



## APPENDIX 9-3

**PUBLIC LIGHTING REPORT**

Meath County Council - Viewing Purposes Only!

**DATE:** 17 August 2022

**DESIGNER:** Alex Naper

**PROJECT No:** SES 01222 Rev B

**PROJECT NAME:** Site C – Strategic Housing Development- Sky Castle Ltd.



Residential area designed in accordance with EN13201-2:2015 Category P4.  
Car parks designed in accordance with EN12464-2:2014 5.9.1  
Distributor road carriageway section designed in accordance with EN13201-2:2015 Category M4.  
Distributor road as a whole designed in accordance with EN13201-2:2015 Category P2.  
Conflict areas designed in accordance with EN13201-2:2015 Category C3.  
Link Road designed in accordance with EN13201-2:2015 Category P3.

Rev A: Updated site layout.  
Rev B: Existing HID luminaires added.

## **Outdoor Lighting Report**

**PREPARED BY:**

Sabre Electrical Services Ltd.  
Unit 11,  
Bellview Industrial Estate,  
Tolka Valley Road,  
Dublin 11  
Phone Number: 01 8110875  
Contact: Graham Sheehan  
eMail: graham@sabrelighting.ie

## Layout Report

### General Data

Dimensions in Metres Angles in Degrees

### Calculation Grids

| ID | Grid Name | X      | Y       | X' Length | Y' Length | X' Spacing | Y' Spacing |
|----|-----------|--------|---------|-----------|-----------|------------|------------|
| 1  | Grid 1    | 179.15 | 672.48  | 54.00     | 69.00     | 1.50       | 1.50       |
| 2  | Grid 2    | 223.73 | 640.13  | 172.38    | 108.00    | 1.50       | 1.50       |
| 3  | Grid 3    | 398.26 | 562.05  | 48.00     | 36.00     | 1.50       | 1.50       |
| 4  | Grid 4    | 444.41 | 552.71  | 192.00    | 30.00     | 1.50       | 1.50       |
| 5  | Grid 5    | 631.43 | 503.18  | 36.00     | 51.00     | 1.50       | 1.50       |
| 6  | Grid 6    | 660.28 | 451.05  | 138.00    | 105.00    | 1.50       | 1.50       |
| 7  | Grid 7    | 793.90 | 416.44  | 48.00     | 39.00     | 1.50       | 1.50       |
| 8  | Grid 8    | 627.97 | 130.25  | 375.78    | 307.00    | 1.50       | 1.50       |
| 9  | Grid 9    | 115.61 | 401.72  | 375.67    | 83.99     | 1.50       | 1.50       |
| 10 | Grid 10   | 642.63 | 273.10  | 70.40     | 30.00     | 1.50       | 1.50       |
| 11 | Grid 11   | 748.56 | 399.27  | 33.00     | 54.00     | 1.50       | 1.50       |
| 12 | Grid 12   | 775.36 | 384.00  | 24.00     | 27.00     | 1.50       | 1.50       |
| 13 | Grid 13   | 67.17  | 515.26  | 276.00    | 211.29    | 1.50       | 1.50       |
| 14 | Grid 14   | 295.17 | 361.95  | 240.00    | 234.00    | 1.50       | 1.50       |
| 15 | Grid 15   | 432.91 | 479.64  | 227.97    | 73.42     | 1.50       | 1.50       |
| 16 | Grid 16   | 56.10  | 603.07  | 81.00     | 138.00    | 1.50       | 1.50       |
| 17 | Grid 17   | -19.92 | 543.87  | 81.00     | 96.00     | 1.50       | 1.50       |
| 18 | Grid 18   | -74.64 | 623.33  | 96.00     | 96.00     | 1.50       | 1.50       |
| 19 | Grid 19   | 588.24 | 384.15  | 154.00    | 27.00     | 1.50       | 1.50       |
| 20 | Grid 20   | 931.01 | -191.05 | 81.00     | 307.00    | 1.50       | 1.50       |

### Luminaires



#### Luminaire A Data

|                      |                                 |
|----------------------|---------------------------------|
| Supplier             | C U Phosco                      |
| Type                 | P863-128-R2E-730-W3-425-55W     |
| Lamp(s)              | 730SS                           |
| Lamp Flux (klm)      | 7.78                            |
| File Name            | P863-128-R2E-730-W3-425-55W.ies |
| Maintenance Factor   | 0.87                            |
| Imax70,80,90(cd/klm) | 463.7, 84.3, 0.0                |
| No. in Project       | 23                              |

#### Luminaire B Data

|                      |                               |
|----------------------|-------------------------------|
| Supplier             | C U Phosco                    |
| Type                 | E950-28-P4A-730-C550-14W      |
| Lamp(s)              | 730N                          |
| Lamp Flux (klm)      | 2.08                          |
| File Name            | E950-28-P4A-730-C0550-14W.ies |
| Maintenance Factor   | 0.82                          |
| Imax70,80,90(cd/klm) | 659.3, 183.1, 0.3             |
| No. in Project       | 81                            |

#### Luminaire C Data

|                      |                              |
|----------------------|------------------------------|
| Supplier             | C U Phosco                   |
| Type                 | E950-28-P4A-730-C250-8W      |
| Lamp(s)              | 730N                         |
| Lamp Flux (klm)      | 0.98                         |
| File Name            | E950-28-P4A-730-C0250-8W.ies |
| Maintenance Factor   | 0.82                         |
| Imax70,80,90(cd/klm) | 659.3, 183.1, 0.3            |
| No. in Project       | 23                           |

#### Luminaire D Data

|                      |                               |
|----------------------|-------------------------------|
| Supplier             | C U Phosco                    |
| Type                 | E950-28-F2A-730-C550-14W      |
| Lamp(s)              | 730N                          |
| Lamp Flux (klm)      | 2.11                          |
| File Name            | E950-28-F2A-730-C0550-14W.ies |
| Maintenance Factor   | 0.82                          |
| Imax70,80,90(cd/klm) | 623.6, 113.9, 0.3             |
| No. in Project       | 15                            |

**Luminaires****Luminaire E Data**

|                      |                                  |
|----------------------|----------------------------------|
| Supplier             | C U Phosco                       |
| Type                 | P862-256-R2E-730-W3-425-107W     |
| Lamp(s)              | 730SS                            |
| Lamp Flux (klm)      | 14.97                            |
| File Name            | P862-256-R2E-730-W3-425-107W.ies |
| Maintenance Factor   | 0.87                             |
| Imax70,80,90(cd/klm) | 458.4, 47.0, 0.0                 |
| No. in Project       | 10                               |

**Luminaire F Data**

|                      |                                |
|----------------------|--------------------------------|
| Supplier             | C U Phosco                     |
| Type                 | P863-128-R4-730-W3-300-40W     |
| Lamp(s)              | 730SS                          |
| Lamp Flux (klm)      | 5.53                           |
| File Name            | P863-128-R4-730-W3-300-40W.ies |
| Maintenance Factor   | 0.87                           |
| Imax70,80,90(cd/klm) | 386.2, 27.2, 0.4               |
| No. in Project       | 24                             |

**Luminaire G Data**

|                      |                                 |
|----------------------|---------------------------------|
| Supplier             | C U Phosco                      |
| Type                 | P862-256-R2E-730-W3-300-76W     |
| Lamp(s)              | 730SS                           |
| Lamp Flux (klm)      | 10.70                           |
| File Name            | P862-256-R2E-730-W3-300-76W.ies |
| Maintenance Factor   | 0.87                            |
| Imax70,80,90(cd/klm) | 458.4, 47.0, 0.0                |
| No. in Project       | 5                               |

**Luminaire H Data**

|                      |                                 |
|----------------------|---------------------------------|
| Supplier             | C U Phosco                      |
| Type                 | P863-128-F2B-730-W3-300-40W     |
| Lamp(s)              | 730SS                           |
| Lamp Flux (klm)      | 5.39                            |
| File Name            | P863-128-F2B-730-W3-300-40W.ies |
| Maintenance Factor   | 0.87                            |
| Imax70,80,90(cd/klm) | 461.8, 61.8, 0.8                |
| No. in Project       | 1                               |

**Luminaire I Data**

|                      |                                  |
|----------------------|----------------------------------|
| Supplier             | C U Phosco                       |
| Type                 | E950-28-P4A-822-BB-A0500-13W     |
| Lamp(s)              | 822N                             |
| Lamp Flux (klm)      | 1.23                             |
| File Name            | E950-28-P4A-822-BB-A0500-13W.ies |
| Maintenance Factor   | 0.83                             |
| Imax70,80,90(cd/klm) | 590.5, 96.9, 0.3                 |
| No. in Project       | 46                               |

**Luminaire J Data**

|                      |   |
|----------------------|---|
| Supplier             |   |
| Type                 | 2685 SNN-1C#                                  |
| Lamp(s)              | 1 ST 150 17500 2000 E40                       |
| LampFlux(klm)/Colour | 17.50 1950 / 23                               |
| File Name            | Arc 2685 SNN 1C# 1 ST 150 17500 1950 E 40.ltd |
| Maintenance Factor   | 0.75  |
| Imax70,80,90(cd/klm) | 352.0, 100.0, 5.0                             |
| No. in Project       | 8   |

**Layout**

| ID | Type | X      | Y      | Height | Angle  | Tilt | Cant | Out-reach | Target X | Target Y | Target Z |
|----|------|--------|--------|--------|--------|------|------|-----------|----------|----------|----------|
| 1  | E    | 208.27 | 672.81 | 10.00  | 311.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 2  | E    | 198.95 | 640.33 | 10.00  | 125.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 3  | A    | 228.69 | 644.88 | 8.00   | 43.00  | 0.00 | 0.00 | 0.50      |          |          |          |
| 4  | A    | 297.50 | 604.85 | 8.00   | 250.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 5  | A    | 273.01 | 609.26 | 8.00   | 49.00  | 0.00 | 0.00 | 0.50      |          |          |          |
| 6  | A    | 323.34 | 583.61 | 8.00   | 73.00  | 0.00 | 0.00 | 0.50      |          |          |          |
| 7  | B    | 296.20 | 588.77 | 6.00   | 151.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 8  | A    | 423.50 | 573.20 | 8.00   | 265.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 9  | A    | 389.16 | 568.47 | 8.00   | 76.00  | 0.00 | 0.00 | 0.50      |          |          |          |
| 10 | A    | 444.89 | 560.40 | 8.00   | 89.00  | 0.00 | 0.00 | 0.50      |          |          |          |
| 11 | B    | 427.10 | 554.90 | 6.00   | 178.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 12 | A    | 355.14 | 574.15 | 8.00   | 79.00  | 0.00 | 0.00 | 0.50      |          |          |          |
| 13 | A    | 640.33 | 530.26 | 8.00   | 60.00  | 0.00 | 0.00 | 0.50      |          |          |          |
| 14 | A    | 665.55 | 512.77 | 8.00   | 57.00  | 0.00 | 0.00 | 0.50      |          |          |          |
| 15 | A    | 783.31 | 443.06 | 8.00   | 59.00  | 0.00 | 0.00 | 0.50      |          |          |          |
| 16 | A    | 813.58 | 436.85 | 8.00   | 243.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 17 | A    | 828.49 | 418.69 | 8.00   | 62.00  | 0.00 | 0.00 | 0.50      |          |          |          |
| 18 | F    | 797.71 | 417.43 | 8.00   | 325.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 19 | A    | 252.24 | 623.80 | 8.00   | 54.00  | 0.00 | 0.00 | 0.50      |          |          |          |
| 20 | A    | 611.82 | 536.40 | 8.00   | 85.00  | 0.00 | 0.00 | 0.50      |          |          |          |
| 21 | A    | 478.53 | 555.68 | 8.00   | 89.00  | 0.00 | 0.00 | 0.50      |          |          |          |
| 22 | A    | 512.26 | 550.80 | 8.00   | 89.00  | 0.00 | 0.00 | 0.50      |          |          |          |
| 23 | A    | 545.79 | 545.82 | 8.00   | 89.00  | 0.00 | 0.00 | 0.50      |          |          |          |
| 24 | A    | 578.26 | 541.07 | 8.00   | 89.00  | 0.00 | 0.00 | 0.50      |          |          |          |
| 25 | A    | 693.79 | 492.02 | 8.00   | 67.00  | 0.00 | 0.00 | 0.50      |          |          |          |
| 26 | A    | 723.22 | 475.42 | 8.00   | 60.00  | 0.00 | 0.00 | 0.50      |          |          |          |
| 27 | A    | 753.17 | 459.05 | 8.00   | 59.00  | 0.00 | 0.00 | 0.50      |          |          |          |
| 28 | F    | 794.24 | 390.83 | 8.00   | 156.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 29 | F    | 771.34 | 371.59 | 8.00   | 325.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 30 | F    | 686.76 | 241.27 | 8.00   | 61.00  | 0.00 | 0.00 | 0.50      |          |          |          |
| 31 | F    | 670.22 | 261.89 | 8.00   | 241.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 32 | F    | 710.19 | 239.97 | 8.00   | 240.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 33 | F    | 700.27 | 276.13 | 8.00   | 322.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 34 | A    | 641.37 | 275.58 | 8.00   | 252.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 35 | F    | 747.73 | 348.75 | 8.00   | 312.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 36 | F    | 726.09 | 320.59 | 8.00   | 329.00 | 0.00 | 0.00 | 0.50      |          |          |          |

**Layout Continued**

| ID | Type | X      | Y      | Height | Angle  | Tilt | Cant | Out-reach | Target X | Target Y | Target Z |
|----|------|--------|--------|--------|--------|------|------|-----------|----------|----------|----------|
| 37 | F    | 711.50 | 300.20 | 8.00   | 331.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 38 | B    | 271.67 | 573.26 | 6.00   | 322.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 39 | B    | 677.46 | 261.15 | 6.00   | 58.00  | 0.00 | 0.00 | 0.50      |          |          |          |
| 40 | B    | 660.52 | 270.56 | 6.00   | 58.00  | 0.00 | 0.00 | 0.50      |          |          |          |
| 41 | B    | 677.61 | 282.33 | 6.00   | 238.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 42 | B    | 774.76 | 395.71 | 6.00   | 58.00  | 0.00 | 0.00 | 0.50      |          |          |          |
| 43 | B    | 767.41 | 417.70 | 6.00   | 327.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 44 | B    | 776.77 | 434.42 | 6.00   | 327.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 45 | B    | 787.23 | 417.57 | 6.00   | 148.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 46 | B    | 275.64 | 553.87 | 6.00   | 140.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 47 | B    | 246.98 | 545.57 | 6.00   | 316.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 48 | B    | 248.25 | 526.32 | 6.00   | 138.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 49 | D    | 234.00 | 544.16 | 6.00   | 222.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 50 | B    | 213.31 | 554.39 | 6.00   | 36.00  | 0.00 | 0.00 | 0.40      |          |          |          |
| 51 | B    | 200.97 | 585.16 | 6.00   | 39.00  | 0.00 | 0.00 | 0.40      |          |          |          |
| 52 | B    | 217.06 | 615.74 | 6.00   | 310.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 53 | B    | 224.73 | 596.57 | 6.00   | 127.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 54 | C    | 231.90 | 633.42 | 5.00   | 313.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 55 | B    | 244.16 | 613.12 | 6.00   | 134.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 56 | C    | 266.87 | 587.60 | 5.00   | 241.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 57 | C    | 246.59 | 600.19 | 5.00   | 241.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 58 | C    | 254.30 | 580.21 | 5.00   | 135.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 59 | C    | 237.65 | 563.61 | 5.00   | 134.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 60 | E    | -28.10 | 534.01 | 10.00  | 297.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 61 | F    | 651.85 | 545.35 | 8.00   | 317.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 62 | B    | 181.47 | 602.07 | 6.00   | 297.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 63 | B    | 149.70 | 578.39 | 6.00   | 304.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 64 | B    | 173.80 | 581.98 | 6.00   | 123.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 65 | B    | 146.04 | 561.30 | 6.00   | 129.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 66 | B    | 134.48 | 579.99 | 6.00   | 213.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 67 | B    | 118.03 | 569.29 | 6.00   | 31.00  | 0.00 | 0.00 | 0.40      |          |          |          |
| 68 | B    | 149.91 | 537.15 | 6.00   | 219.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 69 | B    | 171.35 | 508.25 | 6.00   | 221.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 70 | B    | 180.92 | 482.69 | 6.00   | 62.00  | 0.00 | 0.00 | 0.40      |          |          |          |
| 71 | B    | 198.60 | 496.74 | 6.00   | 305.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 72 | B    | 224.20 | 516.18 | 6.00   | 307.00 | 0.00 | 0.00 | 0.40      |          |          |          |

**Layout Continued**

| ID  | Type | X      | Y      | Height | Angle  | Tilt | Cant | Out-reach | Target X | Target Y | Target Z |
|-----|------|--------|--------|--------|--------|------|------|-----------|----------|----------|----------|
| 73  | B    | 226.41 | 461.79 | 6.00   | 230.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 74  | B    | 202.95 | 465.56 | 6.00   | 47.00  | 0.00 | 0.00 | 0.40      |          |          |          |
| 75  | B    | 253.36 | 448.16 | 6.00   | 274.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 76  | B    | 296.38 | 445.50 | 6.00   | 243.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 77  | B    | 239.79 | 438.65 | 6.00   | 72.00  | 0.00 | 0.00 | 0.40      |          |          |          |
| 78  | B    | 281.03 | 461.62 | 6.00   | 344.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 79  | B    | 302.61 | 493.25 | 6.00   | 307.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 80  | B    | 332.89 | 500.44 | 6.00   | 245.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 81  | B    | 300.22 | 527.19 | 6.00   | 237.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 82  | B    | 281.97 | 543.71 | 6.00   | 220.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 83  | B    | 330.72 | 516.49 | 6.00   | 143.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 84  | B    | 347.52 | 538.51 | 6.00   | 144.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 85  | B    | 357.35 | 560.27 | 6.00   | 165.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 86  | B    | 358.92 | 482.09 | 6.00   | 234.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 87  | B    | 316.66 | 420.15 | 6.00   | 198.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 88  | B    | 322.98 | 397.50 | 6.00   | 258.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 89  | C    | 306.11 | 402.28 | 5.00   | 8.00   | 0.00 | 0.00 | 0.40      |          |          |          |
| 90  | C    | 298.98 | 428.02 | 5.00   | 38.00  | 0.00 | 0.00 | 0.40      |          |          |          |
| 91  | C    | 274.80 | 438.99 | 5.00   | 89.00  | 0.00 | 0.00 | 0.40      |          |          |          |
| 92  | C    | 224.12 | 567.50 | 5.00   | 195.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 93  | C    | 343.14 | 505.98 | 5.00   | 199.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 94  | B    | 423.66 | 527.77 | 6.00   | 174.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 95  | B    | 425.88 | 509.17 | 6.00   | 263.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 96  | B    | 457.09 | 497.24 | 6.00   | 237.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 97  | B    | 470.12 | 475.37 | 6.00   | 55.00  | 0.00 | 0.00 | 0.50      |          |          |          |
| 98  | B    | 478.23 | 496.47 | 6.00   | 326.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 99  | B    | 493.61 | 495.57 | 6.00   | 160.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 100 | B    | 483.62 | 521.03 | 6.00   | 354.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 101 | B    | 499.50 | 467.67 | 6.00   | 232.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 102 | B    | 496.06 | 441.66 | 6.00   | 140.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 103 | D    | 517.67 | 444.83 | 6.00   | 154.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 104 | B    | 490.81 | 456.25 | 6.00   | 52.00  | 0.00 | 0.00 | 0.50      |          |          |          |
| 105 | B    | 476.74 | 435.98 | 6.00   | 294.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 106 | B    | 466.05 | 419.15 | 6.00   | 130.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 107 | B    | 440.78 | 406.48 | 6.00   | 326.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 108 | B    | 442.93 | 390.58 | 6.00   | 140.00 | 0.00 | 0.00 | 0.50      |          |          |          |

**Layout Continued**

| ID  | Type | X      | Y      | Height | Angle  | Tilt | Cant | Out-reach | Target X | Target Y | Target Z |
|-----|------|--------|--------|--------|--------|------|------|-----------|----------|----------|----------|
| 109 | B    | 426.81 | 363.15 | 6.00   | 18.00  | 0.00 | 0.00 | 0.50      |          |          |          |
| 110 | B    | 424.59 | 345.72 | 6.00   | 319.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 111 | B    | 396.40 | 322.28 | 6.00   | 242.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 112 | B    | 409.25 | 326.79 | 6.00   | 314.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 113 | B    | 372.62 | 340.54 | 6.00   | 239.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 114 | B    | 344.84 | 363.21 | 6.00   | 241.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 115 | B    | 321.96 | 381.61 | 6.00   | 229.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 116 | B    | 347.35 | 399.66 | 6.00   | 130.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 117 | B    | 364.96 | 420.50 | 6.00   | 139.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 118 | B    | 373.58 | 445.86 | 6.00   | 316.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 119 | B    | 379.02 | 459.97 | 6.00   | 48.00  | 0.00 | 0.00 | 0.50      |          |          |          |
| 120 | B    | 399.63 | 472.79 | 6.00   | 316.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 121 | B    | 409.65 | 496.21 | 6.00   | 345.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 122 | C    | 391.43 | 424.91 | 5.00   | 144.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 123 | C    | 395.47 | 444.57 | 5.00   | 233.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 124 | B    | 384.72 | 416.65 | 6.00   | 227.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 125 | B    | 411.72 | 394.79 | 6.00   | 231.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 126 | C    | 508.27 | 479.94 | 5.00   | 328.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 127 | C    | 519.77 | 472.40 | 5.00   | 144.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 128 | C    | 537.56 | 466.02 | 5.00   | 331.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 129 | D    | 543.97 | 489.24 | 5.00   | 347.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 130 | C    | 524.01 | 453.57 | 5.00   | 253.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 131 | C    | 514.28 | 501.86 | 5.00   | 351.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 132 | C    | 526.07 | 500.76 | 6.00   | 167.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 133 | D    | 500.20 | 539.53 | 6.00   | 165.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 134 | D    | 509.90 | 528.45 | 6.00   | 264.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 135 | D    | 501.10 | 509.45 | 6.00   | 84.00  | 0.00 | 0.00 | 0.50      |          |          |          |
| 136 | D    | 527.15 | 526.13 | 6.00   | 266.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 137 | D    | 522.37 | 506.65 | 6.00   | 82.00  | 0.00 | 0.00 | 0.50      |          |          |          |
| 138 | D    | 547.57 | 523.10 | 6.00   | 265.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 139 | D    | 544.34 | 503.86 | 6.00   | 82.00  | 0.00 | 0.00 | 0.50      |          |          |          |
| 140 | D    | 558.25 | 488.54 | 6.00   | 84.00  | 0.00 | 0.00 | 0.50      |          |          |          |
| 141 | D    | 567.97 | 509.61 | 6.00   | 264.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 142 | D    | 586.74 | 499.03 | 6.00   | 168.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 143 | C    | 601.64 | 505.07 | 5.00   | 275.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 144 | C    | 620.91 | 515.99 | 5.00   | 318.00 | 0.00 | 0.00 | 0.50      |          |          |          |



**Layout Continued**

| ID  | Type | X       | Y       | Height | Angle  | Tilt | Cant | Out-reach | Target X | Target Y | Target Z |
|-----|------|---------|---------|--------|--------|------|------|-----------|----------|----------|----------|
| 145 | E    | 75.26   | 561.55  | 10.00  | 125.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 146 | E    | 40.21   | 567.02  | 10.00  | 313.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 147 | C    | 383.32  | 436.68  | 5.00   | 142.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 148 | F    | 49.02   | 575.93  | 8.00   | 34.00  | 0.00 | 0.00 | 0.50      |          |          |          |
| 149 | E    | 6.98    | 549.98  | 10.00  | 297.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 150 | E    | 162.19  | 638.30  | 10.00  | 303.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 151 | B    | 715.81  | 327.52  | 6.00   | 64.00  | 0.00 | 0.00 | 0.50      |          |          |          |
| 152 | E    | 99.02   | 597.80  | 10.00  | 301.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 153 | E    | 140.32  | 598.64  | 10.00  | 126.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 154 | B    | 685.36  | 344.20  | 6.00   | 64.00  | 0.00 | 0.00 | 0.50      |          |          |          |
| 155 | B    | 709.67  | 348.46  | 6.00   | 242.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 156 | B    | 660.76  | 358.30  | 6.00   | 64.00  | 0.00 | 0.00 | 0.50      |          |          |          |
| 157 | B    | 615.68  | 379.08  | 6.00   | 70.00  | 0.00 | 0.00 | 0.50      |          |          |          |
| 158 | D    | 610.85  | 399.55  | 6.00   | 242.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 159 | B    | 638.30  | 369.37  | 6.00   | 64.00  | 0.00 | 0.00 | 0.50      |          |          |          |
| 160 | B    | 683.24  | 363.39  | 6.00   | 249.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 161 | E    | 248.25  | 675.60  | 10.00  | 123.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 162 | C    | 332.89  | 384.60  | 5.00   | 134.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 163 | C    | 561.70  | 533.10  | 5.00   | 355.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 164 | G    | 1006.55 | 105.63  | 10.00  | 355.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 165 | G    | 1000.63 | 66.40   | 10.00  | 353.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 166 | G    | 995.78  | 27.16   | 10.00  | 355.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 167 | G    | 990.35  | -11.84  | 10.00  | 355.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 168 | J    | 1001.14 | -52.97  | 10.00  | 175.00 | 5.00 | 0.00 | 2.00      |          |          |          |
| 169 | J    | 994.47  | -113.53 | 10.00  | 171.00 | 5.00 | 0.00 | 2.00      |          |          |          |
| 170 | J    | 989.12  | -157.38 | 10.00  | 177.00 | 5.00 | 0.00 | 2.00      |          |          |          |
| 171 | J    | 956.10  | -208.57 | 10.00  | 293.00 | 5.00 | 0.00 | 2.00      |          |          |          |
| 172 | J    | 982.61  | -217.53 | 10.00  | 192.00 | 5.00 | 0.00 | 2.00      |          |          |          |
| 173 | F    | 937.97  | 105.63  | 8.00   | 251.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 174 | F    | 987.51  | 84.47   | 8.00   | 86.00  | 0.00 | 0.00 | 0.50      |          |          |          |
| 175 | F    | 958.07  | 89.41   | 8.00   | 70.00  | 0.00 | 0.00 | 0.50      |          |          |          |
| 176 | F    | 912.98  | 106.38  | 8.00   | 61.00  | 0.00 | 0.00 | 0.50      |          |          |          |
| 177 | F    | 892.20  | 130.44  | 8.00   | 243.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 178 | F    | 863.46  | 148.55  | 8.00   | 247.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 179 | F    | 835.85  | 153.95  | 8.00   | 59.00  | 0.00 | 0.00 | 0.50      |          |          |          |
| 180 | F    | 816.89  | 177.30  | 8.00   | 246.00 | 0.00 | 0.00 | 0.50      |          |          |          |

**Layout Continued**

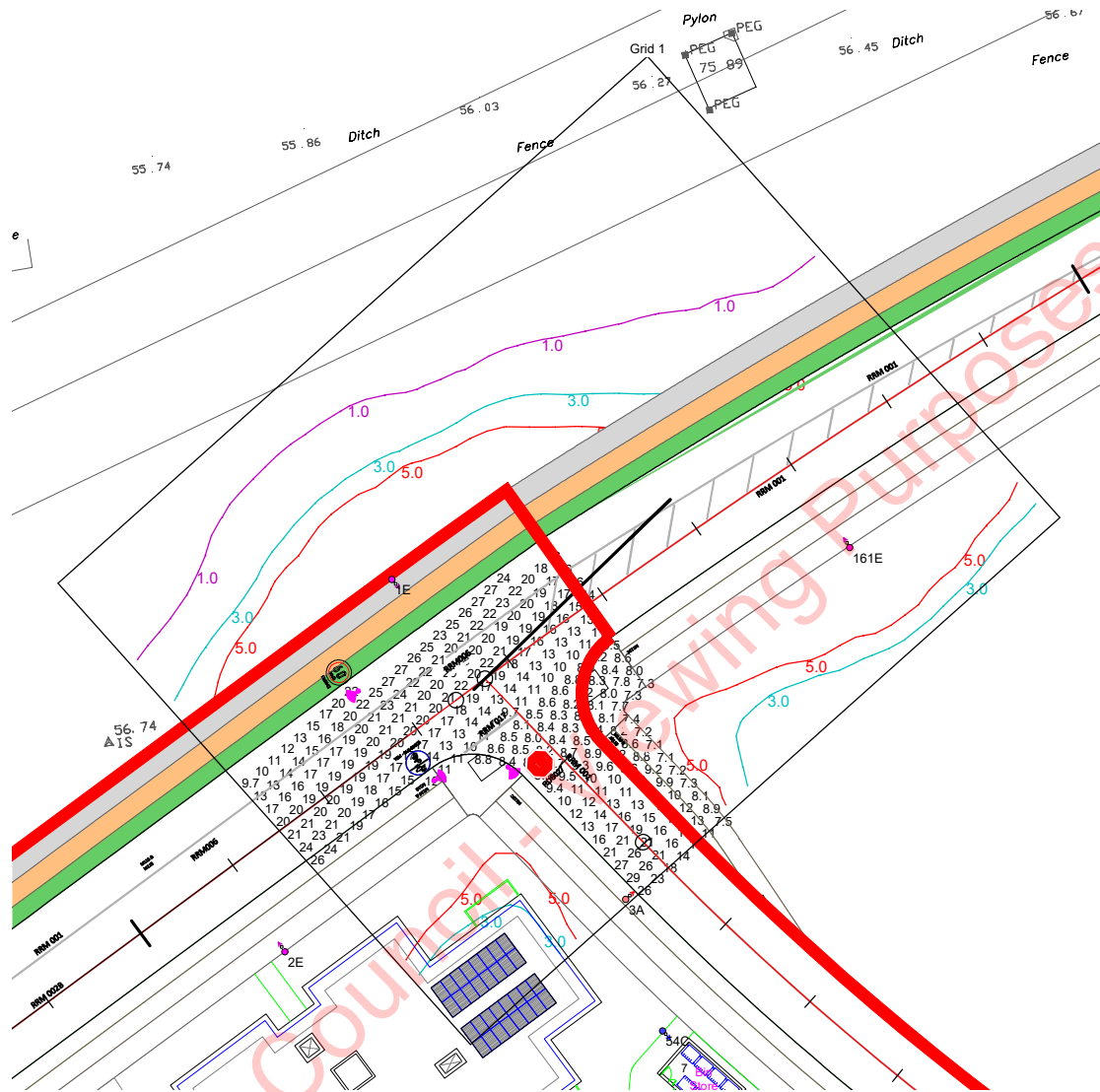
| ID  | Type | X      | Y       | Height | Angle  | Tilt | Cant | Out-reach | Target X | Target Y | Target Z |
|-----|------|--------|---------|--------|--------|------|------|-----------|----------|----------|----------|
| 181 | F    | 788.11 | 183.51  | 8.00   | 58.00  | 0.00 | 0.00 | 0.50      |          |          |          |
| 182 | F    | 766.22 | 208.72  | 8.00   | 243.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 183 | F    | 735.82 | 226.08  | 8.00   | 243.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 184 | D    | 594.84 | 383.64  | 6.00   | 70.00  | 0.00 | 0.00 | 0.50      |          |          |          |
| 185 | F    | 799.54 | 158.47  | 8.00   | 330.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 186 | H    | 780.49 | 132.70  | 8.00   | 29.00  | 0.00 | 0.00 | 0.50      |          |          |          |
| 187 | I    | 64.13  | 538.16  | 5.00   | 48.00  | 0.00 | 0.00 | 0.40      |          |          |          |
| 188 | I    | 87.03  | 517.08  | 5.00   | 48.00  | 0.00 | 0.00 | 0.40      |          |          |          |
| 189 | I    | 111.38 | 497.91  | 5.00   | 48.00  | 0.00 | 0.00 | 0.40      |          |          |          |
| 190 | I    | 136.46 | 479.56  | 5.00   | 48.00  | 0.00 | 0.00 | 0.40      |          |          |          |
| 191 | I    | 160.45 | 459.93  | 5.00   | 48.00  | 0.00 | 0.00 | 0.40      |          |          |          |
| 192 | I    | 181.25 | 440.39  | 5.00   | 42.00  | 0.00 | 0.00 | 0.40      |          |          |          |
| 193 | I    | 201.88 | 417.79  | 5.00   | 38.00  | 0.00 | 0.00 | 0.40      |          |          |          |
| 194 | I    | 224.60 | 396.05  | 5.00   | 48.00  | 0.00 | 0.00 | 0.40      |          |          |          |
| 195 | I    | 249.26 | 378.49  | 5.00   | 53.00  | 0.00 | 0.00 | 0.40      |          |          |          |
| 196 | I    | 273.95 | 361.17  | 5.00   | 52.00  | 0.00 | 0.00 | 0.40      |          |          |          |
| 197 | I    | 297.84 | 341.16  | 5.00   | 58.00  | 0.00 | 0.00 | 0.40      |          |          |          |
| 198 | I    | 323.20 | 321.70  | 5.00   | 45.00  | 0.00 | 0.00 | 0.40      |          |          |          |
| 199 | I    | 348.01 | 303.11  | 5.00   | 48.00  | 0.00 | 0.00 | 0.40      |          |          |          |
| 200 | I    | 373.31 | 285.07  | 5.00   | 55.00  | 0.00 | 0.00 | 0.40      |          |          |          |
| 201 | I    | 396.13 | 268.56  | 5.00   | 43.00  | 0.00 | 0.00 | 0.40      |          |          |          |
| 202 | I    | 417.09 | 249.61  | 5.00   | 77.00  | 0.00 | 0.00 | 0.40      |          |          |          |
| 203 | I    | 437.89 | 230.21  | 5.00   | 97.00  | 0.00 | 0.00 | 0.40      |          |          |          |
| 204 | I    | 457.42 | 208.14  | 5.00   | 171.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 205 | I    | 475.91 | 183.22  | 5.00   | 5.00   | 0.00 | 0.00 | 0.40      |          |          |          |
| 206 | I    | 493.11 | 157.04  | 5.00   | 142.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 207 | I    | 509.17 | 129.35  | 5.00   | 355.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 208 | I    | 523.81 | 100.68  | 5.00   | 226.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 209 | I    | 537.85 | 70.60   | 5.00   | 289.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 210 | I    | 550.93 | 40.41   | 5.00   | 203.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 211 | I    | 563.96 | 9.08    | 5.00   | 172.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 212 | I    | 575.10 | -29.06  | 5.00   | 148.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 213 | I    | 585.14 | -63.36  | 5.00   | 148.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 214 | I    | 594.67 | -94.91  | 5.00   | 148.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 215 | I    | 603.67 | -133.46 | 5.00   | 148.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 216 | I    | 612.56 | -178.32 | 5.00   | 148.00 | 0.00 | 0.00 | 0.40      |          |          |          |

**Layout Continued**

| ID  | Type | X       | Y       | Height | Angle  | Tilt | Cant | Out-reach | Target X | Target Y | Target Z |
|-----|------|---------|---------|--------|--------|------|------|-----------|----------|----------|----------|
| 217 | I    | 530.20  | 421.68  | 5.00   | 129.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 218 | I    | 553.69  | 439.94  | 5.00   | 123.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 219 | I    | 577.43  | 458.13  | 5.00   | 126.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 220 | I    | 447.30  | 385.17  | 5.00   | 117.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 221 | I    | 474.44  | 393.34  | 5.00   | 89.00  | 0.00 | 0.00 | 0.40      |          |          |          |
| 222 | I    | 484.18  | 399.27  | 5.00   | 0.00   | 0.00 | 0.00 | 0.40      |          |          |          |
| 223 | I    | 496.98  | 423.34  | 5.00   | 153.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 224 | I    | 569.58  | 385.24  | 5.00   | 90.00  | 0.00 | 0.00 | 0.40      |          |          |          |
| 225 | I    | 545.67  | 394.86  | 5.00   | 312.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 226 | I    | 546.78  | 386.45  | 5.00   | 310.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 227 | I    | 566.33  | 414.56  | 5.00   | 302.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 228 | I    | 581.85  | 429.68  | 5.00   | 210.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 229 | I    | 602.76  | 474.19  | 5.00   | 126.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 230 | I    | 628.29  | 487.86  | 5.00   | 126.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 231 | I    | 646.50  | 506.11  | 5.00   | 134.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 232 | I    | 571.36  | 446.42  | 5.00   | 209.00 | 0.00 | 0.00 | 0.40      |          |          |          |
| 233 | G    | 1021.25 | 84.61   | 10.00  | 177.00 | 0.00 | 0.00 | 0.50      |          |          |          |
| 234 | J    | 998.24  | -75.27  | 10.00  | 175.00 | 5.00 | 0.00 | 2.00      |          |          |          |
| 235 | J    | 996.10  | -92.71  | 10.00  | 175.00 | 5.00 | 0.00 | 2.00      |          |          |          |
| 236 | J    | 985.12  | -179.50 | 10.00  | 175.00 | 5.00 | 0.00 | 2.00      |          |          |          |

## Horizontal Illuminance (lux)

Grid 1

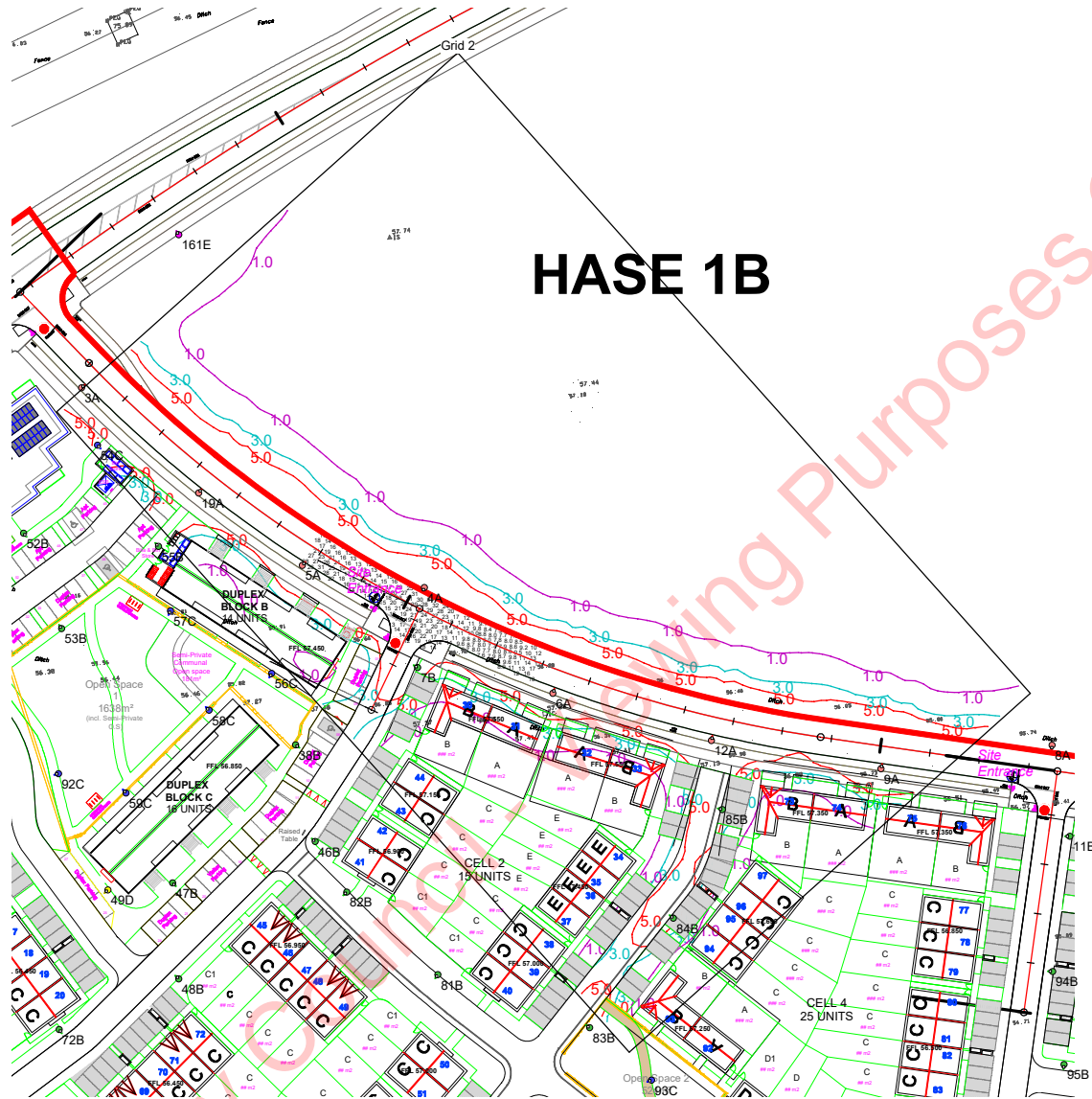


### Results

|           |       |
|-----------|-------|
| Eav       | 15.33 |
| Emin      | 7.10  |
| Emax      | 29.32 |
| Emin/Emax | 0.24  |
| Emin/Eav  | 0.46  |
|           |       |

## Horizontal Illuminance (lux)

Grid 2

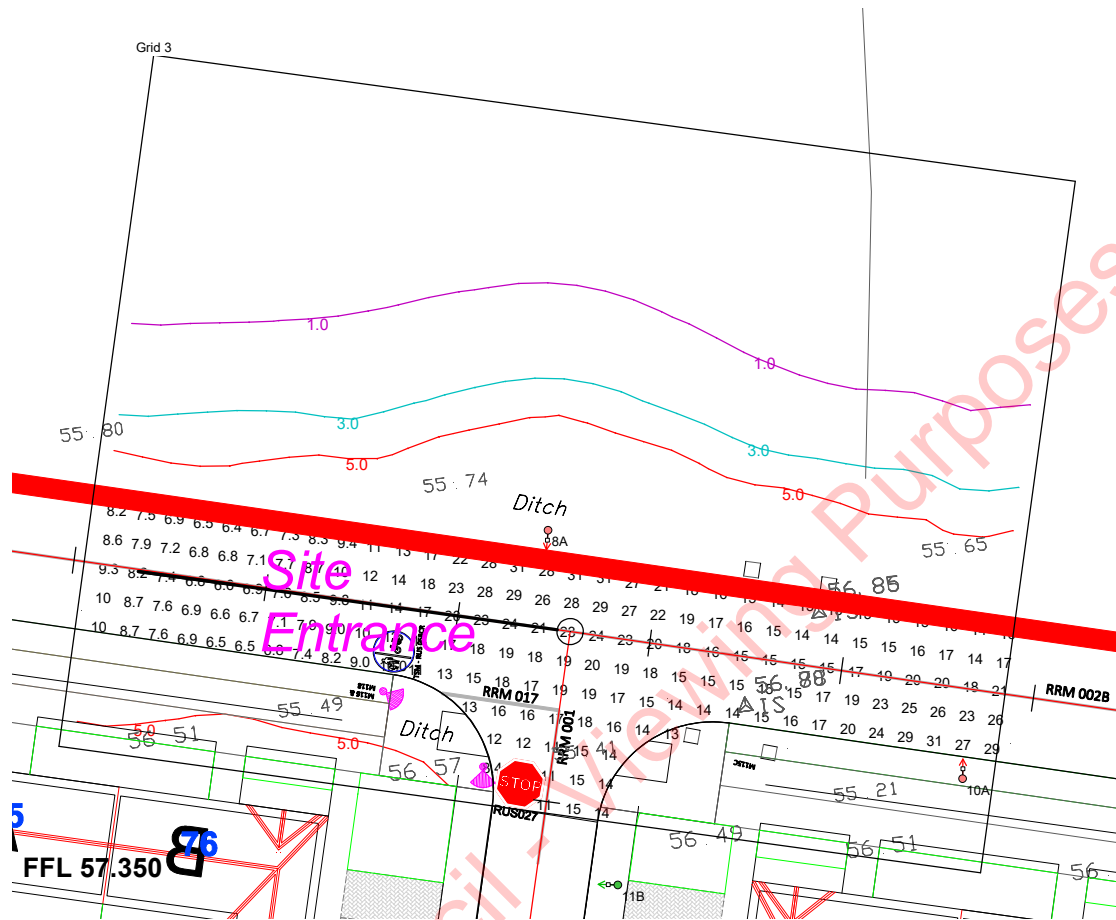


### Results

|                                    |       |
|------------------------------------|-------|
| Eav                                | 16.16 |
| Emin                               | 7.54  |
| E <sub>max</sub>                   | 32.17 |
| E <sub>min</sub> /E <sub>max</sub> | 0.23  |
| E <sub>min</sub> /E <sub>av</sub>  | 0.47  |
|                                    |       |

## Horizontal Illuminance (lux)

Grid 3

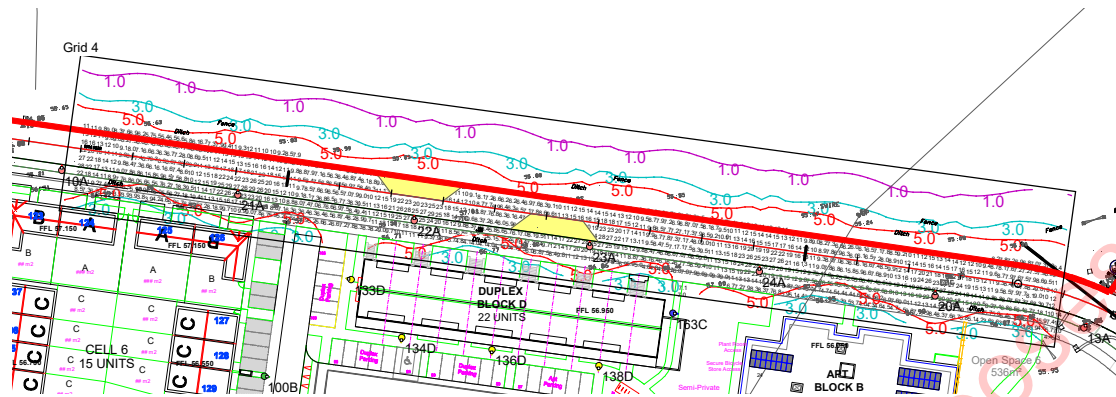


### Results

|           |       |
|-----------|-------|
| Eav       | 15.28 |
| Emin      | 6.42  |
| Emax      | 31.26 |
| Emin/Emax | 0.21  |
| Emin/Eav  | 0.42  |
|           |       |

## Horizontal Illuminance (lux)

Grid 4



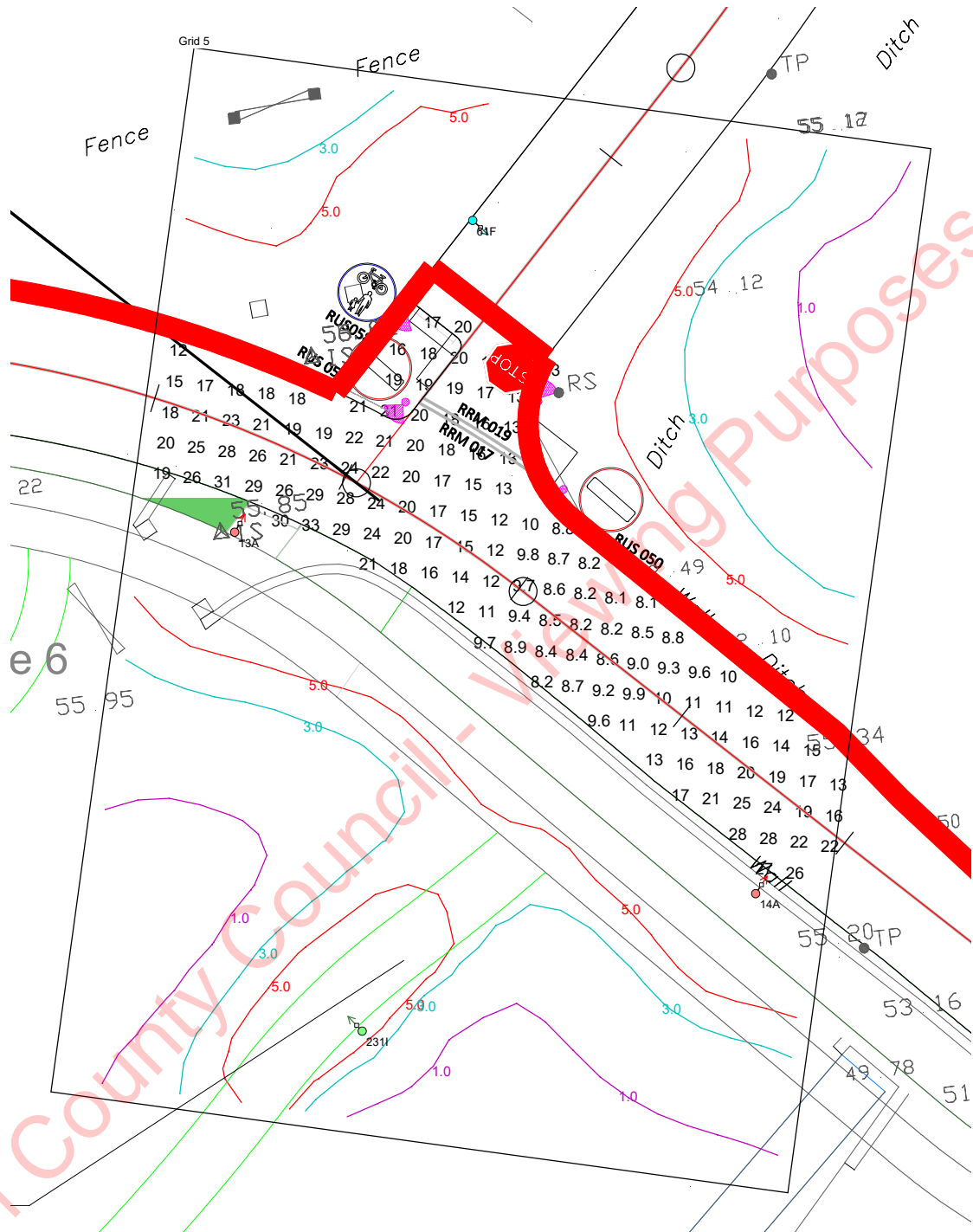
### Results

|           |       |
|-----------|-------|
| Eav       | 11.06 |
| Emin      | 3.14  |
| Emax      | 29.36 |
| Emin/Emax | 0.11  |
| Emin/Eav  | 0.28  |

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### Horizontal Illuminance (lux)

Grid 5



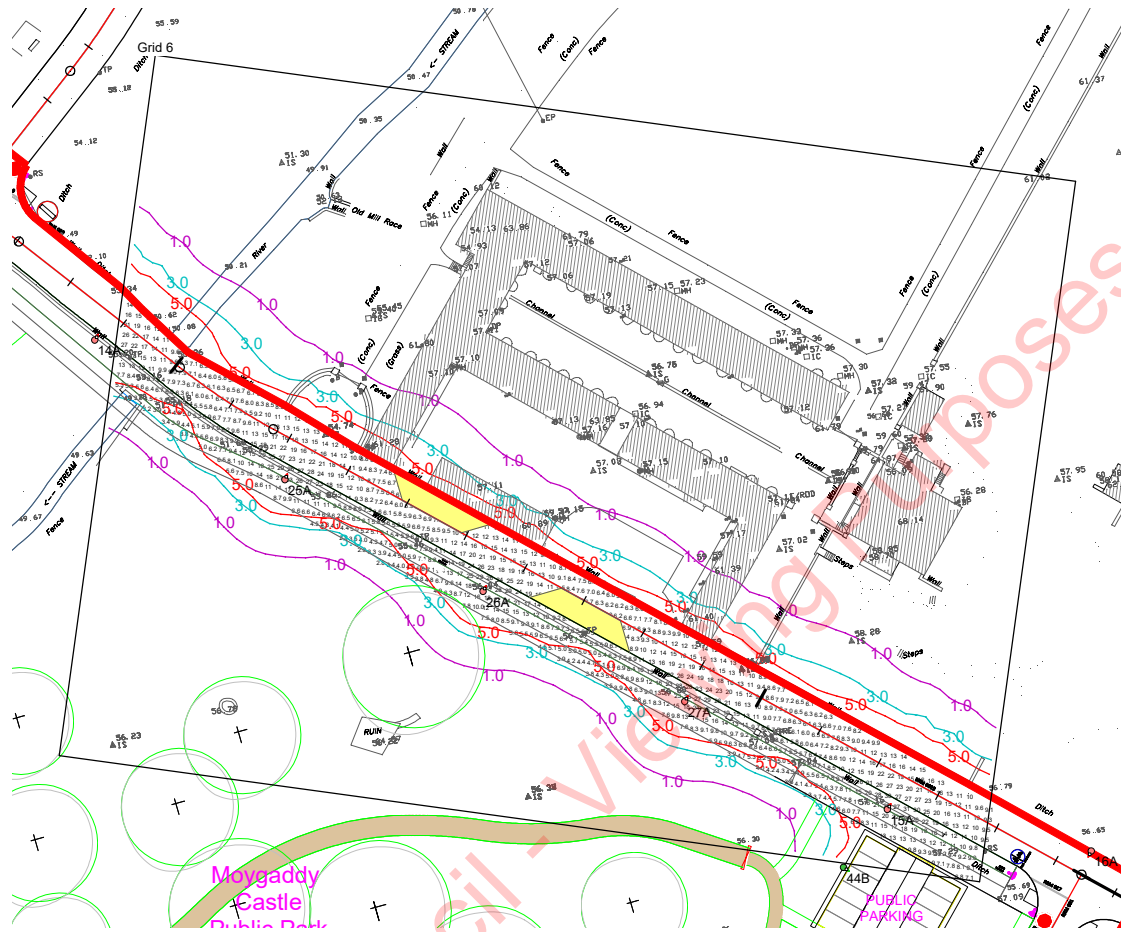
**Results**

|           |       |
|-----------|-------|
| Eav       | 16.70 |
| Emin      | 8.10  |
| Emax      | 32.64 |
| Emin/Emax | 0.25  |
| Emin/Eav  | 0.49  |
|           |       |



## Horizontal Illuminance (lux)

Grid 6

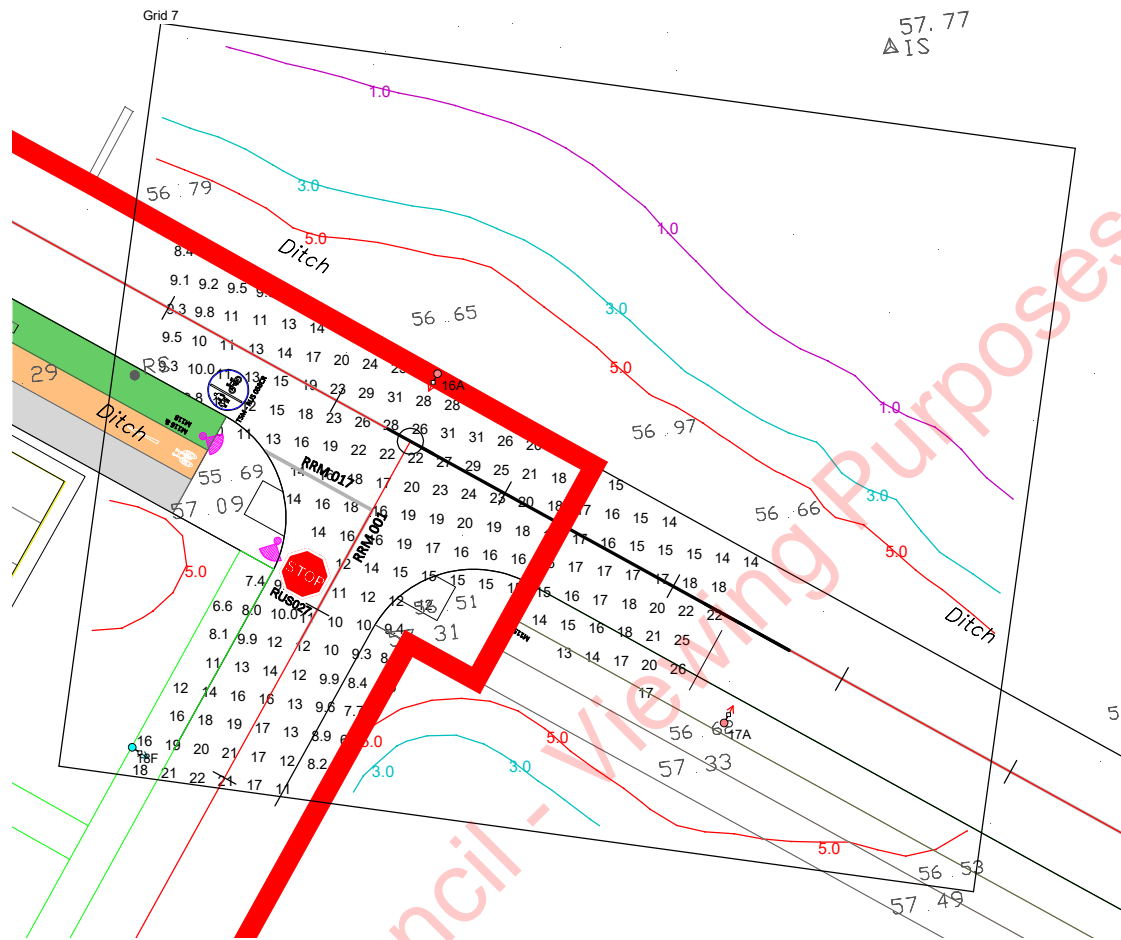


### Results

|           |       |
|-----------|-------|
| Eav       | 11.14 |
| Emin      | 2.77  |
| Emax      | 31.42 |
| Emin/Emax | 0.09  |
| Emin/Eav  | 0.25  |
|           |       |

## Horizontal Illuminance (lux)

Grid 7

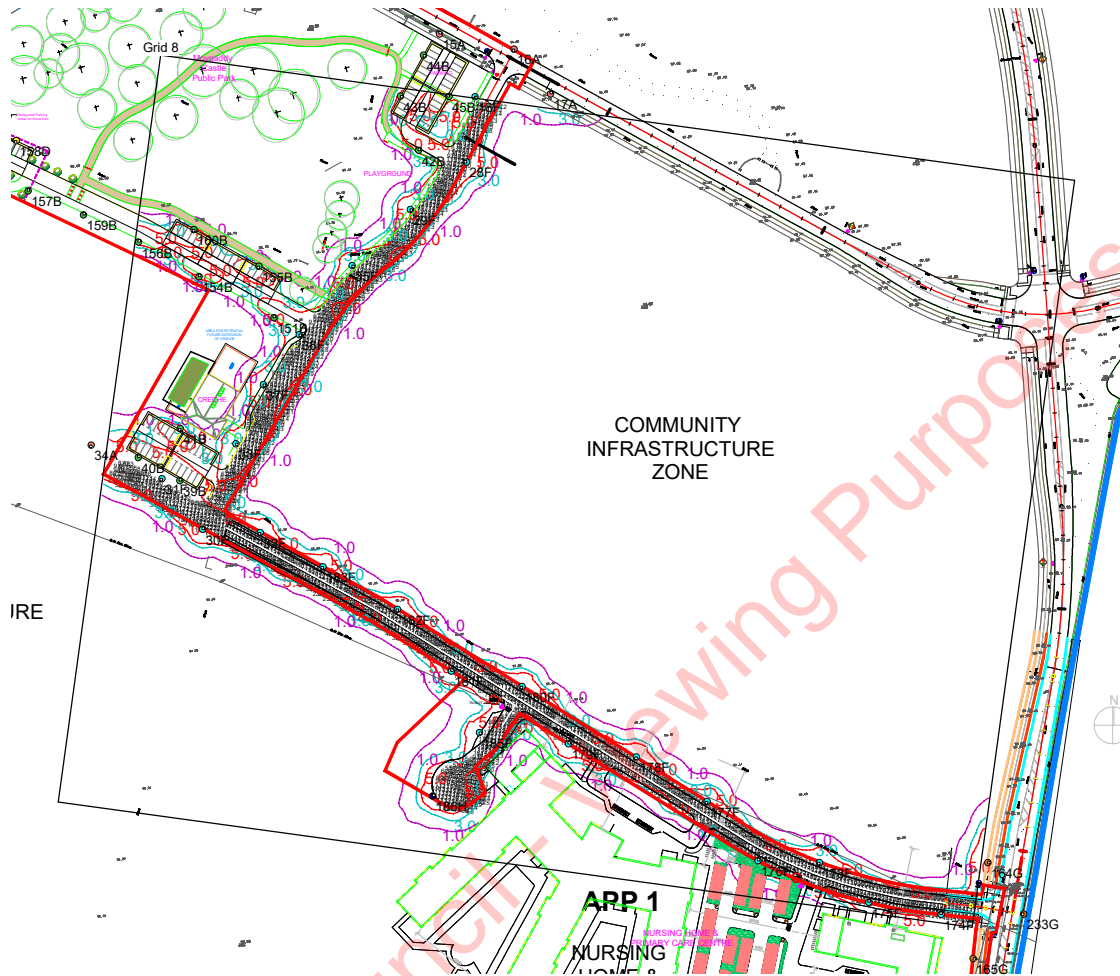


### Results

|           |       |
|-----------|-------|
| Eav       | 15.86 |
| Emin      | 6.64  |
| Emax      | 31.33 |
| Emin/Emax | 0.21  |
| Emin/Eav  | 0.42  |
|           |       |

### Horizontal Illuminance (lux)

Grid 8



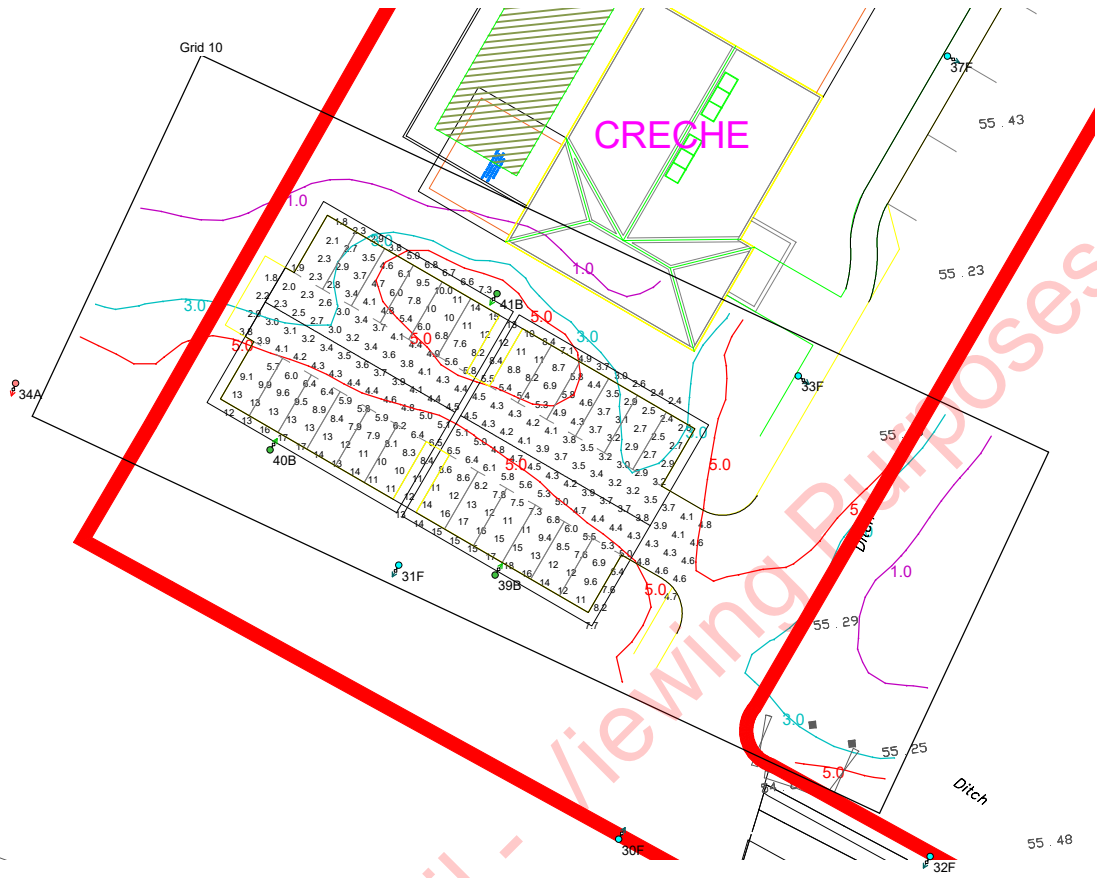
#### Results

|           |       |
|-----------|-------|
| Eav       | 10.62 |
| Emin      | 2.14  |
| Emax      | 23.55 |
| Emin/Emax | 0.09  |
| Emin/Eav  | 0.20  |
|           |       |



## Horizontal Illuminance (lux)

Grid 10

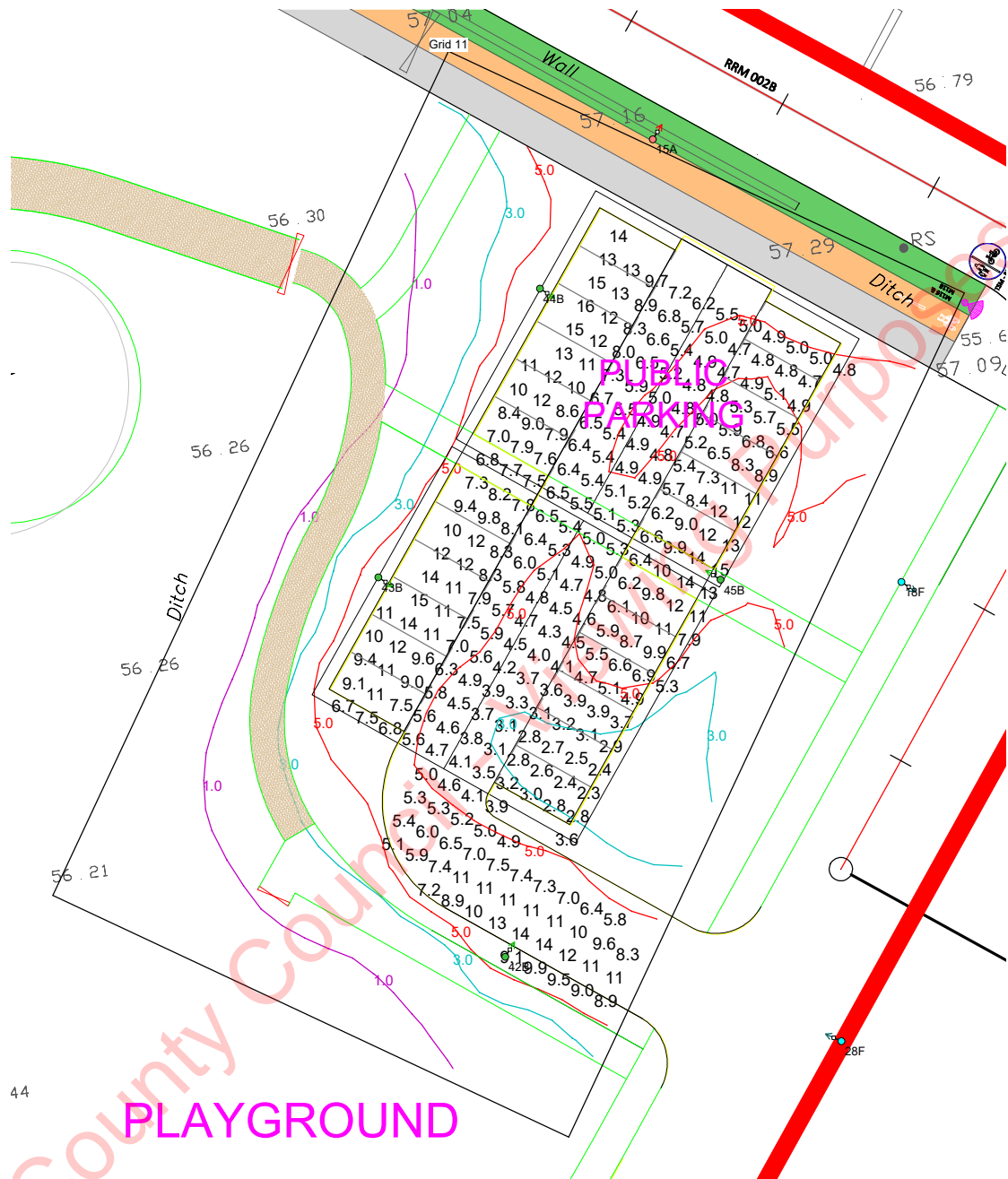


### Results

|           |       |
|-----------|-------|
| Eav       | 6.68  |
| Emin      | 1.76  |
| Emax      | 17.97 |
| Emin/Emax | 0.10  |
| Emin/Eav  | 0.26  |
|           |       |

# Horizontal Illuminance (lux)

Grid 11

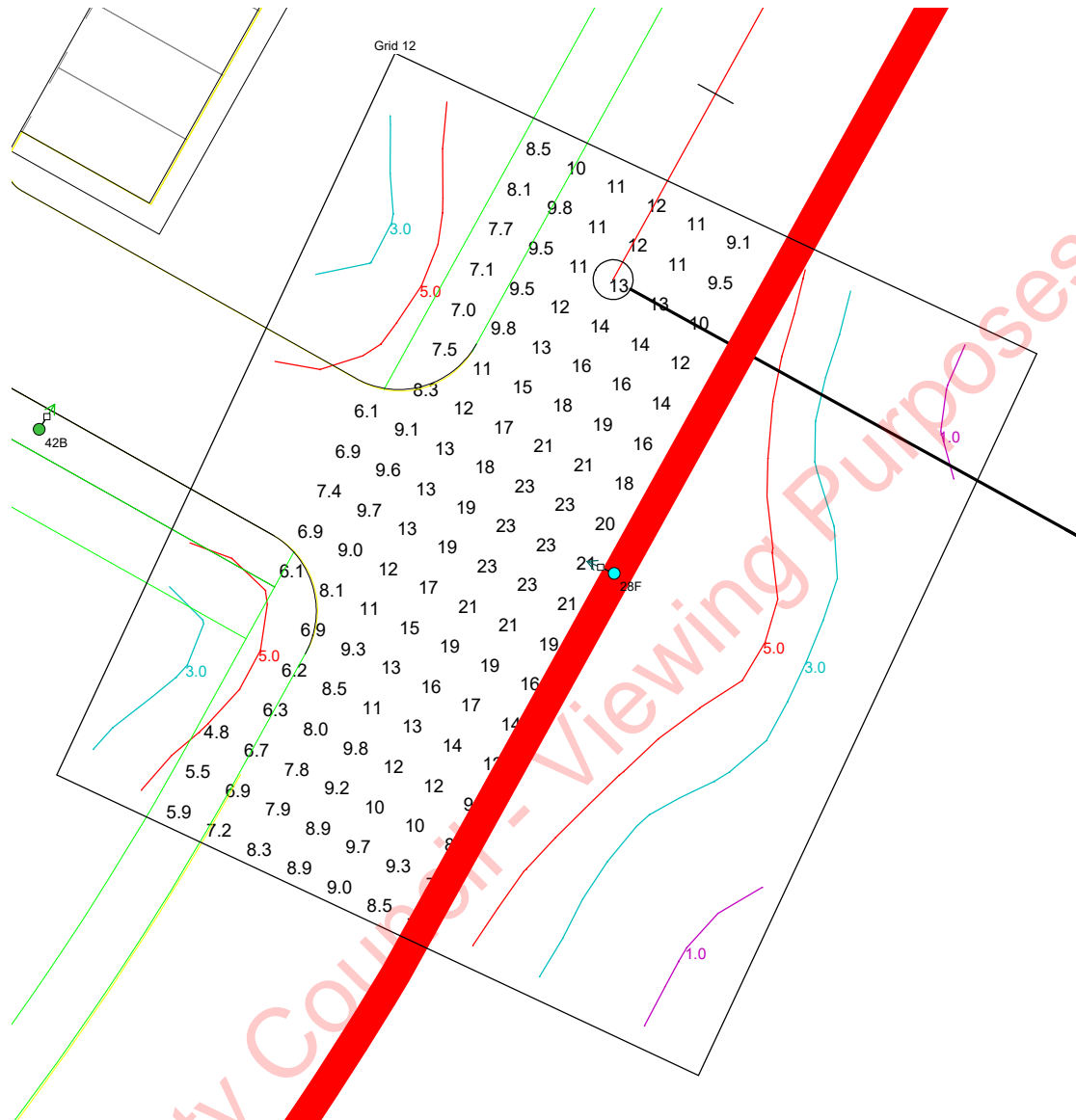


### Results

|           |       |
|-----------|-------|
| Eav       | 7.20  |
| Emin      | 2.32  |
| Emax      | 15.72 |
| Emin/Emax | 0.15  |
| Emin/Eav  | 0.32  |
|           |       |

## Horizontal Illuminance (lux)

Grid 12

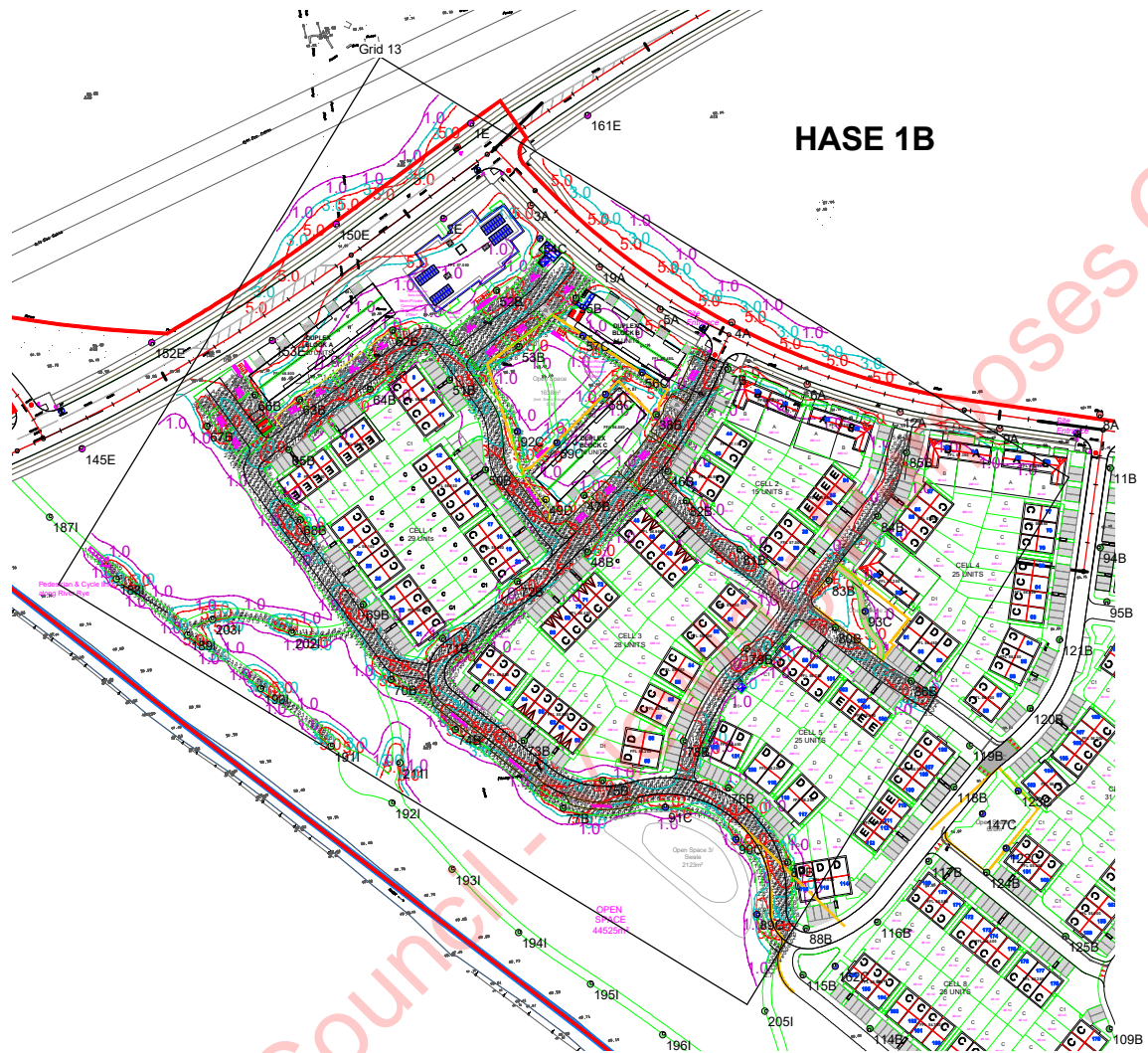


### Results

|           |       |
|-----------|-------|
| Eav       | 12.26 |
| Emin      | 4.81  |
| Emax      | 23.42 |
| Emin/Emax | 0.21  |
| Emin/Eav  | 0.39  |
|           |       |

## Horizontal Illuminance (lux)

Grid 13



**HASE 1B**

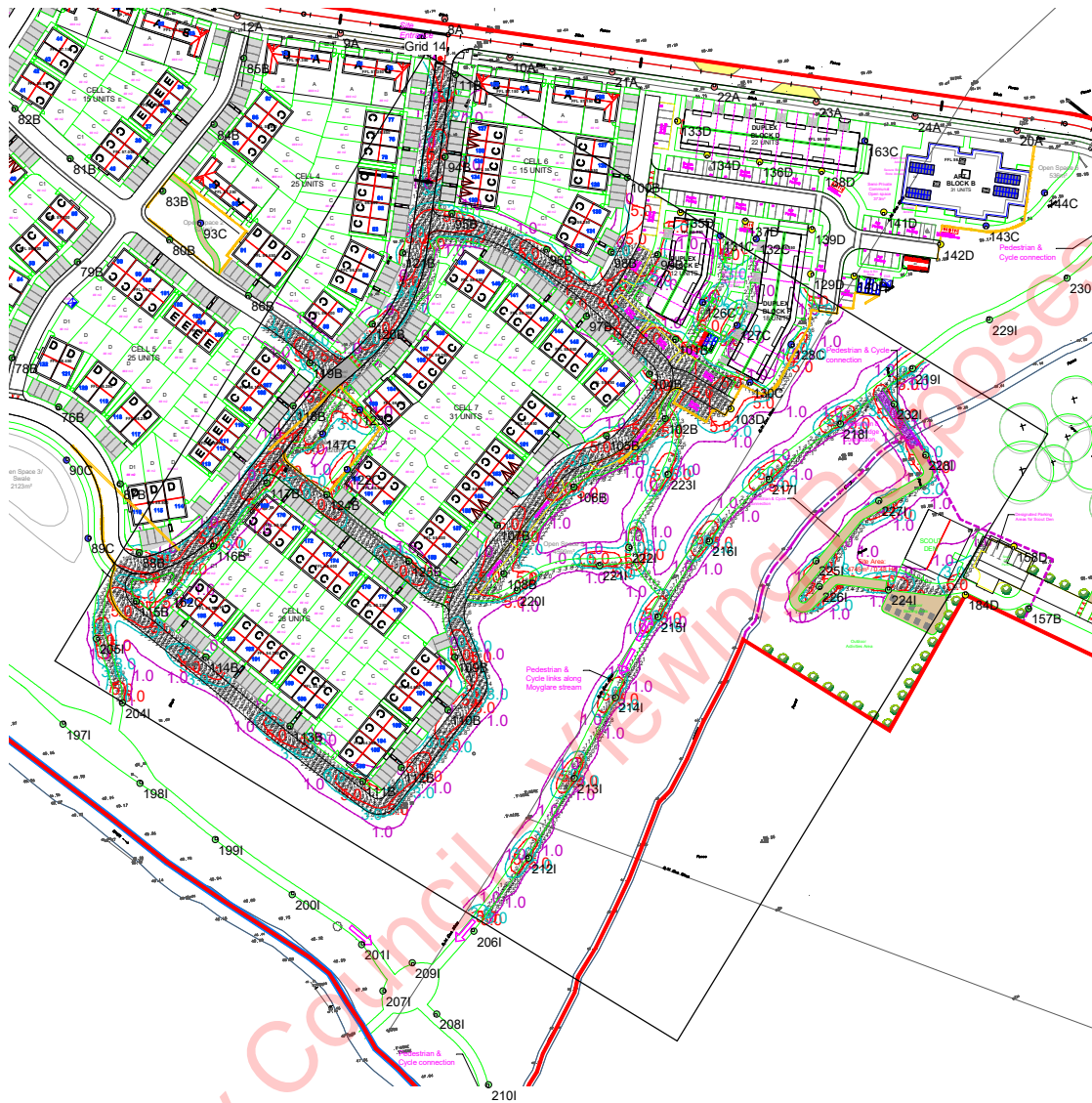
**Results**

|           |       |
|-----------|-------|
| Eav       | 5.13  |
| Emin      | 1.01  |
| Emax      | 16.82 |
| Emin/Emax | 0.06  |
| Emin/Eav  | 0.20  |
|           |       |



# Horizontal Illuminance (lux)

Grid 14

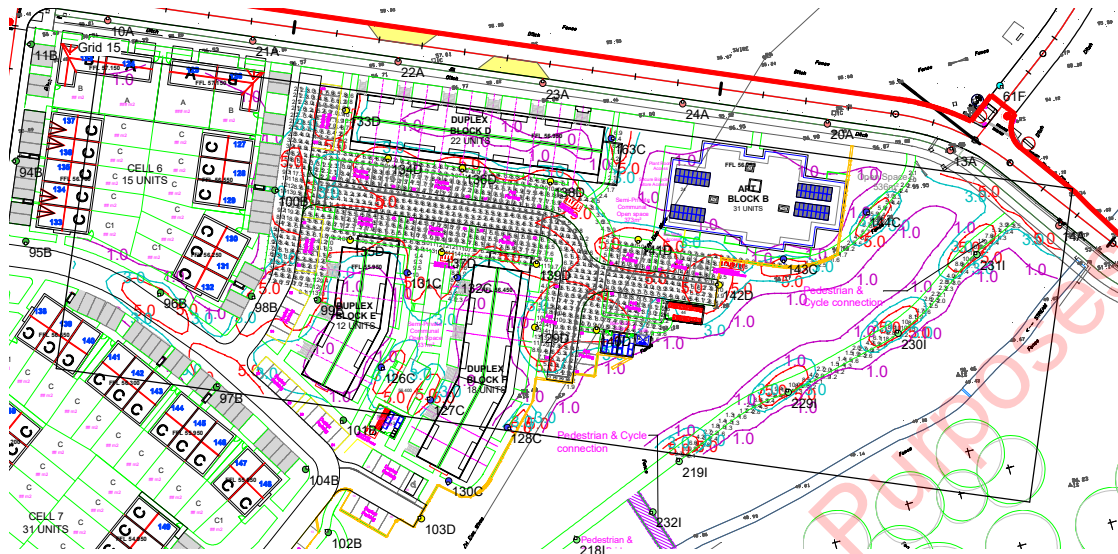


## Results

|           |       |
|-----------|-------|
| Eav       | 5.52  |
| Emin      | 1.08  |
| Emax      | 15.62 |
| Emin/Emax | 0.07  |
| Emin/Eav  | 0.20  |
|           |       |

# Horizontal Illuminance (lux)

Grid 15



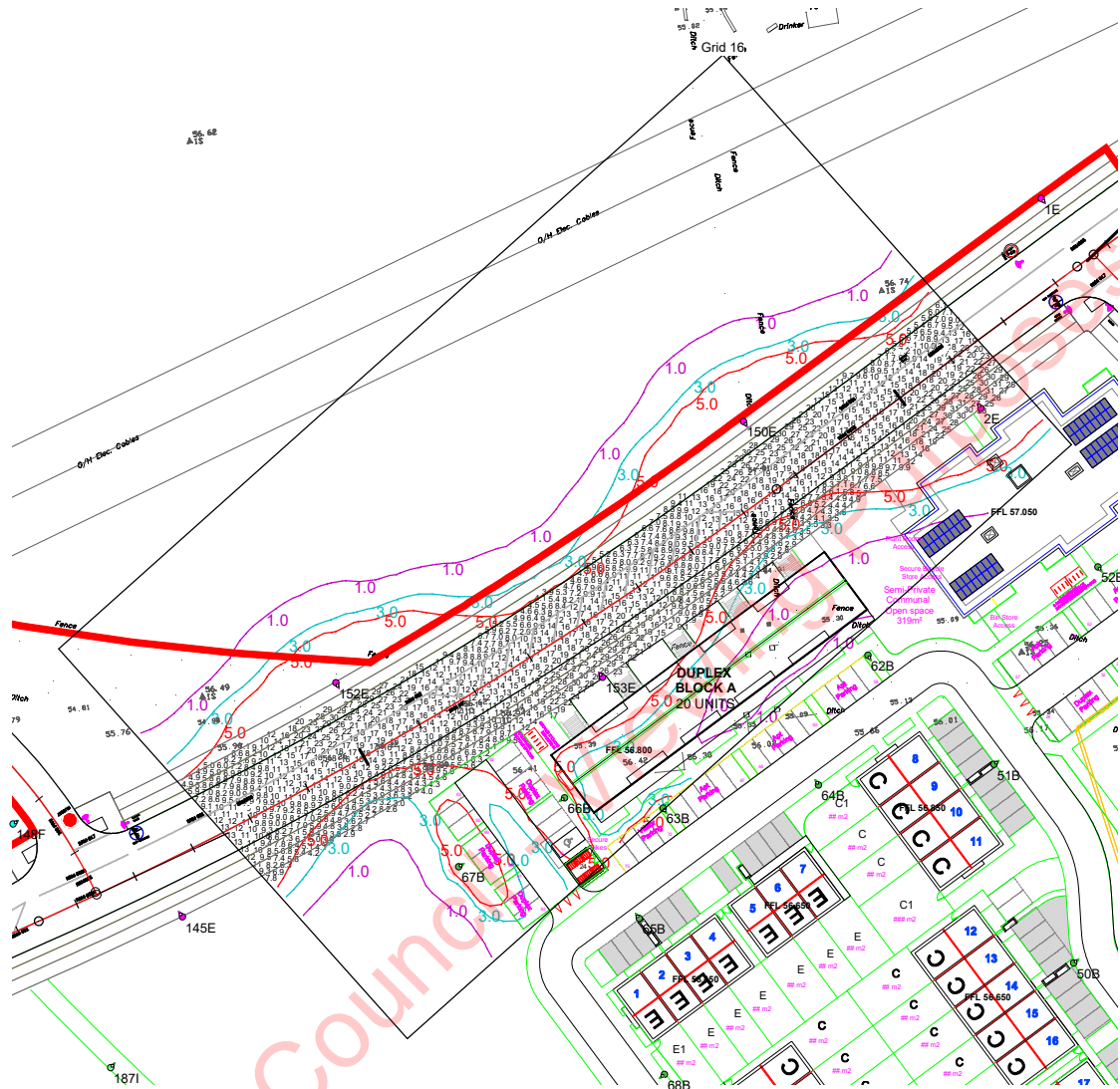
## Results

|           |       |
|-----------|-------|
| Eav       | 5.97  |
| Emin      | 1.18  |
| Emax      | 14.12 |
| Emin/Emax | 0.08  |
| Emin/Eav  | 0.20  |

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# Horizontal Illuminance (lux)

Grid 16

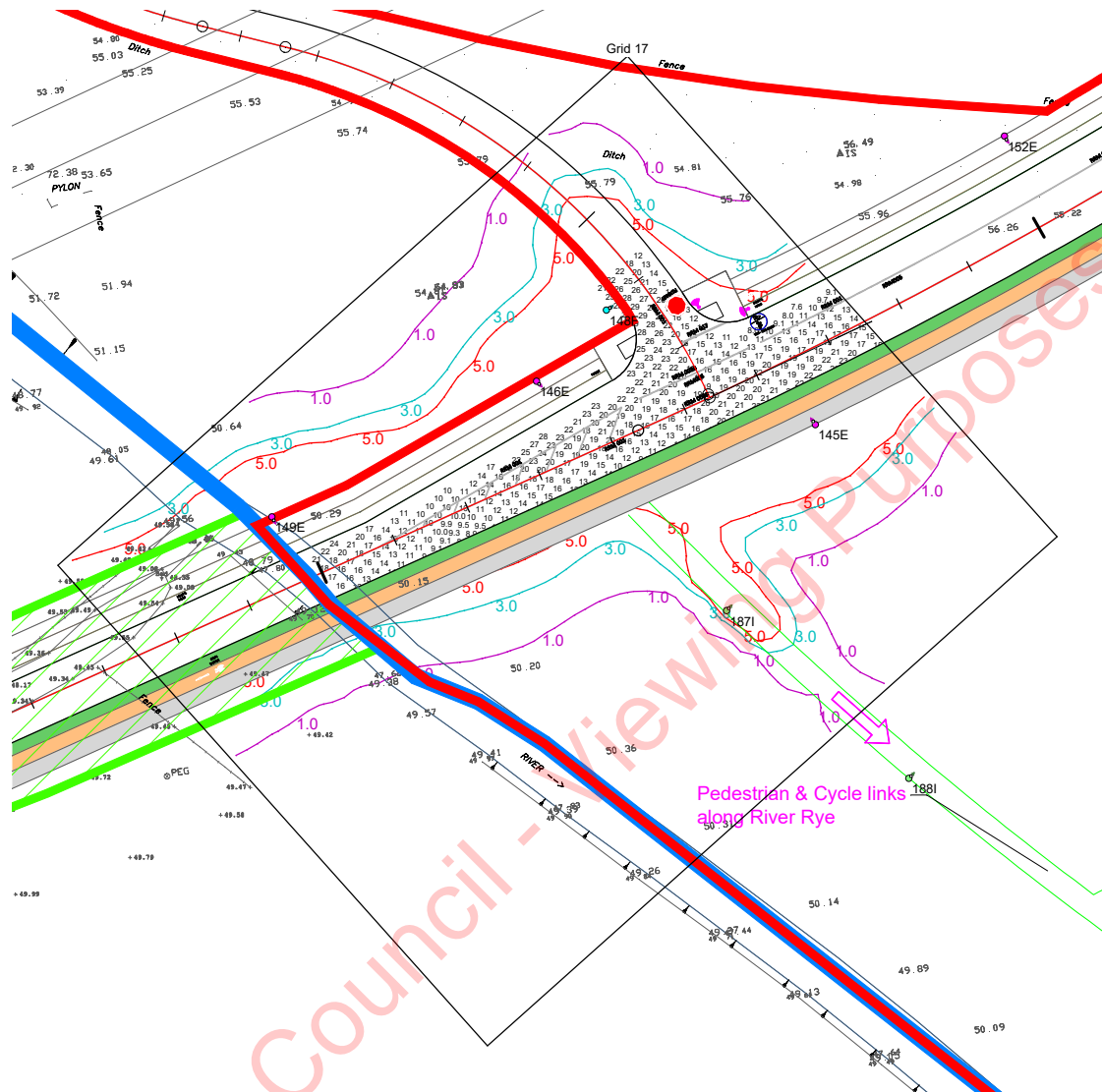


## Results

|           |       |
|-----------|-------|
| Eav       | 13.33 |
| Emin      | 2.61  |
| Emax      | 31.09 |
| Emin/Emax | 0.08  |
| Emin/Eav  | 0.20  |
|           |       |

# Horizontal Illuminance (lux)

Grid 17

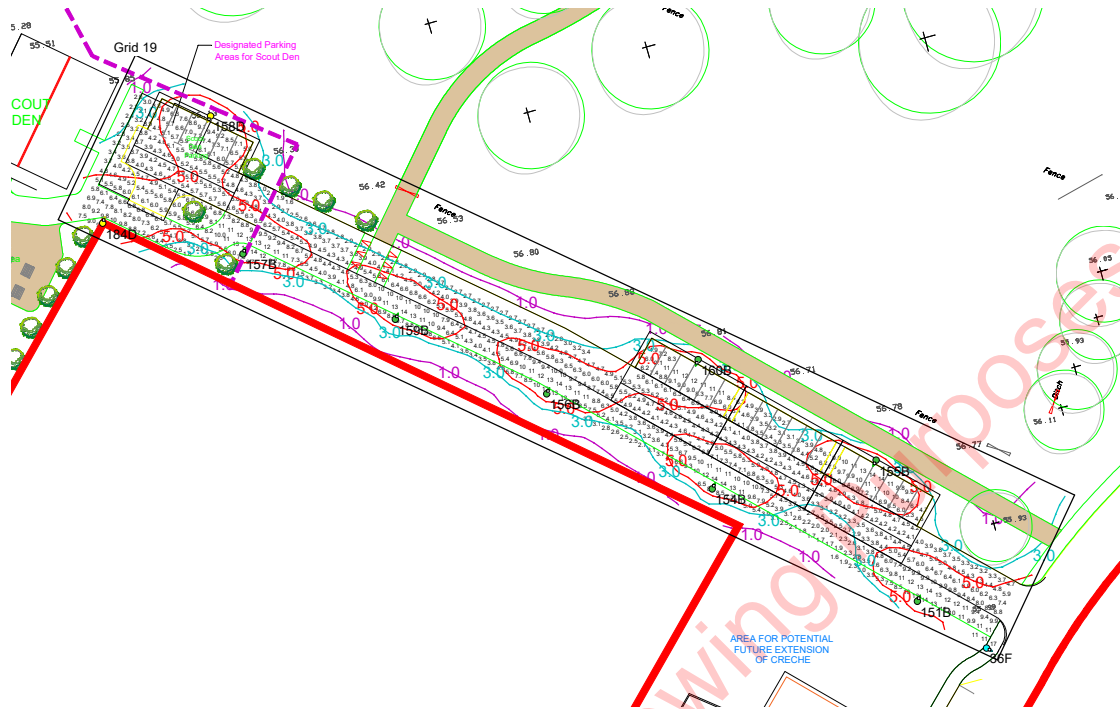


## Results

|           |       |
|-----------|-------|
| Eav       | 16.86 |
| Emin      | 7.64  |
| Emax      | 29.49 |
| Emin/Emax | 0.26  |
| Emin/Eav  | 0.45  |
|           |       |

## Horizontal Illuminance (lux)

Grid 19

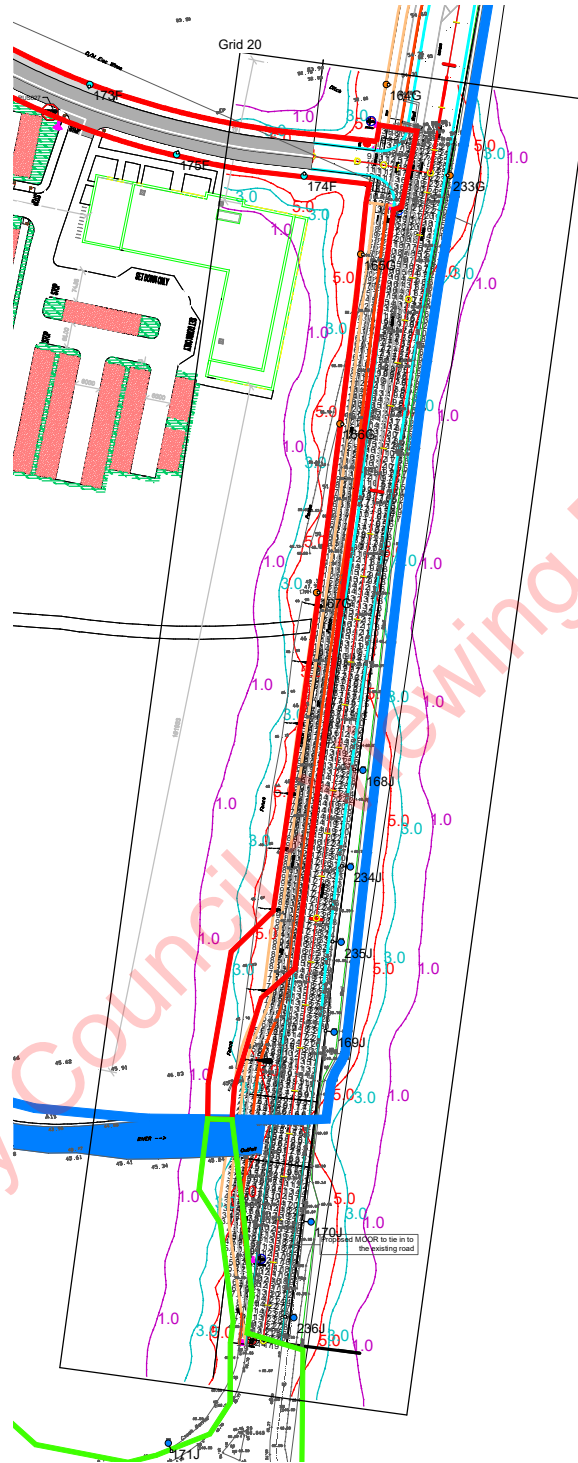


### Results

|           |       |
|-----------|-------|
| Eav       | 5.90  |
| Emin      | 1.62  |
| Emax      | 16.83 |
| Emin/Emax | 0.10  |
| Emin/Eav  | 0.27  |
|           |       |

## Horizontal Illuminance (lux)

Grid 20



### Results

|           |       |
|-----------|-------|
| Eav       | 12.57 |
| Emin      | 2.48  |
| Emax      | 33.97 |
| Emin/Emax | 0.07  |
| Emin/Eav  | 0.20  |
|           |       |