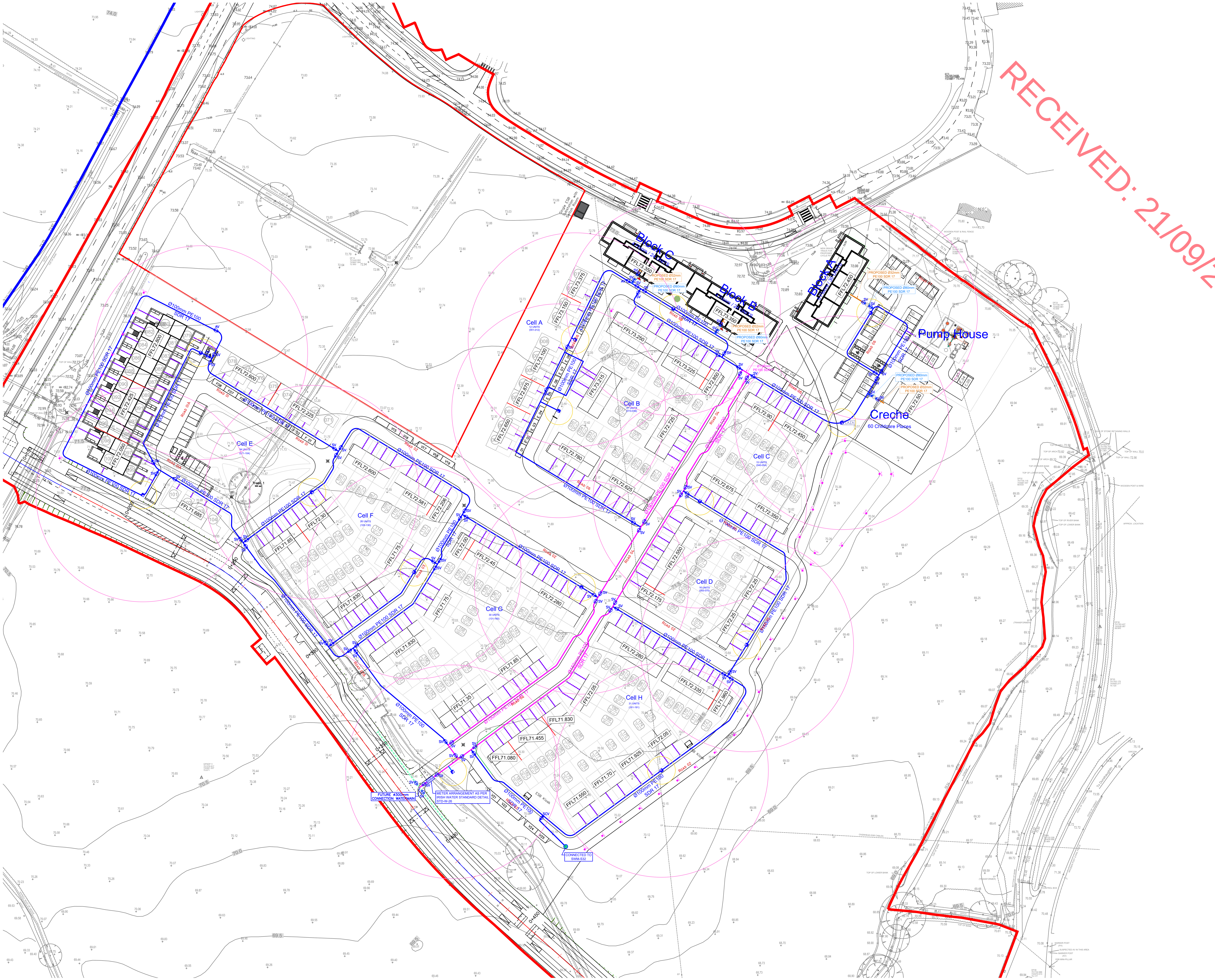
Appendix 12.3 Watermain

August 2023

McCutcheon Halley
CHARTERED PLANNING CONSULTANTS



north

GENERAL NOTES

- ALL WATERMAINS TO BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH IRISH WATER CODE OF PRACTICE (DECEMBER 2017 LATEST REV)
- THE LAYOUT OF THE WORKS TO BE IN ACCORDACE WITH SECTION 3.5 OF IW CODE OF PRACTICE.
- SEPARATION DISTANCE TO BE IN ACCORDANCE WITH SECTION 3.6 OF IW CODE OF PRACTICE.
- SIZE OF THE WATERMAIN AS SHOWN ON THE DRAWING WIH THE MIN REQUIREMENT TO BE IN ACCORDANCE WITH SECTION 3.7 OF IW CODE OF PRACTICE.
- MATERIALS FOR WATERMAIN TO BE IN ACCORDANCE WITH SECTION 3.9 OF IW CODE OF PRACTICE.
- ALL PIPE JOINTS TO BE IN ACCORDANCE WITH 3.10 OF IW CODE OF PRACTICE.
- DEPTH OF COVER TO BE IN ACCORDANCW WITH 3.11 OF IW CODE OF PRACTICE.
- BOUNDRY BOXES TO BE IN ACCORDANCE WITH 3.14 OF IW CODE OF PRACTICE.
- WATER METERS TO BE IN ACCORDANCE WITH 3.15 OF IW CODE OF PRACTICE.
- WATERMAIN FITTINGS TO BE IN ACCORDANCE WITH 3.16 OF IW CODE OF PRACTICE.
- HYDRANT, AIR VALVES, SLUICE VALVES AND SCOUR VALVE CHAMBERS TO BE IN ACCORDANCE WITH 3.18 OF IW CODE OF PRACTICE.
- WATERMETER CHAMBERS TO BE IN ACCORDANCE WITH 3.19 OF IW CODE OF PRACTICE.
- SCOUR CHAMBERS TO BE IN ACCORDANCE WITH 3.21 OF IW CODE OF PRACTICE.
- INDICATOR MARKER PLATES AND POSTS TO BE IN ACCORDANCE WITH 3.23 OF IW CODE OF PRACTICE.
- WARNING TAPE TO BE IN ACCORDANCE WITH 3.24 OF IW CODE OF PRACTICE.
- CONSTRUCTION OF WATERMAIN TO BE IN ACCORDANCE WITH SECTION 4.0 OF IW CODE OF PRACTICE.
- TESING AND COMMISSIONING TO BE IN ACCORDANCE WITH SECTION 4.10 OF IW CODE OF PRACTICE.

PROJECT NOTES

- PIPE MATERIAL TO BE SDR 17 PE 100 HDPE WITH THE SIZES SHOWN ON THE DRAWING
- NO HYDRANTS TO BE PLACED IN LINE WITH DRIVEWAYS
- WATERMAIN TO BE MIN 3M FROM DWELLING AND 1M FROM THE BOUNDARY. IN SOME CIRCUMSTANCES THIS HAS LED TO THE WATERMAIN BEEN PLACED IN THE ROAD WITH THE HYDRANTS OFF LINE.
- MIN COVER TO BE 900 IN THE INTERNAL ROADS AND 1200 IN THE MAIN LINK ROADS.
- OUTSIDE FACE OF WATERMAIN TO BE LOCATED 750MM FROM THE BACK OF THE KERB

BOUNDARY BOX NOTES:

- THE BOUNDARY BOX IS TO BE IN ACCORDANCE WITH THE IRISH WATER SPECIFICATION, INCORPORATING A G1.5 MANIFOLD, STOP-TAP, FROST PLUG & NON-RETURN VALVE.
- THE BOUNDARY BOX SHALL BE POSITIONED IN PUBLIC SPACE & AS CLOSE AS POSSBILE TO THE PROPERTY BOUNDARY BUT NO PART OR FITTING TO BE WITHIN 225mm OF THE PROPERTY LINE.
  THE BOUNDARY BOX IS TO BE INSTALLED AT A MINIMUM DEPTH OF 600mm (+/- 25mm) TO THE CROWN OF THE INLET & OUTLET FITTINGS ON THE OUTSIDE OF THE BOX.
- BOX TO BE FOUNDED ON 100mm DEPTH OF C12/15 CONCRETE AND SURROUNDED WITH CLAUSE 808 GRANULAR MATERIAL.
- THE DESIRABLE MINIMUM COVER FROM THE FINISHED GROUND LEVEL TO THE EXTERNAL CROWN OF A SERVICE CONNECTION SHALL BE 750mm WITH AN ABSOLUTE MINIMUM DEPTH OF 600mm FOR SHORT DISTANCES (SUBJECT TO IRISH WATER AGREEMENT). THE DESIRABLE MAXIMUM COVER FOR A SERVICE CONNECTION PIPE SHOULD BE 1200mm, WHERE PRACTICABLE.
- 6.. CUSTOMER'S DISTRIBUTION PIPEWORK WITHIN THE PREMISES SHOULD BE SUITABLY SIZED TO ACCOMMODATE FLOW FROM 20mm INTERNAL DIAMETER SERVICE PIPE.

MAIN PIPES

- VALVES SHALL BE ARRANGED IN SUCH A MANNER TO ALLOW FOR NETWORK TO BE MANAGED TO ENSURE THAT NO MORE THAN 40 PROPERTIES LOSE WATER FROM A BURST ON THE SYSTEM AT ANY ONE TIME.
- SLUICE VALVE CHAMBERS TO BE IN ACCORDANCE WITH STD-W-15 (PE).

ALL BENDS, TEES, DEAD ENDS, ETC. OF PIPELINES TO BE ADEQUATELY RESTRAINED BY THRUST BLOCKS AS PER DRAWING No. STD-W-28

LEGEND

- EXISTING 300mm WATERMAIN
- PROPOSED 150mm WATERMAIN
- PROPOSED 100mm WATERMAIN
- PROPOSED 80mm FIRE HYDRANT AND BULK METER CONECTION
- PROPOSED 32mm BULK METER CONECTION
- SERVICE CONECTIONS
- BOUNDARY SITE LINE
- SV — SLUICE VALVE
- SCV — SCOUR VALVE
- AV — AIR VALVE
- H — FIRE HYDRANT
- BB — BOUNDARY BOX
- BM — BULK WATER METER TO APARTMENTS
- BWM — BULK WATER METER
- FIRE HYDRANT 46m RADIUS
- FIRE HYDRANT 6m RADIUS
- PROPOSED SURFACE WATER MANHOLE

REV	DATE	DESCRIPTION	ISSUED
00	01/09/2023	ISSUED FOR PLANNING	FC

PLANNING

PAUL Mc GRAIL
CONSULTING ENGINEERS
4 FAGAN'S LANE, 1º FLOOR
MAYNOOTH, CO. KILDARE
W23 K29V
WEBSITE: WWW.PMCG.IE
OFFICE: +353 (01) 255 1700

CLIENT
MARINA QUARTER LTD

PROJECT
RESIDENTIAL DEVELOPMENT AT DUNBOYNE

PHASE
01

TITLE
WATERMAIN LAYOUT

SCALES	DRAWN	APPROVED
1:750	TS	PMG
	DATE SEP'23	DATE SEP'23

DRAWING No.
2023-108-010301

REV
00

DRAWING No.
NA

Appendix 12.4 Public Lighting Report

August 2023

McCutcheon Halley
CHARTERED PLANNING CONSULTANTS

DATE: 5 September 2023
DESIGNER: Michael Lannon
PROJECT No: 3185
PROJECT NAME: Bennetstown LRD, Dunboyne

MORLEYWALSH consulting engineers

Lighting class Design to EN13201 / BS 5489

Grid 1 (Roadway & Footpath) - Lighting Class P4
Grid 2 (Roadway & Footpath) - Lighting Class P4
Grid 3 (Roadway & Footpath) - Lighting Class C2
Grid 4 (Roadway & Footpath) - Lighting Class C2

Note: All Lighting Columns are to be at the back of footpaths

Outdoor Lighting Report

NOTE: THIS PROPOSED PUBLIC LIGHTING LAYOUT IS SUBJECT TO APPROVAL BY THE LOCAL AUTHORITY. PLEASE CHECK THE STATUS OF THE COMPLIANCE SUBMISSION WITH THE ARCHITECTS PRIOR TO INSTALLATION OR COMMENCING ANY WORKS TO THE BOUNDARY TREATMENTS

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	578.95	1210.06	238.09	355.41	1.50	1.50
2	Grid 2	816.91	1210.07	238.09	355.44	1.50	1.50
3	Grid 3	688.14	1392.49	21.20	22.39	1.41	1.49
4	Grid 4	767.20	1299.03	21.20	22.39	1.41	1.49

Luminaires

Luminaire A Data

Supplier	C U Phosco
Type	P852-12-F2-WW-CA0650-25W
Lamp(s)	730C WW
Lamp Flux (klm)	2.89
File Name	P852-12-F2-WW-CA0650-25W.ies
Maintenance Factor	0.80
Imax70,80,90(cd/klm)	750.5, 280.0, 34.0
No. in Project	80

Luminaire B Data

Supplier	C U Phosco
Type	P863-128-F8-730-W3-500-65W
Lamp(s)	730SS
Lamp Flux (klm)	8.97
File Name	P863-128-F8-730-W3-500-65W.ies
Maintenance Factor	0.80
Imax70,80,90(cd/klm)	214.2, 28.7, 0.0
No. in Project	2

Layout

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
1	A	683.14	1430.30	6.00	152.00	0.00	0.00	0.40			
2	A	699.42	1421.43	6.00	57.00	0.00	0.00	0.40			
3	A	673.84	1455.85	6.00	329.00	0.00	0.00	0.40			
4	A	685.21	1478.29	6.00	339.00	0.00	0.00	0.40			
5	A	712.36	1470.45	6.00	233.00	0.00	0.00	0.40			
6	A	735.34	1456.31	6.00	232.00	0.00	0.00	0.40			
7	A	707.71	1409.85	6.00	306.00	0.00	0.00	0.40			
8	A	728.00	1425.27	6.00	307.00	0.00	0.00	0.40			
9	A	736.91	1435.08	6.00	112.00	0.00	0.00	0.40			
10	A	894.17	1409.06	6.00	159.00	0.00	0.00	0.40			
11	A	707.88	1441.95	6.00	216.00	0.00	0.00	0.40			
12	A	749.76	1448.21	6.00	301.00	0.00	0.00	0.40			
13	A	763.29	1450.35	6.00	70.00	0.00	0.00	0.40			
14	A	783.14	1439.57	6.00	64.00	0.00	0.00	0.40			
15	A	805.72	1424.57	6.00	68.00	0.00	0.00	0.40			
16	A	808.86	1411.03	6.00	177.00	0.00	0.00	0.40			
18	A	774.24	1366.78	6.00	118.00	0.00	0.00	0.40			

Layout Continued

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
19	A	765.48	1357.68	6.00	221.00	0.00	0.00	0.40			
17	A	790.76	1381.52	6.00	124.00	0.00	0.00	0.40			
20	A	743.13	1472.77	6.00	50.00	0.00	0.00	0.40			
21	A	721.96	1486.26	6.00	60.00	0.00	0.00	0.40			
22	A	697.26	1494.63	6.00	56.00	0.00	0.00	0.40			
23	A	673.12	1506.64	6.00	57.00	0.00	0.00	0.40			
24	A	661.88	1490.23	6.00	131.00	0.00	0.00	0.40			
25	A	650.45	1467.72	6.00	137.00	0.00	0.00	0.40			
26	A	639.21	1446.26	6.00	150.00	0.00	0.00	0.40			
27	A	783.59	1334.56	6.00	217.00	0.00	0.00	0.40			
28	A	824.25	1404.82	6.00	60.00	0.00	0.00	0.40			
29	A	837.63	1396.82	6.00	58.00	0.00	0.00	0.40			
30	A	862.88	1377.55	6.00	329.00	0.00	0.00	0.40			
31	A	853.30	1343.84	6.00	116.00	0.00	0.00	0.40			
32	A	834.58	1342.30	6.00	302.00	0.00	0.00	0.40			
33	A	812.27	1326.43	6.00	325.00	0.00	0.00	0.40			
34	A	793.09	1312.54	6.00	294.00	0.00	0.00	0.40			
35	A	817.71	1313.21	6.00	240.00	0.00	0.00	0.40			
36	A	855.13	1279.63	6.00	229.00	0.00	0.00	0.40			
37	A	869.41	1289.96	6.00	314.00	0.00	0.00	0.40			
38	A	893.06	1307.32	6.00	304.00	0.00	0.00	0.40			
39	A	914.44	1322.99	6.00	314.00	0.00	0.00	0.40			
40	A	926.90	1340.75	6.00	340.00	0.00	0.00	0.40			
41	A	900.47	1358.42	6.00	44.00	0.00	0.00	0.40			
42	A	881.27	1382.12	6.00	260.00	0.00	0.00	0.40			
43	A	924.34	1355.85	6.00	316.00	0.00	0.00	0.40			
44	A	938.47	1376.05	6.00	321.00	0.00	0.00	0.40			
45	A	945.38	1390.78	6.00	60.00	0.00	0.00	0.40			
46	A	924.52	1414.99	6.00	246.00	0.00	0.00	0.40			
48	A	882.54	1389.83	6.00	139.00	0.00	0.00	0.40			
49	A	862.55	1399.54	6.00	286.00	0.00	0.00	0.40			
50	A	860.67	1427.52	6.00	259.00	0.00	0.00	0.40			
51	A	841.31	1440.35	6.00	238.00	0.00	0.00	0.40			
52	A	837.86	1459.57	6.00	345.00	0.00	0.00	0.40			
53	A	849.83	1483.71	6.00	328.00	0.00	0.00	0.40			
54	A	861.34	1506.57	6.00	332.00	0.00	0.00	0.40			

Layout Continued

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
55	A	874.29	1521.37	6.00	270.00	0.00	0.00	0.40			
56	A	895.90	1508.29	6.00	250.00	0.00	0.00	0.40			
57	A	923.46	1476.58	6.00	316.00	0.00	0.00	0.40			
58	A	906.99	1449.56	6.00	336.00	0.00	0.00	0.40			
59	A	901.29	1417.65	6.00	125.00	0.00	0.00	0.40			
60	A	943.88	1467.68	6.00	66.00	0.00	0.00	0.40			
61	A	982.56	1457.86	6.00	147.00	0.00	0.00	0.40			
62	A	961.28	1469.23	6.00	324.00	0.00	0.00	0.40			
63	A	957.19	1479.87	6.00	131.00	0.00	0.00	0.40			
64	A	974.55	1490.54	6.00	326.00	0.00	0.00	0.40			
65	A	984.35	1520.44	6.00	322.00	0.00	0.00	0.40			
66	A	1005.79	1497.99	6.00	147.00	0.00	0.00	0.40			
67	A	1002.74	1472.19	6.00	103.00	0.00	0.00	0.40			
68	A	989.00	1534.77	6.00	211.00	0.00	0.00	0.40			
69	A	959.49	1439.98	6.00	351.00	0.00	0.00	0.40			
70	A	955.06	1417.69	6.00	345.00	0.00	0.00	0.40			
71	A	1026.57	1470.09	6.00	162.00	0.00	0.00	0.40			
72	A	844.04	1256.60	6.00	342.00	0.00	0.00	0.40			
73	A	822.94	1431.33	6.00	46.00	0.00	0.00	0.40			
74	A	862.67	1541.48	6.00	329.00	0.00	0.00	0.40			
75	A	916.90	1495.58	6.00	243.00	0.00	0.00	0.40			
76	A	839.32	1496.98	6.00	55.00	0.00	0.00	0.40			
77	A	851.16	1518.35	6.00	138.00	0.00	0.00	0.40			
78	A	829.75	1483.01	6.00	178.00	0.00	0.00	0.40			
79	A	819.96	1456.33	6.00	167.00	0.00	0.00	0.40			
80	B	701.51	1401.24	8.00	271.00	0.00	0.00	1.00			
81	B	784.14	1304.93	8.00	256.00	0.00	0.00	1.00			
83	A	832.23	1296.58	6.00	230.00	0.00	0.00	0.40			
84	A	1009.50	1518.80	6.00	239.00	0.00	0.00	0.40			

DATE: 5 September 2023 | DESIGNER: Michael Lannon
PROJECT No: 3185 | PROJECT NAME: Bennetstown LRD, Dunboyne

MORLEYWALSH consulting engineers

Horizontal Illuminance (lux)

Grid 1

Results

Eav	5.04
Emin	1.81
Emax	24.21
Emin/Emax	0.07
Emin/Eav	0.36

8514860366

Horizontal Illuminance (lux)

RECEIVED: 21/09/2023

Grid 2

Results

Eav	5.01
Emin	1.71
Emax	13.22
Emin/Emax	0.13
Emin/Eav	0.34

8514860366

Horizontal Illuminance (lux)

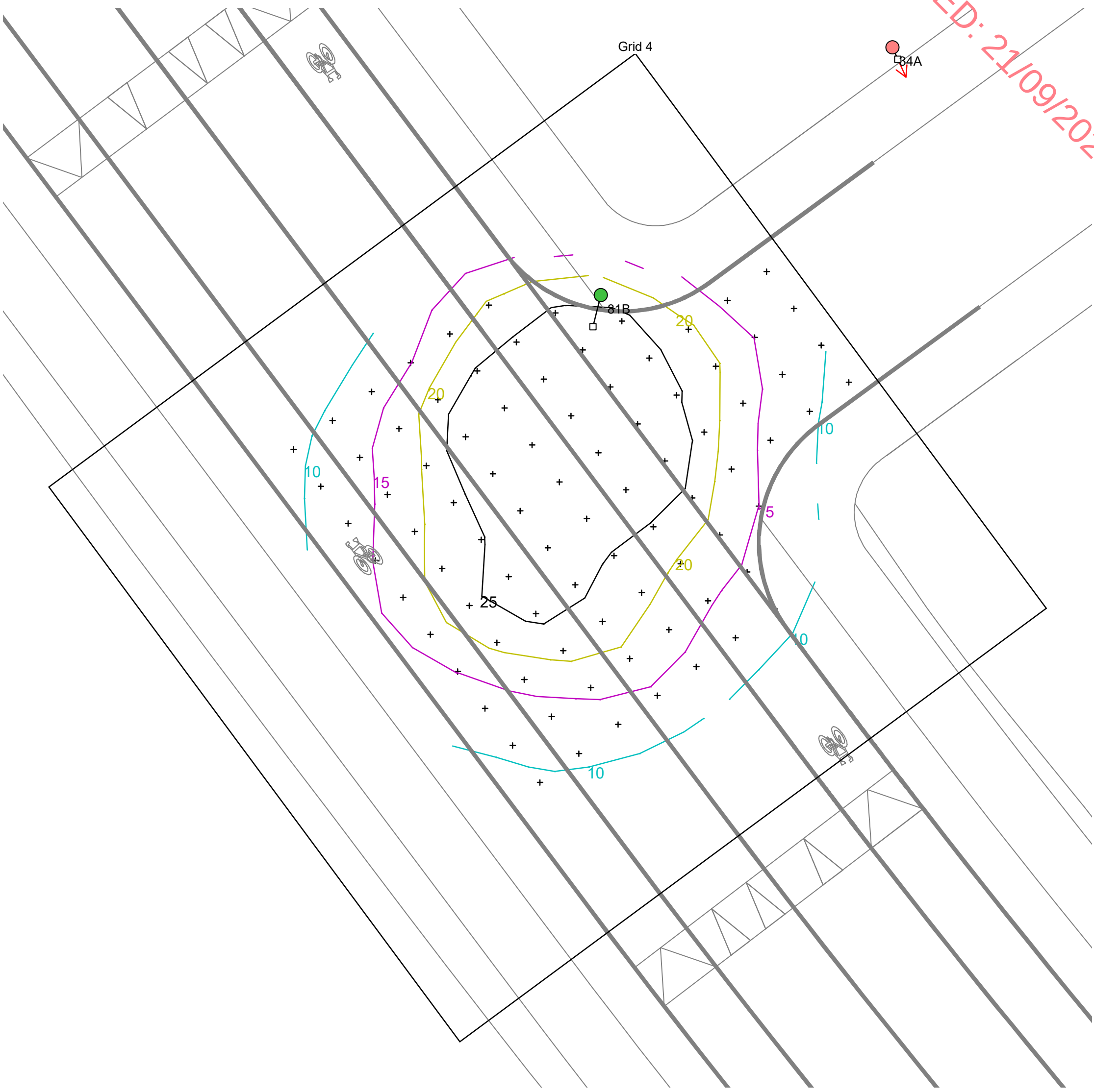
Grid 3

Results

Eav	20.83
Emin	8.82
Emax	55.71
Emin/Emax	0.16
Emin/Eav	0.42

Horizontal Illuminance (lux)

Grid 4



Results

Eav	20.85
Emin	8.76
Emax	59.63
Emin/Emax	0.15
Emin/Eav	0.42