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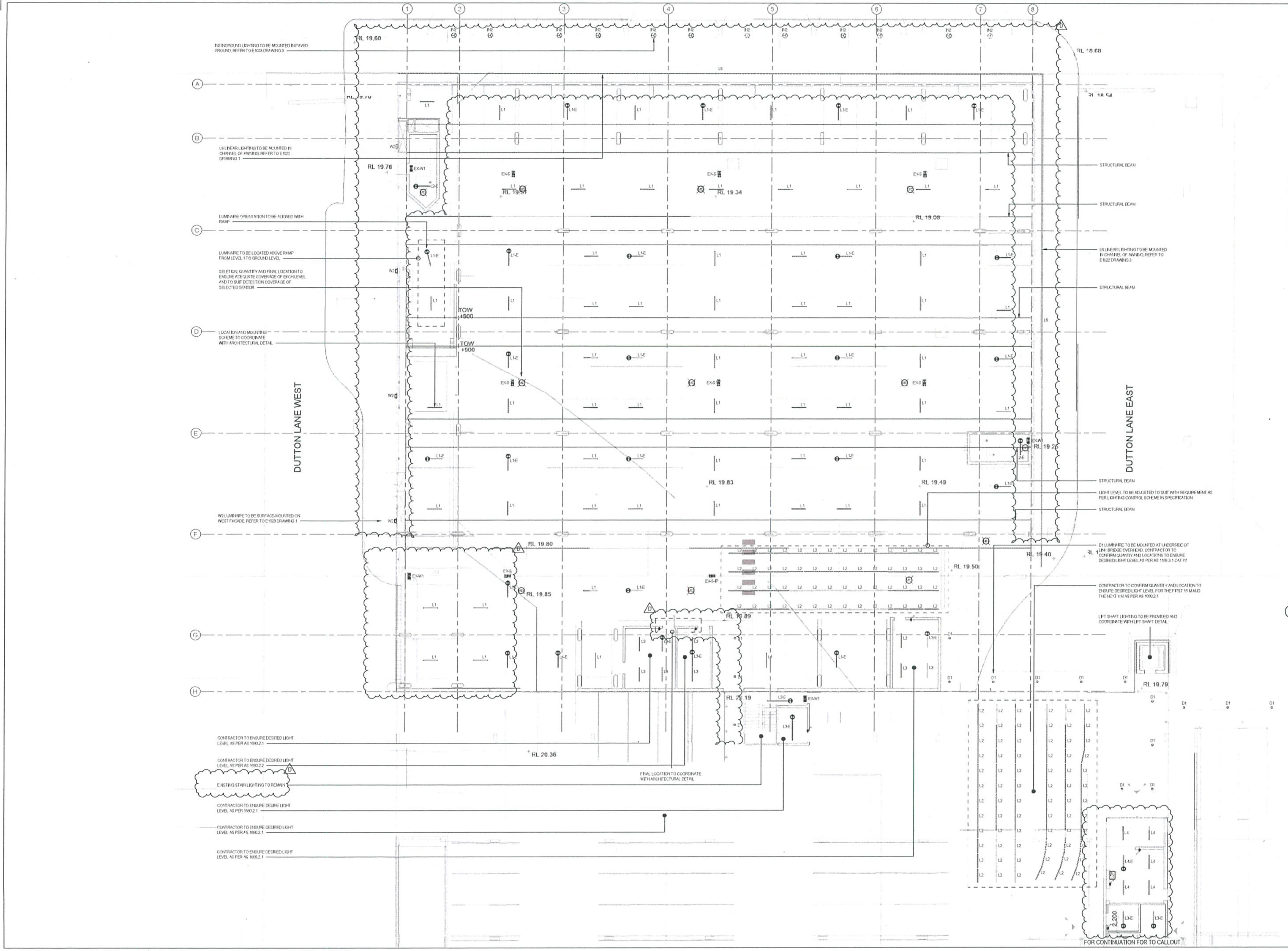
4.8 Lighting

General
Lighting shall be provided to the car park, fire stairs, lift lobbies and pedestrian link. The required illuminations levels for each of the spaces shall be in accordance with the Australian standards and the relevant guidelines.

The emergency lighting equipment will be an integral part of the design and mainly concealed or unobtrusive. In line with this principle, emergency lighting will be integrated within general luminaries where possible or provided through dedicated recessed LED emergency fittings complete with self-contained battery and charger.

Standards
AS 1680
AS 1201.
AS 2325.
AS/NZS 2293
AS/NZS 60968 and AS/NZS 60969.
AS/NZS 60901.

Proposed
- Higher illumination levels are required at the entrance for the transition between the outside and inside of the carpark.
- Lighting control for the car park shall be designed to be controlled via BMS control, within activation time to be adjustable by the Council.
- Fire stair lighting will be 24 hour illuminated.
- Individual rooms will be locally switched.
- Lighting to the building perimeter will be via BMS and PE Cell control to deactivate external lighting during day light hours.
- Dimmers, dimmer controls, relays and relay controls as necessary.



NOTES:

1. CONTRACTOR TO PROVIDE SURFACE MOUNTED LED BATTENS TO GROUND FLOOR, LEVEL 1 AND LEVEL 2 TO SATISFY THE REQUIREMENTS OF AS1680. FINAL POSITIONS TO BE CO-ORDINATED WITH STRUCTURAL BEAMS AND CAR BAYS.
2. CONTRACTOR TO PROVIDE POLE MOUNTED LUMINAIRES WITH FULL CUT OFF TO OPEN ROOF CARPARK TO SATISFY THE REQUIREMENTS OF AS1158.3.1 CATEGORY P11B.
3. CONTRACTOR TO PROVIDE EMERGENCY AND EXIT LIGHTING. EMERGENCY AND EXIT LIGHTING SYSTEM TO BE STAND-ALONE SINGLE POINT SYSTEM TO MATCH EXISTING. EMERGENCY LIGHTING TO BE INTEGRATED INTO TYPICAL LED BATTEN. FINAL POSITIONS OF EXIT SIGNS TO BE CO-ORDINATED WITH EGRESS PATHS. CONTRACTOR TO ALLOW TO SURFACE MOUNT, WALL MOUNT AND ROD SUSPEND TO ENSURE VISIBILITY.
4. FOR CARPARK ENTRY, LIGHTING TO PROVIDE 800LUX DURING THE DAY. AT DUSK, ILLUMINANCE LEVEL TO AUTOMATICALLY REDUCE TO 160LUX AS PER AS1680.2.1
5. PROVIDE ADDITIONAL LIGHTING TO ACCESSIBLE CAR SPACES IN ACCORDANCE WITH AS1680.
6. ALL CARPARK LUMINAIRES TO BE 4000K, DALI DIMMABLE, CRI80+, IP65. ALL FACADE LUMINAIRES TO BE 3000K.
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9. CONTRACTOR TO PROVIDE ALL SYSTEM COMPONENTS REQUIRED TO ACHIEVE THE ABOVE OPERATIONAL REQUIREMENTS INCLUDING BUT NOT LIMITED TO TIME CLOCK, IP65 OCCUPANCY/ MOTION SENSORS, DALI DIMMING MODULES AND RELAY MODULES.
10. CONTRACTOR SHALL DETERMINE THE NUMBER OF POLES IN THE DISTRIBUTION BOARD FOR LIGHTING, POWER AND 30% SPARE CAPACITY.
11. EACH CIRCUIT SHALL HAVE A MAXIMUM OF 10 POWER SOCKET OUTLETS OR 20 LUMINAIRE FOR 20A CIRCUIT BREAKER.

1 STORE ROOM - LIGHTING LAYOUT
1 : 100

STATUS

T2 - REVISED FOR TENDER

AMENDMENTS

REV	DESCRIPTION	DATE
A	75% TENDER ISSUE	09.05.19
B	TENDER ADDENDUM	24.05.19
C	T2 - REVISED FOR TENDER	27.05.19
D	T2 - REVISED FOR TENDER	31.05.19

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STEENSEN VARMING

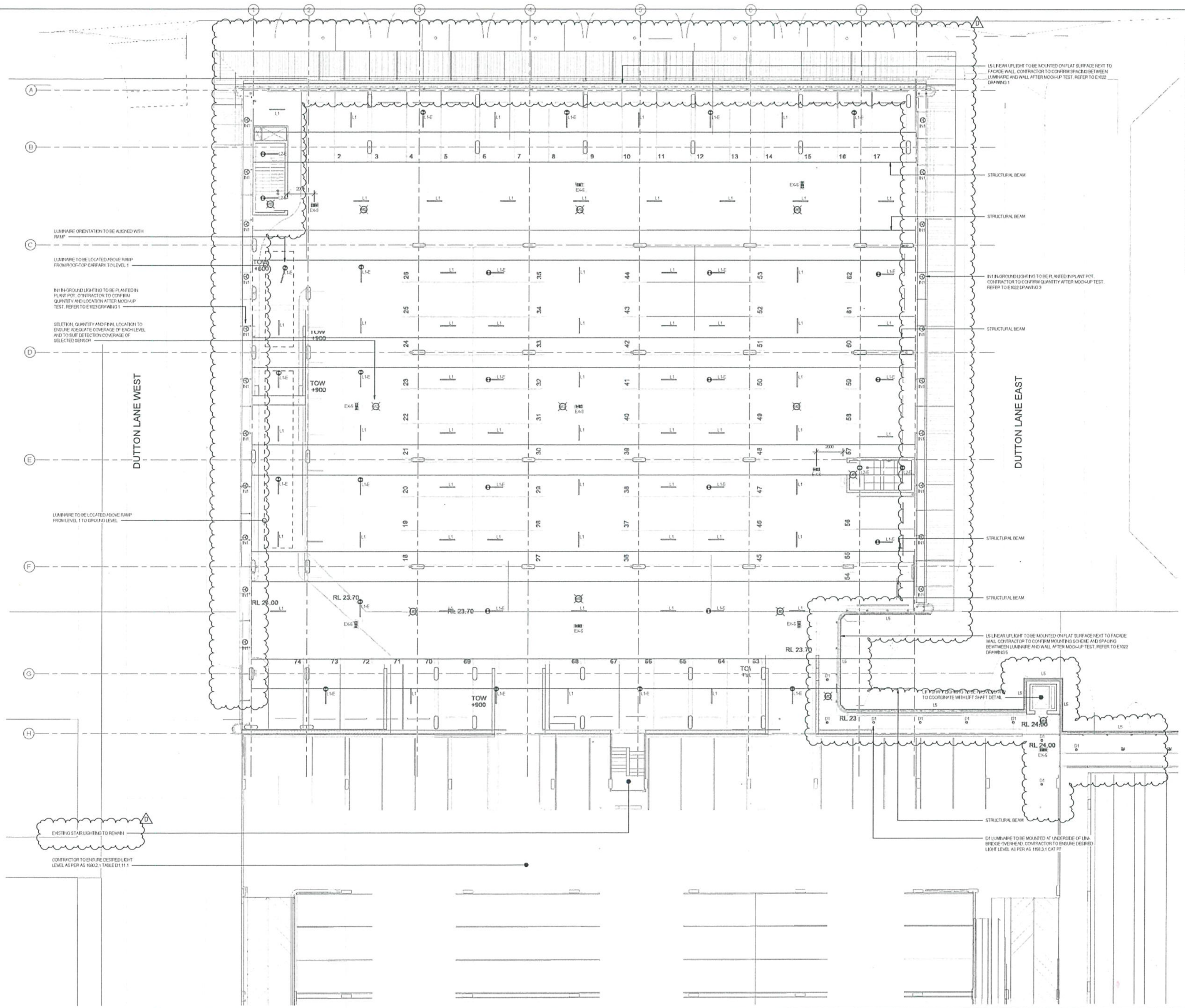
PROJECT
302 HUGHES STREET CARPARK
34-40 HUGHES STREET, CABRAMATTA, NSW

DRAWING TITLE
ELECTRICAL SERVICES AND LIGHTING
LIGHTING LAYOUT - GROUND

A0

SUITABILITY	DRAWN	DESIGNED	CHECKED	APPROVED	SCALE
S2	IR	DS	MF	MF	1 : 100

NORTHPOINT	PROJECT No.	DRAWING No.	REVISION
	187103-SV-XX-00-DR-E3010		D



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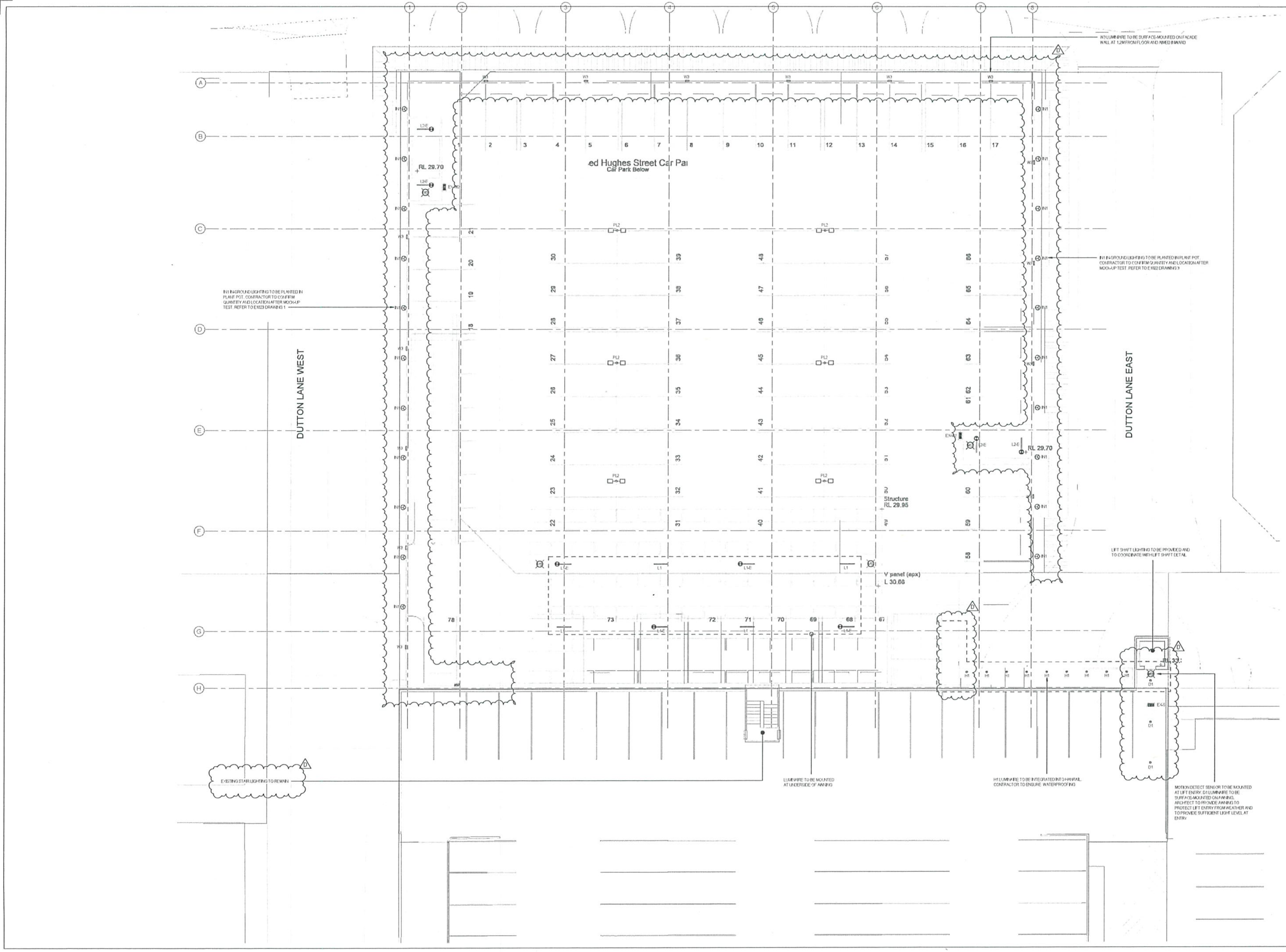
PROJECT
302 HUGHES STREET CARPARK
34-40 HUGHES STREET, CABRAMATTA, NSW

DRAWING TITLE
ELECTRICAL SERVICES AND LIGHTING
LIGHTING LAYOUT - LEVEL 01

SUITABILITY	DRAWN	DESIGNED	CHECKED	APPROVED	SCALE
S2	IR	DS	MF	MF	1 : 100

A0

NORTHPOINT	PROJECT No.	DRAWING No.	REVISION
	187103-SV-XX-01-DR-E3020		D



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DESIGNED UNDER QUALITY SYSTEM CERTIFIED AS COMPLYING WITH ISO 9001 BY AN ACCREDITED CERTIFICATION BODY

STATUS

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PROJECT

302 HUGHES STREET CARPARK
34-40 HUGHES STREET, CABRAMATTA, NSW

DRAWING TITLE

ELECTRICAL SERVICES AND LIGHTING
LIGHTING LAYOUT - LEVEL 02

SUITABILITY	DRAWN	DESIGNED	CHECKED	APPROVED	SCALE
S2	IR	DS	MF	MF	1 : 100

A0

NORTH POINT	PROJECT No.	DRAWING No.	REVISION
	187103-SV-XX-02-DR-E3030		D

2 URBAN PLANNING

- boom gates to ensure secure vehicle entry and exit
- appropriate lighting throughout carpark, including pedestrian entry points and around ticket machines and lifts etc
- provision of CCTV cameras

2.6 LIGHT POLLUTION

The existing residential apartment building to the west of the proposed car park has windows facing the car park. Light pollution from the additional 2 storeys of carpark has been assessed and addressed by the project electrical engineers Steensen Vaming.

The detained lighting design shall be in accordance with the Hughes Street Car Park Mechanical and Electrical Services DA Report. The following excerpt from the services report outlines the design parameters for lighting design:

"The artificial lighting to the car park including the carpark roof shall be designed to minimise light spill to adjacent properties and comply with the requirements of AS4282 Control of the Obtrusive Effects of Outdoor Light."

WEST FACADE:

Solid concrete balustrades and upturns between 600mm - 1000mm high form barriers preventing direct headlight glare shining onto the adjacent residential buildings. Above the solid barriers, planting is proposed to minimise indirect headlight glare.

3 PARKING

NORTH FACADE:

The North facade is made up of a dense aluminium tube screen that will act to minimise headlight glare. It is also noted that to the north, residential dwellings are approximately 30m away, and across what is a highly trafficked road, with street lighting.

2.7 ACOUSTIC IMPACT

Acoustic Impact report by Marshall Day Acoustics confirms that noise emissions from the use of the car park have been calculated and demonstrates compliance with the NPfI noise level criteria at the nearest residential and commercial receivers.

3 PARKING

The proposed Hughes Street Car Park provides an additional 198 paid car parking spaces. The ground floor is accessed directly from Dutton Lane East with a direct entry from Dutton Lane East with 3.5m clear head hight to allow for small rigid vehicle (SRV) access into and throughout the ground floor.

Level 1 and level 2 act as an extension of the Dutton Lane Car Park floor plate, and contains 74 and 78 parking spaces respectively. Level 2 is an open air roof and contains 4 E-Car charging stations for electric vehicles to support the expected growing demand.

3.1 GROUND FLOOR TIME SHARED PARKING

The ground floor of Hughes Street Car Park contains 67 paid car parking spaces, 26 of which are time-shared with 12 SRV parking spaces for commercial delivery vehicles.