# PACIFIC COMMUNITY, PROPOSED EXTENSION TO EXISTING BUILDING - CRYO LAB FNTC ROAD 2, NARERE, NASINU

# **ELECTRICAL SERVICES**

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E200	PROPOSED ELECTRICAL SECTIONS LAYOUT	T1	2023.01.18	TENDER ISSUE

SHEET NUMBER:	E1
ISSUED FOR:	TENDER ISSUE
ISSUED DATE:	2023/01/18
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APPROVED BY:	SATISH PATEL

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## **GENERAL NOTES**

- THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE TECHNICAL SPECIFICATIONS AND ALL OTHER RELEVANT DOCUMENTS.
- ELECTRICAL CONTRACTOR TO LOCATE LIGHT SWITCHES RELATIVE TO DOOR 2. SWINGS. CHECK HEIGHT AND LOCATION ON SITE.
- USE ONLY SPECIFIED HEREIN. REFER ALTERNATIVES WITH SAMPLES AND SPECIFICATIONS TO ENGINEER FOR APPROVAL.
- 4. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COORDINATION WITH THE SUPPLY AUTHORITY INCLUDING PERMITS, INSPECTIONS AND CERTIFICATIONS.
- MOUNT SWITCH TOGGLES ON PRE-FABRICATED SWITCH PLATES WITH LABEL 5. INSERT SLOTS.
- 6. EMERGENCY LIGHT CIRCUITS TO BE CONNECTED TO THE UNSWITCHED ACTIVE
- ELECTRICAL CONTRACTOR TO HOLD THE SINGLE SITE ELECTRICAL WORK PERMIT FOR ALL ELECTRICAL WORKS. ELECTRICAL WORKS BY OTHER CONTRACTORS 7. SHALL BE SUPERVISED AND CHECKED BY THE ELECTRICAL CONTRACTOR. ALL COSTS SHALL BE INCLUDED IN THE CONTRACT SUM.
- CIRCUIT FOR THE FIRE ALARM PANEL SHALL BE OF THE FIRE RATED TYPE AND SUPPLIED FROM ESSENTIAL SERVICES.
- 9. ELECTRICAL CONTRACTOR TO PROVIDE ALL CONDUITS AND CABLE DUCTING AS REQUIRED BY TELECOMMUNICATION, DATA, MATV AND SECURITY SYSTEM WORKS.
- SPECIFICATIONS AND DATASHEETS OF ALL EQUIPMENT SHALL BE SUBMITTED TO 10. ENGINEER FOR APPROVAL PRIOR TO ORDERING, USE ONLY EQUIPMENT SPECIFIED HEREIN. NO ALTERNATIVES PERMITTED BY ELECTRICAL CONTRACTOR.
- POSITION ALL FITTINGS, LIGHT AND POWER SHALL BE MARKED WITH CHALK FOR ARCHITECT / SERVICES ENGINEERS APPROVAL PRIOR TO PERMANENT INSTALLATION
- 12. POWER OUTLETS FOR AC INDOOR UNITS, SECURITY ALARM PANEL, CCTV RACK & COMMUNICATION RACK SHALL HAVE INTEGRATED SURGE PROTECTION
- 13. CONNECT A MAXIMUM OF 16 LUMINARIES PER FINAL SUB-CIRCUIT UNLESS NOTED
- WHERE CIRCUIT NUMBERS ARE INDICATED ON THE DRAWING CONNECT ONLY THE GPO'S SHOWN TO THAT CIRCUIT. OTHERWISE MAXIMUM NUMBERS OF GPO POINTS ON A CIRCUIT SHALL NOT EXCEED 6 POINTS. CONFIRM FINAL QUANTITIES PRIOR TO MANUFACTURE OF DISTRIBUTION BOARDS.
- CLEANERS GPO TO BE MOUNTED AT 300MM HEIGHT.
- 16. PENETRATIONS FOR ELECTRICAL SERVICES WORKS TO BE MADE BY BUILDER AND FIRE RATED SEALING OF PENETRATION BY ELECTRICAL SERVICES CONTRACTOR.
- 17. ELECTRICAL CONTRACTOR TO PROVIDE SUB-MAINS FROM MSB-CYRO LAB BUILDING TO THIS POINT ONLY.
- MECHANICAL CONTRACTOR TO PROVIDE DB-MSSB AND ALL CIRCUIT BREAKERS, FITTINGS, WIRING FROM THIS POINT ONWARDS TO MECHANICAL SERVICES PLANT.

## **ABBREVIATIONS**

ACP	ACCESS CONTROL PANEL
AFFL	ABOVE FINISH FLOOR LEVEL
APFCU	AUTOMATIC POWER FACTOR CONTROL UNIT
ATS	AUTOMATIC TRANSFER SWITCH
CP	CABLE PIT
DB	DISTRIBUTION BOARD
EFL	ENERGY FIJI LIMITED (SUPPLY AUTHORITY, ELECTRICITY REGULATORY ORGANIZATION
F/A	FROM ABOVE
F/B	FROM BELOW
FCC	FIELD CABLE CONNECTION
GEN	GENERATOR
GCP	GENERATOR CONTROL PANEL
GPO	GENERAL PURPOSE OUTLET
HL	HIGH LEVEL
MCB	MINIATURE CIRCUIT BREAKER
МССВ	MOULDED CASE CIRCUIT BREAKER
MSB	MAIN SWITCHBOARD
MSSB	MECHANICAL SERVICES SWITCHBOARD
MBS	UPS MAINTENANCE BYPASS SWITCH
NTS	NOT TO SCALE
N/A	NOT APPLICABLE
T/A	TO ABOVE
T/B	TO BELOW
UPS	UNINTERRUPTIBLE POWER SUPPLY
WP	WEATHER POOF

## **LINE TYPES**

LOW VOLTAGE OVERHEAD LINE	LV
HIGH VOLTAGE OVERHEAD LINE	——— HV ———
CIRCUIT & SWITCH	

## **POWER SYMBOLS**

Y	SINGLE GPO OUTLET MOUNTED AT 300mm A.F.F.L 10A UNLESS OTHERWISE SPECIFIED
*	DOUBLE DUPLEX GENERAL PURPOSE OUTLET MOUNTED AT 300mm AFFL UNLESS OTHERWISE SPECIFIED.
ХK	GENERAL PURPOSE DOUBLE OUTLET MOUNTED AT 300mm AFFL UNLESS OTHERWISE SPECIFIED. "X" DENOTES THE NUMBER OF OUTLETS.
X	SINGLE PHASE PERMANENT ISOLATOR MOUNTED AT 300mm AFFL UNLESS OTHERWISE SPECIFIED. 'X' DENOTES THE POWER RATING.
X <sub>4</sub>	THREE PHASE PERMANENT ISOLATOR MOUNTED AT 300mm AFFL UNLESS OTHERWISE SPECIFIED. "X" DENOTES THE POWER RATING.
РВ	FLOOR MOUNTED POWER BOX
PC	PHOTOCELL SWITCH
	ELECTRICAL MAIN SWITCHBOARD.
	ELECTRICAL DISTRIBUTION BOARD
X	EQUIPMENT MOUNTING HEIGHT
RM	REVENUE METER
-	SUB-MAIN SWITCHBOARD

## **SCHEMATIC SYMBOLS**

<b>™</b> ATS	AUTOMATIC TRANSFER SWITCH
x <del>O</del>	DIESEL GENERATOR. 'X' DENOTES THE kVA RATING OF THE GENERATOR
GCP	GENERATOR CONTROL PANEL
×	CIRCUIT BREAKER. 'X' DENOTES THE CURRENT RATING
×	SWITCH. 'X' DENOTES CURRENT RATING
-010-	DELAYED OPEN
-d-	DELAYED CLOSE
-0'0-	ISOLATION SWITCH
	FUSE
<u></u>	EARTH
	SINGLE PHASE LINE
-///-	THREE PHASE LINE
<b>*</b>	CABLE TYPE
<b></b> >	CURRENT TRANSFORMER (SHALL BE REVENUE CLASS TO EFL STANDARDS)
PM	POWER LOGIC METER (SMART METER WITH NETWORK CONNECTION CAPABILITY. METER SHALL BE REVENUE CLASS TO EFL STANDARDS)

## **COMMUNICATIONS AND SECURITY SYMBOLS**

H.	DOUBLE RJ45 OUTLET FOR DATA & VOICE OUTLET MOUNTED AT 300mm AFFL UNLESS OTHERWISE SPECIFIED. (2xCAT 6 CABLES)
п <mark>Ч</mark>	n x RJ45 DATA OUTLET ON FACEPLATE MOUNTED AT 300mm AFFL UNLESS OTHERWISE SPECIFIED. (nx CAT 6 CABLES) 'n' DENOTES # OF OUTLETS

# **DB NOMENCLATURE**

DB-Lx-y/P#

DISTRIBUTION BOARD CIRCUIT NUMBERS

CIRCUIT NUMBERS

P = POWER CIRCUIT, L = LIGHT CIRCUIT

x = LEVEL NUMBER. y = SUB LEVEL NUMBER

Pacific Community Communauté du Pacifique

T1 180123 TENDER ISSUE P1 071222 PRELIMINARY ISSUE NO: DATE:

PROJECT TITLE: **PACIFIC COMMUNITY** PROPOSED EXTENSION TO EXISTING BUILDING-CRYO LAB FNTC ROAD 2, NASINU.

GENERAL NOTES & LEGEND OF SYMBOLS

DRAWN: NP/ST SCALE: N/A DATE: 180123 TENDER ISSUE STATUS: E2

DESIGN: SP

3885 AUTOCAD FILE NO: 3885-E2-T1

A3

T1

**TENDER ISSUE** 

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REF	GENERIC DESCRIPTION	INSTALLATION	WHERE USED	DIMENSIONS mm	LIGHT SOURCE	WATTAGE	SYSTEM LUMENS	COLOUR TEMPERATURE	HOUSING	MINIMUM IP RATING	MINIMUM IK RATING	COMPLIANT FITTING	WARRANTY	SUPPLIER	PICTURE
LF1	Recessed Down Light	Recessed	Ground Floor	114L X 114W X 63H	LED	18	2000 lm	4000K	Metal-Plastic, Lens Cover: Optical PC	IP54	IK54	Smart Bright LED Downlight DN029B G2 LED20/CCT PSR-E D200 CAU	N/A	PHILIPS	
LF2	Flood Light	mounted at 4.8 meter height	Outside	336L x 482W x 37.7H	LED	200	24000lm	6500K	Aluminium Die-casting, Lens Cover: Optical PC	IP65	IK08	Smart bright floodlight BVP151 LED240/CW PSU 200W SWB G2 CN	N/A	PHILIPS	4
E1	Maintained LED Emergency Exit Light	Surface Mount Above Exit Doors	Exit Doors	355Lmm x 215Wmm x 80Hmm	LED	2.7 Watts (Standby), 5.1 Watts (Max)	NA	NA	ABS body and diffuser with polycarbonate clear tamper proof cover	IP20	NA	Phillips Maintained Exit Light With Decal Surface Mount	N/A	PHILIPS	
E2	Emergency Luminiare	Surface Mount	Ground floor	620L x 33W x 45H x 80D	LED	4.0 Watts (Standby), 5.6 Watts (Max)	180Lm	5000K	ABS body and diffuser with polycarbonate clear tamper proof cover	IP20	IK2	Philips Emergency downlight EM120B LED2S EL3 WH	3 YEARS	PHILIPS	(B)

PROPOSED LIGHT FITTING SCHEDULE

SCALE: N/A

TENDER ISSUE



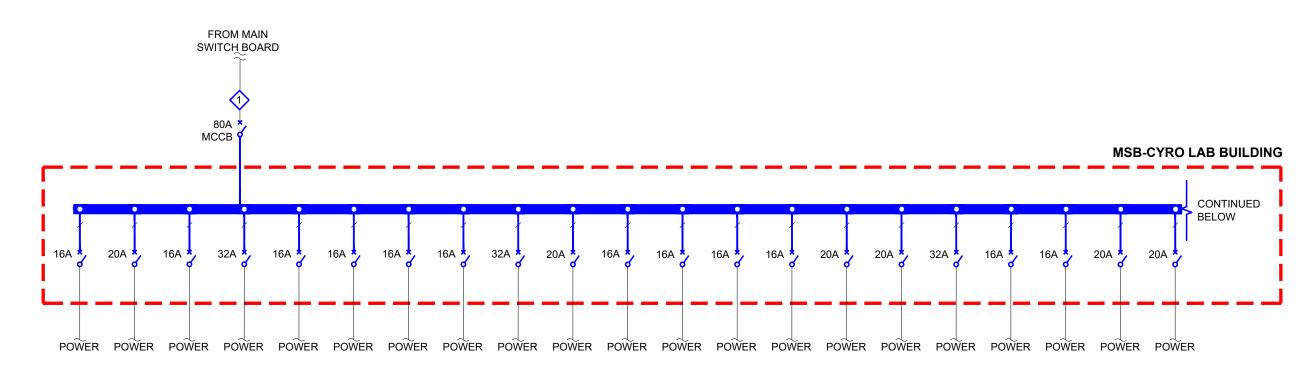


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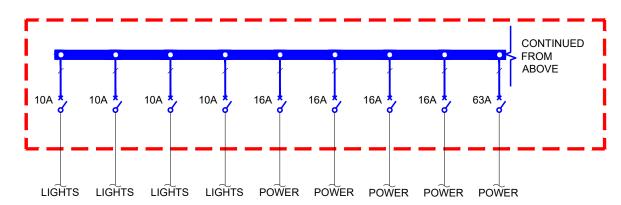
PROPOSED LIGHT FITTING SCHEDULE

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## NOTE:

- 1. THE ELECTRICAL CONTRACTOR SHALL TRACE EACH CIRCUIT AND IDENTIFY THE LOAD CONNECTION AND FITTING OR EQUIPMENT NUMBER. THE ELECTRICAL CONTRACTOR SHALL AFFIX COMPUTER PRINTED LABELS ADJACENT TO THE CORRESPONDING CIRCUIT BREAKERS ON THE SWITCHBOARD
- 2. EXISTING SUB-MAINS CABLE FROM REMOTE SITE MAIN SWITCHBOARD THIS CABLE SHALL BE UPGRADED / REPLACED BY OTHERS SEPARATE SCOPE TO THIS PROJECT



1 EXISTING ELECTRICAL SCHEMATIC

SCALE: N/A

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ARCHITECTS

AGENTECTS

OSTORIC COMMUNITATION
PROVINCE PROVINCES

FAMOR RECORDER

FAMOR RECORDE

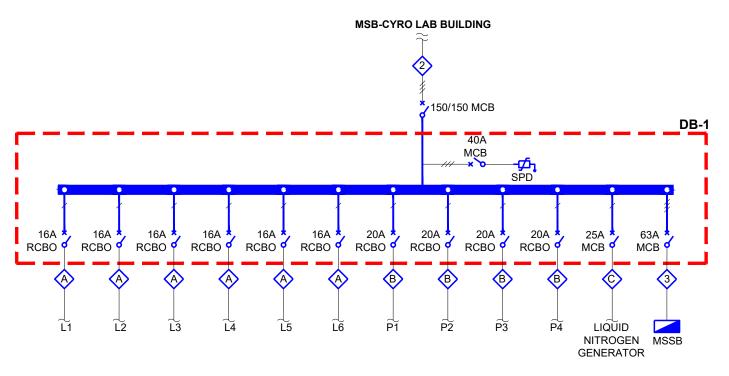


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PROJECT TITLE:  PACIFIC COMMUNITY  PROPOSED EXTENSION TO EXISTING BUILDING-CRYO LAB FNTC ROAD 2, NASINU.	
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EXISTING ELECTRICAL SCHEMATIC

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L1 7 Lighting Points L2 9 Lighting Points 7 Lighting Points L3 7 Lighting Points L5 7 Lighting Points L6 6 Lighting Points Growth Room Points (GPO) P1 Lab Room Points (GPO) Storage Room Points (GPO) Liquid Nitrogen Storage Room Points (GPO)

1. DB-1 IS ONLY FOR THE PROPOSED NEW CYRO LAB



## PROPOSED ELECTRICAL SCHEMATIC (DB-1)

SCALE:

REF	FROM	то	CABLE SIZE	INSTALLATION
1	EXISTING MSB	MSB-CYRO LAB BUILDING	1 X 4C + E 10mm² Cu/PVC/PVC	UNDERGROUND
2	MSB-CYRO LAB BUILDING	DB-1	1 X 4C + E 25mm² Cu/PVC/PVC	UNDERGROUND
3	DB-1	MSSB	1 X 4C + E 10mm² Cu/PVC/PVC	ELECTRICAL CONDUIT / CATENARIES
Α	DB-1	LIGHTS	1.5mm 2C + E Cu TPS	ELECTRICAL CONDUIT / CATENARIES
В	DB-1	POWER POINTS	2C + E 2.5mm² Cu TPS	ELECTRICAL CONDUIT / CATENARIES
С	DB-1	LN GENSET	4C + E 10mm² Cu/PVC/PVC	ELECTRICAL CONDUIT / CATENARIES

2

PROPOSED CABLE SCHEDULE

E5

SCALE: N/A

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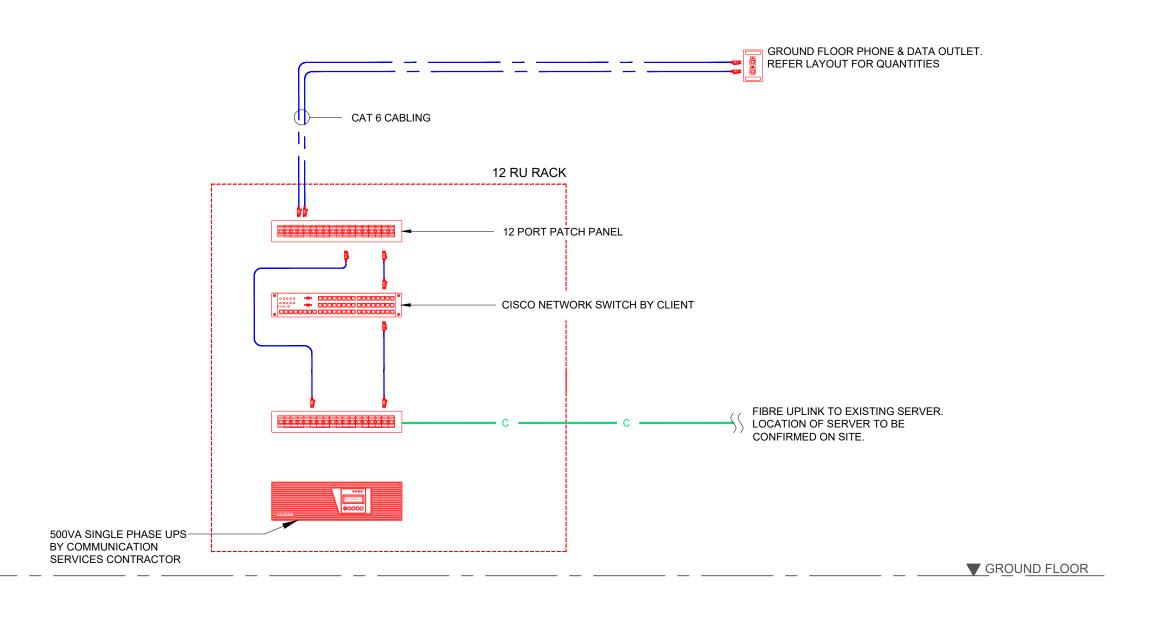


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PROPOSED ELECTRICAL SCHEMATIC & CABLE SCHEDULE

DESIGN:	SP	PROJECT NO:
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STATUS:	TENDER ISSUE	E5   A3   T1





## PROPOSED COMMUNICATIONS SCHEMATIC DIAGRAM

SCALE: N/A

## NOTE:

1. THE COMMUNICATION CONTRACTOR TO TRACE AND IDENTIFY THE CONNECTION OF DATA POINTS TO EXISTING SERVER.

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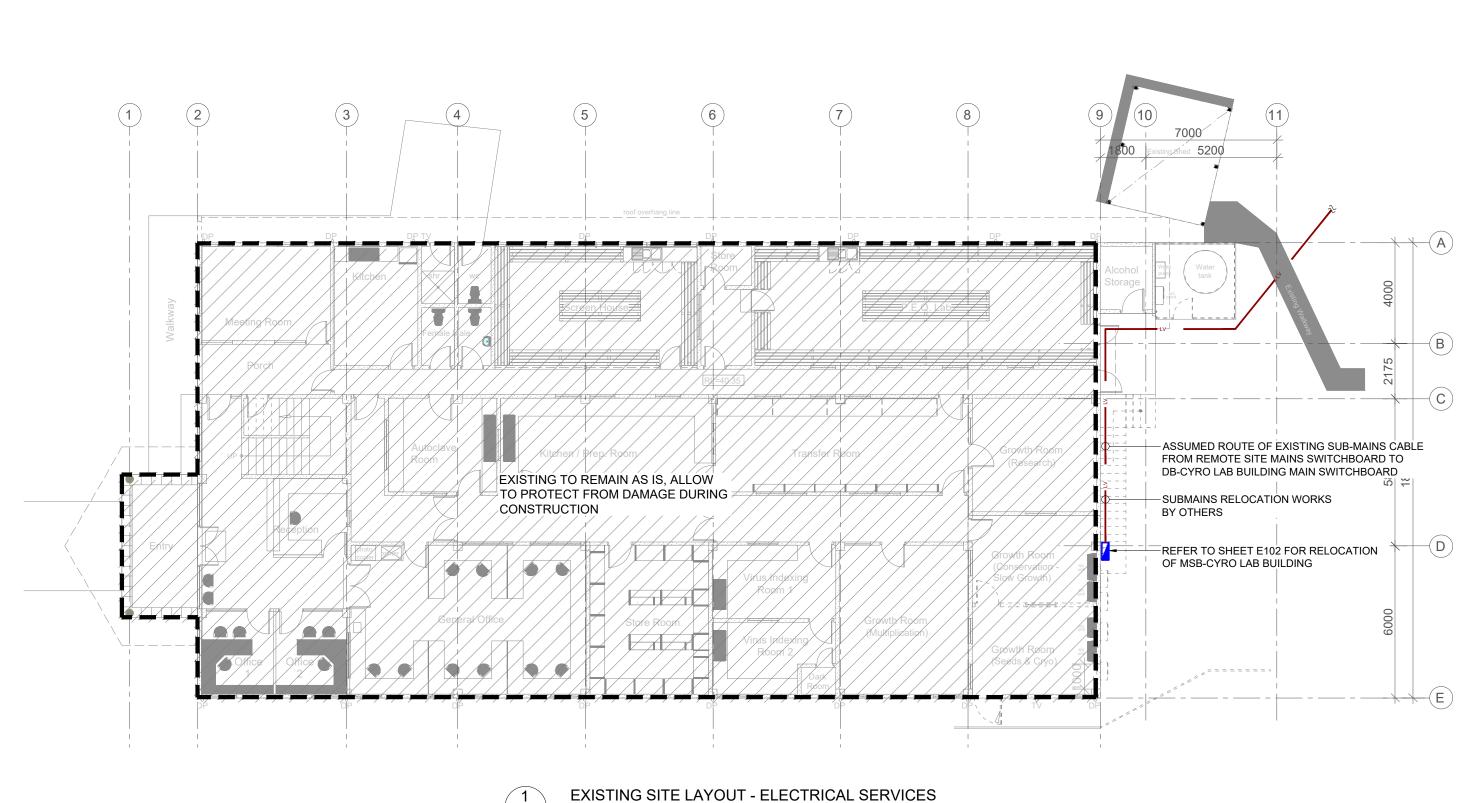
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PACIFIC COMMUNITY PROPOSED EXTENSION TO EXISTING BUILDING-CRYO LAB FNTC ROAD 2, NASINU.	
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1	FNTC ROAD 2, NASINU.
	DRAWING TITLE:
	PROPOSED COMMUNICATIONS SCHEMATIC DIAGRAM

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	STATUS:	TENDER ISSUE	E6 A3 T1



1 E100

100 SCALE: 1:150

## NOTES:

- 1. SUBMAINS UPGRADE WORKS BY OTHERS
- 2. ALL TPS EXTENSIONS FOR RELOCATION SHALL BE DONE BY THE ELECTRICAL CONTRACTOR
- 3. THE ELECTRICAL CONTRACTOR TO ENSURE THERE IS POWER ON SITE WHEN RELOCATION WORKS ARE DONE.

# **TENDER ISSUE**







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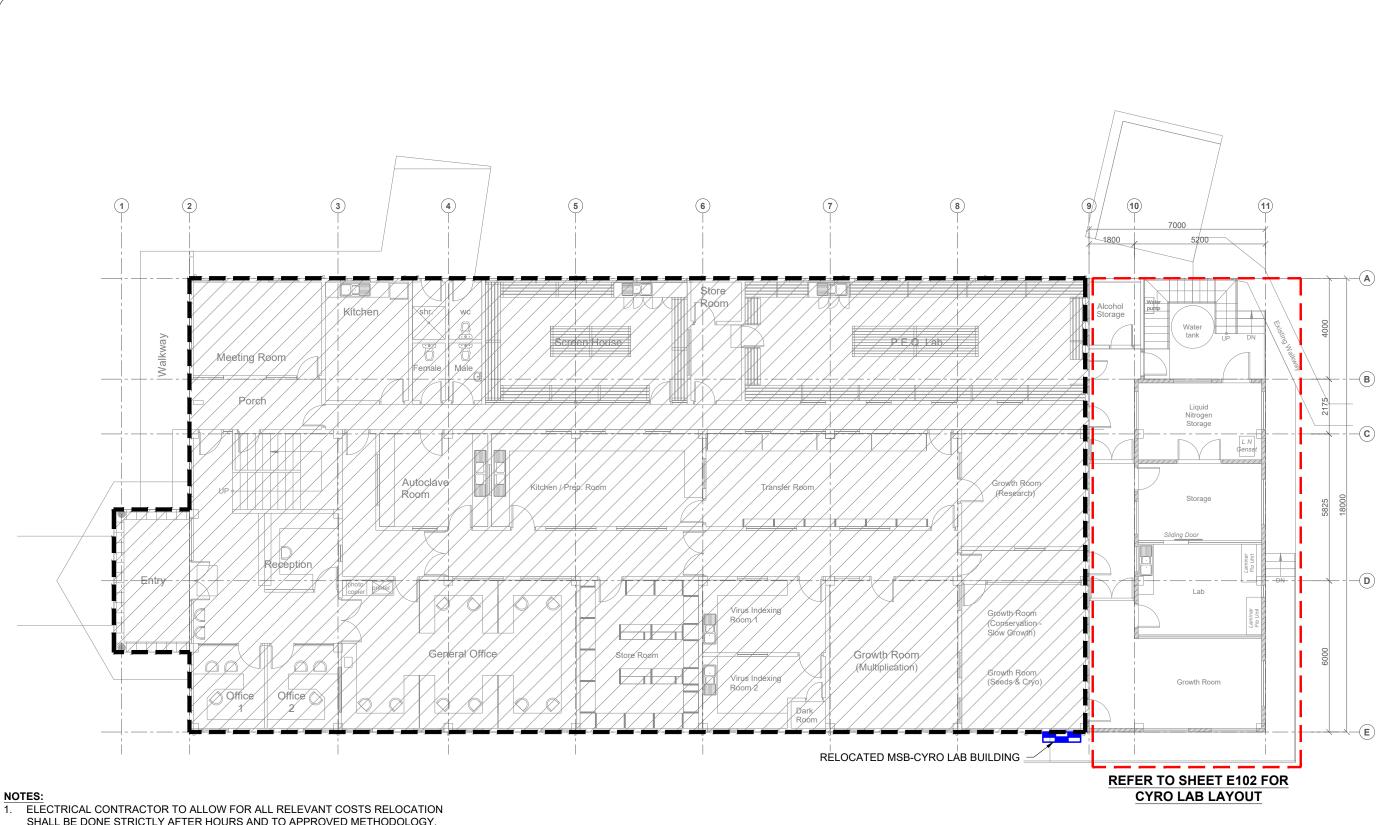
PACIFIC COMMUNITY
PROPOSED EXTENSION TO EXISTING BUILDING-CRYO LAB
FNTC ROAD 2, NASINU.

DRAWING TITLE:

EXISTING SITE LAYOUT - ELECTRICAL

SERVICES

3	DESIGN:	SP	PROJECT NO: 3885  AUTOCAD FILE NO: 3885-E100-T1  SHEET NO: SIZE: T1				
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- SHALL BE DONE STRICTLY AFTER HOURS AND TO APPROVED METHODOLOGY.
- 2. ELECTRICAL CONTRACTOR SHALL ENSURE THAT POWER SUPPLY TO CRITICAL LAB EQUIPMENT IS UNINTERRUPTED WHILST THE CHANGEOVER IS HAPPENING, ALLOW TO PROVIDE A PORTABLE GENERATOR FOR THIS WORK DURATION.
- ELECTRICAL CONTRACTOR TO ALLOW ALL RELEVANT COSTS FOR EXTENDING THE EXISTING SUB-MAINS CABLE FROM THE REMOTE SITE MAINS SWITCHBOARD TO THE NEW LOCATION OF THIS MSB-CYRO LAB BUILDING.
- 4. ELECTRICAL CONTRACTOR TO ALLOW ALL RELEVANT COSTS FOR EXTENDING ALL OUTGOING CABLES FROM CURRENT LOCATION OF MSB-CYRO LAB BUILDING TO ITS NEW LOCATION.



PROPOSED SITE LAYOUT - ELECTRICAL SERVICES

E101

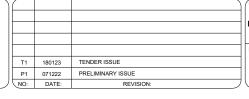
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# **TENDER ISSUE**

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PROJECT TITLE: PACIFIC COMMUNITY PROPOSED EXTENSION TO EXISTING BUILDING-CRYO LAB FNTC ROAD 2, NASINU. PROPOSED SITE LAYOUT - ELECTRICAL

SERVICES

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	QA:	AA/NP	AUTOCAD FILE NO:			
	SCALE:	1:150	3885-E101-T1			
	DATE:	180123	QUEET NO. OFFICION			

E101

STATUS: TENDER ISSUE

