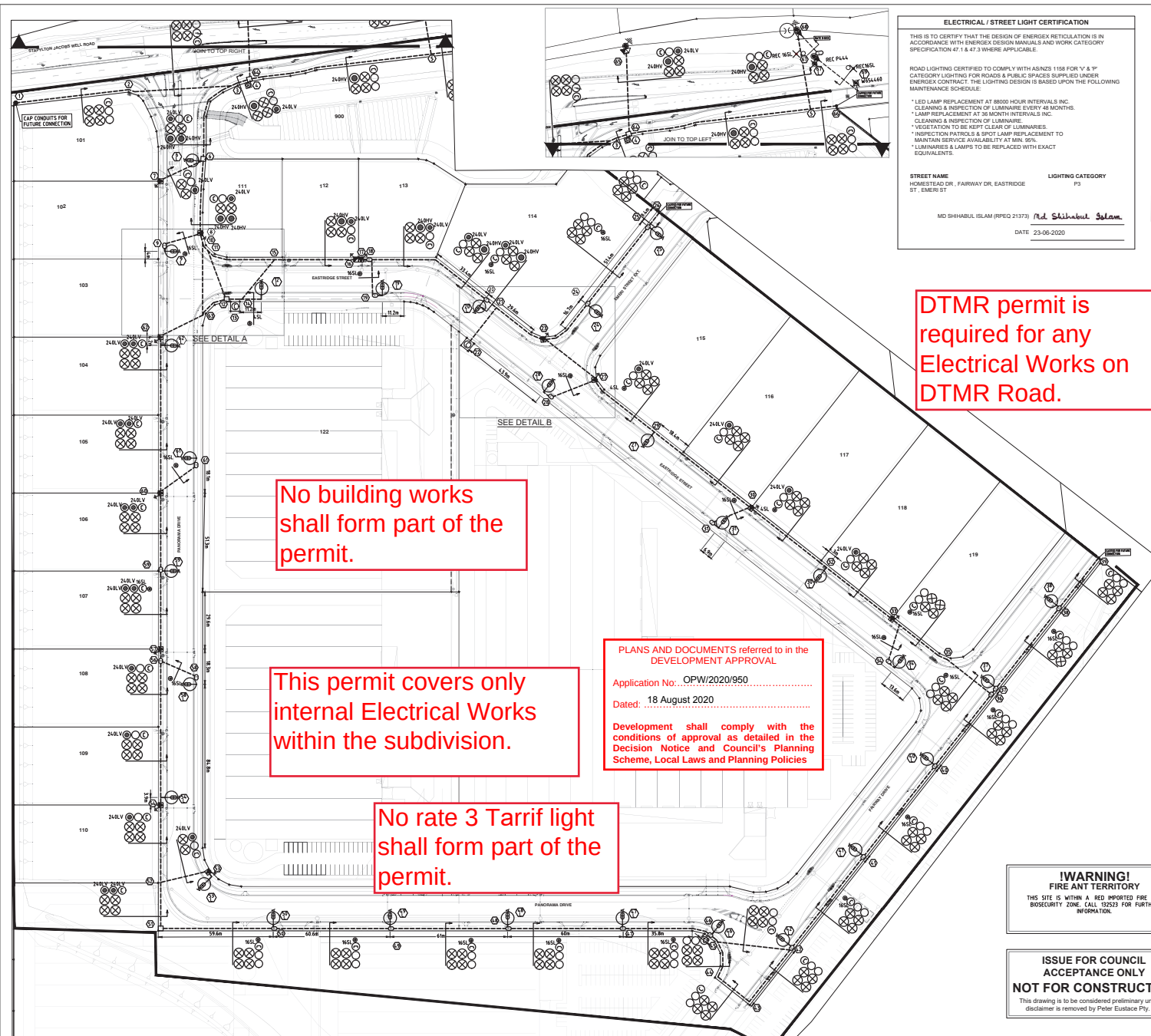




ELECTRICAL / STREET LIGHT CERTIFICATION

THIS IS TO CERTIFY THAT THE DESIGN OF ENERGEX RETICULATION IS IN ACCORDANCE WITH ENERGEX DESIGN MANUALS AND WORK CATEGORY SPECIFICATION 47.1 & 47.3 WHERE APPLICABLE.

ROAD LIGHTING CERTIFIED TO COMPLY WITH AS/NZS 1158 FOR 'V' & 'P' CATEGORY LIGHTING FOR ROADS & PUBLIC SPACES SUPPLIED UNDER ENERGEX CONTRACT. THE LIGHTING DESIGN IS BASED UPON THE FOLLOWING MAINTENANCE SCHEDULE:

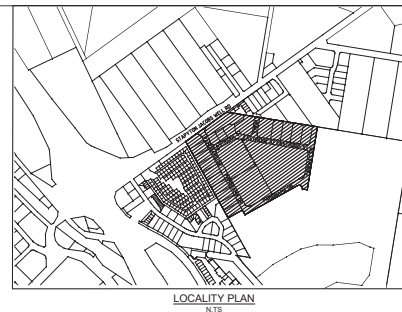
- * LED LAMP REPLACEMENT AT 8000 HOUR INTERVALS INC. CLEANING & INSPECTION OF LUMINAIRE EVERY 48 MONTHS.
- * LAMP REPLACEMENT AT 36 MONTH INTERVALS INC. CLEANING & INSPECTION OF LUMINAIRE.
- * VEGETATION TO BE KEPT CLEAR OF LUMINAIRES.
- * INSPECTION PATROLS & SPOT LAMP REPLACEMENT TO MAINTAIN SERVICE AVAILABILITY AT MIN. 90%.
- * LUMINAIRES & LAMPS TO BE REPLACED WITH EXACT EQUIVALENTS.

STREET NAME
HOMESTEAD DR., FAIRWAY DR, EASTRIDGE ST., EMERI ST

LIGHTING CATEGORY
P3

MO SHIRABUL ISLAM (RPEC 21373) *Md Shirabul Islam*

DATE 23-05-2020



MAINTENANCE REGIME

Maintenance Factor Assumed: The maintenance factor assumed in the calculations is as follows:

- * Lumen Maintenance Factor (refer AS 1158 1.1:2005 APPENDIX E).
- * Lamp Lumen Depreciation Factor (refer Lamp Manufacturer's "Lamp Lumen Depreciation Curve").

Maintenance Factor Calculated: 0.75

Schedule of Maintenance: This road lighting design is based on the following maintenance schedule:

- * LED lamp replacement carried out at 8000 hrs intervals. Cleaning regime every 48 months.
- * All other luminaires lamp replacement & cleaning carried out at 36 month intervals.

At this time the following shall also occur:

- * All optical surfaces, both internal and external, of the luminaire shall be cleaned.
- * All glands shall be checked for deterioration and replaced where necessary.
- * Damaged/defuncted spacers shall be replaced.
- * All accessible screws, nuts etc. shall be checked for tightness.
- * A visual check shall be made of the electrical components and wiring for signs of overheating.
- * If required, the luminaire shall be realigned/adjusted to the design specification.

CERTIFICATE OF COMPLIANCE

DESIGN DOCUMENTATION IN ACCORDANCE WITH THE REQUIREMENTS OF COMPLIANCE OF AS/NZS 1158

- * Refer AS1158.1:2005 Appendix D for information regarding V category
- * Refer AS1158.3:2005 Appendix E for information regarding P category
- * Performed in 3.0.0 computer software used

ITEM	PROJECT SPECIFICATION
LIGHTING CATEGORY	
Nominate Lighting Category	P3
Road Surface Reflectance Characteristics	R3
INSTALLATION GEOMETRY	
Road Reserve Lighting Design Width	23m
Mounting Height	8m
Overhang	1.5m
Lighting Arrangement	ARR3
Pole Spacing	0.8 BxI
Upcast Angle	0°
LUMINAIRE/LAMP 1 DETAILS	
Lamp Type / Wattage	LSA
Luminaire Identification	Philips RoadFair
Lamp Flux (Lumens)	6000
I-Table Number (see)	BRP351 LEDDOWN 80W DIMV
LIGHTING TARIFF	
Power Factor	HFF (0.95)
Start/Run Currents (Amps)	0.223
IP Rating	IP66
LUMINAIRE BASED DESIGN - CATEGORY V LUMINAIRE/LAMP 1 TECHNICAL PARAMETER COMPLIANCE	
Spacing (m)	Normal Overhang
Average carriageway luminance (L) cd/m²	
Overall uniformity (U ₀)	
Longitudinal uniformity (U _L)	
Upward wasted light ratio (UWL/R) %	
Threshold increment (T _h) %	
Surround verge luminance (E _v) %	
Complies with standard	
LUMINAIRE BASED DESIGN - CATEGORY V TECHNICAL PARAMETER COMPLIANCE - "Design area" is intersection of a and a roads	
Point Horizontal Illuminance (E _h)	
Illuminance (Horizontal Uniformity) Cat V (U _h)	
CATEGORY P3 LUMINAIRE/LAMP 1 MAXIMUM SPACING CALC	
Average Horizontal Illuminance (E _h)	21.75 lx
Minimum Point Horizontal Illuminance (E _h)	28.2 lx
Illuminance Uniformity (U _h)	919
Upward wasted light ratio (UWL/R) %	≤ 0%
Road Reserve Lighting Design Width (m)	Maximum Spacing (m)
23	90.2

SYMBOL LEGEND

- PROPOSED 400w S/L
- ⊙ PROPOSED ENERGEX 100mm COMPS
- ⊗ PROPOSED 150mm
- ⊙ EXISTING 400w S/L
- ⊙ EXISTING ENERGEX 100mm COMPS
- ⊗ EXISTING 150mm
- PROPOSED CABLE (AS MARKED)
- EXISTING CABLE (AS MARKED)
- PROPOSED UNDERGROUND HV/LV ROUTE
- EXISTING UNDERGROUND HV/LV ROUTE
- PROPOSED OVERHEAD HV/LV ROUTE
- EXISTING OVERHEAD HV/LV ROUTE
- PROPOSED S/L CABLE
- EXISTING S/L CABLE
- ⊕ PDMOUNT TRANSFORMER
- ⊕ PHT LV GEODRAPHIC
- ⊕ PHT HV GEODRAPHIC
- ⊕ RING MAIN UNIT
- ⊕ RNU HV SCHEMATIC
- PROPOSED SUPPLY PILLAR
- EXISTING SUPPLY PILLAR
- PROPOSED LINK PILLAR
- EXISTING LINK PILLAR
- ⊕ COMMERCIAL PILLAR
- ⊕ EARTH
- ⊕ PROPOSED TYPE A PIT
- ⊕ EXISTING TYPE A PIT
- ⊕ RECOVER EQUIPMENT
- ⊕ 1WV STRAIGHT JOINT
- ⊕ OVERHEAD POLE TRANSFORMER
- ⊕ OVERHEAD POLE HV ONLY
- ⊕ OVERHEAD POLE LV ONLY
- ⊕ OVERHEAD POLE HV & LV
- ⊕ OVERHEAD HV TERMINATION
- ⊕ OVERHEAD LV TERMINATION
- ⊕ AIR BREAK SWITCH (OPEN)
- ⊕ AIR BREAK SWITCH (CLOSED)
- ⊕ DISCONNECT LINKS (OPEN)
- ⊕ DISCONNECT LINKS (CLOSED)
- ⊕ WATER METER
- ⊕ SURVEY PEG

STREET LIGHT SYMBOL LEGEND

- ⊕ RATE 2 LSA
- ⊕ EXISTING RATE 2 LSA
- ⊕ RECOVER S/SB RATE 2
- ⊕ RECOVER M/S RATE 2

ENERGEX NON-STANDARD TRENCH SECTIONS

TC.

ETC.

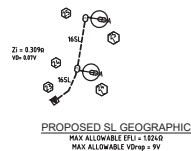
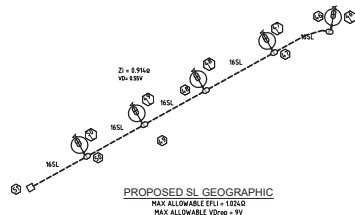
DETAIL SP1

TC.

P/L

ETC.

DETAIL SP2



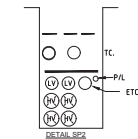
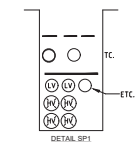
PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Dated: 18 August 2020

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

This drawing is to be considered preliminary until the disclaimer is removed by Peter Eustace Pty. Ltd.

THIS SITE IS WITHIN A RED IMPORTED FIRE ANT BIOSECURITY ZONE. CALL 132523 FOR FURTHER INFORMATION.

ENERGEX NON-STANDARD TRENCH SECTIONS

DATE	23/06/2020	PE CONSULTING ENGINEERS PROJECT ADDRESS POSTAL ADDRESS TELEPHONE FAX WEBSITE 1114, 99 Lawrence Dr, Nanning QLD 4011 PO Box 2813, Nanning QLD 4011 087 5590 1425 087 5590 1425 www.petereustace.com.au peter@petereustace.com.au	NORTH 19-0515-03	SITE CONTACT DETAILS NAME Energex OH TBC Energex UG COMPANY REFER NBN GAS REFER GAS WATER REFER CIVIL STORMWATER REFER CIVIL SEWERAGE REFER CIVIL ELECTRICITY REFER CIVIL COUNCIL STANDARD ALIGNMENTS NAME Energex OH TBC Energex UG COMPANY REFER NBN GAS REFER GAS WATER REFER CIVIL STORMWATER REFER CIVIL SEWERAGE REFER CIVIL ELECTRICITY REFER CIVIL WORKS COORDINATOR PARENT PROJECT NO. WORK REQUEST NO. LOTS 101-122, 900 CANCELLING LOTS LOCAL AUTHORITY GOLD COAST CITY COUNCIL PETER EUSTACE & ASSOCIATES APPROVED CHECKED DESIGNER PLANNER ISSUE DATE	SHRIHABUL ISLAM Peter Eustace & Associates INSTALL CABLE , CONDUIT , PILLARS, PITS AND STREET LIGHT 23 LOTS SUBDIVISION HESTER -YATALA STAPLYTON JACOBS WELL ROAD YATALA	WORKSPALM VERSION 5.5 SCALE: N.T.S. PROJECT / SUB PROJECT NO. S1301346	Sheet ISSUE NO. A 3 of 3
				PROJECT ADDRESS POSTAL ADDRESS TELEPHONE FAX WEBSITE 1114, 99 Lawrence Dr, Nanning QLD 4011 PO Box 2813, Nanning QLD 4011 087 5590 1425 087 5590 1425 www.petereustace.com.au peter@petereustace.com.au	LOT 981 on SP250994 080 REP	23 JUNE 2020	