

**Notes**

Rev	Date	Description of Revisions	Drawn	Chkd	Appr
B	29.12.10	Stage 2 Design - First Issue	MB	JW	CT
A	26.11.08	2nd Issue	JO	DH	SW
DA	29.08.08	1st Issue	JO	DH	SW

**ndcconsultants**  
Unit 4 Apex Park, Wainwright Road, Worcester, Worcestershire, WR4 9FN. Tel: 01905 756000

**Design**

Scale(s): ELR & Mileage  
BML2

Drawn	Sign.	Date
Mike Bonner		29.12.10
Joe Winter		29.12.10
Chris Tappenden		29.12.10

**FTN / GSM-R Project Stage 2 Design**

**New Milton (1121) to Sway (1122)**

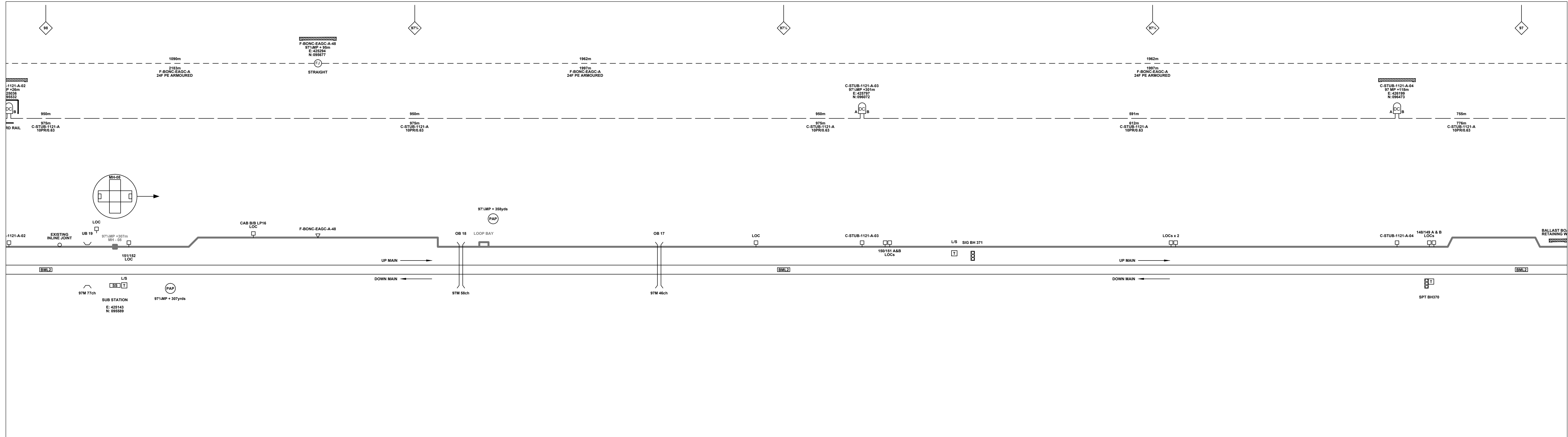
**Network Rail**

FTN/GSM-R Project  
Tournament House  
Passington  
London  
W2 1HA

Alternative Reference: See Layout Tab A3 Sheets 1 and 2

Drawing Number: NTP0\SLD\1121\1122\001

Sheet 1 of 6  
Revision B



**Legend**

Cabinet and Verts	Copper Joint	Trough Duct Cable Tray	Signal Box	FTN Core Node	Screen Joint Routeworks	Manhole details: Cross - To be used Filled - In use Clear - Empty	Overbridge	Signal	Engineer's Line Reference	Gas Line
Cabinet with Regenerator and Verts	Fibre Joint	Cable - Type Identified by FTN Code	Electrical Control Room	Core Node with GSM-R Colocated	Copper Joint Routeworks	Tunnel	Underbridge	Vehicle Access Point	Mile Post	HV Cable
Screening Conductor Joint with/without Earth	Manhole	Status - as per Key Below	Mid Length Sheath Gap Fibre	FTN Access Node	Cabinet Routeworks	Earth Farm	Pedestrian Access Point	Platform	LV Cable	Sewer
<b>KEY</b>	Existing Fibre Cable	Existing Copper Cable	Existing Screen Cable	FTN Access Node with GSM-R Colocated	Fibre Joint Routeworks	Buffer Stop	Telephone	Copper Blue Fibre	Red Screen Green	Water
<b>Proposed Fibre &amp; Civils Elements are shown in RED</b>	<b>Proposed Copper Elements are shown in BLUE</b>	<b>Proposed Screening Elements are shown in MAGENTA</b>	<b>All Existing Elements are shown in BLACK</b>	<b>Manhole details: Cross - To be used, Filled - In use, Clear - Empty</b>	<b>Manhole details: Cross - To be used, Filled - In use, Clear - Empty</b>	<b>Manhole details: Cross - To be used, Filled - In use, Clear - Empty</b>	<b>Manhole details: Cross - To be used, Filled - In use, Clear - Empty</b>	<b>Manhole details: Cross - To be used, Filled - In use, Clear - Empty</b>	<b>Manhole details: Cross - To be used, Filled - In use, Clear - Empty</b>	<b>Manhole details: Cross - To be used, Filled - In use, Clear - Empty</b>

**Notes**

Rev	Date	Description of Revisions	Drawn	Chkd	Appr
B	29.12.10	Stage 2 Design - First Issue	MB	JW	CT
A	26.11.08	2nd Issue	JO	DH	SW
DA	29.08.08	1st Issue	JO	DH	SW

**ndcconsultants**  
Unit 4 Apex Park, Wainwright Road, Worcester, Worcestershire, WR4 9FN. Tel: 01905 756000

**Design**

Scale(s): ELR & Mileage  
BML2

Designed	Mike Bonner	Sign.	Date	29.12.10
Checked	Joe Winter	Sign.	Date	29.12.10
Approved	Chris Tappenden	Sign.	Date	29.12.10

**FTN / GSM-R Project Stage 2 Design**

**New Milton (1121) to Sway (1122)**

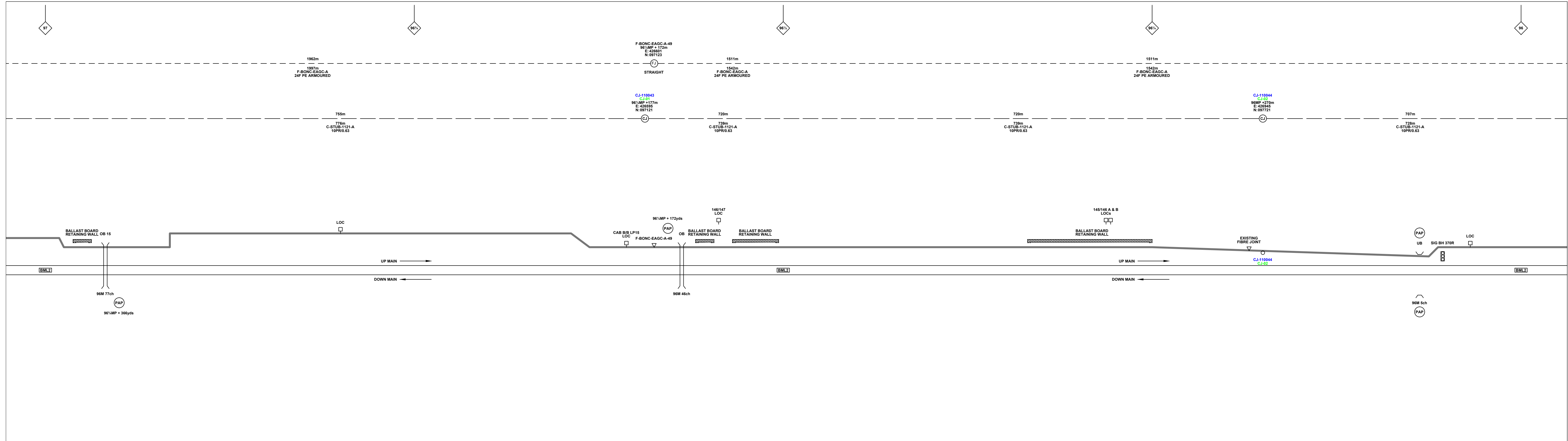
**Network Rail**

FTN/GSM-R Project  
Tournament House  
Passington  
London  
W2 1HA

Alternative Reference: See Layout Tab A3 Sheets 3 and 4

Drawing Number: NTP0\SLD\1121\1122\001

Sheet: 2 of 6  
Revision: B



**Legend**


**KEY**

Proposed Fibre & Civils Elements are shown in RED  
 Proposed Copper Elements are shown in BLUE  
 Proposed Screening Elements are shown in MAGENTA  
 All Recoveries are shown in GREEN

All Existing Elements are shown in BLACK  
 Existing Fibre Cable  
 Existing Copper Cable  
 Existing Screen Cable

Notes

Rev	Date	Description of Revisions	Drawn	Chkd	Appr
B	29.12.10	Stage 2 Design - First Issue	MB	JW	CT
A	26.11.08	2nd Issue	JO	DH	SW
DA	29.08.08	1st Issue	JO	DH	SW

Contractor(s)

**ndcconsultants**  
 Unit 4 Apex Park, Wainwright Road, Worcester, Worcestershire, WR4 9FN. Tel: 01905 756000

Status: **Design**

Scale(s): ELR & Mileage  
 NTS BML2

Designed	Mike Bonner	Sign.		Date	29.12.10
Checked	Joe Winter	Sign.		Date	29.12.10
Approved	Chris Tappenden	Sign.		Date	29.12.10

Project: FTN / GSM-R Project  
 Stage 2 Design

Drawing Title: New Milton (1121) to Sway (1122)

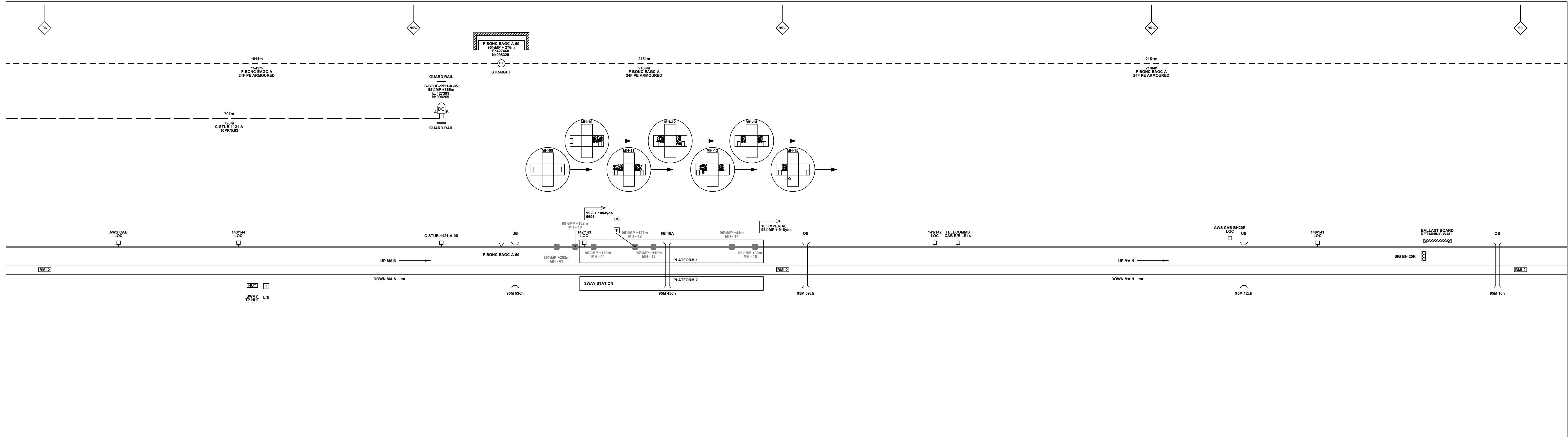
**Network Rail**

FTN/GSM-R Project  
 Tournament House  
 Passington  
 London  
 W2 1HA

Alternative Reference: See Layout Tab A3 Sheets 5 and 6

Drawing Number: NTP0\SLD\1121\1122\001

Sheet: 3 of 6  
 Revision: B



**Legend**

Cabinet and Verts	Copper Joint	Trough Duct Cable Tray	Signal Box	FTN Core Node	Screen Joint Routeworks	Manhole details: Cross-To be used, Filled-In use, Clear-Empty	Overbridge	Signal	Engineer's Line Reference	Gas Line
Cabinet with Regenerator and Verts	Fibre Joint	Cable - Type Identified by FTN Code	Electrical Control Room	Core Node with GSM-R Colocated	Copper Joint Routeworks	Tunnel	Underbridge	Vehicle Access Point	Mile Post	HV Cable
<b>KEY</b> Proposed Fibre & Civils Elements are shown in RED Proposed Copper Elements are shown in BLUE Proposed Screening Elements are shown in MAGENTA All Recoveries are shown in GREEN	Screening Conductor Joint with/without Earth	Manhole	Mid Length Sheath Gap Fibre	FTN Access Node	Cabinet Routeworks	Earth Farm	Buffer Stop	Pedestrian Access Point	Platform	LV Cable
	Existing Fibre Cable	Existing Copper Cable	Sheath Gap Copper	FTN Access Node with GSM-R Colocated	Fibre Joint Routeworks	Telephone	Cable Pull	AC Stanchion	Sewer	Water

**Notes**

Rev	Date	Description of Revisions	Drawn	Chkd	Appr
B	29.12.10	Stage 2 Design - First Issue	MB	JW	CT
A	26.11.08	2nd Issue	JO	DH	SW
DA	29.08.08	1st Issue	JO	DH	SW

**ndcconsultants**  
Unit 4 Apex Park, Wainwright Road, Worcester, Worcestershire, WR4 9FN. Tel: 01905 756000

**Design**  
BML2

Designed	Mike Bonner	Sign.	Date	29.12.10
Drawn	Joe Winter	Sign.	Date	29.12.10
Checked	Chris Tappenden	Sign.	Date	29.12.10

**FTN / GSM-R Project Stage 2 Design**  
**New Milton (1121) to Sway (1122)**

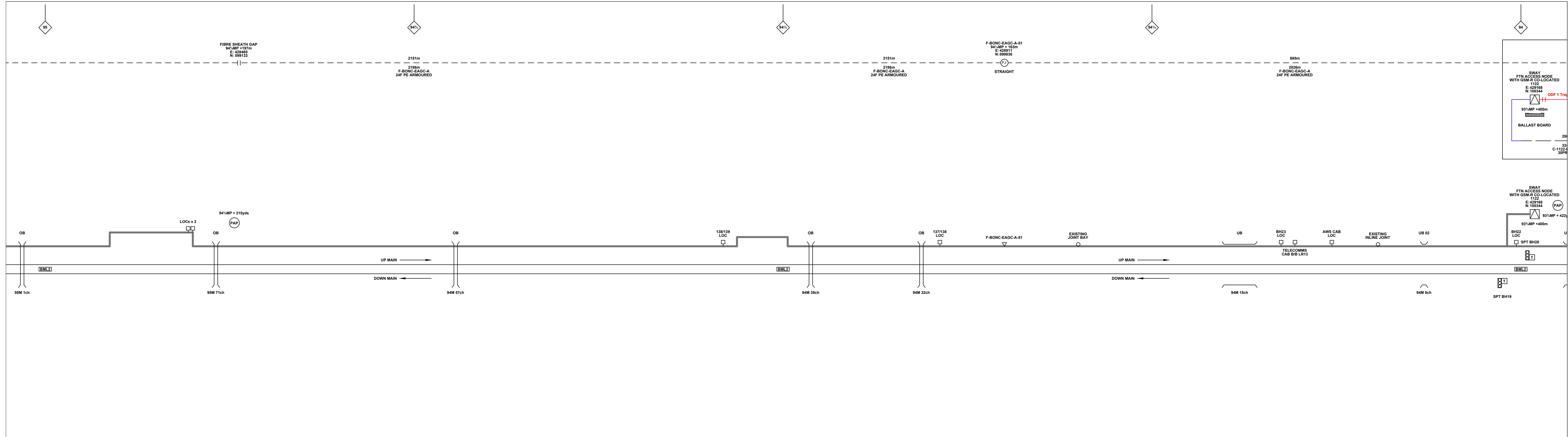
**Network Rail**

FTN/GSM-R Project  
Tournament House  
Passington  
London  
W2 1HA

Alternative Reference: See Layout Tab A3 Sheets 7 and 8

Drawing Number: NTPO\SLD\1121\1122\001

Sheet 4 of 6  
Revision B



**Legend**

Cabinet and Verts	Copper Joint	Trough Duct Cable Tray	Signal Box	FTN Core Node	Screen Joint Routeworks	Manhole details: Cross - To be used, Filled - In use, Clear - Empty	Overbridge	Signal	Engineer's Line Reference	Crossing	Gas Line
Cabinet with Regenerator and Verts	Fibre Joint	Cable - Type Identified by FTN Code	Electrical Control Room	Core Node with GSM-R Colocated	Copper Joint Routeworks	Manhole	Underbridge	Vehicle Access Point	Mile Post	Gantry	HV Cable
Screening Conductor Joint with/without Earth	Fibre Joint with/without Earth	Cable Status as per Key Below	Mid Length Sheath Gap Fibre	FTN Access Node	Cabinet Routeworks	Sheath Gap Copper	Tunnel	Pedestrian Access Point	Platform	Sewer	LV Cable
<b>KEY</b>				FTN Access Node with GSM-R Colocated	Fibre Joint Routeworks			Earth Farm	Telephone	Telecoms	Water
Proposed Fibre & Civils Elements are shown in RED		All Existing Elements are shown in BLACK						Buffer Stop		Copper Blue Fibre	AC Stanchion
Proposed Copper Elements are shown in BLUE		Existing Fibre Cable								Fibre Red	
Proposed Screening Elements are shown in MAGENTA		Existing Copper Cable								Screen Green	
All Recoveries are shown in GREEN		Existing Screen Cable									

**Notes**

Rev	Date	Description of Revisions	Drawn	Chkd	Appr
B	29.12.10	Stage 2 Design - First Issue	MB	JW	CT
A	26.11.08	2nd Issue	JO	DH	SW
DA	29.08.08	1st Issue	JO	DH	SW

**ndcconsultants**  
Unit 4 Apex Park, Wainwright Road, Worcester, Worcestershire, WR4 9FN. Tel: 01905 756000

**Design**  
BML2

Designed	Mike Bonner	Sign.	Date	29.12.10
Checked	Joe Winter	Sign.	Date	29.12.10
Approved	Chris Tappenden	Sign.	Date	29.12.10

**FTN / GSM-R Project Stage 2 Design**

**New Milton (1121) to Sway (1122)**

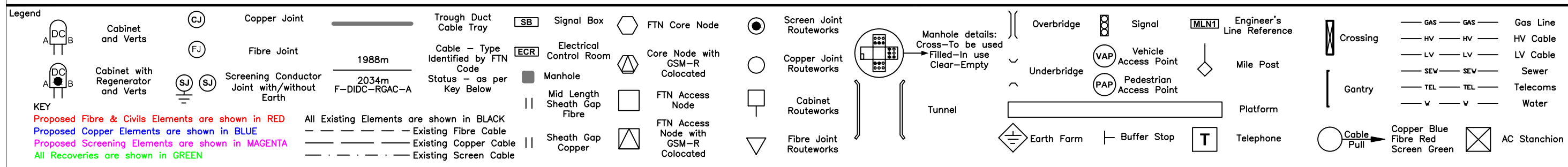
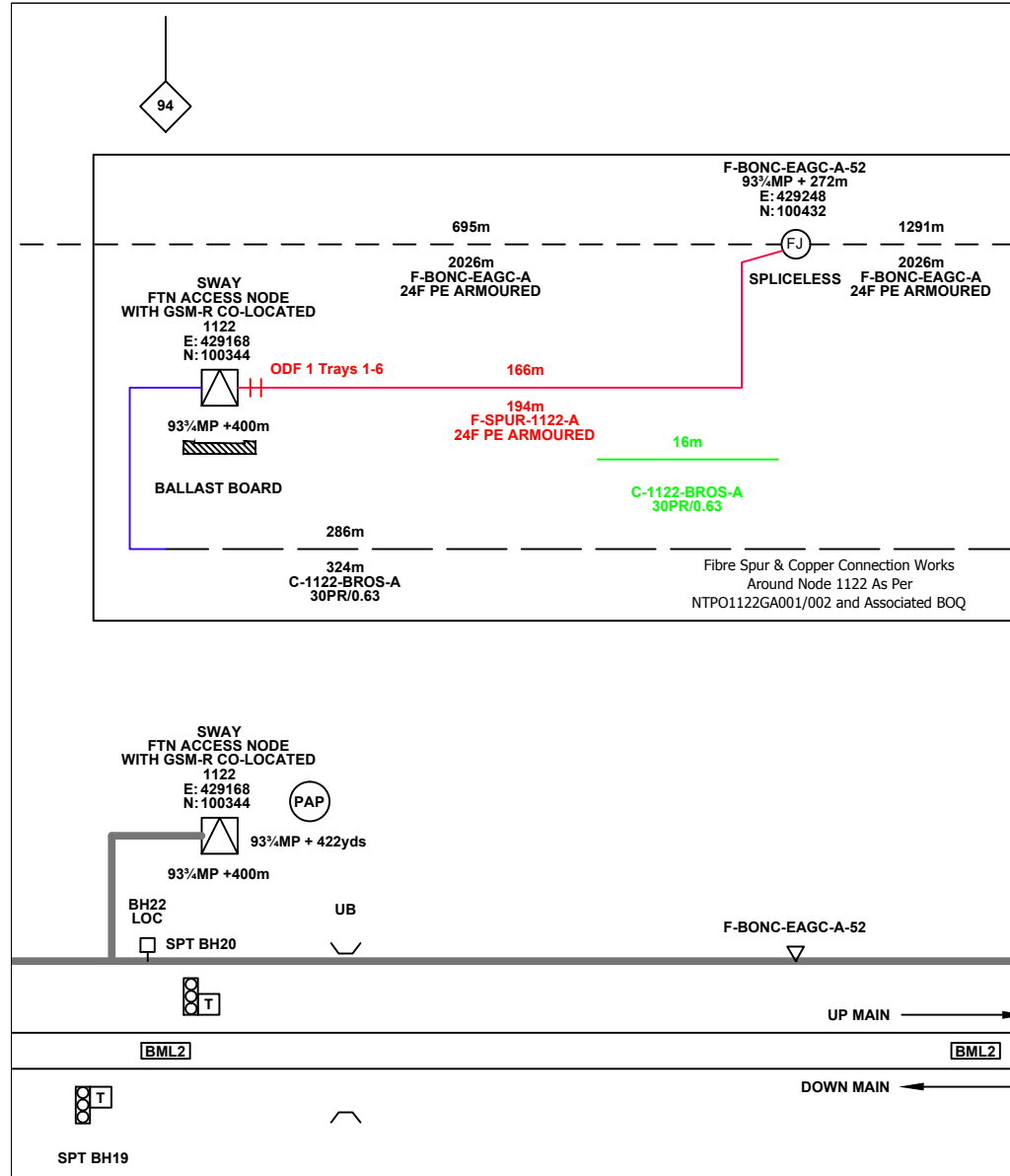
**Network Rail**

FTN/GSM-R Project  
Tournament House  
Passington  
London  
W2 1HA

Alternative Reference: See Layout Tab A3 Sheets 9 and 10

Drawing Number: NTPO\SLD\1121\1122\001

Sheet 5 of 6  
Revision B



Notes

Rev	Date	Description of Revisions	Drawn	Chkd	Appr
B	29.12.10	Stage 2 Design - First Issue	MB	JW	CT
A	26.11.08	2nd Issue	JO	DH	SW
DA	29.08.08	1st Issue	JO	DH	SW

Contractor(s)

Unit 4 Apex Park, Wainwright Road, Worcester, Worcestershire, WR4 9FN. Tel: 01905 756000

Status: **Design**

Scale(s): ELR & Mileage  
BML2

Designed	Sign.	Date
Drawn	Sign.	Date
Checked	Sign.	Date
Approved	Sign.	Date

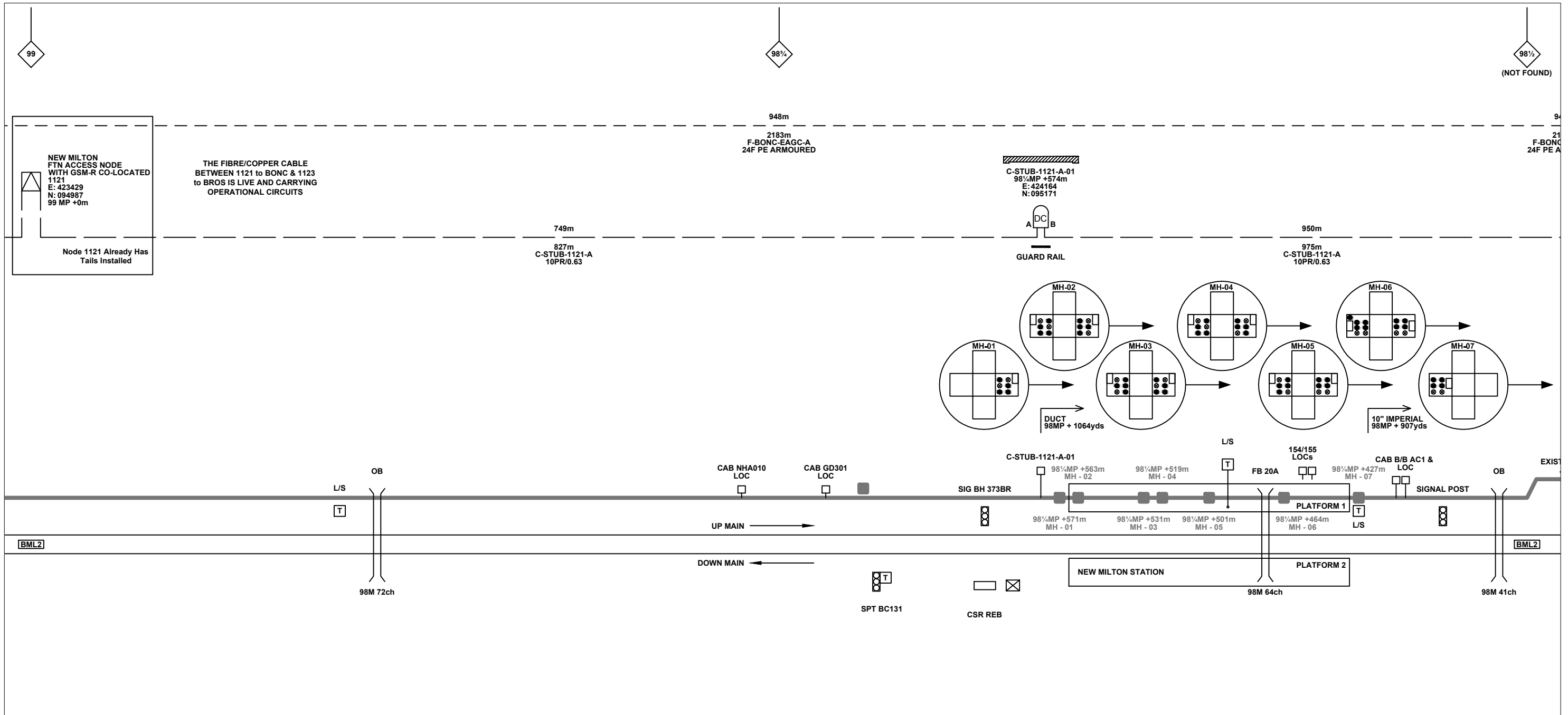
Project: FTN / GSM-R Project  
Tournament House  
Passington  
London  
W2 1HA

Drawing Title: **FTN / GSM-R Project Stage 2 Design**  
**New Milton (1121) to Sway (1122)**

Alternative Reference: See Layout Tab A3 Sheet 11

Drawing Number: NTPO\SLD\1121\1122\001

Sheet: 6 of 6  
Revision: B



1121 to 1122 Intermediate Works Bill of Quantities			
7.360	Renumber Copper Joint	each	2

**Legend**

Cabinet and Verts	Copper Joint	Trough Duct Cable Tray	Signal Box	FTN Core Node	Screen Joint Routeworks	Overbridge	Signal	Engineer's Line Reference	Crossing	GAS — GAS — Gas Line
Cabinet with Regenerator and Verts	Fibre Joint	Cable - Type Identified by FTN Code	Electrical Control Room	Core Node with GSM-R Colocated	Copper Joint Routeworks	Underbridge	VAP	Mile Post	Gantry	HV — HV — HV Cable
<b>KEY</b>	Screening Conductor Joint with/without Earth	Manhole	Manhole	FTN Access Node	Cabinet Routeworks	Manhole details: Cross-To be used Filled-In use Clear-Empty	PAP	Platform	W — W — Water	Cable Pull
Proposed Fibre & Civils Elements are shown in RED		All Existing Elements are shown in BLACK		FTN Access Node with GSM-R Colocated	Fibre Joint Routeworks	Tunnel	Earth Farm	Buffer Stop	AC Stanchion	
Proposed Copper Elements are shown in BLUE		Existing Fibre Cable		Sheath Gap Fibre						
Proposed Screening Elements are shown in MAGENTA		Existing Copper Cable		Sheath Gap Copper						
All Recoveries are shown in GREEN		Existing Screen Cable								

Notes

Rev	Date	Description of Revisions	Drawn	Chkd	Appr
B	29.12.10	Stage 2 Design - First Issue	MB	JW	CT
A	26.11.08	2nd Issue	JO	DH	SW
DA	29.08.08	1st Issue	JO	DH	SW

Contractor(s)

Unit 4 Apex Park, Wainwright Road, Worcester, Worcestershire, WR4 9FN. Tel: 01905 756000

Status: **Design**

Scale(s): NTS, BML2

Design	Sign.	Date
Drawn: Mike Bonner	Sign.	Date: 29.12.10
Checked: Joe Winter	Sign.	Date: 29.12.10
Approved: Chris Tappenden	Sign.	Date: 29.12.10

Project: FTN / GSM-R Project Stage 2 Design

Drawing Title: New Milton (1121) to Sway (1122)

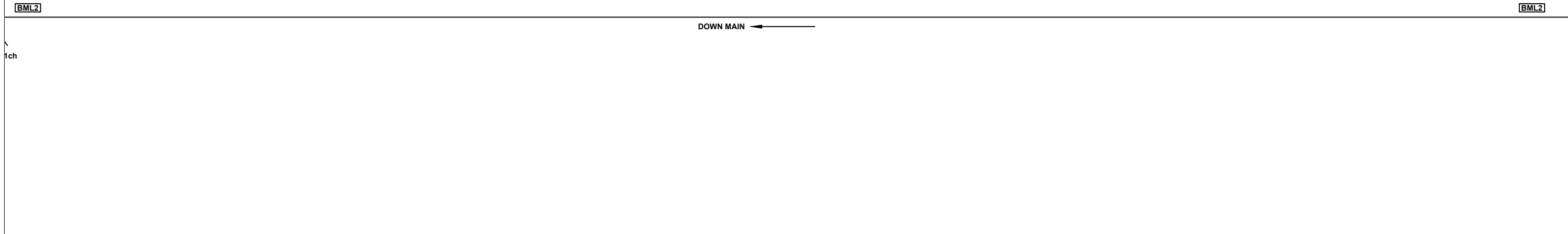
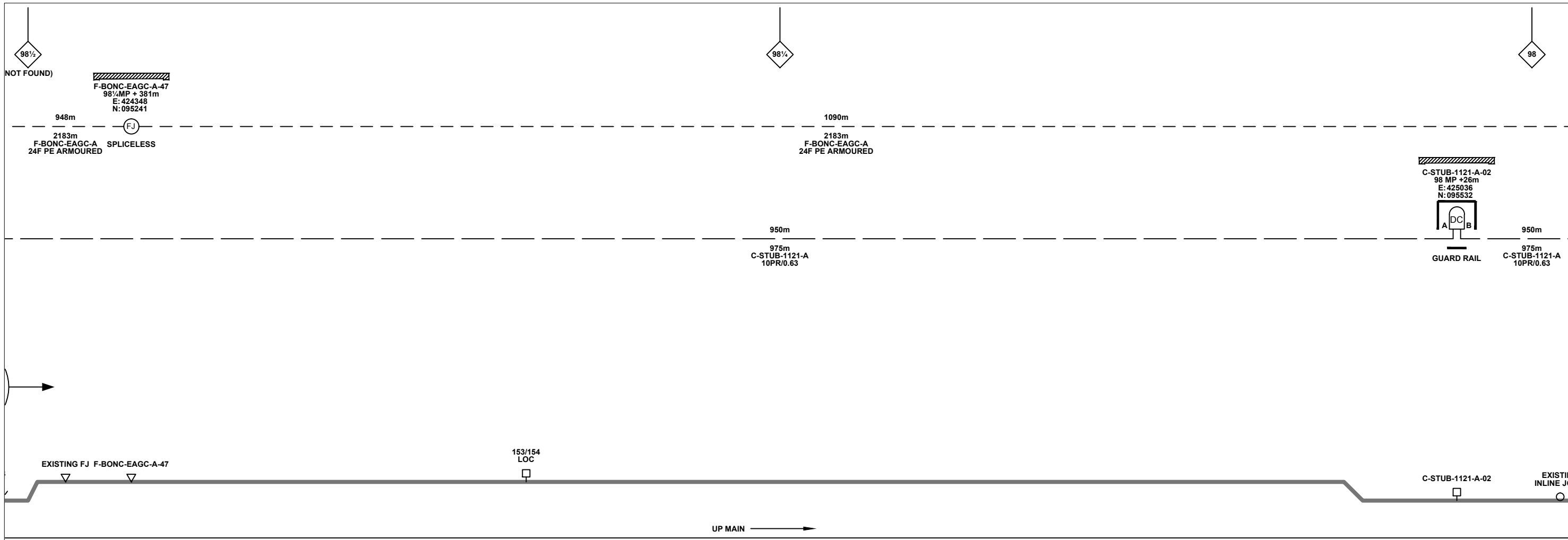
FTN/GSM-R Project  
Tournament House  
Farringdon  
London  
W2 1HA

Alternative Reference: See Layout Tab 841 x 297 Sheet 1

Drawing Number: NTPO\SLD\1121\1122\001

Sheet: 1 of 11

Revision: B



**Legend**

Cabinet and Verts	Copper Joint	Trough Duct Cable Tray	Signal Box	FTN Core Node	Screen Joint Routeworks	Overbridge	Signal	Engineer's Line Reference	Crossing	GAS — GAS — Gas Line
Cabinet with Regenerator and Verts	Fibre Joint	Cable - Type Identified by FTN Code	Electrical Control Room	Core Node with GSM-R Colocated	Copper Joint Routeworks	Underbridge	Vehicle Access Point	Mile Post	Gantry	HV — HV — HV Cable
<b>KEY</b>	Screening Conductor Joint with/without Earth	Manhole	Mid Length Sheath Gap Fibre	FTN Access Node	Cabinet Routeworks	Manhole details: Cross-To be used, Filled-In use, Clear-Empty	Pedestrian Access Point	Platform	— W — W — Water	
Proposed Fibre & Civils Elements are shown in RED						Tunnel		Earth Farm	Buffer Stop	Telephone
Proposed Copper Elements are shown in BLUE										Cable Pull
Proposed Screening Elements are shown in MAGENTA										AC Stanchion
All Recoveries are shown in GREEN										

All Existing Elements are shown in BLACK

1988m F-DIDC-RGAC-A

Status - as per Key Below

2034m F-DIDC-RGAC-A

Notes

B	29.12.10	Stage 2 Design - First Issue	MB	JW	CT
A	26.11.08	2nd Issue	JO	DH	SW
DA	29.08.08	1st Issue	JO	DH	SW
Rev	Date	Description of Revisions	Drawn	Chkd	Appr

Contractor(s)

Unit 4 Apex Park, Wainwright Road, Worcester, Worcestershire, WR4 9FN. Tel: 01905 756000

Status: **Design**

Scale(s): NTS, BML2

Designed	Sign.	Date
Drawn	Sign.	Date 29.12.10
Checked	Sign. <i>M.L.</i>	Date 29.12.10
Approved	Sign. <i>Chris Tappenden</i>	Date 29.12.10
Project		
FTN / GSM-R Project Stage 2 Design		
Drawing Title		
New Milton (1121) to Sway (1122)		

FTN/GSM-R Project  
Tournament House  
Paddington  
London  
W2 1HA

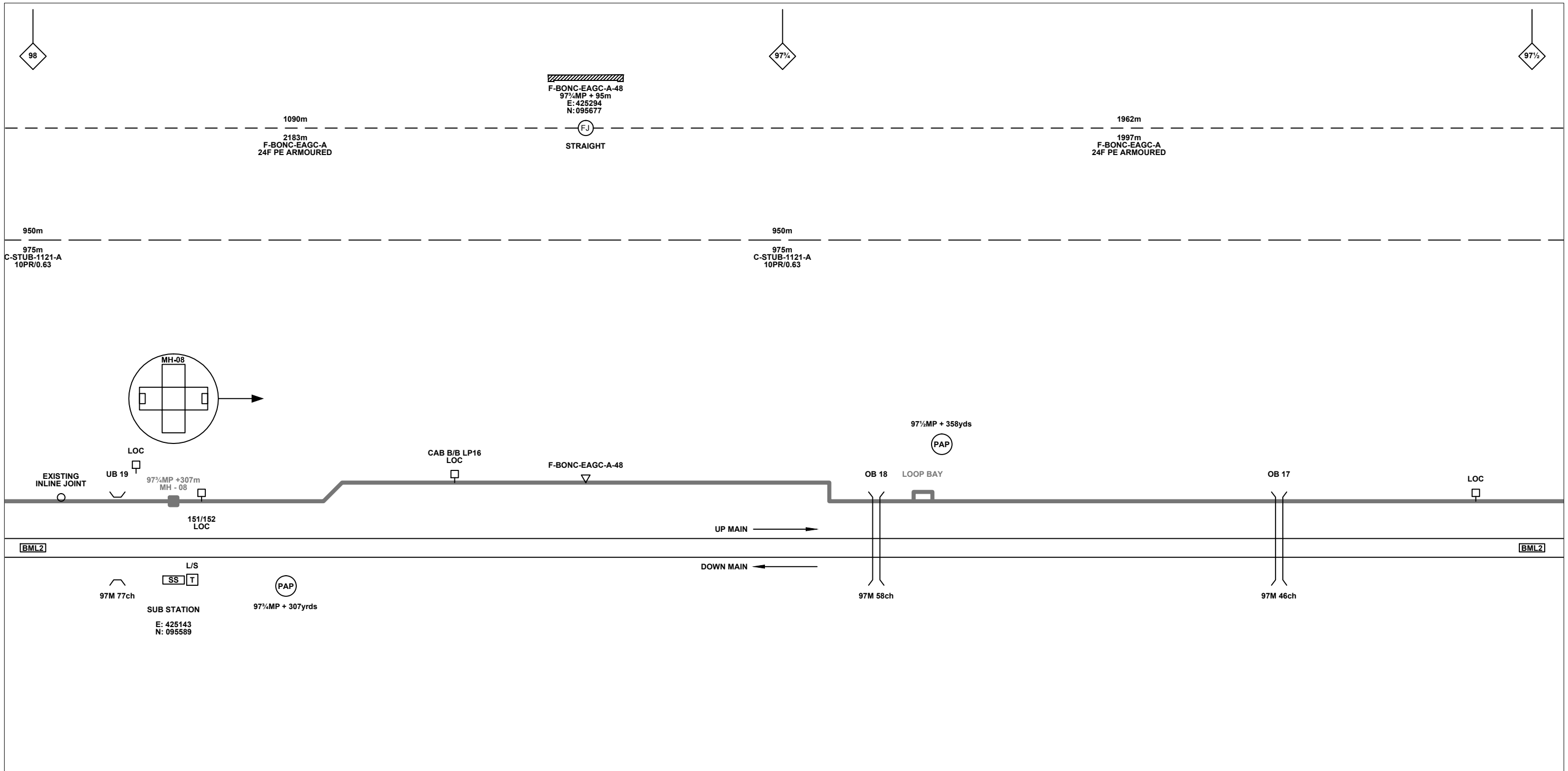
Alternative Reference: See Layout Tab 841 x 297 Sheet 1

Drawing Number: NTPO\SLD\1121\1122\001

Sheet: 2 of 11

Revision: **B**





**Legend**

Cabinet and Verts	Copper Joint	Trough Duct Cable Tray	Signal Box	FTN Core Node	Screen Joint Routeworks	Overbridge	Signal	Engineer's Line Reference	Crossing	GAS — GAS — Gas Line
Cabinet with Regenerator and Verts	Fibre Joint	Cable - Type Identified by FTN Code	Electrical Control Room	Core Node with GSM-R Colocated	Copper Joint Routeworks	Underbridge	Vehicle Access Point	Mile Post	Gantry	HV — HV — HV Cable
<b>KEY</b>	Screening Conductor Joint with/without Earth	Manhole	Mid Length Sheath Gap Fibre	FTN Access Node	Cabinet Routeworks	Manhole details: Cross-To be used Filled-In use Clear-Empty	Pedestrian Access Point	Platform	— W — W — Water	
Proposed Fibre & Civils Elements are shown in RED										Cable Pull
Proposed Copper Elements are shown in BLUE										AC Stanchion
Proposed Screening Elements are shown in MAGENTA										
All Recoveries are shown in GREEN										
All Existing Elements are shown in BLACK										
Existing Fibre Cable										
Existing Copper Cable										
Existing Screen Cable										

Notes

Rev	Date	Description of Revisions	Drawn	Chkd	Appr
B	29.12.10	Stage 2 Design - First Issue	MB	JW	CT
A	26.11.08	2nd Issue	JO	DH	SW
DA	29.08.08	1st Issue	JO	DH	SW

Contractor(s)

Unit 4 Apex Park, Wainwright Road, Worcester, Worcestershire, WR4 9FN. Tel: 01905 756000

Status: **Design**

Scale(s): NTS, BML2

Designed	Sign.	Date
Drawn	Sign.	Date 29.12.10
Checked	Sign. <i>M.L.</i>	Date 29.12.10
Approved	Sign. <i>Chris Tappenden</i>	Date 29.12.10
Project		
FTN / GSM-R Project Stage 2 Design		
Drawing Title		
New Milton (1121) to Sway (1122)		

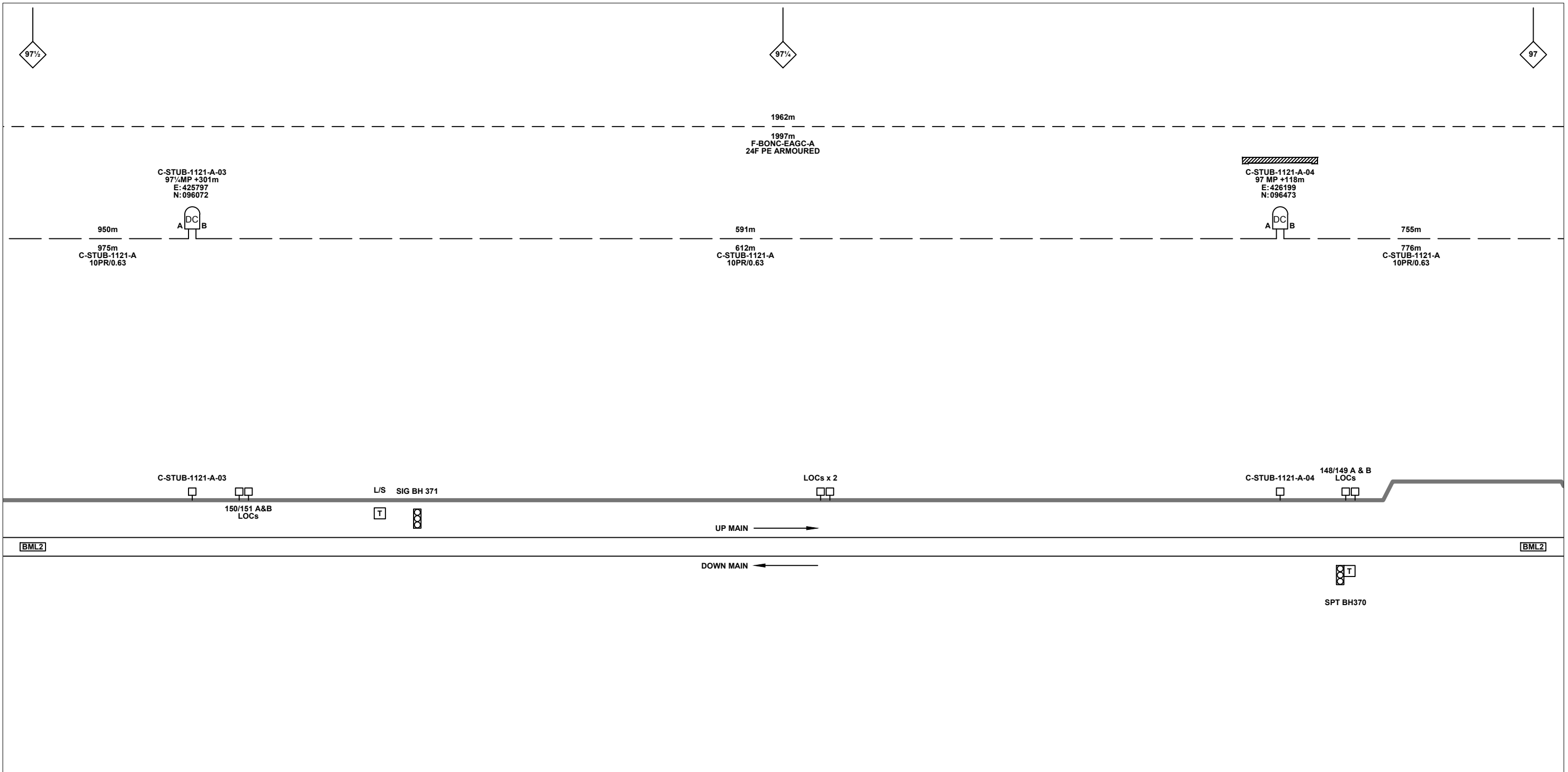
FTN/GSM-R Project  
Tournament House  
Paddington  
London  
W2 1HA

Alternative Reference: See Layout Tab 841 x 297 Sheet 2

Drawing Number: NTPO\SLD\1121\1122\001

Sheet: 3 of 11

Revision: **B**



**Legend**

Cabinet and Verts	Copper Joint	Trough Duct Cable Tray	Signal Box	FTN Core Node	Screen Joint Routeworks	Overbridge	Signal	Engineer's Line Reference	Crossing	GAS — GAS — Gas Line
Cabinet with Regenerator and Verts	Fibre Joint	Cable - Type Identified by FTN Code	Electrical Control Room	Core Node with GSM-R Colocated	Copper Joint Routeworks	Underbridge	Vehicle Access Point	Mile Post	Gantry	HV — HV — HV Cable
<b>KEY</b>	Screening Conductor Joint with/without Earth	Manhole	Mid Length Sheath Gap Fibre	FTN Access Node	Cabinet Routeworks	Tunnel	Pedestrian Access Point	Platform	— v — v — Water	Cable Pull
Proposed Fibre & Civils Elements are shown in RED										AC Stanchion
Proposed Copper Elements are shown in BLUE										
Proposed Screening Elements are shown in MAGENTA										
All Recoveries are shown in GREEN										

Rev	Date	Description of Revisions	Drawn	Chkd	Appr
B	29.12.10	Stage 2 Design - First Issue	MB	JW	CT
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Contractor(s)

**ndcconsultants**

Unit 4 Apex Park, Wainwright Road, Worcester, Worcestershire, WR4 9FN. Tel: 01905 756000

Status: **Design**

Scale(s): NTS, BML2

ELR & Mileage

Designed	Sign.	Date
Drawn	Sign.	Date 29.12.10
Checked	Sign.	Date 29.12.10
Approved	Sign.	Date 29.12.10
Project		
FTN / GSM-R Project Stage 2 Design		
Drawing Title		
New Milton (1121) to Sway (1122)		

**Network Rail**

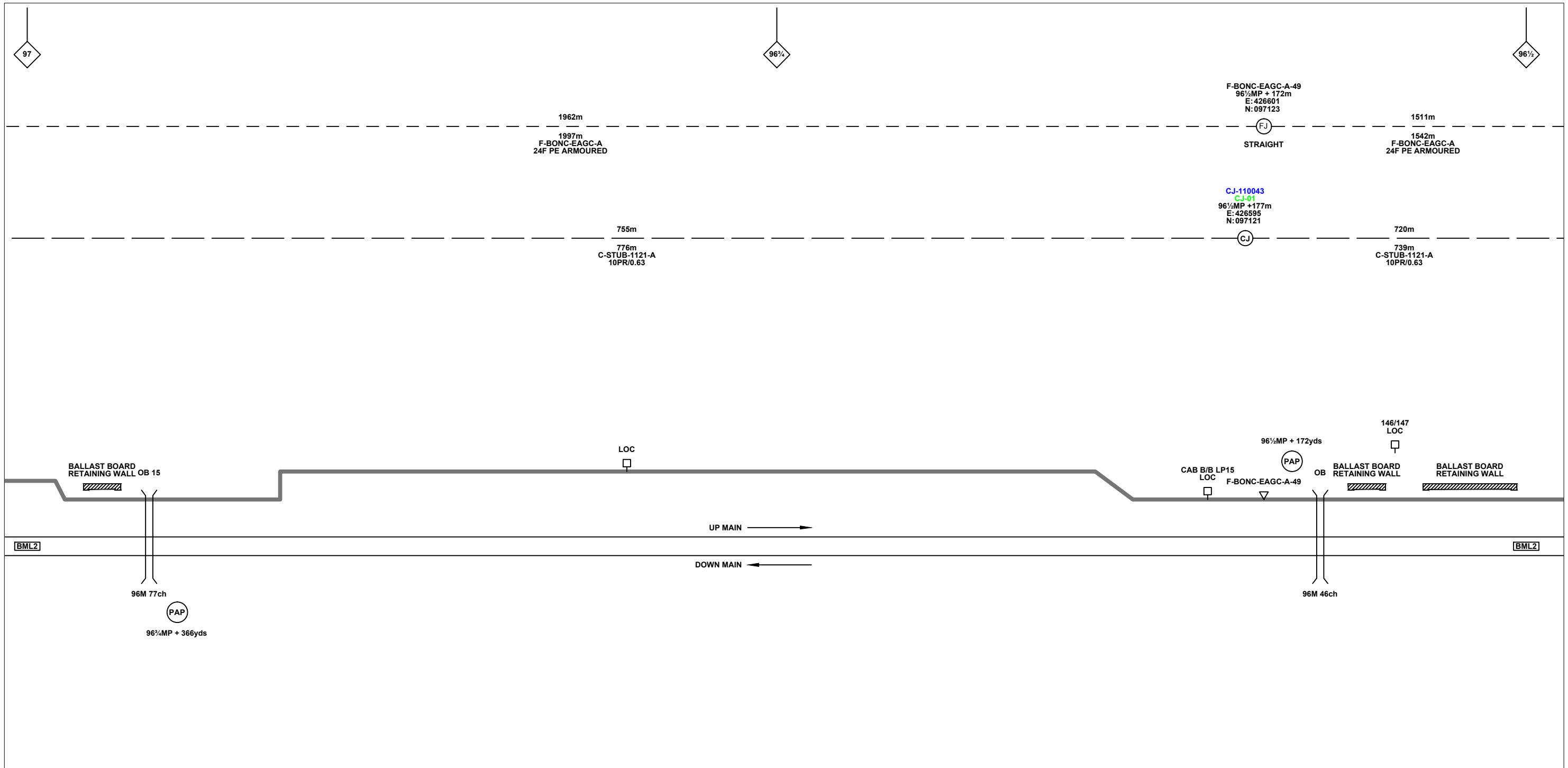
FTN/GSM-R Project  
Tournament House  
Paddington  
London  
W2 1HA

Alternative Reference: See Layout Tab 841 x 297 Sheet 2

Drawing Number: NTPO\SLD\1121\1122\001

Sheet: 4 of 11

Revision: **B**



**Legend**

Cabinet and Verts	Copper Joint	Trough Duct Cable Tray	Signal Box	FTN Core Node	Screen Joint Routeworks	Overbridge	Signal	Engineer's Line Reference	Crossing	GAS — GAS — Gas Line
Cabinet with Regenerator and Verts	Fibre Joint	Cable - Type Identified by FTN Code	Electrical Control Room	Core Node with GSM-R Colocated	Copper Joint Routeworks	Underbridge	Vehicle Access Point	Mile Post	Gantry	HV — HV — HV Cable
<b>KEY</b>	Screening Conductor Joint with/without Earth	Manhole	Mid Length Sheath Gap Fibre	FTN Access Node	Cabinet Routeworks		Pedestrian Access Point	Platform	SEW — SEW — Sewer	LV — LV — LV Cable
Proposed Fibre & Civils Elements are shown in RED				FTN Access Node with GSM-R Colocated	Fibre Joint Routeworks		Earth Farm	Telephone	TEL — TEL — Telecoms	W — W — Water
Proposed Copper Elements are shown in BLUE							Buffer Stop		Cable Pull	AC Stanchion
Proposed Screening Elements are shown in MAGENTA										
All Recoveries are shown in GREEN										

Notes

Rev	Date	Description of Revisions	Drawn	Chkd	Appr
B	29.12.10	Stage 2 Design - First Issue	MB	JW	CT
A	26.11.08	2nd Issue	JO	DH	SW
DA	29.08.08	1st Issue	JO	DH	SW

Contractor(s)

Unit 4 Apex Park, Wainwright Road, Worcester, Worcestershire, WR4 9FN. Tel: 01905 756000

Status: **Design**

Scale(s): NTS, BML2

Designed	Sign.	Date
Drawn	Sign.	Date 29.12.10
Checked	Sign.	Date 29.12.10
Approved	Sign.	Date 29.12.10
Project		
FTN / GSM-R Project Stage 2 Design		
Drawing Title		
New Milton (1121) to Sway (1122)		

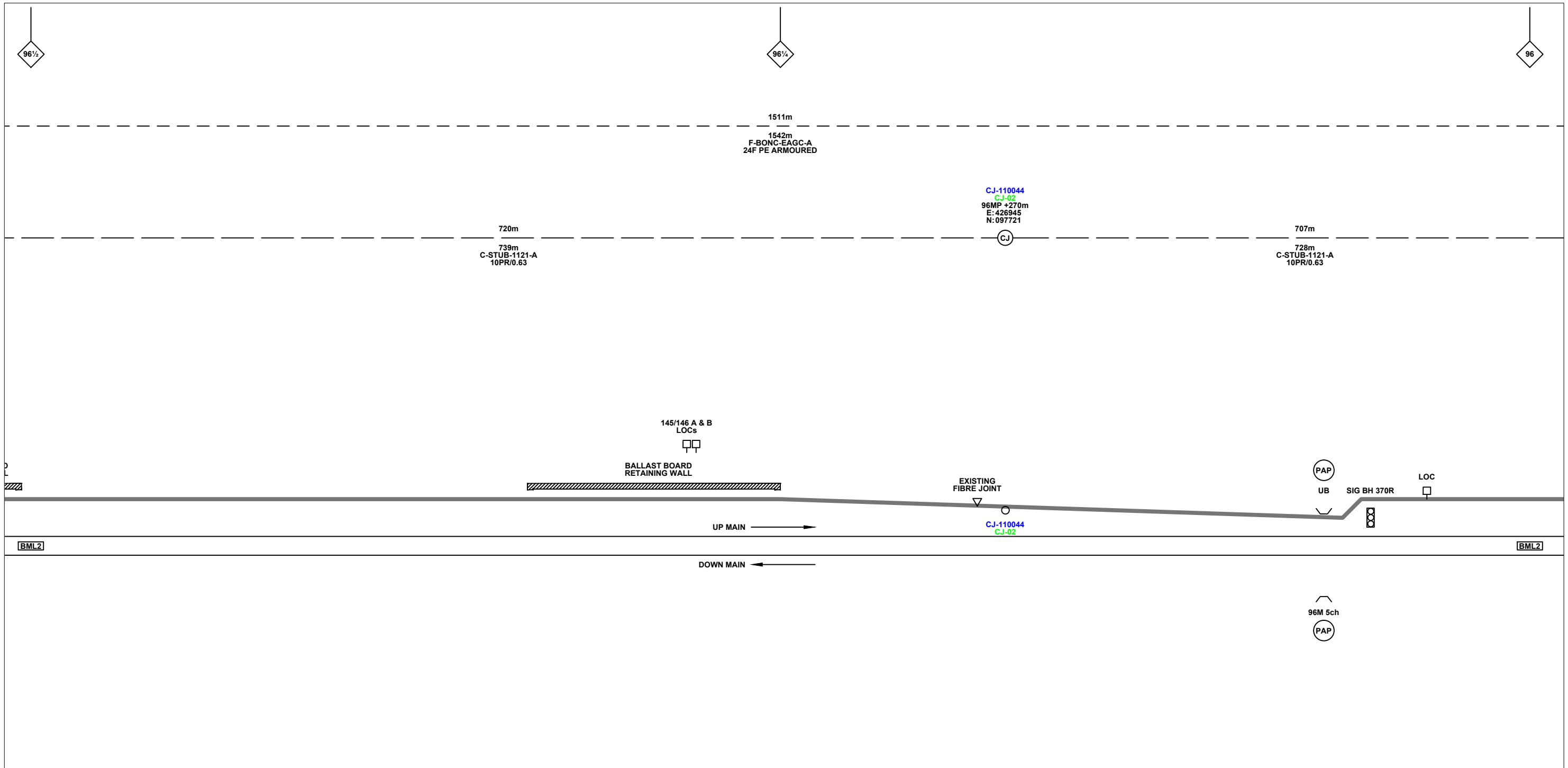
FTN/GSM-R Project  
Tournament House  
Paddington  
London  
W2 1HA

Alternative Reference: See Layout Tab 841 x 297 Sheet 3

Drawing Number: NTPO\SLD\1121\1122\001

Sheet: 5 of 11

Revision: B



**Legend**

Cabinet and Verts	Copper Joint	Trough Duct Cable Tray	Signal Box	FTN Core Node	Screen Joint Routeworks	Overbridge	Signal	Engineer's Line Reference	Crossing	GAS — GAS — Gas Line
Cabinet with Regenerator and Verts	Fibre Joint	Cable - Type Identified by FTN Code	Electrical Control Room	Core Node with GSM-R Colocated	Copper Joint Routeworks	Manhole	VAP Access Point	Mile Post	HV — HV — HV Cable	LV — LV — LV Cable
<b>KEY</b>	Screening Conductor Joint with/without Earth	2034m F-DIDC-RGAC-A	Mid Length Sheath Gap Fibre	FTN Access Node	Cabinet Routeworks	Sheath Gap Copper	PAP Access Point	Platform	SEW — SEW — Sewer	TEL — TEL — Telecoms
Proposed Fibre & Civils Elements are shown in RED		All Existing Elements are shown in BLACK	Tunnel	FTN Access Node with GSM-R Colocated	Fibre Joint Routeworks		Earth Farm	Telephone	W — W — Water	AC Stanchion
Proposed Copper Elements are shown in BLUE		Existing Fibre Cable	Manhole details: Cross-To be used Filled-In use Clear-Empty				Buffer Stop		Cable Pull	
Proposed Screening Elements are shown in MAGENTA		Existing Copper Cable								
All Recoveries are shown in GREEN		Existing Screen Cable								

Notes

B	29.12.10	Stage 2 Design - First Issue	MB	JW	CT
A	26.11.08	2nd Issue	JO	DH	SW
DA	29.08.08	1st Issue	JO	DH	SW
Rev	Date	Description of Revisions	Drawn	Chkd	Appr

Contractor(s)

Unit 4 Apex Park, Wainwright Road, Worcester, Worcestershire, WR4 9FN. Tel: 01905 756000

Status: **Design**

Scale(s): NTS, BML2

Designed	Sign.	Date
Drawn	Mike Bonner	29.12.10
Checked	Joe Winter	29.12.10
Approved	Chris Tappenden	29.12.10
Project	FTN / GSM-R Project Stage 2 Design	
Drawing Title	New Milton (1121) to Sway (1122)	

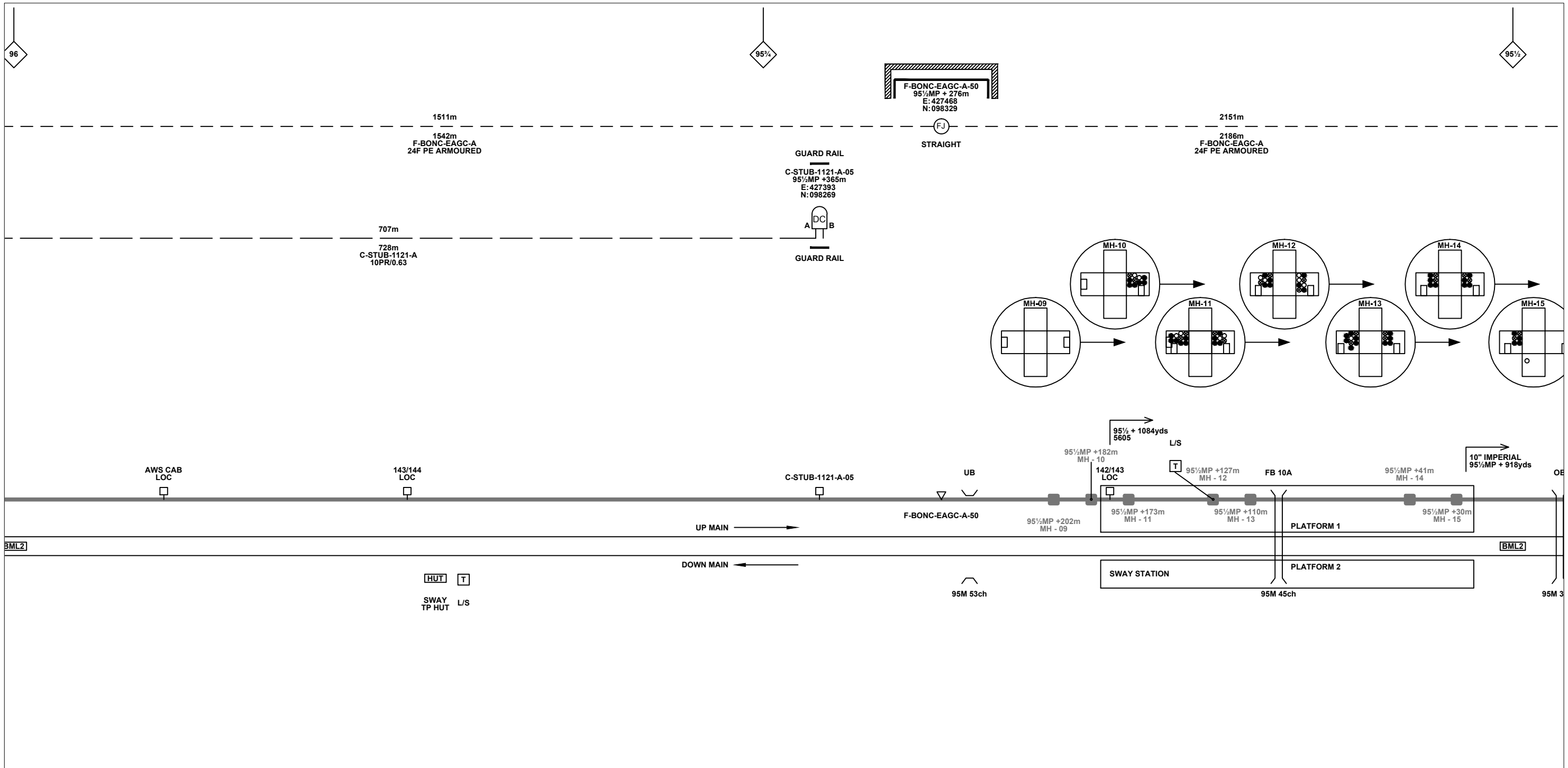
FTN/GSM-R Project  
Tournament House  
Paddington  
London  
W2 1HA

Alternative Reference: See Layout Tab 841 x 297 Sheet 3

Drawing Number: NTPO\SLD\1121\1122\001

Sheet: 6 of 11

Revision: B



**Legend**

Cabinet and Verts	Copper Joint	Trough Duct Cable Tray	Signal Box	FTN Core Node	Screen Joint Routeworks	Overbridge	Signal	Engineer's Line Reference	Crossing	GAS — GAS — Gas Line
Cabinet with Regenerator and Verts	Fibre Joint	Cable - Type Identified by FTN Code	Electrical Control Room	Core Node with GSM-R Colocated	Copper Joint Routeworks	Underbridge	Vehicle Access Point	Mile Post	Gantry	HV — HV — HV Cable
<b>KEY</b>	Screening Conductor Joint with/without Earth	Manhole	Mid Length Sheath Gap Fibre	FTN Access Node	Cabinet Routeworks	Tunnel	Pedestrian Access Point	Platform	— W — W — Water	Cable Pull
Proposed Fibre & Civils Elements are shown in RED										AC Stanchion
Proposed Copper Elements are shown in BLUE										
Proposed Screening Elements are shown in MAGENTA										
All Recoveries are shown in GREEN										
All Existing Elements are shown in BLACK										
Existing Fibre Cable										
Existing Copper Cable										
Existing Screen Cable										

Notes

Rev	Date	Description of Revisions	Drawn	Chkd	Appr
B	29.12.10	Stage 2 Design - First Issue	MB	JW	CT
A	26.11.08	2nd Issue	JO	DH	SW
DA	29.08.08	1st Issue	JO	DH	SW

Contractor(s)

Unit 4 Apex Park, Wainwright Road, Worcester, Worcestershire, WR4 9FN. Tel: 01905 756000

Status: **Design**

Scale(s): NTS, BML2

Designed	Sign.	Date
Drawn	Sign.	Date 29.12.10
Checked	Sign.	Date 29.12.10
Approved	Sign.	Date 29.12.10
Project		
FTN / GSM-R Project Stage 2 Design		
Drawing Title		
New Milton (1121) to Sway (1122)		

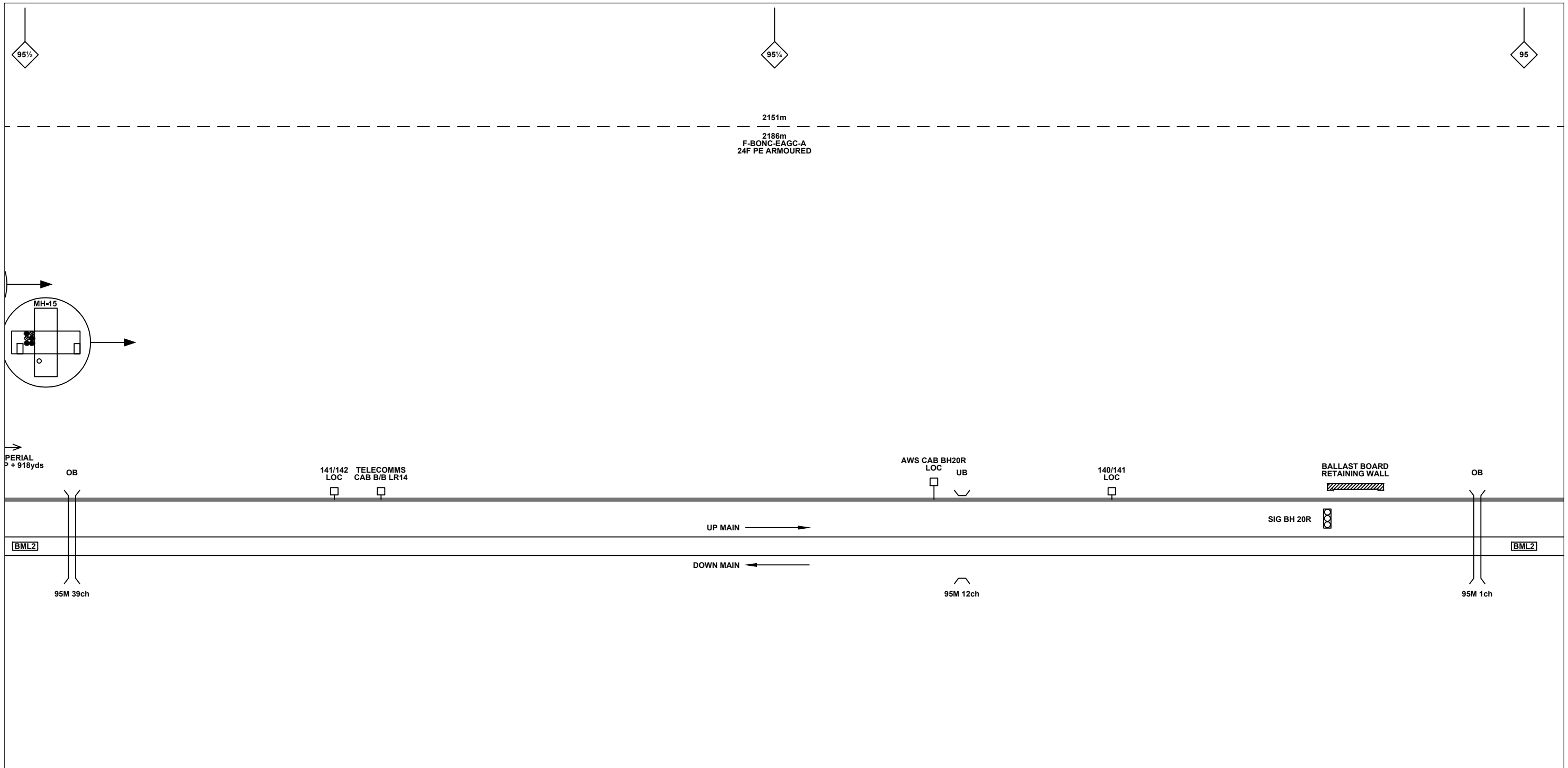
FTN/GSM-R Project  
Tournament House  
Paddington  
London  
W2 1HA

Alternative Reference: See Layout Tab 841 x 297 Sheet 4

Drawing Number: NTPO\SLD\1121\1122\001

Sheet: 7 of 11

Revision: B



**Legend**

Cabinet and Verts	Copper Joint	Trough Duct Cable Tray	Signal Box	FTN Core Node	Screen Joint Routeworks	Overbridge	Signal	Engineer's Line Reference	Crossing	GAS — GAS — Gas Line
Cabinet with Regenerator and Verts	Fibre Joint	Cable - Type Identified by FTN Code	Electrical Control Room	Core Node with GSM-R Colocated	Copper Joint Routeworks	Underbridge	VAP Vehicle Access Point	Mile Post	Gantry	HV — HV — HV Cable
<b>KEY</b>	Screening Conductor Joint with/without Earth	Manhole	Mid Length Sheath Gap Fibre	FTN Access Node	Cabinet Routeworks	Tunnel	PAP Pedestrian Access Point	Platform	SEW — SEW — Sewer	TEL — TEL — Telecoms
Proposed Fibre & Cables Elements are shown in RED		Sheath Gap Copper	FTN Access Node with GSM-R Colocated	Fibre Joint Routeworks	Earth Farm	Buffer Stop	Telephone	Cable Pull	W — W — Water	AC Stanchion
Proposed Copper Elements are shown in BLUE										
Proposed Screening Elements are shown in MAGENTA										
All Recoveries are shown in GREEN										

Notes

B	29.12.10	Stage 2 Design - First Issue	MB	JW	CT
A	26.11.08	2nd Issue	JO	DH	SW
DA	29.08.08	1st Issue	JO	DH	SW
Rev	Date	Description of Revisions	Drawn	Chkd	Appr

Contractor(s)

Unit 4 Apex Park, Wainwright Road, Worcester, Worcestershire, WR4 9FN. Tel: 01905 756000

Status: **Design**

Scale(s): NTS, BML2

Designed	Sign.	Date
Drawn	Mike Bonner	29.12.10
Checked	Joe Winter	29.12.10
Approved	Chris Tappenden	29.12.10
Project	FTN / GSM-R Project Stage 2 Design	
Drawing Title	New Milton (1121) to Sway (1122)	

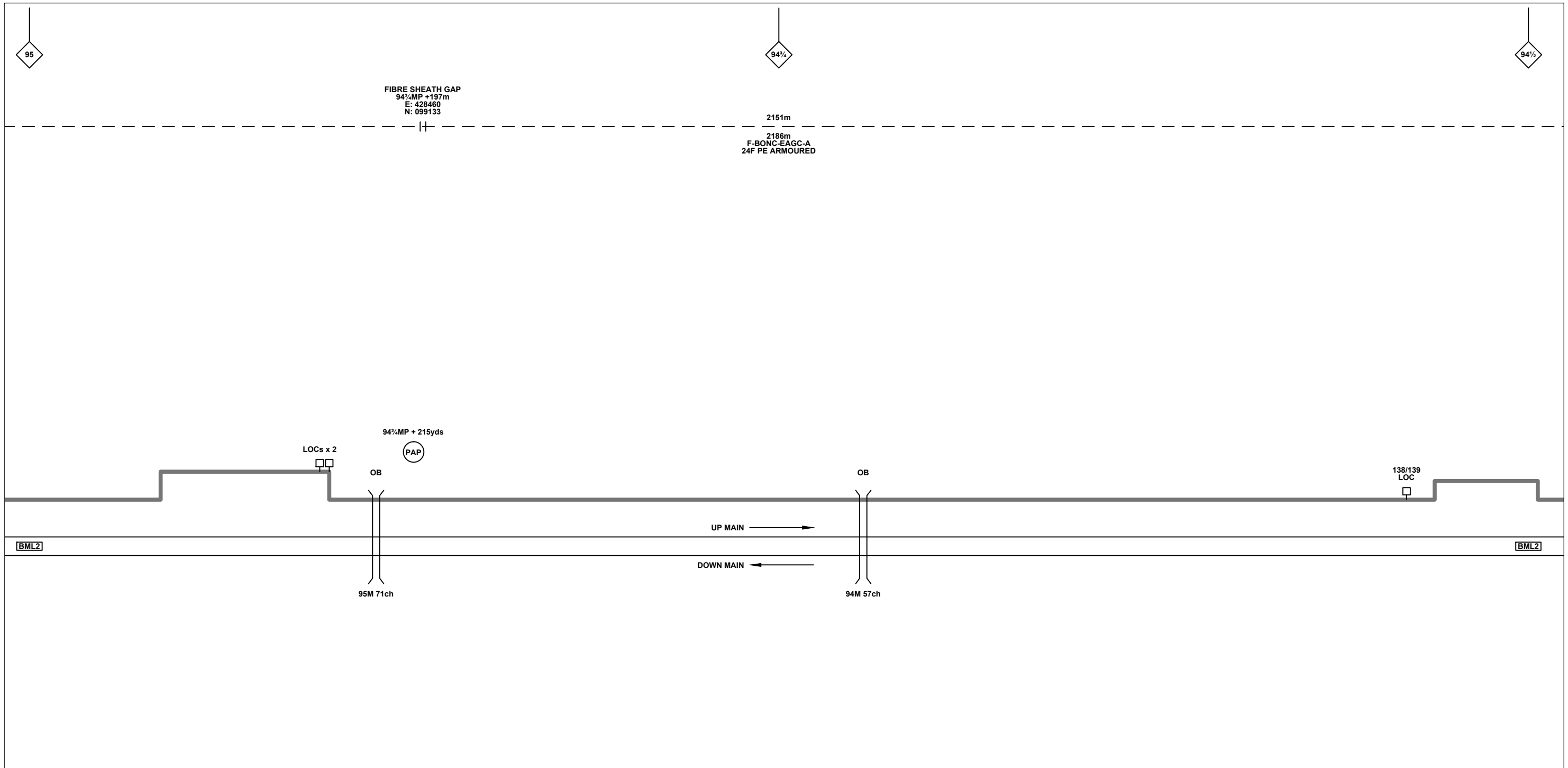
FTN/GSM-R Project  
Tournament House  
Paddington  
London  
W2 1HA

Alternative Reference: See Layout Tab 841 x 297 Sheet 4

Drawing Number: NTPO\SLD\1121\1122\001

Sheet: 8 of 11

Revision: **B**



**Legend**

	Cabinet and Verts		Copper Joint		Trough Duct Cable Tray		Signal Box		FTN Core Node		Screen Joint Routeworks		Manhole details: Cross-To be used Filled-In use Clear-Empty		Overbridge		Signal		Engineer's Line Reference		Crossing		GAS	Gas Line
	Cabinet with Regenerator and Verts		Fibre Joint		Cable - Type Identified by FTN Code		Electrical Control Room		Core Node with GSM-R Colocated		Copper Joint Routeworks		Manhole		Underbridge		Vehicle Access Point		Mile Post		Gantry		HV	HV Cable
<b>KEY</b>			Screening Conductor Joint with/without Earth		Status - as per Key Below		Mid Length Sheath Gap Fibre		FTN Access Node		Cabinet Routeworks		Tunnel		Earth Farm		Buffer Stop		Telephone		Cable Pull		Copper Blue	
					Existing Fibre Cable		Sheath Gap Copper		FTN Access Node with GSM-R Colocated		Fibre Joint Routeworks				Platform						AC Stanchion		LV	LV Cable
					Existing Copper Cable										SEW	Sewer						TEL	Telecoms	
					Existing Screen Cable										W	Water								

Notes

B	29.12.10	Stage 2 Design - First Issue	MB	JW	CT
A	26.11.08	2nd Issue	JO	DH	SW
DA	29.08.08	1st Issue	JO	DH	SW
Rev	Date	Description of Revisions	Drawn	Chkd	Appr

Contractor(s)

**ndc consultants**

Unit 4 Apex Park, Wainwright Road, Worcester, Worcestershire, WR4 9FN. Tel: 01905 756000

Status: **Design**

Scale(s): NTS

ELR & Mileage: BML2

Designed	Sign.	Date
Drawn	Mike Bonner	29.12.10
Checked	Joe Winter	29.12.10
Approved	Chris Tappenden	29.12.10
Project	<b>FTN / GSM-R Project Stage 2 Design</b>	
Drawing Title	<b>New Milton (1121) to Sway (1122)</b>	

**Network Rail**

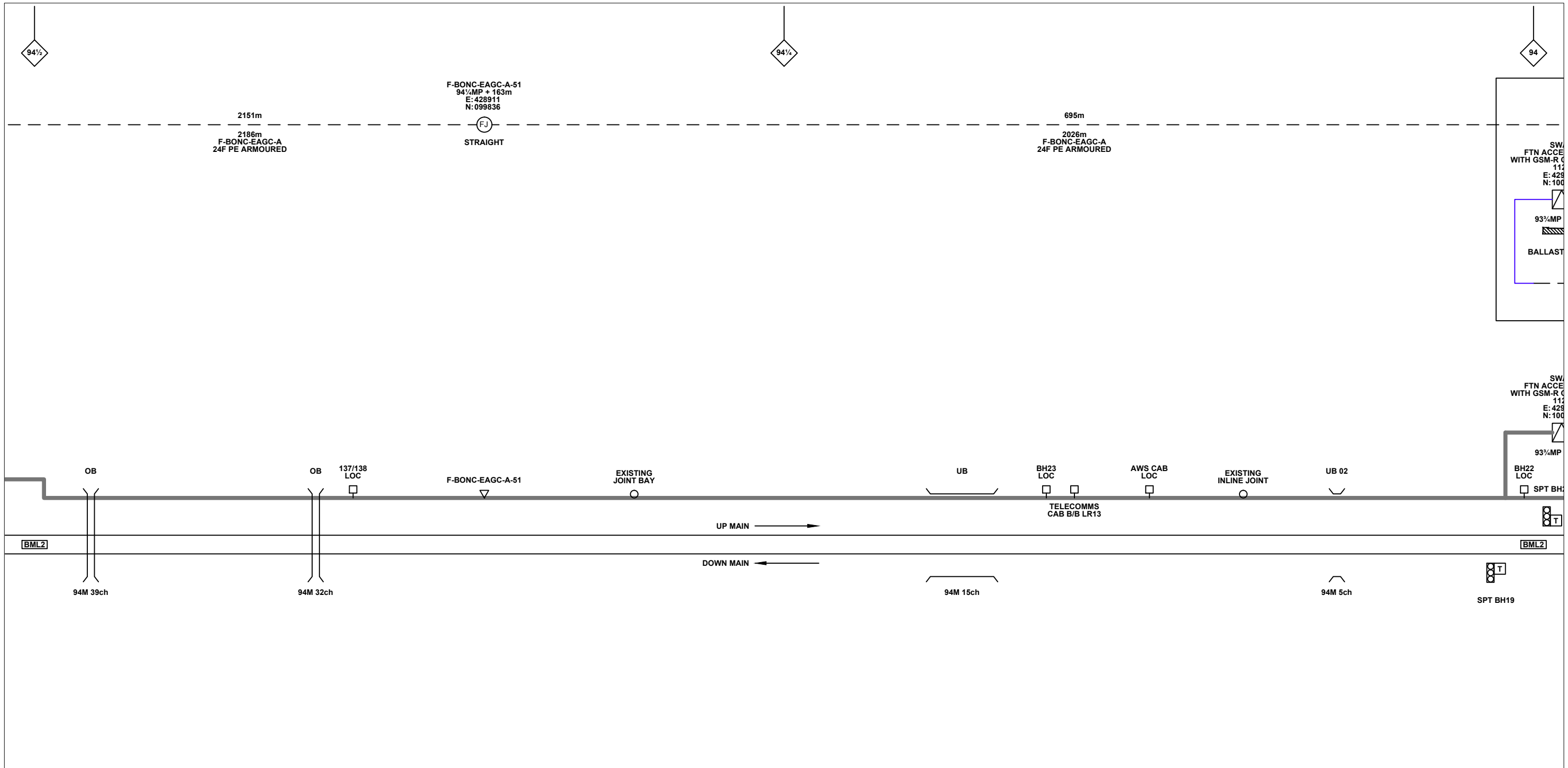
FTN/GSM-R Project  
Tournament House  
Paddington  
London  
W2 1HA

Alternative Reference: See Layout Tab 841 x 297 Sheet 5

Drawing Number: NTPO\SLD\1121\1122\001

Sheet: 9 of 11

Revision: **B**



**Legend**

Cabinet and Verts	Copper Joint	Trough Duct Cable Tray	Signal Box	FTN Core Node	Screen Joint Routeworks	Overbridge	Signal	Engineer's Line Reference	Crossing	GAS — GAS — Gas Line
Cabinet with Regenerator and Verts	Fibre Joint	Cable - Type Identified by FTN Code	Electrical Control Room	Core Node with GSM-R Colocated	Copper Joint Routeworks	Manhole	VAP	Mile Post	HV — HV — HV Cable	LV — LV — LV Cable
<b>KEY</b>	Screening Conductor Joint with/without Earth	Status - as per Key Below	Mid Length Sheath Gap Fibre	FTN Access Node	Cabinet Routeworks	Sheath Gap Copper	PAP	Platform	SEW — SEW — Sewer	TEL — TEL — Telecoms
Proposed Fibre & Civils Elements are shown in RED		All Existing Elements are shown in BLACK	Tunnel	FTN Access Node with GSM-R Colocated	Fibre Joint Routeworks		Earth Farm	Buffer Stop	W — W — Water	AC Stanchion
Proposed Copper Elements are shown in BLUE		--- Existing Fibre Cable							Cable Pull	Copper Blue Fibre Red Screen Green
Proposed Screening Elements are shown in MAGENTA		--- Existing Copper Cable								
All Recoveries are shown in GREEN		--- Existing Screen Cable								

Notes

B	29.12.10	Stage 2 Design - First Issue	MB	JW	CT
A	26.11.08	2nd Issue	JO	DH	SW
DA	29.08.08	1st Issue	JO	DH	SW
Rev	Date	Description of Revisions	Drawn	Chkd	Appr

Contractor(s)

Unit 4 Apex Park, Wainwright Road, Worcester, Worcestershire, WR4 9FN. Tel: 01905 756000

Status: **Design**

Scale(s): NTS, BML2

Designed	Sign.	Date
Drawn	Sign.	Date 29.12.10
Checked	Sign.	Date 29.12.10
Approved	Sign.	Date 29.12.10
Project		
FTN / GSM-R Project Stage 2 Design		
Drawing Title		
New Milton (1121) to Sway (1122)		

FTN/GSM-R Project  
Tournament House  
Paddington  
London  
W2 1HA

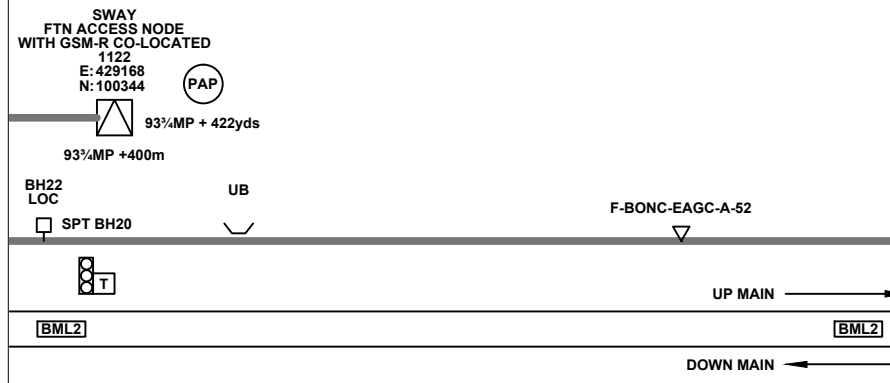
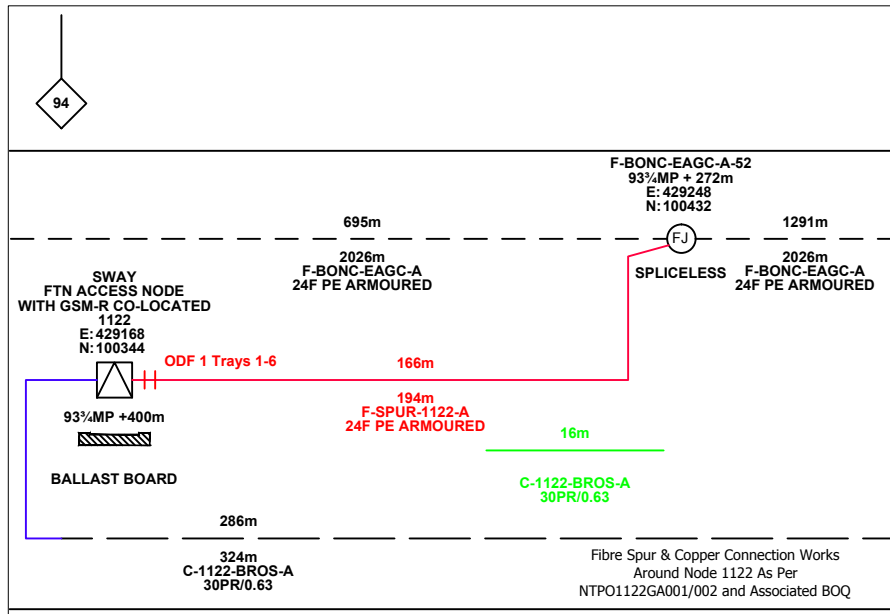
Alternative Reference: See Layout Tab 841 x 297 Sheet 5

Drawing Number: NTPO\SLD\1121\1122\001

Sheet: 10 of 11

Revision: B





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**Legend**

Cabinet and Verts	Copper Joint	Trough Duct Cable Tray	Signal Box	FTN Core Node	Screen Joint Routeworks	Overbridge	Signal	Engineer's Line Reference	Crossing	GAS — GAS — Gas Line
Cabinet with Regenerator and Verts	Fibre Joint	Cable - Type Identified by FTN Code	Electrical Control Room	Core Node with GSM-R Colocated	Copper Joint Routeworks	Underbridge	Vehicle Access Point	Mile Post	Gantry	HV — HV — HV Cable
<b>KEY</b>	Screening Conductor Joint with/without Earth	Manhole	Mid Length Sheath Gap Fibre	FTN Access Node	Cabinet Routeworks	Manhole details: Cross-To be used Filled-In use Clear-Empty	Pedestrian Access Point	Platform	SEW — SEW — Sewer	LV — LV — LV Cable
Proposed Fibre & Cables Elements are shown in RED										TEL — TEL — Telecoms
Proposed Copper Elements are shown in BLUE										W — W — Water
Proposed Screening Elements are shown in MAGENTA										
All Recoveries are shown in GREEN										
										Cable Pull
										AC Stanchion
										Earth Farm
										Buffer Stop
										Telephone

Notes

Rev	Date	Description of Revisions	Drawn	Chkd	Appr
B	29.12.10	Stage 2 Design - First Issue	MB	JW	CT
A	26.11.08	2nd Issue	JO	DH	SW
DA	29.08.08	1st Issue	JO	DH	SW

Contractor(s)

Unit 4 Apex Park, Wainwright Road, Worcester, Worcestershire, WR4 9FN. Tel: 01905 756000

Status: **Design**

Scale(s): NTS, BML2

Designed	Sign.	Date
Drawn	Sign.	Date 29.12.10
Checked	Sign. <i>M.L.</i>	Date 29.12.10
Approved	Sign. <i>Chris Tappenden</i>	Date 29.12.10
Project		
FTN / GSM-R Project Stage 2 Design		
Drawing Title		
New Milton (1121) to Sway (1122)		

FTN/GSM-R Project  
Tournament House  
Paddington  
London  
W2 1HA

Alternative Reference: See Layout Tab 841 x 297 Sheet 6

Drawing Number: NTP01\SLD\1121\1122\001

Sheet: 11 of 11

Revision: **B**