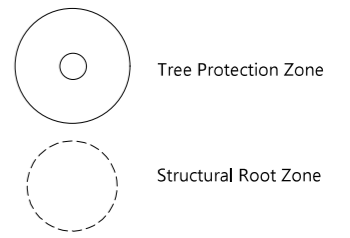


EXISTING TREE RETENTION VALUE



Note: radius of trees indicates the Tree Protection Zone calculated in accordance with AS4970 Protection of trees on development sites.



MARA Consulting Pty Ltd
 Design | Communication
 5 Griffith Avenue, Stockton NSW 2295
 t: 02 4965 4317
 e: mara@maraconsulting.com.au
 maraconsulting.com.au



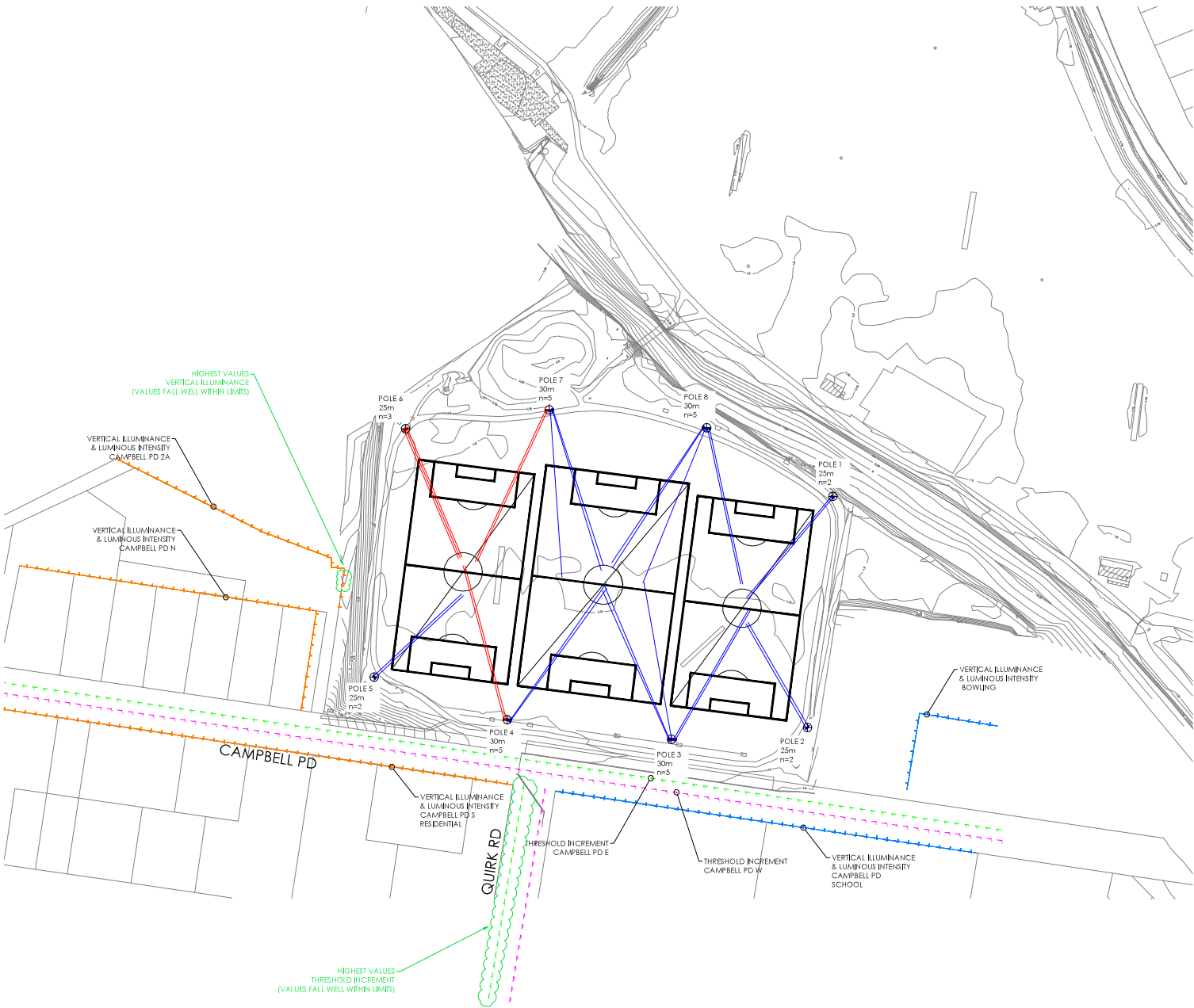
Revisions			Revisions		
Issue	Details	Date	Issue	Details	Date
A	DA Issue	18.11.20			
B	DA Issue	24.11.20			

Project:
 Passmore Reserve

Client:
 Northern Beaches Council

Title:
 Site Plan

Site: Passmore Reserve, Campbell Parade, Manly Vale
 Date: 24 November 2020
 Job No: 2068
 Revision: Sheet:



Luminaire Schedule				
Scene	Initial	Qty	Description	Total Lamp Lumens
1	BVPS27 OUT 130 50K A354NB +LD	7	Apex Optivision LED Gen3 3 modA: 5700 K BVPS27 OUT 130 50K A354NB +LD	212461
2	BVPS27 OUT 130 50K A354NB +BL	22	Apex Optivision LED Gen3 3 modA: 5700 K	212461

Luminaire Location Summary 1				
Scene	Initial	Z	TH	LLF
1	BVPS27 OUT 130 50K A354NB +BL	25.25	66	1.00
2	BVPS27 OUT 130 50K A354NB +BL	25.25	66	1.00

Luminaire Location Summary 5				
Scene	Initial	Z	TH	LLF
16	BVPS27 OUT 130 50K A354NB +BL	25.25	66	1.00
18	BVPS27 OUT 130 50K A354NB +BL	25.25	66	1.00

Luminaire Location Summary 2				
Scene	Initial	Z	TH	LLF
3	BVPS27 OUT 130 50K A354NB +BL	25.25	66	1.00
4	BVPS27 OUT 130 50K A354NB +BL	25.25	66	1.00

Luminaire Location Summary 6				
Scene	Initial	Z	TH	LLF
17	BVPS27 OUT 130 50K A354NB +LD	25.25	66	1.00
18	BVPS27 OUT 130 50K A354NB +LD	25.25	66	1.00
19	BVPS27 OUT 130 50K A354NB +LD	25.25	66	1.00

Luminaire Location Summary 3				
Scene	Initial	Z	TH	LLF
5	BVPS27 OUT 130 50K A354NB +BL	30.25	67	1.00
6	BVPS27 OUT 130 50K A354NB +BL	30.25	67	1.00
7	BVPS27 OUT 130 50K A354NB +BL	30.25	68	1.00
8	BVPS27 OUT 130 50K A354NB +BL	30.25	69	1.00
9	BVPS27 OUT 130 50K A354NB +BL	29.7	69	1.00

Luminaire Location Summary 7				
Scene	Initial	Z	TH	LLF
20	BVPS27 OUT 130 50K A354NB +LD	30.25	69	1.00
21	BVPS27 OUT 130 50K A354NB +LD	30.25	69	1.00
22	BVPS27 OUT 130 50K A354NB +BL	30.25	69	1.00
23	BVPS27 OUT 130 50K A354NB +BL	30.25	69	1.00
24	BVPS27 OUT 130 50K A354NB +BL	29.7	69	1.00

Luminaire Location Summary 4				
Scene	Initial	Z	TH	LLF
10	BVPS27 OUT 130 50K A354NB +BL	29.7	69	1.00
11	BVPS27 OUT 130 50K A354NB +BL	30.25	69	1.00
12	BVPS27 OUT 130 50K A354NB +BL	30.25	69	1.00
13	BVPS27 OUT 130 50K A354NB +LD	30.25	69	1.00
14	BVPS27 OUT 130 50K A354NB +LD	30.25	69	1.00

Luminaire Location Summary 8				
Scene	Initial	Z	TH	LLF
25	BVPS27 OUT 130 50K A354NB +BL	29.7	69	1.00
26	BVPS27 OUT 130 50K A354NB +BL	30.25	69	1.00
27	BVPS27 OUT 130 50K A354NB +BL	30.25	69	1.00
28	BVPS27 OUT 130 50K A354NB +BL	30.25	69	1.00
29	BVPS27 OUT 130 50K A354NB +BL	30.25	68	1.00

Obtrusive Light - Compliance Report
 AS/NZS 4282:2019 A3 - Medium Discrete Brightness, Non-Curfew L1
 Filename: 19078-06-A Passmore Reserve_LA+5 - revised 202225
 25/02/2020 11:15:35 AM

Illuminance
 Maximum Allowable Value: 10 Lux

Calculations Tested (11):	Test Results	Max. Illum.
ObtrusiveLight_Campbell Pd 2A_1_III_Seg1	PASS	0.09
ObtrusiveLight_Campbell Pd_1_S_III_Seg1	PASS	0.5
ObtrusiveLight_Campbell Pd_N_III_Seg1	PASS	0.2
ObtrusiveLight_Campbell Pd_N_III_Seg2	PASS	0.4
ObtrusiveLight_Campbell Pd 2A_2_III_Seg1	PASS	0.6
ObtrusiveLight_Campbell Pd 2A_2_III_Seg2	PASS	0.8
ObtrusiveLight_Campbell Pd 2A_2_III_Seg3	PASS	0.4
ObtrusiveLight_Campbell Pd 2A_2_III_Seg4	PASS	0.1
ObtrusiveLight_Campbell Pd_Mack_IL_Seg1	PASS	0.5
ObtrusiveLight_Manty Bowling_III_Seg1	PASS	0.2
ObtrusiveLight_Manty Bowling_III_Seg2	PASS	0.1

Threshold Increment (TI)
 Maximum Allowable Value: 20 %

Calculations Tested (4):	Adaptation Test Results
ObtrusiveLight_TI_Campbell Pd_E	1 PASS
ObtrusiveLight_TI_Campbell Pd_W	1 PASS
ObtrusiveLight_TI_Quirk Rd_N	1 PASS
ObtrusiveLight_TI_Quirk Rd_S	1 PASS

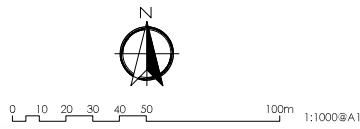
Upward Waste Light Ratio (UWLR)
 Maximum Allowable Value: 2.0 %

Calculated UWLR: 0.0 %
 Test Results: PASS

Luminous Intensity (Cd) At Vertical Planes
 Maximum Allowable Value: 12500 Cd

Calculations Tested (11):	Test Results
ObtrusiveLight_Campbell Pd 2A_1_Cd_Seg1	PASS
ObtrusiveLight_Campbell Pd_S_Cd_Seg1	PASS
ObtrusiveLight_Campbell Pd_N_Cd_Seg1	PASS
ObtrusiveLight_Campbell Pd_N_Cd_Seg2	PASS
ObtrusiveLight_Campbell Pd 2A_2_Cd_Seg1	PASS
ObtrusiveLight_Campbell Pd 2A_2_Cd_Seg2	PASS
ObtrusiveLight_Campbell Pd 2A_2_Cd_Seg3	PASS
ObtrusiveLight_Campbell Pd 2A_2_Cd_Seg4	PASS
ObtrusiveLight_Campbell Pd_Mack_Cd_Seg1	PASS
ObtrusiveLight_Manty Bowling_Cd_Seg1	PASS
ObtrusiveLight_Manty Bowling_Cd_Seg2	PASS

Issue	Amendment	Date
P1	PRELIMINARY ISSUE	25-09-19
P2	PRELIMINARY ISSUE	01-11-19
P3	PRELIMINARY ISSUE	27-02-20

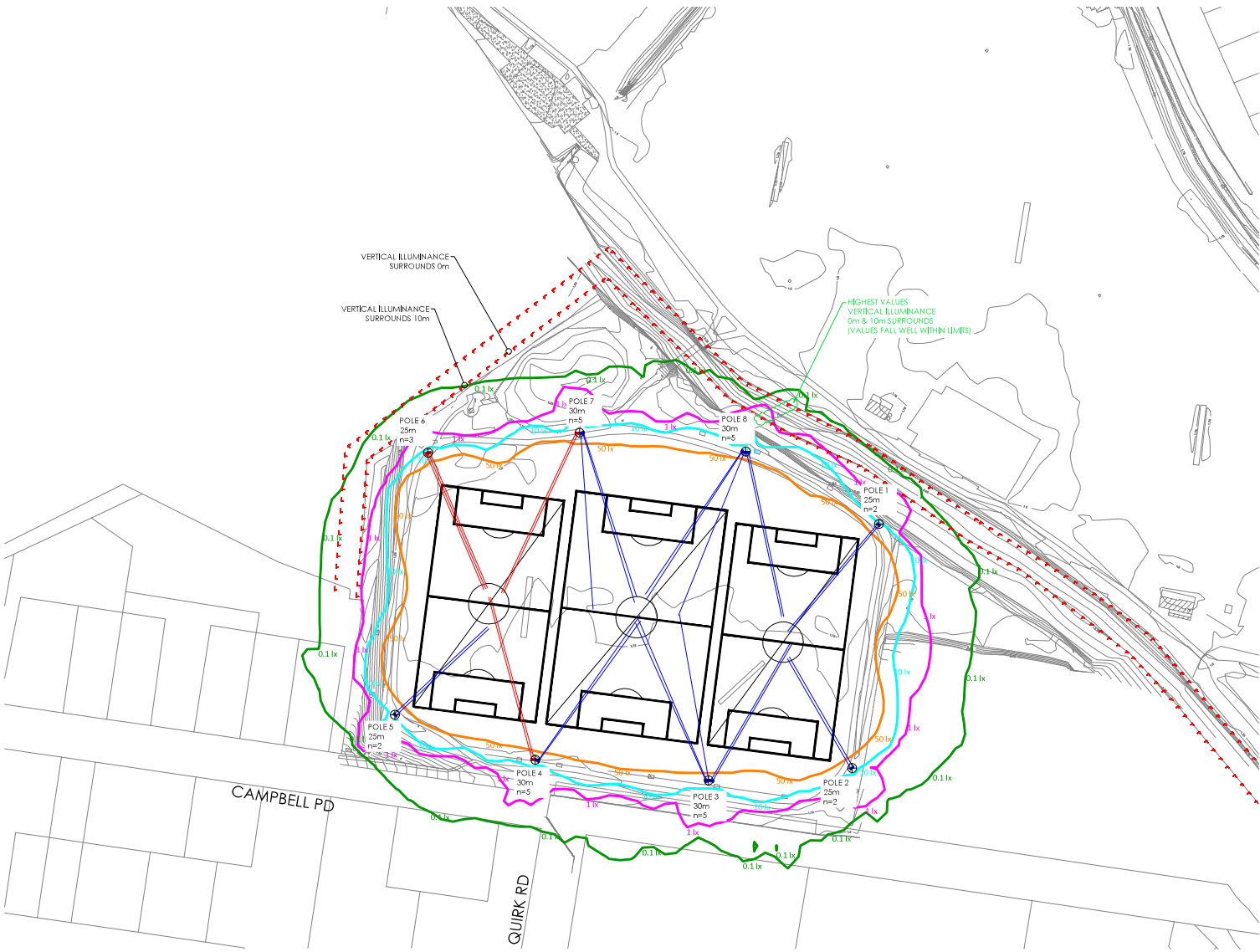


- Notes:
- Drawings are based on site plan, converted PDF from APEX lighting design for pole locations, and aerial imagery. Locations are indicative only.
 - Vertical Illuminance & Luminous Intensity calculation grid heights: 1.5 - 30m.
 - Threshold Increment calculations height: 1.5m.
Windscreen cutoff angle: 20° above horizontal.
 - A light loss factor of 1.0 is used to show initial light values.
 - Floodlight reference fill is noted as 'fill'. Subtract 30° from fill value to get the fill of the visor.
All luminaires are tilted with visor at 37°.

Lead Consultant
 BBF TOWN PLANNERS
 Client
 NBC



Project NBC SPORTSFIELDS
 PASSMORE RESERVE, BALGOWLAH HEIGHTS
 Drawing OBTRUSIVE LIGHTING ASSESSMENT
 AS/NZS 4282:2019 CALCULATIONS
 Drawn CVZ Apprv. RM Date SEP 2019 Scale 1:1,000@A1
 Project No Drawing No Rev
 L160P CL-02 STD P3



Luminaire Schedule				
Scene	Initial		Description	Total Lamp Lumens
1	BVP527 OUT 130 50K A354B +L0	7	Apex OptVision LED Gen3 3 moduA 5700K BVP527 OUT 130 50K A354B +L0	212461
2	BVP527 OUT 130 50K A354B +BL	22	Apex OptVision LED Gen3 3 moduB 5700K	212461

Luminaire Location Summary 1				
Scene	Initial			
LumNo	Label	Z	TH	LLF
1	BVP527 OUT 130 50K A354B +BL	25.25	66	1.00
2	BVP527 OUT 130 50K A354B +BL	25.25	66	1.00

Luminaire Location Summary 5				
Scene	Initial			
LumNo	Label	Z	TH	LLF
16	BVP527 OUT 130 50K A354B +BL	25.25	66	1.00
18	BVP527 OUT 130 50K A354B +BL	25.25	66	1.00

Luminaire Location Summary 2				
Scene	Initial			
LumNo	Label	Z	TH	LLF
3	BVP527 OUT 130 50K A354B +BL	25.25	66	1.00
4	BVP527 OUT 130 50K A354B +BL	25.25	66	1.00

Luminaire Location Summary 6				
Scene	Initial			
LumNo	Label	Z	TH	LLF
17	BVP527 OUT 130 50K A354B +L0	25.25	66	1.00
18	BVP527 OUT 130 50K A354B +L0	25.25	66	1.00
19	BVP527 OUT 130 50K A354B +L0	25.25	66	1.00

Luminaire Location Summary 3				
Scene	Initial			
LumNo	Label	Z	TH	LLF
5	BVP527 OUT 130 50K A354B +BL	30.25	67	1.00
6	BVP527 OUT 130 50K A354B +BL	30.25	67	1.00
7	BVP527 OUT 130 50K A354B +BL	30.25	68	1.00
8	BVP527 OUT 130 50K A354B +BL	30.25	69	1.00
9	BVP527 OUT 130 50K A354B +BL	29.7	69	1.00

Luminaire Location Summary 7				
Scene	Initial			
LumNo	Label	Z	TH	LLF
20	BVP527 OUT 130 50K A354B +L0	30.25	69	1.00
21	BVP527 OUT 130 50K A354B +L0	30.25	69	1.00
22	BVP527 OUT 130 50K A354B +BL	30.25	69	1.00
23	BVP527 OUT 130 50K A354B +BL	30.25	69	1.00
24	BVP527 OUT 130 50K A354B +BL	29.7	69	1.00

Luminaire Location Summary 4				
Scene	Initial			
LumNo	Label	Z	TH	LLF
10	BVP527 OUT 130 50K A354B +BL	29.7	69	1.00
11	BVP527 OUT 130 50K A354B +BL	30.25	69	1.00
12	BVP527 OUT 130 50K A354B +BL	30.25	69	1.00
13	BVP527 OUT 130 50K A354B +L0	30.25	69	1.00
14	BVP527 OUT 130 50K A354B +L0	30.25	69	1.00

Luminaire Location Summary 8				
Scene	Initial			
LumNo	Label	Z	TH	LLF
25	BVP527 OUT 130 50K A354B +BL	29.7	69	1.00
26	BVP527 OUT 130 50K A354B +BL	30.25	69	1.00
27	BVP527 OUT 130 50K A354B +BL	30.25	69	1.00
28	BVP527 OUT 130 50K A354B +BL	30.25	69	1.00
29	BVP527 OUT 130 50K A354B +BL	30.25	68	1.00

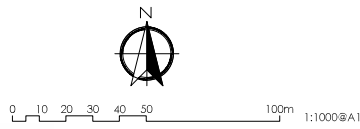
Obtrusive Light - Compliance Report
 AS/NZS 4222:2019, A3 - Medium District Brightness Non-Curfew L1
 Filename: 18076-06-A-Passmore Reserve, LA+S - revised 200225
 25/02/2020 11:24:04 AM

Illuminance
 Maximum Allowable Value: 10 Lux

Calculations Tested (23):

Calculation Label	Test Results	Max. Illum.
ObtrusiveLight_Site_Surrounds_10_III_Seg1	PASS	0.3
ObtrusiveLight_Site_Surrounds_10_III_Seg2	PASS	0.3
ObtrusiveLight_Site_Surrounds_10_III_Seg3	PASS	0.1
ObtrusiveLight_Site_Surrounds_10_III_Seg4	PASS	0.3
ObtrusiveLight_Site_Surrounds_10_III_Seg5	PASS	0.9
ObtrusiveLight_Site_Surrounds_10_III_Seg6	PASS	0.3
ObtrusiveLight_Site_Surrounds_10_III_Seg7	PASS	0.1
ObtrusiveLight_Site_Surrounds_10_III_Seg8	PASS	0.0
ObtrusiveLight_Site_Surrounds_10_III_Seg9	PASS	0.1
ObtrusiveLight_Site_Surrounds_0m_III_Seg1	PASS	1.1
ObtrusiveLight_Site_Surrounds_0m_III_Seg2	PASS	0.6
ObtrusiveLight_Site_Surrounds_0m_III_Seg3	PASS	0.2
ObtrusiveLight_Site_Surrounds_0m_III_Seg4	PASS	0.6
ObtrusiveLight_Site_Surrounds_0m_III_Seg5	PASS	2.4
ObtrusiveLight_Site_Surrounds_0m_III_Seg6	PASS	1.2
ObtrusiveLight_Site_Surrounds_0m_III_Seg7	PASS	2.1
ObtrusiveLight_Site_Surrounds_0m_III_Seg8	PASS	0.3
ObtrusiveLight_Site_Surrounds_0m_III_Seg9	PASS	0.2
ObtrusiveLight_Site_Surrounds_0m_III_Seg10	PASS	0.1
ObtrusiveLight_Site_Surrounds_0m_III_Seg11	PASS	0.1
ObtrusiveLight_Site_Surrounds_0m_III_Seg12	PASS	0.1
ObtrusiveLight_Site_Surrounds_0m_III_Seg13	PASS	0.1
ObtrusiveLight_Site_Surrounds_0m_III_Seg14	PASS	0.0

Issue	Amendment	Date
P1	PRELIMINARY ISSUE	25-09-19
P2	PRELIMINARY ISSUE	01-11-19
P3	PRELIMINARY ISSUE	27-02-20



Notes:

- Drawings are based on site plan, converted PDF from APEX lighting design for pole locations, and aerial imagery. Locations are indicative only.
- Vertical Illuminance calculation grid heights: 1.5 - 30m.
- A light loss factor of 1.0 is used to show initial light values.
- Floodlight reference tilt is noted as 'tilt', Substrate 30° from tilt value to get the tilt of the visor. All luminaires are tilted with visor at 37°.

Lead Consultant
 BBF TOWN PLANNERS
 Client
 NBC



Project NBC SPORTSFIELDS
 PASSMORE RESERVE, BALGOLAH HEIGHTS
 Drawing OBTRUSIVE LIGHTING ASSESSMENT
 SURROUNDS CALCULATIONS
 Drawn CVZ
 Project No L160P
 Date SEP 2019
 Scale 1:1000@A1
 Rev P3