

Before the Commissioner appointed by
the Selwyn District Council

Under the Resource Management Act 1991

In the matter of

Resource consent application for Foodstuffs (South Island)
Properties Limited to establish and operate a PAK'nSAVE
supermarket and associated access, loading, car parking,
signage, earthworks and landscaping at 157 Levi Road,
Rolleston

Statement of evidence of Gregory Mark Kitto

18 July 2022

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**anderson
lloyd.**

Qualifications and experience

- 1 My full name is Gregory Mark Kitto.
- 2 My qualifications are NZCE (Elec). I have been working as an Electrical Engineer for 38 years. My experience includes the design and observation of electrical services installations, including lighting solutions, for commercial premises. I have been involved in the design of supermarkets since 1989.
- 3 I am currently employed as a Senior Electrical Engineer with Pedersen Read Ltd and have held that position since 1999.
- 4 My previous work experience includes the design of electrical services (including lighting design) for Foodstuffs premises (including supermarkets) throughout the South Island; the Christchurch Art Gallery; Christchurch International Airport; Spitfire Square retail shopping centre.
- 5 My role in relation to Foodstuffs (South Island) Properties Limited's (**Foodstuffs**) application to establish and operate a PAK'nSAVE supermarket and associated access, loading, car parking, signage, earthworks and landscaping at 157 Levi Road, Rolleston (**Application and Application Site**) has been to provide advice in relation to the proposed artificial outdoor lighting.
- 6 My assessment is based upon the proposal description attached to the evidence of Mr Mark Allan as Appendix 1.
- 7 In preparing this statement of evidence I have considered the following documents:
 - (a) the AEE accompanying the Application;
 - (b) submissions relevant to my area of expertise;
 - (c) section 42A report
 - (d) The operative and proposed Selwyn District Plan as relevant to light spill.
- 8 I have visited the Application Site on Tuesday 5th July during the hours of darkness.

Code of Conduct for Expert Witnesses

- 9 While this is not a hearing before the Environment Court, I confirm that I have read the Code of Conduct for expert witnesses contained in the Environment Court of New Zealand Practice Note 2014 and that I have complied with it when preparing my evidence. Other than when I state I am relying on the advice of another person, this evidence is within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

Scope of evidence

- 10 I have prepared evidence in relation to:
- (a) the existing artificial outdoor lighting environment of the Application Site;
 - (b) the proposed artificial outdoor lighting installation;
 - (c) the key findings of my assessment of effects;
 - (d) matters raised by submitters to the Application;
 - (e) matters raised in the Selwyn District Council's (**SDC**) staff report (reports issued under s42A of the RMA); and
 - (f) SDC's proposed conditions of consent.

Executive Summary

- 11 The proposed artificial outdoor lighting installation associated with the Application Site includes car park, security, pedestrian entry, deliveries area and bike parking lighting as well as illuminated signage.
- 12 The proposed artificial outdoor lighting is designed in accordance with the current AS/NZS Standards for lighting of public spaces, in conformance with the requirements of the operative Selwyn District Plan, and with due regard to neighbouring residential properties.
- 13 I consider any effects of the proposed artificial outdoor lighting installation are less than minor, and are appropriate to the environment in which the proposal is located, for the following reasons:
- (a) The proposed car park lighting is a permitted activity;
 - (b) The effect of the security lights will be less significant than the effect of security lights located on adjacent residential properties;
 - (c) Due to their location and their photometric distribution the pedestrian entry lighting fittings and delivery lighting fittings will not contribute to any light spill or glare on adjacent properties; and
 - (d) Although four of the proposed external signs will be illuminated, I am of the opinion that they will not be a source of glare nor will they contribute significantly to any spill lighting and therefore will have minimal adverse effects (if any) on adjoining residential properties.

- 14 With respect to the Officer's Report, I too believe that any adverse effects associated with the artificial outdoor lighting will be adequately managed by means of the proposed design and associated controls.

The existing environment

- 15 The Application Site is situated at the corner of Levi Road, Lincoln Rolleston Road, Masfield Drive and Lowes Road in Rolleston. It comprises a single triangular-shaped greenfield allotment with a total area of approximately 7.18ha. The proposal will occupy approximately 4.14ha of the northern portion of the site. The site is owned by Foodstuffs. It comprises of mostly rural pastureland, with a residential dwelling and several accessory buildings (sheds) situated in the northern portion of the site. The boundaries of the site are primarily defined by post-and-wire fencing and shelterbelts up to 5-6m in height along the north-west and south-west boundaries.
- 16 The surrounding area comprises of residential, rural, rural lifestyle and commercial land use activities. Residential activities are established directly north of the site on the northern side of Levi Road and Lowes Road. Lifestyle activities are located directly west of the site on the western side of Lincoln Rolleston Road. The Falcon's Landing residential development is currently being established to the south of the site on the western side of Lincoln Rolleston Road. Rural and rural lifestyle activities adjoin the site to the east on the southern side of Levi Road and eastern side of Lincoln Rolleston Road. The neighbouring rural property to the east at 139 Levi Road contains a residential dwelling, horse stables and a harness racing track. I understand this land is currently subject to a rezoning application (Plan Change 71) that, if successful, will change the zoning from rural to residential. A hedge approximately 4m high runs along the length of this property's shared boundary with the site. The Rolleston Town Centre is approximately 500m north-west of the site on Masfield Drive and comprises of commercial and community activities typical of a town centre, including large format retailing (e.g. The Warehouse, New World, Countdown, Noel Leeming).
- 17 The existing artificial outdoor lighting installations immediately surrounding the Application Site consist of street lighting poles and residential dwelling exterior security lighting. The street lighting installations are generally as follows:
- (a) Masfield Drive: 7m high poles with LED floodlights on the southern side of the road.
 - (b) Levi Road: 7m high poles with LED floodlights on the north-western side of the road.
 - (c) Lincoln Rolleston Road: No street lighting immediately adjoining the site except for a lone 7m high pole on the southern side of the road adjacent to

the entries to 351 and 353. 9m high poles with LED floodlights on the southern side of the road at Falcon's Landing to the east of the site.

- (d) Lowes Road: 7m high poles with LED floodlights on the north-western side of the road.
- (e) Round-about intersection of the above roads: 2 x 9-10m high poles with LED floodlights.

Description of the proposed artificial outdoor lighting installation

18 The proposed outdoor lighting installation within the Application Site includes:

- (a) Car park lighting;
- (b) Security lighting;
- (c) Pedestrian entry lighting;
- (d) Deliveries area lighting;
- (e) Staff bike shed lighting;
- (f) Illuminated signage.

Car Park Lighting

- 19 The proposed car park lighting generally consists of 7.6m high steel poles with flat glass LED floodlights mounted at the masthead. The poles proposed to be located along the eastern boundary of the site and adjoining the staff car parks and yard area will be 6.0m in height. The poles will generally be mounted on 600mm high raised concrete foundations, except those proposed to be located along the eastern boundary of the site and those proposed to be located along the southern boundary of the development area. The floodlights will have a 3000K warm-white colour appearance.
- 20 AGI (lighting modelling software) has been used to model the proposed car park lighting installation and to calculate the initial lighting levels.
- 21 The design is:
- (a) in accordance with the requirements of Australian / New Zealand Standard AS/NZS 1158.3.1:2020 – Lighting for roads and public spaces, Part 3.1: Pedestrian area (Category P) lighting – Performance and design requirements;

- (b) in conformance with the requirements of the operative Selwyn District Plan, Township Volume, Rules & Definitions, C10 LZ Activities, 10.7 Activities and Light Spill; and
 - (c) in conformance with the requirements of the proposed Selwyn District Plan, Light Rule requirements LIGHT-REQ1 Light Spill, LIGHT-REQ2 Glare and LIGHT-REQ3 Sky Glow.
- 22 All car park lighting floodlights mounted on poles immediately adjacent to the site boundaries will be orientated away from adjacent properties and fitted with back-light shields preventing the spill of light onto any adjacent property behind them.
- 23 Car park lighting will generally only operate at full output during the hours of darkness between 7.00am and 10.00pm. Between 10.00pm to 10.30pm and 6.30am to 7.00am the car park lighting will operate dimmed to 40% to enable customers to walk safely through the car park between the building and their vehicle. Between 10.30pm and 6.30am the car park lighting will operate dimmed to 20% to provide security lighting throughout the car park.
- 24 Staff car park lighting, located in the eastern corner of the site well separated and screened from the adjacent residential properties in Levi Road and Lincoln Rolleston Road, will similarly only operate at full output during the hours of darkness between 7.00am and 10.00pm. Between 10.00pm to 7.00am the staff car park lighting will operate dimmed to 20% but will momentarily ramp up to full output upon motion sensing to enable staff to walk safely through the car park between the building and their vehicle. The momentary ramping up of the lights will be programmed for a maximum of 10mins duration per motion event.

Security Lighting

- 25 The proposed security lighting consists of either recessed LED downlights located within canopies or surface LED bulkhead luminaires wall mounted above external doors around the perimeter of the building. This specifically relates to the two public entry doors on the western elevation of the building, four personnel doors located on the western, eastern and southern elevations of the building and three roller shutter doors located on the northern, eastern and southern elevations of the building.
- 26 These luminaires are designed to create a pool of light around the doors during the hours of darkness so as to discourage loitering in the vicinity of the doors. They are low wattage fixtures and they direct all light directly downwards. The closest luminaire to a residential boundary is a 15W 995 lumen fitting located above the Click & Collect roller door. This luminaire is approximately 63m from the residential boundary at 146 – 148 Levi Road. This luminaire has an equivalent output to a 100W incandescent lamp (1060 lumens).

- 27 Security lighting will operate during the hours of darkness.

Pedestrian Entry Lighting

- 28 The proposed pedestrian entry lighting consists of recessed LED downlights within the canopies adjacent to the two public entry doors on the western elevation of the building, surface LED bulkhead luminaires mounted on the vertical structural columns of the arbors traversing the car park and 1.0m high bollard luminaires traversing the proposed pathway through the open green space proposed in the western corner of the site adjacent to the Levi Road, Lincoln Rolleston Road roundabout.
- 29 These luminaires direct the light down and they will only operate during the hours of darkness between 7.00am and 10.00pm.

Deliveries Lighting

- 30 The proposed deliveries lighting consists of:
- (a) 6.0m high steel poles with flat glass LED floodlights mounted at the masthead located along the eastern boundary of the site and the southern boundary of the development area.
 - (b) LED floodlight luminaires mounted beneath the canopy above the goods delivery area of the building. The goods delivery area is located in the eastern corner of the building adjacent to the yard area.
 - (c) Flat glass LED floodlights mounted on the goods delivery area canopy fascia approximately 4.5m high.
 - (d) LED floodlight luminaires mounted beneath the canopy above the Click & Collect drive-through area in the northern end of the building.
 - (e) Flat glass LED floodlights mounted on the Click & Collect drive-through area canopy fascia approximately 4.5m high.
- 31 These luminaires direct the light down.
- 32 The Click & Collect drive-through lighting will operate during the hours of darkness between 7.00am and 10.00pm.
- 33 The goods delivery lighting will generally only operate at full output during the hours of darkness between 7.00am and 10.00pm. Between 10.00pm to 7.00am the lighting within the eastern and southern driveways will operate dimmed to 20% but will momentarily ramp up to full output upon motion sensing. The momentary ramping up of the lights will be programmed for a maximum of 10 minutes duration

per motion event. Between 10.00pm to 7.00am the lighting within the yard and beneath the goods delivery canopy will generally be off and only turned on when required to unload a goods delivery vehicle.

Staff Bike Shed Lighting

- 34 The staff bike shed is located at the southern end of the building adjacent to the staff car parks. The proposed staff bike shed lighting consists of LED batten luminaires mounted beneath the shed roof and between the purlins so as to screen them.
- 35 Staff bike shed lighting will generally be off but shall momentarily ramp up to full output upon motion sensing to enable staff to safely park or pickup their bike. The momentary ramping up of the lights will be programmed for a maximum of 10mins duration per motion event.

Illuminated Signage

- 36 The proposed illuminated signage consists of:
 - (a) 'PAK'nSAVE' façade sign located on the north-west building elevation (i.e. Levi Road elevation).
 - (b) 'PAK'nSAVE' façade sign located on the south-west building elevation (i.e. Lincoln Rolleston Road Road elevation).
 - (c) Two illuminated 8m high freestanding 'PAK'nSAVE' pylon signs, one located adjacent to Access A on Lincoln Rolleston Road and the other adjacent to Access D on Levi Road.
- 37 The signage will be internally illuminated.
- 38 The illuminated signage will generally only operate during the hours of darkness between 7.00am and 10.00pm.

Assessment of effects

- 39 I have assessed the effects of the proposed outdoor lighting installation on the adjoining properties as follows:

Car Park, Security, Pedestrian Entry, Deliveries and Staff Bike Shed Lighting

- 40 The design conforms with the requirements of the operative Selwyn District Plan, Township Volume, Rules & Definitions, C10 LZ Activities, 10.7 Activities and Light Spill. The proposed artificial outdoor lighting is a permitted activity as all fixed exterior lighting will, as far as practicable, be aimed, adjusted and/or screened to direct lighting away from adjacent properties and roads so that the obtrusive effects

of glare on occupants are minimised and the maximum spill lighting level (horizontal or vertical) on any part of any adjoining property is less than 3 lux.

- 41 All car park lighting floodlights mounted on poles immediately adjacent to the site boundaries will have luminaires directed away from the boundary and they will be fitted with back-light shields preventing the spill of light onto the adjacent property behind them.
- 42 While I understand the relevant lighting provisions of the proposed Selwyn District Plan do not currently have any legal effect, I have assessed the proposed artificial outdoor lighting installation design as conforming with the following proposed Light Rule requirements:
- (a) LIGHT-REQ1 Light Spill – the proposed artificial outdoor lighting has a calculated maximum horizontal and/or vertical illuminance at the boundary of any adjoining property site less than the proposed 5 lux during the hours of darkness from 6.00am to 10.00pm and less than the proposed 1 lux during the period from 10.00pm to 6.00am;
 - (b) LIGHT-REQ2 Glare – the proposed artificial outdoor lighting is designed such that fixed exterior lighting will, as far as practicable, be aimed, adjusted and/or screened to direct lighting away from adjacent properties and roads so that the obtrusive effects of glare are minimised. All car park lighting floodlights mounted on poles immediately adjacent to the site boundaries will have luminaires directed away from the boundary.
 - (c) LIGHT-REQ3 Sky Glow – the proposed artificial outdoor lighting is designed such that all luminaires have flat glass lenses directed downward at the ground which ensures that all light shines below the horizontal. In the case of the proposed bike shed lighting, all luminaires are to be mounted between purlins beneath a roof which ensures that all light shines below the horizontal.
- 43 It is therefore my opinion that the effects of the proposed artificial outdoor lighting installation on adjoining properties will be minimal and certainly within levels anticipated for permitted activities. In the case of the proposed security lighting, the effect of these lights, in my opinion, would be less significant than the effect of security lights located on adjacent residential properties which can have light outputs in excess of 1600 lumens and be located in closer proximity.

Illuminated Signage

- 44 Although four of the proposed external signs are luminous, I am of the opinion that they will not contribute significantly to any spill lighting on adjoining properties. The façade sign proposed on the north-west building elevation is approximately 63m

from any residential property boundary and the façade sign proposed on the south-west building elevation is approximately 117m from any residential property boundary. These signs are sufficiently distant from the site boundary that they will not contribute significantly to any spill lighting.

- 45 The pylon sign proposed on the Levi Road boundary will be directly opposite an existing street lighting pole located between 150 and 152 Levi Road. The existing spill lighting measured at the residential property boundary on Levi Road immediately adjacent to an existing street lighting pole was 13 lux horizontal and 11 lux vertical. I am of the opinion that any spill lighting caused by the pylon sign will be negligible and significantly less than the effect of the existing street lighting.
- 46 The pylon sign proposed on the Lincoln Rolleston Road boundary will be opposite the driveway to 351 Lincoln Rolleston Road and within 30m of an existing street lighting pole located adjacent to 353 Lincoln Rolleston Road. The existing spill lighting measured at the residential property boundary at the entry to 353 Lincoln Rolleston Road immediately adjacent to the existing street lighting pole was 6 lux horizontal and 4 lux vertical. I am of the opinion that any spill lighting caused by the pylon sign will be negligible and less than the effect of the existing street lighting.
- 47 The four illuminated signs will not be a source of glare because the signs are not point sources of light (i.e. they are not like car head lights), and will not be a source of distraction because they are static signs (i.e. they are not dynamic).
- 48 I am therefore of the opinion that the proposed illuminated signage will have minimal adverse effect on adjoining properties.

Matters raised by submitters

- 49 Several submitters raised their concern with respect to light spill from the artificial outdoor lighting proposed within the Application Site. These submitters being:
 - (a) BTW Company on behalf of Harbour Building Partnership Ltd.
 - (b) BTW Company on behalf of:
 - (i) David & Donna Butts of 1/351 Lincoln Rolleston Road;
 - (ii) Jason McLachlan & Kimberlee Woods of 2/351 Lincoln Rolleston Road;
 - (iii) Martin & Adrienne Baxter of 3/351 Lincoln Rolleston Road;
 - (iv) Christopher & Rachel Grocott of 21 Lowes Road.

- 50 As previously stated, the artificial outdoor lighting design conforms with the requirements of the operative Selwyn District Plan (and the corresponding requirements of the proposed Selwyn District Plan). Any light spill effects are therefore within the anticipated levels of permitted activities.
- 51 Several submitters raised their concern with respect to light pollution from the artificial outdoor lighting proposed within the Application Site. These submitters being:
- (a) Alan Blair Haylock & Kathreen Joy Haylock of 158 Levi Road;
 - (b) Maryana Hamilton of 23 Gracia Avenue;
 - (c) Patrick Westerlund & Linda Ili of 160 Levi Road;
 - (d) Shona Robb of 353 Lincoln Rolleston Road;
 - (e) Ian Paki of 19 Christie Place;
 - (f) Nicholas & Glenda Brown of 6 Beaumont Drive;
 - (g) Helen Buyers of 39 Lowes Road.
- 52 I have interpreted the term “light pollution” to have the same meaning as “sky glow” with respect to the proposed Selwyn District Plan Light rules, as the issue of light pollution is not addressed within the operative Selwyn District Plan. Despite the proposed LIGHT-REQ3 Sky Glow having no legal effect, I have assessed the Application as conforming with this requirement and consider any “light pollution” effect to be appropriate for the receiving environment.
- 53 One submitter, Alistair Grant of 148 Levi Road, raised their concern that a brightly lit supermarket and a substantial sealed car park with the associated [*lighting*] will cause even less feeling of being in a neighbourhood.
- 54 The supermarket building will not be floodlit from any artificial outdoor lighting and the car park will be lit in accordance with the requirements of Australian / New Zealand Standard AS/NZS 1158.3.1:2020 – Lighting for roads and public spaces, Part 3.1: Pedestrian area (Category P) lighting – Performance and design requirements to achieve an average lighting level of 22-23 lux. This is an appropriate lighting level for the safety and security of pedestrians where they are required to share an outdoor space with vehicles.
- 55 In my opinion, the artificial outdoor lighting proposed is an appropriate lighting level for a residential setting and could not be considered “bright” and would not contribute to any loss of feeling of neighbourhood.

Matters raised by SDC staff reports

- 56 With respect to the Officer's Report paragraph 92, page 17, I too believe that any adverse effects associated with the artificial outdoor lighting will be adequately managed by means of the proposed design and associated controls.

Proposed consent conditions

- 57 I generally agree with the Recommended Draft Conditions of Consent for Lighting, subject to including some extra detail in wording. I comment as follows:
- 58 Lighting plans shall be provided to the Team Leader Compliance identifying lighting design and location, including lighting along pedestrian routes and lighting required for security purposes. Refer to the Pedersen Read PAK'nSAVE Rolleston Car Park Lighting drawing appended to this evidence.
- 59 Prior to the issuing of a building consent, the applicant shall submit an electrical design statement confirming that the proposed outdoor lighting design complies with the following LIGHT-REQ1 requirement:
- (a) the proposed artificial outdoor lighting has a calculated maximum horizontal and/or vertical illuminance at the boundary of any adjoining property site less than the proposed 5 lux during the hours of darkness from 6.00am to 10.00pm and less than the proposed 1 lux during the period from 10.00pm to 6.00am;
- 60 As previously stated, the illumination of all signs shall be restricted to between 0700 hours and 2200 hours.
- 61 As previously stated, all security lights are of a type that direct all light directly downwards.

Conclusion

- 62 The artificial outdoor lighting is designed in accordance with the current AS/NZS Standards for lighting of public spaces and in conformance with the requirements of the operative Selwyn District Plan, and the proposed requirements of the proposed Selwyn District Plan (albeit having no legal effect). Due regard has been had for any potential adverse effects on neighbouring properties and therefore effects as a result of lighting should not be an impediment to the granting of a resource consent to establish and operate a supermarket at 157 Levi Road.

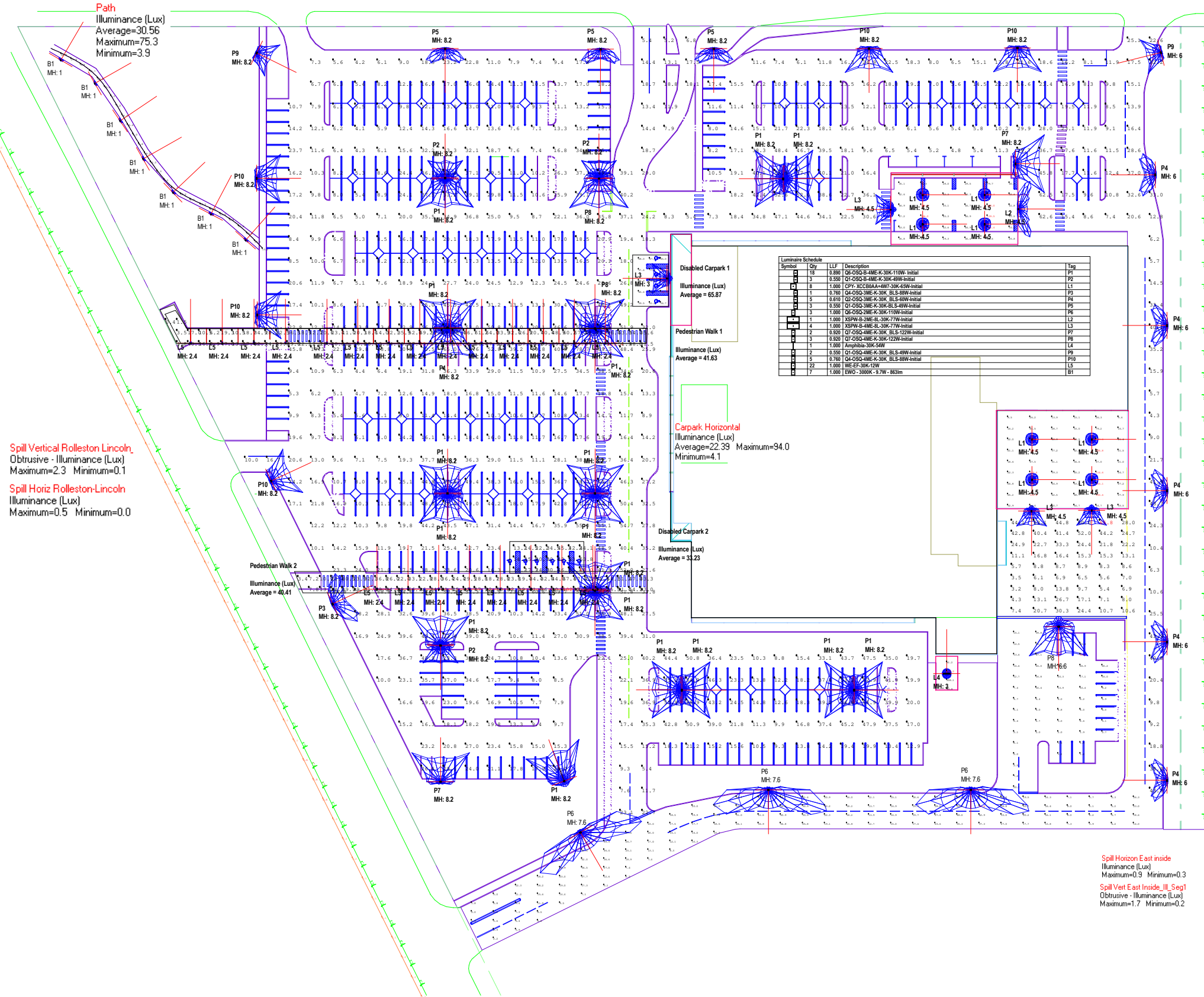
Gregory Mark Kitto

Dated this 18th day of July 2022

Appendix 1 - Pedersen Read PAK'nSAVE Rolleston Car Park Lighting drawing

Spill Vertical Levi Road-LZ_Ill_Seg1
Obtrusive - Illuminance (Lux)
Maximum=1.9 Minimum=0.1

Spill Horiz Levi Road-LZ
Illuminance (Lux)
Maximum=0.4 Minimum=0.0



Luminaire Schedule			Lamp	
Symbol	Qty	Description	Tag	
P1	16	0.890 Q2-OSQ-8-4ME-K-30K-110W-Initial	P1	
P2	3	0.350 Q1-OSQ-8-4ME-K-30K-49W-Initial	P2	
P3	8	1.000 Q1-OSQ-8-4ME-K-30K-49W-Initial	P3	
P4	1	0.760 Q4-OSQ-3ME-K-30K-BLS-88W-Initial	P4	
P5	5	0.610 Q2-OSQ-3ME-K-30K-BLS-88W-Initial	P5	
P6	3	0.350 Q1-OSQ-3ME-K-30K-BLS-49W-Initial	P6	
P7	1	1.000 Q2-OSQ-3ME-K-30K-110W-Initial	P7	
P8	3	1.000 XSPW-8-2ME-BL-30K-77W-Initial	P8	
P9	4	1.000 XSPW-8-2ME-BL-30K-77W-Initial	P9	
P10	2	0.350 Q1-OSQ-4ME-K-30K-BLS-122W-Initial	P10	
P11	3	0.350 Q1-OSQ-4ME-K-30K-BLS-122W-Initial	P11	
P12	1	1.000 Amphibious 30K-50W	P12	
P13	2	0.350 Q1-OSQ-4ME-K-30K-BLS-49W-Initial	P13	
P14	5	0.760 Q4-OSQ-4ME-K-30K-BLS-88W-Initial	P14	
P15	22	1.000 WEF-30K-12W	P15	
P16	7	1.000 EWO-300K-1.7W-863m	P16	