

EIA REPORT

Legend:

PLAN

- City Boundary
- Proposed Development Boundary
- Proposed Road Development
- Earthworks - Fill
- Earthworks - Cut
- Structure (S)
- Proposed Retaining wall (R)
- Proposed Culvert (C)
- Proposed Environmental Underpass (C)
- Proposed Attenuation Pond / Infiltration Basin/Wetlands

Geology

- Cable Percussive Borehole
- Cable Percussive + Rotary Core Borehole
- Trial Pit
- Window Sample
- Soakways
- GI Borehole (Lackagh area)
- Horizontal Borehole (Lackagh Quarry)
- Historical GI Locations Records

Geophysics

R19 GP3/24

S19

PROFILE

- Existing Ground
- Proposed Geometry Profile
- Maximum Groundwater Level
- Minimum Groundwater Level
- LACKAGH TUNNEL & GALWAY RACECOURSE TUNNEL

Geology

- Weathered Rock [WwR]
- Topsoil [TOP]
- Silt [SI]
- Sand [Sa]
- Peat [PEAT]
- Made Ground [MG]
- Limestone [LSRck]
- Gravel [GR]
- Clay [CI]
- Cobbles and Boulders [Cb]
- Granite [TGRck]

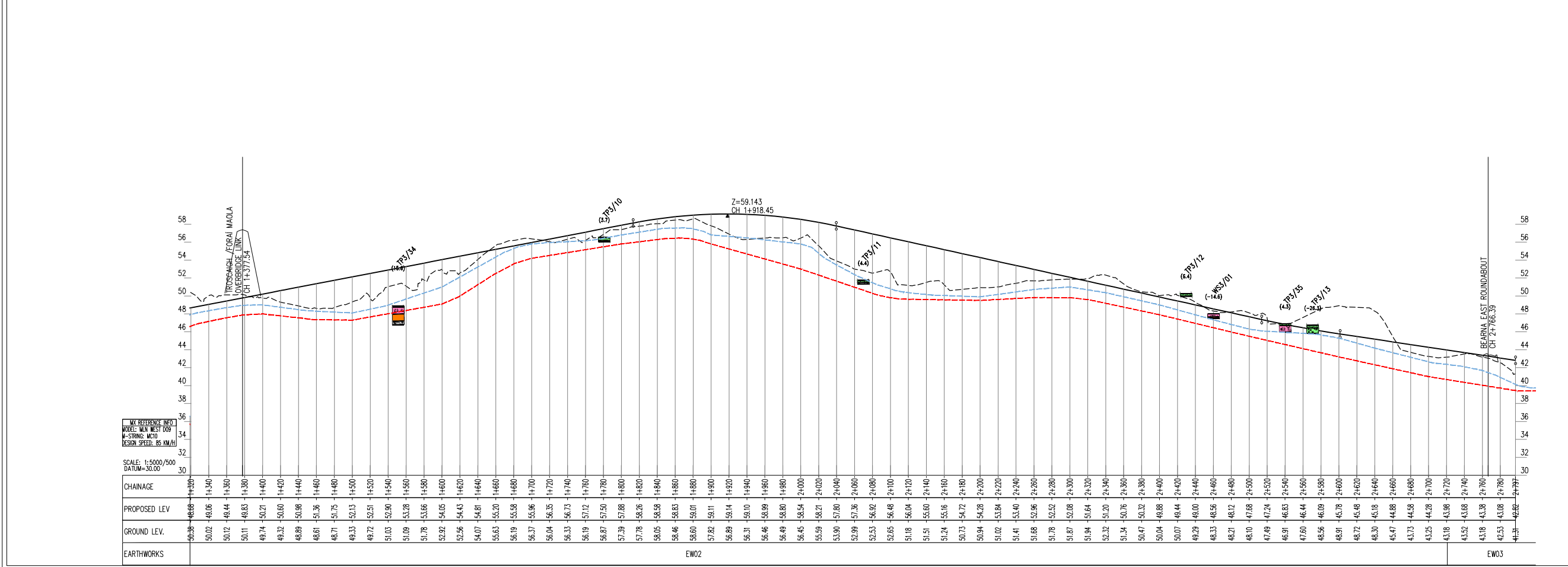
Geotechnical

- CONCRETE
- LIMESTONE
- MUDSTONE
- NO RECOVERY
- CLAY
- Sandy CLAY
- Gravelly COBBLES
- Clayey COBBLES
- COBBLES
- GRAVEL
- Sandy SILT
- Silty SAND
- Organic CLAY
- SAND
- Cobbly CLAY
- BOULDERS
- Gravelly CLAY
- Silty sandy gravelly CLAY
- FILL (MADE GROUND)
- Sandy cobbly CLAY
- TOPSOIL
- COBBLES and BOULDERS
- Sandy gravelly cobbly CLAY

Geophysics

Layers from Seismic Refraction Model:

- Ground Surface/Top of Layer 1 (200 - 340m/s)
- Top of Layer 2 (900 - 1200m/s)
- Top of Layer 3 (2000 - 2400m/s)
- Top of Layer 4 (4000 - 5000m/s)



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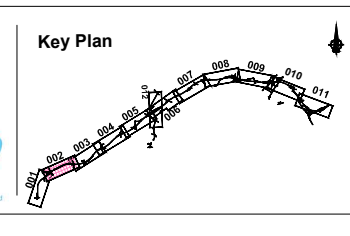
Clients

Comhairle Chontae na Gaillimhe
Galway County Council

Galway City Transport Project

An Roinn Iompair Turasoireachta agus Spóirt
Department Transport, Tourism and Sport

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Bonnasair Iompair Éireann
Transport Infrastructure Ireland



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www.N6GalwayCity.ie
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Job Title

N6 Galway City Ring Road

Scale

H 1:5000 / V 1:500 @ A3

Date:

September 2018

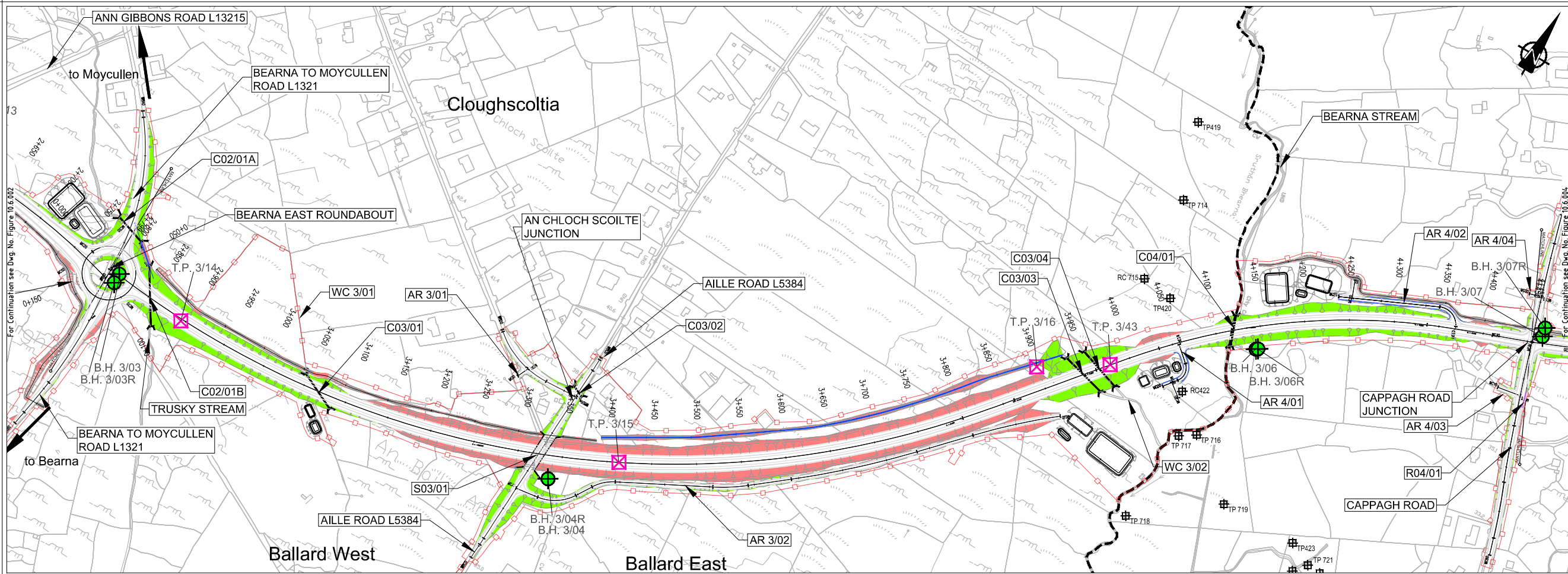
| Issue | Date | By | Chkd | Appd |
|-------|------------|----|------|------|
| I1 | 28/09/2018 | KJ | LB | EMC |

Drawing Title

Hydrogeology Plan & Profile
Mainline Plan/Profile - CH.1+350 to CH.2+799
Sheet 2 of 12

For Information

Job No: 233985
Drawing No: Figure 10.6.002
Issue: 11



EIA REPORT

Legend:

PLAN

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Geophysics

R19 GP3/24

S19

PROFILE

- Existing Ground
- Proposed Geometry Profile
- Maximum Groundwater Level
- Minimum Groundwater Level
- LACKAGH TUNNEL & GALWAY RACECOURSE TUNNEL

Geology

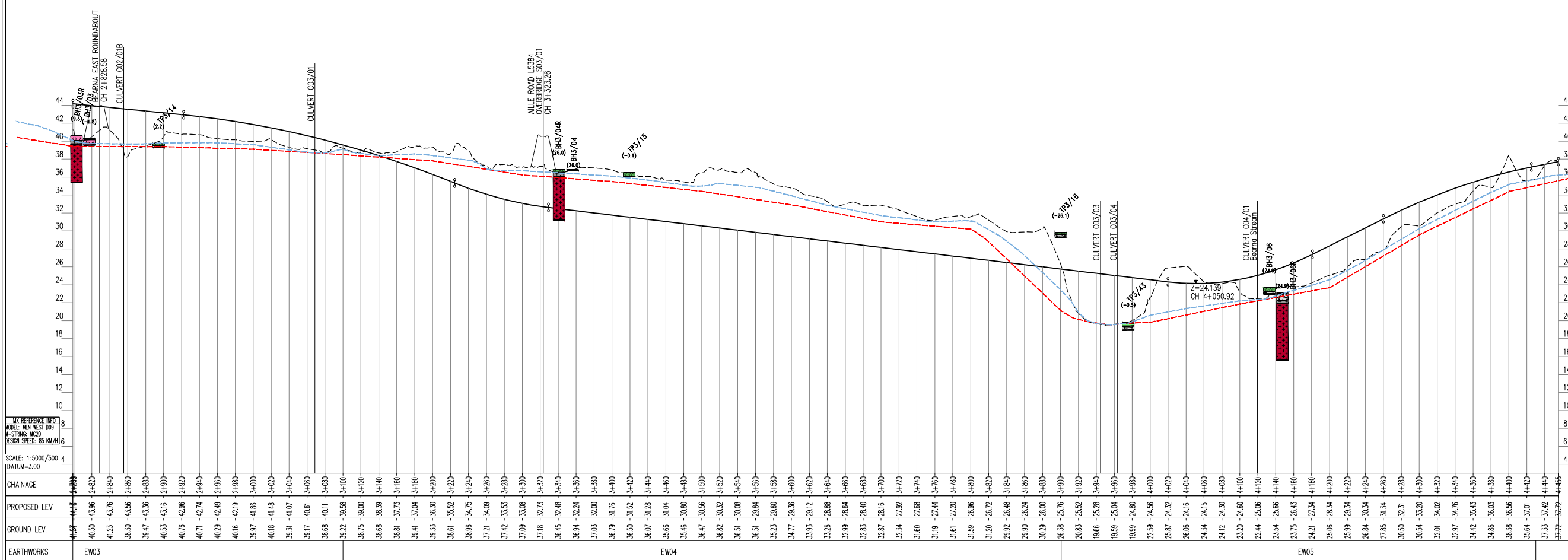
- Weathered Rock [Wrr]
- Limestone [LSRck]
- Topsil [TOP]
- Gravel [GR]
- Silt [SI]
- Clay [CI]
- Sand [Sa]
- Cobbles and Boulders [Cb]
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- Made Ground [MG]
- Silty SAND
- CONCRETE
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- CLAY
- SANDY CLAY
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- Top of Layer 4 (4000 - 5000m/s)

20.0 40.0 80.0 160.0 320.0 640.0 1280.0 2560.0



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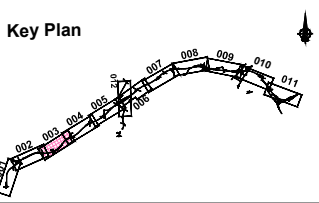
Clients

Comhairle Chontae na Gaillimhe
Galway County Council

Galway City Transport Project

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

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Transport Infrastructure Ireland



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Scale
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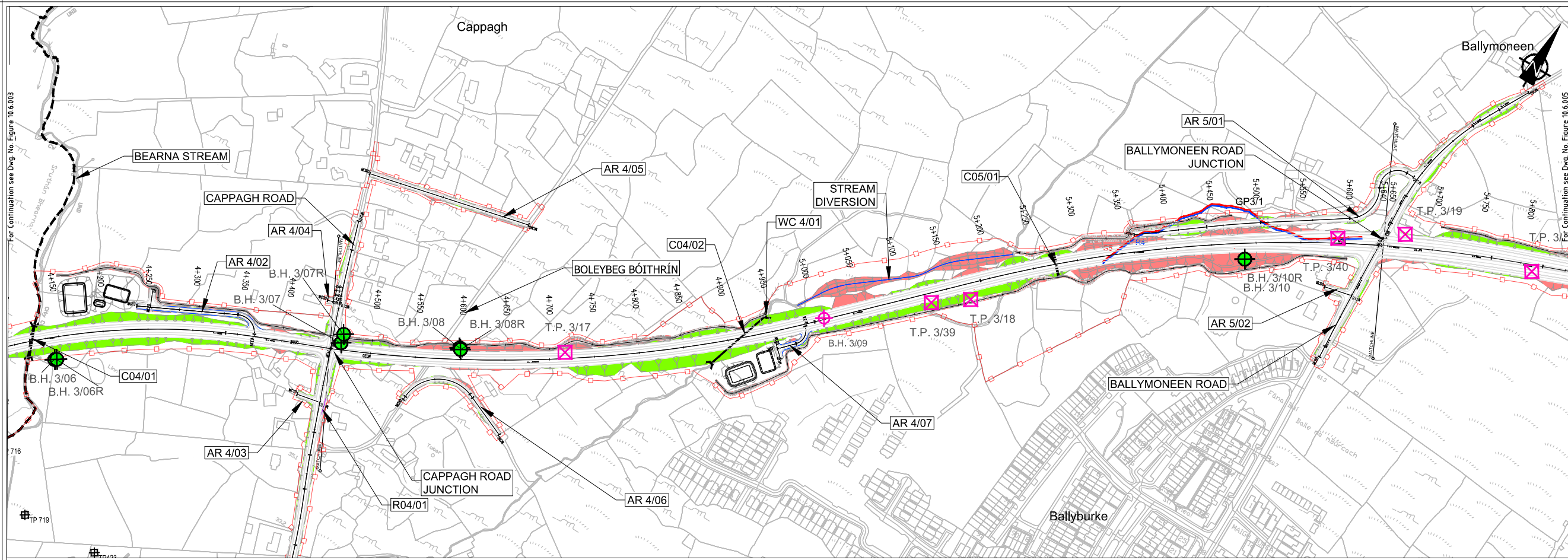
Date:
September 2018

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|--------|-----------------|----|------|------|
| I1 | 28/09/2018 | KJ | LB | EMC |
| Issue | Date | By | Chkd | Appd |
| 233985 | Figure 10.6.003 | | | 11 |

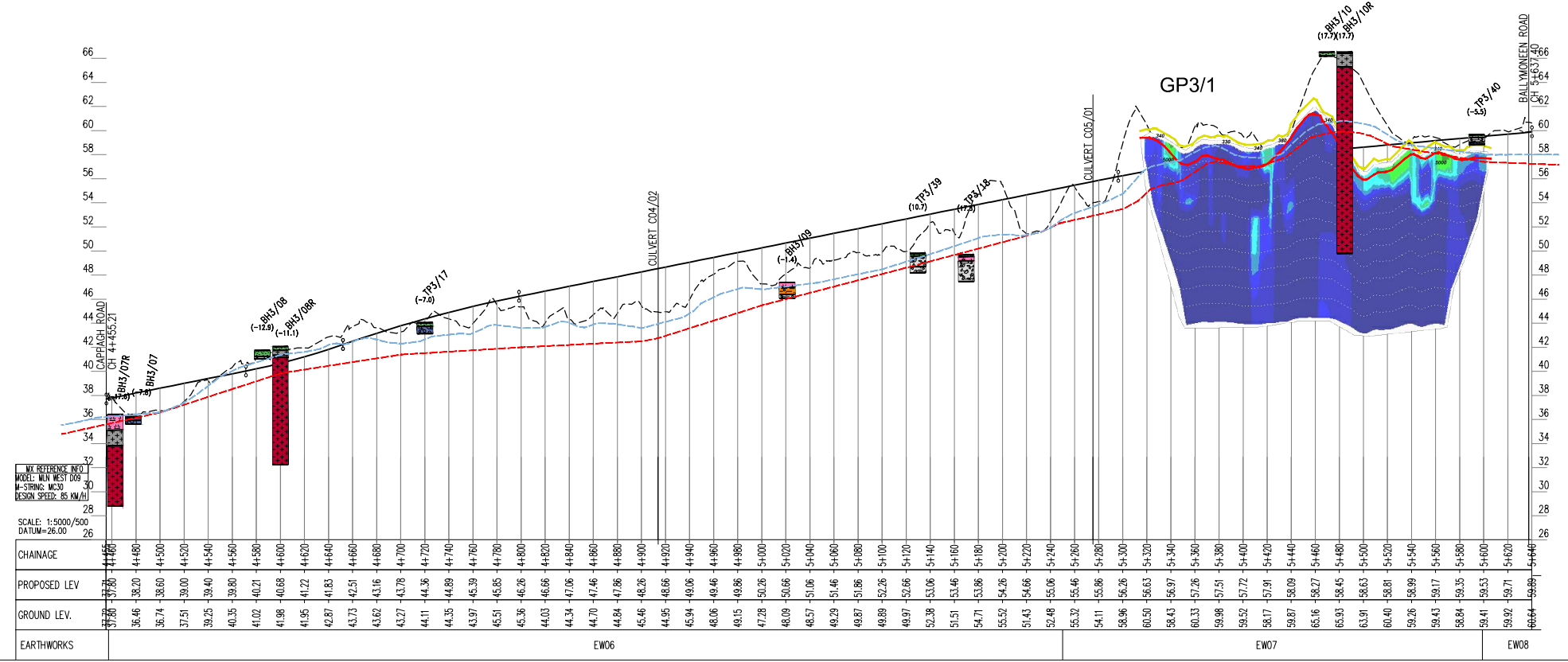
Drawing Title
Hydrogeology Plan & Profile
Mainline Plan/Profile - CH.2+799 to CH.4+455
Sheet 3 of 12

For Information

Job No: 233985
Drawing No: Figure 10.6.003
Issue: 11



- EIA REPORT**
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- Geology**
- Cable Percussive Borehole (B.H. No.)
 - Cable Percussive + Rotary Core Borehole (B.H. No.R)
 - Trial Pit (T.P. No.)
 - Window Sample (W.S. No.)
 - Soakways (S.W. No.)
 - GI Borehole (Lackagh area) (B.H.No.)
 - Horizontal Borehole (Lackagh Quarry) (B.H.No.)
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- S19
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 - Top of Layer 3 (2000 - 2400m/s)
 - Top of Layer 4 (4000 - 5000m/s)



WE REFERENCE NO: 100
 MODEL: MAIN WEST 009
 W-STRING: MC30
 DESIGN SPEED: 85 KM/H

SCALE: 1:5000/500
 DATUM: 26.00

| CHAINAGE | PROPOSED LEV | GROUND LEV. | EARTHWORKS |
|----------|--------------|-------------|------------|
| 44500 | 37.80 | 37.80 | |
| 44505 | 36.46 | 36.46 | |
| 44510 | 36.74 | 36.60 | |
| 44515 | 37.51 | 39.00 | |
| 44520 | 39.25 | 39.40 | |
| 44525 | 40.35 | 39.80 | |
| 44530 | 41.02 | 40.21 | |
| 44535 | 41.98 | 40.68 | |
| 44540 | 41.95 | 41.21 | |
| 44545 | 42.87 | 41.83 | |
| 44550 | 43.73 | 42.51 | |
| 44555 | 43.82 | 43.16 | |
| 44560 | 43.27 | 43.78 | |
| 44565 | 44.11 | 44.36 | |
| 44570 | 44.35 | 44.68 | |
| 44575 | 43.97 | 45.39 | |
| 44580 | 45.51 | 45.65 | |
| 44585 | 45.36 | 46.26 | |
| 44590 | 44.03 | 46.66 | |
| 44595 | 44.34 | 47.06 | |
| 44600 | 44.70 | 47.46 | |
| 44605 | 45.46 | 48.26 | |
| 44610 | 44.95 | 48.66 | |
| 44615 | 45.94 | 49.06 | |
| 44620 | 48.06 | 49.46 | |
| 44625 | 49.15 | 49.86 | |
| 44630 | 47.28 | 50.26 | |
| 44635 | 48.09 | 50.66 | |
| 44640 | 48.57 | 51.06 | |
| 44645 | 49.29 | 51.46 | |
| 44650 | 49.87 | 51.86 | |
| 44655 | 49.97 | 52.26 | |
| 44660 | 49.97 | 52.66 | |
| 44665 | 52.38 | 53.06 | |
| 44670 | 51.51 | 53.46 | |
| 44675 | 54.71 | 53.86 | |
| 44680 | 55.52 | 54.26 | |
| 44685 | 51.43 | 54.66 | |
| 44690 | 52.48 | 55.06 | |
| 44695 | 55.32 | 55.46 | |
| 44700 | 54.11 | 55.86 | |
| 44705 | 58.96 | 56.26 | |
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| 44715 | 58.43 | 56.97 | |
| 44720 | 60.33 | 57.26 | |
| 44725 | 59.98 | 57.51 | |
| 44730 | 59.52 | 57.72 | |
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| 44740 | 59.87 | 58.09 | |
| 44745 | 65.16 | 58.27 | |
| 44750 | 65.93 | 58.45 | |
| 44755 | 63.91 | 58.63 | |
| 44760 | 60.40 | 58.81 | |
| 44765 | 59.26 | 58.99 | |
| 44770 | 59.43 | 59.17 | |
| 44775 | 58.84 | 59.35 | |
| 44780 | 59.41 | 59.53 | |
| 44785 | 59.92 | 59.71 | |
| 44790 | 60.64 | 59.89 | |

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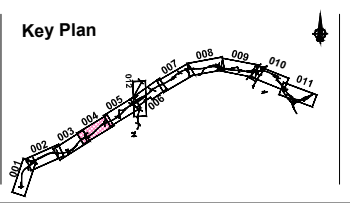
Clients

Comhairle Chontae na Gaillimhe
Galway County Council

Galway City Transport Project

An Roinn Iompair
Turasóireachta agus Spóirt

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Job Title
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Date:
September 2018

| Issue | Date | By | Chkd | Appd |
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| I1 | 28/09/2018 | KJ | LB | EMC |

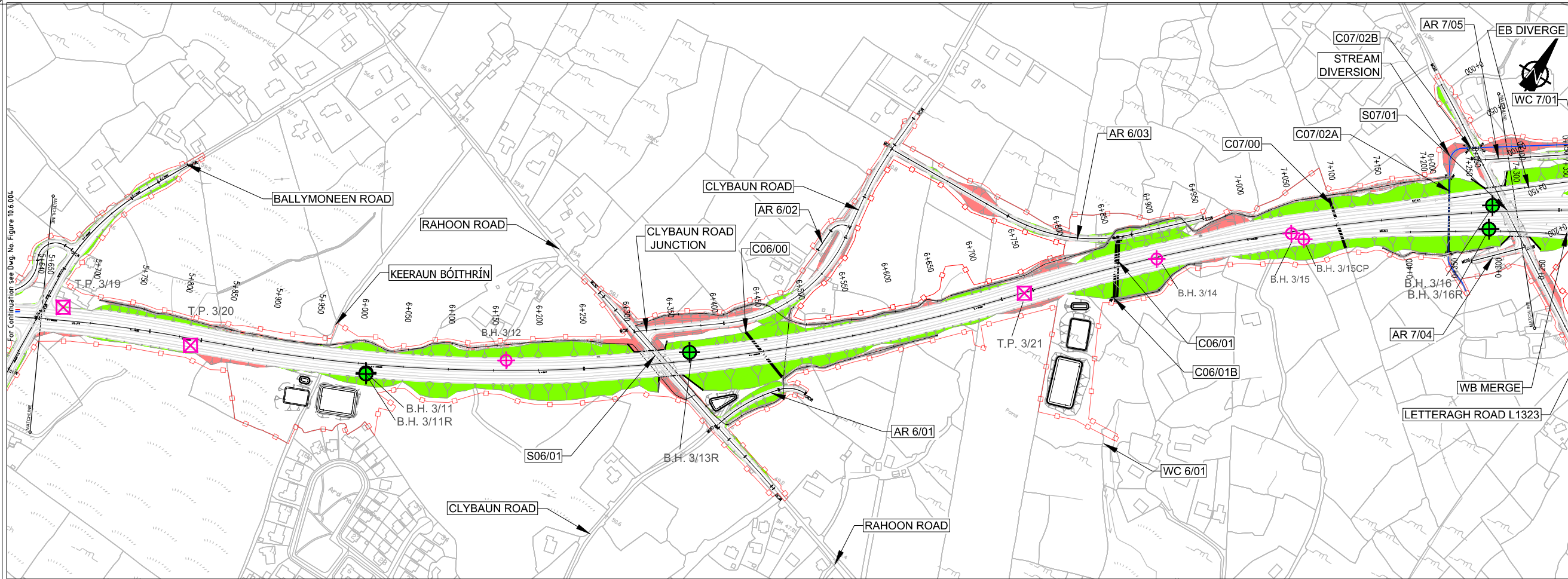
Drawing Title
Hydrogeology Plan & Profile
Mainline Plan/Profile - CH.4+455 to CH.5+640
Sheet 4 of 12

Drawing Status
For Information

Job No
233985

Drawing No
Figure 10.6.004

Issue
11



EIA REPORT

Legend:

PLAN

- City Boundary
- Proposed Development Boundary
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- Earthworks - Fill
- Earthworks - Cut
- Structure (S)
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Geology

- Cable Percussive Borehole
- Cable Percussive + Rotary Core Borehole
- Trial Pit
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- GI Borehole (Lackagh area)
- Horizontal Borehole (Lackagh Quarry)
- Historical GI Locations Records

Geophysics

- Geophysics Locations

PROFILE

- Existing Ground
- Proposed Geometry Profile
- Maximum Groundwater Level
- Minimum Groundwater Level
- LACKAGH TUNNEL & GALWAY RACECOURSE TUNNEL

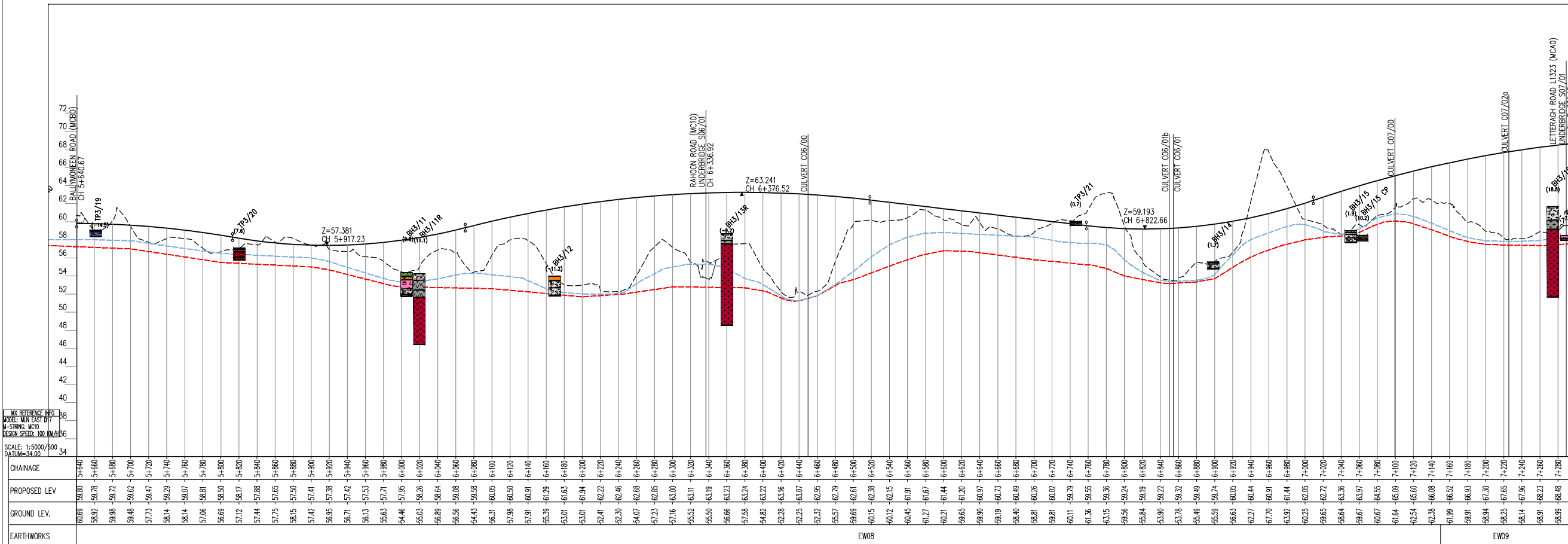
Geology

| | |
|----------------------|---------------------------|
| Weathered Rock [Wrr] | Limestone [LSRck] |
| Topsoil [TOP] | Gravel [GR] |
| Silt [SI] | Clay [CI] |
| Sand [Sa] | Cobbles and Boulders [Cb] |
| Peat [PEAT] | Granite [TGrRck] |
| Made Ground [MG] | |

Geophysics

Layers from Seismic Refraction Model:

- Ground Surface/Top of Layer 1 (200 - 340m/s)
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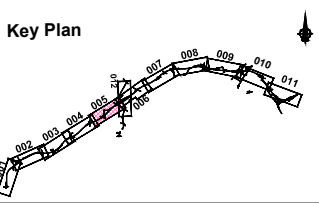
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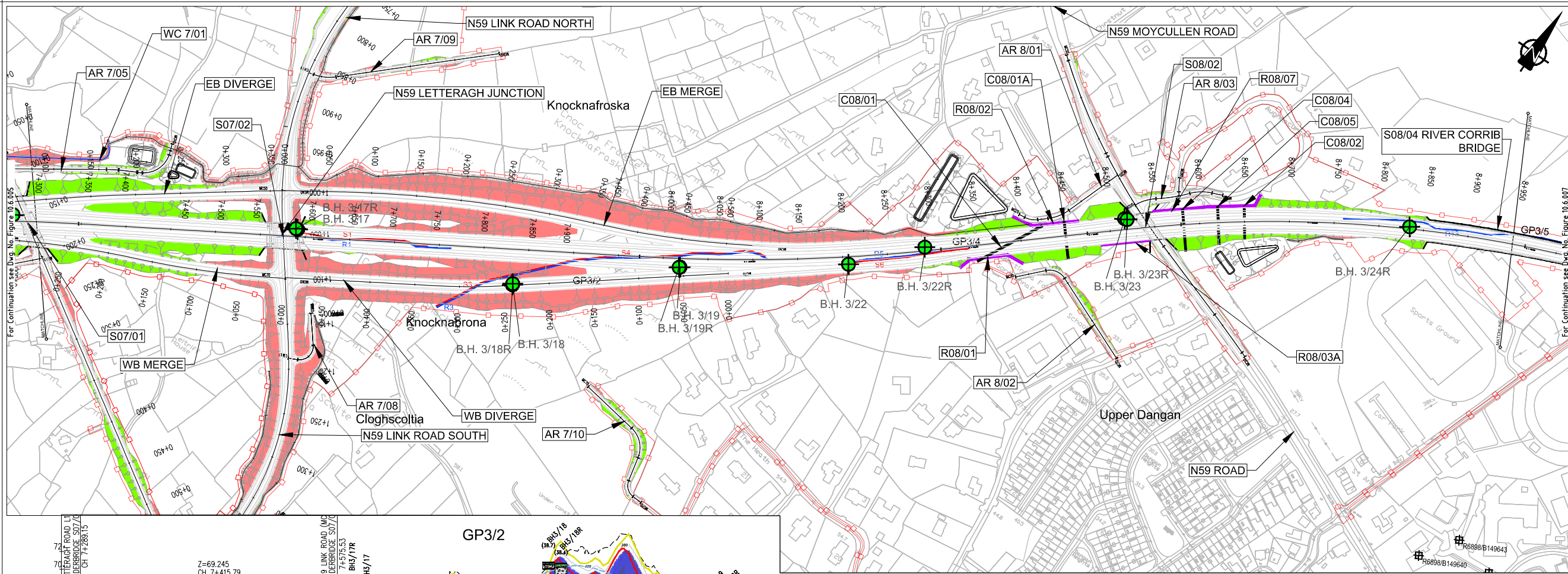
Date:
September 2018

| | | | | |
|-------|------------|----|------|------|
| I1 | 28/09/2018 | KJ | LB | EMC |
| Issue | Date | By | Chkd | Appd |

Drawing Title
Hydrogeology Plan & Profile
Mainline Plan/Profile - CH.5+640 to CH.7+300
Sheet 5 of 12

For Information

Job No: 233985
Drawing No: Figure 10.6.005
Issue: 11



EIA REPORT

Legend:

PLAN

- City Boundary
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- Historical GI Locations Records

Geophysics

- Geophysics Locations

PROFILE

- Existing Ground
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- Maximum Groundwater Level
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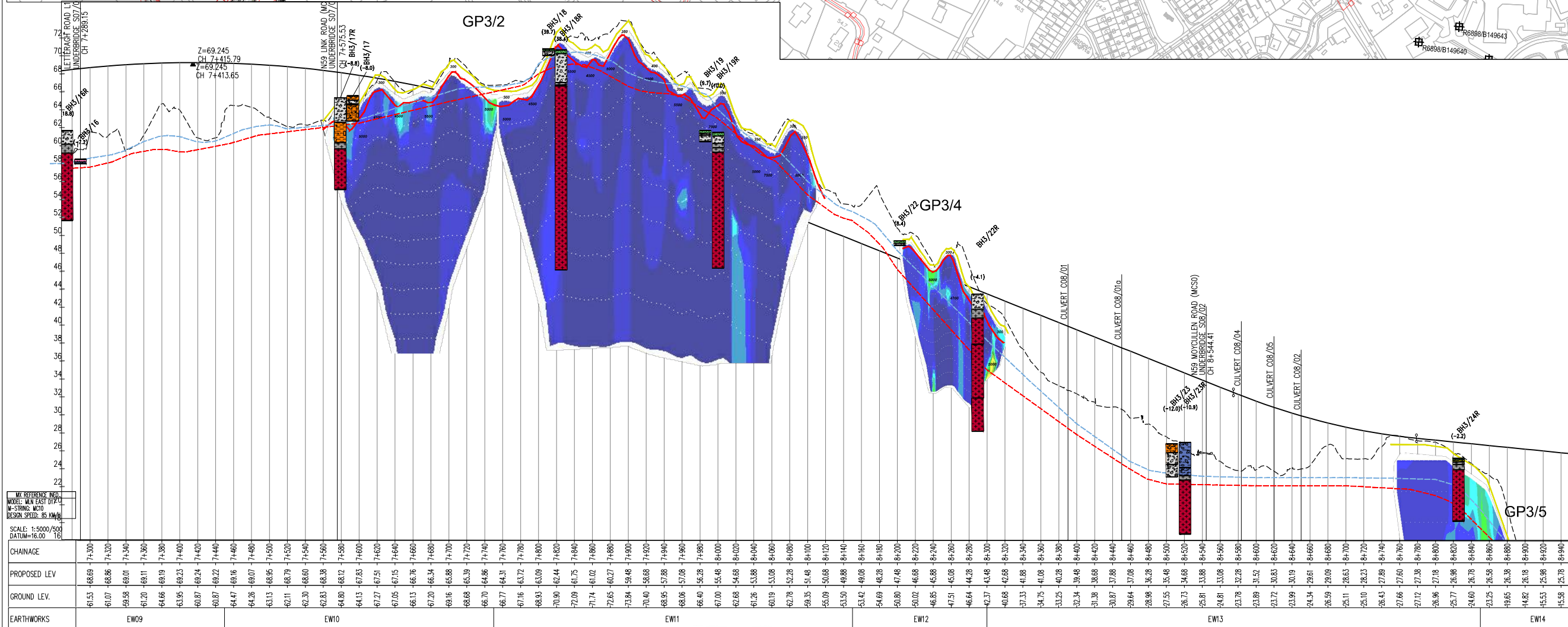
Geotechnical

- CONCRETE
- LIMESTONE
- MUDSTONE
- NO RECOVERY
- CLAY
- Sandy CLAY
- Gravelly COBBLES
- Clayey COBBLES
- COBBLES
- GRAVEL
- Sandy SILT
- Silt
- Silty SAND
- Organic CLAY
- SAND
- Cobbly CLAY
- BOULDERS
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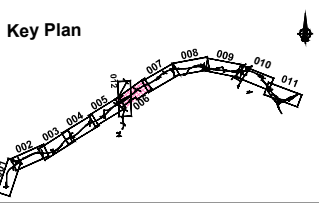
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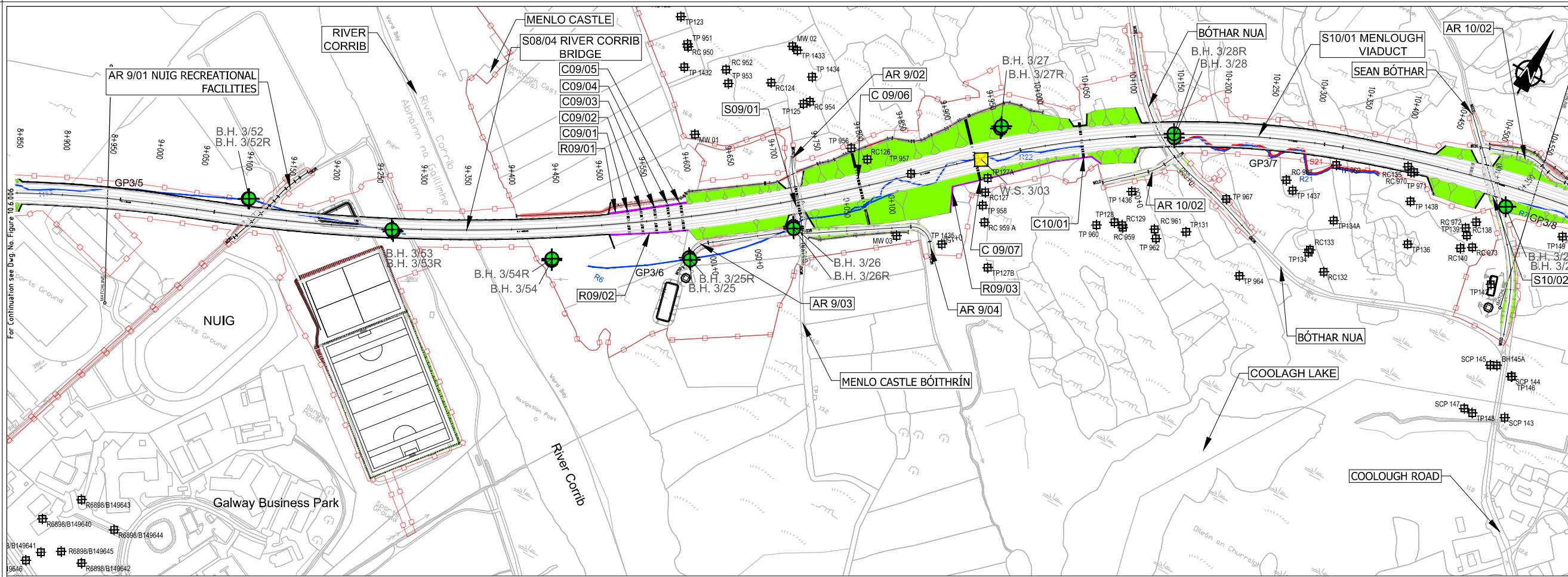
Drawing Title
Hydrogeology Plan & Profile
Mainline Plan/Profile - CH.7+300 to CH.8+950
Sheet 6 of 12

Drawing Status
For Information

Job No
233985

Drawing No
Figure 10.6.006

Issue
11



EIA REPORT

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PLAN

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- G.I. Code & Number

Geophysics

R19 GP3/24

S19

PROFILE

- Existing Ground
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- Maximum Groundwater Level
- Minimum Groundwater Level
- LACKAGH TUNNEL & GALWAY RACECOURSE TUNNEL

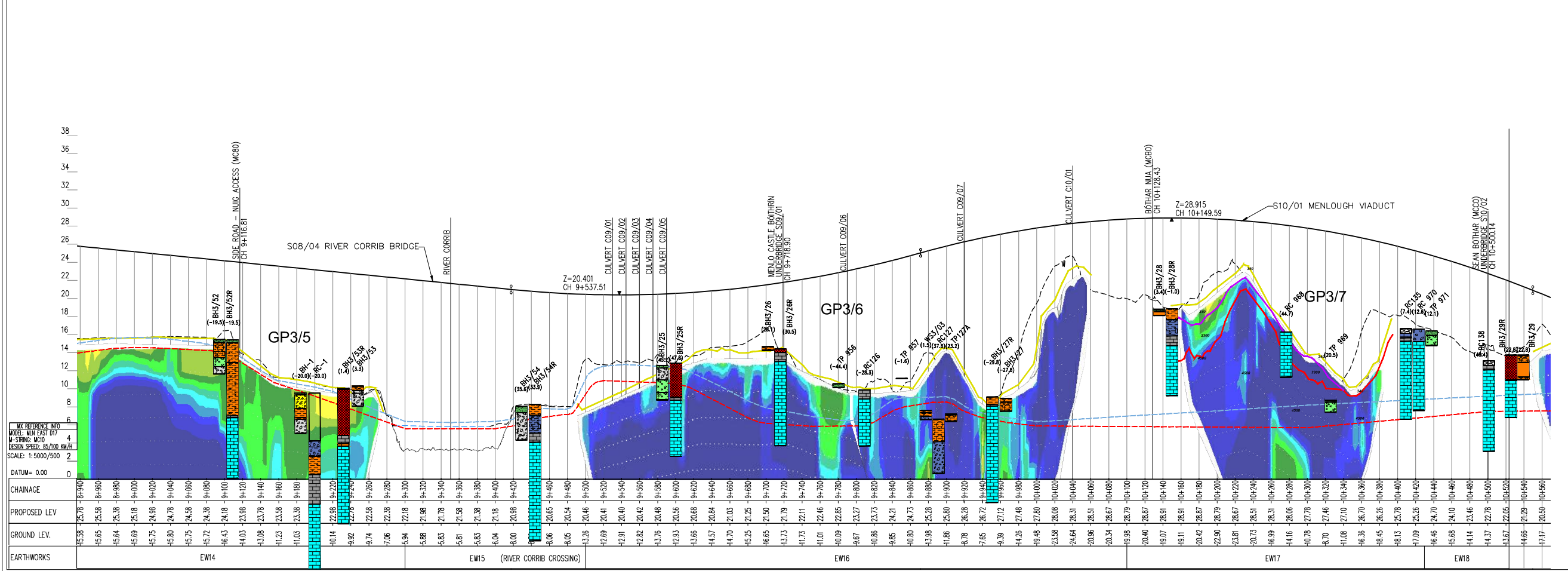
Geology

- Weathered Rock [Wrr]
- Topsoil [TOP]
- Silt [SI]
- Sand [Sa]
- Peat [PEAT]
- Made Ground [MG]
- Limestone [LSRck]
- Gravel [GR]
- Clay [CI]
- Cobbles and Boulders [Cb]
- Granite [TRck]
- Silty SAND
- Organic CLAY
- SAND
- Cobbly CLAY
- BOULDERS
- Gravelly CLAY
- Silty sandy gravelly CLAY (MADE GROUND)
- Sandy cobbly CLAY
- TOPSOIL
- COBBLES and BOULDERS
- Sandy gravelly cobbly CLAY

Geophysics

Layers from Seismic Refraction Model:

- Ground Surface/Top of Layer 1 (200 - 340m/s)
- Top of Layer 2 (900 - 1200m/s)
- Top of Layer 3 (2000 - 2400m/s)
- Top of Layer 4 (4000 - 5000m/s)



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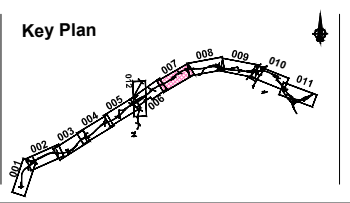
Clients

Comhairle Chontae na Gaillimhe
Galway County Council

Galway City Transport Project

An Roipín Iompair
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TII



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Scale

1:2500 / :250

Date

September 2018

| Issue | Date | By | Chkd | Appd |
|-------|------------|----|------|------|
| I1 | 28/09/2018 | KJ | LB | EMC |

For Information

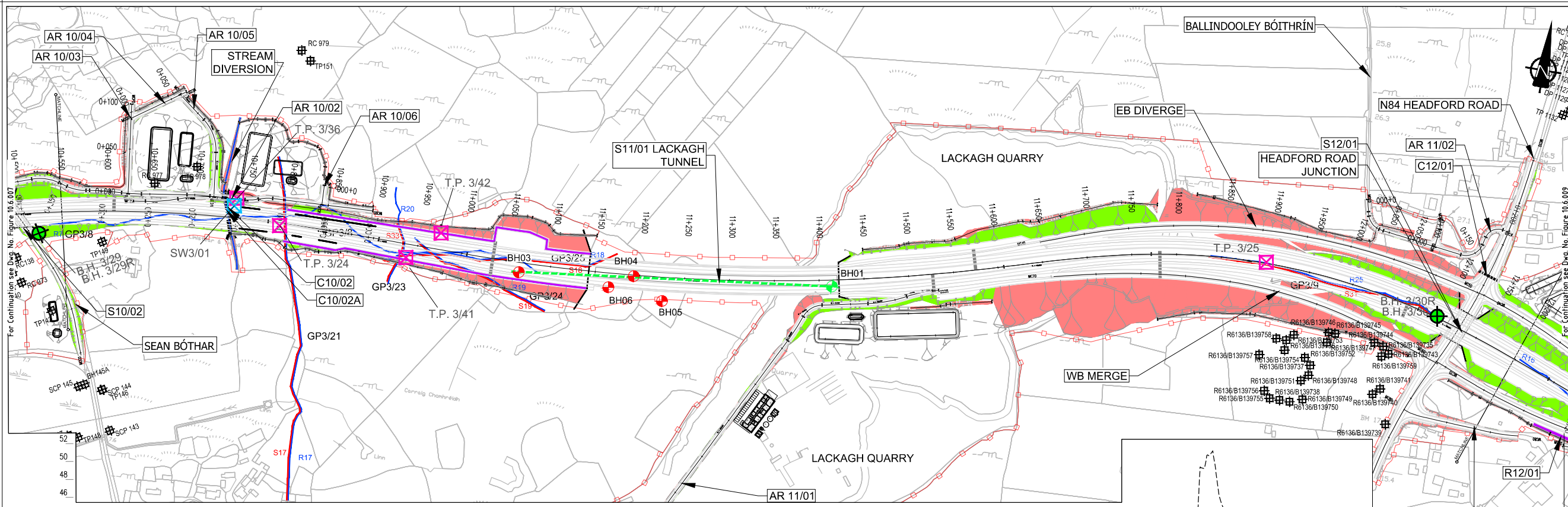
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|--------|-----------------|-------|
| 233985 | Figure 10.6.007 | 11 |

Drawing Title

Hydrogeology Plan & Profile
Mainline Plan /Profile - CH.8+950 to CH.10+550
Sheet 7 of 12

Drawing Status

For Information



EIA REPORT

Legend:

PLAN

- City Boundary
- Proposed Development Boundary
- Proposed Road Development
- Earthworks - Fill
- Earthworks - Cut
- Structure (S)
- Proposed Retaining wall (R)
- Proposed Culvert (C)
- Proposed Environmental Underpass (C)
- Proposed Attenuation Pond / Infiltration Basin/Wetlands

Geology

- Cable Percussive Borehole
- Cable Percussive + Rotary Core Borehole
- Trial Pit
- Window Sample
- Soakways
- GI Borehole (Lackagh area)
- Horizontal Borehole (Lackagh Quarry)
- Historical GI Locations Records

Geophysics

- Geophysics Locations

PROFILE

- Existing Ground
- Proposed Geometry Profile
- Maximum Groundwater Level
- Minimum Groundwater Level
- LACKAGH TUNNEL & GALWAY RACECOURSE TUNNEL

Geology

- Weathered Rock [Wrr]
- Topsoil [TOP]
- Silt [SI]
- Sand [Sa]
- Peat [PEAT]
- Made Ground [MG]
- Limestone [LSRck]
- Gravel [GR]
- Clay [CI]
- Cobbles and Boulders [Cb]
- Granite [TRck]

Geotechnical Symbols

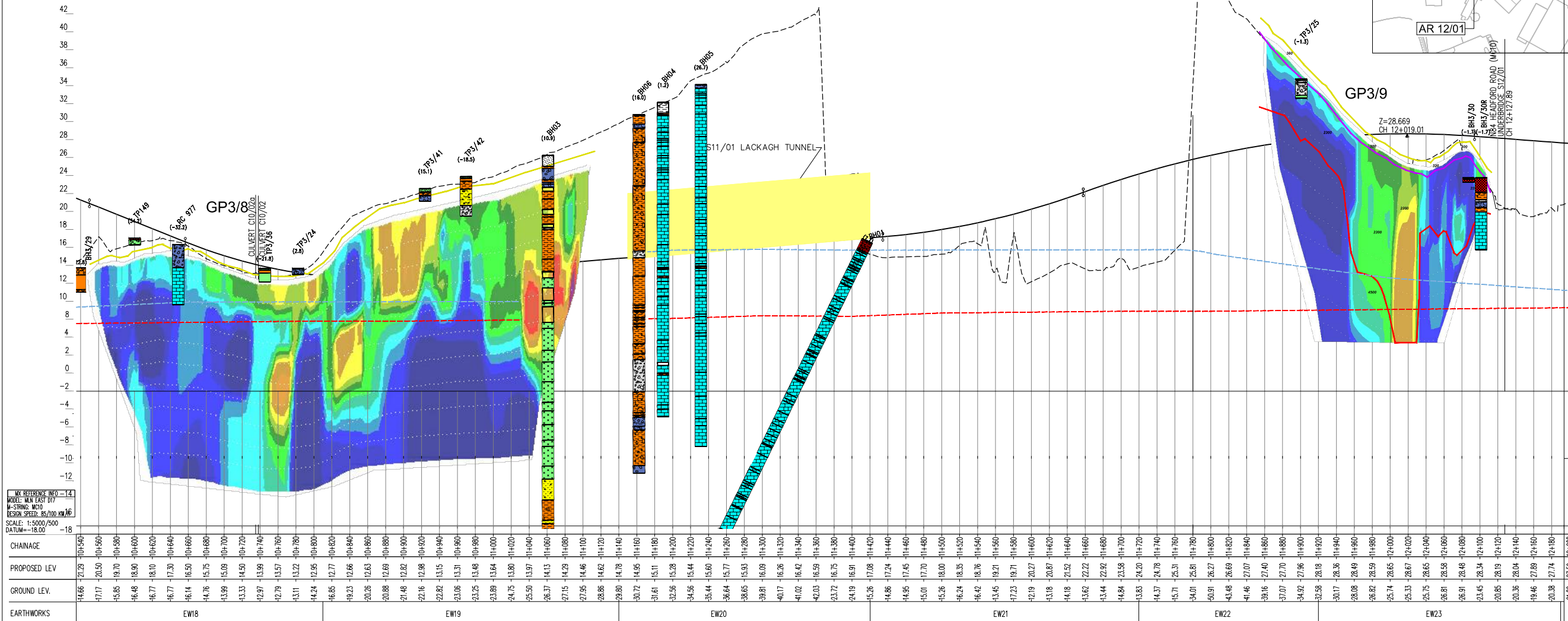
- CONCRETE
- LIMESTONE
- MUDSTONE
- NO RECOVERY
- CLAY
- Sandy CLAY
- Gravelly COBBLES
- Clayey COBBLES
- COBBLES
- GRAVEL
- Sandy SILT
- Silty SAND
- Organic CLAY
- SAND
- Cobbly CLAY
- BOULDERS
- Gravelly CLAY
- Silty sandy gravelly CLAY
- CLAY (MADE GROUND)
- Sandy cobbly CLAY
- TOPSOIL
- COBBLES and BOULDERS
- Sandy gravelly cobbly CLAY

Geophysics

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- Top of Layer 2 (900 - 1200m/s)
- Top of Layer 3 (2000 - 2400m/s)
- Top of Layer 4 (4000 - 5000m/s)

Scale: 20.0 40.0 80.0 160.0 320 640 1280 2560



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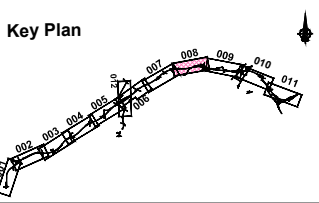
Clients

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Galway County Council

Galway City Transport Project

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Job Title

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Scale

H 1:5000 / V 1:500 @ A3

Date: September 2018

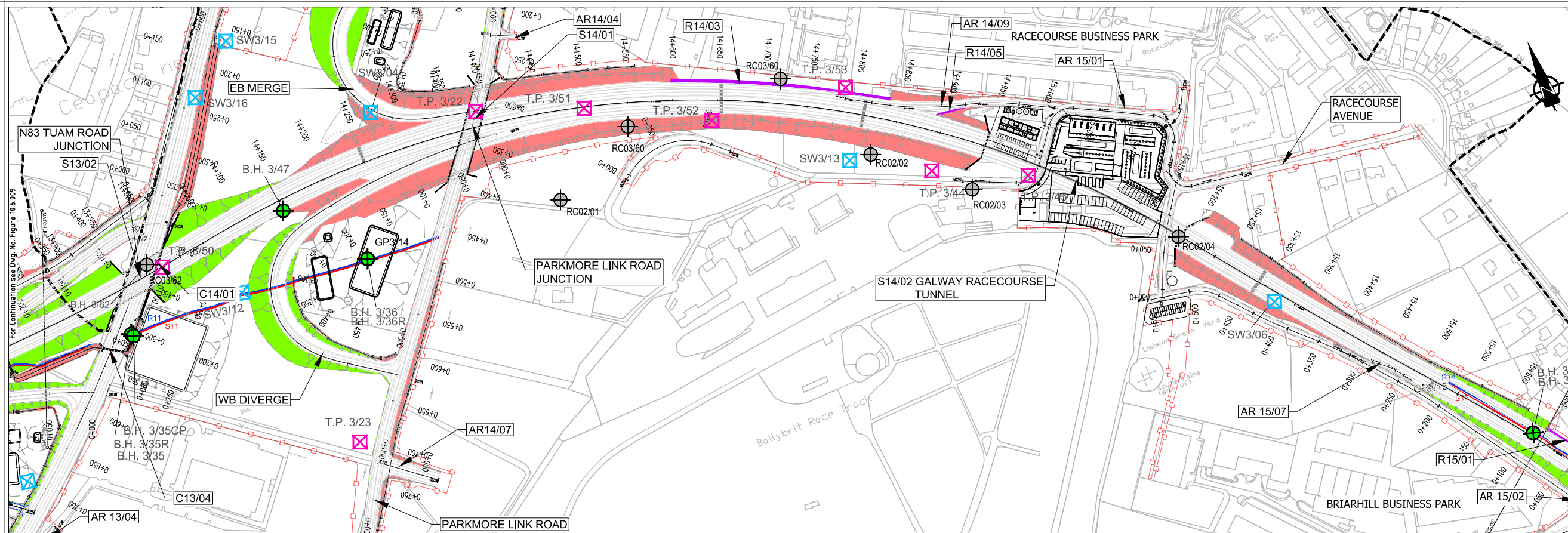
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| 11 | 28/09/2018 | KJ | LB | EMC |
| Issue | Date | By | Chkd | Appd |

Drawing Title

Hydrogeology Plan & Profile
Mainline Plan /Profile - CH.10+550 to CH.12+200
Sheet 8 of 12

For Information

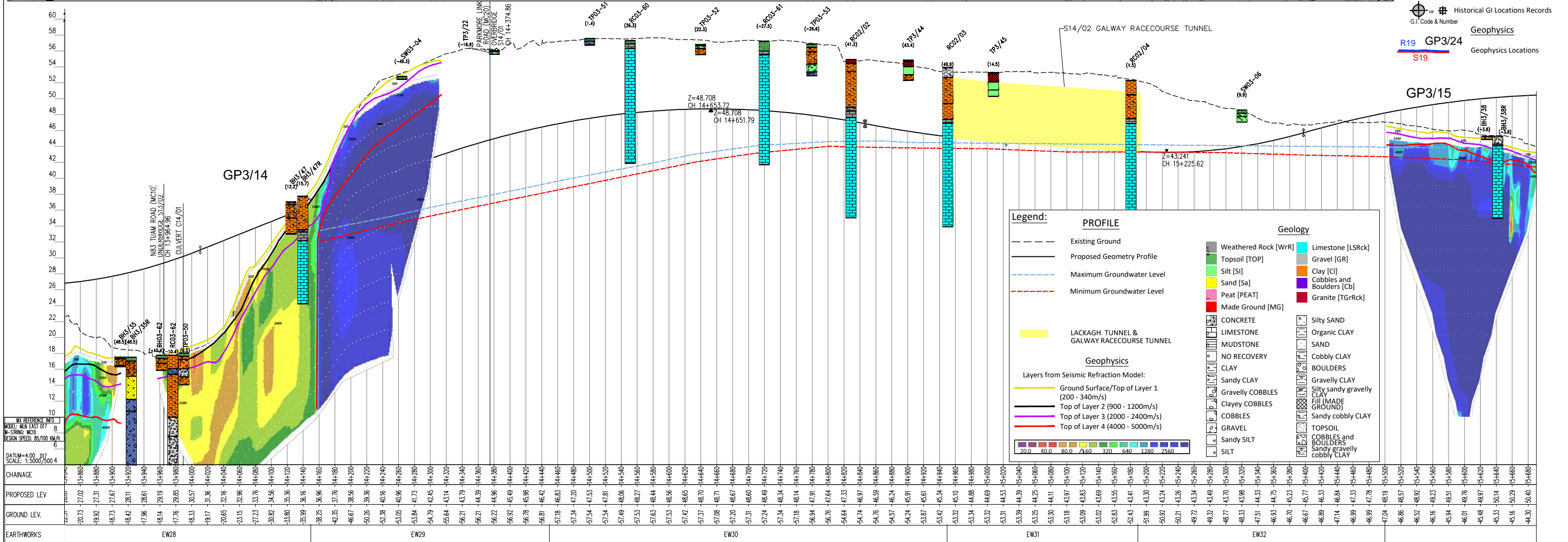
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| Job No | Drawing No | Issue |
| 233985 | Figure 10.6.008 | 11 |



EIA REPORT

Legend:

- PLAN
 - City Boundary
 - Proposed Development Boundary
 - Proposed Road Development
 - Earthworks - Fill
 - Earthworks - Cut
 - Structure (S)
 - Proposed Retaining wall (R)
 - Proposed Culvert (C)
 - Proposed Environmental Underpass (C)
 - Proposed Attenuation Pond / Infiltration Basin / Wetlands
- Geology
 - Cable Percussive Borehole
 - Cable Percussive + Rotary Core Borehole
 - Trial Pit
 - Window Sample
 - Soakways
 - GI Borehole (Lackagh area)
 - Horizontal Borehole (Lackagh Quarry)
 - Historical GI Locations Records
- Geophysics
 - R19 GP3/24
 - S19
 - Geophysics Locations



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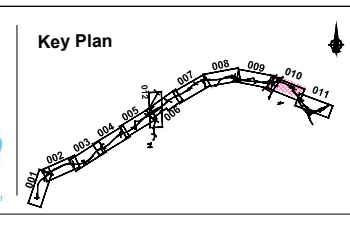
Clients

Comhairle Chontae na Gaillimhe
Galway County Council

Galway City Transport Project

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Scale
H 1:5000 / V 1:500 @ A3

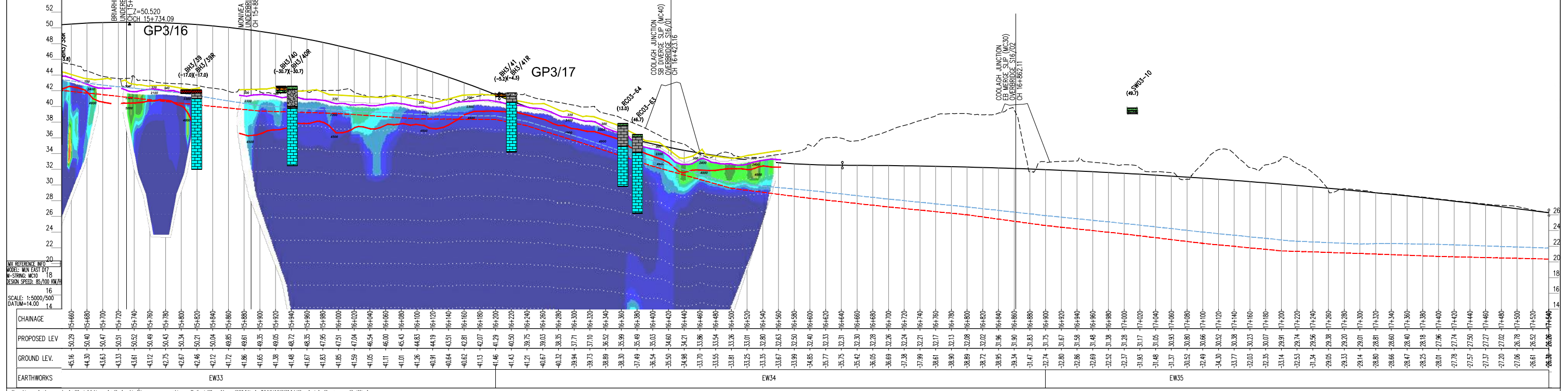
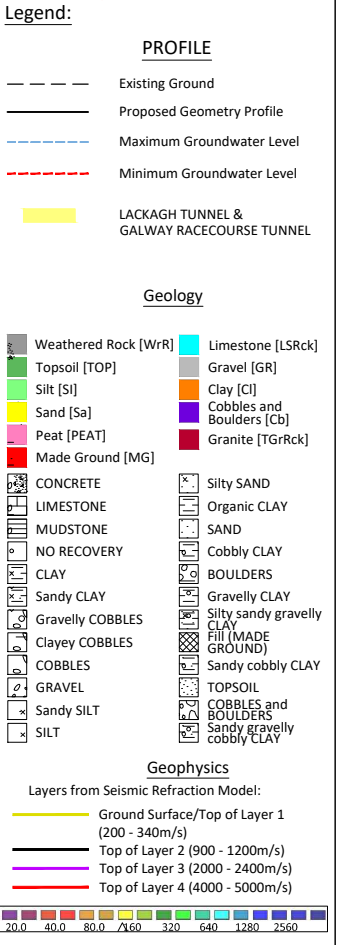
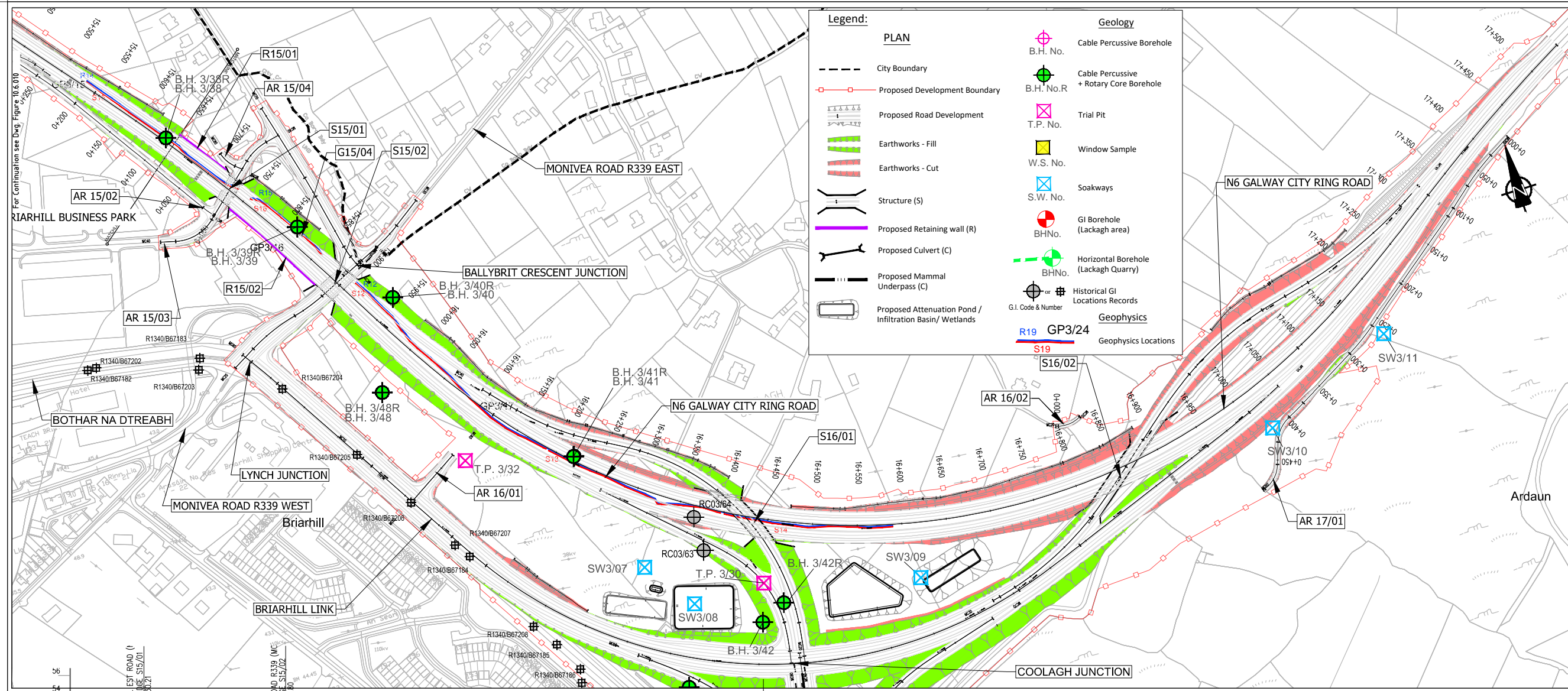
Date:
September 2018

| Issue | Date | By | Chkd | Appd |
|-------|------------|----|------|------|
| I1 | 28/09/2018 | KJ | LB | EMC |

Drawing Title
Hydrogeology Plan & Profile
Mainline Plan/Profile - CH.13+850 to CH.15+650
Sheet 10 of 12

For Information

Job No: 233985
Drawing No: Figure 10.6.010
Issue: 11



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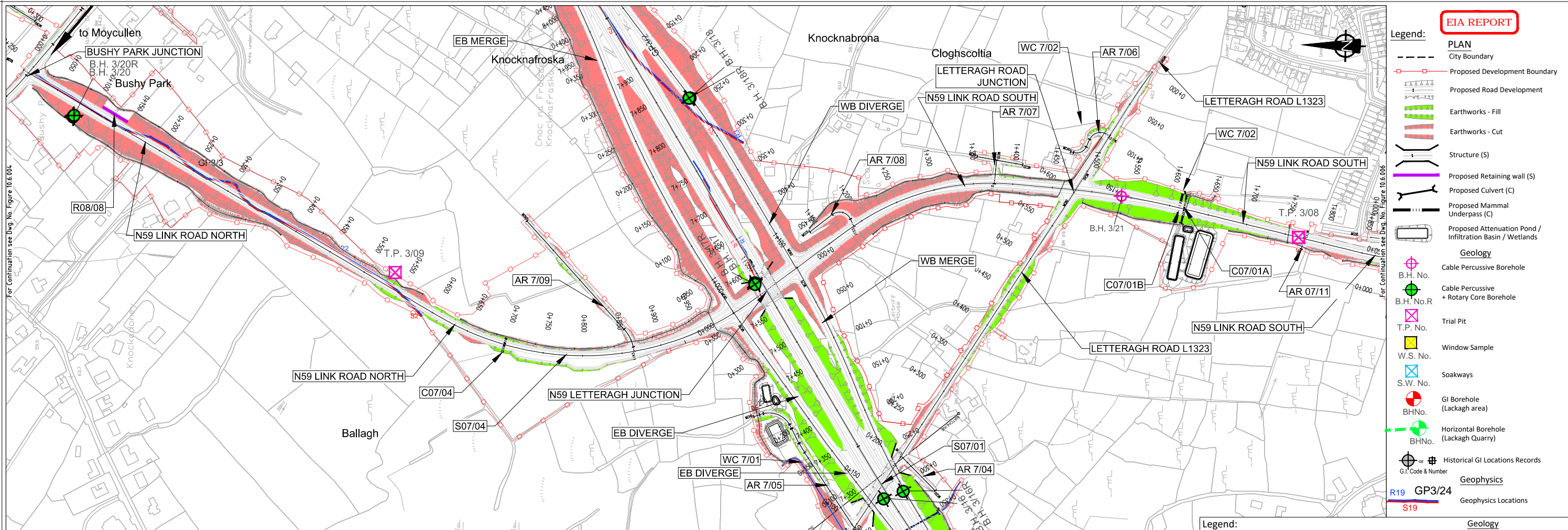
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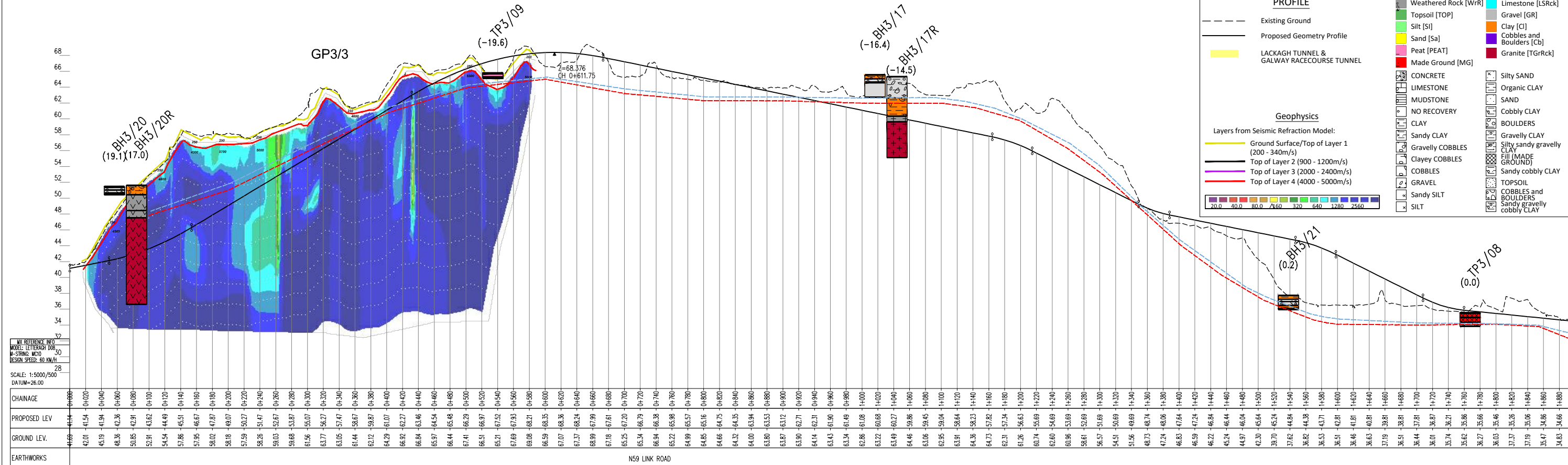
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Hydrogeology Plan & Profile
Mainline Plan/Profile - CH.15+650 to CH.17+540
Sheet 11 of 12

Drawing Status
For Information

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| Job No | 233985 | Drawing No | Figure 10.6.011 | Issue | 11 |
| Issue | | Date | | By | Chkd |
| | | | | Appd | |



- EIA REPORT**
- Legend:**
- PLAN
 - City Boundary
 - Proposed Development Boundary
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 - Earthworks - Fill
 - Earthworks - Cut
 - Structure (S)
 - Proposed Retaining wall (S)
 - Proposed Culvert (C)
 - Proposed Mammal Underpass (C)
 - Proposed Attenuation Pond / Infiltration Basin / Wetlands
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 - Trial Pit
 - Window Sample
 - Soakways
 - GI Borehole (Lackagh area)
 - BHNo.
 - Horizontal Borehole (Lackagh Quarry)
 - Historical GI Locations Records
 - Geophysics
 - R19 GP3/24
 - S19
 - Geophysics Locations



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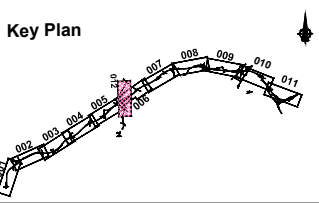
Clients

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Scale
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Date
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Drawing Title
Hydrogeology Plan & Profile
N59 Plan/Profile - Mainline CH.7+570
Sheet 12 of 12

Drawing Status
For Information

Job No
233985

Drawing No
Figure 10.6.012

Issue
11