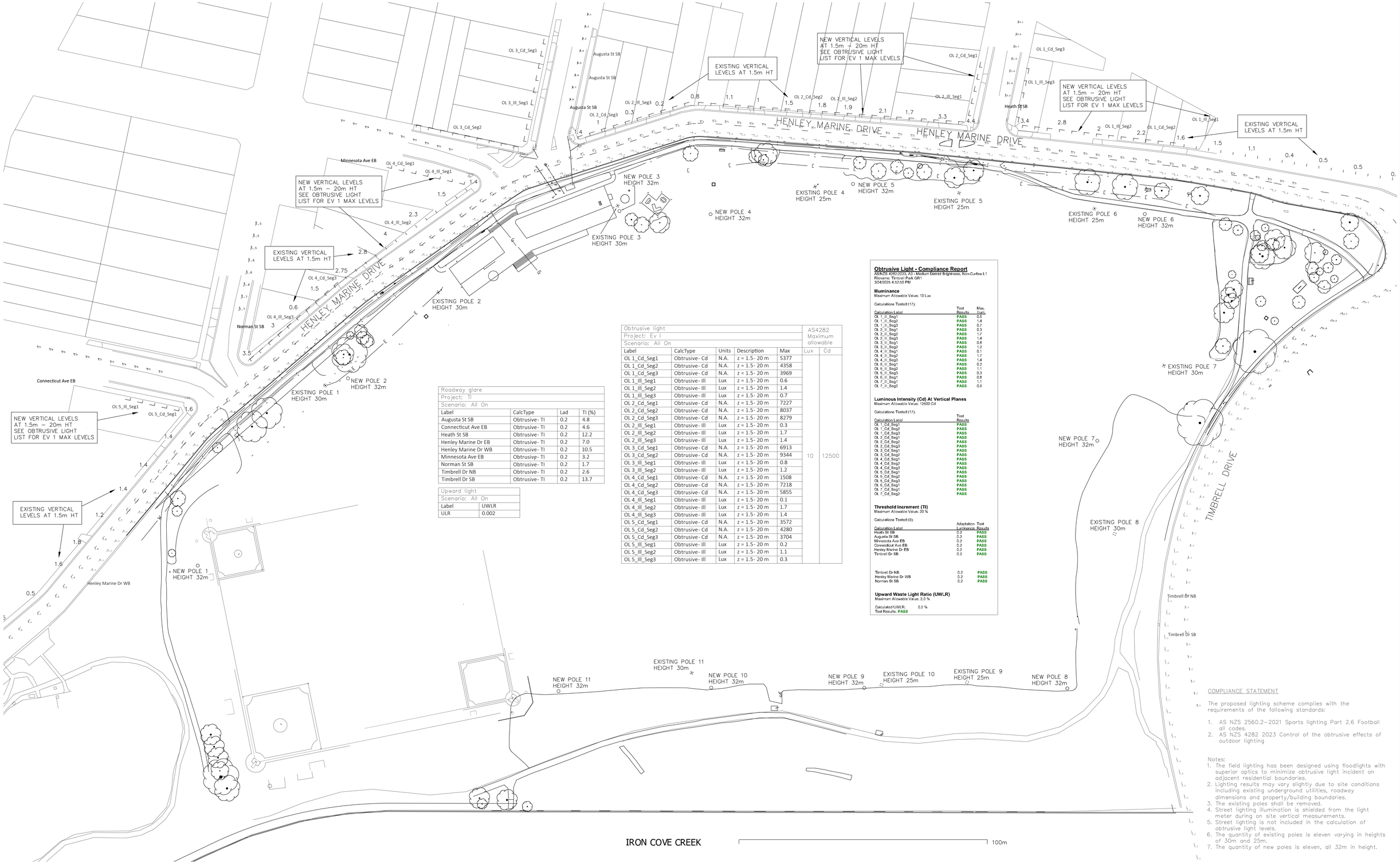
Appendix 5

Lighting Plans

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DO NOT SCALE from this drawing. Use given dimensions. The contractor is to check all dimensions on the job prior to commencement of shop drawings or fabrication. Any discrepancies are to be refered to Council prior to commencement of work.



Roadway glare			
Project: TI			
Scenario: All On			
Label	CalcType	Lad	TI (%)
Augusta St SB	Obtrusive - TI	0.2	4.8
Connecticut Ave EB	Obtrusive - TI	0.2	4.6
Heath St SB	Obtrusive - TI	0.2	12.2
Henley Marine Dr EB	Obtrusive - TI	0.2	7.0
Henley Marine Dr WB	Obtrusive - TI	0.2	10.5
Minnesota Ave EB	Obtrusive - TI	0.2	3.2
Norman St SB	Obtrusive - TI	0.2	1.7
Timbrell Dr NB	Obtrusive - TI	0.2	2.6
Timbrell Dr SB	Obtrusive - TI	0.2	13.7

Upward light	
Scenario: All On	
Label	UWLR
ULR	0.002

Obtrusive light					AS4282 Maximum allowable	
Project: Ev 1						
Scenario: All On						
Label	CalcType	Units	Description	Max	Lux	Cd
OL 1_Cd_Seg1	Obtrusive - Cd	N.A.	z = 1.5 - 20 m	5377		
OL 1_Cd_Seg2	Obtrusive - Cd	N.A.	z = 1.5 - 20 m	4358		
OL 1_Cd_Seg3	Obtrusive - Cd	N.A.	z = 1.5 - 20 m	3969		
OL 1_Ill_Seg1	Obtrusive - Ill	Lux	z = 1.5 - 20 m	0.6		
OL 1_Ill_Seg2	Obtrusive - Ill	Lux	z = 1.5 - 20 m	1.4		
OL 1_Ill_Seg3	Obtrusive - Ill	Lux	z = 1.5 - 20 m	0.7		
OL 2_Cd_Seg1	Obtrusive - Cd	N.A.	z = 1.5 - 20 m	7227		
OL 2_Cd_Seg2	Obtrusive - Cd	N.A.	z = 1.5 - 20 m	8037		
OL 2_Cd_Seg3	Obtrusive - Cd	N.A.	z = 1.5 - 20 m	8279		
OL 2_Ill_Seg1	Obtrusive - Ill	Lux	z = 1.5 - 20 m	0.3		
OL 2_Ill_Seg2	Obtrusive - Ill	Lux	z = 1.5 - 20 m	1.7		
OL 2_Ill_Seg3	Obtrusive - Ill	Lux	z = 1.5 - 20 m	1.4		
OL 3_Cd_Seg1	Obtrusive - Cd	N.A.	z = 1.5 - 20 m	6913		
OL 3_Cd_Seg2	Obtrusive - Cd	N.A.	z = 1.5 - 20 m	9344	10	12500
OL 3_Ill_Seg1	Obtrusive - Ill	Lux	z = 1.5 - 20 m	0.8		
OL 3_Ill_Seg2	Obtrusive - Ill	Lux	z = 1.5 - 20 m	1.2		
OL 4_Cd_Seg1	Obtrusive - Cd	N.A.	z = 1.5 - 20 m	1508		
OL 4_Cd_Seg2	Obtrusive - Cd	N.A.	z = 1.5 - 20 m	7218		
OL 4_Cd_Seg3	Obtrusive - Cd	N.A.	z = 1.5 - 20 m	5855		
OL 4_Ill_Seg1	Obtrusive - Ill	Lux	z = 1.5 - 20 m	0.1		
OL 4_Ill_Seg2	Obtrusive - Ill	Lux	z = 1.5 - 20 m	1.7		
OL 4_Ill_Seg3	Obtrusive - Ill	Lux	z = 1.5 - 20 m	1.4		
OL 5_Cd_Seg1	Obtrusive - Cd	N.A.	z = 1.5 - 20 m	3572		
OL 5_Cd_Seg2	Obtrusive - Cd	N.A.	z = 1.5 - 20 m	4280		
OL 5_Cd_Seg3	Obtrusive - Cd	N.A.	z = 1.5 - 20 m	3704		
OL 5_Ill_Seg1	Obtrusive - Ill	Lux	z = 1.5 - 20 m	0.2		
OL 5_Ill_Seg2	Obtrusive - Ill	Lux	z = 1.5 - 20 m	1.1		
OL 5_Ill_Seg3	Obtrusive - Ill	Lux	z = 1.5 - 20 m	0.3		

Obtrusive Light - Compliance Report
AS/NZS 4282:2023, A3 - Medium District Brightness, Non-Curfew L1
Filename: Timbrell Park GR1
3/04/2025 4:52:50 PM

Illuminance
Maximum Allowable Value: 10 Lux

Calculations Tested (17):

Calculation Label	Test Results	Max. Illum.
OL 1_Ill_Seg1	PASS	0.6
OL 1_Ill_Seg2	PASS	1.4
OL 1_Ill_Seg3	PASS	0.7
OL 2_Ill_Seg1	PASS	0.3
OL 2_Ill_Seg2	PASS	1.7
OL 2_Ill_Seg3	PASS	1.4
OL 3_Ill_Seg1	PASS	0.8
OL 3_Ill_Seg2	PASS	1.2
OL 4_Ill_Seg1	PASS	0.1
OL 4_Ill_Seg2	PASS	1.7
OL 4_Ill_Seg3	PASS	1.4
OL 5_Ill_Seg1	PASS	0.2
OL 5_Ill_Seg2	PASS	1.1
OL 5_Ill_Seg3	PASS	0.3
OL 6_Ill_Seg1	PASS	0.8
OL 7_Ill_Seg1	PASS	1.1
OL 7_Ill_Seg2	PASS	0.9

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

Calculations Tested (17):

Calculation Label	Test Results
OL 1_Cd_Seg1	PASS
OL 1_Cd_Seg2	PASS
OL 1_Cd_Seg3	PASS
OL 2_Cd_Seg1	PASS
OL 2_Cd_Seg2	PASS
OL 2_Cd_Seg3	PASS
OL 3_Cd_Seg1	PASS
OL 3_Cd_Seg2	PASS
OL 4_Cd_Seg1	PASS
OL 4_Cd_Seg2	PASS
OL 4_Cd_Seg3	PASS
OL 5_Cd_Seg1	PASS
OL 5_Cd_Seg2	PASS
OL 5_Cd_Seg3	PASS
OL 6_Cd_Seg1	PASS
OL 7_Cd_Seg1	PASS
OL 7_Cd_Seg2	PASS

Threshold Increment (TI)
Maximum Allowable Value: 20 %

Calculations Tested (9):

Calculation Label	Adaptation Luminance	Test Results
Heath St SB	0.2	PASS
Augusta St SB	0.2	PASS
Minnesota Ave EB	0.2	PASS
Connecticut Ave EB	0.2	PASS
Henley Marine Dr EB	0.2	PASS
Timbrell Dr SB	0.2	PASS
Timbrell Dr NB	0.2	PASS
Henley Marine Dr WB	0.2	PASS
Norman St SB	0.2	PASS

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

Calculated UWLR: 0.2 %
Test Results: PASS

COMPLIANCE STATEMENT

The proposed lighting scheme complies with the requirements of the following standards:

1. AS NZS 2560.2–2021 Sports lighting Part 2.6 Football all codes.
2. AS NZS 4282 2023 Control of the obtrusive effects of outdoor lighting

Notes:
1. The field lighting has been designed using floodlights with superior optics to minimize obtrusive light incident on adjacent residential boundaries.
2. Lighting results may vary slightly due to site conditions including existing underground utilities, roadway dimensions and property/building boundaries.
3. The existing poles shall be removed.
4. Street lighting illumination is shielded from the light meter during on site vertical measurements.
5. Street lighting is not included in the calculation of obtrusive light levels.
6. The quantity of existing poles is eleven varying in heights of 30m and 25m.
7. The quantity of new poles is eleven, all 32m in height.

No.	DATE	Description	Drawn
C	02/07/25	'Height' descriptor added to pole locations. New notes 4–7.	CC
B	05/06/25	Note 3 added	CC
A	01/05/25	Issue for DA	CC

City of Canada Bay

Electrical Engineer
GRA ELECTRICAL ENGINEERS
GARY ROBERTS & ASSOCIATES PTY LTD ACN 064331086
PHONE (02) 9457 6485
E-mail: grassec@optusnet.com.au

Client: CANADA BAY COUNCIL

Project: TIMBRELL PARK
Henley Marine Drive
Five Dock NSW 2137
2025 LIGHTING UPGRADE

Drawing: ELECTRICAL SERVICES OBTRUSIVE LIGHTING

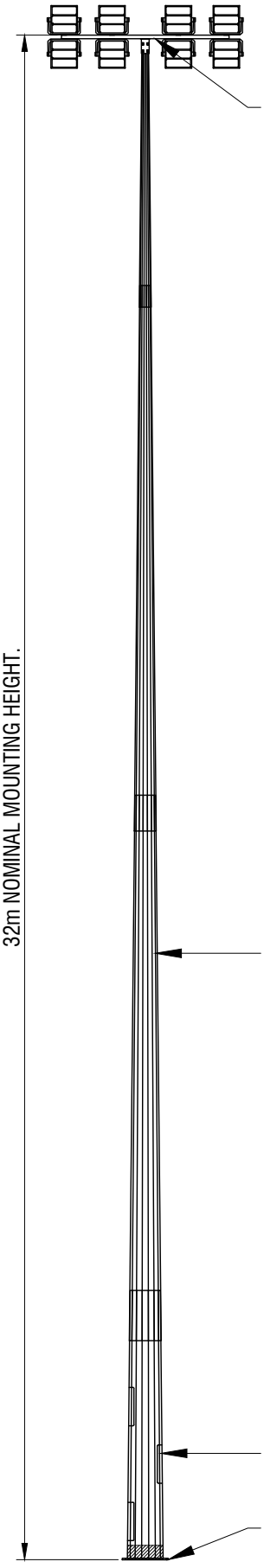
Drawing No: 560E7 Issue: C

Date: 18/04/25 Drawn: C.C. Checked: Proj.No: 560 Scale: 1:500@A0

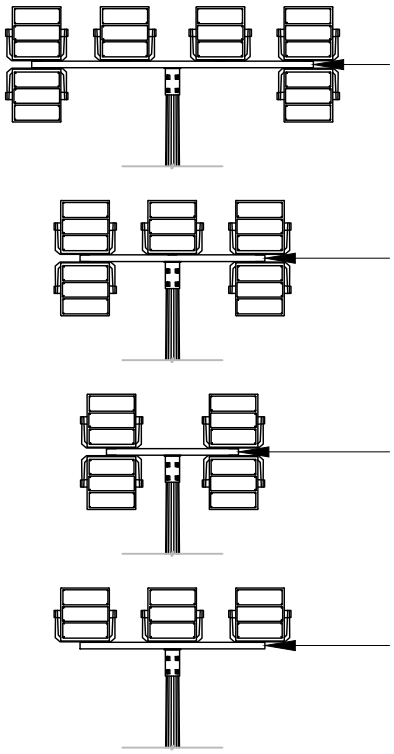
PLOT DATE:
CAD FILE:

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NOTES:
- Refer GM Poles Quotation(s) for Product Quantity (if applicable).
- Technical content of drawing subject to final detailing UNO.



GM POLES MANUFACTURED CROSSARM TO SUIT UP TO 4x OVERSLUNG AND 4x UNDERSLUNG PHILIPS OPTIVISION BVP528-BV LED LUMINAIRES AT MAXIMUM INSTALLED LENS TILT TO HORIZONTAL OF 40° WITH NO ALLOWANCE FOR EXTERNAL GLARE CONTROL DEVICES. SECONDARY TETHER POINT PROVIDED ON CROSSARM TO SUIT TETHER BY OTHERS. REFER TO ADDITIONAL CROSSARM ARRANGEMENTS.



CROSSARM ARRANGEMENTS

GM POLES MANUFACTURED TAPERED POLYGONAL POLE.
POLE AND ACCESSORIES HOT DIP GALVANISED AFTER FABRICATION.
GMP ID: SPEC TP-F32-169-3D-K

3-OFF 800x200 CLEAR FLUSH FITTING ACCESS DOOR c/w INTERNAL GEAR TRAY CENTRAL AND OPPOSITE. DRIVERS WITHIN POLE BASE, ARRANGEMENT DETERMINED BY OTHERS.

BASEPLATE TO SUIT **GM POLES** 10xM30 HIGH STRENGTH FOUNDATION BOLTS ON A 850mm P.C.D. BASEPLATE AND 300mm ABOVE TREATED WITH EPOXY INSIDE AND OUTSIDE OF POLE.

GM POLES
490 Freeman Rd.
RICHLANDS,
QLD 4077
Ph: (07) 3718 4900

TIMBRELL PARK SPORTS LIGHTING GENERAL ARRANGEMENTS

Rev	Date	Drn	Description	Chk
0	09/05/2025	D.C.	INITIAL ISSUE	D.C.

Drn	Date	Scale	Drawing No	Page
D. Creed	09/05/2025	N.T.S.	CD0021805A	1 of 1