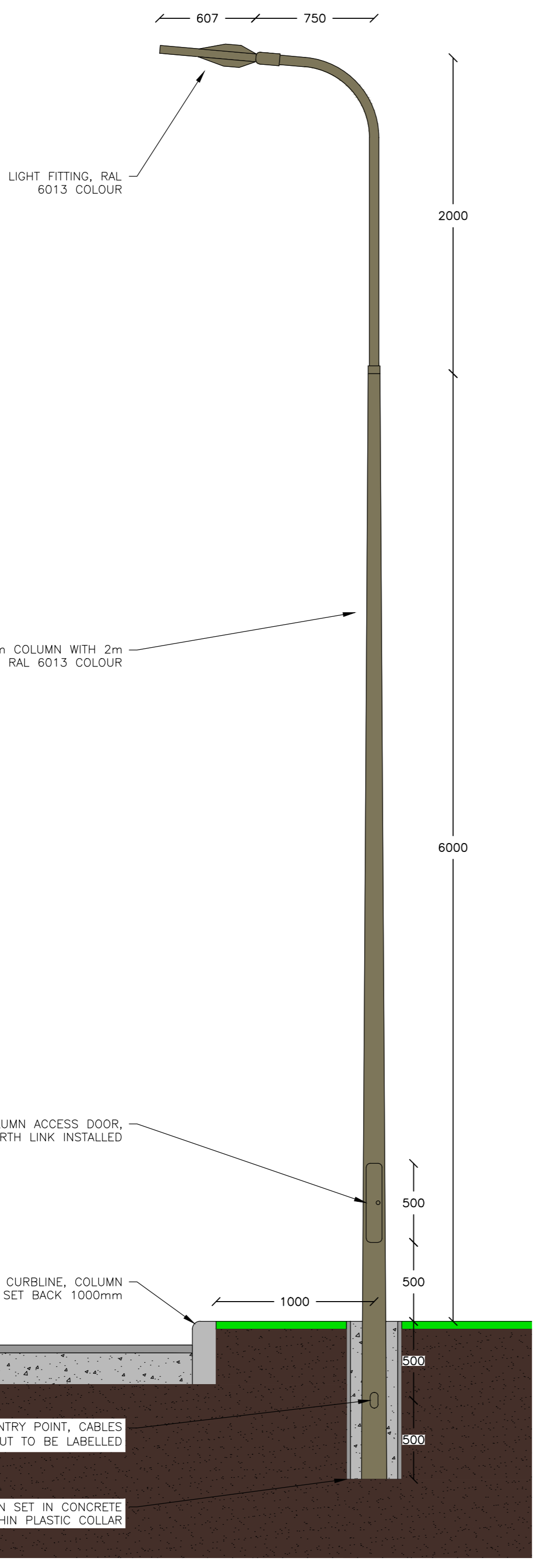
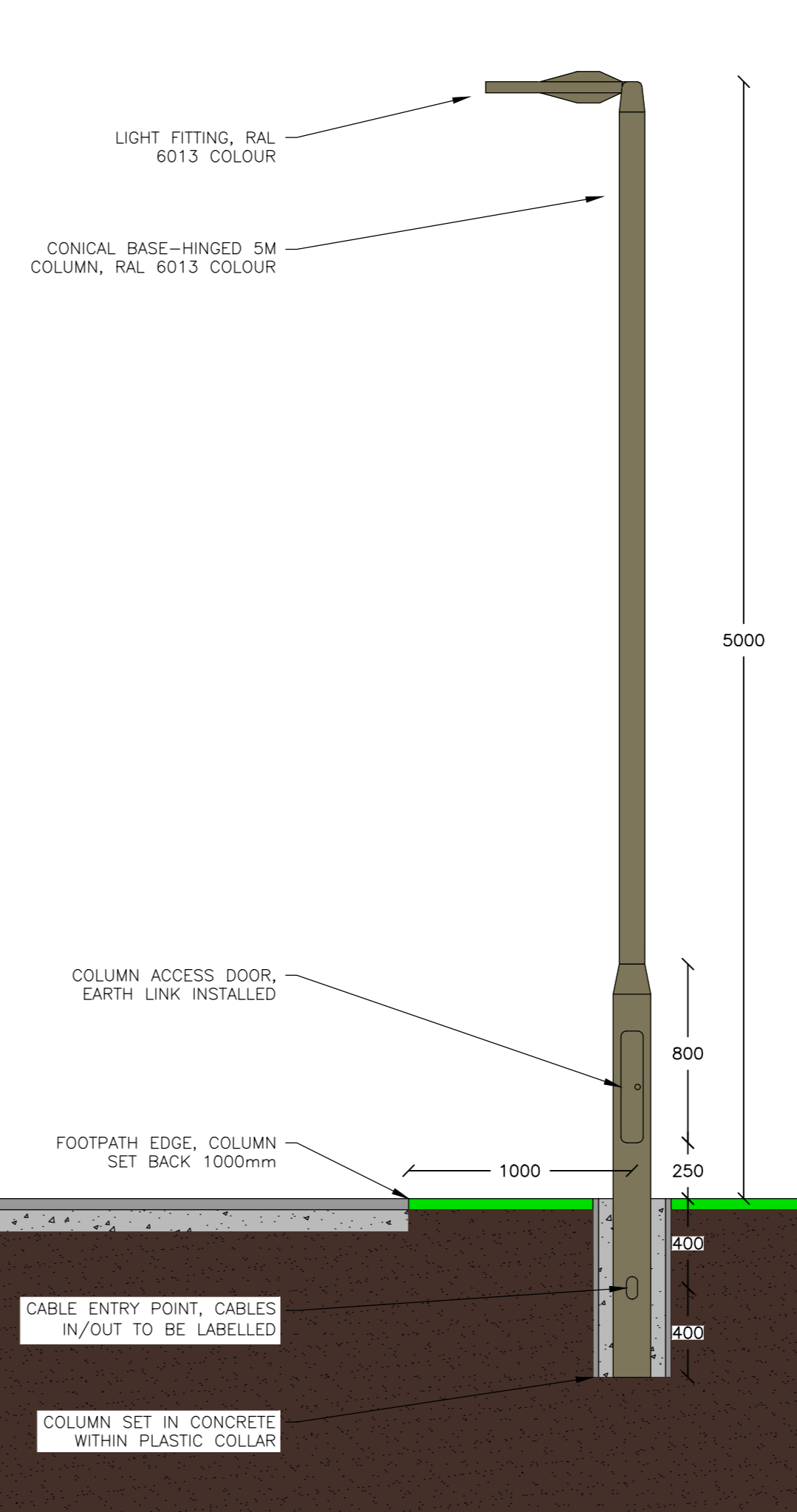


DETAIL OF TYPE 1 COLUMN, SCALE 1:25



DETAIL OF TYPE 2 COLUMN, SCALE 1:25



NOTES ON LIGHTING DESIGN

- THE LIGHTING HAS BEEN DESIGNED AGAINST THE FOLLOWING STANDARDS:
 - PD CEN/TR 13201-1:2014 ROAD LIGHTING PART 1 GUIDELINES ON SELECTION OF LIGHTING CLASSES AND CYCLEWAYS
 - BS EN 13201-2:2015 ROAD LIGHTING PART 2 PERFORMANCE REQUIREMENTS
- THIS AREA IS CONSIDERED TO BE A CLASS P AREA, AS IT CONTAINS A LOW SPEED ROAD ALONGSIDE FOOTWAYS AND CYCLEWAYS.
- THE SELECTION OF THE FINAL LIGHTING CLASS IS DETAILED IN 13201-1:2014, TABLE 4:

NOTES ON ROADWAY AND FOOTPATH LIGHTING CLASS

Table 4 - Parameters for the selection of lighting class P

Parameter	Options	Description*	Weighting Value (v _i)
Travel speed	Low	v ≤ 40 km/h	3
	Very low (walking speed)	Very low, walking speed	1
	Easy		0
Use intensity	Normal		0
	Quiet		-1
Traffic composition	Pedestrians, cyclists and motorised traffic		3
	Pedestrians and motorised traffic		1
	Pedestrians and cyclists only		1
	Pedestrians only		0
Parked vehicles	Cyclists only		0
	Present		1
	Not present		0
Ambient luminosity	High	shopping windows, advertisement expressions, sport fields, station areas, storage areas	1
	Moderate	normal situation	0
	Low		0
Facial recognition	Necessary		Additional requirements
	Not necessary		No additional requirements

* The values stated in the columns are an example. Any adaptation of the method or more appropriate weighting values can be used instead, on the national level.

† Specific guidelines or use of facial recognition (parameter) are defined at national level for each country.

Table 3 - Lighting classes

Class	Horizontal illuminance		Additional requirement if facial recognition is necessary	
	E _h [minimum maintained] lx	E _{av} [maintained] lx	E _{min} [maintained] lx	E _{max} [maintained] lx
P1	15.0	3.00	5.0	5.0
P2	10.0	2.00	3.0	3.0
P3	7.5	1.50	2.5	2.5
P4	5.0	1.00	1.5	1.5
P5	3.0	0.60	1.0	0.6
P6	2.0	0.40	0.6	0.2
P7	performance not determined	performance not determined		

† To provide for uniformity, the actual value of the estimated average illuminance shall not exceed 1.5 times the minimum value indicated for the class.

NOTES ON TOUCAN CROSSING LIGHTING CLASS

Table 3 - Parameters for the selection of lighting class C

Parameter	Options	Description*	Weighting Value (v _i)
Design speed or speed limit	Very high	v ≥ 100 km/h	3
	High	70 < v < 100 km/h	2
	Moderate	40 < v < 70 km/h	0
Traffic volume	Low	v ≤ 40 km/h	-1
	Moderate		0
Traffic composition	Mixed with high percentage of non-motorised		2
	Mixed		1
Separation of carriageway	No		-1
	Yes		0
Parked vehicles	Present		0
	Not present		0
Ambient luminosity	High	shopping windows, advertisement expressions, sport fields, station areas, storage areas	1
	Moderate	normal situation	0
	Low		0
Navigational task	Very difficult		-1
	Difficult		1
	Easy		0

* The values stated in the columns are an example. Any adaptation of the method or more appropriate weighting values can be used instead, on the national level.

Table 2 - Cx-series of lighting classes based on road surface illuminance

Class	Horizontal illuminance	
	E _h [minimum maintained] lx	E _{av} [minimum] lx
Cx1	50	0.40
Cx2	30	0.40
Cx3	20	0.40
Cx4	15	0.40
Cx5	10	0.40
Cx6	7.5	0.40

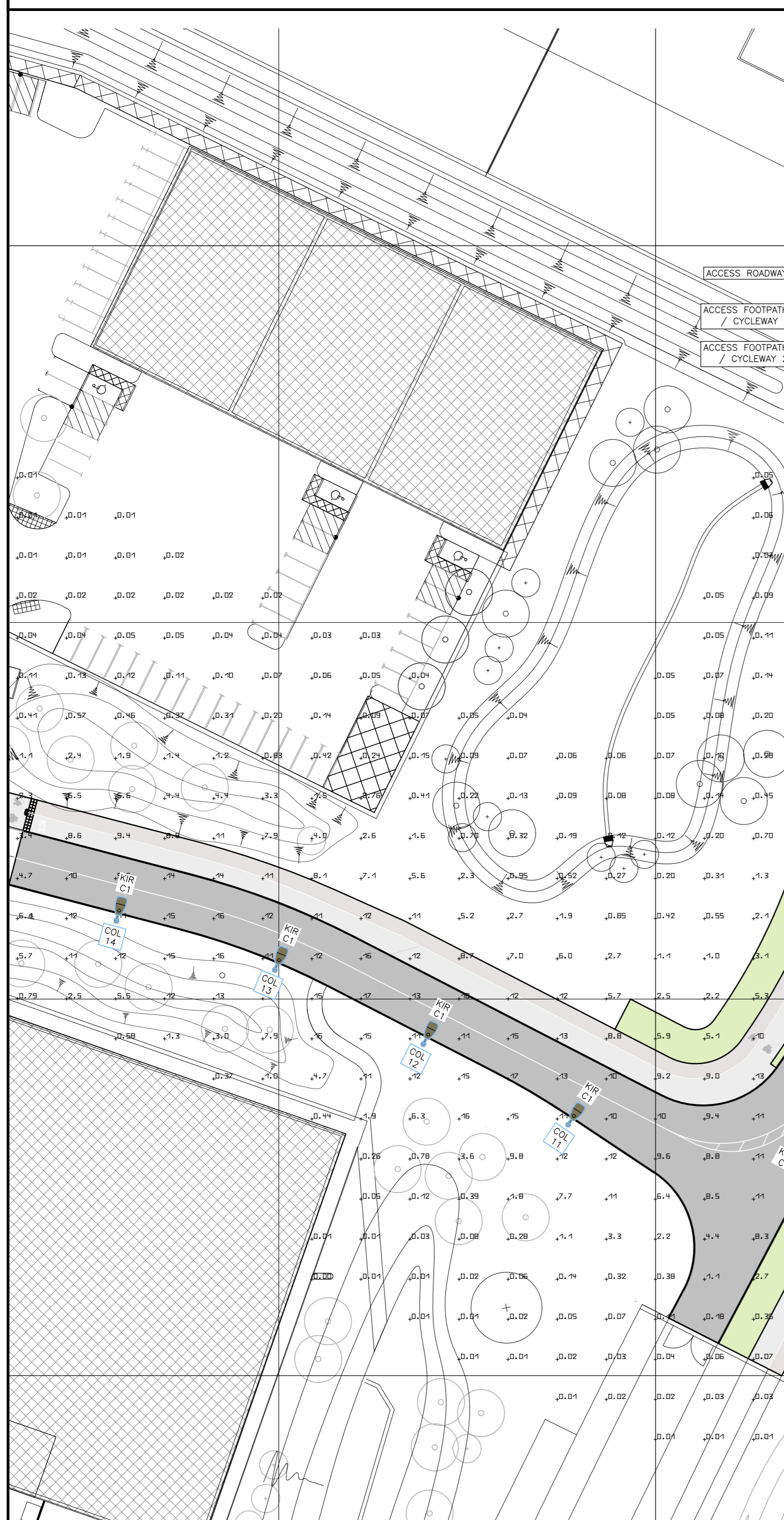
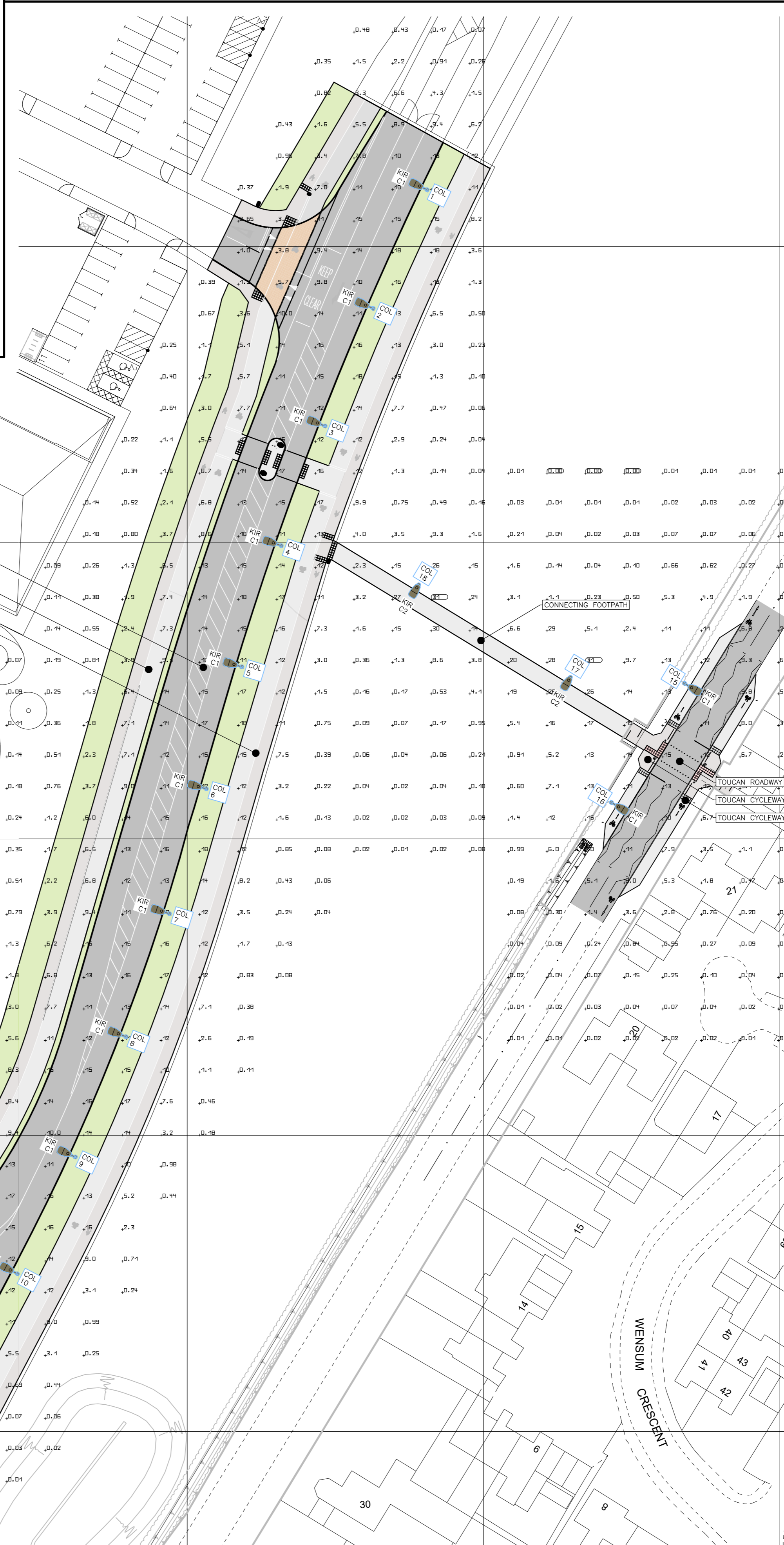
LIGHTING RESULTS

LIGHTING CALCULATIONS HAVE BEEN CARRIED OUT USING DIALUX EVO AND ASSESSED AGAINST THE REQUIREMENTS DESCRIBED ABOVE. SUMMARY AS FOLLOWS:

- ACCESS ROADWAY
 - REQUIREMENT = 7.50 LUX AVERAGE, 1.50 LUX MINIMUM
 - CALCULATED = 12.5 LUX AVERAGE, 4.52 LUX MINIMUM
 - PASS
- ACCESS FOOTPATH / CYCLEWAY 1
 - REQUIREMENT = 7.50 LUX AVERAGE, 1.50 LUX MINIMUM
 - CALCULATED = 9.04 LUX AVERAGE, 4.15 LUX MINIMUM
 - PASS
- ACCESS FOOTPATH / CYCLEWAY 2
 - REQUIREMENT = 7.50 LUX AVERAGE, 1.50 LUX MINIMUM
 - CALCULATED = 13.3 LUX AVERAGE, 9.37 LUX MINIMUM
 - PASS
- CONNECTING FOOTPATH (NOTE: 5m COLUMNS)
 - REQUIREMENT = 7.50 LUX AVERAGE, 1.50 LUX MINIMUM
 - CALCULATED = 19.0 LUX AVERAGE, 2.43 LUX MINIMUM
 - PASS
- TOUCAN ROADWAY
 - REQUIREMENT = 10.0 LUX AVERAGE, 0.40 UNIFORMITY
 - CALCULATED = 10.7 LUX AVERAGE, 0.56 UNIFORMITY
 - PASS
- TOUCAN CYCLEWAY 1
 - REQUIREMENT = 10.0 LUX AVERAGE, 0.40 UNIFORMITY
 - CALCULATED = 12.1 LUX AVERAGE, 0.76 UNIFORMITY
 - PASS
- TOUCAN CYCLEWAY 2
 - REQUIREMENT = 10.0 LUX AVERAGE, 0.40 UNIFORMITY
 - CALCULATED = 9.69 LUX AVERAGE, 0.83 UNIFORMITY
 - PASS

LIGHT FITTING

- DW WINDSOR KIRIUM PRO 1 - GREEN RAL 6013, 56 WATT 32 LED 3000K COLOUR TEMPERATURE, NEMA 7 PIN SOCKET
- LUCY ZODION SUPER 6 PHOTOCCELL
- COLUMN TYPE 1 (C1): 6m CONICAL AVON STEEL COLUMN (BS EN 40) BDB STANTON METAL COMPANY TOGETHER WITH 2m UPLIFT AND 0.75m OUTREACH THAMES PROJECTION BRACKET. TOTAL MOUNTING HEIGHT 8m. RATIONALISED WIND LOADING FACTOR (RWF) FOR OXFORDSHIRE AS SPECIFIED IN PD6547:2009
- COLUMN TYPE 2 (C2): 5m BASE-HINGED CONICAL STEEL COLUMN (BS EN 40), HOT DIP GALVANIZED TO BS EN ISO 1461:2009, POST TOP MOUNTING



REV DWN ZE CHKD NB APPD DATE 02/06/2023 UPDATED PRELIMINARY ISSUE

CLIENT: PARKWAY

PROJECT: BICESTER ROADWAY LIGHTING

DRAWING TITLE: SITE ROADWAY LIGHTING

DRAWING NUMBER: 0002-1001 | SCALE @ A1: 1:500 | REVISION: P0

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