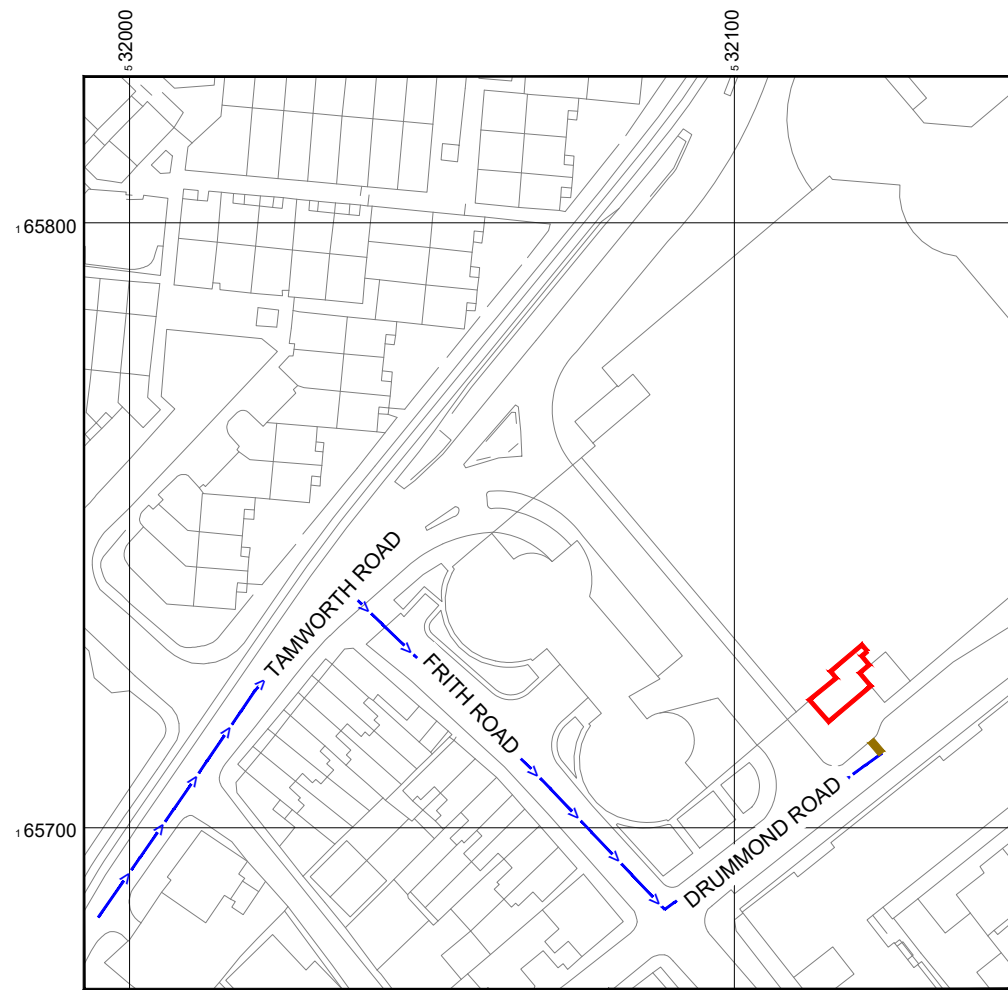


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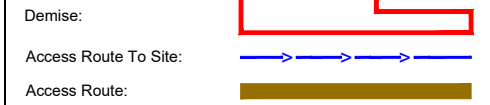
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NGR E: 532120 N: 165720

NOTES:

1. ALL DIMENSIONS IN MM UNLESS OTHERWISE NOTED.

DIRECTIONS TO SITE:  
HEAD EAST ON M25, AT THE ROUNDABOUT, TAKE THE 1ST EXIT ONTO GODSTONE HILL/A22. AT WAPSES LODGE ROUNDABOUT, TAKE THE 4TH EXIT ONTO SUCCOMB'S HILL, CONTINUE ONTO NARROW LN, TURN RIGHT ONTO WESTHALL RD, WESTHALL RD TURNS LEFT AND BECOMES THE GREEN/B269, AT THE ROUNDABOUT, TAKE THE 1ST EXIT ONTO LOWER COOMBE ST/A236. AT THE ROUNDABOUT, TAKE THE 2ND EXIT ONTO OLD TOWN/A236, TURN RIGHT ONTO REEVES CORNER, CONTINUE ONTO TAMWORTH RD, CONTINUE STRAIGHT TO STAY ON TAMWORTH RD, CONTINUE STRAIGHT TO STAY ON TAMWORTH RD, TURN RIGHT.



Master:	MBNL / EE / H3G:	Project:	Purpose of Issue:	Issue:
M002	MBNL	Vendor Swap	Detail Design	A1
Date:	06/11/2023	Revision / Upgrade Description:		
Drawn:	DvB	First Issue		
Checked:	DM			
Approved:	KTL			
Master:	MBNL / EE / H3G:	Project:	Purpose of Issue:	Issue:
M001	MBNL	Vendor Swap	Planning	A
Date:	30/08/2023	Revision / Upgrade Description:		
Drawn:	MM	First Issue		
Checked:	DvB			
Approved:	KTL			



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Birmingham Business Park, B37 7YU

Tel: +44 (0)1908 377 766  
Email: info@ktl.ie

Site Name:  
**CENTRALE SHOPPING CENTRE 2**

Site ID:  
**1082862**

Address:  
**CENTRALE SHOPPING CENTRE  
NORTH END  
CROYDON  
CR0 1TY**

Title:  
**002 SITE LOCATION PLAN**

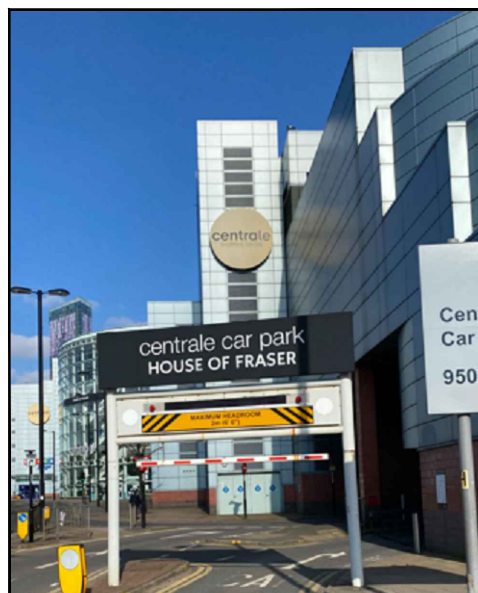
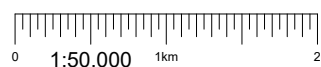
Project:  
**VENDOR SWAP**

Purpose of Issue:  
**DETAILED DESIGN**

EE Cell ID:	MBNL Cell ID:	3UK Cell ID:
<b>50961</b>	<b>CDN002</b>	<b>CR0137</b>

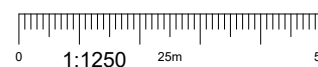
Master Drawing No:	Issue:
<b>1082862_CDN002_50961_CR0137_M002</b>	<b>A1</b>

SITE AREA PLAN



SITE PHOTOGRAPH

SITE LOCATION PLAN



GOOGLE MAPS QR CODE

GOOGLE MAPS - HYPERLINK

GOOGLE STREET VIEW - HYPERLINK

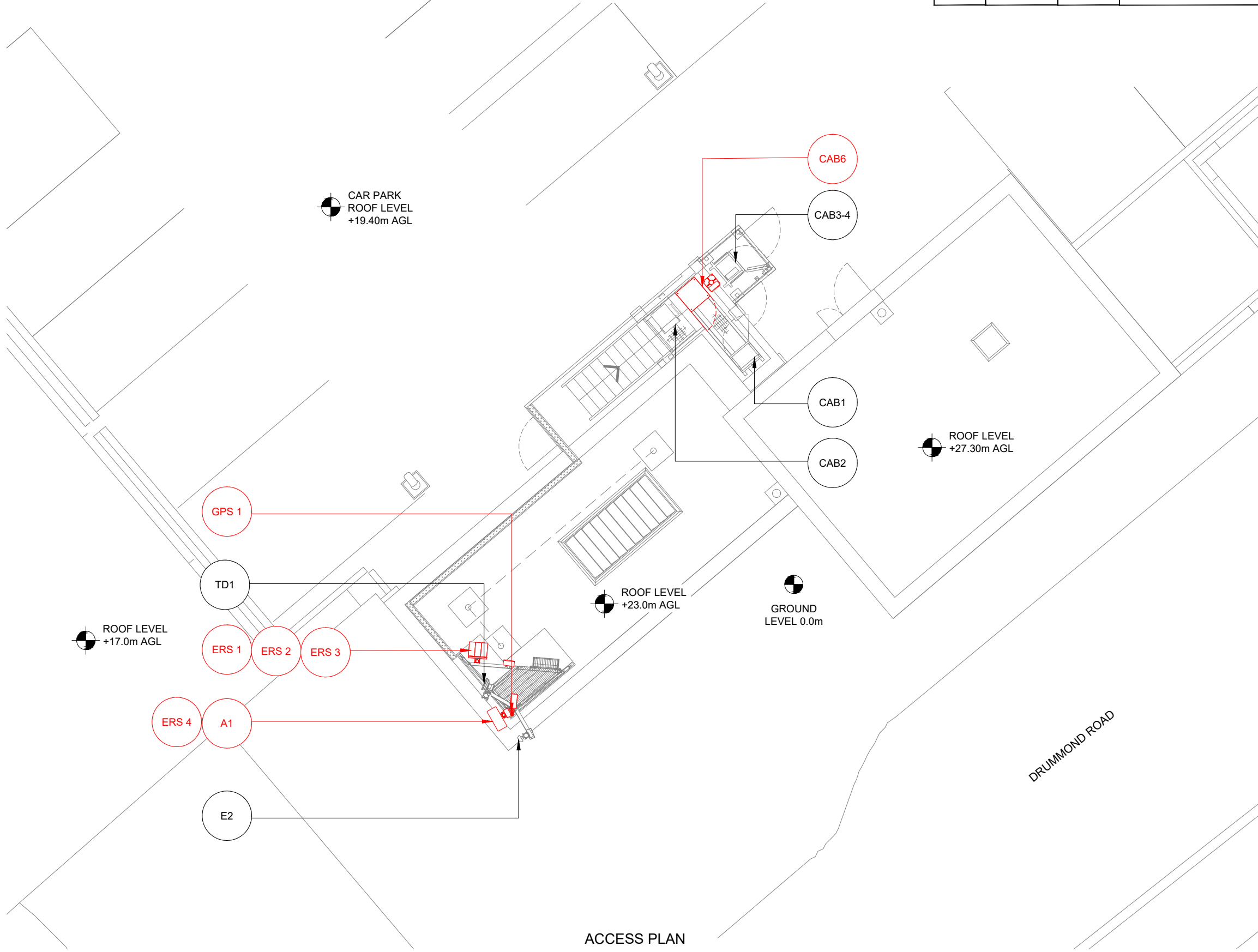
100mm  
50mm  
10mm





Asset Reference	Asset Description:	Asset Status:	Access Description:	Asset Reference	Asset Description:	Asset Status:	Access Description:
E1	Antenna	Remove	Rooftop Worker Access	CAB1-4	Cabinets	Installed	Unrestricted Access
E2	Antenna	Installed	Rooftop Worker Access	CAB5	Cabinets	Remove	Unrestricted Access
A1	Antenna	Proposed	Rooftop Worker Access	CAB6	Cabinet	Proposed	Unrestricted Access
GPS 1	GPS Node	Proposed	Rooftop Worker Access	ERS1-4	ERS	Proposed	Rooftop Worker Access
				TD1	Dish	Installed	Rooftop Worker Access

NOTES:  
 1. ALL DIMENSIONS IN MM UNLESS OTHERWISE NOTED.  
 DEFINED ACCESS ROUTE DESCRIPTION FROM SITE ENTRANCE TO THE EQUIPMENT:



Master:	MBNL / EE / H3G:	Project:	Purpose of Issue:	Issue:
M002	MBNL	Vendor Swap	Detail Design	A1
Date:	06/11/2023	Revision / Upgrade Description:		
Drawn:	DvB	First Issue		
Checked:	DM			
Approved:	KTL			
Master:	MBNL / EE / H3G:	Project:	Purpose of Issue:	Issue:
M001	MBNL	Vendor Swap	Planning	A
Date:	30/08/2023	Revision / Upgrade Description:		
Drawn:	MM	First Issue		
Checked:	DvB			
Approved:	KTL			



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Site Name:  
**CENTRALE SHOPPING CENTRE 2**

Site ID:  
**1082862**

Address:  
**CENTRALE SHOPPING CENTRE  
 NORTH END  
 CROYDON  
 CR0 1TY**

Title:  
**003 ACCESS PLAN**

Project:  
**VENDOR SWAP**

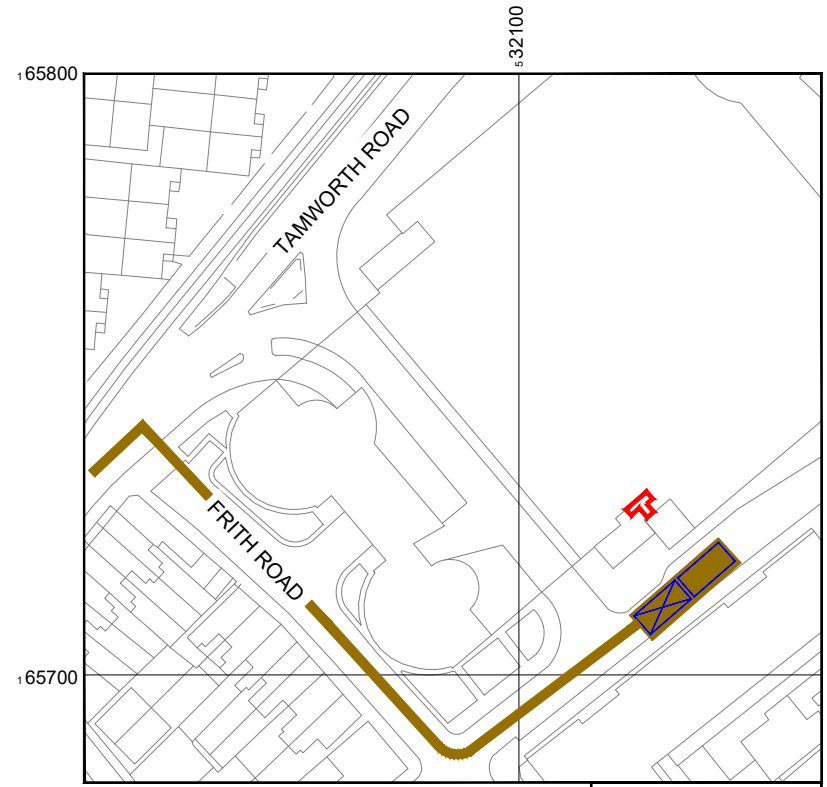
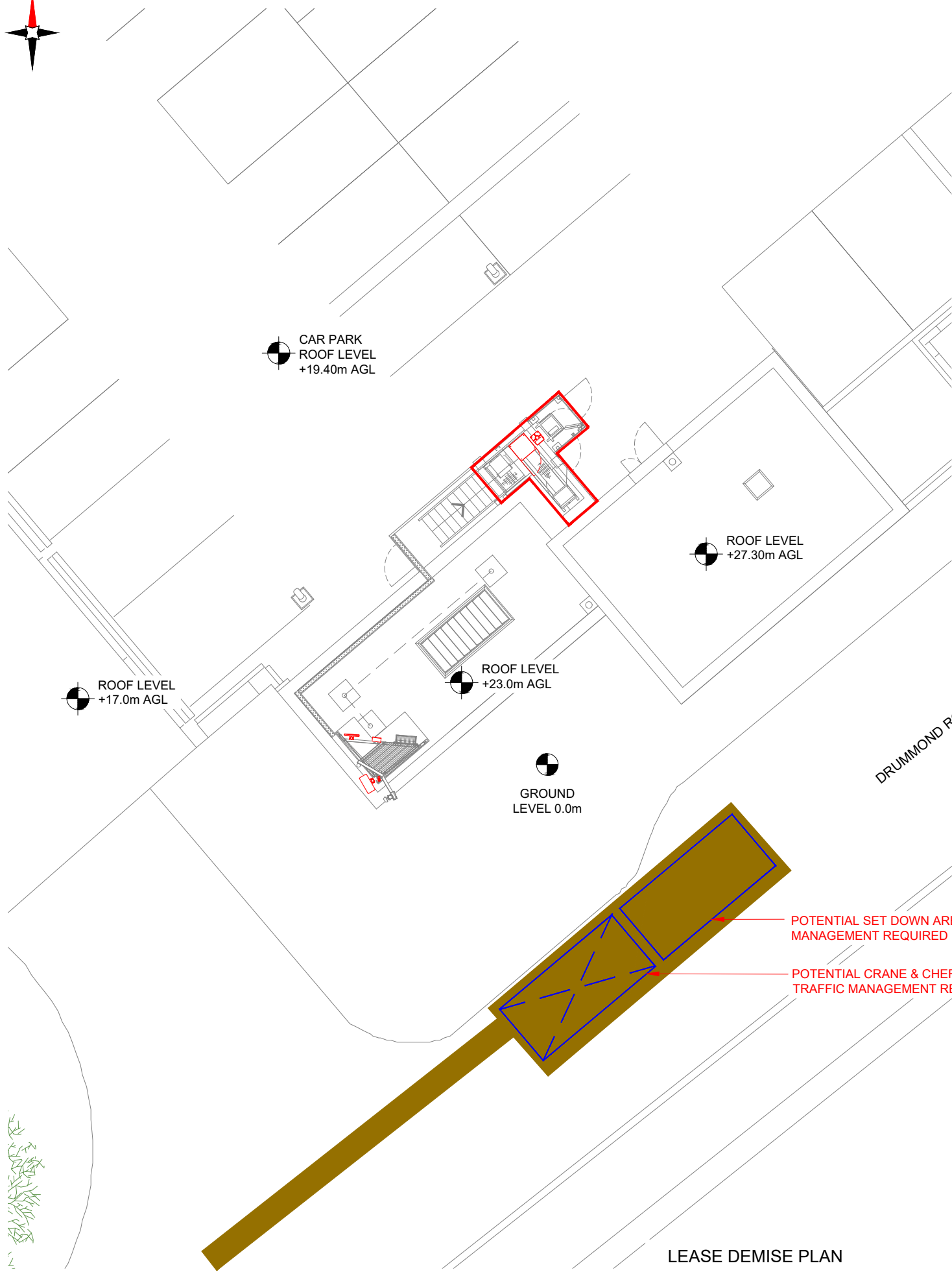
Purpose of Issue:  
**DETAILED DESIGN**

EE Cell ID: <b>50961</b>	MBNL Cell ID: <b>CDN002</b>	3UK Cell ID: <b>CR0137</b>
-----------------------------	--------------------------------	-------------------------------

Master Drawing No:  
**1082862\_CDN002\_50961\_CR0137\_M002**

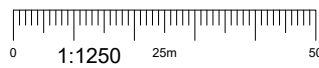
Issue:  
**A1**

100mm  
 50mm  
 10mm

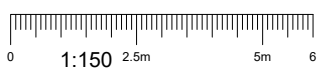


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SITE LOCATION PLAN



LEASE DEMISE PLAN



<b>NEW CODE:</b>		
Demise:	Outlined in Red	
Access Route:	Solid Brown	
Set Down Area:	Outlined in Blue	
Crane Area:	Dashed in Blue	

Master:	MBNL / EE / H3G:	Project:	Purpose of Issue:	Issue:
M002	MBNL	Vendor Swap	Detail Design	A1
Date:	06/11/2023	Revision / Upgrade Description:		
Drawn:	DvB	First Issue		
Checked:	DM			
Approved:	KTL			
Master:	MBNL / EE / H3G:	Project:	Purpose of Issue:	Issue:
M001	MBNL	Vendor Swap	Planning	A
Date:	30/08/2023	Revision / Upgrade Description:		
Drawn:	MM	First Issue		
Checked:	DvB			
Approved:	KTL			



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Email: info@ktl.ie

Site Name:  
**CENTRALE SHOPPING CENTRE 2**

Site ID:  
**1082862**

Address:  
**CENTRALE SHOPPING CENTRE  
NORTH END  
CROYDON  
CR0 1TY**

Title:  
**004 LEASE DEMISE**

Project:  
**VENDOR SWAP**

Purpose of Issue:  
**DETAILED DESIGN**

EE Cell ID: <b>50961</b>	MBNL Cell ID: <b>CDN002</b>	3UK Cell ID: <b>CR0137</b>
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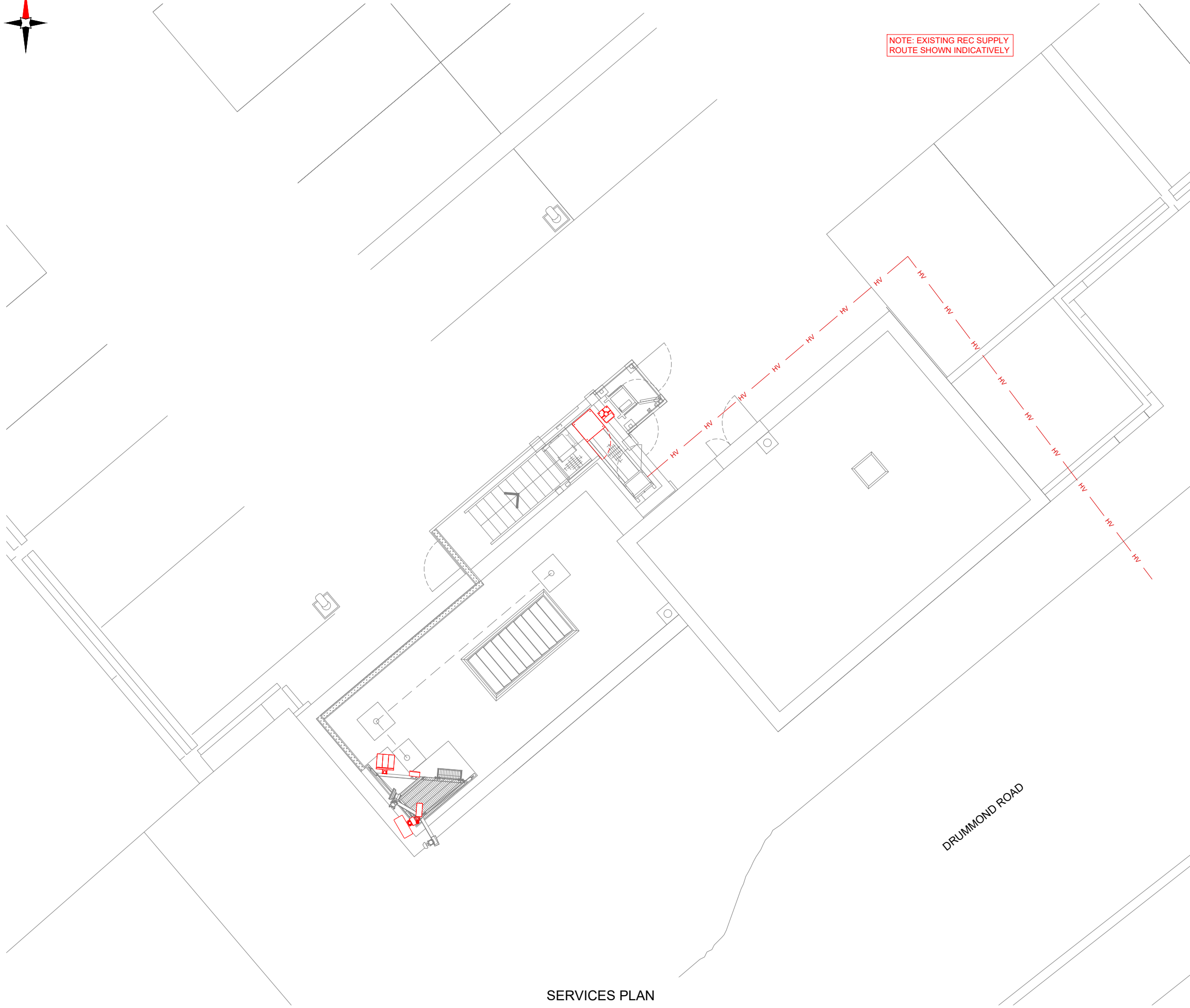
Master Drawing No:  
**1082862\_CDN002\_50961\_CR0137\_M002**

Issue:  
**A1**

100mm  
50mm  
10mm



NOTE: EXISTING REC SUPPLY ROUTE SHOWN INDICATIVELY



NOTES:

- ALL DIMENSIONS IN MM UNLESS OTHERWISE NOTED.

SERVICES:

— HV — HV — HV — HV —

Master:	MBNL / EE / H3G:	Project:	Purpose of Issue:	Issue:
M002	MBNL	Vendor Swap	Detail Design	A1
Date:	06/11/2023	Revision / Upgrade Description:		
Drawn:	DvB	First Issue		
Checked:	DM			
Approved:	KTL			
Master:	MBNL / EE / H3G:	Project:	Purpose of Issue:	Issue:
M001	MBNL	Vendor Swap	Planning	A
Date:	30/08/2023	Revision / Upgrade Description:		
Drawn:	MM	First Issue		
Checked:	DvB			
Approved:	KTL			



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Site Name:  
**CENTRALE SHOPPING CENTRE 2**

Site ID:  
**1082862**

Address:  
**CENTRALE SHOPPING CENTRE  
NORTH END  
CROYDON  
CR0 1TY**

Title:  
**005 SERVICES PLAN**

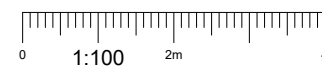
Project:  
**VENDOR SWAP**

Purpose of Issue:  
**DETAILED DESIGN**

EE Cell ID: <b>50961</b>	MBNL Cell ID: <b>CDN002</b>	3UK Cell ID: <b>CR0137</b>
-----------------------------	--------------------------------	-------------------------------

Master Drawing No: <b>1082862_CDN002_50961_CR0137_M002</b>	Issue: <b>A1</b>
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SERVICES PLAN



100mm  
50mm  
10mm

Live Technologies	Proposed Config	Achievable Config	Proposed Config	Achievable MIMO Config	CR Status
GSM;UMTS;LTE1800 Carrier 1 ;LTE1800 Carrier 2	18/18/21/26/26/35/80/70	18/18/21/26/26/35/80/70	18/21/26 @4x4; 70/80 @2x4; 3500 @8x8	18/21/26 @4x4; 70/80 @2x4; 3500 @8x8	N/A

FIXITS			
FIXIT TYPE	STATUS	FIXIT NUMBER	COMMENTS
-	-	-	-

DEPENDENCY	STATUS	COMMENTS
Asbestos	Completed	Refer to asbestos report dated 05/03/20. No ACMS detected
Building Regulations Approval	N/A	-
Planning Conditions	Ok	-
RF Compliance TD54000 v11.0	Pass / Fail: Pass	Sector A   T&A - Stepdown 4.0a
Global Design Check	N/A	-
Geotech Report	N/A	-
Structural Calculations	Completed	-
Intrusive Building Survey	N/A	-
Rigging Survey	N/A	-
Power	Upgrade Required: NO	Existing Single phase 100A REC supply
Line of Sight Survey	N/A	-
Cooling Solution	Indoor/outdoor: Outdoor	kW: - Status: - System: - Upgrade Required: -
Services Search	N/A	-
Trial Hole	N/A	-
Temporary Site	N/A	-
Other	N/A	-
Other	-	-

**STATUS KEY:**

**Installed:** Existing  
**Retain:** Existing and to remain  
**Relocate:** Existing and to be relocated  
**Remove:** Existing to be removed from site  
**Proposed:** New on site

**LOCATION KEY:**

**Outdoor:** Located outside  
**Indoor:** Located within an equipment cabin or equipment room  
**Internal:** located inside a cabinet or item of equipment

Master: M002	MBNL / EE / H3G: MBNL	Project: Vendor Swap	Purpose of Issue: Detail Design	Issue: A1
Date: 06/11/2023	Drawn: DvB	Checked: DM	Approved: KTL	Revision / Upgrade Description: First Issue
Master: M001	MBNL / EE / H3G: MBNL	Project: Vendor Swap	Purpose of Issue: Planning	Issue: A
Date: 30/08/2023	Drawn: MM	Checked: DvB	Approved: KTL	Revision / Upgrade Description: First Issue



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 Email: info@ktl.ie

Site Name: **CENTRALE SHOPPING CENTRE 2**

Site ID: **1082862**

Address: **CENTRALE SHOPPING CENTRE  
 NORTH END  
 CROYDON  
 CR0 1TY**

Title: **006 FIXIT's & PROJECT DEPENDENCIES**

Project: **VENDOR SWAP**

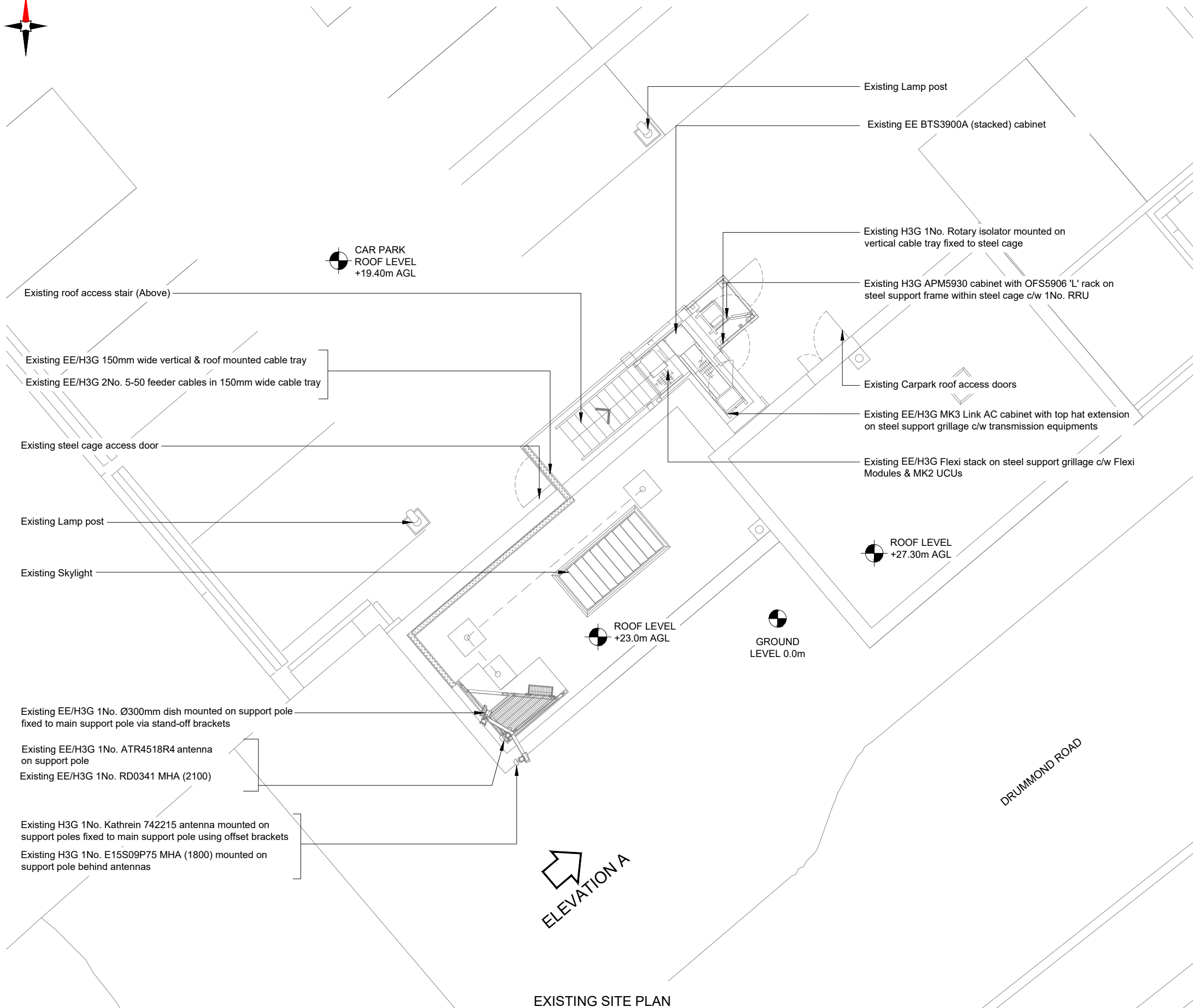
Purpose of Issue: **DETAILED DESIGN**

EE Cell ID: <b>50961</b>	MBNL Cell ID: <b>CDN002</b>	3UK Cell ID: <b>CR0137</b>
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Master Drawing No: 1082862_CDN002_50961_CR0137_M002	Issue: <b>A1</b>
--	---------------------

Note:  
 Page is for Internal Distribution Only

100mm  
50mm  
10mm



NOTES:  
1. ALL DIMENSIONS IN MM UNLESS OTHERWISE NOTED.

Master:	MBNL / EE / H3G:	Project:	Purpose of Issue:	Issue:
M002	MBNL	Vendor Swap	Detail Design	A1
Date:	06/11/2023	Revision / Upgrade Description:		
Drawn:	DvB	First Issue		
Checked:	DM			
Approved:	KTL			
Master:	MBNL / EE / H3G:	Project:	Purpose of Issue:	Issue:
M001	MBNL	Vendor Swap	Planning	A
Date:	30/08/2023	Revision / Upgrade Description:		
Drawn:	MM	First Issue		
Checked:	DvB			
Approved:	KTL			



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Site Name:  
**CENTRALE SHOPPING CENTRE 2**

Site ID:  
**1082862**

Address:  
**CENTRALE SHOPPING CENTRE  
NORTH END  
CROYDON  
CR0 1TY**

Title:  
**100 EXISTING SITE PLAN**

Project:  
**VENDOR SWAP**

Purpose of Issue:  
**DETAILED DESIGN**

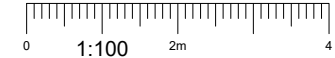
EE Cell ID: <b>50961</b>	MBNL Cell ID: <b>CDN002</b>	3UK Cell ID: <b>CR0137</b>
-----------------------------	--------------------------------	-------------------------------

Master Drawing No:  
**1082862\_CDN002\_50961\_CR0137\_M002**

Issue:  
**A1**

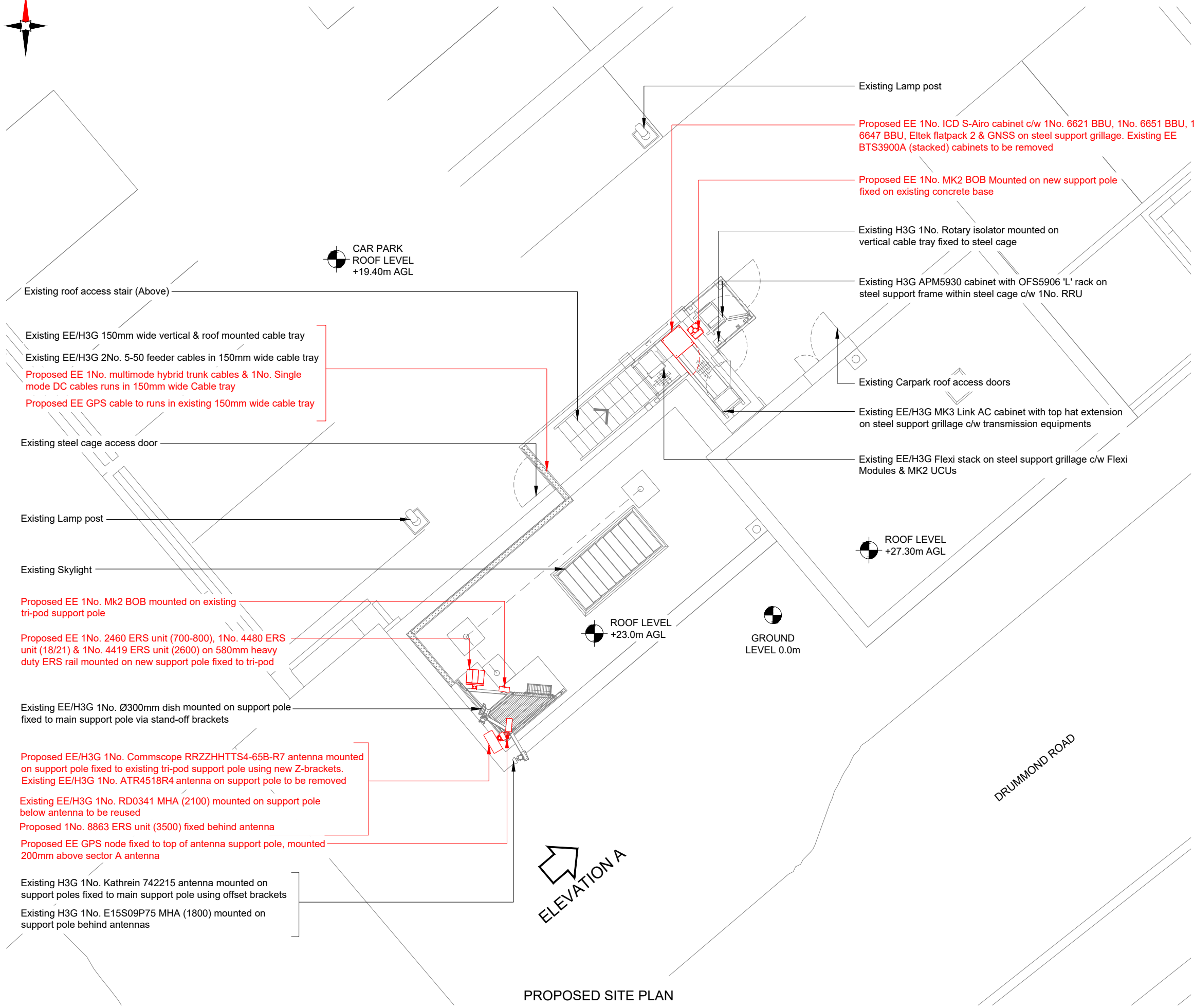


EXISTING SITE PLAN



100mm  
150mm  
10mm





NOTES:  
1. ALL DIMENSIONS IN MM UNLESS OTHERWISE NOTED.

Note;  
All existing feeder/fibre cables to be re-used.  
Subject to testing

Master:	MBNL / EE / H3G:	Project:	Purpose of Issue:	Issue:
M002	MBNL	Vendor Swap	Detail Design	A1
Date:	06/11/2023	Revision / Upgrade Description:		
Drawn:	DvB	First Issue		
Checked:	DM			
Approved:	KTL			
Master:	MBNL / EE / H3G:	Project:	Purpose of Issue:	Issue:
M001	MBNL	Vendor Swap	Planning	A
Date:	30/08/2023	Revision / Upgrade Description:		
Drawn:	MM	First Issue		
Checked:	DvB			
Approved:	KTL			



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Site Name:  
**CENTRALE SHOPPING CENTRE 2**

Site ID:  
**1082862**

Address:  
**CENTRALE SHOPPING CENTRE  
NORTH END  
CROYDON  
CR0 1TY**

Title:  
**150 PROPOSED SITE PLAN**

Project:  
**VENDOR SWAP**

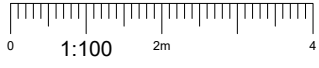
Purpose of Issue:  
**DETAILED DESIGN**

EE Cell ID: <b>50961</b>	MBNL Cell ID: <b>CDN002</b>	3UK Cell ID: <b>CR0137</b>
-----------------------------	--------------------------------	-------------------------------

Master Drawing No:  
**1082862\_CDN002\_50961\_CR0137\_M002**

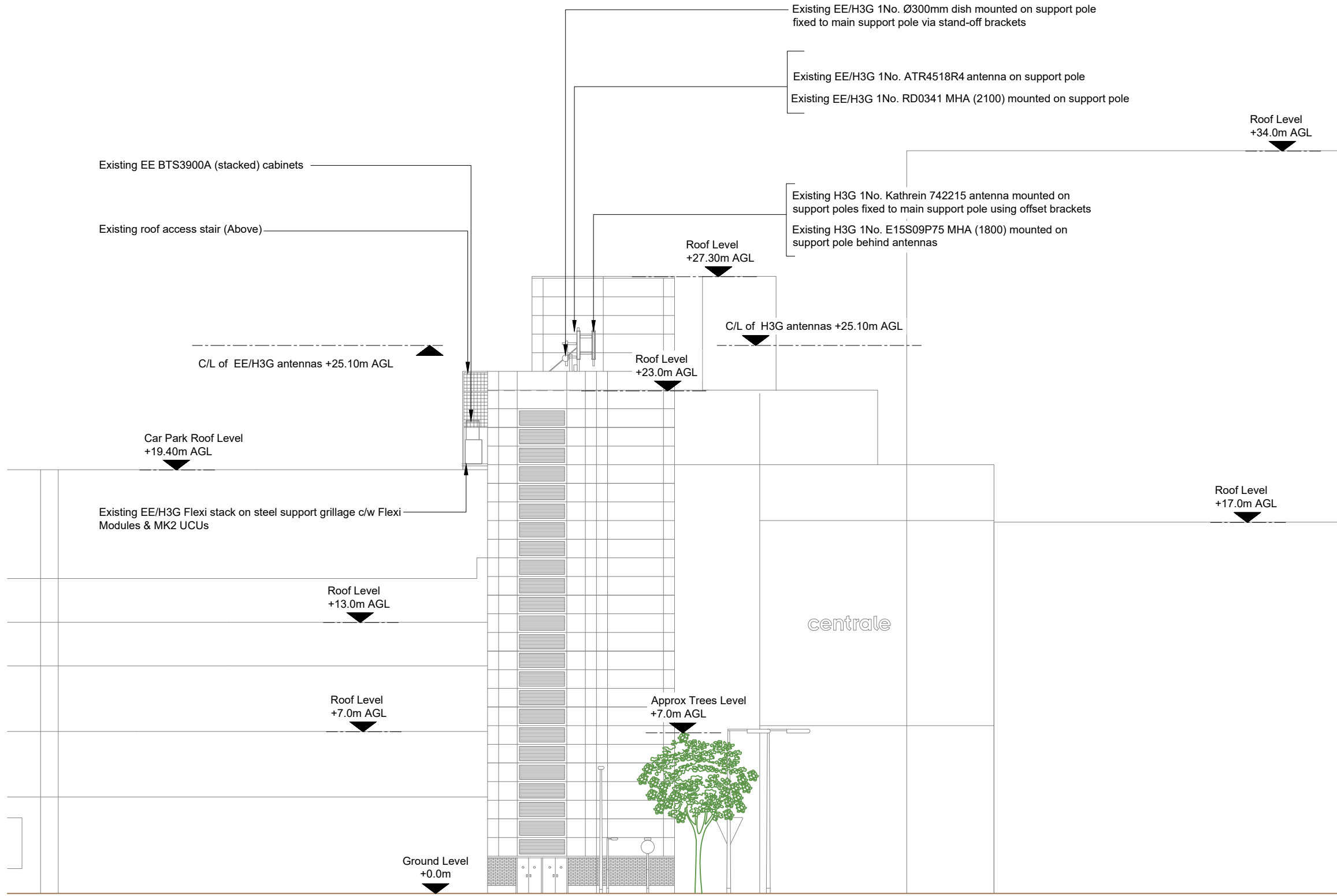
Issue:  
**A1**

PROPOSED SITE PLAN



100mm  
50mm  
10mm





EXISTING SITE ELEVATION A



NOTES:

- 1. ALL DIMENSIONS IN MM UNLESS OTHERWISE NOTED.

Master:	MBNL / EE / H3G:	Project:	Purpose of Issue:	Issue:
M002	MBNL	Vendor Swap	Detail Design	A1
Date:	06/11/2023	Revision / Upgrade Description:		
Drawn:	DvB	First Issue		
Checked:	DM			
Approved:	KTL			
Master:	MBNL / EE / H3G:	Project:	Purpose of Issue:	Issue:
M001	MBNL	Vendor Swap	Planning	A
Date:	30/08/2023	Revision / Upgrade Description:		
Drawn:	MM	First Issue		
Checked:	DvB			
Approved:	KTL			



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Site Name:  
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Site ID:  
**1082862**

Address:  
**CENTRALE SHOPPING CENTRE  
NORTH END  
CROYDON  
CR0 1TY**

Title:  
**200 EXISTING SITE ELEVATION A**

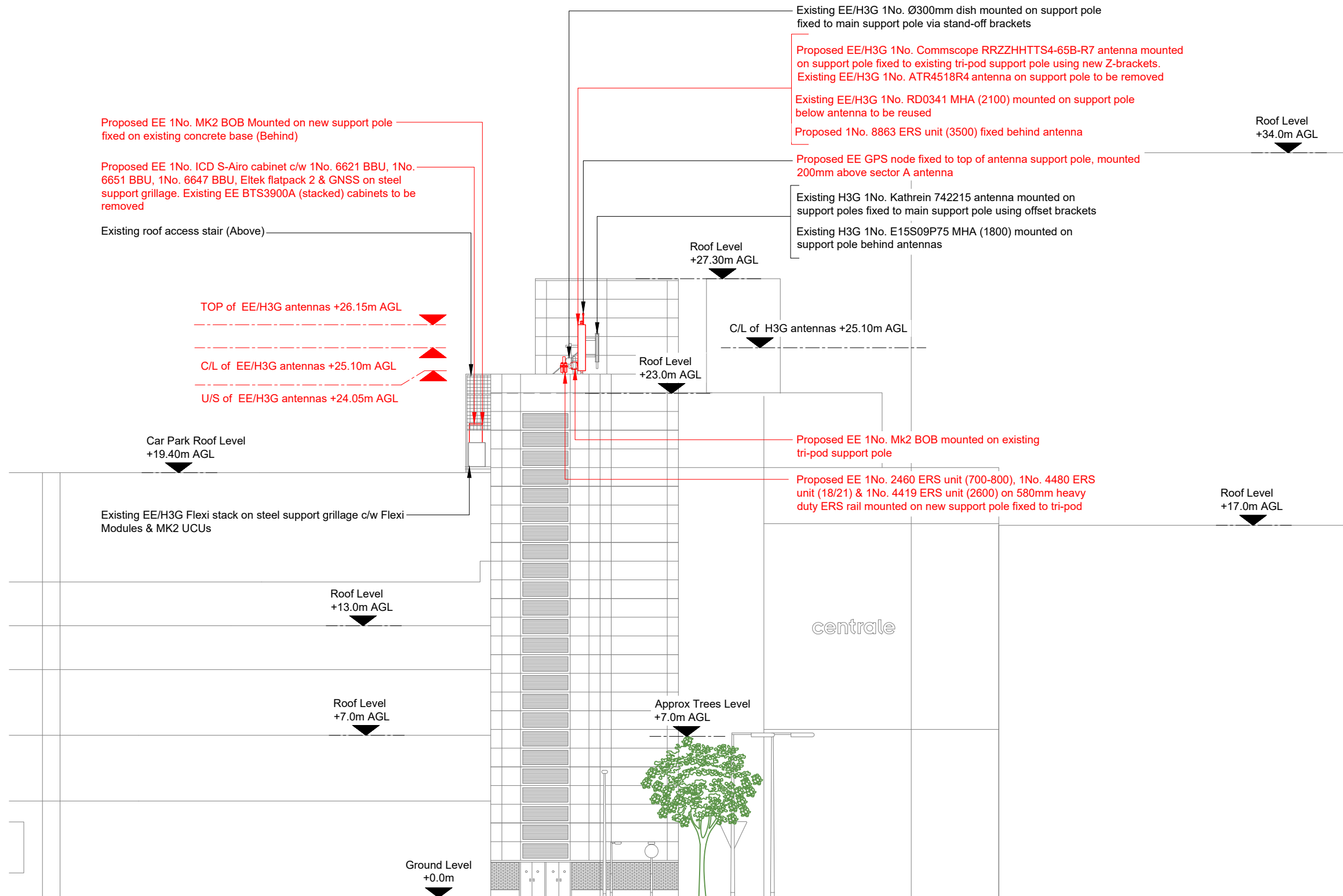
Project:  
**VENDOR SWAP**

Purpose of Issue:  
**DETAILED DESIGN**

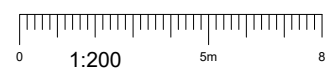
EE Cell ID: <b>50961</b>	MBNL Cell ID: <b>CDN002</b>	3UK Cell ID: <b>CR0137</b>
-----------------------------	--------------------------------	-------------------------------

Master Drawing No: <b>1082862_CDN002_50961_CR0137_M002</b>	Issue: <b>A1</b>
---	---------------------

100mm  
50mm  
10mm



PROPOSED SITE ELEVATION A



NOTES:

- ALL DIMENSIONS IN MM UNLESS OTHERWISE NOTED.

Note:  
All existing feeder/fibre cables to be re-used.  
Subject to testing

Master:	MBNL / EE / H3G:	Project:	Purpose of Issue:	Issue:
M002	MBNL	Vendor Swap	Detail Design	A1
Date:	06/11/2023	Revision / Upgrade Description:		
Drawn:	DvB	First Issue		
Checked:	DM			
Approved:	KTL			
Master:	MBNL / EE / H3G:	Project:	Purpose of Issue:	Issue:
M001	MBNL	Vendor Swap	Planning	A
Date:	30/08/2023	Revision / Upgrade Description:		
Drawn:	MM	First Issue		
Checked:	DvB			
Approved:	KTL			



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Site Name:

CENTRALE SHOPPING CENTRE 2

Site ID:

1082862

Address:

CENTRALE SHOPPING CENTRE  
NORTH END  
CROYDON  
CR0 1TY

Title:

250 PROPOSED SITE ELEVATION A

Project:

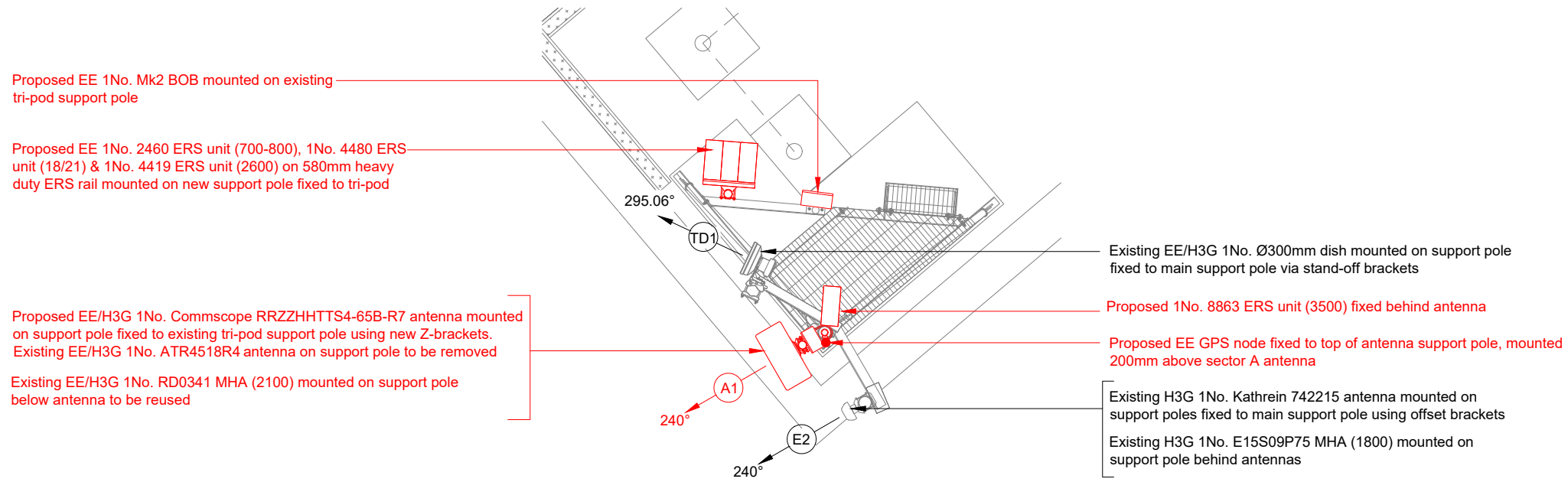
VENDOR SWAP

Purpose of Issue:

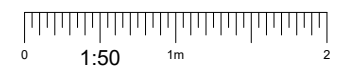
DETAILED DESIGN

EE Cell ID:	MBNL Cell ID:	3UK Cell ID:
50961	CDN002	CR0137

Master Drawing No:	Issue:
1082862_CDN002_50961_CR0137_M002	A1



PROPOSED ANTENNA & RRU PLAN



NOTES:  
1. ALL DIMENSIONS IN MM UNLESS OTHERWISE NOTED.

Master:	MBNL / EE / H3G:	Project:	Purpose of Issue:	Issue:
M002	MBNL	Vendor Swap	Detail Design	A1
Date:	06/11/2023	Revision / Upgrade Description:		
Drawn:	DvB	First Issue		
Checked:	DM			
Approved:	KTL			
Master:	MBNL / EE / H3G:	Project:	Purpose of Issue:	Issue:
M001	MBNL	Vendor Swap	Planning	A
Date:	30/08/2023	Revision / Upgrade Description:		
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Site Name:  
**CENTRALE SHOPPING CENTRE 2**

Site ID:  
**1082862**

Address:  
**CENTRALE SHOPPING CENTRE  
NORTH END  
CROYDON  
CR0 1TY**

Title:  
**310 ANTENNA PLAN & RRU PLAN**

Project:  
**VENDOR SWAP**

Purpose of Issue:  
**DETAILED DESIGN**

EE Cell ID: <b>50961</b>	MBNL Cell ID: <b>CDN002</b>	3UK Cell ID: <b>CR0137</b>
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Master Drawing No: <b>1082862_CDN002_50961_CR0137_M002</b>	Issue: <b>A1</b>
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100mm  
50mm  
10mm



EXISTING ANTENNA SCHEDULE

ANTENNAS							FEEDER/FIBRE					BOBS / MHA's / RRU's / JUMPERS / ROUTERS										Antenna Status / Additional comments			
Antenna ID	Antenna Manufacturer & Type	Antenna AGL (m) TOP C/L U/S	Antenna Bearing (°)	Operator	Spectrum Port number	Tech Deployed	Type & Length(m)					Main Feeder Type (COAX or Fibre)	Main Feeders QTY	Fibre Trunk Length	BOB Low Level QTY / TYPE	BBU to BOB length (m)	BOB High Level QTY / Type	BOB to RRU / AAU Length (m)	RFU / RRU / AAU (RFU Type to be called off)	RRU to Antenna Length (m)	MHA Type	Passive Router (Low Level)	Active Router (High Level)	COAX Feeder Loss (db)	
							Low level Jumper	Main Feeder	High Level Jumper 1 (MHA)	High Level Jumper 2 (router/combiner)	Total														
E1	ATR4518R4	25.1	240°	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Remove	
				EE/H3G	3 - 4	1800/2100	4-50 =2m	5-50 =26m	4-50 =2m	-	30m	COAX	2No. Existing	-	-	-	-	-	-	RD0341	-	-	-	-1.83	
E2	Kathrein 742215	25.10	240°	H3G	1 - 2	1800	4-50 =2m	78-50 =26m	4-50 =2m	-	30m	COAX	2No. Existing	-	-	-	-	-	-	E15S09P75	-	-	-	-1.68	Remain

Master:	MBNL / EE / H3G:	Project:	Purpose of Issue:	Issue:
M002	MBNL	Vendor Swap	Detail Design	A1
Date:	06/11/2023	Revision / Upgrade Description:		
Drawn:	DvB	First Issue		
Checked:	DM			
Approved:	KTL			
Master:	MBNL / EE / H3G:	Project:	Purpose of Issue:	Issue:
M001	MBNL	Vendor Swap	Planning	A
Date:	30/08/2023	Revision / Upgrade Description:		
Drawn:	MM	First Issue		
Checked:	DvB			
Approved:	KTL			



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Site Name:  
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Site ID:  
**1082862**

Address:  
**CENTRALE SHOPPING CENTRE  
NORTH END  
CROYDON  
CR0 1TY**

Title:  
**320 EXISTING ANTENNA SCHEDULE**

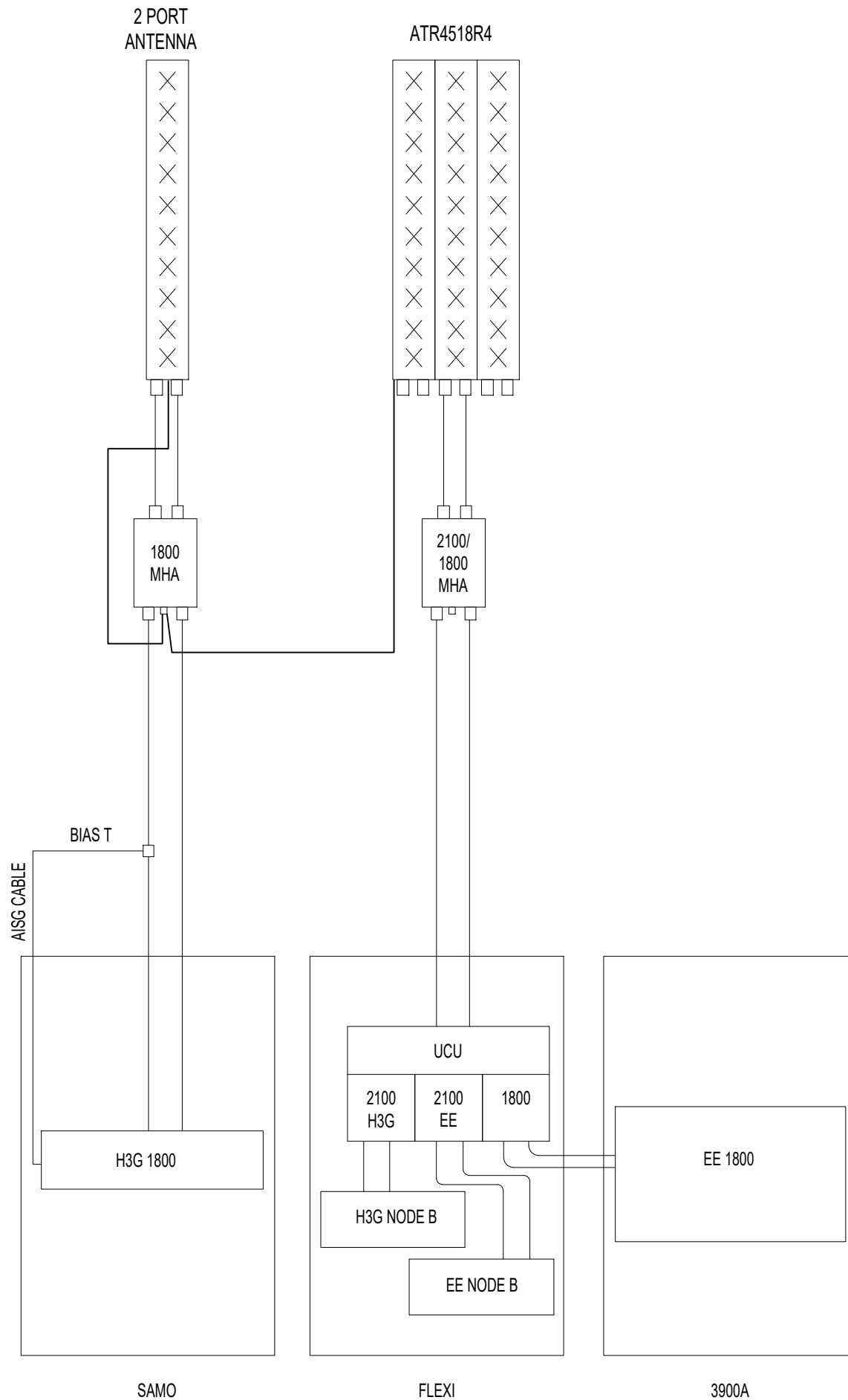
Project:  
**VENDOR SWAP**

Purpose of Issue:  
**DETAILED DESIGN**

EE Cell ID: <b>50961</b>	MBNL Cell ID: <b>CDN002</b>	3UK Cell ID: <b>CR0137</b>
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Master Drawing No: <b>1082862_CDN002_50961_CR0137_M002</b>	Issue: <b>A1</b>
---	---------------------

100mm  
50mm  
10mm



Master:	MBNL / EE / H3G:	Project:	Purpose of Issue:	Issue:
M002	MBNL	Vendor Swap	Detail Design	A1
Date:	06/11/2023	Revision / Upgrade Description:		
Drawn:	DvB	First Issue		
Checked:	DM			
Approved:	KTL			
Master:	MBNL / EE / H3G:	Project:	Purpose of Issue:	Issue:
M001	MBNL	Vendor Swap	Planning	A
Date:	30/08/2023	Revision / Upgrade Description:		
Drawn:	MM	First Issue		
Checked:	DvB			
Approved:	KTL			



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Site Name:  
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Site ID:  
**1082862**

Address:  
**CENTRALE SHOPPING CENTRE  
NORTH END  
CROYDON  
CR0 1TY**

Title:  
**325 EXISTING LINE CONFIGURATION**

Project:  
**VENDOR SWAP**

Purpose of Issue:  
**DETAILED DESIGN**

EE Cell ID:	MBNL Cell ID:	3UK Cell ID:
<b>50961</b>	<b>CDN002</b>	<b>CR0137</b>

Master Drawing No:	Issue:
<b>1082862_CDN002_50961_CR0137_M002</b>	<b>A1</b>

100mm  
50mm  
10mm

**PROPOSED ANTENNA SCHEDULE (Proposed / Existing-Remain )**

ANTENNAS							FEEDER/FIBRE					BOBS / MHA's / RRU's / JUMPERS / ROUTERS										Antenna Status / Additional comments													
Antenna ID	Antenna Manufacturer & Type	Antenna AGL (m) TOP C/L U/S	Antenna Bearing (°)	Operator	Spectrum Port number	Tech Deployed	Type & Length(m)					Main Feeder Type (COAX or Fibre)	Main Feeders QTY Existing / Proposed	Fibre Trunk Length	BOB Low Level QTY / TYPE	BBU to BOB length (m)	BOB High Level QTY / Type	BOB to RRU / AAU Length (m)	RFU / RRU / AAU (RRU Type to be called off)	RRU to Antenna Length (m)	MHA Type		Passive Router (Low Level)	Active Router (High Level)	COAX Feeder Loss (db)										
							Low level Jumper	Main Feeder	High Level Jumper 1 (MHA)	High Level Jumper 2 (router/combiner)	Total																								
E1	ATR4518R4	25.1	240°	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Remove											
E2	Kathrein 742215	25.10	240°	H3G	1 - 2	1800	4-50 =2m	78-50 =26m	4-50 =2m	-	30m	COAX	2No. Existing	-	-	-	-	RFU	-	E15S09P75	-	-	-	Remain											
A1	Commscope RRZZHHTTS4-65B -R7	26.15 25.10 24.05	240°	EE	1 - 2	700-800	-	-	-	-	-	Multicore Fibre	1No. Proposed	30m	MK2 BOB	3m	MK2 BOB	2.0m	2460 ERS	2.0m	-	-	-	-	-0.13	Proposed									
				EE	3 - 4		-	-	-	-	2.0m							-	-	-	-	-	-	-	-		-	-	-	-	-	-0.13			
				EE	5 - 6	1800/2100	-	-	-	-	-							-	-	2.0m	4480 ERS	2.0m	-	-	-		-	-	-	-	-	-	-	-0.22	
				EE	7 - 8		-	-	-	-	-							-	-	2.0m	4419 ERS	2.0m	-	-	-		-	-	-	-	-	-	-	-0.22	
				EE	9 - 10	2600	-	-	-	-	-							-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-
				EE	11 - 12	SPARE	-	-	-	-	-							-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-
				EE	13 - 14	2100	4-50 =2m	5-50 =26m	4-50 =2m	-	30m							-	-	-	-	-	-	-	-		RFU	-	RD0341	-	-	-	-	-	-1.83
				EE	15 - 16	2600	-	-	-	-	-							-	-	-	-	1No. Proposed	30m	MK2 BOB	3m		MK2 BOB	2.0m	4419 ERS	2.0m	-	-	-	-	-
EE	17 - 25	3500	-	-	-	-	-	-	-	-	-	1No. Proposed	30m	MK2 BOB	3m	MK2 BOB	2.0m	8863 ERS	2.0m	-	-	-	-	-	-0.28										

Master:	MBNL / EE / H3G:	Project:	Purpose of Issue:	Issue:
M002	MBNL	Vendor Swap	Detail Design	A1
Date:	06/11/2023	Revision / Upgrade Description:		
Drawn:	DvB	First Issue		
Checked:	DM			
Approved:	KTL			
Master:	MBNL / EE / H3G:	Project:	Purpose of Issue:	Issue:
M001	MBNL	Vendor Swap	Planning	A
Date:	30/08/2023	Revision / Upgrade Description:		
Drawn:	MM	First Issue		
Checked:	DvB			
Approved:	KTL			



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Site ID:  
**1082862**

Address:  
**CENTRALE SHOPPING CENTRE  
NORTH END  
CROYDON  
CR0 1TY**

Title:  
**330 PROPOSED ANTENNA SCHEDULE**

Project:  
**VENDOR SWAP**

Purpose of Issue:  
**DETAILED DESIGN**

EE Cell ID: <b>50961</b>	MBNL Cell ID: <b>CDN002</b>	3UK Cell ID: <b>CR0137</b>
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Master Drawing No: <b>1082862_CDN002_50961_CR0137_M002</b>	Issue: <b>A1</b>
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100mm  
50mm  
10mm



Key

Description	Line Style
Proposed 800	
Proposed 3G 1800/2100	
Proposed LTE 1800/2100	
Proposed 2600	
Proposed 3400-3600	
Existing Feeders, Jumpers, Equipment	
Proposed Feeders & Equipment	
Proposed Power Cables	
Proposed Single Mode Fibre	
Proposed Multimode Fibre / Hybrid Trunking	
RET Cables	

Master: M002	MBNL / EE / H3G:	Project: Vendor Swap	Purpose of Issue: Detail Design	Issue: A1
Date: 06/11/2023	Drawn: DvB	Revision / Upgrade Description: First Issue		
Checked: DM	Approved: KTL			
Master: M001	MBNL / EE / H3G:	Project: Vendor Swap	Purpose of Issue: Planning	Issue: A
Date: 30/08/2023	Drawn: MM	Revision / Upgrade Description: First Issue		
Checked: DvB	Approved: KTL			



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Site Name: CENTRALE SHOPPING CENTRE 2

Site ID: 1082862

Address: CENTRALE SHOPPING CENTRE  
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CR0 1TY

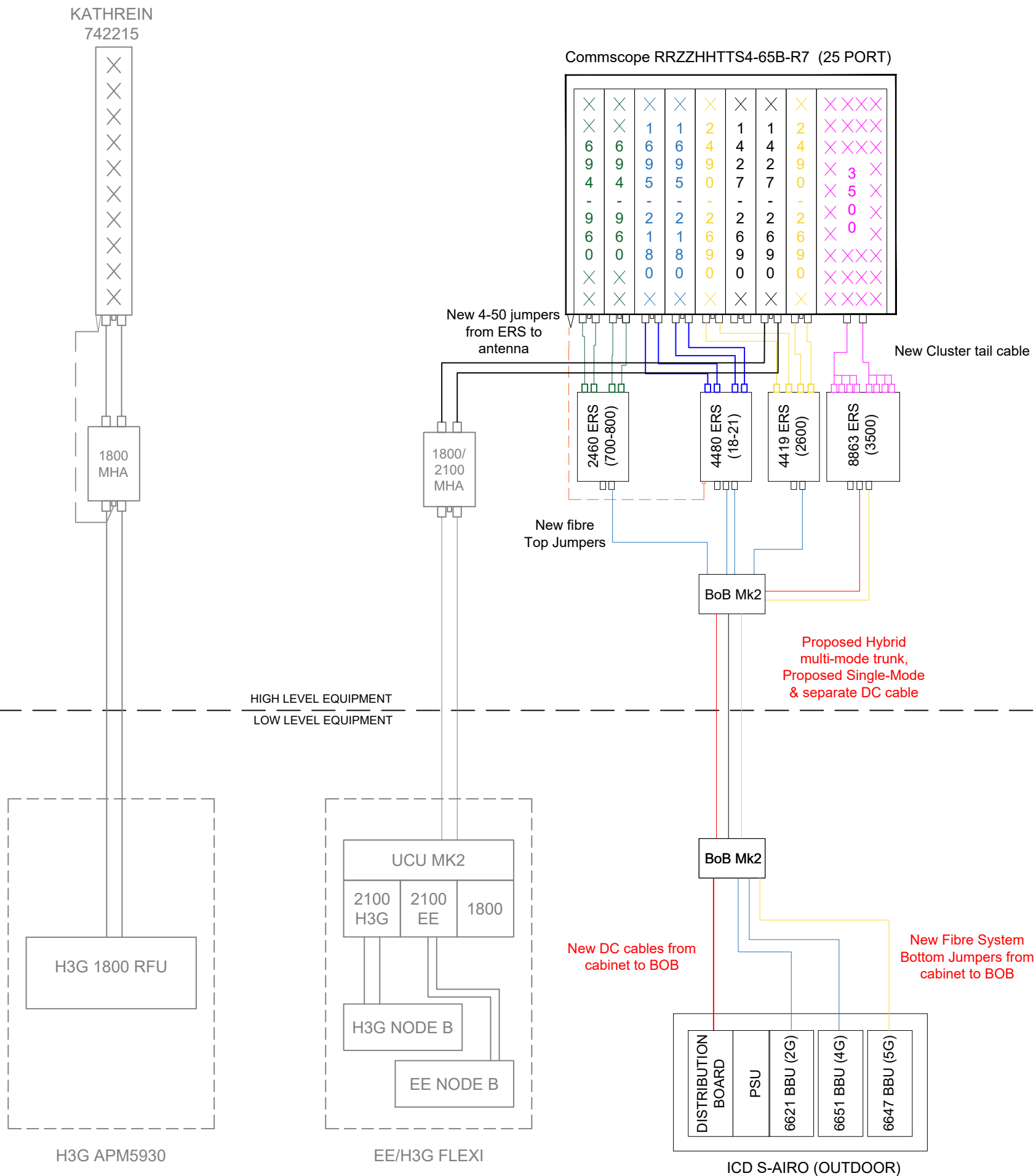
Title: 335 PROPOSED LINE CONFIGURATION

Project: VENDOR SWAP

Purpose of Issue: DETAILED DESIGN

EE Cell ID: 50961 MBNL Cell ID: CDN002 3UK Cell ID: CR0137

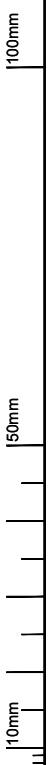
Master Drawing No: 1082862\_CDN002\_50961\_CR0137\_M002 Issue: A1



Commscope RRZZHHTTS4-65B-R7 (25 PORT)

×	×	×	×	×	×	×	×	×	×
6	6	1	1	2	1	1	2	×	×
9	9	9	9	9	4	4	4	×	×
4	4	5	5	0	7	7	0	×	×
9	9	-	-	-	-	-	-	×	×
9	9	2	2	2	2	2	2	×	×
6	6	1	1	6	6	6	6	×	×
0	0	8	8	9	9	9	9	×	×
×	×	0	0	0	0	0	0	×	×

Proposed Operators Carrier Count	
Frequency	Count
700	1
800	1
1800	2
2100	1
2600	2
3500	1



### Support Structure Schedule

Structure ID	Status	Height / Length AGL (m)	Structure Manufacturer	Description / Type	Colour / Finishing (RAL Colour)	Size (mm)	Foundation / Support Grillage / Host Structure Details	Comments
ST1	Existing	-	-	Tri-pod	Galvanised	-	Free-Standing	1No.
ST2	Existing	25.10m	Bespoke	Antenna Support Pole	Galvanised	Ø60.3x3.0	Free-Standing	1No.
ST3	Existing	-	-	Offset brackets	Galvanised	-	Free-Standing	2No.
ST4	Proposed	25.10m	Bespoke	Antenna Support Pole	Galvanised	Ø76.1x5.0	Free-Standing	1No.
ST5	Proposed	-	-	Z-brackets	Galvanised	-	Free-Standing	2No.
ST6	Proposed	25.10m	Bespoke	ERS Support pole	Galvanised	Ø88.9x3.2	Free-Standing	1No. 1500mm long

**STATUS KEY:**

**Installed:** Existing  
**Retain:** Existing and to remain  
**Relocate:** Existing and to be relocated  
**Remove:** Existing to be removed from site  
**Proposed:** New on site

**LOCATION KEY:**

**Outdoor:** Located outside  
**Indoor:** Located within an equipment cabin or equipment room  
**Internal:** located inside a cabinet or item of equipment

### Equipment Schedule

Equipment ID	Operator	Quantity	Status	Equipment Manufacturer	Equipment Description / Type	Dimensions (W x D x H)	Weight (kg)	Colour (RAL Colour)	Location	Comments
CAB1	EE/H3G	1	Existing	Portastor	MK3 Link AC	600x500x1240	250kg	RAL 7035	Grillage	-
CAB2	EE/H3G	1	Existing	Nokia	Flexi Stack	492x560x1300	250kg	RAL 7035	Grillage	c/w Flexi Modules & MK2 UCU
CAB3	H3G	1	Existing	Huawei	OFS5906 'L' rack	750x750x600	250kg	RAL 7035	Grillage	-
CAB4	H3G	1	Existing	Huawei	APM5930	480x600x1000	250kg	RAL 7035	Grillage	-
CAB5	EE	2	Remove	Huawei	BTS 3900A (Stacked)	600x480x1400	250kg	RAL 7035	Grillage	-
CAB6	EE	1	Proposed	ICD	S-AIRO	600x600x2100	250kg	RAL 6009	Grillage	-
ERS1	EE	1	Proposed	Ericsson	2460 ERS Unit	398x190x553	37.5kg	RAL 7035	Free-Standing Frame	For 700/800 technology
ERS2	EE	1	Proposed	Ericsson	4480 ERS Unit	553x398x151	32.5kg	RAL 7035	Free-Standing Frame	For 1800/2100 Technology
ERS3	EE	1	Proposed	Ericsson	4419 ERS Unit	477x898x153	21kg	RAL 7035	Free-Standing Frame	For 2600 Technology
ERS4	EE	1	Proposed	Ericsson	8863 ERS Unit	343 x146x495	20.7kg	RAL 7035	Free-Standing Frame	For 3500 Technology
BT1	EE	1	Proposed	Commscope	MK2 BOB	300x300x150	10kg	RAL 7035	Free-Standing Frame	-
BB1	EE	1	Proposed	Commscope	MK2 BOB	300x300x150	10kg	RAL 7035	Grillage	-
AMP1	EE/H3G	1	Existing	Radio Design	RD0341 MHA	96x230x169	5kg	RAL 7035	Structure High Level	For 2100
AMP2	H3G	1	Existing	Commscope	E15S09P75	227x56x225	4.5kg	RAL 7035	Structure High Level	For 1800
BBU 1	EE	1	Proposed	Ericsson	6621 BBU	447x350x44.5	6kg	RAL 7035	Within Cabinet	2G BBU within S-AIRO
BBU 2	EE	1	Proposed	Ericsson	6651 BBU	447x352x44.5	7.5kg	RAL 7035	Within Cabinet	4G BBU within S-AIRO
BBU 3	EE	1	Proposed	Ericsson	6647 BBU	447x352x44.5	7.5kg	RAL 7035	Within Cabinet	5G BBU within S-AIRO
REC1	EE	1	Proposed	Rosenberger	GNSS Receiver	78x78x95	-	RAL 7035	Within Cabinet	within S-AIRO

Master: M002	MBNL / EE / H3G: MBNL	Project: Vendor Swap	Purpose of Issue: Detail Design	Issue: A1
Date: 06/11/2023	Revision / Upgrade Description: First Issue	Drawn: DvB	Checked: DM	Approved: KTL
Master: M001	MBNL / EE / H3G: MBNL	Project: Vendor Swap	Purpose of Issue: Planning	Issue: A
Date: 30/08/2023	Revision / Upgrade Description: First Issue	Drawn: MM	Checked: DvB	Approved: KTL



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Site Name: CENTRALE SHOPPING CENTRE 2  
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 Address: CENTRALE SHOPPING CENTRE  
 NORTH END  
 CROYDON  
 CR0 1TY

### GPS NODE Schedule

Equipment ID	Supply Status	Operator	Height (C/L) AGL	Cable Length	Cable type	Location	Comments
GPS1	Proposed	EE	26.30m	25m	4-50	Sector A	GPS Node fixed above EE antenna at Sector A

Title: 400 EQUIPMENT SCHEDULE & SUPPORT STRUCTURE DETAILS

Project: VENDOR SWAP

Purpose of Issue: DETAILED DESIGN

EE Cell ID: 50961	MBNL Cell ID: CDN002	3UK Cell ID: CR0137
Master Drawing No: 1082862_CDN002_50961_CR0137_M002		Issue: A1

100mm

50mm

10mm

### AC Power Schedule

Equipment ID	Supply Status	Operator	Type	Incoming Supply Type	Meter / Service head / location	Distribution Board Manufacturer (cabins / internal rooms)	Upgrade Required (Y / N / TBC at DD)	Comments
MCAB1	Existing	EE/H3G	REC	Single Phase 100A	Meter room	Proteus	N	-
DB	Existing	EE/H3G	AC	Single Phase 100A	MK3 Link AC	Hager	N	-

**STATUS KEY:**

**Installed:** Existing  
**Retain:** Existing and to remain  
**Relocate:** Existing and to be relocated  
**Remove:** Existing to be removed from site  
**Proposed:** New on site

**LOCATION KEY:**

**Outdoor:** Located outside  
**Indoor:** Located within an equipment cabin or equipment room  
**Internal:** located inside a cabinet or item of equipment

### DC Power Schedule

Supply Status	Operator	Enclosure / Location	Model	Rectifier		Upgrade Required (Y / N / TBC at DD)	Comments
				QTY	Size (kw)		
Existing	EE/H3G	MK3 Link AC	Eltek Flatpack 2	2	1.8	N	-
Proposed	EE	S-AIRO	Eltek Flatpack 2	5	2	-	-

### Transmission Supply Schedule

Equipment ID	Supply Status	Operator	Enclosure	Type:	Supplier Name	U-Space Available	Comments
CAB1	Existing	EE/H3G	MK3 Link AC	Microwave & Fibre	BT	4U	-

Master: M002	MBNL / EE / H3G: MBNL	Project: Vendor Swap	Purpose of Issue: Detail Design	Issue: A1
Date: 06/11/2023	Revision / Upgrade Description: First Issue			
Drawn: DvB	Checked: DM			
Approved: KTL	Master: M001			
Master: M001	MBNL / EE / H3G: MBNL	Project: Vendor Swap	Purpose of Issue: Planning	Issue: A
Date: 30/08/2023	Revision / Upgrade Description: First Issue			
Drawn: MM	Checked: DvB			
Approved: KTL				



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**Site ID:**

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**Address:**

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 CR0 1TY

**Title:**

401 POWER &amp; TRANSMISSION SCHEDULE

**Project:**

VENDOR SWAP

**Purpose of Issue:**

DETAILED DESIGN

EE Cell ID: <b>50961</b>	MBNL Cell ID: <b>CDN002</b>	3UK Cell ID: <b>CR0137</b>
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Master Drawing No: 1082862_CDN002_50961_CR0137_M002	Issue: <b>A1</b>
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100mm

50mm

10mm

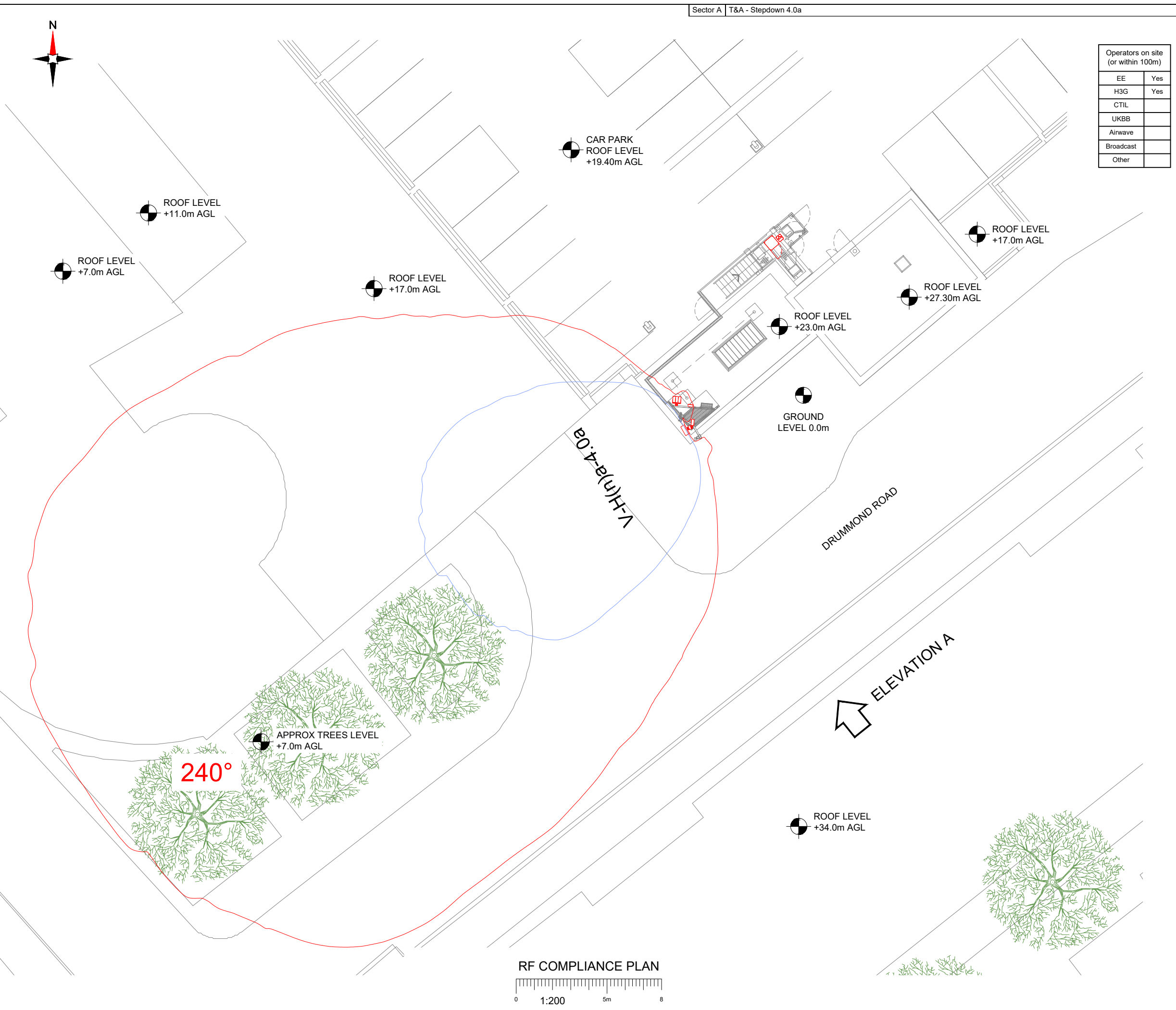




Operators on site (or within 100m)	
EE	Yes
H3G	Yes
CTIL	
UKBB	
Airwave	
Broadcast	
Other	

- NOTES:
1. ALL DIMENSIONS IN MM UNLESS OTHERWISE NOTED.
  2. REFER TO TD54000 v11.0 FOR MBNL RF COMPLIANCE GUIDANCE.

100mm  
50mm  
10mm



Master:	MBNL / EE / H3G:	Project:	Purpose of Issue:	Issue:
M002	MBNL	Vendor Swap	Detail Design	A1
Date:	06/11/2023	Revision / Upgrade Description:		
Drawn:	DvB	First Issue		
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Master:	MBNL / EE / H3G:	Project:	Purpose of Issue:	Issue:
M001	MBNL	Vendor Swap	Planning	A
Date:	30/08/2023	Revision / Upgrade Description:		
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Site ID:  
**1082862**

Address:  
**CENTRALE SHOPPING CENTRE  
NORTH END  
CROYDON  
CR0 1TY**

Title:  
**500 RF COMPLIANCE PLAN**

Project:  
**VENDOR SWAP**

Purpose of Issue:  
**DETAILED DESIGN**

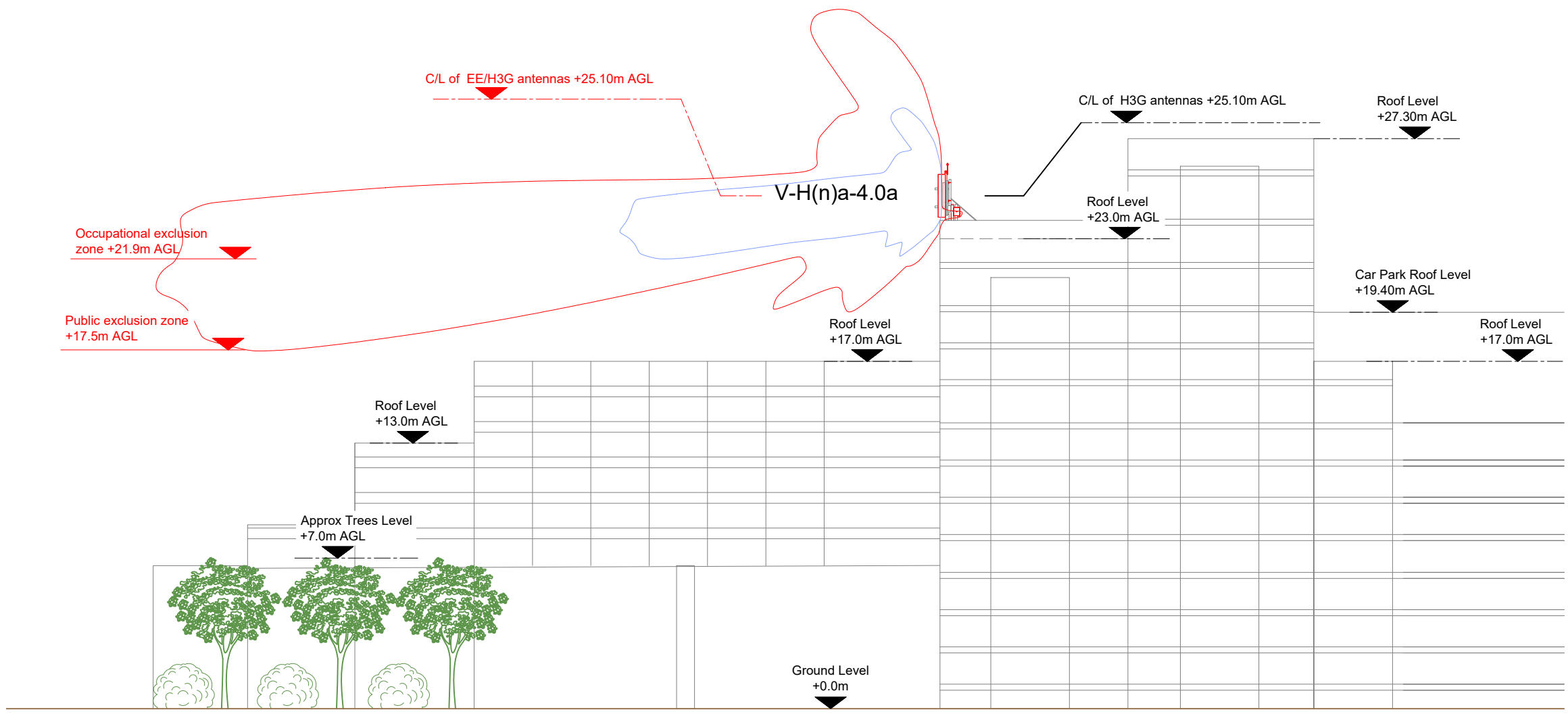
EE Cell ID: <b>50961</b>	MBNL Cell ID: <b>CDN002</b>	3UK Cell ID: <b>CR0137</b>
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Master Drawing No:  
**1082862\_CDN002\_50961\_CR0137\_M002**

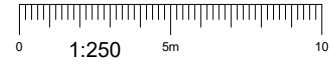
Issue:  
**A1**

Operators on site (or within 100m)	
EE	Yes
H3G	Yes
CTIL	
UKBB	
Airwave	
Broadcast	
Other	

- NOTES:
- ALL DIMENSIONS IN MM UNLESS OTHERWISE NOTED.
  - REFER TO TD54000 v11.0 FOR MBNL RF COMPLIANCE GUIDANCE.



RF COMPLIANCE ELEVATION



Master:	MBNL / EE / H3G:	Project:	Purpose of Issue:	Issue:
M002	MBNL	Vendor Swap	Detail Design	A1
Date:	06/11/2023	Revision / Upgrade Description:		
Drawn:	DvB	First Issue		
Checked:	DM			
Approved:	KTL			
Master:	MBNL / EE / H3G:	Project:	Purpose of Issue:	Issue:
M001	MBNL	Vendor Swap	Planning	A
Date:	30/08/2023	Revision / Upgrade Description:		
Drawn:	MM	First Issue		
Checked:	DvB			
Approved:	KTL			



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Email: info@ktl.ie

Site Name:  
**CENTRALE SHOPPING CENTRE 2**

Site ID:  
**1082862**

Address:  
**CENTRALE SHOPPING CENTRE  
NORTH END  
CROYDON  
CR0 1TY**

Title:  
**510 RF COMPLIANCE ELEVATION**

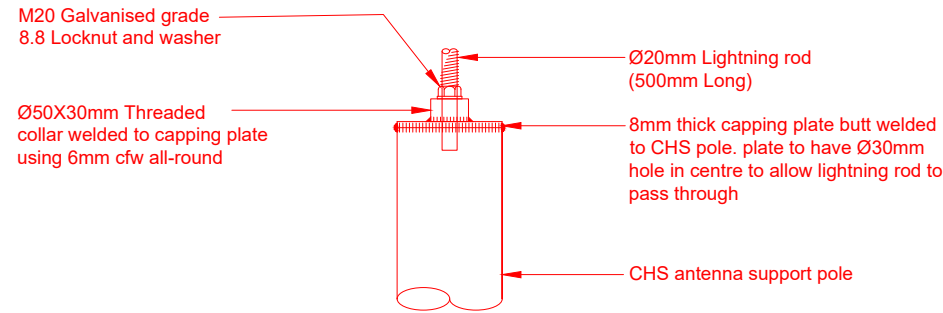
Project:  
**VENDOR SWAP**

Purpose of Issue:  
**DETAILED DESIGN**

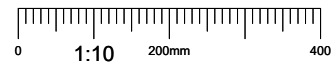
EE Cell ID: <b>50961</b>	MBNL Cell ID: <b>CDN002</b>	3UK Cell ID: <b>CR0137</b>
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Master Drawing No: <b>1082862_CDN002_50961_CR0137_M002</b>	Issue: <b>A1</b>
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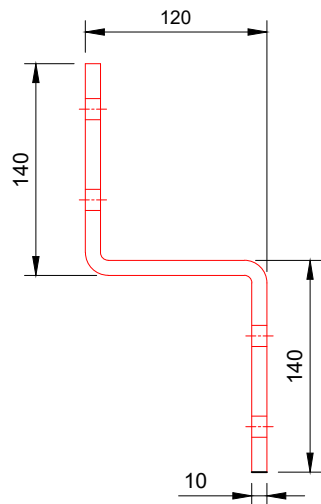
100mm  
50mm  
10mm



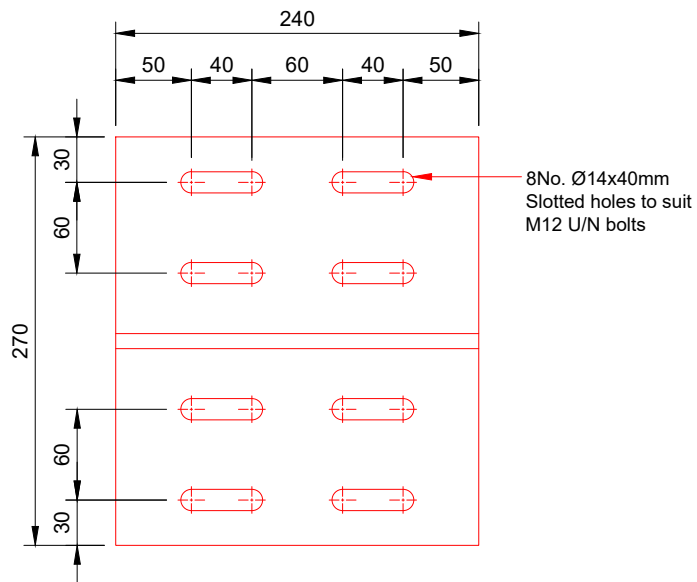
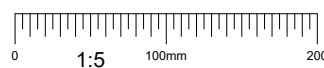
TYPICAL LIGHTNING FINIAL DETAIL



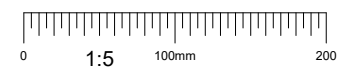
NOTE:  
Slotted holes to suit M12:  
• 60.3 - 114.3 CHS U-Bolt  
• 50x75 - 75x100 N-Bolt



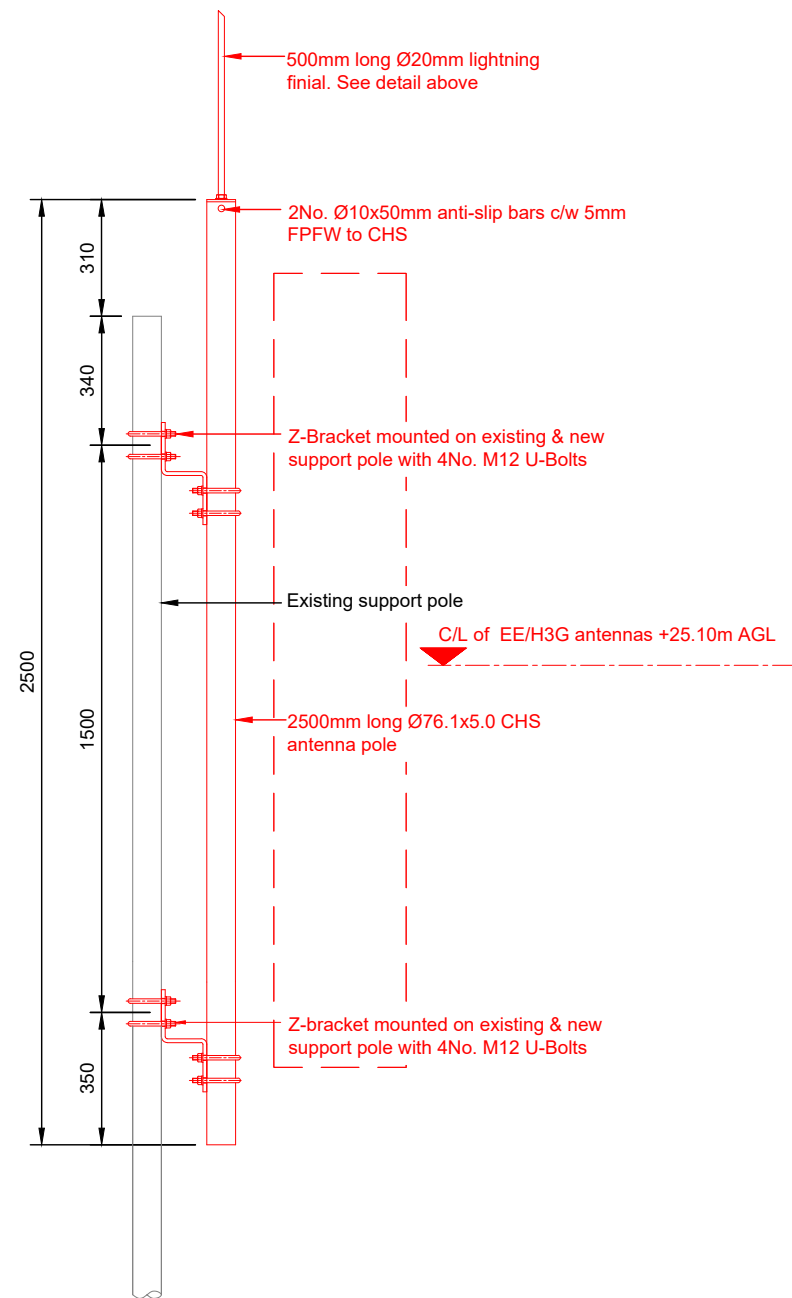
Z BRACKET SIDE VIEW



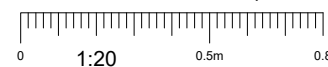
Z BRACKET FRONT VIEW



All fixings to be proprietary hot formed hot dip galvanised with flat and spring washers UNO



Z-BRACKET SUPPORT POLE (6No. REQUIRED)



NOTES:

- ALL DIMENSIONS IN MM UNLESS OTHERWISE NOTED.

Master:	MBNL / EE / H3G:	Project:	Purpose of Issue:	Issue:
M002	MBNL	Vendor Swap	Detail Design	A1
Date:	06/11/2023	Revision / Upgrade Description:		
Drawn:	DvB	First Issue		
Checked:	DM			
Approved:	KTL			
Master:	MBNL / EE / H3G:	Project:	Purpose of Issue:	Issue:
M001	MBNL	Vendor Swap	Planning	A
Date:	30/08/2023	Revision / Upgrade Description:		
Drawn:	MM	First Issue		
Checked:	DvB			
Approved:	KTL			



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Site Name:

CENTRALE SHOPPING CENTRE 2

Site ID:

1082862

Address:

CENTRALE SHOPPING CENTRE  
NORTH END  
CROYDON  
CR0 1TY

Title:

600 DETAILED DESIGN

Project:

VENDOR SWAP

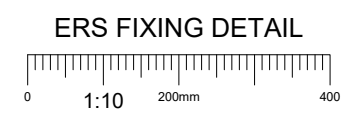
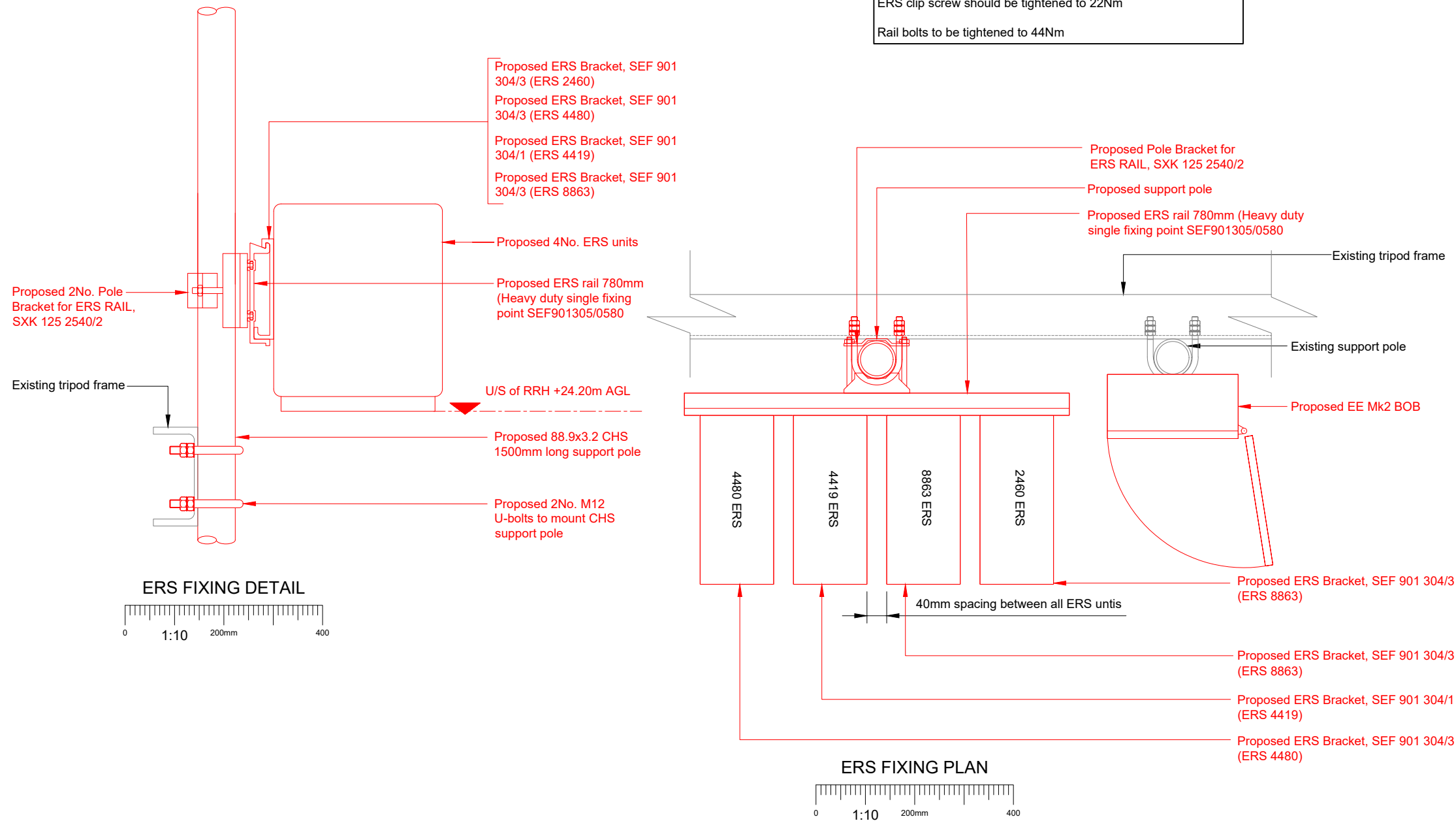
Purpose of Issue:

DETAILED DESIGN

EE Cell ID:	MBNL Cell ID:	3UK Cell ID:
50961	CDN002	CR0137

Master Drawing No:	Issue:
1082862_CDN002_50961_CR0137_M002	A1

**NOTE:**  
 Pole bracket for ERS rail, SXK 125 2540/2 Suits Ø25-120 CHS.  
 ERS clip screw should be tightened to 22Nm  
 Rail bolts to be tightened to 44Nm



NOTES:  
 1. ALL DIMENSIONS IN MM UNLESS OTHERWISE NOTED.

Master:	MBNL / EE / H3G:	Project:	Purpose of Issue:	Issue:
M002	MBNL	Vendor Swap	Detail Design	A1
Date:	06/11/2023	Revision / Upgrade Description:		
Drawn:	DvB	First Issue		
Checked:	DM			
Approved:	KTL			
Master:	MBNL / EE / H3G:	Project:	Purpose of Issue:	Issue:
M001	MBNL	Vendor Swap	Planning	A
Date:	30/08/2023	Revision / Upgrade Description:		
Drawn:	MM	First Issue		
Checked:	DvB			
Approved:	KTL			

**EE**

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Address:  
**CENTRALE SHOPPING CENTRE  
 NORTH END  
 CROYDON  
 CR0 1TY**

Title:  
**601 DETAILED DESIGN**

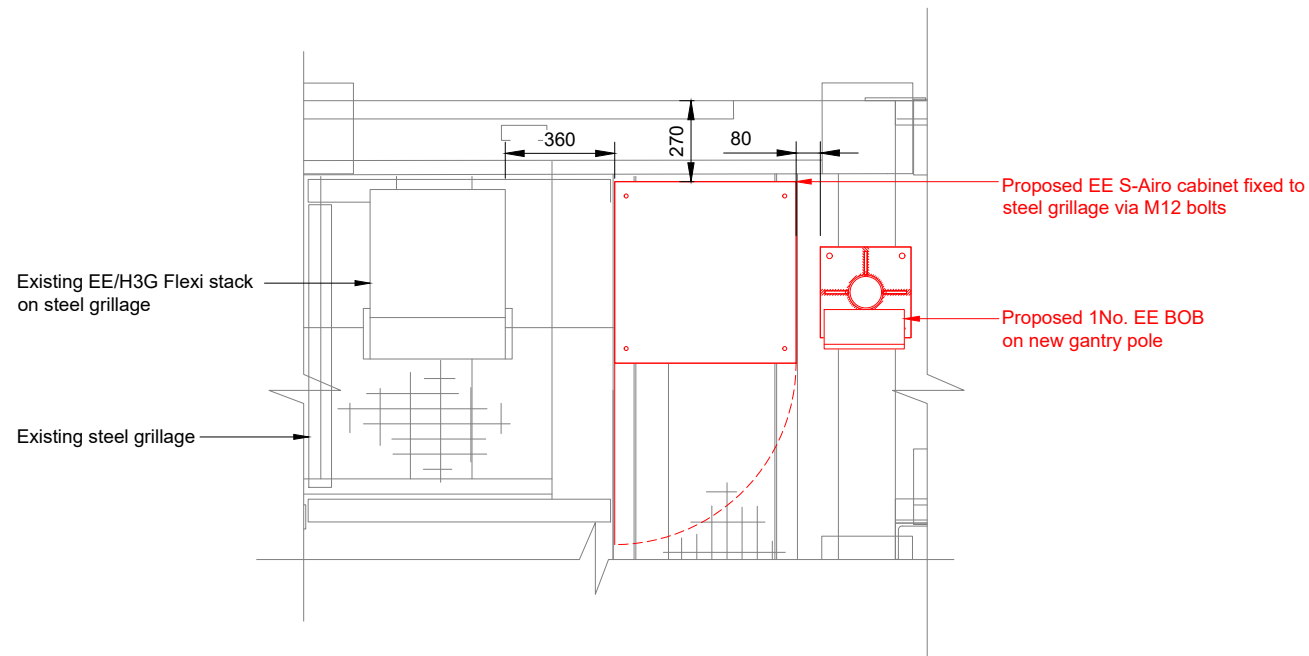
Project:  
**VENDOR SWAP**

Purpose of Issue:  
**DETAILED DESIGN**

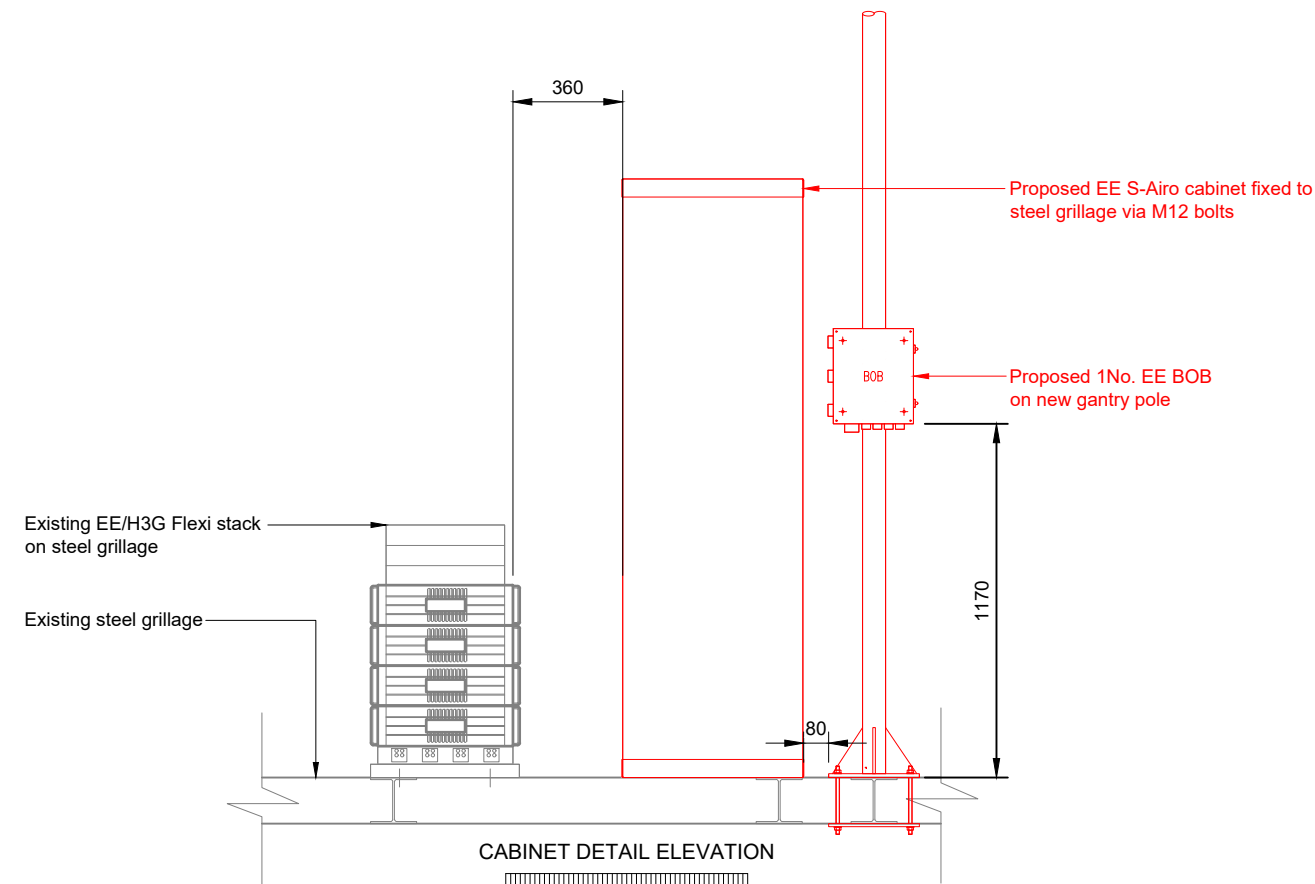
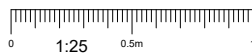
EE Cell ID: <b>50961</b>	MBNL Cell ID: <b>CDN002</b>	3UK Cell ID: <b>CR0137</b>
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Master Drawing No:  
**1082862\_CDN002\_50961\_CR0137\_M002**

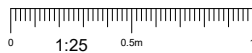
Issue:  
**A1**



CABINET DETAIL PLAN



CABINET DETAIL ELEVATION



NOTES:

- ALL DIMENSIONS IN MM UNLESS OTHERWISE NOTED.

Master:	MBNL / EE / H3G:	Project:	Purpose of Issue:	Issue:
M002	MBNL	Vendor Swap	Detail Design	A1
Date:	06/11/2023	Revision / Upgrade Description:		
Drawn:	DvB	First Issue		
Checked:	DM			
Approved:	KTL			
Master:	MBNL / EE / H3G:	Project:	Purpose of Issue:	Issue:
M001	MBNL	Vendor Swap	Planning	A
Date:	30/08/2023	Revision / Upgrade Description:		
Drawn:	MM	First Issue		
Checked:	DvB			
Approved:	KTL			



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Site ID:  
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**CENTRALE SHOPPING CENTRE  
NORTH END  
CROYDON  
CR0 1TY**

Title:  
**602 DETAILED DESIGN**

Project:  
**VENDOR SWAP**

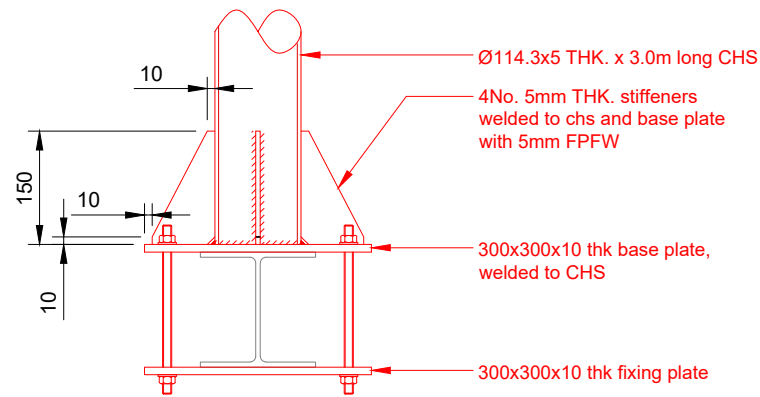
Purpose of Issue:  
**DETAILED DESIGN**

EE Cell ID: <b>50961</b>	MBNL Cell ID: <b>CDN002</b>	3UK Cell ID: <b>CR0137</b>
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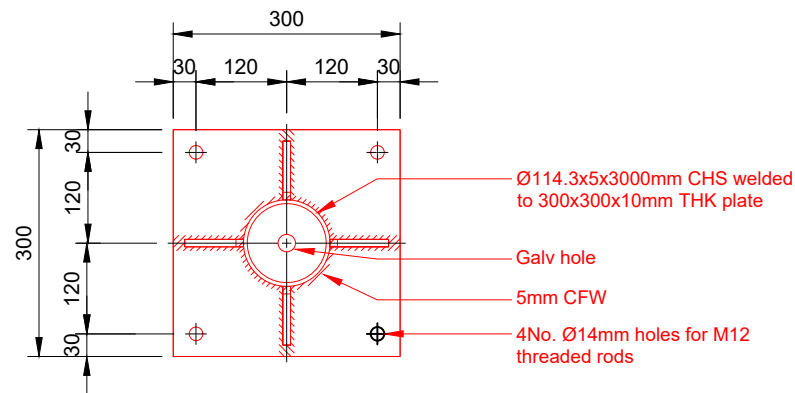
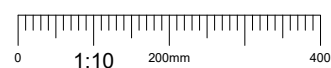
Master Drawing No: <b>1082862_CDN002_50961_CR0137_M002</b>	Issue: <b>A1</b>
---	---------------------

100mm  
50mm  
10mm

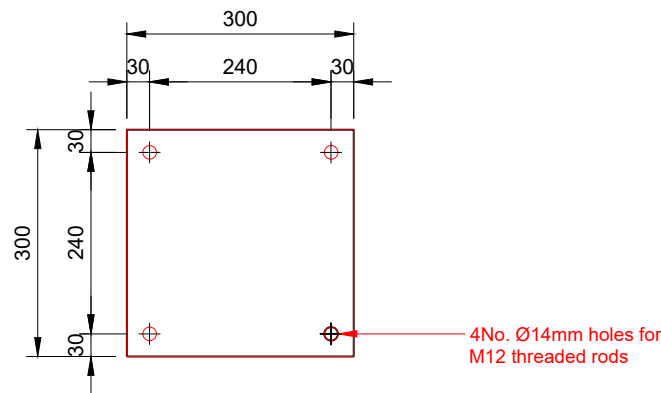
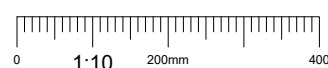




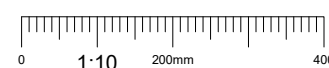
GANTRY POLE & PLATE FIXING DETAIL



GANTRY POLE & BASE PLATE FIXING PLAN



FIXING PLATE DETAIL



NOTES:  
1. ALL DIMENSIONS IN MM UNLESS OTHERWISE NOTED.

Master: M002	MBNL / EE / H3G: MBNL	Project: Vendor Swap	Purpose of Issue: Detail Design	Issue: A1
Date: 06/11/2023	Drawn: DvB	Revision / Upgrade Description: First Issue		
Checked: DM	Approved: KTL			
Master: M001	MBNL / EE / H3G: MBNL	Project: Vendor Swap	Purpose of Issue: Planning	Issue: A
Date: 30/08/2023	Drawn: MM	Revision / Upgrade Description: First Issue		
Checked: DvB	Approved: KTL			



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Site Name:  
**CENTRALE SHOPPING CENTRE 2**

Site ID:  
**1082862**

Address:  
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NORTH END  
CROYDON  
CR0 1TY**

Title:  
**603 DETAILED DESIGN**

Project:  
**VENDOR SWAP**

Purpose of Issue:  
**DETAILED DESIGN**

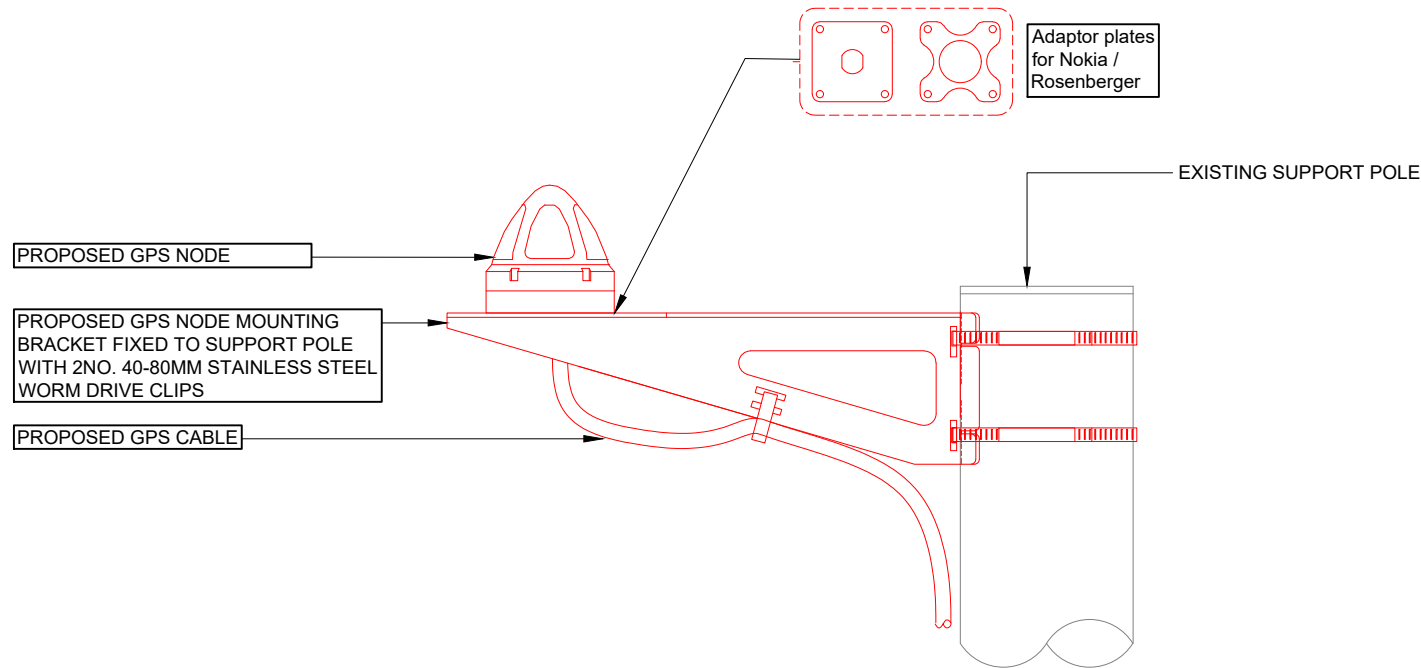
EE Cell ID: <b>50961</b>	MBNL Cell ID: <b>CDN002</b>	3UK Cell ID: <b>CR0137</b>
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Master Drawing No: <b>1082862_CDN002_50961_CR0137_M002</b>	Issue: <b>A1</b>
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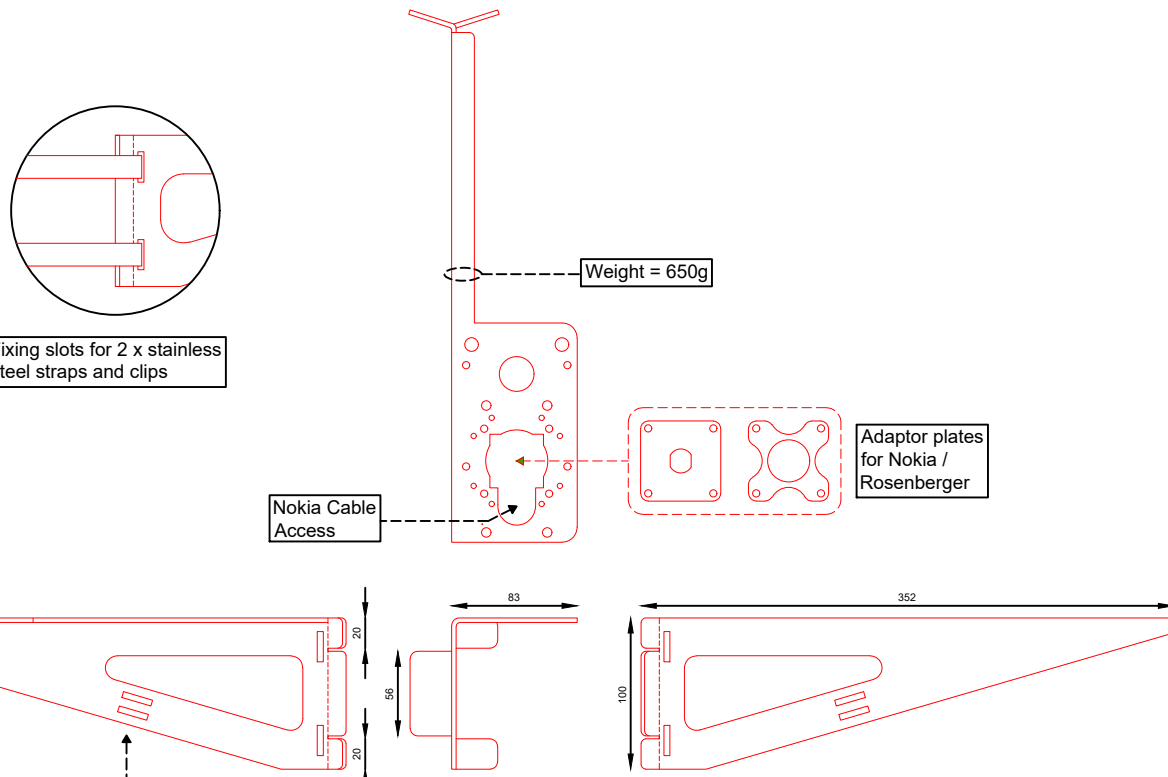
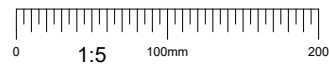
100mm

50mm

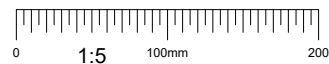
10mm



GPS FIXING DETAIL



GPS BRACKET DETAIL



NOTES:

- ALL DIMENSIONS IN MM UNLESS OTHERWISE NOTED.

Master:	MBNL / EE / H3G:	Project:	Purpose of Issue:	Issue:
M002	MBNL	Vendor Swap	Detail Design	A1
Date:	06/11/2023	Revision / Upgrade Description:		
Drawn:	DvB	First Issue		
Checked:	DM			
Approved:	KTL			
Master:	MBNL / EE / H3G:	Project:	Purpose of Issue:	Issue:
M001	MBNL	Vendor Swap	Planning	A
Date:	30/08/2023	Revision / Upgrade Description:		
Drawn:	MM	First Issue		
Checked:	DvB			
Approved:	KTL			



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Site ID:

1082862

Address:

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NORTH END  
CROYDON  
CR0 1TY

Title:

604 DETAILED DESIGN

Project:

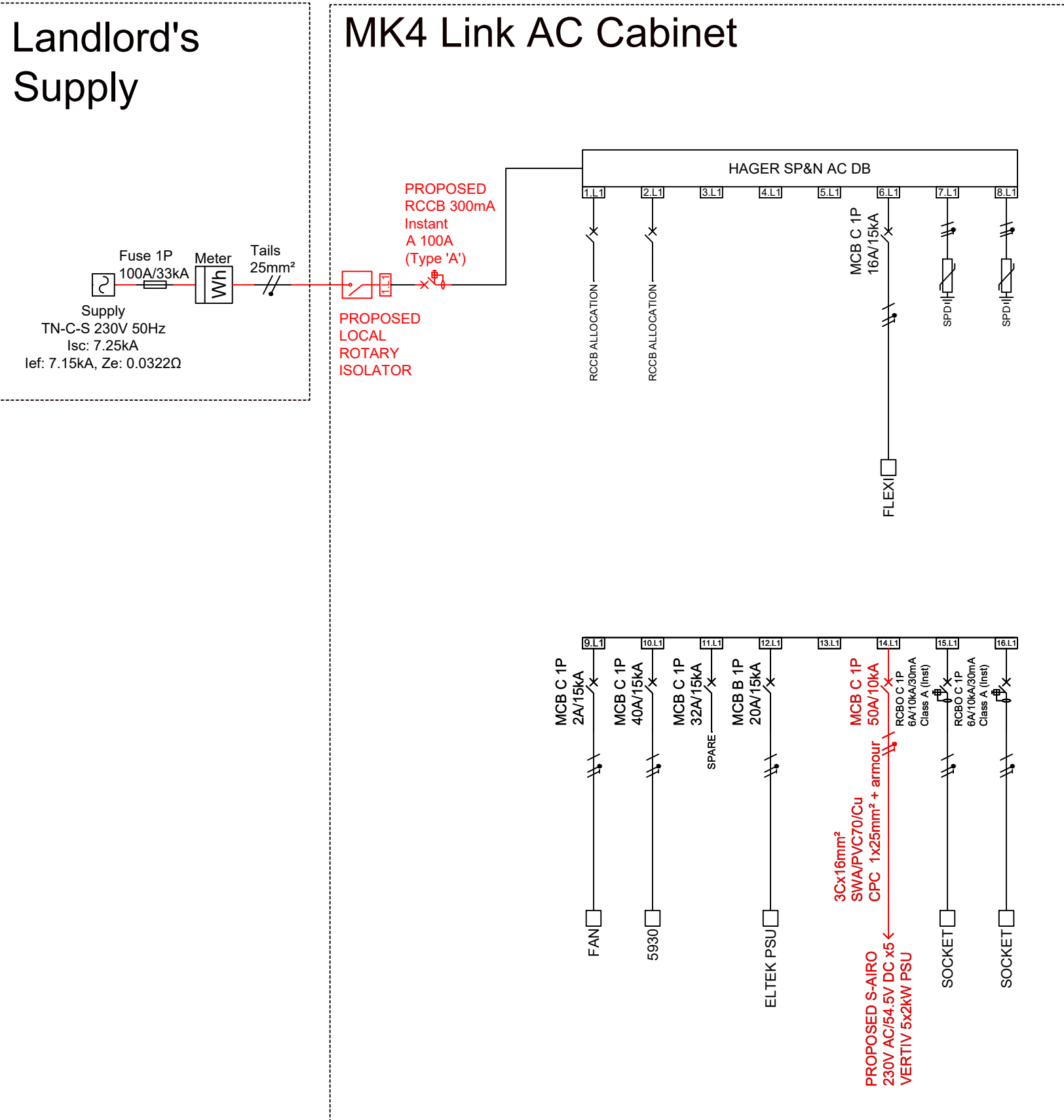
VENDOR SWAP

Purpose of Issue:

DETAILED DESIGN

EE Cell ID:	MBNL Cell ID:	3UK Cell ID:
50961	CDN002	CR0137

Master Drawing No:	Issue:
1082862_CDN002_50961_CR0137_M002	A1



AC ELECTRICAL SCHEMATIC  
N.T.S.

NOTES:  
1. ALL DIMENSIONS IN MM UNLESS OTHERWISE NOTED.

Master:	MBNL / EE / H3G:	Project:	Purpose of Issue:	Issue:
M002	MBNL	Vendor Swap	Detail Design	A1
Date:	06/11/2023	Revision / Upgrade Description:		
Drawn:	DvB	First Issue		
Checked:	DM			
Approved:	KTL			
Master:	MBNL / EE / H3G:	Project:	Purpose of Issue:	Issue:
M001	MBNL	Vendor Swap	Planning	A
Date:	30/08/2023	Revision / Upgrade Description:		
Drawn:	MM	First Issue		
Checked:	DvB			
Approved:	KTL			

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Site Name:  
**CENTRALE SHOPPING CENTRE 2**

Site ID:  
**1082862**

Address:  
**CENTRALE SHOPPING CENTRE  
NORTH END  
CROYDON  
CR0 1TY**

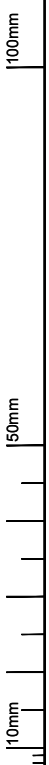
Title:  
**700 AC ELECTRICAL SCHEMATIC**

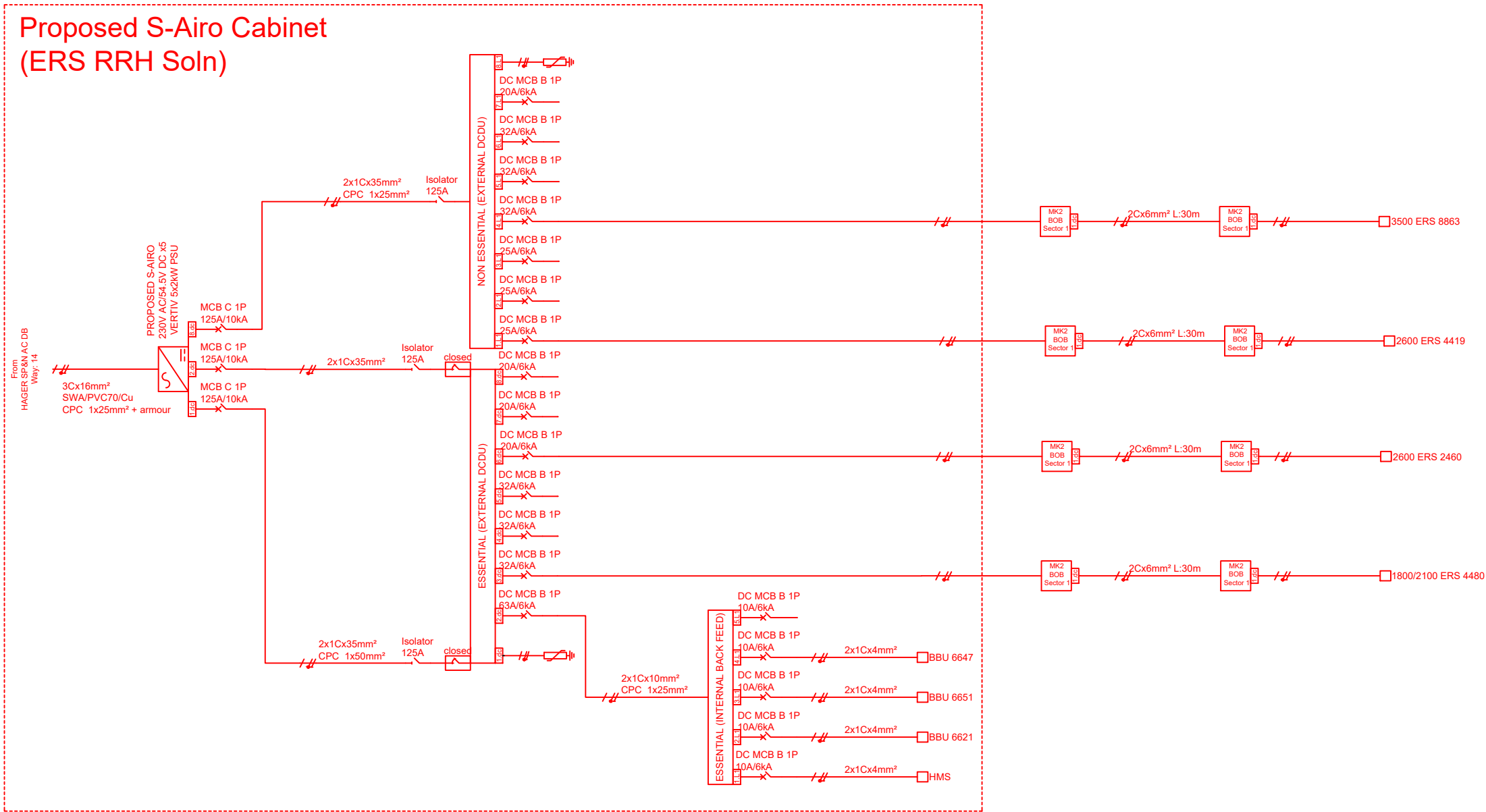
Project:  
**VENDOR SWAP**

Purpose of Issue:  
**DETAILED DESIGN**

EE Cell ID:	MBNL Cell ID:	3UK Cell ID:
<b>50961</b>	<b>CDN002</b>	<b>CR0137</b>

Master Drawing No:	Issue:
<b>1082862_CDN002_50961_CR0137_M002</b>	<b>A1</b>





DC 1 ELECTRICAL SCHEMATIC  
N.T.S.

NOTES:

- ALL DIMENSIONS IN MM UNLESS OTHERWISE NOTED.

Master:	MBNL / EE / H3G:	Project:	Purpose of Issue:	Issue:
M002	MBNL	Vendor Swap	Detail Design	A1
Date:	06/11/2023	Revision / Upgrade Description:		
Drawn:	DvB	First Issue		
Checked:	DM			
Approved:	KTL			
Master:	MBNL / EE / H3G:	Project:	Purpose of Issue:	Issue:
M001	MBNL	Vendor Swap	Planning	A
Date:	30/08/2023	Revision / Upgrade Description:		
Drawn:	MM	First Issue		
Checked:	DvB			
Approved:	KTL			



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Site Name:  
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Site ID:  
**1082862**

Address:  
**CENTRALE SHOPPING CENTRE  
NORTH END  
CROYDON  
CR0 1TY**

Title:  
**701 DC ELECTRICAL SCHEMATIC**

Project:  
**VENDOR SWAP**

Purpose of Issue:  
**DETAILED DESIGN**

EE Cell ID: <b>50961</b>	MBNL Cell ID: <b>CDN002</b>	3UK Cell ID: <b>CR0137</b>
-----------------------------	--------------------------------	-------------------------------

Master Drawing No: <b>1082862_CDN002_50961_CR0137_M002</b>	Issue: <b>A1</b>
---	---------------------



Assumed existing LP connection from cabinet to existing LP system

Proposed EE BOB & gantry pole to be bonded to existing LP system

Proposed EE Cabinet to be bonded to existing LP system

Assumed existing LP connection from cabinet to existing LP system

Assumed existing LP connection from steelwork to existing LP system

Assumed existing LP connection from cabinet to existing LP system

Proposed EE BOB & ERS units to be bonded to existing LP system

Assumed existing LP connection from dish to existing LP system

Proposed EE Antenna & GPS to be bonded to existing LP system

Assumed existing LP connection from steelwork to existing LP system

Assumed existing LP connection from dish to existing LP system

Cable tray to have earth connection at joints

NOTE: All feeders to be bonded to existing LP system

All antenna & dish poles to be cross bonded to existing LP system on roof.

Exposed tape to be 25x3mm bare aluminium.

Bi-metallic connectors to be used where necessary.

Ends of all cable tray & cable ladder runs to be cross bonded to existing LP system.

The LP system is to be tested to ensure it complies with the specification. ie 10 Ohms Max resistance. Install additional down tapes & earth pits as necessary.

SYMBOL	DESCRIPTION
	Existing earth tape bond connection to equipment
	Existing lightning protection tape
	Existing Earth Pit
	Existing Earth Mats
	Proposed earth tape bond connection to equipment
	Proposed lightning protection tape
	Proposed Earth Pit
	Proposed Earth Mats

LIGHTNING PROTECTION PLAN  
Scale 1:100

NOTES:

- ALL DIMENSIONS IN MM UNLESS OTHERWISE NOTED.

Master: M002	MBNL / EE / H3G:	Project: Vendor Swap	Purpose of Issue: Detail Design	Issue: A1
Date: 06/11/2023	Drawn: DvB	Revision / Upgrade Description: First Issue		
Checked: DM	Approved: KTL			
Master: M001	MBNL / EE / H3G:	Project: Vendor Swap	Purpose of Issue: Planning	Issue: A
Date: 30/08/2023	Drawn: MM	Revision / Upgrade Description: First Issue		
Checked: DvB	Approved: KTL			



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CENTRALE SHOPPING CENTRE 2

Site ID:

1082862

Address:

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NORTH END  
CROYDON  
CR0 1TY

Title:

705 LIGHTNING PROTECTION DETAILS

Project:

VENDOR SWAP

Purpose of Issue:

DETAILED DESIGN

EE Cell ID: <b>50961</b>	MBNL Cell ID: <b>CDN002</b>	3UK Cell ID: <b>CR0137</b>
Master Drawing No: 1082862_CDN002_50961_CR0137_M002		Issue: <b>A1</b>





**WARNING SIGNAGE**

Access restriction: No unauthorised persons allowed beyond this point



Restricted access sign at access points to MBNL equipment

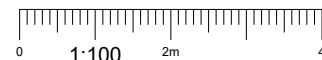


Behind every antenna



Behind every antenna

**SIGNAGE PLAN**



**NOTES:**

1. ALL DIMENSIONS IN MM UNLESS OTHERWISE NOTED.
2. THIS DRAWING TO BE READ IN CONJUNCTION WITH: RD10043

Master: M002	MBNL / EE / H3G:	Project: Vendor Swap	Purpose of Issue: Detail Design	Issue: A1
Date: 06/11/2023	Drawn: DvB	Revision / Upgrade Description: First Issue		
Checked: DM	Approved: KTL			
Master: M001	MBNL / EE / H3G:	Project: Vendor Swap	Purpose of Issue: Planning	Issue: A
Date: 30/08/2023	Drawn: MM	Revision / Upgrade Description: First Issue		
Checked: DvB	Approved: KTL			



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Site Name:  
**CENTRALE SHOPPING CENTRE 2**

Site ID:  
**1082862**

Address:  
**CENTRALE SHOPPING CENTRE  
NORTH END  
CROYDON  
CR0 1TY**

Title:  
**800 SIGNAGE PLAN**

Project:  
**VENDOR SWAP**

Purpose of Issue:  
**DETAILED DESIGN**

EE Cell ID: <b>50961</b>	MBNL Cell ID: <b>CDN002</b>	3UK Cell ID: <b>CR0137</b>
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Master Drawing No: <b>1082862_CDN002_50961_CR0137_M002</b>	Issue: <b>A1</b>
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100mm  
150mm  
10mm

1.0 General

1.1. Do not scale drawings.

1.2. All dimensions in mm unless noted otherwise.

1.3. Not Required

1.4. The contractor shall be responsible for confirming dimensions and levels on site prior to the commencement of construction or fabrication.

1.5. The contractor shall be responsible for setting out the project on site.

1.6. The contractor shall be responsible for the stability and integrity of existing structures and ground profiles within and adjacent to the works, from the date of taking possession of the site until practical completion of the works. The contractor shall be responsible for the design, installation and maintenance of all necessary temporary works to comply with this requirement.

1.7. The contractor shall ensure that tolerances are integrated and co-ordinated throughout the works to ensure the efficient implementation of the works.

1.8. Where the existing weatherproof envelope is pierced to implement the works, the contractor shall be responsible for ensuring that ingress of water does not occur during the construction period.

1.9. Deviations between site dimensions, levels or existing details to those shown on the drawings shall be brought to the attention of the Engineer for comment and resolution.

1.10. Preparation, handling and application of the proprietary products shall be all in accordance with the recommendations of the product manufacturer, Health and Safety legislation and the specifications and details of the Engineer. Where contradictions occur between these requirements, reference should be made to the Engineer for resolution.

1.11. Where specific proprietary products are referenced an equal product approved by the engineer may be substituted, unless noted otherwise.

2.0. Fasteners and Connections - Steel to Steel

2.1. All bolts shall be M16 grade 8.8 unless noted otherwise.

Incorporating fully threaded length bolts :  
Bolt to BS EN ISO 4017, nut to BS EN ISO 4032 (Class 8) and washer to BS EN ISO 7091 (100HV).

Incorporating part threaded length bolts:  
Bolt to BS EN ISO 4014, nut to BS EN ISO 4032 (Class 8) and washer to BS EN ISO 7091 (100HV).

2.2. All bolts shall be Galvanised finish in accordance with BS EN ISO 10684.

2.3. All bolts shall be sized in length to give a minimum extension beyond the nut of three threads.

2.4. Where connections are made using dissimilar materials, all connections shall be provided with neoprene, 'top-hat' washers, spring washers or other approved barrier between connector and main material, to minimise the risk of bi-metallic (electrolytic) corrosion.

2.5. Where appropriate, taper washers shall be used in bolted connections.

2.6. Where a connection is subject to vibration or cyclic loading use shall be made of locknuts, lockwashers or spring washers or other approved methods at locations indicated on the drawing by the Engineer to minimise the risk of loosening of the connectors.

3.0. Fasteners and Connections - Steel to Concrete or Masonry

3.1. The preferred method of fixing structural fixings into solid concrete or masonry walls shall be through-bolt fixings unless specified otherwise. Where the through-bolt fixings cannot be achieved resin anchor fixings should be utilised upon consultation with engineer.

3.2 All resin anchors into solid concrete shall be Hilti HIT RE500 resin injection system with HAS-R stainless steel anchor components, or similar approved, unless noted otherwise.

3.3. All resin anchors into solid brickwork or other solid masonry shall be Hilti HIT-HY270 resin injection system with HIT-V stainless steel anchor components, or similar approved, unless noted otherwise.

Material	Anchor diameter	Minimum embedment depth (mm)
Solid brick or stone	M10	90
Solid brick or stone	M12	110
Solid concrete	M10	90
Solid concrete	M12	110
Solid concrete	M16	125
Solid concrete	M20	170
Embedment lengths are taken from Hilti Fastening Technology Manual		

3.5. Where a connection is made between dissimilar metals, all connections shall be provided with neoprene, 'top-hat' washers/spring washers or other approved barrier between connector and main material, to minimise the risk of bi-metallic (electrolytic) corrosion.

3.6. Where appropriate, taper washers shall be used in bolted connections.

3.7. Where a connection is subject to vibration or cyclic loading use shall be made of locknuts, lockwashers, spring washers or other approved methods, as indicated on the drawing by the Engineer, to minimise the risk of loosening of the connectors.

3.8. Anchors shall be tested in accordance with 'Construction Fixings Association Guidance Note : Procedure for Testing Construction Fixings' and BS 5080-1:1993 - Structural fixings in concrete and masonry BS 5080-2:1986 Structural Fixings in concrete and masonry. Method for determination of resistance to loading in shear or manufacturers recommendations.

3.9. Code of Practice for the design, selection, installation use and maintenance of anchor devices conforming to BS EN795:2012 refer to BS 7883:2005

3.10. The Engineer shall be advised a minimum of 48 hours in advance to afford the opportunity of witnessing the test.

3.11. All tests shall be carried out to the following test loads (UNO):

Material	Anchor diameter	Test load (kN)
Solid brick or stone	M10	3.0
Solid brick or stone	M12	3.5
Solid concrete	M10	6.3
Solid concrete	M12	9.5
Solid concrete	M16	12.1
Solid concrete	M20	20
Test load is based on $1.0 \times N_{rec}$ ( $f_{cc} = 33 \text{ Nmm}^2$ ) for solid brickwork and $1.0 \times F_{REC}$ ( $f_{cc} = 30 \text{ Nmm}^2$ ) taken from Hilti Fastening Technology Manual		

3.12. All tests shall be documented with location sketches and unique references for each bolt tested, in such a manner that each test location can be identified on site from the documentation.

3.13. All nuts, bolts and studs used in connections to porous materials shall be stainless steel.

3.14 Code of practice for the selection and installation of post-installed anchors in concrete and masonry refer to BS 8539:2012

4.0. Concrete

4.1. Unless noted otherwise all concrete shall be:

Concrete grade: C28/35  
Minimum cement content: 330 kg.m<sup>2</sup>

Nominal aggregate size: 20mm  
Maximum free water/cement ratio: 0.5

4.2. Unless noted otherwise all reinforcement shall be:

- (a) High yield ( $f_y = 500 \text{ Nmm}^2$ ) type 2 deformed bar reinforcement to BS 4449:2005 +A2:2009
- (b) Mild steel ( $f_y = 250 \text{ Nmm}^2$ ) plain round reinforcement bars to BS 4449:2005 +A2:2009
- (c) Welded steel mesh reinforcement to BS EN 10080:2005
- (d) Scheduled and dimensioned to BS 8666:2005

4.3. All tower holding down bolts and anchorage assemblies, their setting out and any relevant templates shall be supplied by the tower manufacturer.

4.4. The main contractor shall be responsible for setting out, fixing and checking the installation of the tower anchorage assembly in accordance with the details supplied by the tower manufacturer.

4.5. The mix design certificate shall be submitted to the Engineer, for the opportunity to comment, a minimum of 72 hours prior to commencement of casting.

4.6. Concrete cube testing to be carried out in accordance with BS 1881. The results to be forwarded to the Engineer for evaluation.

4.7. All concrete reinforcement and cast in items shall be positively located in position prior to casting of the concrete.

4.8. Where concrete is to be cast against an existing concrete surface, the existing surface shall be scabbled to remove laitance and other deleterious materials. Scabbling shall expose the aggregate and sound material. A bonding agent is to be applied to the scabbled surface a maximum of two days before casting.

4.9. Concrete in each base shall be cast in a single continuous operation.

4.10. Cover to reinforcement as noted on detail drawing.

4.11. Concrete shall not be cast where the ambient temperature is 2 degrees centigrade and falling or less than 2 degrees on a rising thermometer.

4.12. Finishes where stated shall be :

- 4.12.1. Formed finish - basic as struck.
- 4.12.2. Worked finish - brush finish.

5.0. Steelwork

5.1 Structural steel to be Grade S355 steel to BS EN 10025.

5.2 All welds to be minimum 6mm fillet weld unless noted otherwise. Welds at tube to tube connections to be full penetration butt welds.

5.3 All steelwork to be galvanised to BS EN 150 1461:2009.

5.4 Minor site erection damage to be made good with brush applied Galvalfroid.

5.5 BS EN 1090 - 1 - 2009 CE Marking:  
BS EN 1090 - 1 - 2009 Execution of Steel Structures and Aluminium Structures for all fabricated steelwork to be compliant with CE Marking specifications. All fabricated steel must be designed and fabricated to the requirements of Execution Class 2 as a minimum unless noted otherwise. In order for fabricated steelwork to comply with BS EN 1090, Designers must state the Execution Class requirements on the drawings if not Execution Class 2 and the Principal Contractors must ensure that any third party fabricator is appropriately accredited.

NOTES:

1. ALL DIMENSIONS IN MM UNLESS OTHERWISE NOTED.

Master: M002	MBNL / EE / H3G:	Project: Vendor Swap	Purpose of Issue: Detail Design	Issue: A1
Date: 06/11/2023	Drawn: DvB	Revision / Upgrade Description: First Issue		
Checked: DM	Approved: KTL			
Master: M001	MBNL / EE / H3G:	Project: Vendor Swap	Purpose of Issue: Planning	Issue: A
Date: 30/08/2023	Drawn: MM	Revision / Upgrade Description: First Issue		
Checked: DvB	Approved: KTL			



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Site Name:  
**CENTRALE SHOPPING CENTRE 2**

Site ID:  
**1082862**

Address:  
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NORTH END  
CROYDON  
CR0 1TY**

Title:  
**901 STANDARD NOTES**

Project:  
**VENDOR SWAP**

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**1082862\_CDN002\_50961\_CR0137\_M002**

Issue:  
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100mm  
50mm  
10mm



ELECTRICAL, LIGHTNING PROTECTION AND EARTHING NOTES

- ALL ELECTRICAL WORKS INCLUDING AC DISTRIBUTION, DC DISTRIBUTION, PSU AND BATTERY INSTALLATIONS SHALL COMPLY WITH CURRENT LEGISLATION INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
  - BS7671:2018 - REQUIREMENT FOR ELECTRICAL INSTALLATIONS (AS AMENDED)
  - ELECTRICITY AT WORK REGULATIONS 1989
  - HEALTH AND SAFETY AT WORK ACT 1974
  - ELECTRICITY SUPPLY, QUALITY AND CONTINUITY REGULATIONS 2002
  - BS 7430: CODE OF PRACTICE FOR EARTHING
  - BS6701 SECTION 5.2 (BS EN 50310)
  - BS EN 62305: PROTECTION AGAINST LIGHTNING PARTS 1 - 4
  - GUIDANCE NOTE 3 - INSPECTION AND TESTING
  - ALL OTHER RELEVANT BRITISH STANDARDS
  - CDM REGULATIONS
  - LOCAL AUTHORITY REQUIREMENTS
  - BUILDING REGULATIONS (AS APPLICABLE)
  - HSR25 - MEMORANDUM OF GUIDANCE ON THE ELECTRICITY AT WORK REGULATIONS 1989
  - GS38 - ELECTRICAL TEST EQUIPMENT FOR USE BY ELECTRICIANS
  - HSG85 - ELECTRICITY AT WORK. SAFE WORKING PRACTICES
  - HSG107 - MAINTAINING PORTABLE ELECTRICAL EQUIPMENT
  - HSG230 - KEEPING ELECTRICAL SWITCHGEAR SAFE
  - INDG139 - USING ELECTRIC STORAGE BATTERIES SAFELY
  - INDG231 - ELECTRICAL SAFETY AND YOU. A BRIEF GUIDE
  - INDG354 - SAFETY IN ELECTRICAL TESTING AT WORK
  - HSE & CIBSE ELECTRICAL BEST PRACTICE GUIDES

2. EARTHING AND BONDING WORKS SHALL COMPLY WITH BS 7430:2011+A1:2015 AND ALL RELEVANT UPDATES INCLUDING BS7671: 2018 (542.1.201; 542.2.2 & 542.3.1).

- THE FOLLOWING MECHANICAL AND ELECTRICAL SERVICES SHALL INTER-CONNECT DIRECTLY WITH THE 'DESIGNER NOMINATED' MAIN EARTH TERMINAL AS APPLICABLE.
  - SUPPLEMENTARY OR TT DEDICATED EARTH ELECTRODE.
  - COMBINED PROTECTIVE / FUNCTIONAL EARTH
  - LIGHTNING PROTECTION
  - MAIN PROTECTIVE BONDING CONDUCTOR
  - SUPPLEMENTARY PROTECTIVE BONDING CONDUCTORS (WHERE APPLICABLE)
  - OTHER EARTH BARS
  - TELECOM MASTS, TOWERS AND ANTENNA SUPPORTS
  - FEEDERS AND OTHER COAXIAL COPPER SERVICES
  - EXTRANEOUS CONDUCTIVE PARTS
  - HVAC & COPPER SERVICES

NB THIS IS NOT AN EXHAUSTIVE LIST AND AS AN EXAMPLE DOES NOT INCLUDE INDIRECT BONDING CONNECTIONS OR CROSS BONDING ASSOCIATED WITH REMOTE EQUIPMENT AND OTHER CONDUCTIVE PARTS NOT NORMALLY ASSOCIATED WITH THE TELECOM INSTALLATION. AS SUCH, ALL CONDUCTIVE PARTS LOCATED WITHIN THE EQUIPOTENTIAL ZONE SHALL BE CROSS-BONDED AND TIED TO EARTH. THIS SHALL INCLUDE NON TELECOM SPECIFIC EQUIPMENT THAT MAY AFFECT THE TELECOM EQUIPMENT OR ANY PERSONNEL UNDER FAULT CONDITIONS.

4. ALL DNO INSTALLATIONS (REGARDLESS OF EARTH CONFIGURATION) SHALL BENEFIT FROM THE INCLUSION OF AN INDEPENDENT EARTH ELECTRODE TO BE LOCATED IN THE ELECTRICAL PROXIMITY OF THE DNO SERVICE HEAD. THIS 'SUPPLEMENTARY' ELECTRODE AND ITS ASSOCIATED INSTALLATION SHALL COMPLY WITH REGULATION 542.2.201 AS STATED ABOVE AND COMPLEMENT (NOT REPLACE) THE DNO EARTH FACILITY IF PROVIDED.

5. THE LIGHTNING PROTECTION INSTALLATION SHALL BE SUPPLIED, INSTALLED, TESTED, COMMISSIONED AND SET TO WORK IN KEEPING WITH BS EN 62305. WORKS SHALL ENCOMPASS BEST WORKING PRACTICES BY SUITABLY EXPERIENCED AND QUALIFIED PERSONNEL. WHERE INTER-CONNECTED WITH EXISTING LP SERVICES NEW TEST CERTIFICATES MUST REFLECT THE CONJOINED OR ENTIRE LIGHTNING PROTECTION SYSTEM INSTALLATION.

6. CONNECTION OF EXISTING OR INSITU EQUIPMENT, NORMALLY NOT ASSOCIATED WITH THE INSTALLATION SHALL BE KEPT TO A MINIMUM. THIS DOES NOT INCLUDE EXISTING SERVICES THAT MAY AFFECT THE INTEGRITY OF THE EQUIPMENT UNDER FAULT CONDITIONS. MATERIAL'S USED SHALL BE THE PROPRIETARY TYPE AS DEFINED IN THE PROJECT SPECIFICATION AND/ OR CONSTRUCTION DRAWINGS.

7. THE COMPOSITE LIGHTNING PROTECTION SYSTEM SHALL ACHIEVE A RESISTIVITY VALUE < 10 OHMS. THIS VALUE SHALL BE RECORDED IN ISOLATION TO ANY OTHER EXTERNAL INFLUENCES.

8. WHERE AN EXISTING OR PART EXISTING LIGHTNING PROTECTION SYSTEM IS ADOPTED FOR TELECOM PURPOSES, THE SPECIALIST CONTRACTOR SHALL VERIFY IN ADVANCE THAT IT IS BOTH COMPLIANT (DATE INSTALLED) AND FIT FOR PURPOSE. VERIFICATION SHALL BE ACHIEVED BY A COMBINATION OF EXISTING TEST CERTIFICATION, VALID TO WITHIN 1 YEAR AND VISUAL INSPECTION. WHERE EXISTING TEST CERTIFICATION IS NOT AVAILABLE OR HAS EXCEEDED THE DUE EXPIRY DATE THEN THE SPECIALIST CONTRACTOR SHALL ARRANGE TO INSPECT AND RE-TEST THE 'ENTIRE' SYSTEM IN LINE WITH BS EN 62305. DETAILS OF ANY DEPARTURES FROM BS7671: 2018 OR ANY CONFLICTS ARISING FROM EQUIPMENT COMPATIBILITY INCLUDING SPD'S SHALL BE DULY ADVISED.

9. WHERE IN CONTACT WITH OTHER DISSIMILAR METALS SUCH AS CU ELECTRODES OR FERROUS SUPPORTS THEN BI-METALLIC CONNECTORS SHALL BE USED. WHERE THE USE OF BI-METALLIC CONNECTORS IS NOT POSSIBLE, ALL CONDUCTORS INCLUDING AL TAPES WILL BE DULY PROTECTED AND / OR TREATED TO NEGATE DETERIORATION. WHERE CONSUMABLES SUCH AS TRANSFER PASTE OR OTHER SIMILAR COMPOUNDS ARE USED TO NEGATE DETERIORATION OR REQUIRE REGULAR ROUTINE MAINTENANCE THEN THE CONTRACTOR SHALL INDICATE THOSE AREA'S ON THE HAND OVER DOCUMENTS.

10. TAPES BELOW GROUND LEVEL SHALL NORMALLY BE THE BARE CU TYPE 25X3MM. WHERE BURIED WITHIN PEDESTRIAN AREA'S, CU SERVICES SHALL BE LOCATED A MINIMUM 1 METRE BELOW FINISHED GROUND LEVEL AND INSULATED UP TO FINISHED GROUND LEVEL TO NEGATE STEP POTENTIALS AS FAR AS ELECTRICALLY POSSIBLE. WITHIN OTHER AREA'S TAPE CONDUCTORS SHALL NORMALLY BE LOCATED 600MM BELOW FINISHED GROUND LEVEL.

11. ALL RING CONDUCTORS SHALL BE COMPLETE WITH A CONTINUOUS LINE OF MARKER TAPE LOCATED 300MM BELOW FINISHED GROUND LEVEL. WHERE INSTALLED ELECTRODES SHALL BE COMPLETE WITH A FLUSH FITTING CONCRETE INSPECTION CHAMBER / LID AND BE READILY ACCESSIBLE FOR TESTING PURPOSES IN ISOLATION TO OTHER CONNECTED ELECTRODES.

12. ALL DOWN-CONDUCTORS SHALL BE COMPLETE WITH TEST LINK FACILITY AND IDENTIFIED IN LINE WITH THE PROJECT SPECIFICATION/ DRAWINGS.

13. LIGHTNING PROTECTION SYSTEMS SHALL BE IN PLACE AND FULLY FUNCTIONAL PRIOR TO THE ERECTION OF ANY MASTS, TOWERS, ANTENNAS OR OTHER SUCH EQUIPMENT THAT MAY INCREASE THE LIKELIHOOD OF A DIRECT OR RESIDUAL LIGHTNING STRIKE TO THE HOST OR ADJACENT STRUCTURES.

14. SOIL PREPARATION AGENTS SHOULD BE AVOIDED WHERE POSSIBLE. WHERE CONSIDERED NECESSARY THE KTL DESIGN ENGINEER MUST BE DULY ADVISED IN ADVANCE OF THEIR USE.

15. WHERE LIGHTNING PROTECTION TAPES CONNECT TO OTHER SERVICES, CONNECTION SHALL \*PREFERABLY BE ACHIEVED VIA A PROPRIETARY MECHANICAL CONNECTION SUITABLE FOR THE PURPOSE INTENDED. THIS SHALL INCLUDE FLEXIBLE OR BRAIDED CONNECTIONS WHERE THE CONNECTION MAY BE SUBJECT TO MECHANICAL STRESS. LIGHTNING PROTECTION TAPES SHALL NOT BE DRILLED OUT OR PENETRATED TO ACHIEVE CONNECTION. ALL TERMINATIONS SHALL BE SUITABLY PROTECTED TO NEGATE DETERIORATION.  
\* CHEMICAL JOINTING BY PERMISSION OF THE KTL DESIGN ENGINEER

16. SURFACE FIXED TAPES SHALL BE SECURED AT 600MM CENTRES VIA PROPRIETARY PVC INSULATED CLIPS. CLIPS SHALL GENERALLY BE THE SELF-ADHESIVE TYPE SO AS TO AVOID PENETRATING THE BUILDING FABRIC. SCREW/CAVITY FIXINGS SHALL ONLY BE CONSIDERED WHERE THE SELF-ADHESIVE TYPE ARE UNSUITABLE AND THEIR USE WILL NOT DAMAGE THE BUILDING FABRIC.

17. ALL LIGHTNING PROTECTION EQUIPMENT SHALL BE DULY IDENTIFIED AND SIGNAGE POSTED IN KEEPING WITH BS EN 62305. DETAILED WORDING AS PER THE PROJECT SPECIFICATION.

18. CONTINUOUS CONTAINMENT SYSTEM RUNS SHALL BE BONDED DIRECTLY TO THE LIGHTNING PROTECTION SYSTEM AT A MAXIMUM 20 METRE INTERVAL. WHERE BONDED DIRECTLY TO THE LIGHTNING PROTECTION SYSTEM BOND'S SHALL BE 25X3MM CU. TAPE OR BRAID AS REQUIRED. PARALLEL OR DISSIMILAR TRAY RUNS SHALL BE CROSS-BONDED, AS SHOULD CONDUCTIVE FENCES AND GATES. 25X3MM CU. TAPE OR BRAID AS REQUIRED.

19. CABLES SHALL CALCULATED, SPECIFIED AND SUPPLIED IN ACCORDANCE WITH THE FOLLOWING SPECIFICATION AND BS CRITERIA :

- EARTH CABLES SHALL BE SINGLE CORE REF. 6491X TO BS 6004.
- POWER & SWA TYPE CABLES INCLUDING 3 OR 5 CORE REF. 6943X TO BS 5467.
- MIC ALARM CABLE 2 PAIR 1/0.50MM CEL-PE/PJF/PE/SWA/PE BLACK TO CS1128/1198 (EG BATT CABLES P/N 42125).
- PCM CABLES SHALL BE SWA RG59 (VPN 303-223) FOR EXTERNAL USE, COMPLETE WITH IP66 GLAND CW205/16 (VPN 303-688). INTERNAL USE BS20S (VPN 303-224).
- WHERE SPECIFIED OPERATOR 'PREFERRED' CONDUCTOR TYPES INCLUDING HYBRID CABLES SHALL BE FULLY COMPLIANT WITH BS7671:2018 IN ALL ASPECTS OF THEIR PERFORMANCE, INCLUDING ENVIRONMENTAL AND ELECTRICAL WITHSTANDS, PROTECTIVE DEVICE COMPATIBILITY AND SUITABILITY RELATIVE TO PARALLEL SERVICES.

20. CABLES SHALL BE IDENTIFIED AND LABELLED IN KEEPING WITH BS7671: 2018 AND CTIL PROJECT SPECIFICATION SDN5016.

21. WHERE BURIED ELECTRICAL CABLES SHALL BE INSTALLED IN KEEPING WITH THE CONSTRUCTION DRAWINGS, PROJECT SPECIFICATION AND BEST WORKING PRACTICES. PRIOR TO THE OPENING OF ANY TRENCHES THE CONTRACTOR SHALL DEMONSTRATE THAT THE AREA TO BE EXCAVATED IS FREE FROM OTHER SERVICES AND ALL NECESSARY SAFEGUARDS HAVE BEEN PUT IN PLACE TO NEGATE RISK TO SITE PERSONNEL, BUILDING FABRIC, MEMBERS OF THE PUBLIC AND SITE PROVIDER EMPLOYEE'S. UNLESS DIRECTED OTHERWISE ALL SUCH CABLE EXCAVATIONS & ASSOCIATED INSTALLATIONS SHALL INCLUDE ADVANCE H&S / PERMIT TO WORK NOTIFICATIONS.

22. CONTAINMENT SYSTEMS SHALL BE THE PROPRIETARY TYPE AS DETAILED ON THE CONSTRUCTION DRAWINGS I.E. ROOFPRO OR APPROVED. THEY SHALL TAKE COGNISANCE OF CABLE CLASSIFICATIONS AND SEGREGATION AS DEFINED IN SECTION / CHAPTER 52 OF BS7671: 2018 AND BE COMPLETE PRIOR TO ANY CABLE INSTALLATION.

23. BENDS OFFSETS AND OTHER ACCESSORIES SHALL BE THE PROPRIETARY TYPE. SITE FABRICATED INSTALLATIONS IN LIEU OF MANUFACTURERS EQUIPMENT SHALL BE AVOIDED WHERE PRACTICALLY POSSIBLE.

24. WHERE THE HOST BUILDING IS COMPLETE WITH A FIRE ALARM SYSTEM, THAT SYSTEM SHALL BE EXTENDED AND / OR MODIFIED VIA THE IN SITU SPECIALIST CONTRACTOR TO PROVIDE BOTH AUDIBLE INDICATION OF FIRE ALARM ACTIVATION AND CALL POINT ACTIVATION. WHERE PRACTICAL DB LEVELS SHALL BE 65DB (A) OR 5DB (A) ABOVE PREVAILING BACKGROUND NOISE. ASSOCIATED CABLES SHALL BE THE MICC OR FP200 TYPE 1.5MM 2 CORE WITH RED XLPE OUTER SHEATH. CLIPS SHALL BE PROPRIETARY CU INSULATED TYPE FIXED DIRECTLY TO BUILDING FABRIC AND/ OR DEDICATED CONTAINMENT. FIRE ALARM WORKS SHALL BE RESTRICTED TO THE VODAFONE INSTALLATION BUT ARE DEEMED TO INCLUDE MODIFICATION AS REQUIRED TO THE EXISTING FIRE ALARMS SYSTEM E-PROM AND / OR MIMIC DRIVER. FIRE ALARM WORKS SHALL ONLY BE UNDER TAKEN ON APPROVAL FROM THE BUILDING OFFICER OR HIS NOMINATED SPECIALIST CONTRACTOR.

25. WHERE REQUIRED CABLE SERVICE PENETRATIONS SHALL BE AGREED IN ADVANCE WITH THE RELEVANT AUTHORITY INCLUDING KTL STRUCTURAL AND ELECTRICAL DESIGN ENGINEERS AND THE SITE PROVIDER. FIRE SEALING AND REINSTATEMENT WORKS WILL REFLECT AND AS A MINIMUM MAINTAIN THE SPECIFIED FIRE INTEGRITY OF THE WORK AREA. BS7671: 2018 REGULATION 525.2.

26. EXTERNAL LIGHTING SHALL BE PROVIDED TO THE CABIN / RADIO AREA VIA THE AGREED ACCESS ROUTE ONLY. FITTINGS SHALL BE THE SWITCHABLE MAINTAINED / NON-MAINTAINED AND DUAL FUNCTION VARIETY AND BE BOTH PHYSICALLY AND AESTHETICALLY SUITABLE FOR THE AREA INSTALLED. THEY SHALL BE COMPLETE WITH A MINIMUM AND INTEGRAL 3 HOUR BATTERY BACK- UP FACILITY IN THE EVENT OF MAINS POWER FAILURE. SWITCHING SHALL GENERALLY BE ACHIEVED VIA A COMBINATION OF 2 WAY AND 2 WAY AND INTERMEDIATE SWITCHES POSITIONED IN SUCH A WAY AS TO FACILITATE SAFE OPERATION FROM THE CABIN / RADIO POSITION AND THE NOMINATED BUILD OR FACILITY ENTRY / EXIT POINT.

27. DISTRIBUTION BOARDS, FUSE SWITCHES AND SUNDRIES SHALL BE SUPPLIED IN ACCORDANCE WITH THE FOLLOWING:

- 100AMP SWITCH DISCONNECTOR SHALL BE TO BS EN 60947-3.
- MCB'S TO BS EN 60898.
- RCD'S TO BS EN 61009.
- 7 WAY DB'S TO BS EN 60529 FOR AC MAINS (MK SENTRY 5579 OR EQUIVALENT)
- 24 WAY DB'S TO BS EN 60529 FOR CABINS / ROOMS (EG HAGER VOD5/0.
- SWITCH FUSES 32AMP SP&N AND TP&N TO BS 5419 (MEM 30KXSC2F OR EQUIVALENT)
- SWITCH FUSES 63AMP SP&N AND TP&N TO BS 5419 (MEM 63GNC OR EQUIVALENT)
- SWITCH FUSES 100AMP SP&N AND TP&N TO BS 5419 (MEM 103GNC OR EQUIVALENT).
- PLUGS AND SOCKETS 16AMP IP44 ANGLED IN ACCORDANCE WITH BS EN 60309-2 (MK COMMANDO 9201 BLU)
- PLUGS AND SOCKETS 16AMP IP44 STRAIGHT IN ACCORDANCE WITH BS EN 60309-2 (MK COMMANDO 9201 BLU)
- PLUGS AND SOCKETS 16AMP IP67 SWITCH OUTLET IN ACCORDANCE WITH BS EN 60309-2 (HUBEL BK 1663)
- RCD 13AMP 30MA TWIN SWITCH SOCKET SHALL BE SUPPLIED TO BS 7288 METAL CLAD (VOLEX VT9208 SG).

28. ACCESSORIES AND SUNDRY ITEMS SHALL BE SUPPLIED IN ACCORDANCE WITH THE FOLLOWING:

- WARNING LABELS SHALL BE SUPPLIED TO BS 5378.
- SINGLE PVC BACK BOX FOR ALARM CONNECTIONS SHALL BE SUPPLIED TO BS 5733.
- SINGLE BLANK PLATE ENGRAVED ALARM CONTACTS FOR BACK BOX SHALL BE SUPPLIED TO BS 5733.
- AMP CONNECTOR STRIP SHALL BE SUPPLIED TO BS 5733.

29. WHEN OCCUPYING AN ESCAPE ROUTE OR PART THERE-OF, ALL ELECTRICAL MATERIALS INCLUDING ALL CABLES, FIXINGS AND CONTAINMENT SHALL BE NON COMBUSTIBLE AND 'LOW (IN THE CASE OF CONDUCTORS) SMOKE ZERO HALOGEN'. WHERE CABLES ARE NOT INSTALLED IN CONTAINMENT THEY SHALL BE RUN AND INSTALLED IN SUCH A WAY AS TO NEGATE DROOPING OR SAGGING DURING FIRE OR ABNORMALLY HIGH HEAT CONDITIONS. ADDITIONALLY ALL LINE CONDUCTORS OCCUPYING THE ABOVE AREA'S SHALL BE RCD PROTECTED IN KEEPING WITH BS7671: 2018. THIS INCLUDES MAIN AND SUB-MAIN CABLES, AND SUB-CIRCUITS SUCH AS ACCESS, EMERGENCY LIGHTING AND SMALL POWER WHERE APPLICABLE.

NOTES:  
1. ALL DIMENSIONS IN MM UNLESS OTHERWISE NOTED.

Master: M002	MBNL / EE / H3G: MBNL	Project: Vendor Swap	Purpose of Issue: Detail Design	Issue: A1
Date: 06/11/2023	Revision / Upgrade Description: First Issue			
Drawn: DvB				
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Checked: DvB				
Approved: KTL				



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Site Name:  
**CENTRALE SHOPPING CENTRE 2**

Site ID:  
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Address:  
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Title:  
**900 STANDARD NOTES**

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100mm

50mm

10mm