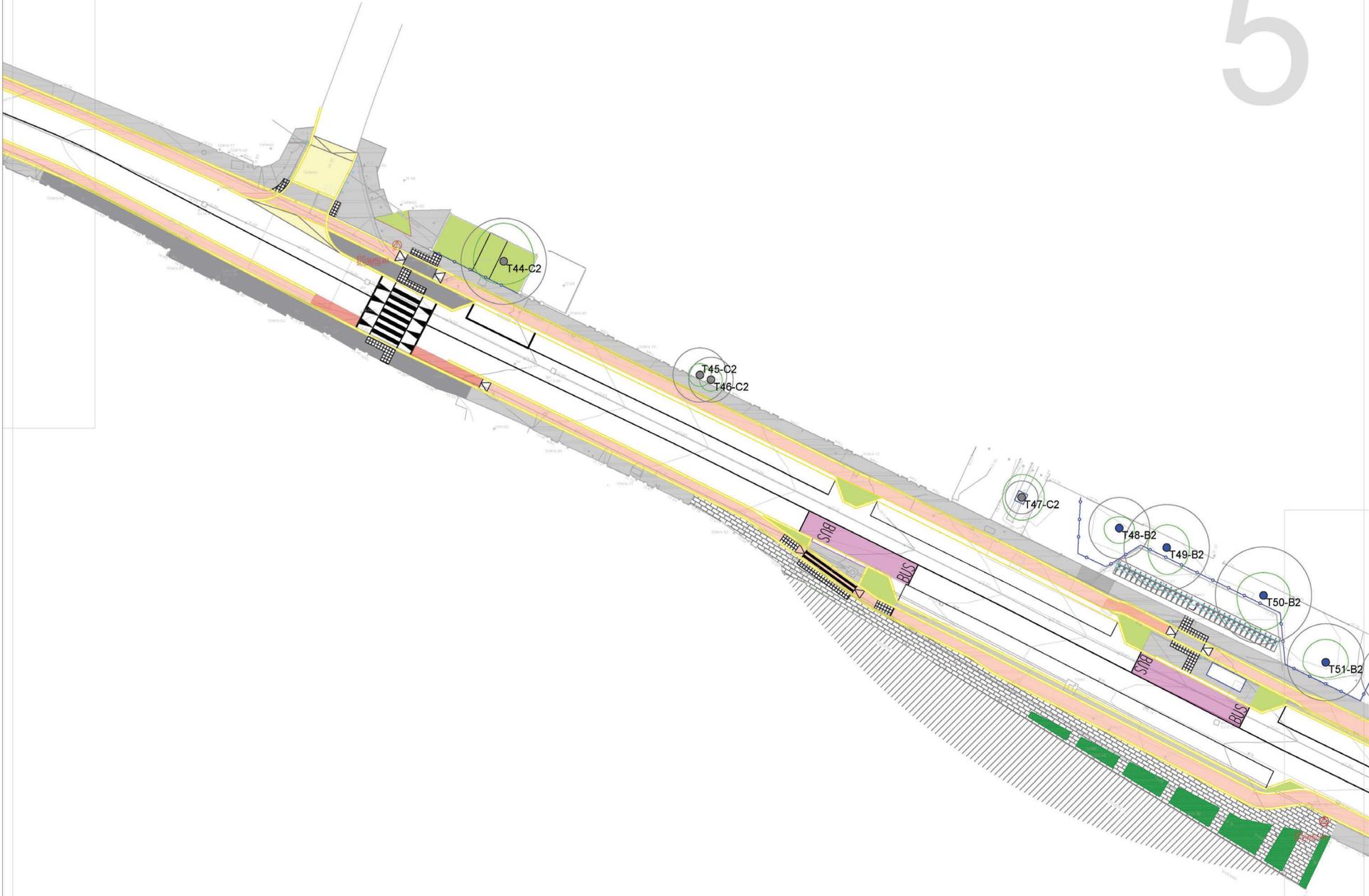
Client: Limerick City & County Council

Agent:

Date: 20/06/2022

Scale: 1:250@A1

5



LEGEND

- Root Protection Area
- Tree Canopy
- Tree Stem & Category Colour
- Tree Tag Number & Category
- Tree to be removed
- Category A Trees (high value)
- Category B Trees (moderate value)
- Category C Trees (low value)
- Category U Trees (unsuitable for retention)
- Tree Protection Fence Indicative Line
- New hard surfacing to be undertaken with Cellular Confinement System (CCS) where levels allow. Should site levels dictate that soil excavation within a Tree RPA is necessary, CCS will not be used and the excavation will be restricted to the absolute minimum to facilitate the works.



NOTES:
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Project Name: LIT to Limerick City Centre
Cycle Scheme

Drawing Title: Tree Protection Plan

Drawing Number: 22027_TPP_sheet 5

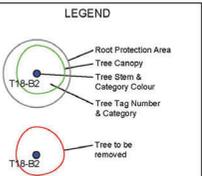
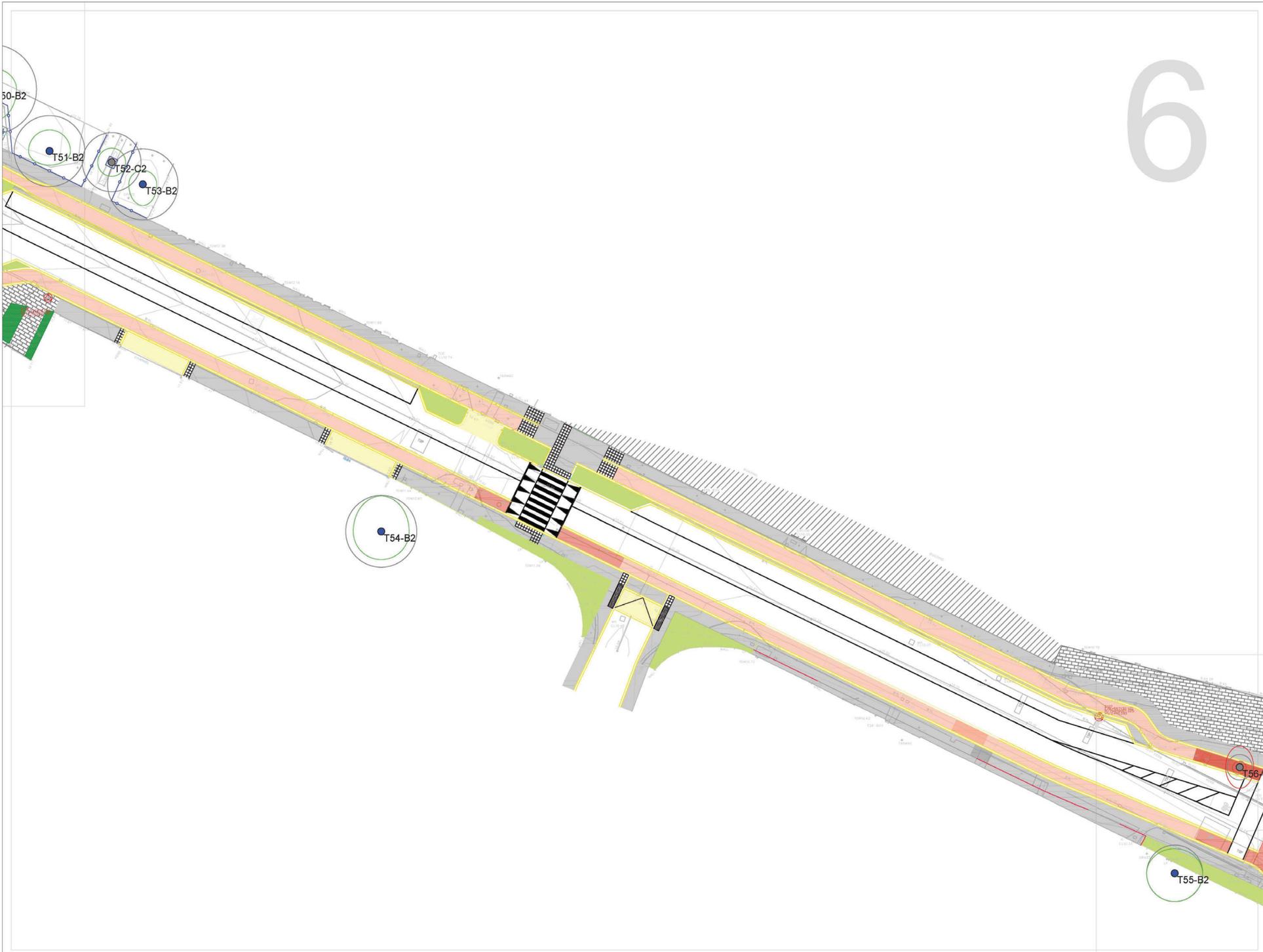
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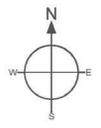
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6



- Category A Trees (high value)
- Category B Trees (moderate value)
- Category C Trees (low value)
- Category U Trees (unsuitable for retention)
- Tree Protection Fence Indicative Line
- New hard surfacing to be undertaken with Cellular Confinement System (CCS) where levels allow. Should site levels dictate that soil excavation within a tree RPA is necessary, CCS will not be used and the excavation will be restricted to the absolute minimum to facilitate the works.



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Project Name: LIT to Limerick City Centre Cycle Scheme

Drawing Title: Tree Protection Plan

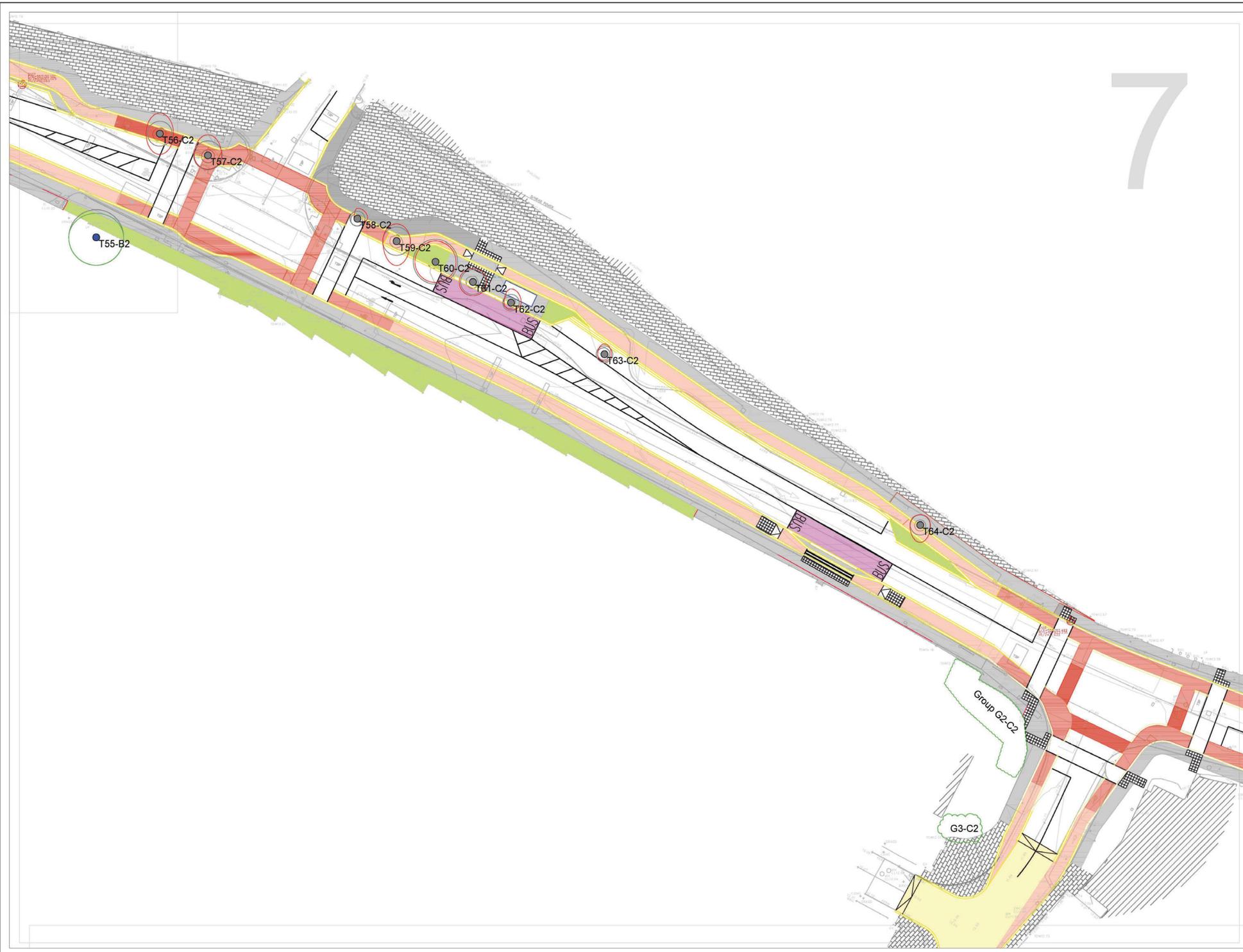
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Client: Limerick City & County Council

Agent:

Date: 20/06/2022

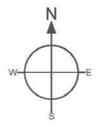
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7



- Category A Trees (high value)
- Category B Trees (moderate value)
- Category C Trees (low value)
- Category U Trees (unsuitable for retention)
- Tree Protection Fence Indicative Line
- New hard surfacing to be undertaken with Cellular Confinement System (CCS) where levels allow. Should site levels dictate that soil excavation within a tree RPA is necessary, CCS will not be used and the excavation will be restricted to the absolute minimum to facilitate the works.



NOTES:
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Project Name: LIT to Limerick City Centre Cycle Scheme

Drawing Title: Tree Protection Plan

Drawing Number: 22027_TPP_sheet 7

Client: Limerick City & County Council

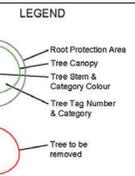
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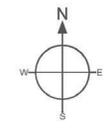
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8



- Category A Trees (high value)
- Category B Trees (moderate value)
- Category C Trees (low value)
- Category U Trees (unsuitable for retention)
- Tree Protection Fence Indicative Line
- New hard surfacing to be undertaken with Cellular Confinement System (CCS) where levels allow. Should site levels dictate that soil excavation within a tree RPA is necessary, CCS will not be used and the excavation will be restricted to the absolute minimum to facilitate the works.



NOTES:
 Please see Tree Survey Report for further detail.
 All drawings to be read in conjunction with the consulting architects and engineers drawings.

Independent Tree Surveys Ltd



Project Name: LIT to Limerick City Centre Cycle Scheme

Drawing Title: Tree Protection Plan

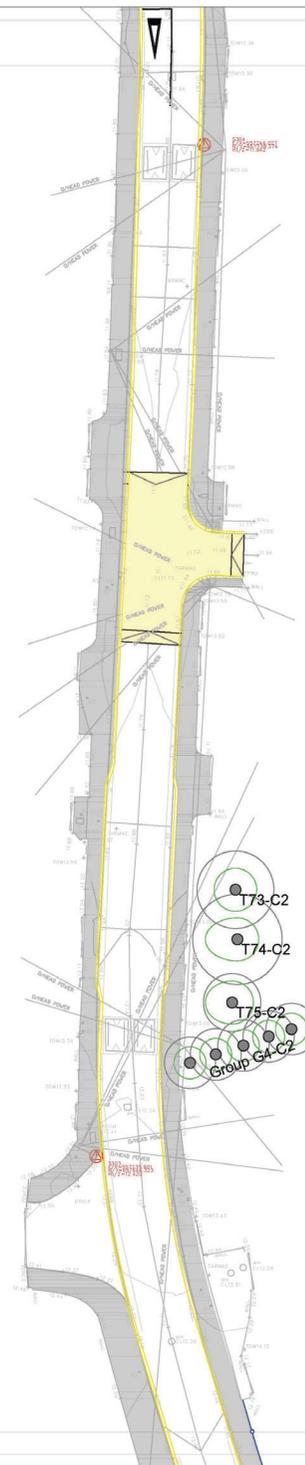
Drawing Number: 22027_TPP_sheet 8

Client: Limerick City & County Council

Agent:

Date: 20/06/2022

Scale: 1:250@A1



LEGEND

- Root Protection Area
- Tree Canopy
- Tree Stem & Category Colour
- Tree Tag Number & Category
- Tree to be removed

T16-B2

T16-B2

- Category A Trees (high value)
- Category B Trees (moderate value)
- Category C Trees (low value)
- Category U Trees (unsuitable for retention)
- Tree Protection Fence Indicative Line
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Project Name: LIT to Limerick City Centre Cycle Scheme

Drawing Title: Tree Protection Plan

Drawing Number: 22027_TPP_sheet 9

Client: Limerick City & County Council

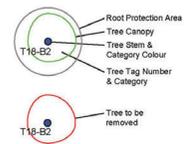
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Date: 20/06/2022

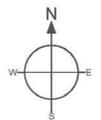
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LEGEND



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- Tree Protection Fence Indicative Line
- New hard surfacing to be undertaken with Cellular Confinement System (CCS) where levels allow. Should site levels dictate that soil excavation within a tree RPA is necessary, CCS will not be used and the excavation will be restricted to the absolute minimum to facilitate the works.



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Project Name: LIT to Limerick City Centre Cycle Scheme

Drawing Title: Tree Protection Plan

Drawing Number: 22027_TPP_sheet 10

Client: Limerick City & County Council

Agent:

Date: 20/06/2022

Scale: 1:250@A1