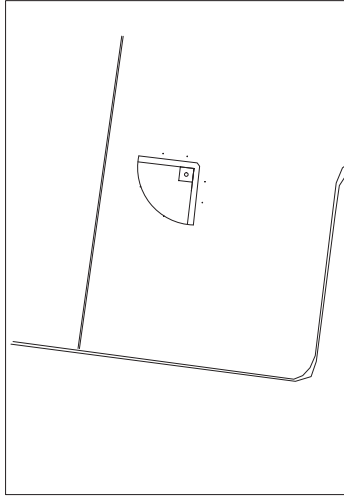




ROCKHAMPTON SOFTBALL FIELD 2 SPORTS LIGHTING UPGRADE ROCKHAMPTON QLD



SITE PLAN
SCALE: N.T.S.



LOCALITY PLAN
SCALE: N.T.S.

GENERAL LIGHTING NOTES:

1. THIS DRAWING SET IS A SUMMARY OF THE GENERAL REQUIREMENTS FOR THIS PROJECT. THE CONTRACTOR SHALL REFER TO THE TECHNICAL SPECIFICATION FOR FURTHER DETAILED INFORMATION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FULLY UNDERSTAND THE WORKS PRIOR TO INSTALLATION. THE CONTRACTOR MUST CONDUCT ALL SURVEYS AND INSPECTIONS NECESSARY TO UNDERSTAND WORKS OUTLINES IN THE DRAWINGS AND OTHER ASSOCIATED DOCUMENTATION. THE CONTRACTOR IS TO MAKE ALLOWANCES IN THE SERVICES FOR ALL ASPECTS COVERED UNDER THIS SPECIFICATION AND COORDINATE THE LOCATION OF PURPOSE OF ALL ELECTRICAL EQUIPMENT WITH OTHER TRADES, STRUCTURES AND ALL OTHER SERVICES.
2. THE EQUIPMENT SUPPLIED BY THE CONTRACTOR SHALL BE SUITABLE FOR CONTINUOUS OPERATION IN AN INDOOR/OUTDOOR ENVIRONMENT AS APPLICABLE. THE CONTRACTOR IS WHOLLY RESPONSIBLE FOR ENSURING THAT THE EQUIPMENT SUPPLIED UNDER THIS CONTRACT SHALL BE CAPABLE OF DELIVERING CONTINUOUS FULL RATED LOAD UNDER THE SITE CONDITIONS LISTED BELOW:
 MAXIMUM AMBIENT TEMPERATURE 45 DEGREES C
 MINIMUM AMBIENT TEMPERATURE 0 DEGREES C
 EXPECTED LIFE OF INSTALLATION 20 YEARS
3. ALL MATERIALS, SUPPLIES AND ALL WORK INSTALLED SHALL COMPLY WITH THE CURRENT CODES, STANDARDS, RULES AND REGULATION OF ALL STANDARD AUTHORITIES INCLUDING, BUT NOT LIMITED TO:
 NATIONAL CONSTRUCTION CODE 2019
 AS/NZS2560 SPORTS LIGHTING SERIES
 AS/NZS3000 AND AS/NZS3008 LV POWER RETICULATION
 AS/NZS3017 ELECTRICAL INSTALLATIONS - TESTING GUIDELINES
 AS6439 LV SWITCHBOARDS
 AS/NZS4282 CONTROL OF OBTRUSIVE LIGHT
 QUEENSLAND BUILDING REGULATIONS
 MAKE ALL APPLICATIONS AND PAY ALL FEE ASSOCIATED WITH TO COMPLY WITH RELEVANT AUTHORITY AND REGULATORY REQUIREMENTS, INCLUDING BUT NOT LIMITED TO METERING, BUILDING PERMITS AND SELF-CERTIFICATION COSTS FOR ELECTRICAL AND COMMUNICATION SYSTEMS.
4. THE LOCATION AND MOUNTING OF THE SERVICES SHOWN ON THE DRAWINGS ARE APPROXIMATE ONLY. FINAL LOCATIONS AND MOUNTING HEIGHTS SHALL BE DETERMINED ON-SITE TO SUIT THE PRINCIPAL AND TO PROVIDE OPTIMUM OPERATING PERFORMANCE AND FUNCTIONALITY.
5. ALL PERSONNEL SHALL BE APPROPRIATELY SKILLED AND LICENSED FOR THEIR PARTICULAR TASKS AND ALL WORK SHALL BE IN ACCORDANCE WITH THE ACCEPTABLE TRADE PRACTICES FOR THEIR WORKS. ALL WORKMANSHIP AND MATERIALS SHALL BE OF A HIGH INDUSTRY STANDARD USING NEW MATERIALS. ALL WORKMANSHIP OR INFERIOR EQUIPMENT SHALL BE REPLACED AT THE CONTRACTOR'S COST.
6. ONE NIGHT OF SPORTS LIGHTING COMMISSIONING FOR FINAL ADJUSTMENT OF LUMINAIRE AIMING TO ACHIEVE COMPLIANCE AND TO INCREASE PERFORMANCE IN ACCORDANCE WITH AS/2560 SERIES ILLUMINANCE AND UNIFORMITY REQUIREMENTS. IN ADDITION, AS PART OF COMMISSIONING THE CONTRACTOR SHALL TAKE HIGH RESOLUTION PHOTOS (MIN. 4MP), CLEARLY DETAILING:
 LOCALITY AND POSITION OF LIGHTING POLE FOOTINGS
 LIGHTING POLE FOOTING EXCAVATION PRIOR TO CAGERED INSTALLATION
 REPRESENTATIVE PHOTOS OF UNDERGROUND CONDUIT INSTALLATION SHOWING NUMBERSIZE CONDUITS INSTALLED AND BURY DEPTH
 PRIOR STANDING EACH LIGHT TOWER, A PHOTO OF EACH LIGHTING POLE HEADMAST
 INSTALLATION SHOWING ALL INSTALLED LUMINAIRES AND THEIR CONNECTIONS
 CLOSE UP OF LUMINAIRE MOUNTING TO HEADMAST
 CLOSE UP OF ARMoured CONDUIT CONNECTION BETWEEN LUMINAIRE AND HEADMAST
 INSIDE EACH ACCESS PANEL SHOWING SWITCHGEAR AND DRIVER INSTALLATIONS
 FINAL INSTALLATION OF SWITCHGEAR AND CONTROL PANEL INSTALLATIONS
7. CABLES SHALL BE ADEQUATELY SUPPORTED ALONG THEIR ENTIRE LENGTH TO THE APPROVAL OF THE SUPERINTENDENT. SUPPORTS SHALL BE INSTALLED AT MAXIMUM INTERVALS OF 1000 MM AND AT LESSER INTERVALS WHERE REQUIRED TO PREVENT UNDUE SAGGING. CABLES IN VERTICAL RUNS SHALL BE SUPPORTED EVERY 600 MM, WHERE NOT INSTALLED ON CABLE TRAY. CABLES SHALL BE SADDLED TO CONCRETE MASONRY OR STEELWORK OR CLIPPED BY CABLE CLAMPS TO UNISTRUT CHANNELS. CHANNELS SHALL BE OF SUFFICIENT WIDTH TO ACCOMMODATE ALL CABLES IN THE RUN PLUS A 20% SPARE CAPACITY. STRUCTURAL STEELWORK SHALL NOT BE DRILLED, WELDED OR CUT TO FACILITATE CABLE INSTALLATION WITHOUT THE SUPERINTENDENT'S WRITTEN PERMISSION.
8. THE PROPOSED LIGHTING SCHEME MEETS OR EXCEEDS THE RELEVANT ILLUMINANCE VALUES AND UNIFORMITY RECOMMENDED IN AS/NZS2560.2:2021 FOR A LOCAL COMPETITION SOFTBALL DIAMOND.
9. UNLESS NOTED OTHERWISE, THE VALUES SHOWN ARE HORIZONTAL MAINTENANCE ILLUMINANCE ON AN OPEN UNOBSTRUCTED PLANE AT GRADE.
10. ALL LUMINAIRE DATA IS SUPPLIED BY MANUFACTURER.
11. DESIGN SOFTWARE USE AG32 V20

12. ALL CALCULATIONS AND RESULTS PROVIDED ARE SUBJECT TO TOLERANCES IN ACCORDANCE WITH AS/NZS3827.1:1998 AND AS/NZS3827.2:1998 LIGHTING SYSTEM PERFORMANCE AND ACCURACY TOLERANCES.
13. THE NUMBER OF FITTINGS SHOWN, AND THE TYPE OF FITTINGS ARE THE MINIMUM REQUIRED AND ADDITIONAL FITTINGS MAY BE NECESSARY IN THE FINAL COORDINATION.

LIGHTING SYSTEM MAINTENANCE

- THE COMBINED LIGHT-LOSS FACTOR APPLIED TO THESE CALCULATIONS IS BASED ON:
14. 3 YEAR CLEANING OF LUMINAIRES IN A URBAN POLLUTION SUB-CATEGORY ENVIRONMENT.
 15. IP6X LUMINAIRE
 16. 20 YEAR DESIGN LIFE.
 17. SPOT REPLACEMENT OF FAILED LIGHT SOURCES.

OBTRUSIVE LIGHTING ANALYSIS

18. COMPLIANCE WITH AS/NZS4282:2019 IS DEMONSTRATED FOR AN A3 ZONE FOR PRE-CURFEW OPERATION ONLY, EXISTING INSTALLATION.
19. ALL OBTRUSIVE LIGHT ANALYSIS IS EVALUATED AT INITIAL FLUX.
20. COMPLIANCE HAS BEEN INVESTIGATED AND CONFIRMED COMPLIANT WITH MOS139 FOR A A ZONE.

LIGHTING CERTIFICATION

LIGHTING CERTIFIED TO COMPLY WITH:
 AS/NZS2560—2020 LOCAL COMPETITION SOFTBALL DIAMOND AND
 AS/NZS4282—2020 FOR A A4 ZONE FOR PRE-CURFEW OPERATION
 ONLY, EXISTING INSTALLATION AND MOS139 ZONE A

- * INSTALLATION MUST COMPLY WITH AS3000.
- * ALL LUMINAIRE DATA HAS BEEN SUPPLIED BY MANUFACTURER.

ROCKHAMPTON SOFTBALL

MIES RLP No. 280

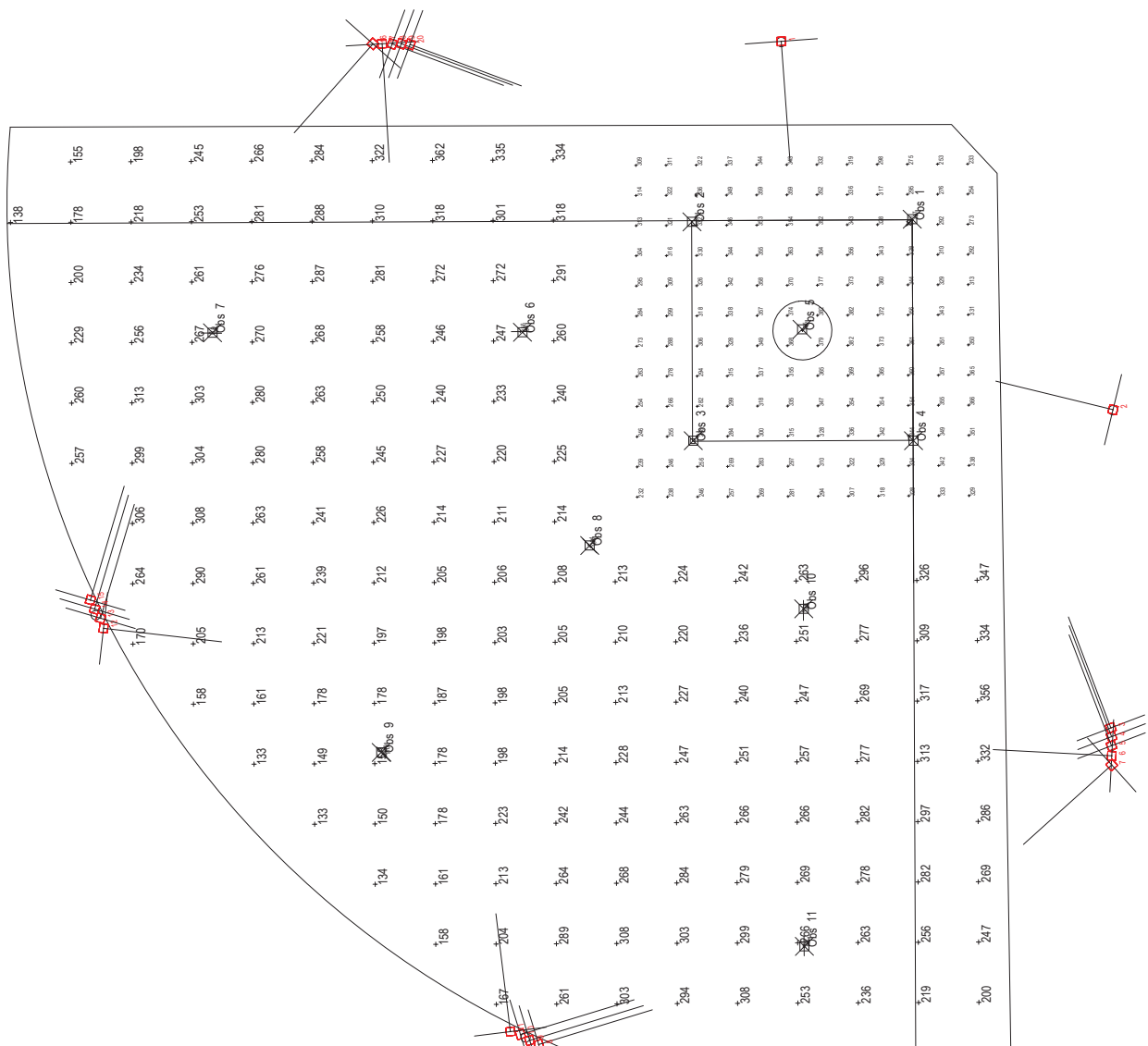
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Rev.	Date	Dim.	Description	Project:	Rockhampton Softball Sports Lighting Upgrade Rockhampton QLD	Title:	ELECTRICAL SERVICES LIGHTING SYSTEMS TITLE PAGE
				Drawn:	TD	Chk:	SAF
				Scale:	N.T.S.	Date:	6-10-21
				Drawing No.:	GE019-E01-1	Rev:	0
				Size:	A3		

Luminaire Schedule			
Symbol	Qty	Label	Description
□	20	F1	GREEN ENERGY H1500-AB0 1500W-4000K NARROW BEAM LED SPORTS FLOOD LIGHT POLE MOUNTED
			Luminaire Lumens 178650 LUF 0.800

Calculation Summary			
Label	Avg	Min	Min/Avg
CF1 EvA	N.A.	154	N.A.
CF1 EvB	N.A.	164	N.A.
CF2 EvA	N.A.	110	N.A.
CF2 EvB	N.A.	110	N.A.
GLARE	N.A.	35	N.A.
GLARE	N.A.	32	N.A.
GLARE	N.A.	35	N.A.
GLARE	N.A.	30	N.A.
GLARE	N.A.	31	N.A.
GLARE	N.A.	27	N.A.
GLARE	N.A.	31	N.A.
GLARE	N.A.	28	N.A.
GLARE	N.A.	199	N.A.
HF EV	N.A.	322	N.A.
INFIELD	N.A.	97	N.A.
LFT EvA	N.A.	158	N.A.
LF2 EvA	N.A.	97	N.A.
LF2 EvB	N.A.	63	N.A.
OUTFIELD	N.A.	362	N.A.
PEV	N.A.	125	N.A.
RF1 EvA	N.A.	90	N.A.
RF1 EvB	N.A.	156	N.A.
RF2 EvA	N.A.	95	N.A.
RF2 EvB	N.A.	79	N.A.

Luminaire Location Summary						
LumNo	Label	X	Y	Z	Orient	Tilt
1	F1	242618.458	7412684.102	22	177.82	0
2	F1	242584.792	7412630.525	22	69.319	0
3	F1	242558.655	7412633.919	22	13.916	10
4	F1	242557.897	7412633.948	22	13.916	10
5	F1	242557.149	7412634.047	22	13.916	10
6	F1	242556.317	7412634.128	22	80	10
7	F1	242555.567	7412634.222	22	125	10
8	F1	242538.345	7412684.153	22	280	10
9	F1	242538.775	7412684.893	22	280	10
10	F1	242539.354	7412685.595	22	280	10
11	F1	242539.694	7412686.394	22	0	10
12	F1	242576.997	7412715.931	22	256.48	10
13	F1	242577.854	7412716.333	22	338.48	10
14	F1	242578.671	7412716.588	22	338.48	10
15	F1	242578.453	7412716.588	22	131.48	10
16	F1	242623.914	7412687.716	22	176.48	10
17	F1	242622.175	7412686.966	22	242.564	10
18	F1	242622.096	7412685.388	22	242.564	10
19	F1	242621.954	7412684.673	22	242.564	10
20	F1	242621.954	7412684.673	22	242.564	10



ROCKHAMPTON REGIONAL COUNCIL
APPROVED PLANS
 These plans are approved subject to the current conditions of approval associated with Development Permit No.: D/121-2022
Dated: 17 November 2022

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Obrusive Light - Compliance Report
 AS/NZS 4282:2019, A3 - Medium District Brightness, Non-Curfew L2
 Filename: GE0019_0.DESIGN
 6/10/2021 14:31:26 PM

Threshold Increment (TI)
 Maximum Allowable Value: 20 %

Calculations Tested (4):	Adaptation Luminance	Test Results
TI KARALEE WESTBOUND	5	PASS
TI KARALEE EASTBOUND	5	PASS
TI CANOONA NORTHBOUND	5	PASS
TI CANOONA SOUTHBOUND	5	PASS

Upward Waste Light Ratio (UWLR)

Maximum Allowable Value: 20 %
 Calculated UWLR: 0.4 %
 Test Results: PASS



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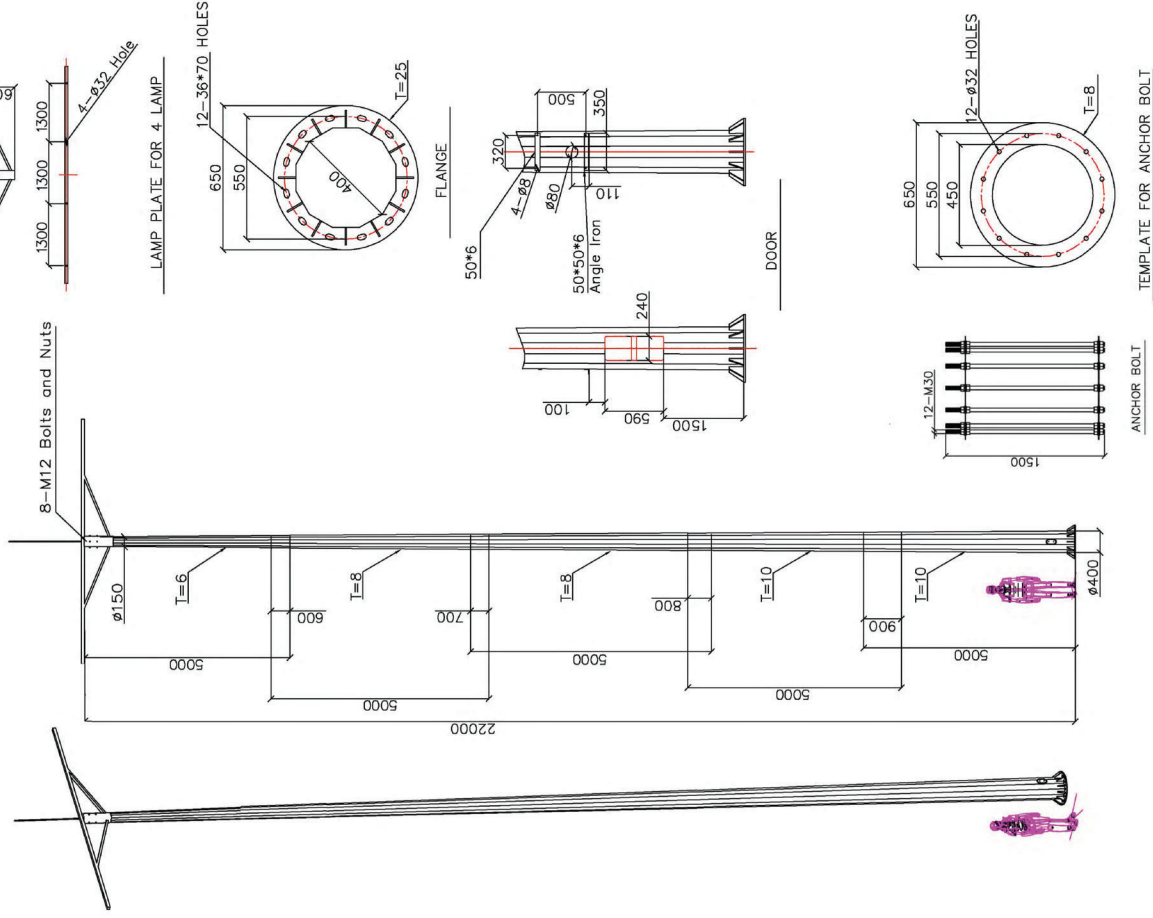


Rev.	Date	Dim.	Description	Drawn:	TD	CHK:	SAF	Date:	6-10-21
				Scale:	N.T.S.				
				Drawing No.	GE0019-E01-3				
									A3
Project:				Title:					
ROCKHAMPTON SOFTBALL				ELECTRICAL SERVICES					
SPORTS LIGHTING UPGRADE				LIGHTING SYSTEMS					
ROCKHAMPTON OLD				OBRUSIVE LIGHT ANALYSIS					
Document Set ID: 38759926 The Massapequa, NY, USA 11/27/2022				Issued without the written permission of Green Energy Queensland					

22m Standard Steel Pole



SOCKHAMPTON REGIONAL COUNCIL
 APPROVED PLANS
 These plans have been approved in accordance with the conditions of approval associated with Development Permit No. DP121.5022
 Dated: 17 November 2022



- Remark:
1. All dimensions are in mm, tolerances are according to DIN EN ISO13920;
 2. The pole thickness is 8mm;
 3. The Material is Q235B steel, the yield strength $\geq 235\text{MPa}$, tensile strength $\geq 450\text{Mpa}$, elongation $\geq 25\%$;
 4. The steel is hot dip galvanized (Zinc thickness $\geq 70\mu\text{m}$)
 5. The welding appearance is fine and smooth, without cracks, pores, slag and other defects, and the welding transition is smooth;