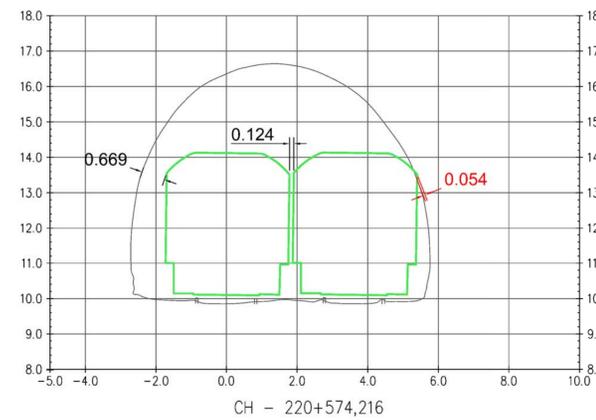
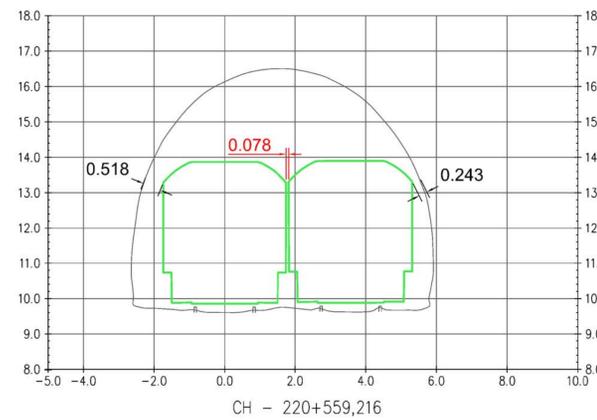
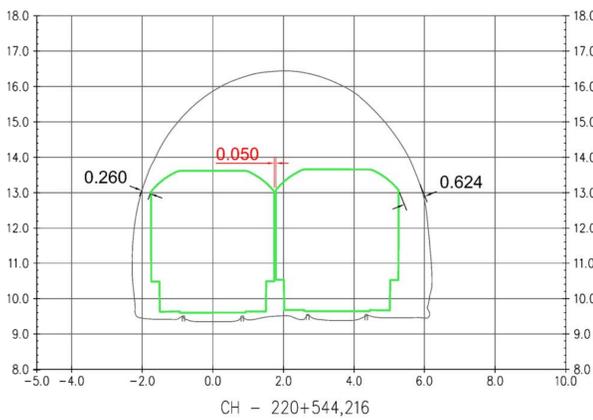
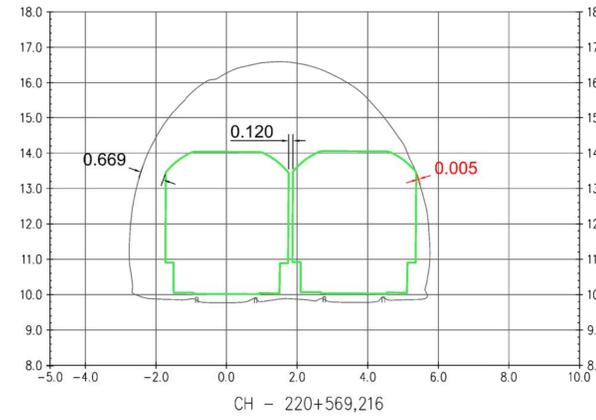
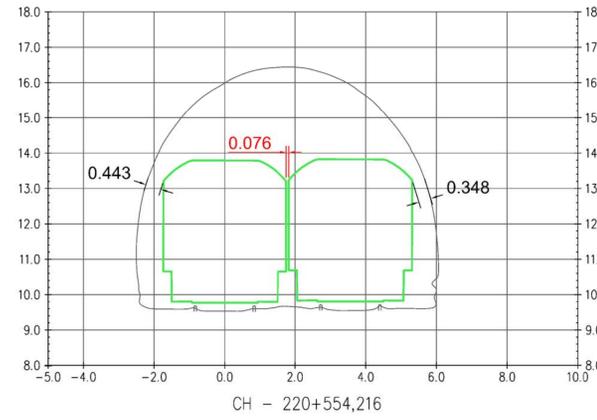
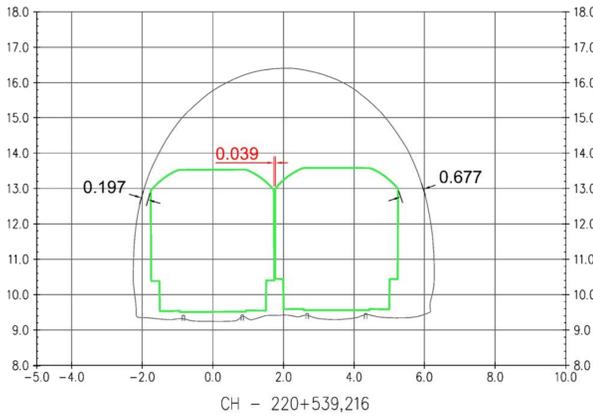
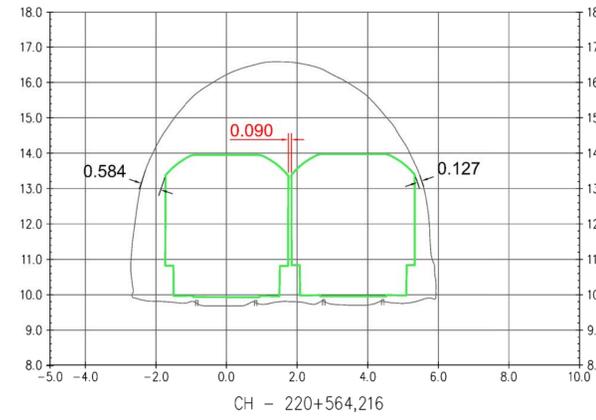
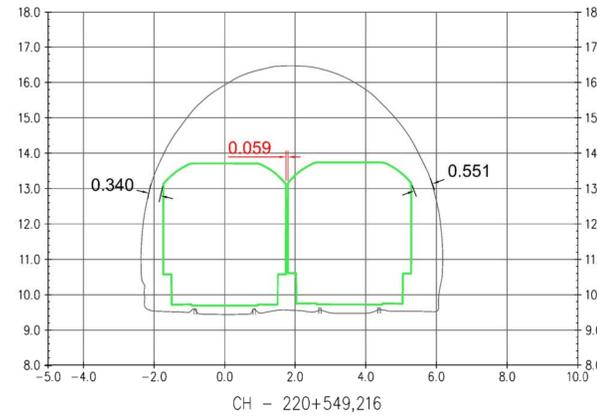
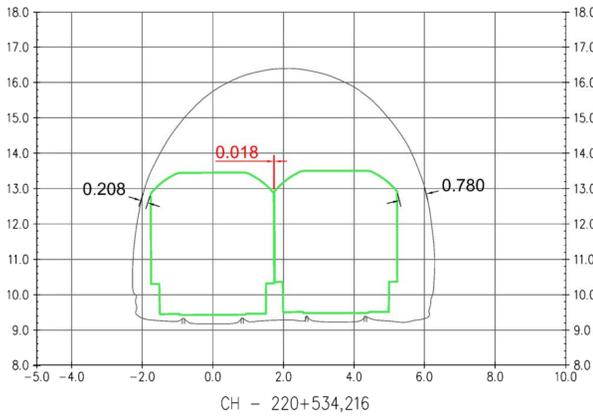


SECTION BETWEEN 220+489,216/220+644,216 (2)



**NOTE:**  
 In Option 0 a gauging assessment of the existing track is demonstrated  
 Existing track is ballasted  
 All distances in metres unless otherwise stated  
 IRL2 reference profile (Standard CME-TMS-327 Vehicle Gauging) is used to assess the gauge in existing structures  
 Track maintenance tolerances for ballast track are added to the reference profile (Standard I-PWY-1101 Requirements for Track and Structures Clearances):  
 - Track position: 25 mm  
 - Gauge widening: 8 mm  
 - Crosslevel error: 20 mm  
 - Vertical alignment variation: 20 mm  
 Clearance between Reference Profile (+ Track Maintenance Tolerance) and railway operational structure to be 150mm as a minimum. It is assumed no windows for staff or passengers to lean out.  
 Vehicle passing clearance between Reference Profiles (+ Track Maintenance Tolerance) to be 100mm as a minimum. It is assumed no windows for staff or passengers to lean out.

— IRL2 Reference Profile + Track Maintenance Tolerances

**NOTE:**  
 INFORMATION IS PRESENTED FOR PUBLIC CONSULTATION NO. 1  
 NOT ALL DESIGN DETAIL OR CONSTRUCTION RELATED DETAIL ARE KNOWN AT THIS TIME, E.G. SUBSTATION LOCATIONS, CONSTRUCTION COMPOUNDS, TEMPORARY BRIDGE REQUIREMENTS, TEMPORARY UTILITY DIVERSIONS AND OTHER ELEMENTS  
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 All elevations are in metres and relate to OSi Geoid Model (OSGM02) Main Head as defined by existing Project Control. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSi active GPS station Tallaght College (TLLG).



Rev	Date	Drn	Chk'd	App'd	Description
v01	21/04/2021	JYM	FJC	AG	FOR PUBLIC CONSULTATION No1

Client: **Iarnród Éireann Irish Rail**

Engineering Designer: **ATKINS** (Member of the SNC-Lavalin Group) supported by **rps**

Date: [ ] Scale: @ A1 / @ A3

Project Code: ATK

Drawn: JYM, Checked: FJC, Approved: AG

QMS Code: [ ]

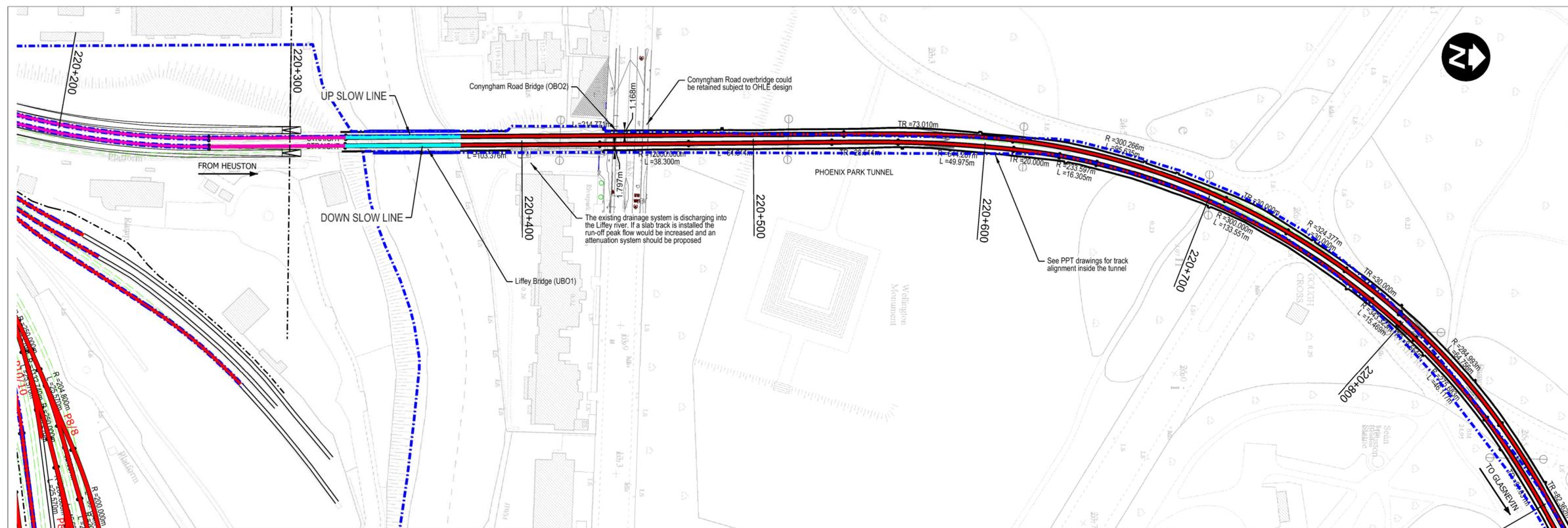
Project Title: **DART + SOUTH WEST**

Drawing Title: **PHOENIX PARK TUNNEL CROSS SECTIONS (SHEET 2 of 2) OPTION 0**

Drawing File Name: **DP-04-23-DWG-PW-TTA-35757**

Version: **V01**, Status: **S3**

DO NOT SCALE USE FIGURED DIMENSIONS ONLY

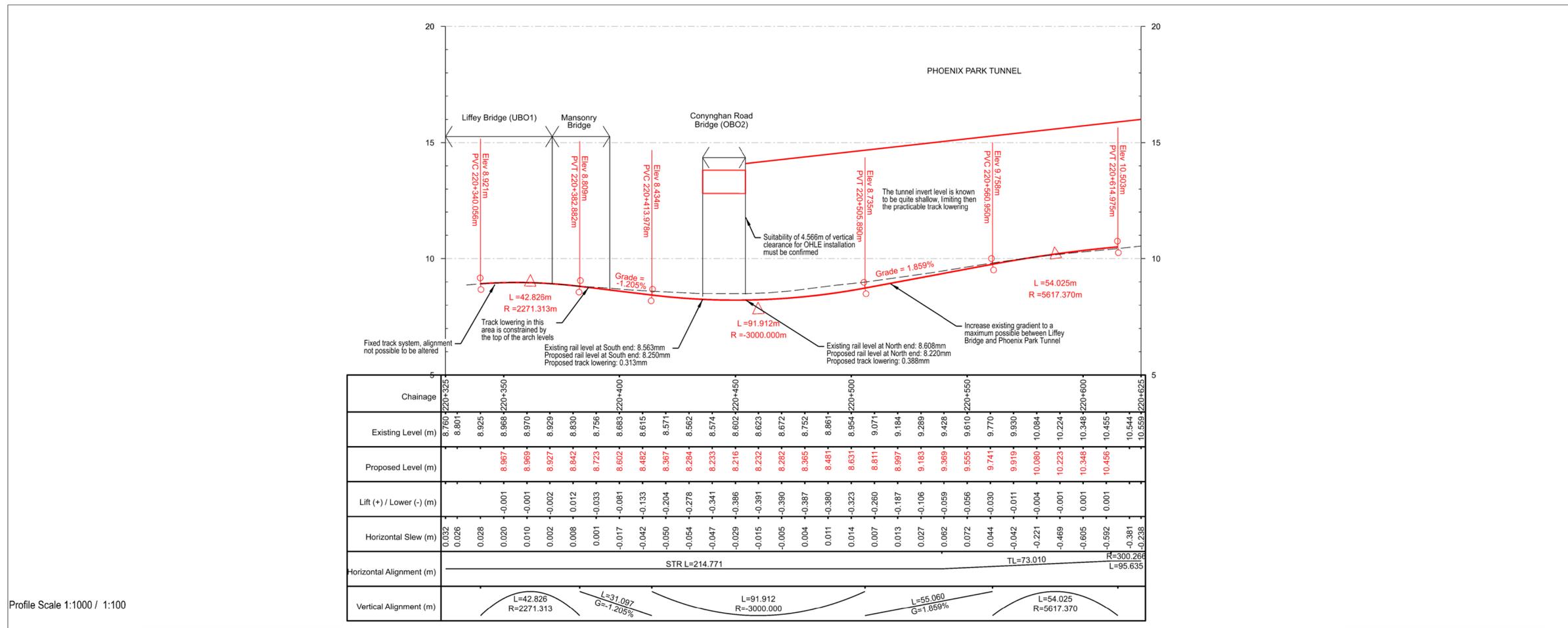


Plan Scale 1:1000

**Legend:**

- Renewed Track / Slewed Track
- Existing Track to be Retained (Main Lines)
- Existing Track to be Retained (Not Main Lines)
- - - Existing Track to be Removed
- - - IÉ Property Boundary
- Proposed Boundary Limit - Permanent Works
- - - Design Zone interface / Chainage interface
- Proposed Retaining Wall
- P8/8 Type of turnout

1. Design is based on topographical survey 09272\_C2\_3D\_R2 2009 in ITM coordinates
2. All distances in metres unless otherwise stated.
3. The layout shows the Permanent Way Option 3 for Conyngham Road Bridge (OBO2).
4. It is assumed that the proposed slab track section (that is required within the Phoenix Park Tunnel) will be extended up to the Liffey River underbridge.



Profile Scale 1:1000 / 1:100

— Proposed vertical alignment

- - - Existing vertical alignment

**NOTE:**

INFORMATION IS PRESENTED FOR PUBLIC CONSULTATION NO. 1

NOT ALL DESIGN DETAIL OR CONSTRUCTION RELATED DETAIL ARE KNOWN AT THIS TIME. E.G. SUBSTATION LOCATIONS, CONSTRUCTION COMPOUNDS, TEMPORARY BRIDGE REQUIREMENTS, TEMPORARY UTILITY DIVERSIONS AND OTHER ELEMENTS

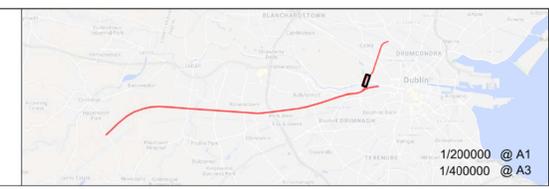
POTENTIAL INTERFERENCE WITH PROPERTY RIGHTS IS BASED ON THE LEVEL OF INFORMATION AND DESIGN AVAILABLE AT THIS TIME. FURTHER WORK INCLUDING DETAILED DESIGN AND TECHNICAL AND CONSTRUCTION RELATED SOLUTIONS WILL SEEK TO MINIMISE POTENTIAL INTERFERENCE WITH PROPERTY RIGHTS

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All elevations are in metres and relate to OSi Geoid Model (OSGM02) Mean Head as defined by existing Project Control. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSi active GPS station Tallaght College (TLLG).



Rev	Date	Drn	Chk'd	App'd	Description
v01	21/04/2021	JYM	FJC	AG	FOR PUBLIC CONSULTATION No1

**Client**

**Engineering Designer**

**Project Title**

**DART + SOUTH WEST**

**Drawing Title**

**CONYNGHAM ROAD BRIDGE (OBO2) TRACK PLAN LAYOUT AND LONGITUDINAL PROFILE OPTION 1**

**Drawing File Name**

**DP-04-23-DWG-PW-TTA-35742**

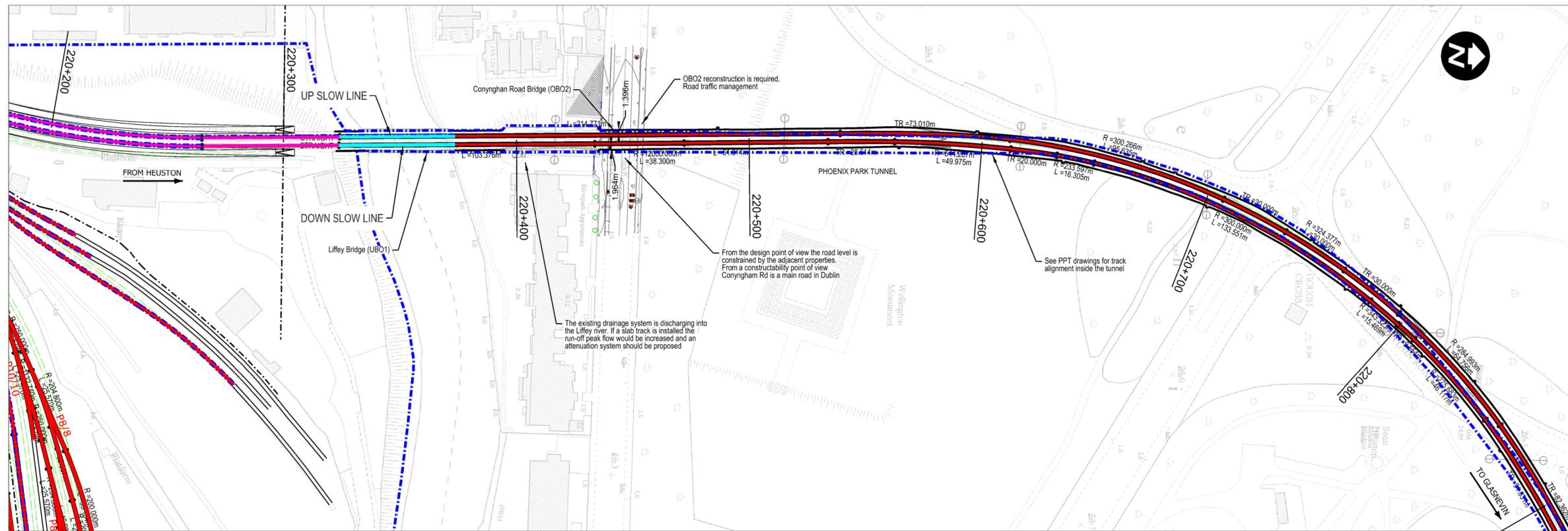
**Version**

**V01**

**Status**

**S3**

DO NOT SCALE USE FIGURED DIMENSIONS ONLY

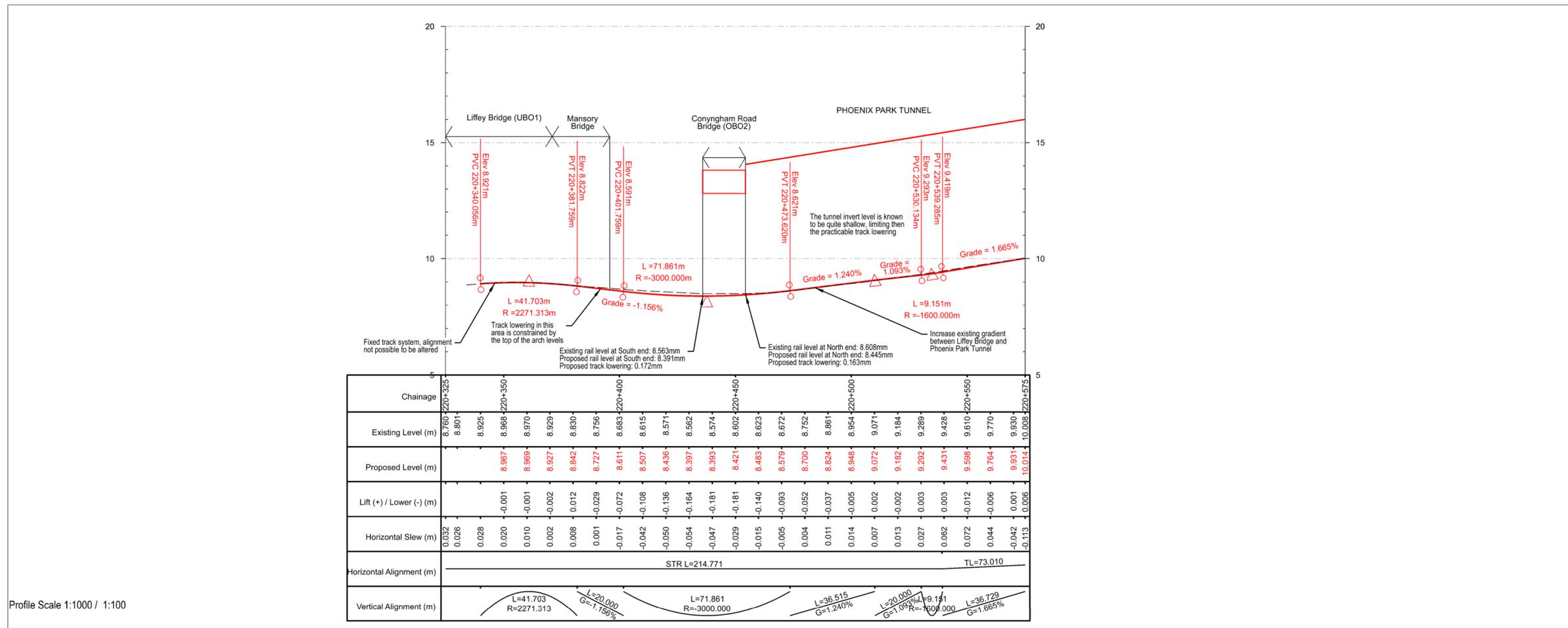


Plan Scale 1:1000

**Legend:**

- Renewed Track / Slewed Track
- Existing Track to be Retained (Main Lines)
- Existing Track to be Retained (Not Main Lines)
- - - Existing Track to be Removed
- - - IÉ Property Boundary
- Proposed Boundary Limit - Permanent Works
- - - Design Zone interface / Chainage interface
- Proposed Retaining Wall
- P8/8 Type of turnout

1. Design is based on topographical survey 09272\_C2\_R2 2009 in ITM coordinates
2. All distances in metres unless otherwise stated.
3. The layout shows the Permanent Way Option 1 for Conyngham Road Bridge (OBO2).
4. It is assumed that the proposed slab track section (that is required within the Phoenix Park Tunnel) will be extended up to the Liffey River underbridge.



Profile Scale 1:1000 / 1:100

— Proposed vertical alignment

- - - Existing vertical alignment

**NOTE:**

INFORMATION IS PRESENTED FOR PUBLIC CONSULTATION NO. 1

NOT ALL DESIGN DETAIL OR CONSTRUCTION RELATED DETAIL ARE KNOWN AT THIS TIME, E.G. SUBSTATION LOCATIONS, CONSTRUCTION COMPOUNDS, TEMPORARY BRIDGE REQUIREMENTS, TEMPORARY UTILITY DIVERSIONS AND OTHER ELEMENTS

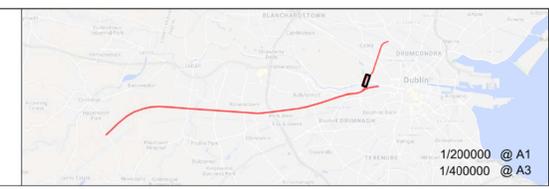
POTENTIAL INTERFERENCE WITH PROPERTY RIGHTS IS BASED ON THE LEVEL OF INFORMATION AND DESIGN AVAILABLE AT THIS TIME. FURTHER WORK INCLUDING DETAILED DESIGN AND TECHNICAL AND CONSTRUCTION RELATED SOLUTIONS WILL SEEK TO MINIMISE POTENTIAL INTERFERENCE WITH PROPERTY RIGHTS

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All elevations are in metres and relate to OSi Geoid Model (OSGM02) Main Head as defined by existing Project Control. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSi active GPS station Tallaght College (TLLG).



Rev	Date	Drn	Chk'd	App'd	Description
v01	21/04/2021	JYM	FJC	AG	FOR PUBLIC CONSULTATION No1

**Client:** **Iarnród Éireann Irish Rail**

**Engineering Designer:** **ATKINS** (Member of the SNC-Lavalin Group)

**Supported by:** **TPSA** and **RPS**

**Date:** \_\_\_\_\_ **Scale:** @ A1, @ A3

**Project Code:** \_\_\_\_\_ **Issuer:** ATK

**QMS Code:** \_\_\_\_\_

**Drawn:** JYM **Checked:** FJC **Approved:** AG

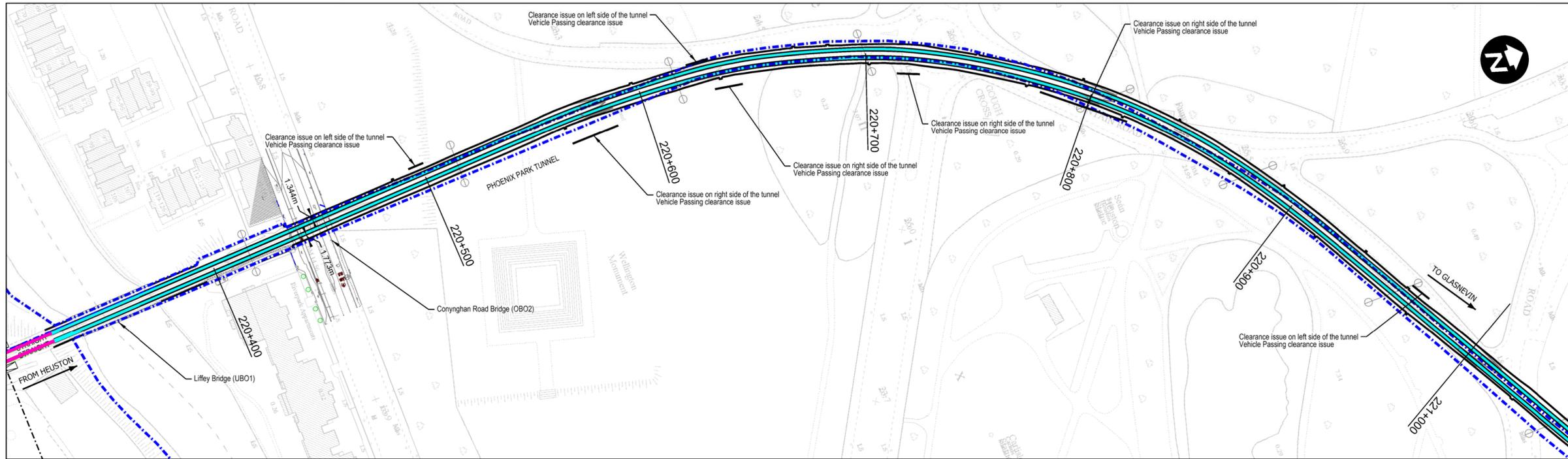
**Project Title:** **DART + SOUTH WEST**

**Drawing Title:** **CONYNGHAM ROAD BRIDGE (OBO2) TRACK PLAN LAYOUT AND LONGITUDINAL PROFILE OPTION 2**

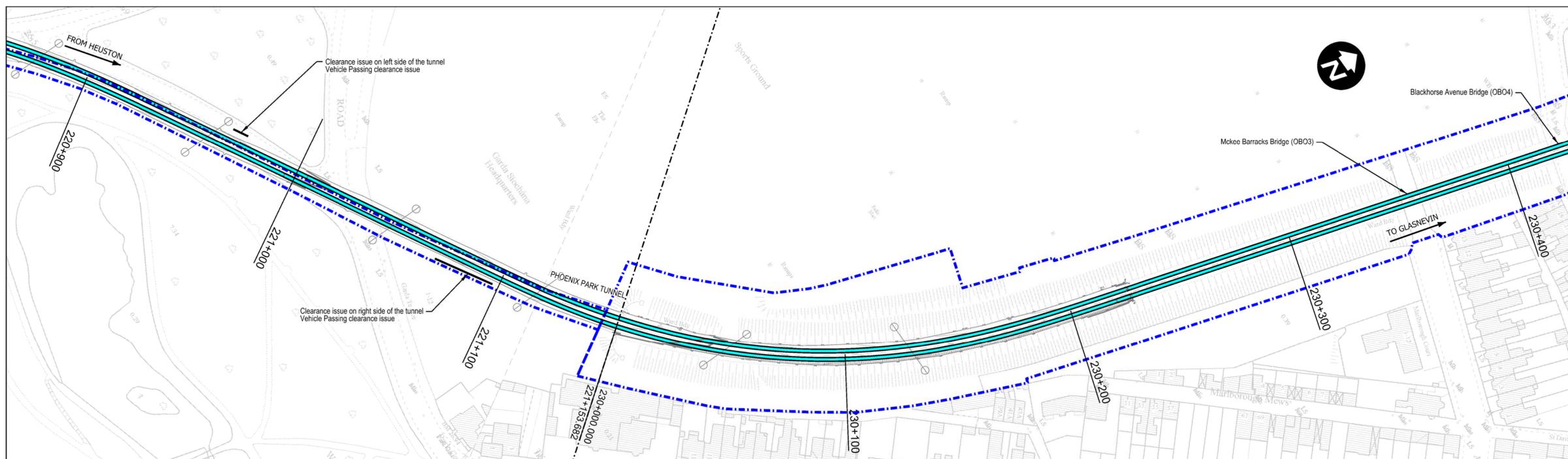
**Drawing File Name:** DP-04-23-DWG-PW-TTA-35743

**Version:** V01 **Status:** S3

DO NOT SCALE USE FIGURED DIMENSIONS ONLY



Plan Scale 1:1000



Plan Scale 1:1000

**Legend:**

- Renewed Track / Slewed Track
- Existing Track to be Retained (Main Lines)
- Existing Track to be Retained (Not Main Lines)
- - - Existing Track to be Removed
- - - IÉ Property Boundary
- - - Proposed Boundary Limit - Permanent Works
- - - Design Zone interface / Chainage interface
- Proposed Retaining Wall
- P8/8 Type of turnout

1. Design is based on topographical survey 08272\_C2\_3D\_R2 2009 in ITM coordinates
2. All distances in metres unless otherwise stated.
3. The layout shows the Permanent Way Option 0 for Phoenix Park Tunnel.
4. Ballast track.
5. Passing Clearances between vehicles are not adequate (minimum value of 6mm).
6. Lateral clearances to tunnel lining are reduced (as low as 75mm). Reduced lateral clearances in ballasted are more difficult to maintain.
7. Existing track alignment seems erratic, therefore difficult to maintain its geometry.

**NOTE:**

INFORMATION IS PRESENTED FOR PUBLIC CONSULTATION NO. 1

NOT ALL DESIGN DETAIL OR CONSTRUCTION RELATED DETAIL ARE KNOWN AT THIS TIME. E.G. SUBSTATION LOCATIONS, CONSTRUCTION COMPOUNDS, TEMPORARY BRIDGE REQUIREMENTS, TEMPORARY UTILITY DIVERSIONS AND OTHER ELEMENTS

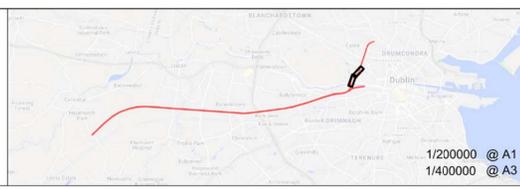
POTENTIAL INTERFERENCE WITH PROPERTY RIGHTS IS BASED ON THE LEVEL OF INFORMATION AND DESIGN AVAILABLE AT THIS TIME. FURTHER WORK INCLUDING DETAILED DESIGN AND TECHNICAL AND CONSTRUCTION RELATED SOLUTIONS WILL SEEK TO MINIMISE POTENTIAL INTERFERENCE WITH PROPERTY RIGHTS

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Rev	Date	Drn	Chk'd	App'd	Description
v01	21/04/2021	JYM	FJC	AG	FOR PUBLIC CONSULTATION No1

**Client:** Iarnród Éireann Irish Rail

**Engineering Designer:** **ATKINS** (Member of the SNC-Lavalin Group)

**Supported by:** **TPPSA** (Member of the SNC-Lavalin Group)

**Supported by:** **RPS**

**Date:** \_\_\_\_\_ **Scale:** @ A1 @ A3

**Project Code:** \_\_\_\_\_ **Issuer:** ATK

**QMS Code:** \_\_\_\_\_

**Drawn:** JYM **Checked:** FJC **Approved:** AG

**Project Title:** DART + SOUTH WEST

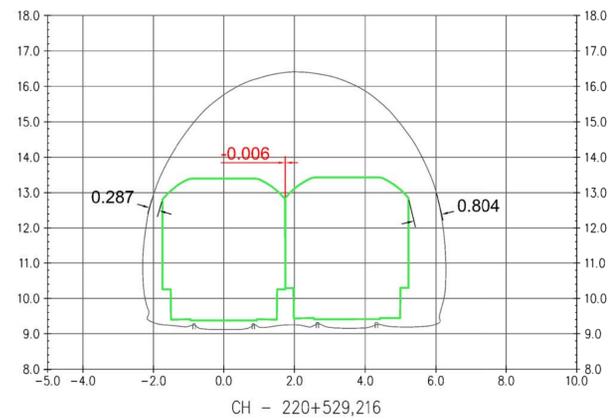
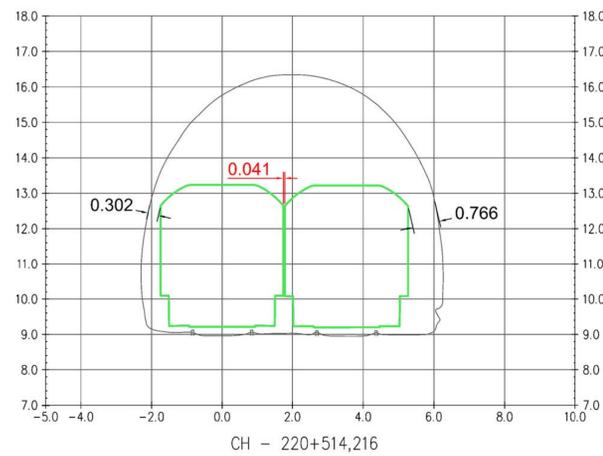
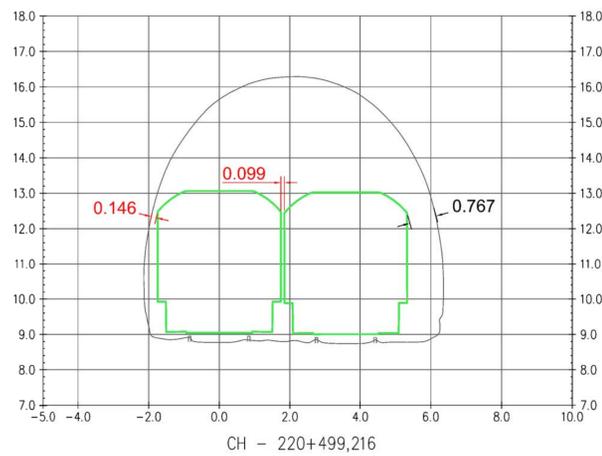
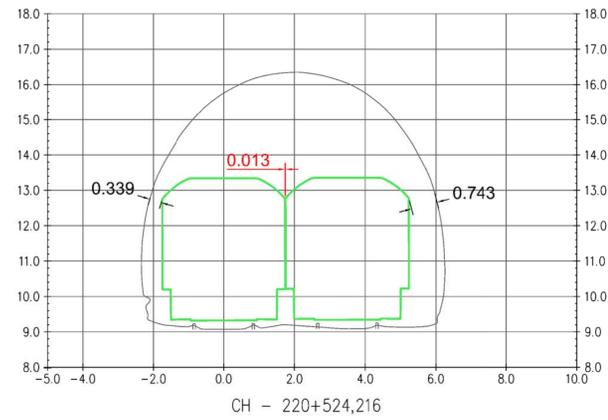
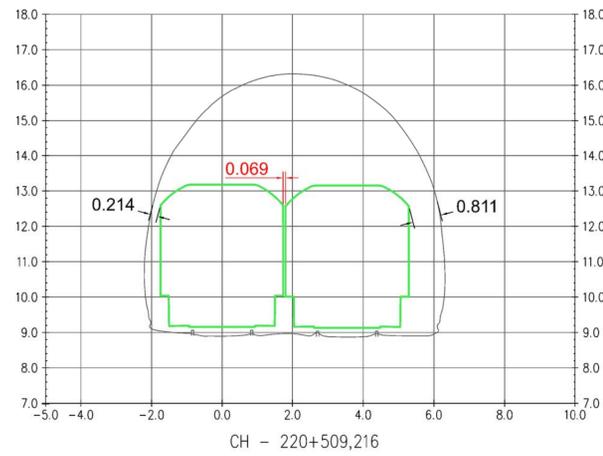
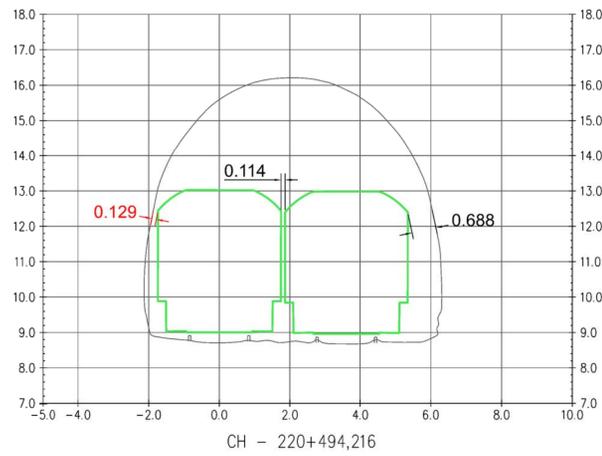
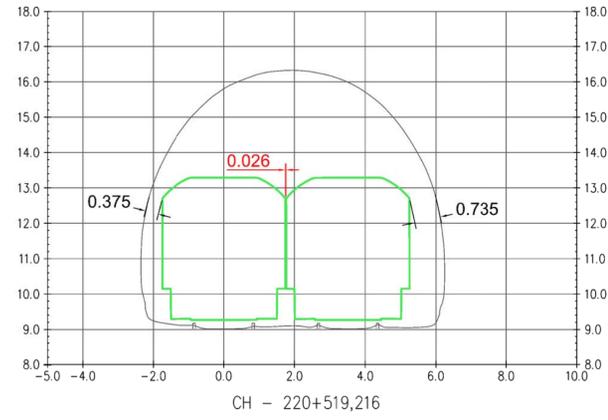
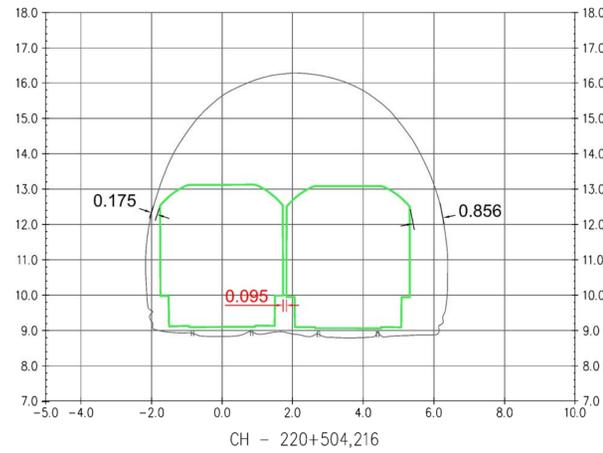
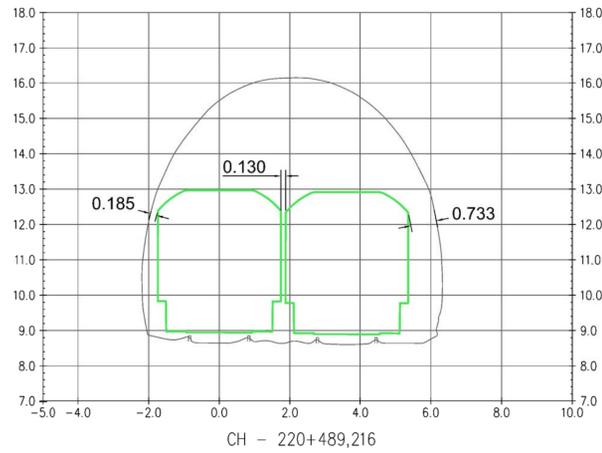
**Drawing Title:** PHOENIX PARK TUNNEL TRACK PLAN LAYOUT OPTION 0

**Drawing File Name:** DP-04-23-DWG-PW-TTA-35755

**Version:** v01 **Status:** S3

DO NOT SCALE USE FIGURED DIMENSIONS ONLY

SECTION BETWEEN 220+489,216/220+644,216 (1)



**NOTE:**  
 In Option 0 a gauging assessment of the existing track is demonstrated  
 Existing track is ballasted  
 All distances in metres unless otherwise stated  
 IRL2 reference profile (Standard CME-TMS-327 Vehicle Gauging) is used to assess the gauge in existing structures  
 Track maintenance tolerances for ballast track are added to the reference profile (Standard I-PWY-1101 Requirements for Track and Structures Clearances):

- Track position: 25 mm
- Gauge widening: 8 mm
- Crosslevel error: 20 mm
- Vertical alignment variation: 20 mm

Clearance between Reference Profile (+ Track Maintenance Tolerance) and railway operational structure to be 150mm as a minimum. It is assumed no windows for staff or passengers to lean out.

Vehicle passing clearance between Reference Profiles (+ Track Maintenance Tolerance) to be 100mm as a minimum. It is assumed no windows for staff or passengers to lean out.

— IRL2 Reference Profile + Track Maintenance Tolerances

**NOTE:**  
 INFORMATION IS PRESENTED FOR PUBLIC CONSULTATION NO. 1  
 NOT ALL DESIGN DETAIL OR CONSTRUCTION RELATED DETAIL ARE KNOWN AT THIS TIME. E.G. SUBSTATION LOCATIONS, CONSTRUCTION COMPOUNDS, TEMPORARY BRIDGE REQUIREMENTS, TEMPORARY UTILITY DIVERSIONS AND OTHER ELEMENTS  
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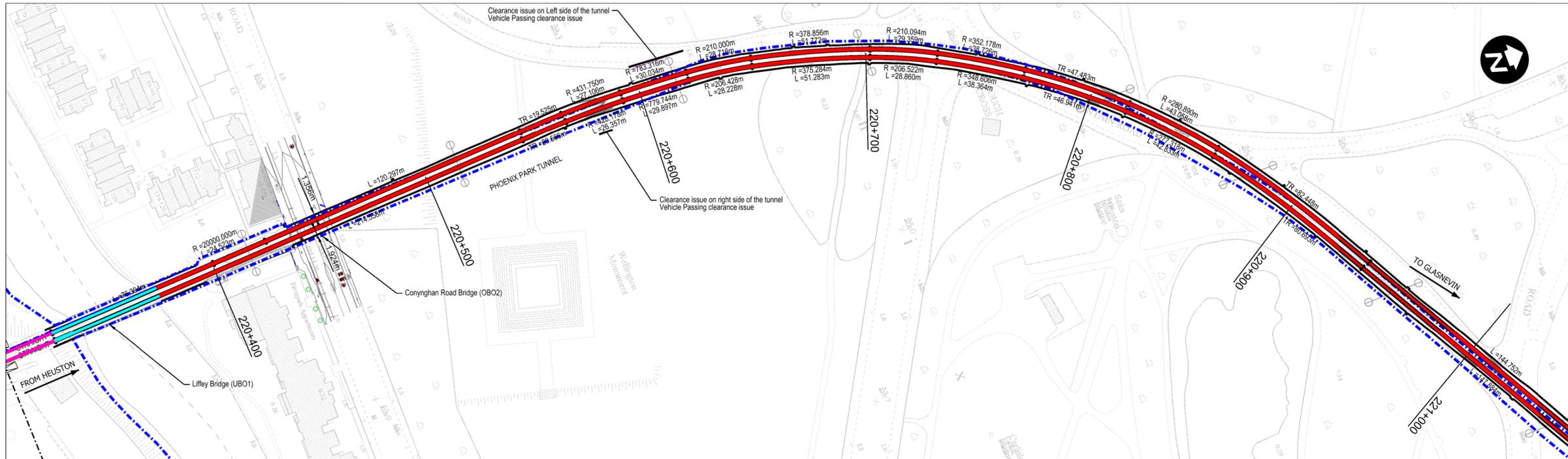


Rev	Date	Drn	Chk'd	App'd	Description
v01	21/04/2021	JYM	FJC	AG	FOR PUBLIC CONSULTATION No1

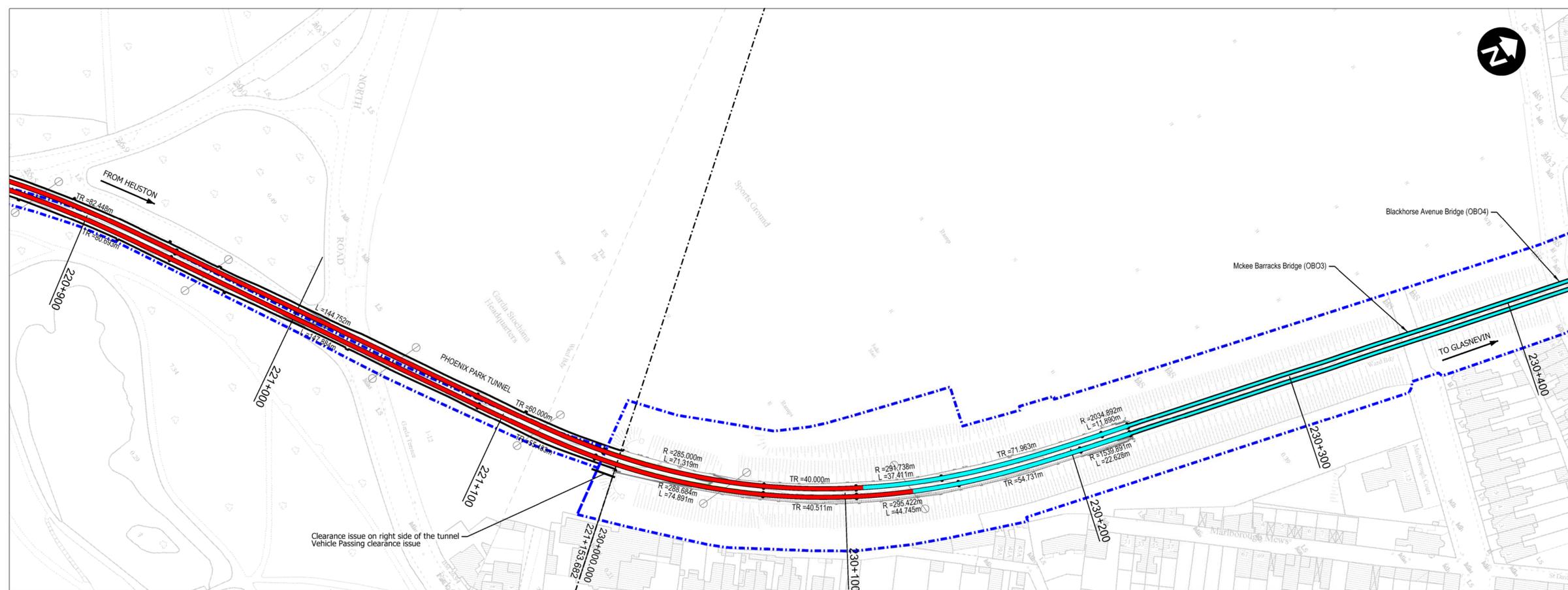
Client <b>Iarnród Éireann Irish Rail</b>		Engineering Designer <b>ATKINS</b> Member of the SNC-Lavalin Group Supported by <b>rps</b>	
Date	Scale	Drawn	Checked
	@ A1 @ A3	JYM	FJC
Project Code	Issuer	QMS Code	Approved
	ATK		AG

Project Title	<b>DART + SOUTH WEST</b>		
Drawing Title	<b>PHOENIX PARK TUNNEL CROSS SECTIONS (SHEET 1 of 2) OPTION 0</b>		
Drawing File Name	DP-04-23-DWG-PW-TTA-35756	Version	v01
Status	<b>S3</b>		

DO NOT SCALE USE FIGURED DIMENSIONS ONLY



Plan Scale 1:1000



Plan Scale 1:1000

**Legend:**

- Renewed Track / Stewed Track
- Existing Track to be Retained (Main Lines)
- Existing Track to be Retained (Not Main Lines)
- - - Existing Track to be Removed
- - - IE Property Boundary
- - - Proposed Boundary Limit - Permanent Works
- - - Design Zone interface / Chainage interface
- Proposed Retaining Wall
- P8/8 Type of turnout

1. Design is based on topographical survey 09272\_C2\_3D\_R2 2009 in ITM coordinates
2. All distances in metres unless otherwise stated.
3. The layout shows the Permanent Way Option 1 for Phoenix Park Tunnel.
4. Slab track. Tunnel invert level is unknown. Construction depth is limited.
5. 6-foot dimension: 1970mm (passing clearances greater than 100mm).
6. Short section of 15m with lateral clearances lower than 100mm
7. Proposed alignment with multiple elements following the tunnel alignment.
8. Waterproofing membrane may be required. Membrane could reduce the tunnel cross section and the lateral clearances as a result.

**NOTE:**

INFORMATION IS PRESENTED FOR PUBLIC CONSULTATION NO. 1

NOT ALL DESIGN DETAIL OR CONSTRUCTION RELATED DETAIL ARE KNOWN AT THIS TIME. E.G. SUBSTATION LOCATIONS, CONSTRUCTION COMPOUNDS, TEMPORARY BRIDGE REQUIREMENTS, TEMPORARY UTILITY DIVERSIONS AND OTHER ELEMENTS

POTENTIAL INTERFERENCE WITH PROPERTY RIGHTS IS BASED ON THE LEVEL OF INFORMATION AND DESIGN AVAILABLE AT THIS TIME. FURTHER WORK INCLUDING DETAILED DESIGN AND TECHNICAL AND CONSTRUCTION RELATED SOLUTIONS WILL SEEK TO MINIMISE POTENTIAL INTERFERENCE WITH PROPERTY RIGHTS

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Rev	Date	Drn	Chk'd	App'd	Description
v01	21/04/2021	JYM	FJC	AG	FOR PUBLIC CONSULTATION No1

**Client:** Iarnród Éireann Irish Rail

**Engineering Designer:** **ATKINS**

**Supported by:** TYPESA, RPS

**Date:** \_\_\_\_\_ **Scale:** @ A1, @ A3

**Project Code:** \_\_\_\_\_ **Issuer:** ATK

**QMS Code:** \_\_\_\_\_

**Drawn:** JYM **Checked:** FJC **Approved:** AG

**Project Title:** DART + SOUTH WEST

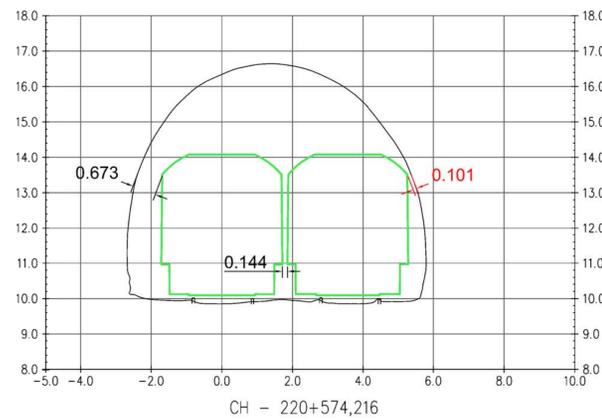
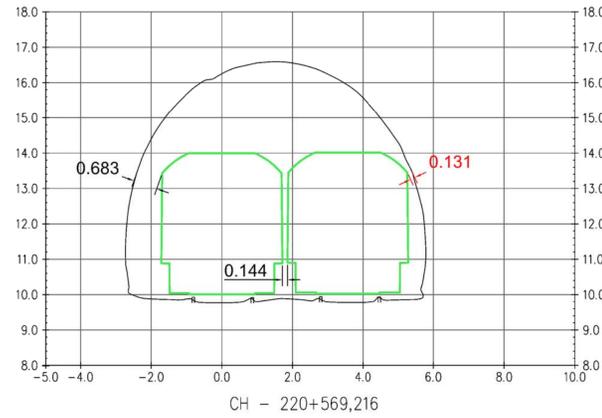
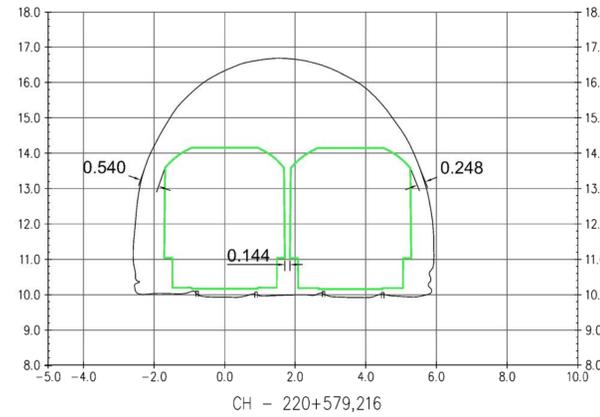
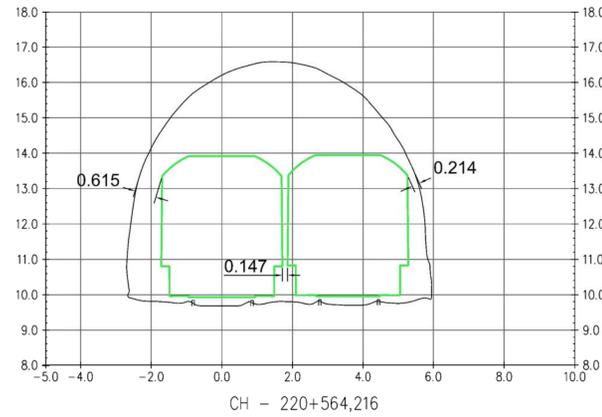
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**Drawing File Name:** DP-04-23-DWG-PW-TTA-35758

**Version:** V01 **Status:** S3

DO NOT SCALE USE FIGURED DIMENSIONS ONLY

SECTION BETWEEN 220+564,216/220+579,216



**NOTE:**  
 In Option 1 an optimised track alignment is proposed to comply with IÉ standards.  
 Slab track is proposed in Option 1  
 All distances in metres unless otherwise stated  
 IRL2 reference profile (Standard CME-TMS-327 Vehicle Gauging)  
 IRL2 reference profile (Standard EN 15273-3. Gauges-Part 3: Structure Gauges):  
 - Track position: 0,005 mm  
 - Gauge widening: 0,008 mm  
 - Crosslevel error: 0,005 mm  
 - Vertical alignment variation: 0,005 mm  
 Clearance between Reference Profile (+ Track Maintenance Tolerance) and railway operational structure to be 150mm as a minimum. It is assumed no windows for staff or passengers to lean out.  
 Vehicle passing clearance between Reference Profiles (+ Track Maintenance Tolerance) to be 100mm as a minimum. It is assumed no windows for staff or passengers to lean out.

— IRL2 Reference Profile + Track Maintenance Tolerances

**NOTE:**  
 INFORMATION IS PRESENTED FOR PUBLIC CONSULTATION NO. 1  
 NOT ALL DESIGN DETAIL OR CONSTRUCTION RELATED DETAIL ARE KNOWN AT THIS TIME, E.G. SUBSTATION LOCATIONS, CONSTRUCTION COMPOUNDS, TEMPORARY BRIDGE REQUIREMENTS, TEMPORARY UTILITY DIVERSIONS AND OTHER ELEMENTS  
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 All elevations are in metres and relate to OSi Geoid Model (OSGM02) Main Head as defined by existing Project Control. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSi active GPS station Tallaght College (TLLG).



Rev	Date	Drn	Chk'd	App'd	Description
v01	21/04/2021	JYM	FJC	AG	FOR PUBLIC CONSULTATION No1

Client: **Iarnród Éireann Irish Rail**

Engineering Designer: **ATKINS** (TYPSA Member of the SNC-Lavalin Group)

Supported by: **rps**

Date: [ ] Scale: @ A1 / @ A3

Project Code: [ ] Issuer: ATK

Drawn: JYM Checked: FJC Approved: AG

QMS Code: [ ]

Project Title: **DART + SOUTH WEST**

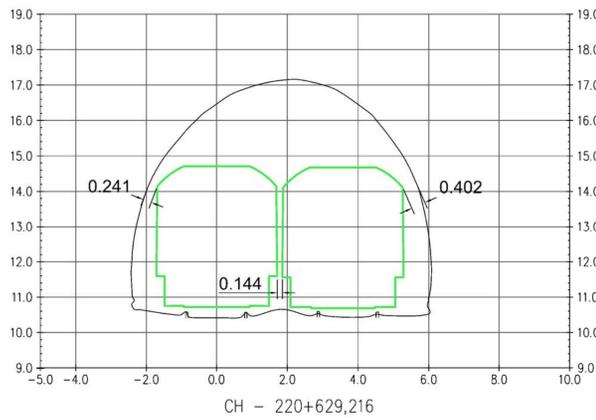
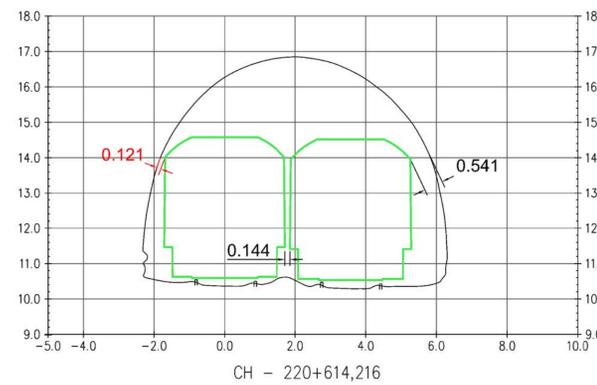
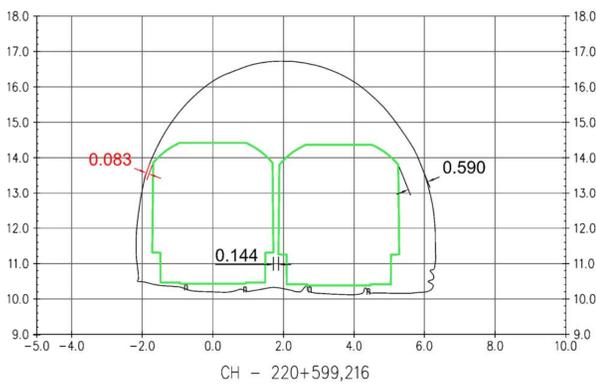
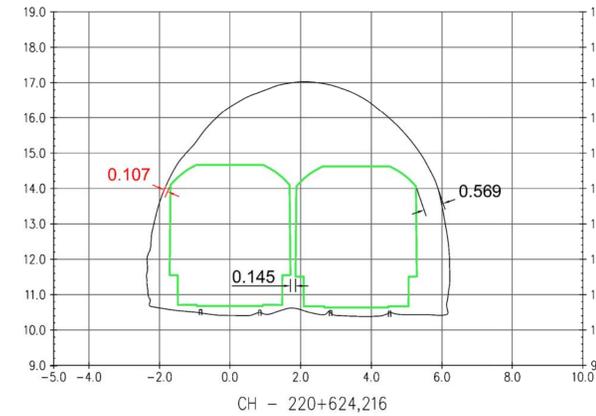
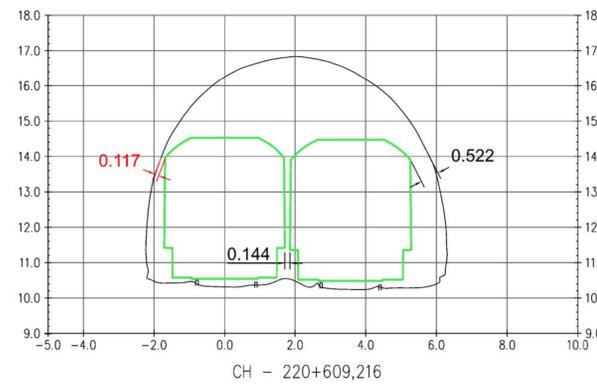
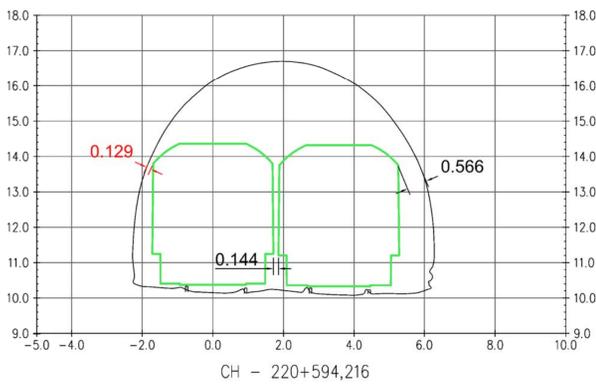
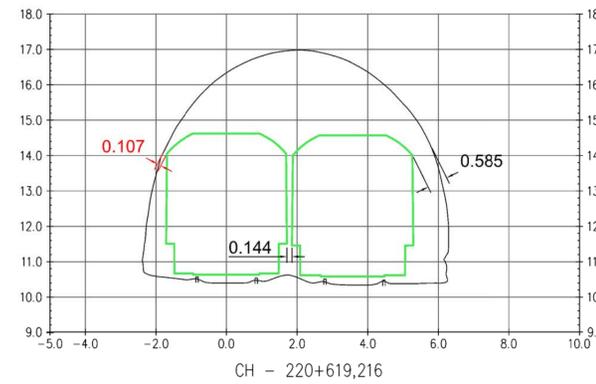
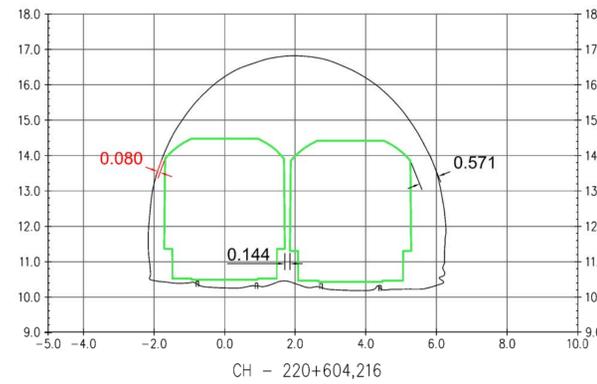
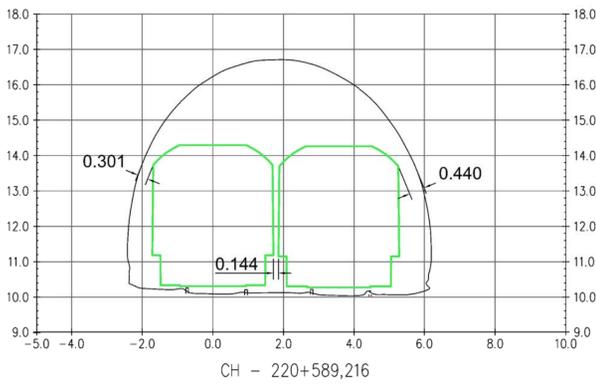
Drawing Title: **PHOENIX PARK TUNNEL CROSS SECTIONS (SHEET 1 of 2) OPTION 1**

Drawing File Name: **DP-04-23-DWG-PW-TTA-35759**

Version: **V01** Status: **S3**

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### SECTION BETWEEN 220+589,216/220+629,216



**NOTE:**  
 In Option 1 an optimised track alignment is proposed to comply with IE standards.  
 Slab track is proposed in Option 1  
 All distances in metres unless otherwise stated  
 IRL2 reference profile (Standard CME-TMS-327 Vehicle Gauging)  
 Coefficients of the slab track tolerances adopted for the kinematic gauge (Standard EN 15273-3. Gauges-Part 3: Structure Gauges):  
 - Track position: 0,005 mm  
 - Gauge widening: 0,008 mm  
 - Crosslevel error: 0,005 mm  
 - Vertical alignment variation: 0,005 mm  
 Clearance between Reference Profile (+ Track Maintenance Tolerance) and railway operational structure to be 150mm as a minimum. It is assumed no windows for staff or passengers to lean out.  
 Vehicle passing clearance between Reference Profiles (+ Track Maintenance Tolerance) to be 100mm as a minimum. It is assumed no windows for staff or passengers to lean out.

— IRL2 Reference Profile + Track Maintenance Tolerances

**NOTE:**  
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Rev	Date	Drn	Chk'd	App'd	Description
v01	21/04/2021	JYM	FJC	AG	FOR PUBLIC CONSULTATION No1

Client: **Iarnród Éireann Irish Rail**

Engineering Designer: **ATKINS** (Member of the SNC-Lavalin Group) supported by **rps**

Date: [ ] Scale: @ A1 / @ A3

Project Code: ATK

Drawn: JYM, Checked: FJC, Approved: AG

QMS Code: [ ]

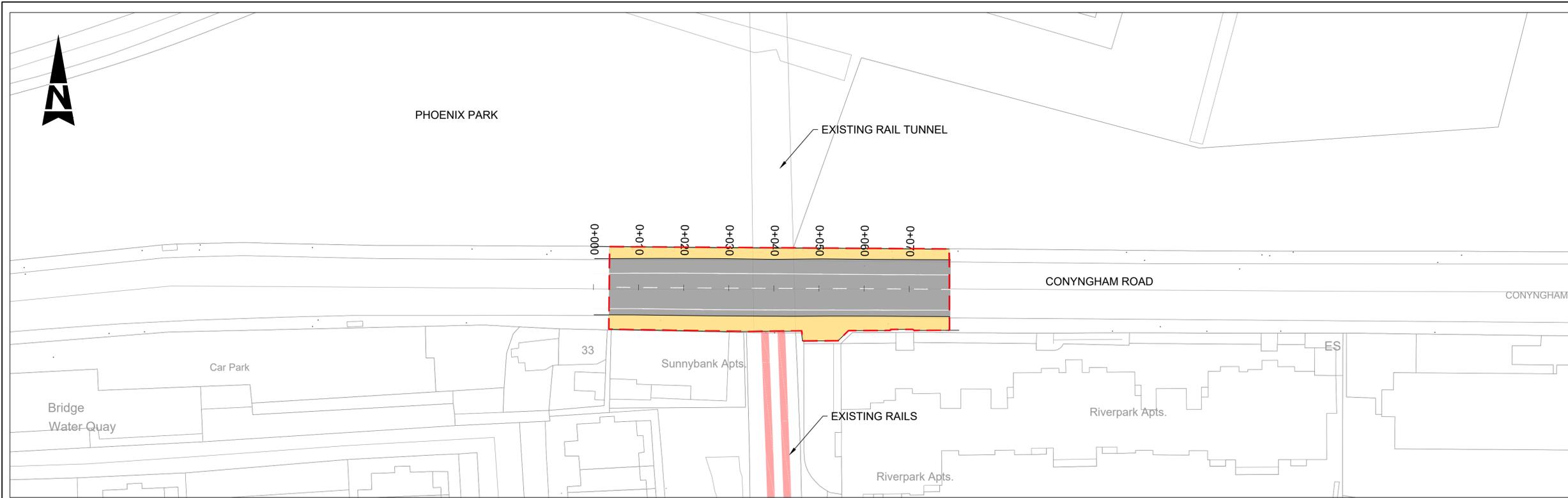
Project Title: **DART + SOUTH WEST**

Drawing Title: **PHOENIX PARK TUNNEL CROSS SECTIONS (SHEET 2 of 2) OPTION 1**

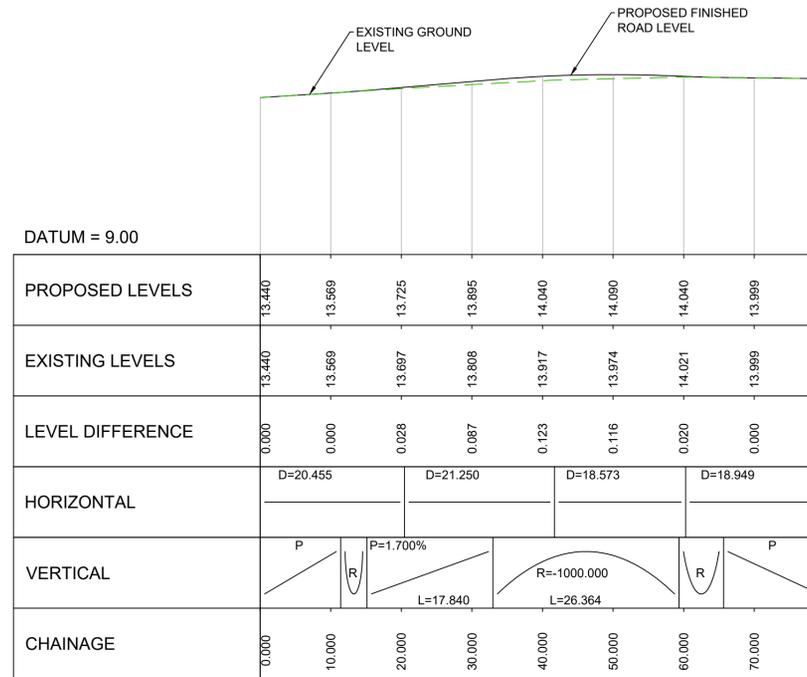
Drawing File Name: DP-04-23-DWG-PW-TTA-35760

Version: V01, Status: S3

DO NOT SCALE USE FIGURED DIMENSIONS ONLY



PLAN - CONYNGHAM ROAD BRIDGE (OBO2)  
SCALE 1:500



LONGITUDINAL SECTION - CONYNGHAM ROAD BRIDGE (OBO2)  
SCALE 1:500 Horizontal, 1:100 Vertical

LEGEND:  
--- PROPOSED BOUNDARY LIMIT - PERMANENT WORKS

NOTE: INFORMATION IS PRESENTED FOR PUBLIC CONSULTATION NO. 1.

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Preferred

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All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSi active GPS station Tallaght College (TLLG).



Rev	Date	Drn	Chkd	App'd	Description
v01	21/04/2021	DB	JX	TM	FOR PUBLIC CONSULTATION No1

Client  
**Iarnród Éireann**  
**Irish Rail**

Engineering Designer  
**ATKINS**  
Supported by **rps**

Project Title	<b>DART+ SOUTH WEST</b>	
Drawing Title	CONYNGHAM ROAD BRIDGE (OBO2) OPTION 2 PLAN AND PROFILE	
Drawing File Name	DP-04-23-DWG-CV-TTA-35270	Version v01 Status S3

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