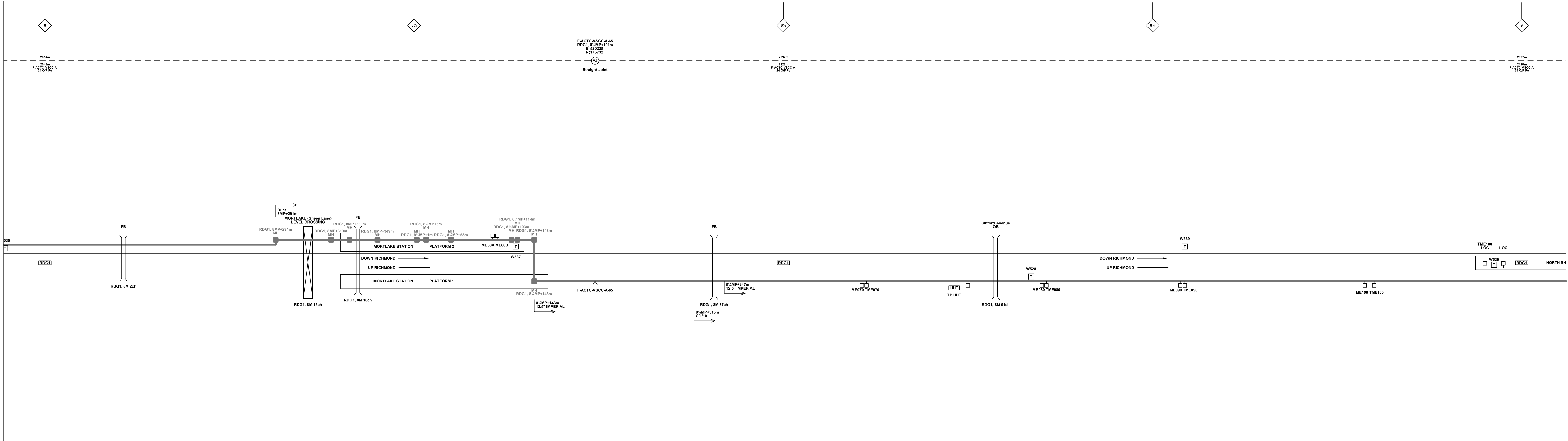


Legend 		Notes D 17/06/2013 Diversity and additional SPUR Cable at Site 2115 added by NWR C 09/05/2013 Converted to As-built B 02/11/2011 Node 2115 has moved after First Issue A 07/04/2010 Redrafted From PDF FTN00102130/DRAB/0005/L		Contractor(s) 		Design/Drawn/Checked/Approved Michal Taraj / Michal Taraj / Rashmi Patel / Steve Witt Date: 09/05/2013 / 09/05/2013 / 09/05/2013 / 09/05/2013			
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		As-built ELR & Mileage RDG1 & HOU		Project FTN / GSM-R Project CA6 LOR ACTC-VSCC Stage 2		FTN/GSM-R Project Tournament House Paddington London W2 1HA Alternative Reference See Layout Tab A3 Sheets 1 and 2 Drawing Number NTPO\SLD\2115\2117\001 Sheet 1 of 3 Revision D	



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	VAP Access Point	Mile Post	Gantry	HV Cable
KEY	Screening Conductor Joint with/without Earth	Status - as per Key Below	Mid Length Sheath Gap Fibre	FTN Access Node	Cabinet Routeworks	Manhole	Tunnel	Pedestrian Access Point	Platform	Sewer	LV Cable
Proposed Fibre & Civils Elements are shown in RED	F-DIDC-RGAC-A	Existing Fibre Cable	Sheath Gap Copper	FTN Access Node with GSM-R Colocated	Fibre Joint Routeworks	Manhole	Earth Farm	Buffer Stop	Telephone	TEL	Water
Proposed Copper Elements are shown in BLUE		Existing Copper Cable								AC Stanchion	
Proposed Screening Elements are shown in MAGENTA		Existing Screen Cable								Copper Blue Fibre Red Screen Green	
All Existing Elements are shown in BLACK											

Notes

D	17/06/2013	Diversity and additional SPUR Cable at Site 2115 added by NWR	PT	PB	GH
C	09/05/2013	Converted to As-built	MT	RP	SW
B	02/11/2011	Node 2115 has moved after First Issue	SH	JW	CT
A	07/04/2010	Redrafted From PDF FTN001/02130/DRAB/0005/L	DA	SF	CT
Rev	Date	Description of Revisions	Drawn	Chkd	Appr

McNicholas

Contractor(s)

As-built

ELR & Mileage
RDG1 & HOU

Designed	Michal Taraj	Sign.		Date	09/05/2013
Drawn	Michal Taraj	Sign.		Date	09/05/2013
Checked	Rashmi Patel	Sign.		Date	09/05/2013
Approved	Steve Witt	Sign.		Date	09/05/2013
Project	FTN / GSM-R Project CA6 LOR ACTC-VSCC Stage 2				
Drawing Title	Barnes Relay Room (2115) Richmond Station (2117)				

Network Rail

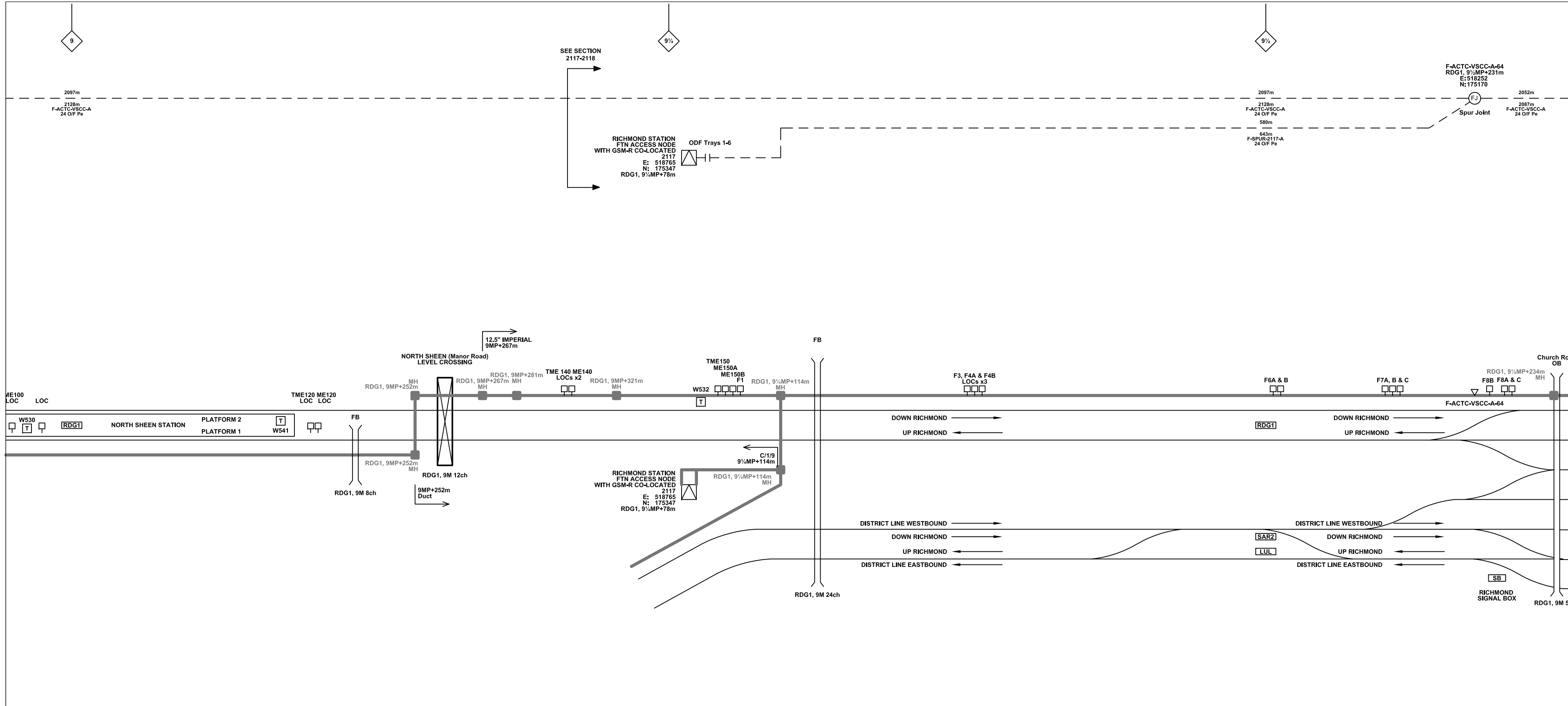
FTN/GSM-R Project
Tournament House
Paddington
London
W2 1HA

Alternative Reference: See Layout Tab A3 Sheets 3 and 4

Drawing Number: NTPO\SLD\2115\2117\001

Sheet: 2 of 3
Revision: D

Sheet Size 841x297



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
KEY	Screening Conductor Joint with/without Earth	Status - as per Key Below	Mid Length Sheath Gap Fibre	FTN Access Node	Manhole details: Cross-To be used Filled-In use Clear-Empty	Tunnel	Pedestrian Access Point	Platform	Sewer	LV Cable
Proposed Fibre & Civils Elements are shown in RED	Existing Fibre Cable	Existing Copper Cable	Sheath Gap Copper	FTN Access Node with GSM-R Colocated	Earth Farm	Buffer Stop	Telephone	Copper Blue Fibre Screen Green	Water	AC Stanchion
Proposed Copper Elements are shown in BLUE	Existing Screen Cable									
Proposed Screening Elements are shown in MAGENTA										
All Recoveries are shown in GREEN										

Notes

D	17/06/2013	Diversity and additional SPUR Cable at Site 2115 added by NWR	PT	PB	GH
C	09/05/2013	Converted to As-built	MT	RP	SW
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A	07/04/2010	Redrafted From PDF FTN00102130/DRAB/0005/L	DA	SF	CT
Rev	Date	Description of Revisions	Drawn	Chkd	Appr

Contractor(s)

As-built

ELR & M/Stage: RDG1 & HOU

Designed	Michal Taraj	Sign.		Date	09/05/2013
Drawn	Michal Taraj	Sign.		Date	09/05/2013
Checked	Rashmi Patel	Sign.		Date	09/05/2013
Approved	Steve Witt	Sign.		Date	09/05/2013
Project	FTN / GSM-R Project CA6 LOR ACTC-VSCC Stage 2				
Drawing Title	Barnes Relay Room (2115) Richmond Station (2117)				

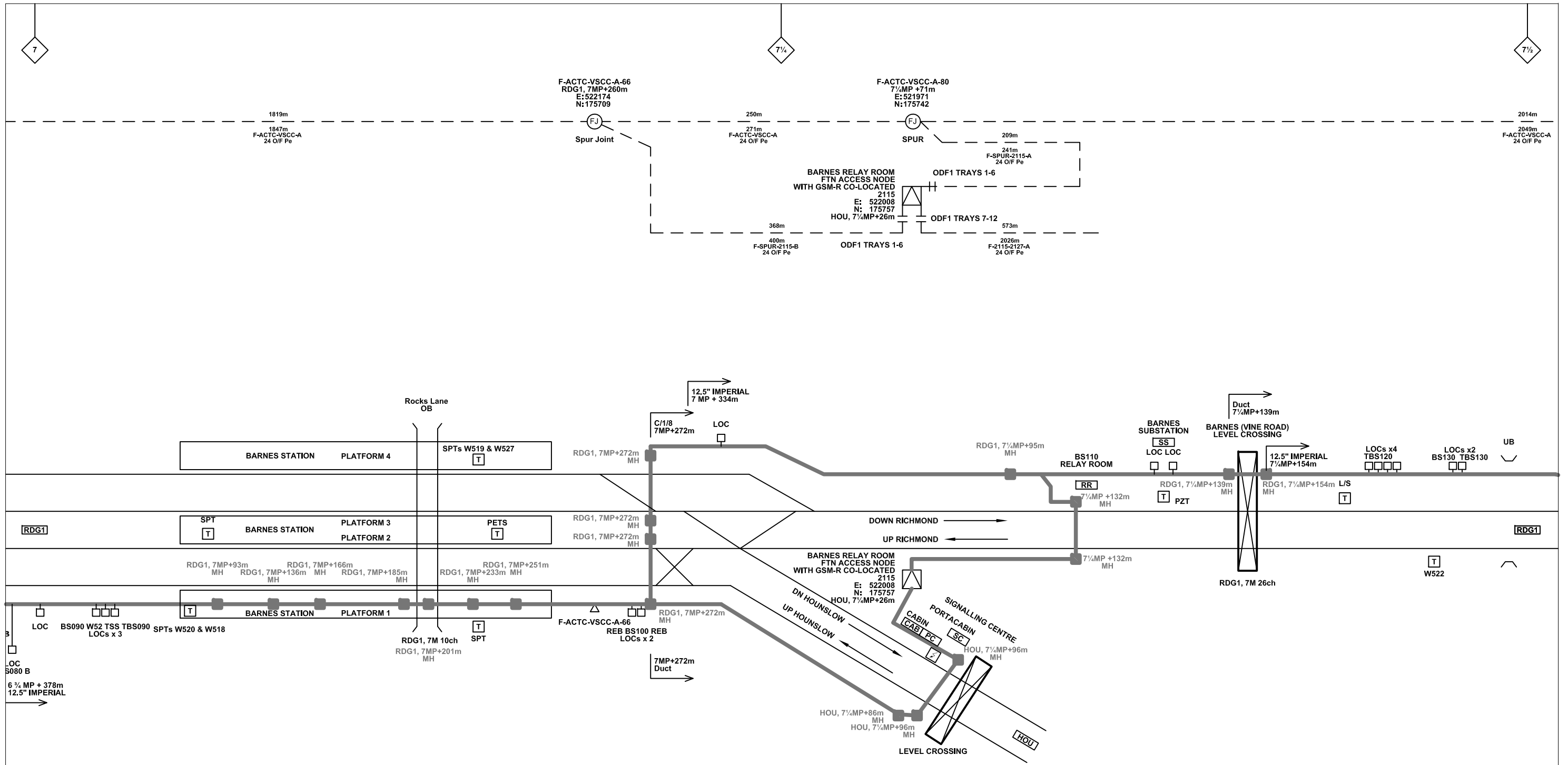
FTN/GSM-R Project
Tournament House
Paddington
London
W2 1HA

Alternative Reference: See Layout Tab A3 Sheets 5 and 6

Drawing Number: NTPO\SLD\2115\2117\001

Sheet: 3 of 3

Revision: D



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		HV Cable		LV Cable		Sewer		Telecoms		Water		Fence
	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		GAS		HV		LV		SEW		TEL		Water		AC Stanchion
	KEY		Screening Conductor Joint with/without Earth		Status - as per Key Below		Manhole		FTN Access Node		Cabinet Routeworks		Manhole details: Cross-To be used		Pedestrian Access Point		Platform		Cable Pull		Buffer Stop		Telephone		Copper Blue		Fibre Red		Screen Green		AC Stanchion		

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

Rev	Date	Description of Revisions	Drawn	Chkd	Appr
D	17/06/2013	Diversity and additional SPUR Cable at Site 2115 added by NWR	PT	PB	GH
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Contractor(s)

As-built

Scale(s)

NTS

ELR & Mileage

RDG1 & HOU

Designed	Michal Taraj	Sign.	Date	09/05/2013
Drawn	Michal Taraj	Sign.	Date	09/05/2013
Checked	Rashmi Patel	Sign.	Date	09/05/2013
Approved	Steve Witt	Sign.	Date	09/05/2013
Project	FTN / GSM-R Project CA6 LOR ACTC-VSCC Stage 2			
Drawing Title	Barnes Relay Room (2115) Richmond Station (2117)			

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

Alternative Reference

See Layout Tab 841 x 297 Sheet 1

Drawing Number

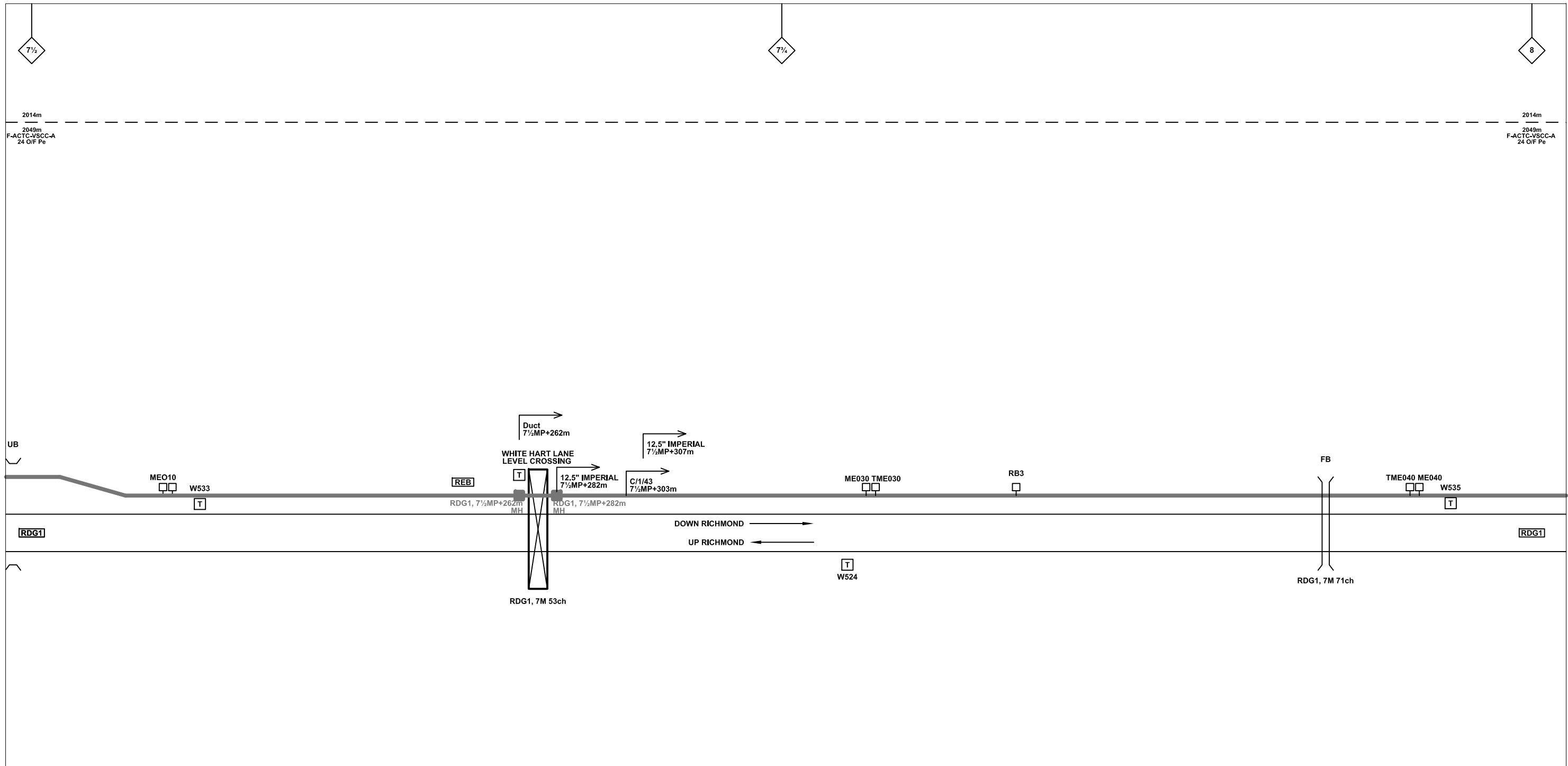
NTPO\SLD\2115\2117\001

Sheet

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Revision

D



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
KEY	Screening Conductor Joint with/without Earth	Status - as per Key Below	Manhole	FTN Access Node	Cabinet Routeworks	Manhole details: Cross-To be used, Filled-In use, Clear-Empty	PAP	Platform	Water	LV	LV	LV Cable
Proposed Fibre & Civils Elements are shown in RED		All Existing Elements are shown in BLACK	Mid Length Sheath Gap Fibre	FTN Access Node with GSM-R Colocated	Fibre Joint Routeworks	Tunnel	Earth Farm	Buffer Stop	AC Stanchion	SEW	SEW	Sewer
Proposed Copper Elements are shown in BLUE		Existing Fibre Cable	Sheath Gap Copper							TEL	TEL	Telecoms
Proposed Screening Elements are shown in MAGENTA		Existing Copper Cable								v	v	Water
All Recoveries are shown in GREEN		Existing Screen Cable										

Notes

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Rev	Date	Description of Revisions	Drawn	Chkd	Appr

Contractor(s)

As-built

Scale(s)

NTS

ELR & Mileage

RDG1 & HOU

Designed	Michal Taraj	Sign.	Date	09/05/2013
Drawn	Michal Taraj	Sign.	Date	09/05/2013
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Approved	Steve Witt	Sign.	Date	09/05/2013
Project	FTN / GSM-R Project CA6 LOR ACTC-VSCC Stage 2			
Drawing Title	Barnes Relay Room (2115) Richmond Station (2117)			

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

Alternative Reference

See Layout Tab 841 x 297 Sheet 1

Drawing Number

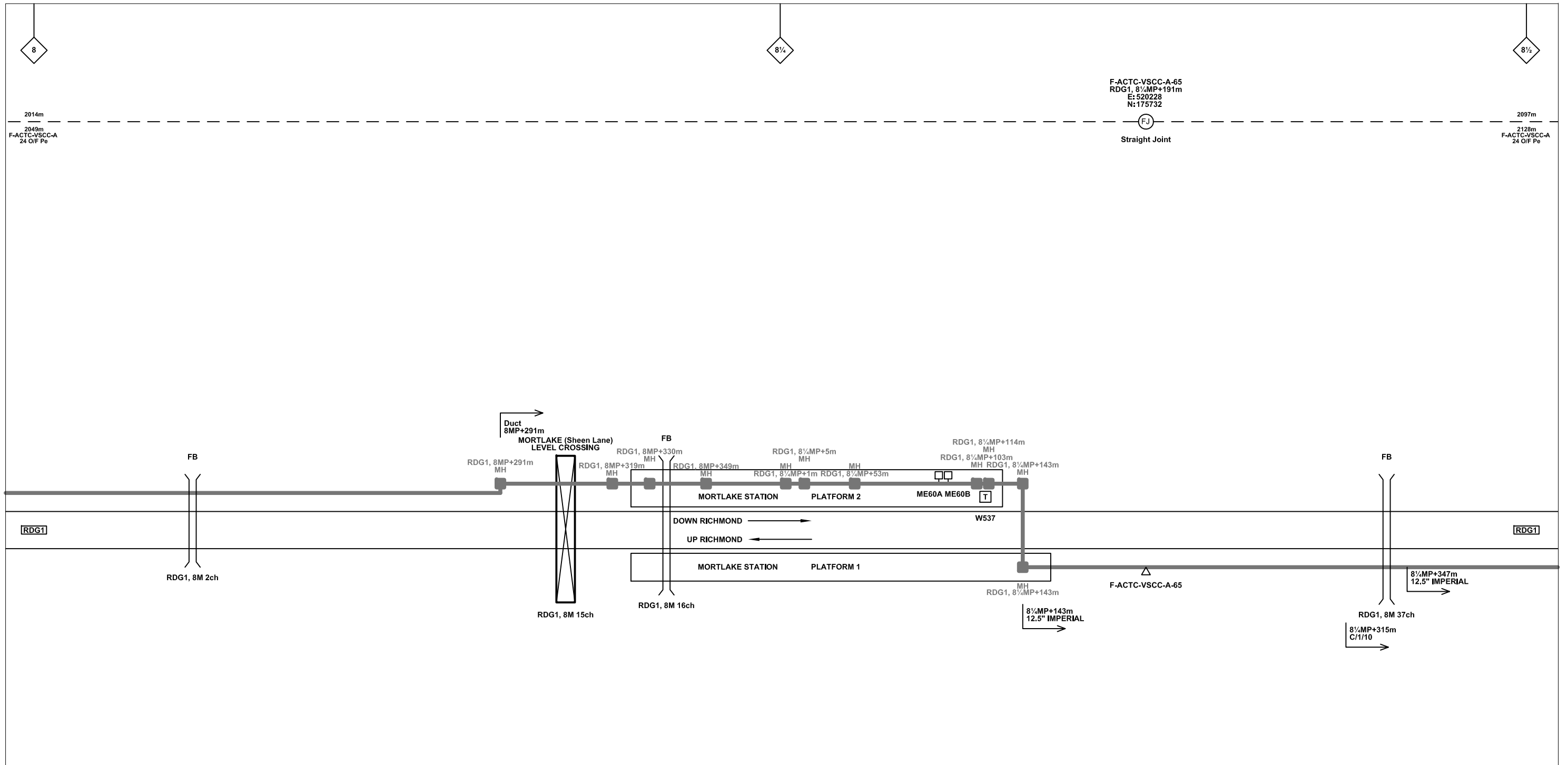
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Sheet

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Revision

D



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		Fence
	Cabinet with Regenerator and Verts		Fibre Joint		Electrical Control Room		Manhole		Core Node with GSM-R Colocated		Copper Joint Routeworks		Underbridge		Vehicle Access Point		Mile Post		Gantry		HV Cable		AC Stanchion
	KEY		Screening Conductor Joint with/without Earth		Cable - Type Identified by FTN Code		Mid Length Sheath Gap Fibre		FTN Access Node		Cabinet Routeworks		Tunnel		Pedestrian Access Point		Platform		Sewer		LV Cable		Telecoms
Proposed Fibre & Civils Elements are shown in RED		All Existing Elements are shown in BLACK		Status - as per Key Below			Sheath Gap Copper		FTN Access Node with GSM-R Colocated		Fibre Joint Routeworks		Earth Farm		Buffer Stop		Telephone		Copper Blue Fibre Red Screen Green		GAS		HV
Proposed Copper Elements are shown in BLUE		Existing Fibre Cable		Existing Copper Cable		Existing Screen Cable																	
Proposed Screening Elements are shown in MAGENTA																							
All Recoveries are shown in GREEN																							

Notes

D	17/06/2013	Diversity and additional SPUR Cable at Site 2115 added by NWR	PT	PB	GH
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Rev	Date	Description of Revisions	Drawn	Chkd	Appr

Contractor(s)

Status: **As-built**

Scale(s): NTS

ELR & Mileage: RDG1 & HOU

Designed	Michal Taraj	Sign.	Date	09/05/2013
Drawn	Michal Taraj	Sign.	Date	09/05/2013
Checked	Rashmi Patel	Sign.	Date	09/05/2013
Approved	Steve Witt	Sign.	Date	09/05/2013
Project	FTN / GSM-R Project CA6 LOR ACTC-VSCC Stage 2			
Drawing Title	Barnes Relay Room (2115) Richmond Station (2117)			

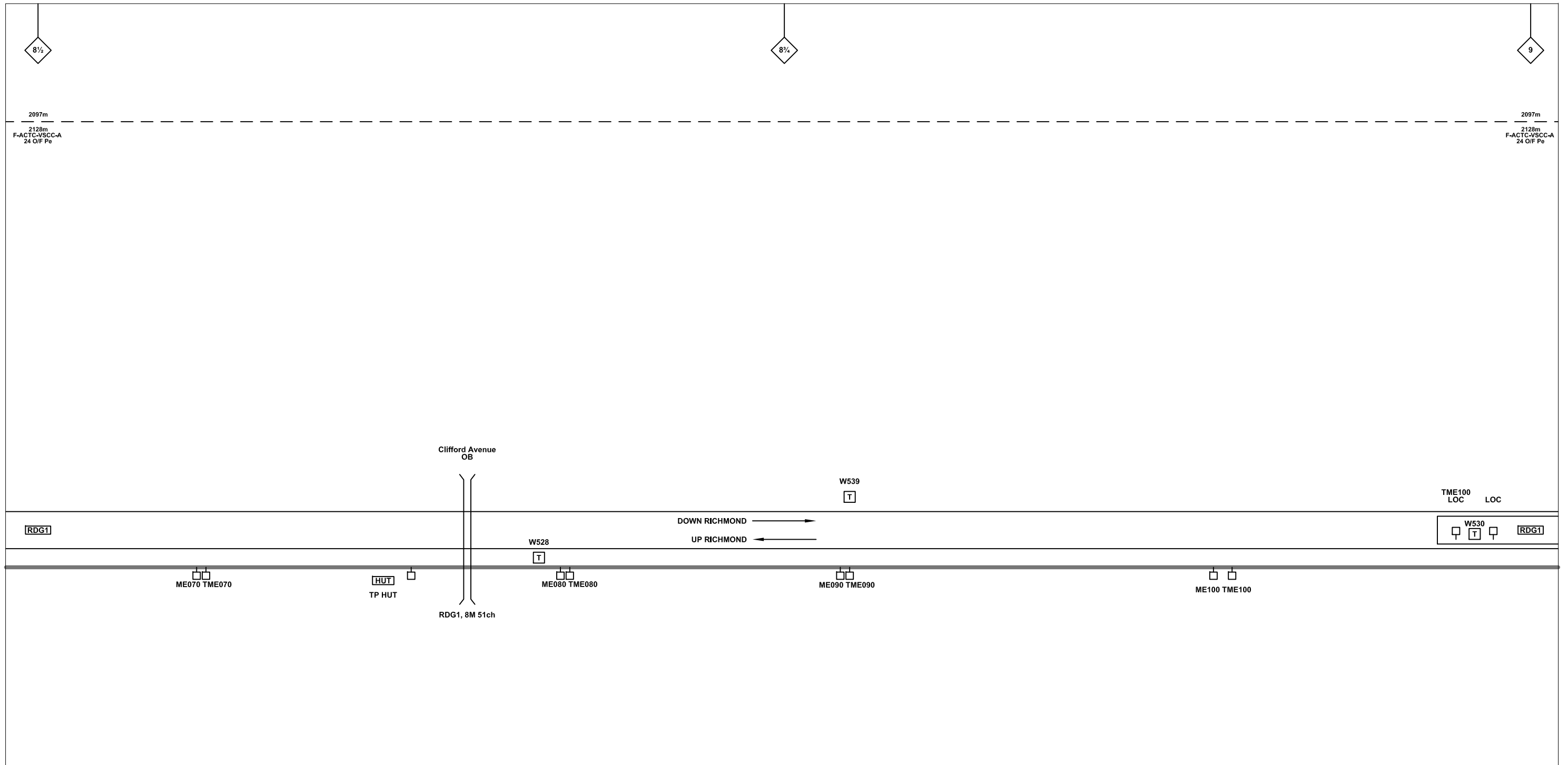
FTN/GSM-R Project
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Alternative Reference: See Layout Tab 841 x 297 Sheet 2

Drawing Number: NTPO\SLD\2115\2117\001

Sheet: 3 of 6

Revision: D



Legend

Cabinet and Verts	Copper Joint	Trough Duct Cable Tray	Signal Box	FTN Core Node	Screen Joint Routeworks	Overbridge	Signal	Engineer's Line Reference	Fence
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	Crossing
KEY	Screening Conductor Joint with/without Earth	Manhole	Mid Length Sheath Gap Fibre	FTN Access Node	Cabinet Routeworks	Tunnel	Pedestrian Access Point	Platform	Gantry
Proposed Fibre & Civils 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	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

Rev	Date	Description of Revisions	Drawn	Chkd	Appr
D	17/06/2013	Diversity and additional SPUR Cable at Site 2115 added by NWR	PT	PB	GH
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Contractor(s)

As-built

Scale(s)
ELR & Mileage
NTS RDG1 & HOU

Designed	Michal Taraj	Sign.	Date	09/05/2013
Drawn	Michal Taraj	Sign.	Date	09/05/2013
Checked	Rashmi Patel	Sign.	Date	09/05/2013
Approved	Steve Witt	Sign.	Date	09/05/2013
Project	FTN / GSM-R Project CA6 LOR ACTC-VSCC Stage 2			
Drawing Title	Barnes Relay Room (2115) Richmond Station (2117)			

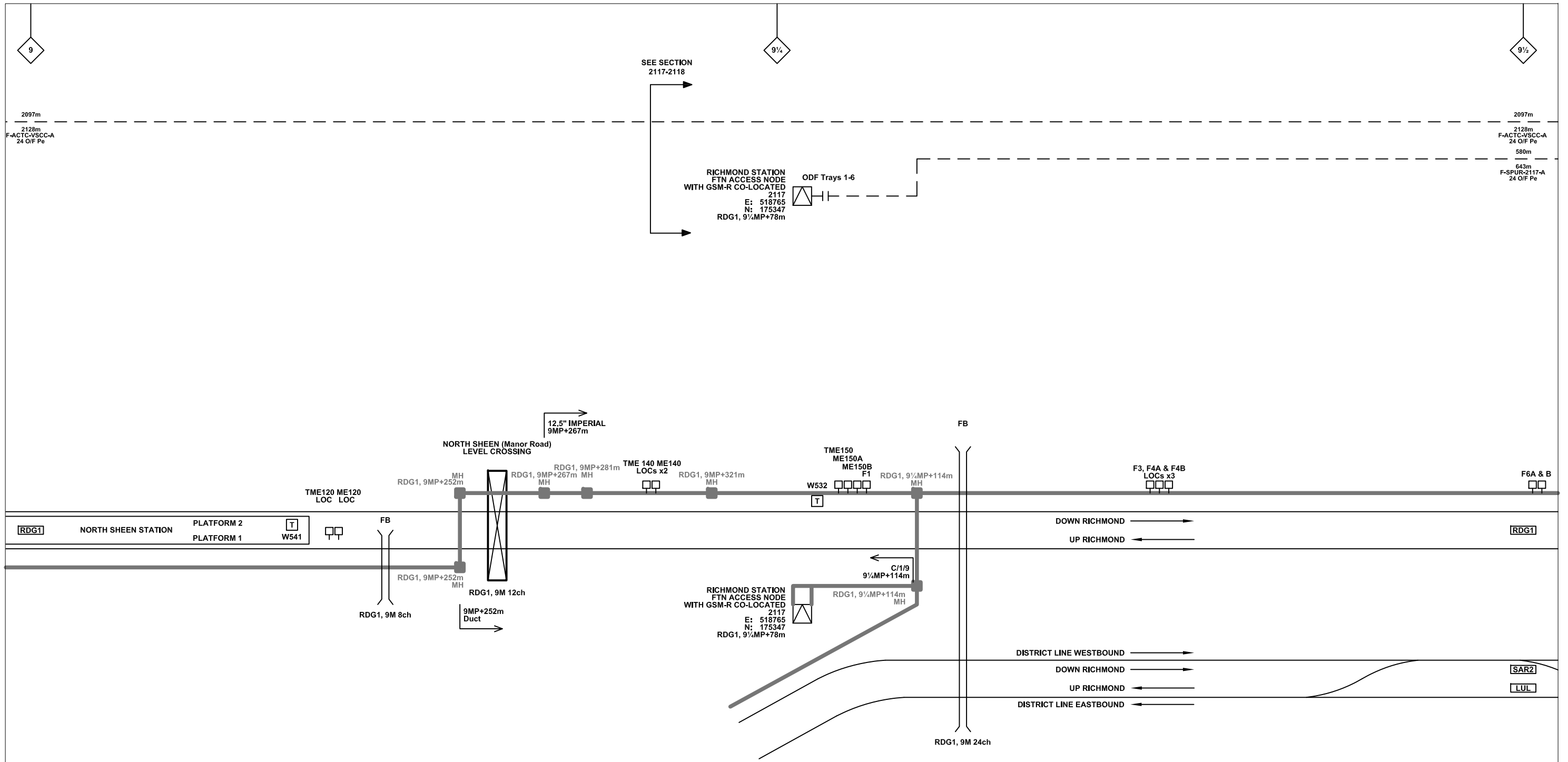
FTN/GSM-R Project
Tournament House
Paddington
London
W2 1HA

Alternative Reference
See Layout Tab 841 x 297 Sheet 2

Drawing Number
NTPO\SLD\2115\2117\001

Sheet
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Revision
D



Legend

Cabinet and Verts	Copper Joint	Signal Box	FTN Core Node	Screen Joint Routeworks	Overbridge	Signal	Engineer's Line Reference	Crossing	Gas Line
Cabinet with Regenerator and Verts	Fibre Joint	Electrical Control Room	Core Node with GSM-R Colocated	Copper Joint Routeworks	Underbridge	Vehicle Access Point	Mile Post	Gantry	HV Cable
KEY	Screening Conductor Joint with/without Earth	Manhole	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		Mid Length Sheath Gap Fibre	FTN Access Node with GSM-R Colocated	Fibre Joint Routeworks	Tunnel	Earth Farm	Buffer Stop	Telephone	Cable Pull
Proposed Copper Elements are shown in BLUE		Sheath Gap Copper							AC Stanchion
Proposed Screening Elements are shown in MAGENTA									
All Recoveries are shown in GREEN									

Notes

D	17/06/2013	Diversity and additional SPUR Cable at Site 2115 added by NWR	PT	PB	GH
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Rev	Date	Description of Revisions	Drawn	Chkd	Appr

Contractor(s)

Status: **As-built**

Scale(s): NTS

ELR & Mileage: RDG1 & HOU

Designed	Michal Taraj	Sign.	Date	09/05/2013
Drawn	Michal Taraj	Sign.	Date	09/05/2013
Checked	Rashmi Patel	Sign.	Date	09/05/2013
Approved	Steve Witt	Sign.	Date	09/05/2013
Project	FTN / GSM-R Project CA6 LOR ACTC-VSCC Stage 2			
Drawing Title	Barnes Relay Room (2115) Richmond Station (2117)			

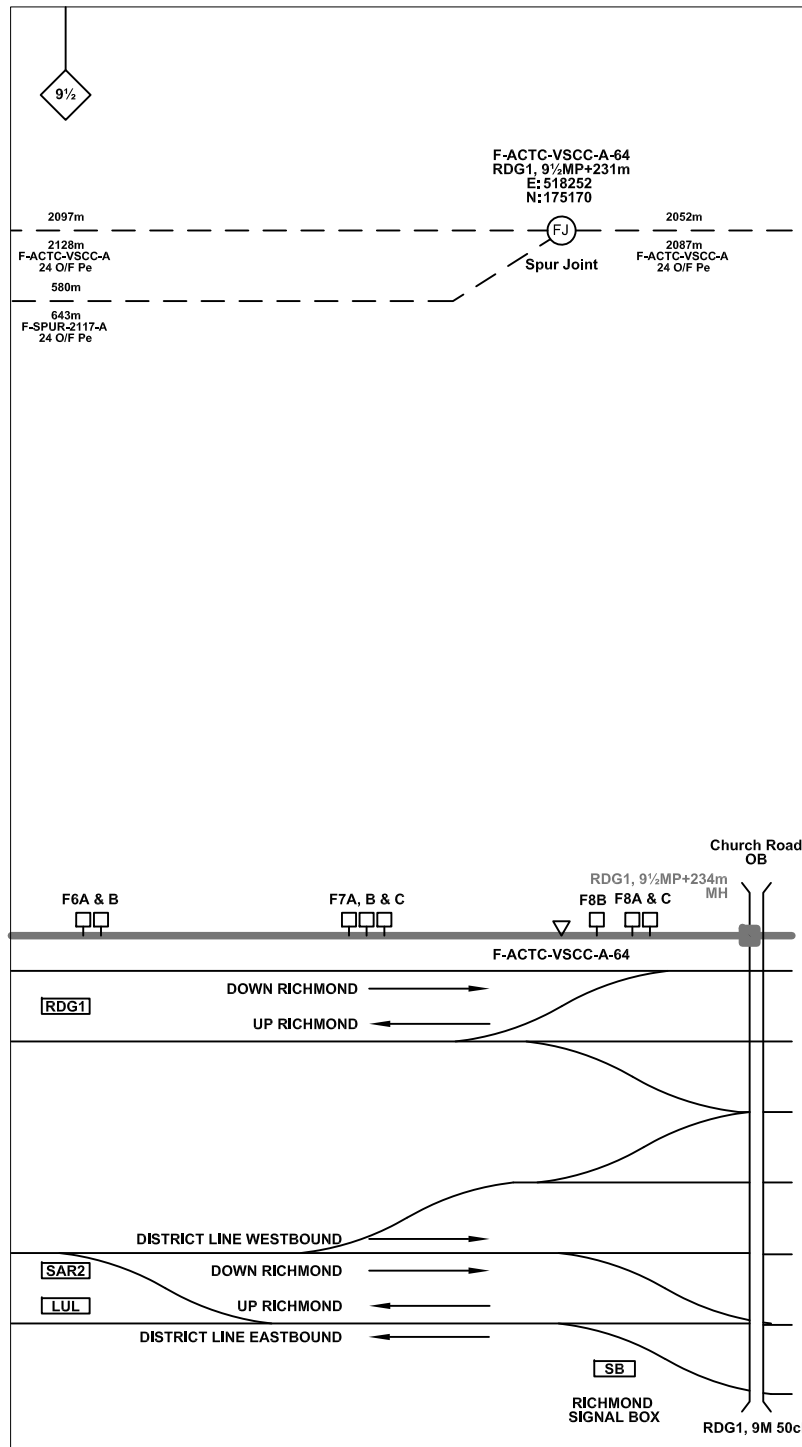
FTN/GSM-R Project
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Alternative Reference: See Layout Tab 841 x 297 Sheet 3

Drawing Number: NTPO\SLD\2115\2117\001

Sheet: 5 of 6

Revision: D



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	Fence
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	Crossing
KEY	Screening Conductor Joint with/without Earth	Status - as per Key Below	Mid Length Sheath Gap Fibre	FTN Access Node	Cabinet Routeworks	Sheath Gap Copper	Tunnel	Pedestrian Access Point	Platform	Gantry
Proposed Fibre & Civils Elements are shown in RED		Existing Fibre Cable	FTN Access Node with GSM-R Colocated	Fibre Joint Routeworks	Earth Farm	Buffer Stop	Telephone	Cable Pull	AC Stanchion	GAS
Proposed Copper Elements are shown in BLUE		Existing Copper Cable								HV Cable
Proposed Screening Elements are shown in MAGENTA		Existing Screen Cable								LV Cable
All Recoveries are shown in GREEN										SEW
										TEL
										Water

Notes

D	17/06/2013	Diversity and additional SPUR Cable at Site 2115 added by NWR	PT	PB	GH
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Rev	Date	Description of Revisions	Drawn	Chkd	Appr

Contractor(s)

As-built

Scale(s)

NTS

ELR & Mileage

RDG1 & HOU

Designed	Michal Taraj	Sign.	Date	09/05/2013
Drawn	Michal Taraj	Sign.	Date	09/05/2013
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Approved	Steve Witt	Sign.	Date	09/05/2013
Project	FTN / GSM-R Project CA6 LOR ACTC-VSCC Stage 2			
Drawing Title	Barnes Relay Room (2115) Richmond Station (2117)			

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Alternative Reference

See Layout Tab 841 x 297 Sheet 3

Drawing Number

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