CVL Network

A G5 Notice of Intended Scope for the Transformation Programme

(CVLNCCP05-G5)

November 2026

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2 Acronyms and Abbreviations

Acronym / Abbreviation	Meaning
ABD	The Transformation works on the section of route from Pontypridd (excluded) to Aberdare via Abercynon
AC	Alternating Current
AFC	Approved for Construction
AIW	Seilwaith Amey Cymru / Amey Infrastructure Wales Ltd
APCO	Auto-Power Change Over system
ASDO	Automatic Selective Door Operation
ATFS	Auto-transformer Feeder Station
CCTV	Closed-Circuit Television
CFS	Catenary Free Section
CIS	Customer Information System
CTL	The Transformation works on the section of route from Ninian Park to Radyr Junction
CVL	The Cardiff Core Valley Lines is the geographic extent of the rail infrastructure network from Cardiff Bay, through Queen Street to Treherbert, Hirwaun, Aberdare, Merthyr Tydfil, Cwmbargoed, Rhymney, Coryton and Ninian Park (exclusive)
CVLICC	The Core Valley Lines Integrated Control Centre, located at Taff's Well, containing signalling and electrification control equipment and personnel
CVLOI	Core Valley Lines Operating Instructions
DRS	Dynamic Route Setting
ECR	Electrical Control Room
ECO	Electrical Control Operator
FLIRT	Fast, Light, Intercity and Regional Train (a Stadler product) – class 756s will be used on the Rhymney Valley of the CVL Network
GSM-R	Global System for Mobile communications – Railways
IDP	Infrastructure Delivery Partner ("IDP") means the partners selected to deliver specific works as part of the Transformation Programme
IM	Infrastructure Manager – the body accountable for safe operation and maintenance of a railway network
IRT	Indicative Running Times
MER	The Transformation works on the section of route from Abercynon (excluded) to Merthyr Tydfil
MPLS	Multi-Protocol Label Switching - A network of connected routers allowing connections to Signalling, Telecoms and SCADA to the CVLICC and the WROC
MV	Metro Vehicle - a Stadler tram/train vehicle - class 398s will be used on the TAM side of the CVL Network
NCN	Network Change Notice
OLE	Overhead Line Electrification System
ORS	Operational Requirements Specification
PAN	Project Advice Note
PES	Permanently Earthed Section of the OLE
PZT	Points Zone Telephone

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Acronym / Abbreviation	Meaning
QSS	The Transformation works on the section of route from Queen Street South Junction to Llandaff
R2P	The Transformation works on the section of route from Radyr to Pontypridd
RA	Route Availability
SCADA	Supervisory Control and Data Acquisition
SFO	Station Facility Owner
SPT	Signal Post Telephone
SRT	Sectional Running Time
SSP	Signalling Scheme Plan
TAM	Treherbert, Aberdare and Merthyr - the western part of the CVL Network from Treherbert, Aberdare and Merthyr Tydfil down through Pontypridd, Radyr, Cathays and Queen Street to Cardiff Bay. Also used as the overarching name for the first major phase of the works (Stage Events 1 to 4).
TfW	Transport for Wales
TfWRL	Transport for Wales Rail Ltd
THT	The Transformation works on the section of route from Pontypridd (excluded) to Treherbert
TMS	Traffic Management System
TPR	Timetable Planning Rules
TVM	Ticket Vending Machine
TW	Signals within the depot will be controlled from a separate Taff's Well depot workstation within the CVLICC and will have the prefix "TW"
VC	All signals within the former Radyr and Abercynon control areas will be controlled from the CVLICC and will have the prefix "VC"
WROC	Network Rail's Wales Route Operating Centre located at Cardiff

3 Terms and Definitions

Access Beneficiary	A train operator who is party to a Track Access Contract with AIW
Complex Projects Procedure	The procedure set out in Condition G5 of the CVL Network Code
Consultation Period	A period for consultation with industry, as set out in the CVL Network Code, Part G, for AIW and Access Beneficiaries to consider the content of, and respond to, a Network Change Proposal
CVL Network	The CVL Network covers the railway network from: Treherbert, Aberdare, Merthyr, Cwmbargoed, Coryton and Rhymney to the CVL West Boundary and the CVL East Boundary with Network Rail
CVL Network Code	The code setting out the rules applying to all regulated access agreements for a railway Network. The CVL Network Code is available here: Core Valley Lines infrastructure manager | TfW
Network Rail	Network Rail is the owner and infrastructure manager of most of the railway network in Great Britain
Rhymney Valley	The eastern part of the CVL from Cardiff Central, through Queen Street to Coryton and Rhymney
Stage Event	Also known as commissioning. This is when a new asset(s), proposed during the Network Change are bought into operation. Otten, other asset(s) are removed in parallel

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Station Working Group	The Station Working Group will agree the scope and plan the delivery of station facilities upgrade that are part of the overall Transformation Programme
Station Facility Owner	The meaning of Facility Owner applied to the station has the meaning defined in section 17 (6) of the Railways Act 1993
South Wales Metro Programme	The programme that the Welsh Government is investing to improve cost effective travel options on Southeast Wales
Transformation Programme	The Transformation Programme of the South Wales Metro Programme is the scope of works to upgrade the networks
Transformation Programme Team	The Transformation Programme Team is the collaboration of AIW and the IDPs to deliver the specified works of the Transformation Programme
Timetable Working Group	The Timetable Working Group is developing the new Timetable Planning Rules ("TPRs") associated with changes to the CVL Network on behalf of AIW. The key personnel for the Timetable Working Group includes Network Rail, AIW, and Access Beneficiaries, which also applies to Network Rail network
Track Access Contract	An access agreement between an IM of a Network and a Railway Undertaking, which permits the operation of train service

4 Governance

4.1 This document is a Notice of Intended Scope for the CVL Transformation Programme in 2027.

4.2 As defined by Condition G7 of the CVL Network Code, AIW will follow Condition G1 to consult with Access Beneficiaries and to establish changes to the CVL Network.

4.3 Consultation Periods for all Network Change Notices will be in accordance with requirements defined by the CVL Network Code.

4.4 In accordance with Conditions 5.7 and 5.12 of Part G of the CVL Network Code, any variation to the G5 Complex Projects Procedure scope of the Transformation Programme. Any variation will be consulted with Access Beneficiaries.

4.5 AIW will continue to maintain close communication with Access Beneficiaries by reconvening the CVL Timetable Working Group, if requested; and through industry consultation, so that all parties remain informed and able to influence project outcomes.

4.6 Other related workstreams or forums with Access Beneficiaries are:

- Network Change consultations
- Station Change consultations
- Vehicle Change consultations
- Access Rights reviews
- Driveability reviews and
- Signal Sighting Committee workshops.

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5 Infrastructure Changes

5.1 This Notice of Intended Scope covers the currently proposed scope of the Transformation Programme on the CVL Network for the year 2027.

5.2 The following high level summary of the proposed Western Route Sectional Appendix changes are required for the Transformation Programme to be implemented during 2027 (see dates below), as presented in Table 1.

Table 1: Western Route Sectional Appendix Changes

Section	Sub-section	Changes
General Instructions	Rule Book Module P2 – Working of single and bi-directional lines by pilotman	Not applicable
General Instructions	Rule Book Module SP – Speeds	Deviations to reflect the use of Tram speed signage on the Cardiff Bay line (only)
General Instructions	Rule Book Module TW1 – Preparation and movement of trains	Deviations to reflect Line-of-Sight operations on the Cardiff Bay line (only)
General Instructions	GSM-R – Cab radio registration at main signals / block markers & position light signals – location codes	Transfer of existing GSMR from South Wales WROC (valleys workstation) to CVLICC (CAR workstation)
General Instructions	Lines equipped with axle counters	No changes anticipated – all affected lines are already equipped with axle counters
General Instructions	Line clear verification (LCV)	No changes anticipated – all affected lines are already equipped with axle counters
General Instructions	Other General Instructions	Changes to reflect the implementation of tram signals and Line-of-Sight operations on the Cardiff Bay line (only)

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Section	Sub-section	Changes
Table A	Applicable	Supplementary notice of signalling and permanent way alterations to be issued for commissioning – Table A to be amended to reflect
Route Clearance tables	Applicable	Route clearance tables to be amended to restrict the Line-of-Sight operated section of the Cardiff Bay line to Class 398 only.
Local Instructions	GW810 (Rhymney Line)	Slotted release is being introduced at Rhymney sidings consistent with what has been provided at Treherbert
Local Instructions	GW820 (Cwmbargoed)	Remains temporarily out of use
Local Instructions	GW828 (Coryton to Heath Jn)	No change to current instructions
Local Instructions	GW830 (Central / Queens Street to Merthyr)	Instructions required for the operation of the Rhymney sidings shunt release controls
Local Instructions	GW839 (Bay)	Local instructions that may be required for the implementation of Line-of-Sight operations on the Cardiff Bay line, will be detailed through the G1 submission.

5.3 The high-level proposed major states of the Transformation Programme to be implemented during 2027 are presented below:

- March to April 2027 CAR Signalling commissioning and recontrol of the Valleys workstation (the Rhymney line from a new fringe between Cardiff Central and Cardiff Queen Street and the Cardiff Bay line) to be removed from NR control at the WROC to be controlled from CVLICC Signalling Control Centre.
    - Note: Cardiff Central & Barry lines remain within the WROC NR Control area

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- Cardiff Queen Street South Junction – remodelling of the track layout to support the doubling of the Cardiff Bay line. There are various enabling stages for both track and signalling works associated with the changes required to reconfigure the layout and control systems for the Cardiff Queen Street area. These changes will all be brought into use as part of the main commissioning blockade through March and April 2027

- Introduction of new Banner Repeater on approach to Rhymney station

- Tir Phil Implementation of move of CF (VC) 2809 at Tir Phil

- Additional signals for headway between Queen Street North Junction and Radyr Junction on the Llandaff Lines

- Signal ID plate changes – 'CF' becomes 'VC' across the section of route where re-controlled

- Cardiff Bay line:

    - Cardiff Bay junction 8008 and 8009 points brought into use and the UP/DN single Cardiff Bay abolished and replaced with Up and Down twin track from Queen Street South Junction to Cardiff Bay station.
    - OLE Energisation Event EE3C providing live overhead line from Cardiff Bay to Bute Town stations (inclusive).
    - Introduction of Line-of-Sight operations from 0m 50chs to Cardiff Bay Station

- Signalling Stage works – Various stages continue after Christmas 2026 to support the preparation of CAR commissioning
    - Datalink rehearsals
    - Ninian Park Line speed Increase (LSI) Stageworks Up and Dn Rad mileage 0M 62ch – 3m 69ch March 2027

- Pontypridd station works permissive works arrangements with associated off indicators VR292 and VR 497 and data change

- Permanent recovery of Pontypridd engineering sidings recovery of signalling associated with the works previously completed in 2024.

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- Deferred scope from 2026 - Energisation Event 1D – HV connection of Ninian Park Feeder station to CVL OLE network, inclusive of independent feeds to Radyr and Taffs Well and Interlocking works are now planned for 24th to 27th December 2027.

5.4 Please refer to Appendix A for a diagram illustrating the Transformation Programme works that are being implemented during 2027.

5.5 For completeness, Appendix B outlines the changes that will be made outside of this Network Change in accordance with industry practice i.e., Station Change process.

5.6 The operational requirements to which the above changes will be delivered are set out below:

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Structure Gauge: The existing structure gauge of each line will be preserved. The existing "route clearance of freight containers/swap bodies" is given in table D5B of the Sectional Appendix. These clearances will be maintained. The Transformation Programme is not remitted to correct any existing non-conformances covered by the star note. However, where physical alterations are required for any other reason, all works will be carried out to current gauging standards. Current gauge for each line of route are as follows:

- o GW810 (Rhymney – Cardiff Queen Street North Junction) W6A*
- o GW820 (Cwmbargoed – Ystrad Mynach South) W6A
- o GW830 (Merthyr Tydfil – Cardiff East Jn via Cathays) W6A*
- o GW839 Queen street south junction to Cardiff Bay) W6A

Level Boarding: Continuation of the CVL - wide programme to correct platform heights and offsets to ensure level boarding compliance for Class 398 and Class 756 rolling stock.

Global System for Mobile communications–Railways ("GSM-R"): No changes to the provision or coverage of the GSM-R system other than those required to support the above Stageworks TD updates for 2027.

Signalling Enhancements: Various stage works as above.

Telecommunications System: Stage works as associated with Signalling scope.

Level Crossing Alterations: Ty-isha LX will be closed, Treherbert crossing minor upgrades will be implemented.,

Discontinuous Electrification: The same discontinuous 25kV OLE system introduced in 2023 will be used throughout the CVL. This system includes numerous Catenary Free Sections (CFS). OLE section diagrams are available on request. In areas that are not being electrified, electric trains passing through these areas will be required to use another form of energy for propulsion. Trains transitioning between electrified and non-electrified areas and vice-versa are required to read a track-mounted beacon to enable their auto pantograph-up or pantograph-down facility and trigger a switch to the other form of energy. This is collectively referred to as the Auto-Power Change Over system (APCO). The CVL OLE system is under the control of the CVLICC Electrical Control Operator (ECO).

Enabling Track and Civils Works: Track and civils work to enable the construction of the signalling assets / track preparatory works will be undertaken across the CVL Network. The existing structure gauge will be preserved throughout.

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6 Operating Procedures

6.1 The scope of Operational Changes described herein are limited to the novel, complex and/or unique features of the operation of the CVL Network not covered by GERM8000 Master Rule Book or by existing instructions: this includes the CVLICC, Taff's Well Depot, Canton Depot and any interface with Network Rail at WROC.

6.2 As part of the Transformation Programme, the existing Rule Book, Regulations and Instructions will be supplemented to encompass the novel, complex and/or unique features that are being introduced.

6.3 The Operating Procedures will conform to the Network Rail Standards and replicate their operations. Degraded mode will be based on the Rule Book.

6.4 Cardiff Bay GW839 will remain part of the GB mainline railway, However the method operation will be changed to become similar to a segregated off-street Tramway under the supervision of the CAR signaller at CVLICC.

7 Timetable Change

7.1 Alterations to the CVL Network described herein, may mean that minor changes to the Train Planning System will have to be made to reflect the new configuration of the Network, at each state of Transformation Programme works. Should any new Timetable Planning Rules ("TPRs") be required, these will be consulted/implemented in accordance with the CVL Network Code Part D.

7.2 If required, calculations for new Sectional Running Times ("SRTs") and the other TPRs will be delivered by Network Rail's Capacity Analysis Team and the TPR Specialists, on AIW's behalf.

7.3 New TPRs and SRTs proposed for the CVL Network will be incorporated into Network Rail's normal timetable change, TPR consultation process, unless otherwise agreed for minor changes with Access Beneficiaries.

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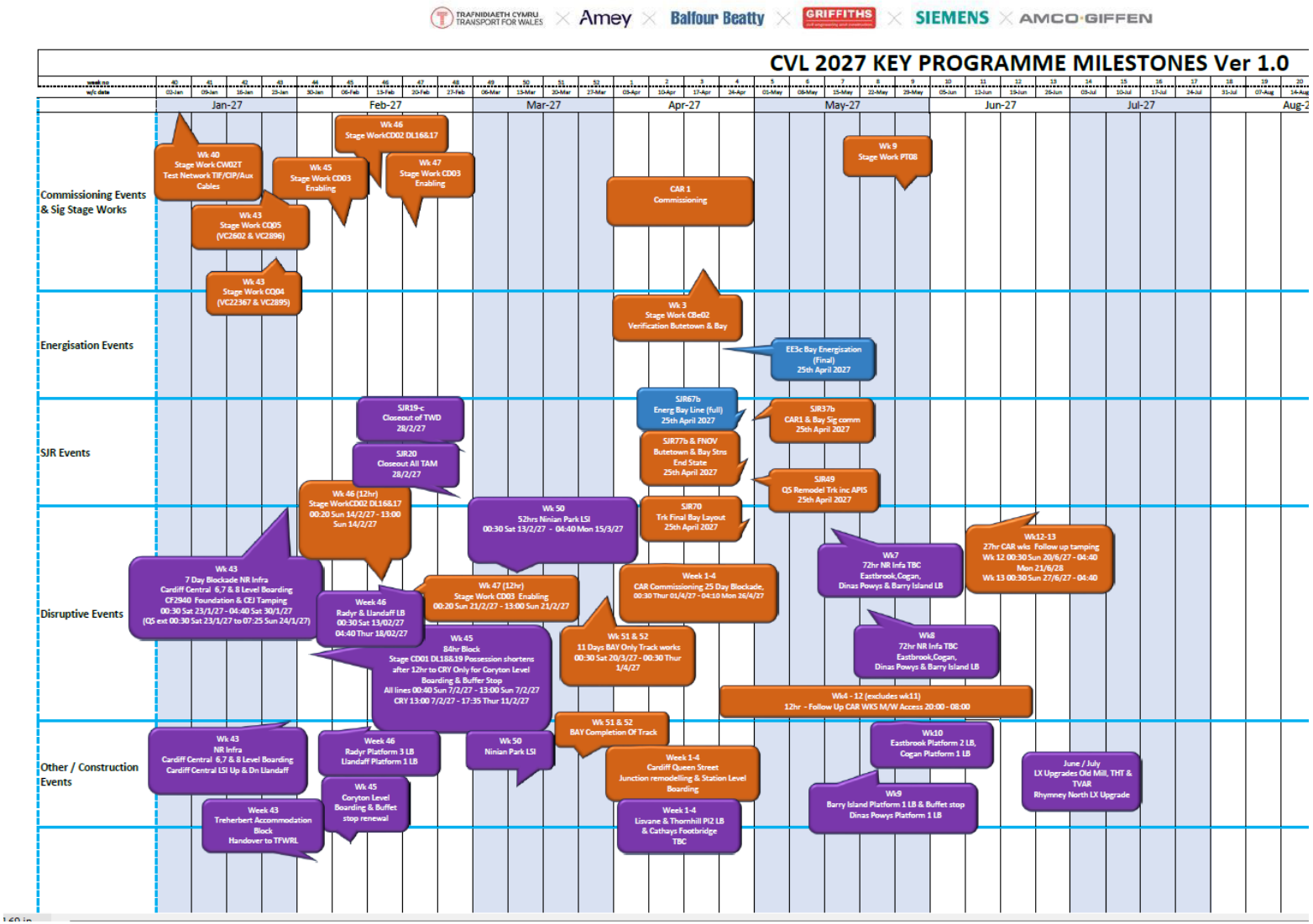
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Appendix A – Scope Diagram and Commissioning Dates Diagram

The scope diagram and commissioning dates diagram for the Transformation Programme to be implemented during 2027 is shown below:

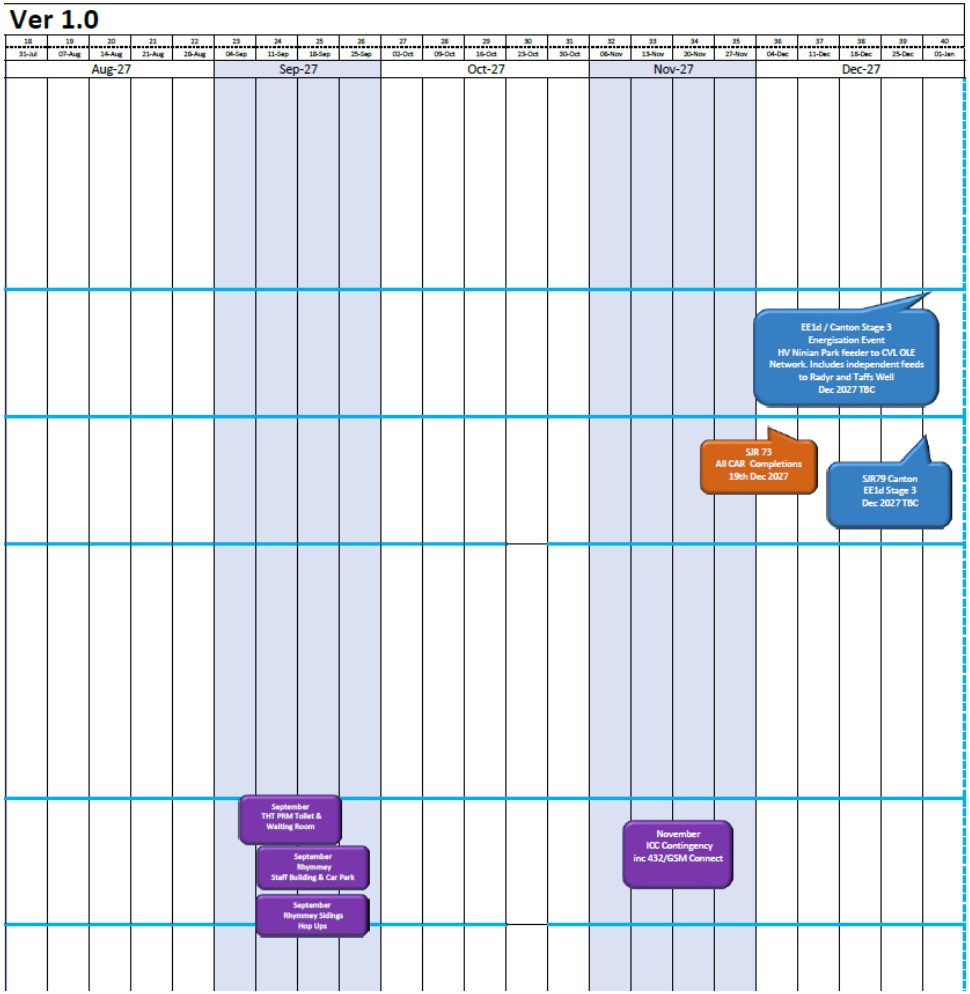
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Appendix B – Station Changes and Off Network Information

Station Changes that are outside of this Network Change. Station changes in 2027 include:

1. The programme of new and refurbished toilets, waiting rooms, shelters and the installation or upgrade of help points, CCTV cameras, Ticket Vending Machines ("TVMs"), smart ticket validators, Wi-Fi, and Customer Information System ("CIS") screens will continue through 2027. These will be separately consulted through the Station Change process.
2. Cardiff Central
    - Signal CF2940 – move of signal (with associated AWS) to improve train performance
    - Revised platform 6 length from 225 to 185mtrs
    - Level Boarding works platforms 6, 7 & 8
    - 4ft signalling alterations

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