# **FOR CONSTRUCTION**

· ·	1			D	ATE OF	ISSUI	E	
		DOCUMENT DETAILS	02/12/2016	16/01/2017	28/02/2017	12/10/2017		
SITE No.	SHEET	SHEET NAME	ISSUE No.					
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	-							
11								



# **IBC DRAWING PACKAGE**

**BULLOCKS FLAT TERMINAL** KOSCIUSZKO NATIONAL PARK NSW 2627 SITE No. S3233



30 OCT 2017

DEVELOPMENT ASSESSMENT AND SYSTEMS PERFORMANCE RECEIVED - JINDABYNE





RF Industries Pty Ltd 99 Station Road Seven Hills NSW 2147 Locked Bag 2007 Seven Hills NSW 1730 Ph: (02) 8814 2300 Fax: (02) 9630 0844

**INDEX** 

REV 01 02/12/2016 PRELIMINARY DESIGN

CHANGE / ISSUE HISTORY BY **DETAIL** JR

APPROVED: BQ

JR

PK

AC

**BULLOCKS FLAT TERMINAL** 

S3233

DRAWING No. SHEET No. G1

16/01/2017 03 28/02/2017 12/10/2017

DESIGNED: PK

PRELIMINARY DESIGN **DETAILED DESIGN** FOR CONSTRUCTION

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TITLE

**PROJECT** 

**SITE ACCESS DETAILS** 

SITE NAME:

**BULLOCKS FLAT TERMINAL IBC.** 

SITE ADDRESS:

KOSCIUSZKO NATIONAL PARK NSW 2627.

SITE CONTACT NAME:

MICHAEL FANNING.

SITE CONTACT PHONE No.:

(02) 6459 4502. M: 0419 993 830. michael.fanning@perisher.com.au.

SITE CONTACT EMAIL: **HOURS OF WORK:** 

INSTALLATION & MAINTENANCE WORKS TO BE COMPLETED OUTSIDE OF THE

SKI SEASON.

**SECURITY REQUIREMENTS:** 

N/A.

**SECURITY COMPANY:** 

N/A.

**OTHER COMMENTS:** 

PARKING:

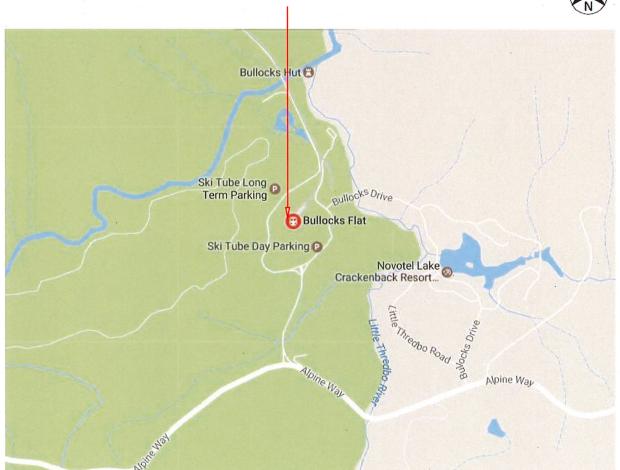
PUBLIC PARKING IS AVAILABLE AT BULLOCKS FLAT TERMINAL.

SITE IS SUBJECT TO SNOW CONDITIONS, CHECK WITH SITE CONTACT PRIOR TO

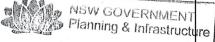
ARRIVAL.

#### **BULLOCKS FLAT TERMINAL**





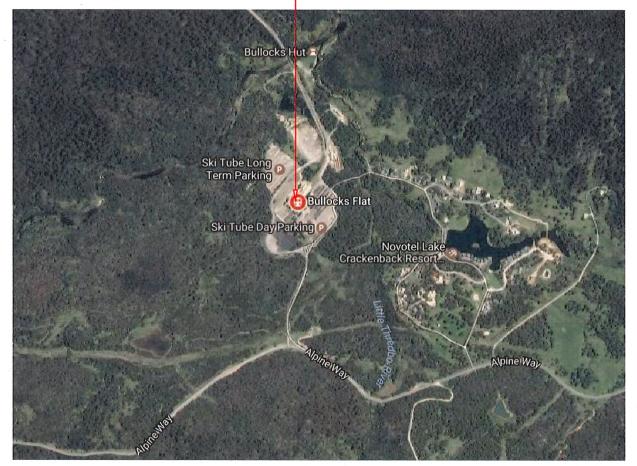
SITE NUMBER:		Sxxxx			
COORDINATE SOURCE	: :	GOOGLE EARTH			
REFERENCE LOCATION	<b>l</b> :	CENTRE OF BUILDING			
DATUM:	GDA94 (MGA94)	LATITUDE	26 4420208		
ZONE:	55	LATITUDE:	-36.442830°		
EASTING:	629248	LONGITUDE	140 4421160		
NORTHING:	5965967	LONGITUDE:	148.442116°		



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DEVELOPMENT ASSESSMENT AND SYSTEMS PERFORMANCE RECEIVED DABYNE

### **BULLOCKS FLAT TERMINAL**



### FOR CONSTRUCTION



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SITE ACCESS & LOCALITY PLAN

**BULLOCKS FLAT TERMINAL** 

DESIGNED: PK DRAWN: PK APPROVED: BQ **CHANGE / ISSUE HISTORY** BY DATE 02/12/2016 JR PRELIMINARY DESIGN 02 16/01/2017 PRELIMINARY DESIGN JR 03 28/02/2017 PK **DETAILED DESIGN** 

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TITLE

**PROJECT** 

DRAWING No. SHEET No. 1/1 FOR CONSTRUCTION **PROJECT SCOPE** 

SITE DESIGN BRIEF ISSUE No:

1, DATED 25/01/2017.

SITE DESIGN VISIT DATE: CATEGORY:

01/02/2017. STANDARD.

SCOPE:

TO PROVIDE DEDICATED LTE2600, L1800, LTE700, U2100/L21 AND U900

COVERAGE TO BULLOCKS FLAT TERMINAL IBC RAILWAY STATION AND PROVIDE A BEST EFFORT FOR THE NEIGHBOUR RAILWAY TUNNELS.

**RISKS IDENTIFIED AT SDV:** 

N/A.

**WORK AUTHORITY NUMBERS** 

	L700	U850	G900	U900	L1800	U2100	L2100	L2300	L2600
W/A No.	368488	-	8	368487	368490	368486	368486		368489

SERVING/SURROUNDING CELL INFORMATION (BCCH/SC/PCI)

	L700	U850	G900	U900	L1800	U2100	L2100	L2300	L2600
IBC						* .			
				312, 315,		312,			17
NAACDO				308, 309,		315,501,			2.000
MACRO			10.8	304, 305,	r <sup>a</sup>	502, 304,			
				306	1	305, 306		1	

**BASIC BUILDING DESCRIPTION** 

**BUILDING FUNCTION:** 

**RAILWAY STATION.** 

**POPULATION COUNT:** 

UNDER INVESTIGATION BY SAE.

TOTAL No. OF FLOORS:

1. 6 m.

APPROX. HEIGHT PER FLOOR: APPROX. FLOOR DIMENSIONS:

68m x 60m.

**EXTERNAL WALL MATERIAL:** 

GLASS AND ROCK WALLS.

INTERNAL WALL MATERIAL:

GYPROCK, MASONARY BLOCK AND CONCRETE.

CEILING MATERIAL/ TYPES:

CEILING TILES, SET CEILING AND OPEN SLABS.

OTHER COMMENTS:

THE TERMINAL HAVE APRROXIMATELY 6m HIGH PITCHED ROOF.

**DEPLOYED EQUIPMENT ON SITE** 

**LEAD OPERATOR:** 

N/A.

**OPERATORS/TECHNOLOGIES:** 

NIL.

No. OF SECTORS:

N/A.

**EQUIPMENT TYPE:** OTHER COMMENTS: N/A. N/A. **OPERATOR/TECHNOLOGY DEPLOYMENTS ON SITE** 

	L700	U850	G900	U900	L1800	U2100	L2100	L2300	L2600					
OPTUS								# #						
TELSTRA				- 9										
VHA														

NOTE: 'X' INDICATES EXISTING TECHNOLOGY IN UNKNOWN CONFIGURATION.

PROPOSED OPERATOR/TECHNOLOGY DEPLOYMENTS

HOL COLD C	OF COLD OF EIGHT ONLY TECHNOLOGY DEFECTIVIENTS												
	L700	U850	G900	U900	L1800	U2100	L2100	L2300	L2600				
OPTUS	(1+0+0)	= =		(1+0+0)	(1+0+0)	(2+0+0)	(1+0+0)		(1+0+0)				
TELSTRA		_							2				
VHA		=							9				

NOTE: 'X' INDICATES EXISTING TECHNOLOGY IN UNKNOWN CONFIGURATION.

**SOLUTION DETAILS** 

TYPE OF SOLUTION:

PASSIVE IBC.

**CARRIER AGGREGATION:** 

LTE1800 + LTE2600 AND LTE2100 + LTE1800.

**EQUIPMENT TYPE/MODEL:** 

**HUAWEI 3900L WITH RFUs..** 

TOTAL No. OF RACKS/TYPE:

2x ELTEK MER, 1x HUAWEI RECTIFIER &1x HUAWEI 3900L.

RF IMPACT ON EXISTING SYSTEM:

**COVERAGE ANTENNAS:** 

4x RFI DAS6927-SOC-N, 2x RFI DAS6927-SDC-N.

OTHER COMMENTS: N/A.

**SECTORING DETAILS** 

**DEPLOYED CONFIG:** 

N/A.

PROPOSED CONFIG:

1 x SECTOR.

**FUTURE CONFIG:** 

1 x SECTOR.

**EQUIPMENT LOCATION** 

**DEPLOYED EQUIP. LOCATION:** 

N/A.

PROPOSED EQUIP. LOCATION:

SWITCH ROOM.

REMOTE EQUIP. LOCATION:

**BACKBONE FEEDER LOCATION:** 

BACKBONE FEESER WILL RUN ABOVE CEILING SPACE.

**IBC ANTENNA LOCATION:** 

ALL ANTENNAS INSTALLED ON SUSPENDED CEILING, CABLE TRAY OR

EXPOSED SLAB AND VISIBLE FROM THE FLOOR.

DONOR ANTENNA LOCATION:

N/A.

L23 GPS ANTENNA LOCATION:

N/A.

**OTHER COMMENTS:** REFER TO LAYOUT AND EQUIPMENT DRAWINGS FOR LOCATION OF

ANTENNAS, PASSIVE DEVICES AND ACTIVE EQUIPMENT.

# FOR CONSTRUCTION

NOW GOVERNMENT Planning & Infrastructure

30 OCT 2017

DEVELOPMENT ASSESSMENT AND SYSTEMS PERFORMANCE

RECEIVED - JINDABYNE



RF Industries Pty Ltd 99 Station Road Seven Hills NSW 2147 Locked Bag 2007 Seven Hills NSW 1730 Ph: (02) 8814 2300 Fax: (02) 9630 0844



TITLE SITE SPECIFIC NOTES - 1

**BULLOCKS FLAT TERMINAL** 

DESIGN	IED: PK		DRAWN:	PK	APPROVED:	BQ	
		2	CHANGE /	ISSUE HISTORY	1		
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03	28/02/2017	DETAIL	ED DESIGN	1			F
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SHEET No. G3.1 S3233 1/2 12/10/2017 FOR CONSTRUCTION **AC POWER** 

**DEPLOYED AC POWER:** PROPOSED AC POWER: MAIN SWITCH BOARD IS PRESENT IN THE SWITCH ROOM.

A NEW AUTHORITY METERED 3PHASE FEED CAPABLE OF 63AMP PER PHASE

TO THE SWITCH ROOM IS REQUIRED. AC POWER INSTALLATION WORKS ARE TO BE CARRIED OUT BY SKI TUBE ELECTRICIAN. A NEW ICS DBK0041

DISTRIBUTION BOARD/PLC IS ALSO TO BE INSTALLED IN THE SWITCH ROOM.

**DC POWER** 

DEPLOYED DC POWER:

NIL.

PROPOSED DC POWER:

A NEW HUAWEI RECTIFIER RACK WITH 4X RECTIFIERS AND 3X BATTERY STRINGS (AG12V100F). DC POWER REQUIREMENTS CALCULATED USING

OPTUS POWER CALCULATOR OM38347 VER. 5.2.

**TRANSMISSION** 

**DEPLOYED TX EQUIPMENT:** 

NIL.

HUAWEI ATN910B MS-NTU IN PROPOSED Tx RACK. PROPOSED TX EQUIPMENT:

TECHNOLOGY	CONFIGURATION	PIR (Mbps)	CIR (Mbps)	EIR (Mbps)	QUANTITY REQUIRED
2G (E1s)	EDGE	4	4	0	, :
3G (900)	HSPA+	36	12	24	1
3G (2100)	HSPA+ DUAL CELL	100	24	76	1
LTE700	10MHz, 2x2 MIMO	150	. 10	140	1
LTE900	5MHz, 2x2 MIMO	45	10	35	× v
LTE1800(METRO)	15MHz, 2x2 MIMO	250	10	240	2
LTE1800(REGIONAL)	15MHz, 2x2 MIMO	300	10	290	1
LTE2100	10MHz, 2x2 MIMO	150	10	140	1
LTE2300	2x20MHz, 4x2 MIMO, 2CC CA	400	10	390	
LTE2600	20MHz, 4x2 MIMO	300	10	290	1

#### **BTS/ NODE B WORKS**

ALL BTS MODULES ARE TO BE INSTALLED AS PER RACK LAY OUT DIAGRAM. SEE EQUIPMENT LAYOUT SHEETS FOR RACK LOCATIONS AND NUMBERING.

#### **KPI EXEMPTION AREAS**

REFER TO SHEETS X1.1 - X1.3 FOR DETAILS OF PROPOSED KPI EXEMPTION AREAS. ANY COVERAGE PROVIDED TO THESE AREAS MAY NOT MEET THE KPI REQUIREMENTS OUTLINED IN OPTUS IBC DESIGN GUIDELINES OM38047 VER. 3.1.

**ENVIRONMENTAL** 

**DEPLOYED COOLING:** 

PROPOSED COOLING: 1x MITSUBISHI 6KW SPLIT SYSTEM A/C UNIT (ICS PART No. VAX 0035)

MANAGED BY AN ICS DISTRIBUTION BOARD/PLC.

NO EXISTING SMOKE SENSOR. EXISTING BASE-BUILDING FIRE SPRINKLER

SYSTEM PRESENT. 1x SMOKE SENSOR INTEGRATED IN TO THE PROPOSED ICS

DOOR ALARM:

EQUIPMENT ROOM IS TO BE SHARED BETWEEN OPERATORS, NO EXISTING

DOOR ALARM PRESENT OR REQUIRED.

TEMPERATURE:

NO EXISTING TEMPERATURE SENSOR. 1x TEMPERATURE SENSOR INTEGRATED

IN TO THE ICS DB/PLC.

**OTHER COMMENTS:** 

FIRE DETECTION/ SUPRESSION:

N/A.

WHS DETAILS

WHS/INDUCTIONS:

ON-SITE SITE SPECIFIC INDUCTION REQUIRED, ARRANGE WITH SITE CONTACT

PRIOR TO ARRIVAL.

**CERTIFICATIONS:** 

MINIMUM WORK COVER WHS CARD. APPROPRIATE PPE AS REQUIRED.

PPE: **OBSERVED RISKS/HAZARDS:** 

NONE OBSERVED.

**OTHER COMMENTS:** 

THIS WHS INFORMATION DETAILS HAZARDS OBSERVED DURING THE SITE VISIT. ADDITIONAL HAZARDS MAY BE PRESENT THAT WERE NOT OBSERVED.

ALL VISITORS TO SITE ARE RESPONSIBLE FOR COMPLETING JSEA'S/SWM'S

AND ASSESSING HAZARDS IN THEIR WORK AREAS.

**OTHER INSTALLATION NOTES** 

**CORE HOLES:** 

FIRE STOPPING:

N/A. ALL CABLE INSTALLATION TO FOLLOWEXISTING PENETRATION.

INSTALLATION CONTRACTOR TO RE-INSTATE OR INSTALL FIRE STOPPING

MATERIAL ONCE CABLES ARE INSTALLED.

**EXPOSED FEEDER AREAS: OTHER COMMENTS:** 

ALL EXPOSED FEEDERS INSTALLED IN CONDUIT AND SADDLED EVERY 1m. N/A.

> NSW GOVERNMENT 🥻 Planning & Infrastructur

> > 3 0 OCT 2017

DEVELOPMENT ASSESSMENT AND SYSTEMS PERFORMANCE RECEIVED - JINDABYNE

### FOR CONSTRUCTION

APPROVED: BQ

BY



RF Industries Pty Ltd 99 Station Road Seven Hills NSW 2147 Locked Bag 2007 Seven Hills NSW 1730 Ph: (02) 8814 2300 Fax: (02) 9630 0844



SITE SPECIFIC NOTES - 2

**BULLOCKS FLAT TERMINAL** 

DATE **REV** 02/12/2016 PRELIMINARY DESIGN 01 16/01/2017 PRELIMINARY DESIGN

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JR SHEET No. PK 28/02/2017 DETAILED DESIGN DRAWING No. S3233 G3.2 AC 12/10/2017 FOR CONSTRUCTION

DRAWN: PK

**CHANGE / ISSUE HISTORY** 

DESIGNED: PK

#### WHS INFORMATION

ALL STAFF AND CONTRACTORS WORKING ON THIS PROJECT ARE TO COMPLY WITH:

- WORK HEALTH & SAFETY ACT 2011
- WORK HEALTH & SAFETY REGULATIONS 2011
- OCCUPATIONAL HEALTH & SAFETY ACT 2004 (VIC)
- OCCUPATIONAL HEALTH & SAFETY REGULATIONS 2007 (VIC)
- OCCUPATIONAL HEALTH & SAFETY ACT 1984 (WA)
- OCCUPATIONAL SAFETY & HEALTH REGULATIONS 1996 (WA)
- RELEVANT CODES OF PRACTICE

	WORK HEALTH AND S	AFETY	- SITE DETAILS				
	ACCESS & EGRESS		MOVING PLANT / TRAFFIC				
	CORING / DRILLING		PLANT & EQUIPMENT OPERATION (EWP				
	DEMOLITION / DISMANTLING		STRUCTURALALTERATIONS				
Х	POWER TOOLS		SERVICES (UNDERGROUND/OVERHEAD				
	FUMES / GAS		UV (SUNLIGHT)				
	FLYING / FALLING OBJECT / DEBRIS	EME EXPOSURE					
	HAZARDOUS MATERIALS		CONFINED SPACES				
	HOT WORKS (CUTTING / WELDING / GRINDING)		DANGEROUS GOODS				
	LIGHTING		FIRE / EXPLOSION				
	MATERIALS HANDLING (CRANE / FORKLIFTETC)	, /	WORKING AT HEIGHTS				
	NOISE		HOT / COLD ENVIRONMENT				
Χ	PUBLIC		LASERS				
Χ	MANUAL HANDLING						
	ENVIRONMENTA	L-SIT	E DETAILS				
	AIR QUALITY (DUST ETC)						
	HERITAGE & ARCHAEOLOGY						
Х	NOISE OR VIBRATION						
	WASTE DISPOSAL	/					
	TRAFFIC & PARKING						
	DANGEROUS GOODS (USE / SPILLS / STORAGE)						

NOTE THAT THIS INFORMATION DETAILS POSSIBLE RISKS / HAZARDS OBSERVED BY THE DESIGN ENGINEER DURING THE SITE DESIGN VISIT. ADDITIONAL RISKS/HAZARDS MAY BE PRESENT ON SITE THAT WERE NOT OBSERVED AT THE TIME OF THE VISIT. AS A MINIMUM THE INSTALLATION CONTRACTOR IS TO IMPLEMENT APPROPRIATE STEPS AND PROCEDURES TO MITIGATE THESE RISKS AND HAZARDS. THE INSTALLATION CONTRACTOR IS RESPONSIBLE FOR COMPLETING JSEA'S / SWM'S AND ASSESSING ALL RISKS / HAZARDS PRIOR TO COMMENCING WORKS.

#### **PPE MATRIX**

















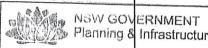












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**WORK HEALTH & SAFETY** 

**BULLOCKS FLAT TERMINAL** 

	DESIGN	IED: PK	DRAWN: PK	APPROVED: BQ	J
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	01	02/12/2016	PRELIMINARY DESIGN		JR
	02	16/01/2017	PRELIMINARY DESIGN	2	JR
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TITLE

DRAWING No. S3233 G4

1/1

SHEET

### **SCHEMATIC BLOCKS**

3/8" Straight Jumper Cable

3/8" Right Angle Jumper Cable

B. / 19

1/4" Coaxial Cable

1/2" Superflex Coaxial Cable

1/2" Coaxial Cable

7/8" Coaxial Cable

1 1/4" Coaxial Cable

**CAT-5 Coaxial Cable** 

Fibre Optic Cable

AC Power Cable

DC Power Cable

Earth Cable

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Seven Hills NSW 1730 Ph: (02) 8814 2300 Fax: (02) 9630 0844

N-Female Connector

N-Male Connector

DIN - Female Connector

DIN - Male

Connector 

**SMA-Female** Connector

SMA-Male Connector

SC-APC Connector

SC-PC Connector

**Resistive Load** 

Cable Load

DC Block

CH H

Omni Antenna

Directional Omni Antenna

Panel Antonna

MIMO Omni Antenna



MIMO Panel Antenna



Yagi Antenna



**Directional Donor Antenna** 



**Grid Antenna** 



Log Periodic Antenna

TITLE

**PROJECT** 



2-Way Splitter



3-Way Splitter



4-Way Splitter







**Hybrid Combiner** 



Low/High Band Combiner



Low Band Combiner



**High Band Combiner** 



Multi Network Combiner



**Triplexer** 



Repeater



**Primary Hub** 



Sencondary Hab



Remote Unit



**Band Pass Filter** 

### LAYOUT BLOCKS

Omni Antenna/ MIMO Omni Antenna

Directional Omni Antenna



Panel Antenna/ **MIMO Panel Antenna** 



Yagi Antenna

**Directional Donor Antenna** 



**Grid Antenna** 



Log Periodic Antenna



**Equipment Room** 



Riser



Splitter Coupler



**Crossband Combiner** 



**Hybrid Coupler** 



Multi Network Combiner



**Triplexer** 



Repeater



Remote Unit



DESIGNED: PK

**Primary Hub** 

Secondary Hub

NSW GOVERNMENT Planning & Infrastructure

30 OCT 2017

DEVELOPMENT ASSESSMENT AND SYSTEMS PERFORMANCE RECEIVED - JINDAEYNE

## FOR CONSTRUCTION

APPROVED: BQ

**BULLOCKS FLAT TERMINAL** 

SYMBOLS, NOTES & LEGEND

CHANGE / ISSUE HISTORY BY REV DATE **DETAIL** JR 02/12/2016 PRELIMINARY DESIGN PRELIMINARY DESIGN JR 16/01/2017 PK 03 28/02/2017 DETAILED DESIGN

DRAWN: PK

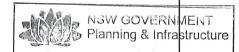
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DRAWING No. SHEET No. FOR CONSTRUCTION AC S3233 G5 12/10/2017









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**OPTUS** 

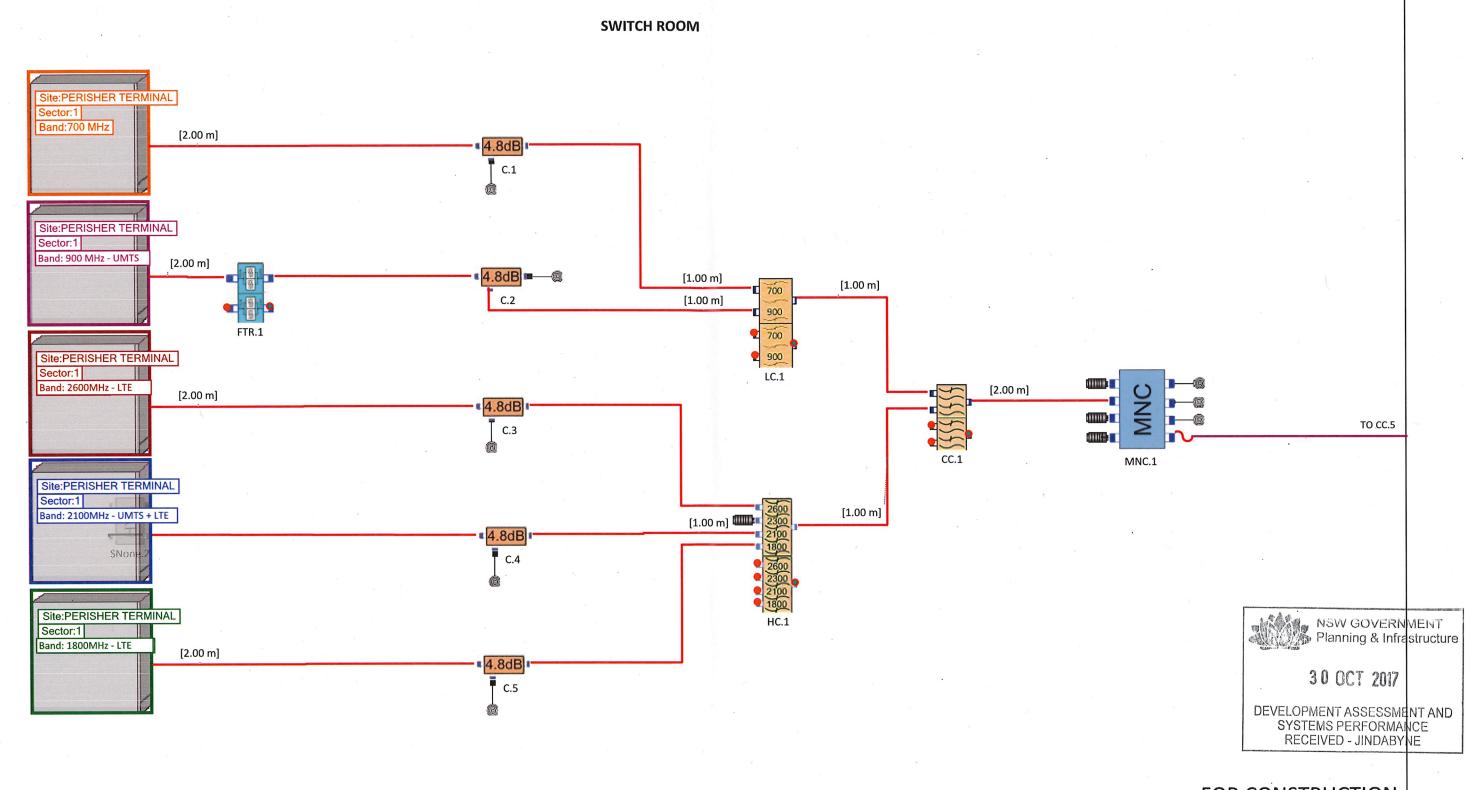
SECTORISATION PLAN - PROPOSED
 _

**BULLOCKS FLAT TERMINAL** 

	DESIGN	IED: PK		DRAWN:	PK	APPROVED:	BQ	5
				CHANGE /	ISSUE HISTORY			
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,	02	16/01/2017	PRELIM	IINARY DES	SIGN			JR
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		,		,		
DRAWING No.		SHEET No.	03 28/02/2017 DE		DETAILED DESIGN	PK
S3233	S1	1/1	Α	12/10/2017	FOR CONSTRUCTION	AC





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TITLE

# SYSTEM SCHEMATIC DIAGRAM PROJECT

# **BULLOCKS FLAT TERMINAL**

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DESIGNED: PK

DATE

**REV** 

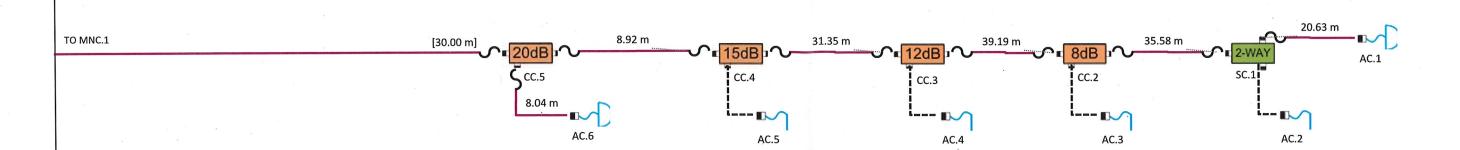
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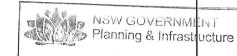
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APPROVED: BQ

BY





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## FOR CONSTRUCTION



RF Industries Pty Ltd 99 Station Road Seven Hills NSW 2147 Locked Bag 2007 Seven Hills NSW 1730 Ph: (02) 8814 2300 Fax: (02) 9630 0844

TITLE **PROJECT** 

SYSTEM SCHEMATIC DIAGRAM

**BULLOCKS FLAT TERMINAL** 

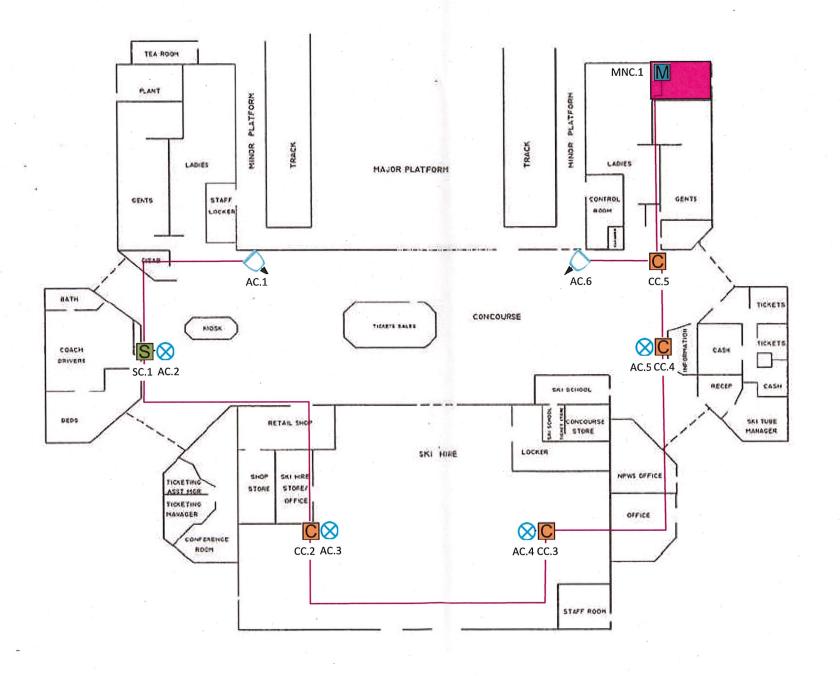
APPROVED: BQ DESIGNED: PK DRAWN: PK CHANGE / ISSUE HISTORY BY REV DATE JR 01 02/12/2016 PRELIMINARY DESIGN JR 02 PRELIMINARY DESIGN 16/01/2017 03 28/02/2017 DETAILED DESIGN

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PK DRAWING No. SHEET No. AC S3233 S2.2 2/2 12/10/2017 FOR CONSTRUCTION



### BULLOCKS FLAT TERMINAL





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DEVELOPMENT ASSESSMENT AND SYSTEMS PERFORMANCE RECEIVED - JINDABYNE

Site Scale: 10.00 m

### FOR CONSTRUCTION

APPROVED: BQ



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OPTUS Yes

	SYSTEM LAYOUT DIAGRAM - CONCOURSE
PROJECT	•

**BULLOCKS FLAT TERMINAL** 

			REV	DATE	DETAIL	BA	
L			01	02/12/2016	PRELIMINARY DESIGN	JR	
_				02	16/01/2017	PRELIMINARY DESIGN	JR
	DRAWING No. SHEET N		SHEET No.	03	28/02/2017	DETAILED DESIGN	PK
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DESIGNED: PK

DRAWN: PK

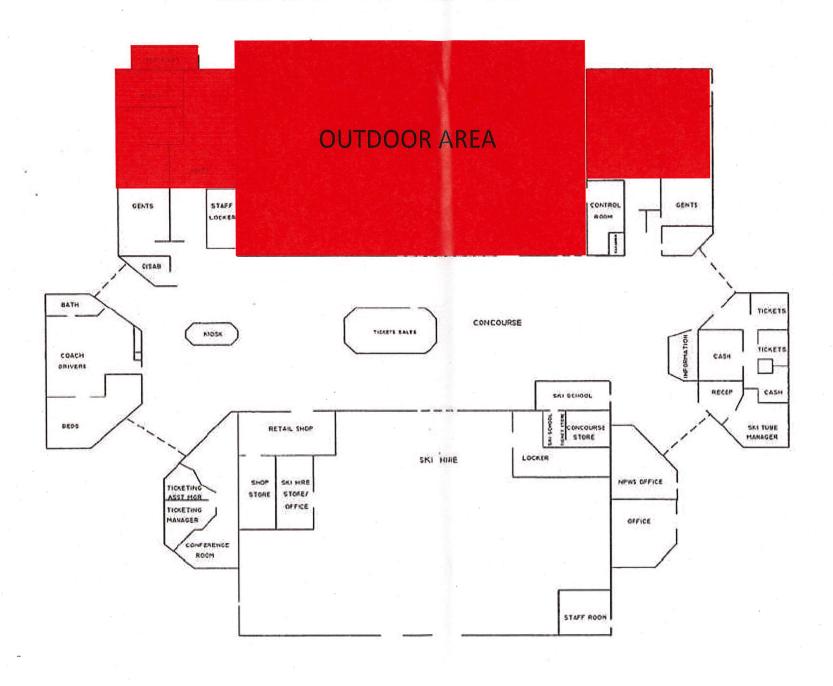
**CHANGE / ISSUE HISTORY** 

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### BULLOCKS FLAT TERMINAL





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Site Scale: 10.00 m

# FOR CONSTRUCTION



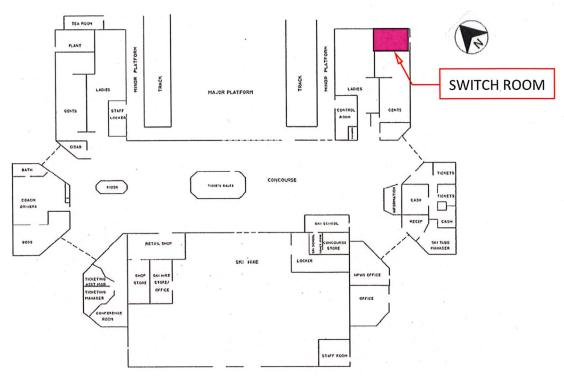
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TITLE	KPI EXEMPTION AREAS - CONCOURSE							DRAWN: PK	APPROVED: BQ	0
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R								DETAIL	* ,	ВҮ
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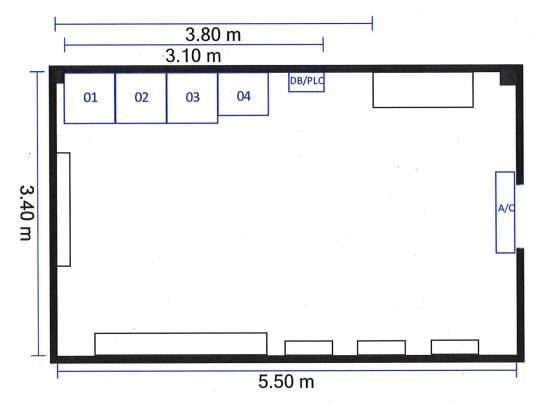




#### PROPOSED EQUIPMENT ROOM LOCATION



PROPOSED OPTUS EQUIPMENT INSTALLATION



PROPOSED OPTUS EQUIPMENT IN SWITCH ROOM



3 0 OCT 2017

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OPTUS

IILE		DESIGI	NED: PK
	EQUIPMENT LAYOUT		
		REV	DATE
PROJECT	BULLOCKS FLAT TERMINAL	01	02/12/2016
		02	16/01/2017

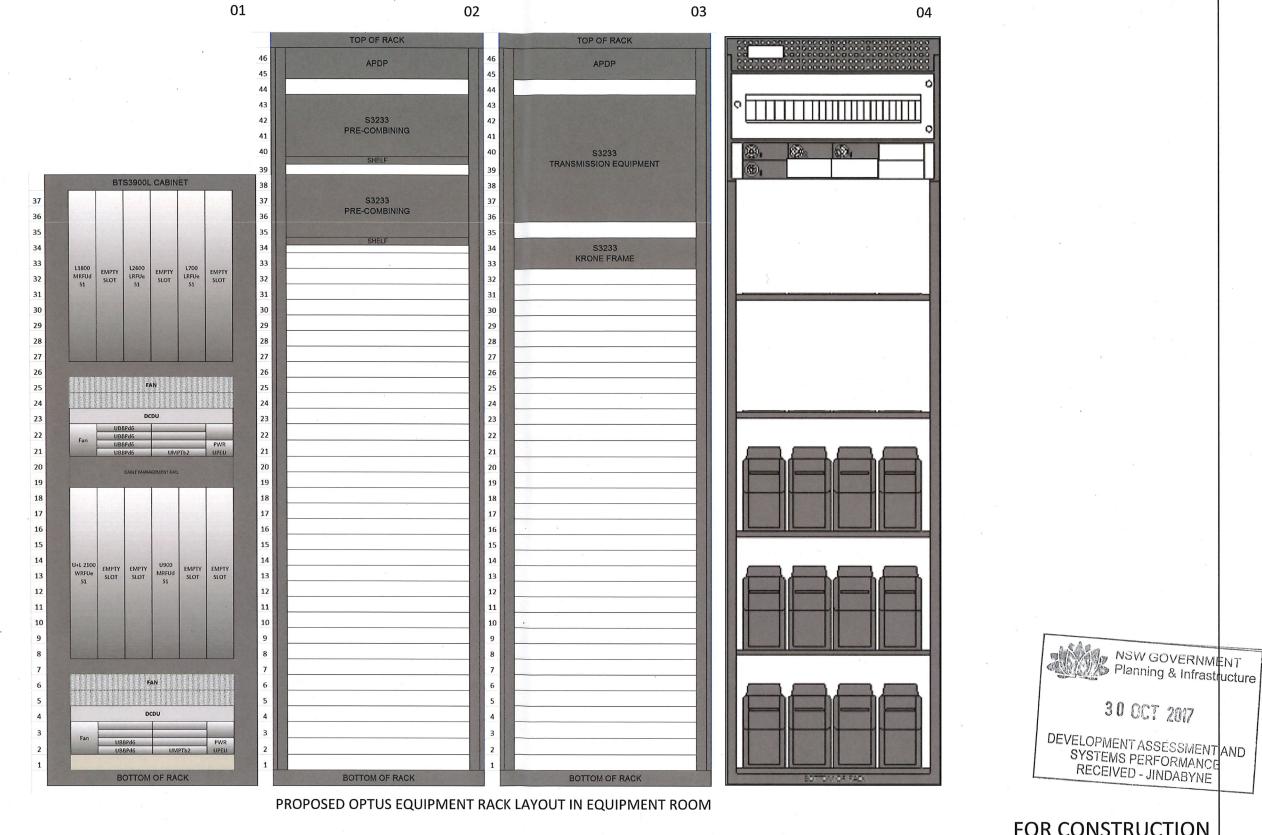
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**DETAIL** 





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# **EQUIPMENT RACK LAYOUT**

## **BULLOCKS FLAT TERMINAL**

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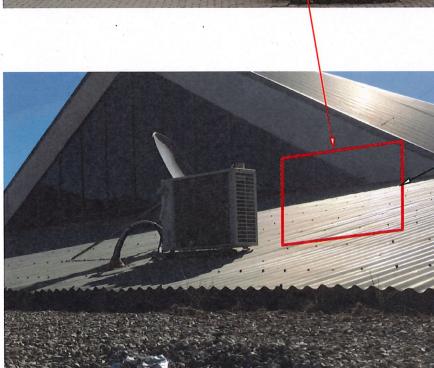
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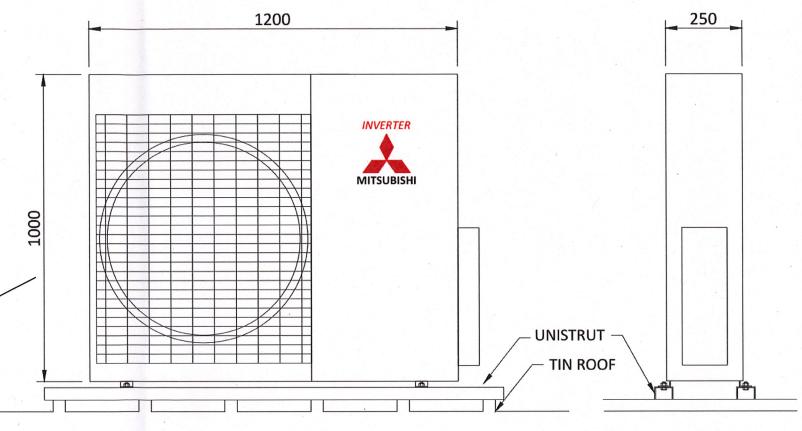
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**FRONT VIEW** 



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TITLE AIR CONDITIONING OUTDOOR UNIT DETAIL

PROJECT

**BULLOCKS FLAT TERMINAL** 

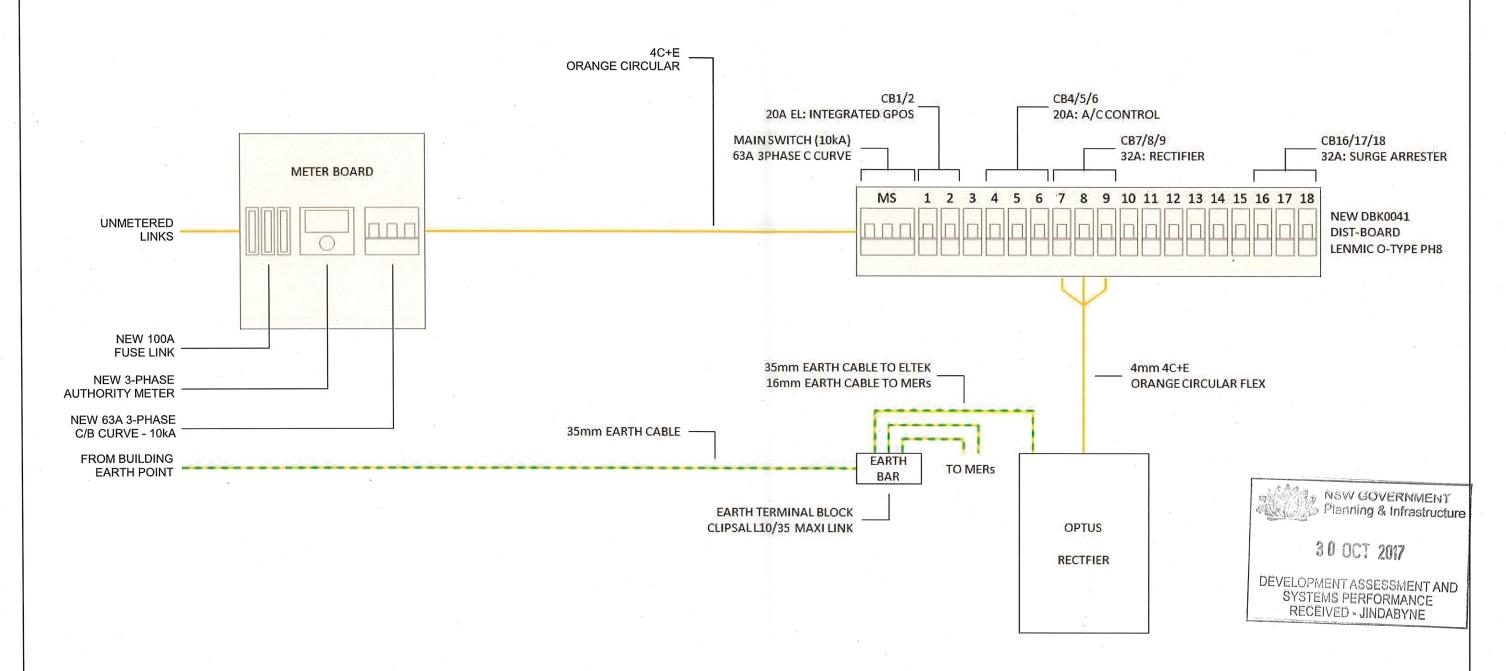
CHANGE / ISSUE HISTORY **DETAIL** BY DATE REV JR 02/12/2016 PRELIMINARY DESIGN JR 16/01/2017 PRELIMINARY DESIGN 02 PK SHEET No. DRAWING No. 28/02/2017 **DETAILED DESIGN** AC E3 1/1 12/10/2017 FOR CONSTRUCTION S3233

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#### **SWITCH ROOM**



### NOTE: INSTALLATION CONTRACTOR TO VERIFY WITH A CERTIFIED ELECTRICAL ENGINEER THAT AC POWER REQUIREMENTS MEET ALL RELEVANT REGULATIONS.

### FOR CONSTRUCTION



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AC POWER DIAG		5.			CHANGE / ISSUE HISTORY	•			
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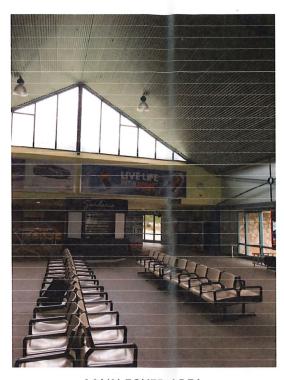
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**BULLOCKS FLAT TERMINAL PLATFORMS** 



**ENTRY TO SWITCH ROOM** 



MAIN FOYER AREA



PROPOSED EQUIPMENT AREA IN THE SWITCH ROOM



SKI HIRE AREA



3 0 OCT 2017

MAIN SWITCH BOARD IN THE SWITCH ROOM

DRAWN: PK

CHANGE / ISSUE HISTORY

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CLIENT

TITLE PROJECT

SITE PHOTOS

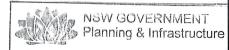
**BULLOCKS FLAT TERMINAL** 

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BY DATE DETAIL REV 02/12/2016 PRELIMINARY DESIGN JR JR 16/01/2017 PRELIMINARY DESIGN PK DRAWING No. SHEET No. 28/02/2017 **DETAILED DESIGN** FOR CONSTRUCTION AC S3233 P1 1/1 12/10/2017

DESIGNED: PK

Туре	Manufacturer	Model	Description	Qty
PTUS FREE ISSUE MAT	TERIALS			
	Optus/Eltek	22868	PANEL,ALARM&PWR DISTR;48VDC;2RU;10 X 6A;	
	Optus/Eltek	29802	SHELF;440MM D;FOR 19IN MER37 RACK;85KG	
	Optus/Eltek	30782	RACK;19IN;MER 46RU;C/W FRONT&REAR RAIL	
	Optus/Huawei	47105	POWER SYSTEM;18KW;W/O RECTIFIERS	
	Optus/Huawei	45712	BATTERIES;12V;100AH;GEL;AG12V100F STRING	
	Optus/Huawei	45717	RECTIFIER MODULE;3000W;1RU;R4850G2	
	Optus/Huawei	30418	EMUA	
	Optus/Huawei	34795	Single U2100 WRFU Expansion	
	Optus/Huawei	38141	BTS 3900L Cabinet Base Plate (Plinth)	
	Optus/Huawei	38381	Single 1800MHz MRFUd	
	Optus/Huawei	39951	UPEU Power Module	
	Optus/Huawei	40295	BBU Expansion Kit	
	Optus/Huawei	43031	BTS3900L Cabinet (Ver.D, DC -48V)	
	Optus/Huawei	43032	Installation Materials for 3900L	4
*	Optus/Huawei	44372	RFU;LRFUE;700MHZ;LTE;2T2R;2X80W	
4	Optus/Huawei	44648	UPEU Power Cable	
	Optus/Huawei	44855	UBBPd6 Baseband Processing Card	
	Optus/Huawei	44856	2100 WRFUe (3G or LTE), 2x80W	
ž.	Optus/Huawei	45362	UMPTb2	
	Optus/Huawei	45663	Single 900MHz MRFUd, 80W	
	Optus/Huawei	45664	BASE BAND UNIT,BBU3910;-48V; NEW VERSION	
· ·	Optus/Huawei	46055	Single 2600MHz LRFUE 2x40W	
	Optus/Tongyu	44876	COMBINER;COM1;700-960MHZ/1800-2600MHZ; TYT-C022D001	
	Optus/Tongyu	44878	COMBINER;COM3;HIGH BAND;18/21/23/2600MHZ; TYT-C124D003	
	Optus/Tongyu	44883	COMBINER;COM2A;700/900MHZ; TYT-C002D031	



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CLIENT

BILL OF MATERIALS - 1

BILL OF MATERIALS - 1	CHANGE / ISSUE HISTORY						
			REV	DATE	DETAIL	В١	
<b>BULLOCKS FLAT TERMINAL</b>	01	02/12/2016	PRELIMINARY DESIGN	JF			
		02	16/01/2017	PRELIMINARY DESIGN	JR		
	DRAWING No	SHEET NO	02	29/02/2017	DETAILED DESIGN	DI	

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			02	16/01/2017	PRELIMINARY DESIGN	JR
DRAWING No.		SHEET No.	03	28/02/2017	DETAILED DESIGN	P <sub>.</sub> K
S3233	B1.1	1/2	Α	12/10/2017	FOR CONSTRUCTION	AC

DRAWN: PK

Туре	Manufacturer	Model	Description	Qty
RFI SUPPLY MATERIALS				,
Antenna	RFI	DAS6927-SDP-N	DAS Directional Panel Antenna, 698-960/1710-2700 MHz	
Antenna	RFI	DAS6927-SOC-N	DAS Omni-Directional Ceiling Antenna, 698-960/1710-2700 MHz	
Attenuator	RFI	SP0000-6005-DIN	TERMINATION 50 OHM 5W DC-2500MHZ 7/16 MALE	
Attenuator	RFI	SP6927-1100-DIN	100 Watt Cable Termination - DIN Male Connector	
Splitter	RFI	SP3827-5102-11	Multi-Band, 2-way Splitter - 380-2700 MHz - N Connectors	
Splitter	RFI	SP6927-2305-DIN	Directional Coupler 690-2700MHz, 3-Port 4.8dB Coupling Loss DIN (F) Connectors	
Splitter	RFI	SP6927-2308-11	Directional Coupler 690-2700MHz, 3-Port 8dB Coupling Loss N (F) Connectors	
Splitter	RFI	SP6927-2312-11	Directional Coupler 690-2700MHz, 3-Port 12dB Coupling Loss N (F) Connectors	
Splitter	RFI	SP6927-2315-11	Directional Coupler 690-2700MHz, 3-Port 15dB Coupling Loss N (F) Connectors	
Splitter	RFI	SP6927-2320-11	Directional Coupler 690-2700MHz, 3-Port 20dB Coupling Loss N (F) Connectors	
Splitter	RFI/CommScope	E15R02P24	FILTER;BAND PASS;DUAL;900MHz	
Splitter	RFI/Rojone	ROJ-074NMT-4-4-716IM	Network Combiner - 700-2700 MHz	
Cable	RFI/Rosenberger	LC02-S005-500	Jumper 0.5m NM to NMRA Superflex 3/8"	
Cable	RFI/Rosenberger	LC02-S006-500	Jumper 0.5m NM to NM Superflex 3/8"	
Cable	RFI/Rosenberger	LC08-110-1000	Jumper 1.0m DM to NM Superflex 1/2"	
Cable	RFI/Rosenberger	LC08-112-2000	Jumper 2.0m DM to DMRA Superflex 1/2"	
Cable	RFI/Rosenberger	LC08-113-1000	Jumper 1.0m DM to DM Superflex 1/2"	
Cable	RFI/Rosenberger	LC08-113-2000	Jumper 2.0m DM to DM Superflex 1/2"	
Cable	RFI/Rosenberger	SL012RL-PE	Flex Cable 1/2" Foam Corrugated PE Jacket	208.45
Connector	RFI/Rosenberger	53K1C7-C03N1	N Jack Straight 1/2" Slink Connector	
Connector	RFI/Rosenberger	53S1C7-C03N1	N Plug Straight 1/2" Slink Connector	
Miscellaneous	RFI .	RADHAZ-LABEL-40MM	RADIATION HAZARD LABEL WARNING TYPE 40MM	
Miscellaneous	RFI/ICS	VAX0035	AIR CON SYSTEM SUPPLY:MHI SPLIT SYSTEM SRK63	
Power Supply	RFI/ICS	DBK0041	DISTRIBUTION BOARD;LENMIC O-TYPE:	-

NSW GOVERNMENT
Planning & Infrastructure

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NOTE: 20% SAFETY MARGIN HAS BEEN ADDED TO THE CABLE LENGTH IN THE BOM ABOVE FOR INSTALLATION PURPOSE.

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**PROJECT** 

TITLE

BILL OF MATERIALS - 2

**BULLOCKS FLAT TERMINAL** 

DESIGNED: PK DRAWN: PK APPROVED: BQ CHANGE / ISSUE HISTORY REV BY 01 02/12/2016 PRELIMINARY DESIGN JR JR

02 16/01/2017 | PRELIMINARY DESIGN DRAWING No. SHEET No. 03 28/02/2017 DETAILED DESIGN B1.2 12/10/2017 FOR CONSTRUCTION

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