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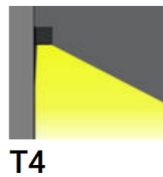
- LEGEND**
- B1 ⊗ 1.2m HIGH LED BOLLARD LIGHT
 - D1 ○ SURFACE MOUNTED LED CAN DOWNLIGHT (WIDE BEAM)
 - D2 ○ RECESSED MOUNTED LED DOWNLIGHT (WIDE BEAM)

- W1 ∩ WALL MOUNTED LED LIGHT @ 2.5m
- W2 ▾ RECESSED LED BRICK LIGHT TO LIGHT STAIRS

Stantec

SKETCH TITLE BY: jkirkland
PROPOSED EXTERNAL LIGHTING PLAN

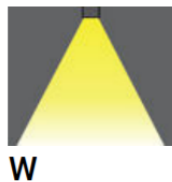
301146287	SL-SK-001	19/12/2021	A
PROJECT No	SKETCH No	DATE	REV



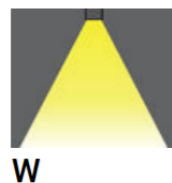
TYPE B1
BOLLARD LUMINAIRE
- 1.2m HIGH
- LED 3000K
- T4 OPTIC (WIDE-FORWARD THROW)

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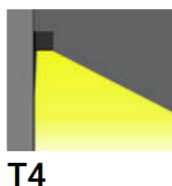
ADVERTISED PLAN



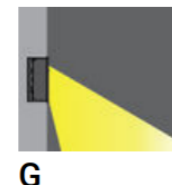
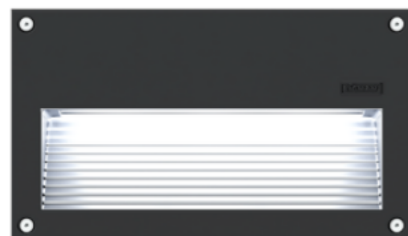
TYPE D1
SURFACE CAN DOWNLIGHT LUMINAIRE
- LED 3000K
- W OPTIC (WIDE BEAM)



TYPE D2
RECESSED DOWNLIGHT LUMINAIRE
- LED 3000K
- W OPTIC (WIDE BEAM)



TYPE W1
SURFACE WALL MOUNTED LUMINAIRE
- MOUNTED 2.5m HIGH AFFL
- LED 3000K
- T4 OPTIC (WIDE-FORWARD THROW)



TYPE W2
RECESSED WALL MOUNTED LUMINAIRE (BRICK LIGHT)
- MOUNTED 400mm ABOVE STEPS
- LED 3000K
- G OPTIC
(WIDE-FORWARD THROW TOWARDS THE GROUND)

RECOMMENDED LIGHTING STANDARDS

Recommended LED light colour temperature to be 3000K and the lighting design be compliant with the recommendations from the Australian Dark Sky Society in minimising upward spill light.

Car Parking within the site to be illuminated to Australian Standards AS/NZS1158.3.1:2020. Recommended lighting sub-category to be PC3 because vehicle & pedestrian movement at night will be low. Average horizontal illuminance $E_h = 3.5$ lux
Point horizontal illuminance $E_{ph} = 0.7$ lux
Illuminance (horizontal uniformity Cat. P UE2) = 8

Pedestrian paths and cyclist paths within the site to be illuminated to Australian Standards AS/NZS1158.3.1:2020. Recommended lighting sub-category to be PP3 because pedestrian movement at night will be low. Average horizontal illuminance $E_h = 3.0$ lux
Point horizontal illuminance $E_{ph} = 0.5$ lux
Illuminance (horizontal uniformity Cat. P UE2) = 5
Point vertical illuminance $EPV = 0.1$ lux

Main entry forecourt within the site to be illuminated to Australian Standards AS/NZS1158.3.1:2020. Recommended lighting sub-category to be PA3 because usage at night will be low. Average horizontal illuminance $E_h = 7.0$ lux
Point horizontal illuminance $E_{ph} = 2.0$ lux
Illuminance (horizontal uniformity Cat. P UE2) = 8
Point vertical illuminance $EPV = 2.0$ lux

New lighting scheme to consider spill light and will be designed to suit Australian standards for spill light AS/NZS4282:2019

Spill Lighting for new external lighting installed for this project is to comply to Australian Standards AS/NZS4282:2019. Recommended environmental zone is considered as Zone A3 Medium district brightness
Vertical Illuminance levels Non-curfew $E_v = 10$ lux
Vertical Illuminance levels Curfew $E_v = 2$ lux



SKETCH TITLE BY: jkirkland
PROPOSED EXTERNAL LIGHTING PHILOSOPHY

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ADVERTISED PLAN

Obtrusive Light - Compliance Report
 AS/NZS 4282:2019, A3 - Medium District Brightness, Curfew
 Filename: SPILL LIGHTING
 19/12/2021 4:42:03 PM

Illuminance
 Maximum Allowable Value: 2 Lux

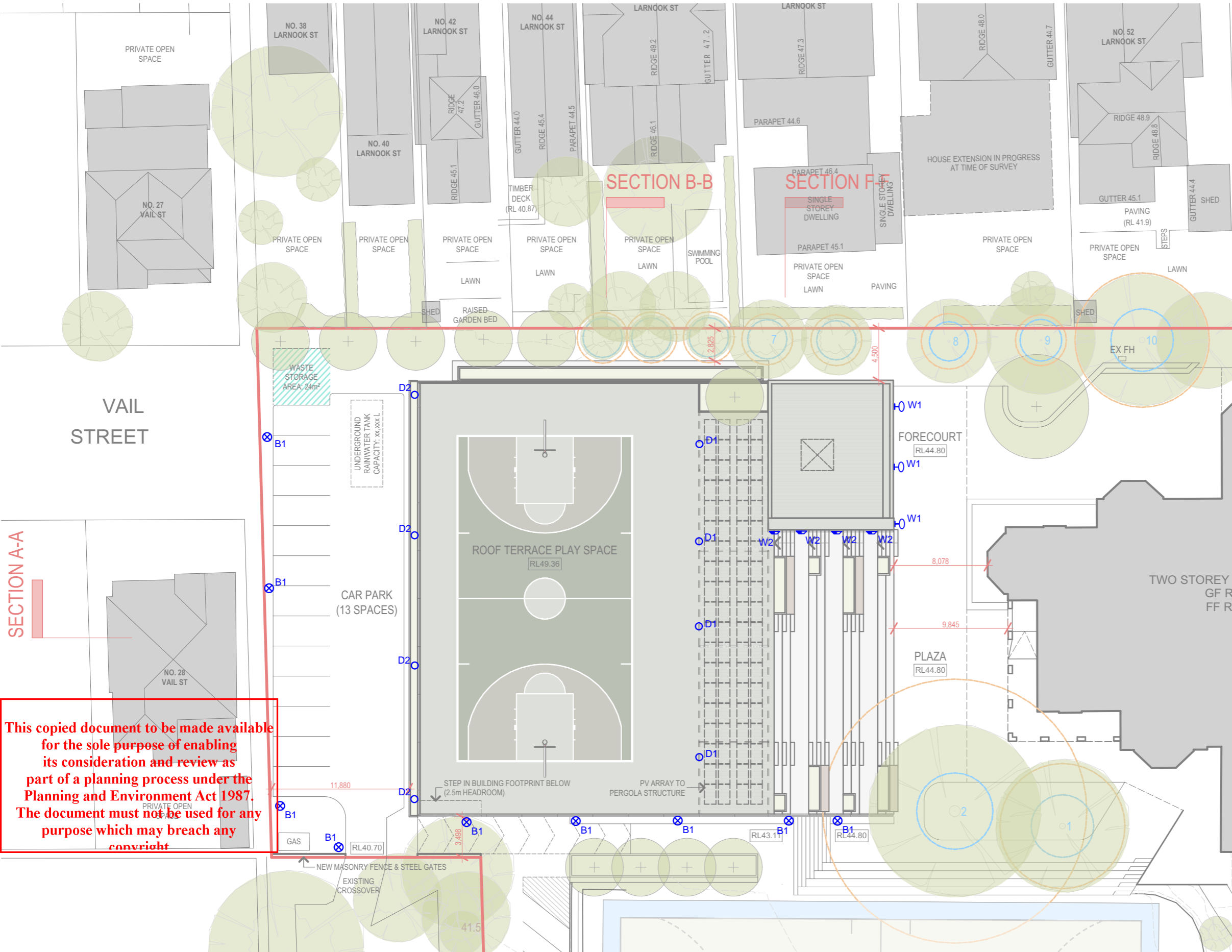
Calculations Tested (18):

Calculation Label	Test Results	Max. Illum.
28 Vail St_III_Seg1	PASS	0.1
28 Vail St_III_Seg2	PASS	0.4
27 Vail St_III_Seg1	PASS	0.1
27 Vail St_III_Seg2	PASS	0.1
38 Larnook St_III_Seg1	PASS	0.0
40 Larnook St_III_Seg1	PASS	0.1
42 Larnook St_III_Seg1	PASS	0.0
44 Larnook St_III_Seg1	PASS	0.0
46 Larnook St_III_Seg1	PASS	0.0
48 Larnook St_III_Seg1	PASS	0.0
50 Larnook St_III_Seg1	PASS	0.1
52 Larnook St_III_Seg1	PASS	0.1
54 Larnook St_III_Seg1	PASS	0.0
58 Larnook St_III_Seg1	PASS	0.0
521 Orrong Rd_III_Seg1	PASS	0.0
521 Orrong Rd_III_Seg2	PASS	0.0
521 Orrong Rd_III_Seg3	PASS	0.0
521 Orrong Rd_III_Seg4	PASS	0.0

Luminous Intensity (Cd) At Vertical Planes
 Maximum Allowable Value: 2500 Cd

Calculations Tested (18):

Calculation Label	Test Results
28 Vail St_Cd_Seg1	PASS
28 Vail St_Cd_Seg2	PASS
27 Vail St_Cd_Seg1	PASS
27 Vail St_Cd_Seg2	PASS
38 Larnook St_Cd_Seg1	PASS
40 Larnook St_Cd_Seg1	PASS
42 Larnook St_Cd_Seg1	PASS
44 Larnook St_Cd_Seg1	PASS
46 Larnook St_Cd_Seg1	PASS
48 Larnook St_Cd_Seg1	PASS
50 Larnook St_Cd_Seg1	PASS
52 Larnook St_Cd_Seg1	PASS
54 Larnook St_Cd_Seg1	PASS
58 Larnook St_Cd_Seg1	PASS
521 Orrong Rd_Cd_Seg1	PASS
521 Orrong Rd_Cd_Seg2	PASS
521 Orrong Rd_Cd_Seg3	PASS
521 Orrong Rd_Cd_Seg4	PASS



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LEGEND

B1 ⊗	1.2m HIGH LED BOLLARD LIGHT	W1 ∩	WALL MOUNTED LED LIGHT @ 2.5m
D1 ○	SURFACE MOUNTED LED CAN DOWNLIGHT (WIDE BEAM)	W2 ▽	RECESSED LED BRICK LIGHT TO LIGHT STAIRS
D2 ○	RECESSED MOUNTED LED DOWNLIGHT (WIDE BEAM)		

Stantec SKETCH TITLE BY: jkirkland
 PROPOSED EXTERNAL LIGHTING SPILL LIGHTING PLAN & RESULTS

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