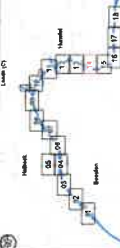




# Notes

1. All dimensions shall be in millimetres. All dimensions shall be checked against the relevant specification.
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9. All dimensions shall be in millimetres. All dimensions shall be checked against the relevant specification.
10. All dimensions shall be in millimetres. All dimensions shall be checked against the relevant specification.

## Key Plan

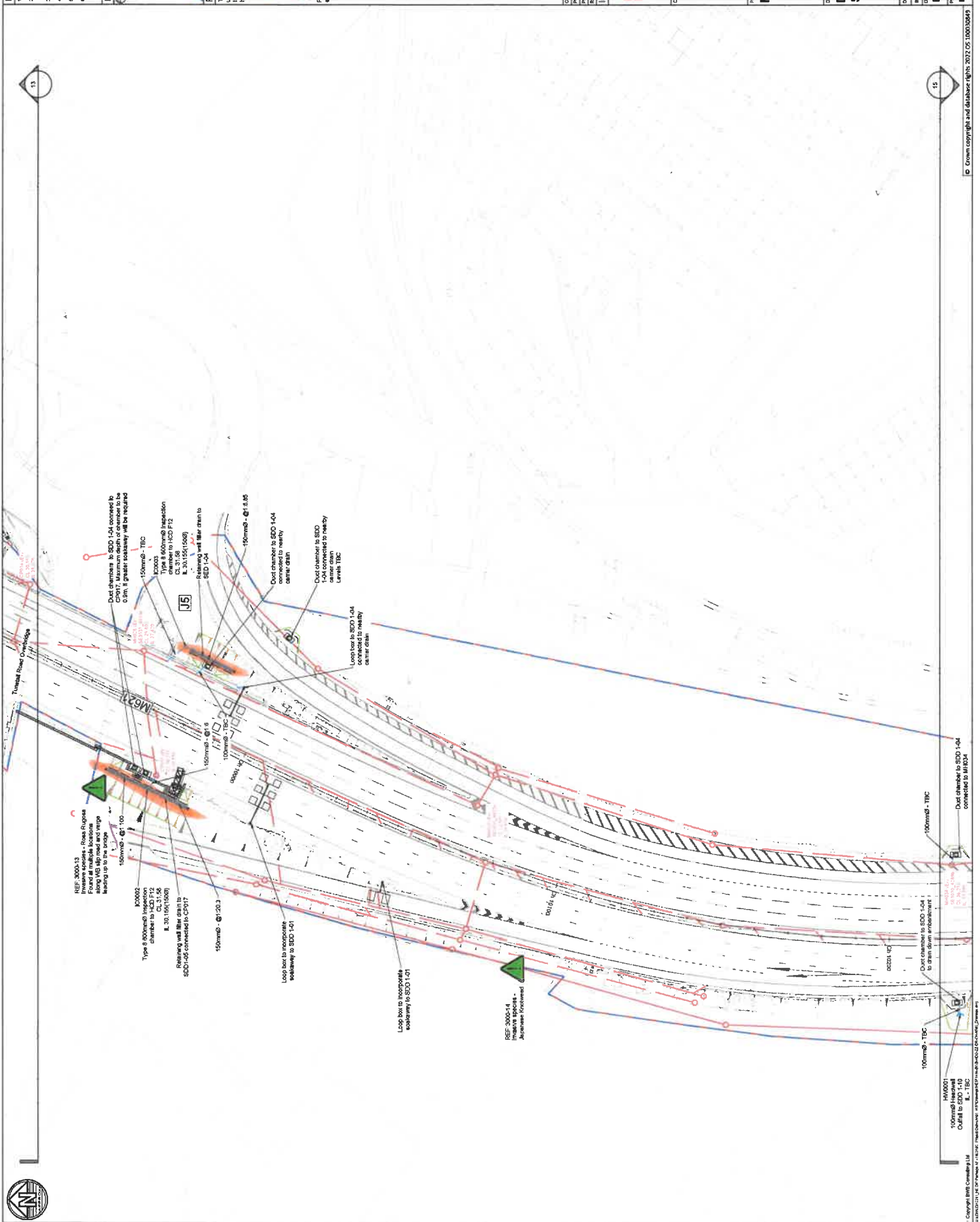


## Residual Design Hazards

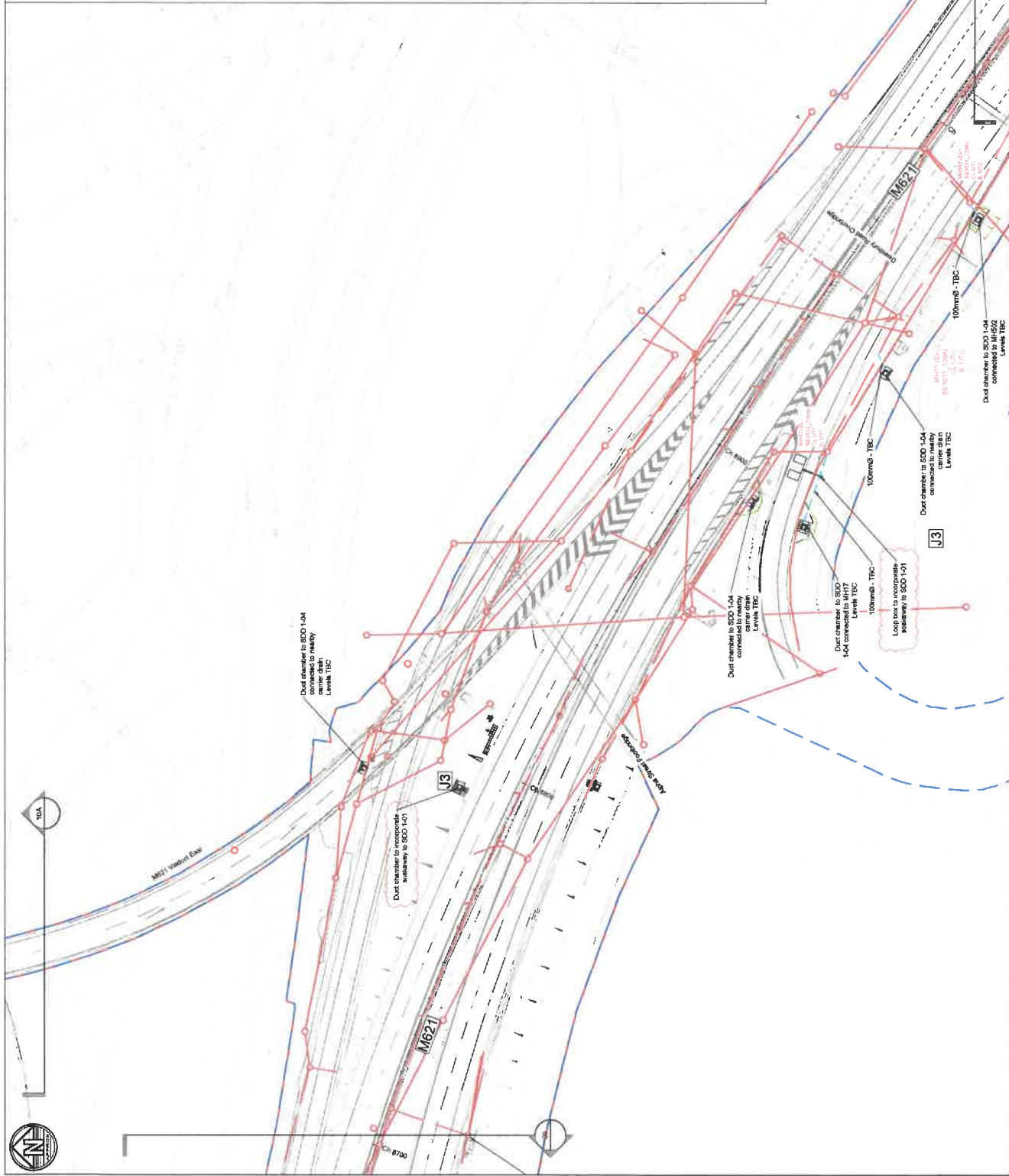
The following notes (where shown) highlight significant (in the context of the project) residual design hazards. The types of hazard are indicated by the hazard symbol. Typical hazards normally associated with the types of work detailed on this drawing are not included.

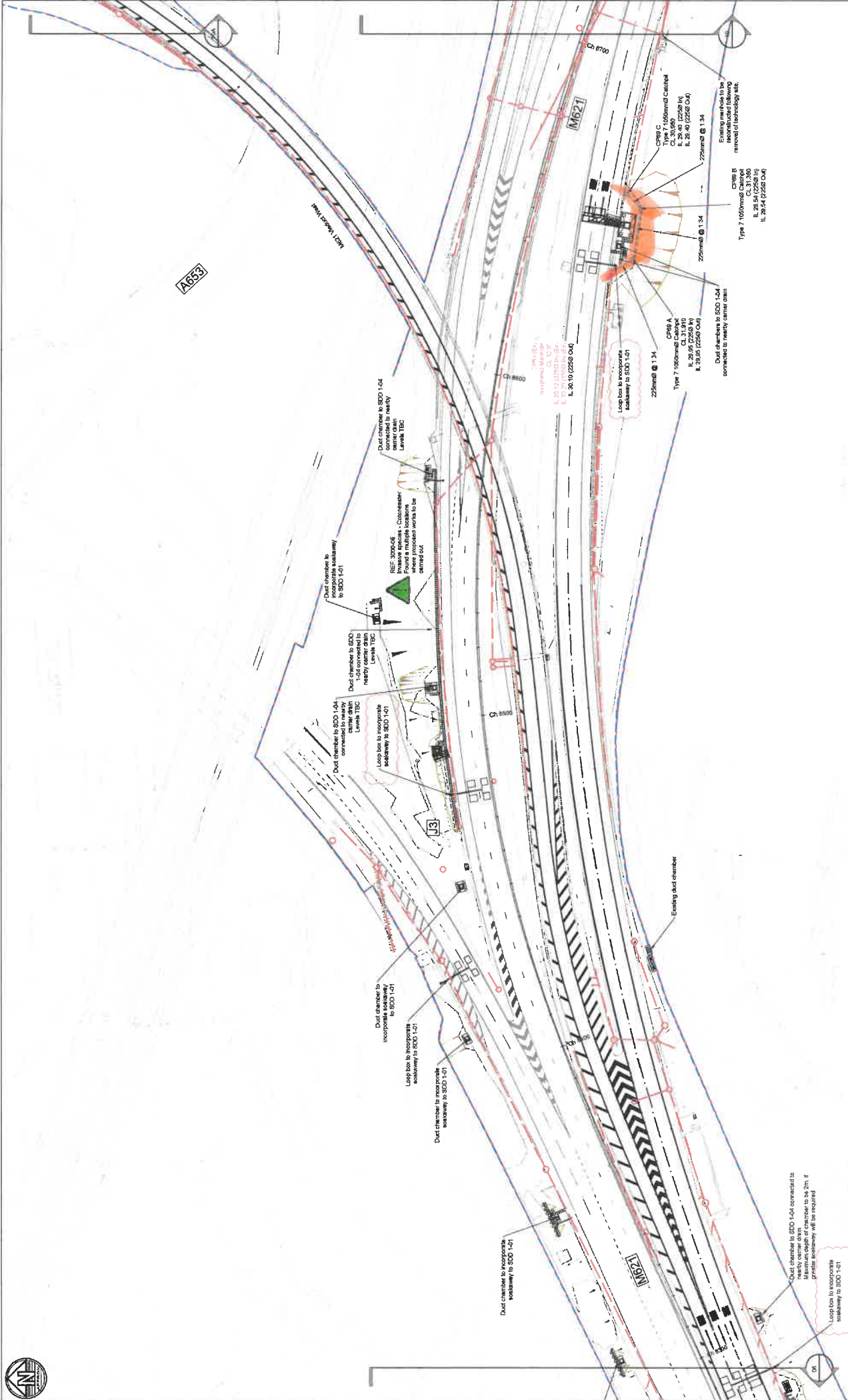
**Construction**  REF XXXXX  
**Environmental**  REF XXXXX  
**Operational**  REF XXXXX

Further information on all hazards can be found in the hazard elimination schedule - HES51464-BWB-HDB-14-DR-CH-4000

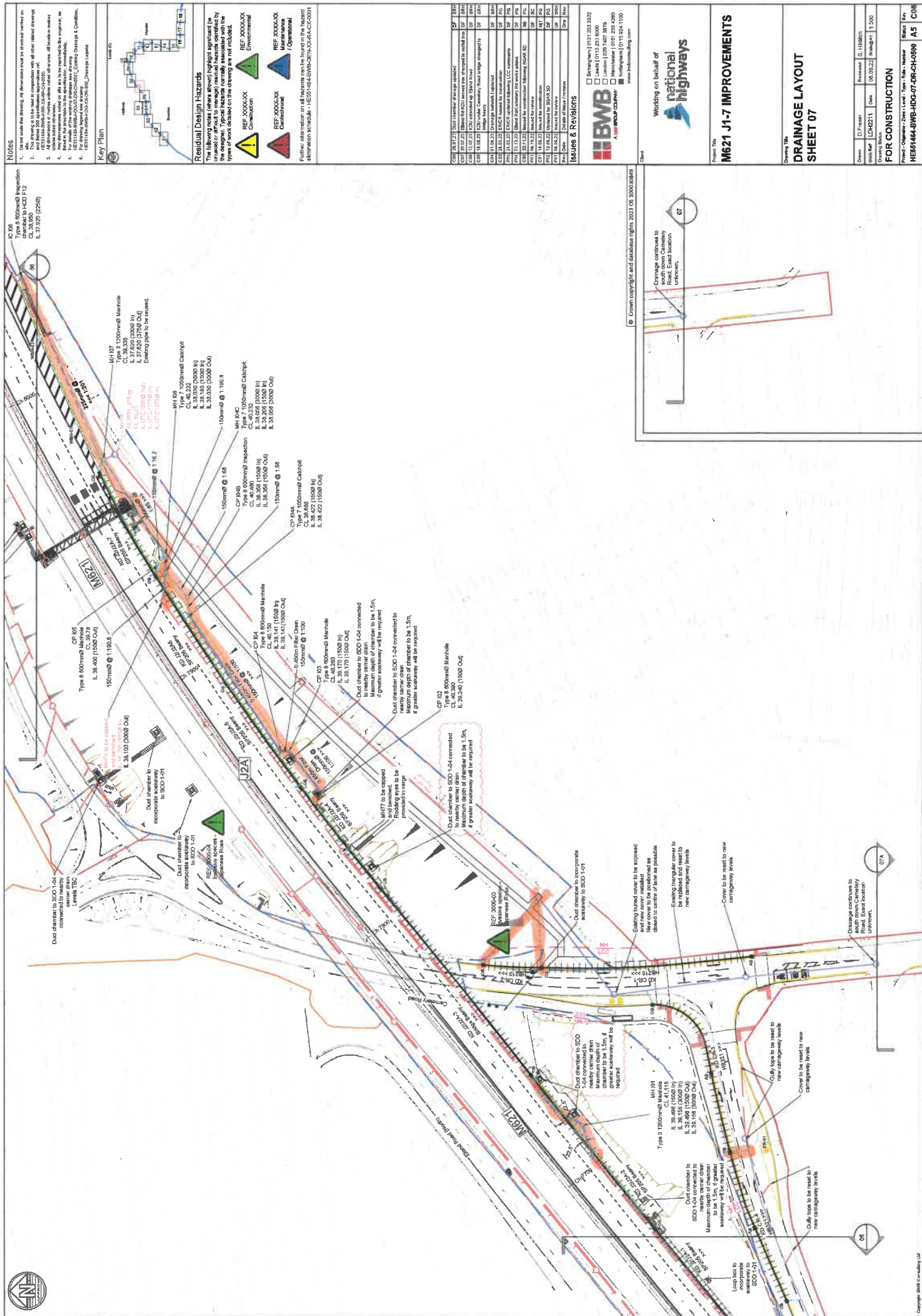




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[illegible]







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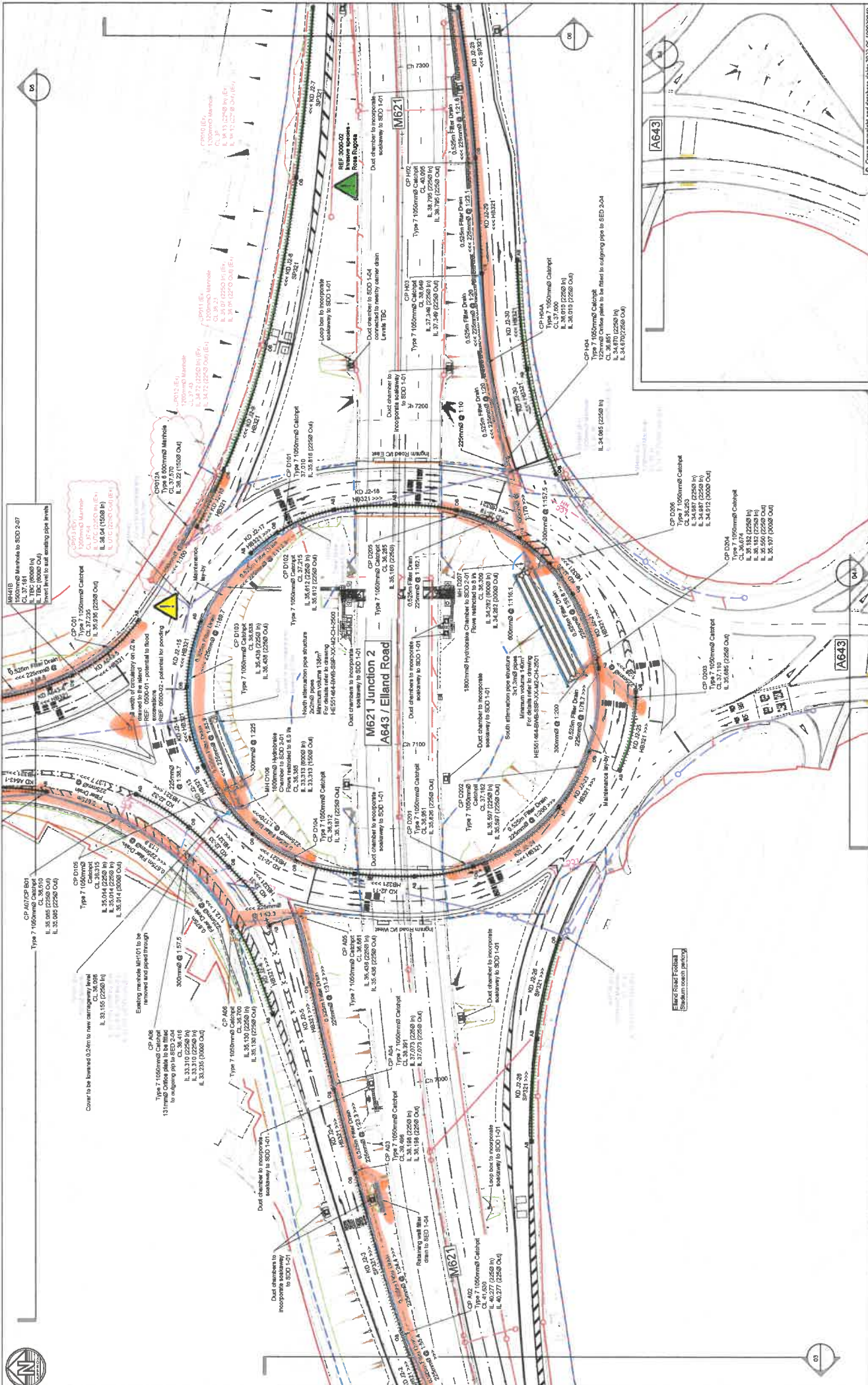
**#621 J1-7 IMPROVEMENTS**

**DRAINAGE LAYOUT**

**SHEET 08**

|        |         |          |            |             |
|--------|---------|----------|------------|-------------|
| Drawn: | WF Ref  | Date:    | Reviewed   | P. Goodyear |
|        | LDH2211 | 27.05.22 | Issued At: | 1 500       |

[illegible]



Notes

1. All dimensions are in metres. All dimensions are to the centreline unless otherwise stated.

2. All dimensions are to the centreline unless otherwise stated.

3. All dimensions are to the centreline unless otherwise stated.

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9. All dimensions are to the centreline unless otherwise stated.

10. All dimensions are to the centreline unless otherwise stated.

Key Plan

Residual Design Hazards

The following hazards are identified in the design and are to be avoided or mitigated by the design. The types of hazard identified in the design are not included.

Further information on all hazards can be found in the hazard avoidance schedule.

HE01: Hazardous materials (Hazardous materials)

HE02: Hazardous materials (Hazardous materials)

HE03: Hazardous materials (Hazardous materials)

HE04: Hazardous materials (Hazardous materials)

HE05: Hazardous materials (Hazardous materials)

HE06: Hazardous materials (Hazardous materials)

HE07: Hazardous materials (Hazardous materials)

HE08: Hazardous materials (Hazardous materials)

HE09: Hazardous materials (Hazardous materials)

HE10: Hazardous materials (Hazardous materials)

Issues & Revisions

| Rev | Date     | Description    | By         | Rev |
|-----|----------|----------------|------------|-----|
| 001 | 12/04/21 | Initial design | CP 1000000 | 001 |
| 002 | 12/04/21 | Initial design | CP 1000000 | 002 |
| 003 | 12/04/21 | Initial design | CP 1000000 | 003 |
| 004 | 12/04/21 | Initial design | CP 1000000 | 004 |
| 005 | 12/04/21 | Initial design | CP 1000000 | 005 |
| 006 | 12/04/21 | Initial design | CP 1000000 | 006 |
| 007 | 12/04/21 | Initial design | CP 1000000 | 007 |
| 008 | 12/04/21 | Initial design | CP 1000000 | 008 |
| 009 | 12/04/21 | Initial design | CP 1000000 | 009 |
| 010 | 12/04/21 | Initial design | CP 1000000 | 010 |

BWB

Working on behalf of

national highways

Project Title

M621 J1-7 IMPROVEMENTS

Project No

HE01: Hazardous materials (Hazardous materials)

Project No

HE02: Hazardous materials (Hazardous materials)

Project No

HE03: Hazardous materials (Hazardous materials)

Project No

HE04: Hazardous materials (Hazardous materials)

Project No

HE05: Hazardous materials (Hazardous materials)

Project No

HE06: Hazardous materials (Hazardous materials)

Project No

HE07: Hazardous materials (Hazardous materials)

Project No

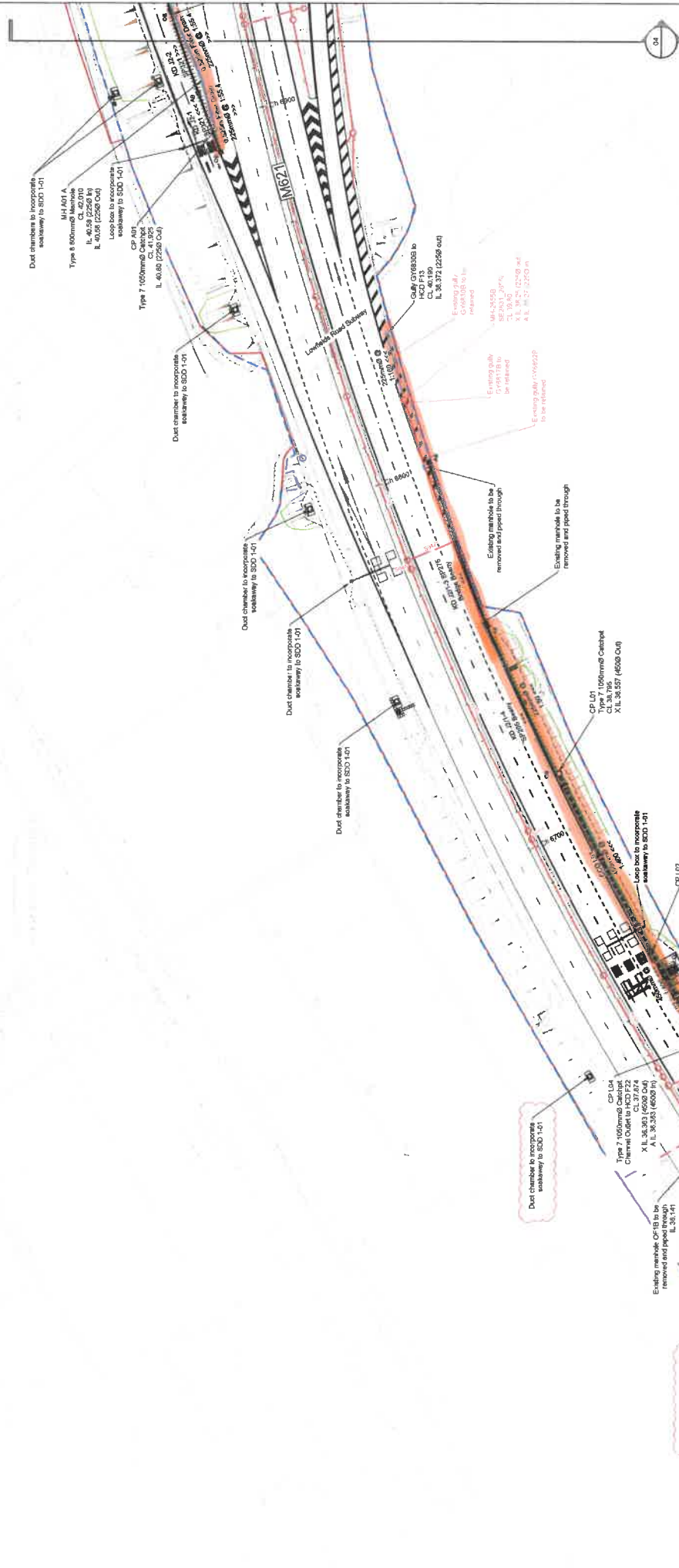
HE08: Hazardous materials (Hazardous materials)

Project No

HE09: Hazardous materials (Hazardous materials)

Project No

HE10: Hazardous materials (Hazardous materials)



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Creating Title

# DRAINAGE LAYOUT

## SHEET 03

Project Title

**M621 J1-7 IMPROVEMENTS**

Client

**BWB**  
Building & Water  
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Drawings Sheet

**FOR CONSTRUCTION**

Project Title

**M621 J1-7 IMPROVEMENTS**

Drawn

Revised

Drawn By

Revised By

Drawn Date

Revised Date

Drawn By

Revised By

Drawn Date

Revised Date

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|         |                        |              |                                |                             |
|---------|------------------------|--------------|--------------------------------|-----------------------------|
| Number  | LDH2211                | Schedule No. | IE551464-BWB-HDG-ZZ-SH-CH-0501 |                             |
| Project | M621 J1-7 Improvements | Status       | For Construction               | Prepared by<br>D.Fraser     |
| Title   | Pipe Schedule          | Rev.<br>Date | C09<br>19.10.23                | Authorised by<br>P.Goodyear |

## Pipe Schedules

| Network A   |            |               |               |                 |                      |                    |
|-------------|------------|---------------|---------------|-----------------|----------------------|--------------------|
| Pipe Number | US Manhole | DS Manhole    | Pipe Type     | Pipe Length (m) | Pipe Gradient (1:xx) | Pipe Diameter (mm) |
| A 1.001     | CP A01     | MH A01 A      | Filter Drain  | 12.000          | 55.4                 | 225                |
| A 1.001A    | MH A01 A   | CP A02        | Filter Drain  | 17.000          | 55.4                 | 225                |
| A 1.002     | CP A02     | CP A03        | Filter Drain  | 50.000          | 24.4                 | 225                |
| A 1.003     | CP A03     | CP A04        | Filter Drain  | 25.200          | 23.3                 | 225                |
| A 1.004     | CP A04     | CP A05        | Filter Drain  | 46.950          | 31.2                 | 225                |
| A 1.005     | CP A05     | CP A06        | Carrier Drain | 18.300          | 63.3                 | 225                |
| A 1.006     | CP A06     | CP A08        | Filter Drain  | 21.000          | 12.1                 | 225                |
| A 2.001     | CP A07     | CP A08        | Filter Drain  | 23.660          | 13.9                 | 225                |
| A 1.008     | CP A08     | Existing Pipe | Carrier Drain | 4.270           | 57.5                 | 300*               |

\*Pipe material and diameter to match existing pipe

| Network B   |            |            |               |                 |                      |                    |
|-------------|------------|------------|---------------|-----------------|----------------------|--------------------|
| Pipe Number | US Manhole | DS Manhole | Pipe Type     | Pipe Length (m) | Pipe Gradient (1:xx) | Pipe Diameter (mm) |
| B 1.001     | CP B01     | CP B01 A   | Filter Drain  | 22.110          | 37.7                 | 225                |
| B 1.002     | CP B01 A   | CP B05     | Filter Drain  | 58.410          | 37.7                 | 225                |
| B 2.001     | CP B03     | CP B04     | Filter Drain  | 40.460          | 225                  | 225                |
| B 2.002     | CP B04     | CP B05     | Filter Drain  | 40.340          | 225                  | 225                |
| B 1.003     | CP B05     | MH41A (Ex) | Carrier Drain | 11.800          | TBC*                 | 225*               |

\*Pipe material and diameter to match existing pipe

| Network C   |            |            |              |                 |                      |                    |
|-------------|------------|------------|--------------|-----------------|----------------------|--------------------|
| Pipe Number | US Manhole | DS Manhole | Pipe Type    | Pipe Length (m) | Pipe Gradient (1:xx) | Pipe Diameter (mm) |
| C 1.001     | CP C01     | CP C02     | Filter Drain | 30.520          | 58.5                 | 225                |
| C 1.002     | CP C02     | CP C03     | Filter Drain | 59.010          | 113.1                | 225                |
| C 1.003     | CP C03     | CP39 (Ex)  | Filter Drain | 20.900          | 33.1                 | 225                |

Pipe material to be vitrified clay

| Network D1  |                       |                       |               |                 |                      |                    |
|-------------|-----------------------|-----------------------|---------------|-----------------|----------------------|--------------------|
| Pipe Number | US Manhole            | DS Manhole            | Pipe# Type    | Pipe Length (m) | Pipe Gradient (1:xx) | Pipe Diameter (mm) |
| D1 1.001    | CP D101               | CP D102               | Filter Drain  | 22.040          | 112.6                | 225                |
| D1 1.002    | CP D102               | CP D103               | Filter Drain  | 28.410          | 169.7                | 225                |
| D1 1.003    | CP D103               | CP D105               | Filter Drain  | 34.540          | 83.9                 | 225                |
| D1 2.001    | CP D104               | CP D105               | Filter Drain  | 28.410          | 170                  | 225                |
| D1 1.004    | CP D105               | Attenuation Structure | Carrier Drain | 2.270           | 225                  | 300                |
| D1 1.005    | Attenuation Structure | MH D106               | Carrier Drain | 4.520           | 500                  | 600                |
| D1 1.006    | MH D106               | MH93 (Ex)             | Carrier Drain | 5.950           | 38.7                 | 225                |

|         |                        |                 |                                |
|---------|------------------------|-----------------|--------------------------------|
| Number  | LDH2211                | Schedule No.    | HE551464-BWB-HDG-ZZ-SH-CH-0501 |
| Project | M621 J1-7 Improvements | Status          | For Construction               |
| Title   | Pipe Schedule          | Rev.            | Prepared by                    |
|         |                        | Date            | Authorised by                  |
|         |                        | C09<br>19.10.23 | D.Fraser<br>P.Goodyear         |

## Pipe Schedules

| Network D2  |                       |                       |               |                 |                      |                    |
|-------------|-----------------------|-----------------------|---------------|-----------------|----------------------|--------------------|
| Pipe Number | US Manhole            | DS Manhole            | Pipe Type     | Pipe Length (m) | Pipe Gradient (1:xx) | Pipe Diameter (mm) |
| D2 1.001    | CP D201               | CP D202               | Filter Drain  | 44.740          | 200                  | 225                |
| D2 1.002    | CP D202               | CP D204               | Filter Drain  | 30.670          | 76.7                 | 225                |
| D2 2.001    | CP D203               | CP D204               | Carrier Drain | 14.100          | 28                   | 225                |
| D2 1.003    | CP D204               | Attenuation Structure | Carrier Drain | 3.700           | 200                  | 300                |
| D2 3.001    | CP D204               | CP D206               | Filter Drain  | 33.200          | 59.8                 | 225                |
| D2 4.001    | CP D205               | CP D206               | Filter Drain  | 17.480          | 162.1                | 225                |
| D2 3.002    | CP D206               | Attenuation Structure | Carrier Drain | 3.600           | 157.5                | 300                |
| D2 1.004    | Attenuation Structure | MH D207               | Carrier Drain | 1.060           | 115.1                | 600                |
| D2 1.005    | MH D207               | MH48A [Ex]            | Carrier Drain | 25.940          | 170                  | 300                |

| Network H   |            |            |               |                 |                      |                    |
|-------------|------------|------------|---------------|-----------------|----------------------|--------------------|
| Pipe Number | US Manhole | DS Manhole | Pipe Type     | Pipe Length (m) | Pipe Gradient (1:xx) | Pipe Diameter (mm) |
| H1.001      | CP H01     | CP H02     | Filter Drain  | 43.970          | 21.8                 | 225                |
| H1.002      | CP H02     | CP H03     | Filter Drain  | 32.470          | 23.1                 | 225                |
| H1.003      | CP H03     | CP H04A    | Filter Drain  | 25.950          | 20                   | 225                |
| H1.004      | CP H04A    | CP H04     | Filter Drain  | 28.860          | 20                   | 225                |
| H1.005      | CP H04     | MH48A [Ex] | Carrier Drain | 3.500           | 10                   | 225                |

| Network I   |               |               |               |                 |                      |                    |
|-------------|---------------|---------------|---------------|-----------------|----------------------|--------------------|
| Pipe Number | US Manhole    | DS Manhole    | Pipe Type     | Pipe Length (m) | Pipe Gradient (1:xx) | Pipe Diameter (mm) |
| I1.001      | Existing Pipe | MH I01        | Carrier Drain | 10.560          | *As Existing         | 300                |
| I2.001      | Existing Pipe | MH I01        | Carrier Drain | 10.560          | *As Existing         | 150                |
| I1.002      | MH I01        | Existing Pipe | Carrier Drain | 17.670          | *As Existing         | 300                |
| I2.002      | MH I01        | Existing Pipe | Carrier Drain | 17.670          | *As Existing         | 150                |
| I3.001      | CP I02        | CP I03        | Filter Drain  | 16.330          | 100                  | 150                |
| I3.002      | CP I03        | CP I04        | Filter Drain  | 2.290           | 100                  | 150                |
| I3.003      | CP I04        | CP I04A       | Filter Drain  | 50.122          | 100                  | 150                |
| I3.004      | CP I04A       | CP I04B       | Carrier Drain | 4.560           | 68                   | 150                |
| I3.005      | CP I04B       | CP I04C       | Carrier Drain | 9.150           | 68                   | 150                |
| I1.004      | MH76          | CP I04C       | Carrier Drain | 7.720           | 190.8                | 300                |
| I1.005      | CP I04C       | MH I06        | Carrier Drain | 4.070           | 200                  | 300                |
| I4.001      | CP I05        | MH I06        | Carrier Drain | 3.560           | 13.6                 | 150                |
| I1.006      | Existing Pipe | MH I06        | Carrier Drain | 23.000          | 200                  | 300                |

\*Pipe material and gradient to match existing pipe  
\*Pipe material and gradient to match existing pipe  
\*Pipe material and gradient to match existing pipe  
\*Pipe material and gradient to match existing pipe

\*Pipe material and gradient to match existing pipe

|         |                        |              |                                 |               |            |
|---------|------------------------|--------------|---------------------------------|---------------|------------|
| Number  | LDH2211                | Schedule No. | HE551 464-8WB-HDG-ZZ-3H-CH-0501 | Prepared by   | D.Fraser   |
| Project | M621 J1-7 Improvements | Status       | For Construction                | Authorised by | P.Goodyear |
| Title   | Pipe Schedule          | Rev.         | C09                             |               |            |
|         |                        | Date         | 19.10.23                        |               |            |

### Pipe Schedules

|        |       |       |               |        |     |     |
|--------|-------|-------|---------------|--------|-----|-----|
| I3.001 | IC108 | MH107 | Carrier Drain | 61.275 | 201 | 225 |
| I1.007 | MH106 | MH107 | Carrier Drain | 34.000 | 85  | 300 |

| Pipe Number | US Manhole    | DS Manhole | Pipe Type     | Pipe Length (m) | Pipe Gradient (1:xx) | Pipe Diameter (mm) |
|-------------|---------------|------------|---------------|-----------------|----------------------|--------------------|
| L1.001      | Existing Pipe | CP L01     | Carrier Drain | 41.970          | 50                   | 225                |
| L1.002      | CP L01        | CP L02     | Carrier Drain | 49.240          | 400                  | 450                |
| L1.003      | CP L02        | CP L03     | Carrier Drain | 23.460          | 400                  | 450                |
| L1.004      | CP L03        | CP L04     | Carrier Drain | 0.400           | 400                  | 450                |
| L1.005      | CP L04        | CP L05     | Carrier Drain | 1.170           | 400                  | 450                |
| L1.006      | CP L05        | OF 1B      | Carrier Drain | 17.230          | 400                  | 450                |

| Pipe Number | US Manhole | DS Manhole | Pipe Type     | Pipe Length (m) | Pipe Gradient (1:xx) | Pipe Diameter (mm) |
|-------------|------------|------------|---------------|-----------------|----------------------|--------------------|
| M1.001      | MHX        | CP M01     | Carrier Drain | 35.700          | 140                  | 225                |
| M1.001A     | CPM01      | CPM01A     | Carrier Drain | 26.200          | 82.3                 | 225                |
| M1.002      | CP M01A    | CP M02     | Carrier Drain | 24.960          | 22.7                 | 450                |
| M1.003      | CP M02     | CP M03     | Carrier Drain | 59.050          | 400                  | 450                |
| M1.004      | CP M03     | CP M04     | Carrier Drain | 0.400           | 400                  | 450                |
| M1.005      | CP M04     | CP M05     | Carrier Drain | 71.000          | 400                  | 450                |
| M1.006      | CP M05     | CP M06     | Carrier Drain | 1.500           | 400                  | 450                |
| M1.007      | CP M06     | OF 1B      | Carrier Drain | 16.040          | 240                  | 300                |

Pipe material to match existing pipe  
Pipe to have Type Z concrete surround

| Pipe Number | US Manhole | DS Manhole | Pipe Type     | Pipe Length (m) | Pipe Gradient (1:xx) | Pipe Diameter (mm) |
|-------------|------------|------------|---------------|-----------------|----------------------|--------------------|
| N1.001      | CP N01     | CP N02     | Carrier Drain | 29.280          | 165                  | 225                |
| N1.002      | CP N02     | MHX        | Carrier Drain | 1.370           | 165                  | 225                |

### Other

| Pipe Number | US Manhole | DS Manhole | Pipe Type     | Pipe Length (m) | Pipe Gradient (1:xx) | Pipe Diameter (mm) |
|-------------|------------|------------|---------------|-----------------|----------------------|--------------------|
|             | OF 1B      | OF 1B (Ex) | Carrier Drain | 1.900           | 42.5                 | 600                |
|             | CP69 (Ex)  | CP 69 A    | Carrier Drain | 5.900           | 34                   | 225                |
|             | CP 69 A    | CP 69 B    | Carrier Drain | 13.900          | 34                   | 225                |
|             | CP 69 B    | CP 69 C    | Carrier Drain | 4.900           | 34                   | 225                |
|             | CP012A     | CP013      | Carrier Drain | 18.100          | 100                  | 150                |

Pipe material to be concrete

|         |                        |              |                                |               |             |
|---------|------------------------|--------------|--------------------------------|---------------|-------------|
| Number  | LDH2211                | Schedule No. | HE551464-BWB-HDG-ZZ-SH-CH-0500 | Prepared by   | D. Fraser   |
| Project | M621 J1-7 Improvements | Status       | For Construction               | Authorised by | P. Goodyear |
| Title   | Manhole Schedule       | Rev.         | C09                            |               |             |
|         |                        | Date         | 19.10.23                       |               |             |

### Manhole Schedules

| Network A    |           |            |                 |              |                   |                       |                   |              |              |                     |            |                   |                                                    |
|--------------|-----------|------------|-----------------|--------------|-------------------|-----------------------|-------------------|--------------|--------------|---------------------|------------|-------------------|----------------------------------------------------|
| Manhole Name | Existing  | Northings  | Cover Level (m) | MH Depth (m) | Manhole Diam. LxW | Pipe Out Invert Level | Pipe Out Diameter | Manhole Type | Opening Size | Cover Loading Class | Cover Type | Highway Authority | Comments / Notes                                   |
| CP A01       | 82363.435 | 642861.315 | 41.925          | 1.125        | 1050              | 40.900                | 225               | Type 7       | 600 x 600    | D400                | Solid      | NH                |                                                    |
| MH A01A      | 82375.77  | 642864.682 | 42.010          | 1.430        | 600               | 40.58                 | 225               | Type 8       | 600 x 600    | D400                | Solid      | NH                |                                                    |
| CP A02       | 82392.165 | 642871.837 | 41.630          | 1.353        | 1050              | 40.277                | 225               | Type 7       | 600 x 600    | D400                | Solid      | NH                |                                                    |
| CP A03       | 82440.987 | 642885.952 | 39.496          | 1.298        | 1050              | 38.198                | 225               | Type 7       | 600 x 600    | D400                | Solid      | NH                |                                                    |
| CP A04       | 82466.436 | 642892.329 | 38.391          | 1.318        | 1050              | 37.073                | 225               | Type 7       | 600 x 600    | D400                | Solid      | NH                |                                                    |
| CP A05       | 82516.235 | 642903.584 | 34.861          | 1.425        | 1050              | 35.436                | 225               | Type 7       | 600 x 600    | D400                | Solid      | NH                |                                                    |
| CP A06       | 82513.912 | 642922.822 | 36.700          | 1.570        | 1050              | 35.130                | 225               | Type 7       | 600 x 600    | D400                | Solid      | NH                |                                                    |
| CP A07       | 82545.309 | 642956.815 | 36.510          | 1.425        | 1050              | 35.085                | 225               | Type 7       | 600 x 600    | D400                | Solid      | NH                |                                                    |
| CP A08       | 82530.935 | 642936.692 | 36.098          | 2.863        | 1050              | 33.235                | 300               | Type 7       | 600 x 600    | D400                | Solid      | NH                | To be filled with 131mmØ orifice plate on outgoing |

| Network B    |           |            |                 |              |                   |                       |                        |              |              |                     |            |                   |                                                        | note |
|--------------|-----------|------------|-----------------|--------------|-------------------|-----------------------|------------------------|--------------|--------------|---------------------|------------|-------------------|--------------------------------------------------------|------|
| Manhole Name | Existing  | Turning    | Cover Level (m) | MH Depth (m) | Manhole Diam. LxW | Pipe Invert Level (m) | Pipe Out Diameter (mm) | Manhole Type | Opening Size | Cover Loading Class | Cover Type | Highway Authority | Comments / Notes                                       |      |
| CP B01       | 82545.265 | 642956.853 | 36.510          | 1.425        | 1050              | 35.085                | 225                    | Type 7       | 600 x 600    | D400                | Solid      | LCC               |                                                        |      |
| CP B01 A     | 82552.442 | 642978.801 | 36.443          | 1.973        | 1050              | 34.470                | 225                    | Type 7       | 600 x 600    | D400                | Solid      | LCC               |                                                        |      |
| CP B03       | 82543.916 | 643121.351 | 34.300          | 1.050        | 1050              | 33.250                | 225                    | Type 7       | 600 x 600    | D400                | Solid      | LCC               |                                                        |      |
| CP B04       | 82546.001 | 643079.765 | 35.472          | 2.407        | 1050              | 33.065                | 225                    | Type 7       | 600 x 600    | D400                | Solid      | LCC               |                                                        |      |
| CP B05       | 82548.031 | 643038.371 | 36.266          | 3.385        | 1050              | 32.881                | 225                    | Type 7       | 600 x 600    | D400                | Solid      | LCC               | To be filled with 82mmØ orifice plate on outgoing pipe |      |

| Network C    |           |            |                 |              |                        |                           |                        |              |              |                     |            |                   |                                                        | pipe |
|--------------|-----------|------------|-----------------|--------------|------------------------|---------------------------|------------------------|--------------|--------------|---------------------|------------|-------------------|--------------------------------------------------------|------|
| Manhole Name | Existing  | Northings  | Cover Level (m) | MH Depth (m) | Manhole Diam. LxW (mm) | Pipe Out Invert Level (m) | Pipe Out Diameter (mm) | Manhole Type | Opening Size | Cover Loading Class | Cover Type | Highway Authority | Comments / Notes                                       |      |
| CP C01       | 82596.589 | 642957.934 | 37.235          | 1.300        | 1050                   | 35.935                    | 225                    | Type 7       | 600 x 600    | D400                | Solid      | LCC               |                                                        |      |
| CP C02       | 82582.272 | 642987.728 | 36.687          | 1.294        | 1050                   | 35.393                    | 225                    | Type 7       | 600 x 600    | D400                | Solid      | LCC               |                                                        |      |
| CP C03       | 82573.392 | 643047.100 | 35.944          | 1.112        | 1050                   | 34.832                    | 225                    | Type 7       | 600 x 600    | D400                | Solid      | LCC               | To be filled with 83mmØ orifice plate on outgoing pipe |      |

| network D1   |           |            |                 |              |                        |                       |                        |              |              |                     |            |                   |                  |
|--------------|-----------|------------|-----------------|--------------|------------------------|-----------------------|------------------------|--------------|--------------|---------------------|------------|-------------------|------------------|
| Manhole Name | Existing  | Northings  | Cover Level (m) | MH Depth (m) | Manhole Diam. LxW (mm) | Pipe Invert Level (m) | Pipe Out Diameter (mm) | Manhole Type | Opening Size | Cover Loading Class | Cover Type | Highway Authority | Comments / Notes |
| CP D101      | 82629.473 | 642908.412 | 37.010          | 1.194        | 1050                   | 35.816                | 225                    | Type 7       | 600 x 600    | D400                | Solid      | LCC               |                  |
| CP D102      | 82613.918 | 642925.131 | 37.215          | 1.603        | 1050                   | 35.612                | 225                    | Type 7       | 600 x 600    | D400                | Solid      | LCC               |                  |
| CP D103      | 82586.759 | 642935.342 | 36.838          | 1.400        | 1050                   | 35.438                | 225                    | Type 7       | 600 x 600    | D400                | Solid      | LCC               |                  |
| CP D104      | 82533.623 | 642904.849 | 36.312          | 1.125        | 1050                   | 35.187                | 225                    | Type 7       | 600 x 600    | D400                | Solid      | LCC               |                  |
| CP D105      | 82533.020 | 642926.265 | 36.315          | 1.301        | 1050                   | 35.014                | 225                    | Type 7       | 600 x 600    | D400                | Solid      | LCC               |                  |
| MH D106      | 82548.349 | 642920.516 | 36.385          | 1.198        | 1800                   | 35.187                | 150                    | SDD 2-01     | 600 x 600    | D400                | Solid      | LCC               |                  |

|         |                        |              |                               |               |            |
|---------|------------------------|--------------|-------------------------------|---------------|------------|
| Number  | LDH2211                | Schedule No. | H551464-BWB-HDG-ZZ-SH-CH-0500 | Prepared by   | D.Fraser   |
| Project | M421 J1-7 Improvements | Status       | For Construction              | Authorised by | P.Goodyear |
| File    | Manhole Schedule       | Rev.         | C09                           |               |            |
|         |                        | Date         | 19.10.23                      |               |            |

### Manhole Schedules

| Manhole Name | Eastings  | Northing   | Cover Level (m) | MH Depth (m) | Manhole Diam. L/W (mm) | Pipe Invert Level (m) | Pipe Out Diameter (mm) | Manhole Type | Opening Size | Cover Loading Class | Cover Type | Highway Authority | Comments / Notes |
|--------------|-----------|------------|-----------------|--------------|------------------------|-----------------------|------------------------|--------------|--------------|---------------------|------------|-------------------|------------------|
| CP D201      | 82531.125 | 642853.504 | 36.951          | 1.125        | 1050                   | 35.826                | 225                    | Type 7       | 600 x 600    | D400                | Solid      | LCC               |                  |
| CP D202      | 82560.445 | 642860.279 | 37.182          | 1.585        | 1050                   | 35.977                | 225                    | Type 7       | 600 x 600    | D400                | Solid      | LCC               |                  |
| CP D203      | 82580.929 | 642865.105 | 36.678          | 1.428        | 1050                   | 35.250                | 225                    | Type 7       | 600 x 600    | D400                | Solid      | LCC               |                  |
| CP D204      | 82591.455 | 642816.213 | 36.674          | 1.567        | 1050                   | 35.107                | 300                    | Type 7       | 600 x 600    | D400                | Solid      | LCC               |                  |
| CP D205      | 82635.166 | 642855.503 | 36.285          | 1.125        | 1050                   | 35.107                | 225                    | Type 7       | 600 x 600    | D400                | Solid      | LCC               |                  |
| CP D206      | 82619.650 | 642830.629 | 36.253          | 1.341        | 1050                   | 34.912                | 300                    | Type 7       | 600 x 600    | D400                | Solid      | LCC               |                  |
| MH D207      | 82620.454 | 642836.093 | 36.309          | 2.027        | 1800                   | 34.282                | 300                    | SDO 2-01     | 600 x 600    | D400                | Solid      | LCC               |                  |

| Manhole Name | Eastings  | Northing   | Cover Level (m) | MH Depth (m) | Manhole Diam. L/W (mm) | Pipe Invert Level (m) | Pipe Out Diameter (mm) | Manhole Type | Opening Size | Cover Loading Class | Cover Type | Highway Authority | Comments / Notes                                      |
|--------------|-----------|------------|-----------------|--------------|------------------------|-----------------------|------------------------|--------------|--------------|---------------------|------------|-------------------|-------------------------------------------------------|
| CP H01       | 82783.182 | 642817.244 | 42.148          | 1.300        | 1050                   | 40.848                | 225                    | Type 7       | 600 x 600    | D400                | Solid      | NH                |                                                       |
| CP H02       | 82738.749 | 642852.142 | 40.095          | 1.300        | 1050                   | 38.795                | 225                    | Type 7       | 600 x 600    | D400                | Solid      | NH                |                                                       |
| CP H03       | 82705.365 | 642850.085 | 38.649          | 1.300        | 1050                   | 37.349                | 225                    | Type 7       | 600 x 600    | D400                | Solid      | NH                |                                                       |
| CP H04A      | 82679.656 | 642841.671 | 37.600          | 1.390        | 1050                   | 36.010                | 225                    | Type 7       | 600 x 600    | D400                | Solid      | NH                |                                                       |
| CP H04       | 82653.057 | 642841.632 | 36.385          | 1.415        | 1050                   | 34.970                | 225                    | Type 7       | 600 x 600    | D400                | Solid      | NH                | To be filled with 122mm office plate on outgoing pipe |

| Manhole Name | Eastings  | Northing   | Cover Level (m) | MH Depth (m) | Manhole Diam. L/W (mm) | Pipe Invert Level (m) | Pipe Out Diameter (mm) | Manhole Type | Opening Size | Cover Loading Class | Cover Type | Highway Authority | Comments / Notes |
|--------------|-----------|------------|-----------------|--------------|------------------------|-----------------------|------------------------|--------------|--------------|---------------------|------------|-------------------|------------------|
| MH I01       | 83143.997 | 643049.149 | 41.118          | 1.962        | 1200                   | 39.496                | 150                    | Type 3       | 600 x 600    | D400                | Solid      | NH                |                  |
| CP I02       | 83239.726 | 643122.576 | 40.390          | 1.050        | 600                    | 39.156                | 300                    | Type 8       | 600 x 600    | D400                | Solid      | NH                |                  |
| CP I03       | 83253.015 | 643133.064 | 40.260          | 1.090        | 600                    | 39.170                | 150                    | Type 8       | 600 x 600    | D400                | Solid      | NH                |                  |
| CP I04       | 83253.190 | 643135.943 | 40.150          | 1.009        | 600                    | 39.141                | 150                    | Type 8       | 600 x 600    | D400                | Solid      | NH                |                  |
| CP I04A      | 83295.240 | 643164.345 | 38.668          | 0.446        | 1050                   | 38.422                | 150                    | Type 7       | 600 x 600    | D400                | Solid      | NH                |                  |
| CP I04B      | 83300.976 | 643165.058 | 40.460          | 2.102        | 600                    | 38.358                | 150                    | Type 8       | 600 x 600    | D400                | Solid      | NH                |                  |
| CP I04C      | 83308.916 | 643171.901 | 40.232          | 2.176        | 1050                   | 38.056                | 300                    | Type 7       | 600 x 600    | D400                | Solid      | NH                |                  |
| CP I05       | 83310.948 | 643174.763 | 39.780          | 1.388        | 600                    | 38.442                | 150                    | Type 8       | 600 x 600    | D400                | Solid      | NH                |                  |
| MH I06       | 83314.722 | 643172.168 | 40.252          | 2.202        | 1200                   | 38.030                | 300                    | Type 8       | 600 x 600    | D400                | Solid      | NH                |                  |
| MH I07       | 83344.491 | 643190.878 | 39.336          | 1.716        | 1200                   | 37.620                | 375                    | Type 3       | 600 x 600    | D400                | Solid      | NH                |                  |
| IC I08       | 83400.852 | 643216.608 | 38.950          | 1.025        | 600                    | 37.925                | 225                    | Type 8       | 600 x 600    | D400                | Solid      | NH                |                  |

| Manhole Name | Eastings  | Northing   | Cover Level (m) | MH Depth (m) | Manhole Diam. L/W (mm) | Pipe Invert Level (m) | Pipe Out Diameter (mm) | Manhole Type | Opening Size | Cover Loading Class | Cover Type | Highway Authority | Comments / Notes |
|--------------|-----------|------------|-----------------|--------------|------------------------|-----------------------|------------------------|--------------|--------------|---------------------|------------|-------------------|------------------|
| CP I01       | 82200.490 | 642774.258 | 38.795          | 2.238        | 1050                   | 36.557                | 450                    | Type 7       | 600 x 600    | D400                | Grated     | NH                |                  |
| CP I02       | 82155.542 | 642750.874 | 37.944          | 1.516        | 1050                   | 36.430                | 450                    | Type 7       | 600 x 600    | D400                | Grated     | NH                |                  |
| CP I03       | 82134.052 | 642738.348 | 37.868          | 1.500        | 1050                   | 36.368                | 450                    | Type 7       | 600 x 600    | D400                | Grated     | NH                |                  |
| CP I04       | 82132.580 | 642737.402 | 37.874          | 1.511        | 1050                   | 36.363                | 450                    | Type 7       | 600 x 600    | D400                | Grated     | NH                |                  |
| MH I05       | 82135.912 | 642735.193 | 38.039          | 1.682        | 2100                   | 36.357                | 450                    | SDO 2-01     | 600 x 600    | D400                | Solid      | NH                |                  |

| Manhole Name | Eastings  | Northing   | Cover Level (m) | MH Depth (m) | Manhole Diam. L/W (mm) | Pipe Invert Level (m) | Pipe Out Diameter (mm) | Manhole Type | Opening Size | Cover Loading Class | Cover Type | Highway Authority | Comments / Notes |
|--------------|-----------|------------|-----------------|--------------|------------------------|-----------------------|------------------------|--------------|--------------|---------------------|------------|-------------------|------------------|
| CP M01       | 81957.103 | 642597.757 | 40.177          | 1.000        | 1050                   | 39.177                | 450                    | Type 7       | 600 x 600    | D400                | Grated     | NH                |                  |
| CP M01A      | 81975.983 | 642617.106 | 39.800          | 1.753        | 1050                   | 38.047                | 450                    | Type 7       | 600 x 600    | D400                | Grated     | NH                |                  |
| CP M02       | 81995.731 | 642635.148 | 39.449          | 2.568        | 1050                   | 36.881                | 450                    | Type 7       | 600 x 600    | D400                | Grated     | NH                |                  |
| CP M03       | 82041.733 | 642674.404 | 38.709          | 1.980        | 1050                   | 36.729                | 450                    | Type 7       | 600 x 600    | D400                | Grated     | NH                |                  |

|         |                        |              |                                |                              |
|---------|------------------------|--------------|--------------------------------|------------------------------|
| Number  | LDH2211                | Schedule No. | HE551464-BWB-HDG-ZL-SH-CH-Q500 |                              |
| Project | M621 J1-7 Improvements | Status       | For Construction               | Prepared by<br>D. Fraser     |
| Title   | Manhole Schedule       | Rev.<br>Date | C09<br>19/10/23                | Authorised by<br>P. Goodyear |

#### Manhole Schedules

|        |           |            |        |       |      |        |     |        |           |      |        |    |
|--------|-----------|------------|--------|-------|------|--------|-----|--------|-----------|------|--------|----|
| CP M04 | 82043.056 | 642675.364 | 38.685 | 1.560 | 1050 | 36.725 | 450 | Type 7 | 600 x 600 | D400 | Grated | NH |
| CP M05 | 82101.722 | 642717.946 | 38.059 | 1.505 | 1050 | 36.554 | 300 | Type 7 | 600 x 600 | D400 | Grated | NH |
| CP M06 | 82103.243 | 642715.621 | 38.225 | 1.692 | 1050 | 36.533 | 300 | Type 7 | 600 x 600 | D400 | Solid  | NH |

To be filled with  
212mmØ orifice  
plate on outgoing  
pipe

|         |                        |              |                                |
|---------|------------------------|--------------|--------------------------------|
| Number  | LDH2211                | Schedule No. | HE551464-BWB-HDG-ZZ-SH-CH-0500 |
| Project | M421 J1-7 Improvements | Status       | For Construction               |
| Title   | Manhole Schedule       | Rev          | Prepared by                    |
|         |                        | Date         | Authorised by                  |
|         |                        | 19 10 23     | P. Goodyear                    |

### Manhole Schedules

| Manhole Name | Existing  | Existing | Manhole     | Pipe Out     | Manhole Type | Opening Size | Cover         | Cover Type | Highway Authority | Comments / Notes |
|--------------|-----------|----------|-------------|--------------|--------------|--------------|---------------|------------|-------------------|------------------|
|              | Heighting | At Depth | Diag. L x W | Invert Level |              |              | Loading Class |            |                   |                  |
| CP N07       | 81914.942 | 1.525    | 600         | 40.285       | Type 8       | 600 x 600    | D400          | Solid      | NH                |                  |
| CP N02       | 81895.085 | 2.229    | 600         | 40.107       | Type 8       | 600 x 600    | D400          | Solid      | NH                |                  |

Other

| Manhole Name | Existing  | Existing | Manhole     | Pipe Out     | Manhole Type | Opening Size | Cover         | Cover Type | Highway Authority | Comments / Notes |
|--------------|-----------|----------|-------------|--------------|--------------|--------------|---------------|------------|-------------------|------------------|
|              | Heighting | At Depth | Diag. L x W | Invert Level |              |              | Loading Class |            |                   |                  |
| CP 69 A      | 83954.918 | 1.960    | 1050        | 29.950       | Type 7       | 600 x 600    | D400          | Solid      | NH                |                  |
| CP 69 B      | 83969.705 | 1.820    | 1050        | 29.540       | Type 7       | 600 x 600    | D400          | Solid      | NH                |                  |
| CP 69 C      | 83973.881 | 1.560    | 1050        | 29.400       | Type 7       | 600 x 600    | D400          | Solid      | NH                |                  |
| CP 612A      | 84530.698 | 1.350    | 600         | 36.220       | Type 8       | 600 x 600    | D400          | Solid      | NH                |                  |

### Yorkshire Water Manholes

| Manhole Name | Existing  | Existing    | Manhole     | Pipe Out     | Manhole Type     | Opening Size | Cover         | Cover Type | Highway Authority | Comments / Notes                                                             |
|--------------|-----------|-------------|-------------|--------------|------------------|--------------|---------------|------------|-------------------|------------------------------------------------------------------------------|
|              | Heighting | At Depth    | Diag. L x W | Invert Level |                  |              | Loading Class |            |                   |                                                                              |
| MHP2         | 82526.319 | 3.419       | 1300        | 33.02        | Existing manhole | 600 x 600    | E600          | Solid      | LCC               | Existing Yorkshire Water Manhole - Cover to be upgraded to E600.             |
| MHP3         | 82544.457 | 3.179       | 1500        | 32.93        | Existing manhole | 600 x 600    | E600          | Solid      | LCC               | Existing Yorkshire Water Manhole - Cover to be lowered and upgraded to E600. |
| MH41         | 82572.399 | 4.23        | 1500        | 32.45        | Existing manhole | 600 x 600    | E600          | Solid      | LCC               | Existing Yorkshire Water Manhole - Cover to be lowered and upgraded to E600. |
| MH42         | 82606.947 | 3.82        | 1500        | 33.24        | Existing manhole | 600 x 600    | E600          | Solid      | LCC               | Existing Yorkshire Water Manhole - Cover to be lowered and upgraded to E600. |
| MH43         | 82631.419 | 3.59        | 1500        | 33.47        | Existing manhole | 600 x 600    | D400          | Solid      | LCC               | Existing Yorkshire Water Manhole - Cover to be lowered and upgraded to E600. |
| MH41B        | 82571.646 | 4.781 (T8C) | 1500        | 32.4 (T8C)   | YW Type A1       | 600 x 600    | D400          | Solid      | LCC               | Existing Yorkshire Water Manhole - Cover to be lowered.                      |
| OF1B         | 82117.051 | 2.267       | 1800        | 36.190       | YW Type B        | 600 x 600    | D400          | Solid      | NH                | Proposed Yorkshire Water Manhole                                             |
|              |           |             |             |              |                  |              |               |            |                   | Proposed Yorkshire Water Manhole                                             |