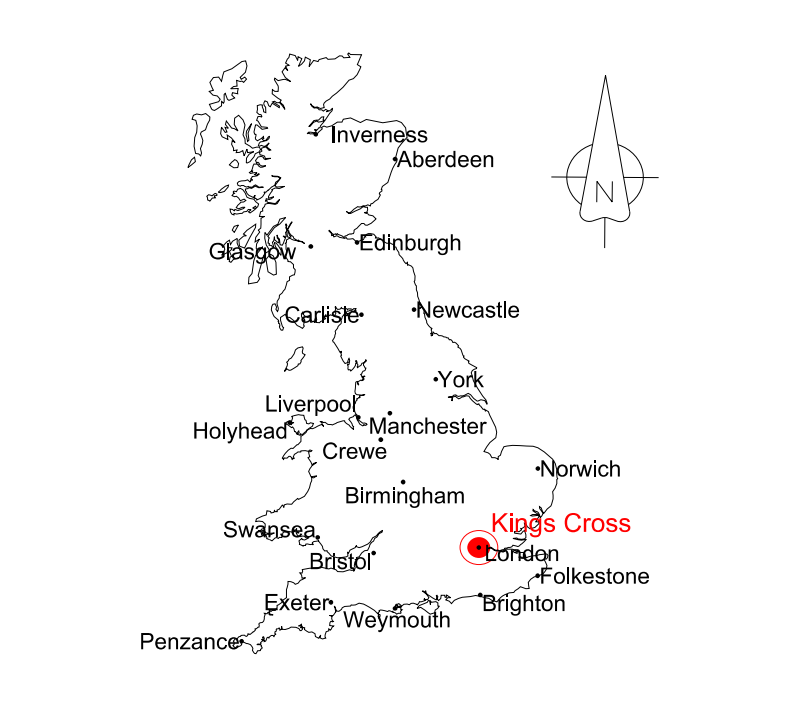
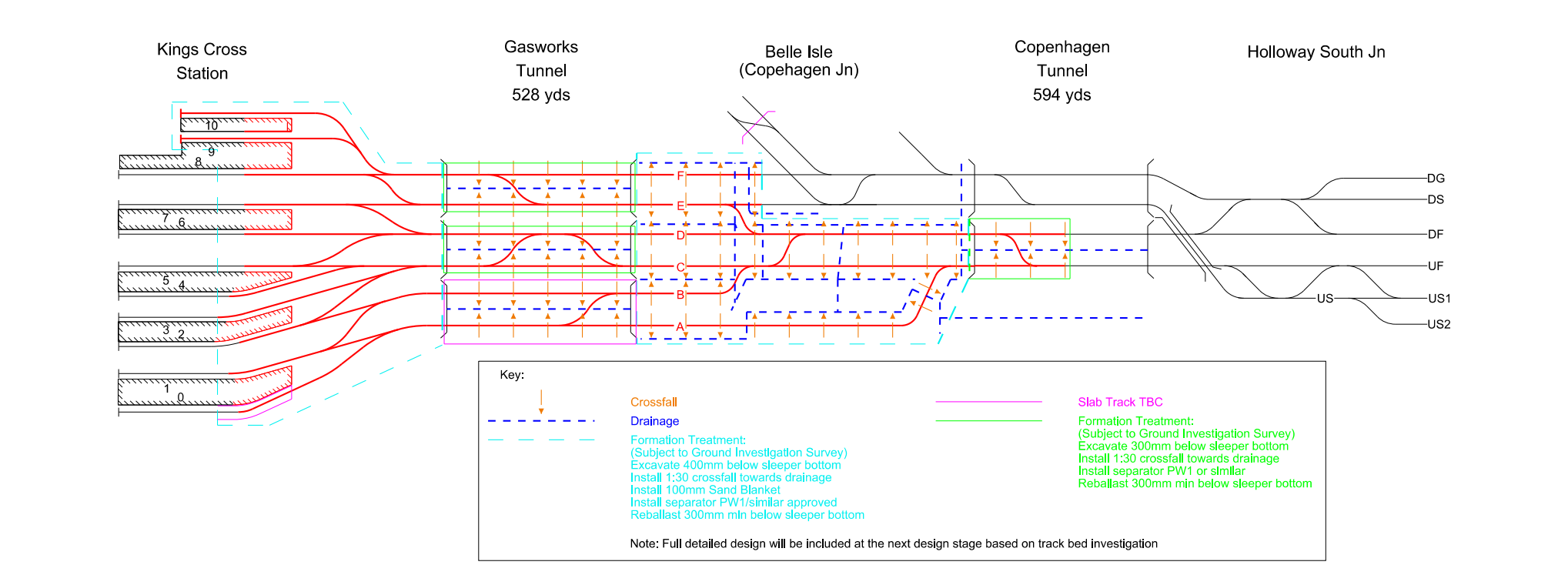
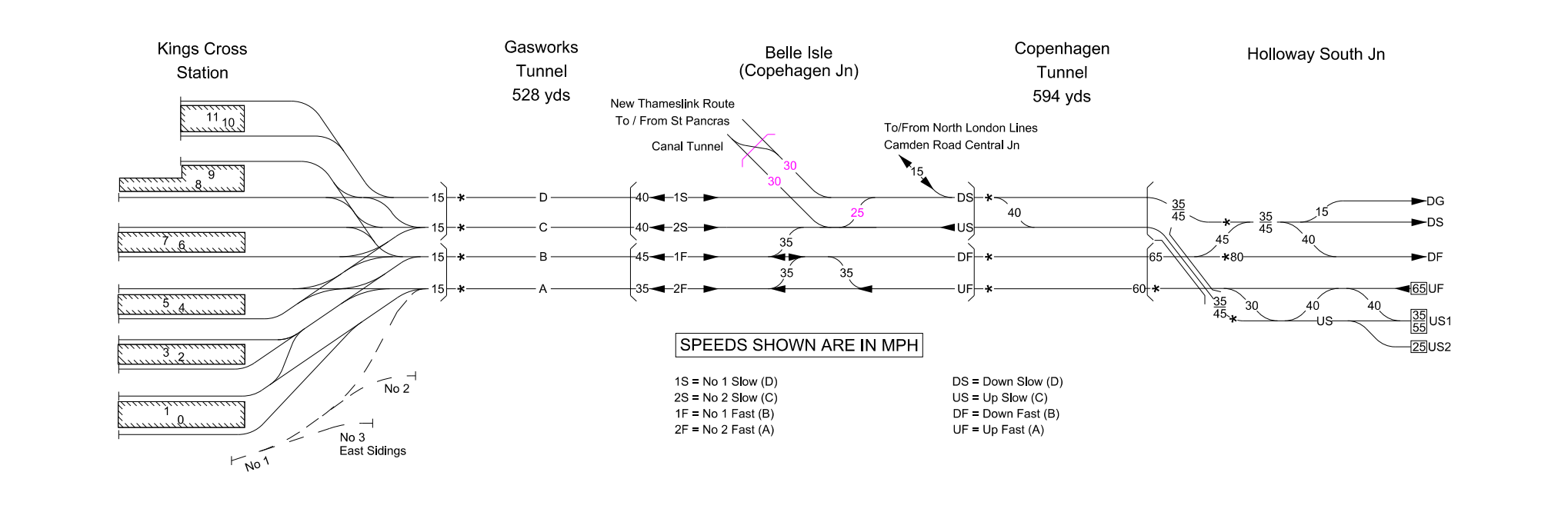
132572-JAC-DRG-TR-000102

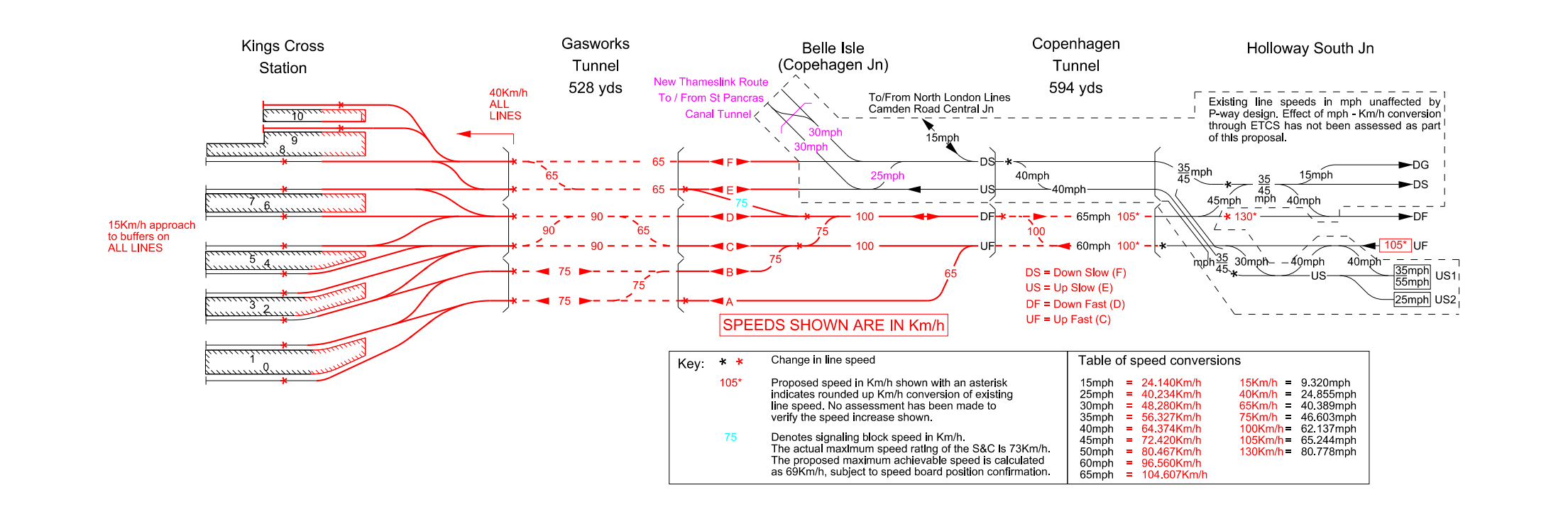


LOCATION DIAGRAM (NTS)





EXISTING LINE DIAGRAM (NTS)



PROPOSED LINE DIAGRAM (NTS)

Continues on drawing 132572-JAC-DRG-TR-000101

From Kings Cross
To Belle Isle
No.1 Slow
No.2 Slow
No.1 Fast
No.2 Fast
Straight
1:24
24.290mTransition Rd=59mm/s
73kph, RH Set
FVs
5072A Points
5m Transition Slab
RFG
920m
925m
Temporary

Continues on drawing 132572-JAC-DRG-TR-000103

POINT NO.	SPEED	SWITCHES						CROSSINGS		CHECK RAILS	
		TYPE	HAND	SWITCH RAIL	STOCK RAIL	POINT MACHINE	FRONTS	ANGLE	TYPE	THROUGH (TYPE)	TURNOUT (TYPE)
5060A	90KPH	SGVs TRANS	LH	23875	26945	IBCL	3070	28	CMCB	7110 TYPE 2	7110 TYPE 2
5060B	90KPH	SGVs TRANS	LH	23875	26945	IBCL	3070	28	CMCB	7110 TYPE 2	7110 TYPE 2
5054A	65KPH	EVs TRANS	RH	17485	20555	IBCL	3070	21	CMCB	5690 TYPE 1	5690 TYPE 1
5054B	65KPH	EVs TRANS	RH	17485	20555	IBCL	3070	21	CMCB	5690 TYPE 1	5690 TYPE 1

POINT NO.	SPEED	SWITCHES						CROSSINGS		CHECK RAILS	
		TYPE	HAND	SWITCH RAIL	STOCK RAIL	POINT MACHINE	FRONTS	ANGLE	TYPE	THROUGH (TYPE)	TURNOUT (TYPE)
5078A	70KPH	FVs TRANS	LH	20325	26945	IBCL	3070	24	CMCB	5690 TYPE 1	5690 TYPE 1
5078B	70KPH	FVs TRANS	LH	20325	26945	IBCL	3070	24	CMCB	5690 TYPE 1	5690 TYPE 1
5066A	65KPH	EVs TRANS	RH	17485	20555	IBCL	3070	21	CMCB	5690 TYPE 1	5690 TYPE 1
5066B	65KPH	EVs TRANS	RH	17485	20555	IBCL	3070	21	CMCB	5690 TYPE 1	5690 TYPE 1

Slue Table

Notes
1. Positive slues are to right in the direction of increasing chainage.
2. Limit of slue and limit of lift shown on General Arrangement represent the practical limit of slue and lift. Slues shown with an asterisk are shown to confirm an adequate interface with the existing alignment has been provided.
3. Lines E & F are new track and therefore do not show lift & slue values.

Chainage (m)	Line D (F)		Sixfoot	Line C (E)		Tenfoot	Line B (D)		Sixfoot	Line A (C)	
	Slue	Lift		Slue	Lift		Slue	Lift		Slue	Lift
470	-13	-3		16	21		-23	0		33	0
475	-13	-2		13	18		-35	2		41	-7
480	-13	0		10	16		-42	6		45	-10
485	-12	5		7	14		-44	7		47	-10
490	-13	11		7	12		-41	11		45	-5
495	-17	15		15	8		-33	13		41	-7
500	-19	15		22	2		-26	21		35	-5
505	-16	5		25	-12		-25	27		29	-12
510	-11	-8		27	-24		-24	39		24	-12
515	-2	-27		31	-30		-23	46		20	-12
520	5	-36		33	-29		-23	59		19	-7
525	10	-34		31	-22		-26	66		21	-5
530	15	-24		31	-8		-27	72		23	-2
535	15	-14		30	10		-27	72		25	2
540	20	-6		27	25		-26	72		26	6
545	23	-3		15	39		-20	65		27	4
550	26	2		7	48		-14	60		26	3
555	31	10		11	39		-9	52		21	1
560	34	18		14	31		-5	45		15	0
565	36	18		10	23		-2	39		10	0
570	36	19		8	17		-2	33		6	1
575	35	19		8	19		-2	30		1	3
580	34	18		8	19		-3	26		-3	7
585	32	19		7	17		-4	23		-9	8
590	32	20		7	16		-5	19		-12	8
595	35	20		8	20		-8	18		-9	8
600	37	19		6	22		-10	18		-6	10
605	39	16		1	20		-7	18		-6	6
610	40	14		-6	18		-3	18		-6	3
615	41	14		-13	14		-2	16		-6	3
620	42	14		-18	10		-2	14		-5	4
625	45	8		-21	4		-4	14		-4	5
630	46	1		-22	-2		-6	15		-2	6
635	42	-7		-22	-11		-7	15		-1	5
640	39	-14		-21	-19		-8	16		-1	4
645	37	-15		-18	-21		-9	18		-1	4
650	34	-12		-16	-18		-9	19		-1	5
655	29	-6		-17	-11		-6	20		1	12
660	25	2		-17	-3		-4	20		3	18
665	22	10		-13	2		-5	24		5	20
670	21	18		-10	7		-6	26		7	22
675	23	26		-8	9		-5	25		8	21
680	25	35		-4	12		-4	23		8	21
685	27	40		5	15		-2	22		11	21
690	27	44		11	16		0	22		13	20
695	26	47		7	16		4	21		12	21
700	24	49		4	16		8	20		11	22
Chainage (m)	Slue	Lift	Sixfoot	Slue	Lift	Tenfoot	Slue	Lift	Sixfoot	Slue	Lift
	Line D (F)			Line C (E)			Line B (D)			Line A (C)	

Slue Table

Notes
1. Positive slues are to right in the direction of increasing chainage.
2. Limit of slue and limit of lift shown on General Arrangement represent the practical limit of slue and lift. Slues shown with an asterisk are shown to confirm an adequate interface with the existing alignment has been provided.
3. Lines E & F are new track and therefore do not show lift & slue values.

Chainage (m)	Line D (F)		Sixfoot	Line C (E)		Tenfoot	Line B (D)		Sixfoot	Line A (C)	
	Slue	Lift		Slue	Lift		Slue	Lift		Slue	Lift
705	17	47		5	14		8	22		12	23
710	12	43		7	11		7	22		12	24
715	11	38		8	5		7	21		9	26
720	12	34		9	2		6	20		6	29
725	11	37		8	13		6	20		6	31
730	10	40		8	27		5	20		6	33
735	10	36		9	26		3	23		4	33
740	9	32		10	25		2	26		3	34
745	4	30		11	21		1	29		2	35
750	-2	28		11	19		1	32		2	38
755	-6	26		13	24		-1	35		5	46
760	-8	23		13	27		-1	37		9	53
765	-10	16		9	26		0	33		9	50
770	-10	11		5	25		2	29		8	47
775	-11	3		3	21		5	29		5	47
780	-10	-2		1	19		8	29		2	47
785	-4	-1		-1	14		9	29		-2	50
790	1	2		-3	13		10	29		-5	52
795	1	10		-6	22		11	29		-4	53
800	1	17		-9	30		11	31		-3	56
805	2	15		-9	25		11	32		-3	59
810	3	12		-10	18		11	34		-4	62
815	3	20		-11	18		12	32		-8	53
820	2	28		-12	19		12	33		-12	45
825	-1	33		-10	24		11	32		-14	40
830	-2	39		-9	29		10	30		-15	36
835	0	43		-10	34		11	28		-17	36
840	2	46		-11	39		13	27		-20	36
845	1	52		-8	39		13	28		-23	36
850	0	56		-5	39		12	29		-27	38
855	-2	52		-7	33		12	29		-28	39
860	-4	49		-8	28		12	29		-29	41
865	-3	47		-7	25		11	28		-32	40
870	-2	47		-5	23		11	27		-34	38
875	-2	46		-3	24		8	23		-32	40
880	-4	43		-2	24		6	18		-29	42
885	-6	46		-1	29		7	12		-29	39
890	-8	48		-1	34		8	4		-30	36
895	-11	47		-2	39		5	-2		-30	33
900	-13	46		-2	43		-1	-8		-29	28
905	-16	47		-2	43		-6	-7		-27	24
910	-17	49		-2	43		-10	-1		-25	20
915	-16	51		-3	43		-14	1		-23	15
920	-14	56		-5	44		-19	6		-20	11
925	-12	49		-11	46		-24	4		-17	6
930	-13	42		-17	48		-29	1		-16	1
935	-21	39		-16	39		-30	-6		-17	-11
Chainage (m)	Slue	Lift	Sixfoot	Slue	Lift	Tenfoot	Slue	Lift	Sixfoot	Slue	Lift
	Line D (F)			Line C (E)			Line B (D)			Line A (C)	

Key : (Existing, Proposed, Redundant, Reused)

— · — ·	Network Rail Boundary
—	Existing track to remain
- - - -	Existing track to be slued
- - - -	Existing track to be removed
—	Ordnance survey data
—	Proposed track alignment (new materials)
—	Proposed track alignment (slued track)
JT	Existing non insulated rail joint
WJ	Existing welded joint
IJ4 or IJ6	Existing insulated rail joint
W	Proposed Weld
←+→	Change in track construction (including type)
▷	Survey stations/pgm (with name & level in metres)
790	Site chainage
Ⓔ	Existing marked cant (with value)
✳	Proposed change in rail inclination
⧗	Proposed change of rail section
- - - -	Buried Water Main
— · — ·	Buried Thames Water Service
—	Buried Electrical Services
— · — ·	Burried Telecoms
⚠	Identified Risk Item
	Horizontal alignment tangent point
	Direction of curvature
+	Spot level (with value in metres)
IC	Inspection cover
▨	Proposed Slabtrack
▨	Proposed Transition Slab
	Proposed drainage run & catch pit
	Existing drainage run & catch pit

Speed Conversion Table		
MPH	Conversion to KPH	KPH Used for ETCS
5	8.047	10
10	16.094	20
15	24.142	25
20	32.187	35
25	40.234	40
30	48.281	50
35	56.327	60
40	64.379	65
45	72.420	75
50	80.467	80
55	88.514	90
60	96.561	100
65	104.607	105
70	117.654	115

Abbreviations

AWS	AWS Magnet
VC	Ballast Line/Cess/Edge/Shoulder
VB	Bottom of Bank
BU	Building
BS	Buffer Stop
DC	Cable not in Duct
DT	Cable Troughing
CMCB	Cast Manganese Centre Block
CP	Catch Pit
CD	Change of Surface Dash
RC	Check Rail
CB	Concrete Base
CS	Concrete Sleeper
CLP	Clearance Point
ER	Earthing Rod
RT	Edge of Track
IE	Electric IC
PEP	Electricity Pole
PCN	Existing Crossing Nose
TL=45	Existing Marked Transition
FL	Flange lubricator
FB	Flash Butt Weld
FP	Fouling Point
HR	Hand Rail
HC	Hedge Canopy
IC	Inspection Cover
IBCL	In-Bearer Clamp Lock
I6 / I4	Insulated Joint (4 Hole / 6 Hole)
LI	Invert Levels
Jt	Joint
JB	Junction/disconnection box
LOC	Location case
LP	Lamp Post
LTB	Last through bearer
MH	Man Hole
PMK	Marker Post
MP	Mile post
L	Open Area Spot Levels
OHLE	Overhead line equipment
OPX	Orange pipe crossing
PI	Passenger Information
RD	Point Rodding
PPO	Post
TP	Point zone telephone
TE	Plug Point Telephone
RL	Rail
PRS	Railway Sign
RFG	Refuge
SC	Shrub Canopy
SP	Signal
SLAD	Signal Ladder
PSP	Signal Post
PSG	Single Gate
PSR	Speed Restriction
SR	Speed Restriction Board
SY	Stairs/Ladder/Steps
WL	Stone Wall
SD	Switch detector
PH	Switch Heating Probe
SH	Switch heating transformer
SM	Switch motor
TEL	Telephone
WE/WJ	Thermit Weld
TJ	Tight Joint
Wood	Timber Sleeper
TCB	Trackside Connection Box
TC	Turning chamber
TPWS	Train Protection Warning System
VT	Virtual Transition
FE	Wooden Post & Wire

Legend/Notes

1. This design is based upon survey information undertaken by Jacobs UK throughout 2014: Topographical survey undertaken between January 13th to February 28th 2014 and futher in March 22nd to 28th 2014. Point cloud survey was underaken between March 1st to October 5th 2014. Point cloud conversion was undertaken by Track Access Services Ltd.

The survey was required to be linked to the East Coast Main Line Grid using the ECML14 transformation. The SnakeGrid parameter file (Snakeparams_ECML14.dat) was provided by Network Rail in May 2014.

ECML14 grid coordinates are achieved by conversion of ETRF89 ellipsoidal latitude/longitude, which are themselves obtained by observation of GNSS observations processed by reference to the Ordnance Survey National GNSS Network.

Height is related to Ordnance Datum Newlyn (ODN) via the GNSS observations described above, linked to the OS National GNSS Network, with ellipsoidal heights being converted to ODN heights using the OSGM02 geoid model. Additional information can be found in the Kings Cross control survey report

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2. All dimensions are in millimetres unless stated otherwise.

3. All clearances and track interval dimensions are shown to running edges (RE).

4. All radii shown are centreline radii.

5. All new plain line to be 60E2 rail on G44 concrete sleepers unless adjoining vertical S&C or shown otherwise.

6. Nominal plain line track gauge to be 1438mm for 60E2 rail, 1435mm for CEN56E1 Rail.
Track gauge for new vertical S&C is to be 1432mm (unless otherwise stated).

7. Site chainage is measured along the Down Fast cess rail. Chainage datum 0.000m is located at the inside face of the southern end wall of the LDHS shed.

8.Unhindered speed (mph) achievable by IEP (5+5 coach configuration) from stand still at Platform 6 buffer at 100% accelleration along average 1:100 rising gradient - for use as a comparator against design line speed.

9. The use of withdrawn / obsolescent and NR60 S&C configurations, and cant deficiency values in excess of 100% of the applied cant should be reviewed by Network Rail HQ.

10. For further information see the following drawings:

Permanent Way General Arrangements:
132572-JAC-DRG-TR-00101 - Kings Cross Station
132572-JAC-DRG-TR-00103 - Belle Isle
132572-JAC-DRG-TR-00104 - Copenhagen Tunnel

Permanent Way Longitudinal Sections:
132572-JAC-DRG-TR-00111 - Kings Cross Platforms 0-3
132572-JAC-DRG-TR-00112 - Kings Cross Platforms 3-6
132572-JAC-DRG-TR-00113 - Kings Cross Platforms 6-8
132572-JAC-DRG-TR-00114 - Kings Cross Platforms 8-10
132572-JAC-DRG-TR-00115 - Gasworks Tunnel East Bore
132572-JAC-DRG-TR-00116 - Gasworks Tunnel West Bore
132572-JAC-DRG-TR-00117 - Gasworks Tunnel Central Bore
132572-JAC-DRG-TR-00118 - Belle Isle Lines A-C
132572-JAC-DRG-TR-00119 - Belle Isle Lines C-F
132572-JAC-DRG-TR-00120 - Copenhagen Tunnel Central Bore

Please refer to specific discipline master documents for a comprehensive list of associated drawings.

11. Design contained in MX model "BELLE NR56 DEC14" and "DESIGN AIP DEC14"

12. Buried services are shown in indicative positions as outlined in the buried services search data supplied by Network Rail. This list should not be considered exhaustive and may not indicate the exact position of actual services.

13. All lineside structures including signalling will be designed clear. IRJ/Axle Counters to be dtermined at next design stage

14. Cross discipline information contained within this drawing is based on the latest available design model for each specific discipline at the time of the track design submission.
The detail is shown for information only and should be viewed with cognisance of the delivery date of each discipline. Please refer to discipline specific design documents for further information.

15. Extent of track renewals and transition rails to be determined at the next design stage

16. Stressing of layout & requirements for adjustment switches to be determined at next design stage.

DRAFT

Rev	Date	Description of Revisions	Drawn	Chkd	Appr
P01.1	23/01/15	For Information Only	CR	-	-

Status
PRELIMINARY

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Project
ECML ETCS NON SIGNALLING
PHASE 1

Drawing Title
KINGS CROSS REMODELLING
TRACK GENERAL ARRANGEMENT
GASWORKS TUNNEL
SHEET 2 OF 4

Designed	J. HYLAND	Signed	Date 23/01/20
Drawn		Signed	Date 06/03/15
Checked		Signed	Date
Approved		Signed	Date
Scale(s) 1:200		ELR & Mileage ECM1: 0.47km to 0.93km	
Alternative Reference Alternative Ref			Sheet 2 of 4
Drawing Number 132572-JAC-DRG-TR-000102			Revision P01.4

Sheet Size A0+6 841 x 2449

132572-JAC-DRG-TR-000102.dgn 09/04/2015 13:37:47