FORM G: INFRASTRUCTURE CONFORMANCE CERTIFICATE

Location: _____ ELR: _____ Line: _____

Project/UID No: _____ ***Affected*** Miles/ Yds From: _____ ***Affected*** Miles / Yds To: _____

TRACK TYPE: Enter a **tick** to confirm the type of track.

S&C: ☐ Plain Line: ☐

TYPE OF WORK: Enter a **tick** to confirm the type of work.

Rail renewal:	☐	Re-rail existing:	☐				
Renew sleepers/bearers:	☐	Relay existing sleepers/bearers:	☐	Ballast renewal:	☐	Tamping:	☐
Formation renewal:	☐	Drain renewal (6ft/cess):	☐	Welding:	☐	Stressing CWR:	☐
Ballast profiling:	☐	CWR offloading:	☐	UTX works:	☐	Piling works:	☐
Civils Form required NR/L2/CIV/003/FORME:	☐	Other please specify:	☐				

INFRASTRUCTURE CONFORMANCE DOCUMENTATION – CONFIRMATION OF RECEIPT

Enter a **tick** (yes), **X** (no) or **N/A** (not applicable) in the boxes below to indicate whether or not you have received completed and signed copies of the listed documents. If any of the required documents have not been received, describe what action has been taken to allow the safe passage of trains.

	Yes	No	N/A
Form A: Track Geometry Certificate:	☐	☐	☐
Form B: System Components Certificate:	☐	☐	☐
Form C: Stress Condition Record:	☐	☐	☐
Form D: Signalling Reconnection Certificate:	☐	☐	☐
Form E: Electrification and Plant Certificate:	☐	☐	☐
Form F: Site condition & Speed Restriction Certificate	☐	☐	☐

TRACK COMPLIANCE STATEMENTS

Enter a **tick** for **Yes**, **No** or **N/A** (not applicable) If a **NO** is entered in response to either of the statements below; describe what action has been taken to allow the safe passage of trains. Record any assessments, visual or otherwise, that have been made to determine the suitability of the track geometry and the need for an ESR and/or Watchman.

	Yes	No	N/A
I have undertaken a visual inspection of the permanent way, taken sample checks to assess the accuracy of the information recorded on the certificates listed above and consulted with the signatories of the certificates:	☐	☐	☐
Appropriate discipline on-call engineer and Route Control have been advised of each safety critical non-compliance i.e. that requires urgent corrective action and/or the imposition of an ESR and/or a Watchman (record incident number below):	☐	☐	☐

Non-compliances/ Comments:	**Mitigating Actions:**

Further Work Required to Sustain Opening Speed (Indicate timescales):

Planned Opening Speed: _____ **mph** **Opening Speed:** _____ **mph**

If the **Opening Speed** is different from the **Planned Opening Speed**, the appropriate discipline on-call engineer and Route Control to be informed. Emergency Speed Restriction arrangements implemented prior to re-opening the line.

CERTIFICATION BY THE AUTHORISED PERSON

I certify that the information above is accurate and deem the track to be safe for the passage of trains at the **Opening Speed** shown:

Print Name: _____ **Signature:** _____ **Date:** _____ **Time:** _____

Sentinel Number: _____ **Competence Issuing Company:** _____ **(Competence Management System)**

POST WORK REVIEW BY THE RESPONSIBLE MANAGER

I have reviewed the Infrastructure Conformance documentation and acted, where necessary, to manage the risks arising from this work and any further work detailed above required to sustain opening speed:

Print Name: _____ **Signature:** _____ **Date:** _____ **Time:** _____

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FORM A: TRACK GEOMETRY CERTIFICATE

Location: _____ ELR: _____ Line: _____

Project/UID No: _____ ***Affected*** Miles/ Yds From: _____ ***Affected*** Miles / Yds To: _____

TRACK GEOMETRY COMPLIANCE STATEMENTS (SEE APPENDIX 2 FOR GUIDANCE)

If a "**NO**" answer is entered in response to any of the compliance statements listed below, the Engineering Supervisor and Authorised Person must be consulted to agree a safe opening speed and any action that is needed to allow the safe passage of trains. The outcomes of any such consultations, any assessments visual or otherwise that have been made to determine the suitability of the track geometry and the need for an ESR and/or Watchman must be recorded below.

			Yes	No	N/A	Worst Values and Location (Half chord or meterage)	
1	Vertical Alignment (Top)	The top is within tolerance required for the **Planned Opening Speed**:	☐	☐	☐		
		Assessment/measurement of voiding undertaken *(follow up inspection may be required – add comment below)*	☐	☐	☐		
2	Horizontal Alignment (Line)	The line is within tolerance required for the **Planned Opening Speed**:	☐	☐	☐		
3	Cross Level (Cant)	The cant is within tolerance required for the **Planned Opening Speed**:	☐	☐	☐		
4a	Static Twist	The maximum twist is within tolerance required for the **Planned Opening Speed**:	☐	☐	☐		
4b	Continuous systems(OTM/MMS) have been used to monitor twist:					Recording parameters were set correctly :	
5a	Gauge	The 4' gauge is within tolerance required for the **Planned Opening Speed**	☐	☐	☐		
5b	Gauge variation	Gauge variation is within tolerance for the **Planned Opening Speed**	☐	☐	☐		

Intervention limits and rectification timescales for track gauge variation (measured over 3 metres)		
Speed	**Variation**	**Action**
Up to 60mph	8mm	Re-gauge within 52 weeks
65 – 95mph	7mm	Re-gauge within 26 weeks
100 – 125mph	6mm	Re-gauge within 13 weeks

5c	Continuous systems(OTM/MMS) have used to monitor gauge:		Recording parameters were set correctly:

If more than one tolerance is exceeded or multiple worst values are at the same location, assess the combined effect they have on the safe passage of trains and action accordingly.

Non-Compliances/ Comments:

Mitigating Action(s):

TOLERANCES

SPEED	Difference between consecutive design variances measured at 10m intervals ('Smoothness')		MEASURED VALUES [1 in 300 twist equates to 10mm variation in cross level over 3m]			
	TOP	ALIGNMENT	CANT	TWIST	STATIC GAUGE	
					WIDE	TIGHT
Up to 20 mph	30mm	30mm	± 20mm	1 in 250 (12mm)	1455mm	1426mm
25 to 40 mph	25mm	25mm	± 20mm	1 in 250 (12mm)	1450mm	1426mm
45 to 60 mph	20mm	20mm	± 20mm	1 in 250 (12mm)	1450mm	1427mm
65 to 95 mph	16mm	16mm	± 15mm	1 in 250 (12mm)	1450mm	1430mm
100 to 125 mph	13mm	13mm	± 15mm	1 in 250 (12mm)	1450mm	1430mm

Values provided in this table are 'Maintenance Tolerances', NR/L2/TRK/001/mod11 Issue 8, which can be used to assess when the track is fit for operational use at the planned opening speed.

FORM A: TRACK GEOMETRY CERTIFICATE

Location: _____ ELR: _____ Line: _____

Project/UID No: _____ ***Affected*** Miles/ Yds From: _____ ***Affected*** Miles / Yds To: _____

STRUCTURAL AND PASSING CLEARANCES (SEE APPENDIX 2 FOR GUIDANCE)

	Enter a tick for Yes, No or N/A		
6a Has the track been installed to design position plus design tolerances?	Yes	No	N/A
	☐	☐	☐

6b If No, which tolerance is exceeded, at what structure(s) and by what values?	**Tolerance**	**Location (structure/meterage/ half chord)**	**Worst Value (variance to design position)**
	Vertical		
	Horizontal		
	Cross Level		

Review any exceedances against the design pack and plots so that the effects on clearances and stepping distances can be determined, providing justification for opening the line in the boxes below

Structural Clearances (detail structures within affected =mileage)	**Comments:**	
Passing Clearances	**Comments:**	
Stepping Distance	**Comments:**	

If more than one tolerance is exceeded, assess the combined effect they have on the safe passage of trains and action accordingly.

Non-Compliances/ Comments:	**Mitigating Action(s):**

ABSOLUTE TRACK GEOMETRY	**Yes**	**No**	**N/A (not applicable)**
Is this section of Track ATG (Absolute Track Geometry)?	☐	☐	☐
If yes, is the installed alignment suitable for EPS (Enhanced Permissible Speed)?	☐	☐	☐
Who has been briefed on the requirements of NR/L3/TRK/0030?	**Checker:** ☐		**Authorised Person:** ☐

Planned Opening Speed: _____ **mph**

Maximum Recommended Opening Speed **(Based on track geometry and clearances):** _____ **mph**

Arrangements made for the imposition of an Emergency Speed Restriction (ESR) when opening the line at a lower speed than the published 'Planned Opening Speed'.

CERTIFICATION BY THE CHECKER

Having visually examined the track and paid attention to any portion that is outside tolerance, I am satisfied, subject to any restrictions arising from other checks/assessments, that it is safe for trains to run at the **Recommended Opening Speed** shown:

Print Name: _____ **Signature:** _____ **Date:** _____ **Time:** _____

CONFIRMATION OF RECEIPT BY THE AUTHORISED PERSON

Print Name: _____ **Signature:** _____ **Date:** _____ **Time:** _____

FORM B: SYSTEM COMPONENTS CERTIFICATE

Location: _____ ELR: _____ Line: _____

Project/UID No: _____ ***Affected*** Miles/ Yds From: _____ ***Affected*** Miles / Yds To: _____

SYSTEM COMPONENTS COMPLIANCE STATEMENTS (SEE APPENDIX 1 FOR GUIDANCE)

If a "**NO**" answer is entered in response to any of the statements below, describe what mitigating action has been taken to allow the safe passage of trains. Record any assessments, visual or otherwise, that have been made to determine the suitability of the track system for the planned opening speed and the need for an ESR and/or Watchman.

			Enter a **tick Yes, No or N/A** (not applicable)		
			Yes	**No**	**N/A**
7	Plain Rails, Check, Guard Rails, Transition Rails and Rail Defects	Rail lengths (joint to joint, weld to weld and joint to weld) are to standards.	☐	☐	☐
		Plain Line check rails are correctly positioned and secured. Flangeways are free of obstructions.	☐	☐	☐
		Guard rails are correctly positioned and secured.	☐	☐	☐
		Transition rails are correctly installed and secured.	☐	☐	☐
		Emergency clamps are fitted to rail defects (if required). If required, a 20mph ESR is in place.	☐	☐	☐
8	Conductor Rail	Conductor rails have been inspected and compliant (see TEF3203: Form E).	☐	☐	☐
9	OHLE	The OHLE system has been inspected and compliant (see TEF3203: Form E).	☐	☐	☐
10	Welds	The Welder's Report Form(s) has been reviewed.	☐	☐	☐
		Appropriate action has been taken to mitigate the risks arising from any defective/rejected welds.	☐	☐	☐
11	Permanent Rail Joints	Joints are correctly constructed and are tightened to the correct torque. Rail ends are coplanar (correct lift plates are fitted where required). Expansion joints have been lubricated (not tight joints or insulated joints).	☐	☐	☐
		Rail end expansion gaps are set correctly (see table in Appendix 1). Tight joint gap (TJ4 plates) is within 6mm tolerance.	☐	☐	☐
12	Temporary Rail Joints	Joints are correctly constructed, have the required number of clamps/bolts fitted and are tightened to the correct torque. Rail ends are coplanar (correct lift plates are fitted where required). No voiding. Temp Rail Joint install form(s) completed.	☐	☐	☐
		Max Speed: 50 mph / 20 mph / 5 mph / Block line; Gap: 0-10mm / 11-50mm / 51-75mm / 76mm+ — Max Speed and rail end gaps for Temporary **Clamped** Rail joints **only**.	☐	☐	☐
13	Fastenings	The correct fastenings, pads and insulators have been installed. Are they all in place, secure and are effective.	☐	☐	☐
14	Sleepers/Bearers	Sleepers/bearers are the correct type, particularly at joints and welds (a minimum of four, of the same depth and material, two each side), and are undamaged by the work.	☐	☐	☐
		Gauge Transition sleepers are correctly installed and secured.	☐	☐	☐
15	Ballast	The bottom ballast has been adequately and uniformly compacted.	☐	☐	☐
		Ballast is clear for the path of conductor rail shoes on both sides of the track.	☐	☐	☐
		Beds are full and the shoulder is to the correct profile OR any deficiencies have been included in the calculations for CRT.	☐	☐	☐
		If wet beds present, have they been packed? Are there plans to remove? Has CRT been adjusted accordingly?	☐	☐	☐
16	Voids	Every sleeper/bearer has been tamped, or consolidated by other means; post any disturbance.	☐	☐	☐
		Any voiding is less than the Maintenance Limit of 7mm.	☐	☐	☐
17	Adjacent tracks	Are unaffected by the work (especially following drainage, formation renewal or S&C work). *May need separate inspection/assessment and consider need to be included in CRT register.*	☐	☐	☐
18	S&C	Crossings, stock rails, switch rails, check rails, stretcher bars, drive shafts etc., are undamaged, correctly constructed, assembled and positioned, and clear of obstructions.	☐	☐	☐
		The 4' gauge, and the switch tip and heel openings are within tolerance.	☐	☐	☐
		Out-of-use switches have been secured correctly.	☐	☐	☐
		Twist rails are correctly installed.	☐	☐	☐
		The kicking strap clearance is within tolerance and the stretcher bar extends under both stock rails.	☐	☐	☐
		TEF 3074 [S&C Gauge, FWC and RSO Measurements Form] has been completed. FBC is zero or negative.	☐	☐	☐
		Modular S&C specific: Modular Bearer Ties are correctly installed and torqued.	☐	☐	☐
		Modular S&C specific: Track twist check documented through tied area.	☐	☐	☐
19	Elec. and Sig.	Signalling and electrification cables and equipment are undamaged by the work.	☐	☐	☐
20	Adjustment Switches	Adjustment switches are correctly constructed, secure, obstruction free and lubricated (see detail on Form C).	☐	☐	☐
21	Interface between existing and new infrastructure	Area of highest risk: Ballast conditions, twist, gauge variation and rail joining have been assessed	☐	☐	☐

Non-Compliances/ Comments/Snagging required:

Mitigating Actions:

Planned Opening Speed _____ **mph**

Recommended Opening Speed (Based on the condition of the systems components): _____ **mph**

CERTIFICATION BY THE SYSTEMS COMPONENTS CHECKER

I certify that the systems components listed above are safe for the line to be opened at the **Recommended Opening Speed** shown:

Print Name: _____ **Signature:** _____ **Date:** _____ **Time:** _____

CONFIRMATION OF RECEIPT BY THE AUTHORISED PERSON (IF A DIFFERENT PERSON)

Print Name: _____ **Signature:** _____ **Date:** _____ **Time:** _____

FORM C: STRESS CONDITION RECORD

Location: _____ ELR: _____ Line: _____

Project/UID No: _____ ***Affected*** Miles/ Yds From: _____ ***Affected*** Miles / Yds To: _____

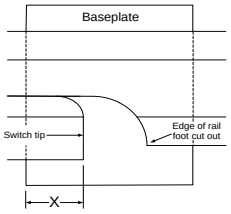
ADJUSTMENT SWITCHES

Notes: *This section applies to adjustment switches installed for the works, or existing adjustment switches affected by the works*
Tolerances from NR/L2/TRK/001/mod16 Issue 7
The left and right hand of any adjustment switch should be determined by standing with your back towards low mileage
If there are no adjustment switches on the site enter N/A (not applicable).

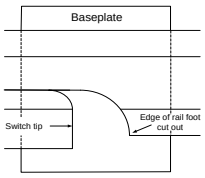
STANDARD ADJUSTMENT SWITCH SETTINGS			ACTUAL ADJUSTMENT SWITCH SETTINGS							
Rail Temp. (°C)	Gap Opening (mm)	Tolerance (mm)	Mileage		Gap Opening		Rail Temp.		Within tolerance?	
			Miles	Yards	Left	Right			Yes	No
-4 to 2	125	±25						°C	☐	☐
3 to 7	119	±25						°C	☐	☐
8 to 13	112	±25						°C	☐	☐
14 to 18	106	±25						°C	☐	☐
19 to 27	100	±25						°C	☐	☐

Check for switch tip support:

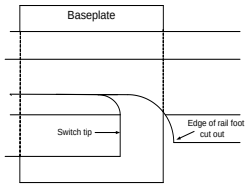
If 'X' <30mm, impose 20mph ESR (until corrected)



Check for support at the end of machining:



correct support



Incorrect support

CWR STRESSING

CWR not stressed in accordance with NR/L2/TRK/3011 Mileage From: _____ Mileage To: _____ Minimum rail temperature (SFT) when fastened down: _____ °C

CWR stressed in accordance with NR/L2/TRK/3011: Mileage From: _____ Mileage To: _____ SFT: _____ °C

CRITICAL RAIL TEMPERATURE ASSESSMENT

	Yes	No	N/A
A critical rail temperature assessment form(s) has been completed for the work site.	☐	☐	☐
All disturbances and deficiencies have been accounted for in the assessment.	☐	☐	☐
Correct SFT values have been used in the assessment.	☐	☐	☐

Lowest CRT (w) value _____ °C

Non-Compliances / Comments:

Mitigating Actions:

CERTIFICATION BY THE CHECKER(S)
I have checked the above items and certify the accuracy of the information provided:

Print Name: _____ **Signature:** _____ **Date:** _____ **Time:** _____

CONFIRMATION OF RECEIPT BY THE AUTHORISED PERSON

Print Name: _____ **Signature:** _____ **Date:** _____ **Time:** _____

FORM D: SIGNALLING RECONNECTION CERTIFICATE

Location: _____ ELR: _____ Line: _____

Project/UID No: _____ ***Affected*** Miles/ Yds From: _____ ***Affected*** Miles / Yds To: _____

TICK THE RELEVANT BOX TO INDICATE WHICH PROCEDURE IS APPLICABLE:

SMT	☑	G110	☐	A210	☐	A110	☐

List below all equipment that has been affected by the works and any that will be left disconnected, restricted, non-compliant with Network Rail Standards, or damaged, when the line is re-opened to trains. Enter a N/A response against items that do not fall into the aforementioned categories.

If any of the equipment is to be left disconnected, restricted, damaged, or in any other way non-compliant when the line(s) is re-opened to the passage of trains, record what action has been taken to protect the signalling system.

If agreement has been reached with the Network Rail Signaller to re-open the line to the passage of trains whilst there is outstanding work to be undertaken, record what action has been taken and/or proposed to safeguard anyone remaining on or near the line.

All equipment locked and secured for traffic prior to signing this Form unless being actively worked on and controlled (Such as LOC boxes).

NOTE THAT ALL SAFETY CRITICAL ISSUES MUST BE ESCALATED TO A SENIOR MANAGEMENT LEVEL (ON-CALL) FOR RESOLUTION

EQUIPMENT	SIGNALLING EQUIPMENT AFFECTED BY THE WORK	EQUIPMENT LEFT DISCONNECTED
Track Circuits / Axle Counters:	**418,419A,437,438A406A/B424A/B**	**N/A**
Signals:	**N/A**	**N/A**
Points:	**N/A**	**N/A**
AWS:	**WH49, WH249**	**N/A**
TPWS:	**N/A**	**N/A**
HABD:	**N/A**	**N/A**
Treadles:	**N/A**	**N/A**
ATP:	**N/A**	**N/A**
TASS Balises	**N/A**	**N/A**
Telephones:	**N/A**	**N/A**
Other:	**N/A**	**N/A**
Lines affected:	**DOWN FAST**	**N/A**
Point Fittings:	**I confirm Form NR/SMS/PF01/RC/01 has been completed and all parameters are satisfactory**	**Y/N** **N/A**

EQUIPMENT	EQUIPMENT LEFT RESTRICTED	EQUIPMENT LEFT IN ANY WAY NON-COMPLIANT OR DAMAGED (Note what action has been taken to protect the Signalling System)

Subject to any exclusions listed above, the equipment was signed back into use with the Signaller located at: **West Hampstead Panel 3**

Non-Compliances/ Comments:	**Mitigating Actions:**

CERTIFICATION BY THE SIGNALLING MAINTENANCE TESTER / G110 Tester / SIGNALLING WORKS TESTER (delete as appropriate)

I confirm, subject to any exclusions mentioned above, that signalling equipment disconnected under section T1A of the Railway Group Standards Rule Book has been re-connected and tested in accordance with the requirements of:

- ☐ NR/L3/SIG/11231 (SMT) or
- ☐ NR/L2/SIG/30014/G110 or
- ☐ NR/L2/SIG/30014/A110 and A210 Testing.

I confirm that I have completed testing in accordance with Master Test Certificate reference number: _____

Print Name: _____ **Signature:** _____ **Date:** _____ **Time:** _____

Sentinel Number: _____ **Competence Issuing Company:** _____

CONFIRMATION OF RECEIPT BY THE AUTHORISED PERSON

Print Name: _____ **Signature:** _____ **Date:** _____ **Time:** _____

FORM E: ELECTRICAL AND PLANT CERTIFICATE

Location: _____ ELR: _____ Line: _____

Project/UID No: _____ ***Affected*** Miles/ Yds From: _____ ***Affected*** Miles / Yds To: _____

LINE(S)	*AFFECTED* MILES/Yds (FROM)	STRUCTURE NO	AFFECTED MILES/Yds (TO)	STRUCTURE NO

CONDUCTOR RAIL COMPLIANCE STATEMENTS If a **"NO"** answer is entered in response to any of the statements below, describe what action has been taken to allow the safe and effective passage of trains, and to safeguard people on or near the line.		Enter a tick Yes, No or N/A		
		Yes	**No**	**N/A**
A	The traction bonding system has been installed in accordance with the accepted design, **or**	☐	☐	☑
B	The traction bonding system has been reinstated as per that which existed prior to the renewal.	☐	☐	☑
C	Cables, bonds and hook switches are to spec. and have been installed in accordance with the ETE design & NR standards. Certificate of Engineering Completion (EPF/GEN/009) Parts 4A	☐	☐	☑
D	Cable connections to rails (conductor rail & running rail) are complete, have been installed correctly and in accordance with manufacturer's instructions	☐	☐	☑
E	The conductor rail has been installed in accordance with the accepted design, **or**	☐	☐	☑
F	The conductor rail has been re-instated in accordance with the installation that existed prior to the renewal.	☐	☐	☑
G	Conductor rails are within the pot ears and are installed to the correct gauge (height & offset).	☐	☐	☑
H	The correct pots have been used, they are correctly spaced, and the anchor pattern is correct.	☐	☐	☑
I	End and side ramps, where renewed, re-instated, or otherwise affected by the work, are correctly formed.	☐	☐	☑
J	Conductor rail joints (plated/ welded) are correctly constructed and safe for the passage of collector shoes.	☐	☐	☑
K	Temporary conductor rail joints are fitted with bypass cables or braids	☐	☐	☑
L	Protection / Guard boards disturbed by works have been re-instated	☐	☐	☑
M	The conductor rail is clear from ballast and maintains a minimum clearance of 75mm from any structure.	☐	☐	☑
N	Where applicable, section proving has been successfully completed	☐	☐	☑
O	Cable and Track Disconnector identifications have been checked as correct.	☐	☐	☑
P	Segregation of 'traction positive' cables of different electrical sections has been checked and clearances have been maintained.	☐	☐	☑

Enter Design Drawing Reference Number(s) where applicable: _____

OVERHEAD LINE COMPLIANCE STATEMENTS		**Yes**	**No**	**N/A**
Q	The traction bonding system is complete and has been installed in accordance with the accepted design, **or**	☐	☐	☑
R	The traction bonding system has been re-instated as per that which existed prior to the renewal.	☑	☐	☐
S	The heights and staggers and components installation comply with the OHLE design, **or**	☑	☐	☐
T	The heights and staggers and components installation comply with the OHLE track scheme analysis.	☐	☐	☑
U	APC magnets have been re-instated in accordance with NR/L2/ELP/21088.	☐	☐	☑
V	The site ~~HAS~~ / HAS NOT been pan checked (NR/L3/ELP/27237 module OLE/B17) and confirmed as compliant.	☑	☐	☐
W	Where applicable, section proving has been completed.	☐	☐	☑
X	Any ancillary conductors affected by the works eg earth wire, return conductor, auto transformer feeder etc, where applicable, have been reinstated in accordance with the accepted design or as per that which existed before the renewal.	☐	☐	☐
Y	**PLANT:** Points heating has been re-instated	☐	☐	☐

Enter Design Drawing Reference Number(s) where applicable: _____

Non-Compliances/ Comments:	**Mitigating Actions:**

CERTIFICATION BY THE CHECKER(S) Signatory (Construction CRE E&P or equivalent)

I have inspected the electrification system and certify that components affected by work for which I am responsible are safe for the line to be opened:

Print Name: _____ **Signature:** _____ **Date:** _____ **Time:** _____

CONFIRMATION OF RECEIPT BY THE AUTHORISED PERSON:

Print Name: _____ **Signature:** _____ **Date:** _____ **Time:** _____

FORM F: SITE CONDITION & SPEED RESTRICTION CERTIFICATE

Location: _____ ELR: _____ Line: _____

Project/UID No: _____ ***Affected*** Miles/ Yds From: _____ ***Affected*** Miles / Yds To: _____

CROSSING SURFACE UNITS COMPLIANCE STATEMENTS If a "**NO**" is entered in response to any of the statements below, describe what action has been taken to allow the safe passage of trains. Record, any assessments, visual or otherwise, that have been made to determine the suitability of the track for the planned opening speed and the need for an ESR and/or Watchman. This should only cover the areas of disturbance; the ES should confirm for worksite limits		**Enter a tick Yes, No or N/A**		
		Yes	**No**	**N/A**
Crossing Surface Units (Such as Level Crossings, Foot crossings. User Worked Crossings, Road Rail Access Points(RRAPs)	Crossing surfaces, RRAPs, road profiles and flangeways are safe for the passage of trains, road vehicles and pedestrians.	☐	☐	☐
	Pedestrian access routes are undamaged, access gates are locked where necessary, and all signage is in place.	☐	☐	☐
	Crossing units are secure laterally and longitudinally, the ends of each unit are correctly positioned on a sleeper, and all fastenings are in place and secure.	☐	☐	☐
	Trespass guards are in place undamaged and secure.	☐	☐	☐
	Barriers, gates, lights, signs and road markings are in place, undamaged and operational for road users/pedestrians.	☐	☐	☐
	Crossings closed (out of use) for the duration of the works are securely locked to prevent use by public.	☐	☐	☐

Non-Compliances/ Comments:	**Mitigating Actions:**

Planned Opening Speed		**mph**	**Recommended Opening Speed** (Based on the condition of the systems components listed above):		**mph**

CERTIFICATION
I certify that the systems components listed above are safe for the line to be opened at the **Recommended Opening Speed** shown and the road opened for traffic:

Print Name: _____ **Signature:** _____ **Date:** _____ **Time:** _____

TSR/ESR COMPLIANCE STATEMENTS If a "**NO**" answer is entered in response to the statement below, describe what action has been taken to allow the safe passage of trains.		Enter a tick **Yes, X or N/A**		
		Yes	**No**	**N/A**
TSR and ESR speed Indicators	Boards and magnets for temporary and/or emergency speed restrictions, have been securely erected at the correct locations, are displaying the correct numerals and indicators, and lines of sight are unobstructed.	☐	☐	☐
	Has a TSR/ESR design been followed?	☐	☐	☐
	For ATP areas, have the correct ATP chips been applied, or for ETCS areas, have TSR/ESRs been applied at the control centre?	☐	☐	☐

Non-Compliances/ Comments:	**Mitigating Actions:**

I certify that speed restriction equipment appropriate for the speed shown above is in place.

Print Name: _____ **Signature:** _____ **Date:** _____ **Time:** _____

SITE TIDINESS/ SECURITY COMPLIANCE STATEMENTS If a "**NO**" answer is entered in response to any of the statements below, describe what action has been taken to allow the safe passage of trains. Record any assessments, visual or otherwise, that have been made to determine the suitability of the track for the planned opening speed and the need for an ESR and/or Watchman.	Enter a Yes, **X or N/A**		
	Yes	**No**	**N/A**
Boundary fences / walls affected by the works are in place and in good condition. **Gates** are locked as required. **Access points** not damaged.	☐	☐	☐
Tools, equipment, scrap, particularly rail off-cuts, and any other item that could compromise the safe passage of trains if placed on or near the line have been cleared away or secured.	☐	☐	☐
Signalling: Lines of sight are unobstructed. Ballast is clear of operational equipment. No damaged cables.	☐	☐	☐
Adjacent structures, tracks, RRAPs, access point and ballast shoulders have not been damaged or adversely affected by the works, plant or equipment. If ballast shoulders have been disturbed, review CRT values and Form C.	☐	☐	☐

Non-Compliances/ Comments:	**Mitigating Actions:**

Opening Speed as instructed by the Authorised Person: _____ **mph**

CERTIFICATION BY THE CHECKER (This may include a signature from the Engineering Supervisor)
I certify that the affected site mileage is safe to open at the Opening Speed.

Print Name: _____ **Signature:** _____ **Date:** _____ **Time:** _____

CONFIRMATION OF RECEIPT BY THE AUTHORISED PERSON

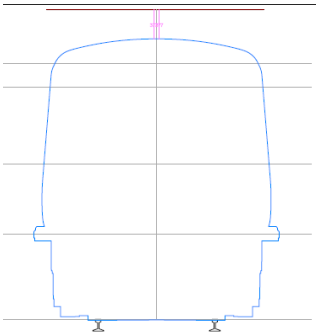
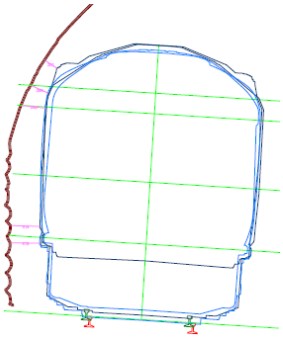
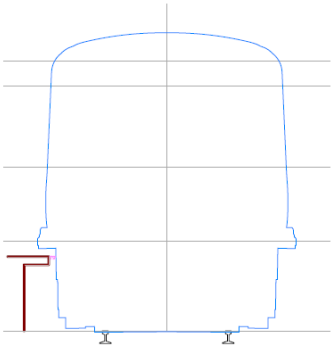
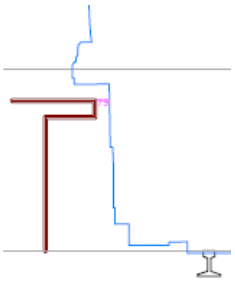
Print Name: _____ **Signature:** _____ **Date:** _____ **Time:** _____

<table>
<tr><th colspan="2">Ref. No</th><th>ITEM</th><th>GUIDANCE FOR THE AUTHORISED PERSON</th></tr>
<tr><td colspan="2">N/A</td><td>General</td><td>The Authorised Person is required to check the accuracy and completeness of the information recorded on each of the Infrastructure Conformance Certificates, excluding those completed personally, by undertaking a visual inspection. If any of the information is thought to be inaccurate, or the maximum opening speed recommended by technical staff, is deemed unsuitable, those responsible for supplying the information should be contacted to discuss what, if any, action is required to provide the safe passage of trains.
Note: Affected mileage may extend beyond the work area to include RRV access points, stored rail etc and may differ for each Form.
The ‘Competence Issuing Authority’ guidance: the company through whose Competence Management System has deemed the Authorised Person as competent in accordance with NR/SP/CTM/011. This might not always be the company who is completing the work.</td></tr>
<tr><td rowspan="8">Form B</td><td>1</td><td>Top</td><td rowspan="7">Check the accuracy of the information recorded on the Track Geometry Certificate by undertaking a visual inspection. Pay attention to transitions, run ins, run outs, and S&C. Take sample checks, wherever deemed necessary, throughout the length of track that has been disturbed and 18 sleepers beyond to confirm the accuracy of visual assessments.
Assess how quickly the top and line is likely to deteriorate and use engineering judgement to determine whether any mitigating action is required to confirm safety of line.
Differences between consecutive design values: The values are based on
Network Rail Intervention Limits. The line may be opened at the proposed speed if there are isolated exceedances and the Authorised Person is satisfied, having undertaken a visual assessment (for smoothness) that the line is safe to open at the proposed speed. Authorised On-Call Engineer need not normally be consulted.</td></tr>
<tr><td>2</td><td>Alignment</td></tr>
<tr><td>3</td><td>Cross Level</td></tr>
<tr><td>4</td><td>Twist</td></tr>
<tr><td rowspan="2">5</td><td>Gauge</td></tr>
<tr><td>Gauge Variation</td></tr>
<tr><td>6</td><td>Clearances</td></tr>
<tr><td>7</td><td>Rail Lengths/ Defects</td><td>Rail Lengths in accordance with NR/L2/TRK/001 and NR/L2/TRK/2102. Defect action required (including timescales) for rail defects are specified in NR/L2/TRK/001/mod07.</td></tr>
<tr><td>10</td><td>Welds</td><td>Visually check the quality of welds and seek assurance from the welders that the correct action has been taken to mitigate any risks arising from welds that have been rejected. Review and sign the Welder’s Report. If it has already been signed and reviewed by someone else on an earlier shift, seek written or verbal assurance that the welds are safe for the passage of trains.</td></tr>
<tr><td>11</td><td>Permanent Joints</td><td>Bolt holes or rail ends have not been flame-cut. Check that correct bolts have been fitted (e.g. high tensile bolts in tight joints) and tightened to correct torque. Confirm expansion gaps are set correctly for temperature (see table below).
Maximum permitted gap for tight joints is 6mm.
<table>
<tr><td>Rail Temp</td><td><11</td><td>11 - 13</td><td>14 - 16</td><td>17 - 19</td><td>20 - 22</td><td>23 - 25</td><td>26 - 28</td><td>29 - 31</td><td>32 – 34</td><td>35 - 37</td><td>>37</td></tr>
<tr><td>Gap</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr>
</table></td></tr>
<tr><td>12</td><td>Temporary Joints & Clamp Plates</td><td>Check that joints are correctly assembled; rail end gaps are within tolerance for the planned opening speed; bolt holes and rail ends have not been flame-cut, and that bolts have been torqued correctly. Where emergency fishplates or ordinary fishplates have been installed, check they are assembled correctly and have the correct number of clamps correctly fitted and torqued.
NR/L2/TRK/2102 and NR/L2/TRK/001 contains further information on other temporary rail jointing systems (such as back-hole bolted and centre clamped).</td></tr>
<tr><td>15</td><td>Ballast</td><td>Seek confirmation, if not already known, that the bed/bottom ballast was compacted uniformly as planned e.g. wacker, roller, Dynamic Track Stabiliser, especially where earthworks and/or drainage works have been undertaken.
Check the ballast is evenly spread, beds are full, and there is an adequate shoulder especially where there is a low and/or inadequate cess. In areas where trains with conductor rail shoes operate check the ballast is clear of conductor rail shoes on both sides of the track. Check your findings against those recorded on the Critical Rail Temperature Assessment form and if different write a comment on the Systems Components Certificate explaining why.</td></tr>
<tr><td>17</td><td>Adjacent tracks</td><td>Adjacent tracks could be affected (disturbed) by excavation works for formation renewal or drainage installation/repair.
Work on one line in S&C, especially within the through bearer area, can affect the top and alignment of the adjacent line.</td></tr>
<tr><td>18</td><td>S & C</td><td>Check crossings, stock rails, switch rails, stretcher bars, drive shafts etc are correctly assembled, secure, undamaged and free of obstructions; Make sure all check rails are in place, correctly constructed and positioned, and that flangeways are free of obstructions; Check the 4’ gauge, particularly at the switch tips, and the switch tip and heel openings to check they are all within tolerance. Check the Kicking Strap is within tolerance and that the stretcher bar extends under both stock rails. Check that any points set to manual control during the work have been returned to the Signaller’s control and that out of use points have been secured correctly. Complete forms TEF 3074 (SM(T) Points Gauge, Free Wheel Clearance and Residual Switch Opening Measurements Form) and NR/SMS/PF01/RC/01 where required. Calculate Flange Back Contact and check the value is zero or negative.</td></tr>
<tr><td></td><td>S&C Modular</td><td>Modular Bearer joints are installed and torqued as detailed in NR/L3/TRK/3406. All screws torqued to 340Nm by an approved tool.
Modular panels only to be lifted as a single unit when being placed. 2 panels not be lifted whilst joined using the bearer tie.
Note: the term ‘lift’ used above is for placement of panels- not tamping.
A full twist check to be completed and documented through the length of any tied bearers.</td></tr>
<tr><td>20</td><td>Adjustment Switches</td><td>Further Information on the Form C(TEF3203). Tolerances from NR/L2/TRK/001/mod16 Issue 7</td></tr>
<tr><td>21</td><td>Interface between existing and new infrastructure</td><td>Although also covered in other items, a new line has been added to pay attention to the interface between existing and new infrastructure as this is one of the highest risk areas. Including but not limited to: the joining of rails, ballast consolidation/compaction/ramps, twist, gauge variation.</td></tr>
</table>

APPENDIX 2 TRACK GEOMETRY CERTIFICATE – GUIDANCE NOTES

GENERAL GUIDANCE NOTES FOR TECHNICAL STAFF	
(a)	Check measuring equipment is in date and correctly calibrated.
(b)	Visually check for voiding, preferably during the passage of engineering trains. If concerned about the degree, or suspected degree, of voiding, the track should be tamped or consolidated by other means before the line is opened to traffic.
(c)	Avoid running engineering trains or tampers on track that has been renewed or significantly disturbed until the track geometry is known to be within acceptable limits.
(d)	Keep the Engineering Supervisor, and the Site Manager informed of any track that does not conform to the required tolerances at the earliest opportunity. Similarly inform them of the lifts, lowers and slues needed to make the track safe for the planned opening speed.
(e)	Whilst surveying, pay attention to transitions, run ins, run outs, and S&C. Undertake a visual check to verify your findings, and to note the presence of any cyclic variations.
(f)	If more than one tolerance is exceeded or multiple worst values are at the same location, assess the combined effect they have on the safe passage of trains and action accordingly.

Ref.	ITEM	SPECIFIC GUIDANCE NOTES FOR TECHNICAL STAFF
1	***Vertical Alignment (Top)***	1. Measure, and record the **variation from design** at each chord point throughout and beyond the length of track that has been disturbed. Continue to a point where the track geometry looks good by eye and the **difference between consecutive variations** is within the tolerances required for the **Planned Opening Speed**. 2. Work out and record all the **differences between consecutive variations** then assess the resulting values to determine whether the top and alignment is within the required tolerance. 3. Repeat the above process each time the track geometry is altered. 4. When alterations to the track geometry have ceased place a tick or cross in the appropriate box on Form A to indicate whether or not the tolerances have been exceeded, record the **maximum difference between consecutive variations** (Worst Value), and add any comments that are deemed relevant. If the tolerances have been exceeded, make a visual examination to confirm the accuracy of the measurements taken.
2	***Horizontal Alignment (Line)***	
3	***Cross Level (Cant)***	1. Measure, and record the cant at each chord point throughout and beyond the length of track that has been disturbed. Continue to a point where the track geometry looks good by eye and any **variation in cant from design** is within the tolerances required for the **Planned Opening Speed**. 2. Work out and record the variations from design and check that they are within the tolerance for the **Planned Opening Speed** whilst ensuring that any lifts that remain will enable the design cant to be achieved. 3. Repeat the above process each time the track geometry is altered. 4. When work to alter the track geometry has ceased, place a tick or cross in the appropriate box on Form A to indicate whether or not the tolerances have been exceeded, record the maximum variation from design (Worst Value), and add any comments that are deemed relevant.
4	***Twist***	1. When using continuous measurement methods (On Track Machines or Mobile Measurement Systems) to monitor twist, check the recording parameters are set correctly before starting work. Check the survey data after each pass of the tamper and inspect any track found to exceed the required thresholds. Following inspection, undertake additional work as necessary to reduce the severity to below the exceedance threshold. 2. Always verify by eye, and undertake additional measurement as deemed necessary. 3. If not using continuous measurement, undertake three-metre twist checks, wherever deemed necessary, throughout the disturbed length and a minimum of 18 sleepers beyond. 4. Record the findings and check that the values are within the required tolerance. 5. Repeat the above process each time the track geometry is altered. 6. When work to alter the track geometry has ceased, place a tick or cross in the appropriate box on Form A to indicate whether or not the tolerances have been exceeded, record the maximum twist (Worst Value), and add any comments that are deemed relevant.
5	***Gauge***	1. Check the 4' gauge, wherever deemed necessary, throughout the disturbed length and record the findings. Pay attention to serviceable sleepers, S&C, and interface with longitudinal timbers. 2. Check that the values for gauge and gauge variation are within the tolerances required for the **Planned Opening Speed.** 3. Repeat the above process each time the track geometry is altered. 4. When work to alter the track geometry has ceased, place a tick or cross in the appropriate box on Form A to indicate whether or not the tolerances have been exceeded, record the maximum variation from design (Worst Value), and add any comments that are deemed relevant.
6	***Structural &Passing Clearances (Also see page 12)***	1. Assess the track position against the tolerances specified and agreed in the design. Highlight any exceedances (non-compliance with specified tolerances). Check critical points such as platforms, underbridges with centre-girders and other known tight locations as shown on Page 12. 2. At tight structures and especially at platforms, alternative tolerances are likely to have been established during the design process and these should be used in checking. 3. The Authorised Person must review each of the identified "out of tolerance" points. 4. The line may be opened where actual dimensions exceed the specified tolerances, provided that the risks of doing so are considered and the Authorised On-Call Engineer is <u>appropriately consulted</u> and supports the decision. At platforms, where the track is out of tolerance (away from the platform) the effect on Stepping Distances to be reviewed with the Authorised On-Call Engineer. 5. If the out of tolerance positions identified by the checker, identified by actual dimensions and clearances, are foul of 'Special Reduced' values, additional work to increase clearances to be undertaken prior to opening the line.
N/A	***Completion Steps***	1. Check that a tick or cross is placed in the appropriate box on Form A for each track geometry parameter to indicate whether or not the tolerances have been exceeded for the **Planned Opening Speed**. 2. Check the Worst Values are recorded in the appropriate box for each parameter. 3. If the track geometry exceeds the tolerances for the **Planned Opening Speed** when work that affects it has ceased, consult the Authorised Person, Site Manager and Engineering Supervisor to agree what, if any, action is required to allow the safe passage of trains. The Authorised Person will record the outcomes of any such discussions on Form G. 4. Finally, sign and date the certificate, and pass it to the Authorised Person with it signed to certify receipt.

GENERAL GUIDANCE NOTES FOR TECHNICAL STAFF (Critical points for Structural and Passing Clearance)	
Flat deck overbridges – vertical position of the track underneath the structure, particularly the resultant height from top of rail to underside of the lowest part of the structure.	
Arched overbridges/tunnels – the vertical position (high to design) and horizontal position (towards the structure) of the track as well as any cross-level error which results in the train being tilted towards the structure (i.e. cant excess if structure is on the inside of the curve and cant deficiency if on the outside of a curve).	
Platforms, under bridges and lower sector clearances – the vertical position (low to design) and horizontal position (towards the structure) of the track as well as any cross-level error which results in the train being tilted towards the structure.	
Stepping Distances – the vertical position (high to design) and horizontal position (away from the platform) of the track as well as any cross-level error which results in the train being tilted away from the platform.	
Passing Clearances – horizontal position (towards the adjacent line) of the track as well as any cross-level error which results in the train being tilted towards the adjacent line.	