

Planning Permission F/21/92285 Road Lighting Design Strategy for Ecology and Amenity: Planning Condition 7

1. Background

Eastleigh Borough Council granted planning permission for the 'Construction of road between Allington Lane and Burnetts Lane with associated footway, cycle paths, water crossings, drainage and landscaping'. Planning Condition 7, associated with permission ref F/21/91185 states:

Within 3 months of the commencement of the development, a final lighting design strategy for biodiversity and amenity shall be submitted to the local planning authority. The strategy shall:

- 1) identify those areas / ecological features and the species they support that are particularly sensitive to artificial lighting and where artificial lighting is likely to cause disturbance in or around their breeding sites and resting places along important routes used to access key areas of their territory, for example for foraging; and*
- 2) show how and where external lighting will be installed (through provision of appropriate lighting contour plans and technical specifications) so that it can be clearly demonstrated that areas to be lit will not disturb or prevent the above species using their territory or having access to their breeding sites and resting places.*

Unless otherwise agreed in writing by the Local Planning Authority, the lighting strategy shall broadly accord with the submitted Lighting Impact Assessment (Hydrock, 23/7/21) recommendations and conclusions and follow the advice and guidance of the Institute of Lighting Professionals (ILPs) publication "Guidance Notes for the reduction of Obtrusive Light" and the Bat Conservation Trust and ILP Guidance Note 08/18 "Bats and artificial lighting in the UK". All external lighting shall be installed in accordance with the approved details prior to first use of the road with the specifications and locations set out in the strategy, and these shall be maintained thereafter in accordance with the strategy. Under no circumstances should any other external lighting be installed without prior consent from the local planning authority.

This Technical Note presents the Lighting Design Strategy for Ecology and Amenity for the road. It sets out key information about artificial lighting at night (ALAN) and biodiversity, highlights those species sensitive to ALAN associated with the setting of the road and key habitats features,, sets out the lighting design rationale, presents the lighting locations, specifications and lux contours associated with the scheme, in relation to retained ecological features and sensitivities, and provides conclusions on its suitability.

Figure 1 and 2 show the proposed road and associated infrastructure.



Figure 1. Road Alignment North

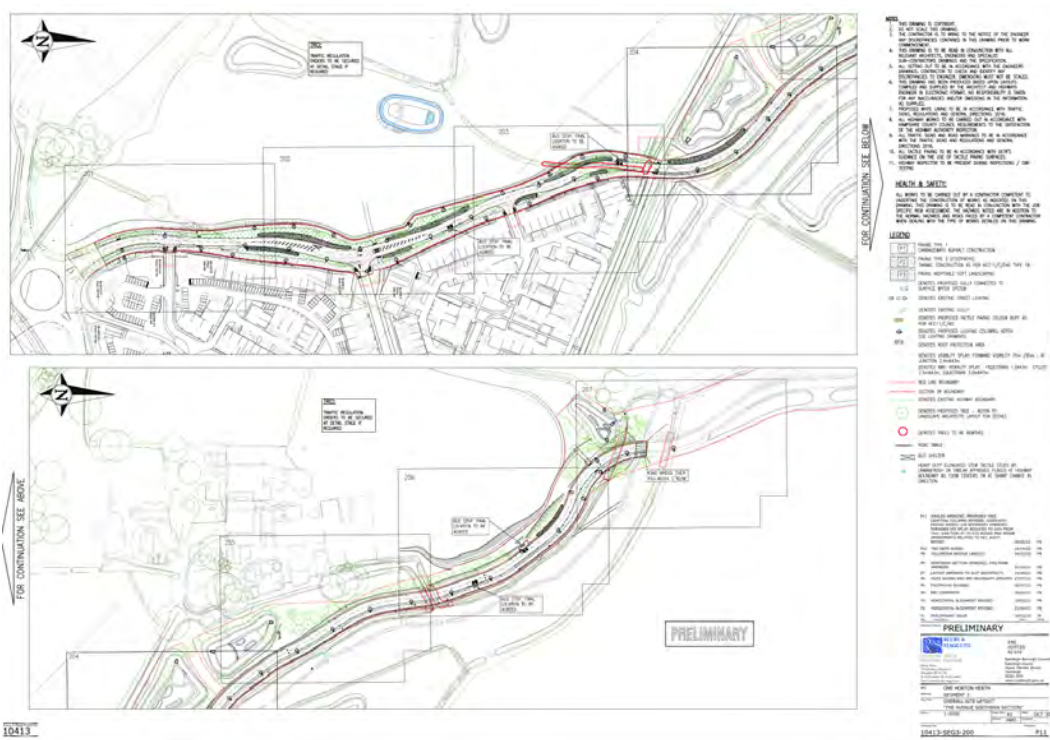


Figure 2. Road Alignment South

2. Street Lighting and Biodiversity

One Horton Heath is home to a rich biodiversity including a wide range of nocturnal wildlife that uses the green and blue spaces that lead to, from and across the development area including watercourses, woodlands, grasslands and farmland, but will also include parks, recreational areas, new ponds and residential gardens. The biodiversity includes nocturnal species (and associated key functional habitat) that are afforded legal and policy protection including bats, owls, badger, hedgehog, fish, amphibians and invertebrates.

Artificial lighting at night can affect nocturnal wildlife in a number of different ways. Two key areas of effect are related to disorientation and attraction/repulsion. The addition of artificial lighting to an environment can affect foraging and reproductive behaviour, predator-prey interactions, habitat use, community structure and physiology. An example of this is where bats have shown a change in foraging behaviour, flight routes and evening emergence times in response to artificial lighting. There is a considerable body of academic evidence relating to this. It is likely that effects of artificial lighting at night are species specific and associated with the role that ambient lighting plays on physiology and behaviour and the type of artificial lighting used in a specific location.

With such a range of fundamental effects on wildlife, it is critical that appropriate measures are introduced to consider the need for lighting, the best design and location for lighting and the ability to control lighting in a way that is compatible with nocturnal wildlife. With an ever-growing population and increase in urban living, it is critical to understand the implications of artificial lighting at night on people and the environment to ensure nature conservation and recovery can go hand in hand with the necessary provision of artificial lighting that humans require. This is reflected in the Government's objective for halting the biodiversity crisis and driving forward nature recovery, other legislation, and associated mechanisms.

The approach to designing the lighting for this road at One Horton Heath has taken these issues into account from the outset, including through the Environmental Impact Assessment process and in the detailed design work carried out by Hampshire County Council and Enerveo (as set out in Section 4). For the purposes of this assessment, Johns Associates has taken the 1 lux contour as being relatively acceptable for nocturnal wildlife, noting that some species are more light sensitive and some more tolerant.

3. Light Sensitive Biodiversity/Habitat Features Associated with the Road

Figure 3 illustrates the baseline sensitive ecological features associated with the northern parts of One Horton Heath. The road associated with this planning condition (located as the grey linear feature on the left of this plan running north to south) passes through terrestrial habitats used by great crested newt, woodland used by dormouse, bats and badger and open grassland areas and through hedgerows used by badger, bats and owls.

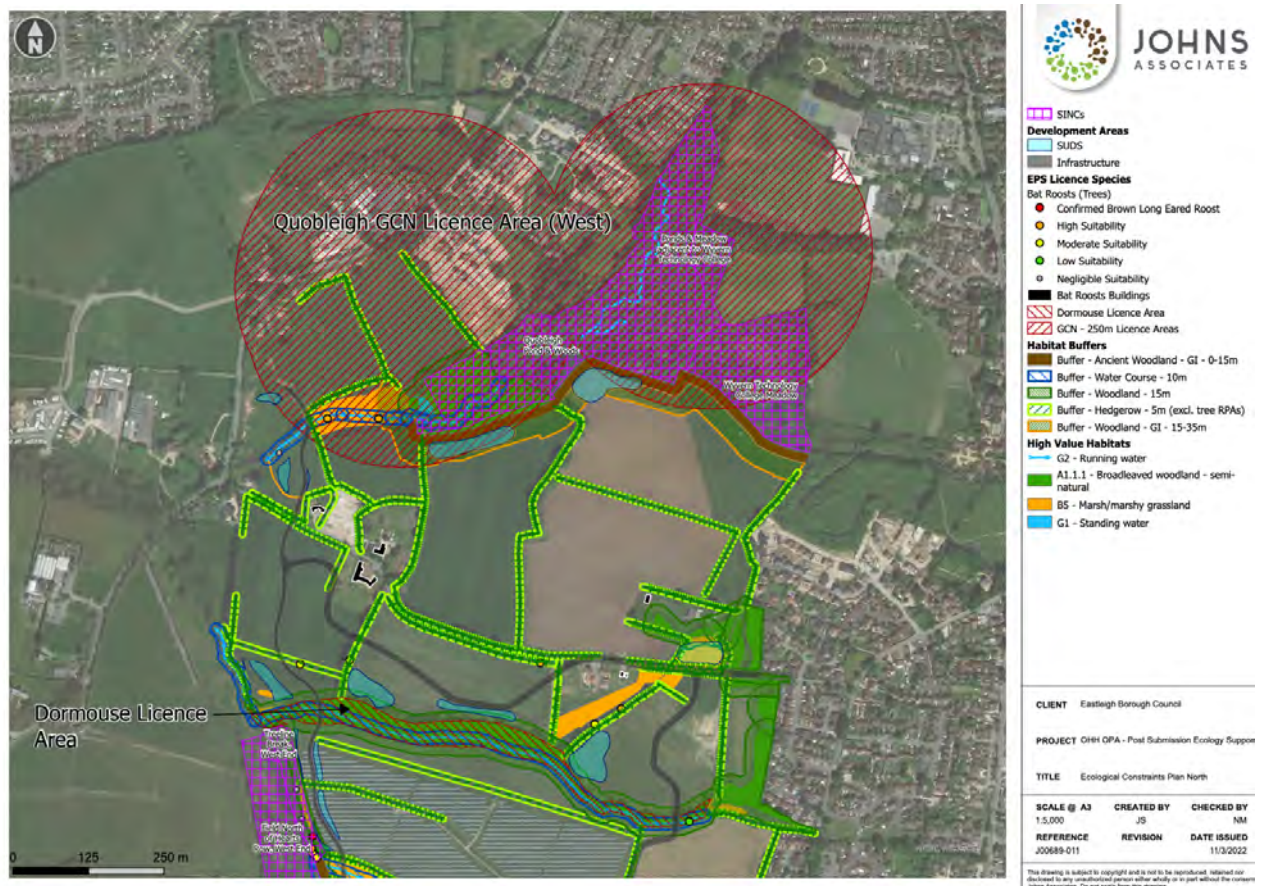


Figure 3 One Horton Heath North

In particular the crossing of the Quobleigh Stream is perhaps the most light sensitive location in this part of the site as it could be used by otter and fish, alongside bats.

Figure 4 illustrates the baseline sensitive ecological features associated with the southern parts of One Horton Heath. The road associated with this planning condition (located as the grey linear feature running north west to south east across this plan) passes through terrestrial habitats used by great crested newt, woodland used by dormouse, bats and badger and open grassland areas and through hedgerows used by badger, bats and owls.

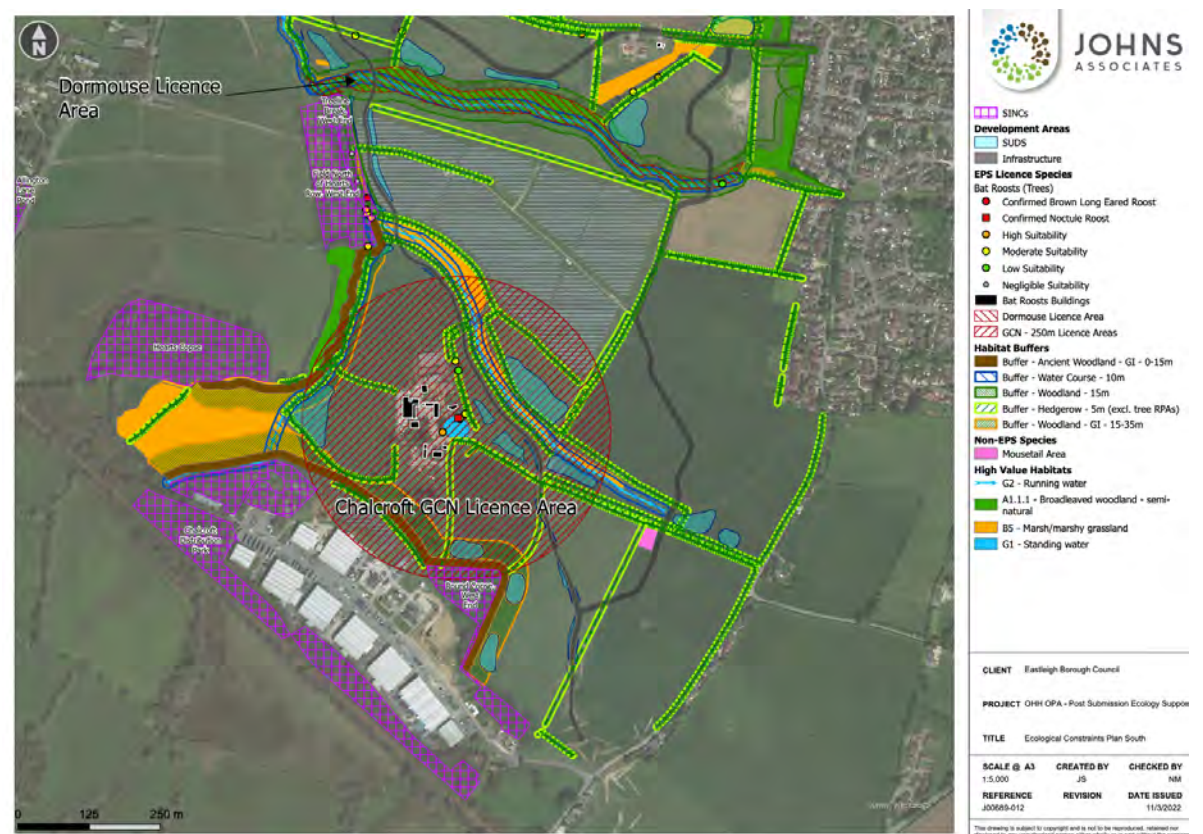


Figure 4 One Horton Heath South

In particular the proximity of the road to the western woodland and stream corridor boundary is perhaps the most light sensitive location in this part of the site as it could be used by otter and fish, alongside bats. Elsewhere, grassland and hedgerow habitats will be used by great crested newt close to Chalcroft, as well as badger, bats and owls.

Figure 5 illustrates the future habitats being created as part of the road proposals. This will largely recreate features being lost as part of the construction phase, but also seeking to reinforce retained habitats, and enhance the biodiversity compared to the typically species poor grassland currently present.

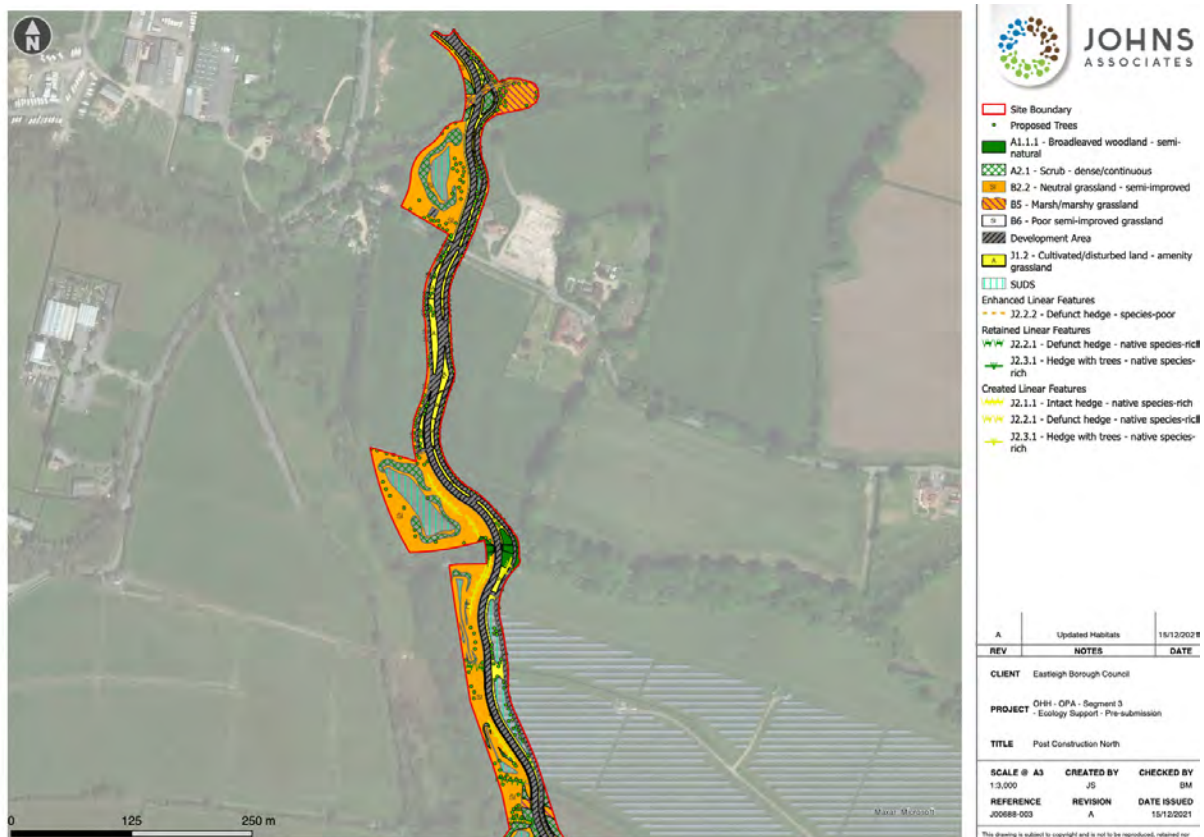


Figure 5. Future habitats along the road - north

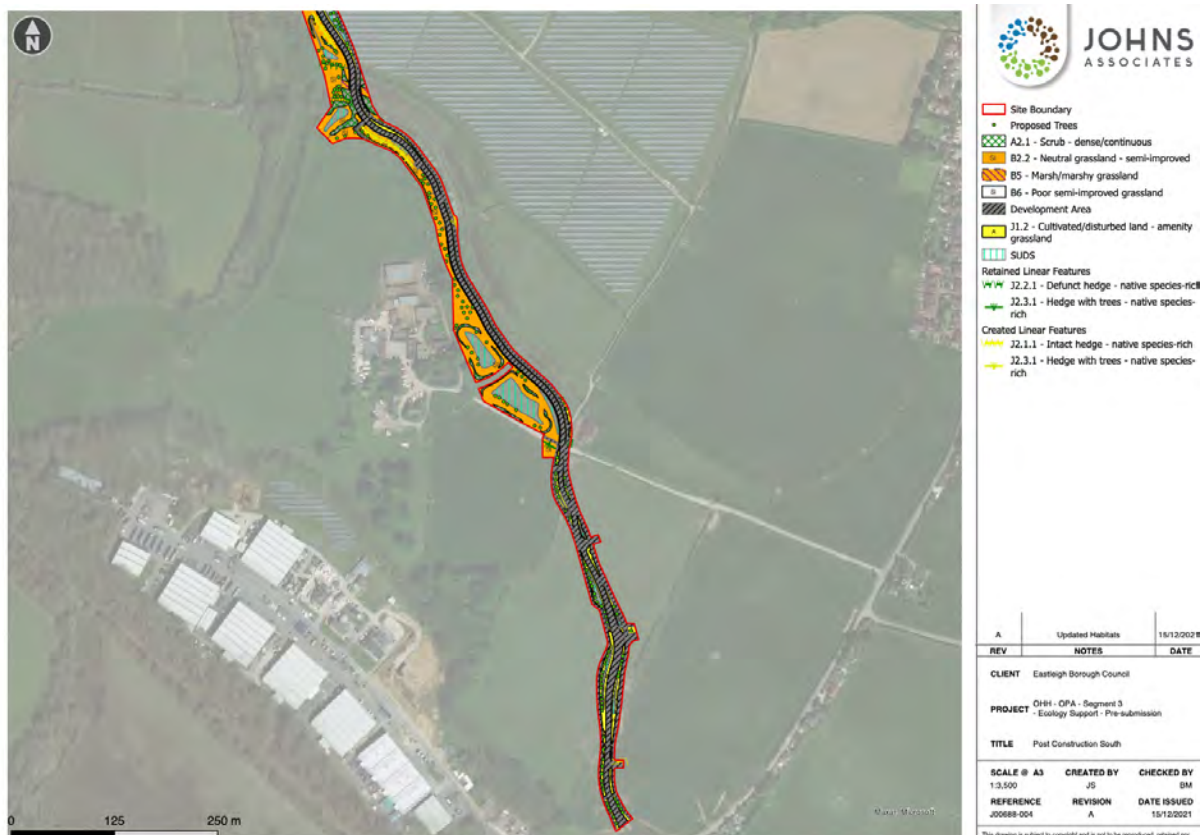


Figure 6. Future habitats along the road - south

4. Lighting Design Rationale

Lighting class selection was carried out by Hampshire County Council (HCC) street lighting and issued as a brief to Enerveo in Feb 2019. Enerveo has worked with the One Horton Heath team and Johns Associates to ensure that the site specific ecological requirements were met and that the lighting strategy broadly accords with the submitted Lighting Impact Assessment (Hydrock, 23/7/21) recommendations and conclusions and follows the advice and guidance of the Institute of Lighting Professionals (ILPs) publication "Guidance Notes for the reduction of Obtrusive Light" and the Bat Conservation Trust and ILP Guidance Note 08/18 "Bats and artificial lighting in the UK.

Enerveo designed the site to HCC's requested lighting levels as follows:

- Warm white LEDs (3000K) have been used as per HCC TG13 for areas that are environmentally sensitive;
- Optics have been chosen to light the width of the road only and minimise spill light off the target area beyond the road and footways;
- Where possible rear louvres have been used to minimise spill light behind lighting columns;
- Due to the curves in the road it is not possible to use louvred optics at all locations as they reduce light along the back edge and mean where roads curve, lighting levels are not met on the road or footways;
- It is not possible to use louvred optics on roundabouts otherwise lighting levels are not met on the road;
- Separated footpaths from the carriage way increase the columns required as dedicated footway lighting is needed; and
- Where dedicated footpath lighting is required, reduced column height of 6m from 8m on the carriage way helps reduce extraneous spill light.

5. Lighting Lux Contours and Retained Features

5.1 Lux Contours

Enerveo kindly provided a .dwg file to Johns Associates showing a range of lux contours for the whole of the scheme. Johns Associates has aligned these with the dwg of the road masterplan and background information to enable a detailed review of the lux levels in relation to known ecological sensitivities along the road routing: see Figure 7 below.

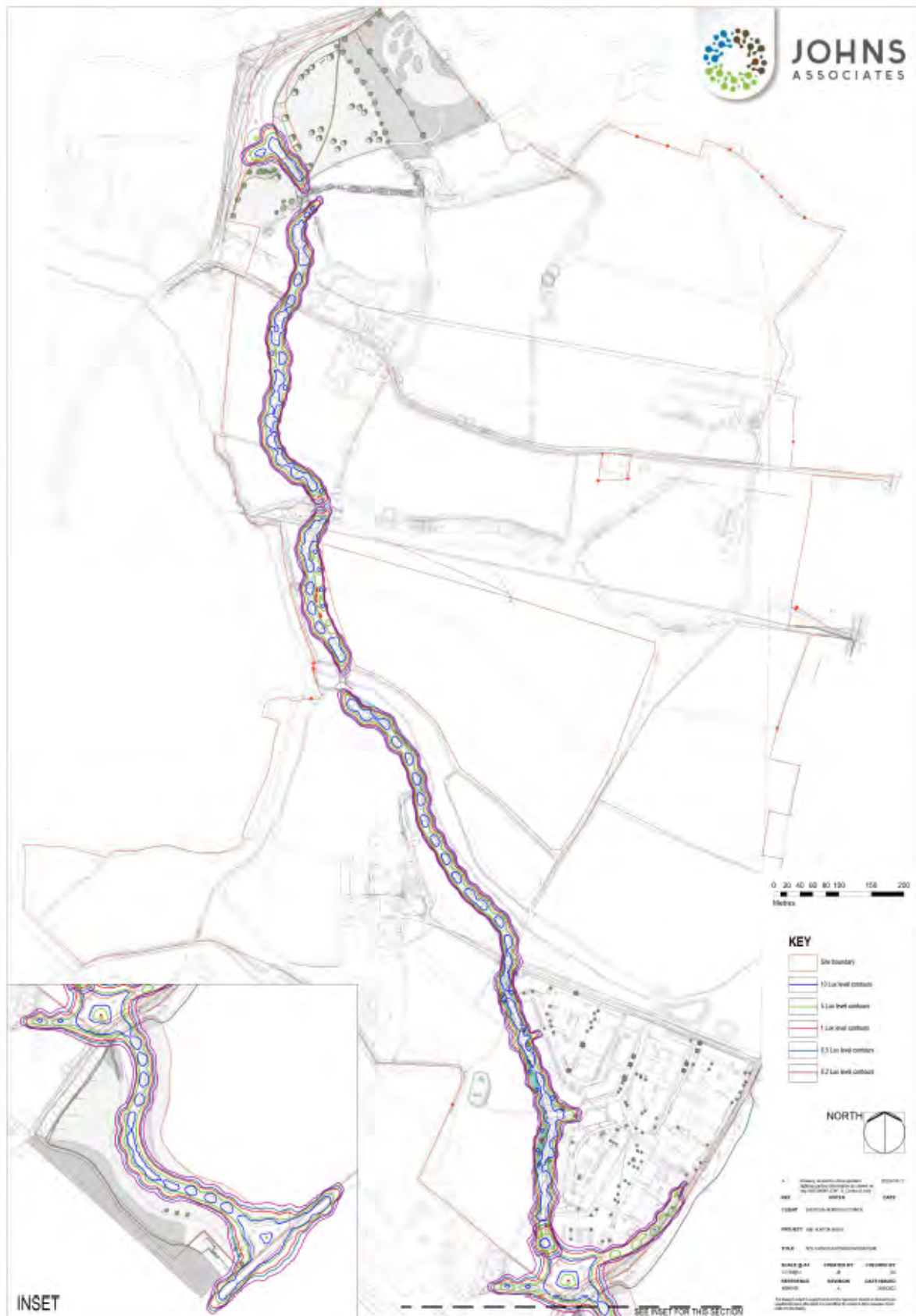


Figure 7. Lux contours and retained features. This plan is available separately.

Enerveo has revised the lighting design to ensure compliance with the *"Technical Note OHH Street Lighting and Ecology July22.pdf"* and the restrictions on the lighting levels made to minimise the impact of the artificial light at night on the night-time natural environment. However, lantern optics have been chosen to minimise spill light and illuminate the highway appropriately in accordance with the HCC lighting brief, HCC TG13 and the ecological restrictions.

1 lux and 5 lux isolux contours have been shown on the lighting drawing (SSE296001-LD-001-G) in the immediate vicinity of the crossings to demonstrate compliance with the restrictions put in place by *"Technical Note OHH Street Lighting and Ecology July22.pdf"*. These contours are limited to directly adjacent bridges to avoid them cluttering the drawing in other areas where they are not required.

SSE296001-AC-002-G grids 15, 16, 17, 18 show light levels in the environmentally sensitive areas under and around the Southern Bridge and Foxholes Wood Bridge. These are fully compliant with the requirements of *"Technical Note OHH Street Lighting and Ecology July22.pdf"*.

SSE296001-AC-003-G grids 7, 11 it has not been possible to achieve 25% overall uniformity (Uo) on this footpath, due to minimising light intrusion onto the restrictions on lighting the watercourse under and around the Quobleigh Brook Bridge. At least 20% uniformity is achieved on both. These are fully compliant with the requirements of *"Technical Note OHH Street Lighting and Ecology July22.pdf"*.

SSE296001-AC-002-G grids 9,10 show light levels in the environmentally sensitive areas under and around the Quobleigh Brook Bridge. These are fully compliant with the requirements of *"Technical Note OHH Street Lighting and Ecology July22.pdf"*.

Lighting Technical Specification

Lantern Type

Urbis Axia 3 with DALI dimming ballast fitted with Mayflower six pin NEMA socket, post-top mounted, tilt 0 degree.

Warm white LEDs (3000K) are to be used.

Lanterns to be finished in 12B21 (mineral green).

Every lighting scheme is required to install one Mayflower Complete Lighting Control DALI Sub-master unit to control Nodes and link to Central Management System.

Optics vary across the site due to varying lighting levels, road geometries etc.

Column Type

Columns to be 8 and 6 metre galvanized tubular steel straight shaft (no outreach bracket), Abcrite coated, colour 12B21, (mineral green).

Raise and lower columns are to be installed on footpaths and are to be of the mid hinge type

All raise and lower columns and any 8m columns adjacent to cycleways are to be fitted with 150mm deep white self-adhesive retro reflective band to BS EN12899 Class RA1, applied between 1.4m & 1.6m above ground to increase night time visibility for cyclists.

Column Locations

Columns are to be installed either rear of footpath or rear of verge. Where verges are at least 1-metre-wide columns are to be installed rear of verge. Any deviation from rear of path or verge are noted on the drawing.

Where columns are at the top of slopes level ground must be expanded to give 1 metre of level ground around each column to allow for sufficient ground to support the columns foundation.

It has not been possible to setback columns 0.5m from cycleways in line with TG13 and TR23 due to proximities of properties and extents of highway boundary. To mitigate this, columns placed on cycleways are to be fitted with 150mm deep white self-adhesive retro reflective band to BS EN12899 Class RA1, applied between 1.4m & 1.6m above ground to increase night-time visibility for cyclists.

Where proposed columns are within the proximity zone of existing overhead high voltage lines, they should not be installed prior to them being diverted underground, the route of the diversion was not available at the time of the design.

6. Conclusions and Recommendations

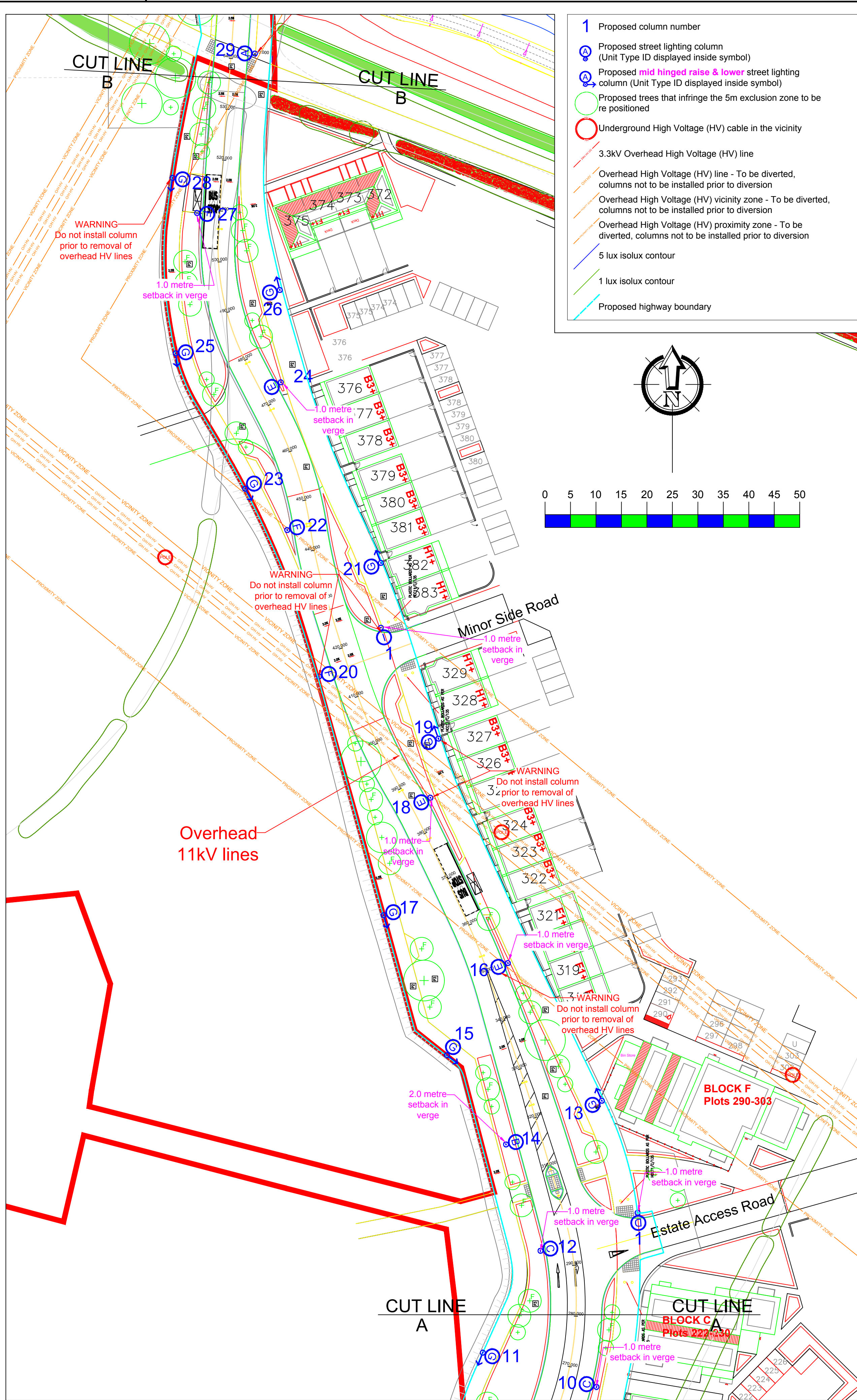
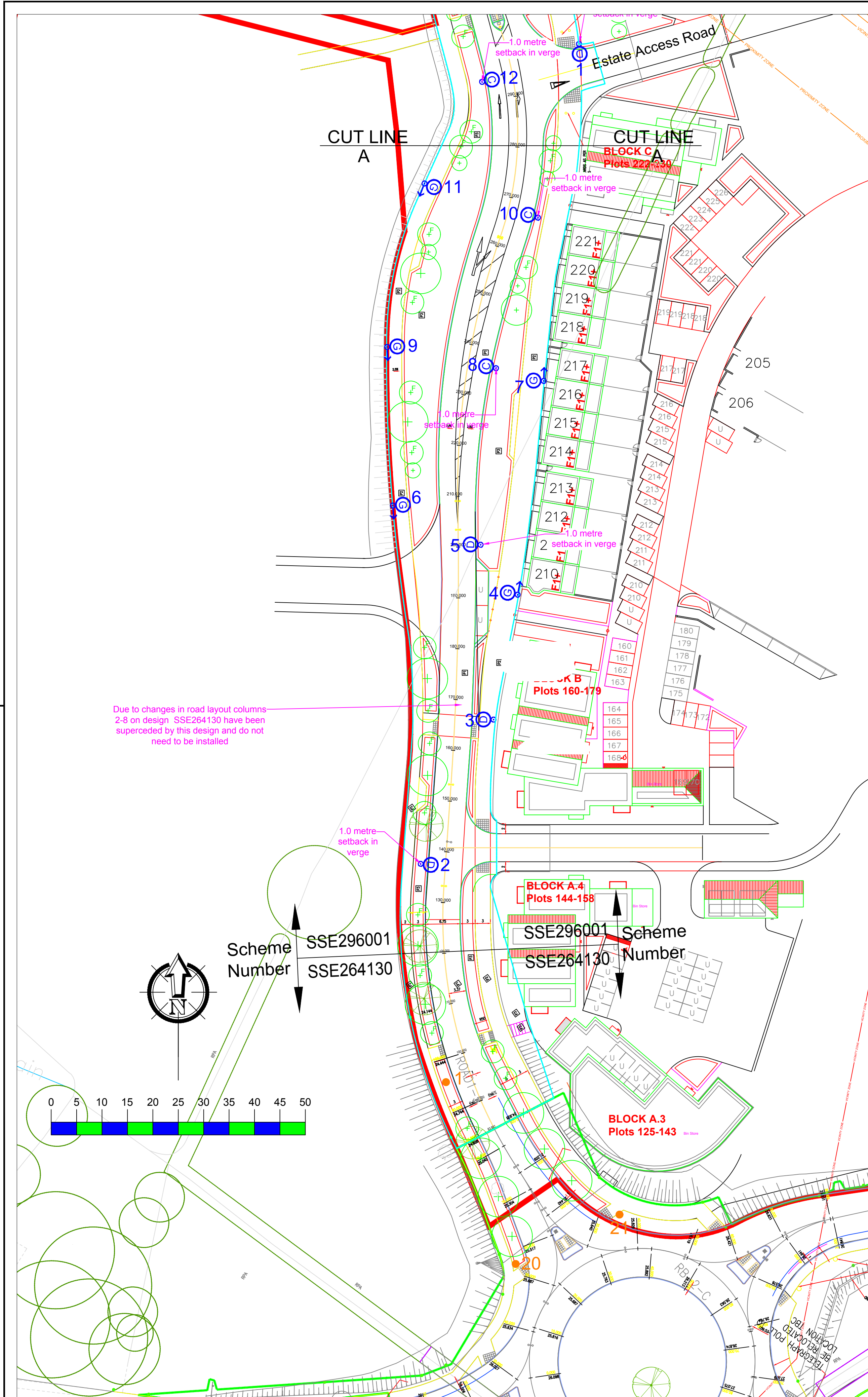
A careful and considered review of the lighting as shown on Figure 7 demonstrates that through the majority of the road, the lighting is maintained close to the carriageway where there are sensitive retained features of likely ecological importance e.g., hedgerows used by commuting or foraging bats and that generally, the 1 lux level is maintained close to the edge of the construction road footprint (including cuttings/embankments). This supports the conclusion that, the area surrounding the road footprint will not be illuminated by the road lighting in a manner that will have a significant effect on nocturnal wildlife.

As such, it is considered reasonable to conclude that the information set out in this document will satisfactorily discharge the requirements of Condition 7 and that the delivery and operation of the road and its lighting will also accord with the requirements of Planning Condition 7.

Prepared by Matt Johns CEnv MCIEEM FGS MIFM

10/05/23

APPENDIX A DETAILED LIGHTING PLANS AND SPECIFICATIONS



- Notes
- Do not scale from drawing if not printed at original paper size.
 - All street lighting equipment and works to be carried out in accordance with current Hampshire County Council specification TG13 and standard detail drawings HCC11/L & HCC11/C series.
 - Contractor to confirm position of statutory undertakers plant before commencement of the works. For statutory undertaker's information visit www.linesearchbeforeudig.co.uk
 - During works all traffic management to be in accordance with Chapter 8 of the Traffic Signs Manual.
 - Lighting columns to be fed by DNO supply unless otherwise shown.
 - Each luminaire to be fitted with Mayflower Complete Lighting control S6000 socket (NEMA).
 - Maintenance numbers as shown on the drawing are to be confirmed by HCC.
 - Columns to be numbered using adhesive labels suitable for exterior use. Letters and numerals shall be 50mm high black on a white background.
 - One Mayflower complete lighting control DALI sub-master unit to be installed to control nodes and link central management system.
 - All apparatus are to be new at the time of installation and be supported by relevant manufacturer's guarantees.
 - All apparatus shall be sited so as to minimise, in so far as is reasonable and practical, nuisance, danger and obstruction to all residents, businesses and users of the highway.
 - All illuminated apparatus must be installed and tested in compliance with BS7671 at the time of adoption.
 - All installations must be installed in such a way that trees or any other foliage on the site does not interfere with the level of lighting. Refer to HCC's drawing HCC11/L/085 'Areas to be kept clear of trees and shrubs'.
 - This detailed design has been prepared in accordance with the HEA-HEMSA guidance note - CDM2015 regulations, issue 1.1, dated 09/04/15 Procedure 3: information has been supplied by the client or another designer or the principal designer and includes a Linesearch by the lighting scheme designer which forms which forms the basis of this lighting scheme design and includes the hazards identified by others on their hazard elimination and management list. The designer has carried out a Linesearch however no further checks have been undertaken.
 - Lanterns to be installed perpendicular to the kerb edge, unless stated on the drawing
 - Columns erected with 0.5 metres on shared foot/cycleways to be fitted with 150mm deep white self adhesive retro reflective band to BS EN12890 Class RA1, applied between 1.4m & 1.6m above ground to increase night time visibility for cyclists.
 - WARNING** - Do not install columns within the proximity zones of Overhead High Voltage (O/H HV) lines prior to removal of O/H HV lines. Diversion routes at the time of design unknown.
 - Columns are the top of slopes should have 1 metre of level ground in all directions around them to support the foundation.

SAFETY HEALTH AND ENVIRONMENTAL (SHE) INFORMATION

Please refer to: Hazard Elimination List
Document Ref:SSE296001-HE-001-G

Lighting Clases - BS5489-1:2020	
Distributor Road	P2
Major Access Road Junction	C3
Distributor Roads Remote Footpath	P4 or P3
Side Roads	P4

G	Lighting at 3x bridges adjusted to below 1 or 5 lux as per ecology report	21/09/22	JLD
F	Landscaping updated	22/04/22	JLD
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C	Revised column locations adjacent bridges	24/01/22	JLD
B	Revised road layout	05/10/21	JLD
A	Original Issue	10/03/21	JLD
REV	DESCRIPTION	DATE	BY

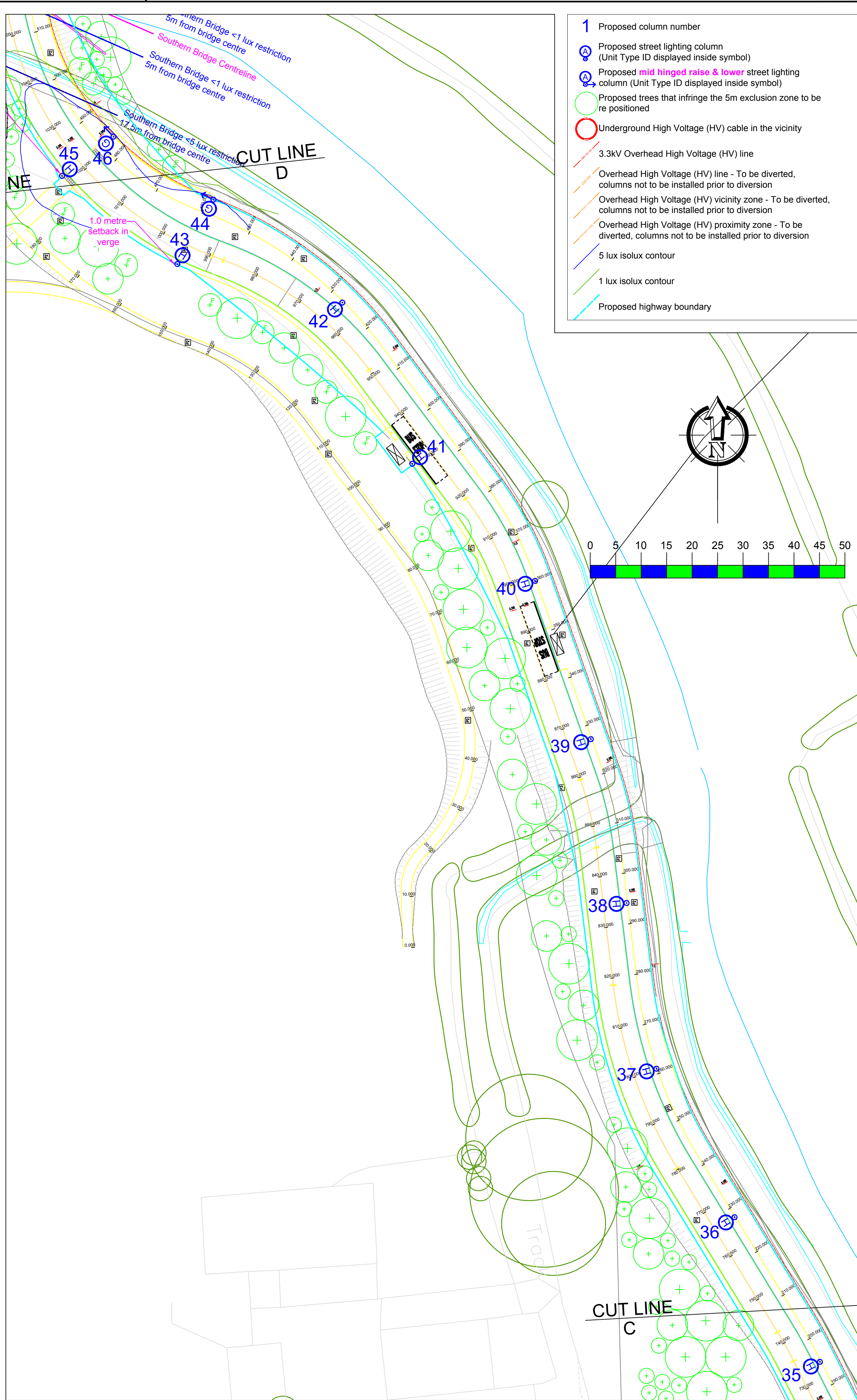
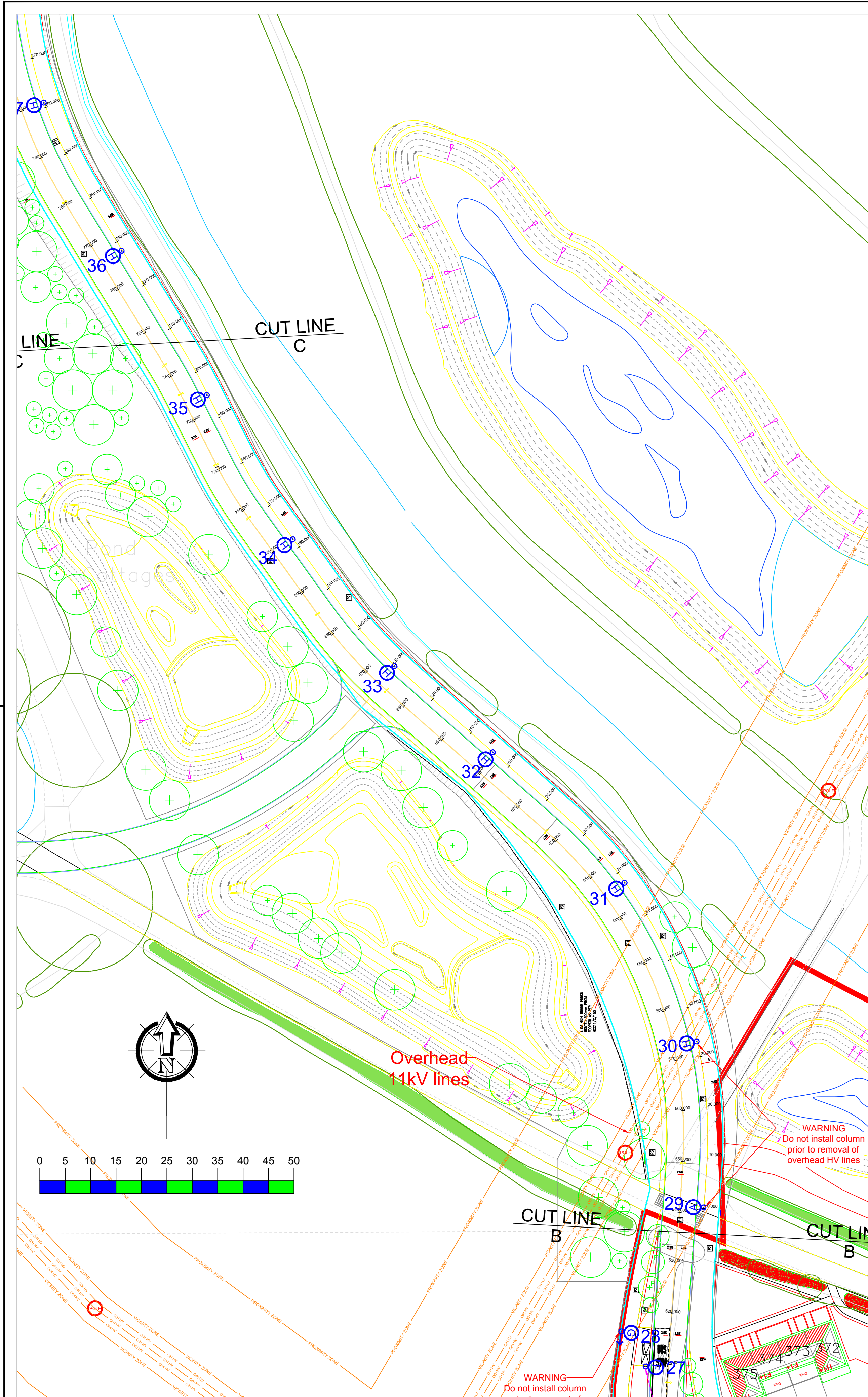
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TITLE

Lighting Layout
(Sheet 1 of 5)

PROJECT Horton Heath Segment 3
Reuby & Stagg

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Side Roads	P4

REV	DESCRIPTION	DATE	BY
G	Lighting at 3x bridges adjusted to below 1 or 5 lux as per ecology report	21/09/22	JLD
F	Landscaping updated	22/04/22	JLD
E	Revised column locations adjacent bridges	04/04/22	JLD
D	Column 78 & 80 relocated due to clash with future side road	21/03/22	JLD
C	Revised column locations adjacent bridges	24/01/22	JLD
B	Revised road layout	05/10/21	JLD
A	Original Issue	10/03/21	JLD

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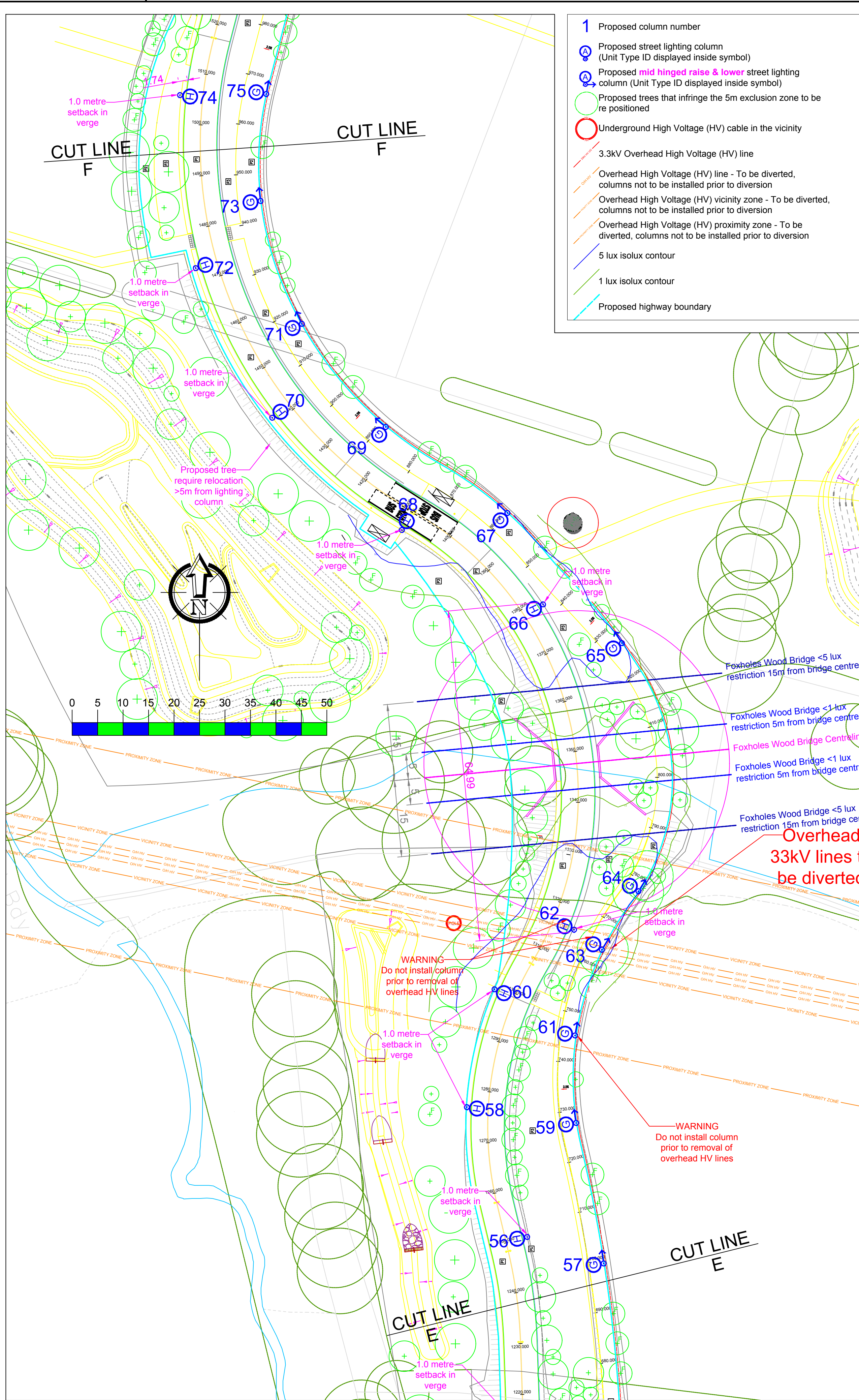
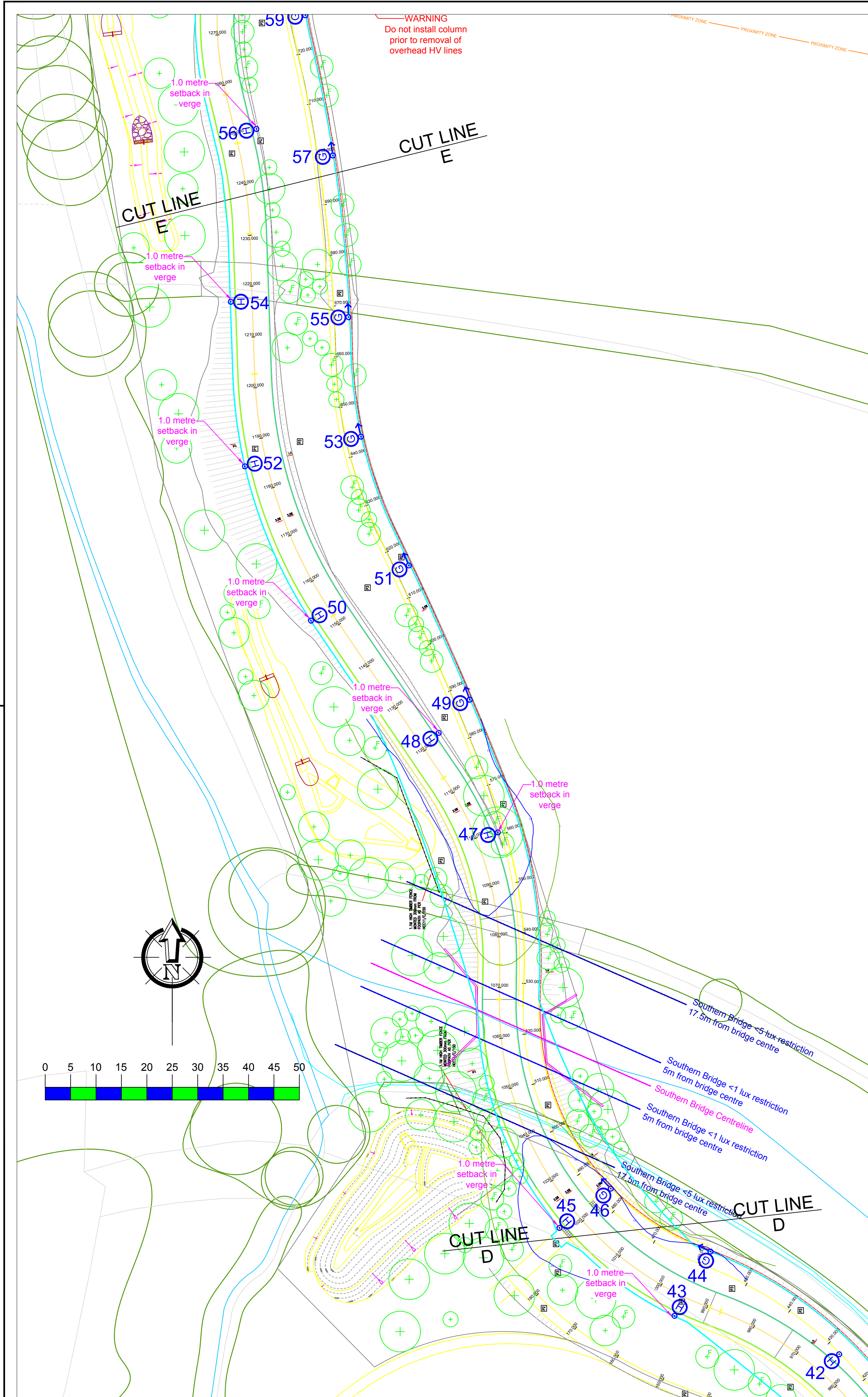
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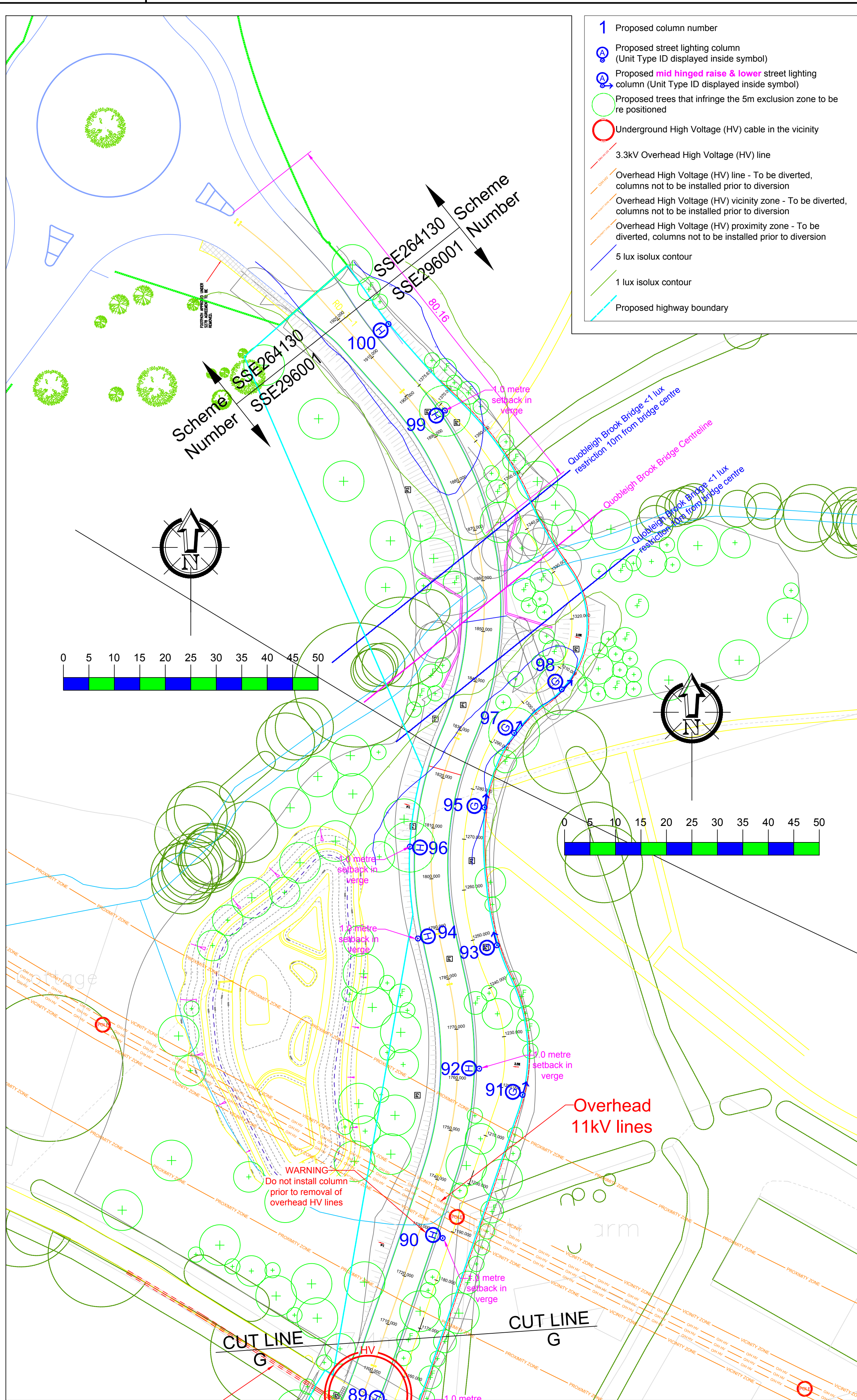
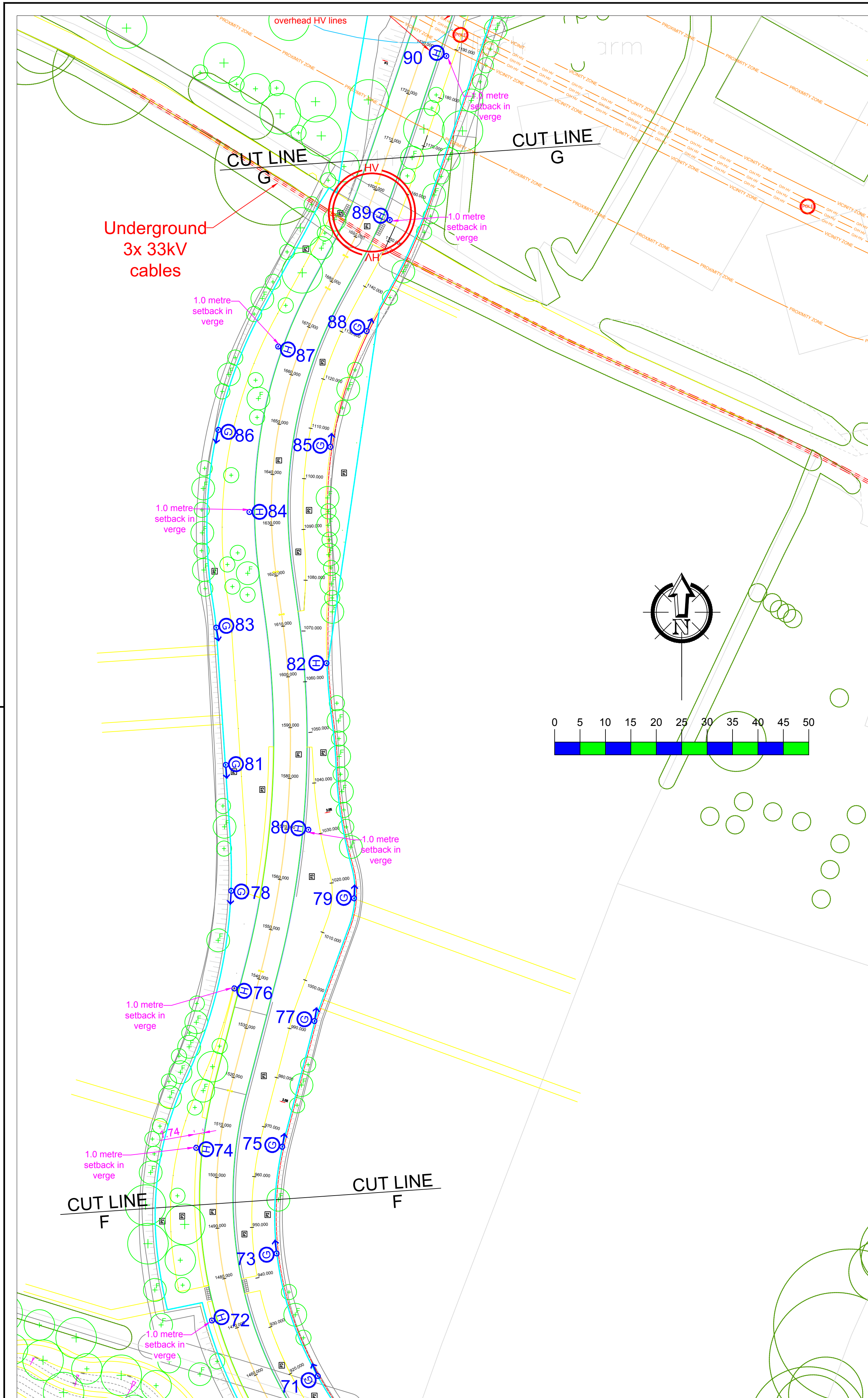
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DRAWING NUMBER SSE296001-LD-003	REVISION F



- 1 Proposed column number
- Proposed street lighting column (Unit Type ID displayed inside symbol)
- Proposed mid hinged raise & lower street lighting column (Unit Type ID displayed inside symbol)
- Proposed trees that infringe the 5m exclusion zone to be re positioned
- Underground High Voltage (HV) cable in the vicinity
- 3.3kV Overhead High Voltage (HV) line
- Overhead High Voltage (HV) line - To be diverted, columns not to be installed prior to diversion
- Overhead High Voltage (HV) vicinity zone - To be diverted, columns not to be installed prior to diversion
- Overhead High Voltage (HV) proximity zone - To be diverted, columns not to be installed prior to diversion
- 5 lux isolux contour
- 1 lux isolux contour
- Proposed highway boundary

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 - Columns are the top of slopes should have 1 metre of level ground in all directions around them to support the foundation.

SAFETY HEALTH AND ENVIRONMENTAL (SHE) INFORMATION

Please refer to: Hazard Elimination List
Document Ref:SSE296001-HE-001-G

Lighting Clases - BS5489-1:2020	
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Major Access Road Junction	C3
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Side Roads	P4

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C	Revised column locations adjacent bridges	24/01/22	JLD
B	Revised road layout	05/10/21	JLD
A	Original Issue	10/03/21	JLD
REV	DESCRIPTION	DATE	BY



SSE Enterprise - Lighting, 1st Floor, Solent Park, Walton Road, Portsmouth, PO6 1UJ

TITLE

Lighting Layout
(Sheet 4 of 5)

PROJECT

Horton Heath Segment 3
Reuby & Stagg

SCALE	DATE
1:500	10/03/21
	DRAWN
	JLD
	CHECKED
	RHJ
PAPER SIZE	APPROVED
A1	SAB
DRAWING NUMBER	REVISION
SSE296001-LD-004	G

Symbol	Count	Mounting Height	Column Material	Column Type	Column Colour	Installation Type	Root Length	Lantern	Lantern Weight	Windage	Mounting	Lantern Tilt	Lantern Colour	Optic Setting	Output	Number of LEDs	Colour Temperature	Wattage	Control Unit	Switching Unit	Isolator	Electricity Supply	Luminaire Elexon Code	Switching Elexon Code
	1	8 metres	Galvanised Steel	Stepped tubular (South Coast PFI Spec)	BS4800 12B21 Mineral Green	Planted	1200mm Factory Standard	Urbis Axia 3.2	4.8kg	0.030m²	Post Top	0 degrees	BS4800 12B21 Mineral Green	5279	8.49klm	24	3000K (WarmWhite)	76W	Electronic DALI Enabled	Mayflower External GPS Node	DNO Isolator	DNO	42 0076 0000 100	98 0001 0010 100
	1	8 metres	Galvanised Steel	Stepped tubular (South Coast PFI Spec)	BS4800 12B21 Mineral Green	Planted	1200mm Factory Standard	Urbis Axia 3.2	4.8kg	0.030m²	Post Top	0 degrees	BS4800 12B21 Mineral Green	5295	9.85klm	32	3000K (WarmWhite)	78W	Electronic DALI Enabled	Mayflower External GPS Node	DNO Isolator	DNO	42 0078 0000 100	98 0001 0010 100
	3	8 metres	Galvanised Steel	Stepped tubular (South Coast PFI Spec)	BS4800 12B21 Mineral Green	Planted	1200mm Factory Standard	Urbis Axia 3.2	4.8kg	0.030m²	Post Top	0 degrees	BS4800 12B21 Mineral Green	5295 Rear Louvres	7.96klm	32	3000K (WarmWhite)	78W	Electronic DALI Enabled	Mayflower External GPS Node	DNO Isolator	DNO	42 0078 0000 100	98 0001 0010 100
	4	8 metres	Galvanised Steel	Stepped tubular (South Coast PFI Spec)	BS4800 12B21 Mineral Green	Planted	1200mm Factory Standard	Urbis Axia 3.2	4.8kg	0.030m²	Post Top	0 degrees	BS4800 12B21 Mineral Green	5267	9.61klm	32	3000K (WarmWhite)	78W	Electronic DALI Enabled	Mayflower External GPS Node	DNO Isolator	DNO	42 0078 0000 100	98 0001 0010 100
	3	8 metres	Galvanised Steel	Stepped tubular (South Coast PFI Spec)	BS4800 12B21 Mineral Green	Planted	1200mm Factory Standard	Urbis Axia 3.2	4.8kg	0.030m²	Post Top	0 degrees	BS4800 12B21 Mineral Green	5279 Rear Louvres	6.10klm	32	3000K (WarmWhite)	59W	Electronic DALI Enabled	Mayflower External GPS Node	DNO Isolator	DNO	42 0059 0000 100	98 0001 0010 100
	3	8 metres	Galvanised Steel	Stepped tubular (South Coast PFI Spec)	BS4800 12B21 Mineral Green	Planted	1200mm Factory Standard	Urbis Axia 3.2	4.8kg	0.030m²	Post Top	0 degrees	BS4800 12B21 Mineral Green	5279	6.53klm	24	3000K (WarmWhite)	53W	Electronic DALI Enabled	Mayflower External GPS Node	DNO Isolator	DNO	42 0053 0000 100	98 0001 0010 100
	44	6 metres	Galvanised Steel	Mid-hinged raise & lower (South Coast PFI Spec)	BS4800 12B21 Mineral Green	Planted	1000mm Factory Standard	Urbis Axia 3.1	3.6kg	0.030m²	Post Top	0 degrees	BS4800 12B21 Mineral Green	5266 Rear Louvres	1.74klm	16	3000K (WarmWhite)	20W	Electronic DALI Enabled	Mayflower External GPS Node	DNO Isolator	DNO	42 0020 0000 100	98 0001 0010 100
	41	8 metres	Galvanised Steel	Stepped tubular (South Coast PFI Spec)	BS4800 12B21 Mineral Green	Planted	1200mm Factory Standard	Urbis Axia 3.2	4.8kg	0.030m²	Post Top	0 degrees	BS4800 12B21 Mineral Green	5266 Rear Louvres	5.81klm	24	3000K (WarmWhite)	61W	Electronic DALI Enabled	Mayflower External GPS Node	DNO Isolator	DNO	42 0061 0000 100	98 0001 0010 100
	1	6 metres	Galvanised Steel	Stepped tubular (South Coast PFI Spec)	BS4800 12B21 Mineral Green	Planted	1000mm Factory Standard	Urbis Axia 3.1	3.6kg	0.030m²	Post Top	0 degrees	BS4800 12B21 Mineral Green	5266 Rear Louvres	1.74klm	16	3000K (WarmWhite)	20W	Electronic DALI Enabled	Mayflower External GPS Node	DNO Isolator	DNO	42 0020 0000 100	98 0001 0010 100

Road Name	Column Number	Easting	Northing	Setback
Estate Access Road	1	448855.80	116295.81	1.0 metre setback in verge
Minor Side Road	1	448805.24	116410.66	1.0 metre setback in verge
Distributor Road	2	448824.48	116134.57	1.0 metre setback in verge
Distributor Road	3	448838.83	116162.93	Rear of path
Distributor Road	4	448843.57	116187.50	Rear of path
Distributor Road	5	448836.29	116197.32	1.0 metre setback in verge
Distributor Road	6	448819.01	116205.04	Rear of path
Distributor Road	7	448848.70	116229.54	Rear of path
Distributor Road	8	448839.32	116232.05	1.0 metre setback in verge
Distributor Road	9	448817.89	116236.22	Rear of path
Distributor Road	10	448847.56	116261.65	1.0 metre setback in verge
Distributor Road	11	448825.24	116268.39	Rear of path
Distributor Road	12	448836.56	116288.36	1.0 metre setback in verge
Distributor Road	13	448848.62	116317.82	Rear of path
Distributor Road	14	448829.79	116309.23	2.0 metre setback in verge
Distributor Road	15	448818.20	116326.76	Rear of path
Distributor Road	16	448830.17	116344.84	1.0 metre setback in verge
Distributor Road	17	448805.76	116354.23	Rear of path
Distributor Road	18	448814.96	116377.29	1.0 metre setback in verge
Distributor Road	19	448816.53	116388.88	Rear of path
Distributor Road	20	448793.09	116401.08	Rear of path
Distributor Road	21	448805.24	116423.37	Rear of path
Distributor Road	22	448786.85	116429.81	1.0 metre setback in verge
Distributor Road	23	448778.59	116437.93	Rear of path
Distributor Road	24	448785.60	116458.81	1.0 metre setback in verge
Distributor Road	25	448764.95	116464.50	Rear of path
Distributor Road	26	448785.39	116476.93	Rear of path
Distributor Road	27	448769.19	116492.15	1.0 metre setback in verge
Distributor Road	28	448764.33	116498.93	Rear of path
Distributor Road	29	448780.51	116523.33	Rear of verge
Distributor Road	30	448779.15	116555.98	Rear of verge
Distributor Road	31	448765.00	116587.16	Rear of verge

Road Name	Column Number	Easting	Northing	Setback
Distributor Road	32	448739.04	116612.85	Rear of verge
Distributor Road	33	448719.71	116629.84	Rear of verge
Distributor Road	34	448699.71	116654.74	Rear of verge
Distributor Road	35	448682.81	116683.11	Rear of verge
Distributor Road	36	448666.05	116711.50	Rear of verge
Distributor Road	37	448650.72	116740.63	Rear of verge
Distributor Road	38	448644.85	116773.16	Rear of verge
Distributor Road	39	448637.83	116805.31	Rear of verge
Distributor Road	40	448626.87	116836.38	Rear of verge
Distributor Road	41	448602.77	116859.36	Rear of verge
Distributor Road	42	448589.05	116891.00	Rear of verge
Distributor Road	43	448556.58	116898.37	1.0 metre setback in verge
Distributor Road	44	448563.73	116911.20	Rear of path
Distributor Road	45	448531.09	116919.52	1.0 metre setback in verge
Distributor Road	46	448544.20	116923.60	Rear of path
Distributor Road	47	448521.90	116993.64	1.0 metre setback in verge
Distributor Road	48	448510.26	117013.21	1.0 metre setback in verge
Distributor Road	49	448516.36	117019.74	Rear of path
Distributor Road	50	448485.12	117035.29	1.0 metre setback in verge
Distributor Road	51	448504.47	117046.20	Rear of path
Distributor Road	52	448472.13	117065.63	1.0 metre setback in verge
Distributor Road	53	448494.96	117071.47	Rear of path
Distributor Road	54	448469.35	117098.00	1.0 metre setback in verge
Distributor Road	55	448492.53	117094.99	Rear of path
Distributor Road	56	448474.41	117131.99	1.0 metre setback in verge
Distributor Road	57	448489.45	117126.83	Rear of path
Distributor Road	58	448462.36	117157.47	1.0 metre setback in verge
Distributor Road	59	448484.07	117154.34	Rear of path
Distributor Road	60	448467.78	117180.72	1.0 metre setback in verge
Distributor Road	61	448483.94	117171.48	Rear of path
Distributor Road	62	448483.62	117192.26	1.0 metre setback in verge
Distributor Road	63	448489.25	117188.26	Rear of path

Road Name	Column Number	Easting	Northing	Setback
Distributor Road	64	448496.26	117199.82	Rear of path
Distributor Road	65	448493.02	117248.52	Rear of path
Distributor Road	66	448477.54	117256.11	1.0 metre setback in verge
Distributor Road	67	448470.54	117274.07	Rear of path
Distributor Road	68	448449.79	117270.72	1.0 metre setback in verge
Distributor Road	69	448446.65	117290.95	Rear of path
Distributor Road	70	448424.36	117292.75	1.0 metre setback in verge
Distributor Road	71	448430.19	117311.18	Rear of path
Distributor Road	72	448409.35	117322.11	1.0 metre setback in verge
Distributor Road	73	448422.03	117335.30	Rear of path
Distributor Road	74	448406.25	117356.08	1.0 metre setback in verge
Distributor Road	75	448423.19	117356.29	Rear of path
Distributor Road	76	448413.75	117387.44	1.0 metre setback in verge
Distributor Road	77	448429.52	117381.02	Rear of path
Distributor Road	78	448413.15	117406.64	Rear of path
Distributor Road	79	448437.31	117405.16	Rear of path
Distributor Road	80	448428.33	117418.65	1.0 metre setback in verge
Distributor Road	81	448412.08	117431.41	Rear of path
Distributor Road	82	448431.90	117451.42	Rear of path
Distributor Road	83	448410.21	117458.42	Rear of path
Distributor Road	84	448416.71	117481.16	1.0 metre setback in verge
Distributor Road	85	448432.66	117493.98	Rear of path
Distributor Road	86	448410.62	117497.31	Rear of path
Distributor Road	87	448422.38	117513.72	1.0 metre setback in verge
Distributor Road	88	448439.81	117516.74	Rear of path
Distributor Road	89	448444.35	117538.60	1.0 metre setback in verge
Distributor Road	90	448455.48	117570.87	1.0 metre setback in verge
Distributor Road	91	448471.16	117599.02	Rear of path
Distributor Road	92	448462.65	117604.16	1.0 metre setback in verge
Distributor Road	93	448466.12	117628.40	Rear of path
Distributor Road	94	448450.61	117629.75	1.0 metre setback in verge
Distributor Road	95	448463.68	117655.48	Rear of path

Road Name	Column Number	Easting	Northing	Setback
Distributor Road	96	448449.03	117647.77	1.0 metre setback in verge
Distributor Road	97	448469.56	117670.04	Rear of path
Distributor Road	98	448478.89	117678.61	Rear of path
Distributor Road	99	448455.97	117733.47	1.0 metre setback in verge
Distributor Road	100	448444.76	117750.38	Rear of path

- Notes
- Do not scale from drawing if not printed at original paper size.
 - All street lighting equipment and works to be carried out in accordance with current Hampshire County Council specification TG13 and standard detail drawings HCC11/L & HCC11/C series.
 - Contractor to confirm position of statutory undertakers plant before commencement of the works. For statutory undertaker's information visit www.linesearchbeforeudig.co.uk
 - During works all traffic management to be in accordance with Chapter 8 of the Traffic Signs Manual.
 - Lighting columns to be fed by DNO supply unless otherwise shown.
 - Each luminaire to be fitted with Mayflower Complete Lighting control S6000 socket (NEMA).
 - Maintenance numbers as shown on the drawing are to be confirmed by HCC.
 - Columns to be numbered using adhesive labels suitable for exterior use. Letters and numerals shall be 50mm high black on a white background.
 - One Mayflower complete lighting control DALI sub-master unit to be installed to control nodes and link central management system.
 - All apparatus are to be new at the time of installation and be supported by relevant manufacturer's guarantees.
 - All apparatus shall be sited so as to minimise, in so far as is reasonable and practical, nuisance, danger and obstruction to all residents, businesses and users of the highway.
 - All illuminated apparatus must be installed and tested in compliance with BS7671 at the time of adoption.
 - All installations must be installed in such a way that trees or any other foliage on the site does not interfere with the level of lighting. Refer to HCC's drawing HCC11/L/085 'Areas to be kept clear of trees and shrubs'.
 - This detailed design has been prepared in accordance with the HEA-HEMSA guidance note - CDM2015 regulations, issue 1.1, dated 09/04/15 Procedure 3: information has been supplied by the client or another designer or the principal designer and includes a Linesearch by the lighting scheme designer which forms which forms the basis of this lighting scheme design and includes the hazards identified by others on their hazard elimination and management list. The designer has carried out a Linesearch however no further checks have been undertaken.
 - Lanterns to be installed perpendicular to the kerb edge, unless stated on the drawing
 - Columns erected with 0.5 metres on shared foot/cycleways to be fitted with 150mm deep white self adhesive retro reflective band to BS EN12893 Class RA1, applied between 1.4m & 1.6m above ground to increase night time visibility for cyclists.
 - WARNING - Do not install columns within the proximity zones of Overhead High Voltage (O/H HV) lines prior to removal of O/H HV lines. Diversion routes at the time of design unknown.**
 - Columns are the top of slopes should have 1 metre of level ground in all directions around them to support the foundation.

Safety Health and Environmental (SHE) INFORMATION

Please refer to: Hazard Elimination List
Document Ref:SSE296001-HE-001-G

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SSE Enterprise - Lighting, 1st Floor, Solent Park, Walton Road, Portsmouth, PO6 1UJ

TITLE

Lighting Layout
(Sheet 5 of 5)

PROJECT

Horton Heath Segment 3
Reuby & Staggs

SCALE 1:500	DATE	10/03/21
	DRAWN	JLD
	CHECKED	RHJ

PAPER SIZE	A1	APPROVED	SAB
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DRAWING NUMBER	SSE296001-LD-005	REVISION	G
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