



EXISTING OPTUS U/G ELECTRICAL
SUPPLY (INDICATIVE ONLY)

EXISTING VHA CHAINLINK
SECURITY FENCE FIXED TO
ELEVATED STEEL PLATFORM

EXISTING OPTUS CHAINLINK
SECURITY FENCE FIXED
TO ELEVATED STEEL PLATFORM
WITH 980 WIDE ACCESS GATE

INSTALL NEW OPTUS GPS ANTENNA
ON TOP OF RRU MOUNT (REFER TO
GPS NOTES)

NEW OPTUS PANEL ANTENNAS
(3 OFF) ON NEW ANTENNA
MOUNTING STEELWORK (REFER
NOTE 4)

EXISTING STEEL STAIR
AND HANDRAIL

EXISTING
CONCRETE SLAB

EXISTING AXICOM
(ROCLA) 14.75m
HIGH CONCRETE
MONOPOLE WITH
EXTENSION.

EXISTING BOLLARDS (TYP.)

EXISTING TELSTRA 300
WIDE CABLE LADDER
(MOUNTED ON SLAB)

MGA ZONE 50
E 392 075
N 6 467 482
AT CL OF MONOPOLE

DETAIL
SCALE 1:100

1
G2

EXISTING VHA EQUIPMENT SHELTER.
RECOVER EXISTING OPTUS 2100 BTS
EQUIPMENT WITHIN SHELTER.

EXISTING CONCRETE PAD (BELOW)

EXISTING OPTUS AND VHA
ELEVATED STEEL PLATFORM
(CARPORT BELOW)

EXISTING TELSTRA
EQUIPMENT ROOM

EXISTING HUTCHISON 300 WIDE
CABLE LADDER SUSPENDED
UNDER PLATFORM

EXISTING VODAFONE 450 WIDE
CABLE LADDER SUSPENDED
UNDER PLATFORM

EXISTING OPTUS PREFABRICATED
EQUIPMENT SHELTER TO ACCOMMODATE
NEW OPTUS EQUIPMENT (REFER DRG.
P0031-F1 FOR EQUIPMENT LAYOUT).

NEW OPTUS RRU's (12 OFF) ON NEW
MOUNTING STEELWORK (REFER NOTE 6)

EXISTING FEEDER CABLES TO BE
RECOVERED AND REPLACED WITH NEW
HYBRID TRUNK CABLES. (REFER NOTE 7)

EXISTING VIVIDWIRELESS
OUTDOOR UNIT WITH SECURITY
FENCE AND GATE

EXISTING VIVIDWIRELESS
150 WIDE ELEVATED CABLE TRAY

LEGEND

— / — / — FENCELINE

— 0 e — 0 e — OPTUS U/G POWER SUPPLY

ANTENNA LEGEND:



GENERAL NOTES:

- REFER TO DRAWING P0031-A1 FOR ANTENNA SYSTEM CONFIGURATION.
- REFER TO DRAWING P0031-G1 FOR STRUCTURAL CERTIFICATION NOTES.
- EXISTING OTHER CARRIERS ANTENNAS AND HEADFRAME NOT SHOWN FOR CLARITY.
- RECOVER EXISTING OPTUS PANEL ANTENNAS AT EL.14.70 (3 OFF DPS60-16ED), AT EL.14.93m (2 OFF CNNPX308R), AT EL.22.64m & ALL ASSOCIATED ANCILLARIES AND INSTALL NEW HUAWEI ASI4517R1 PANEL ANTENNAS (3 OFF), RRUs AND ANCILLARIES AT EL.26.56m ON NEW ANTENNA MOUNTING STEELWORK TO BE FIXED TO THE AXICOM MONOPOLE EXTENSION (REFER STRUCTEL DRG. STD-20526 SHEETS 1 & 2, ISS 1 FOR DETAILS).
- INSTALL NEW 6 OFF 1800/2100/2300/2600 COMBINER (2 OFF PER SECTOR) AND 3 OFF 700/900 COMBINER (1 OFF PER SECTOR) BEHIND EACH PANEL ANTENNA FIXED TO THE NEW MOUNTING STEELWORK.
- INSTALL NEW 12 OFF OPTUS RRUs (2 OFF FRPA + 1 OFF FXDB + 2 OFF FXD + 2 OFF FRGU + 3 OFF FZNI + 2 OFF FRHF) ON NEW RRU MOUNTING STEELWORK (REFER STRUCTEL DRG. STD-20526 SHEETS 1 & 2, ISS 1 FOR DETAILS).
- RECOVER ALL EXISTING COAXIAL FEEDERS AND INSTALL NEW 3 OFF MLEH 9/18 HYBRID TRUNK CABLE (1 OFF PER SECTOR) TO BE RUN IN EXISTING CABLE ROUTES FROM SHELTER TO OPTUS ANTENNAS.
- ALL INFORMATION TO BE CHECKED ON SITE PRIOR TO FABRICATION AND CONSTRUCTION.

OPTUS GPS ANTENNA NOTES:

OPTUS GPS ANTENNA MUST BE INSTALLED IN ACCORDANCE WITH "OPTUS EJV GPS INSTALLATION INSTRUCTION (OM 37886) REV.1A".

- THE GPS ANTENNA LOCATION SHOULD NOT BE OBSTRUCTED IN THE HORIZONTAL PLANE (AZIMUTH) BETWEEN 220° AND 150° LOOKING CLOCKWISE THROUGH TRUE NORTH.
- THE SUGGESTED INSTALL LOCATION FOR THE GPS ANTENNA IS ON TOP OF RRU MOUNT WITH UNOBSTRUCTED 180° VIEW OF THE SKY.

NOKIA
Nokia Networks Pty Ltd
Level 5, 60 Union St, Locked Bag 34, Pyrmont NSW 2009
T: +61 2 9429-9100 | www.networks.nokia.com

OPTUS

Client:
Project:
**MOBILE NETWORK
AUSTRALIA
SITE No:- P0031
NORTH PERTH
REAR OF 1-3 BLAKE ST**

Drawing Title:

SITE LAYOUT AND SETOUT PLAN

Drawing Status:

FOR CONSTRUCTION

Drawing No.

P0031-G3

Revision

A

A	13.10.17	ISSUED FOR CONSTRUCTION	AXICOM	EP	SBL	GL	GS
AB	10.08.12	AS BUILT (LTE1800)	DALY	MT	MI	DI	CT
Rev	Date	Revision Details	Consultant	CAD	Designer	Verifier	Approver

NOKIA

Nokia Networks Pty Ltd

Level 5, 60 Union St, Locked Bag 34, Pyrmont NSW 2009

T: +61 2 9429-9100 | www.networks.nokia.com



Client:
Project:
MOBILE NETWORK
AUSTRALIA
SITE No:- P0031
NORTH PERTH
REAR OF 1-3 BLAKE ST

Drawing Title:
SITE ELEVATION

Drawing Status:
FOR CONSTRUCTION

Drawing No.
P0031-G4

Revision
A

NOTES:

- REFER TO DRAWING P0031-A1 FOR PANEL ANTENNA DETAILS.
- REFER TO DRAWING P0031-G1 FOR CERTIFICATION NOTES.
- REFER TO DRAWING P0031-G3 FOR ADDITIONAL NOTES.
- ALL INFORMATION TO BE CHECKED ON SITE PRIOR TO FABRICATION AND CONSTRUCTION.

INSTALL NEW OPTUS GPS ANTENNA
ON TOP OF RRU MOUNT (REFER TO GPS
ANTENNA NOTES ON DRG. P0031-G3)

- ▽ EL 26.56m
CL NEW OPTUS PANEL ANTENNAS
(3 OFF HUAWEI ASI4517R1)
CL NEW OPTUS FZNI RRHs (3 OFF)
- ▽ EL 25.46m
CL NEW OPTUS FXED RRUs (2 OFF)
CL NEW OPTUS FRGU RRUs (2 OFF)
CL NEW OPTUS FRPA RRUs (2 OFF)
CL NEW OPTUS FXDB RRU (1 OFF)
CL NEW OPTUS FRHF RRUs (2 OFF)

- ▽ EL 24.31m
CL EXISTING VHA Ø300
PARABOLIC ANTENNA (1 OFF)
- ▽ EL 22.64m
CL EXISTING VHA PANEL
ANTENNAS (6 OFF)

- ▽ EL 19.09m
CL EXISTING TELSTRA
PANEL ANTENNAS (3 OFF)

- ▽ EL 18.87m
CL EXISTING TELSTRA
PANEL ANTENNAS (3 OFF)

- ▽ EL 14.75m
TOP OF EXISTING MONOPOLE
- ▽ EL 14.70m
CL EXISTING OPTUS PANEL
ANTENNAS TO BE RECOVERED
(4 OFF RFS DPS60-16ESX)

- ▽ EL 12.67m
CL EXISTING VIVIDWIRELESS
ANTENNAS TO BE RECOVERED (3 OFF)

EXISTING AXICOM
(ROCLA) 14.75m
HIGH CONCRETE
MONOPOLE WITH
EXTENSION

EXISTING FEEDER CABLES TO BE
RECOVERED AND REPLACED WITH NEW
HYBRID TRUNK CABLES (REFER NOTE 7
ON DRG. P0031-G3)

EXISTING STEEL STAIR AND
HANDRAIL (BEHIND)

EXISTING VIVIDWIRELESS
OUTDOOR UNIT WITH SECURITY
FENCE AND GATE

EXISTING BOLLARDS (TYP.)

▽ EL 0.00m (RL 42.8m AHD)
GROUND LEVEL
@ BASE OF MONOPOLE

NOTE:
THIS DRAWING IS DIAGRAMMATIC ONLY
AND SHOULD NOT BE SCALED.

- ▽ EL 25.06m
TOP OF AXICOM EXTENSION
- ▽ EL 24.43m
CL EXISTING VIVIDWIRELESS Ø600
PARABOLIC ANTENNA TO BE RECOVERED (1 OFF)
- ▽ EL 22.96m
CL EXISTING VHA PANEL
ANTENNAS (3 OFF)
- ▽ EL 22.77m
CL EXISTING OPTUS PANEL
ANTENNA TO BE RECOVERED
(1 OFF ARGUS CNPX308R)
- ▽ EL 20.32m
CL EXISTING OPTUS Ø600 PARABOLIC
ANTENNA (1 OFF)
- ▽ EL 18.71m
CL EXISTING TELSTRA
PANEL ANTENNAS (3 OFF)
- ▽ EL 16.78m
CL EXISTING OPTUS Ø600 PARABOLIC
ANTENNA (1 OFF)
- ▽ EL 14.93m
CL EXISTING OPTUS PANEL
ANTENNAS TO BE RECOVERED
(2 OFF ARGUS CNPX308R)

EXISTING OPTUS PREFABRICATED
EQUIPMENT SHELTER TO ACCOMMODATE
NEW OPTUS EQUIPMENT (REFER DRG.
P0031-F1 FOR EQUIPMENT LAYOUT).

EXISTING OPTUS CHAINLINK SECURITY FENCE
FIXED TO ELEVATED STEEL PLATFORM WITH
980 WIDE ACCESS GATE

EXISTING VHA CHAINLINK SECURITY FENCE
FIXED TO ELEVATED STEEL PLATFORM

EXISTING VHA EQUIPMENT SHELTER.
RECOVER EXISTING OPTUS 2100 BTS
EQUIPMENT WITHIN SHELTER.

SOUTH EASTERN ELEVATION

SCALE 1:100



ANTENNA	OPERATOR	OPTUS SECTOR 1						OPTUS SECTOR 2						OPTUS SECTOR 3					
	SECTOR	11-O						21-O						31-O					
	IDENTITY N° (SAO)	NEW						NEW						NEW					
	STATUS	0° TN						120° TN						240° TN					
	AZIMUTH (° TN)	26.56m						26.56m						26.56m					
	EL C/L ANTENNA	E 392 075						E 392 075						E 392 075					
	CO-ORDINATES (NOTE 2)	N 6 467 482						N 6 467 482						N 6 467 482					
	MECHANICAL TILT (°)	0°						0°						0°					
	ELECTRICAL TILT (°)	6°	6°	4°	4°	4°	4°	8°	8°	6°	6°	6°	6°	8°	8°	6°	6°	6°	6°
	RET	YES						YES						YES					
ANCILLARIES	MAKE & MODEL	HUAWEI ASI4517R1						HUAWEI ASI4517R1						HUAWEI ASI4517R1					
	DIMENSIONS (H x W x D)	2600 x 548 x 150						2600 x 548 x 150						2600 x 548 x 150					
	PORTS	1 & 2	3 & 4	5 & 6	7 & 8	9 & 10	11 & 12	1 & 2	3 & 4	5 & 6	7 & 8	9 & 10	11 & 12	1 & 2	3 & 4	5 & 6	7 & 8	9 & 10	11 & 12
	PORT USER	OPTUS	OPTUS	OPTUS	OPTUS	OPTUS	OPTUS	OPTUS	OPTUS	OPTUS	OPTUS	OPTUS	OPTUS	OPTUS	OPTUS	OPTUS	OPTUS	OPTUS	OPTUS
	FREQUENCY BANDS	700	700/900	18/21/26	18/21/26	2300	2300	700	700/900	18/21/26	18/21/26	2300	2300	700	700/900	18/21/26	18/21/26	2300	2300
	MHA	-						-						-					
	COMBINER / DIPLEXER	NEW 1 x (700/900) + 2 x (18/21/23/26)						NEW 1 x (700/900) + 2 x (18/21/23/26)						NEW 1 x (700/900) + 2 x (18/21/23/26)					
	RRU / RF MODULES	(NEW 2 x (L7) + 2 x (L18) + 1 x (U9) + 2 x (U21) + 2 x (L26) ALL SHARED) + NEW 1 x (L23)						(NEW 2 x (L7) + 2 x (L18) + 1 x (U9) + 2 x (U21) + 2 x (L26) ALL SHARED) + NEW 1 x (L23)						(NEW 2 x (L7) + 2 x (L18) + 1 x (U9) + 2 x (U21) + 2 x (L26) ALL SHARED) + NEW 1 x (L23)					
COAXIAL FEEDERS	STATUS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	TECHNOLOGIES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	QUANTITY	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	DESIGNATION (SIZE)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	ESTIMATED LENGTH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TRUNK CABLES	STATUS	EXISTING						EXISTING						EXISTING					
	TECHNOLOGIES	L700/U900/L1800/U2100/L2300/L2600						L700/U900/L1800/U2100/L2300/L2600						L700/U900/L1800/U2100/L2300/L2600					
	QUANTITY	1						1						1					
	MAKE & MODEL (SIZE)	HUBER & SUHNER MLEH						HUBER & SUHNER MLEH						HUBER & SUHNER MLEH					
	NO. OF DC / SMF PAIRS	9/18						9/18						9/18					
	ESTIMATED LENGTH	35m						35m						35m					
	OTHER	-						-						-					

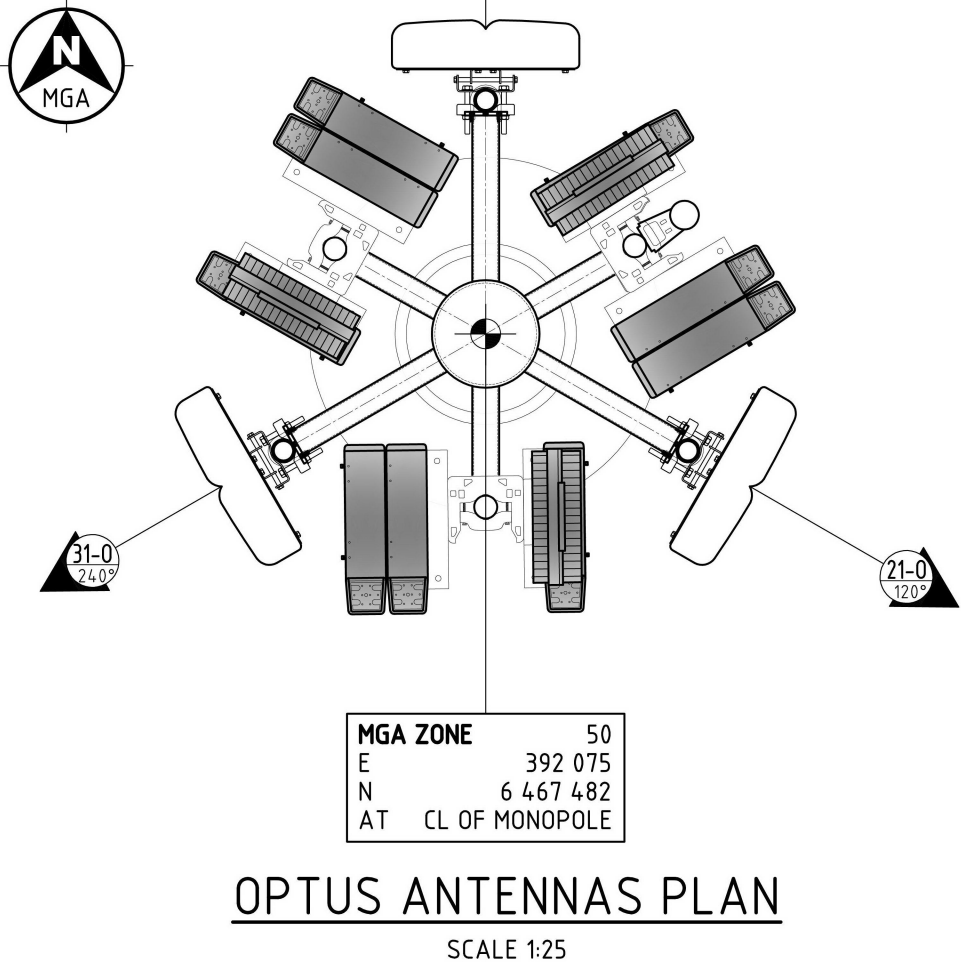
ANCILLARY	EQUIPMENT CODE	MANUFACTURER PRODUCT CODE	TECHNOLOGY FREQUENCIES	DIMENSIONS (mm x mm x mm)	WEIGHT (kg)
RRU	NSN RRU	FRPA	700	560 x 447 x 133	25
		FXDB	U900	560 x 447 x 133	25
		FXED	1800	560 x 447 x 133	25
		FRGU	2100	560 x 447 x 133	25
		FZNI (RRH)	2300	450 x 350 x 160	17
		FRHF	2600	560 x 447 x 133	25
COMBINER/ DIPLEXER	COM2a	E11F13P25	700 / 900	253 x 165 x 103	5.5
	COM3	E15V90P43	1800 / 2100 / 2300 / 2600	260 x 210 x 120	9

ANTENNA LEGEND:



NOTES:

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH RF PLUMBING DIAGRAM DRAWING P0031-A2.
2. ANTENNA CO-ORDINATES ARE SPECIFIED FOR CENTRE OF STRUCTURE, TO THE NEAREST METRE.
3. ANCILLARIES REFER TO ITEMS AT OR NEAR THE ANTENNA.
4. TRUNK LENGTHS ARE ESTIMATED, ROUNDED UP TO THE NEXT 5m.
5. ALL TAILS (84 OFF) TO BE FSJ4-50, NO MORE THAN 5m IN LENGTH.



										 Nokia Networks Pty Ltd Level 5, 60 Union St, Locked Bag 34, Pyrmont NSW 2009 T: +61 2 9429-9100 www.networks.nokia.com				Client: 		Project: MOBILE NETWORK AUSTRALIA SITE No:- P0031 NORTH PERTH REAR OF 1-3 BLAKE ST		Drawing Title: PANEL ANTENNA SYSTEM CONFIGURATION		
A	13.10.17	ISSUED FOR CONSTRUCTION				AXICOM	EP	SBL	GL	GS	Drawing Status: FOR CONSTRUCTION			Drawing No. P0031-A1		Revision A				
AB	10.08.12	AS BUILT (LTE1800)				DALY	MT													
Rev	Date	Revision Details				Consultant	CAD	Designer	Verifier	Approver										