Notes

1. All columns and signs (where indicated) shall be serviced via DNO supply and be fitted with a 16A fuse or greater in the DNO cut out.
2. Columns shall be fitted with double pole isolator. The Unit shall be as Lancashire CC specification i.e. Lucy Zodion with a 32A Isolator and as BS88 Fuse Carrier.
3. Where needed sub fuses for external sub circuits shall be fitted with 6A BS 88 fuses with a 2A fuse in the external sign. Two times (2x) Fuse discrimination shall comply with BS7671.
4. Where there are known services in the vicinity of excavations the Contractor shall ensure hand digging is carried out with care. The Contractor shall arrange for statutory undertakers plant to be marked on site prior to excavations with mechanical excavators.
5. In this instance the use of 3 dimensional masking has not been used to take into consideration the actual position of high sided objects such as buildings and the like, Trees and shrubs etc have not been considered as their masking ability will vary with seasonal conditions.
6. Lighting Iso contours where shown in this drawing have been created using a conventional symmetrical grid. This does not take into account the spacing or weightings as detailed in BS5489 or BS EN 13201-3:2003
7. Equipment shown on this drawing is available through most specialist street lighting electrical distributors like Electrical lighting Solutions (www.elsltd.co.uk), Marwood Electrical (www.marwoodelectrical.co.uk) or Maclean Electrical (www.maclean.co.uk)
8. Copies of the original lighting reality calculations available upon request please send a email to mail@nicksmithassoclates.com quoting the project number.
9. Where lighting is indicated to be dimmed. The Light output shall be dimmed to 50% light output. Pre-set to dim from 19-00 hours until 07-00 hours (7-00pm until 7-00am).

Key

- Existing column to be disconnected and removed to tip
- Existing 10m column with single arm bracket and lantern to remain. (Lantern assumed to be AXIA 3,2 5280 - 32 OSLON SQUARE GIANT 373mA NW 230V 00-56-61)
- Proposed steel galvanised 10m column with 0,5m single arm bracket at zero degree tilt and Urbis Schreder lantern (AXIA 3,2 5280 - 32 OSLON SQUARE GIANT 373mA NW 230V 00-56-61) with neutral white LED to deliver 7080 lumens, integral driver with 20 Lux Cell, Ratio 1:1, LED is pre-set to dim (see note 9)
- Proposed steel galvanised 8m column with post mounted Urbis Schreder lantern (AXIA 3,3 5280 64 OSLON SQUARE GIANT 292mA NW 230V 00-56-61) with neutral white LED to deliver 7080 lumens, Integral driver with 20 Lux Cell, Ratio 1:1, LED is pre-set to dim (see note 9)
- Proposed steel galvanised 6m column with post mounted Urbis Schreder lantern (AXIA 3,1 5266 Integrated lenses 8 OSLON SQUARE GIANT@600mA) with warm white LED to deliver 1950 lumens, integral driver with 20 Lux Cell, Ratio 1:1, LED is pre-set to dim (see note 9)
- Proposed steel galvanised 6m column with post mounted Urbis Schreder lantern (AXIA 3,1 5266 Integrated lenses 8 OSLON SQUARE GIANT@300mA) with warm white LED to deliver 1050 lumens, integral driver with 20 Lux Cell, Ratio 1:1, LED is pre-set to dim (see note 9)
- (11) Existing column number
- [11] Proposed column number (final numbering to be confirmed by LCC) the letter can be dropped and the number only used on the column
- 15 lux iso-contour line
- 6 lux iso-contour line
- 3,00 lux iso-contour line
- 0,60 lux iso-contour line
- Wattage:16w Charge Code : 42 016 0000 100 Switching Regime: 806
- Wattage:8w Charge Code : 42 008 0000 100 Switching Regime: 806
- Wattage:38w Charge Code : 42 038 0000 100 Switching Regime: 806

DNO(N) New DNO supply

DNO(D) Disconnect DNO supply

DNO(T) Transfer DNO supply

COL. NO.	POSITION OF COLUMN X	POSITION OF COLUMN Y	COL. ROT'N
A2	346327.44	406576.79	208
B1	346246.28	406513.17	320
B2	346273.30	406536.09	324
B3	346288.98	406561.71	129
B4	346304.29	406585.74	121
B5	346326.80	406606.56	303
B6	346334.86	406635.27	129
B7	346367.14	406627.55	33
E1	346302.99	406617.07	33
E2	346269.87	406646.91	209
F1	346136.30	406715.14	213
F2	346166.86	406691.05	221
F3	346192.84	406669.36	220
F4	346218.59	406648.24	220
F5	346237.04	406649.02	127
F6	346256.53	406683.13	118
F7	346245.93	406698.97	31
F8	346214.51	406722.15	41
F9	346192.26	406750.40	210
G1	346246.37	406733.71	311
G2	346262.17	406764.01	158
G3	346283.47	406747.54	111
G3	346294.05	406757.66	201
H1	346150.50	406735.43	120
H2	346169.49	406770.57	115
H3	346171.84	406790.87	21
H4	346186.68	406800.65	132

COL. NO.	POSITION OF COLUMN X	POSITION OF COLUMN Y	COL. ROT'N
10	346402.91	406629.09	136
6	346360.97	406518.03	91
7	346362.85	406544.44	102
8	346371.40	406576.48	103
9	346385.68	406606.85	126
A1	346357.10	406554.58	12

Comparable Level of Lighting Classes from EN13201-2:2015										
M Class	-	M1	M2	M3	M4	M5	M6	-	-	
C Class	C0	C1	C2	C3	C4	C5	-	-	-	
P Class	-	-	-	P1	P2	P3	P4	P5	P6	

The use of warm white LED and the lighting class of P5 has been made deliberant due to the ecology report stating the presence of bat commuting routes, We are aware this is a departure from the standard Council specification

Summary of Lighting P Classes from EN13201-2:2015			
Class	Eave	E Min	E Ave Max
P1	15 lux	5 lux	22,5 lux
P2	10 lux	3 lux	15 lux
P3	7,50 lux	1,50 lux	11,25 lux
P4	5,00 lux	1,00 lux	7,50 lux
P5	3,00 lux	0,60 lux	4,50 lux
P6	2,00 lux	0,40 lux	3,00 lux

Summary of Lighting C Classes from EN13201-2:2015		
Class	Eave	Uo
C0	50 lux	40%
C1	30 lux	40%
C2	20 lux	40%
C3	15 lux	40%
C4	10 lux	40%
C5	7,5 lux	40%

Junction
Results - Horizontal Illuminance (lux)
Eav= 12,12
Emin= 5,52
Emax= 24,06
Emin/Emax= 0,23
Emin/Eav= 0,46
Emax/Eav= 1,98

Access
Results - Horizontal Illuminance (lux)
Eav= 6,63
Emin= 1,39
Emax= 23,68
Emin/Emax= 0,06
Emin/Eav= 0,21
Emax/Eav= 3,57

Grid 7
Results - Horizontal Illuminance (lux)
Eav= 3,41
Emin= 0,96
Emax= 13,94
Emin/Emax= 0,07
Emin/Eav= 0,28
Emax/Eav= 4,09

Grid 8
Results - Horizontal Illuminance (lux)
Eav= 3,80
Emin= 0,64
Emax= 15,61
Emin/Emax= 0,04
Emin/Eav= 0,17
Emax/Eav= 4,11

North crossing point
Results - Horizontal Illuminance (lux)
Eav= 10,05
Emin= 4,01
Emax= 13,23
Emin/Emax= 0,30
Emin/Eav= 0,40
Emax/Eav= 1,32

Grid 5
Results - Horizontal Illuminance (lux)
Eav= 3,98
Emin= 0,61
Emax= 15,65
Emin/Emax= 0,04
Emin/Eav= 0,15
Emax/Eav= 3,93

Grid 9
Results - Horizontal Illuminance (lux)
Eav= 3,37
Emin= 0,86
Emax= 14,76
Emin/Emax= 0,06
Emin/Eav= 0,26
Emax/Eav= 4,38

Grid 14
Results - Horizontal Illuminance (lux)
Eav= 2,95
Emin= 0,59
Emax= 8,41
Emin/Emax= 0,07
Emin/Eav= 0,20
Emax/Eav= 2,86

South Crossing point
Results - Horizontal Illuminance (lux)
Eav= 10,96
Emin= 5,59
Emax= 15,07
Emin/Emax= 0,37
Emin/Eav= 0,51
Emax/Eav= 1,38

Southern area
Results - Horizontal Illuminance (lux)
Eav= 4,16
Emin= 0,75
Emax= 16,07
Emin/Emax= 0,04
Emin/Eav= 0,18
Emax/Eav= 4,34

Grid 10
Results - Horizontal Illuminance (lux)
Eav= 4,17
Emin= 1,07
Emax= 17,20
Emin/Emax= 0,06
Emin/Eav= 0,26
Emax/Eav= 4,13

REV	DETAILS	APP / DWN	DATE
A	Revised layout, columns and calculations updated.	RSS / NWS	04.12.20

Drawing Number: 2663-D-01
Revision: A

Client: Bellway Homes (North West)

Project: Lathom Pastures Phase II, Neverstitch Road Skelmersdale

Drawing Title: Proposed Road Lighting and Illuminance Layout

Scale at A1: 1-500
Sheet 1 of 2
Drawn: NWS
Date: 23.09.2020

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