

**Legend**

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

**Notes**

B	15/11/12	As Built	RM	JH	IA
A	07/10/11	Redrafted from 2090-2103 FTN001_01430_DRAB_0003 Rev C.dwg & 2102-2103 FTN001_01430_DRAB_0002 Rev C.dwg	MB	JW	CT
Rev	Date	Description of Revisions	Drawn	Chkd	Appr

Contractor(s)

Status: **As Built**

Scale(s): ELR & Mileage  
RPE

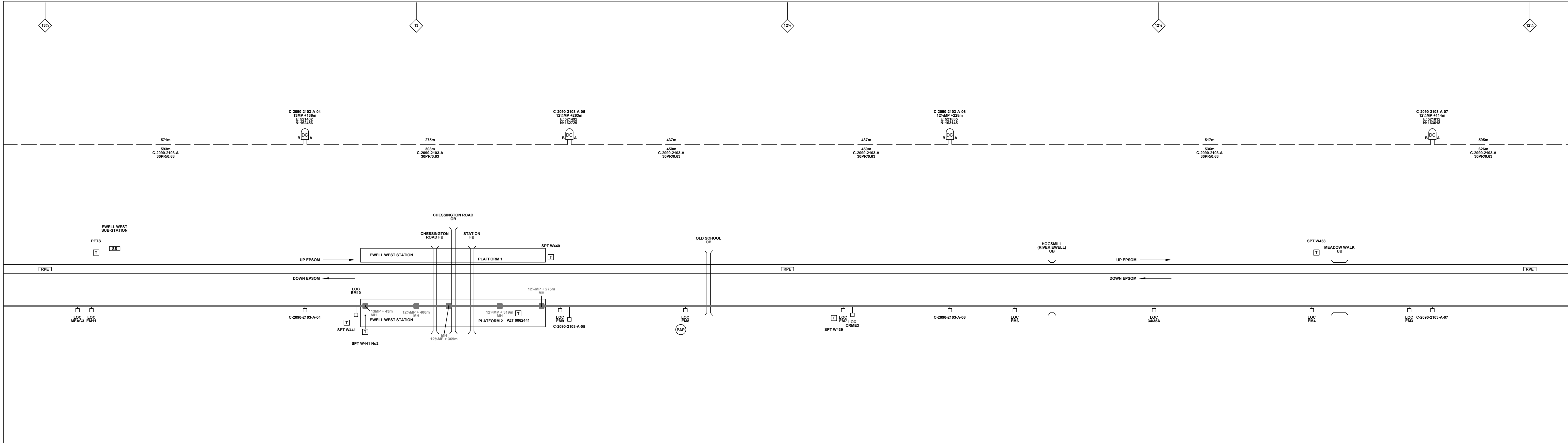
Designed	Mike Bonner	Sign.		Date	07/10/2011
Checked	Joe Winter	Sign.		Date	07/10/2011
Approved	Chris Tappenden	Sign.		Date	07/10/2011
Project	FTN/GSM-R Project Stage 2				
Drawing Title	Epsom Station (2090) to Stoneleigh Station (2103)				

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

Alternative Reference: See Layout Tab A3 Sheets 1 and 2

Drawing Number: NTPO\SLD\2090\2103\001

Sheet 1 of 3  
Revision B



**Legend**

Cabinet and Verts	Fibre Joint	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
Cabinet with Regenerator and Verts	Screening Conductor Joint with/without Earth	Fibre Joint 1988m	Cable - Type Identified by FTN Code Status - as per Key Below	Electrical Control Room	Core Node with GSM-R Colocated	Copper Joint Routeworks	Manhole	Underbridge	Vehicle Access Point	Mile Post
<b>KEY</b>	Existing Fibre Cable	Existing Copper Cable	Existing Screen Cable	Mid Length Sheath Gap Fibre	FTN Access Node	Cabinet Routeworks	Sheath Gap Copper	Platform	Pedestrian Access Point	Telephone
<b>Proposed Fibre &amp; Civils Elements are shown in RED</b>	Proposed Fibre Cable	Proposed Copper Elements are shown in BLUE	Proposed Screening Elements are shown in MAGENTA	Screening Conductor Joint with/without Earth	FTN Access Node with GSM-R Colocated	Fibre Joint Routeworks	Tunnel	Earth Form	Buffer Stop	Mast
<b>All Existing Elements are shown in BLACK</b>	Existing Fibre Cable	Existing Copper Cable	Existing Screen Cable	Mid Length Sheath Gap Fibre	FTN Access Node with GSM-R Colocated	Fibre Joint Routeworks	Tunnel	Earth Form	Buffer Stop	Mast

**Notes**

Rev	Date	Description of Revisions	Drawn	Chkd	Appr
B	15/11/12	As Built	RM	JH	IA
A	07/10/11	Redrafted from 2090-2103 FTN001_01430_DRAB_0003 Rev C.dwg & 2102-2103 FTN001_01430_DRAB_0002 Rev C.dwg	MB	JW	CT

Contractor(s)

**As Built**

ELR & Mileage  
RPE

Designed	Mike Bonner	Sign.	Date	07/10/2011
Checked	Joe Winter	Sign.	Date	07/10/2011
Approved	Chris Tappenden	Sign.	Date	07/10/2011

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

**Epsom Station (2090) to Stoneleigh Station (2103)**

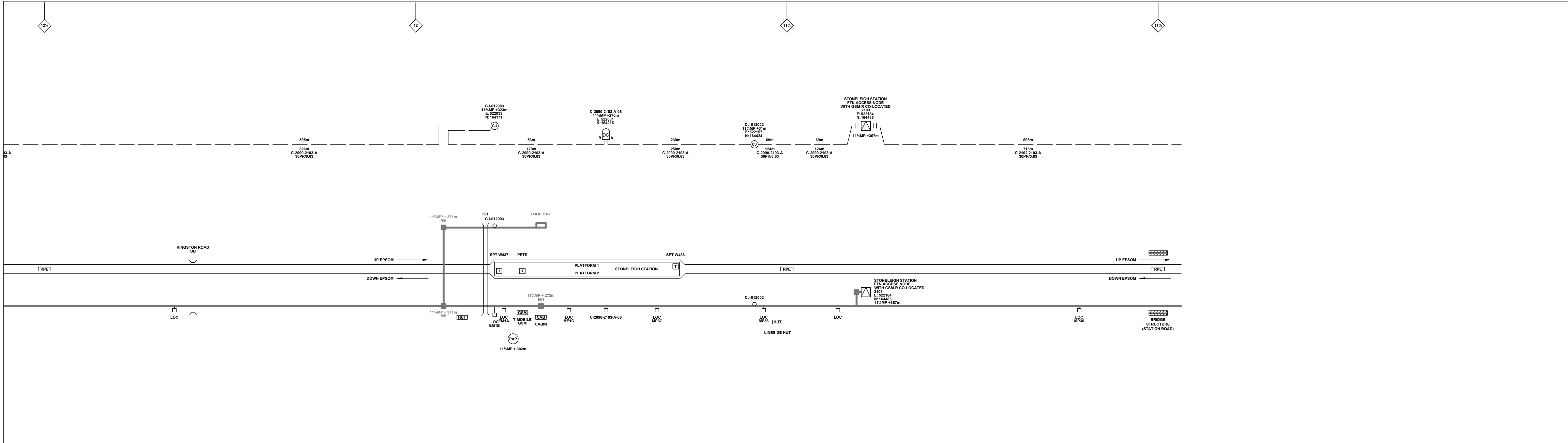
FTN/GSM-R Project  
Tournament House  
Passington  
London  
W2 1HA

Alternative Reference  
**See Layout Tab A3 Sheets 3 and 4**

Drawing Number  
**NTPO\SLD\2090\2103\001**

Sheet  
**2 of 3**

Revision  
**B**



**Legend**

	Cabinet and Verts		Copper Joint		Trough Duct Cable Tray		Signal Box		FTN Core Node		Screen Joint Routeworks		Manhole		Overbridge		Signal		Engineer's Line Reference
	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 details: Cross-To be used Filled-In use Clear-Empty		Underbridge		Vehicle Access Point		Mile Post
	Screening Conductor Joint with/without Earth		Manhole		Status - as per Key Below		Mid Length Sheath Gap Fibre		FTN Access Node		Cabinet Routeworks		Tunnel		Earth Form		Pedestrian Access Point		Platform
	Proposed Fibre & Civils Elements are shown in RED		Manhole		All Existing Elements are shown in BLACK		Sheath Gap Copper		FTN Access Node with GSM-R Colocated		Fibre Joint Routeworks		Copper Pull		Buffer Stop		Mast		Telephone

**Notes**

B	15/11/12	As Built	RM	JH	IA
A	07/10/11	Redrafted from 2090-2103 FTN001_01430_DRAB_0003 Rev C.dwg & 2102-2103 FTN001_01430_DRAB_0002 Rev C.dwg	MB	JW	CT
Rev	Date	Description of Revisions	Drawn	Chkd	Appr

**Contractor(s)**

**Status**  
As Built

**Scale(s)**  
ELR & Mileage  
RPE

Designed	Mike Bonner	Sign.		Date	07/10/2011
Checked	Joe Winter	Sign.		Date	07/10/2011
Approved	Chris Tappenden	Sign.		Date	07/10/2011
Project	FTN/GSM-R Project Stage 2				
Drawing Title	Epsom Station (2090) to Stoneleigh Station (2103)				

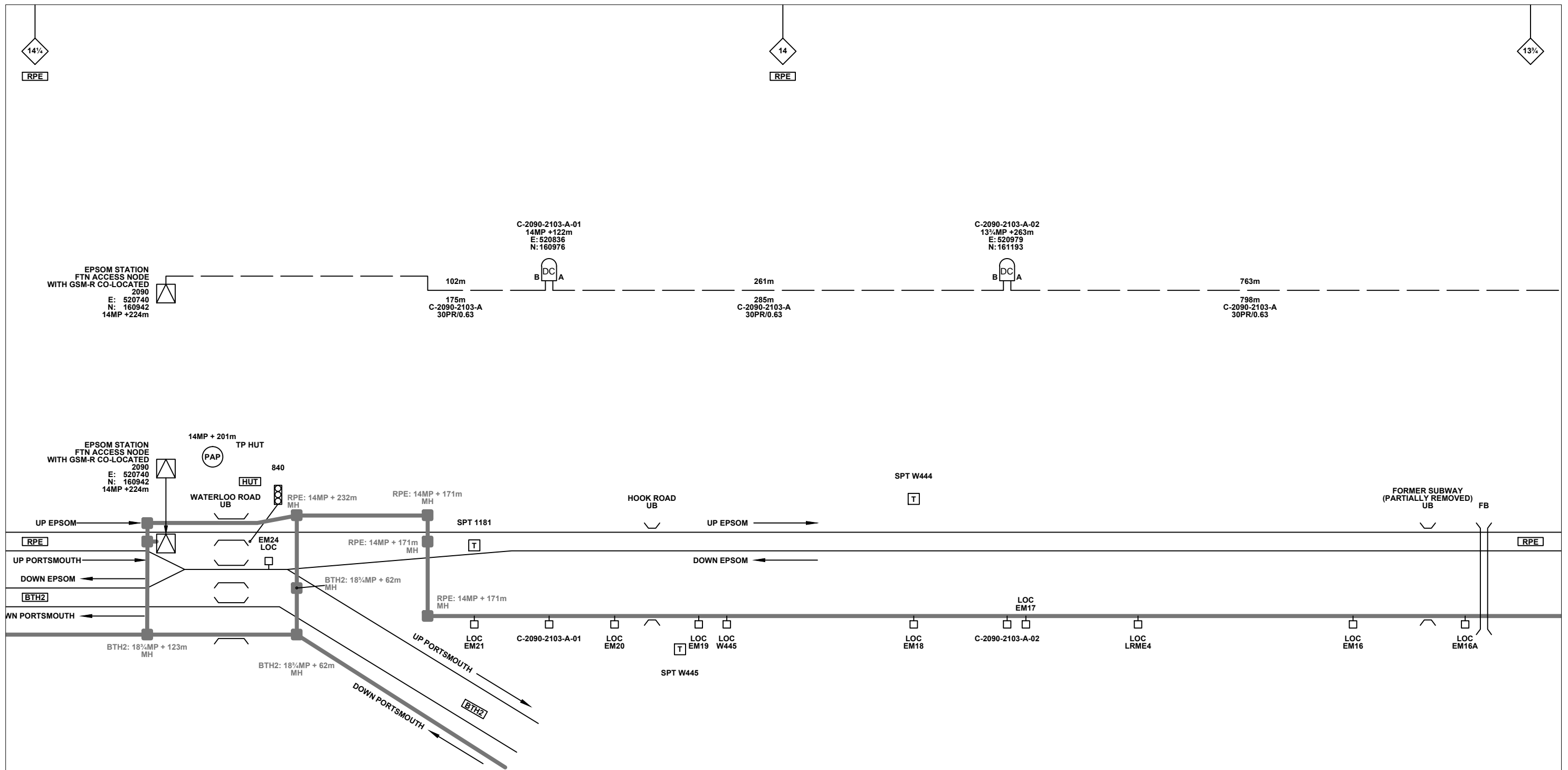
FTN/GSM-R Project  
Tournament House  
Passington  
London  
W2 1HA

Alternative Reference  
See Layout Tab A3 Sheets 5 and 6

Drawing Number  
NTPO\SLD\2090\2103\001

Sheet  
3 of 3

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

Notes

Rev	Date	Description of Revisions	Drawn	Chkd	Appr
B	15/11/12	As Built	RM	JH	IA
A	07/10/11	Redrafted from 2090-2103 FTN001_01430_DRAB_0003 Rev C.dwg & 2102-2103 FTN001_01430_DRAB_0002 Rev C.dwg	MB	JW	CT

Contractor(s)

Status: **As Built**

Scale(s): NTS

ELR & Mileage: RPE

Designed		Sign.		Date	
Drawn	Mike Bonner	Sign.		Date	07/10/2011
Checked	Joe Winter	Sign.		Date	07/10/2011
Approved	Chris Tappenden	Sign.		Date	07/10/2011
Project	FTN/GSM-R Project Stage 2				
Drawing Title	Epsom Station (2090) to Stoneleigh Station (2103)				

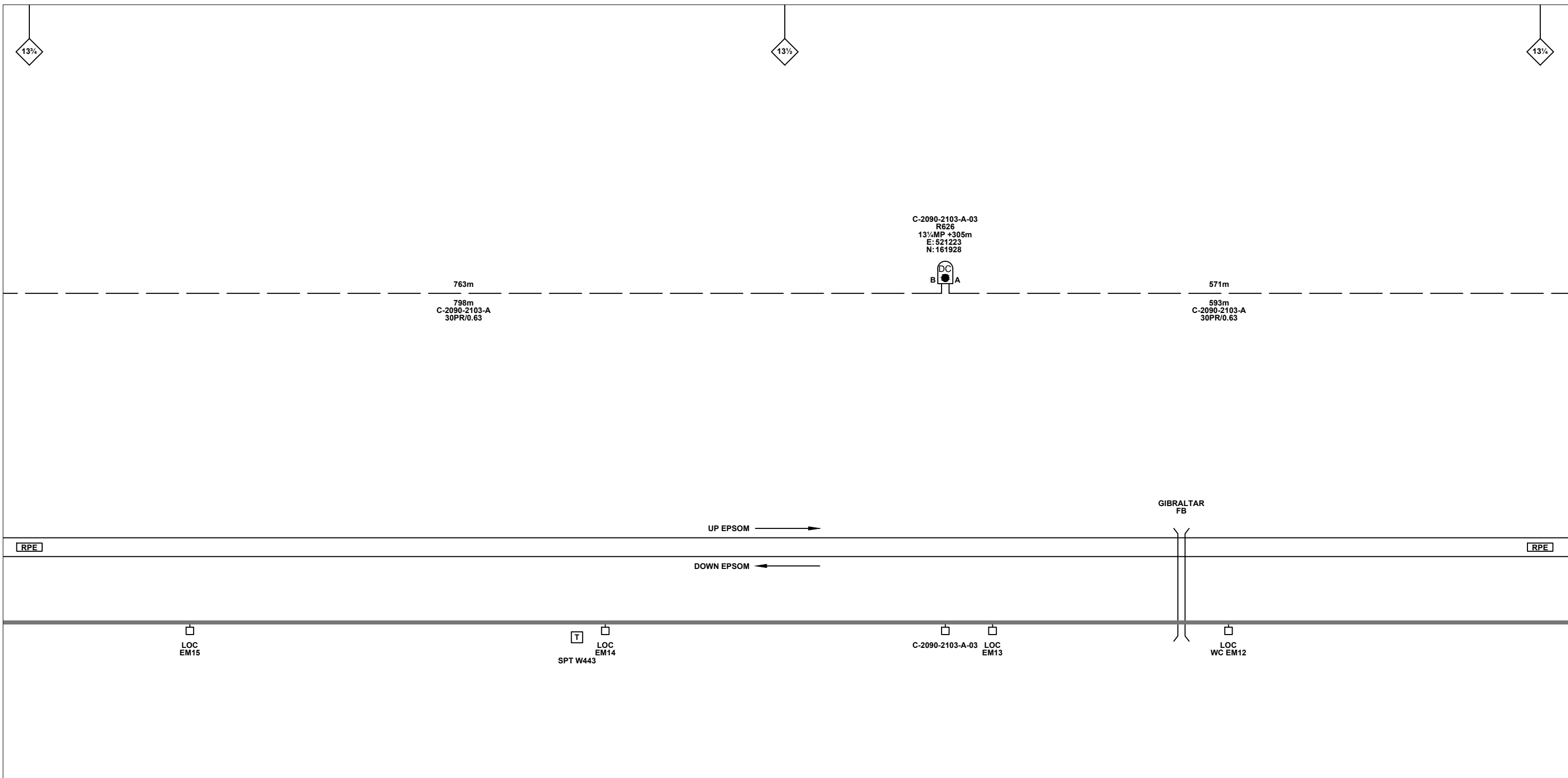
FTN/GSM-R Project  
Tournament House  
Paddington  
London  
W2 1HA

Alternative Reference: See Layout Tab 841 x 297 Sheet 1

Drawing Number: NTPO\SLD\2090\2103\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	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	Vehicle Access Point	Mile Post	HV Cable	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	Tunnel	Pedestrian Access Point	Platform	Sewer	Water
Proposed Fibre & Civils Elements are shown in RED		All Existing Elements are shown in BLACK	Sheath Gap Copper	FTN Access Node with GSM-R Colocated	Fibre Joint Routeworks	Earth Farm	Buffer Stop	Telephone	Cable Pull	Mast
Proposed Copper Elements are shown in BLUE		Existing Fibre Cable								
Proposed Screening Elements are shown in MAGENTA		Existing Copper Cable								
All Recoveries are shown in GREEN		Existing Screen Cable								

Notes

Rev	Date	Description of Revisions	Drawn	Chkd	Appr
B	15/11/12	As Built	RM	JH	IA
A	07/10/11	Redrafted from 2090-2103 FTN001_01430_DRAB_0003 Rev C.dwg & 2102-2103 FTN001_01430_DRAB_0002 Rev C.dwg	MB	JW	CT

Contractor(s)

Status: **As Built**

Scale(s): NTS

ELR & Mileage: RPE

Designed		Sign.		Date	
Drawn	Mike Bonner	Sign.		Date	07/10/2011
Checked	Joe Winter	Sign.		Date	07/10/2011
Approved	Chris Tappenden	Sign.		Date	07/10/2011
Project	FTN/GSM-R Project Stage 2				
Drawing Title	Epsom Station (2090) to Stoneleigh Station (2103)				

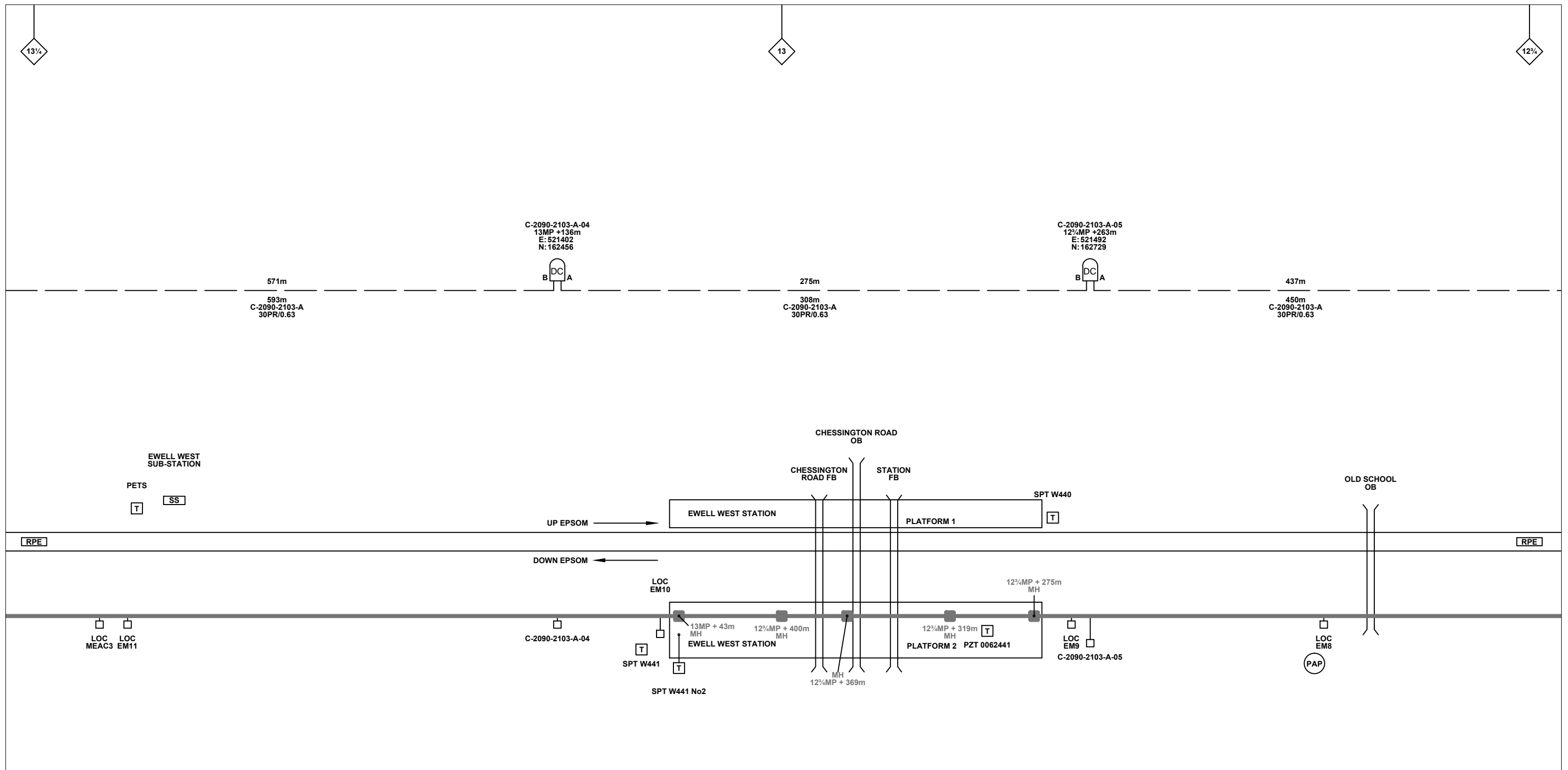
FTN/GSM-R Project  
Tournament House  
Paddington  
London  
W2 1HA

Alternative Reference: See Layout Tab 841 x 297 Sheet 1

Drawing Number: NTPO\SLD\2090\2103\001

Sheet: 2 of 6

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 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 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	Sewer	LV Cable
Proposed Fibre & Civils Elements are shown in RED		Status - as per Key Below	Sheath Gap Copper	FTN Access Node with GSM-R Colocated	Fibre Joint Routeworks	Tunnel	Earth Farm	Buffer Stop	Telecoms	Water
Proposed Copper Elements are shown in BLUE		All Existing Elements are shown in BLACK						Telephone	Cable Pull	Mast
Proposed Screening Elements are shown in MAGENTA		Existing Fibre Cable								
All Recoveries are shown in GREEN		Existing Copper Cable								
		Existing Screen Cable								

Notes

Rev	Date	Description of Revisions	Drawn	Chkd	Appr
B	15/11/12	As Built	RM	JH	IA
A	07/10/11	Redrafted from 2090-2103 FTN001_01430_DRAB_0003 Rev C.dwg & 2102-2103 FTN001_01430_DRAB_0002 Rev C.dwg	MB	JW	CT

Contractor(s)

Status: **As Built**

Scale(s): NTS

ELR & Mileage: RPE

Designed		Sign.		Date	
Drawn	Mike Bonner	Sign.	<i>M.L.</i>	Date	07/10/2011
Checked	Joe Winter	Sign.	<i>[Signature]</i>	Date	07/10/2011
Approved	Chris Tappenden	Sign.	<i>[Signature]</i>	Date	07/10/2011
Project	FTN/GSM-R Project Stage 2				
Drawing Title	Epsom Station (2090) to Stoneleigh Station (2103)				

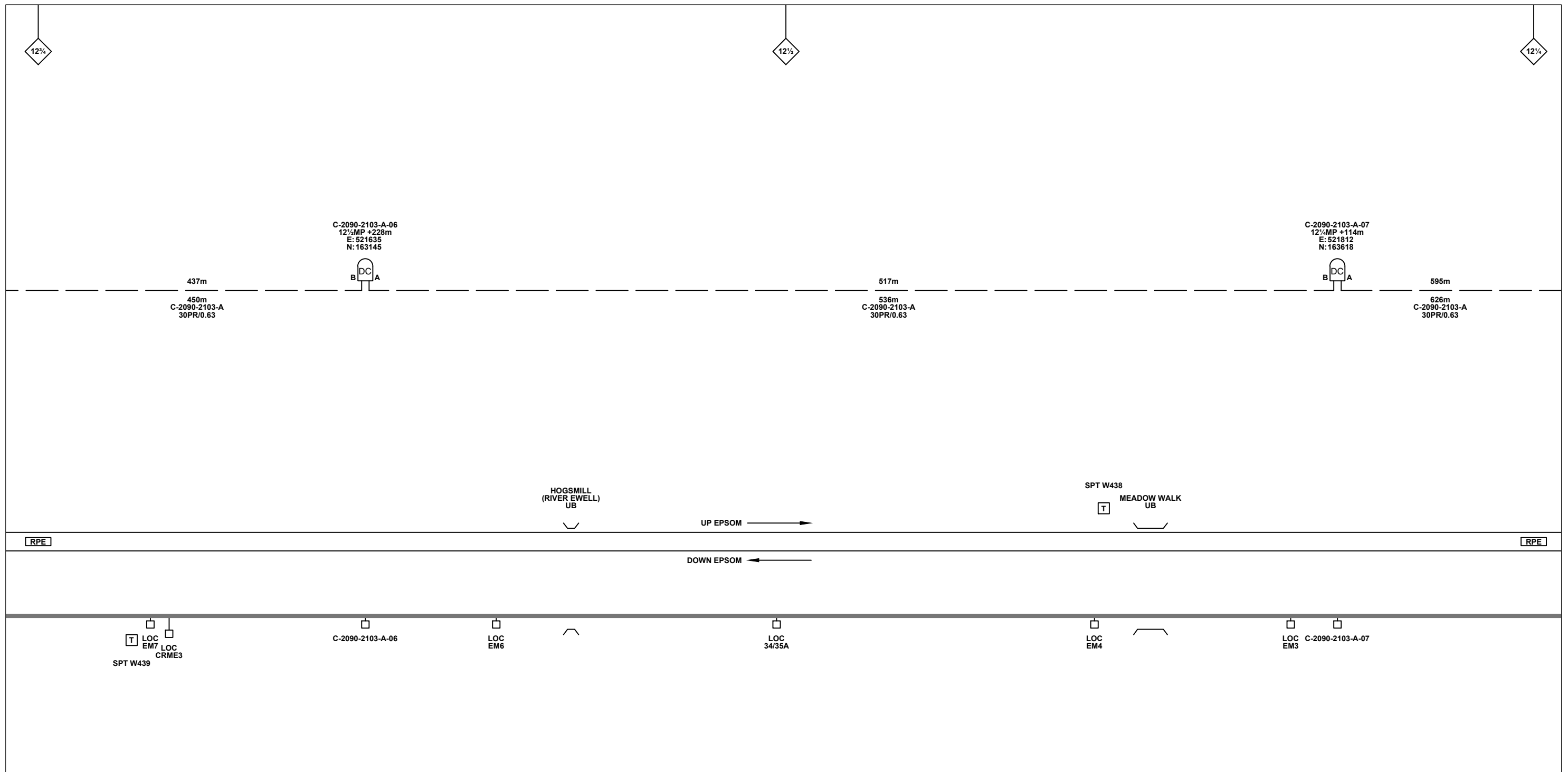
FTN/GSM-R Project  
Tournament House  
Paddington  
London  
W2 1HA

Alternative Reference: See Layout Tab 841 x 297 Sheet 2

Drawing Number: NTPO\SLD\2090\2103\001

Sheet: 3 of 6

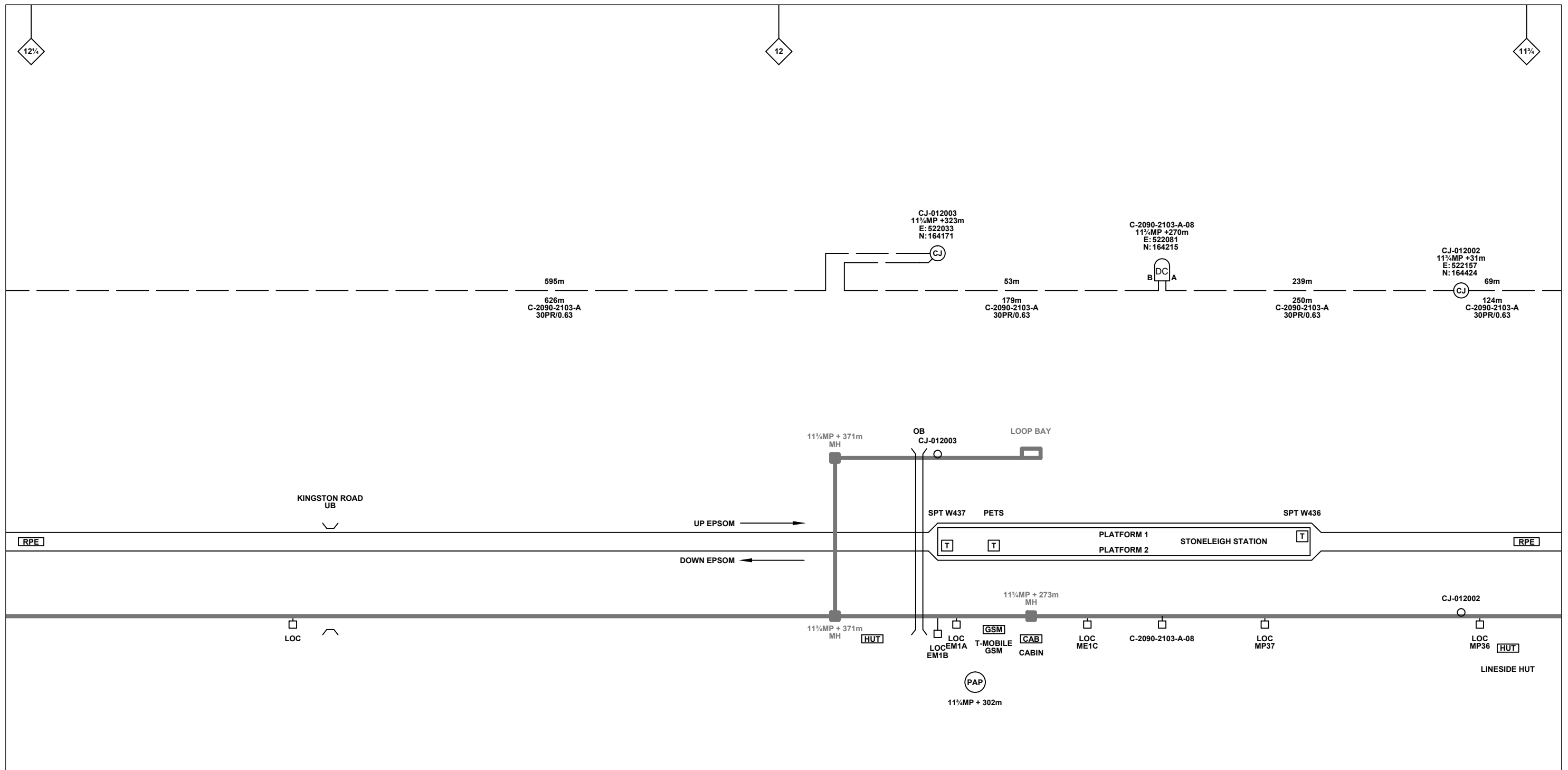
Revision: B



**Legend**

Cabinet and Verts	Copper Joint	Trough Duct Cable Tray	Signal Box	FTN Core Node	Screen Joint Routeworks	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	Vehicle Access Point	Mile Post	HV Cable	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	Manhole details: Cross-To be used, Filled-In use, Clear-Empty	Pedestrian Access Point	Platform	Sewer	Telecoms
Proposed Fibre & Civils Elements are shown in RED		All Existing Elements are shown in BLACK	Sheath Gap Copper	FTN Access Node with GSM-R Colocated	Fibre Joint Routeworks	Tunnel	Earth Farm	Buffer Stop	Water	Mast
Proposed Copper Elements are shown in BLUE		Existing Fibre Cable								
Proposed Screening Elements are shown in MAGENTA		Existing Copper Cable								
All Recoveries are shown in GREEN		Existing Screen Cable								

			Contractor(s)			Designed: _____ Sign: _____ Date: _____ Drawn: Mike Bonner Sign: <i>M.L.</i> Date: 07/10/2011 Checked: Joe Winter Sign: <i>[Signature]</i> Date: 07/10/2011 Approved: Chris Tappenden Sign: <i>[Signature]</i> Date: 07/10/2011					
Status: <b>As Built</b>			Drawing Title: <b>Epsom Station (2090) to Stoneleigh Station (2103)</b>			Project: <b>FTN/GSM-R Project Stage 2</b>			FTN/GSM-R Project Tournament House Paddington London W2 1HA		
Drawing Number: <b>NTPO\SLD\2090\2103\001</b>			Alternative Reference: <b>See Layout Tab 841 x 297 Sheet 2</b>			Sheet: <b>4 of 6</b>			Revision: <b>B</b>		
Drawing Title: <b>Epsom Station (2090) to Stoneleigh Station (2103)</b>			Scale(s): <b>NTS</b>			ELR & Mileage: <b>RPE</b>			Drawing Number: <b>NTPO\SLD\2090\2103\001</b>		
Rev	Date	Description of Revisions	Drawn	Chkd	Appr						
B	15/11/12	As Built	RM	JH	IA						
A	07/10/11	Redrafted from 2090-2103 FTN001_01430_DRAB_0003 Rev C.dwg & 2102-2103 FTN001_01430_DRAB_0002 Rev C.dwg	MB	JW	CT						



**Legend**

Cabinet and Verts	Copper Joint	Trough Duct Cable Tray	Signal Box	FTN Core Node	Screen Joint Routeworks	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	Manhole	Vehicle Access Point	Mile Post	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	Manhole details: Cross-To be used, Filled-In use, Clear-Empty	Pedestrian Access Point	Platform	LV Cable
<b>Proposed Fibre &amp; Civils Elements are shown in RED</b>		<b>All Existing Elements are shown in BLACK</b>	Sheath Gap Copper	FTN Access Node with GSM-R Colocated	Fibre Joint Routeworks	Tunnel	Earth Farm	Gantry	Sewer
<b>Proposed Copper Elements are shown in BLUE</b>		Existing Fibre Cable					Buffer Stop	Telephone	Telecoms
<b>Proposed Screening Elements are shown in MAGENTA</b>		Existing Copper Cable						Cable Pull	Water
<b>All Recoveries are shown in GREEN</b>		Existing Screen Cable						Mast	

Notes

Rev	Date	Description of Revisions	Drawn	Chkd	Appr
B	15/11/12	As Built	RM	JH	IA
A	07/10/11	Redrafted from 2090-2103 FTN001_01430_DRAB_0003 Rev C.dwg & 2102-2103 FTN001_01430_DRAB_0002 Rev C.dwg	MB	JW	CT

Contractor(s)

Status: **As Built**

Scale(s): NTS

ELR & Mileage: RPE

Designed		Sign.		Date	
Drawn	Mike Bonner	Sign.		Date	07/10/2011
Checked	Joe Winter	Sign.		Date	07/10/2011
Approved	Chris Tappenden	Sign.		Date	07/10/2011
Project	<b>FTN/GSM-R Project Stage 2</b>				
Drawing Title	<b>Epsom Station (2090) to Stoneleigh Station (2103)</b>				

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

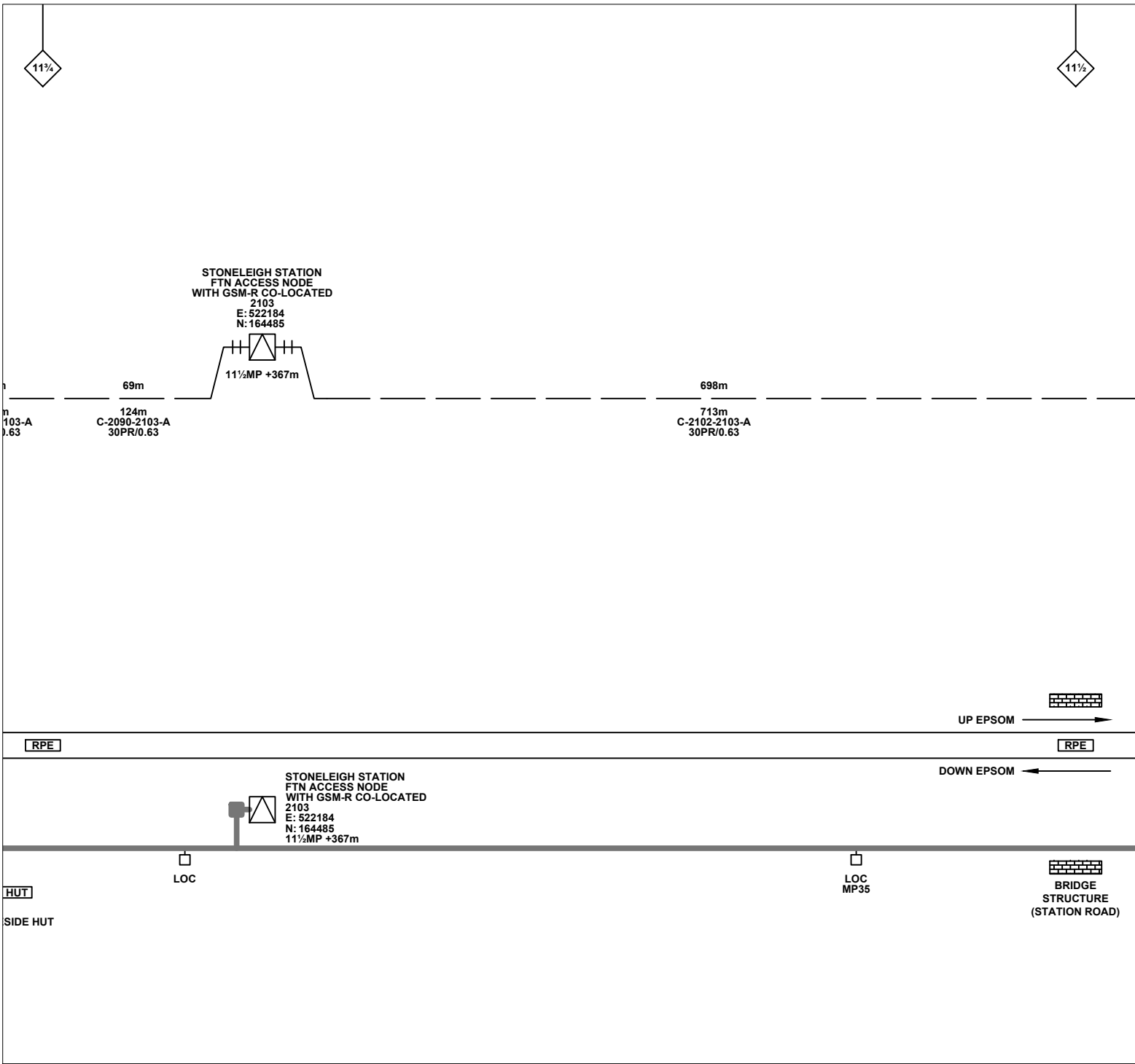
Alternative Reference: See Layout Tab 841 x 297 Sheet 3

Drawing Number: **NTPO\SLD\2090\2103\001**

Sheet: **5 of 6**

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 Vehicle Access Point	Mile Post	HV — HV — HV Cable	LV — LV — LV 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	Status - as per Key Below	Mid Length Sheath Gap Fibre	FTN Access Node	Cabinet Routeworks	Manhole details: Cross-To be used, Filled-In use, Clear-Empty	PAP Pedestrian Access Point	Platform	SEW — SEW — Sewer	TEL — TEL — Telecoms
	Existing Fibre Cable	Existing Copper Cable	Sheath Gap Copper	FTN Access Node with GSM-R Colocated	Fibre Joint Routeworks	Tunnel	Earth Farm	Buffer Stop	Telephone	W — W — Water
	Existing Screen Cable									Copper Blue, Fibre Red, Screen Green, Mast

Notes

Rev	Date	Description of Revisions	Drawn	Chkd	Appr
B	15/11/12	As Built	RM	JH	IA
A	07/10/11	Redrafted from 2090-2103 FTN001_01430_DRAB_0003 Rev C.dwg & 2102-2103 FTN001_01430_DRAB_0002 Rev C.dwg	MB	JW	CT

Contractor(s)

Status: **As Built**

Scale(s): NTS

ELR & Mileage: RPE

Designed		Sign.		Date	
Drawn	Mike Bonner	Sign.	<i>M.L.</i>	Date	07/10/2011
Checked	Joe Winter	Sign.	<i>[Signature]</i>	Date	07/10/2011
Approved	Chris Tappenden	Sign.	<i>[Signature]</i>	Date	07/10/2011
Project	FTN/GSM-R Project Stage 2				
Drawing Title	Epsom Station (2090) to Stoneleigh Station (2103)				

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

Alternative Reference: See Layout Tab 841 x 297 Sheet 3

Drawing Number: NTP0\SLD\2090\2103\001

Sheet: 6 of 6

Revision: B