

**DATE:** 22 May 2026  
**DESIGNER:** SHD Lighting Consultancy Limited  
**PROJECT No:** SHD2688  
**PROJECT NAME:** Stoke Road



CAD layout reference: SRH-AJP-ZZ-00-DR-C-3000-3004-P02 - S38 Highway GA  
Plan 1-5

Spine Road lighting classification: P4 (BS 5489-1: 2020, Table A.5)

Minimum maintained average illuminance (Eav): >5.00 lux <7.50 lux  
Minimum illuminance (Emin): >1.00 lux  
Lighting uniformity (Emin/Eav): >0.20 (20%)

Side Roads lighting classification: P5 (BS 5489-1: 2020, Table A.5)

Minimum maintained average illuminance (Eav): >3.00 lux <4.50 lux  
Minimum illuminance (Emin): >0.60 lux  
Lighting uniformity (Emin/Eav): >0.20 (20%)

## **Outdoor Lighting Report**

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## 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: Whole Area         | 441654.17 | 295323.21 | 943.30    | 800.19    | 3.77       | 3.20       |
| 2  | Grid 2: Lighting Class P4  | 441763.84 | 295562.74 | 211.00    | 45.00     | 1.50       | 1.50       |
| 3  | Grid 3: Lighting Class P4  | 441959.47 | 295621.01 | 211.00    | 75.00     | 1.50       | 1.50       |
| 4  | Grid 4: Lighting Class P4  | 442147.37 | 295709.87 | 375.75    | 67.38     | 1.50       | 1.50       |
| 5  | Grid 5: Lighting Class P5  | 441847.84 | 295454.57 | 44.90     | 144.00    | 1.50       | 1.50       |
| 6  | Grid 6: Lighting Class P5  | 441881.21 | 295467.05 | 324.93    | 39.00     | 1.50       | 1.50       |
| 7  | Grid 7: Lighting Class P5  | 442042.55 | 295449.69 | 172.00    | 75.00     | 1.50       | 1.50       |
| 8  | Grid 8: Lighting Class P5  | 441890.78 | 295509.31 | 48.00     | 66.00     | 1.50       | 1.50       |
| 9  | Grid 9: Lighting Class P5  | 442000.65 | 295550.91 | 48.00     | 66.00     | 1.50       | 1.50       |
| 10 | Grid 10: Lighting Class P5 | 442347.81 | 295894.80 | 48.00     | 123.00    | 1.50       | 1.50       |
| 11 | Grid 11: Lighting Class P5 | 442283.27 | 295869.90 | 78.00     | 45.00     | 1.50       | 1.50       |
| 12 | Grid 12: Lighting Class P5 | 442061.82 | 295573.28 | 39.74     | 144.47    | 1.47       | 2.09       |
| 13 | Grid 13: Lighting Class P5 | 442011.77 | 295724.61 | 45.00     | 81.00     | 1.50       | 1.50       |
| 14 | Grid 14: Lighting Class P5 | 441978.24 | 295690.76 | 45.00     | 81.00     | 1.50       | 1.50       |

### Luminaires

#### Luminaire A Data



|                    |                                                 |
|--------------------|-------------------------------------------------|
| Supplier           | TRT Lighting                                    |
| Type               | A32_GEN2_LED_60W_GR5_(Blue)_G0_300<br>OK_FG     |
| Lamp(s)            | 42 0060 0000 100                                |
| Lamp Flux (klm)    | 8.38                                            |
| File Name          | A32_GEN2_LED_60W_GR5_(Blue)_G0_300<br>OK_FG.ies |
| Maintenance Factor | 0.84                                            |
| Lum. Int. Class    | None                                            |
| No. in Project     | 17                                              |

#### Luminaire B Data



|                      |                                 |
|----------------------|---------------------------------|
| Supplier             | ASD Lighting                    |
| Type                 | HWD2-#3K16 700-M1-CLO Gen 7     |
| Lamp(s)              | LED                             |
| LampFlux(klm)/Colour | 3.73 3000/72                    |
| File Name            | HWD2-#3K16 700-M1-CLO (34W).ldt |
| Maintenance Factor   | 0.84                            |
| Lum. Int. Class      | G2                              |
| No. in Project       | 18                              |

#### Luminaire C Data



|                      |                                 |
|----------------------|---------------------------------|
| Supplier             | ASD Lighting                    |
| Type                 | HWD2-#3K12 700-M1-CLO Gen 7     |
| Lamp(s)              | LED                             |
| LampFlux(klm)/Colour | 2.92 3000/72                    |
| File Name            | HWD2-#3K12 700-M1-CLO (26W).ldt |
| Maintenance Factor   | 0.84                            |
| Lum. Int. Class      | G1                              |
| No. in Project       | 31                              |

## Layout

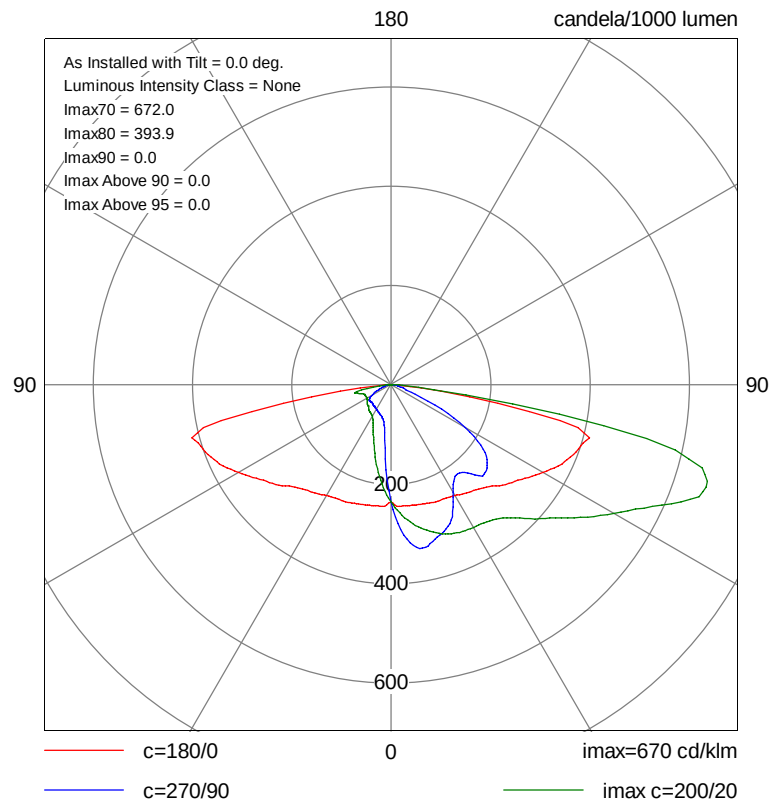
| ID | Type | X         | Y         | Height | Angle  | Tilt | Cant | Out-reach | Dimmed to | Target X | Target Y | Target Z |
|----|------|-----------|-----------|--------|--------|------|------|-----------|-----------|----------|----------|----------|
| 1  | A    | 441768.94 | 295594.86 | 10.00  | 130.00 | 0.00 | 0.00 | 0.40      | 100%      |          |          |          |
| 2  | A    | 441805.23 | 295615.39 | 10.00  | 271.00 | 0.00 | 0.00 | 0.40      | 100%      |          |          |          |
| 3  | B    | 441811.24 | 295589.95 | 6.00   | 202.00 | 0.00 | 0.00 | 0.40      | 50%       |          |          |          |
| 4  | A    | 441845.25 | 295620.65 | 10.00  | 131.00 | 0.00 | 0.00 | 0.40      | 100%      |          |          |          |
| 5  | A    | 441880.87 | 295647.94 | 10.00  | 127.00 | 0.00 | 0.00 | 0.40      | 100%      |          |          |          |
| 6  | A    | 441927.32 | 295666.83 | 10.00  | 94.00  | 0.00 | 0.00 | 0.40      | 100%      |          |          |          |
| 7  | A    | 441975.39 | 295683.26 | 10.00  | 297.00 | 0.00 | 0.00 | 0.40      | 100%      |          |          |          |
| 8  | A    | 442016.88 | 295702.84 | 10.00  | 125.00 | 0.00 | 0.00 | 0.40      | 100%      |          |          |          |
| 9  | A    | 442052.56 | 295735.05 | 10.00  | 283.00 | 0.00 | 0.00 | 0.40      | 100%      |          |          |          |
| 10 | C    | 442038.07 | 295701.14 | 6.00   | 212.00 | 0.00 | 0.00 | 0.40      | 50%       |          |          |          |
| 11 | A    | 442109.96 | 295731.38 | 10.00  | 99.00  | 0.00 | 0.00 | 0.40      | 100%      |          |          |          |
| 12 | C    | 442043.57 | 295660.92 | 6.00   | 11.00  | 0.00 | 0.00 | 0.40      | 50%       |          |          |          |
| 13 | A    | 442162.84 | 295739.52 | 10.00  | 107.00 | 0.00 | 0.00 | 0.40      | 100%      |          |          |          |
| 14 | A    | 442211.80 | 295755.64 | 10.00  | 124.00 | 0.00 | 0.00 | 0.40      | 100%      |          |          |          |
| 15 | A    | 442249.62 | 295785.16 | 10.00  | 127.00 | 0.00 | 0.00 | 0.40      | 100%      |          |          |          |
| 16 | A    | 442280.80 | 295811.68 | 10.00  | 138.00 | 0.00 | 0.00 | 0.40      | 100%      |          |          |          |
| 17 | A    | 442313.80 | 295847.23 | 10.00  | 122.00 | 0.00 | 0.00 | 0.40      | 100%      |          |          |          |
| 18 | A    | 442359.59 | 295872.84 | 10.00  | 118.00 | 0.00 | 0.00 | 0.40      | 100%      |          |          |          |
| 19 | A    | 442400.47 | 295905.76 | 10.00  | 128.00 | 0.00 | 0.00 | 0.40      | 100%      |          |          |          |
| 20 | A    | 442430.67 | 295942.89 | 10.00  | 308.00 | 0.00 | 0.00 | 0.40      | 100%      |          |          |          |
| 21 | B    | 442379.81 | 295911.37 | 6.00   | 217.00 | 0.00 | 0.00 | 0.40      | 50%       |          |          |          |
| 22 | B    | 441828.42 | 295554.43 | 6.00   | 213.00 | 0.00 | 0.00 | 0.40      | 50%       |          |          |          |
| 23 | B    | 441847.98 | 295526.13 | 6.00   | 203.00 | 0.00 | 0.00 | 0.40      | 50%       |          |          |          |
| 24 | B    | 441852.88 | 295496.43 | 6.00   | 33.00  | 0.00 | 0.00 | 0.40      | 50%       |          |          |          |
| 25 | B    | 441882.85 | 295499.05 | 6.00   | 279.00 | 0.00 | 0.00 | 0.40      | 50%       |          |          |          |
| 26 | B    | 441920.43 | 295495.67 | 6.00   | 97.00  | 0.00 | 0.00 | 0.40      | 50%       |          |          |          |
| 27 | B    | 441953.43 | 295512.07 | 6.00   | 286.00 | 0.00 | 0.00 | 0.40      | 50%       |          |          |          |
| 28 | C    | 441914.54 | 295514.96 | 6.00   | 196.00 | 0.00 | 0.00 | 0.40      | 50%       |          |          |          |
| 29 | B    | 441989.78 | 295523.37 | 6.00   | 289.00 | 0.00 | 0.00 | 0.40      | 50%       |          |          |          |
| 30 | B    | 442021.12 | 295535.42 | 6.00   | 296.00 | 0.00 | 0.00 | 0.40      | 50%       |          |          |          |
| 31 | B    | 442040.16 | 295551.95 | 6.00   | 204.00 | 0.00 | 0.00 | 0.40      | 50%       |          |          |          |
| 32 | B    | 442087.87 | 295563.34 | 6.00   | 102.00 | 0.00 | 0.00 | 0.40      | 50%       |          |          |          |
| 33 | C    | 442074.85 | 295581.71 | 6.00   | 27.00  | 0.00 | 0.00 | 0.40      | 50%       |          |          |          |
| 34 | B    | 442120.09 | 295574.37 | 6.00   | 120.00 | 0.00 | 0.00 | 0.40      | 50%       |          |          |          |
| 35 | B    | 442134.30 | 295593.75 | 6.00   | 22.00  | 0.00 | 0.00 | 0.40      | 50%       |          |          |          |
| 36 | B    | 442159.15 | 295591.56 | 6.00   | 206.00 | 0.00 | 0.00 | 0.40      | 50%       |          |          |          |

### Layout Continued

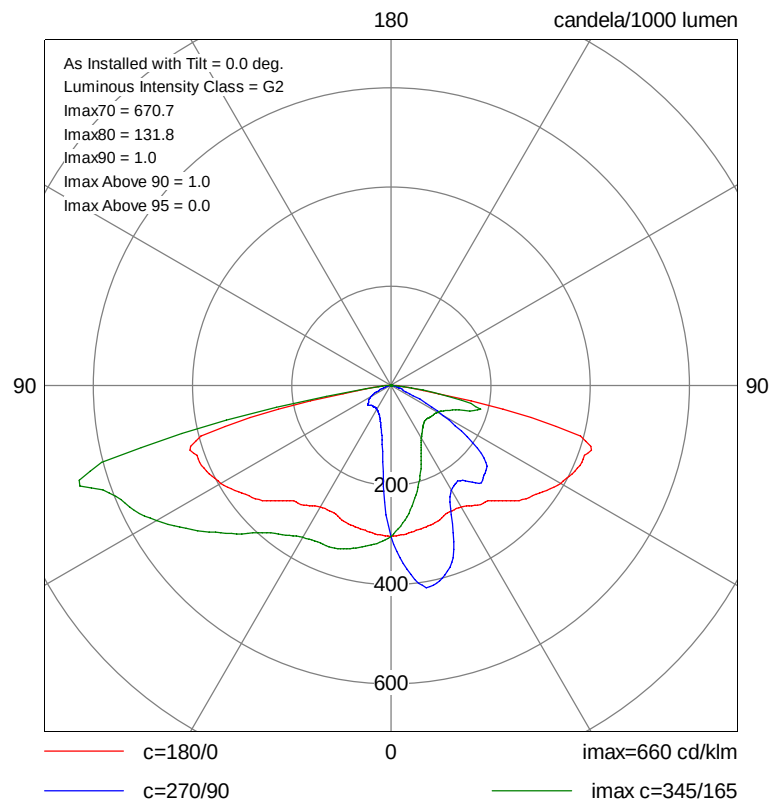
| ID | Type | X         | Y         | Height | Angle  | Tilt | Cant | Out-reach | Dimmed to | Target X | Target Y | Target Z |
|----|------|-----------|-----------|--------|--------|------|------|-----------|-----------|----------|----------|----------|
| 37 | C    | 442032.70 | 295525.68 | 6.00   | 204.00 | 0.00 | 0.00 | 0.40      | 50%       |          |          |          |
| 38 | C    | 442034.57 | 295494.84 | 6.00   | 17.00  | 0.00 | 0.00 | 0.40      | 50%       |          |          |          |
| 39 | C    | 442047.19 | 295473.92 | 6.00   | 60.00  | 0.00 | 0.00 | 0.40      | 50%       |          |          |          |
| 40 | C    | 442072.83 | 295489.74 | 6.00   | 295.00 | 0.00 | 0.00 | 0.40      | 50%       |          |          |          |
| 41 | C    | 442133.46 | 295520.43 | 6.00   | 302.00 | 0.00 | 0.00 | 0.40      | 50%       |          |          |          |
| 42 | C    | 442161.68 | 295536.45 | 6.00   | 300.00 | 0.00 | 0.00 | 0.40      | 50%       |          |          |          |
| 43 | C    | 442167.19 | 295561.22 | 6.00   | 27.00  | 0.00 | 0.00 | 0.40      | 50%       |          |          |          |
| 44 | C    | 441904.81 | 295545.56 | 6.00   | 200.00 | 0.00 | 0.00 | 0.40      | 50%       |          |          |          |
| 45 | C    | 441893.22 | 295569.38 | 6.00   | 290.00 | 0.00 | 0.00 | 0.40      | 50%       |          |          |          |
| 46 | B    | 442017.69 | 295577.15 | 6.00   | 24.00  | 0.00 | 0.00 | 0.40      | 50%       |          |          |          |
| 47 | B    | 442004.90 | 295606.48 | 6.00   | 312.00 | 0.00 | 0.00 | 0.40      | 50%       |          |          |          |
| 48 | C    | 442346.27 | 295953.65 | 6.00   | 216.00 | 0.00 | 0.00 | 0.40      | 50%       |          |          |          |
| 49 | C    | 442317.53 | 295975.02 | 6.00   | 37.00  | 0.00 | 0.00 | 0.40      | 50%       |          |          |          |
| 50 | C    | 442321.50 | 295995.06 | 6.00   | 160.00 | 0.00 | 0.00 | 0.40      | 50%       |          |          |          |
| 51 | C    | 442336.73 | 295939.51 | 6.00   | 128.00 | 0.00 | 0.00 | 0.40      | 50%       |          |          |          |
| 52 | C    | 442304.47 | 295925.83 | 6.00   | 305.00 | 0.00 | 0.00 | 0.40      | 50%       |          |          |          |
| 53 | C    | 442288.74 | 295891.88 | 6.00   | 42.00  | 0.00 | 0.00 | 0.40      | 50%       |          |          |          |
| 54 | C    | 442363.94 | 295931.32 | 6.00   | 210.00 | 0.00 | 0.00 | 0.40      | 50%       |          |          |          |
| 55 | B    | 442061.86 | 295556.41 | 6.00   | 297.00 | 0.00 | 0.00 | 0.40      | 50%       |          |          |          |
| 56 | C    | 442106.31 | 295505.31 | 6.00   | 298.00 | 0.00 | 0.00 | 0.40      | 50%       |          |          |          |
| 57 | C    | 442298.26 | 295988.64 | 6.00   | 278.00 | 0.00 | 0.00 | 0.40      | 50%       |          |          |          |
| 58 | C    | 442278.95 | 295905.20 | 6.00   | 308.00 | 0.00 | 0.00 | 0.40      | 50%       |          |          |          |
| 59 | C    | 442050.98 | 295630.52 | 6.00   | 17.00  | 0.00 | 0.00 | 0.40      | 50%       |          |          |          |
| 60 | C    | 442070.89 | 295609.09 | 6.00   | 205.00 | 0.00 | 0.00 | 0.40      | 50%       |          |          |          |
| 61 | C    | 442033.74 | 295749.48 | 6.00   | 18.00  | 0.00 | 0.00 | 0.40      | 50%       |          |          |          |
| 62 | C    | 442016.31 | 295778.31 | 6.00   | 27.00  | 0.00 | 0.00 | 0.40      | 50%       |          |          |          |
| 63 | C    | 442010.00 | 295803.82 | 6.00   | 293.00 | 0.00 | 0.00 | 0.40      | 50%       |          |          |          |
| 64 | C    | 441986.13 | 295715.63 | 6.00   | 36.00  | 0.00 | 0.00 | 0.40      | 50%       |          |          |          |
| 65 | C    | 441962.06 | 295745.56 | 6.00   | 39.00  | 0.00 | 0.00 | 0.40      | 50%       |          |          |          |
| 66 | C    | 441952.31 | 295767.51 | 6.00   | 311.00 | 0.00 | 0.00 | 0.40      | 50%       |          |          |          |

## Polar Diagrams

### Luminaire A A32 GEN2 LED 60W GR5 (Blue) G0 3000K FG

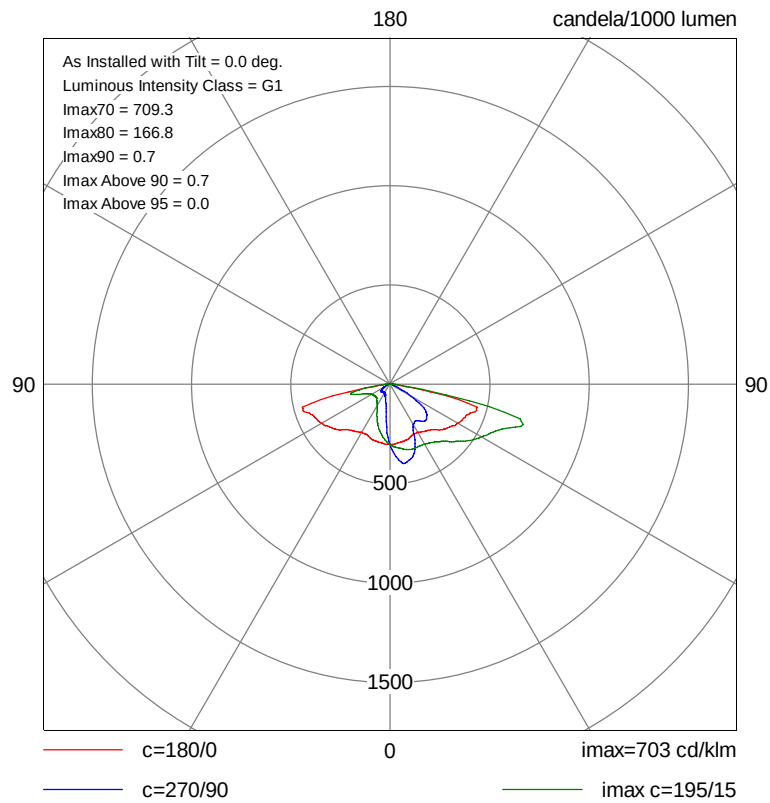


### Luminaire B HWD2-#3K16 700-M1-CLO Gen 7



## Polar Diagrams Continued

### Luminaire C HWD2-#3K12 700-M1-CLO Gen 7



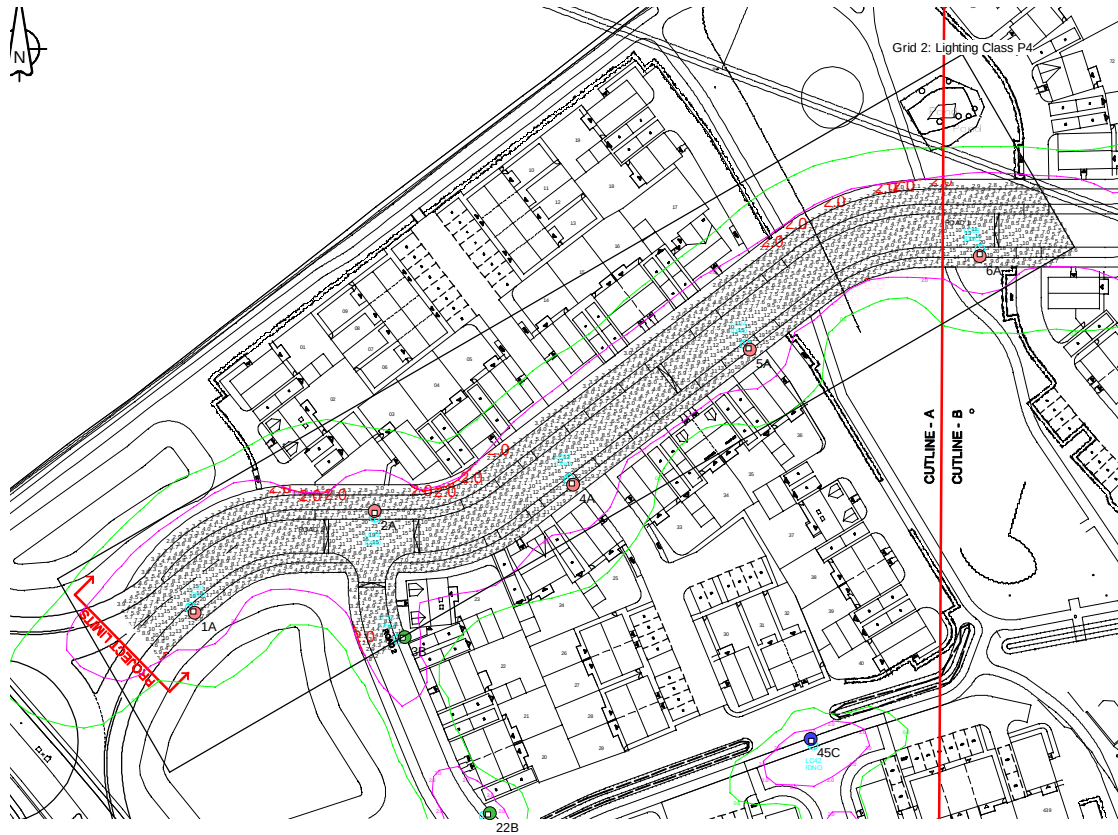
## Horizontal Illuminance (lux)

Grid 1: Whole Area



## Horizontal Illuminance (lux)

Grid 2: Lighting Class P4

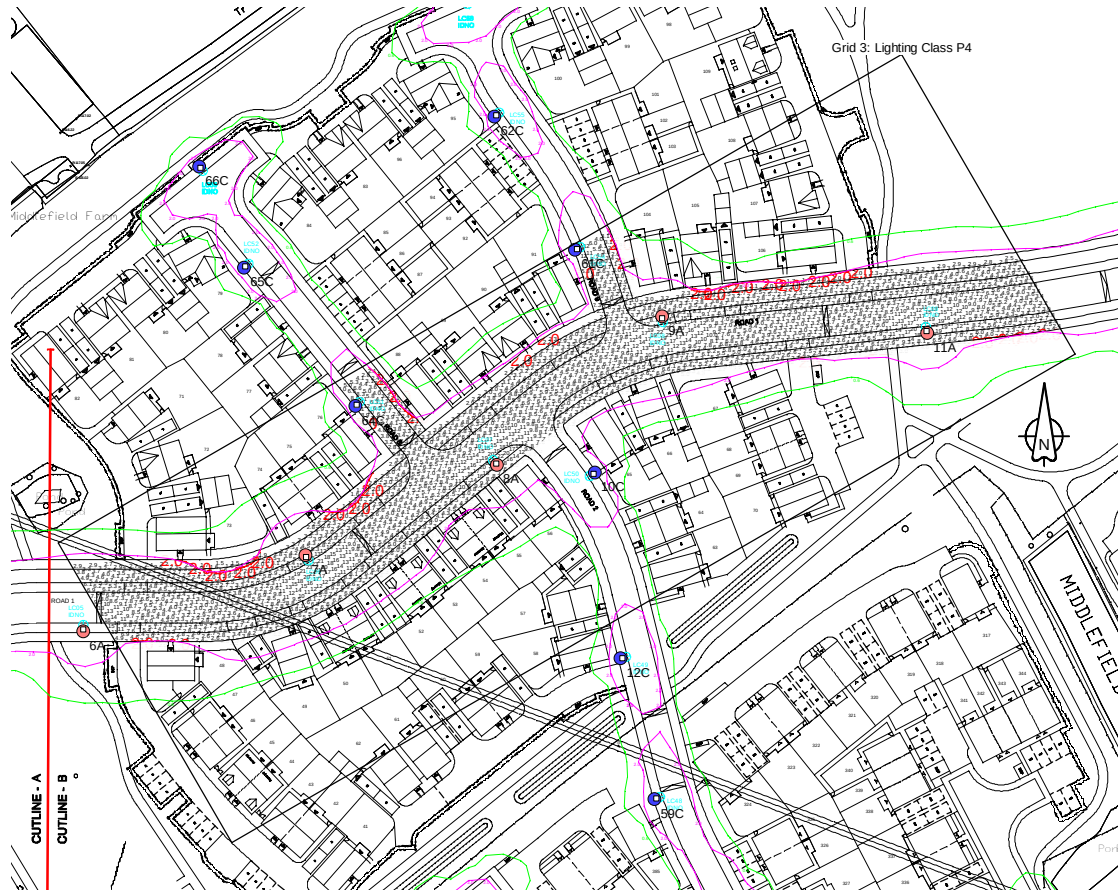


### Results

|                                    |       |
|------------------------------------|-------|
| Eav                                | 6.67  |
| Emin                               | 1.53  |
| E <sub>max</sub>                   | 23.19 |
| E <sub>min</sub> /E <sub>max</sub> | 0.07  |
| E <sub>min</sub> /E <sub>av</sub>  | 0.23  |
|                                    |       |

## Horizontal Illuminance (lux)

Grid 3: Lighting Class P4

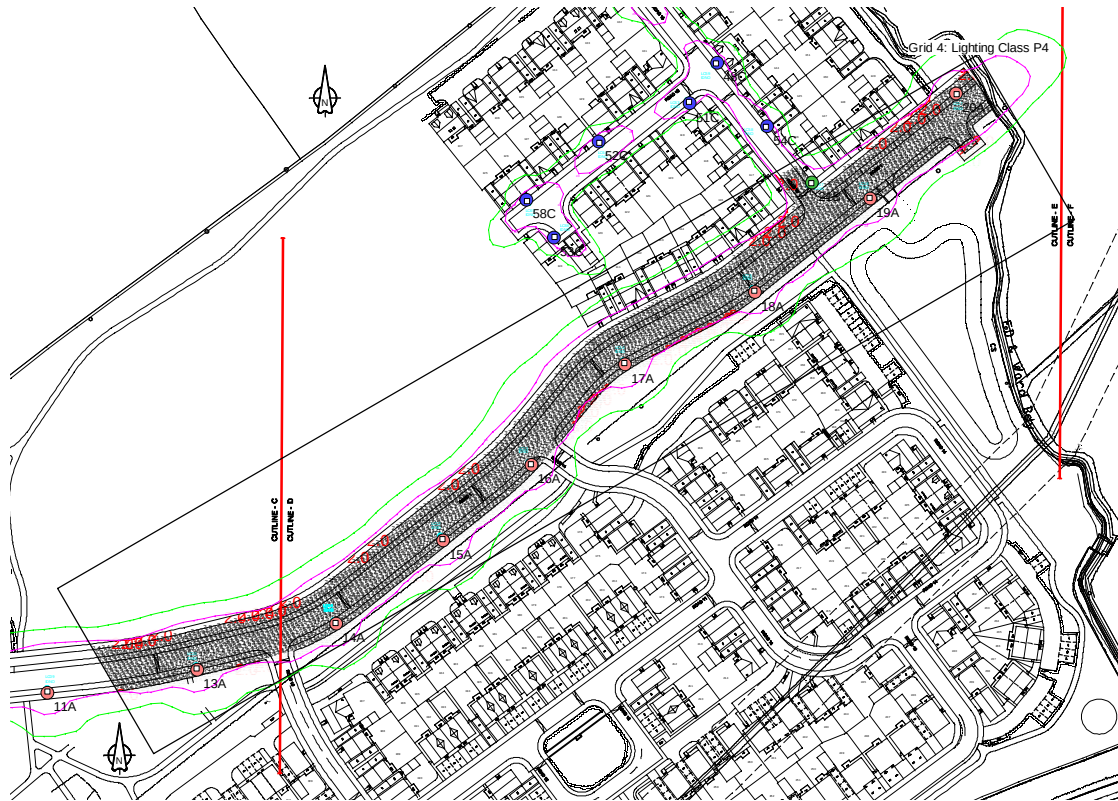


### Results

|                       |       |
|-----------------------|-------|
| Eav                   | 5.88  |
| Emin                  | 1.39  |
| E <sub>max</sub>      | 23.05 |
| Emin/E <sub>max</sub> | 0.06  |
| Emin/Eav              | 0.24  |
|                       |       |

## Horizontal Illuminance (lux)

Grid 4: Lighting Class P4

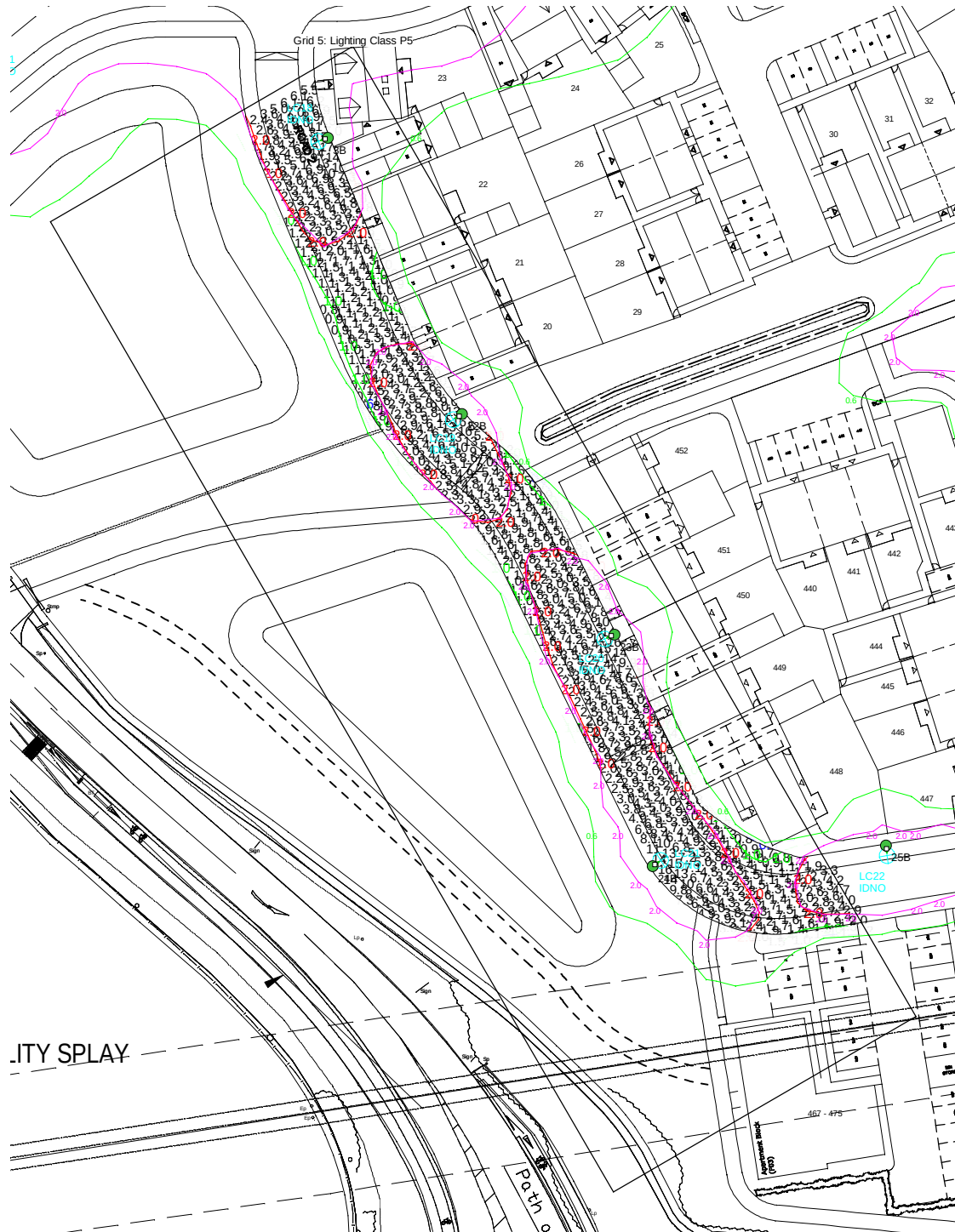


### Results

|           |       |
|-----------|-------|
| Eav       | 6.34  |
| Emin      | 1.26  |
| Emax      | 23.27 |
| Emin/Emax | 0.05  |
| Emin/Eav  | 0.20  |
|           |       |

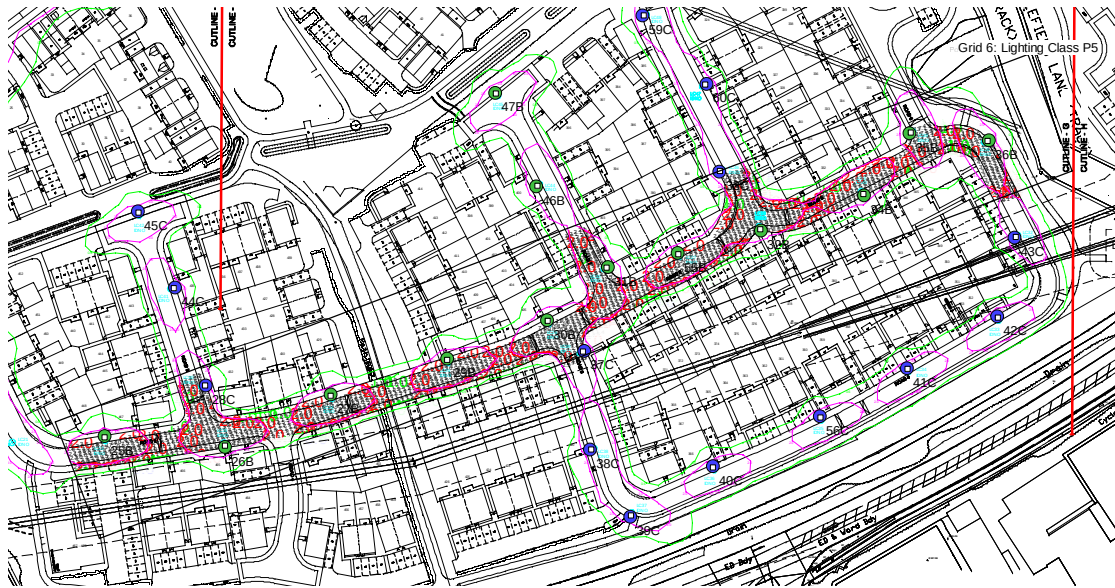
## Horizontal Illuminance (lux)

Grid 5: Lighting Class P5



## Horizontal Illuminance (lux)

Grid 6: Lighting Class P5

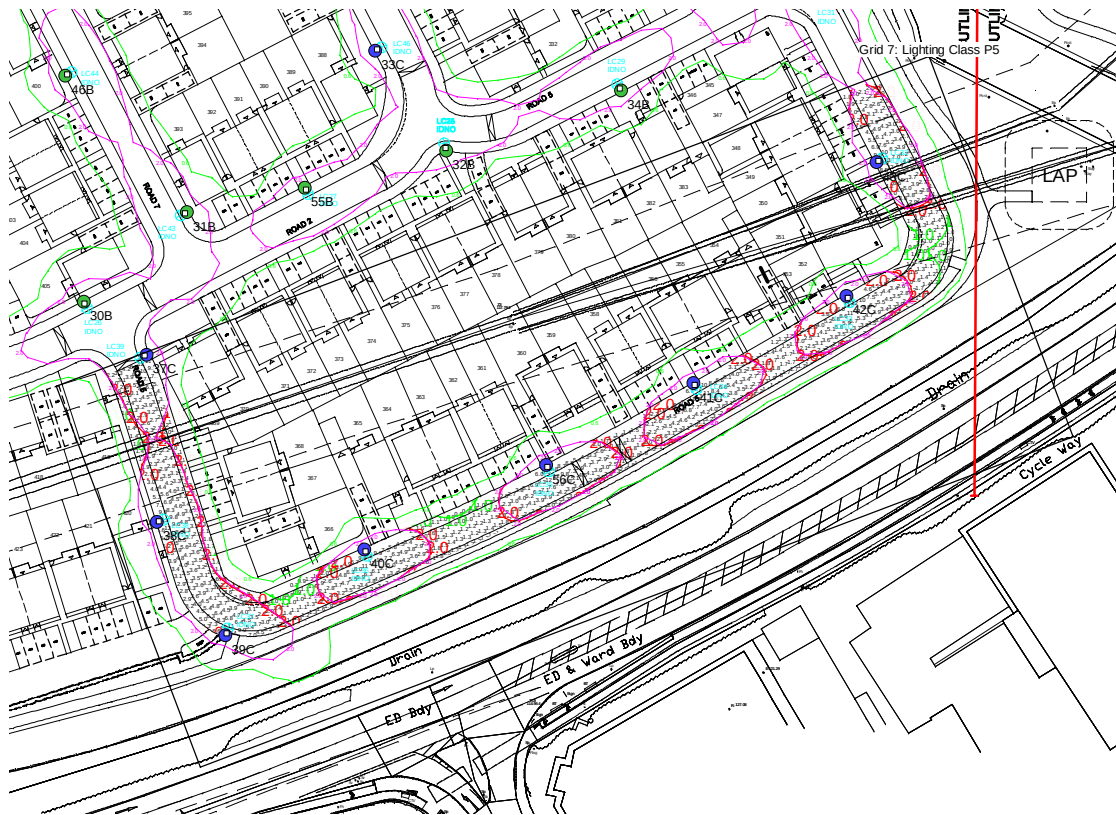


### Results

|           |       |
|-----------|-------|
| Eav       | 3.98  |
| Emin      | 0.90  |
| Emax      | 18.06 |
| Emin/Emax | 0.05  |
| Emin/Eav  | 0.23  |
|           |       |

**Horizontal Illuminance (lux)**

Grid 7: Lighting Class P5

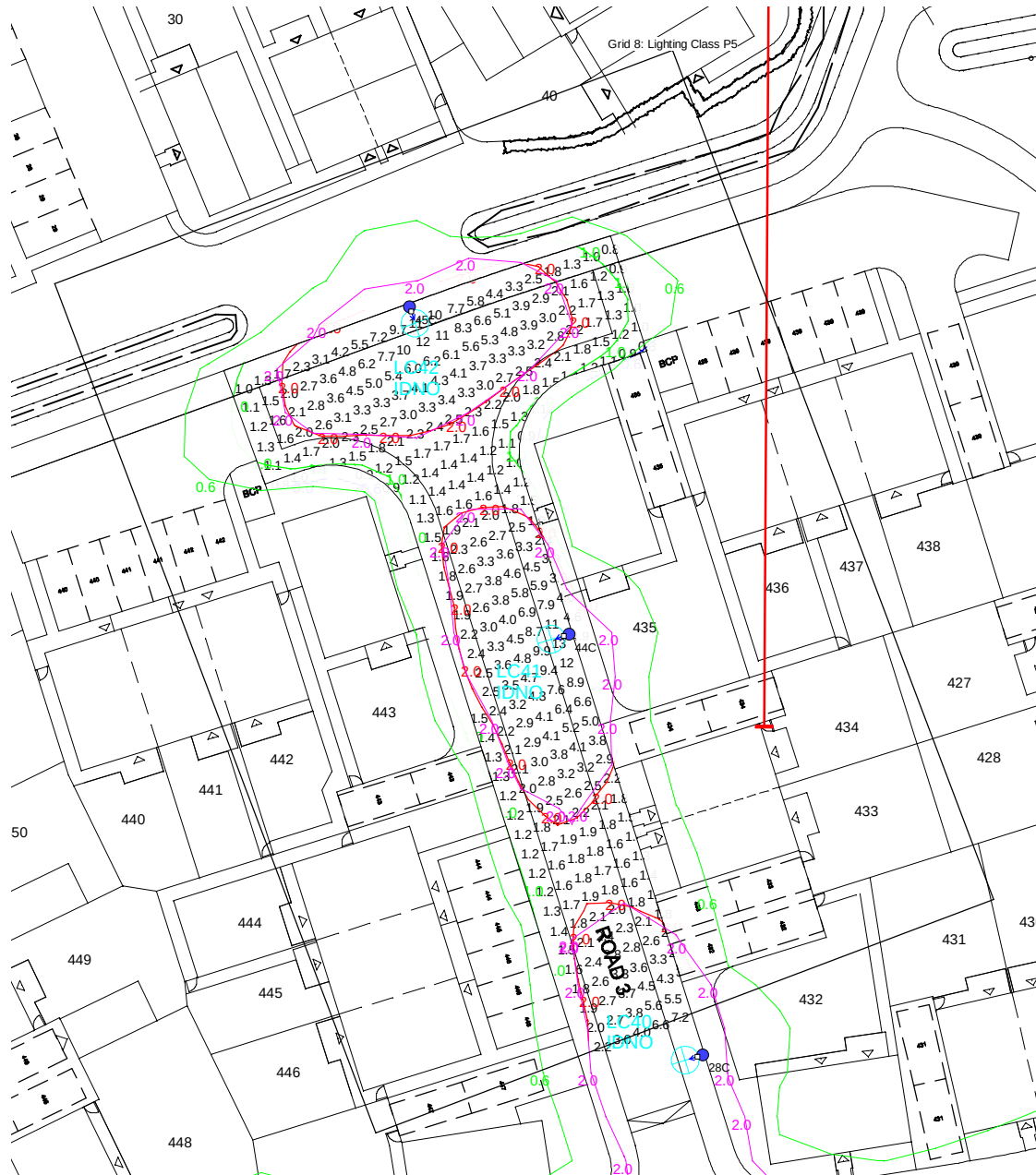


## Results

|                       |       |
|-----------------------|-------|
| Eav                   | 3.40  |
| Emin                  | 0.75  |
| E <sub>max</sub>      | 13.56 |
| Emin/E <sub>max</sub> | 0.06  |
| Emin/Eav              | 0.22  |
|                       |       |

## Horizontal Illuminance (lux)

Grid 8: Lighting Class P5



### Results

|           |       |
|-----------|-------|
| Eav       | 3.01  |
| Emin      | 0.77  |
| Emax      | 13.04 |
| Emin/Emax | 0.06  |
| Emin/Eav  | 0.25  |
|           |       |

## Horizontal Illuminance (lux)

Grid 9: Lighting Class P5

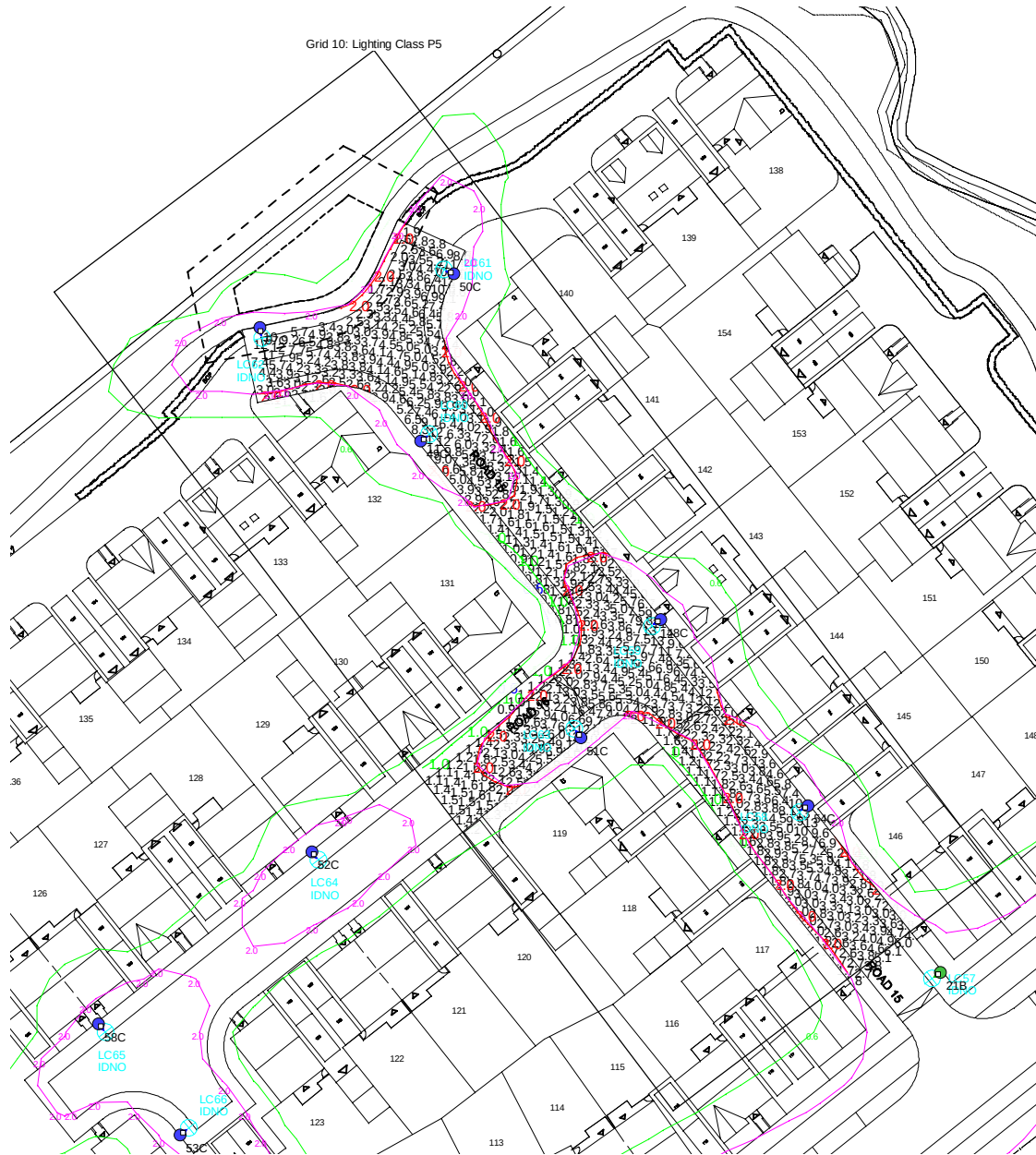


### Results

|           |       |
|-----------|-------|
| Eav       | 3.61  |
| Emin      | 0.71  |
| Emax      | 16.52 |
| Emin/Emax | 0.04  |
| Emin/Eav  | 0.20  |
|           |       |

## Horizontal Illuminance (lux)

Grid 10: Lighting Class P5

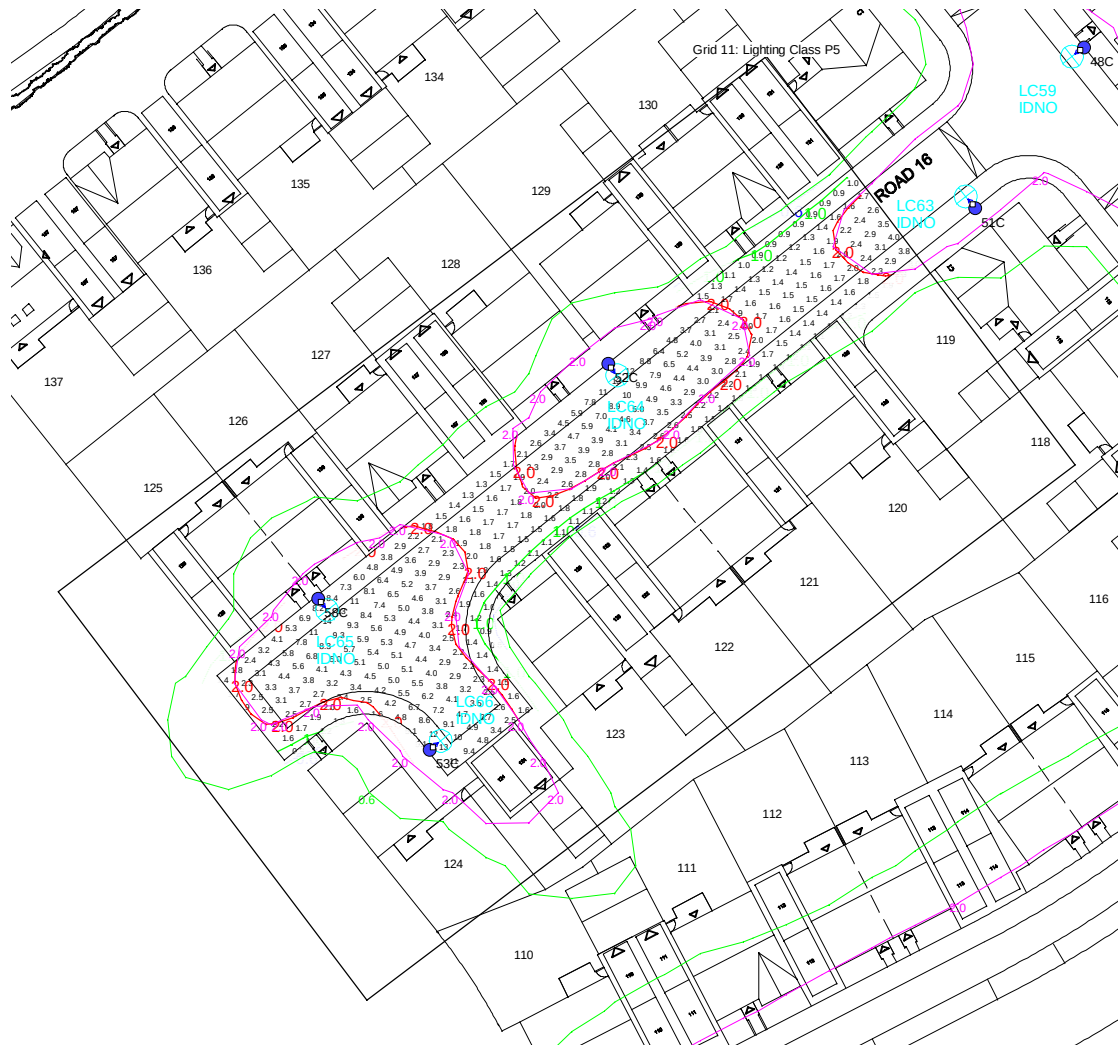


### Results

|           |       |
|-----------|-------|
| Eav       | 3.78  |
| Emin      | 0.75  |
| Emax      | 13.19 |
| Emin/Emax | 0.06  |
| Emin/Eav  | 0.20  |
|           |       |

## Horizontal Illuminance (lux)

Grid 11: Lighting Class P5



### Results

|                                    |       |
|------------------------------------|-------|
| Eav                                | 3.30  |
| Emin                               | 0.75  |
| E <sub>max</sub>                   | 13.66 |
| E <sub>min</sub> /E <sub>max</sub> | 0.05  |
| E <sub>min</sub> /E <sub>av</sub>  | 0.23  |
|                                    |       |

## Horizontal Illuminance (lux)

Grid 12: Lighting Class P5



### Results

|           |       |
|-----------|-------|
| Eav       | 3.36  |
| Emin      | 0.66  |
| Emax      | 13.54 |
| Emin/Emax | 0.05  |
| Emin/Eav  | 0.20  |
|           |       |

## Horizontal Illuminance (lux)

Grid 13: Lighting Class P5



### Results

|           |       |
|-----------|-------|
| Eav       | 3.19  |
| Emin      | 0.65  |
| Emax      | 13.43 |
| Emin/Emax | 0.05  |
| Emin/Eav  | 0.20  |
|           |       |

## Horizontal Illuminance (lux)

Grid 14: Lighting Class P5



### Results

|           |       |
|-----------|-------|
| Eav       | 3.16  |
| Emin      | 0.65  |
| Emax      | 13.04 |
| Emin/Emax | 0.05  |
| Emin/Eav  | 0.21  |
|           |       |