



A629 Improvement Scheme, Kirklees

Biodiversity Net Gain Assessment

June 2021

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This document has been prepared and checked in accordance with
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Comments

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Executive Summary

Waterman Infrastructure & Environment Ltd (Waterman IE) was commissioned by Kirklees Metropolitan Borough Council (hereafter referred to as the 'Applicant') to undertake a Biodiversity Net Gain Assessment (BNGA) in relation to proposed junction improvement works along the A629 in Huddersfield (hereafter referred to as the 'Development').

The Development will occur at four separate locations (collectively referred to as the 'Site'):

- Area A (Blacker Road) -- centred around the junction of Blacker Road, New North Road, Edgerton Grove Road and Edgerton Road;
- Area B (Cavalry Arms) -- centred around the junction of Birkby Road, East Street and Halifax Road;
- Area C (Prince Royd) -- adjacent to Halifax Road;
- Area D (Yew Tree Road to Ainley Top) -- adjacent to Ainley Top roundabout.

Habitats currently present within the Site include sealed surface, vegetated garden, woodland, vacant ground, modified grassland, amenity grassland, ditch and line of trees.

It is proposed that habitats within Areas C and D will be enhanced as part of the Development. This will involve improving the condition of woodland within Area C, and improving the condition of modified grassland, amenity grassland and vegetated garden in Area D.

It is proposed to create new habitat in Areas A, C and D. In Area A, vegetated garden will be created (a Garden of Rest), woodland will be planted to replace the majority of woodland lost along Blacker Road. A new hedgerow, lines of trees and shrubbery will also be established. In Area C new amenity grassland will be created with adjacent hedgerow planting, and in Area D there will be extensive hedgerow and tree lines planted.

A Management Plan, that describes how the Site will be monitored and maintained for biodiversity for a 30 year period after final completion of the roadworks and principal landscaping, will be produced.

Successful implementation of the habitat enhancement and creation proposals will allow the achievement of a Biodiversity Net Gain of **14.14%** in Habitat Units and **294.67%** in Hedgerow Units for the Site. If Habitat Units and Hedgerow Units are combined this gives an overall Net Gain for the Site of **42.04%**.

1. Introduction

- 1.1. Waterman Infrastructure & Environment Ltd (Waterman IE) was commissioned by Kirklees Metropolitan Borough Council (hereafter referred to as the 'Applicant') to undertake a Biodiversity Net Gain Assessment (BNGA) in relation to proposed junction improvement works on the A629, north of Huddersfield (hereafter referred to as the 'Development'). The assessment forms part of the consideration of potential effects upon environmental capital.
- 1.2. The junction improvement works have been split into four geographical locations along the A629, separately identified as Area A, Area B, Area C and Area D. These areas are collectively referred to as the 'Site' within this report. A selection of photographs of the Site are included in **Appendix A** and the proposed landscape plans are included in **Appendix B**.

Site Setting

- 1.3. The Site comprises four separate areas:
 - Area A – Blacker Road, centred around the junction of Blacker Road, New North Road, Edgerton Grove Road and Edgerton Road (**Figure 1**; Photograph 1 **Appendix A**; OS Grid Reference SE 13484 17444);
 - Area B - Cavalry Arms, centred around the junction of Birkby Road, East Street and Halifax Road (**Figure 2**; Photograph 2 **Appendix A**; OS Grid Reference SE 12246 18517);
 - Area C - Prince Royd, adjacent to Halifax Road (**Figure 3**; Photograph 3 **Appendix A**; OS Grid Reference SE 12026 18649);
 - Area D – Yew Tree Road to Ainley Top, centred around a field adjacent to Ainley Top roundabout (**Figure 4**; Photograph 4 **Appendix A**; OS Grid Reference SE 11551 19125).

Development proposals

Area A

- 1.4. The proposals for Area A include:
 - road widening to create extra capacity by providing new traffic lanes at Edgerton Road, Blacker Road and New North Road;
 - repositioning of footways to allow more traffic lanes along Edgerton Road, Blacker Road, Edgerton Grove Road and New North Road;
 - road and footway resurfacing along existing roads within Area A boundary;
 - a new Garden of Rest and associated parking area in Edgerton Cemetery;
 - repositioning of existing signal-controlled crossing points on all junctions;
 - a no-parking restriction zone to allow traffic flow;
 - new soft landscaping and trees; and
 - cycle stop boxes at each junction to allow safe navigation for cyclists.

Area B

1.5. The proposals for Area B include:

- road widening to create extra capacity by providing new traffic lanes at Birkby Road;
- road resurfacing along existing roads within Area B boundary;
- repositioning of footways to allow more traffic lanes at Halifax Road (A629) and Birkby Road;
- existing footway widening at the junction of Halifax Road (A629) and Birkby Road;
- new soft landscaping and trees; and
- repositioning of signal-controlled pedestrian crossings.

Area C

1.6. The proposals for Area C include:

- new off-road parking arrangements for residents affected by parking restrictions (off Halifax Road (A629) within a currently wooded area);
- new road resurfacing (Halifax Road (A629));
- footway improvements (on sections of either side of Halifax Road (A629));
- new soft landscaping and trees;
- a new controlled pedestrian crossing; and
- the inclusion of a parking restriction zone.

Area D

1.7. The proposals for Area D include:

- road widening to create extra capacity by providing new traffic lanes;
- road and footway resurfacing along existing roads within the Area D boundary;
- new and improved footways to allow more traffic lanes and be better for pedestrians;
- island to keep traffic separated and allow pedestrians to cross the road safely;
- a two way and one-way cycle lane;
- new soft landscaping and trees;
- new uncontrolled pedestrian island to make crossing the road easier; and
- a new signal-controlled toucan crossing.

Proposals in Third Party Land Ownership

- 1.8. Some of the land within Areas A and B, on which landscaping works are proposed as part of the Development, are under third party ownership. The Applicant has engaged with the relevant landowners to agree the landscaping proposals within these locations. However, at Area B, the ability to maintain the landscape works for 30 years from scheme completion (as required for the BNGA) cannot be guaranteed. As a result, landscape works within Area B have not been included within the calculations within this BNGA. At Area A (and at Area C and Area D), it is intended that all trees contributing to the calculations in this BNGA will be inspected and maintained in accordance with the Council's tree maintenance policy, which includes inspections at 18-month intervals, with all faults or defects dealt with as per the inspector's recommendations for 30 years from scheme completion.

Purpose of this report

- 1.9. In line with local planning policies (**Appendix C**), developments are required to "*minimise impact on biodiversity and provide net biodiversity gains through good design by incorporating biodiversity enhancements and habitat creation where opportunities exist*".
- 1.10. This BNGA demonstrates how it will be possible to achieve a greater than 10% biodiversity net-gain for the Site as a whole, in terms of both Habitat Units and Hedgerow Units. It outlines the current baseline for the Site and shows what habitat areas will be lost, retained, enhanced and created across the Site. It also gives an indication of the minimum anticipated time-frames that individual habitat management plans should be in place to achieve the predicted gains.

2. Methodology

Guidance

- 2.1. This report has been produced in accordance with the methodology set out in the following guidance documents:

- The Biodiversity Metric 2.0 – User Guide – Beta Test¹; and
- The Biodiversity Metric 2.0 – Technical Supplement – Beta Test².

Study Area and Baseline survey

- 2.2. Data from Phase 1 habitat surveys³ of the Site, carried out in May 2020, were principally used to inform this assessment (see Waterman reports WIE14496-100-R-8-5-1-EcIA, WIE14496-100-R-9-4-2-EcIA, WIE14496-100-R-10-5-1-EcIA, WIE14496-100-R-11-5-2-EcIA).
- 2.3. Up-to-date aerial imagery and Site photographs were also consulted where necessary, as was mapping provided by Kirklees Council (TF5-Area A-P-LSC-1 (19-05-21), TF5-Area A-P-LSC-2 (19-05-21), TF5-Area B-P-LSC-1 (21-05-21), TF5-Area B-P-LSC-2 (20-05-21), TF5-Area C-P-LSC-1 (18-05-21), TF5-Area D-P-LSC-1 (26-05-21), TF5-Area D-P-LSC-2 (26-05-21), TF5-Area D-P-LSC-3 (26-05-21), TF5-Area D-P-LSC-4 (26-05-21)).

Biodiversity Net Gain Calculations

- 2.4. All biodiversity net gain calculations were undertaken using the Defra Biodiversity Metric 2.0 Calculation Tool (Beta Test December 2019 Update). This tool was developed to provide a standardised methodology for completing BNGAs.
- 2.5. Habitats were separated into discrete parcels and linear sections either where they were geographically discrete or where there was a change in habitat condition across a single location. Each parcel / linear section was recorded and calculated separately using the Metric 2.0 Calculation Tool.

Habitat Distinctiveness

- 2.6. Habitat distinctiveness is a standard score based on the type of habitat present, which is automatically generated by the Metric 2.0 Calculation Tool following input of the relevant UK Habitat classification system habitat type.

Ecological Connectivity

- 2.7. Ecological connectivity is a score based on the proximity of the habitat patch to similar or related habitats. In the test version of the Biodiversity Metric 2.0 all High and Very High distinctiveness habitats should be assigned a Medium connectivity multiplier, and other habitats a Low connectivity multiplier. For all habitats/hedgerows, in all areas, ecological connectivity was set as 'low' as all habitats on Site are of medium distinctiveness or lower.

¹ Crosher et al. (2019a) The Biodiversity Metric 2.0: Auditing and accounting for biodiversity value: User Guide (Beta version, July 2019); joint publication JP029. Natural England, Worcester.

² Crosher et al. (2019b) The Biodiversity Metric 2.0: Auditing and accounting for biodiversity value: technical supplement (Beta version, July 2019). Natural England, Worcester.

³ JNCC. (2010). *Handbook for Phase 1 Habitat Survey*. Joint Nature Conservancy Council

- 2.8. A connectivity assessment is not appropriate for some habitats such as Urban - Developed Land; Sealed Surface. In these cases, N/A was selected, and the tool automatically applied a neutral value to reflect this.

Strategic Significance

- 2.9. Strategic significance utilises published local plans and objectives to identify local priorities for targeting biodiversity and nature improvement. It works at a landscape scale and gives additional unit value to habitats that are located in preferred locations for biodiversity and other environmental objectives.
- 2.10. Strategic significance for each habitat set as 'area/compensation not in local strategy/no local strategy' because the Development does not fall within an area identified as of particular ecological significance.

Condition assessment

- 2.11. The habitat and hedgerow condition assessment followed the guidelines provided within the Biodiversity Metric 2.0 – Technical Supplement. This document sets out criteria and characteristics for habitat and hedgerow types and provides guidance on an assessment of their condition (which can be 'good', 'fairly good', 'moderate', 'fairly poor' and 'poor'). The criteria considered include such things as the presence of undesirable species, habitat/hedgerow extent, habitat/hedgerow health and vegetation structure.
- 2.12. Proposed habitat conditions have been assigned to newly created and enhanced habitats within the Metric. This was achieved by reviewing the criteria characteristics for each habitat/hedgerow within the Site, as set out in the Biodiversity Metric 2.0 – Technical Supplement, and the proposed landscaping plans (see **Appendix C**) to determine a realistic, achievable, condition once the habitats/hedgerows have established and been subject to appropriate management.

Limitations and Assumptions

- 2.13. During the 2020 Phase 1 Survey of the Site, access to third-party land was not available due to health and safety reasons as a result of the Covid-19 pandemic. Within these areas, a combination of survey from public vantage points (i.e. pavements), aerial photography and previous Site photographs have instead been used to confirm existing and/or identify any new habitats that may have been present. However, given the habitat types present within third-party areas (private residential gardens), this is not considered a limitation to this assessment.
- 2.14. The UK Habitat classification system⁴ is used by the Biodiversity Metric Calculation Tool. Therefore, a translation from the Phase 1 classification system into the UK Habitat classification system has been undertaken for this BNGA. Minor loss of resolution in data may have occurred during this process.

⁴ UK Habitat Classification Working Group (2018). UK Habitat Classification – Habitat definitions. V1.0.

3. Biodiversity Net Gain Assessment

- 3.1. Separate BNG calculations were made for each of the four Areas A-D. These results were then combined in an overall BNGA for the Site.

Baseline conditions

- 3.2. Baseline conditions, including UK Habitat Classification codes for the different habitat types for each of Areas A – D are shown in **Tables 1 – 4** and **Figures 5 - 8** respectively. (. The areas of habitat expected to be retained after completion of the Development, and the areas expected to be lost, are shown in **Tables 1 - 4**.

Habitat Enhancement and Creation

- 3.3. There will be no habitat enhancement within Area A. However, a Garden of Rest (vegetated garden habitat) will be created on the current vacant ground (0.04 ha). A species-rich native hedgerow (60 m) and a short line of native trees (approximately 20 m), both in moderate condition, will be created within the Garden of Rest. Along New North Road, a new line of native trees (160 m total length) with a native hedgerow (110 m total length) and shrub layer (mixed scrub, 0.024 ha), all in moderate condition, will be created. Finally for Area A, a strip of woodland (0.0136 ha), in moderate condition, will be created to replace that lost along Blacker Road. To achieve these targets a management plan of at least 30 years duration will be put in place.
- 3.4. There will be no habitat enhancement or creation within Area B.
- 3.5. Woodland (0.23 ha) within Area C will be enhanced from poor to moderate condition (**Appendix D** lists criteria to be fulfilled for achievement of this condition). In addition, amenity grassland (0.01 ha) in moderate condition and a species-rich native hedgerow (20 m) in moderate condition will be created. To achieve these targets a management plan of at least 15 years duration will need to be put in place.
- 3.6. Modified grassland (0.25 ha) within Area D will be enhanced to neutral grassland in moderate condition by creating a wildflower meadow, and amenity grassland (0.12 ha) will be enhanced from poor to moderate condition by bulb and wildflower planting. The area of vegetated garden (0.07 ha) will be enhanced to urban woodland by appropriate planting of a mix of native tree species. A species-rich native hedgerow (450 m total length) with occasional native trees will be created, along with a line of native trees (100 m total length). To achieve these targets a management plan of at least 27 years duration will need to be put in place.
- 3.7. Post-intervention habitat and hedgerow gains and losses in Areas A – D are shown in **Tables 5 – 8**, respectively.

Biodiversity Net Gain

Given current baseline conditions and current plans for habitat enhancement and creation (as outlined above) there will be Biodiversity Net Gain of **14.14%** for habitat units and **294.67%** for hedgerow units across the Site. If habitat units and hedgerow units are combined this gives an overall Net Gain for the Site of **42.04%**. A summary of how these figures are obtained is presented in **Table 9**.

Table 1: Area A baseline conditions and expected retention and/or loss of habitat.

Habitat	Area or Length	Condition	Habitat or Hedgerow Units	Area or Length Retained	Area or Length Lost
Sealed Surface	0.93 ha	n/a	n/a	n/a	n/a
Vegetated Garden (Edgerton Green Gardens)	0.4 ha	poor	0.80	0.4 ha	--
Vegetated Garden (Cedar Mount Gardens)	0.1 ha	poor	0.20	0.1 ha	--
Vegetated Garden (Other gardens)	0.07 ha	poor	0.14	0.07 ha	--
Woodland (6 Edgerton Road)	0.12 ha	fairly poor	0.72	0.1 ha	0.02 ha
Vacant Ground (Proposed garden of rest area)	0.04 ha	poor	0.08	--	0.04 ha
Line of Trees (Edgerton Green Gardens)	140 m	poor	0.28	--	140 m
Line of Trees (Cedar Mount Gardens)	160 m	poor	0.32	--	160 m

Table 2: Area B baseline conditions and expected retention and/or loss of habitat.

Habitat	Area or Length	Condition	Habitat or Hedgerow Units	Area or Length Retained	Area or Length Lost
Sealed Surface	0.4 ha	n/a	n/a	n/a	n/a
Vegetated Garden	0.1 ha	poor	0.20	0.07 ha	0.03 ha
Line of Trees	75 m	poor	0.15	--	75 m

Table 3: Area C baseline conditions and expected retention and/or loss of habitat.

Habitat	Area or Length	Condition	Habitat or Hedgerow Units	Area or Length Retained	Area or Length Lost
Sealed Surface	0.45 ha	n/a	n/a	n/a	n/a
Woodland	0.28 ha	poor	1.12	0.23 ha	0.05 ha
Vacant Ground	0.06 ha	poor	0.12	--	0.06 ha
Ditch	0.004 ha	poor	0.02	0.004 ha	--

Table 4: Area D baseline conditions and expected retention and/or loss of habitat.

Habitat	Area or Length	Condition	Habitat or Hedgerow Units	Area or Length Retained	Area or Length Lost
Sealed Surface	0.39 ha	n/a	n/a	n/a	n/a
Modified Grassland	1.45 ha	poor	2.90	1.25 ha	0.2 ha
Amenity Grassland	0.17 ha	poor	0.34	0.12 ha	0.05 ha
Vegetated Garden	0.07 ha	poor	0.14	0.07 ha	--
Ditch	0.003 ha	poor	0.01	0.003 ha	--

Table 5: Habitat and Hedgerow Units delivered from habitat enhancement and/or creation within Area A.

Proposed Habitat Enhancement	Habitat Units Delivered	Hedgerow Units Delivered
None	n/a	n/a
Proposed Habitat Creation	Habitat Units Delivered	Hedgerow Units Delivered
Vegetated Garden (0.04 ha)	0.08	--
Woodland (0.0136 ha)	0.03	--
Mixed Scrub (0.024 ha)	0.17	--
Species-rich Native Hedgerow (60 m)	--	0.27
Native Hedgerow (110 m)	--	0.37
Line of Trees (0.015 m)	--	0.03
Line of Trees (160 m)	--	0.31

Table 6: Habitat and Hedgerow Units delivered from habitat enhancement and/or creation within Area B.

Proposed Habitat Enhancement	Habitat Units Delivered	Hedgerow Units Delivered
None	n/a	n/a
Proposed Habitat Creation	Habitat Units Delivered	Hedgerow Units Delivered
None	n/a	n/a

Table 7: Habitat and Hedgerow Units delivered from habitat enhancement and/or creation within Area C.

Proposed Habitat Enhancement	Habitat Units Delivered	Hedgerow Units Delivered
Poor Woodland to Moderate Woodland (0.23 ha)	1.28	--
Proposed Habitat Creation	Habitat Units Delivered	Hedgerow Units Delivered
Amenity Grassland (0.01 ha)	--	0.04
Species-rich Native Hedgerow (20 m)	--	0.09

Table 8: Habitat and Hedgerow Units delivered from habitat enhancement and/or creation within Area D.

Proposed Habitat Enhancement	Habitat Units Delivered	Hedgerow Units Delivered
Modified Grassland (0.25 ha) to Neutral Grassland (0.25 ha)	1.55	--
Poor Amenity Grassland (0.12 ha) to Moderate Amenity Grassland (0.12 ha)	0.46	--
Vegetated Garden (0.07 ha) to Urban Woodland (0.07 ha)	0.30	--
Proposed Habitat Creation	Habitat Units Delivered	Hedgerow Units Delivered
Species-rich Native Hedgerow with Trees (450 m)	--	1.69
Line of Tree (100 m)	--	0.20

Table 9: Overall Biodiversity Net Gain for the Site.

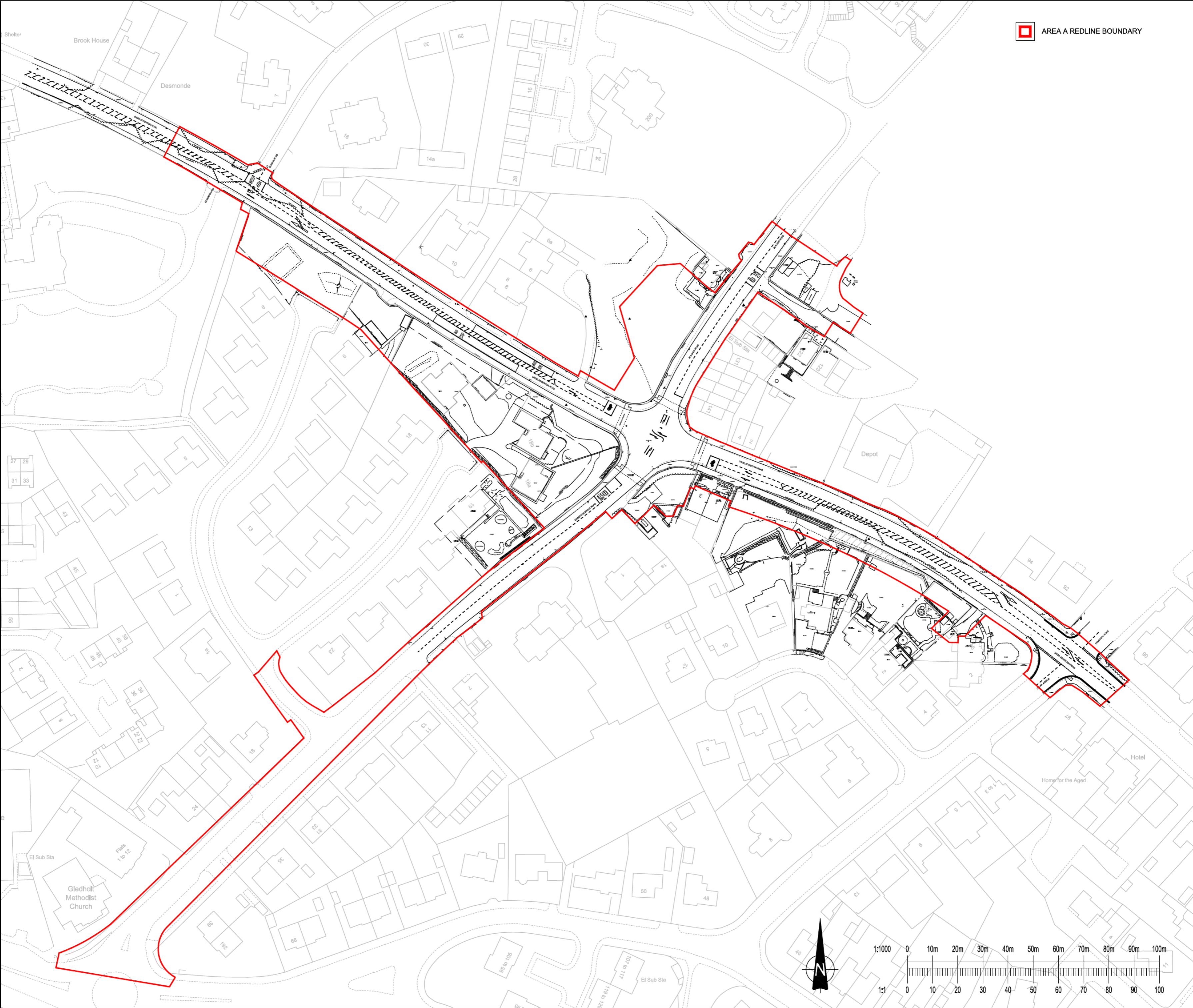
		Area A	Area B	Area C	Area D	Overall
Baseline	Habitat Units	1.94	0.2	1.26	3.39	6.79
	Hedgerow Units	0.6	0.15	0	0	0.75
	Habitat Units + Hedgerow Units					7.54
Post-intervention	Habitat Units	1.96	0.14	1.33	4.32	7.75
	Hedgerow Units	0.98	0	0.09	1.89	2.96
	Habitat Units + Hedgerow Units					10.71
Total Net Unit Change	Habitat Units	0.02	-0.06	0.07	0.93	0.96
	Hedgerow Units	0.38	-0.15	0.09	1.89	2.21
	Habitat Units + Hedgerow Units					3.17
Total Net % Change	Habitat Units					14.14
	Hedgerow Units					294.67
	Habitat Units + Hedgerow Units					42.04

4. Conclusions and Recommendations

- 4.1. The imminent Environment Bill will mandatorily require most significant future developments to achieve a minimum of 10% biodiversity net gain.
- 4.2. The BNGA presented here shows how this target will be exceeded by the current Development both in terms of Habitat Units and Hedgerow Units. Habitat loss to the Development has been minimised and practical plans for habitat enhancement and creation are proposed.
- 4.3. A habitat management plan will be produced in consultation with the Local Planning Authority. This plan will detail those maintenance and monitoring prescriptions required to ensure that the created and enhanced habitats reach their target condition and their value for biodiversity is maintained in the long-term. This plan should cover a time span of 30 consecutive years but it is anticipated that it will be a dynamic document and subject to regular review and amendment, as appropriate. To this end, it is proposed that habitat monitoring by a suitably qualified and informed ecologist is included in the management plan, at a maximum interval of every 5 years.
- 4.4. Should the scheme design for the Development be amended, the calculations set out within this BNGA will need to be updated.

FIGURES

- Figure 1: Area A red line boundary
- Figure 2: Area B red line boundary
- Figure 3: Area C red line boundary
- Figure 4: Area D red line boundary
- Figure 5: Area A baseline habitats
- Figure 6: Area B baseline habitats
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AREA A REDLINE BOUNDARY

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Project
A629 IMPROVEMENT SCHEME, KIRKLEES

Title
**FIGURE 1:
AREA A REDLINE
BOUNDARY**

Client
KIRKLEES METROPOLITAN BOROUGH COUNCIL

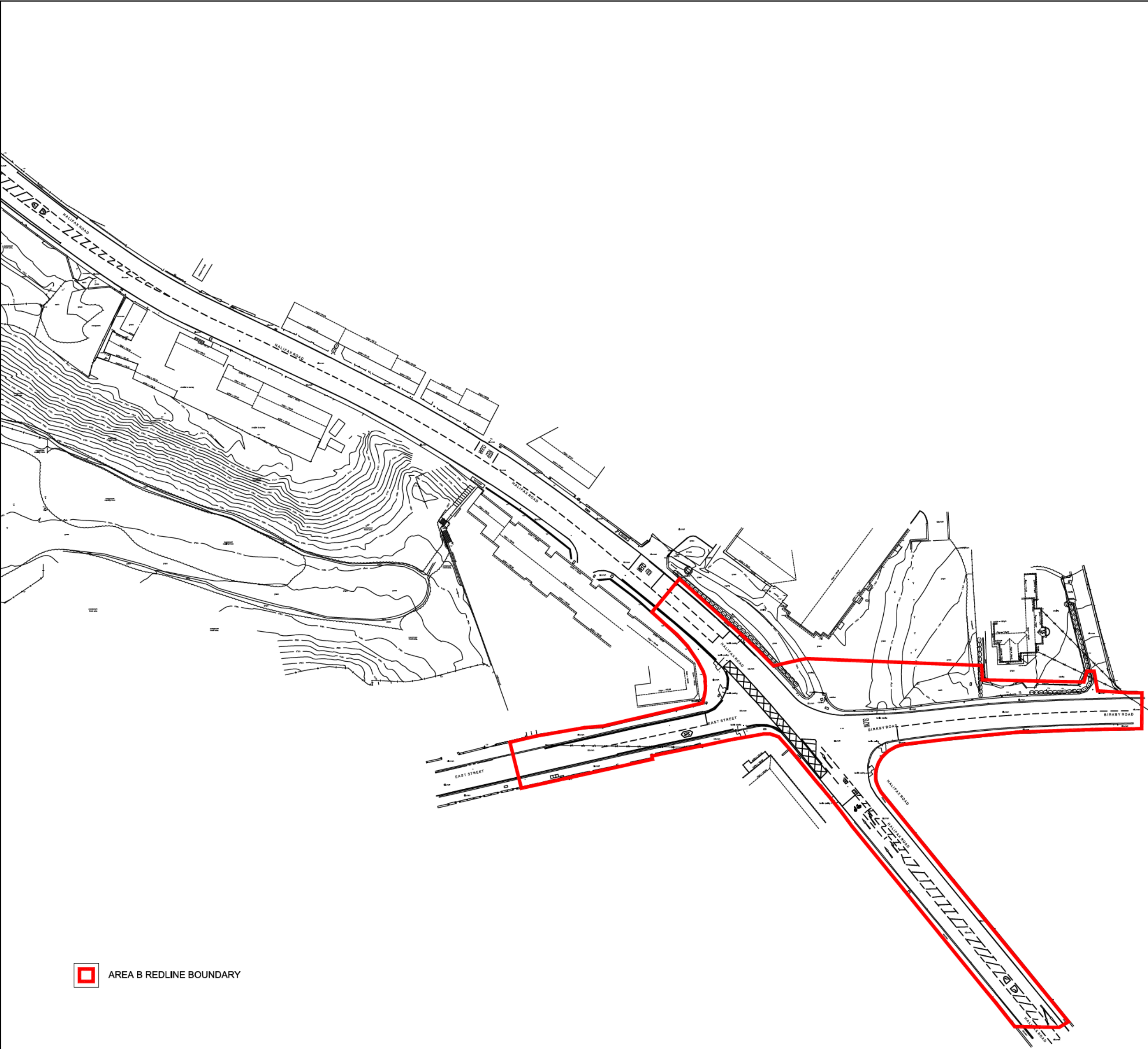


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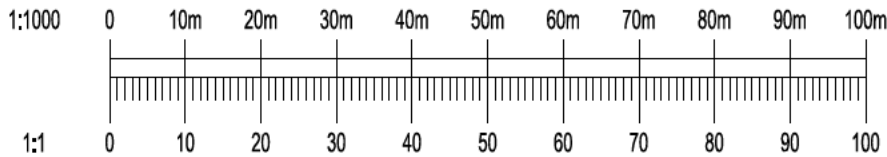
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14496-WIE-ZZ-XX-DR-V-80201					P01



 AREA B REDLINE BOUNDARY



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Project
A629 IMPROVEMENT SCHEME, KIRKLEES

Title
**FIGURE 2:
AREA B REDLINE
BOUNDARY**

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KIRKLEES METROPOLITAN BOROUGH COUNCIL



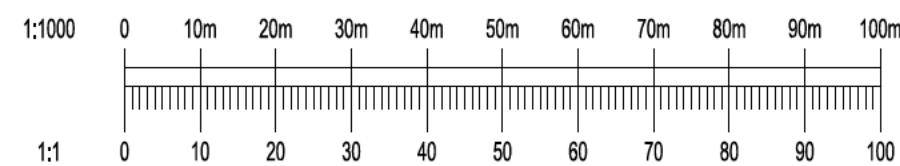
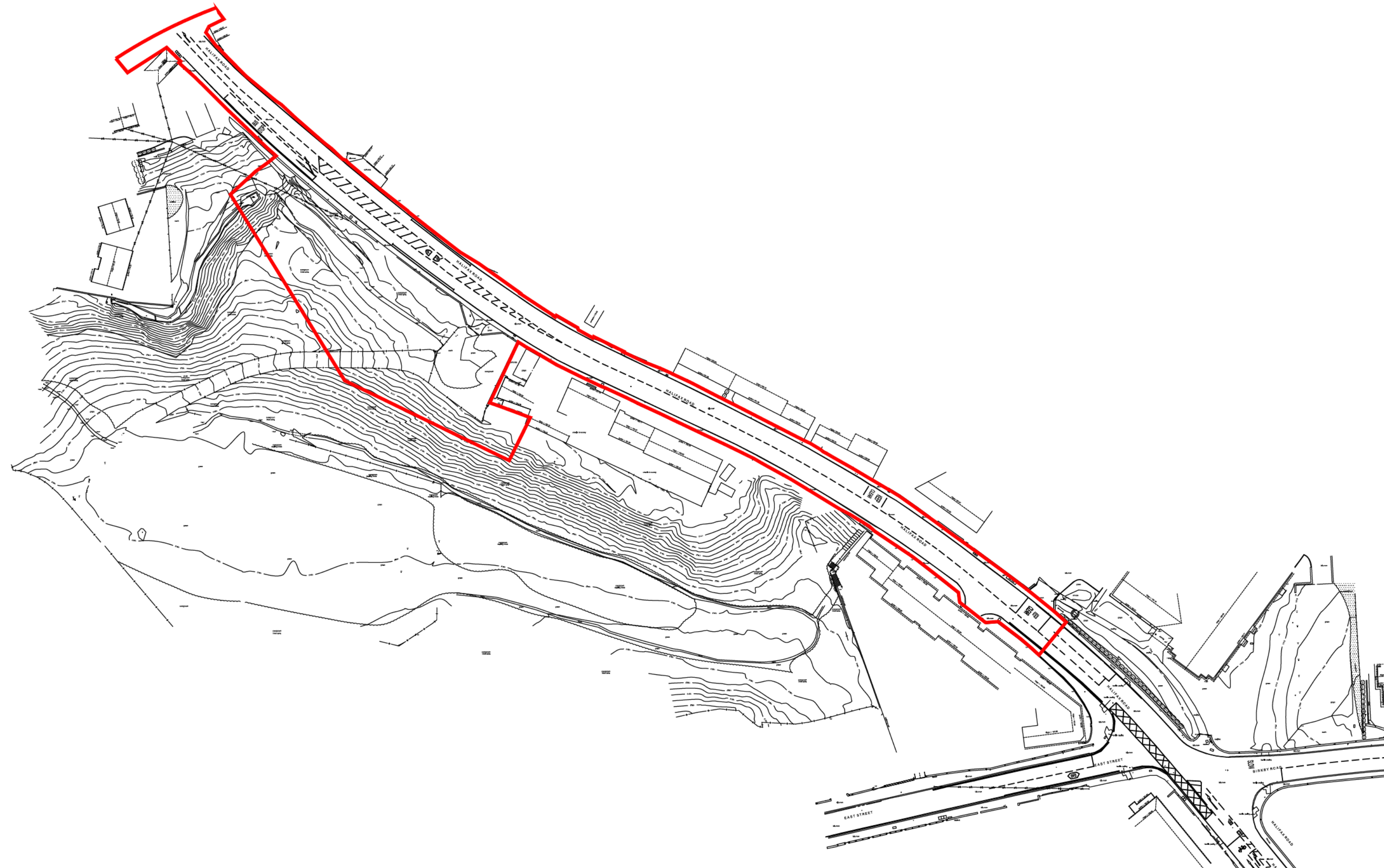
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A2-Wat-BS-S, WIE14496-100-77-SA-AREAD-SURVEY



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A629 IMPROVEMENT SCHEME, KIRKLEES

Title
**FIGURE 3:
AREA C REDLINE
BOUNDARY**

Client
KIRKLEES METROPOLITAN BOROUGH COUNCIL

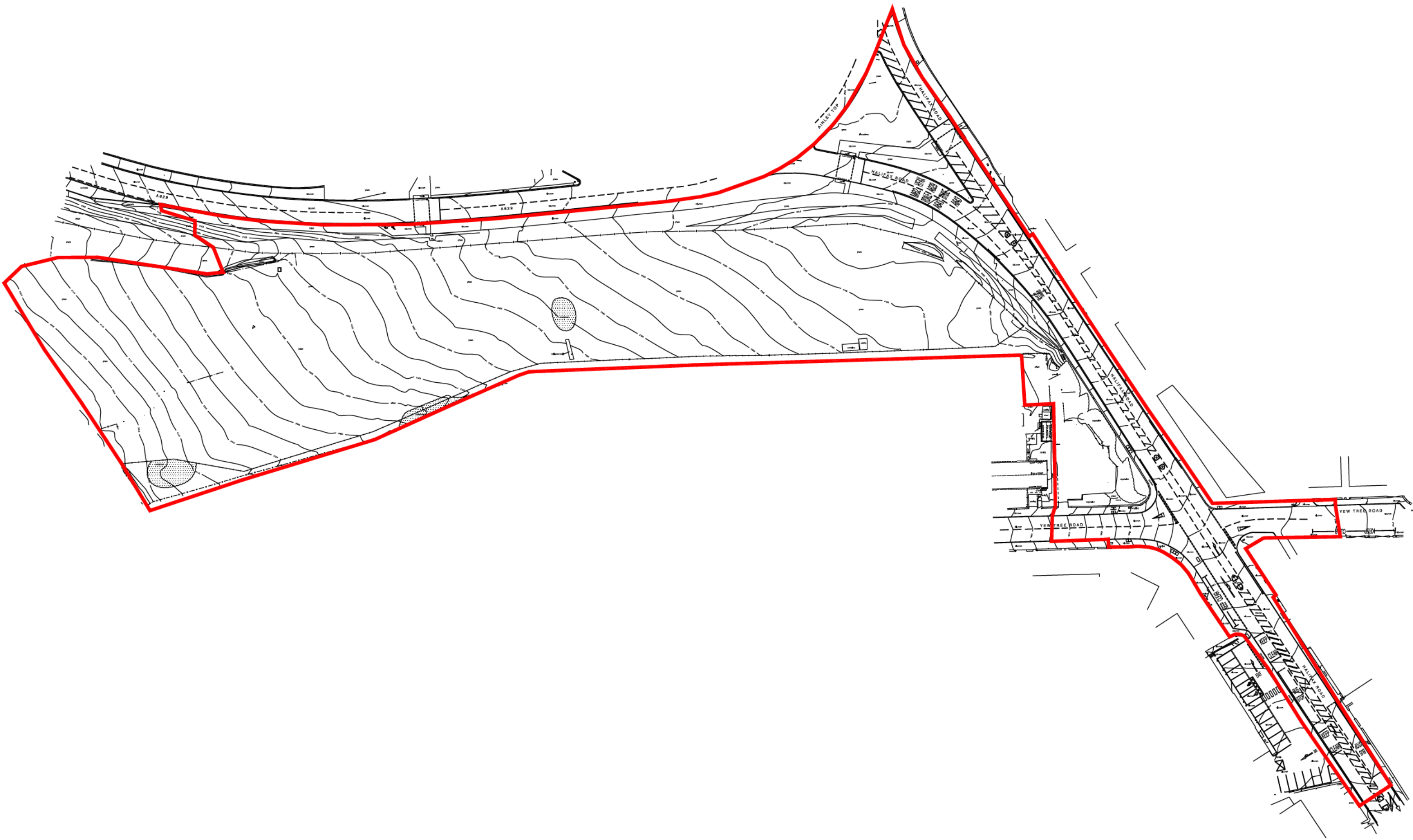
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Status
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Designed By	SD	Checked By	JB	Waterman Ref	WIE14496-100
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Project - Originator - Volume - Level - Type - Role - Number	Revision
14496-WIE-ZZ-XX-DR-V-80203	P01

A2-Wat-BS-S, WIE14496-100-77-SA-AREAD-SURVEY



AREA D REDLINE BOUNDARY

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P01	11.06.21	PRELIMINARY ISSUE	DC
Rev	Date	Description	By

Amendments

Project
A629 IMPROVEMENT SCHEME, KIRKLEES

Title
**FIGURE 4:
AREA D REDLINE
BOUNDARY**

Client
KIRKLEES METROPOLITAN BOROUGH COUNCIL

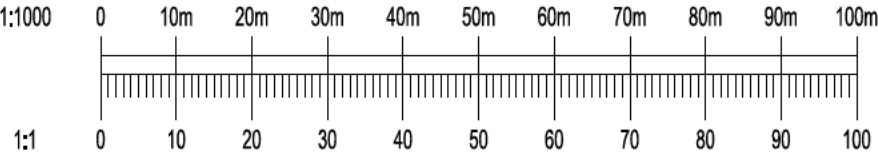


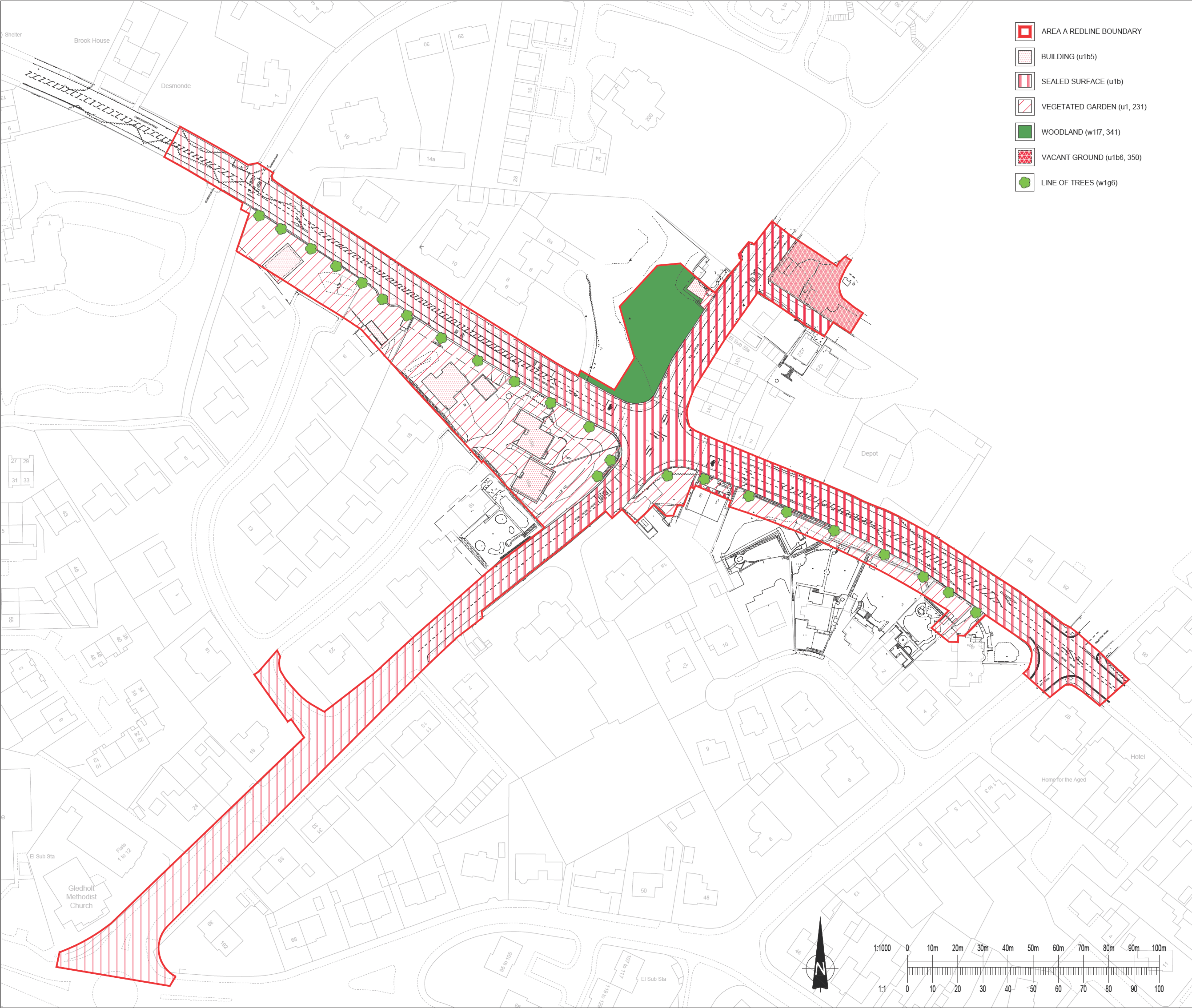
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Project - Originator - Volume - Level - Type - Role - Number					Revision
14496-WIE-ZZ-XX-DR-V-80204					P01






- AREA A REDLINE BOUNDARY
- BUILDING (u1b5)
- SEALED SURFACE (u1b)
- VEGETATED GARDEN (u1, 231)
- WOODLAND (w1f7, 341)
- VACANT GROUND (u1b6, 350)
- LINE OF TREES (w1g6)

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P01	15.06.21	PRELIMINARY ISSUE	MC
Rev	Date	Description	By
Amendments			
Project A629 IMPROVEMENT SCHEME, KIRKLEES			
Title FIGURE 5: ARE A BASELINE HABITATS			
Client KIRKLEES METROPOLITAN BOROUGH COUNCIL			
			
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Drawn By MC	Date JUNE 2021	Scales @ A2 1:1000	
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14496-WIE-ZZ-XX-DR-V-80205			P01



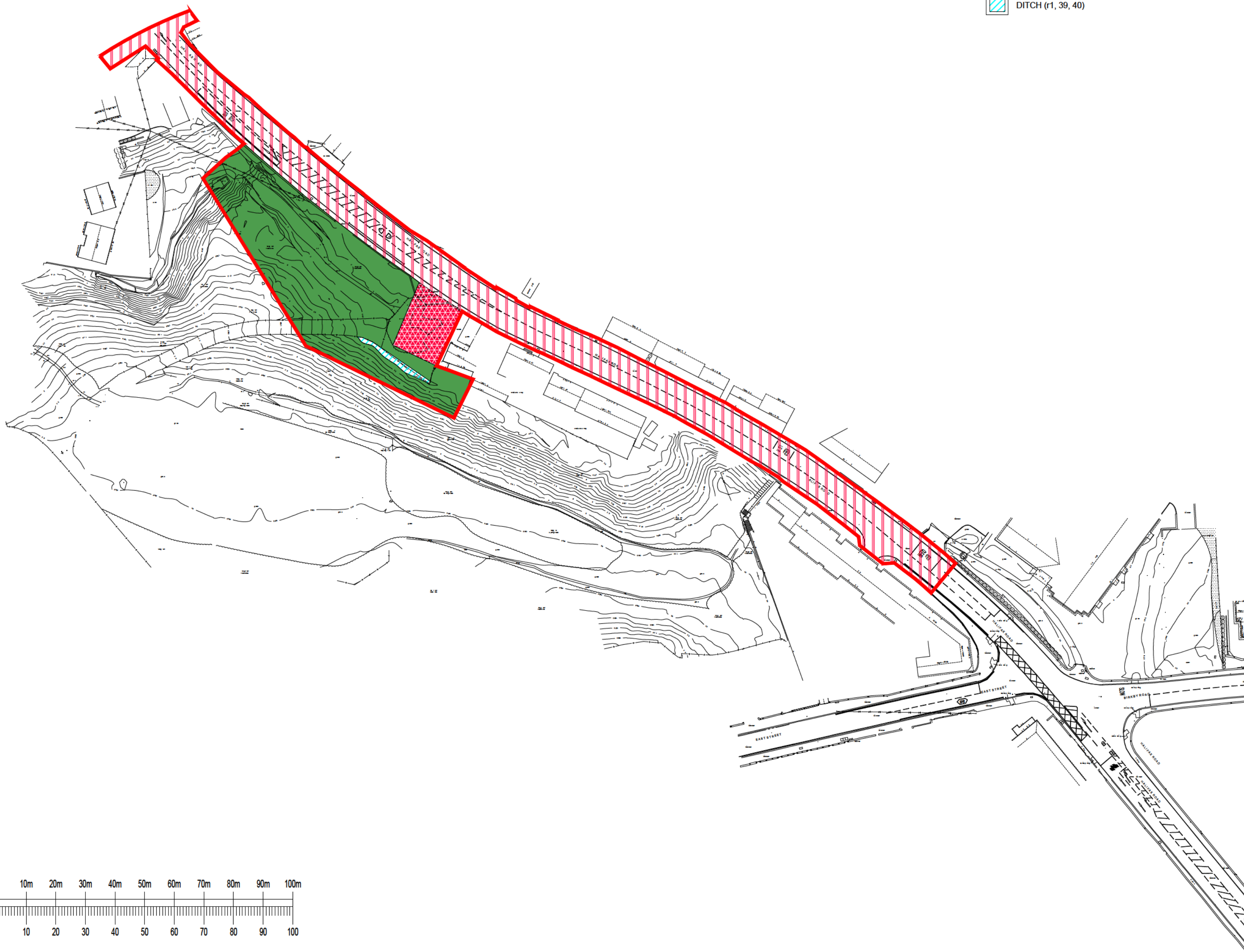
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Project			
A629 IMPROVEMENT SCHEME, KIRKLEES			
Title			
FIGURE 6: AREA B BASELINE HABITATS			
Client			
KIRKLEES METROPOLITAN BOROUGH COUNCIL			
<div></div>			
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Status			
PRELIMINARY			
Designed By	DM	Checked By	JB
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Project - Originator - Volume - Level - Type - Role - Number			Revision
14496-WIE-ZZ-XX-DR-V-80206			P01


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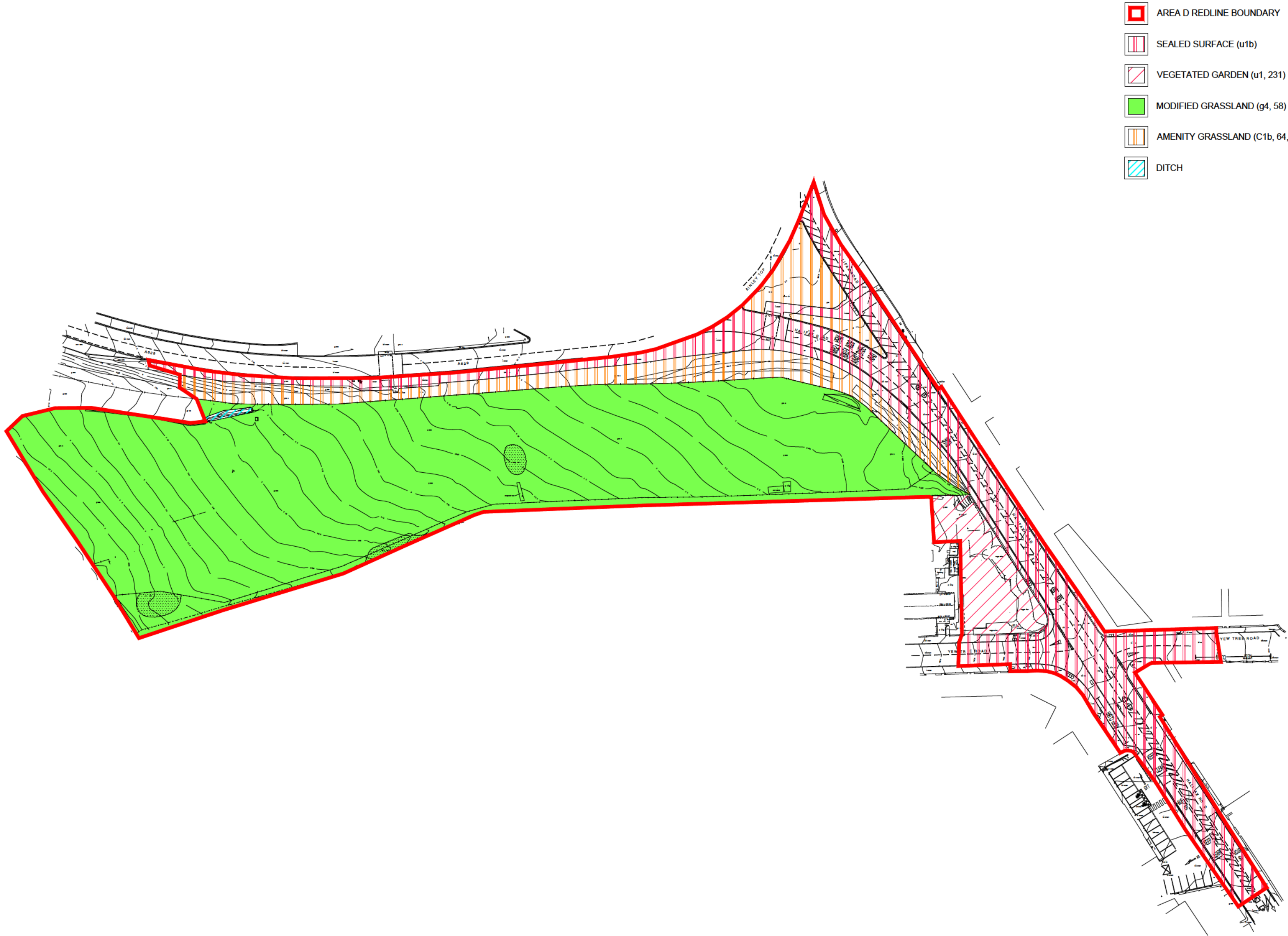
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GENERAL NOTES

P01	15.06.21	PRELIMINARY ISSUE	MC
Rev	Date	Description	By
Amendments			
Project A629 IMPROVEMENT SCHEME, KIRKLEES			
Title FIGURE 7: AREA C BASELINE HABITATS			
Client KIRKLEES METROPOLITAN BOROUGH COUNCIL			
			
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Status PRELIMINARY			
Designed By	DM	Checked By	JB Waterman Ref WIE14496-100
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Project - Originator - Volume - Level - Type - Role - Number			Revision P01
14496-WIE-ZZ-XX-DR-V-80207			

A2-Wat-BS-S, WIE14496-100-77-SA-AREAD-SURVEY



- AREA D REDLINE BOUNDARY
- SEALED SURFACE (u1b)
- VEGETATED GARDEN (u1, 231)
- MODIFIED GRASSLAND (g4, 58)
- AMENITY GRASSLAND (C1b, 64, 431)
- DITCH

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GENERAL NOTES

P01	15.06.21	PRELIMINARY ISSUE	MC
Rev	Date	Description	By

Amendments

Project
A629 IMPROVEMENT SCHEME, KIRKLEES

Title
**FIGURE 8:
AREA D
BASELINE HABITATS**

Client
KIRKLEES METROPOLITAN BOROUGH COUNCIL

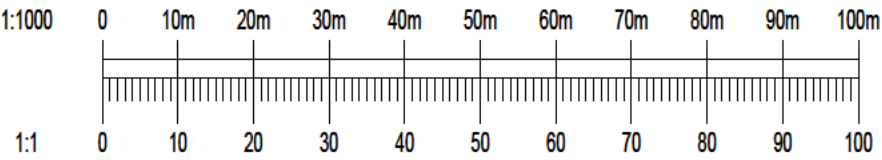


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Status
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14496-WIE-ZZ-XX-DR-V-80208					P01



APPENDICES

A. Photographs



Photograph 1. Area A (looking towards the south-east from SE 13460 17456).



Photograph 2. Area B (looking towards the east from SE 12209 18538).



Photograph 3. Area C (looking towards the south from SE 12024 18657).



Photograph 4. Area D (looking towards the west from SE 11623 19164).

B. Proposed Landscape Plans

TREE PLANTING PLAN FOR BLACKER ROAD CORNER

Deciduous Tree Species	Qty	Size/height	Description	Pit Size (dia'-mtrs)
Aesculus hippocastanum	2	5-7m+	Instant mature tree	1.5
Acer platanoides	3	5-7m+	Instant mature tree	1.5
Acer psuedoplatanus 'Atropurpureum'	1	5-7m+	Instant mature tree	1.5
Crataegus monogyna	2	4-4.5	Extra Heavy Standard	1
Fagus sylvatica 'Purpurea'	1	5-7m+	Instant mature tree	1.5
Quercus robur	2	5-7m+	Instant mature tree	1.5
Tilia cordata	2	5-7m+	Instant mature tree	1.5
Ulmus new horizon	1	4-4.5m	Extra Heavy standards	1
Coniferous Tree Species				
Cupressocyparis leylandii	2	5m	Semi mature	1.2
Understory shrub layer				
Ilex aquifolium	5	1.5-2m	Pot grown shrubs	0.5
Prunus lauroscerascus	5	1.5-2m	Pot grown shrubs	0.5
Sambucus nigra	2	1.5-2m	Pot grown shrubs	0.5

8 & 9 EDGERTON GREEN

TREE PLANTING PLAN FOR 8 & 9 EDGERTON GREEN

Pleached trees with 2m clear stem	Qty	Size/height	Description	Pit size (dia'-mtrs)
Cupressocyparis leylandii	12	3 to 3.5m	1.5 metre centres	0.8
Prunus lusitanica	12	3 to 3.5m	1.5 metre centres	0.8
Deciduous Tree Species				
Acer platanoides	3	5-7m+	Instant mature tree	1.5
Acer psuedoplatanus 'Atropurpureum'	2	5-7m+	Instant mature tree	1.5
Fagus sylvatica	1	5-7m+	Instant mature tree	1.5
Quercus robur	2	5-7m+	Instant mature tree	1.5
Sorbus aria	1	5-6m	Semi mature	1.2
Tilia cordata	1	5-7m+	Instant mature tree	1.5
Coniferous Tree Species				
Cupressocyparis leylandii	1	5m	Semi mature	1.2
Evergreen Hedgerow Species				
Ilex aquifolium	15 lin m	200-250cm	Instant blocks (1m trough)	Linear-300mm W
Ligustrum ovalifolium	15 lin m	200-250cm	Instant blocks (1m trough)	Linear-300mm W
Prunus lauroscerascus Rotundifolia	20 lin m	200-250cm	Instant blocks	Linear-300mm W

KEY

- Proposed Highway footway
- Proposed mixed native deciduous and evergreen species rich hedgerow
- Re-instatement, re-grade or soil and seed
- Proposed pleached tree screen
- Mixed evergreen hedgerow
- Rebuilt stone wall to replace existing
- Proposed tree (1.5 dia pit required)
- Proposed tree (2m dia pit required)
- Red line boundary (planning) / Site extents

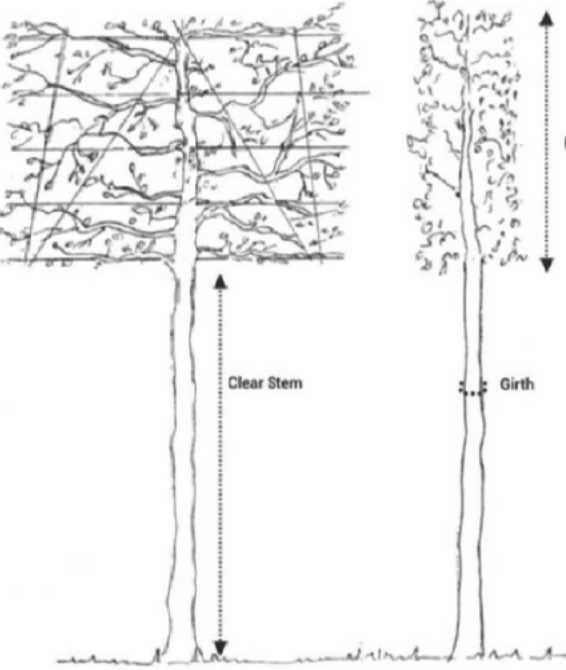
Tree Species

- Acer platanoides
- Acer platanoides
- Acer pseudoplatanus 'Atropurpureum'
- Quercus robur
- Tilia Cordata
- Cupressocyparis leylandii
- Acer platanoides
- Acer pseudoplatanus 'Atropurpureum'
- Tilia Cordata
- Quercus robur
- Thuja plicata
- Cupressocyparis leylandii
- Cupressocyparis leylandii
- Cupressocyparis leylandii
- Cupressocyparis leylandii
- Cupressocyparis leylandii
- Thuja plicata
- Cupressocyparis leylandii
- Cupressocyparis leylandii
- Thuja plicata
- Cupressocyparis leylandii
- Cupressocyparis leylandii
- Prunus lauroscerascus Rotundifolia

TREE PLANTING PLAN FOR 18a, 18b & 18c EDGERTON GREEN

Pleached trees with 2m clear stem	Qty	Size/height	Description	Pit size (dia'-mtrs)
Cupressocyparis leylandii	20	3 to 3.5m	1.5 metre centres	0.8
Prunus lusitanica	36	3 to 3.5m	1.5 metre centres	0.8
Mixed Native Deciduous/Evergreen Species Rich Hedgerow				
Crataegus monogyna	20	180-200cm	Instant blocks (1m trough)	Linear-300mm W
Ilex aquifolium	5	180-200cm	Instant blocks (1m trough)	Linear-300mm W
Prunus spinosa	5	180-200cm	Instant blocks (1m trough)	Linear-300mm W
Corylus avelana	3	180-200cm	Instant blocks (1m trough)	Linear-300mm W
Cornus sanguinea	2	180-200cm	Instant blocks (1m trough)	Linear-300mm W
Acer campestre	3	180-200cm	Instant blocks (1m trough)	Linear-300mm W
Ligustrum ovalifolium	2	180-200cm	Instant blocks (1m trough)	Linear-300mm W
Deciduous Tree Species				
Acer platanoides	5	5-7m+	Instant mature tree	1.5
Acer psuedoplatanus 'Atropurpureum'	2	5-7m+	Instant mature tree	1.5
Aesculus hippocastanum	2	5-7m+	Instant mature tree	1.5
Crataegus monogyna	3	4-4.5	Extra Heavy Standard	1
Fagus sylvatica	2	5-7m+	Instant mature tree	1.5
Sorbus aucuparia	1	5-6m	Semi mature	1.2
Tilia cordata	2	5-7m+	Instant mature tree	1.5
Coniferous Tree Species				
Cupressocyparis leylandii	5	5m	Semi mature	1.2
Thuja plicata	6	5m	Semi mature	1.2
Evergreen Hedgerow Species	Qty	Size/height	Description	Pit size (dia'-mtrs)
Ilex aquifolium	8 lin m	200-250cm	Instant blocks (1m trough)	Linear-300mm W
Ligustrum ovalifolium	8 lin m	200-250cm	Instant blocks (1m trough)	Linear-300mm W
Prunus lauroscerascus Rotundifolia	10 lin m	200-250cm	Instant blocks	Linear-300mm W

Pleached Tree Example



Pleached Laurel trees, showing the frame on which they grow.



Instant mixed native hedgerow.

PLANNING ISSUE

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Streetscene and Housing Service Highways and Operation Division Flint Street, Fartown Huddersfield HD1 6LG		
SECTION Landscape Architects / Highways Design		
DRAWN	AM	CHECKED SH
SCALE	PROJECT NO.	DATE
1:200@A0	25/12448	19/05/2021
PROJECT WYTF A629 HALIFAX ROAD PHASE 5 CORRIDOR IMPROVEMENT		
TITLE AREA A TREE MITIGATION & LANDSCAPE PROPOSALS (SHEET 1 OF 2)		
DRAWING No. TF5/Area-A/P/LSC-1		
CAD No.		

