



SINGLE LINE DIAGRAMS	
SYMBOL	DESCRIPTION
	CIRCUIT BREAKER, SIZE AND TYPE AS DENOTED.
	ISOLATOR, SIZE AND TYPE AS DENOTED.
	EARTH LEAKAGE, SIZE AND TYPE AS DENOTED.
	CONTACTOR, SIZE AND TYPE AS DENOTED.
	24HR, 7 DAY ELECTRONIC PROGRAMMABLE TIMER, RAIL MOUNTED
	ENERGY CONTROL UNIT (10A LIMIT - 5kW RESISTIVE LOAD)
	PHOTOCELL
	LIGHT SWITCH - SINGLE POLE (ONE/TWO WAY INDICATED)
	TRANSFORMER
	FUSE (SIZE TBC)
	CURRENT TRANSFORMER
	OUT OF LINE POLE MOUNTED TRANSFORMER

**ABBREVIATIONS**  
 FLEX = FLEXIBLE TRAILING CABLE  
 INS E = INSULATED EARTH WIRE  
 PVC = DENOTES PVC INSULATED SINGLE CORE HOUSE WIRE  
 SWA = DENOTES SWA Cc CABLE NO. OF CORES AS INDICATED  
 GP = GENERAL PURPOSE STRANDED PVC INSULATED WIRE  
 OL = OVER LOAD  
 SCV = SLOW CURVE

**REFERENCE NOTES : SCHEMATICS**

- REFER TO BOQ, DETAIL, QUALITY AND GENERAL SPECIFICATION FOR DETAILED REQUIREMENTS.
- DB'S SHALL BE SUPPLIED COMPLETE WITH DOORS AND BE ABLE TO BE LOCKABLE BY PADLOCK.
- NO PLASTIC HINGES, LOCK MECHANISMS OR TRAYS.
- SPARE WAYS SHALL BE BLANKED OFF WITH ONE COLOUR BLANKS ONLY.
- CABLE NUMBERS - USE CCT REFERENCE, I.E. "L1" AND LABEL CABLE BELOW / ABOVE DB & AT EQUIPMENT, WITH PRINTED AL CABLE LABEL IN HOLDER AND THE LIVE CONDUCTOR AT EACH TERMINATION POINT WITH RING NUMBERS OF SAME NOTATION.
- DB SHALL HAVE A4 SIZE LEGEND CARD HOLDER WITH LEGEND CONTAINING ALL EQUIPMENT IN THE DB CORRESPONDING TO WAY IDENTIFICATION ON TRAFFOLITE LABEL RAIL BELOW EACH BREAKER ROW. IT SHALL FURTHER IDENTIFY THE ASSOCIATED CIRCUIT BY PURPOSE, I.E. "P1", THE FEEDER BREAKER SIZE, I.E. "20A SP" AND THE FEEDER CONDUCTOR SIZE AND TYPE, I.E. "2.5mm² x 3C SWA".
- THE DB SHALL HAVE A PRINTED TRAFFOLITE LABEL IN RAIL OUTSIDE WITH "DB NAME", "SUPPLIED FROM" AND THE CABLE SIZE, NOTED ON THE LABEL.
- ONLY SWITCHGEAR OF ONE MANUFACTURER ARE ALLOWED.
- CASCADING TO BE APPLIED WHERE POSSIBLE.
- ALL SPARE WAYS SHALL BE BLANKED OFF WITH WHITE BLANKS.
- ALL DB'S AND ALL SEPARATELY OPENABLE SUB SECTIONS IN DB'S SHALL HAVE A4 LAMINATE HOLDERS WITH SCREW FIX RIGID PERSPEX COVERS.
- ALL MECHANICAL EQUIPMENT LOADS TO BE CONFIRMED WITH SUCCESSFUL MECHANICAL CONTRACTOR PRIOR TO DB APPROVAL. PROVIDE SCHEDULE WITH DEVIATIONS TO ENGINEER AT EARLIEST OPPORTUNITY TO PREVENT DELAYS ON DB APPROVALS.
- ALL CONTACTORS SHALL BE OF ONE MANUFACTURER ONLY.
- PANEL BUILDER TO PROPOSE BEST LAYOUT CONFIGURATION - Q NUMBERS ARE PRELIMINARY.  
NOTE: PHASING TO BE DONE ONCE EQUIPMENT LOADS ARE KNOWN. PANEL BUILDERS TO BALANCE BASED ON BREAKER SIZING.
- IF EXISTING SUPPLY CABLE PASS INSULATION RESISTANCE TEST, IT SHALL BE RE-USED.
- EQUIPMENT THAT PLUGS IN (1PH & 3PH) MUST BE PROTECTED BY EARTH LEAKAGE UNITS.

NOTE: ALARM SYSTEM CONSISTS OF BATTERY CHARGER, BATTERY, SIREN & RED ALARM LIGHT, TIMED ALARM OUTPUT WITH ACCEPT BUTTON, HOUSED IN SEPERATE DB SECTION.

ISSUED FOR TENDER

REVISIONS			REFERENCE DRAWINGS		
REVISION	DATE	DESCRIPTION	DATE	DRAWING NUMBER	DESCRIPTION
A	01 OCT 2020	ISSUED FOR COMMENT			
B	13 NOV 2020	ISSUED FOR TENDER			

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NAME	DATE
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DESIGNED: A.J. JOOSTE	NOV 2020

**PROFESSIONAL APPROVAL**  
 PROFESSIONAL ENGINEER

NAME: A.J. JOOSTE

SIGNATURE: \_\_\_\_\_

REGISTRATION NUMBER: 20160581

DATE: 13 NOVEMBER 2020

MASTER COPY KEPT AT TCB ENGINEERING OFFICES BEARS THE SIGNATURE OF APPROVAL

**CLIENT**

KAREEBERG MUNICIPALITY  
 HANAU STREET  
 CARNARVON

**CLIENT APPROVAL**

CLIENT STAMP: \_\_\_\_\_

**CARNARVON SUBSTATION**

LOW VOLTAGE DISTRIBUTION BOARD  
 SINGLE LINE DIAGRAM

SHEET SIZE	PROJECT NUMBER	BUILDING NAME	LEVEL	SERVICE	DRW. NR.	SHEET	REVISION
A1	K 0 6 1 7	- - - - -	- - - - -	S L D	0 4 1	OF 1	B