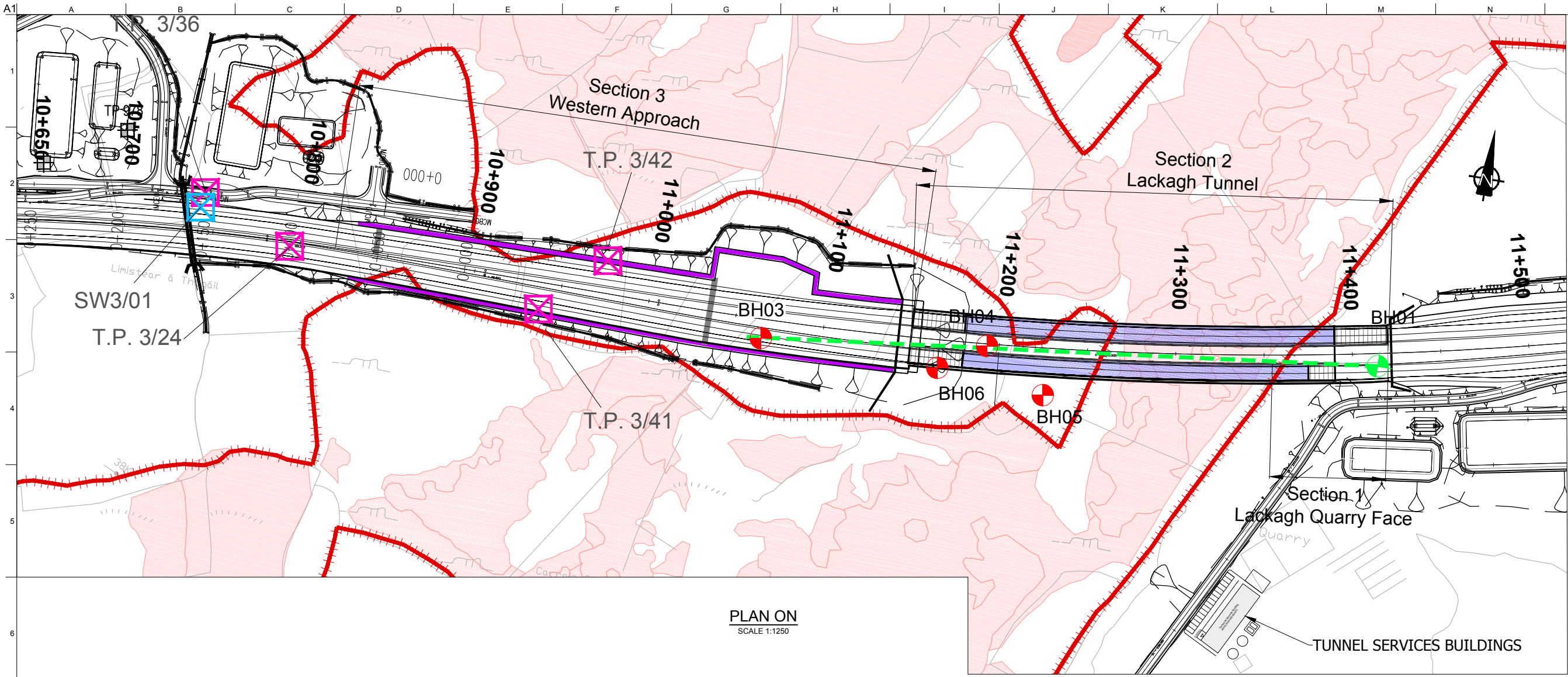


## **Appendix A.1.4**

### **Lackagh Tunnel – Drawings**

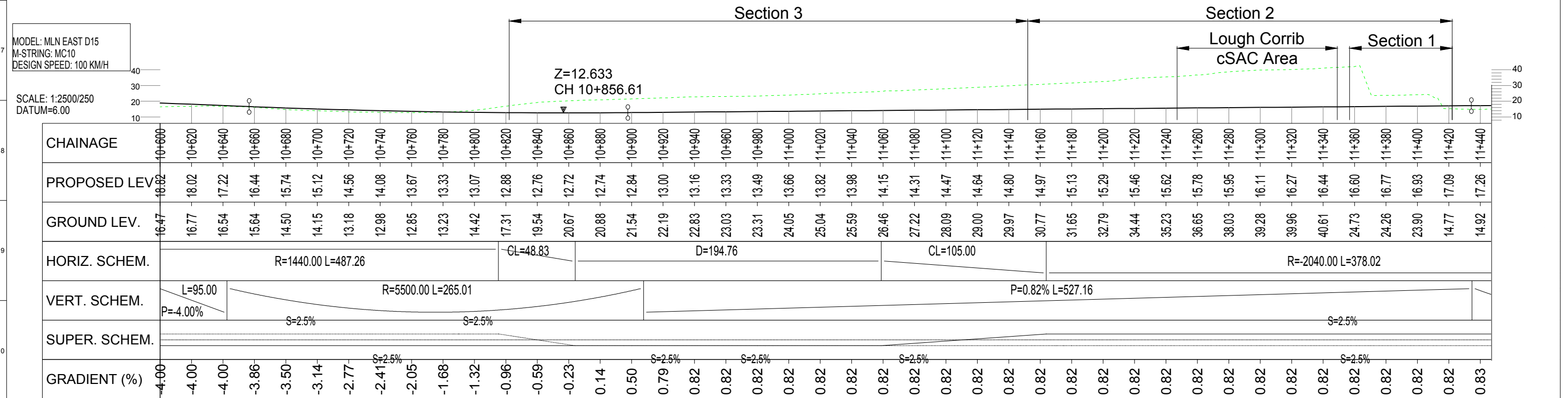
## A.1.4

---



- Legend:**
- Plan**
    - Proposed Geometry Plan
    - Proposed Tunnel Section
    - Proposed Tunnel Entrance Portal Structures
    - PED
    - Lough Corrib cSAC Boundary
    - Annex I Habitat
    - Borehole
    - Horizontal Borehole
    - Trial Pit
    - Soakaway
  - Profile**
    - Existing Ground (Indicative Levels based on 2m grid LiDAR Data DTM.)
    - Proposed Geometry Profile

**PLAN ON**  
SCALE 1:1250



Sin díreabh tá sonraíocht Shuirbhíreacht Orlánáis Éireann arna aistriú go dtí físeán Ceidúnas OSI Uimh. 2010/17CCMA/Comhairle Contae na Gaillimhe. Sírúinn aistriú go dtí físeán Ceidúnas OSI Uimh. 2010/17CCMA/Comhairle Contae na Gaillimhe. © Suirbhíreacht Orlánáis Éireann, 2010.

© Suirbhíreacht Orlánáis Éireann. Gach ceart ar chosaint. Uimhir cheidúnais 2010/17CCMA/Comhairle Contae na Gaillimhe.

Includes Ordnance Survey Ireland data reproduced under OSI Licence number 2010/17CCMA/Galway County Council. Unauthorised reproduction infringes Ordnance Survey Ireland and Government of Ireland copyright. © Ordnance Survey Ireland, 2010.

© Ordnance Survey Ireland. All rights reserved. Licence number 2010/17CCMA/Galway County Council.

**Clients**

Comhairle Chontae na Gaillimhe  
Galway County Council

**Galway City Transport Project**

**An Roinn Iompair**  
Turasóireachta agus Spóirt

**TII**  
Bonnagar Iompair Éireann

**Consultant**

**ARUP**

Corporate House  
City East Business Park  
Ballybrit, Galway, Ireland.

Tel +353 (0)91 460675  
www.N6GalwayCity.ie  
www.arup.ie

**Job Title**

N6 Galway City Ring Road

**Scale**

1:2500 @ A3

**Date:**

February 2017

Issue	Date	By	Chkd	Appd
I2	14/09/2017	DC	PS	JC
I1	27/02/2017	DC	PS	JC

**Drawing Title**

Lackagh Tunnel and Western Approach  
General Plan & Profile

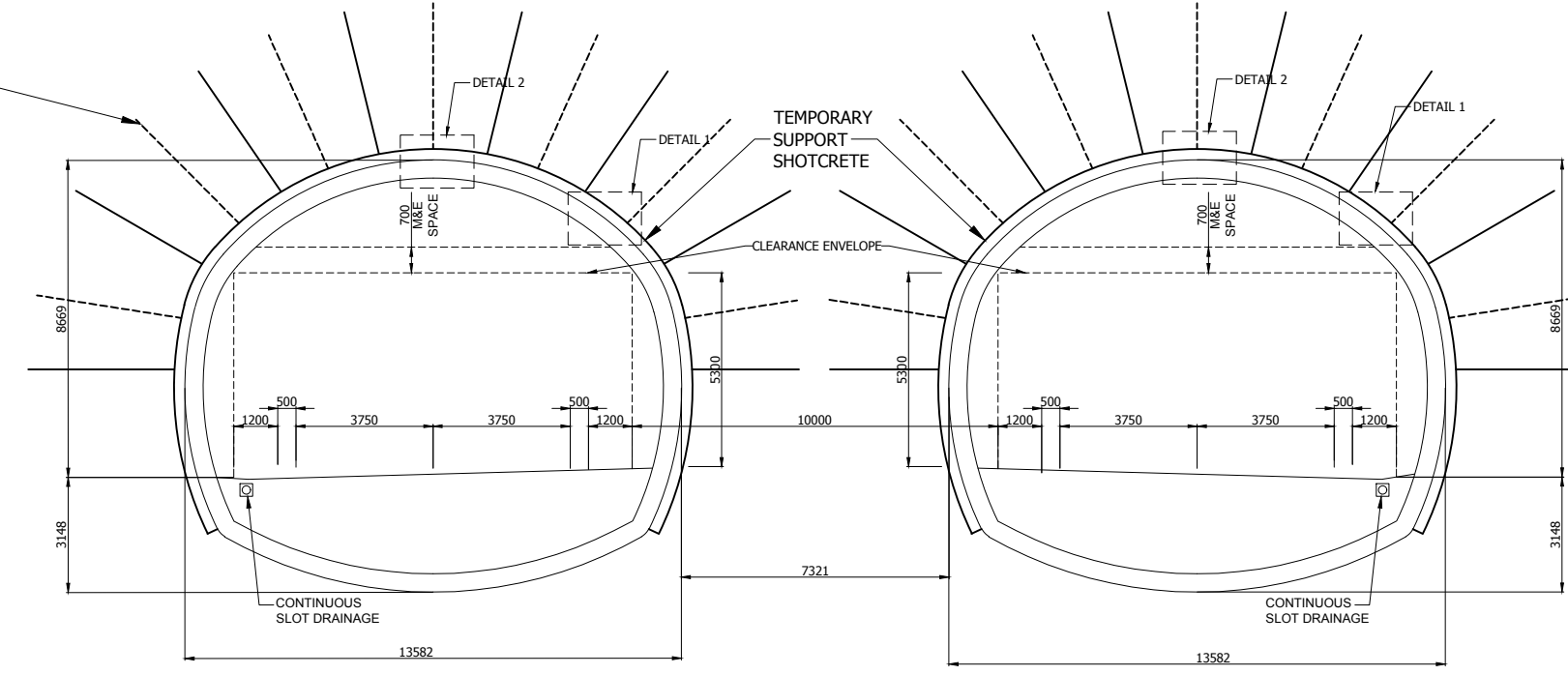
**Drawing Status**

**For Information**

Job No: 233985  
Drawing No: GCOB-1700-D-S11-01-001  
Issue: 12

NOTES:  
 1. ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE STATED.  
 2. DRAWING TO BE READ IN CONJUNCTION WITH ALIGNMENT DRAWINGS AND TUNNEL PLAN AND PROFILE DRAWINGS.

SYSTEMATIC DOWELS (SUCCESSIVE DOWELS TO BE INSTALLED IN STAGGERED ARRAYS)

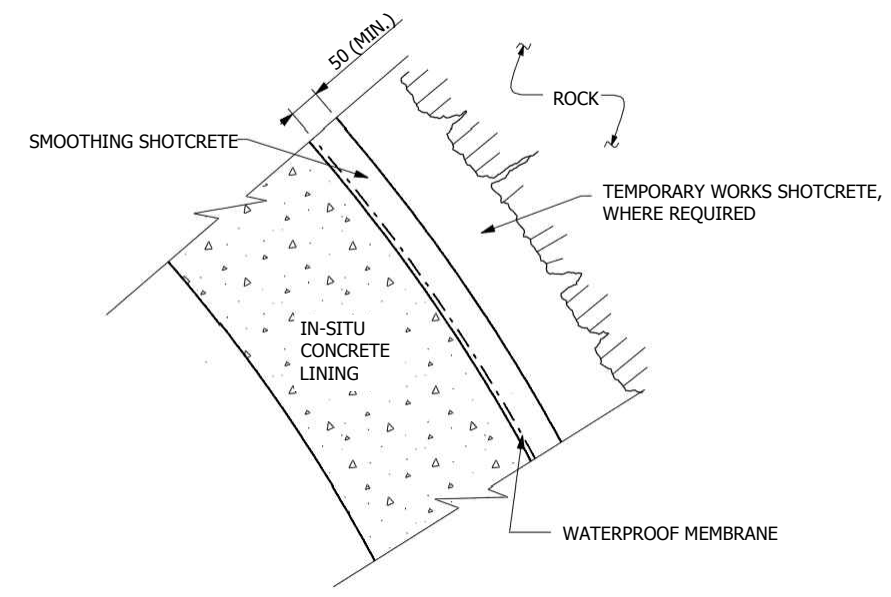


SEE DRG. GCOB-D-S11001-013 FOR TYPICAL DETAILS OF TEMPORARY SUPPORT MEASURES

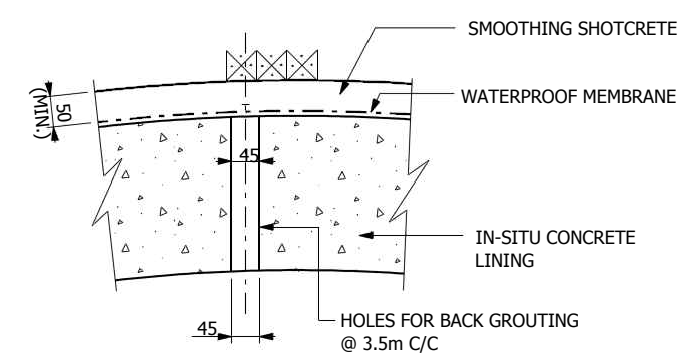
EASTBOUND BORE

WESTBOUND BORE

TYPICAL CROSS SECTION FOR LACKAGH TUNNEL



DETAIL 2



DETAIL 1

Clients

Consultant

Corporate House  
 City East Business Park  
 Ballybrit, Galway, Ireland.

Tel +353 (0)91 460675  
 www.N6GalwayCity.ie  
 www.arup.ie

Job Title  
**N6 Galway City Ring Road**

Scale  
 N.T.S.

Date  
 July 2016

Issue	Date	By	Chkd	Appd
I3	14/09/2017	KJ	PS	JC
I2	08/06/2017	KJ	PS	JC
I1	27/02/2017	DC	PS	JC

Drawing Title  
**Lackagh Tunnel and Western Approach Mined Tunnel General Arrangement**

Drawing Status  
**For Information**

Job No  
**233985**

Drawing No  
**GCOB-D-S11-01-011**

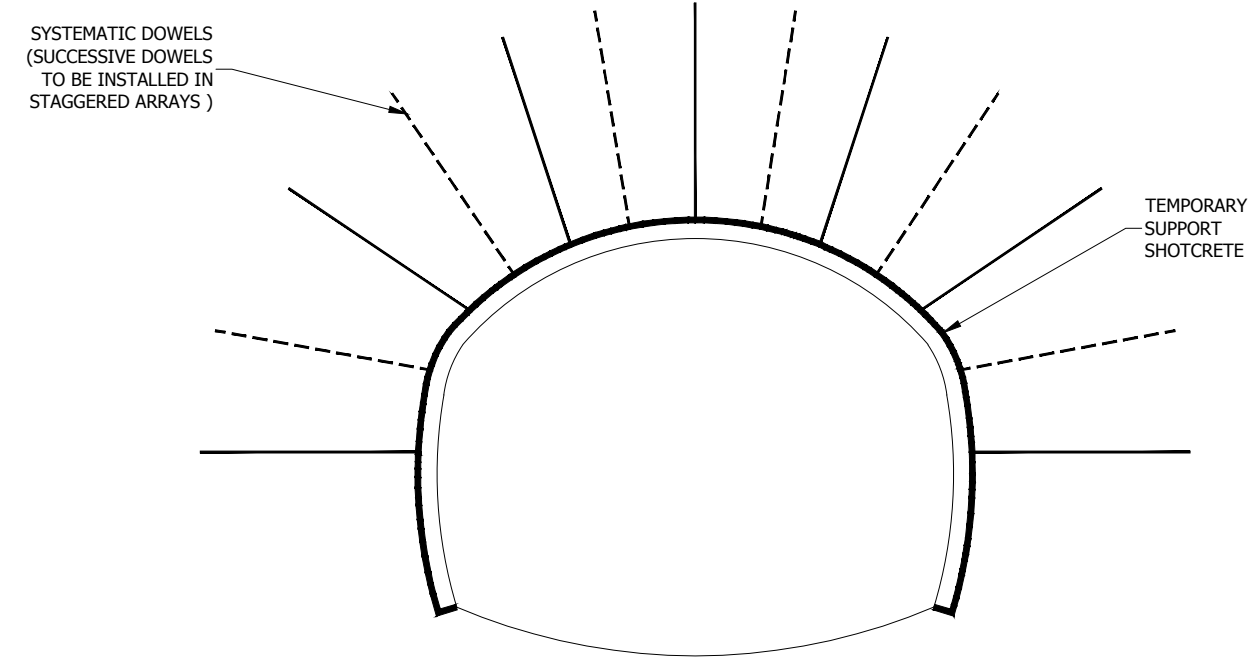
Issue  
**13**

**NOTES:**

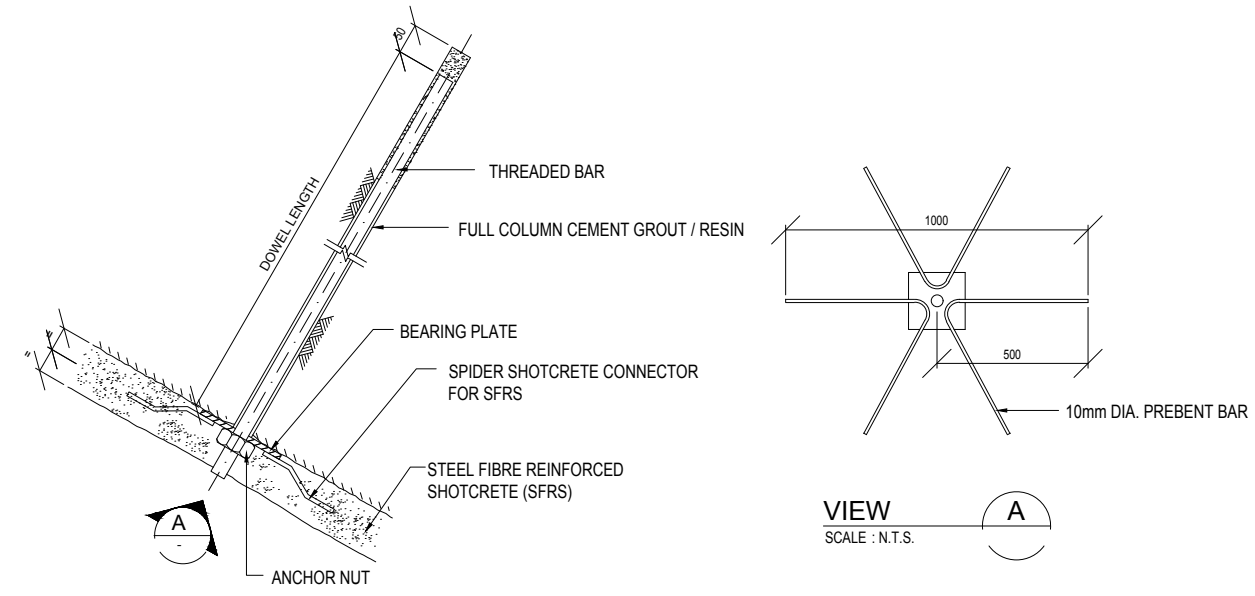
1. ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE STATED.
2. ON COMPLETION OF EACH ROUND OF EXCAVATION THE EXPOSED ROCK SHALL BE INSPECTED AND MAPPED BY A SUITABLY QUALIFIED GEOLOGIST IN ACCORDANCE WITH THE ROCK MASS CLASSIFICATION Q SYSTEM AND THE SUPPORT DETERMINED ACCORDING TO TABLE A OF THIS DRAWING.
3. ALL SYSTEMATIC DOWELS SHALL BE INSTALLED PERPENDICULAR TO THE EXCAVATED PROFILE.
4. WHERE A LARGE ROCK WEDGE FEATURE OCCURS THE GEOLOGIST WILL ADVISE ON SPECIFIC BOLTING REQUIREMENTS.
5. FOR DETAILS ON THE Q-SYSTEM REFER TO:

[1] BARTON, N., LIEN, R. & LUNDE, J. (1974). ENGINEERING CLASSIFICATION OF ROCK MASSES FOR THE DESIGN OF TUNNEL SUPPORT. ROCK MECHANICS AND ROCKENGINEERING VOL. 6 NO. 4.

[2] GRIMSTAD E AND BARTON N.R. (1993). UPDATING OF THE Q-SYSTEM FOR NMT. IN INTERNATIONAL SYMPOSIUM ON SPRAYED CONCRETE, FARERNES, NORWAY. NORWEGIAN CONCRETE ASSOCIATION, PP. 46-66.



TYPICAL TEMPORARY SUPPORT CROSS SECTION - LACKAGH TUNNEL



TYPICAL DETAIL OF TEMPORARY CHEMICAL/CEMENT GROUTED ROCK DOWEL  
N.T.S.

TABLE A (REFER TO NOTE 5)

SUPPORT CATEGORY	Q (AS MAPPED)	MIN. SUPPORT REQUIREMENT BASED ON Q-VALUE	
		ARCH	
1&2	$Q \geq 3.9$	FEATURE DOWELS: SYSTEMATIC DOWELS: SHOTCRETE:	AS NECESSARY NONE 50mm THICK ON LOCAL FRACTURE ZONES
3	$1.9 \leq Q < 3.9$	FEATURE DOWELS: SYSTEMATIC DOWELS: SHOTCRETE:	AS NECESSARY 4.3m LONG ON A 2.3m GRID 50mm THICK
4	$0.6 \leq Q < 1.9$	FEATURE DOWELS: SYSTEMATIC DOWELS: SHOTCRETE:	AS NECESSARY 4.3m LONG ON A 2m GRID 70mm THICK
5	$0.2 \leq Q < 0.6$	FEATURE DOWELS: SYSTEMATIC DOWELS: SHOTCRETE:	AS NECESSARY 4.3m LONG ON A 1.7m GRID 100mm THICK
6-9	$< 0.2$	PRE-SUPPORT AND PASSIVE LINING SYSTEM ON CONSULTATION WITH THE DESIGNER	

Clients

Consultant

Corporate House  
City East Business Park  
Ballybrin, Galway, Ireland.

Tel +353 (0)91 460675  
www.N6GalwayCity.ie  
www.arup.ie

Job Title  
N6 Galway City Ring Road

Scale N.T.S.

Date: July 2016

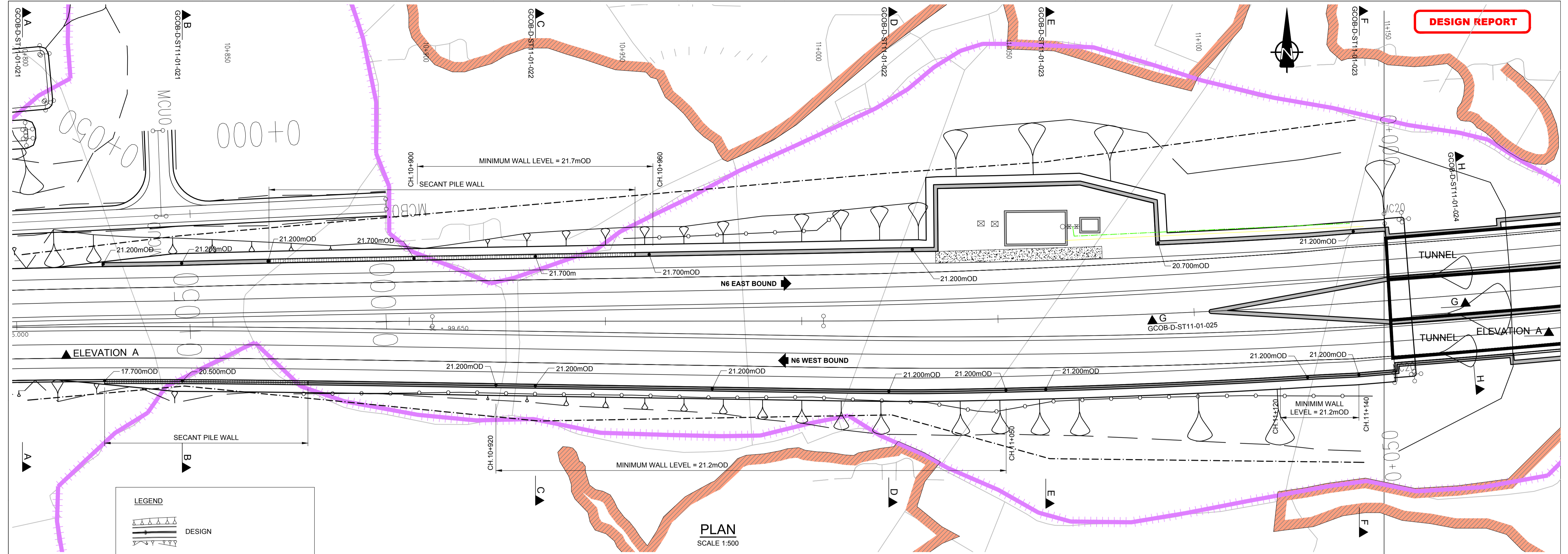
Issue	Date	By	Chkd	Appd
I2	14/09/2017	KJ	PS	JC
I1	27/02/2017	KJ	PS	JC

Drawing Title  
Lackagh Tunnel & Western Approach Tunnel Temporary Support Details

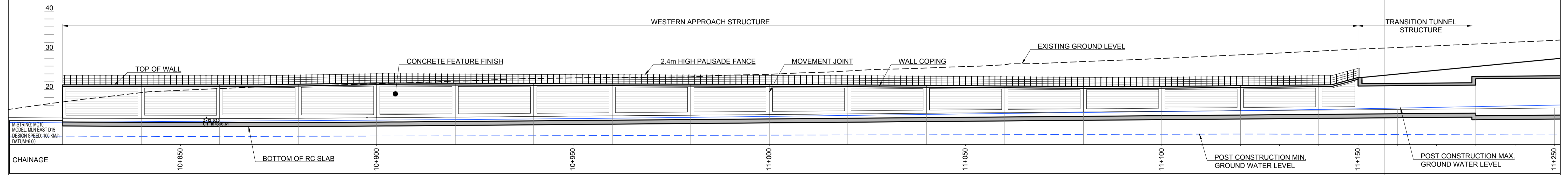
Drawing Status

**For Information**

Job No	Drawing No	Issue
233985	GCOB-D-S11-01-013	12



**PLAN**  
SCALE 1:500



**WESTERN APPROACH & TUNNEL ELEVATION A-A**  
SCALE 1:500

San áireamh tá sonraíocht Shairbhéireacht Ordnáinis Éireann arna áitirgeadh faoi Cheadúnas OSI Uimh. 2010/17CCMA/Comhairle Contae na Gaillimhe. Sárúinn áitirgeadh neamhdáraithe cóipeacht Shairbhéireacht Ordnáinis Éireann agus Rialtas na hÉireann. © Sairbhéireacht Ordnáinis Éireann, 2010.

© Sairbhéireacht Ordnáinis Éireann. Gach ceart ar chosaint.  
Uimhir cheadúnais 2010/17CCMA/Comhairle Contae na Gaillimhe.

Includes Ordnance Survey Ireland data reproduced under OSI Licence number 2010/17CCMA/Galway County Council.  
Unauthorised reproduction infringes Ordnance Survey Ireland and Government of Ireland copyright. © Ordnance Survey Ireland, 2010.

© Ordnance Survey Ireland. All rights reserved. Licence number 2010/17CCMA/Galway County Council.

Clients

Consultant

Corporate House  
City East Business Park  
Ballybrit, Galway, Ireland.

Tel +353 (0)91 460675  
www.N6GalwayCity.ie  
www.arup.ie

Job Title  
**N6 Galway City Ring Road**

Scale  
1:500 @ A1 / 1:1000 @ A3

Date  
February 2017

Issue	Date	By	Chkd	Appd
I2	14/09/2017	DC	PM	PM
I1	27/02/2017	DC	PM	PM

Drawing Title  
**Lackagh Tunnel & Western Approach  
Western Approach Plan & Elevation**

Drawing Status  
**For Information**

Job No  
**233985-00**

Drawing No  
**GCOB-1700-D-S11-01-020**

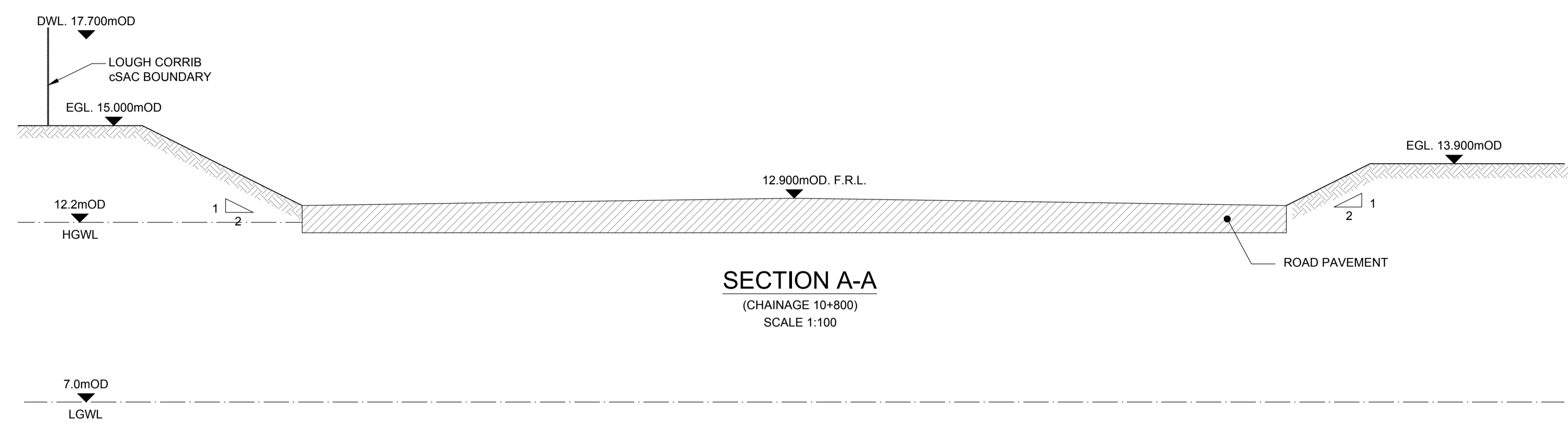
Issue  
**12**

**Legend:**

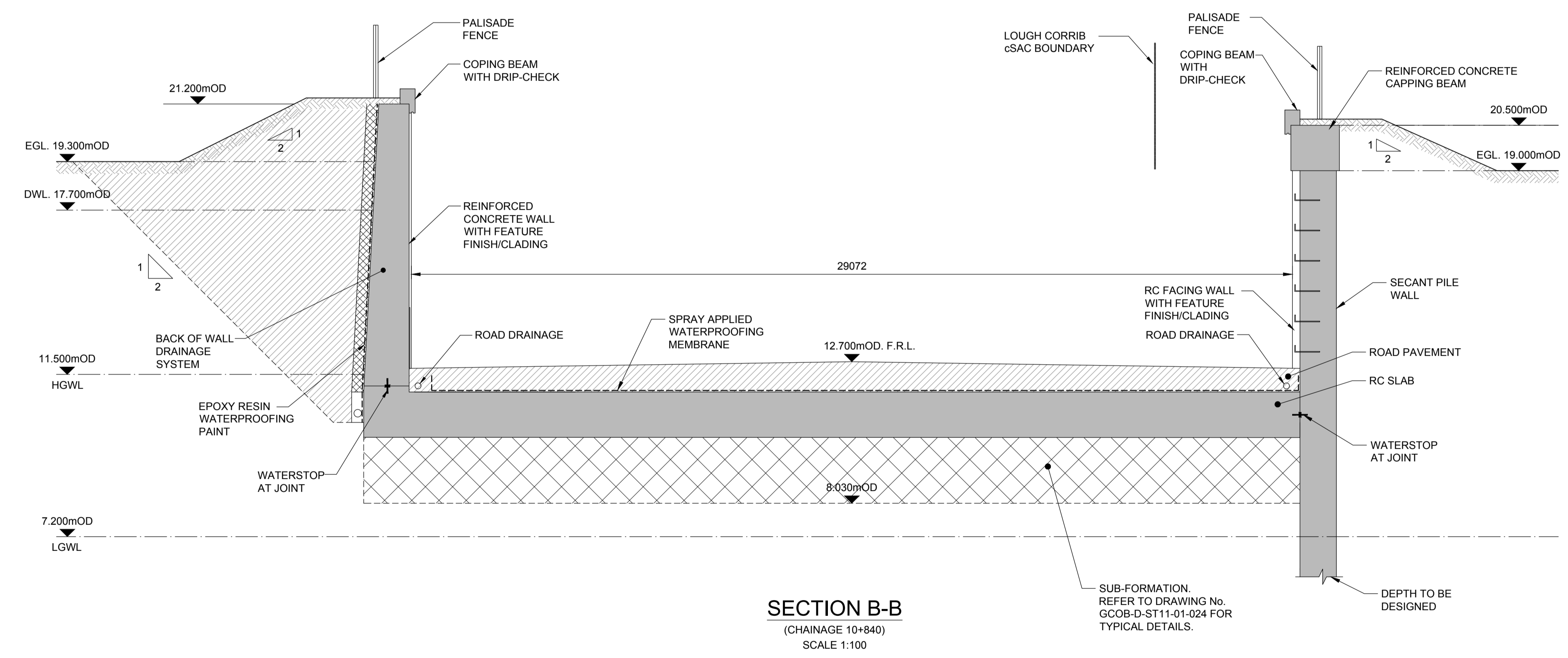
EGL = Existing Ground Level  
 DWL = Design Water Level  
 HGWL = High Ground Water Level  
 LGWL = Low Ground Water Level

**NOTE:**

- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
- ALL LEVELS ARE SHOWN IN METERS ABOVE ORDNANCE DATUM.
- FOR TYPICAL DETAILS SEE DRAWING GCOB-1700-D-S11-01-026.



**SECTION A-A**  
 (CHAINAGE 10+800)  
 SCALE 1:100



**SECTION B-B**  
 (CHAINAGE 10+840)  
 SCALE 1:100

Clients

Consultant

Corporate House  
 City East Business Park  
 Ballybri, Galway, Ireland.

Tel +353 (0)91 460675  
 www.N6GalwayCity.ie  
 www.arup.ie

Job Title  
**N6 Galway City Ring Road**

Scale  
 1:100 @ A1 / 1:200 @ A3

Date  
 February 2017

Issue	Date	By	Chkd	Appd
I2	14/09/2017	DC	PM	PM
I1	27/02/2017	DC	PM	PM

Drawing Title  
**Lackagh Tunnel & Western Approach  
 Western Approach**

Sections - Sheet 1 of 4

Drawing Status  
**For Information**

Job No  
**233985-00**

Drawing No  
**GCOB-1700-D-S11-01-021**

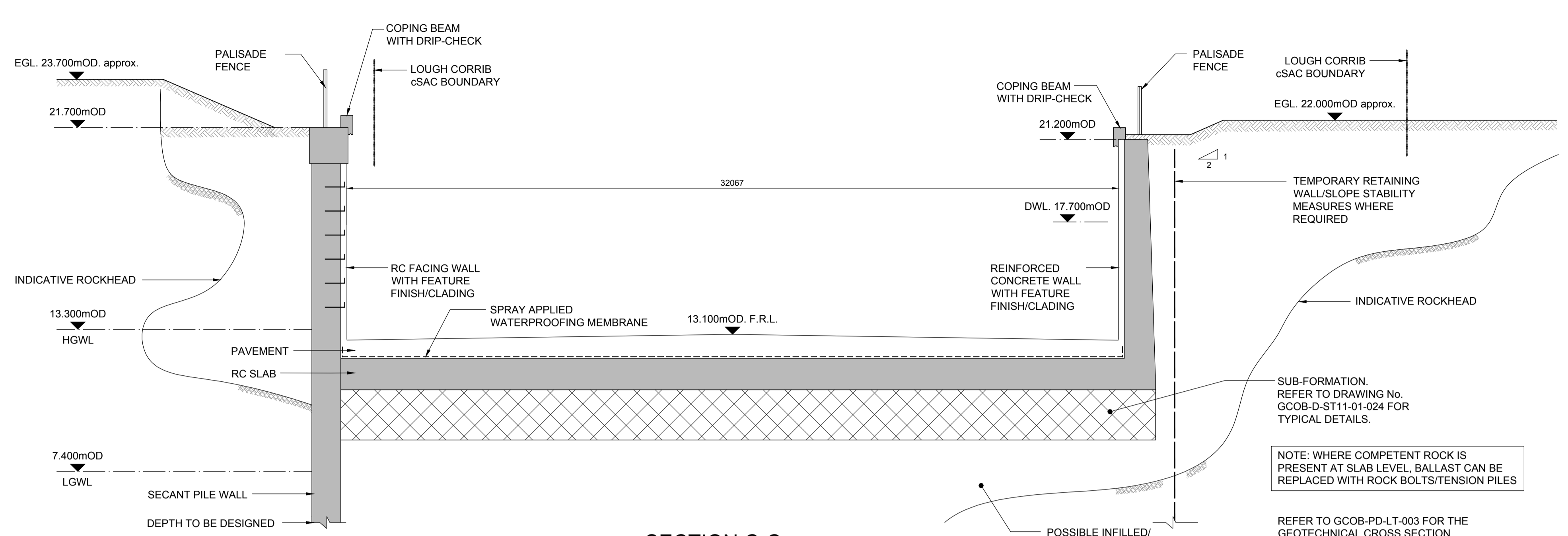
Issue  
**I2**

**Legend:**

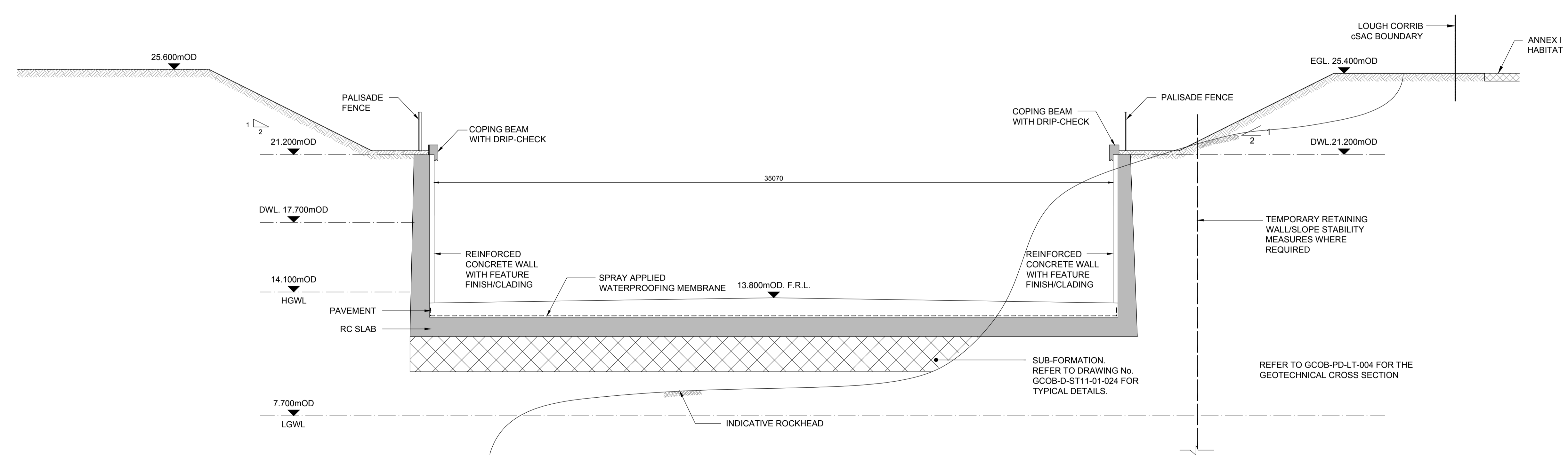
EGL = Existing Ground Level  
 DWL = Design Water Level  
 HGWL = High Ground Water Level  
 LGWL = Low Ground Water Level

**NOTE:**

- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
- ALL LEVELS ARE SHOWN IN METERS ABOVE ORDNANCE DATUM.
- FOR TYPICAL DETAILS SEE DRAWING GCOB-1700-D-S11-01-026.



**SECTION C-C**  
 (CHAINAGE 10+930)  
 SCALE 1:125



**SECTION D-D**  
 (CHAINAGE 11+020)  
 SCALE 1:125



Job Title  
**N6 Galway City Ring Road**

Scale  
 1:125 @ A1 / 1:250 @ A3

Date  
 February 2017

Issue	Date	By	Chkd	Appd
I3	17/10/2017	DC	PM	PM
I2	14/09/2017	DC	PM	PM
I1	27/02/2017	DC	PM	PM

Drawing Title  
**Lackagh Tunnel & Western Approach**  
 Western Approach  
 Sections - Sheet 2 of 4

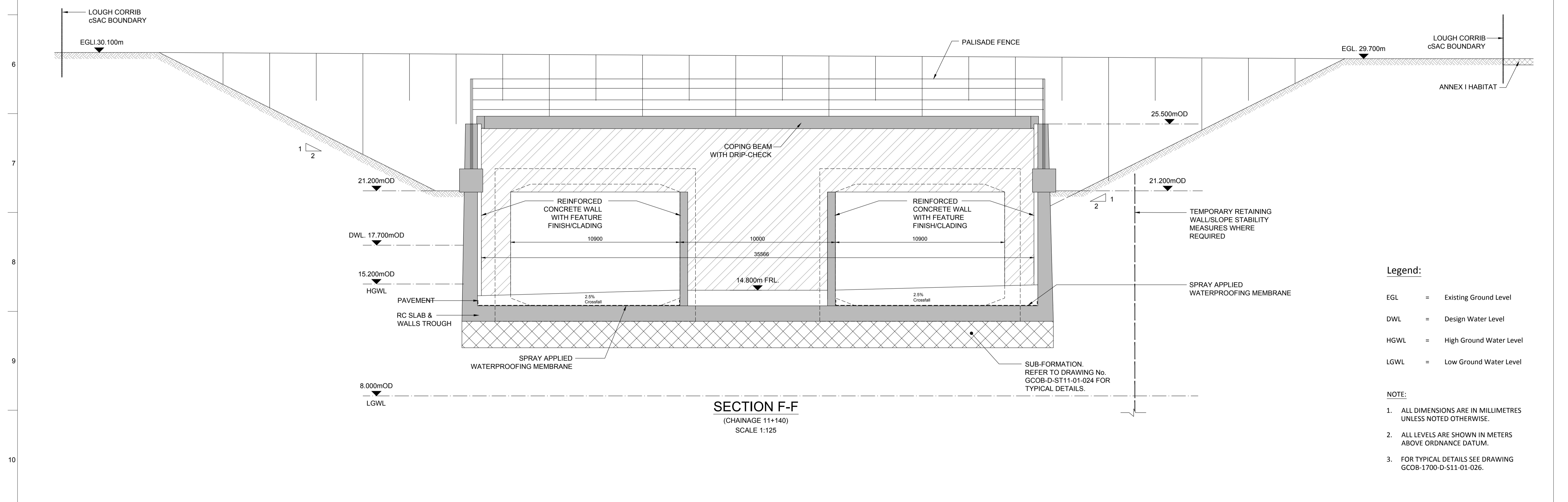
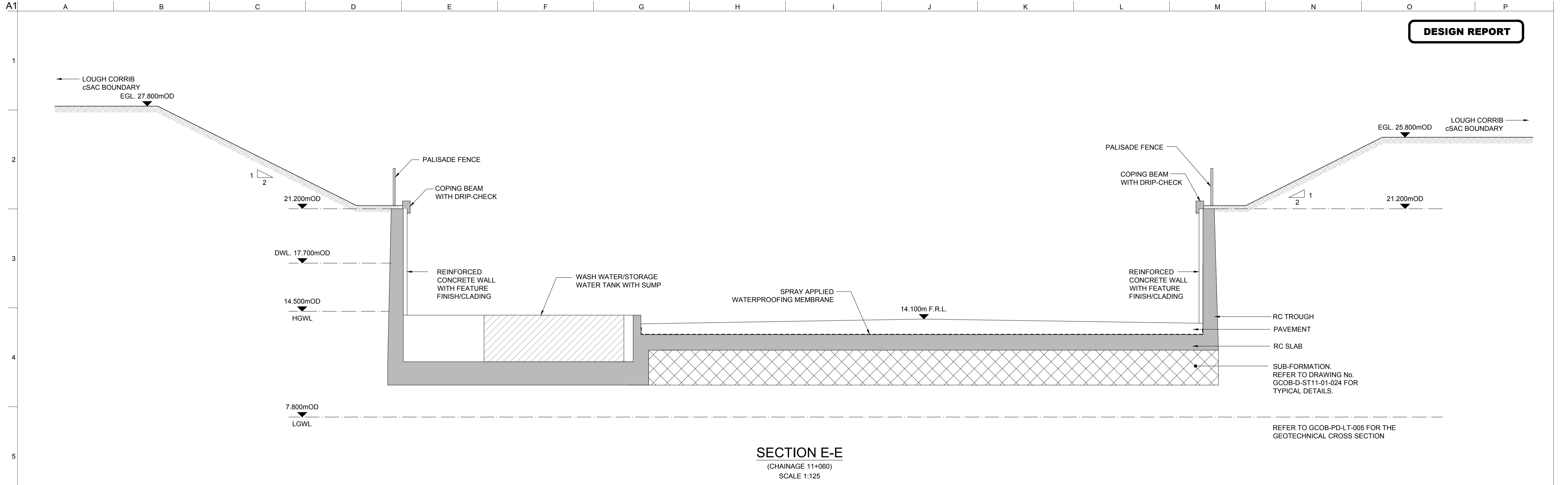
Drawing Status  
**For Information**

Job No  
**233985-00**

Drawing No  
**GCOB-1700-D-S11-01-022**

Issue  
**I3**





**Legend:**

EGL = Existing Ground Level  
 DWL = Design Water Level  
 HGWL = High Ground Water Level  
 LGWL = Low Ground Water Level

**NOTE:**

- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
- ALL LEVELS ARE SHOWN IN METERS ABOVE ORDNANCE DATUM.
- FOR TYPICAL DETAILS SEE DRAWING GCOB-1700-D-S11-01-026.

Do not scale

Clients

Comhairle Chontae na Gaillimhe  
Galway County Council

Galway City Transport Project

An Roinn Iompair  
Turasoireachta agus Spóirt

Departaíocht Transport, Toilíní agus Spóirt

Consultant

**ARUP**

Corporate House  
City East Business Park  
Ballybri, Galway, Ireland.

Tel +353 (0)91 460675  
www.N6GalwayCity.ie  
www.arup.ie

Job Title  
N6 Galway City Ring Road

Scale  
1:125 @ A1 / 1:250 @ A3

Date  
February 2017

Issue	Date	By	Chkd	Appd
I3	17/10/2017	DC	PM	PM
I2	14/09/2017	DC	PM	PM
I1	27/02/2017	DC	PM	PM

Drawing Title  
Lackagh Tunnel & Western Approach  
Western Approach  
Sections - Sheet 3 of 4

Drawing Status  
**For Information**

Job No  
233985-00

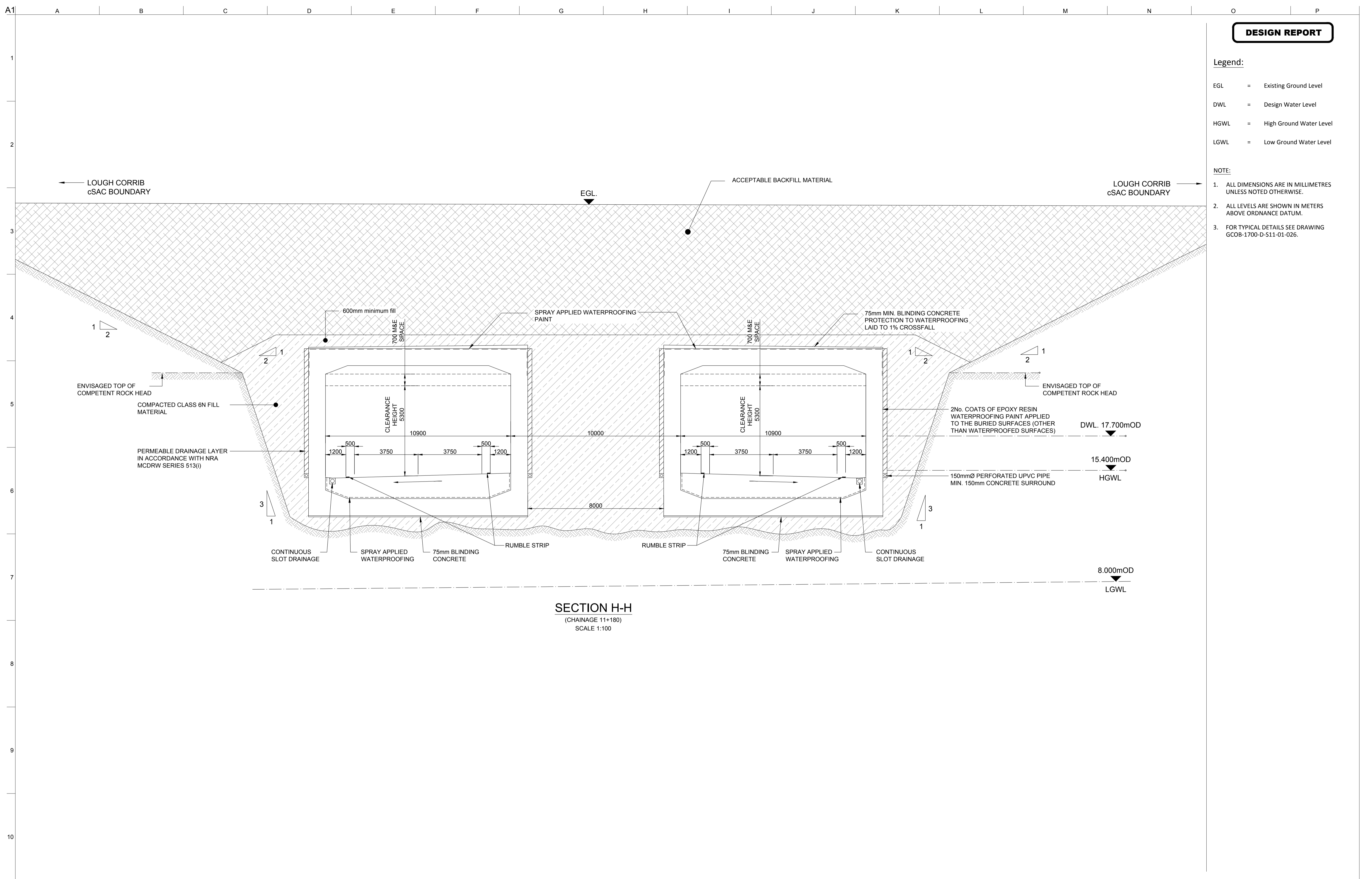
Drawing No  
GCOB-1700-D-S11-01-023

Issue  
I3

**DESIGN REPORT**

- Legend:**
- EGL = Existing Ground Level
  - DWL = Design Water Level
  - HGWL = High Ground Water Level
  - LGWL = Low Ground Water Level

- NOTE:**
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
  2. ALL LEVELS ARE SHOWN IN METERS ABOVE ORDINANCE DATUM.
  3. FOR TYPICAL DETAILS SEE DRAWING GCOB-1700-D-S11-01-026.



**SECTION H-H**  
(CHAINAGE 11+180)  
SCALE 1:100

Clients

Consultant

Corporate House  
City East Business Park  
Ballybnt, Galway, Ireland.

Tel +353 (0)91 460675  
www.N6GalwayCity.ie  
www.arup.ie

Job Title  
**N6 Galway City Ring Road**

Scale  
1:100 @ A1 / 1:200 @ A3

Date  
January 2017

Issue	Date	By	Chkd	Appd
I2	14/09/2017	DC	PM	PM
I1	27/02/2017	DC	PM	PM

Drawing Title  
**Lackagh Tunnel & Western Approach Western Approach**  
Sections - Sheet 4 of 4

Drawing Status  
**For Information**

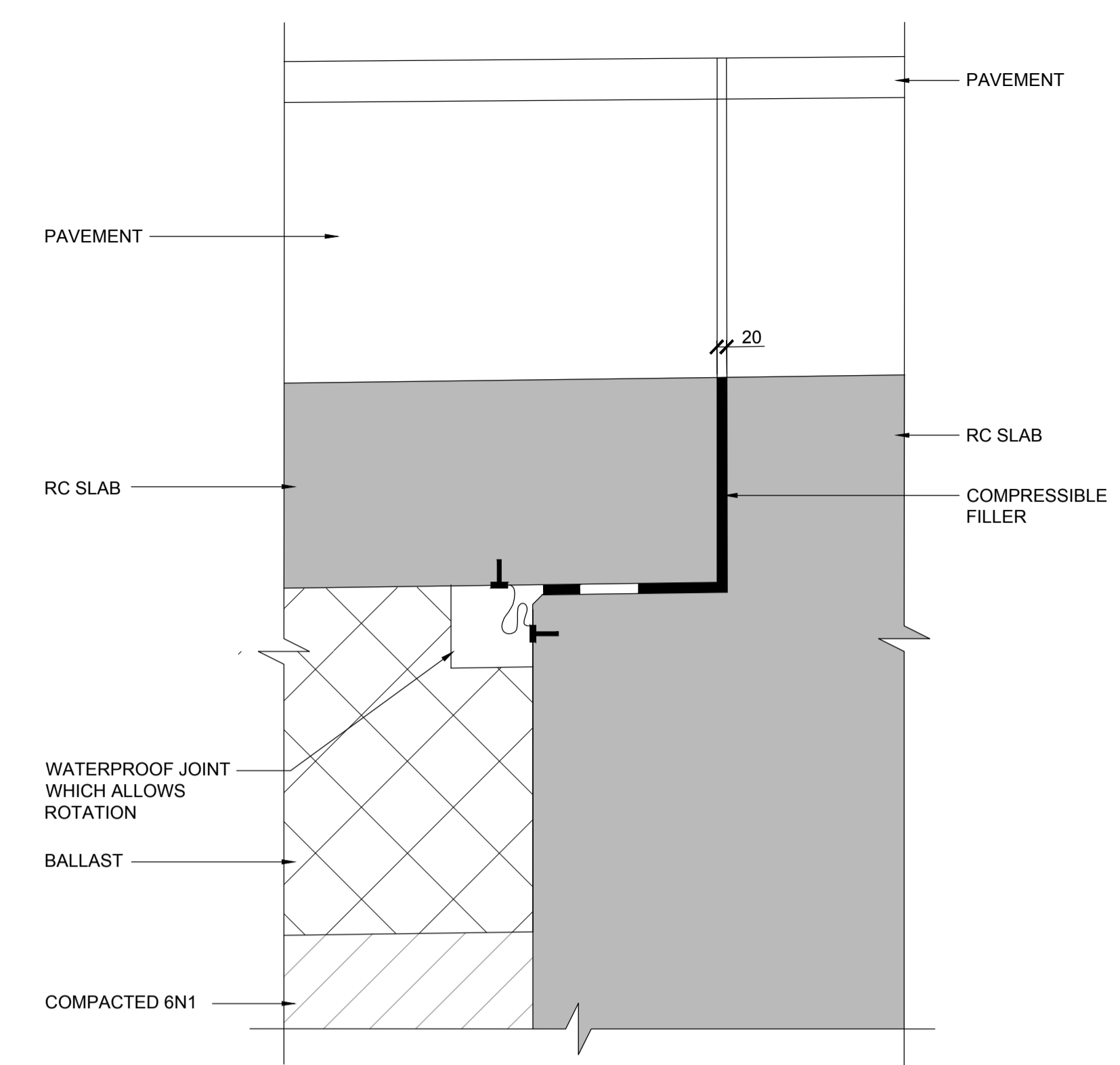
Job No  
**233985-00**

Drawing No  
**GCOB-1700-D-S11-01-024**

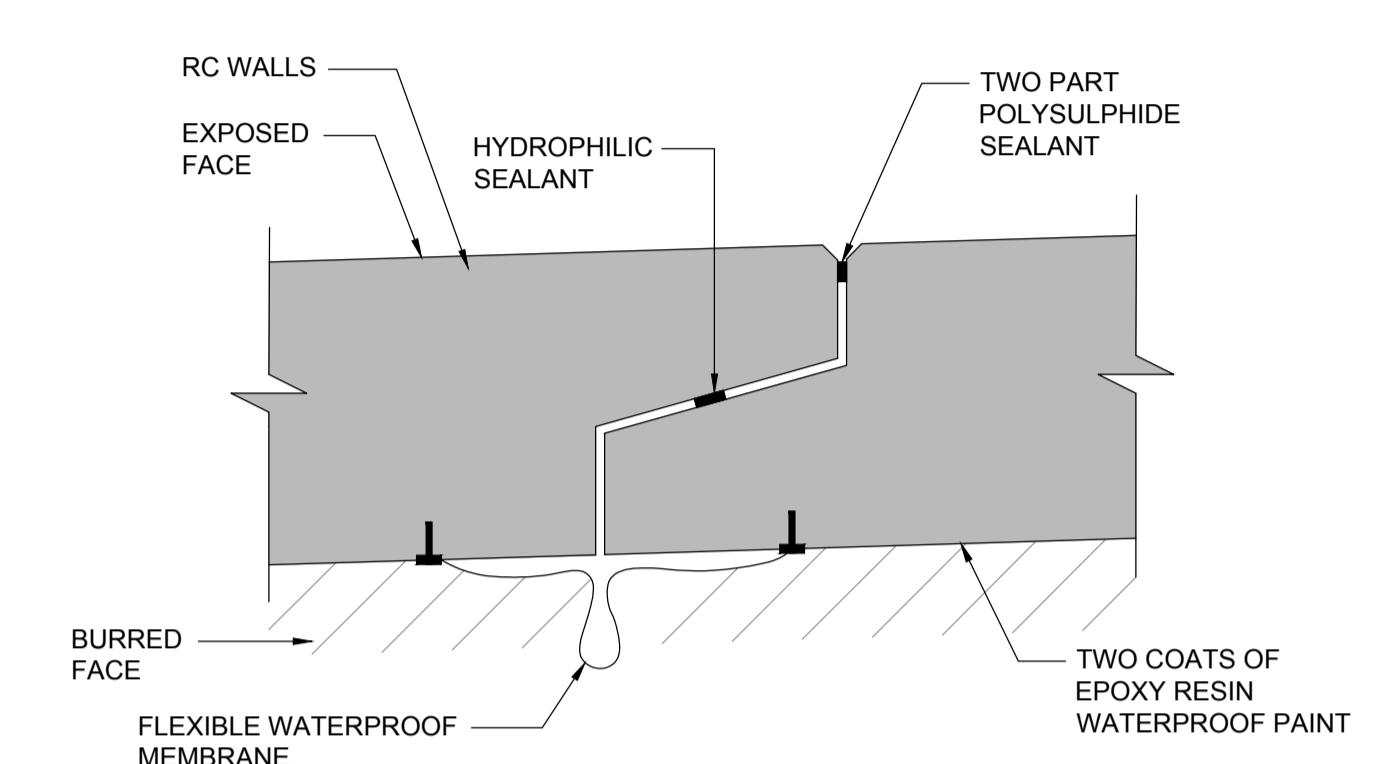
Issue  
**I2**

**DESIGN REPORT**

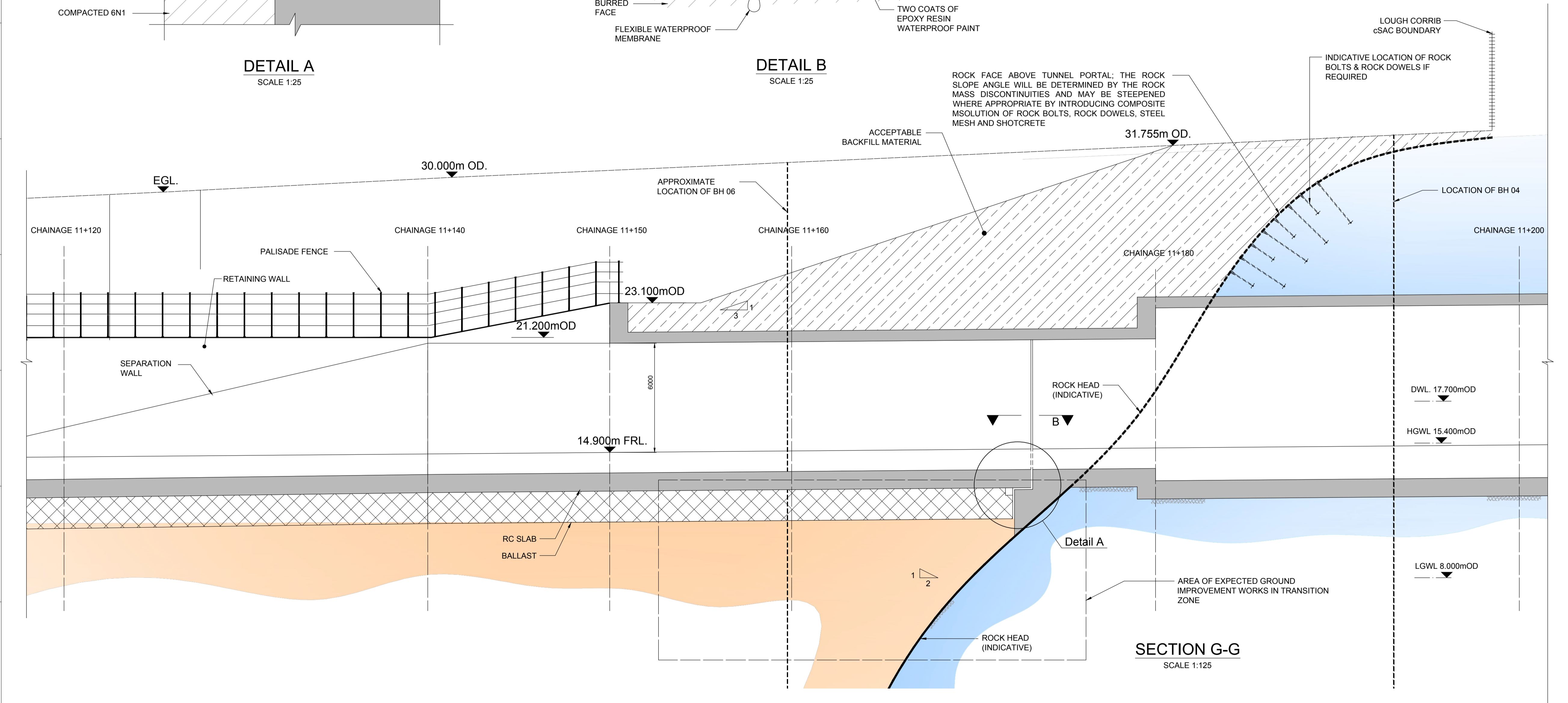
- Legend:**
- DWL = Design Water Level
  - HGWL = High Ground Water Level
  - LGWL = Low Ground Water Level
  - Existing Ground Level
  - Top of RC Wall
  - Indicative Rock Head Level
  - █ Limestone Bedrock
  - █ Overburden
  - █ Acceptable Backfill Material



**DETAIL A**  
SCALE 1:25



**DETAIL B**  
SCALE 1:25



**SECTION G-G**  
SCALE 1:125

Clients

Consultant

Corporate House  
City East Business Park  
Ballybri, Galway, Ireland.

Tel +353 (0)91 460675  
www.N6GalwayCity.ie  
www.arup.ie

Job Title  
**N6 Galway City Ring Road**

Scale  
1:125 @ A1 / 1:250 @ A3

Date  
February 2017

Issue	Date	By	Chkd	Appd
I3	17/10/2017	DC	PM	PM
I2	14/09/2017	DC	PM	PM
I1	27/02/2017	DC	PM	PM

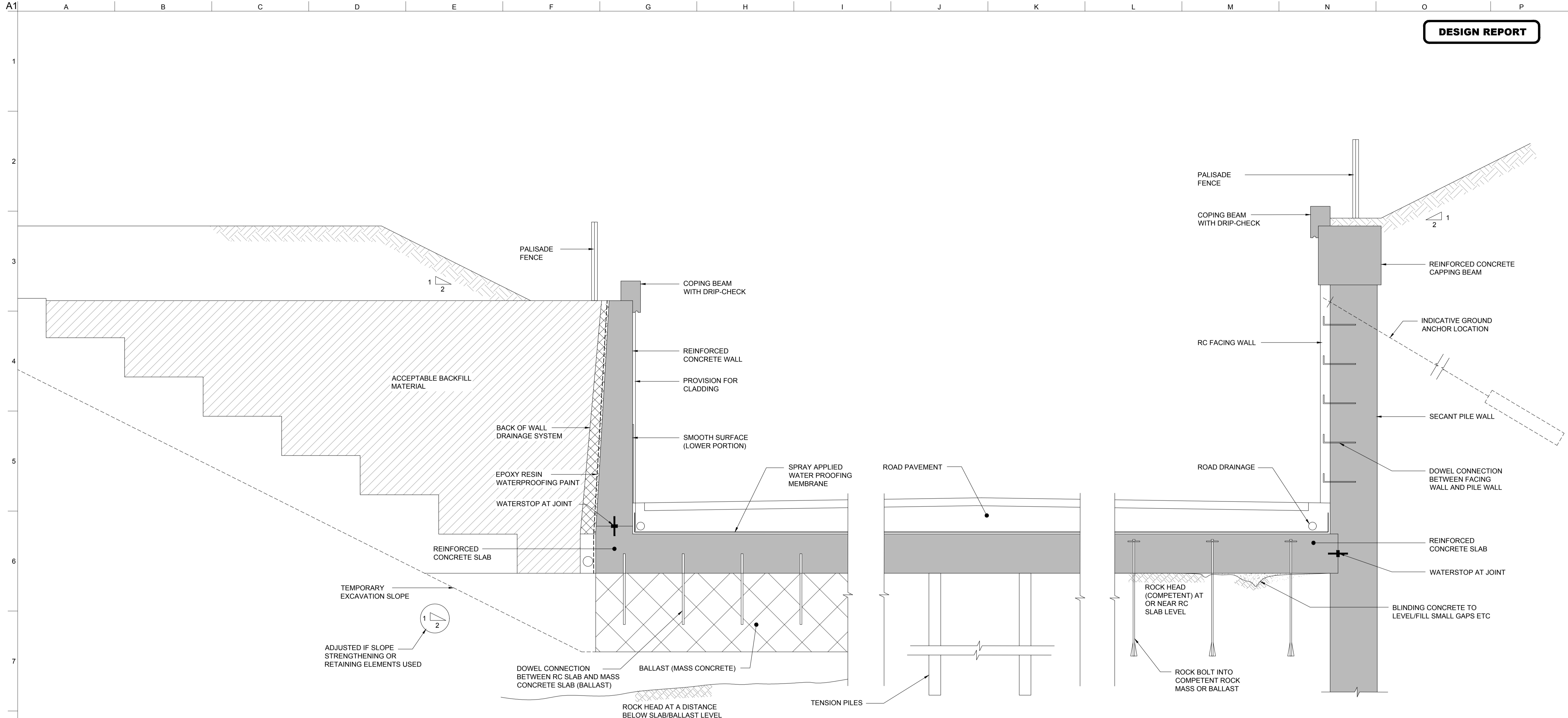
Drawing Title  
**Lackagh Tunnel & Western Approach  
Western Approach  
Transition to Lackagh Tunnel**

Drawing Status  
**For Information**

Job No  
**233985-00**

Drawing No  
**GC0B-1700-D-S11-01-025**

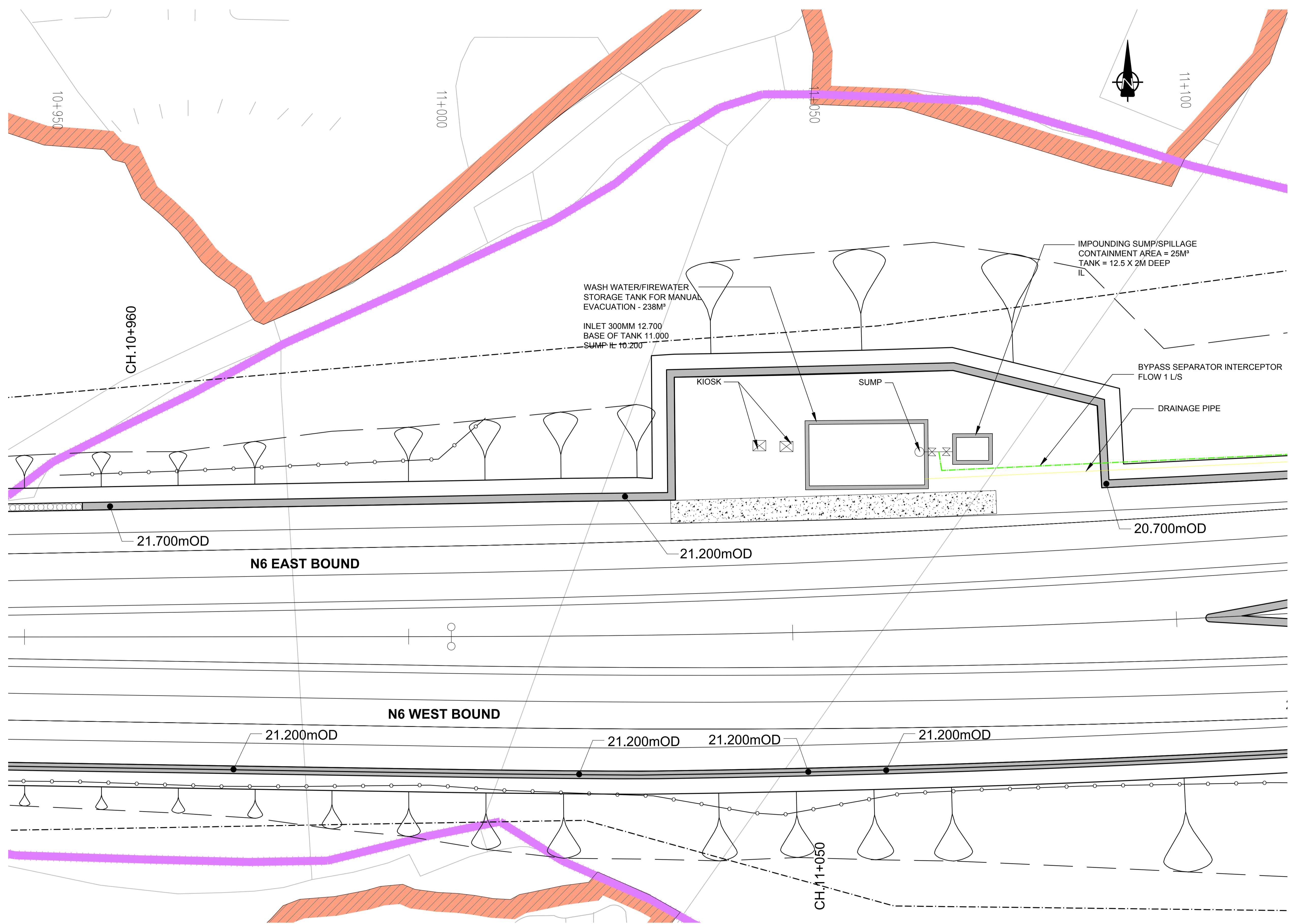
Issue  
**I3**



**TYPICAL DETAIL**  
SCALE 1:50

NOTE: SUB-FORMATIONS TYPICAL DETAILS VARY.  
POTENTIAL OPTIONS:  
1. BALLAST  
2. TENSION PILES  
3. ROCK BOLTS

<p>Clients</p> <p>Comhairle Chontae na Gaillimhe Galway County Council</p> <p>Galway City Transport Project</p> <p>An Roinn Iompair Turasoireachta agus Spóirt</p> <p>TIIV</p>	<p>Consultant</p> <p>Corporate House City East Business Park Ballybri, Galway, Ireland.</p> <p>Tel +353 (0)91 460675 www.N6GalwayCity.ie www.arup.ie</p>	<p>Job Title</p> <p><b>N6 Galway City Ring Road</b></p> <p>Scale 1:125 @ A1 / 1:250 @ A3</p> <p>Date: January 2017</p>	<p>Drawing Title</p> <p><b>Lackagh Tunnel &amp; Western Approach Typical Details</b></p> <p>Drawing Status</p> <p><b>For Information</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>I2</td> <td>14/09/2017</td> <td>DC</td> <td>PM</td> <td>PM</td> </tr> <tr> <td>I1</td> <td>27/02/2017</td> <td>DC</td> <td>PM</td> <td>PM</td> </tr> <tr> <td>Issue</td> <td>Date</td> <td>By</td> <td>Chkd</td> <td>Appd</td> </tr> </table> <p>Job No: <b>233985-00</b>   Drawing No: <b>GC0B-1700-D-S11-01-026</b>   Issue: <b>I2</b></p>	I2	14/09/2017	DC	PM	PM	I1	27/02/2017	DC	PM	PM	Issue	Date	By	Chkd	Appd
I2	14/09/2017	DC	PM	PM														
I1	27/02/2017	DC	PM	PM														
Issue	Date	By	Chkd	Appd														



- LEGEND**
- DESIGN
  - ANNEX I HABITAT
  - LOUGH CORRIB eSAC BOUNDARY
  - TEMPORARY RETAINING ELEMENT OR SLOPE STABILITY MEASURES
  - 1:2 SLOPE FROM BOTTOM OF APPROACH STRUCTURE TO GROUND LEVEL
  - SECANT PILE WALL
  - RC TROUGH WALL

- NOTE:**
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
  2. ALL LEVELS ARE SHOWN IN METERS ABOVE ORDNANCE DATUM.
  3. FOR TYPICAL DETAILS SEE DRAWING GCOB-1700-D-S11-01-026.

**PROPOSED SUMP LAYOUT**  
SCALE 1:250

San áireamh tá sonraíochtaí Shairbhéireachtaí Ordánáis Éireann arna atáirgeadh faoi Cheadúnas OSI Uimh. 2010/17CCMA/Comhairle Contae na Gaillimhe. Sárúonn atáirgeadh neamhdáraithe cóipeacht Shairbhéireachtaí Ordánáis Éireann agus Rialtas na hÉireann. © Sairbhéireacht Ordánáis Éireann, 2010.

© Sairbhéireacht Ordánáis Éireann. Gach ceart ar chosaint. Uimhir cheadúnais 2010/17CCMA/Comhairle Contae na Gaillimhe.

Includes Ordnance Survey Ireland data reproduced under OSI Licence number 2010/17CCMA/Galway County Council. Unauthorised reproduction infringes Ordnance Survey Ireland and Government of Ireland copyright. © Ordnance Survey Ireland, 2010.

© Ordnance Survey Ireland. All rights reserved. Licence number 2010/17CCMA/Galway County Council.

**Clients**

Comhairle Chontae na Gaillimhe  
Galway County Council

**Galway City Transport Project**

**An Roinn Iompair**  
Turasóireachta agus Spóirt  
Department Transport, Tourism and Sport

**TIIP**  
Borradh Iompair Éireann  
Transport Infrastructure Ireland

**Consultant**

**ARUP**

Corporate House  
City East Business Park  
Ballybrit, Galway, Ireland.

Tel +353 (0)91 460675  
www.N6GalwayCity.ie  
www.arup.ie

**Job Title**  
N6 Galway City Ring Road

**Scale**  
1:250 @ A1 / 1:500 @ A3

**Date:**  
February 2017

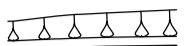



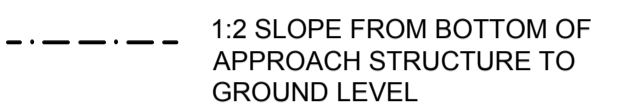
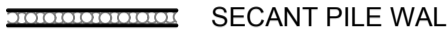

Issue	Date	By	Chkd	Appd
I2	14/09/2017	DC	PM	PM
I1	27/02/2017	DC	PM	PM

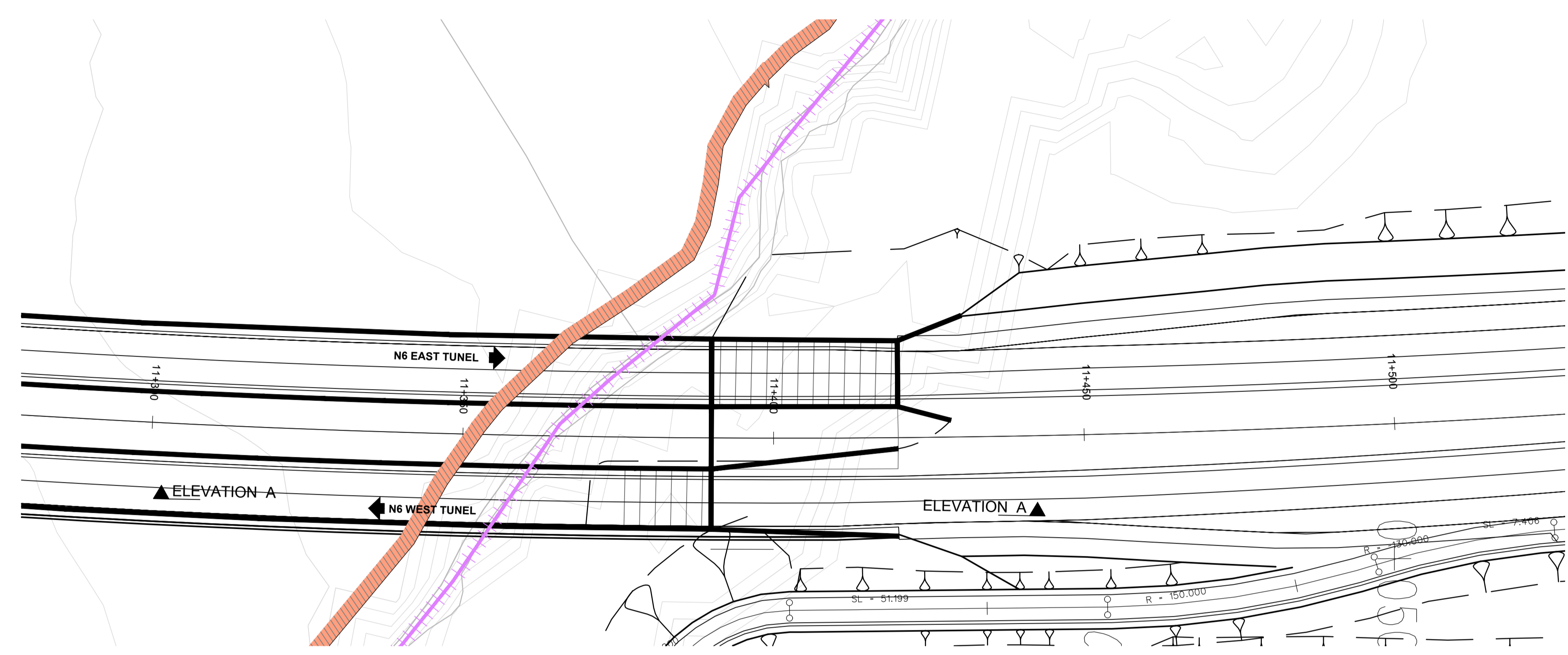
**Drawing Title**  
Lackagh Tunnel & Western Approach  
Western Approach  
Proposed Sump Layout

**Drawing Status**

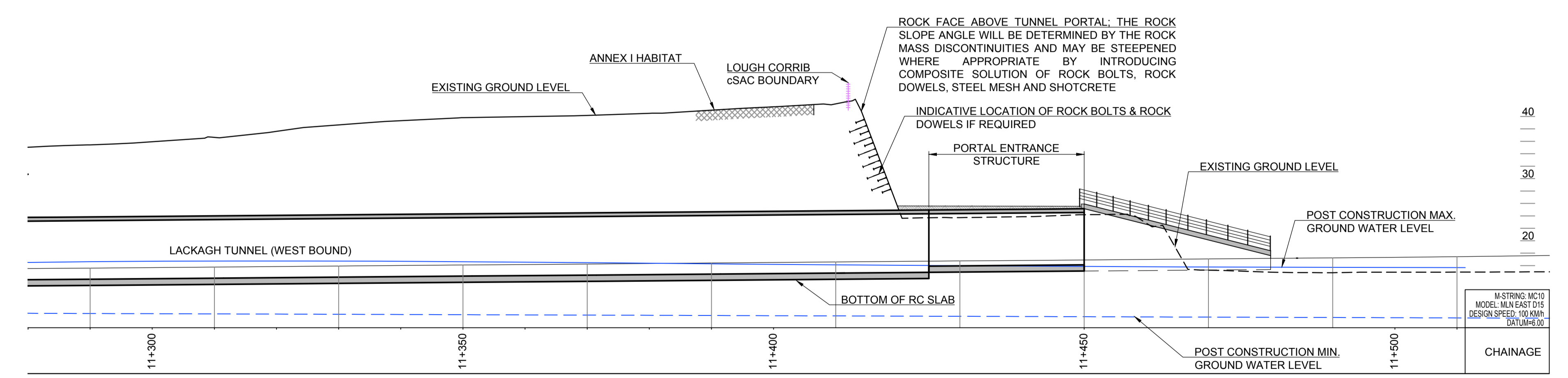
**For Information**

Job No: **233985-00** | Drawing No: **GCOB-1700-D-S11-01-027** | Issue: **12**

- LEGEND**
-  DESIGN
  -  ANNEX I HABITAT
  -  LOUGH CORRIB cSAC BOUNDARY
  -  TEMPORARY RETAINING ELEMENT OR SLOPE STABILITY MEASURES
  -  1:2 SLOPE FROM BOTTOM OF APPROACH STRUCTURE TO GROUND LEVEL
  -  SECANT PILE WALL
  -  RC TROUGH WALL



**EASTERN APPROACH & TUNNEL PLAN**  
SCALE 1:500



**EASTERN APPROACH & TUNNEL ELEVATION A-A**  
SCALE 1:500

San áireamh tá sonraíocht Shuirbhíreacht Ordnáis Éireann arna atáirgeadh faoi Chreadúnas OSI Uimh. 2010/17CCMA/Comhairle Contae na Gaillimhe. Sárúonn atáirgeadh neamhdáraithe cóipeacht Shuirbhíreacht Ordnáis Éireann agus Rialtas na hÉireann. © Suirbhíreacht Ordnáis Éireann, 2010.

© Suirbhíreacht Ordnáis Éireann. Gach ceart ar chosaint. Uimhir cheadúnais 2010/17CCMA/Comhairle Contae na Gaillimhe.

Includes Ordnance Survey Ireland data reproduced under OSI Licence number 2010/17CCMA/Galway County Council. Unauthorised reproduction infringes Ordnance Survey Ireland and Government of Ireland copyright. © Ordnance Survey Ireland, 2010.

© Ordnance Survey Ireland. All rights reserved. Licence number 2010/17CCMA/Galway County Council.

Clients



Consultant



Corporate House  
City East Business Park  
Ballybrit, Galway, Ireland.

Tel +353 (0)91 460675  
www.N6GalwayCity.ie  
www.arup.ie

Job Title  
**N6 Galway City Ring Road**

Scale  
1:500 @ A1 / 1:1000 @ A3

Date:  
September 2017

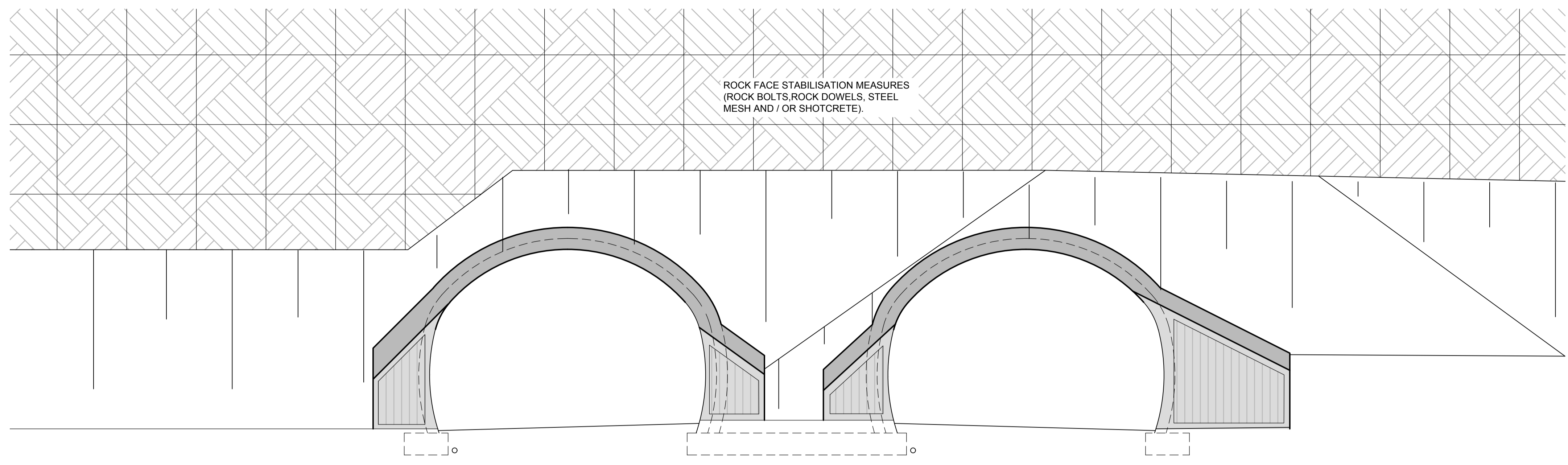
Issue	Date	By	Chkd	Appd
I1	14/09/2017	tp	PM	PM

Drawing Title  
**Lackagh Tunnel & Western Approach Eastern Approach Plan & Elevation**

Drawing Status

**For Information**

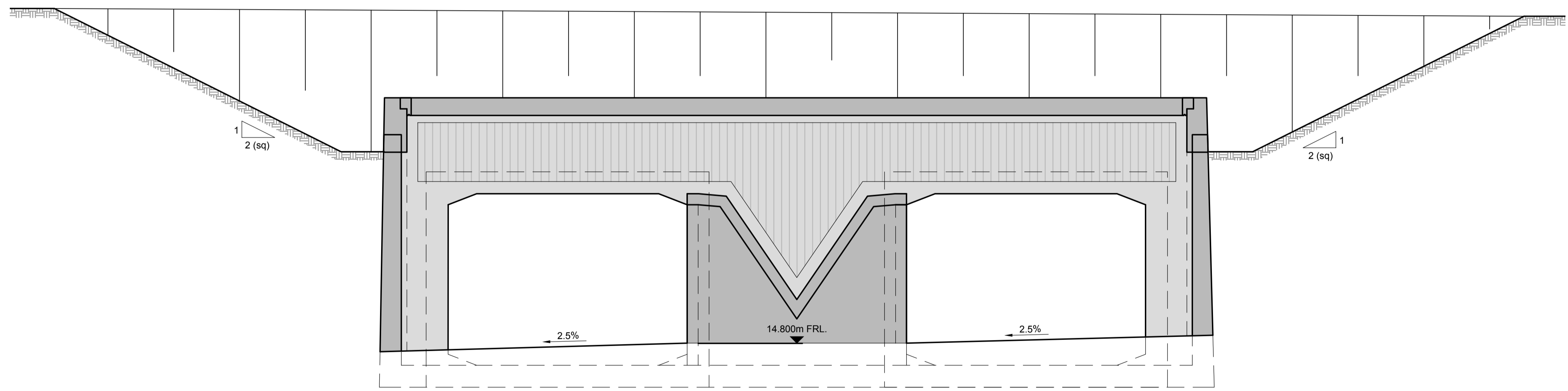
Job No	Drawing No	Issue
<b>233985-00</b>	<b>GCOB-1700-D-S11-01-030</b>	<b>11</b>



ROCK FACE STABILISATION MEASURES  
(ROCK BOLTS, ROCK DOWELS, STEEL  
MESH AND / OR SHOTCRETE).

**EASTERN PORTAL ELEVATION  
IN LACKAGH QUARRY**  
(CHAINAGE 11+450)  
SCALE 1:125

**NOTE**  
The aesthetic treatment of the portals will require further input from an aesthetic advisor and will be developed as the design progresses.



**WEST PORTAL ELEVATION AT  
THE WESTERN APPROACH**  
(CHAINAGE 11+100)  
SCALE 1:125

San áireamh tá sonraíochtaí Shuirbhéireacht Ordnáis Éireann arna atáirgeadh faoi Chreadúnaí OSI Uimh. 2010/17CCMA/Comhairle Contae na Gaillimhe. Sárú na atáirgeadh neamhdáraithe cóipeacht Shuirbhéireacht Ordnáis Éireann agus Rialtas na hÉireann. © Suirbhéireacht Ordnáis Éireann, 2010.  
© Suirbhéireacht Ordnáis Éireann. Gach ceart ar chosaint.  
Uimhir cheadúnais 2010/17CCMA/Comhairle Contae na Gaillimhe.  
Includes Ordnance Survey Ireland data reproduced under OSI Licence number 2010/17CCMA/Galway County Council. Unauthorised reproduction infringes Ordnance Survey Ireland and Government of Ireland copyright. © Ordnance Survey Ireland, 2010.  
© Ordnance Survey Ireland. All rights reserved. Licence number 2010/17CCMA/Galway County Council.

Clients

Consultant

Corporate House  
City East Business Park  
Ballybrit, Galway, Ireland.

Tel +353 (0)91 460675  
www.N6GalwayCity.ie  
www.arup.ie

Job Title  
N6 Galway City Ring Road

Scale  
1:500 @ A1 / 1:1000 @ A3

Date  
September 2017

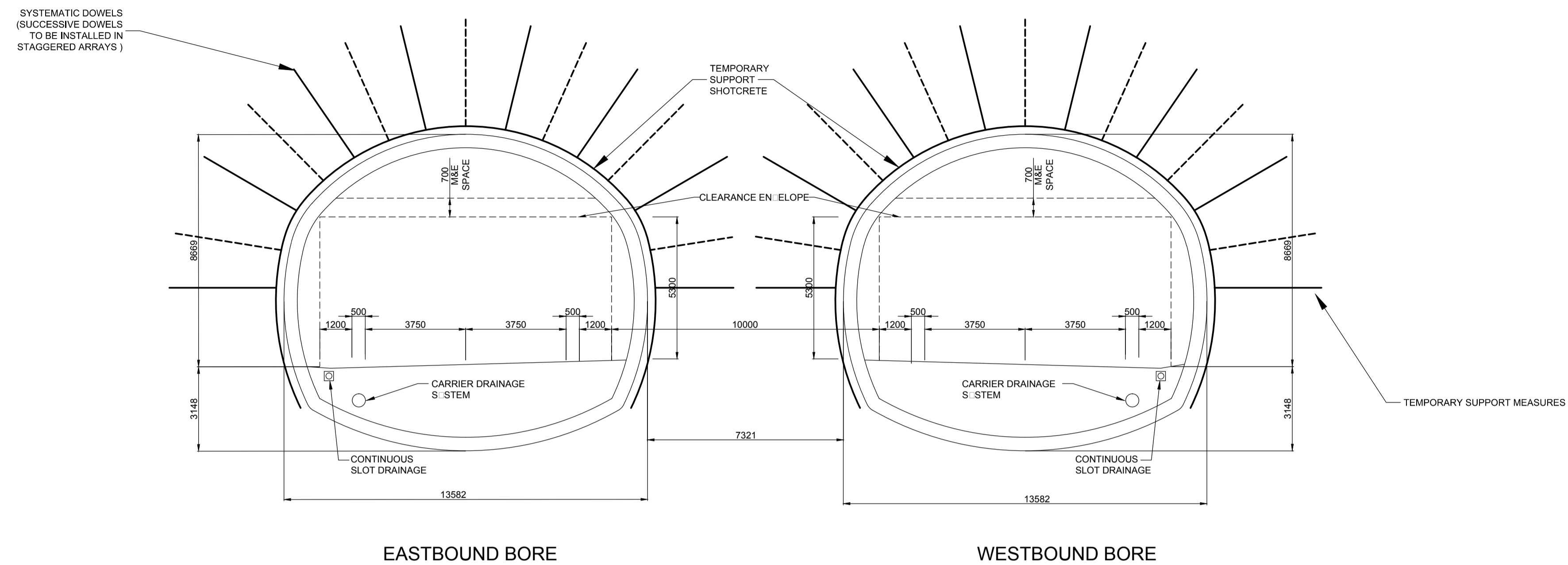
Issue	Date	By	Chkd	Appd
I1	14/09/2017	TP	PM	PM

Drawing Title  
Lackagh Tunnel & Western Approach  
Eastern Approach Plan & Elevation

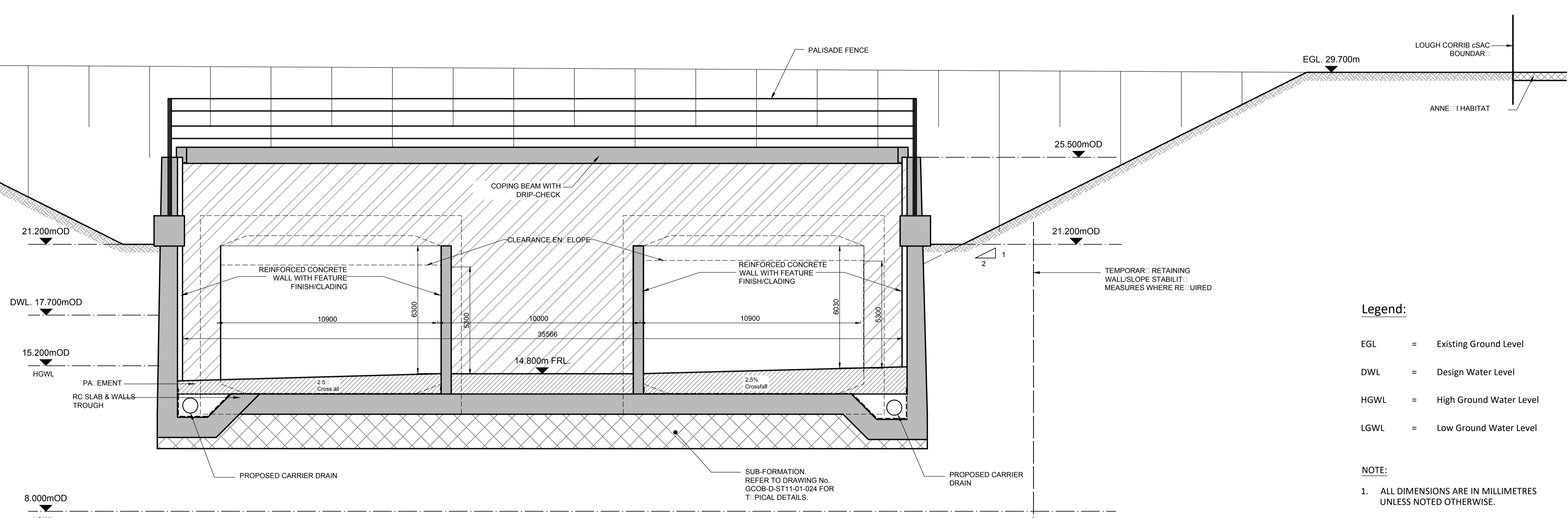
Drawing Status

**For Information**

Job No	Drawing No	Issue
233985-00	GCOB-1700-D-S11-01-040	11



**TYPICAL CROSS - SECTION FOR LACKAGH TUNNEL**  
SCALE 1:125 A1



**TUNNEL PORTAL CROSS - SECTION**  
Western Portal (CHAINAGE 11+140)  
SCALE 1:125 A1

- Legend:**
- EGL = Existing Ground Level
  - DWL = Design Water Level
  - HGWL = High Ground Water Level
  - LGWL = Low Ground Water Level

- NOTE:**
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
  2. ALL LEVELS ARE SHOWN IN METERS ABOVE ORDINANCE DATUM.

Clients

Consultant

Corporate House  
City East Business Park  
Ballybrit, Galway, Ireland.

Tel +353 (0)91 460675  
www.N6GalwayCity.ie  
www.arup.ie

Job Title  
**N6 Galway City Ring Road**

Scale  
1:125 A1 / 1:250 A3

Date  
August 2019

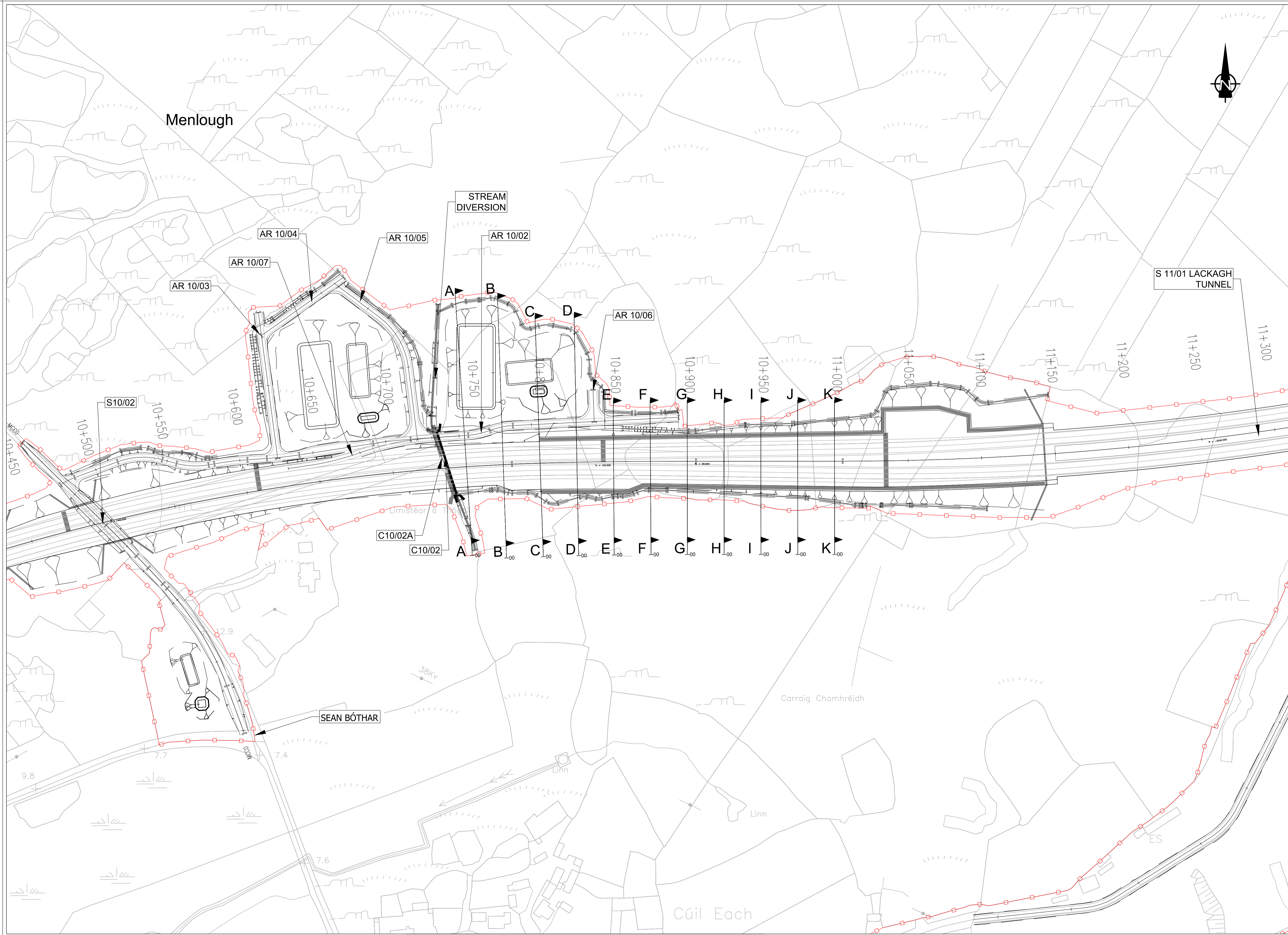
Issue	Date	By	Chkd	Appd
I1	30/08/2019	KJ	AP	PM

Drawing Title  
**Lackagh Tunnel Clearance and General Arrangement Dimensions for Portals and Typical Cross-Section**

Drawing Status  
**For Information**

Job No <b>233985</b>	Drawing No <b>Figure 1.4.01</b>	Issue <b>11</b>
-------------------------	------------------------------------	--------------------





**FOR INFORMATION**

- Legend:**
- Proposed Development Boundary
  - Proposed Road Geometry
  - Earthworks - Fill
  - Earthworks - Cut
  - Structure (S)
  - Proposed Retaining wall (R)
  - Proposed Mammal Underpass (C)
  - Proposed Culvert (C)
  - Proposed Attenuation Pond / Infiltration Basin / Wetlands
  - AR - Access Road
  - Cross Section Path

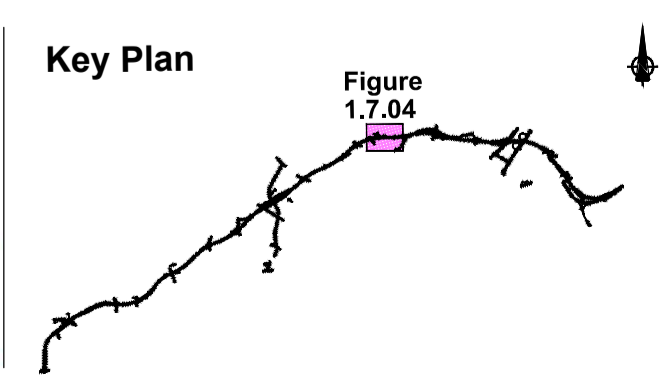
Son áireamh tá sonraíocht Shuirbhíreachtí Ordnáis Éireann arna áitirgeadh faoi Cheadúnas OSI Uimh. 2010/19CCMA/Comhairle Contae na Gaillimhe. Sírtaonn áitirgeadh neamhdáraithe cóipeacht Shuirbhíreachtí Ordnáis Éireann agus Rialtas na hÉireann. © Suirbhíreachtí Ordnáis Éireann, 2010.

© Suirbhíreachtí Ordnáis Éireann. Gach ceart ar chosaint.  
Uimhir cheadúnais 2010/19CCMA/Comhairle Contae na Gaillimhe.

Includes Ordnance Survey Ireland data reproduced under OSI Licence number 2010/19CCMA/Galway County Council.  
Unauthorised reproduction infringes Ordnance Survey Ireland and Government of Ireland copyright. © Ordnance Survey Ireland, 2010.

© Ordnance Survey Ireland. All rights reserved. Licence number 2010/19CCMA/Galway County Council.

Clients



Consultant

Corporate House  
City East Business Park  
Ballybrit, Galway, Ireland.

Tel +353 (0)91 460675  
www.NGalwayCity.ie  
www.arup.ie

Job Title  
**N6 Galway City Ring Road**

Scale  
1:2500 @ A3

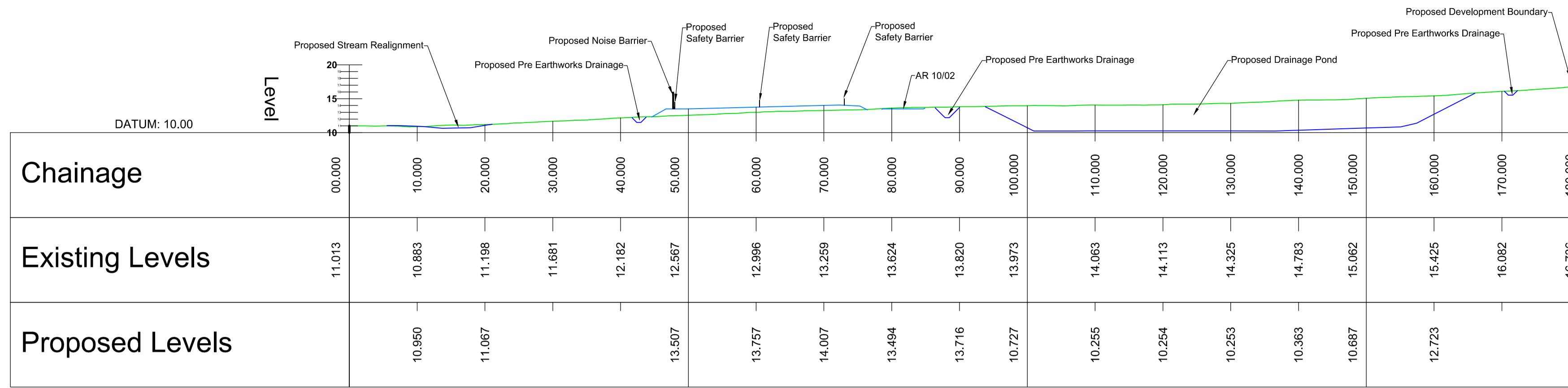
Date:  
August 2019

Issue	Date	By	Chkd	Appd
I1	30/08/2019	KJ	MH	EMC

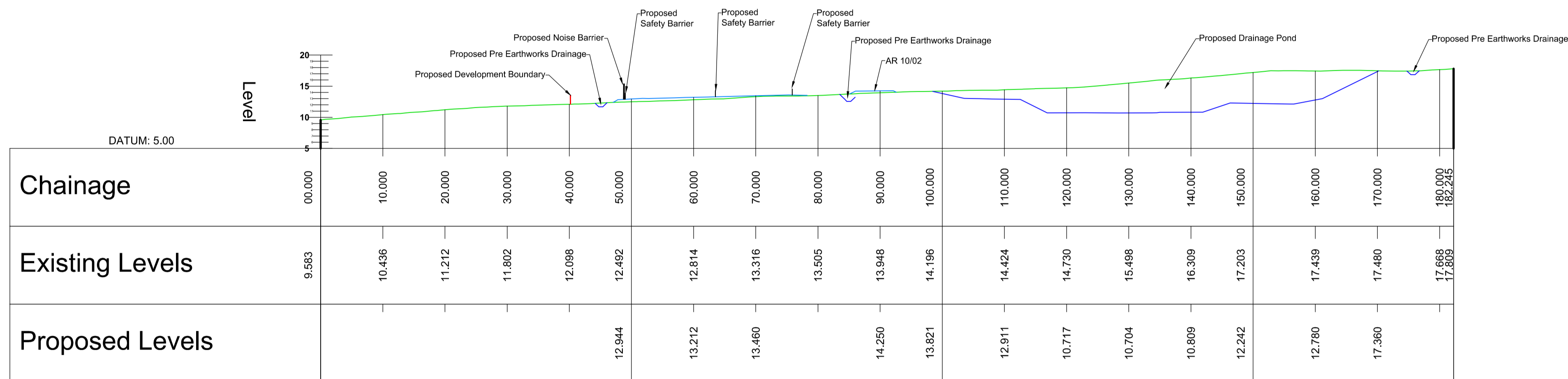
Drawing Title  
Retaining Wall West of Lackagh Tunnel  
Plan Layout  
Sheet 1 of 4

Drawing Status  
**For Information**

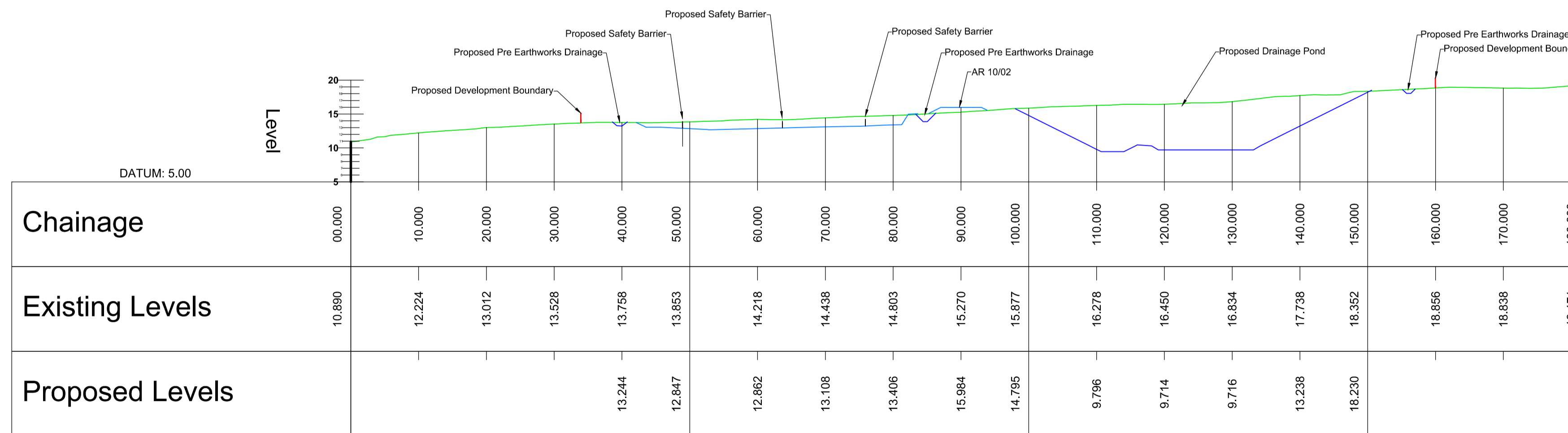
Job No <b>233985</b>	Drawing No <b>Figure 1.4.02</b>	Issue <b>11</b>
-------------------------	------------------------------------	--------------------



CROSS SECTION A-A : CH 10+740



CROSS SECTION B-B : CH 10+775



CROSS SECTION C-C : CH 10+800

San áireamh tá sonraíocht Shuirbhíreacht Ordnáis Éireann arna áitirgeadh faoi Cheadúnas OSI Uimh. 2010/19CCMA/Comhairle Contae na Gaillimhe. Sírúinn áitirgeadh neamhdaraithe cóipeacht Shuirbhíreacht Ordnáis Éireann agus Rialtas na hÉireann. © Suirbhíreacht Ordnáis Éireann, 2010.

© Suirbhíreacht Ordnáis Éireann. Gach ceart ar chosaint.  
Uimhir cheadúnais 2010/19CCMA/Comhairle Contae na Gaillimhe.

Includes Ordnance Survey Ireland data reproduced under OSI Licence number 2010/19CCMA/Galway County Council.  
Unauthorised reproduction infringes Ordnance Survey Ireland and Government of Ireland copyright. © Ordnance Survey Ireland, 2010.

© Ordnance Survey Ireland. All rights reserved. Licence number 2010/19CCMA/Galway County Council.

Clients

Key Plan

Consultant

Corporate House  
City East Business Park  
Ballybrit, Galway, Ireland.

Tel +353 (0)91 460675  
www.NGalwayCity.ie  
www.arup.ie

Job Title  
N6 Galway City Ring Road

Scale  
1:1000 @ A3

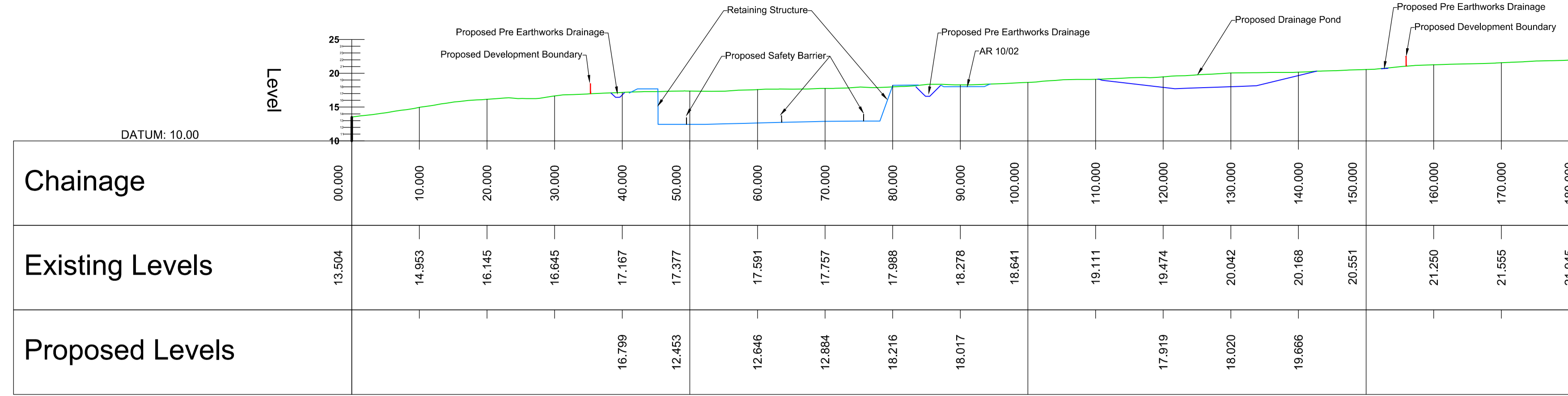
Date  
August 2019

Issue	Date	By	Chkd	Appd
I1	30/08/2019	KJ	MH	EMC

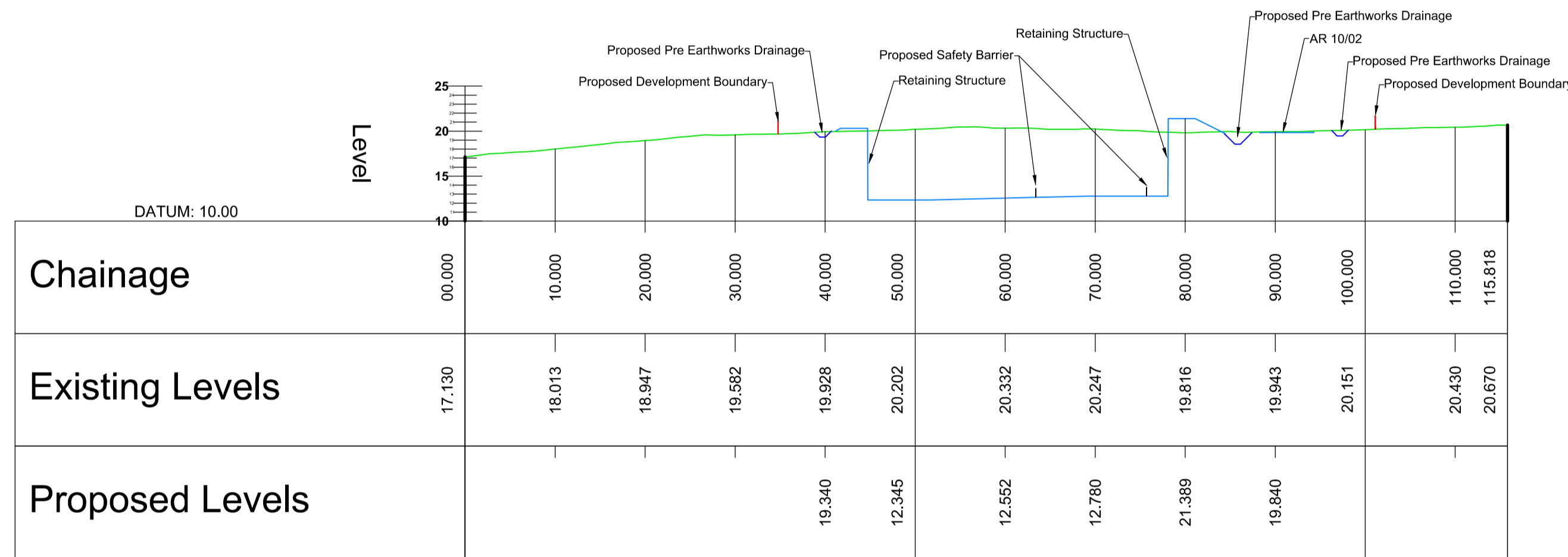
Drawing Title  
Retaining Wall West of Lackagh Tunnel  
Cross Sections  
Sheet 2 of 4

Drawing Status  
For Information

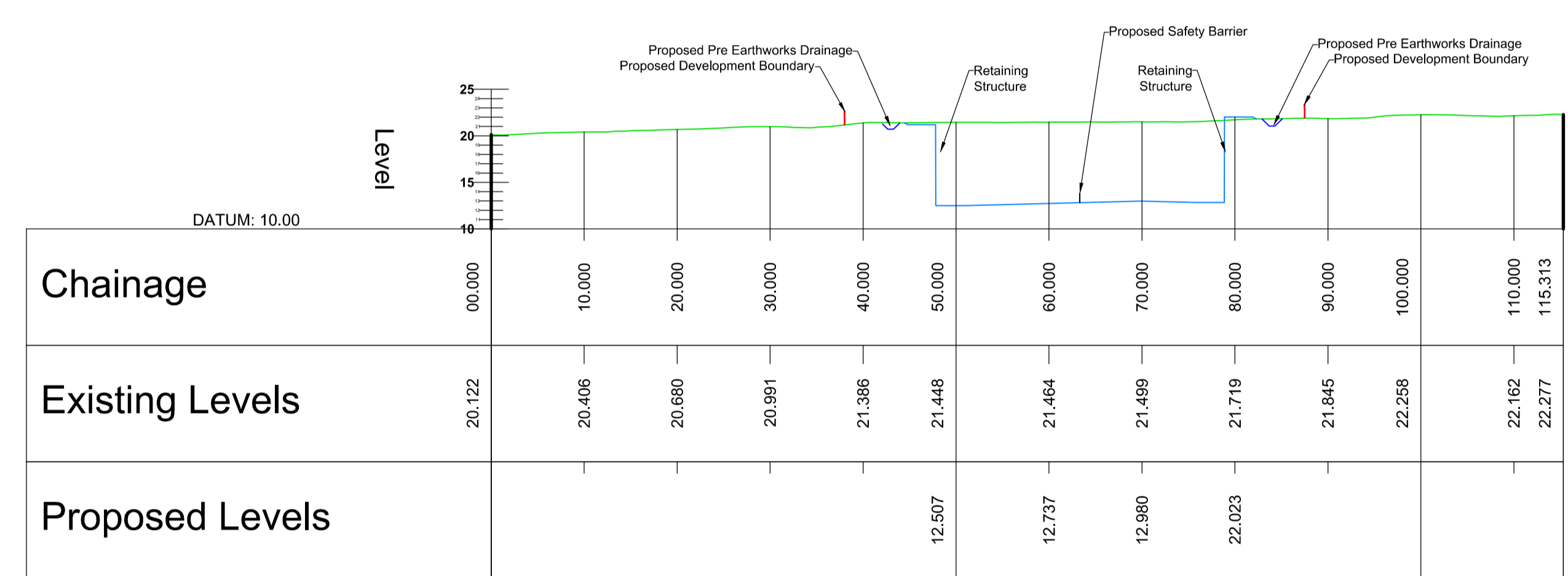
Job No	Drawing No	Issue
233985	Figure 1.4.03	11



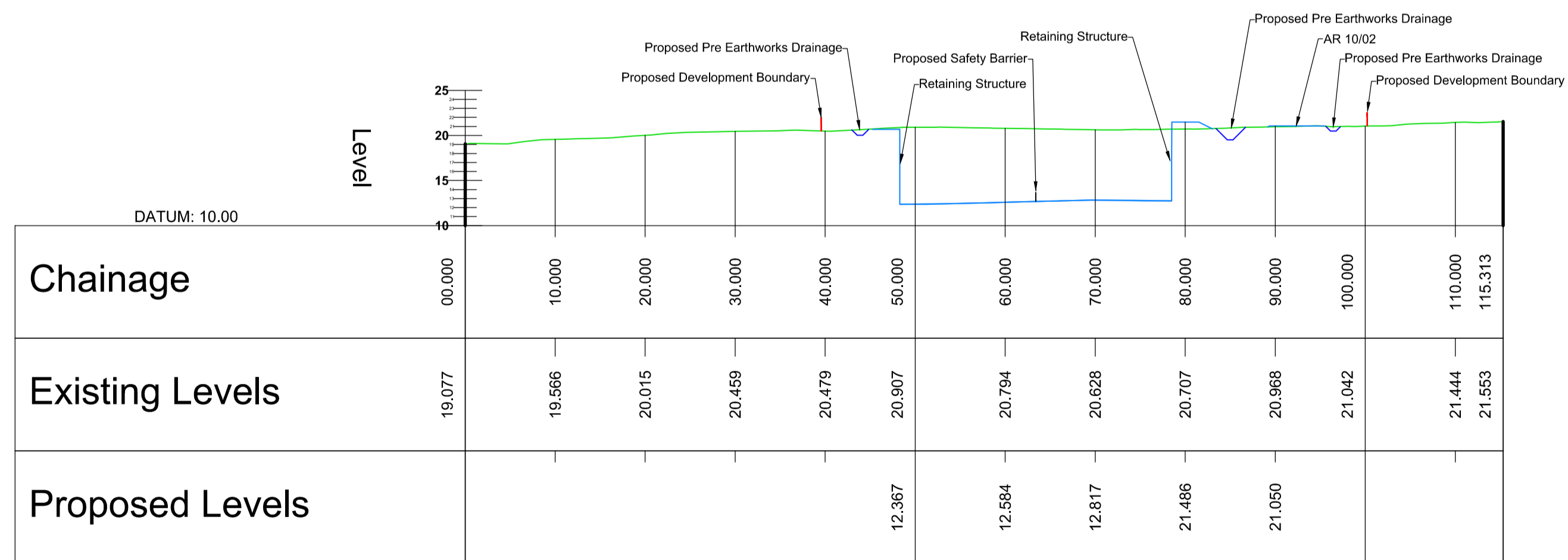
CROSS SECTION D-D : CH 10+825



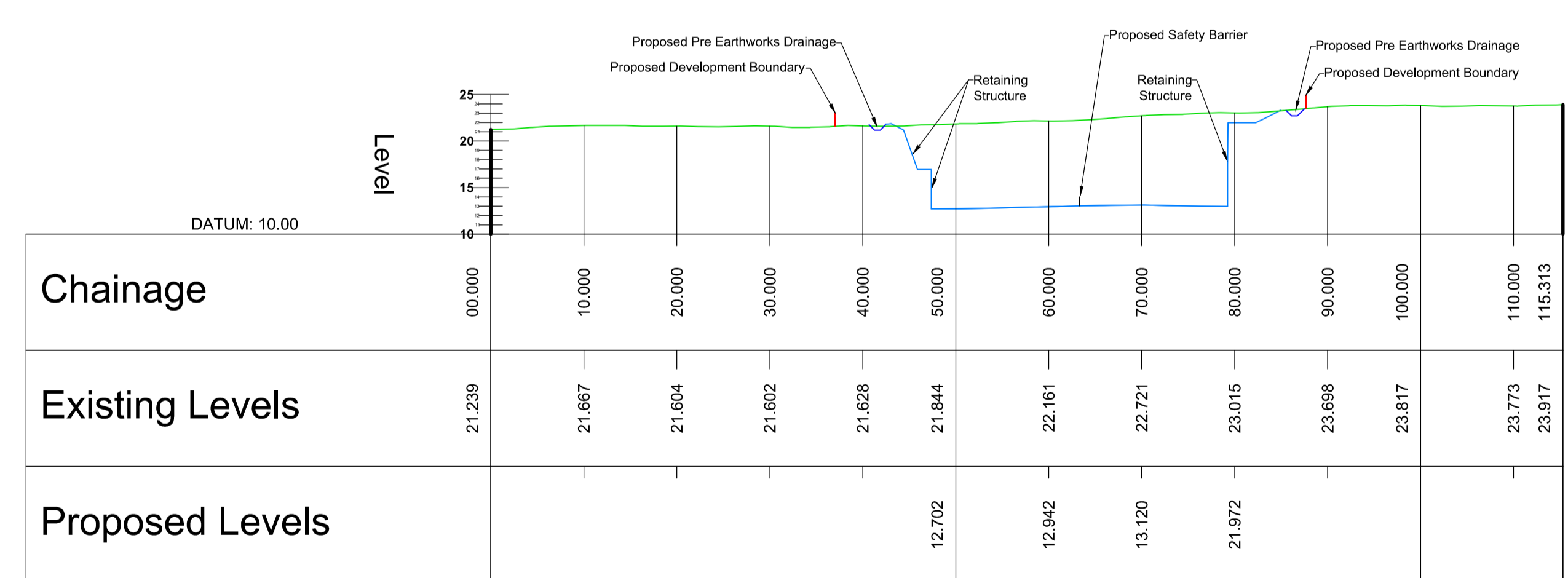
CROSS SECTION E-E : CH 10+850



CROSS SECTION G-G : CH 10+900



CROSS SECTION F-F : CH 10+875



CROSS SECTION H-H : CH 10+925

Son áireamh tá sonraíocht Shuirbhíreachtí Ordnáis Éireann arna áitirgeadh faoi Cheadúnas OSI Uimh. 2010/19CCMA/Comhairle Contae na Gaillimhe. Sárionn áitirgeadh neamhdáraithe cóipeacht Shuirbhíreachtí Ordnáis Éireann agus Rialtas na hÉireann. © Suirbhíreachtí Ordnáis Éireann, 2010.

© Suirbhíreachtí Ordnáis Éireann. Gach ceart ar chosaint.  
Uimhir cheadúnais 2010/19CCMA/Comhairle Contae na Gaillimhe.

Includes Ordnance Survey Ireland data reproduced under OSI Licence number 2010/19CCMA/Galway County Council.  
Unauthorised reproduction infringes Ordnance Survey Ireland and Government of Ireland copyright. © Ordnance Survey Ireland, 2010.

© Ordnance Survey Ireland. All rights reserved. Licence number 2010/19CCMA/Galway County Council.

Clients

Key Plan

Consultant

Corporate House  
City East Business Park  
Ballybrit, Galway, Ireland.

Tel +353 (0)91 460675  
www.N6GalwayCity.ie  
www.arup.ie

Job Title  
N6 Galway City Ring Road

Scale  
1:1000 @ A3

Date  
August 2019

I1	30/08/2019	KJ	MH	EMC
Issue	Date	By	Chkd	Appd

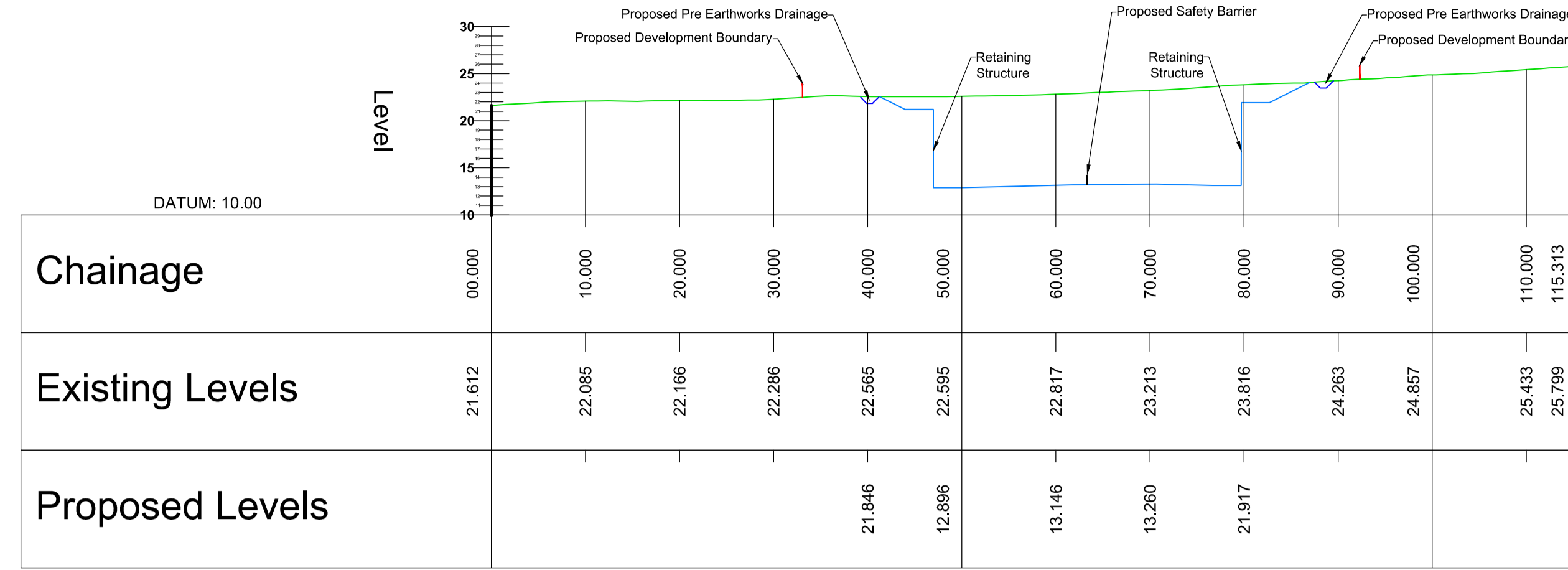
Drawing Title  
Retaining Wall West of Lackagh Tunnel  
Cross Sections  
Sheet 3 of 4

Drawing Status  
For Information

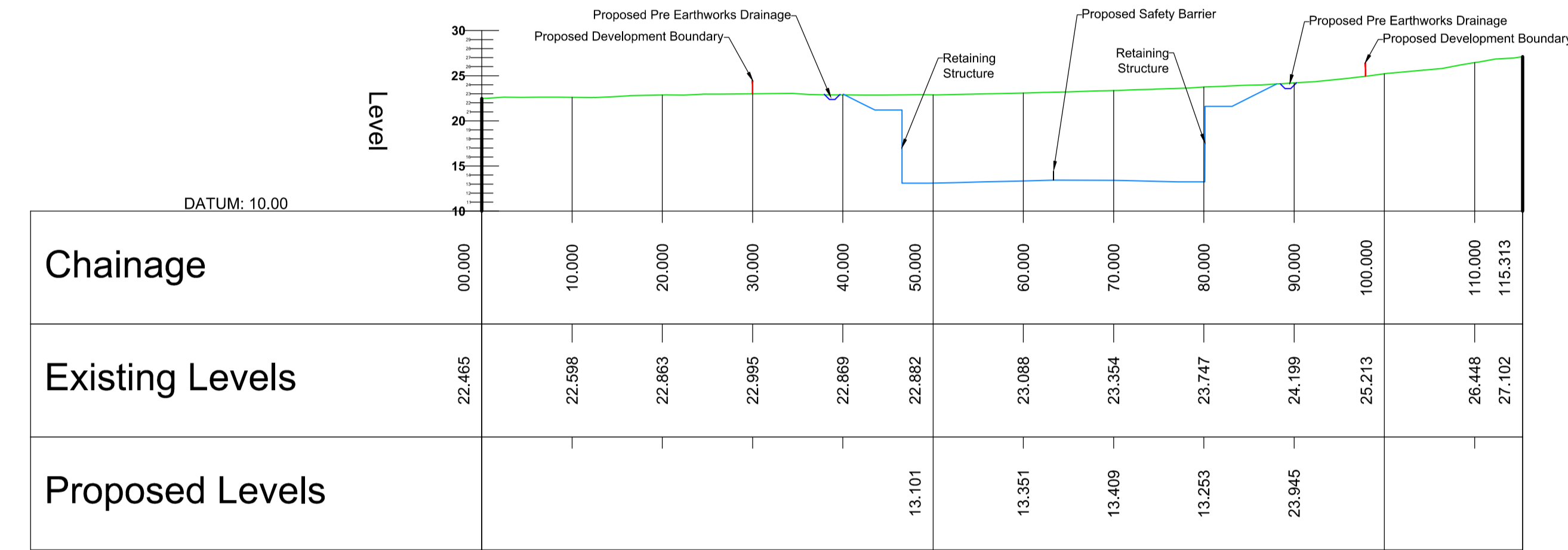
Job No  
233985

Drawing No  
Figure 1.4.04

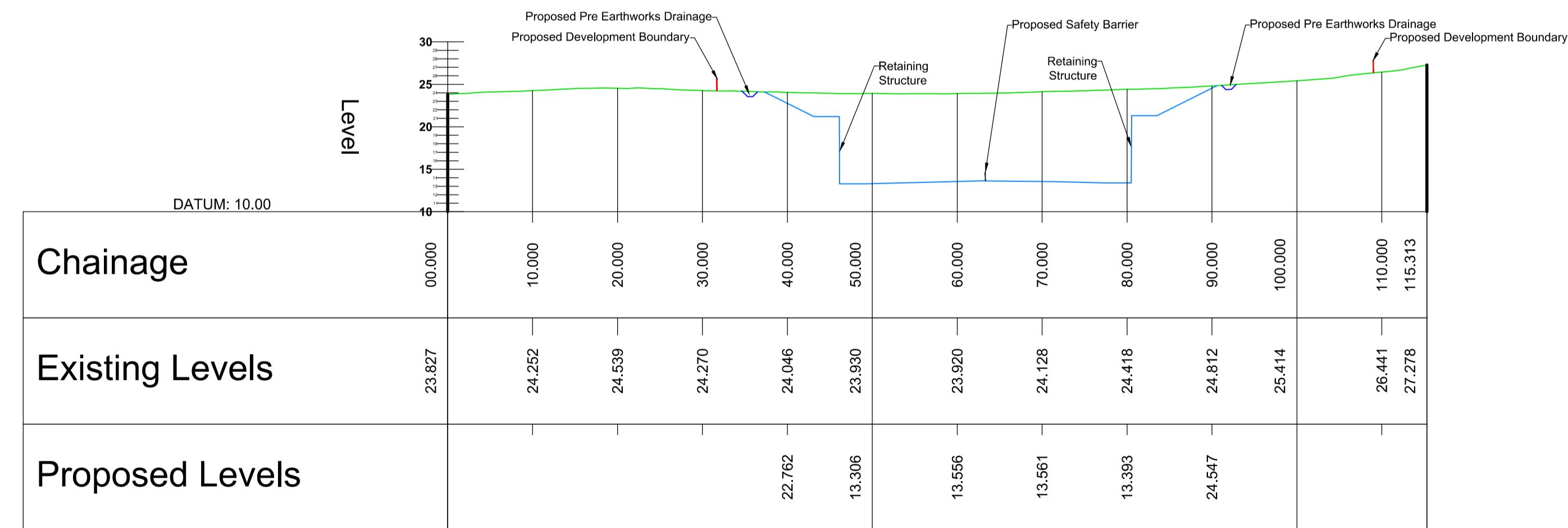
Issue  
11



CROSS SECTION I-I : CH 10+950



CROSS SECTION J-J : CH 10+975



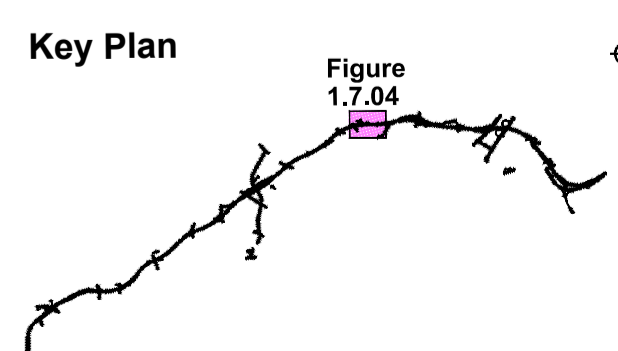
CROSS SECTION K-K : CH 11+000

San áireamh tá sonraíocht Shuirbhíreacht Ordnáis Éireann arna áitirgeadh faoi Cheadúnas OSI Uimh. 2010/19CCMA/Comhairle Contae na Gaillimhe. Sártaonn áitirgeadh neamhúdaraithe cóipeacht Shuirbhíreacht Ordnáis Éireann agus Rialtas na hÉireann. © Suirbhíreacht Ordnáis Éireann, 2010.

© Suirbhíreacht Ordnáis Éireann. Gach ceart ar chosaint.  
Uimhir cheadúnais 2010/19CCMA/Comhairle Contae na Gaillimhe.

Includes Ordnance Survey Ireland data reproduced under OSI Licence number 2010/19CCMA/Galway County Council.  
Unauthorised reproduction infringes Ordnance Survey Ireland and Government of Ireland copyright. © Ordnance Survey Ireland, 2010.

© Ordnance Survey Ireland. All rights reserved. Licence number 2010/19CCMA/Galway County Council.



Job Title  
N6 Galway City Ring Road

Scale  
1:1000 @ A3

Date:  
August 2019

I1	30/08/2019	KJ	MH	EMC
Issue	Date	By	Chkd	Appd

Drawing Title  
Retaining Wall West of Lackagh Tunnel

Cross Sections  
Sheet 4 of 4

Drawing Status  
For Information

Job No	Drawing No	Issue
233985	Figure 1.4.05	11