TECHNICAL REPORT

8

Noise and vibration assessment – construction and other operations

PART 7 OF 7

Appendix M to N

NARROMINE TO NARRABRI ENVIRONMENTAL IMPACT STATEMENT

The Australian Government is delivering Inland Rail through the Australian Rail Track Corporation (ARTC), in partnership with the private sector.

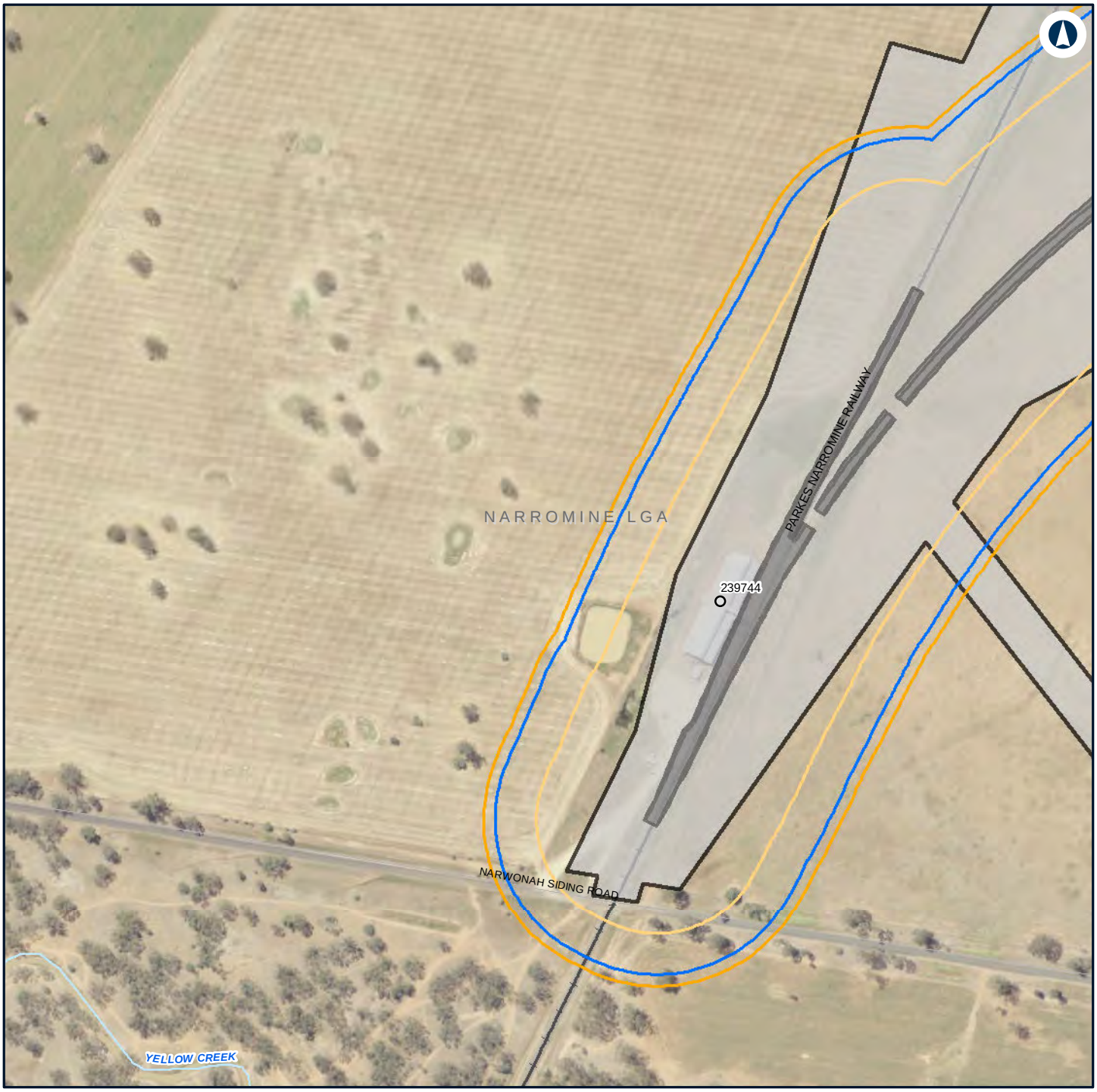
TECHNICAL REPORT

8

Noise and vibration assessment – construction and other operations

Appendix M Construction vibration buffers: human comfort – rail earthworks / bridges (impact piling)

NARROMINE TO NARRABRI ENVIRONMENTAL IMPACT STATEMENT



LEGEND

- Construction footprint
- Rail earthworks extent (propagation source)

Structure type

- Commercial/Industrial

Vibration from rail earthworks

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 1 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

INLAND RAIL ARTC

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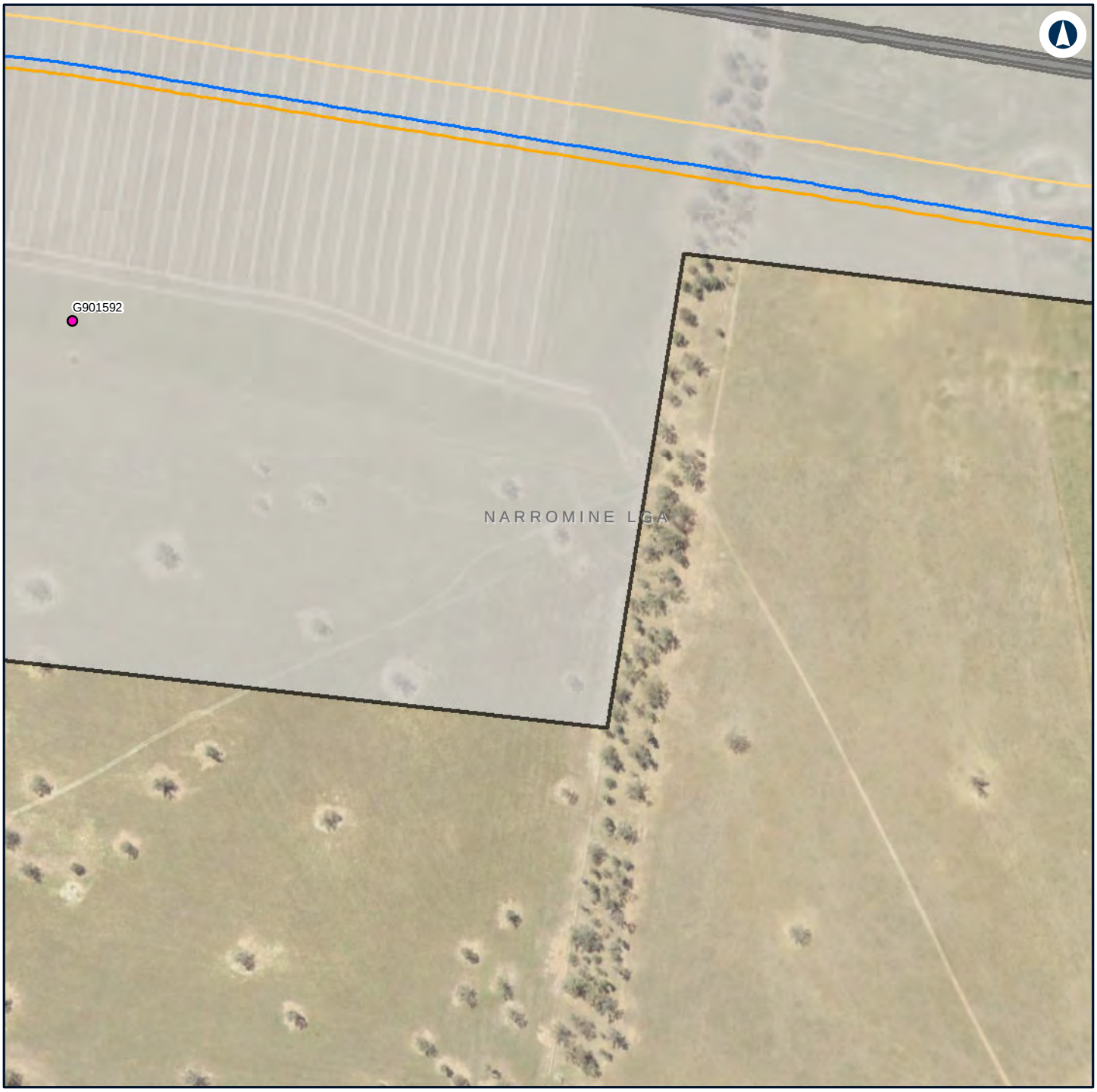

LEGEND

Construction footprint
Rail earthworks extent (propagation source)

Structure type
Residential

Vibration from rail earthworks
AVTG night max (0.26 m/s 1.75, 94 m)
AVTG day max (0.4 m/s 1.75, 128 m)
BS 5228-2:2009 (1 mm/s, 140 m)

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 2 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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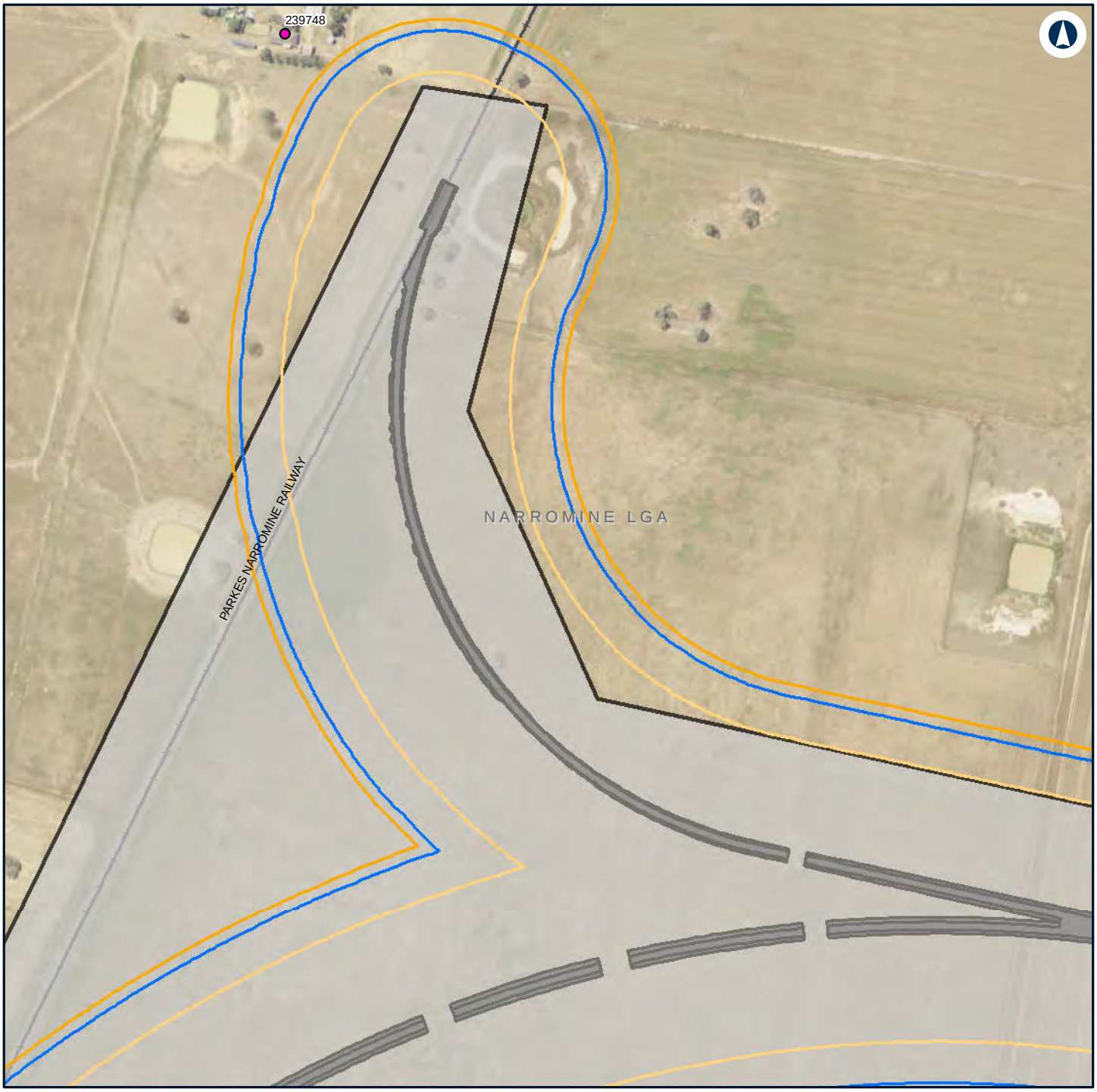

LEGEND

- Construction footprint
- Rail earthworks extent (propagation source)

Structure type

- Residential

Vibration from rail earthworks

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 3 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

Vibration from rail earthworks

- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

Structure type

- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 4 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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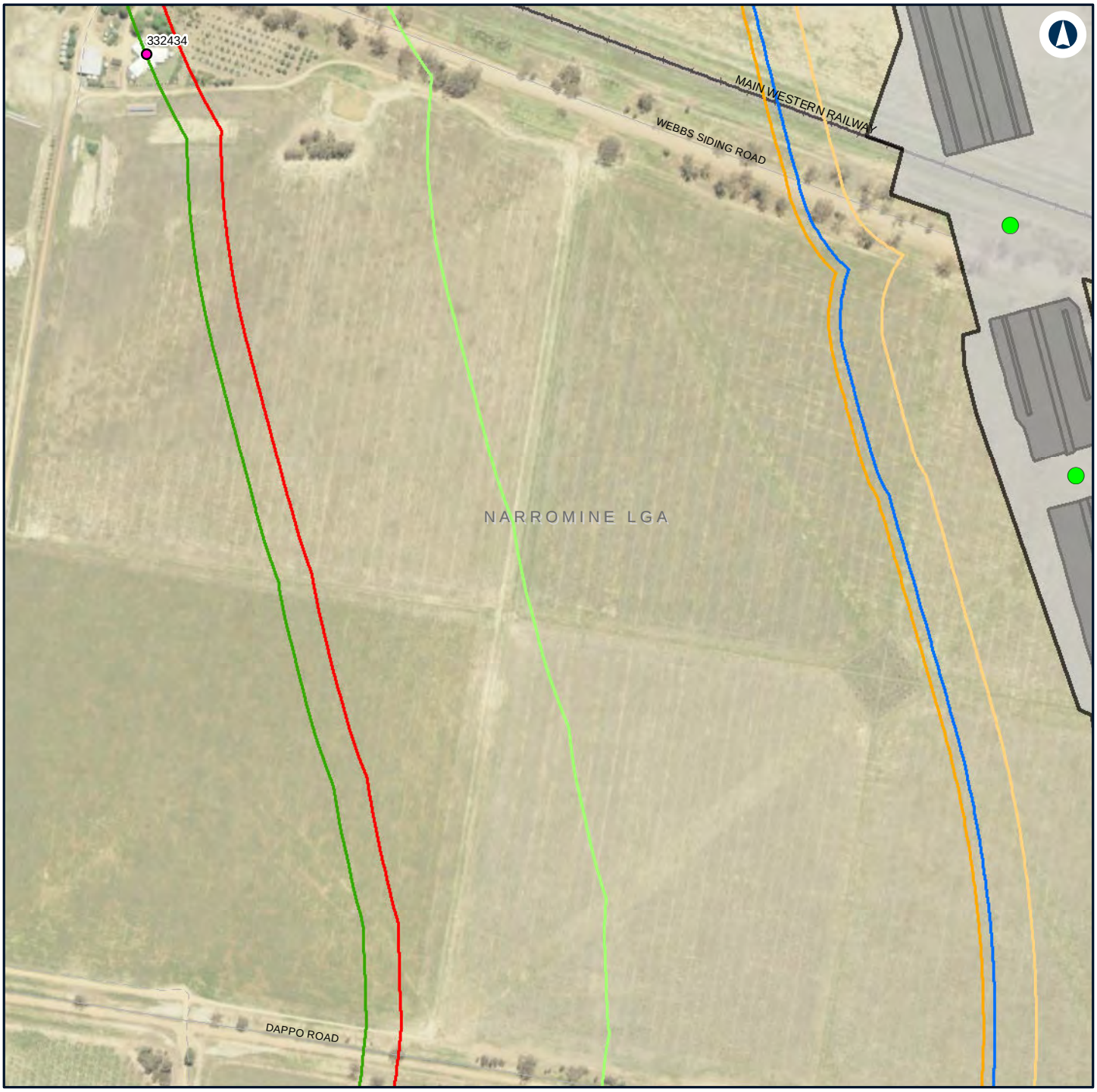

LEGEND

- Bridge centre (propagation source)
- Construction footprint
- Rail earthworks extent (propagation source)

Vibration from bridge construction (piling)

- AVTG night max (0.26 m/s 1.75, 490 m)
- AVTG day max (0.4 m/s 1.75, 670 m)
- BS 5228-2:2009 (1 mm/s, 700 m)

Vibration from rail earthworks

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

Structure type

- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 5 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

- Construction footprint
- Rail earthworks extent (propagation source)

Structure type

- Residential

Vibration from rail earthworks

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 6 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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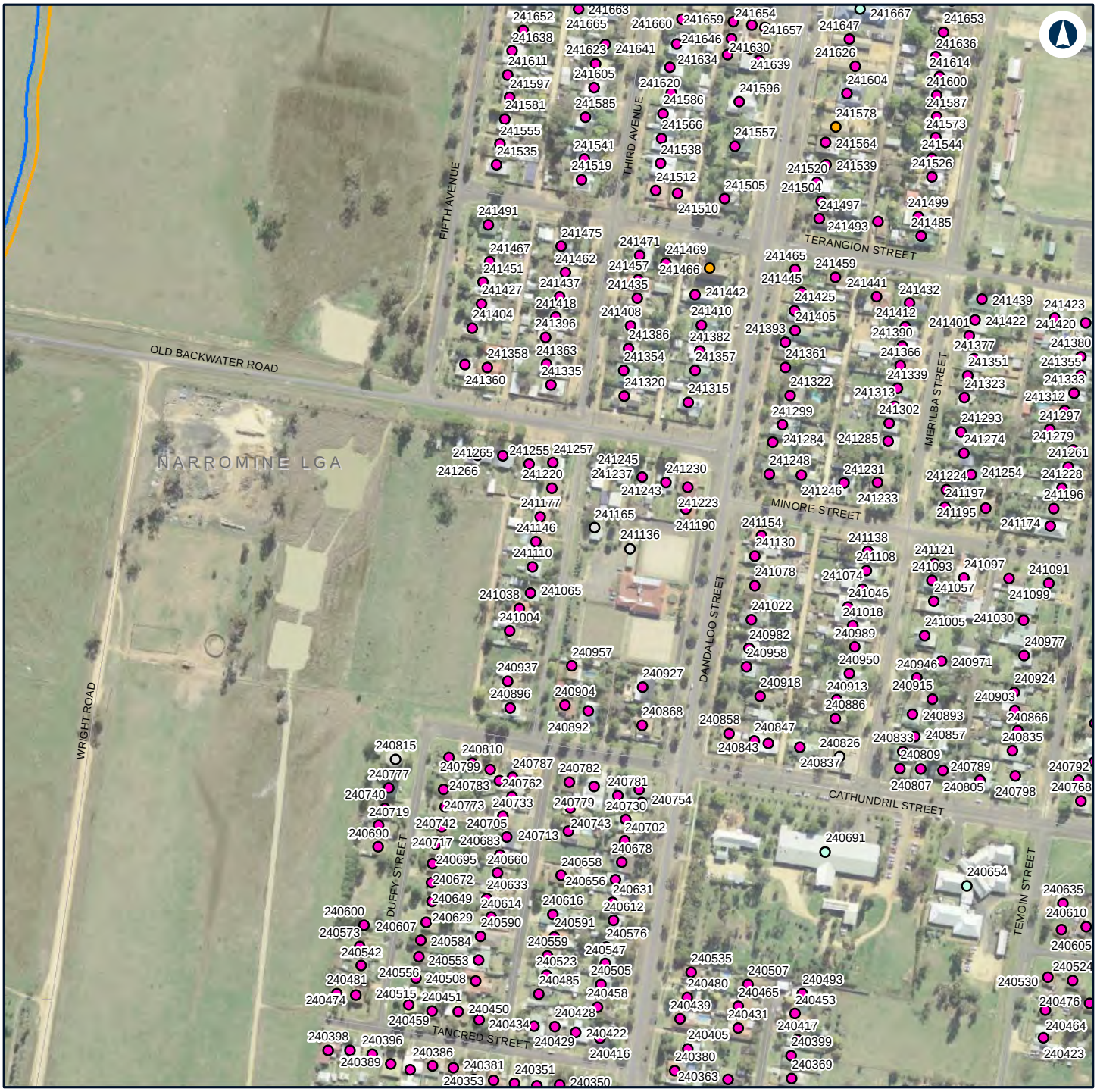

LEGEND

Vibration from rail earthworks

- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

Structure type

- Commercial/Industrial
- Health
- Residential
- Worship

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 7 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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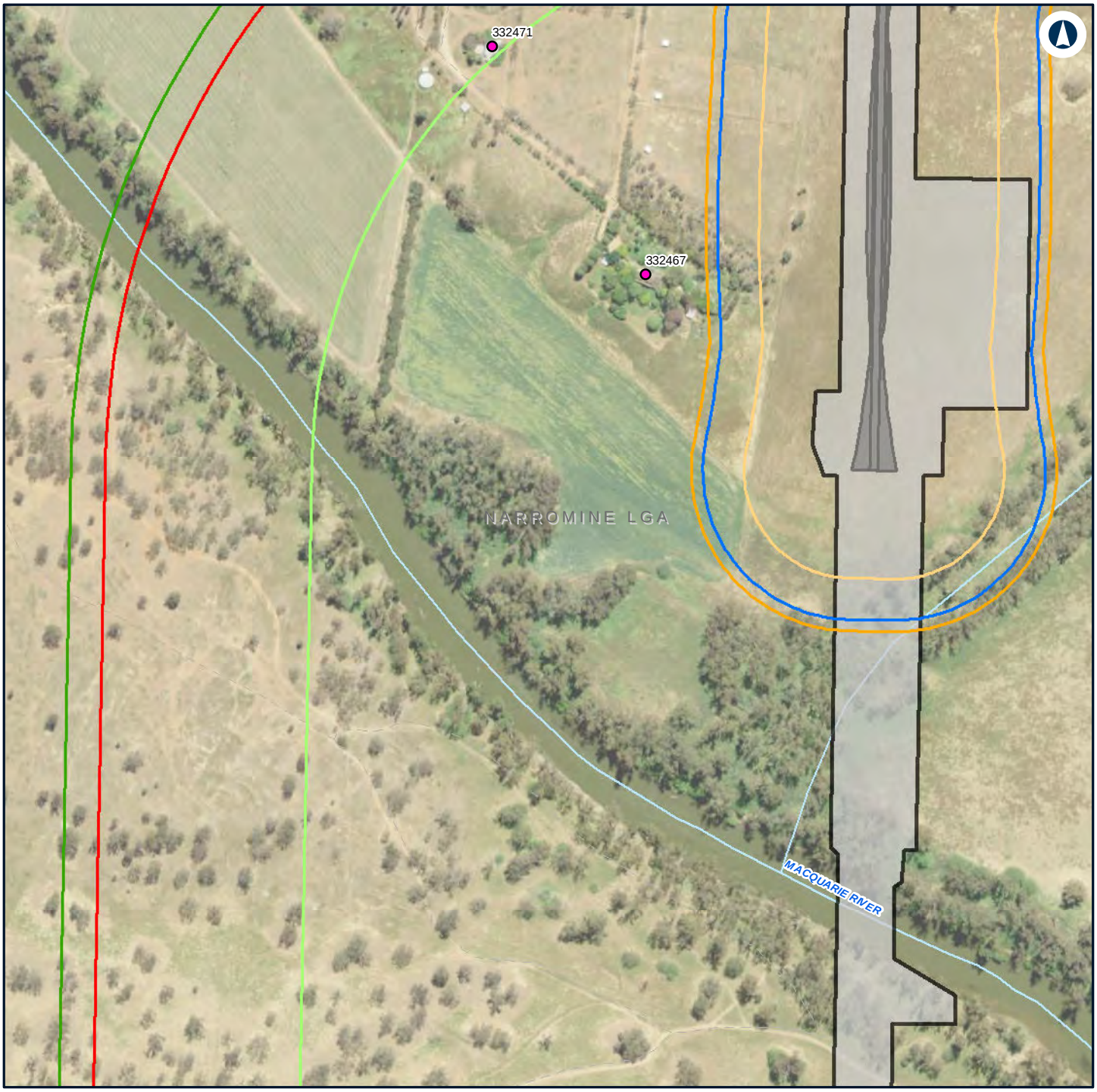

LEGEND

- Construction footprint
- Rail earthworks extent (propagation source)

Vibration from bridge construction (piling)

- AVTG night max (0.26 m/s 1.75, 490 m)
- AVTG day max (0.4 m/s 1.75, 670 m)
- BS 5228-2:2009 (1 mm/s, 700 m)

Vibration from rail earthworks

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

Structure type

- Residential

NARROMINE TO NARRABRI

Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 8 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

- Construction footprint
- Rail earthworks extent (propagation source)

Structure type

- Commercial/Industrial

Vibration from rail earthworks

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 9 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

- Construction footprint
- Rail earthworks extent (propagation source)

Vibration from rail earthworks

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

Structure type

- Commercial/Industrial
- Community
- Health
- Residential
- Worship

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 10 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

- Construction footprint
- Rail earthworks extent (propagation source)

Vibration from bridge construction (piling)

- AVTG night max (0.26 m/s 1.75, 490 m)
- AVTG day max (0.4 m/s 1.75, 670 m)
- BS 5228-2:2009 (1 mm/s, 700 m)

Vibration from rail earthworks

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

Structure type

- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 11 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

- Construction footprint
- Rail earthworks extent (propagation source)

Vibration from rail earthworks

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

Structure type

- Commercial/Industrial
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 12 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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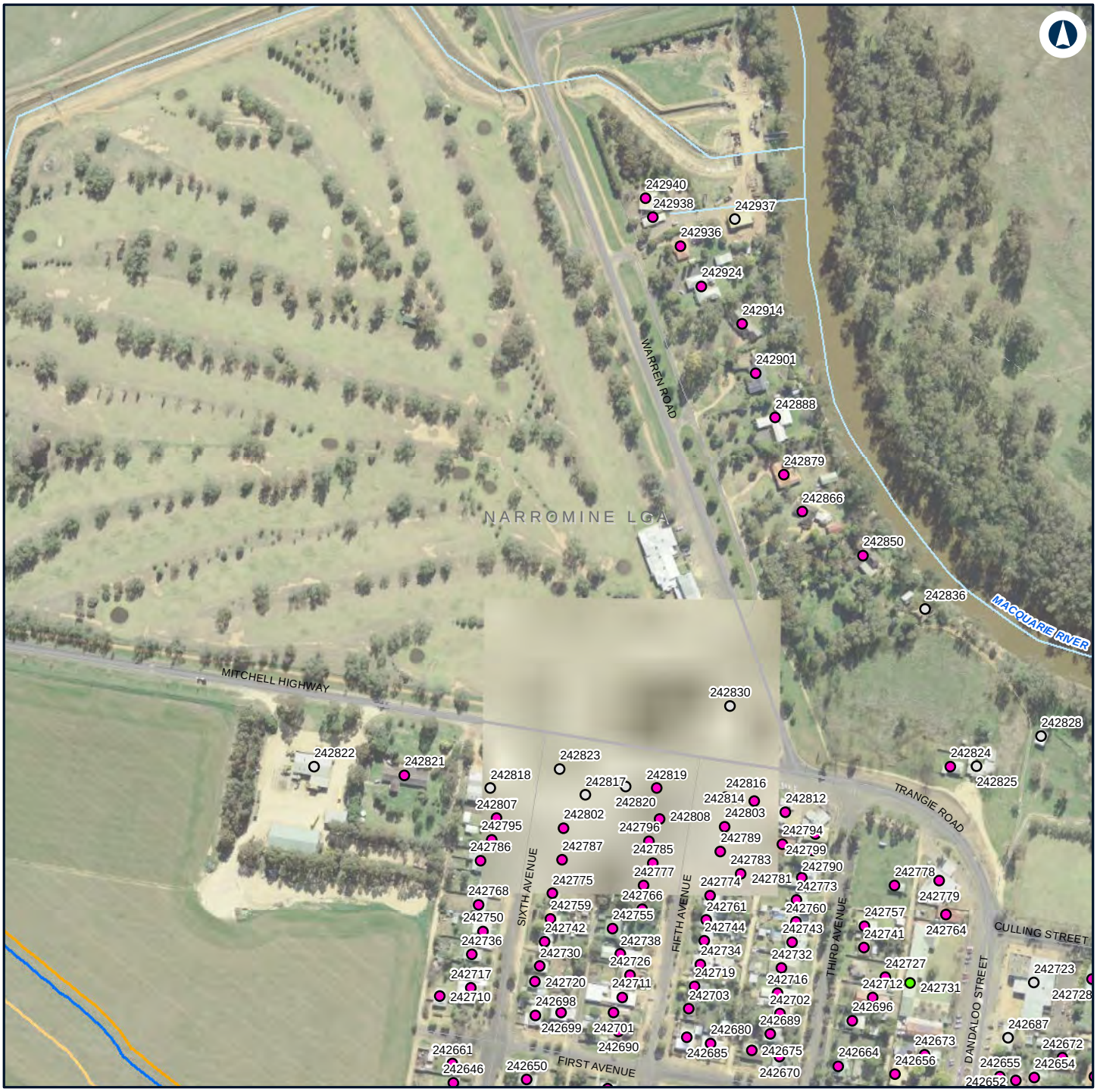

LEGEND

Vibration from rail earthworks

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

Structure type

- Commercial/Industrial
- Educational
- Residential

NARROMINE TO NARRABRI

Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 13 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

- Construction footprint
- Rail earthworks extent (propagation source)

Vibration from bridge construction (piling)

- AVTG night max (0.26 m/s 1.75, 490 m)
- AVTG day max (0.4 m/s 1.75, 670 m)
- BS 5228-2:2009 (1 mm/s, 700 m)

Vibration from rail earthworks

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

Structure type

- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 14 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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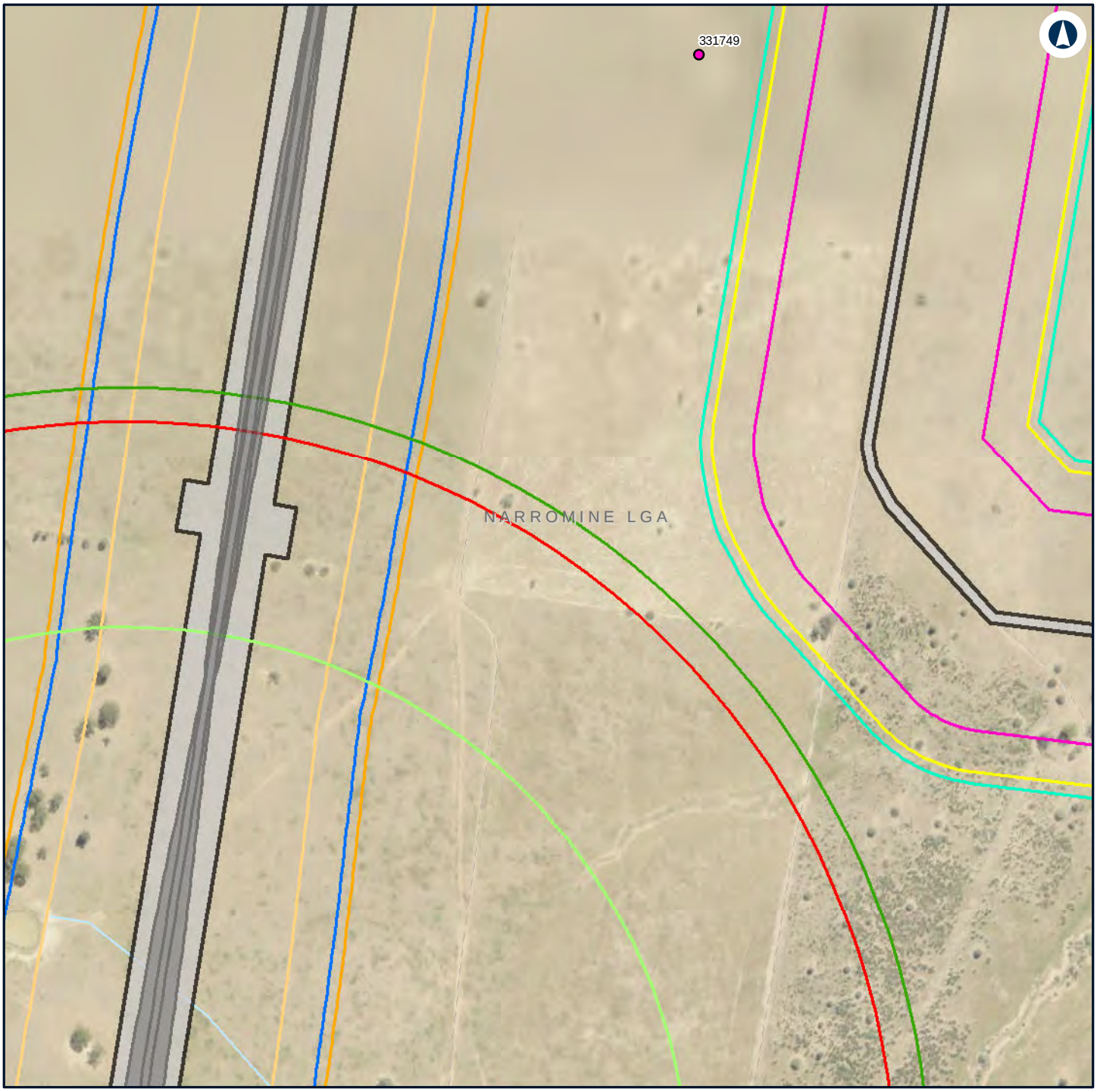

LEGEND

- Construction footprint
- Rail earthworks extent (propagation source)

Vibration from borrow pit finishing works

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 130 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

Vibration from bridge construction (piling)

- AVTG night max (0.26 m/s 1.75, 490 m)
- AVTG day max (0.4 m/s 1.75, 670 m)
- BS 5228-2:2009 (1 mm/s, 700 m)

Vibration from rail earthworks

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

Structure type

- Residential

NARROMINE TO NARRABRI

Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 15 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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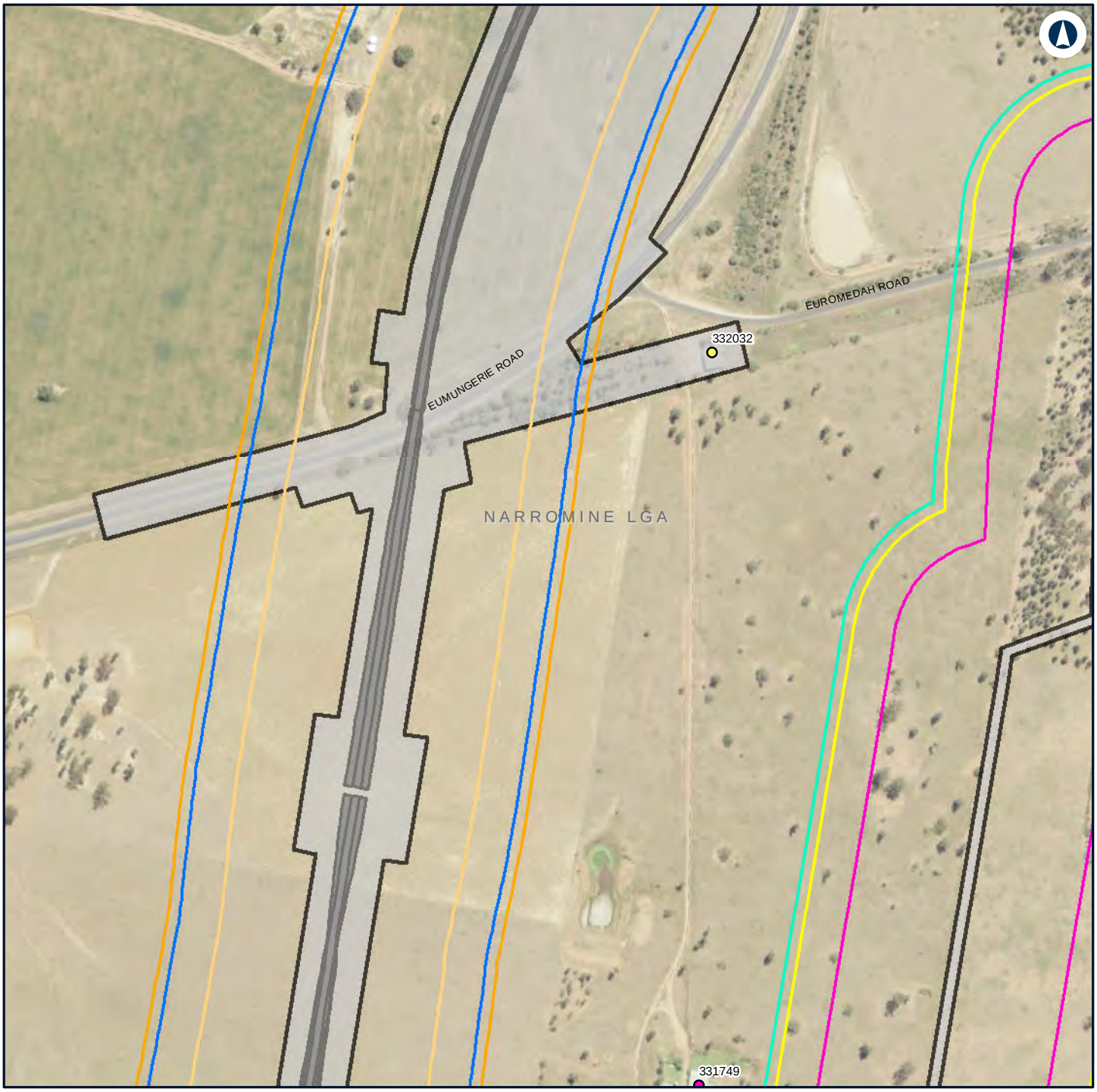

LEGEND

- Construction footprint
- Rail earthworks extent (propagation source)

Vibration from borrow pit finishing works

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 130 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

Vibration from rail earthworks

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

Structure type

- Community
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 16 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

Construction footprint

Rail earthworks extent (propagation source)

Structure type

Residential

Vibration from rail earthworks

AVTG night max (0.26 m/s 1.75, 94 m)

AVTG day max (0.4 m/s 1.75, 128 m)

BS 5228-2:2009 (1 mm/s, 140 m)

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 17 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

- Construction footprint
- Rail earthworks extent (propagation source)

Structure type

- Residential

Vibration from rail earthworks

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 18 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

- Construction footprint
- Rail earthworks extent (propagation source)

Structure type

- Residential

Vibration from rail earthworks

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 19 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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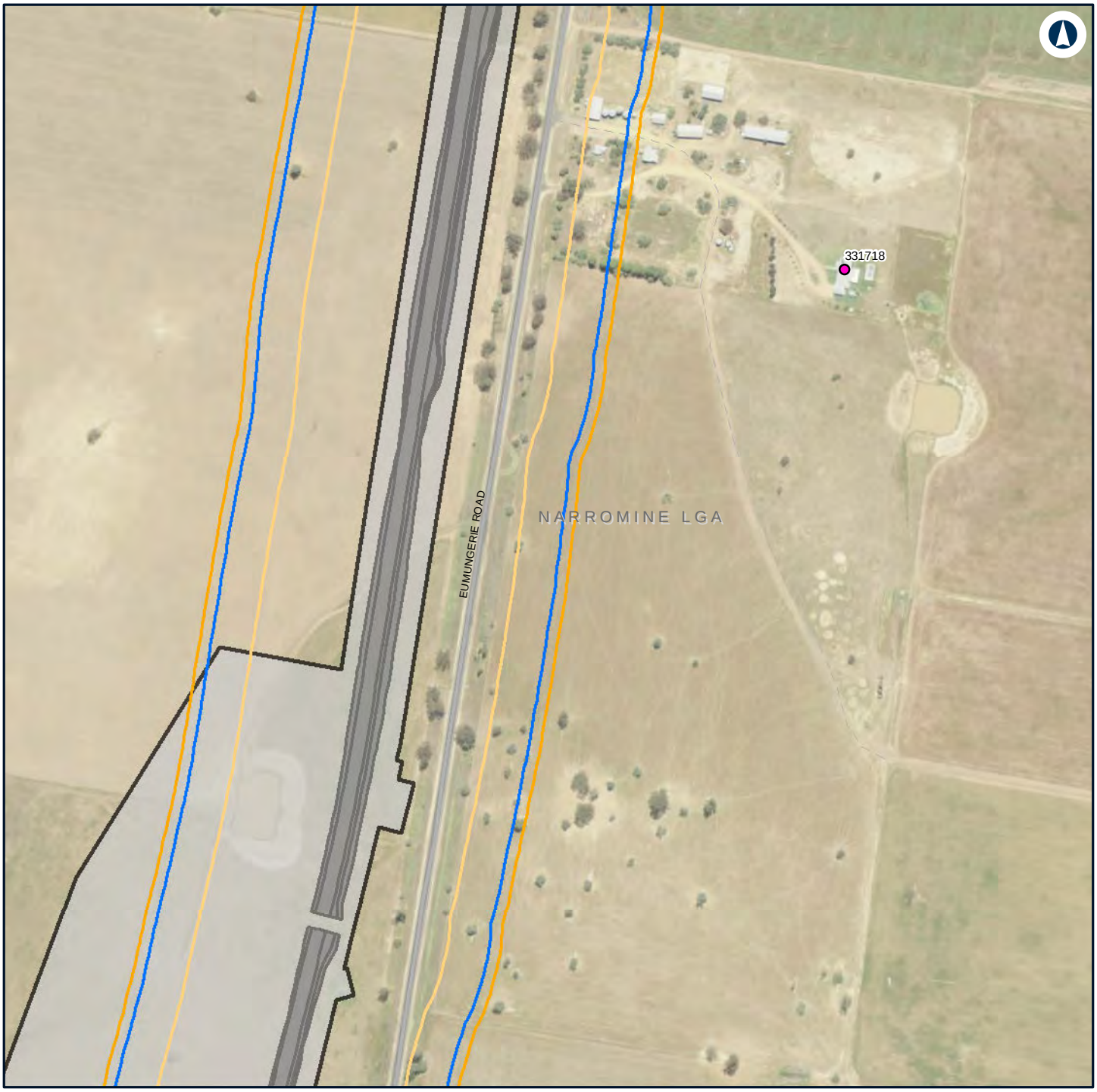

LEGEND

- Construction footprint
- Rail earthworks extent (propagation source)

Structure type

- Residential

Vibration from rail earthworks

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 20 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
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LEGEND

Construction footprint
Rail earthworks extent (propagation source)

Structure type
Residential

Vibration from rail earthworks
AVTG night max (0.26 m/s 1.75, 94 m)
AVTG day max (0.4 m/s 1.75, 128 m)
BS 5228-2:2009 (1 mm/s, 140 m)

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 21 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

INLAND RAIL ARTC

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LEGEND

- Construction footprint
- Rail earthworks extent (propagation source)

Structure type

- Residential

Vibration from rail earthworks

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 22 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

Construction footprint
Rail earthworks extent (propagation source)

Structure type
Residential

Vibration from rail earthworks
AVTG night max (0.26 m/s 1.75, 94 m)
AVTG day max (0.4 m/s 1.75, 128 m)
BS 5228-2:2009 (1 mm/s, 140 m)

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 23 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

- Construction footprint
- Rail earthworks extent (propagation source)

Structure type

- Residential

Vibration from rail earthworks

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 24 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

Construction footprint
Rail earthworks extent (propagation source)

Structure type
Residential

Vibration from rail earthworks
AVTG night max (0.26 m/s 1.75, 94 m)
AVTG day max (0.4 m/s 1.75, 128 m)
BS 5228-2:2009 (1 mm/s, 140 m)

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 25 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

- Construction footprint
- Rail earthworks extent (propagation source)

Structure type

- Residential

Vibration from rail earthworks

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 26 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

- Construction footprint
- Rail earthworks extent (propagation source)

Structure type

- Residential

Vibration from rail earthworks

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 27 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

- Construction footprint
- Rail earthworks extent (propagation source)

Structure type

- Residential

Vibration from rail earthworks

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 28 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

INLAND RAIL ARTC

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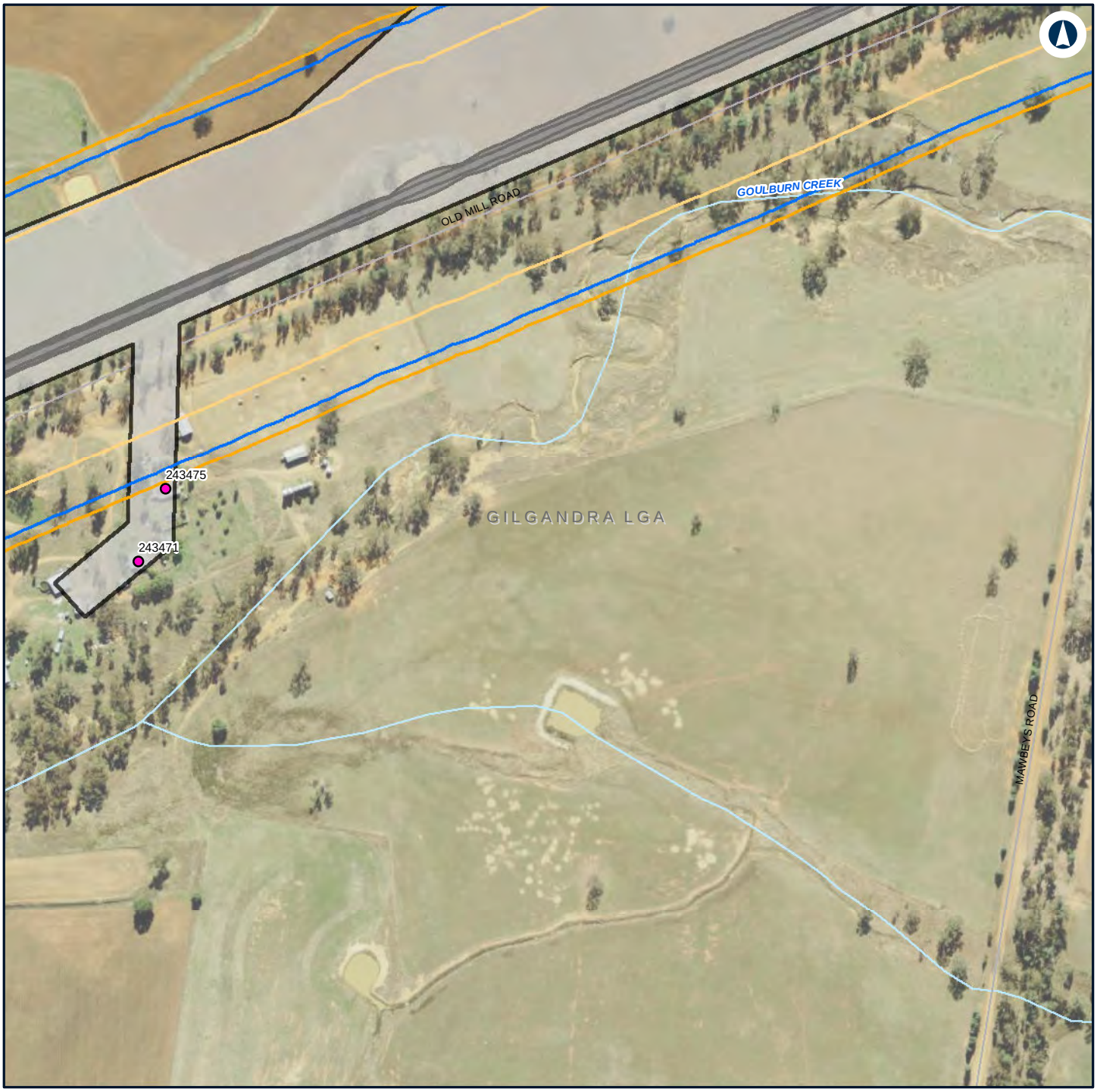

LEGEND

- Construction footprint
- Rail earthworks extent (propagation source)

Structure type

- Residential

Vibration from rail earthworks

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 29 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

Vibration from bridge construction (piling)

- AVTG night max (0.26 m/s 1.75, 490 m)
- AVTG day max (0.4 m/s 1.75, 670 m)
- BS 5228-2:2009 (1 mm/s, 700 m)

Structure type

- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 30 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

Vibration from bridge construction (piling)

- AVTG day max (0.4 m/s 1.75, 670 m)
- BS 5228-2:2009 (1 mm/s, 700 m)

Structure type

- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 31 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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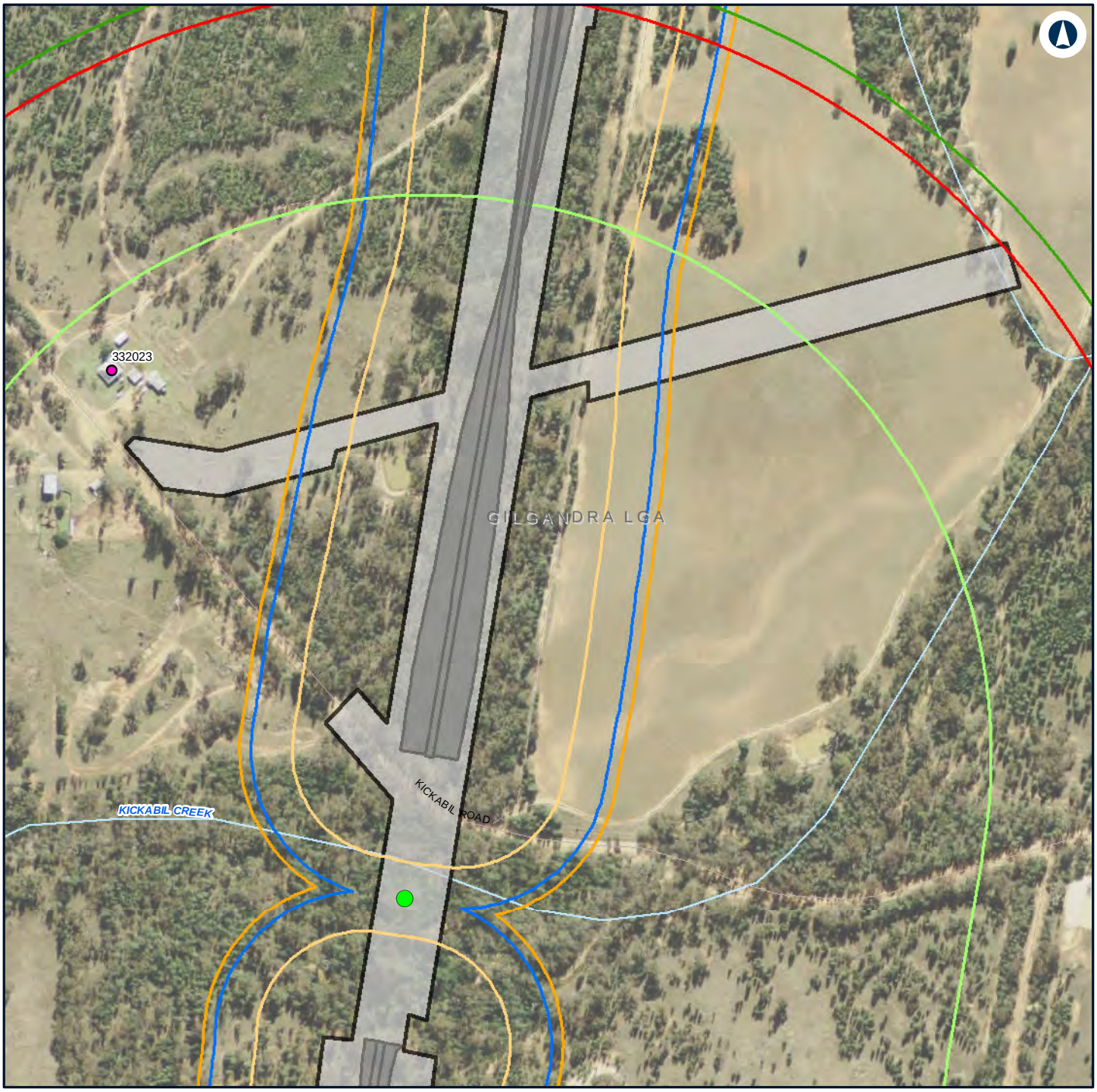

LEGEND

- Bridge centre (propagation source)
- Construction footprint
- Rail earthworks extent (propagation source)

Vibration from bridge construction (piling)

- AVTG night max (0.26 m/s 1.75, 490 m)
- AVTG day max (0.4 m/s 1.75, 670 m)
- BS 5228-2:2009 (1 mm/s, 700 m)

Vibration from rail earthworks

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

Structure type

- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 32 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

Vibration from bridge construction (piling)

AVTG day max (0.4 m/s 1.75, 670 m)

BS 5228-2:2009 (1 mm/s, 700 m)

Structure type

Residential

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 33 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

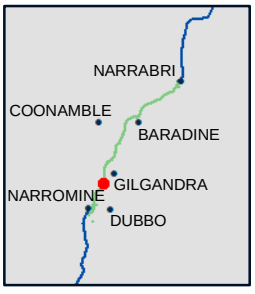
Vibration from bridge construction (piling)

AVTG day max (0.4 m/s 1.75, 670 m)

BS 5228-2:2009 (1 mm/s, 700 m)

Structure type

Residential



NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 34 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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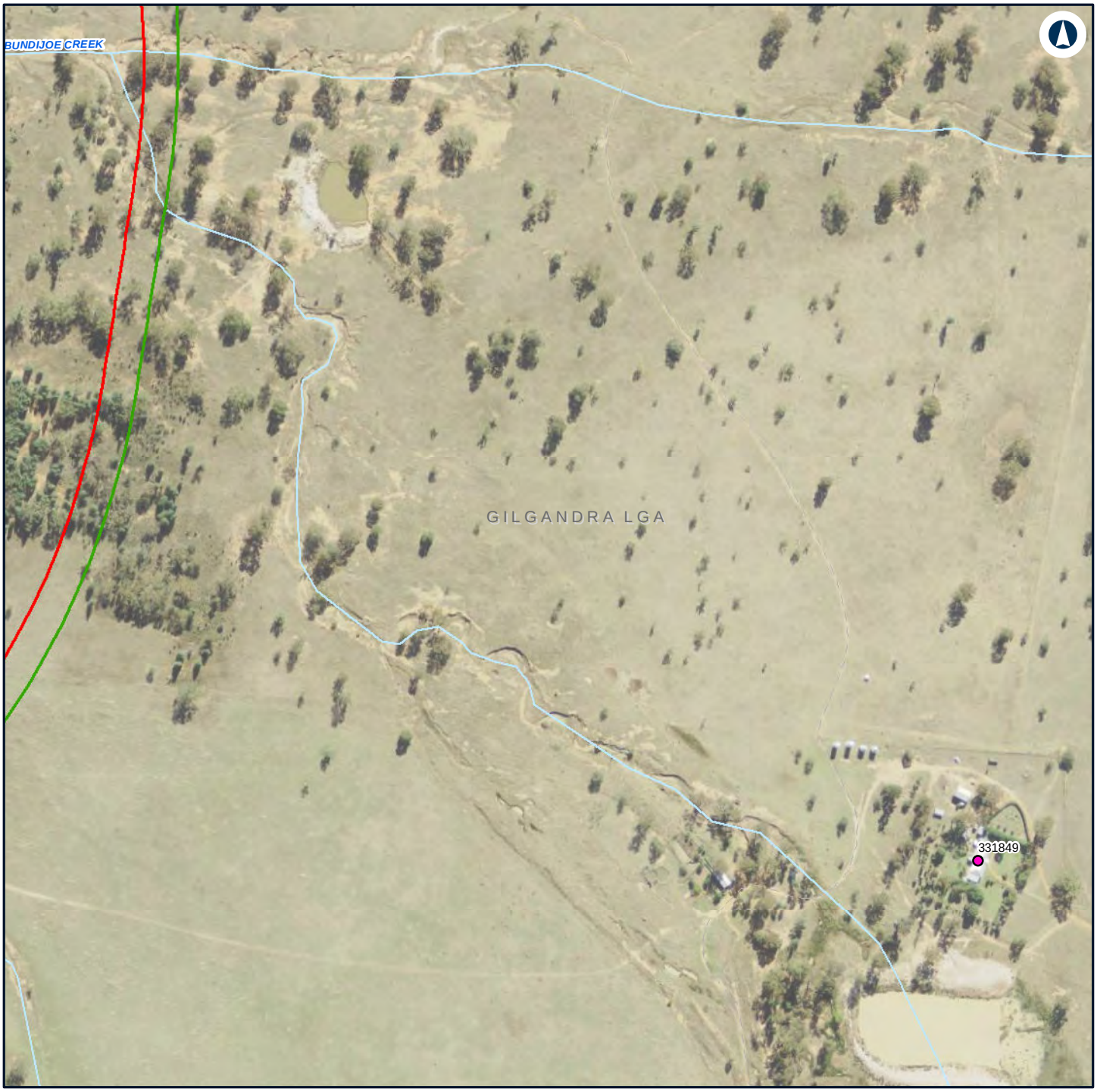


LEGEND

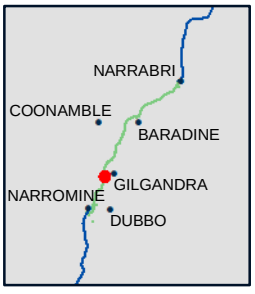
Vibration from bridge construction (piling)

AVTG day max (0.4 m/s 1.75, 670 m)

BS 5228-2:2009 (1 mm/s, 700 m)

Structure type

Residential



NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 35 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000

Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

- Construction footprint
- Rail earthworks extent (propagation source)

Vibration from bridge construction (piling)

- AVTG night max (0.26 m/s 1.75, 490 m)
- AVTG day max (0.4 m/s 1.75, 670 m)
- BS 5228-2:2009 (1 mm/s, 700 m)

Vibration from rail earthworks

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

Structure type

- Residential

NARROMINE TO NARRABRI

Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 36 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

Construction footprint
Rail earthworks extent (propagation source)

Structure type
Residential

Vibration from rail earthworks
AVTG night max (0.26 m/s 1.75, 94 m)
AVTG day max (0.4 m/s 1.75, 128 m)
BS 5228-2:2009 (1 mm/s, 140 m)

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 37 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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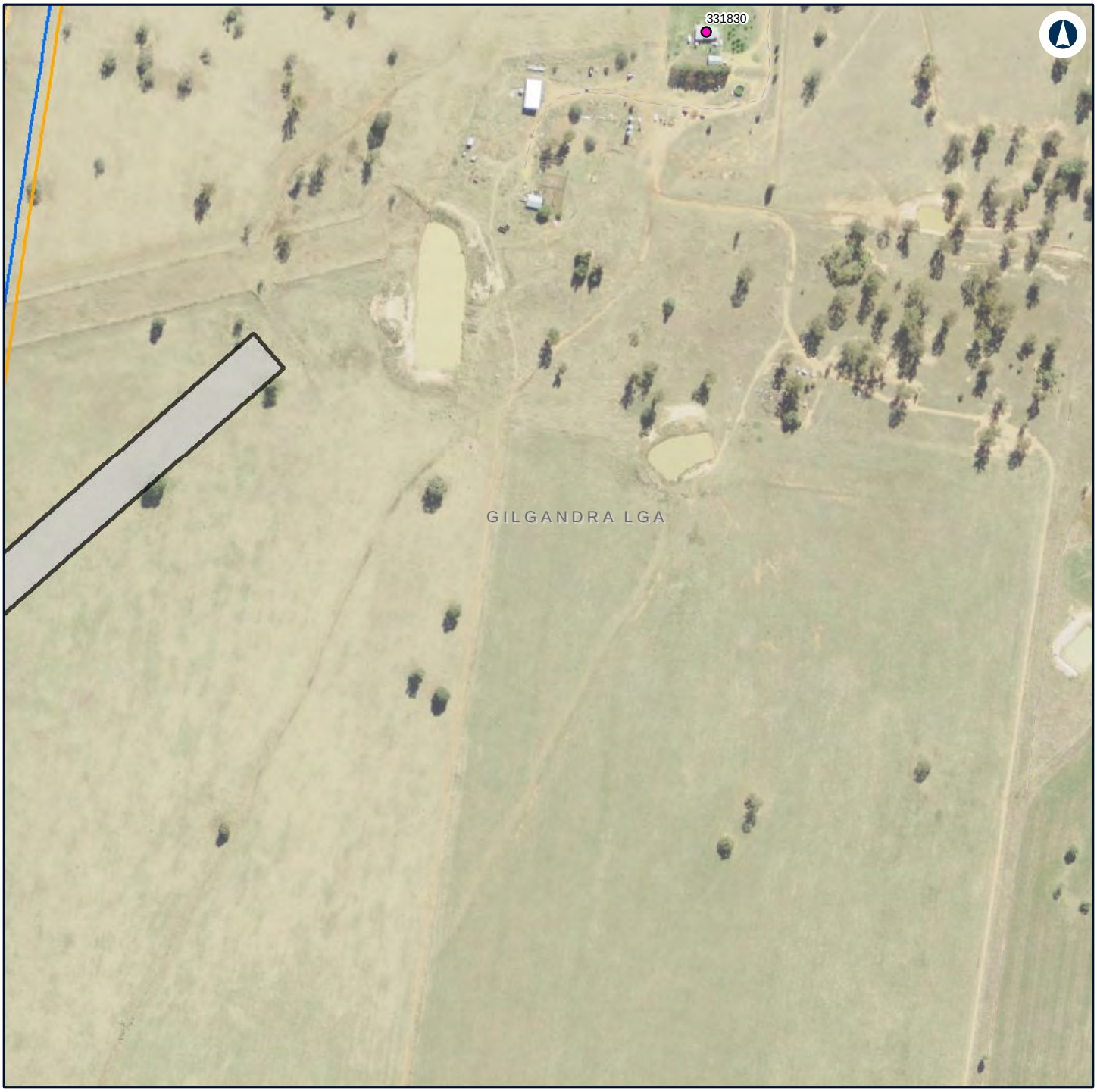

LEGEND

Construction footprint

Vibration from rail earthworks

AVTG night max (0.26 m/s 1.75, 94 m)

AVTG day max (0.4 m/s 1.75, 128 m)

BS 5228-2:2009 (1 mm/s, 140 m)

Structure type

Residential

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 38 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

Construction footprint

Vibration from bridge construction (piling)

AVTG night max (0.26 m/s 1.75, 490 m)

AVTG day max (0.4 m/s 1.75, 670 m)

BS 5228-2:2009 (1 mm/s, 700 m)

Structure type

Residential

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 39 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

Vibration from bridge construction (piling)

- AVTG night max (0.26 m/s 1.75, 490 m)
- AVTG day max (0.4 m/s 1.75, 670 m)
- BS 5228-2:2009 (1 mm/s, 700 m)

Structure type

- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 40 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

- Bridge centre (propagation source)
- Construction footprint
- Rail earthworks extent (propagation source)

Vibration from bridge construction (piling)

- AVTG night max (0.26 m/s 1.75, 490 m)
- AVTG day max (0.4 m/s 1.75, 670 m)
- BS 5228-2:2009 (1 mm/s, 700 m)

Vibration from rail earthworks

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

Structure type

- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 41 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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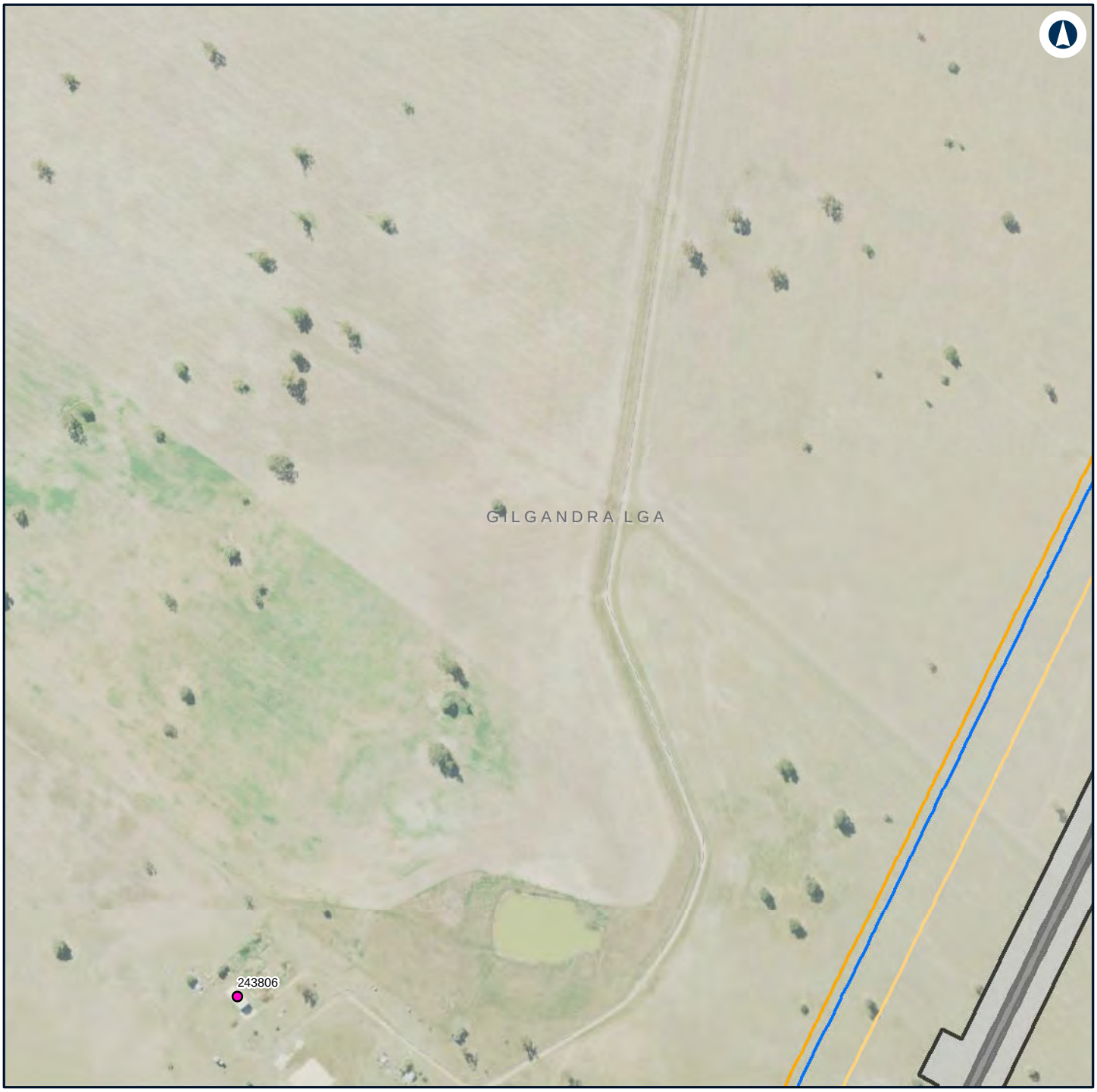

LEGEND

- Construction footprint
- Rail earthworks extent (propagation source)

Structure type

- Residential

Vibration from rail earthworks

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

NARROMINE TO NARRABRI

Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 42 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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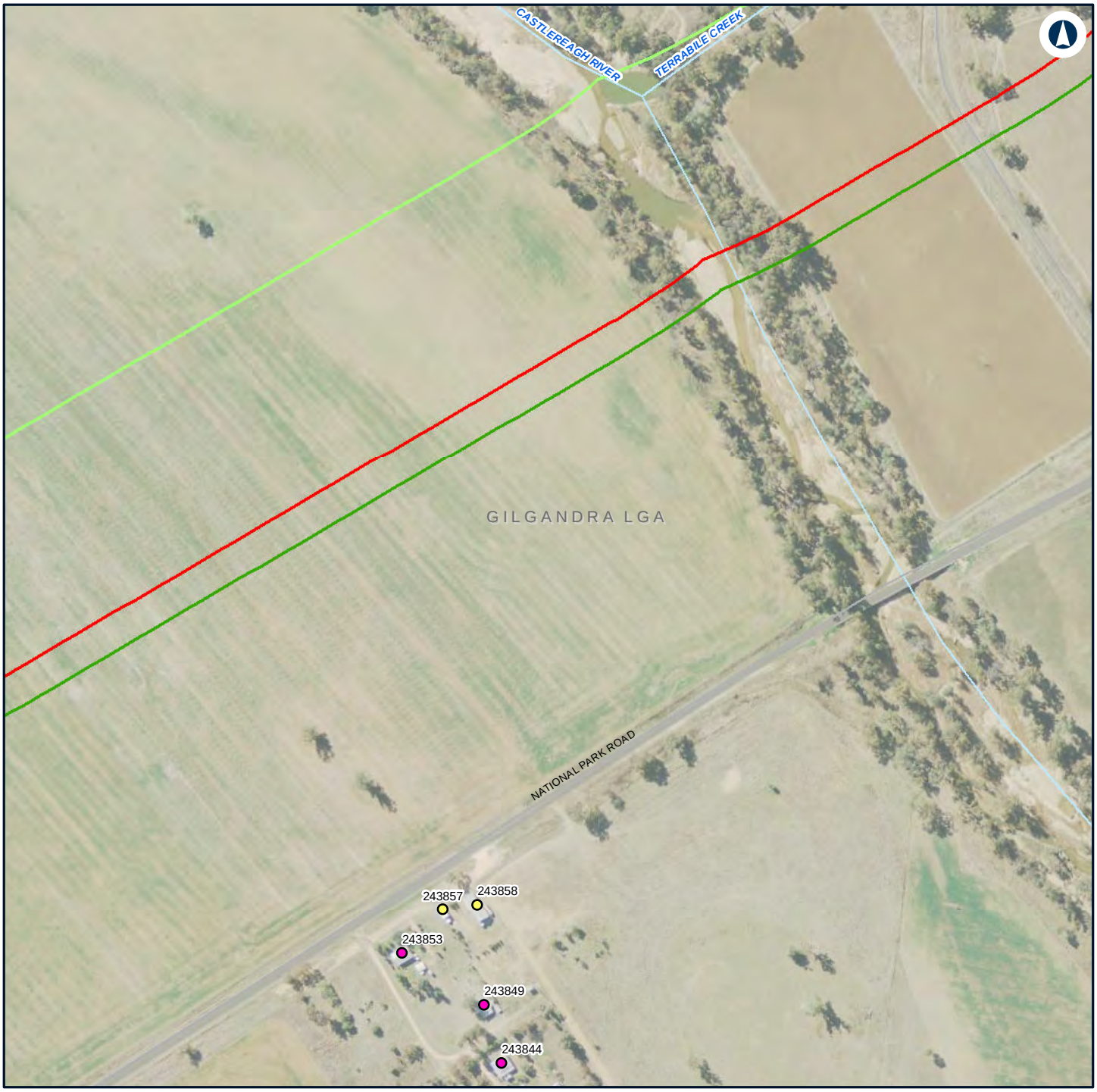

LEGEND

Vibration from bridge construction (piling)

- AVTG night max (0.26 m/s 1.75, 490 m)
- AVTG day max (0.4 m/s 1.75, 670 m)
- BS 5228-2:2009 (1 mm/s, 700 m)

Structure type

- Community
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 43 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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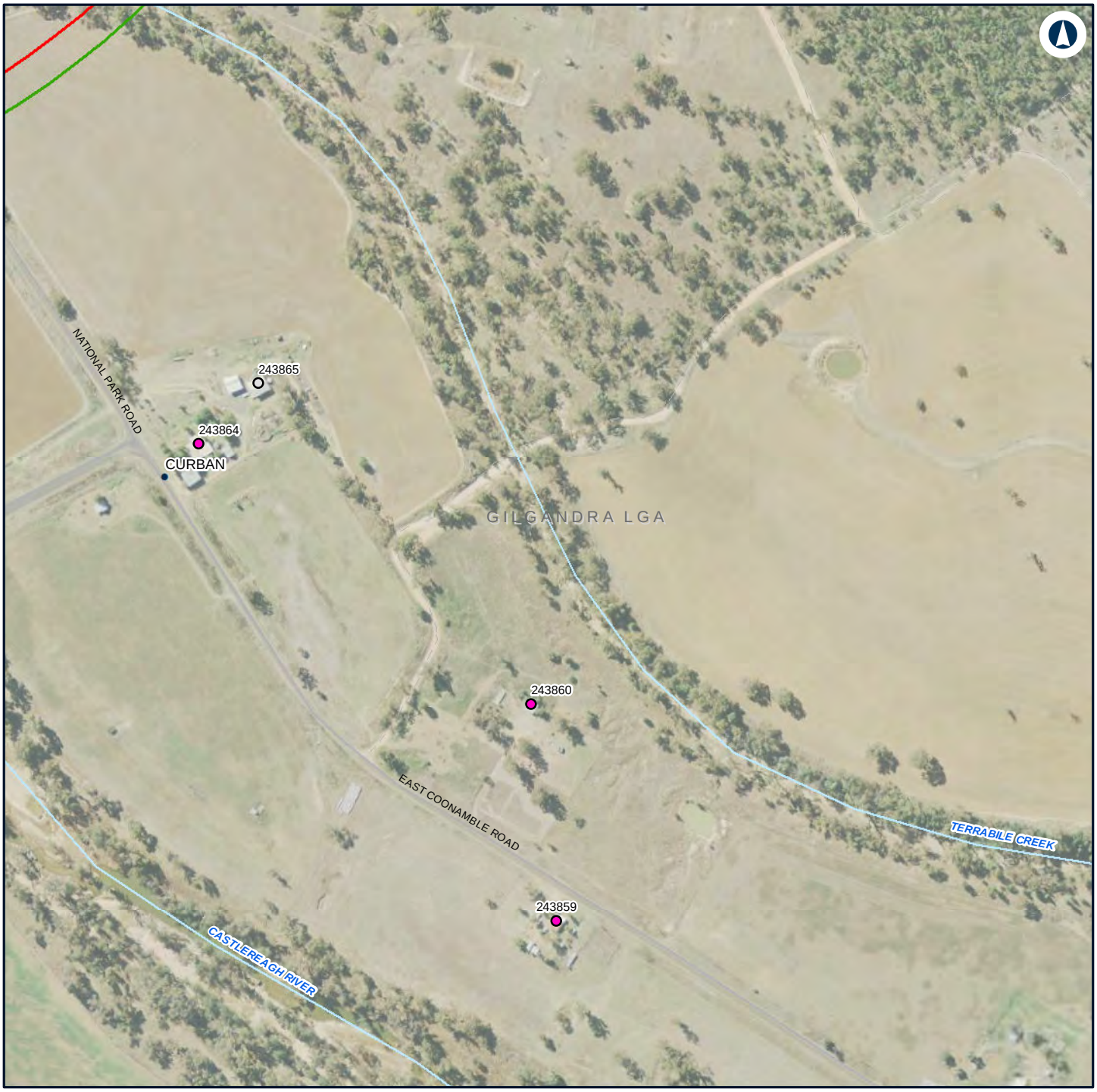

LEGEND

Vibration from bridge construction (piling)

- AVTG day max (0.4 m/s 1.75, 670 m)
- BS 5228-2:2009 (1 mm/s, 700 m)

Structure type

- Commercial/Industrial
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 44 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

INLAND RAIL ARTC

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LEGEND

Vibration from bridge construction (piling)
- AVTG night max (0.26 m/s 1.75, 490 m)
- AVTG day max (0.4 m/s 1.75, 670 m)
- BS 5228-2:2009 (1 mm/s, 700 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

Structure type
- Residential

Vibration from rail earthworks
- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 45 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

Vibration from rail earthworks

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

Structure type

- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 46 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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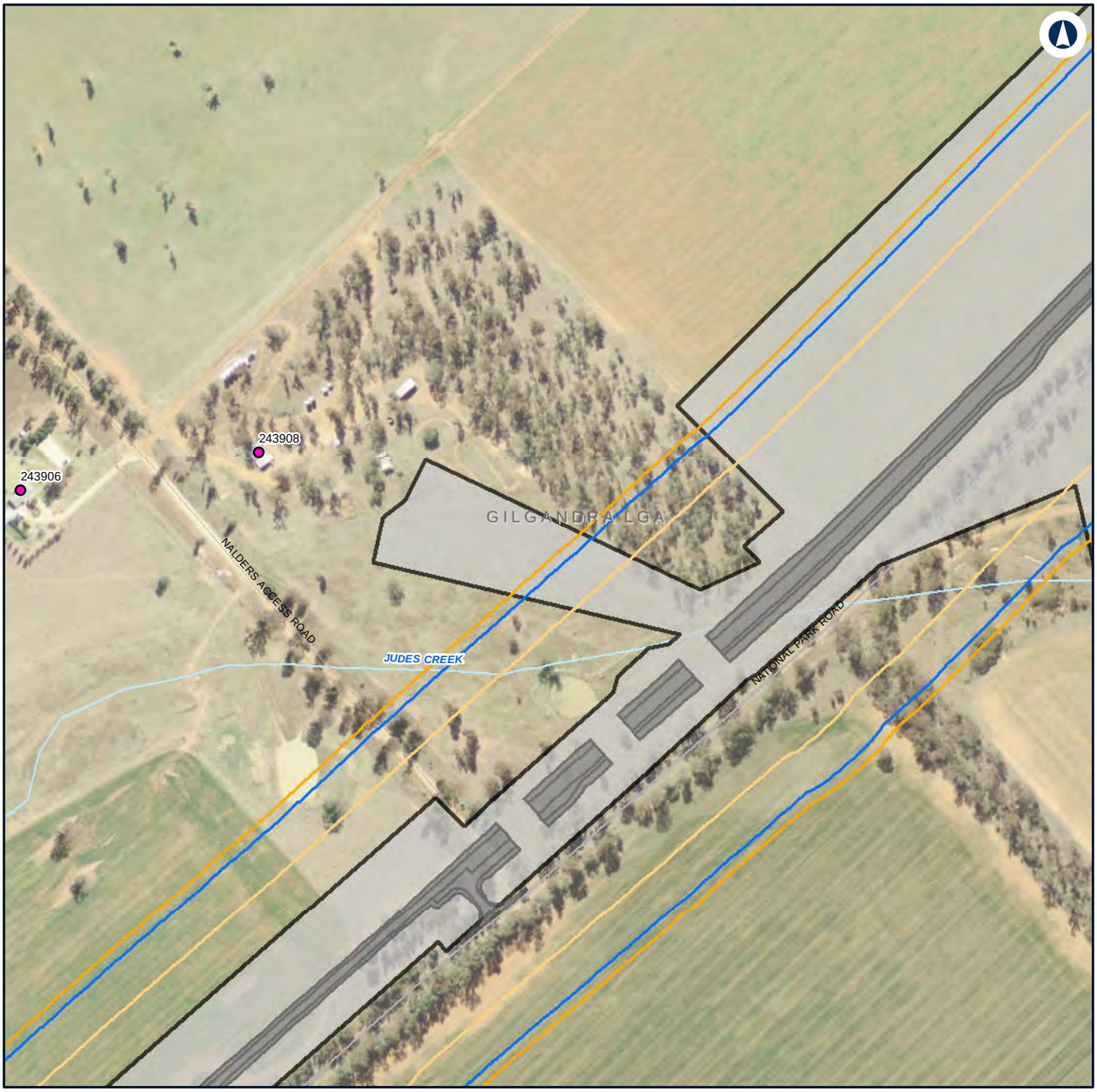

LEGEND

Construction footprint
Rail earthworks extent (propagation source)

Structure type
Residential

Vibration from rail earthworks
AVTG night max (0.26 m/s 1.75, 94 m)
AVTG day max (0.4 m/s 1.75, 128 m)
BS 5228-2:2009 (1 mm/s, 140 m)

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 47 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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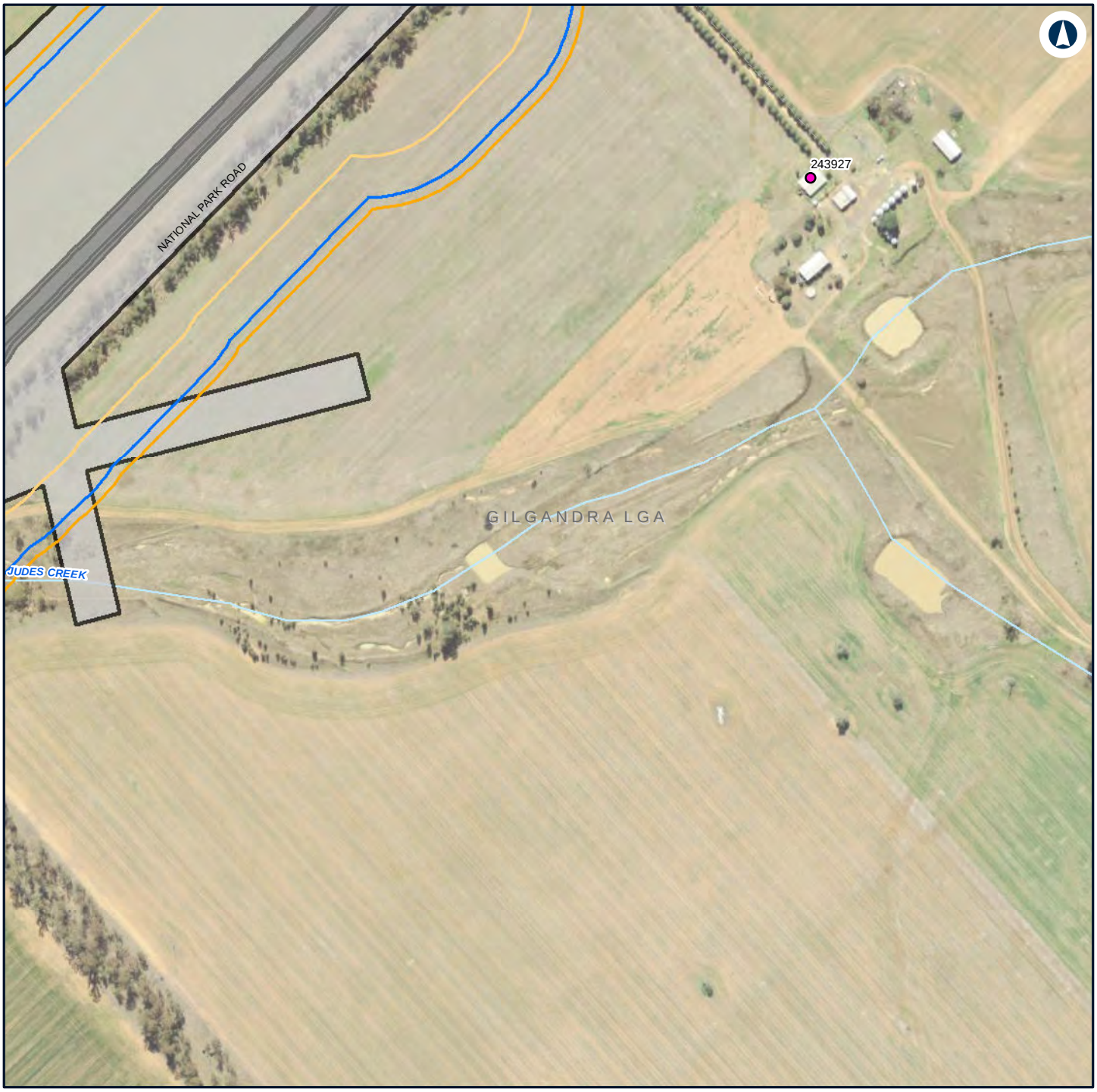

LEGEND

- Construction footprint
- Rail earthworks extent (propagation source)

Structure type

- Residential

Vibration from rail earthworks

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 48 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

- Construction footprint
- Rail earthworks extent (propagation source)

Vibration from bridge construction (piling)

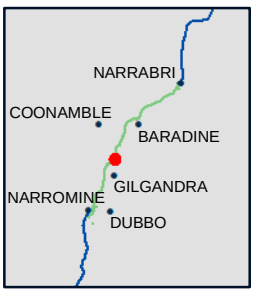
- AVTG night max (0.26 m/s 1.75, 490 m)
- AVTG day max (0.4 m/s 1.75, 670 m)
- BS 5228-2:2009 (1 mm/s, 700 m)

Vibration from rail earthworks

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

Structure type

- Residential



NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 49 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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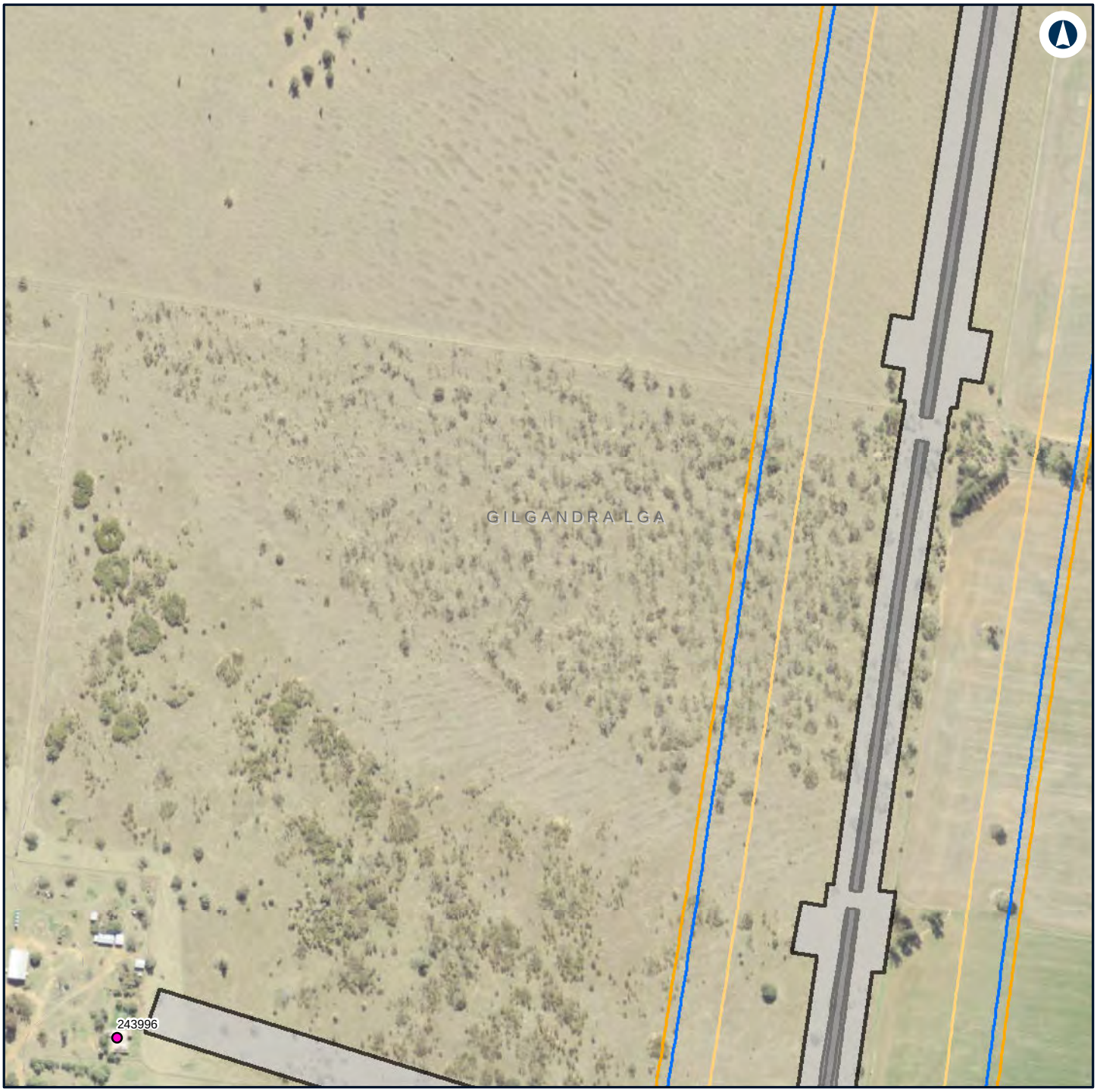

LEGEND

- Construction footprint
- Rail earthworks extent (propagation source)

Structure type

- Residential

Vibration from rail earthworks

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

NARROMINE TO NARRABRI

Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 50 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

Construction footprint
Rail earthworks extent (propagation source)

Structure type
Residential

Vibration from rail earthworks
AVTG night max (0.26 m/s 1.75, 94 m)
AVTG day max (0.4 m/s 1.75, 128 m)
BS 5228-2:2009 (1 mm/s, 140 m)

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 51 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

Construction footprint

Vibration from rail earthworks

AVTG night max (0.26 m/s 1.75, 94 m)

AVTG day max (0.4 m/s 1.75, 128 m)

BS 5228-2:2009 (1 mm/s, 140 m)

Structure type

Residential

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 52 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000

Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

- Construction footprint
- Rail earthworks extent (propagation source)

Vibration from bridge construction (piling)

- AVTG day max (0.4 m/s 1.75, 670 m)
- BS 5228-2:2009 (1 mm/s, 700 m)

Vibration from rail earthworks

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

Structure type

- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 53 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

- Construction footprint
- Rail earthworks extent (propagation source)

Structure type

- Residential

Vibration from rail earthworks

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

NARROMINE TO NARRABRI

Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 54 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

- Construction footprint
- Rail earthworks extent (propagation source)

Structure type

- Residential

Vibration from rail earthworks

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 55 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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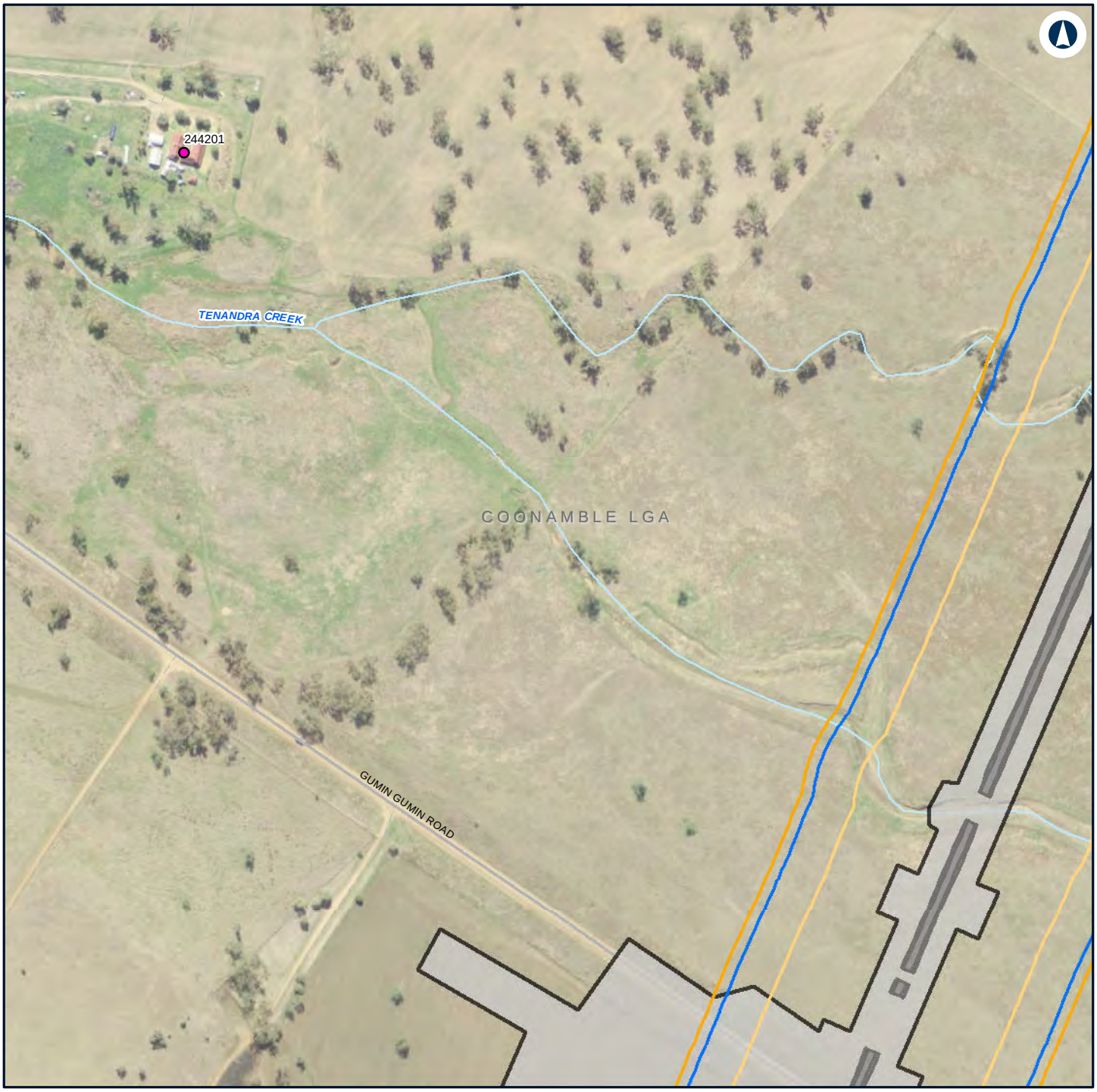

LEGEND

- Construction footprint
- Rail earthworks extent (propagation source)

Structure type

- Residential

Vibration from rail earthworks

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 56 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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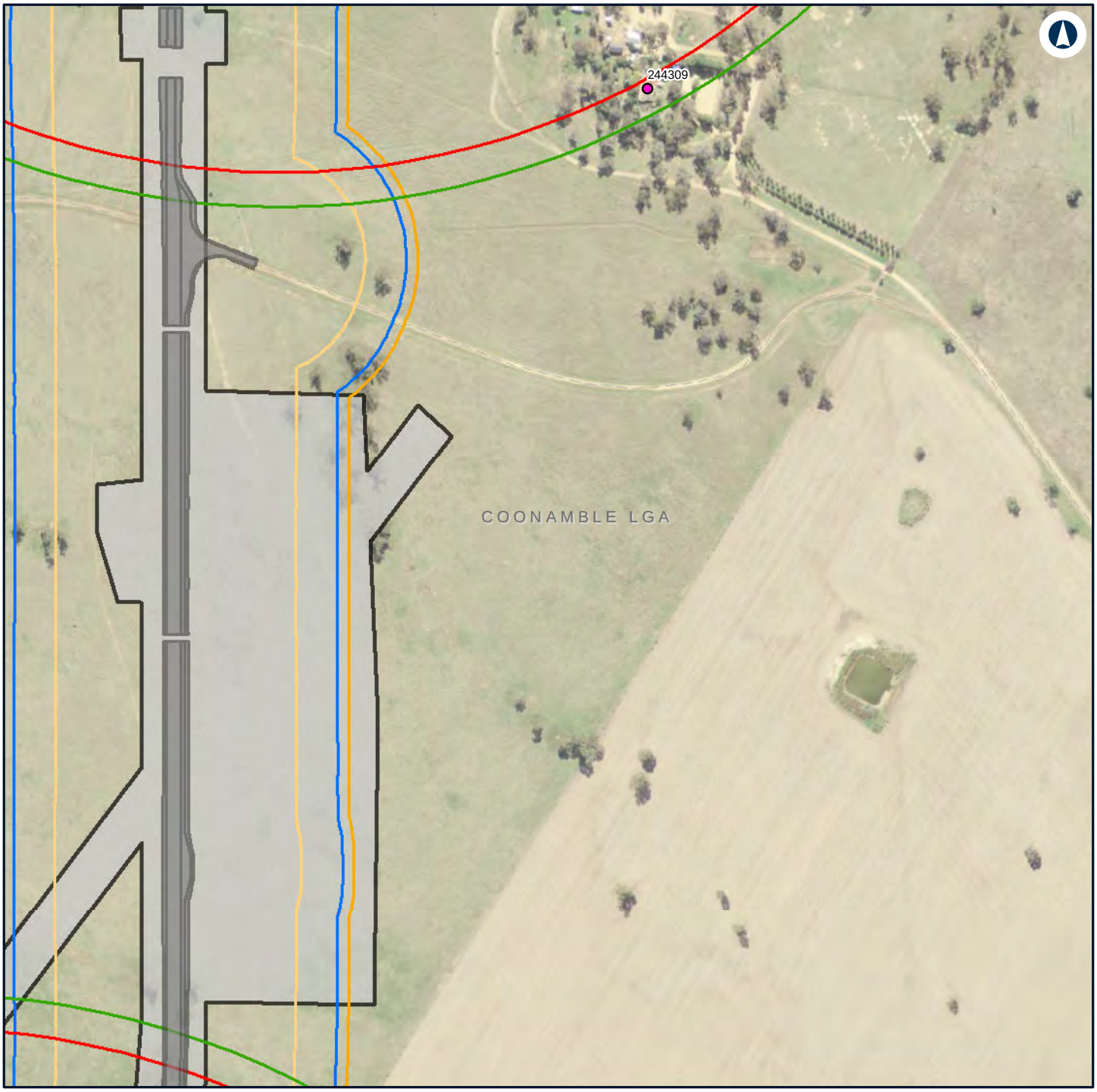

LEGEND

- Construction footprint
- Rail earthworks extent (propagation source)

Vibration from bridge construction (piling)

- AVTG day max (0.4 m/s 1.75, 670 m)
- BS 5228-2:2009 (1 mm/s, 700 m)

Vibration from rail earthworks

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

Structure type

- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 57 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

Vibration from bridge construction (piling)

- AVTG day max (0.4 m/s 1.75, 670 m)
- BS 5228-2:2009 (1 mm/s, 700 m)

Structure type

- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 58 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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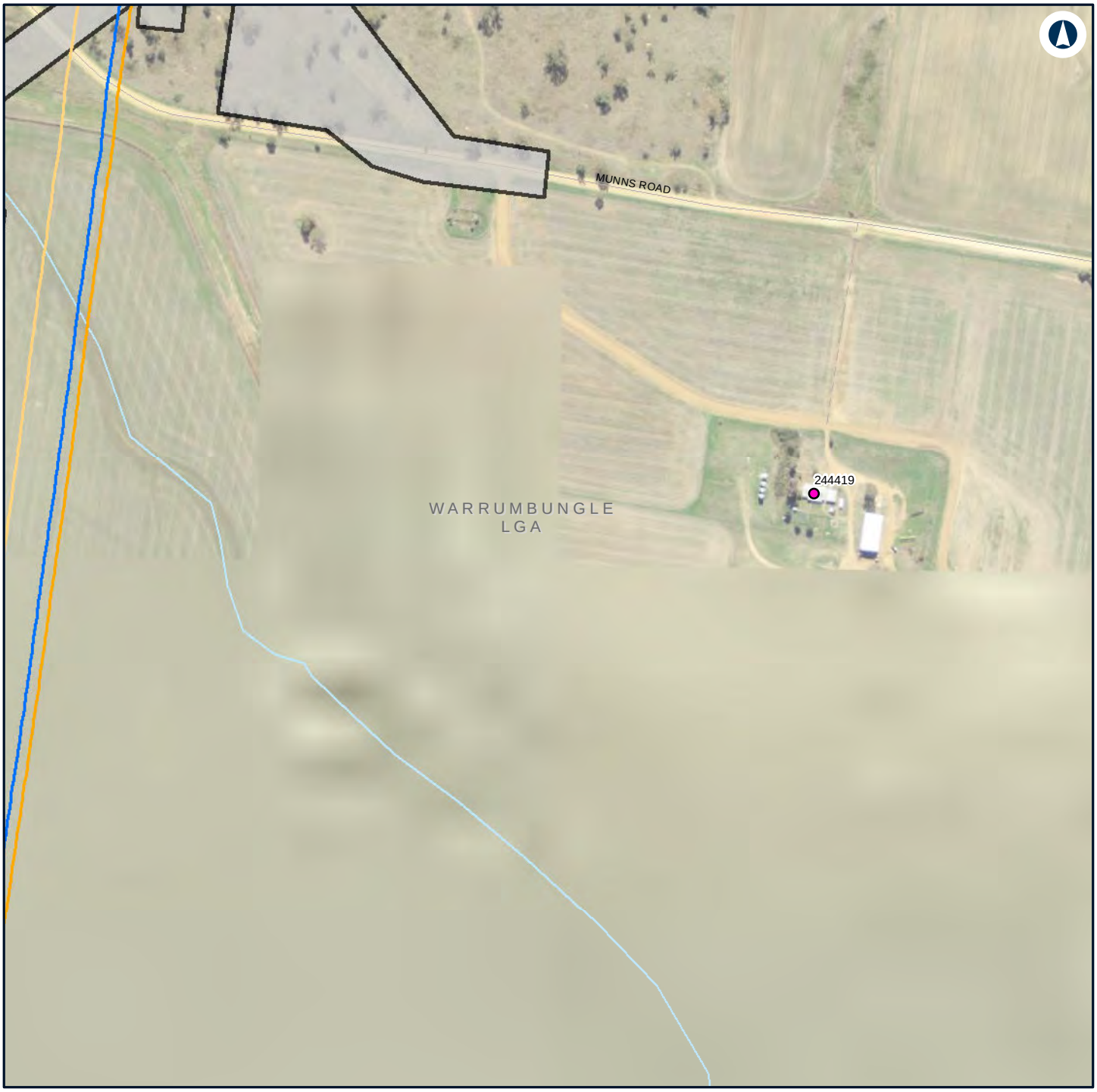


LEGEND

Construction footprint

Vibration from rail earthworks

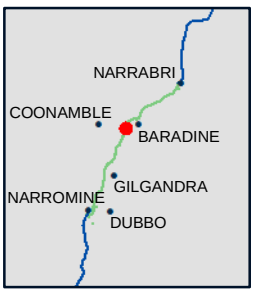
AVTG night max (0.26 m/s 1.75, 94 m)

AVTG day max (0.4 m/s 1.75, 128 m)

BS 5228-2:2009 (1 mm/s, 140 m)

Structure type

Residential



NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 59 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

Vibration from bridge construction (piling)

- AVTG night max (0.26 m/s 1.75, 490 m)
- AVTG day max (0.4 m/s 1.75, 670 m)
- BS 5228-2:2009 (1 mm/s, 700 m)

Structure type

- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 60 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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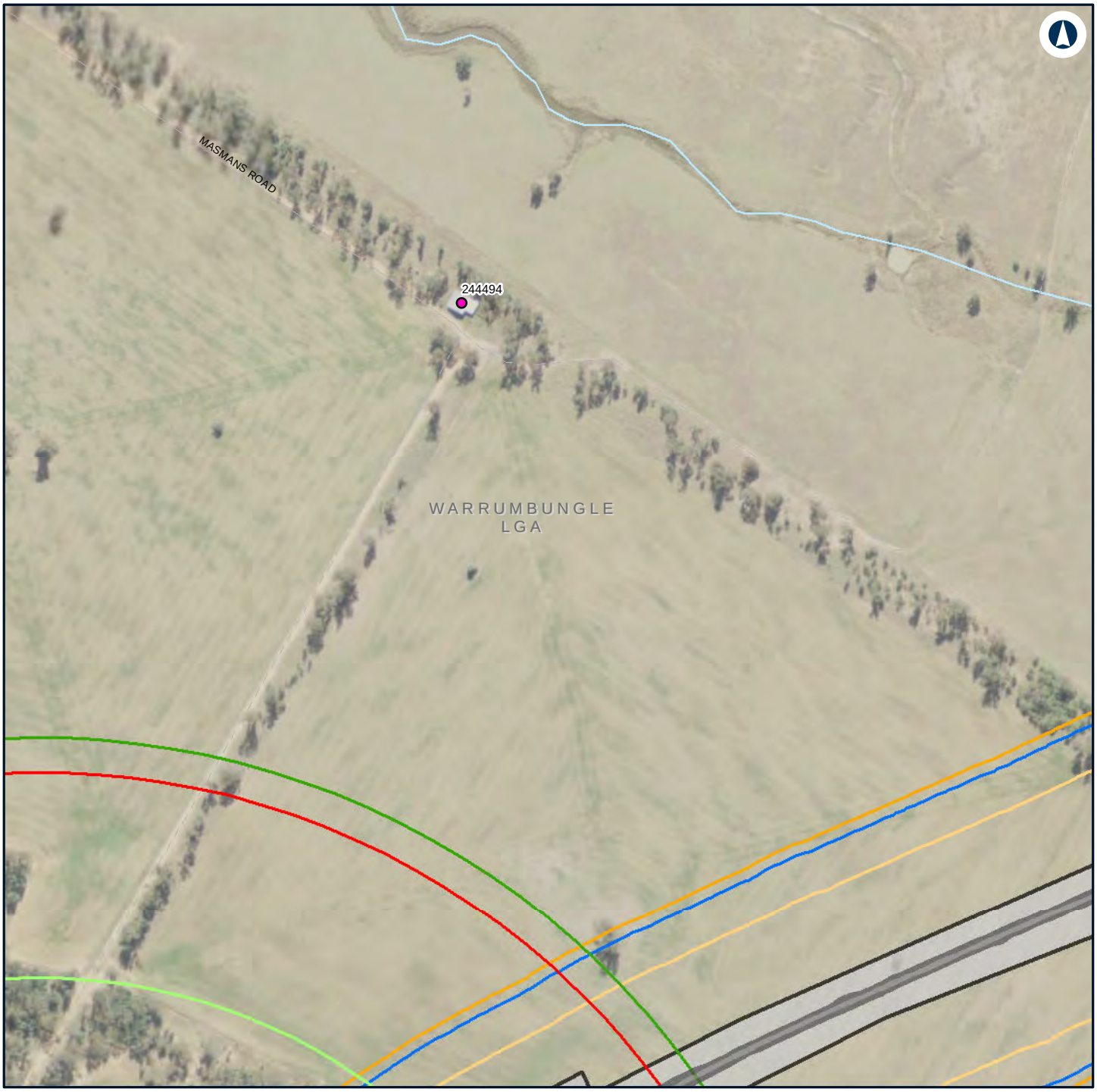

LEGEND

- Construction footprint
- Rail earthworks extent (propagation source)

Vibration from bridge construction (piling)

- AVTG night max (0.26 m/s 1.75, 490 m)
- AVTG day max (0.4 m/s 1.75, 670 m)
- BS 5228-2:2009 (1 mm/s, 700 m)

Vibration from rail earthworks

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

Structure type

- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 61 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

- Construction footprint
- Rail earthworks extent (propagation source)

Structure type

- Residential

Vibration from rail earthworks

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 62 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

- Construction footprint
- Rail earthworks extent (propagation source)

Structure type

- Residential

Vibration from rail earthworks

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 63 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

Construction footprint
Rail earthworks extent (propagation source)

Structure type
Residential

Vibration from rail earthworks
AVTG night max (0.26 m/s 1.75, 94 m)
AVTG day max (0.4 m/s 1.75, 128 m)
BS 5228-2:2009 (1 mm/s, 140 m)

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 64 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

Vibration from bridge construction (piling)

- AVTG day max (0.4 m/s 1.75, 670 m)
- BS 5228-2:2009 (1 mm/s, 700 m)

Structure type

- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 65 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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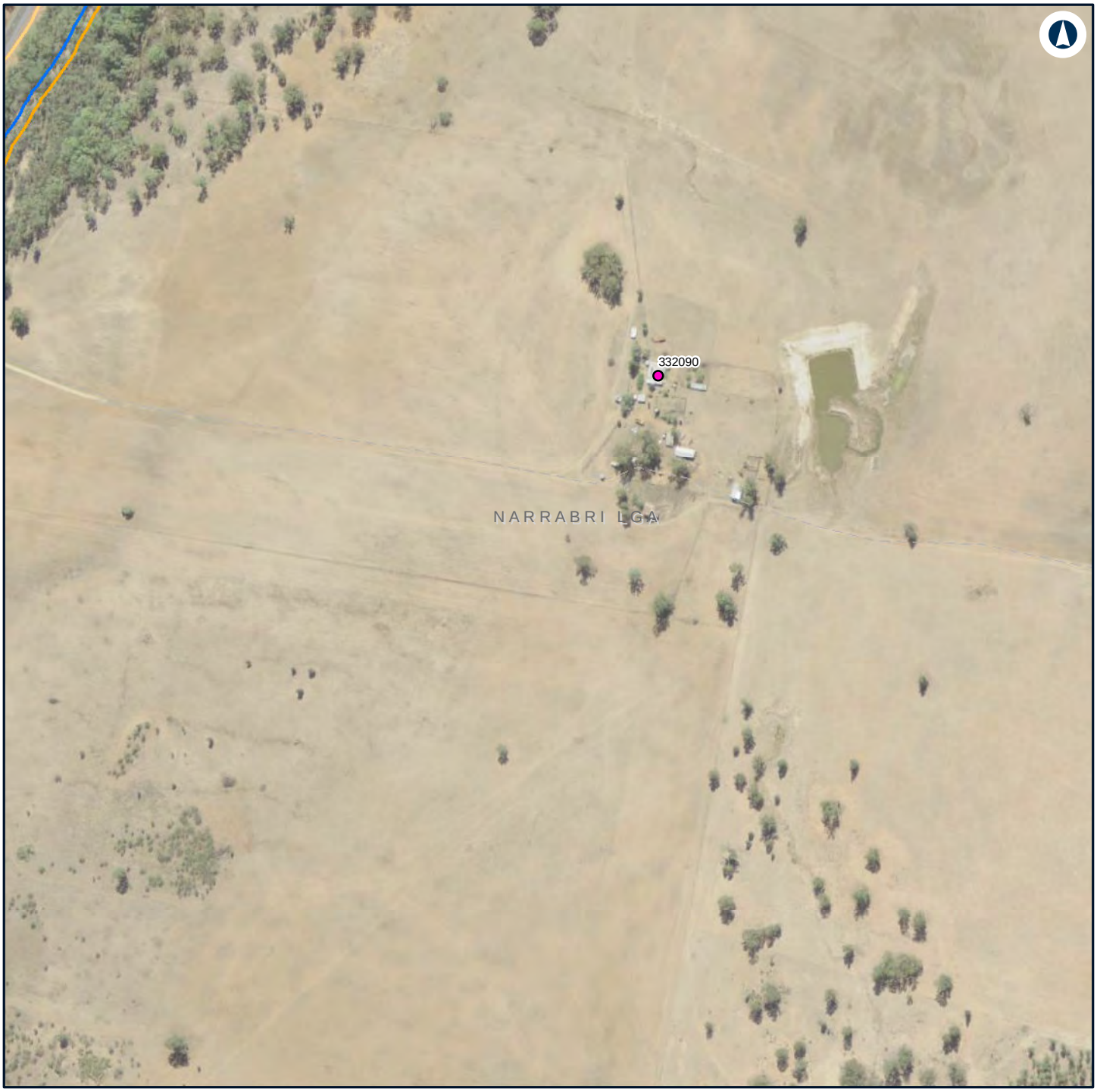

LEGEND

Vibration from rail earthworks

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

Structure type

- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 66 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

INLAND RAIL ARTC

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LEGEND

- Construction footprint
- Rail earthworks extent (propagation source)

Structure type

- Residential

Vibration from rail earthworks

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 67 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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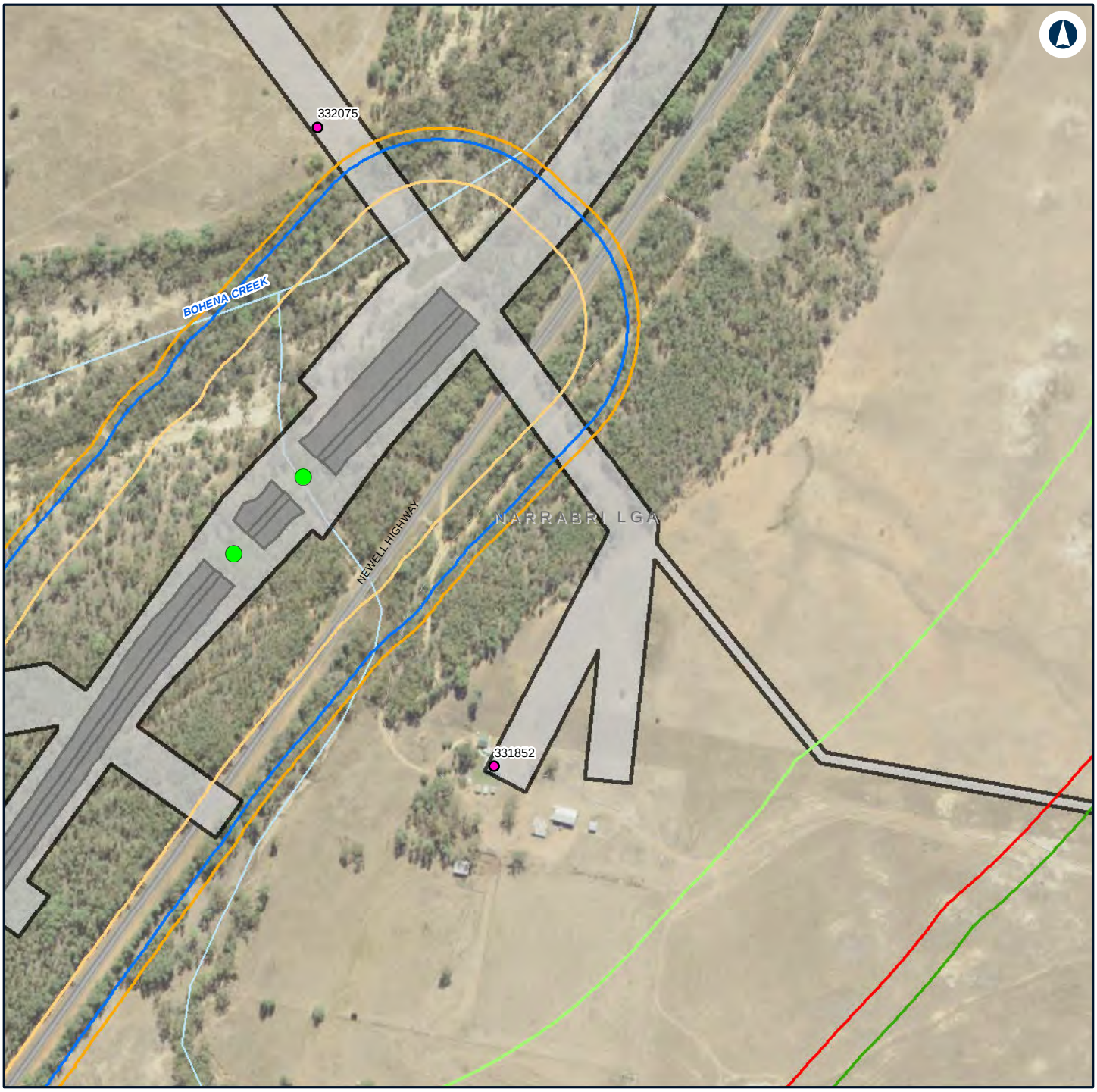

LEGEND

- Bridge centre (propagation source)
- Construction footprint
- Rail earthworks extent (propagation source)

Vibration from bridge construction (piling)

- AVTG night max (0.26 m/s 1.75, 490 m)
- AVTG day max (0.4 m/s 1.75, 670 m)
- BS 5228-2:2009 (1 mm/s, 700 m)

Vibration from rail earthworks

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

Structure type

- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 68 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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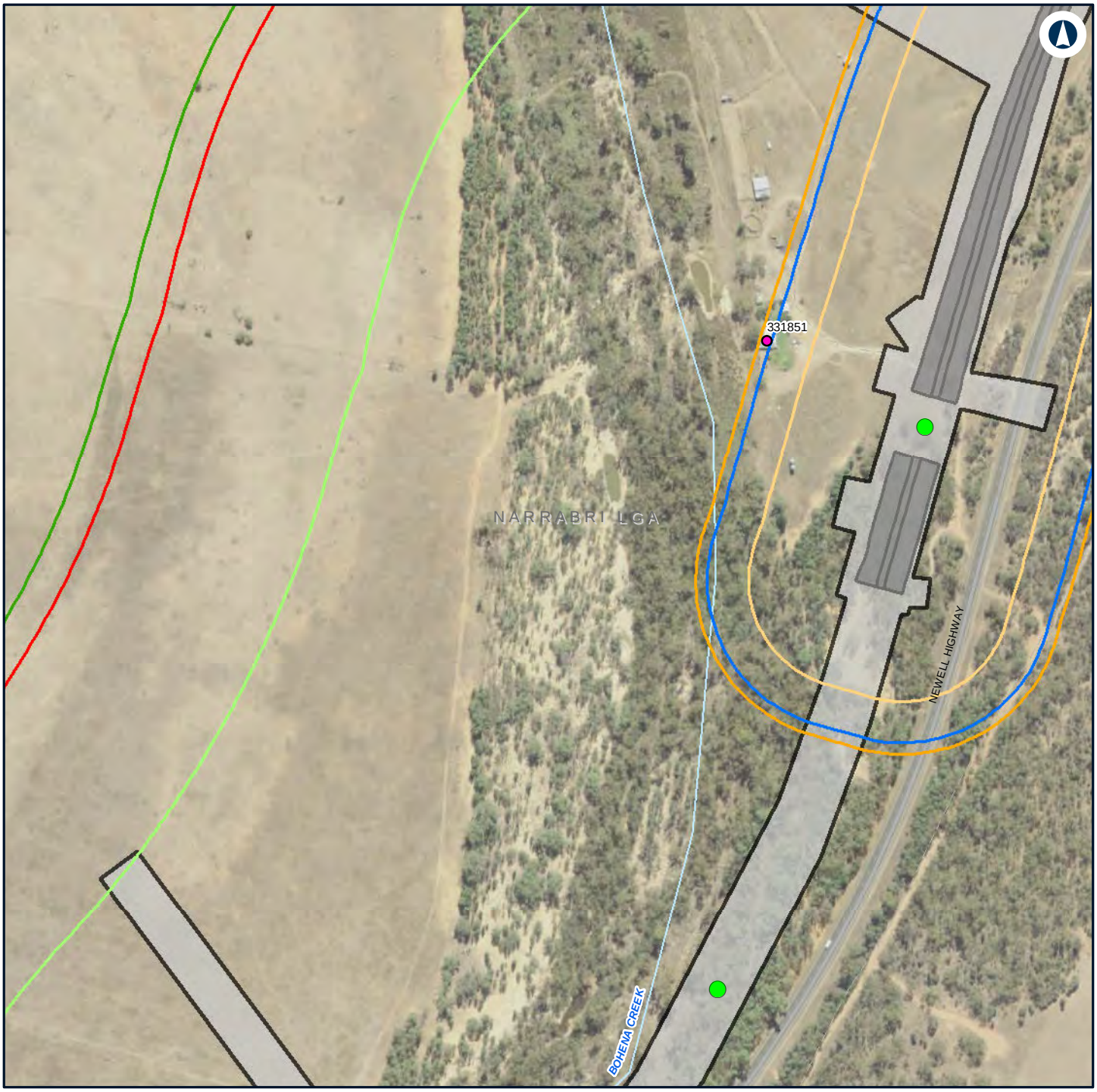

LEGEND

- Bridge centre (propagation source)
- Construction footprint
- Rail earthworks extent (propagation source)

Vibration from bridge construction (piling)

- AVTG night max (0.26 m/s 1.75, 490 m)
- AVTG day max (0.4 m/s 1.75, 670 m)
- BS 5228-2:2009 (1 mm/s, 700 m)

Vibration from rail earthworks

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

Structure type

- Residential

NARROMINE TO NARRABRI

Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 69 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

INLAND RAIL ARTC

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LEGEND

- Construction footprint
- Rail earthworks extent (propagation source)

Structure type

- Residential

Vibration from rail earthworks

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 70 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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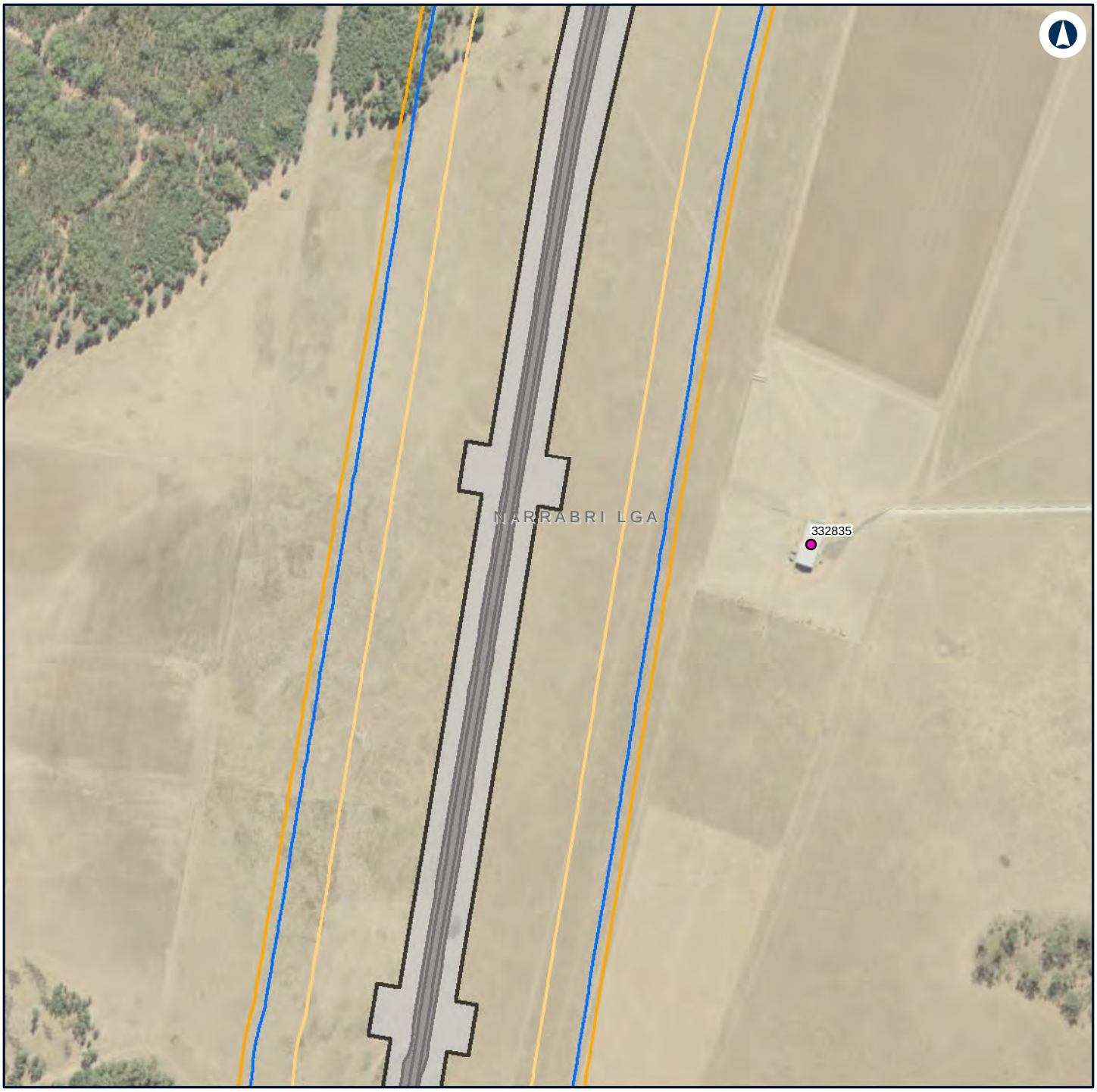

LEGEND

Construction footprint

Rail earthworks extent (propagation source)

Structure type

Residential

Vibration from rail earthworks

AVTG night max (0.26 m/s 1.75, 94 m)

AVTG day max (0.4 m/s 1.75, 128 m)

BS 5228-2:2009 (1 mm/s, 140 m)

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 71 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

Construction footprint

Vibration from rail earthworks

AVTG night max (0.26 m/s 1.75, 94 m)

AVTG day max (0.4 m/s 1.75, 128 m)

BS 5228-2:2009 (1 mm/s, 140 m)

Structure type

Residential

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 72 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

INLAND RAIL ARTC

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LEGEND

- Construction footprint
- Rail earthworks extent (propagation source)

Vibration from bridge construction (piling)

- AVTG day max (0.4 m/s 1.75, 670 m)
- BS 5228-2:2009 (1 mm/s, 700 m)

Vibration from rail earthworks

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

Structure type

- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 73 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

- Construction footprint
- Rail earthworks extent (propagation source)

Vibration from bridge construction (piling)

- AVTG night max (0.26 m/s 1.75, 490 m)
- AVTG day max (0.4 m/s 1.75, 670 m)
- BS 5228-2:2009 (1 mm/s, 700 m)

Vibration from rail earthworks

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

Structure type

- Commercial/Industrial
- Residential

NARROMINE TO NARRABRI

Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 74 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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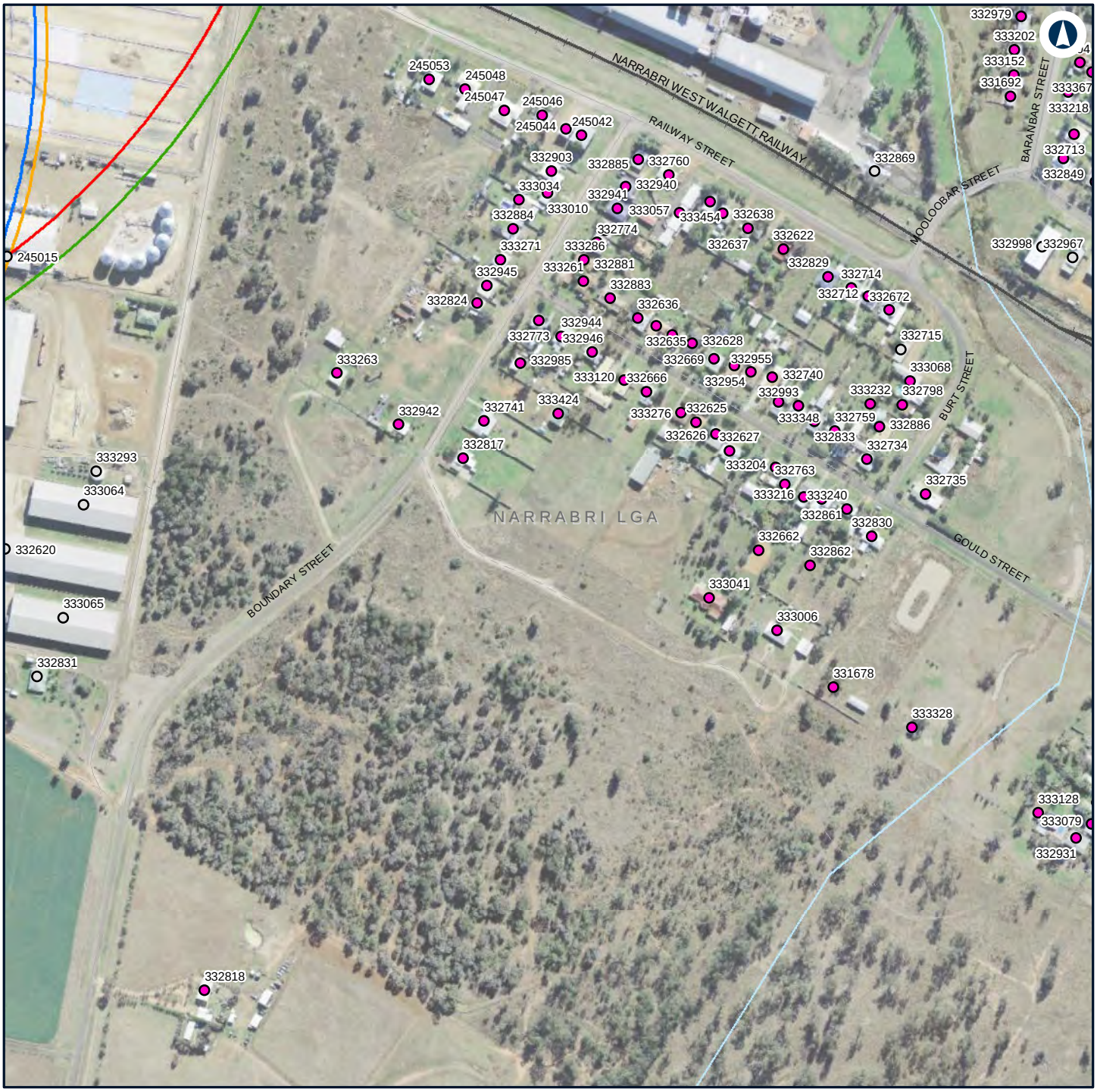

LEGEND

Vibration from bridge construction (piling)

- AVTG day max (0.4 m/s 1.75, 670 m)
- BS 5228-2:2009 (1 mm/s, 700 m)

Vibration from rail earthworks

- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

Structure type

- Commercial/Industrial
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 75 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

- Construction footprint

Vibration from bridge construction (piling)

- AVTG night max (0.26 m/s 1.75, 490 m)
- AVTG day max (0.4 m/s 1.75, 670 m)
- BS 5228-2:2009 (1 mm/s, 700 m)

Structure type

- Commercial/Industrial

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 76 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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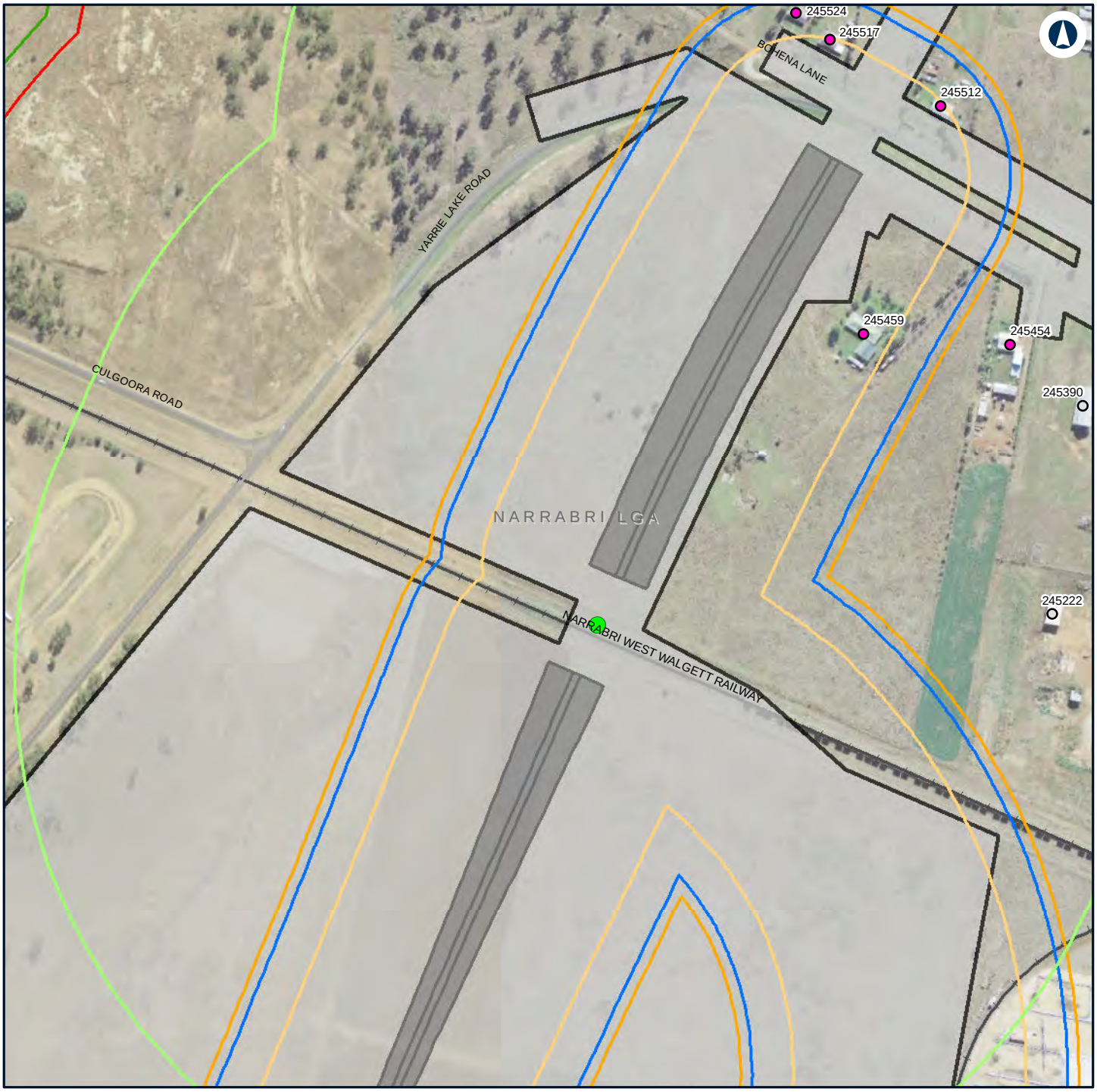


LEGEND

- Bridge centre (propagation source)
- Construction footprint
- Rail earthworks extent (propagation source)

Vibration from bridge construction (piling)

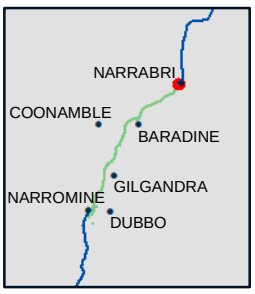
- AVTG night max (0.26 m/s 1.75, 490 m)
- AVTG day max (0.4 m/s 1.75, 670 m)
- BS 5228-2:2009 (1 mm/s, 700 m)

Vibration from rail earthworks

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

Structure type

- Commercial/Industrial
- Residential



NARROMINE TO NARRABRI

Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 77 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

- Construction footprint
- BS 5228-2:2009 (1 mm/s, 140 m)

Vibration from bridge construction (piling)

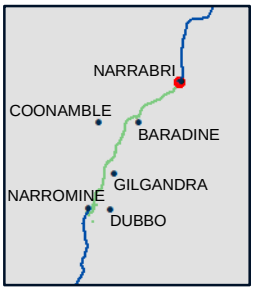
- AVTG night max (0.26 m/s 1.75, 490 m)
- AVTG day max (0.4 m/s 1.75, 670 m)
- BS 5228-2:2009 (1 mm/s, 700 m)

Vibration from rail earthworks

- AVTG day max (0.4 m/s 1.75, 128 m)

Structure type

- Commercial/Industrial
- Residential



NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 78 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

- Construction footprint

Vibration from bridge construction (piling)

- AVTG night max (0.26 m/s 1.75, 490 m)
- AVTG day max (0.4 m/s 1.75, 670 m)
- BS 5228-2:2009 (1 mm/s, 700 m)

Vibration from rail earthworks

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

Structure type

- Commercial/Industrial
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 79 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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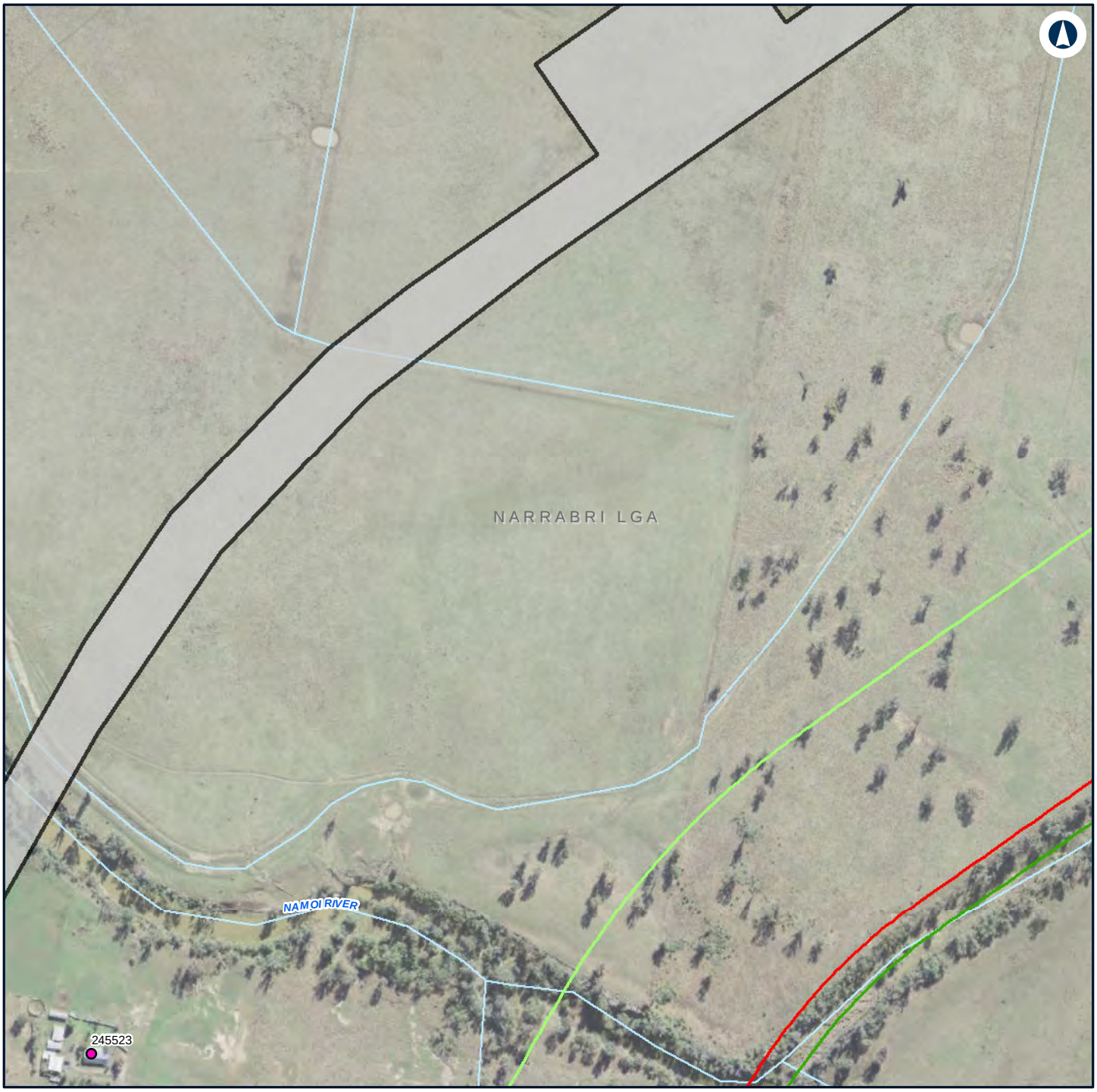

LEGEND

Construction footprint

Vibration from bridge construction (piling)

AVTG night max (0.26 m/s 1.75, 490 m)

AVTG day max (0.4 m/s 1.75, 670 m)

BS 5228-2:2009 (1 mm/s, 700 m)

Structure type

Residential

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 80 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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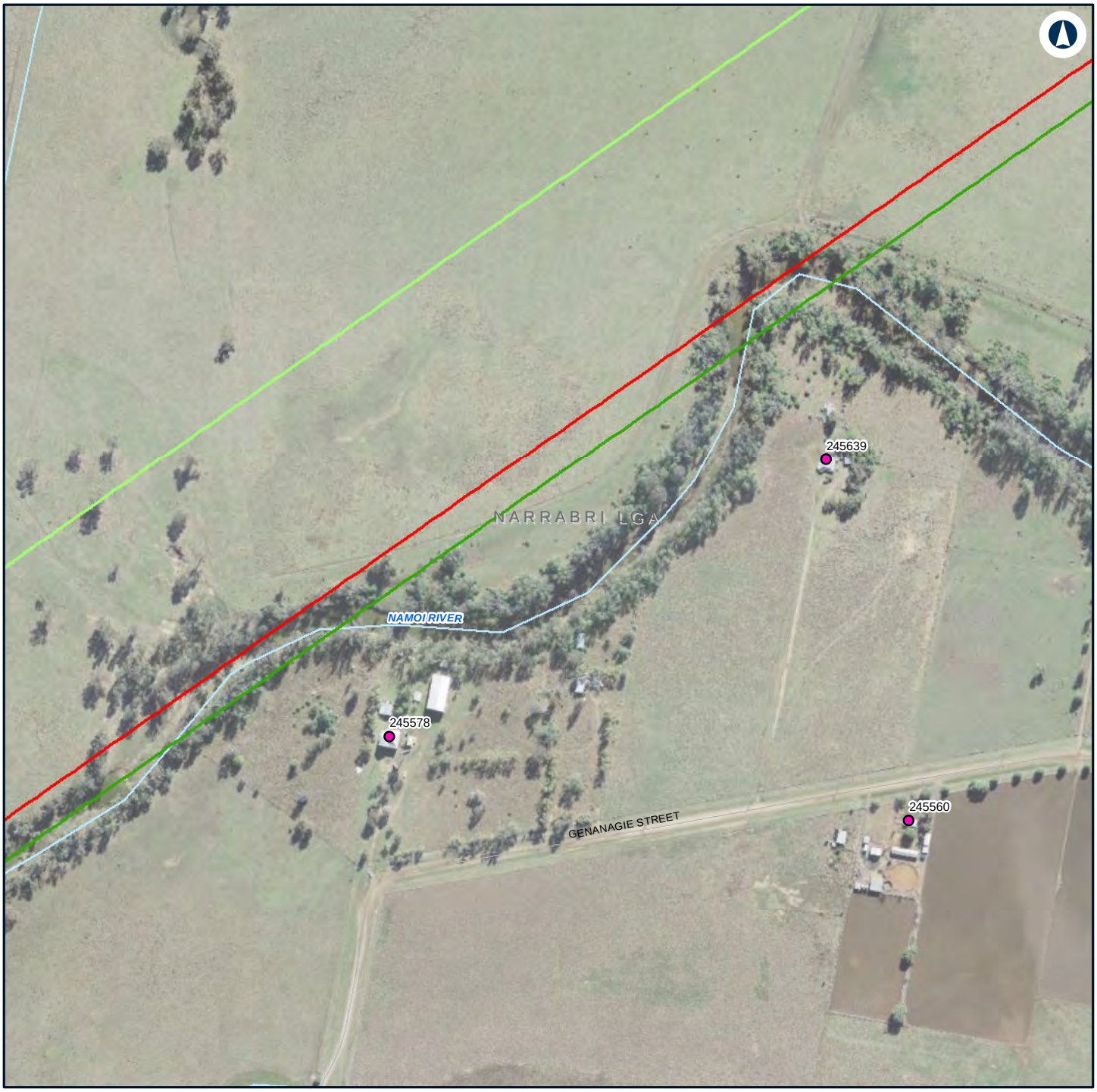


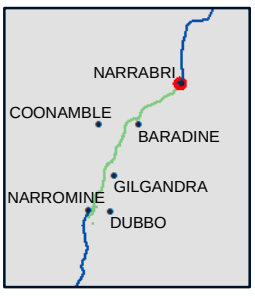
LEGEND

Vibration from bridge construction (piling)

- AVTG night max (0.26 m/s 1.75, 490 m)
- AVTG day max (0.4 m/s 1.75, 670 m)
- BS 5228-2:2009 (1 mm/s, 700 m)

Structure type

- Residential



NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 81 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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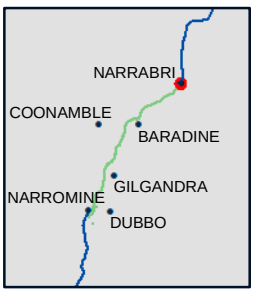
LEGEND

Vibration from bridge construction (piling)

- AVTG day max (0.4 m/s 1.75, 670 m)
- BS 5228-2:2009 (1 mm/s, 700 m)

Structure type

- Residential



NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 82 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

INLAND RAIL ARTC

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LEGEND

Construction footprint

Vibration from bridge construction (piling)

AVTG night max (0.26 m/s 1.75, 490 m)

AVTG day max (0.4 m/s 1.75, 670 m)

BS 5228-2:2009 (1 mm/s, 700 m)

Structure type

Residential

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 83 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000

Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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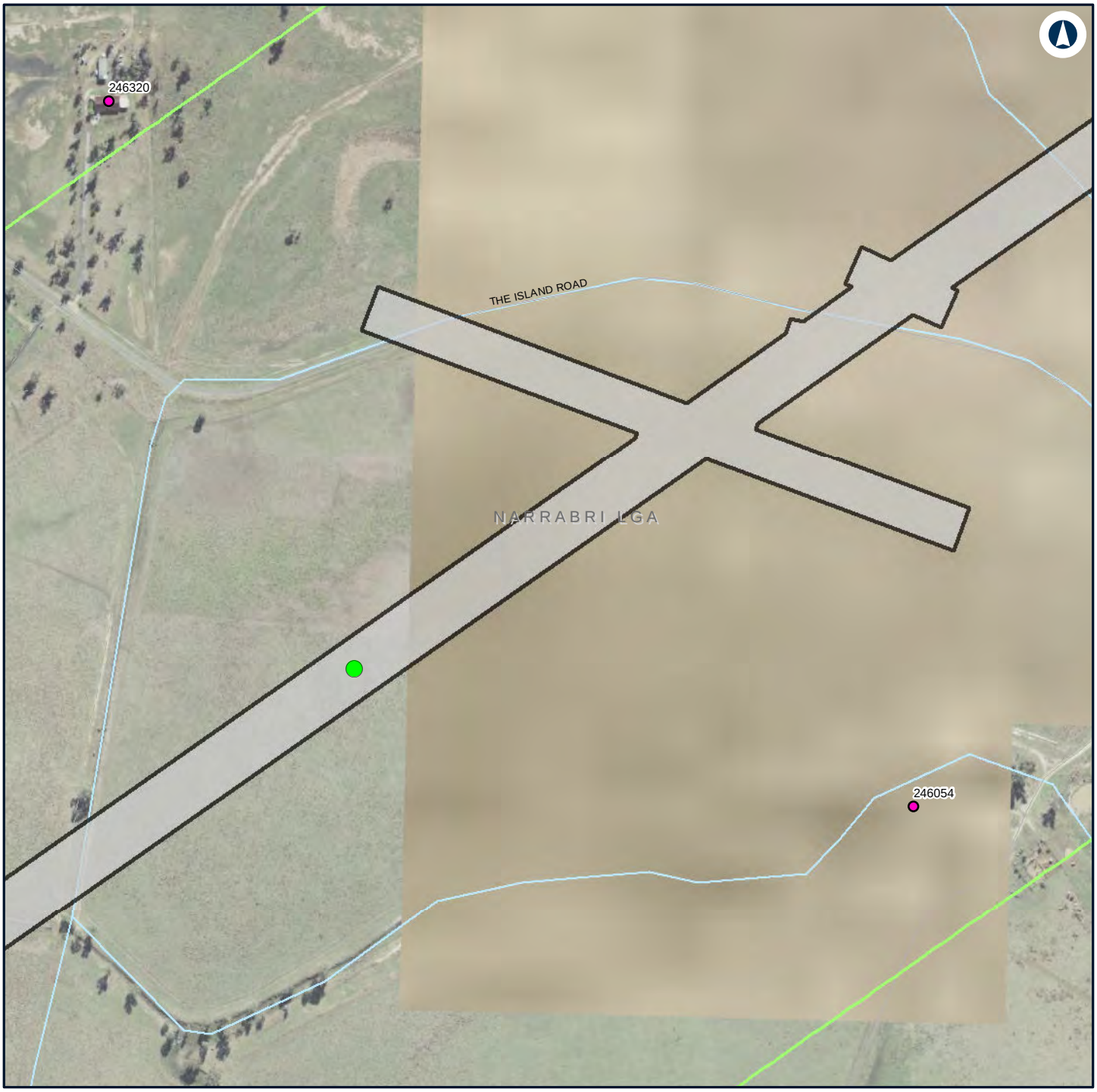


LEGEND

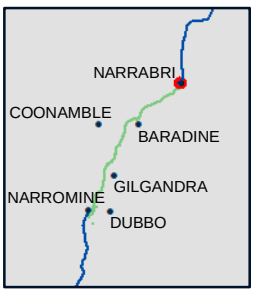
- Bridge centre (propagation source)
- Construction footprint

Vibration from bridge construction (piling)

- AVTG night max (0.26 m/s 1.75, 490 m)
- AVTG day max (0.4 m/s 1.75, 670 m)
- BS 5228-2:2009 (1 mm/s, 700 m)

Structure type

- Residential



NARROMINE TO NARRABRI

Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 84 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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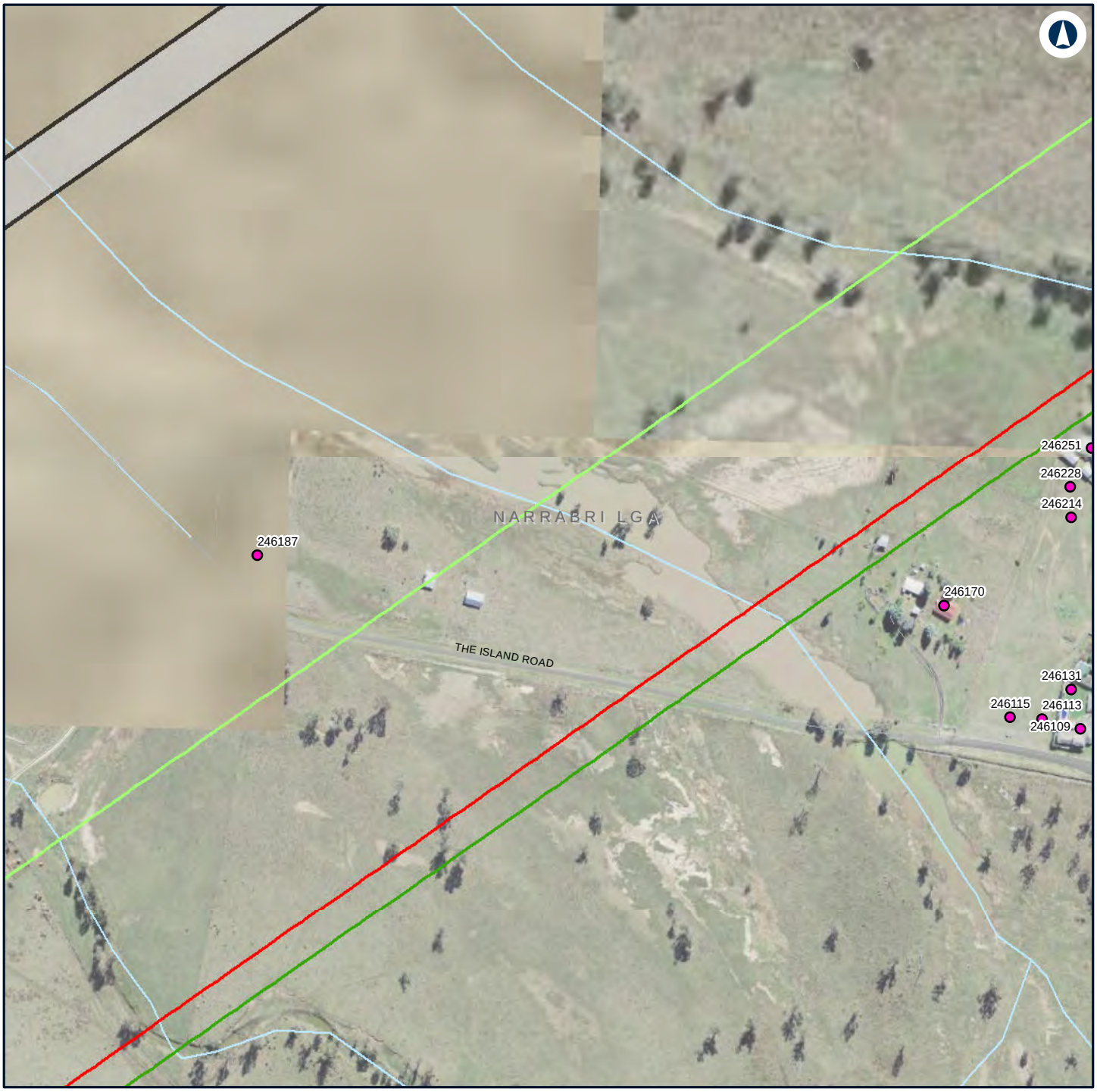


LEGEND

Construction footprint

Vibration from bridge construction (piling)

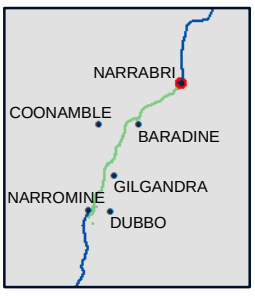
AVTG night max (0.26 m/s 1.75, 490 m)

AVTG day max (0.4 m/s 1.75, 670 m)

BS 5228-2:2009 (1 mm/s, 700 m)

Structure type

Residential



NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 85 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000

Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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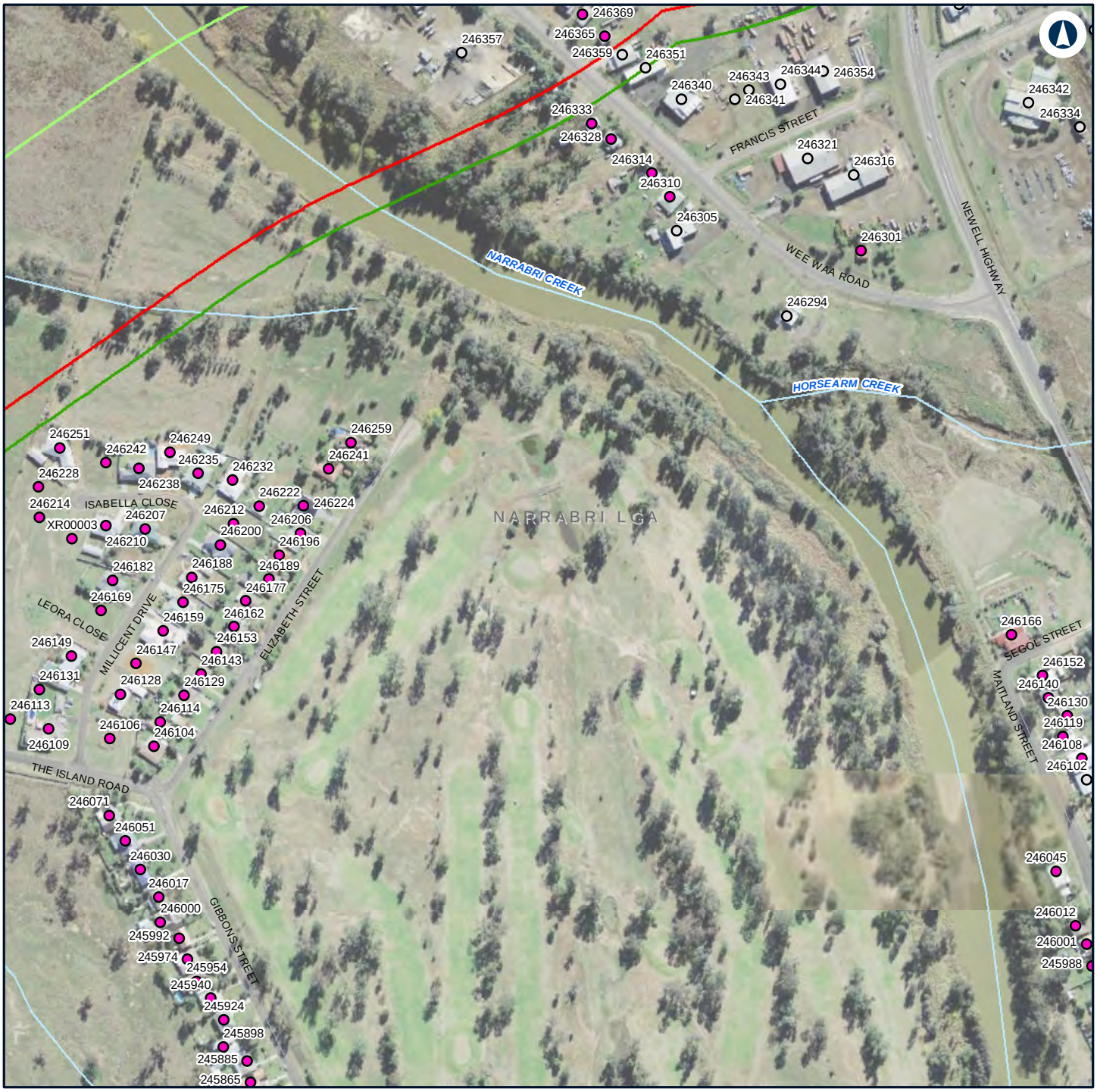


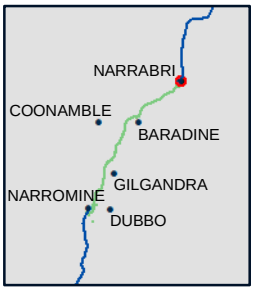
LEGEND

Vibration from bridge construction (piling)

- AVTG night max (0.26 m/s 1.75, 490 m)
- AVTG day max (0.4 m/s 1.75, 670 m)
- BS 5228-2:2009 (1 mm/s, 700 m)

Structure type

- Commercial/Industrial
- Residential



NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 86 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

Vibration from bridge construction (piling)

- AVTG day max (0.4 m/s 1.75, 670 m)
- BS 5228-2:2009 (1 mm/s, 700 m)

Structure type

- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 87 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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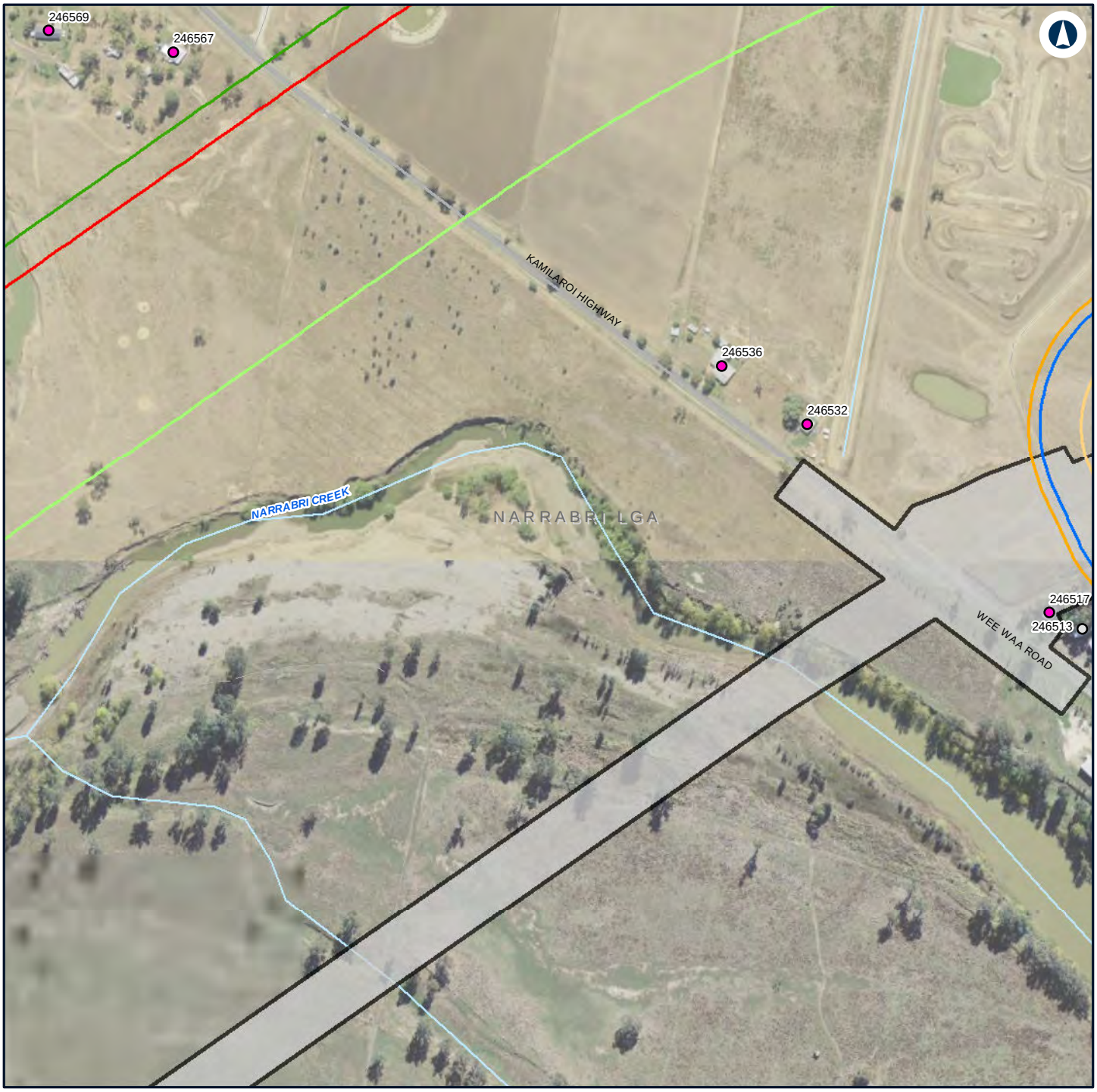
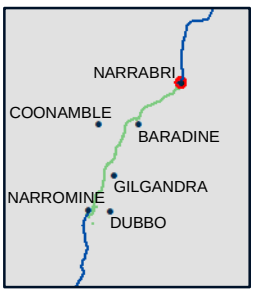


LEGEND

- Construction footprint
- **Vibration from bridge construction (piling)**
  - AVTG night max (0.26 m/s 1.75, 490 m)
  - AVTG day max (0.4 m/s 1.75, 670 m)
  - BS 5228-2:2009 (1 mm/s, 700 m)
- **Vibration from rail earthworks**
  - AVTG night max (0.26 m/s 1.75, 94 m)
  - AVTG day max (0.4 m/s 1.75, 128 m)
  - BS 5228-2:2009 (1 mm/s, 140 m)
- **Structure type**
  - Commercial/Industrial
  - Residential



NARROMINE TO NARRABRI

Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 88 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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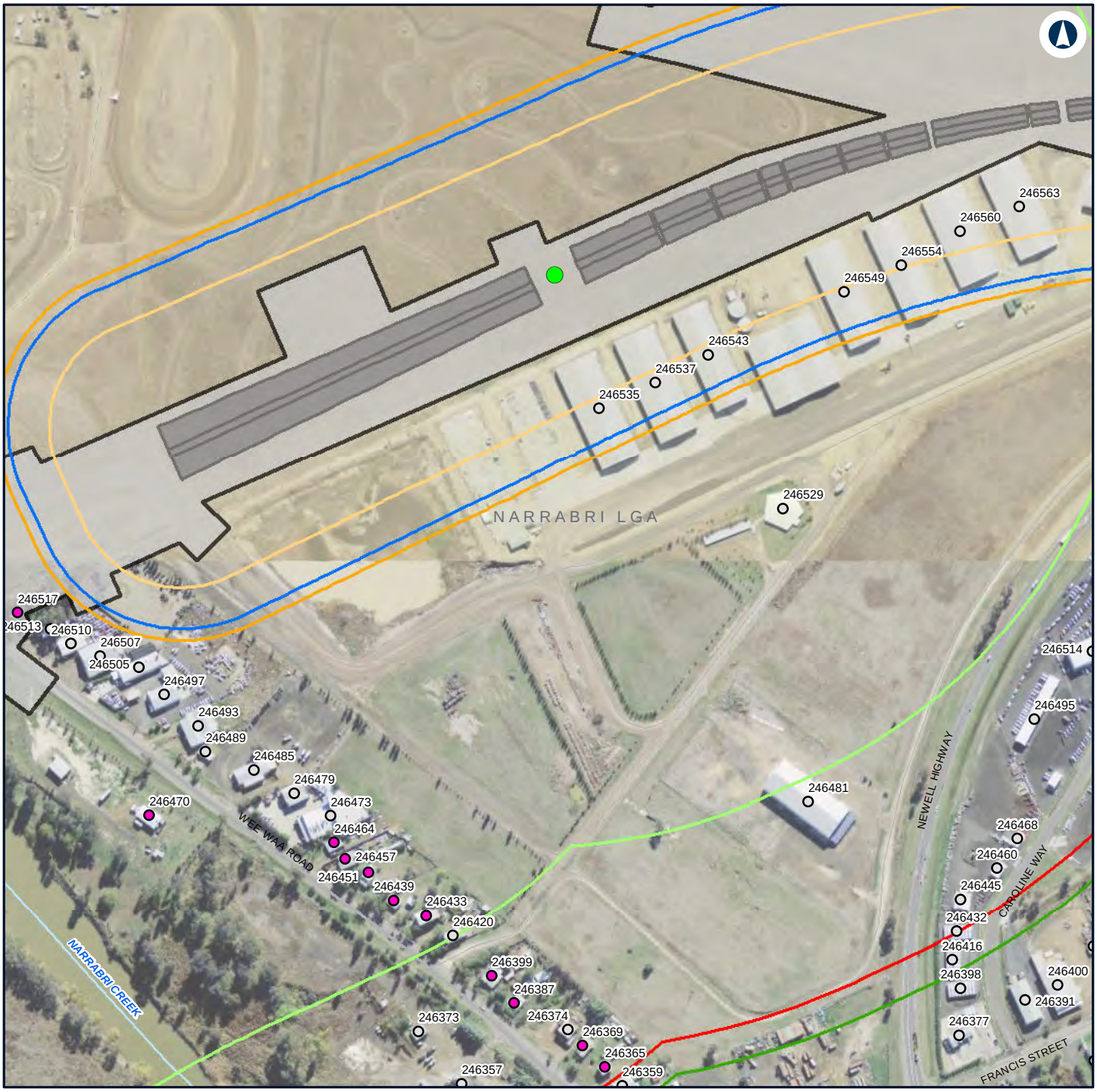


LEGEND

- Bridge centre (propagation source)
- Construction footprint
- Rail earthworks extent (propagation source)

Vibration from bridge construction (piling)

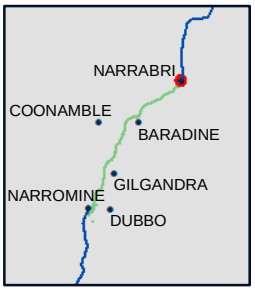
- AVTG night max (0.26 m/s 1.75, 490 m)
- AVTG day max (0.4 m/s 1.75, 670 m)
- BS 5228-2:2009 (1 mm/s, 700 m)

Vibration from rail earthworks

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

Structure type

- Commercial/Industrial
- Residential



NARROMINE TO NARRABRI

Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 89 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

- Construction footprint
- Rail earthworks extent (propagation source)

Vibration from bridge construction (piling)

- AVTG night max (0.26 m/s 1.75, 490 m)
- AVTG day max (0.4 m/s 1.75, 670 m)
- BS 5228-2:2009 (1 mm/s, 700 m)

Vibration from rail earthworks

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

Structure type

- Commercial/Industrial

NARROMINE TO NARRABRI

Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 90 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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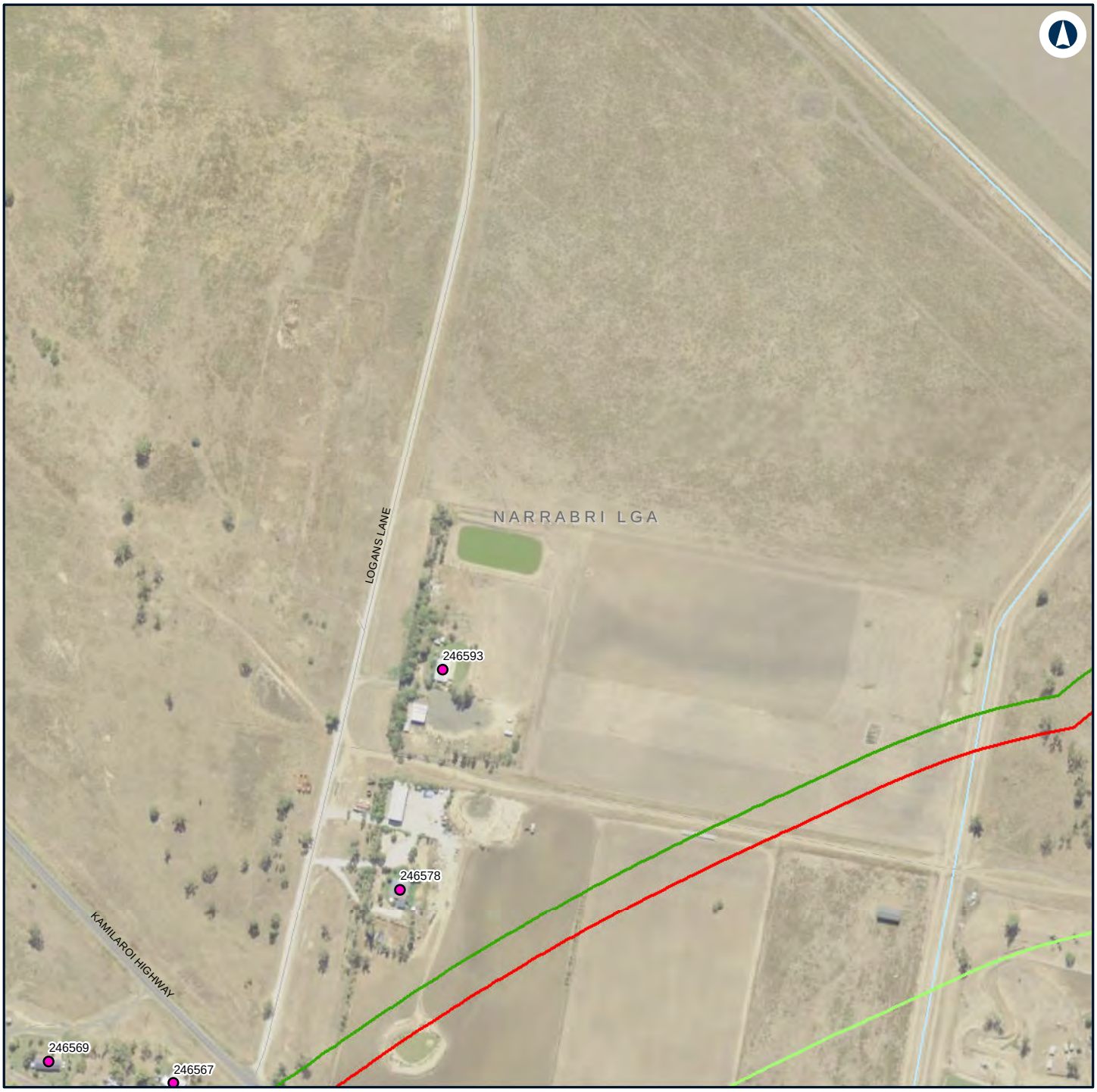


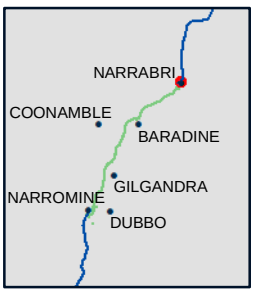
LEGEND

Vibration from bridge construction (piling)

- AVTG night max (0.26 m/s 1.75, 490 m)
- AVTG day max (0.4 m/s 1.75, 670 m)
- BS 5228-2:2009 (1 mm/s, 700 m)

Structure type

- Residential



NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 91 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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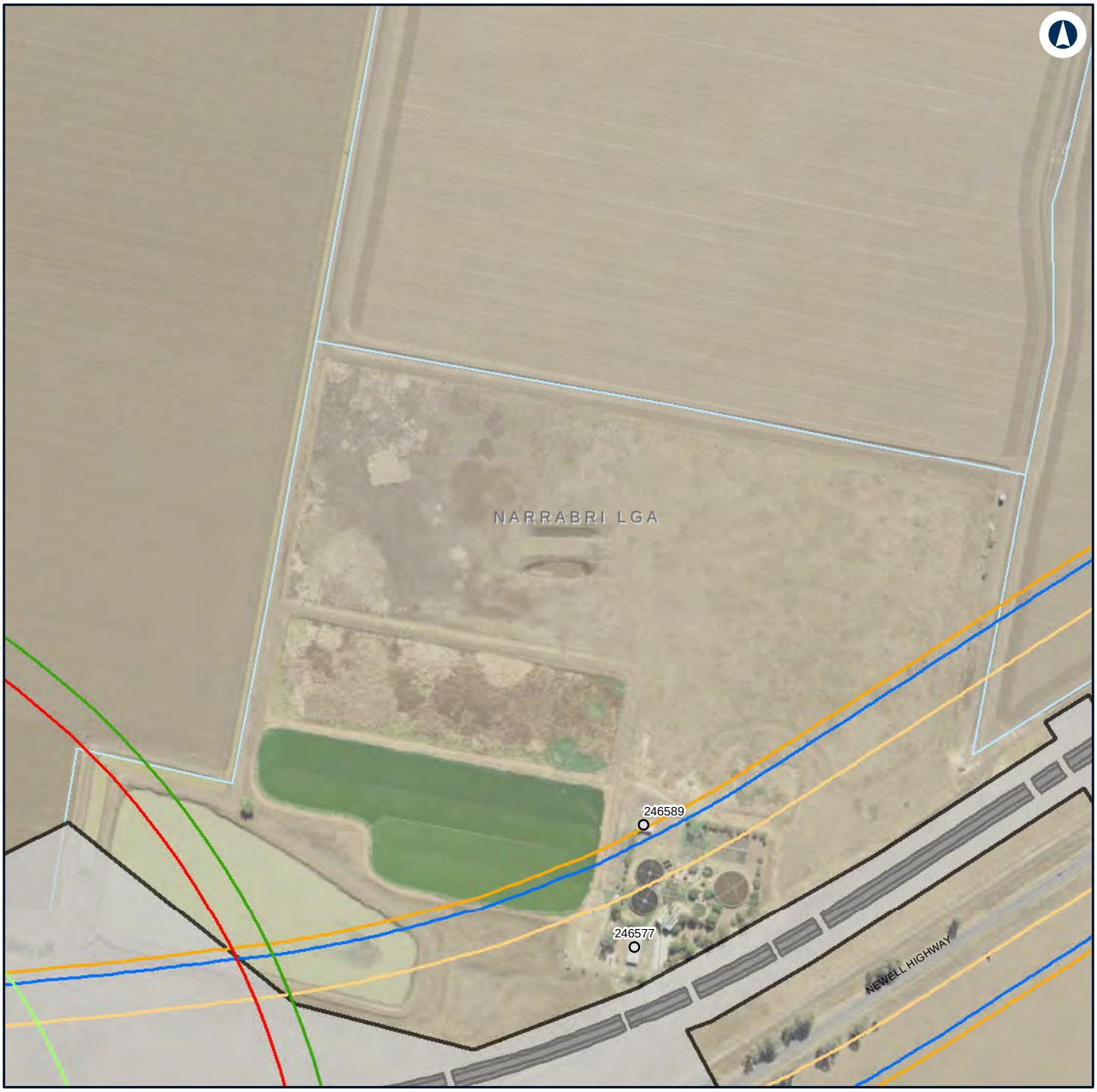

LEGEND

- Construction footprint
- Rail earthworks extent (propagation source)

Vibration from bridge construction (piling)

- AVTG night max (0.26 m/s 1.75, 490 m)
- AVTG day max (0.4 m/s 1.75, 670 m)
- BS 5228-2:2009 (1 mm/s, 700 m)

Vibration from rail earthworks

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

Structure type

- Commercial/Industrial

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 92 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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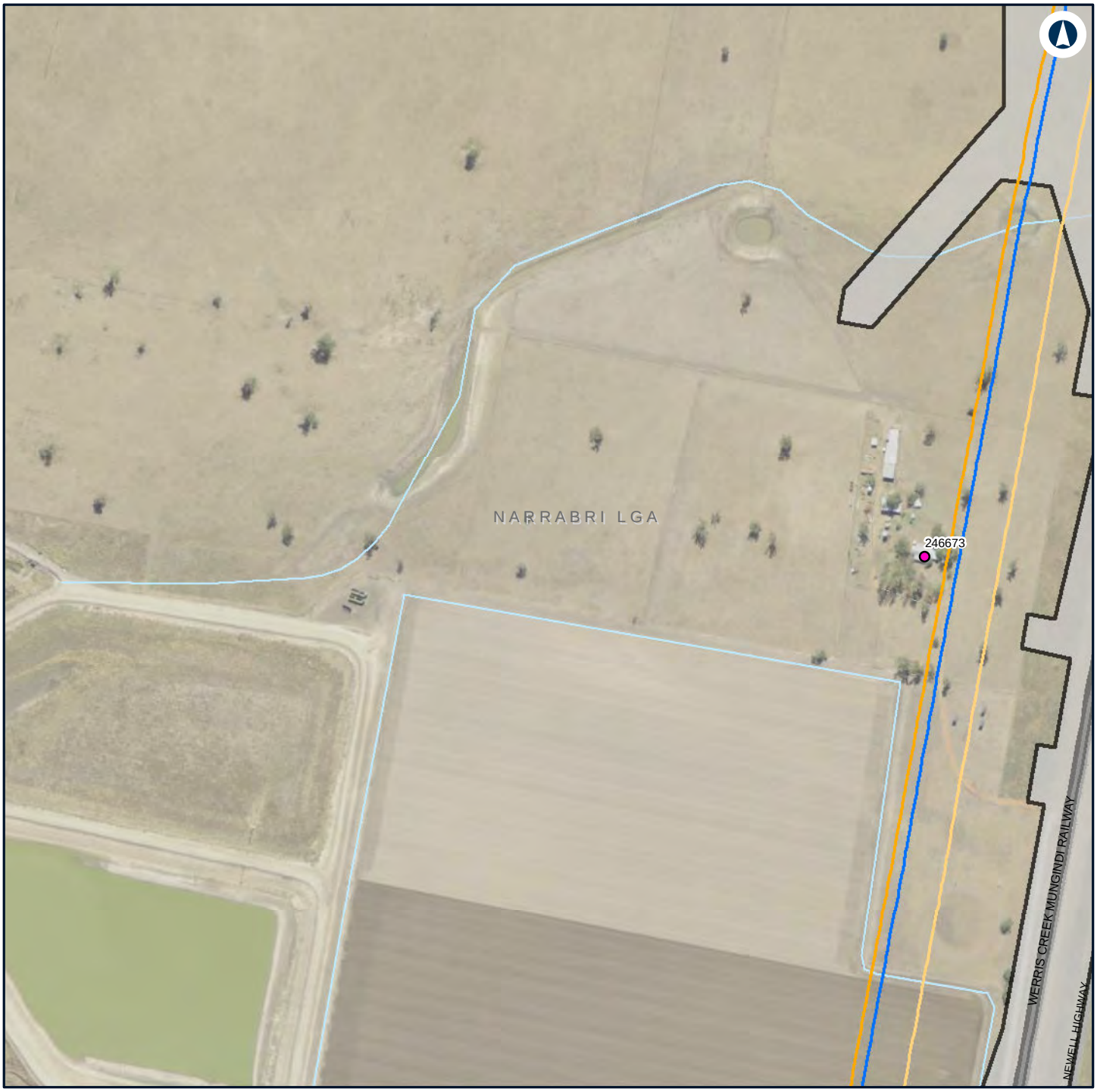

LEGEND

- Construction footprint
- Rail earthworks extent (propagation source)

Structure type

- Residential

Vibration from rail earthworks

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 93 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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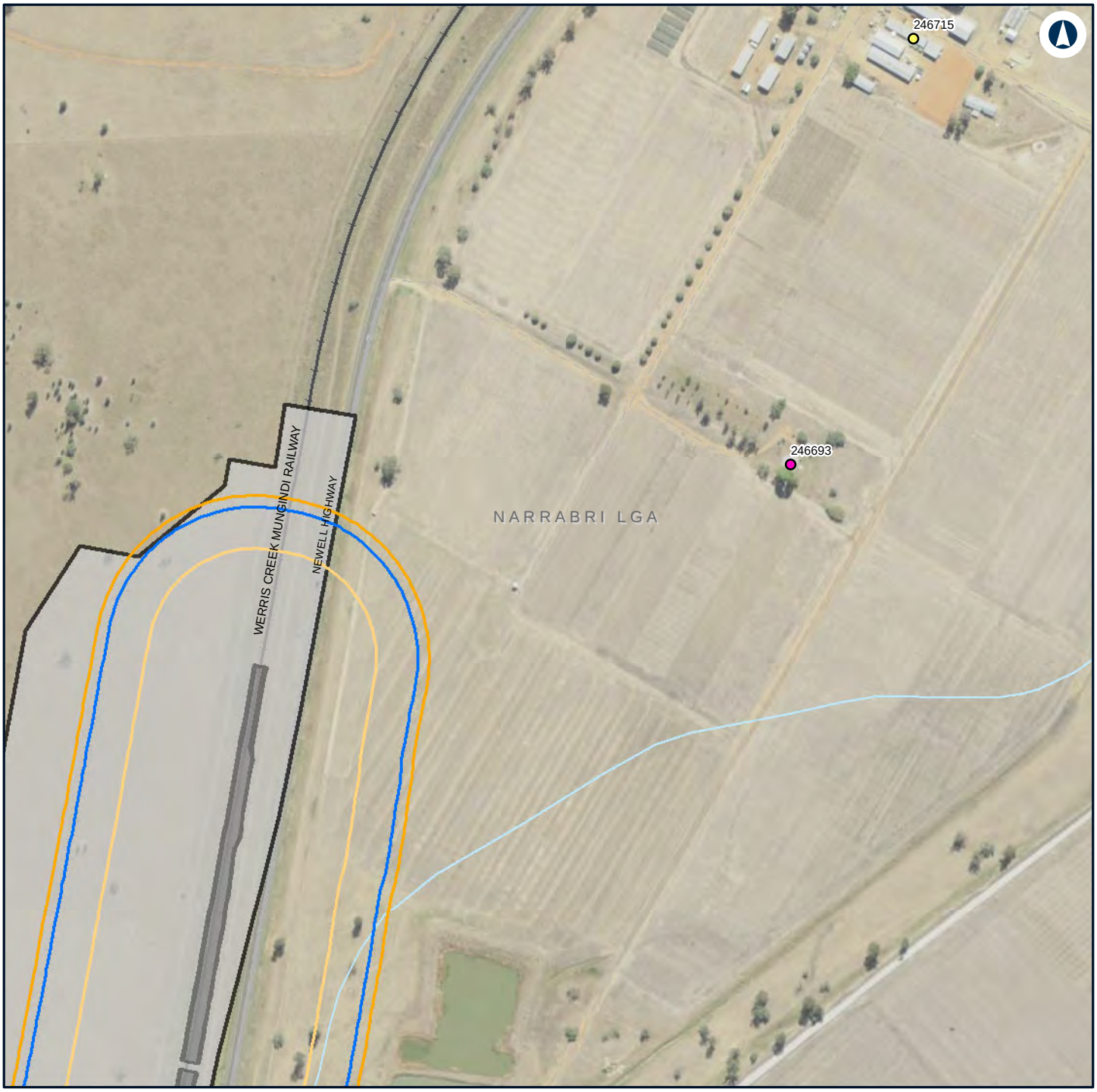

LEGEND

- Construction footprint
- Rail earthworks extent (propagation source)

Vibration from rail earthworks

- AVTG night max (0.26 m/s 1.75, 94 m)
- AVTG day max (0.4 m/s 1.75, 128 m)
- BS 5228-2:2009 (1 mm/s, 140 m)

Structure type

- Community
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 94 OF 94

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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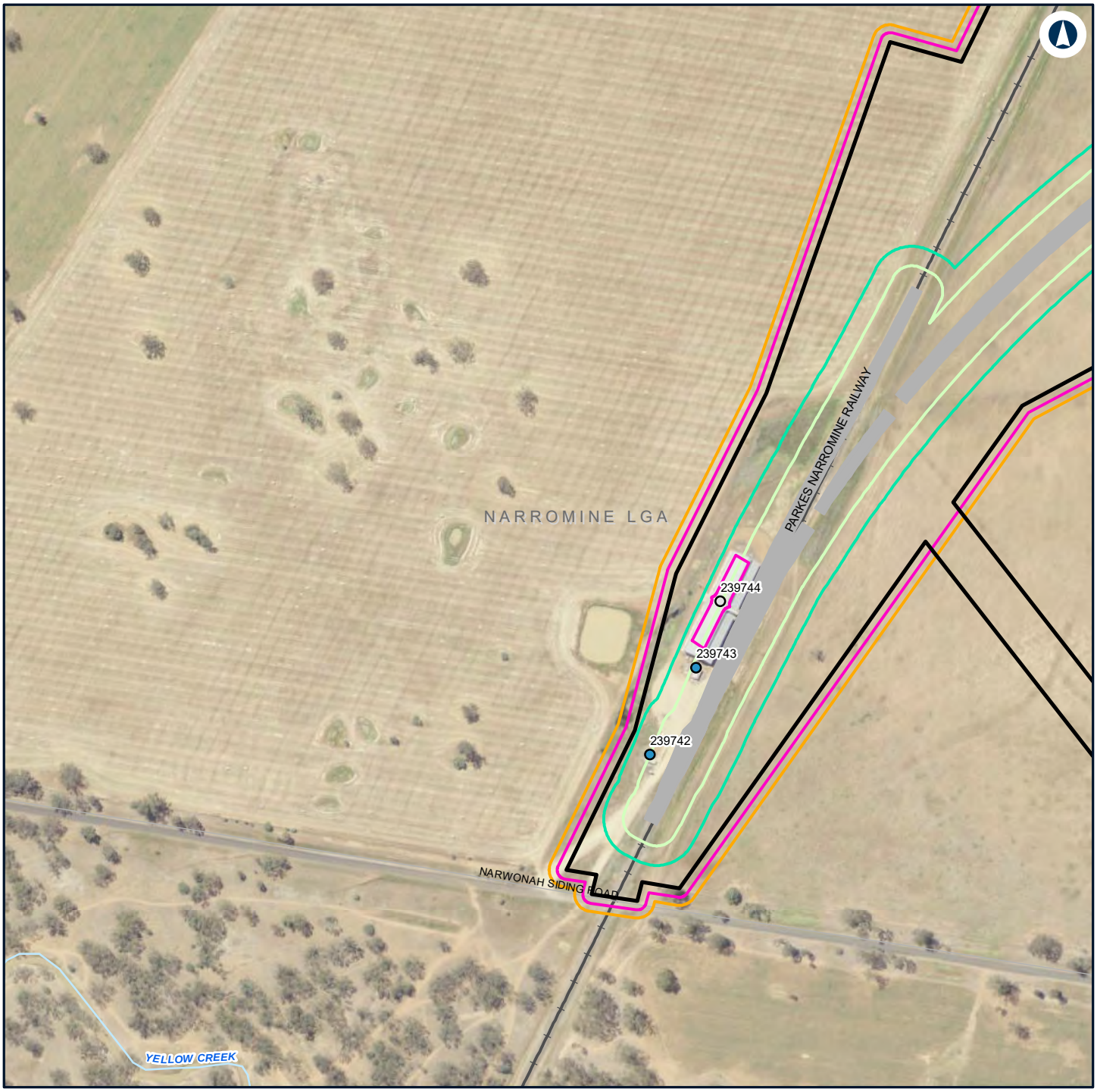
TECHNICAL REPORT

8

Noise and vibration assessment – construction and other operations

Appendix N Construction vibration buffers – structural damage



LEGEND

- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Commercial/Industrial
- Other

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 1 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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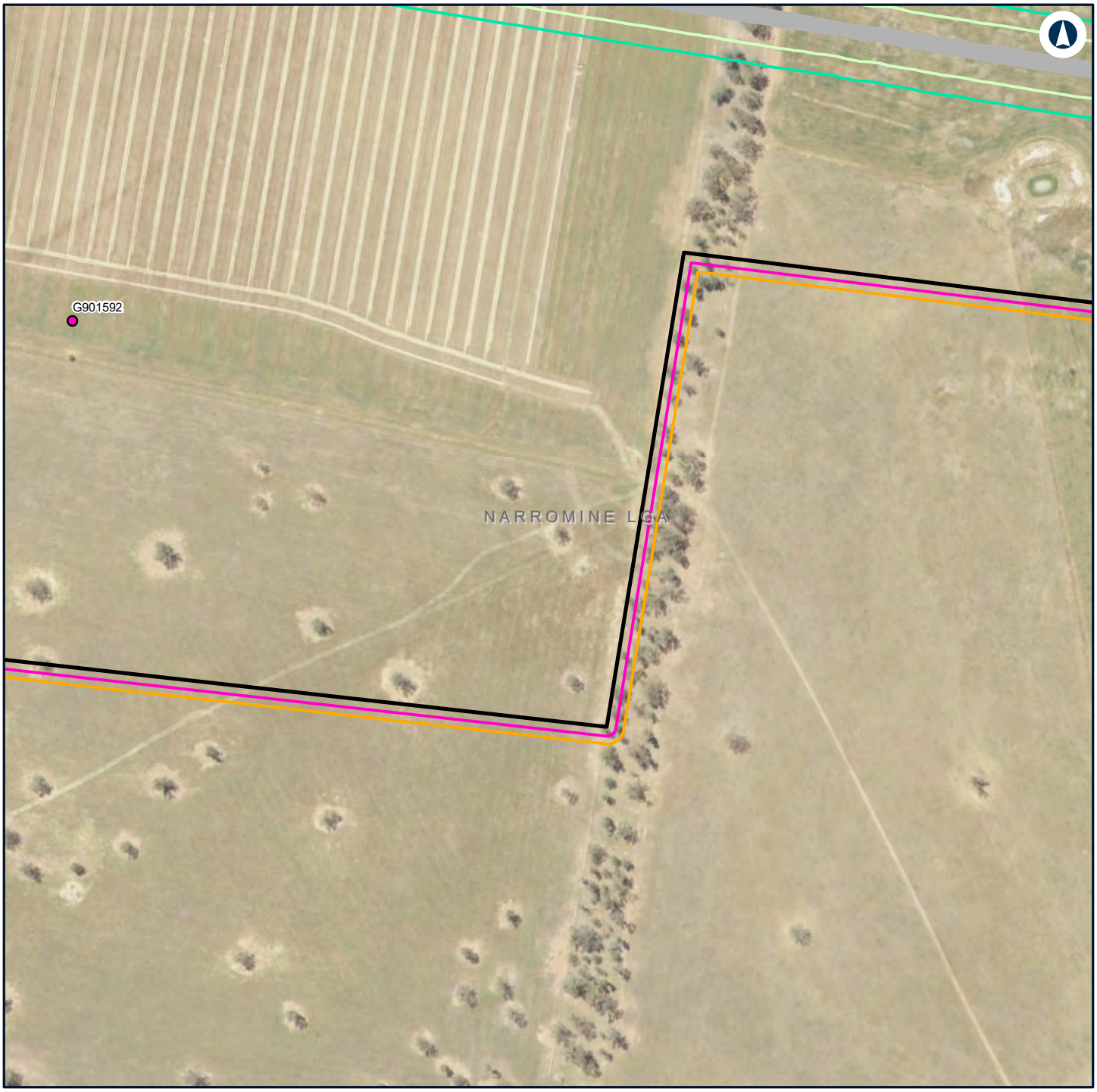

LEGEND

- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 2 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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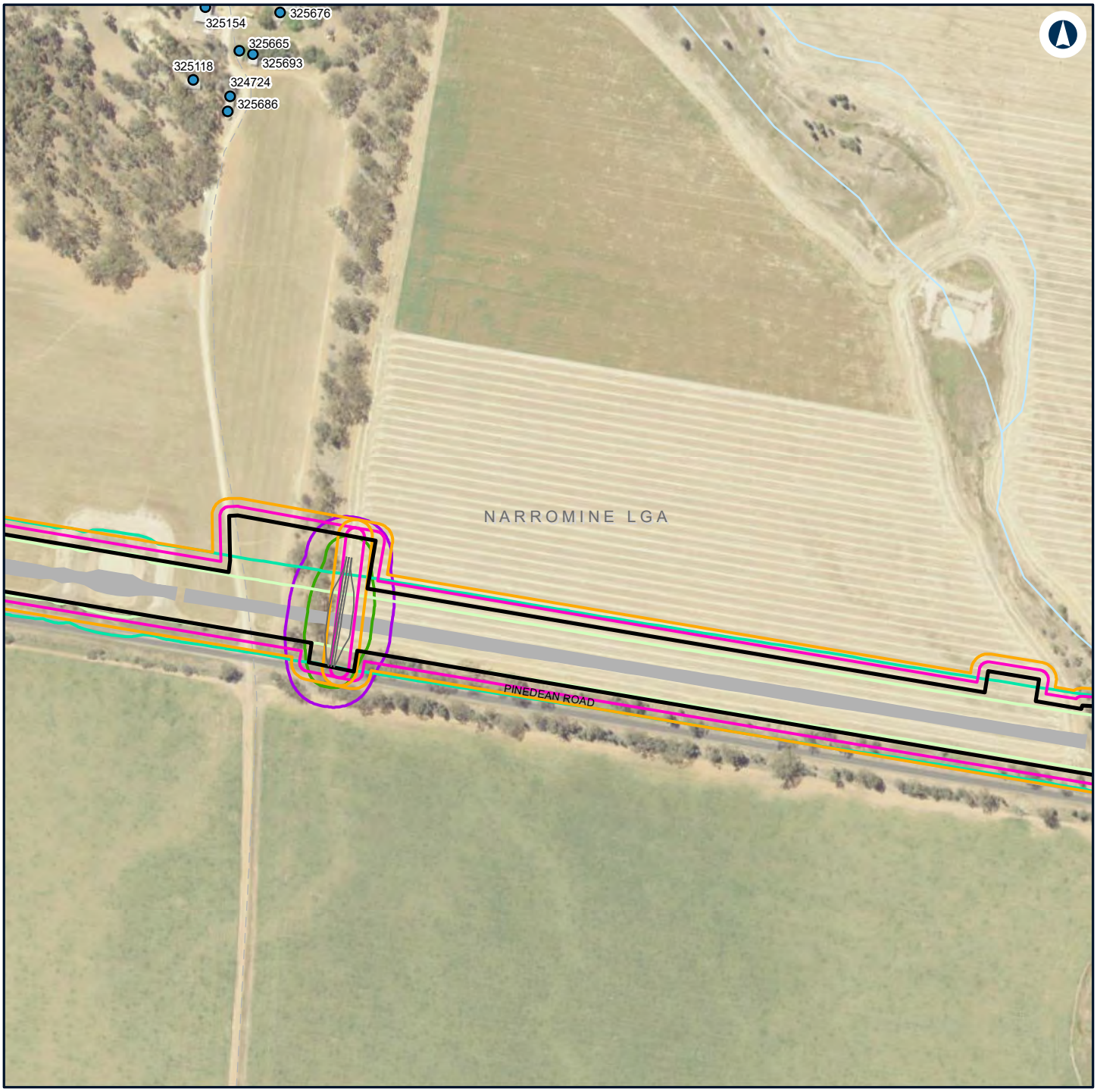

LEGEND

- Road design
- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Road earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Road earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 3 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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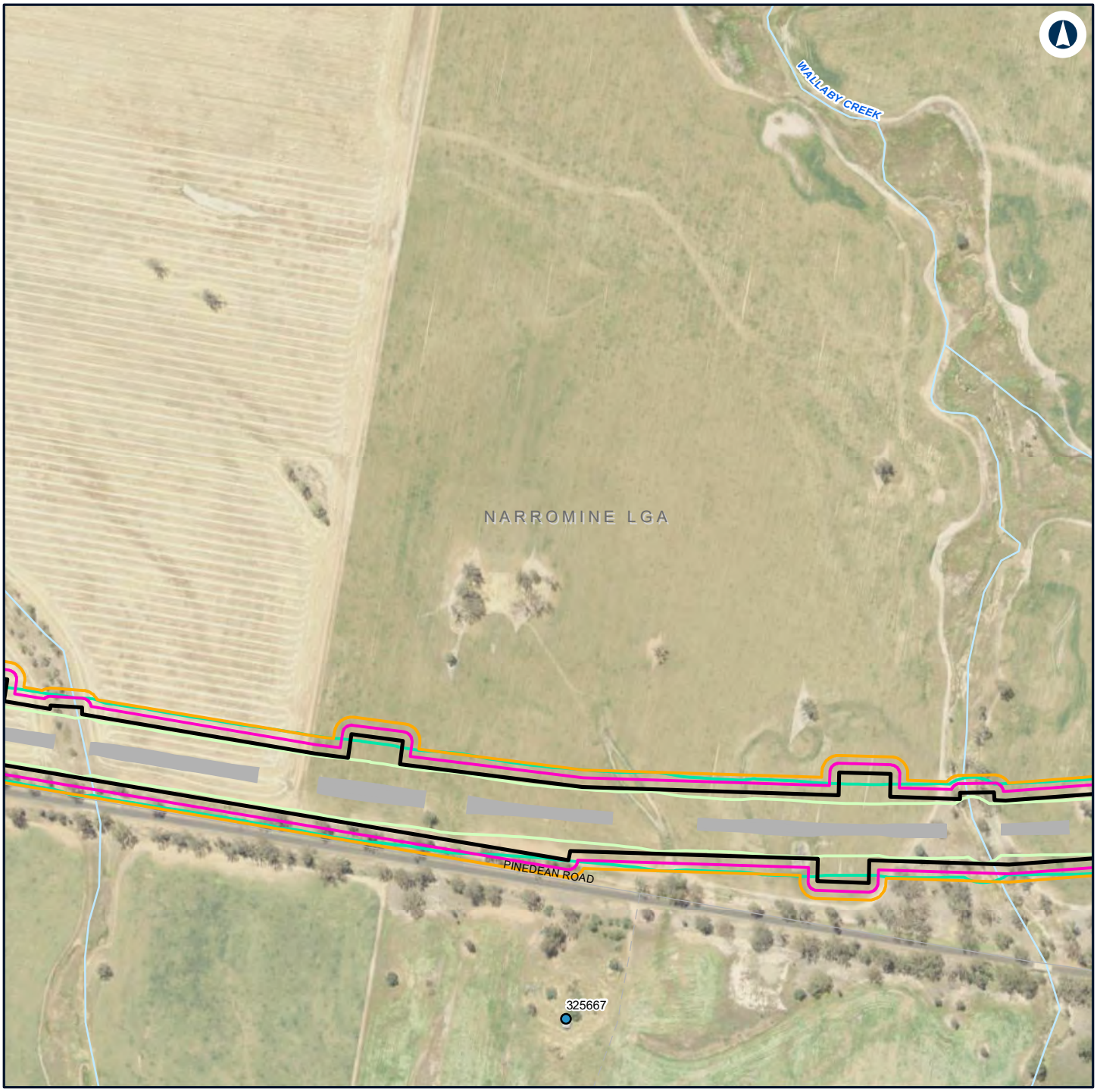

LEGEND

- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 4 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

- Contruction footprint
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Other

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 5 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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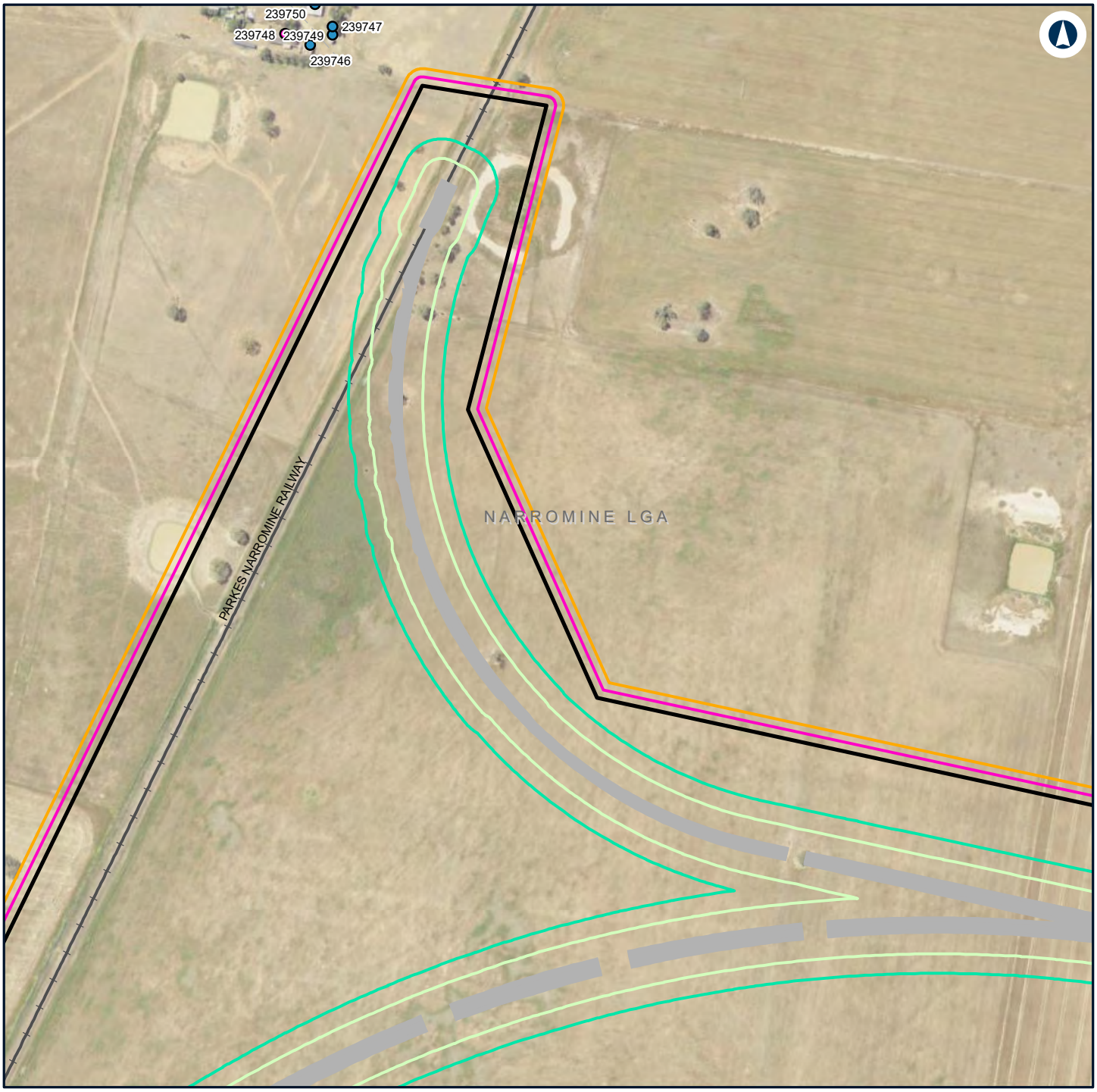

LEGEND

- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 6 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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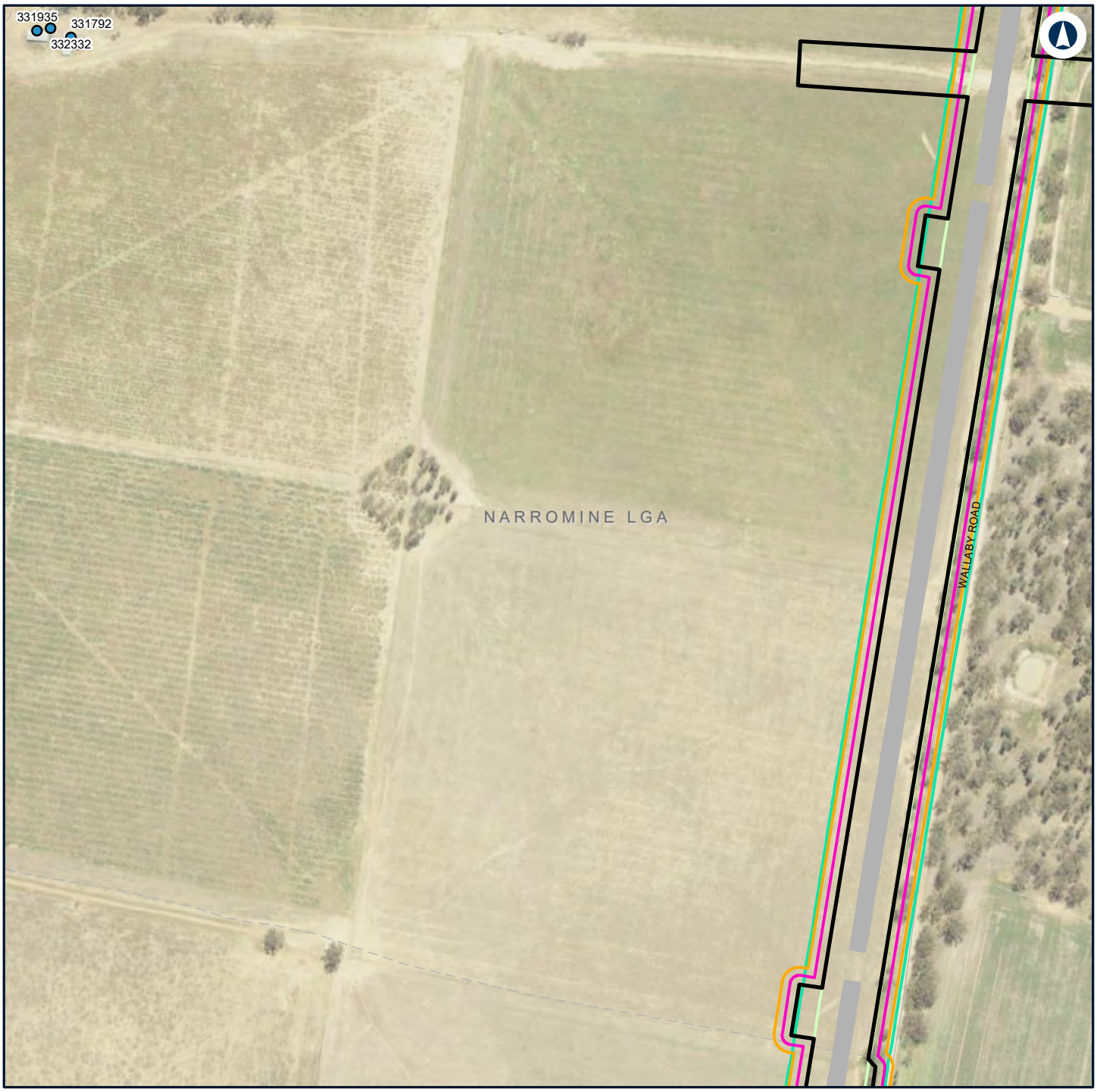

LEGEND

- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 7 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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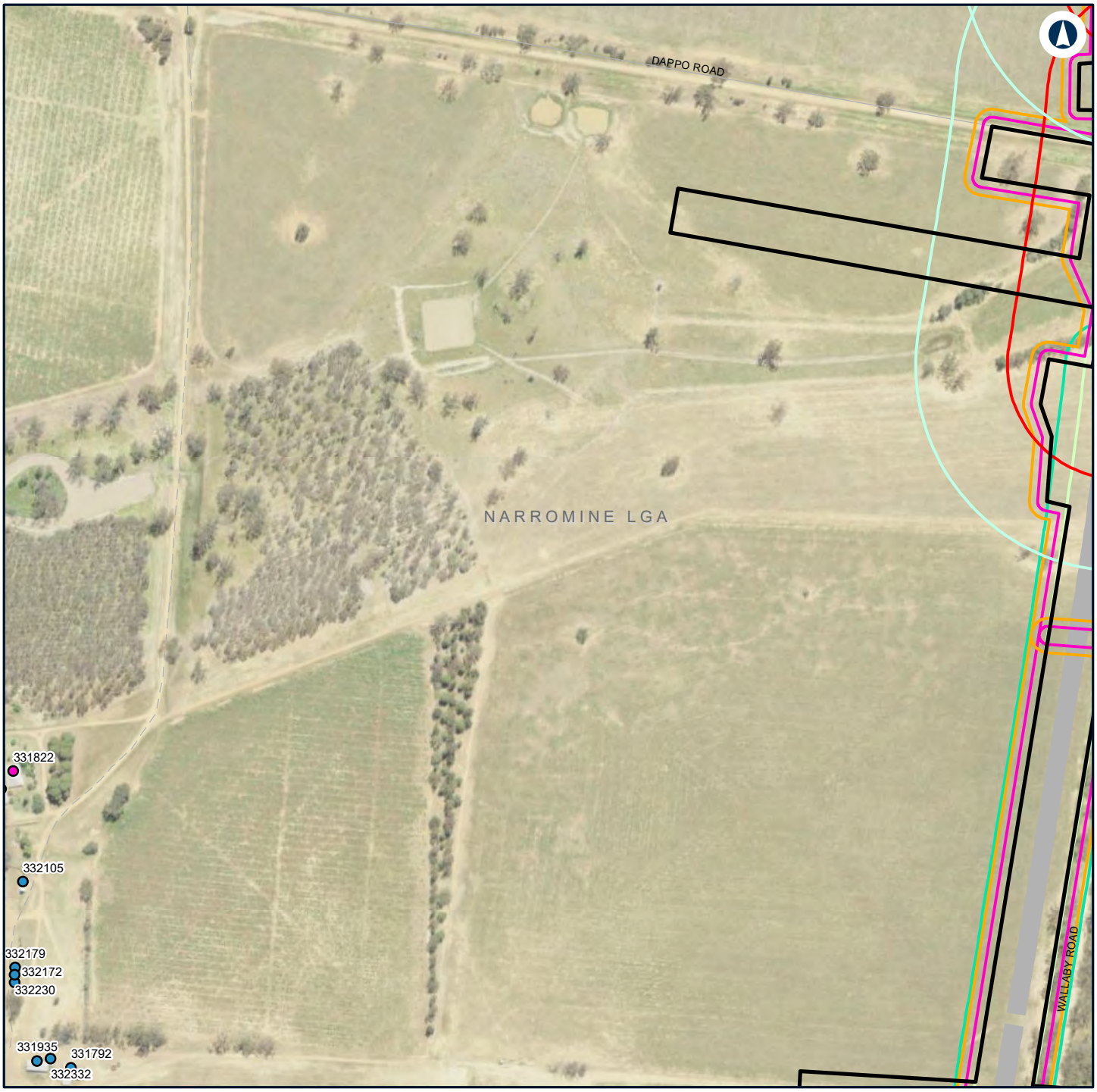

LEGEND

- Contruction footprint
- Rail earthworks extent
- Bridges (Impact piling) – Heritage structures: 3mm/s, 180m
- Bridges (Impact piling) – Standard buildings: 5mm/s, 100m
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 8 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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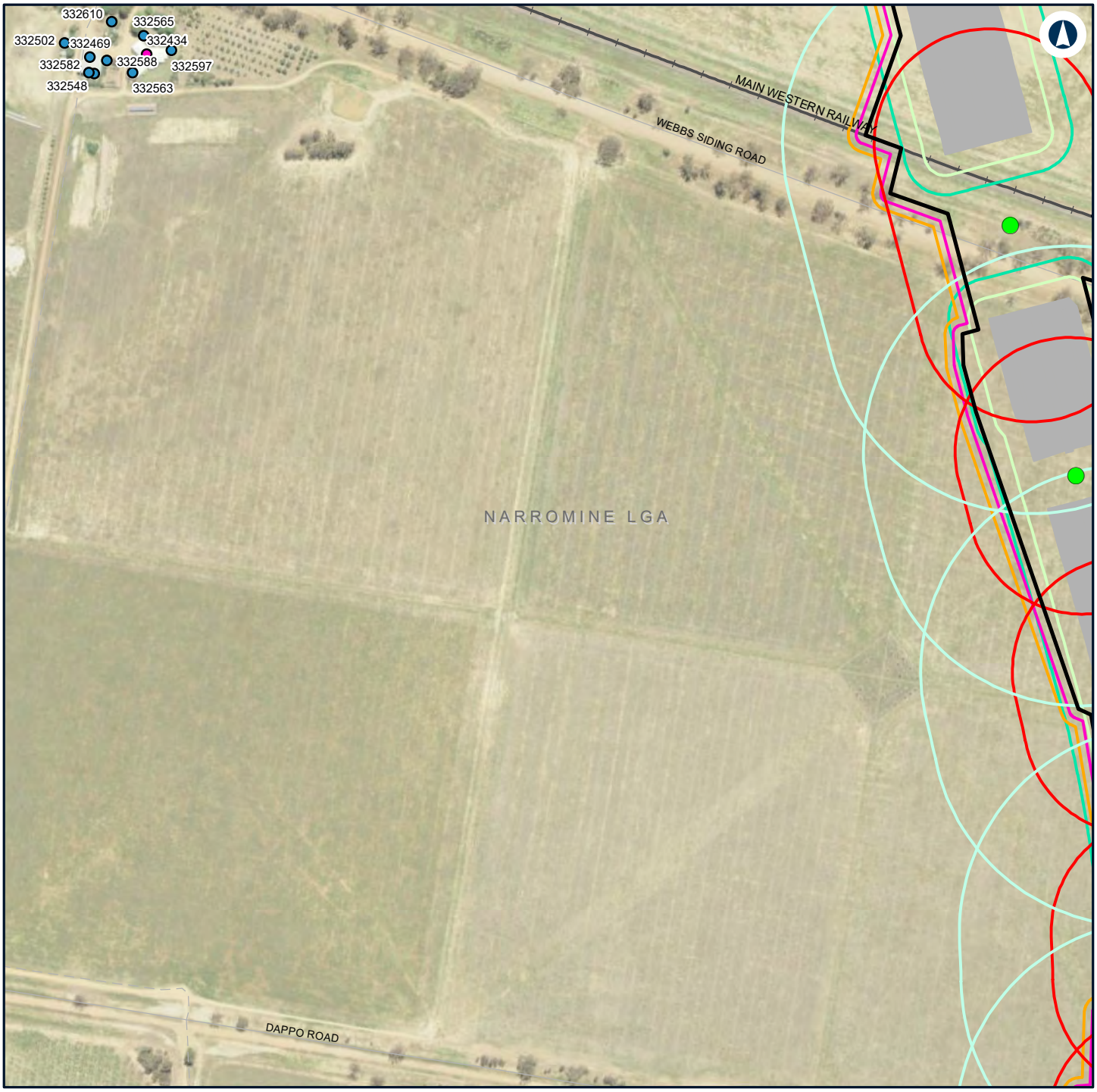

LEGEND

- Bridge centre
- Contruction footprint
- Rail earthworks extent
- Bridges (Impact piling) – Heritage structures: 3mm/s, 180m
- Bridges (Impact piling) – Standard buildings: 5mm/s, 100m
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 9 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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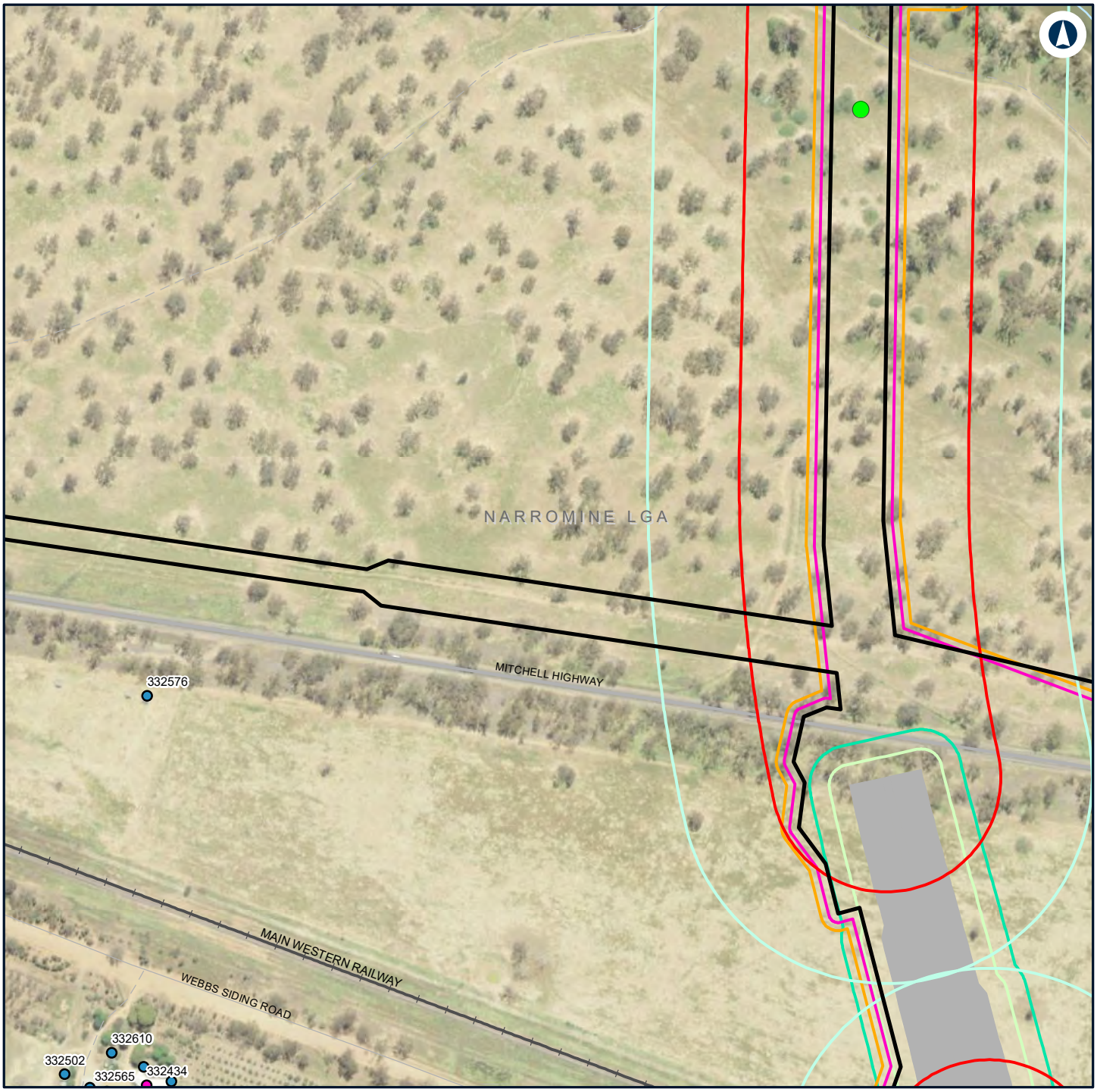

LEGEND

- Bridge centre
- Contruction footprint
- Rail earthworks extent
- Bridges (Impact piling) – Heritage structures: 3mm/s, 180m
- Bridges (Impact piling) – Standard buildings: 5mm/s, 100m
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 10 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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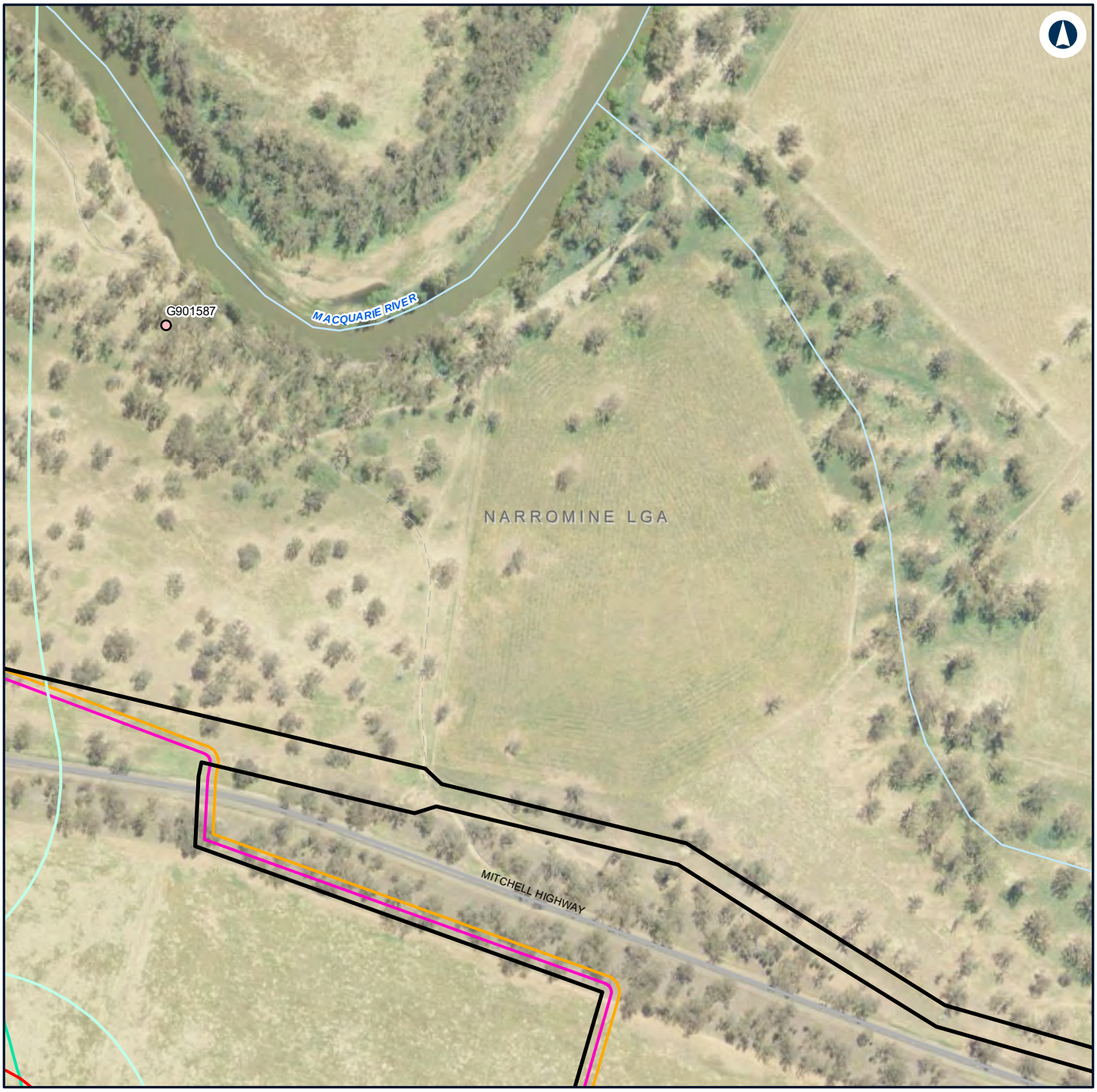

LEGEND

- Contruction footprint
- Bridges (Impact piling) – Heritage structures: 3mm/s, 180m
- Bridges (Impact piling) – Standard buildings: 5mm/s, 100m
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Passive recreation

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 11 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 12 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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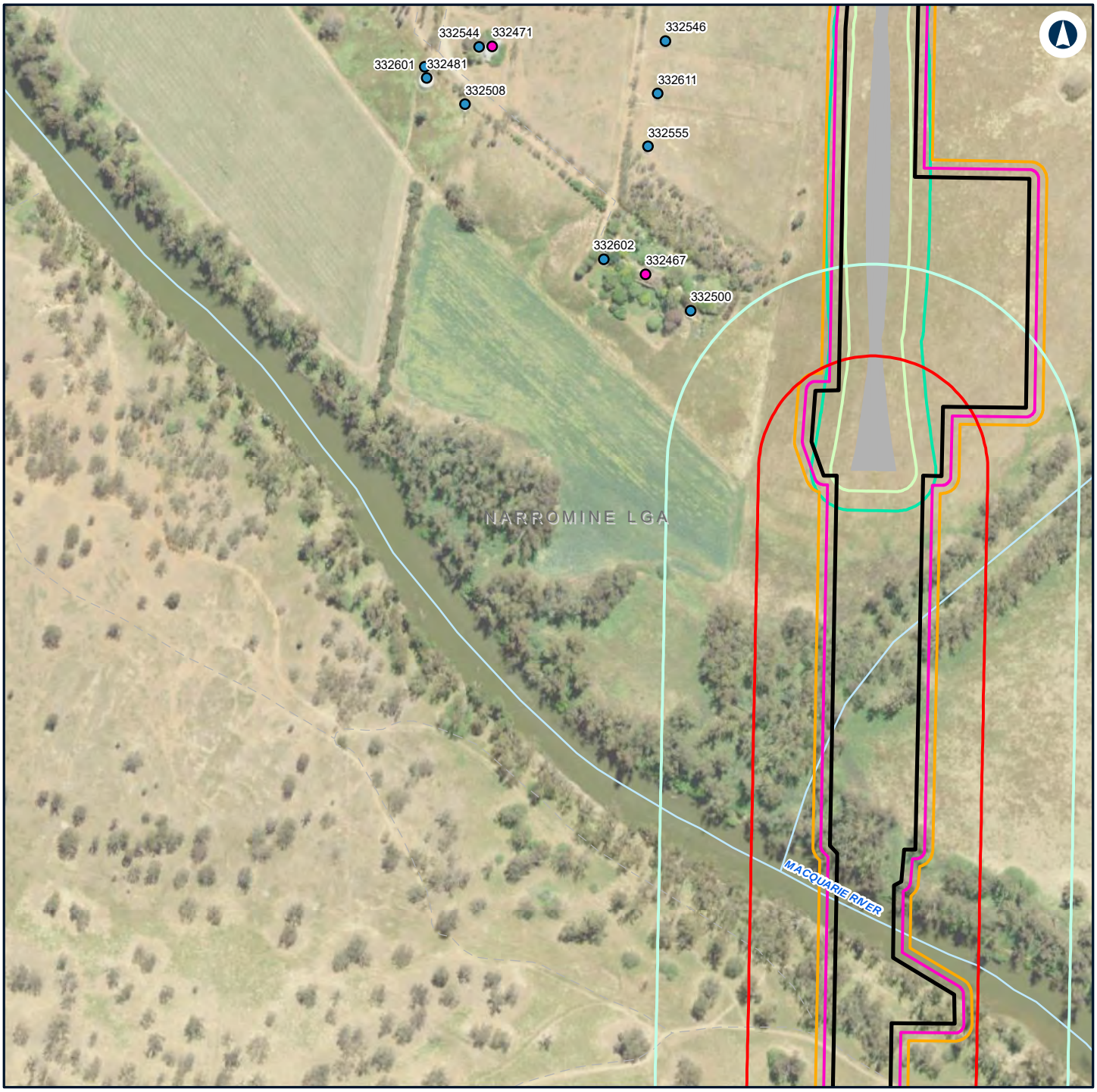

LEGEND

- Contruction footprint
- Rail earthworks extent
- Bridges (Impact piling) – Heritage structures: 3mm/s, 180m
- Bridges (Impact piling) – Standard buildings: 5mm/s, 100m
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 13 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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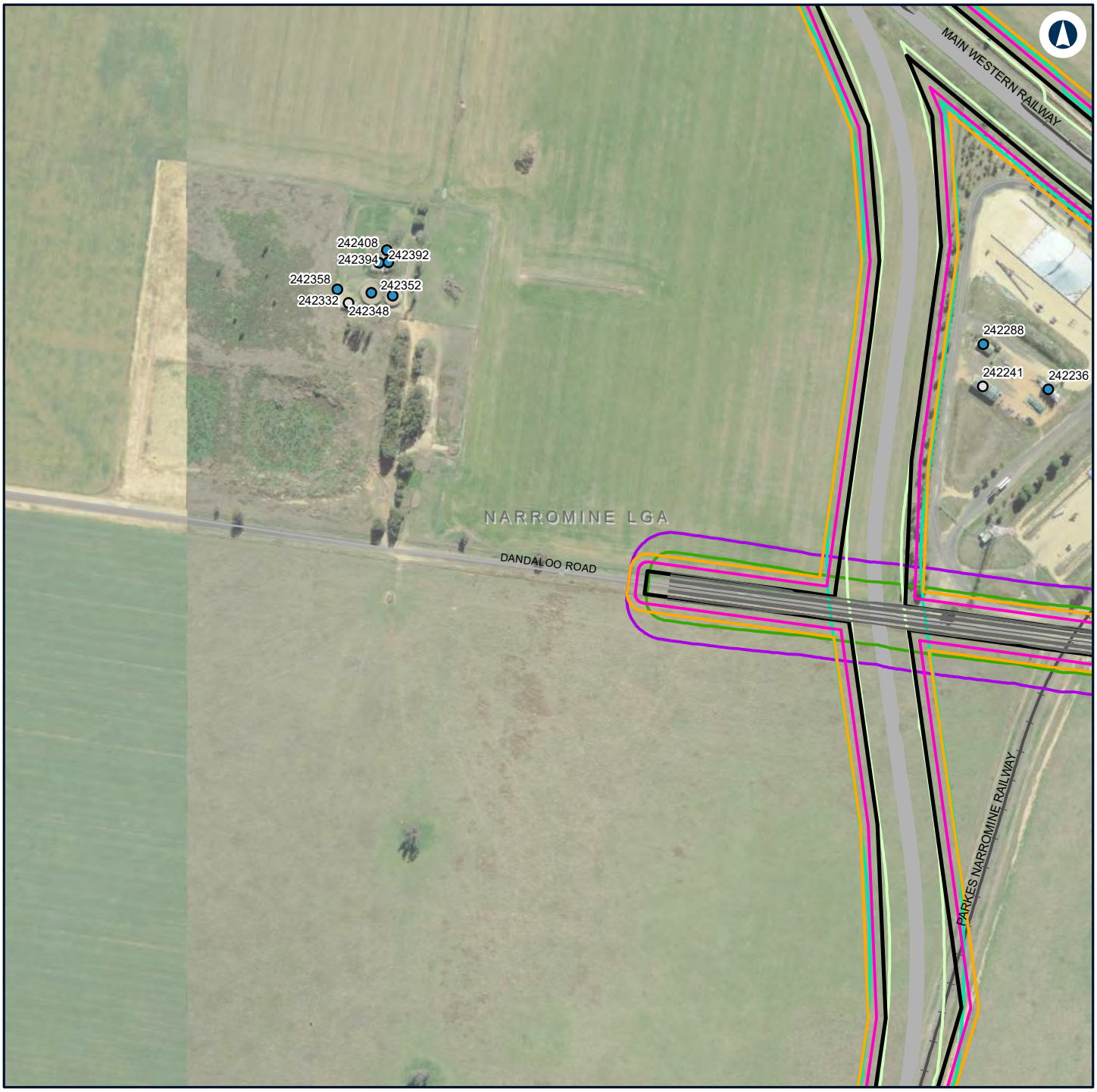

LEGEND

- Road design
- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Road earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Road earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Commercial/Industrial
- Other

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 14 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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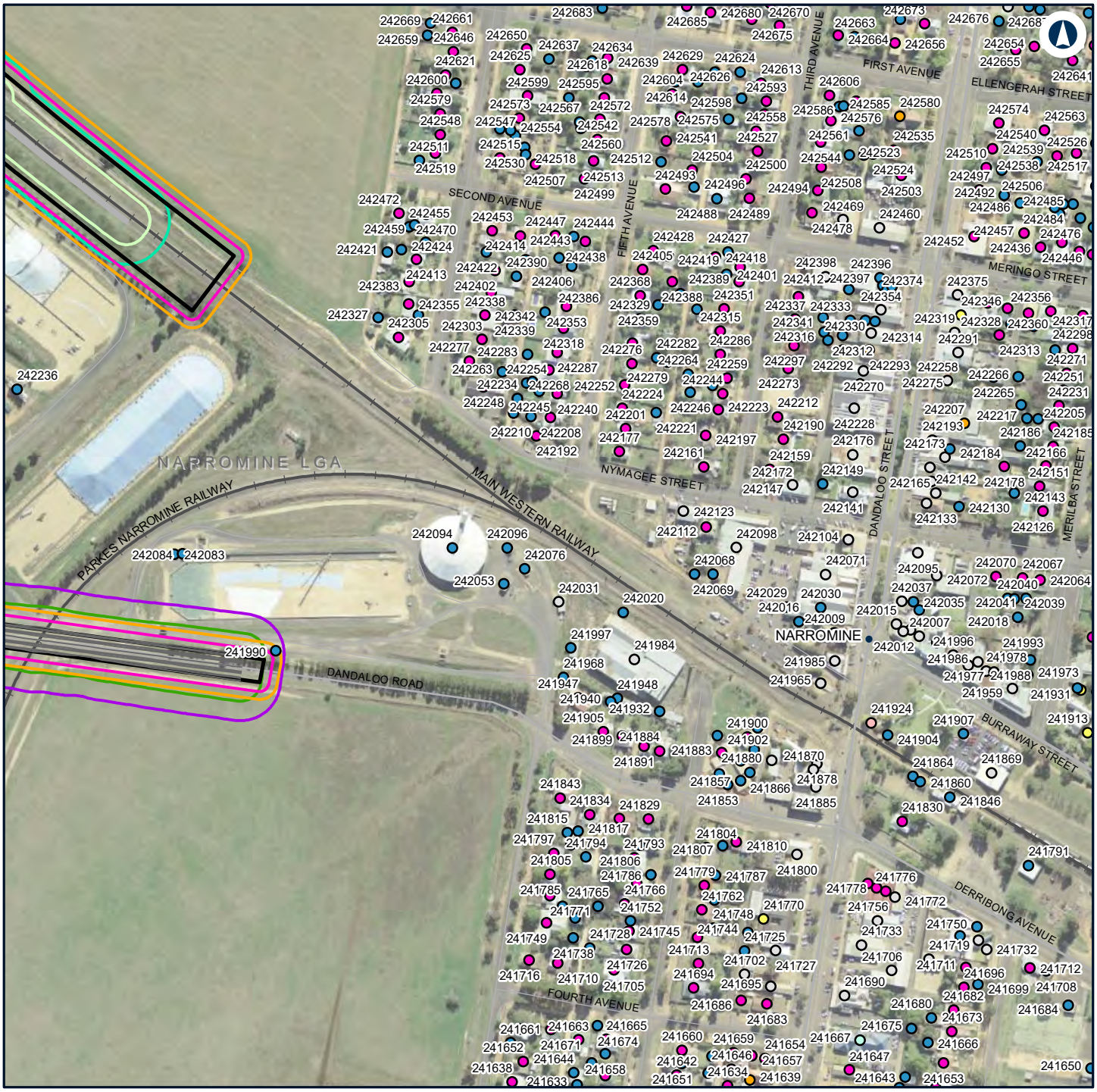

LEGEND

- Road design
- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Road earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Road earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Commercial/Industrial
- Community
- Health
- Other
- Passive recreation
- Residential
- Worship

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 15 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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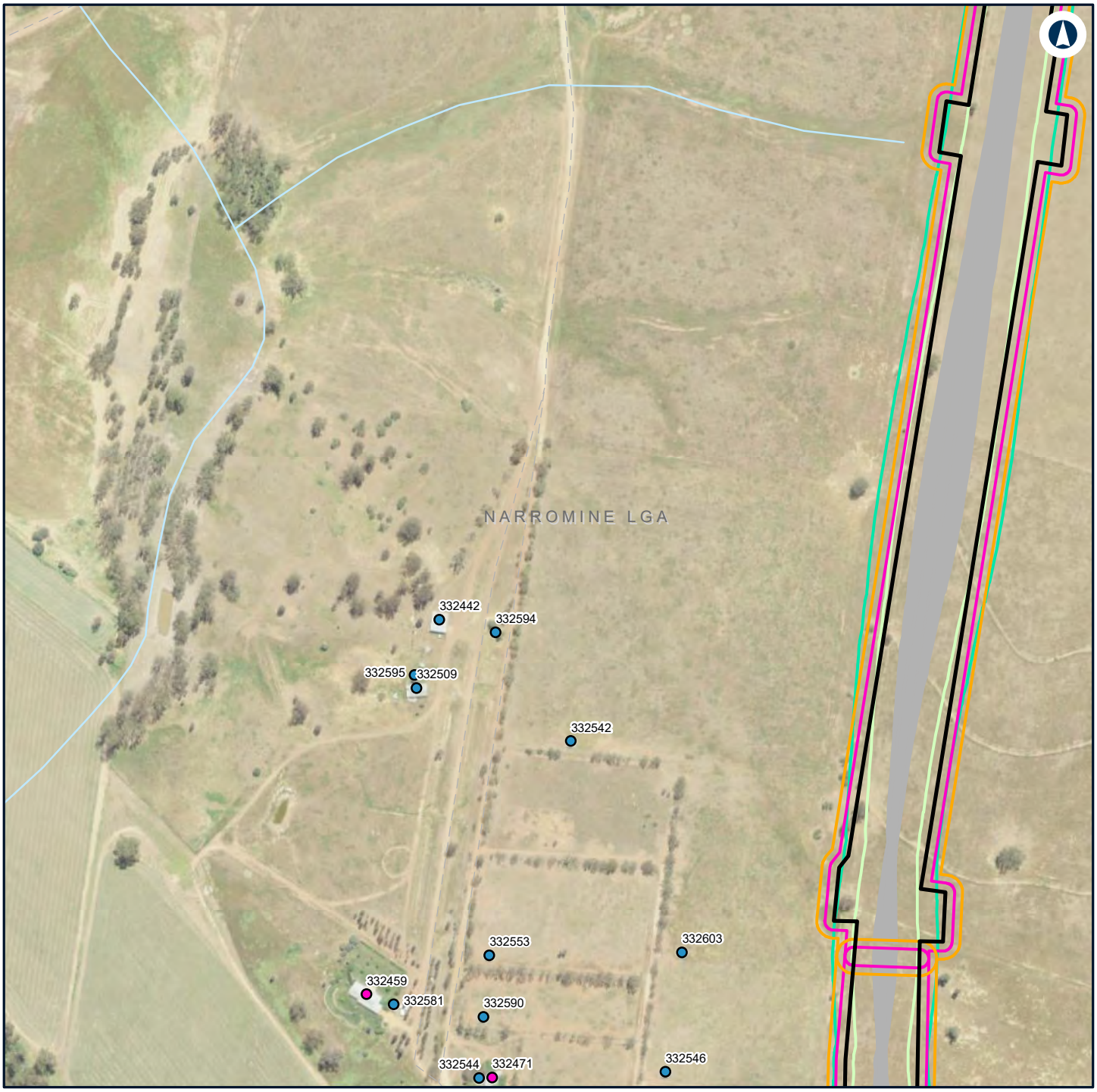

LEGEND

- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 16 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Commercial/Industrial
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 17 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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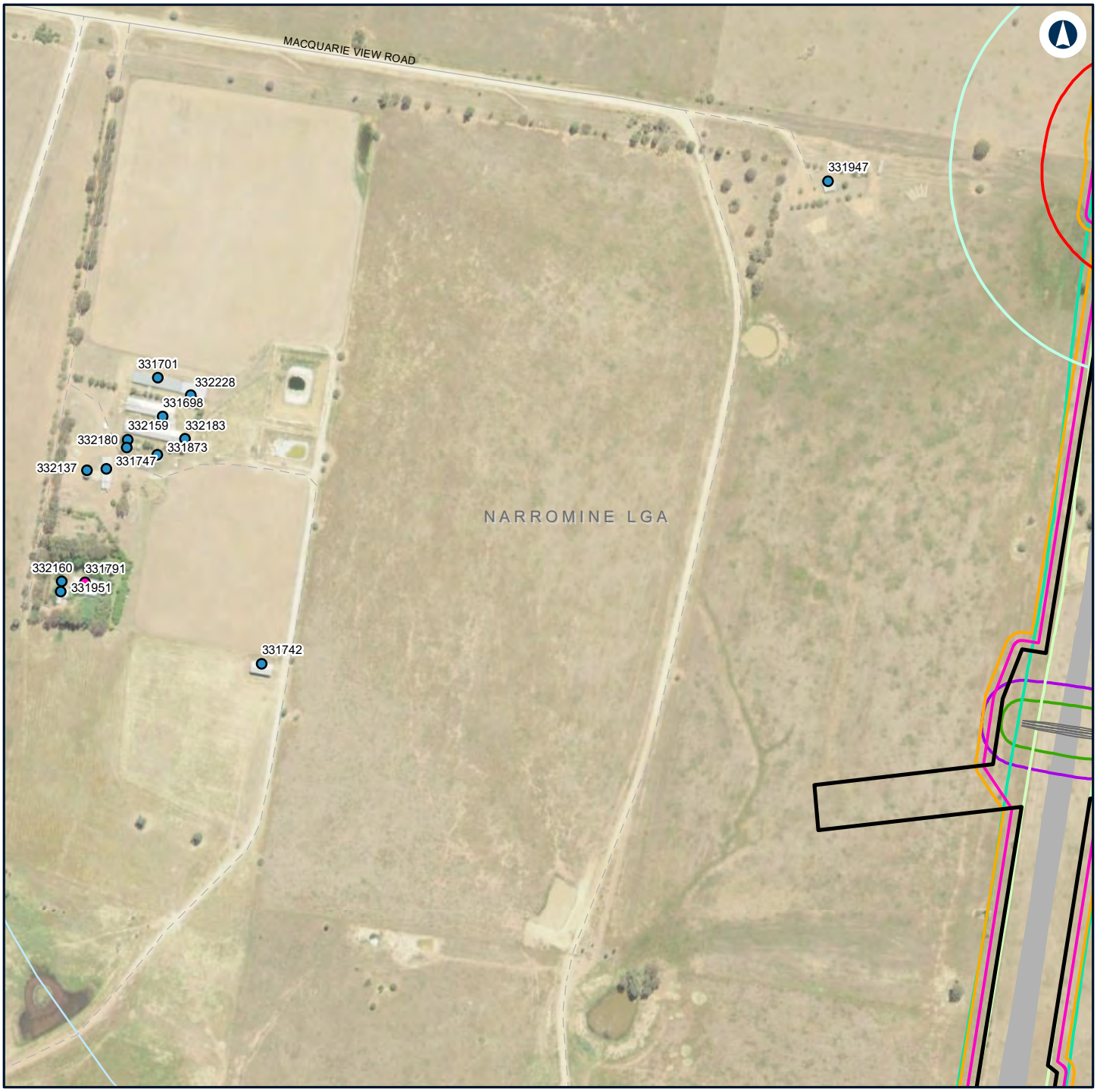

LEGEND

- Road design
- Contruction footprint
- Rail earthworks extent
- Bridges (Impact piling) – Heritage structures: 3mm/s, 180m
- Bridges (Impact piling) – Standard buildings: 5mm/s, 100m
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Road earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Road earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Active recreation
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 18 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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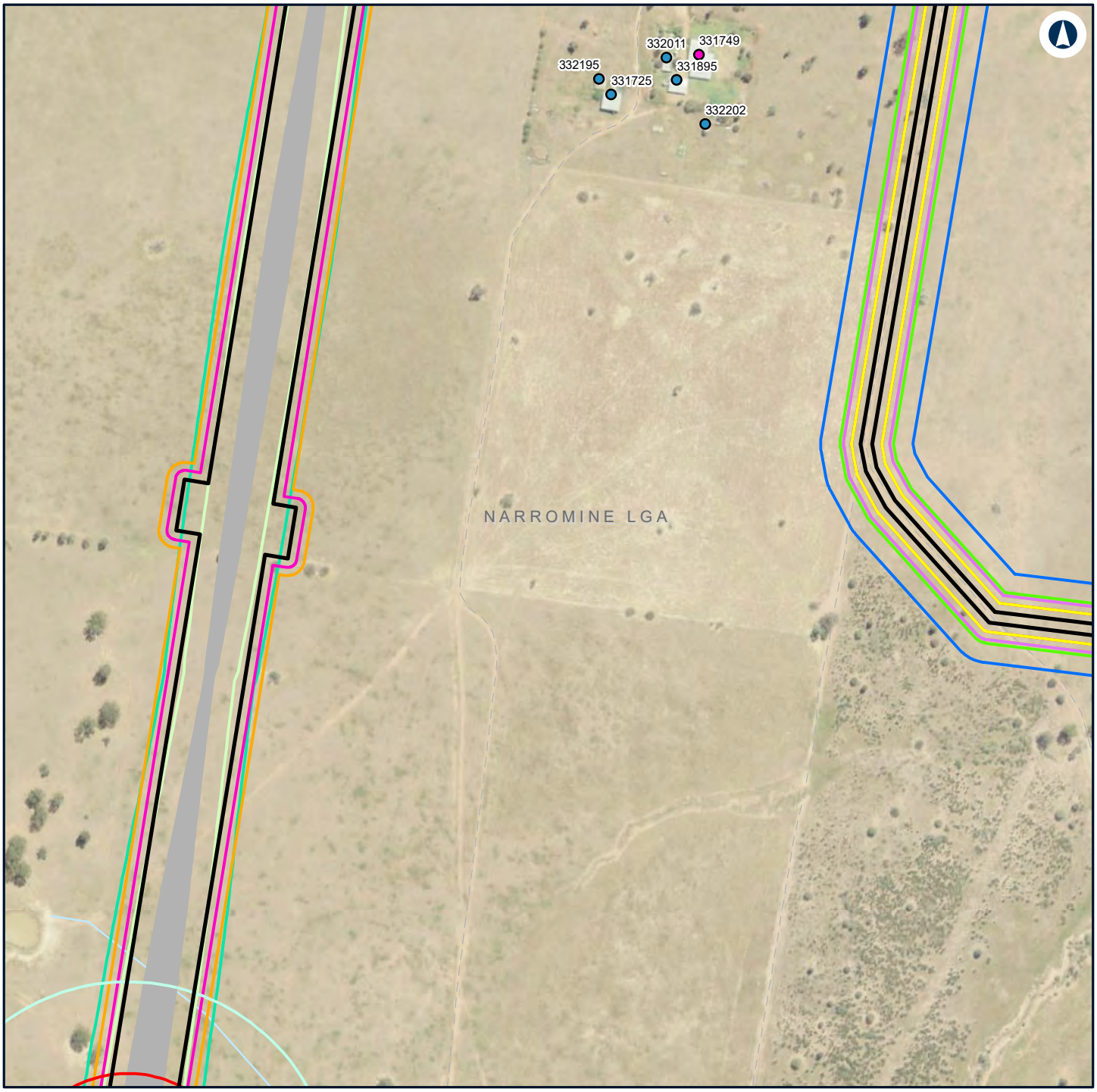

LEGEND

- Contruction footprint
- Rail earthworks extent
- Borrow pits (Dozer) – Heritage structures: 3mm/s, 15m
- Borrow pits (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Borrow pits (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Borrow pits (Dozer) – Standard buildings: 5mm/s, 8m
- Bridges (Impact piling) – Heritage structures: 3mm/s, 180m
- Bridges (Impact piling) – Standard buildings: 5mm/s, 100m
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 19 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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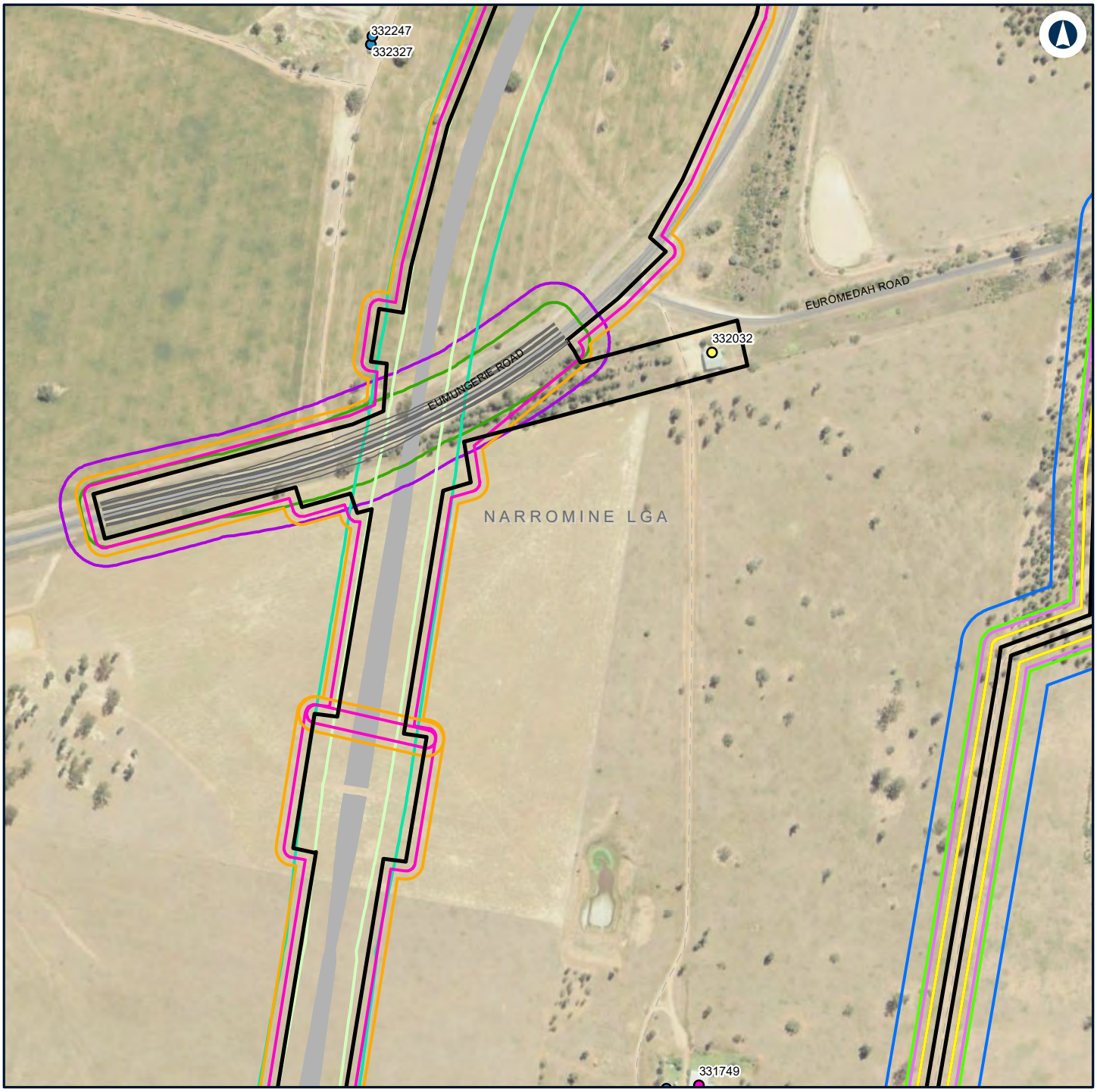

LEGEND

- Road design
- Contruction footprint
- Rail earthworks extent
- Borrow pits (Dozer) – Heritage structures: 3mm/s, 15m
- Borrow pits (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Borrow pits (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Borrow pits (Dozer) – Standard buildings: 5mm/s, 8m
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Road earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Road earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Community
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 20 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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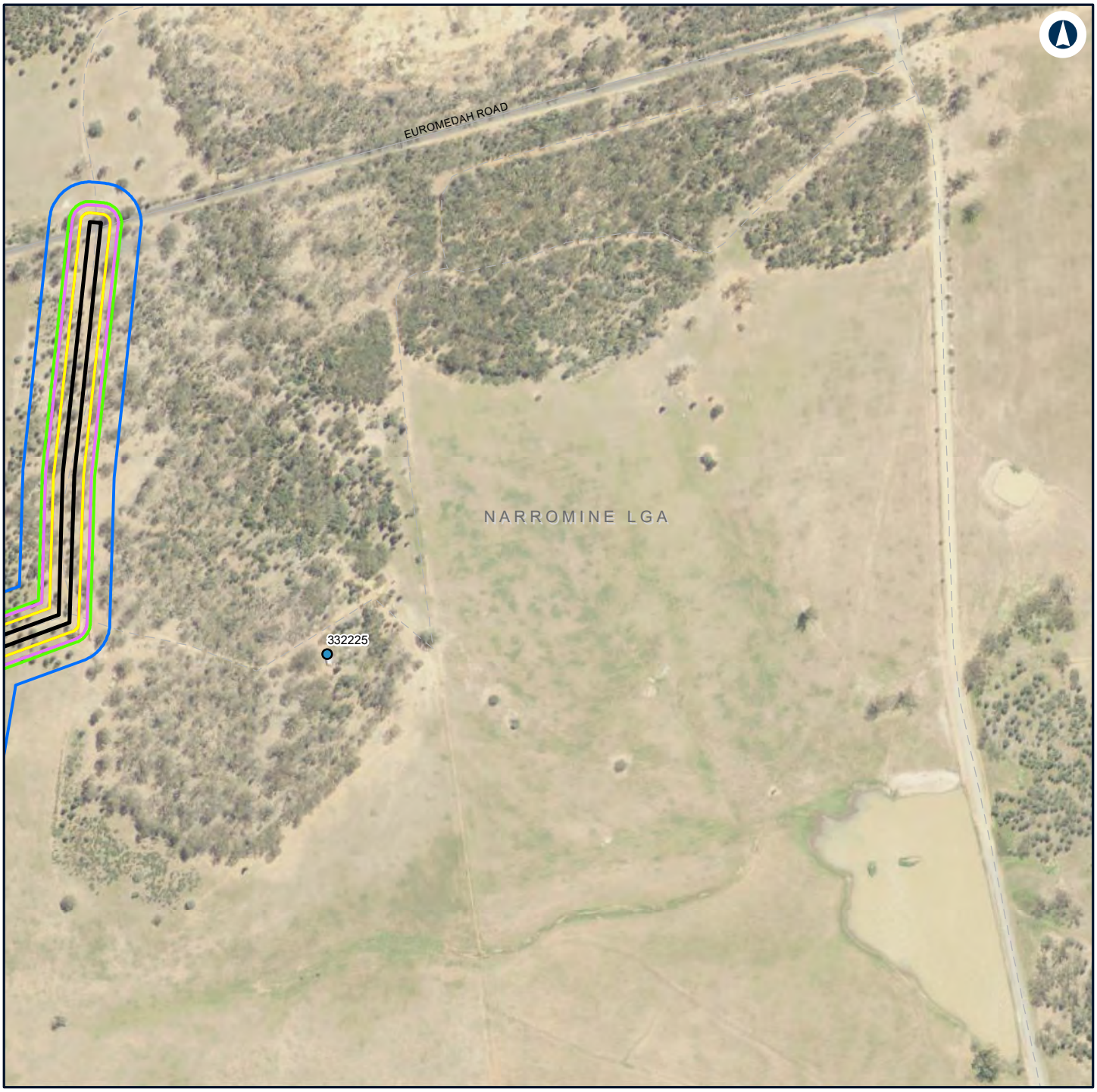

LEGEND

- Contruction footprint
- Borrow pits (Dozer) – Heritage structures: 3mm/s, 15m
- Borrow pits (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Borrow pits (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Borrow pits (Dozer) – Standard buildings: 5mm/s, 8m
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Other

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 21 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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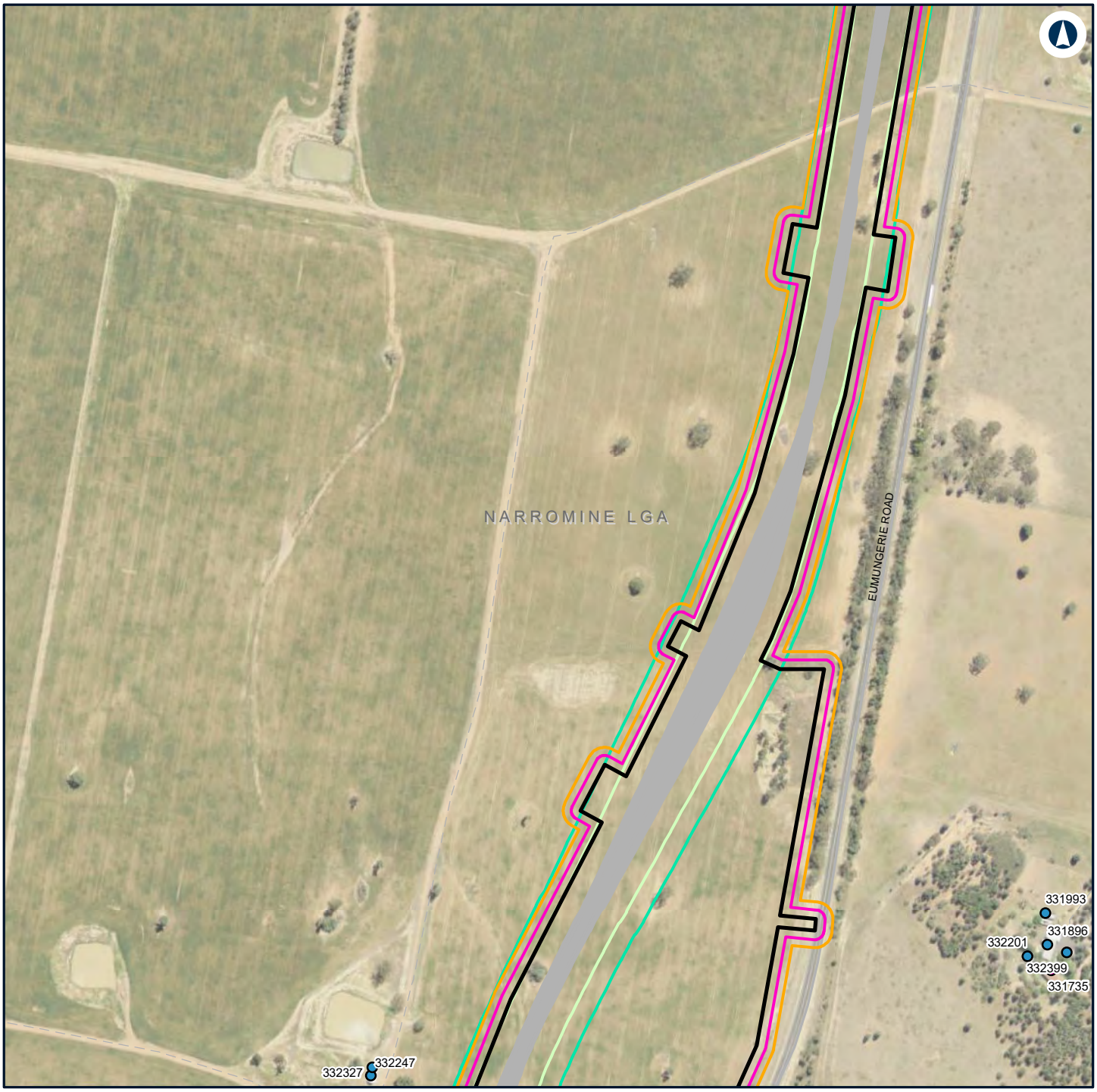

LEGEND

- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 22 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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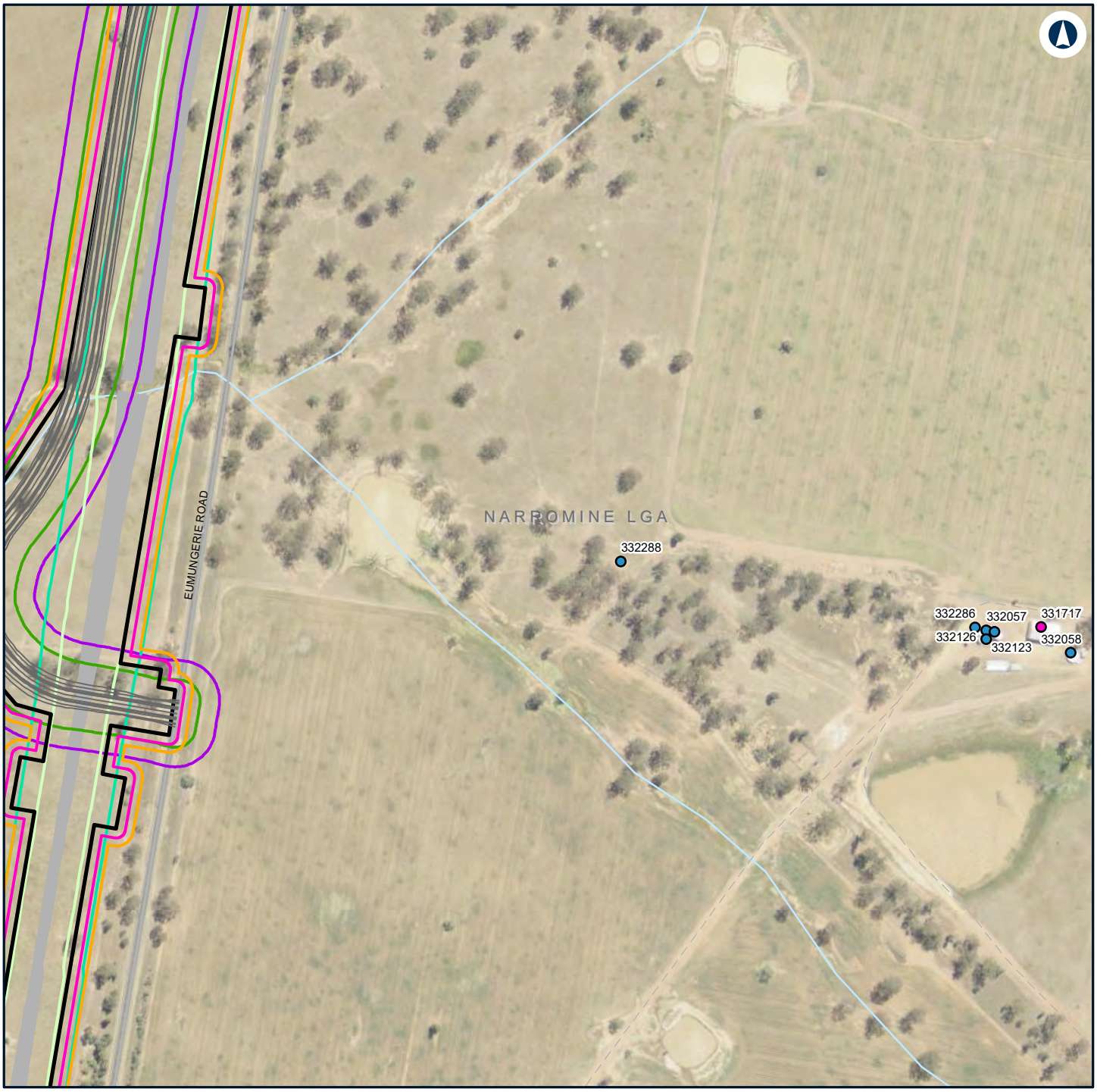

LEGEND

- Road design
- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Road earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Road earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 23 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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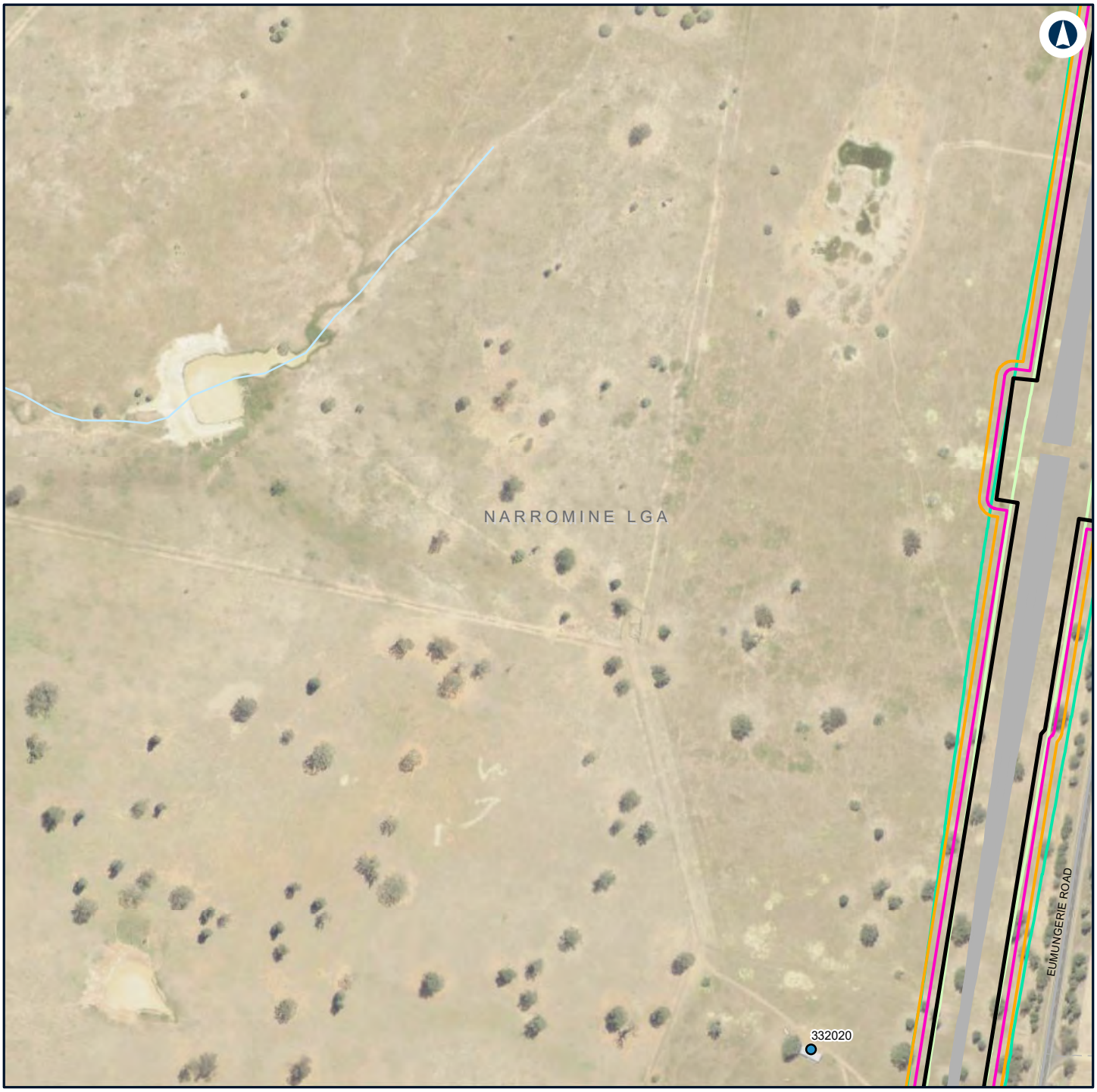

LEGEND

- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 24 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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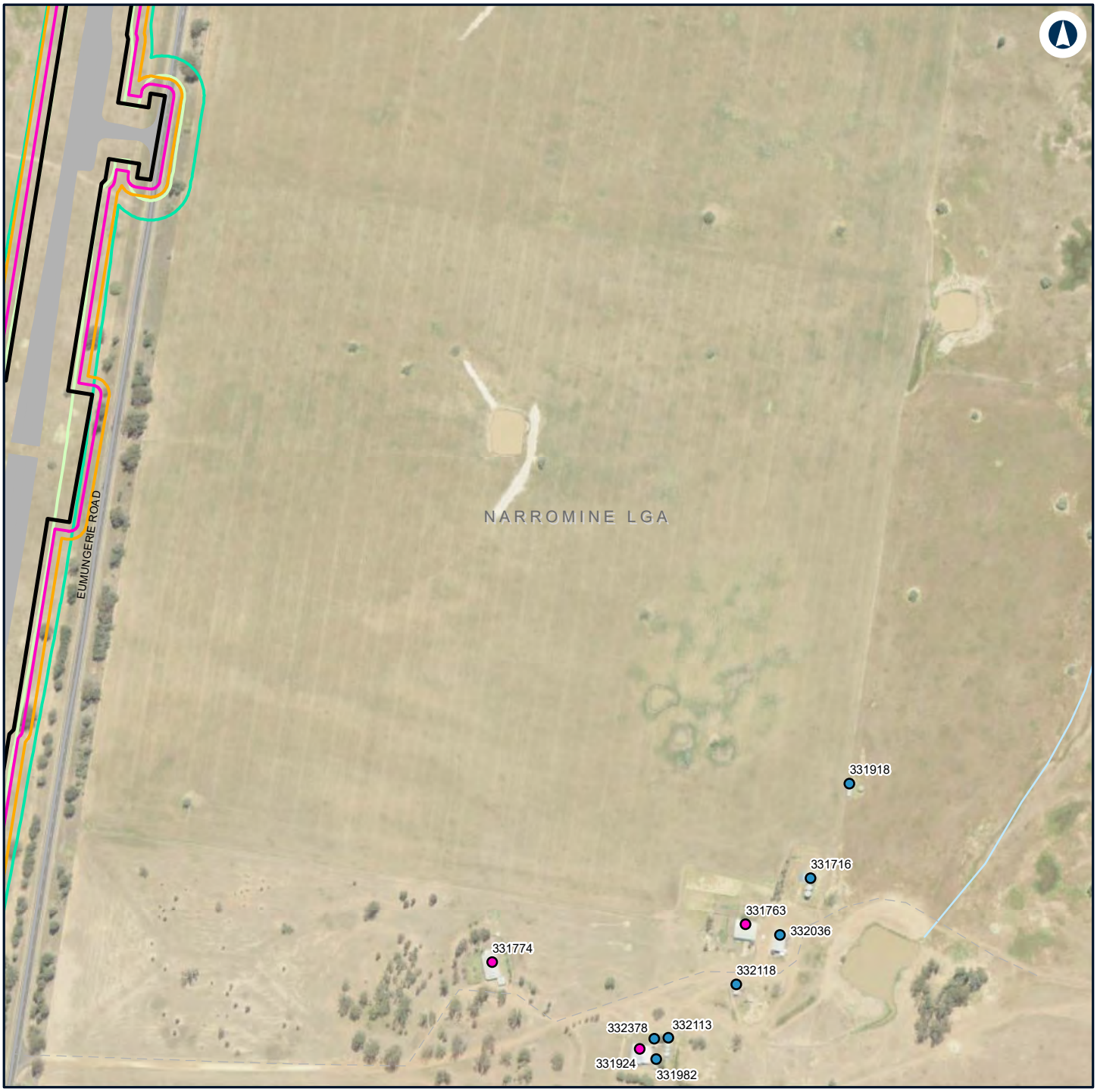

LEGEND

- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 25 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 26 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

INLAND RAIL ARTC

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LEGEND

- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 27 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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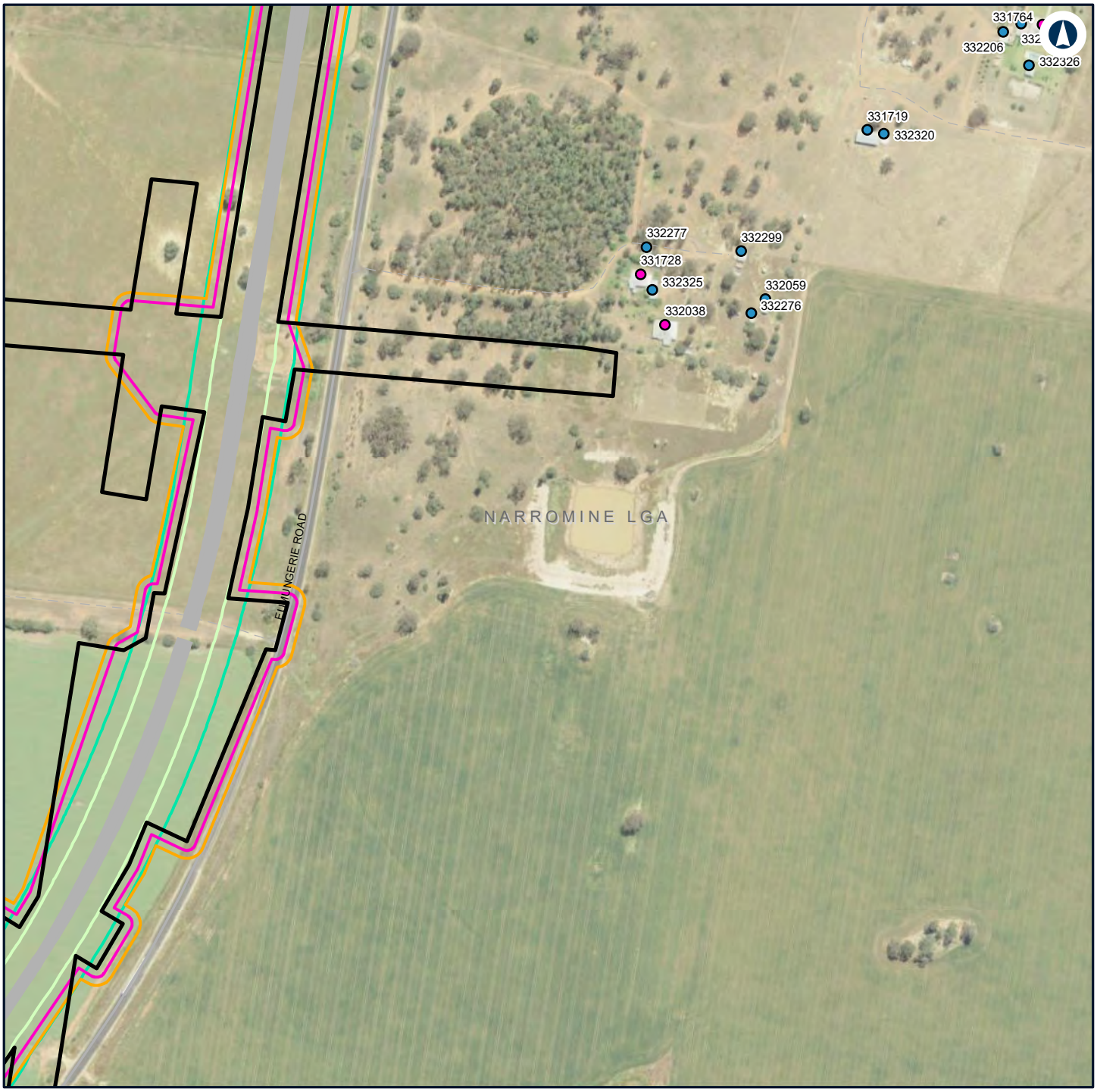

LEGEND

- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 28 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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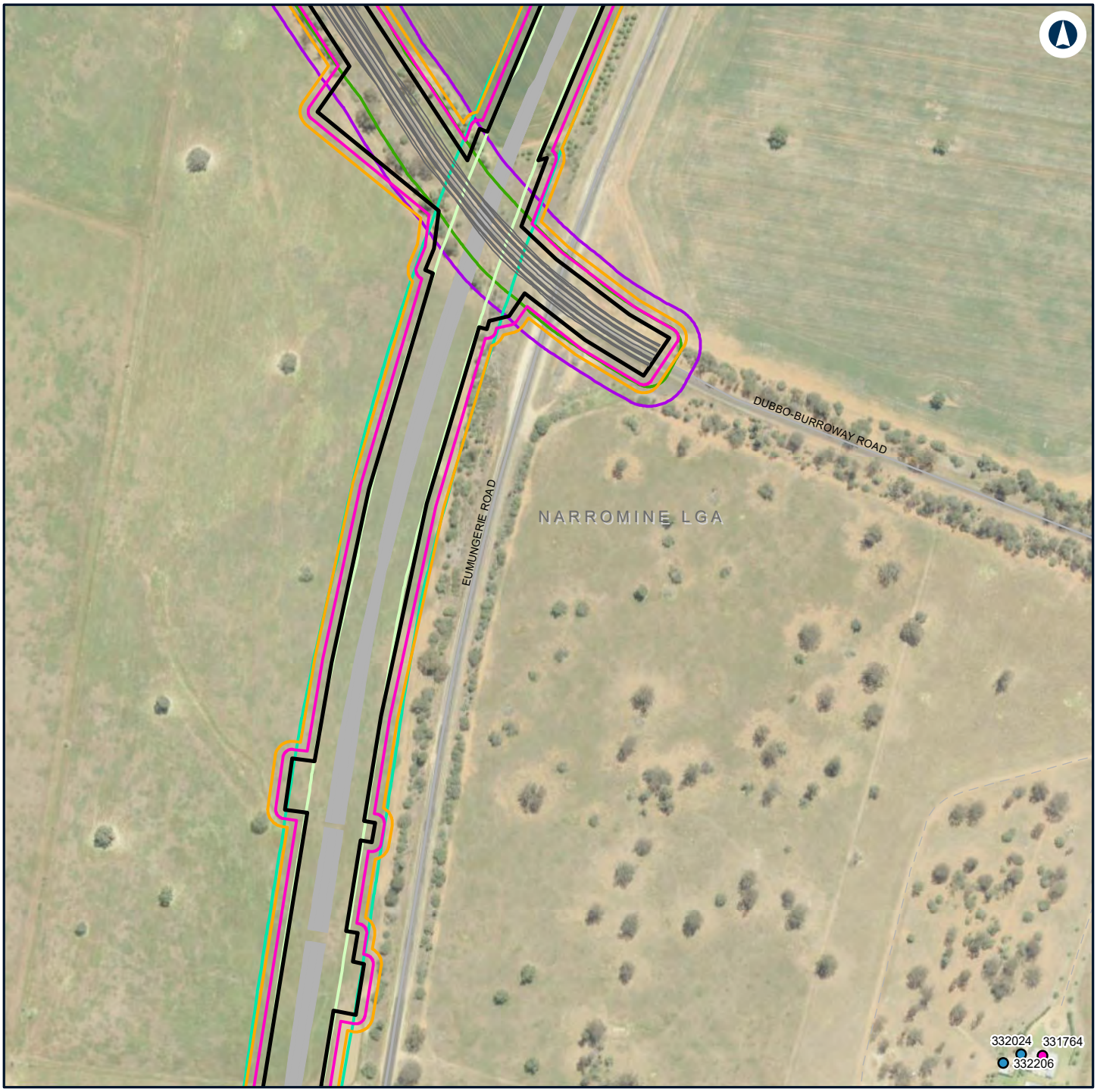

LEGEND

- Road design
- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Road earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Road earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 29 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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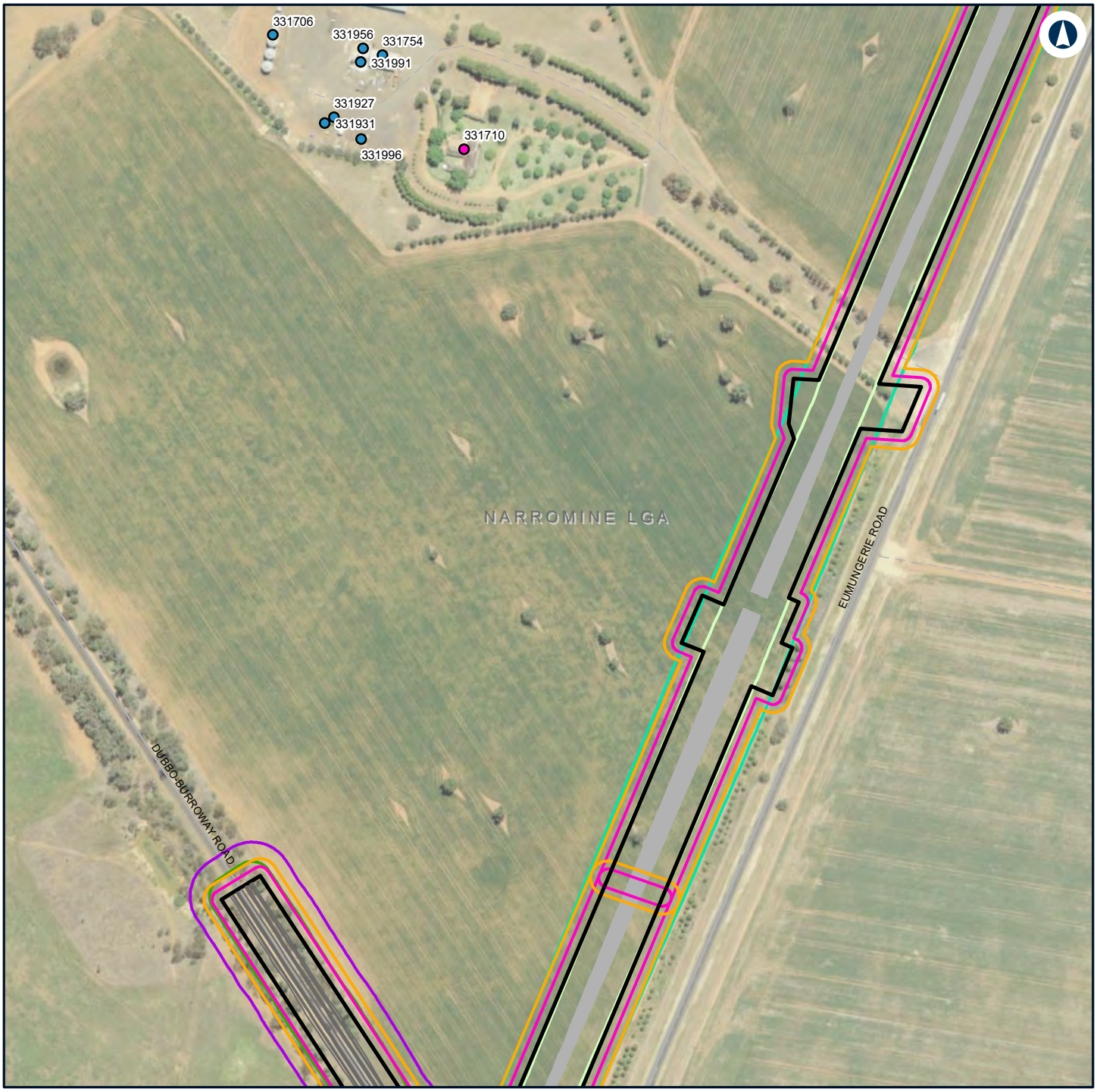

LEGEND

- Road design
- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Road earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Road earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 30 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 31 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 32 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 33 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 34 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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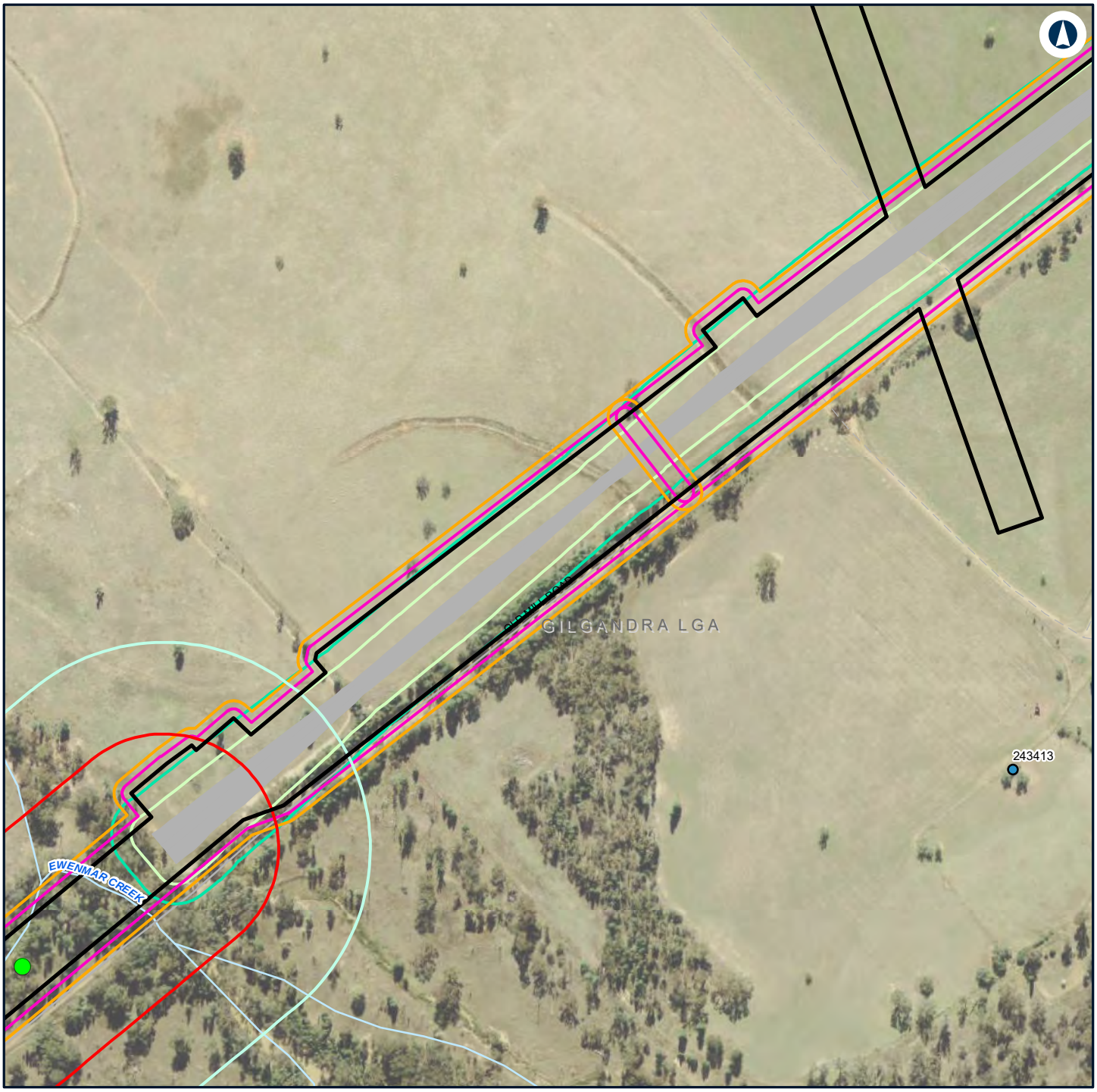

LEGEND

- Bridge centre
- Contruction footprint
- Rail earthworks extent
- Bridges (Impact piling) – Heritage structures: 3mm/s, 180m
- Bridges (Impact piling) – Standard buildings: 5mm/s, 100m
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 35 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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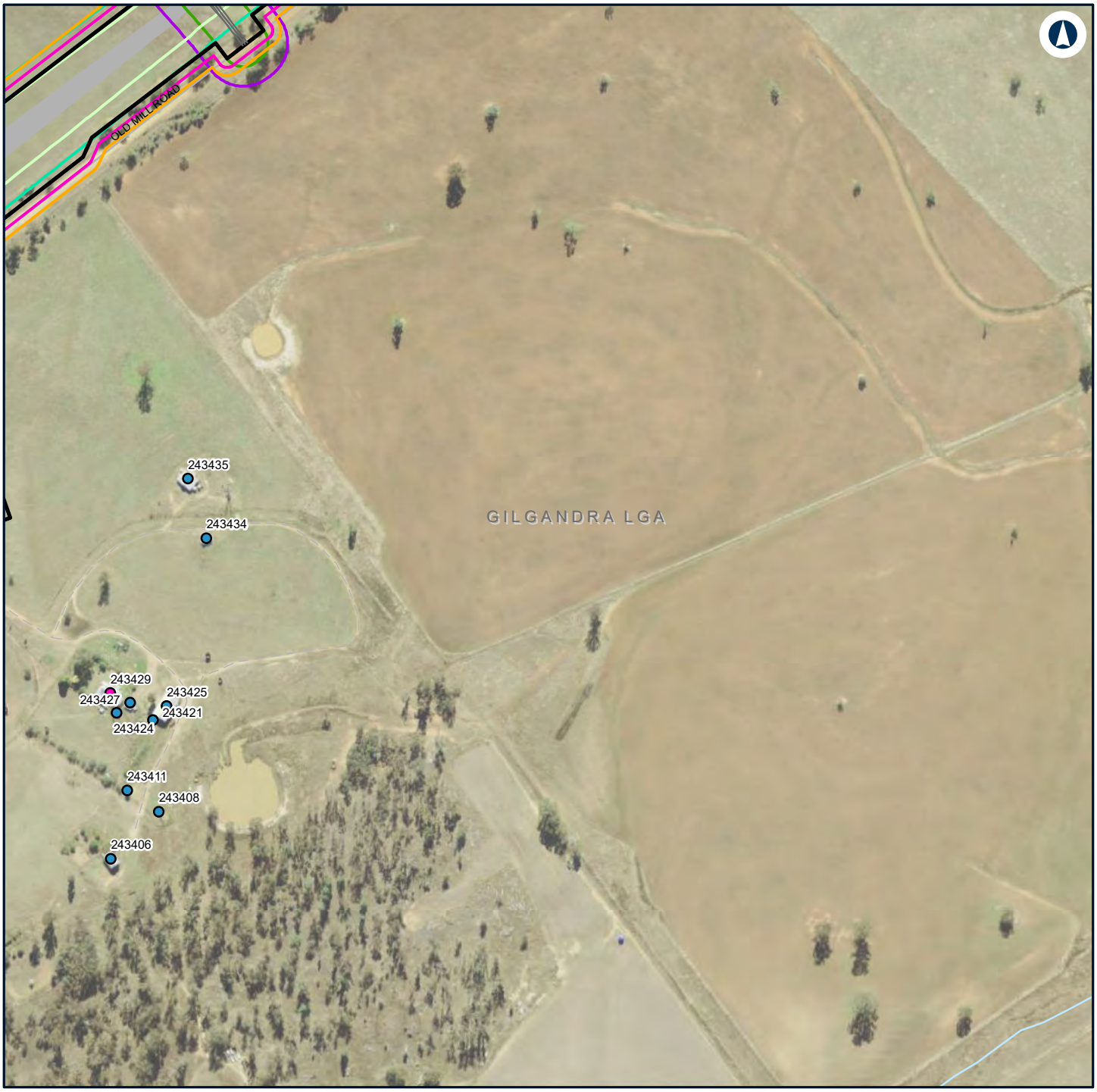

LEGEND

- Road design
- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Road earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Road earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 36 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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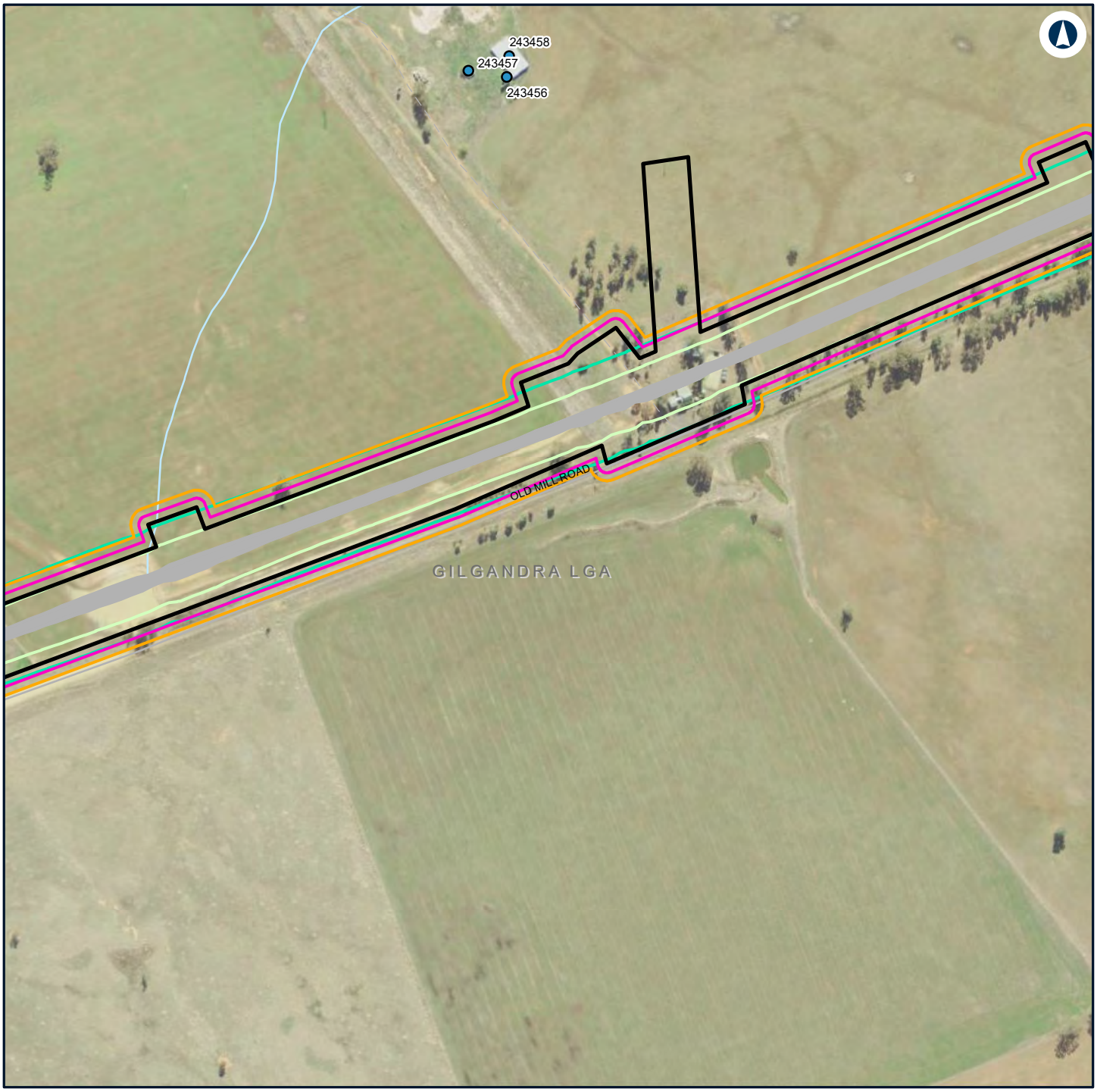

LEGEND

- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 37 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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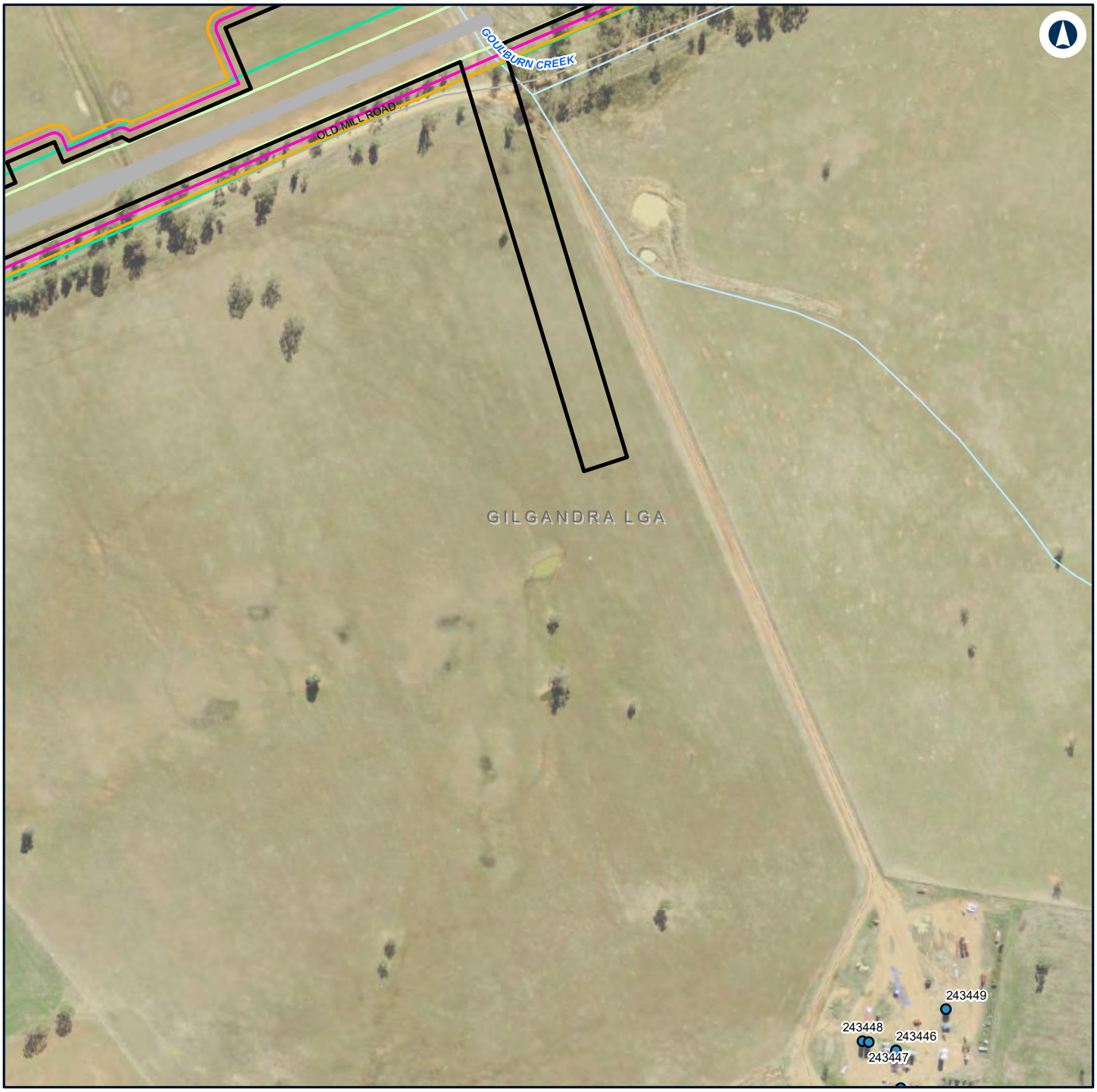

LEGEND

- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 38 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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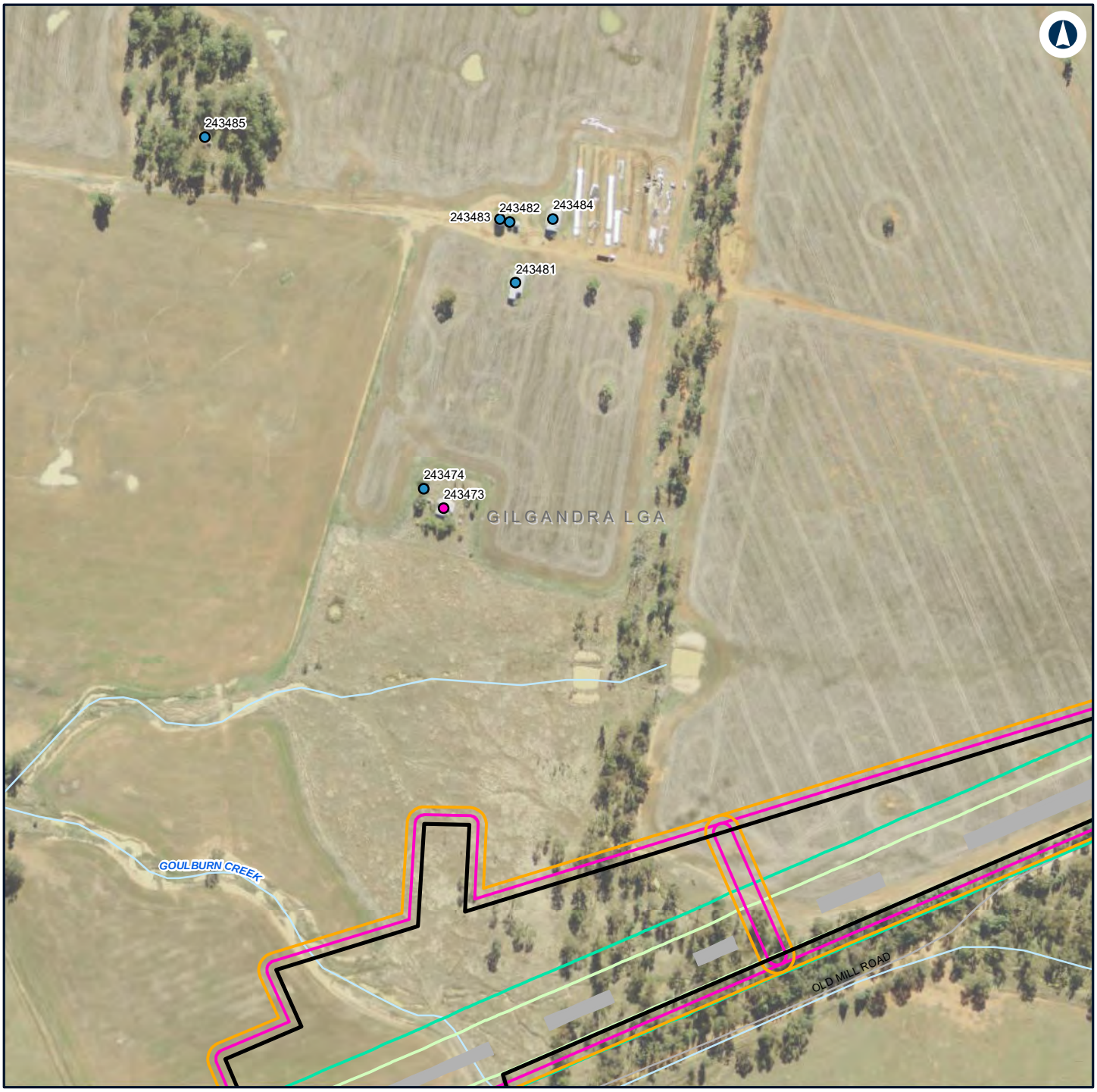

LEGEND

- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 39 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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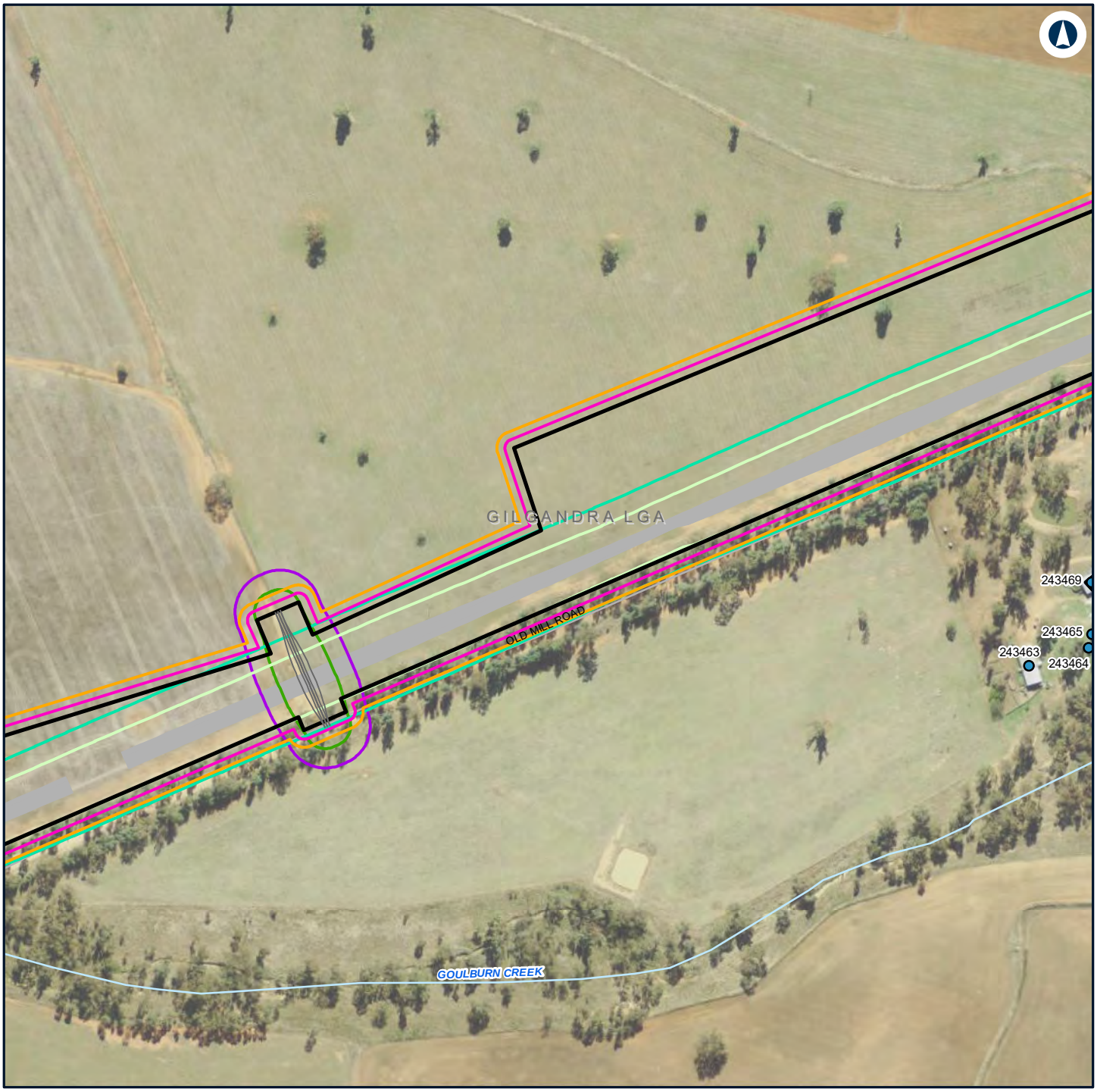

LEGEND

- Road design
- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Road earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Road earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 40 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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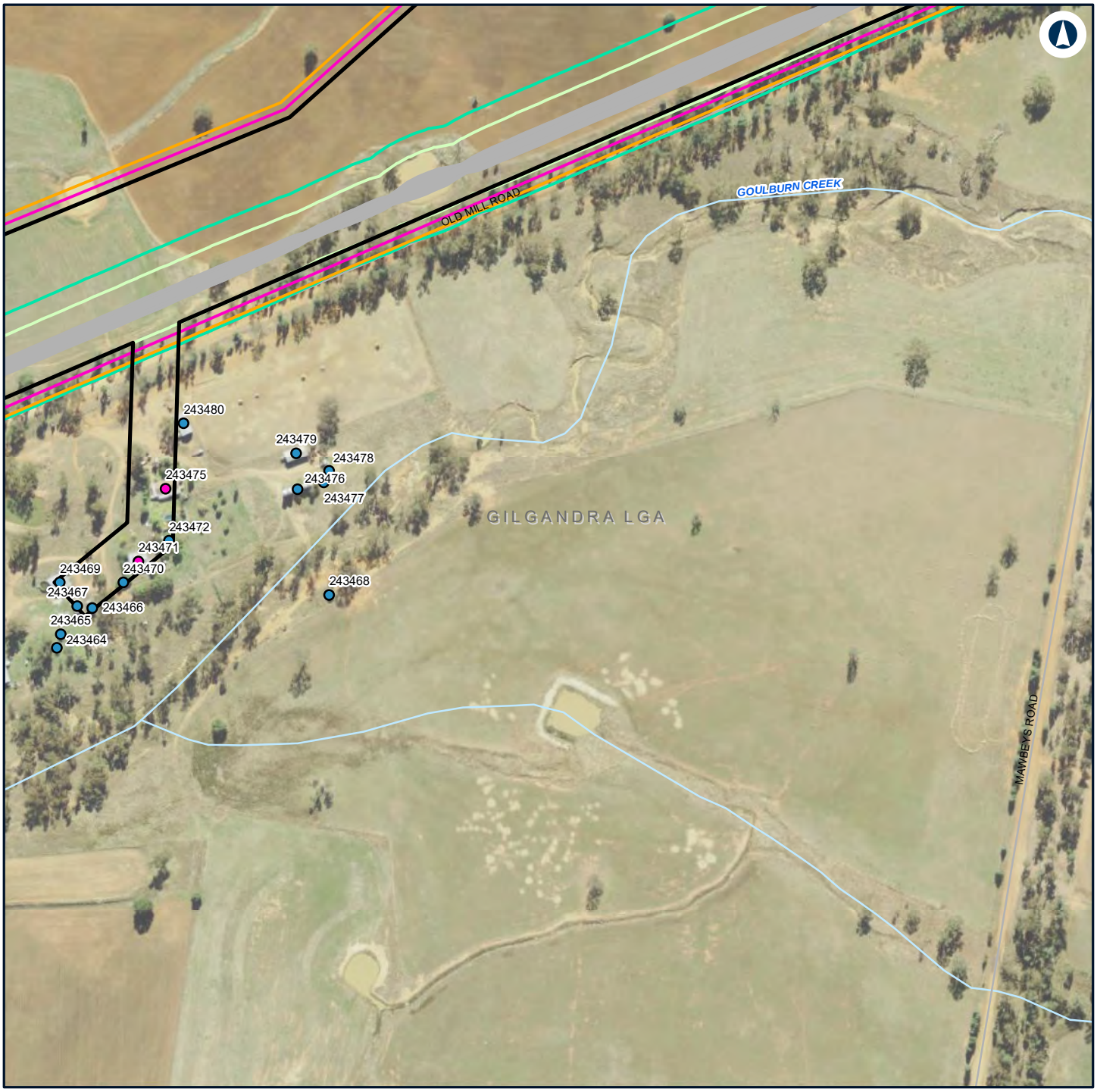

LEGEND

- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 41 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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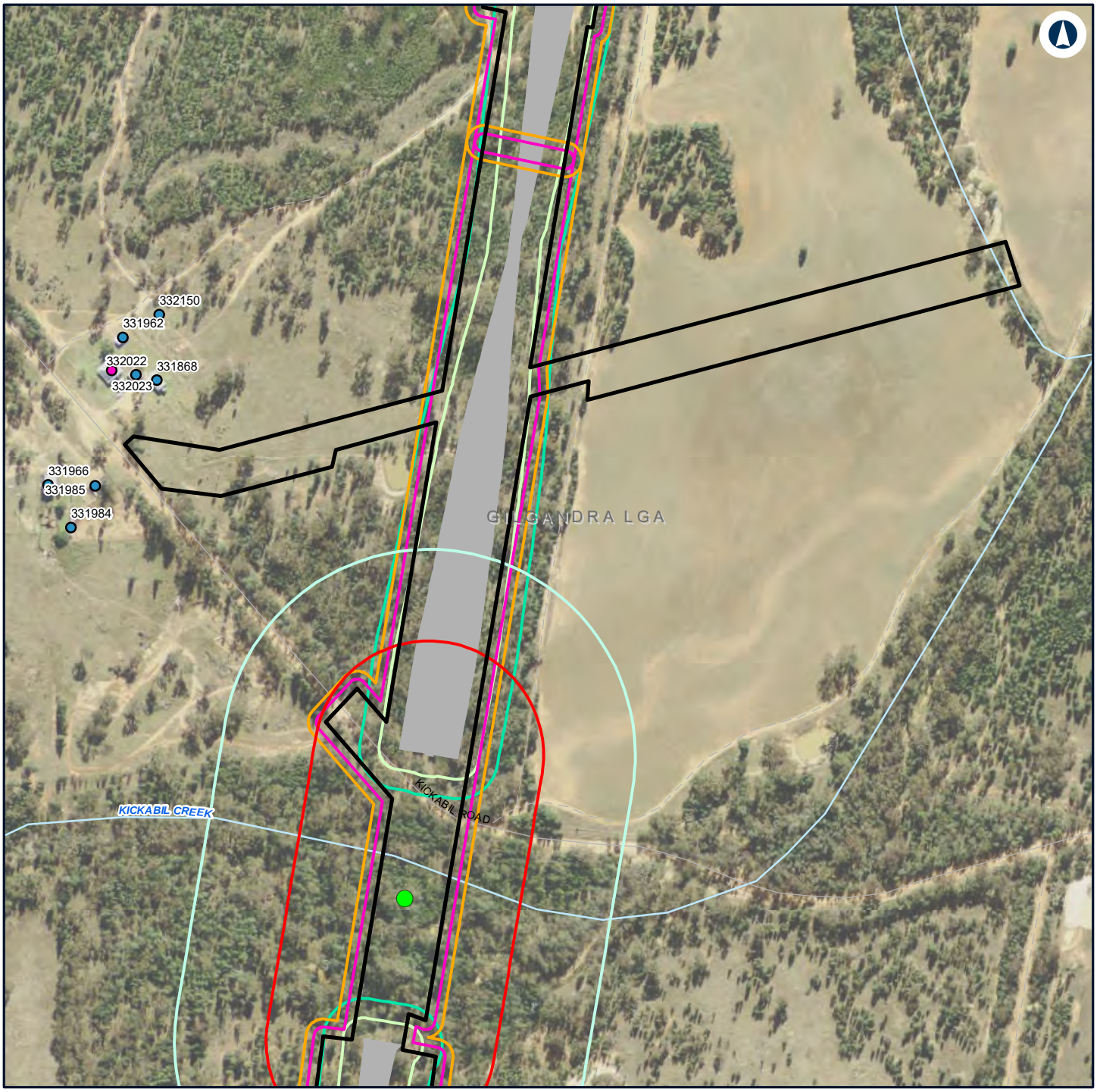

LEGEND

- Bridge centre
- Contruction footprint
- Rail earthworks extent
- Bridges (Impact piling) – Heritage structures: 3mm/s, 180m
- Bridges (Impact piling) – Standard buildings: 5mm/s, 100m
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 42 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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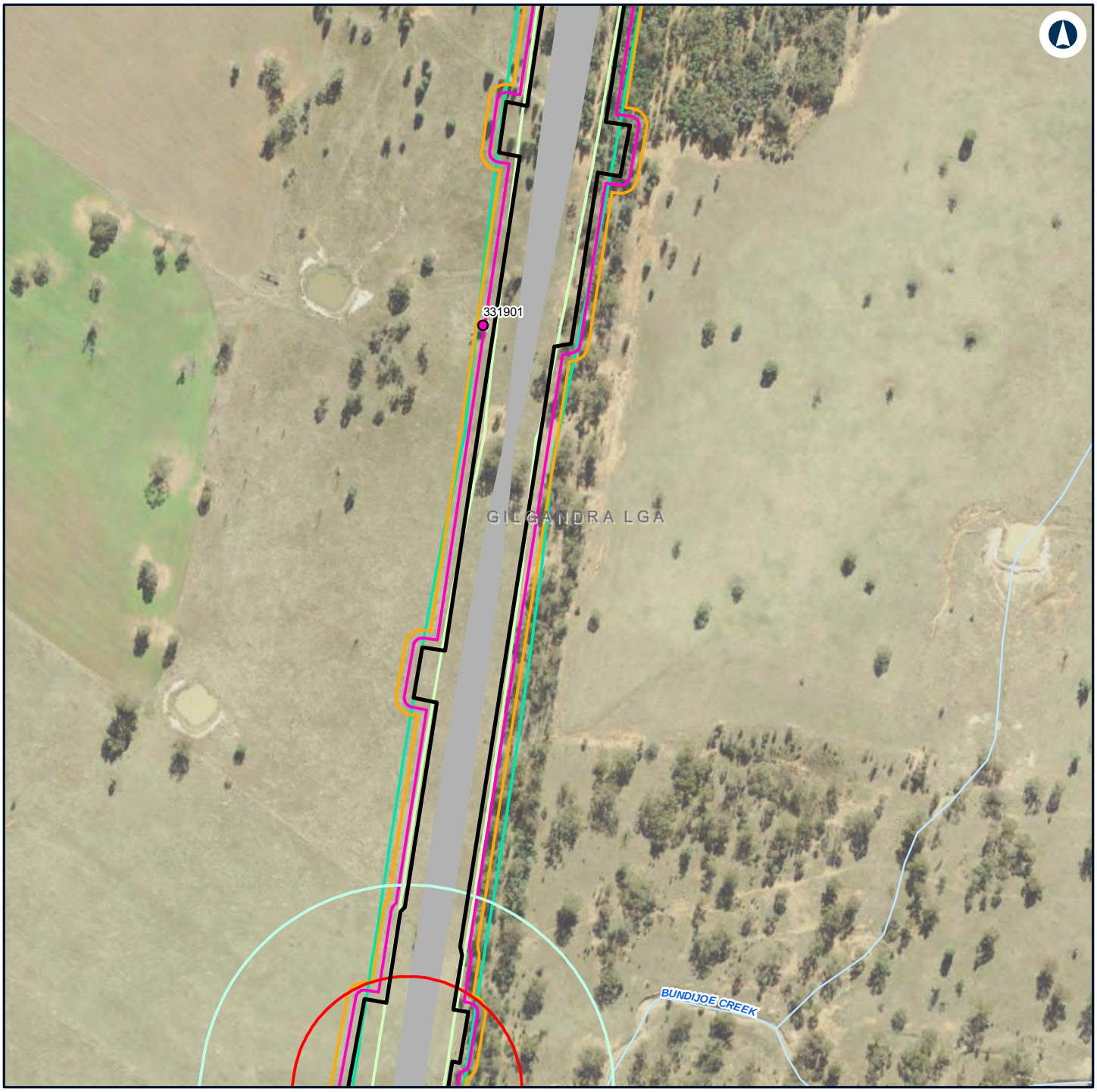

LEGEND

- Contruction footprint
- Rail earthworks extent
- Bridges (Impact piling) – Heritage structures: 3mm/s, 180m
- Bridges (Impact piling) – Standard buildings: 5mm/s, 100m
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 43 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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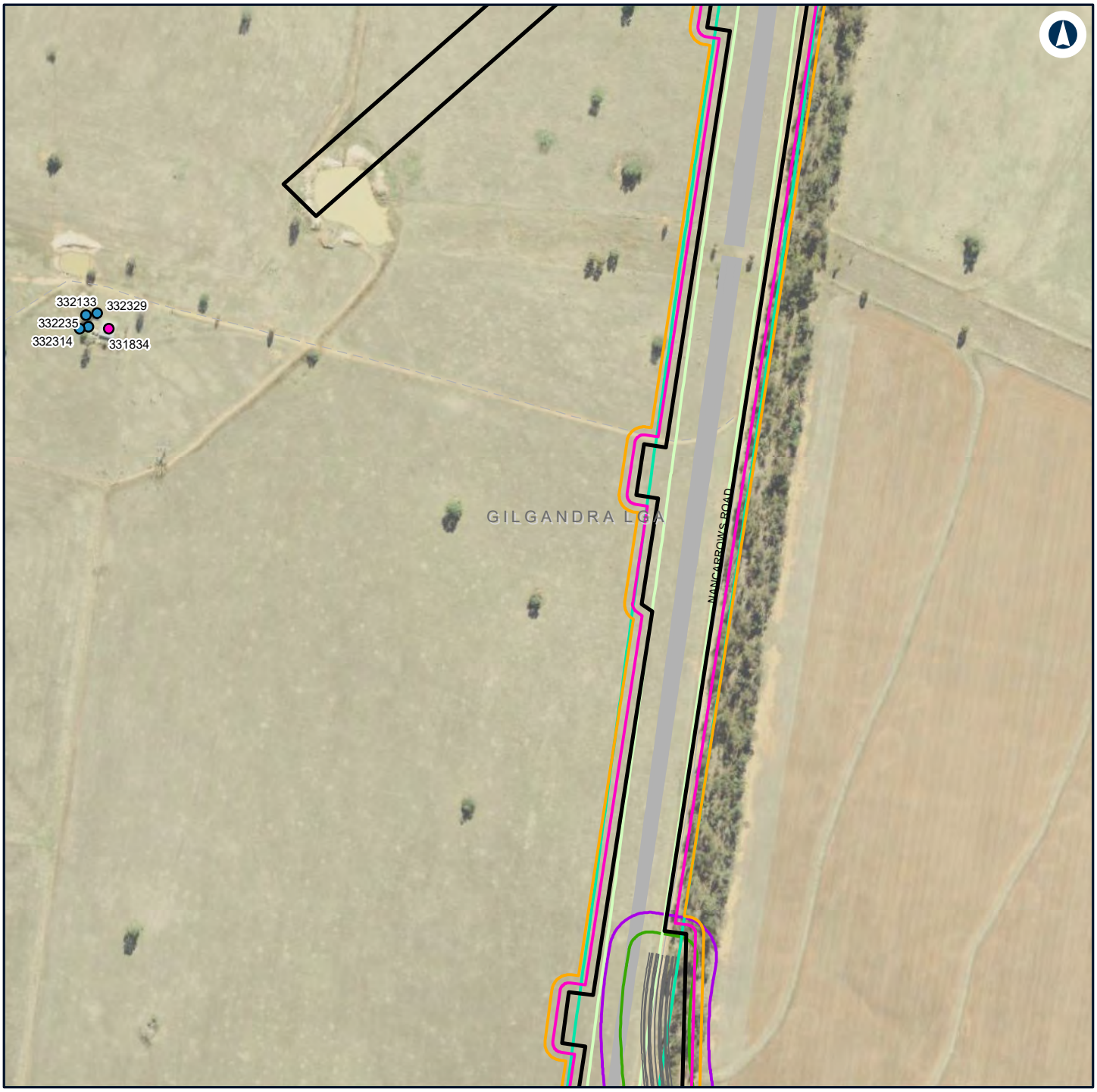

LEGEND

- Road design
- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Road earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Road earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 44 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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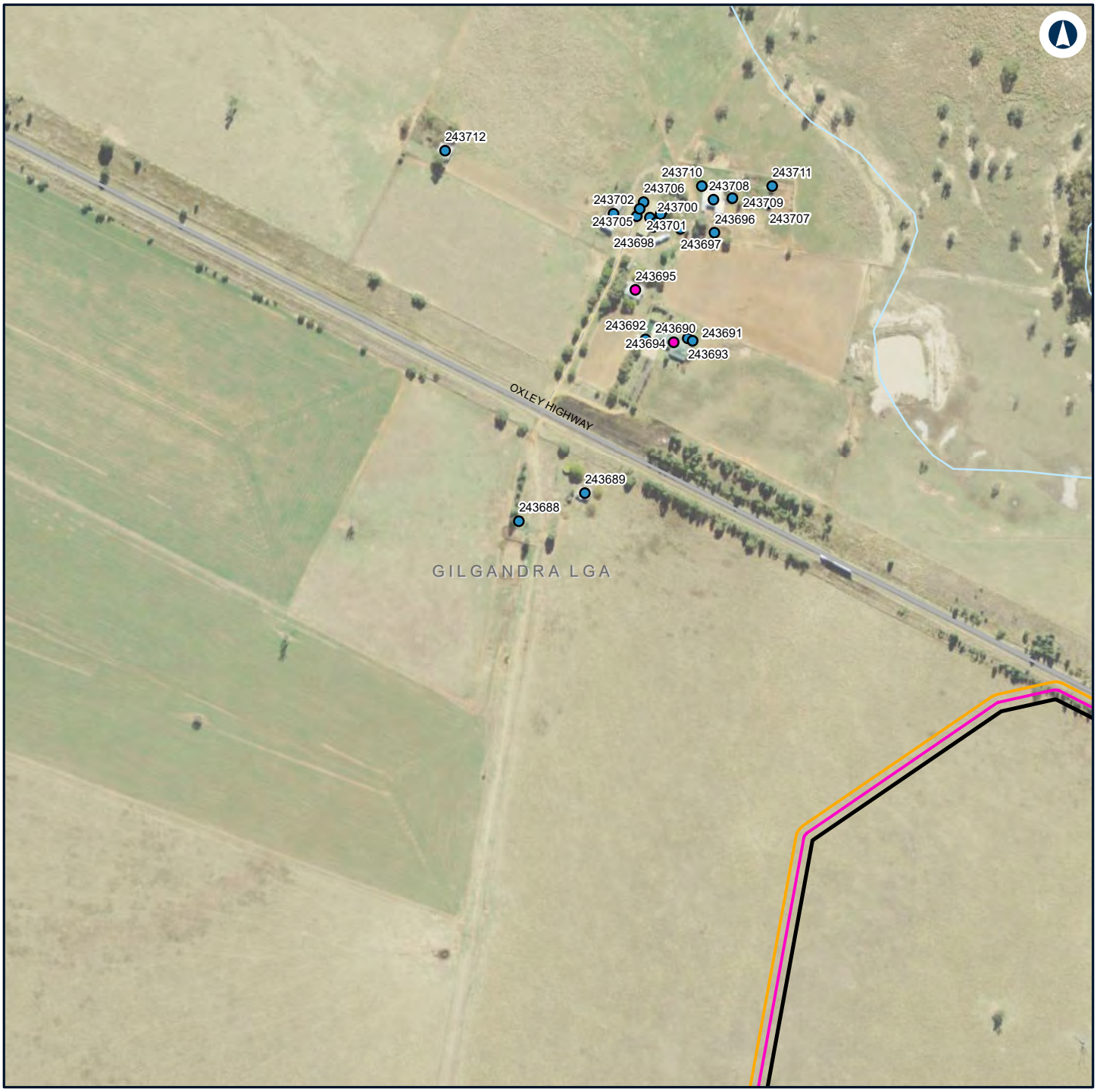

LEGEND

- Contruction footprint
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 45 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 46 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

INLAND RAIL ARTC

The Australian Government is delivering Inland Rail through the Australian Rail Track Corporation (ARTC), in partnership with the private sector.

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LEGEND

- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 47 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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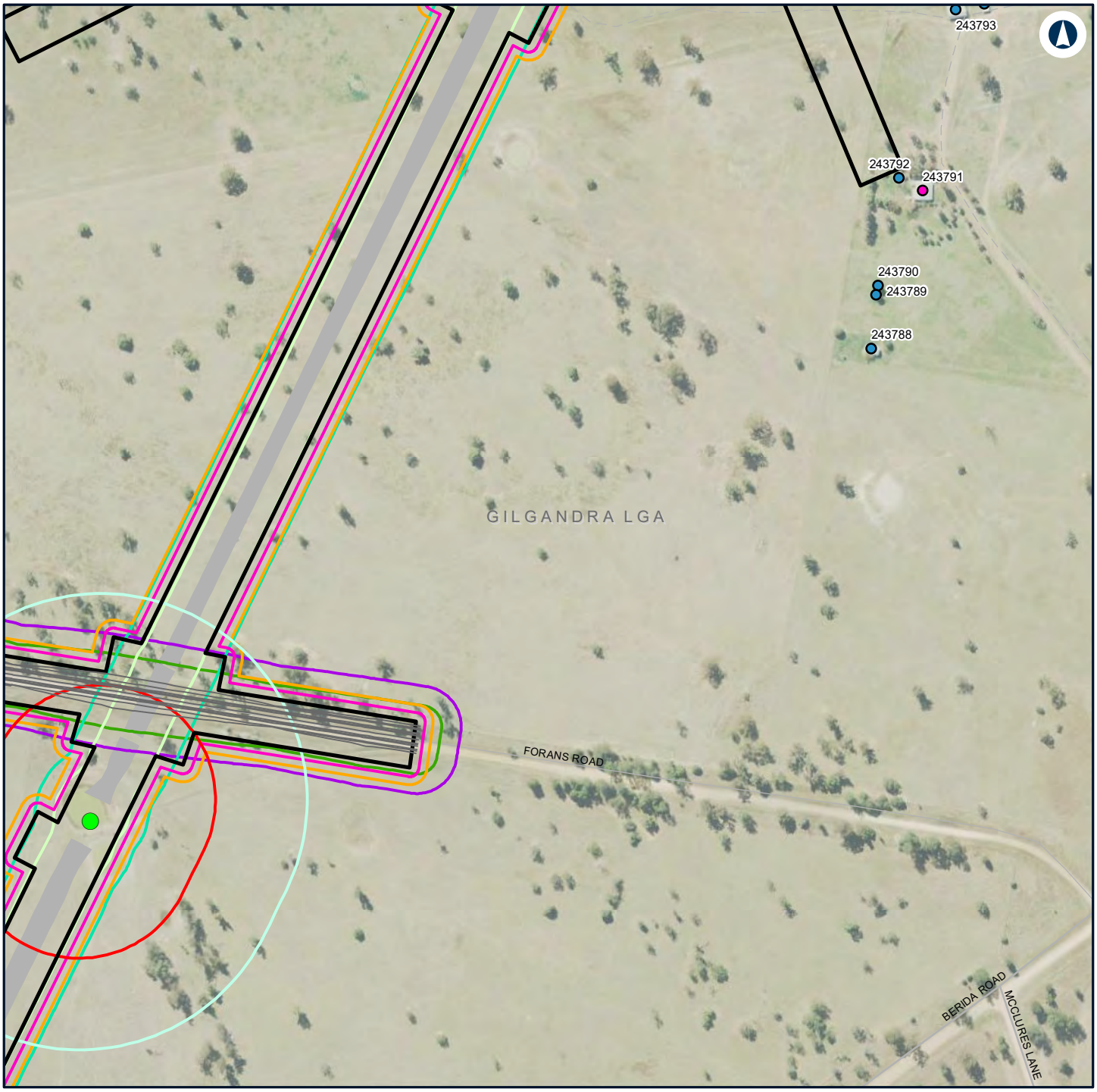

LEGEND

- Bridge centre
- Road design
- Contruction footprint
- Rail earthworks extent
- Bridges (Impact piling) – Heritage structures: 3mm/s, 180m
- Bridges (Impact piling) – Standard buildings: 5mm/s, 100m
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Road earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Road earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 48 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 49 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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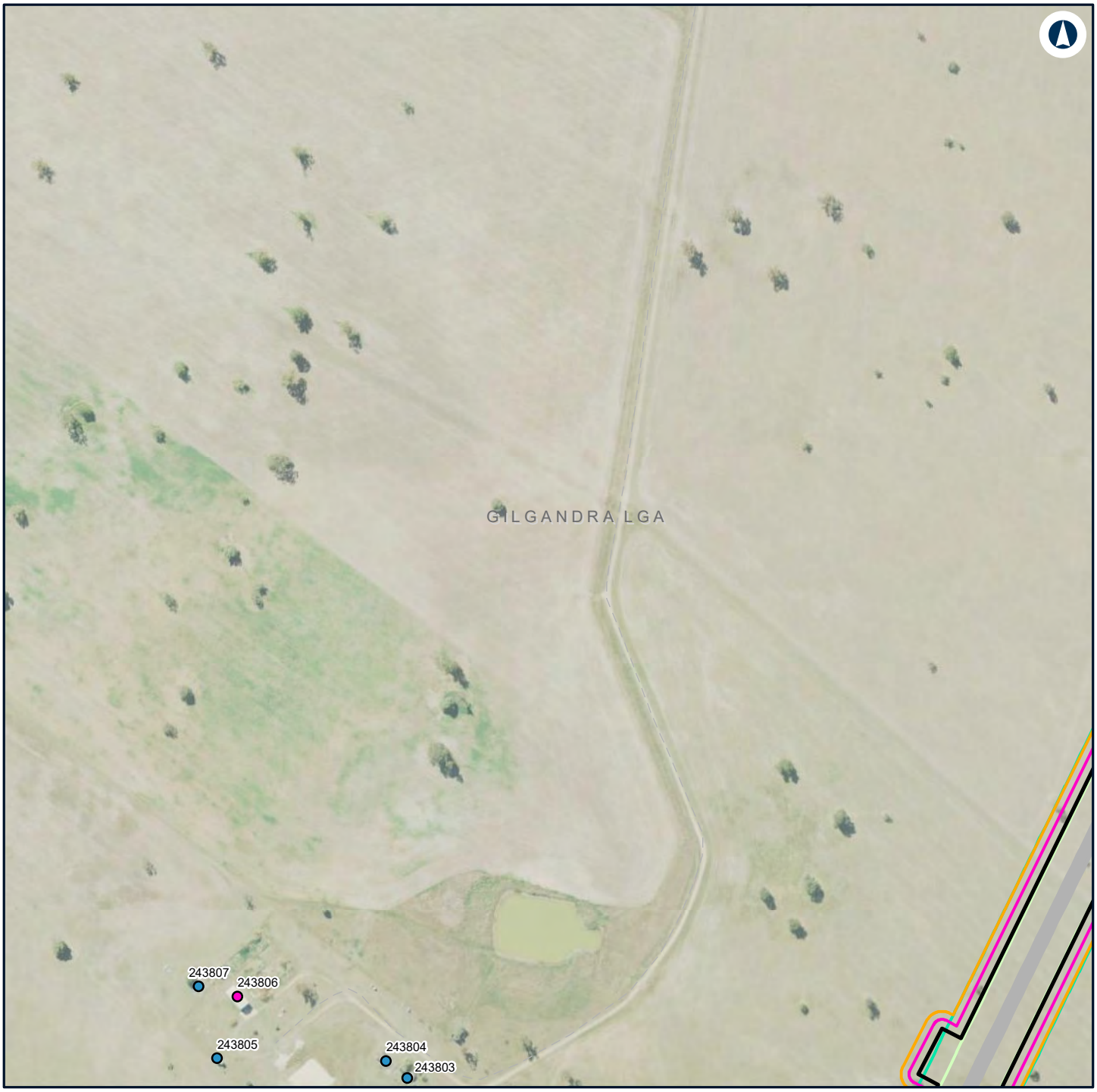

LEGEND

- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 50 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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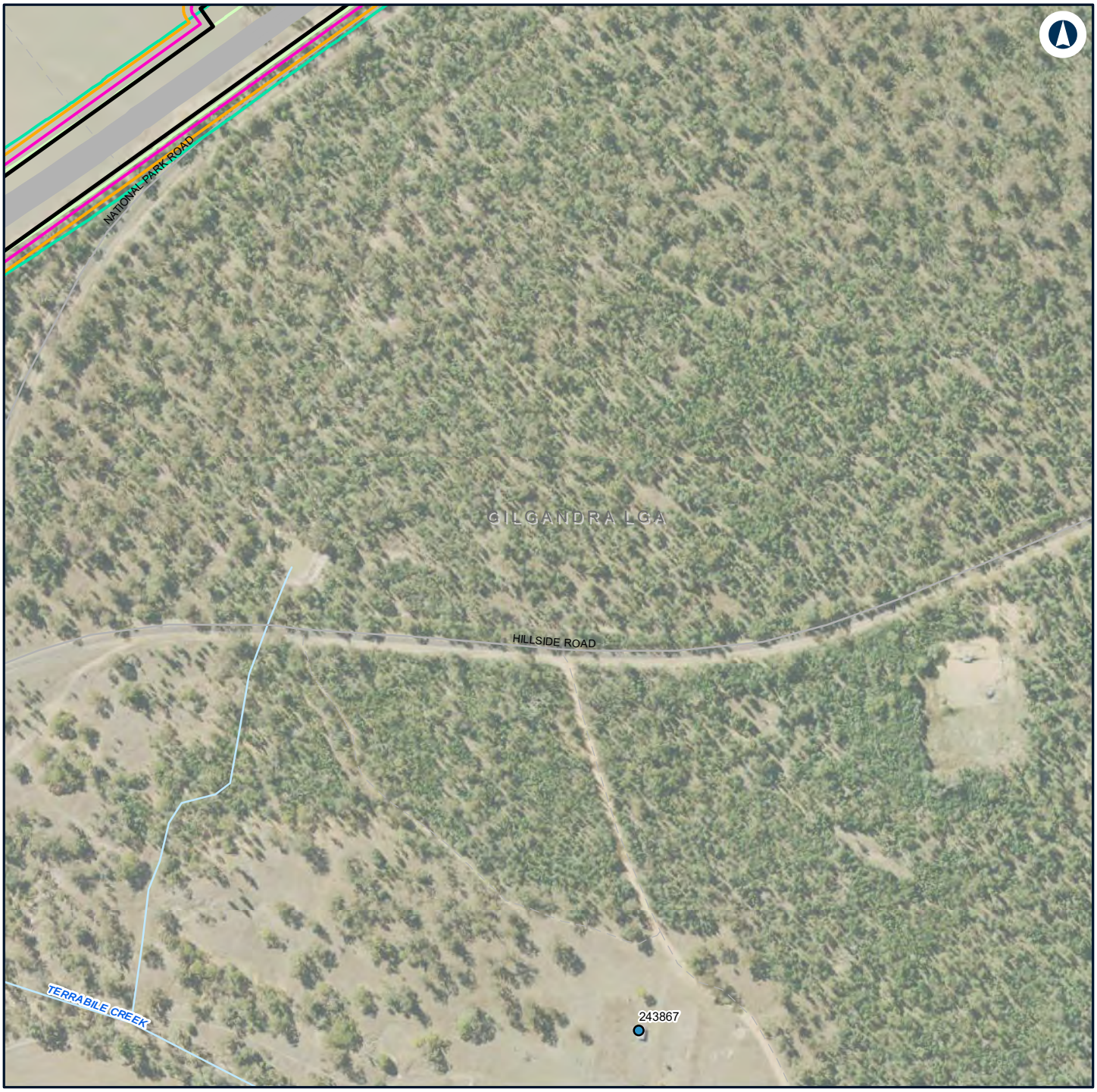

LEGEND

- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Active recreation

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 51 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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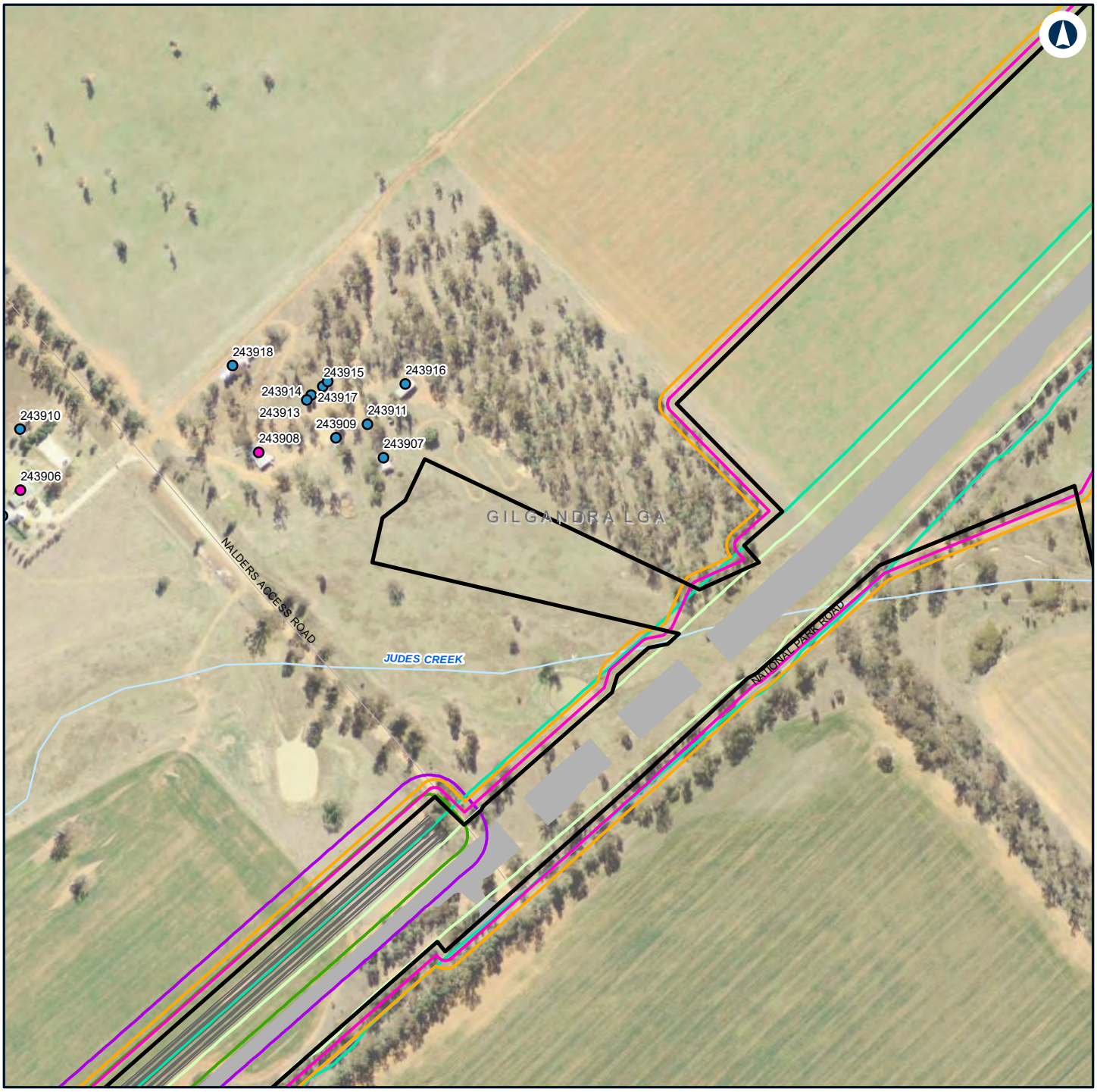

LEGEND

- Road design
- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Road earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Road earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 52 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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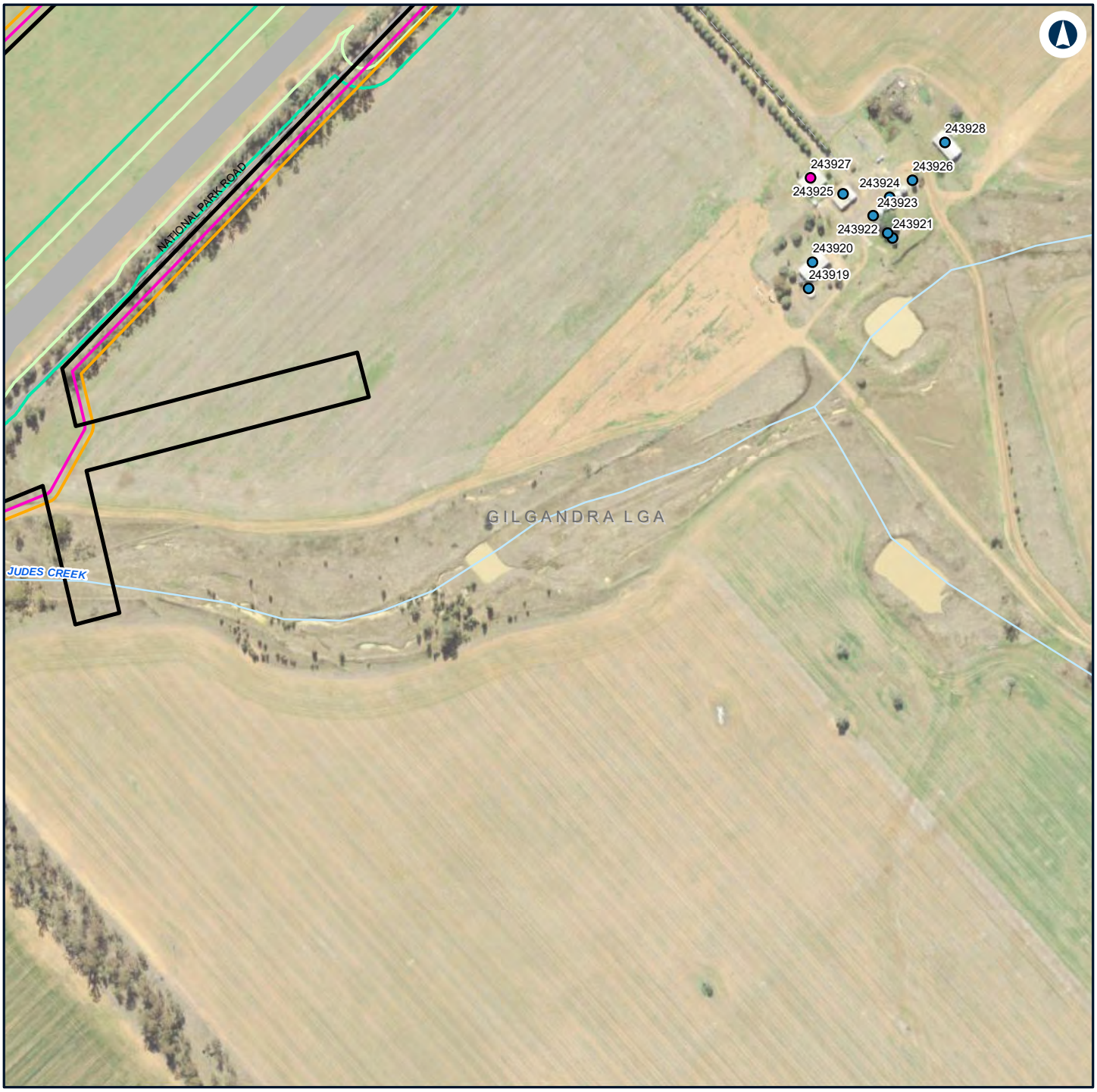

LEGEND

- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 53 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 54 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 55 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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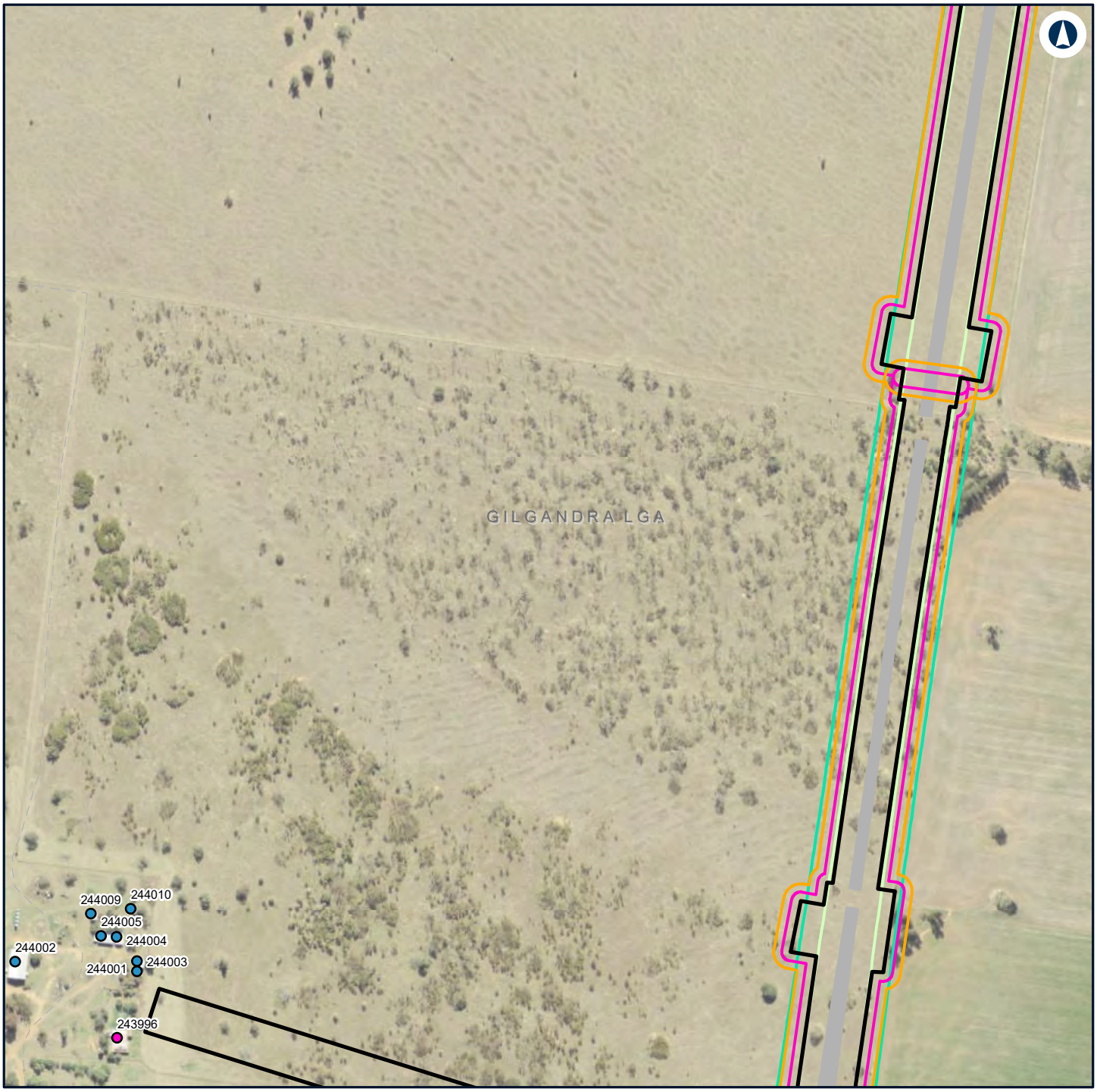

LEGEND

- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 56 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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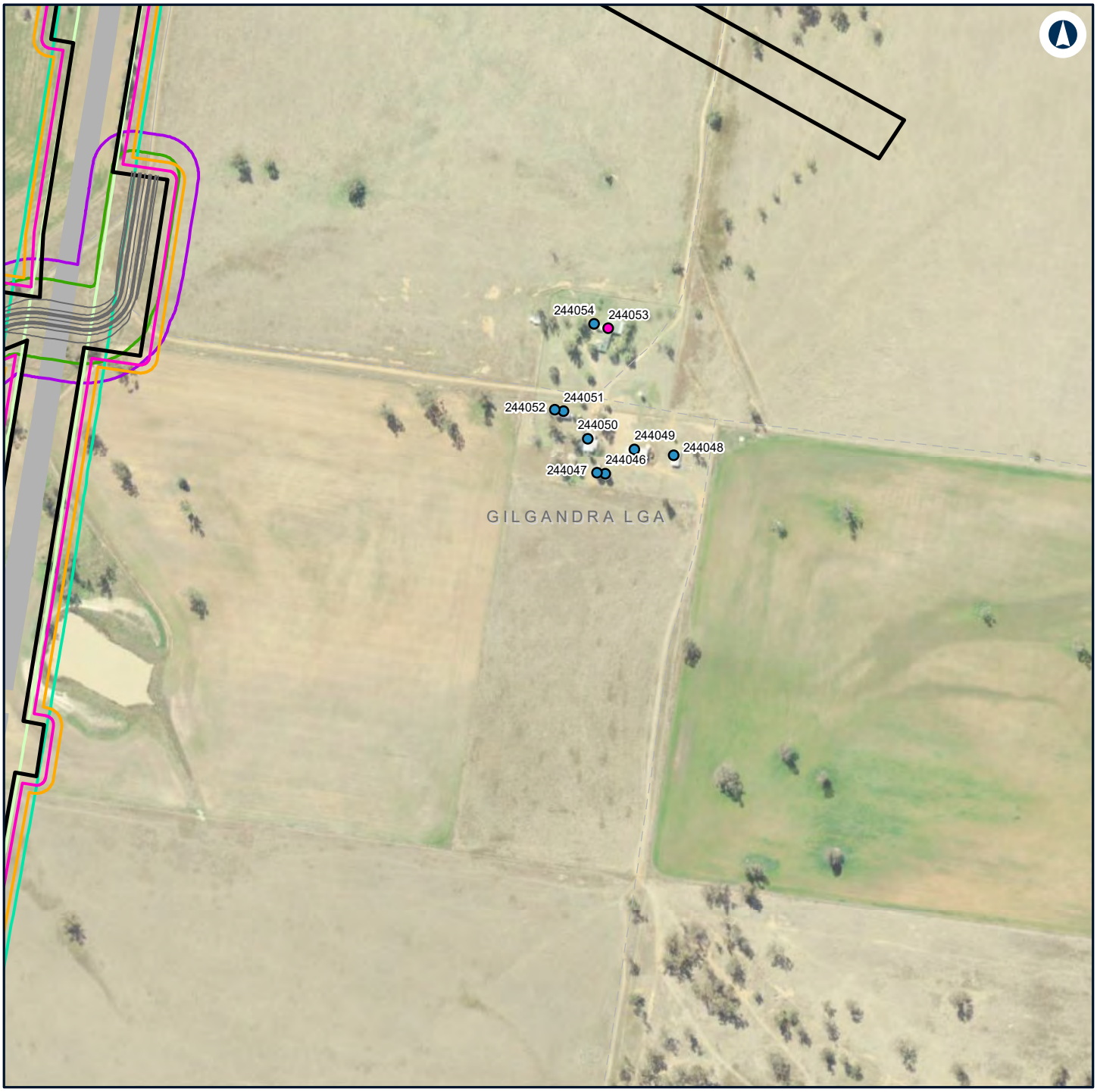

LEGEND

- Road design
- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Road earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Road earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 57 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

- Bridge centre
- Contruction footprint
- Rail earthworks extent
- Bridges (Impact piling) – Heritage structures: 3mm/s, 180m
- Bridges (Impact piling) – Standard buildings: 5mm/s, 100m
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 58 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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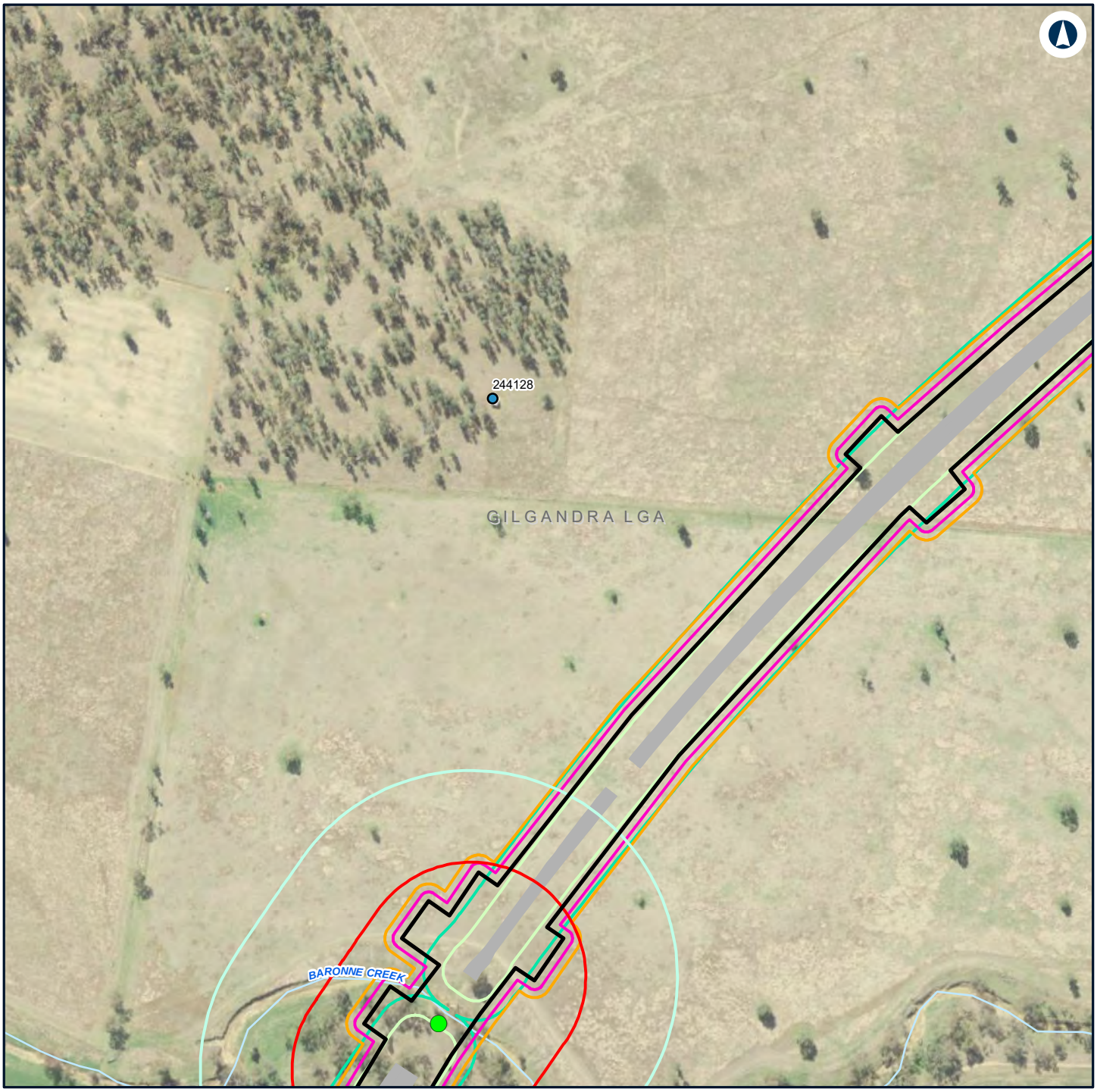

LEGEND

- Bridge centre
- Contruction footprint
- Rail earthworks extent
- Bridges (Impact piling) – Heritage structures: 3mm/s, 180m
- Bridges (Impact piling) – Standard buildings: 5mm/s, 100m
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 59 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

- Road design
- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Road earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Road earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 60 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

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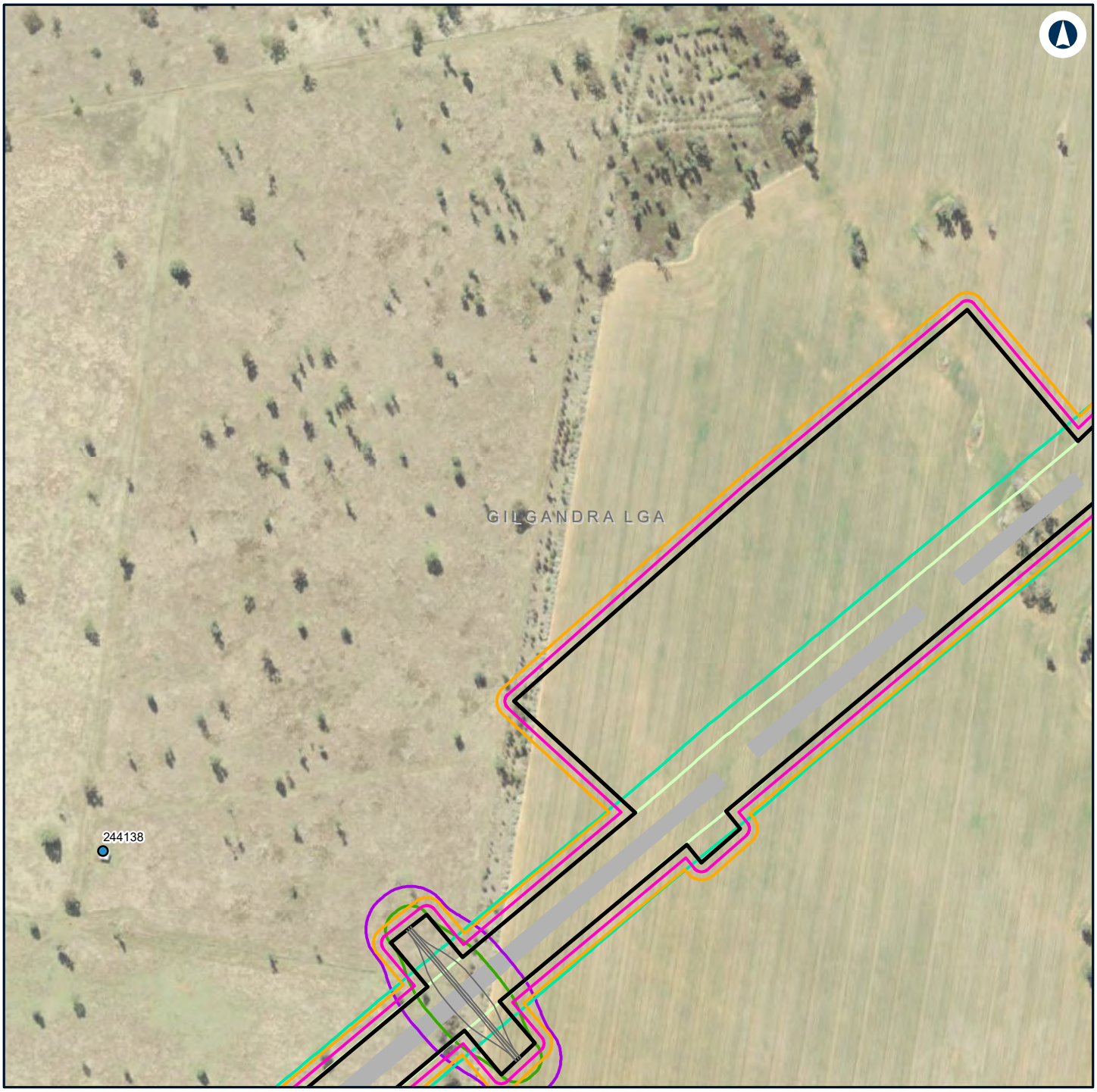

LEGEND

- Road design
- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Road earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Road earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 61 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
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Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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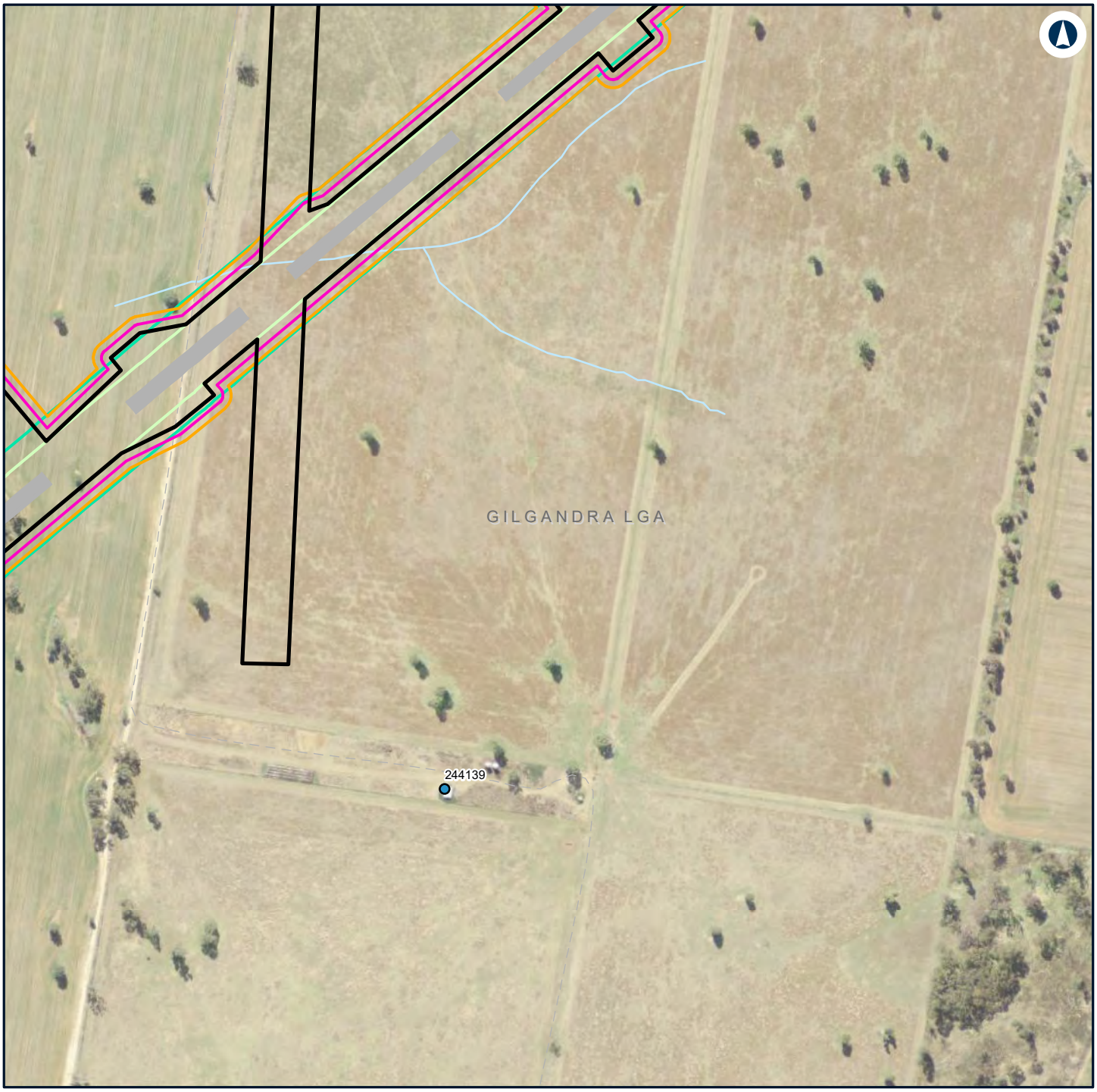

LEGEND

- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 62 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

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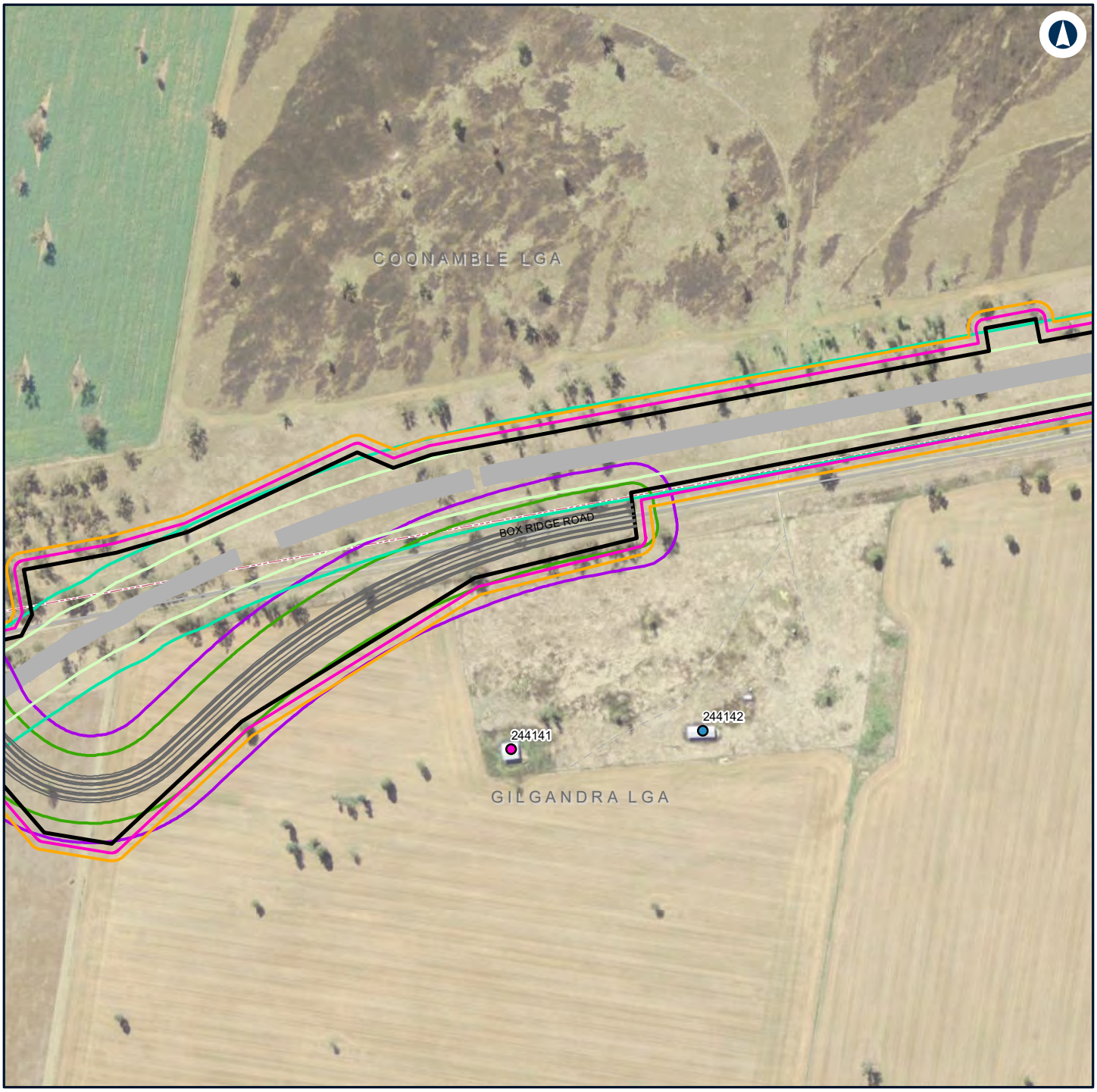

LEGEND

- Road design
- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Road earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Road earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 63 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

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LEGEND

- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 64 OF 113

0 0.1 0.2 Km

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LEGEND

- Road design
- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Road earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Road earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 65 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

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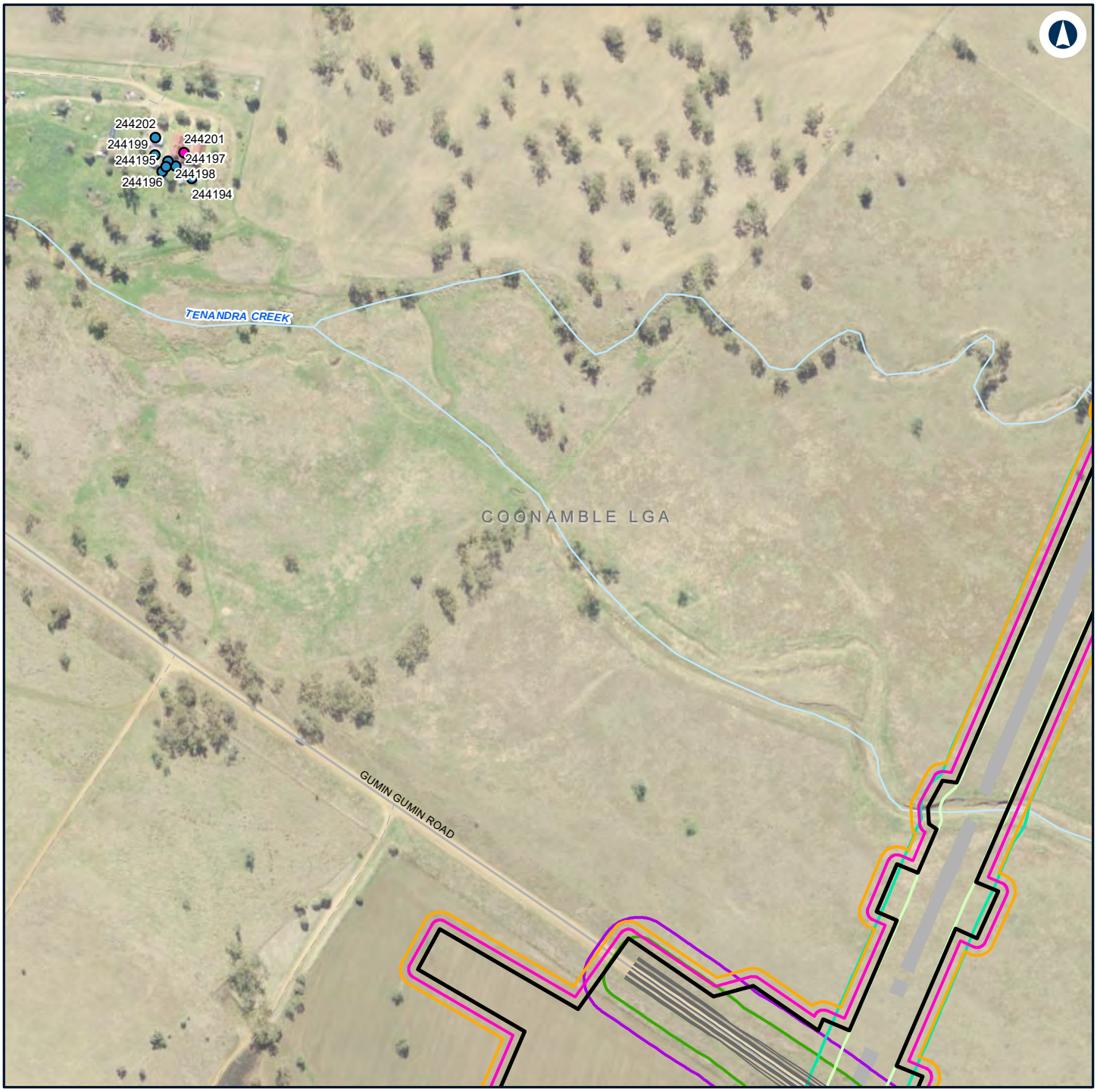

LEGEND

- Road design
- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Road earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Road earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 66 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

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Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 67 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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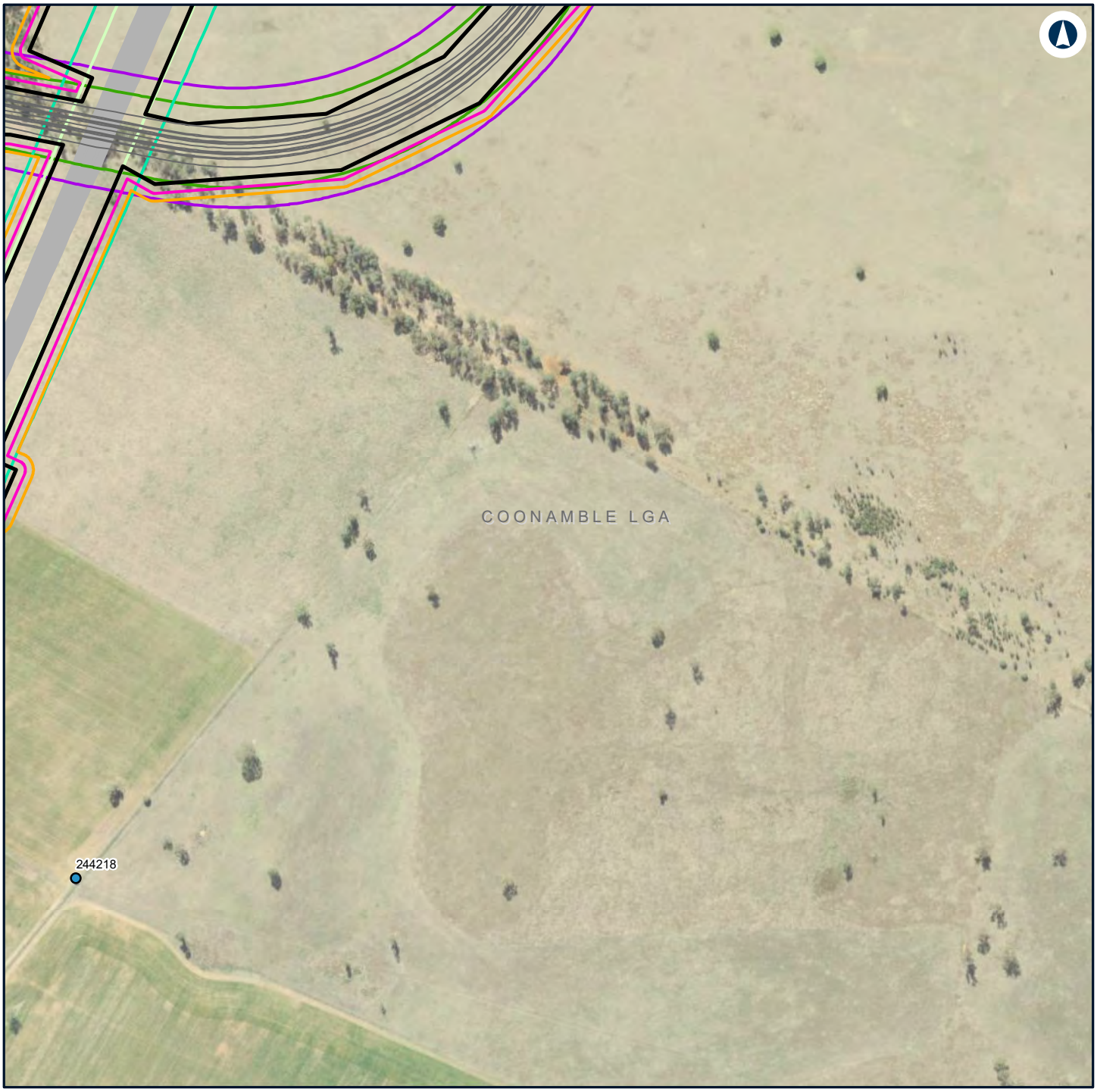

LEGEND

- Road design
- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Road earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Road earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 68 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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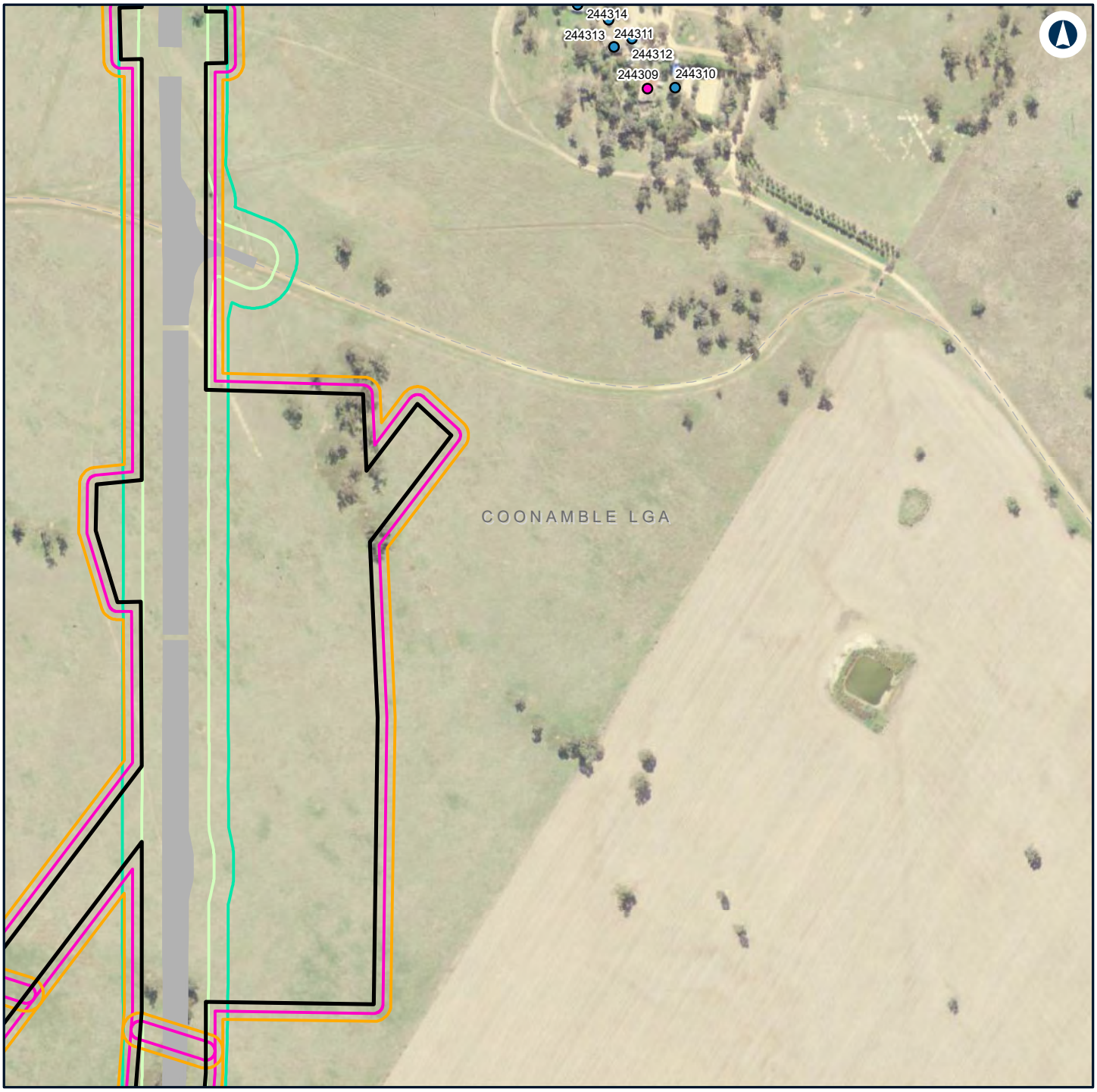

LEGEND

- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 69 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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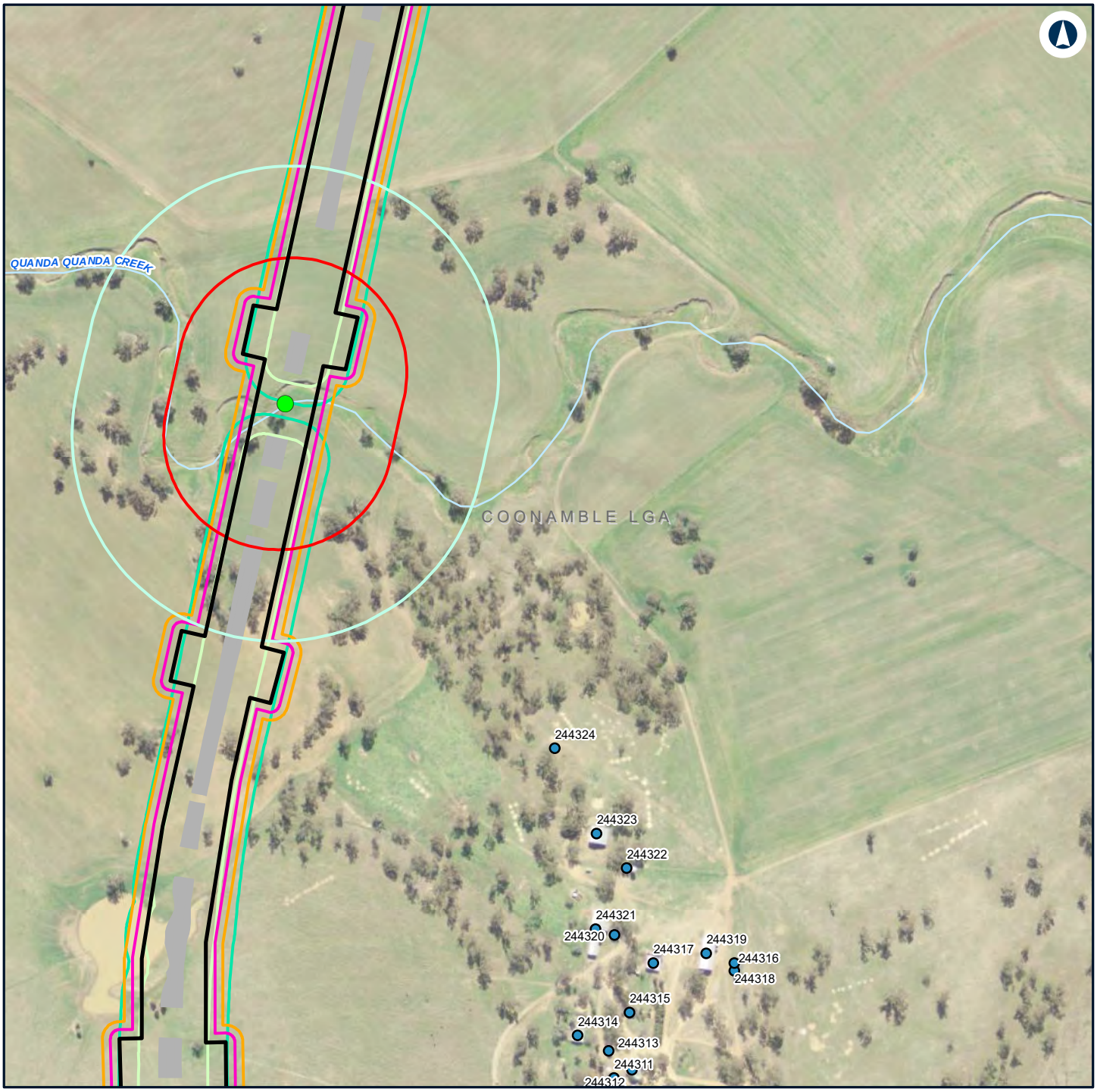

LEGEND

- Bridge centre
- Contruction footprint
- Rail earthworks extent
- Bridges (Impact piling) – Heritage structures: 3mm/s, 180m
- Bridges (Impact piling) – Standard buildings: 5mm/s, 100m
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 70 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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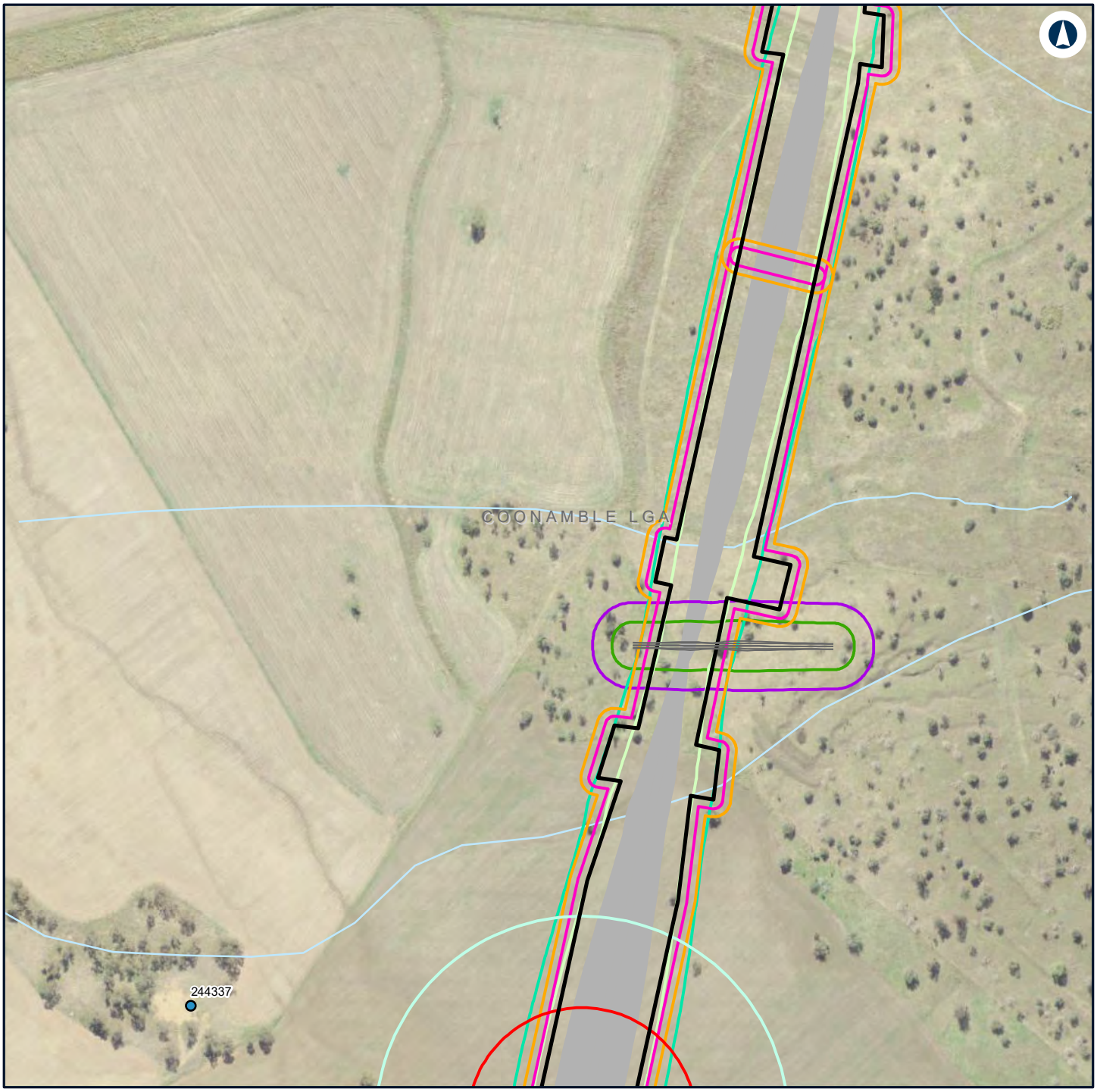

LEGEND

- Road design
- Contruction footprint
- Rail earthworks extent
- Bridges (Impact piling) – Heritage structures: 3mm/s, 180m
- Bridges (Impact piling) – Standard buildings: 5mm/s, 100m
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Road earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Road earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 71 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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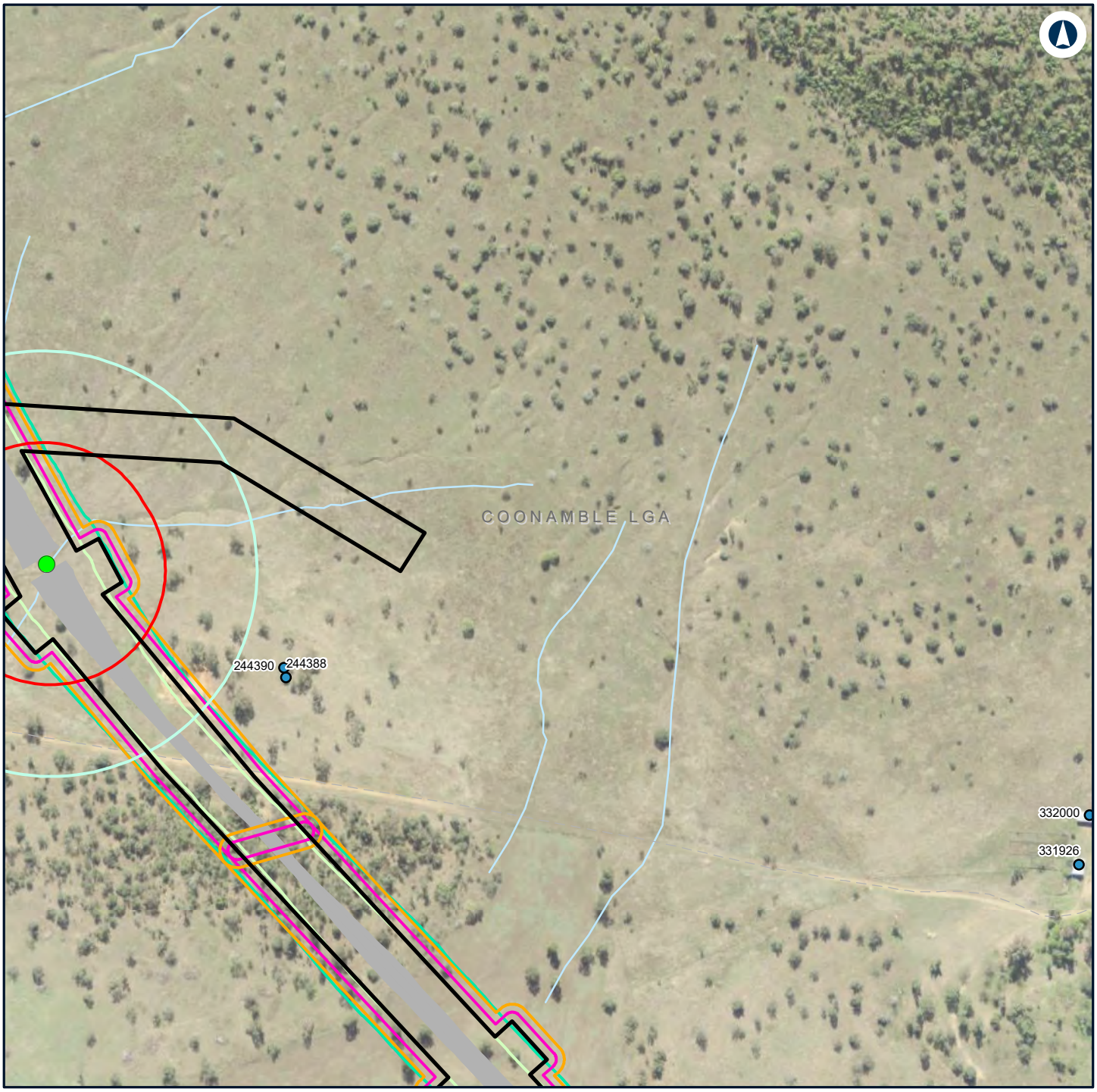

LEGEND

- Bridge centre
- Contruction footprint
- Rail earthworks extent
- Bridges (Impact piling) – Heritage structures: 3mm/s, 180m
- Bridges (Impact piling) – Standard buildings: 5mm/s, 100m
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 72 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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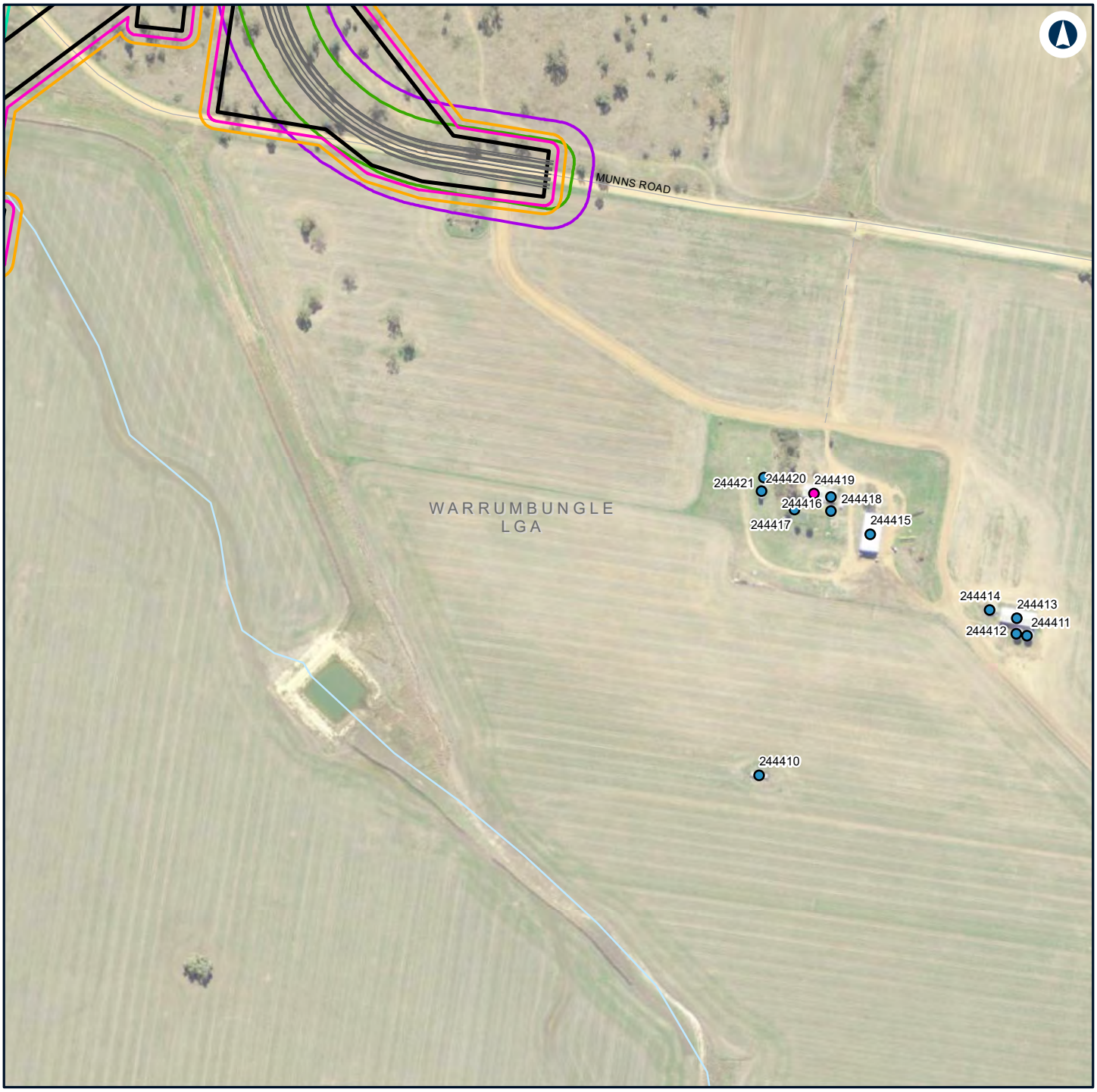

LEGEND

- Road design
- Contruction footprint
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Road earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Road earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 73 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

- Road design
- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Road earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Road earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 74 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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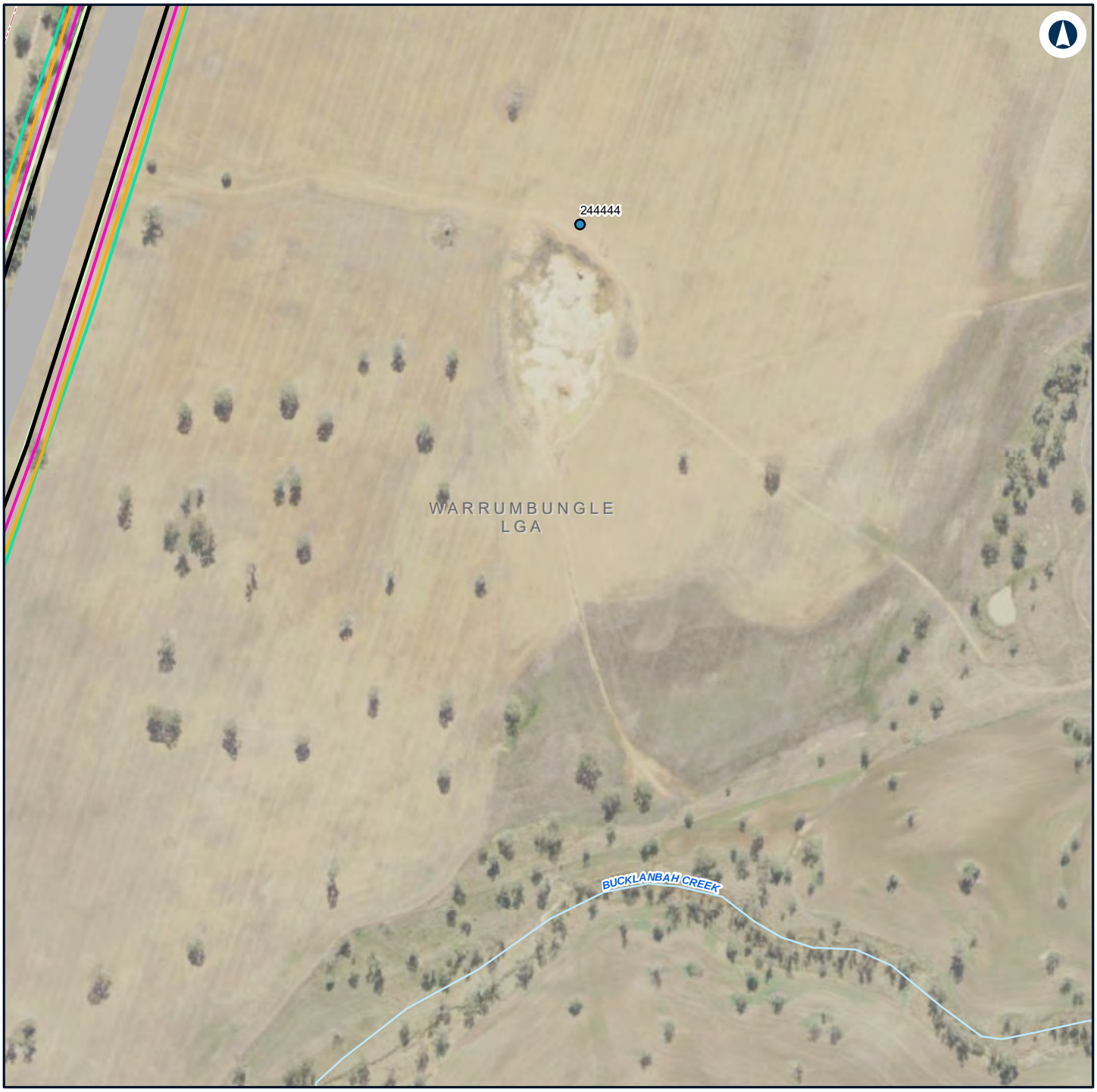

LEGEND

- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 75 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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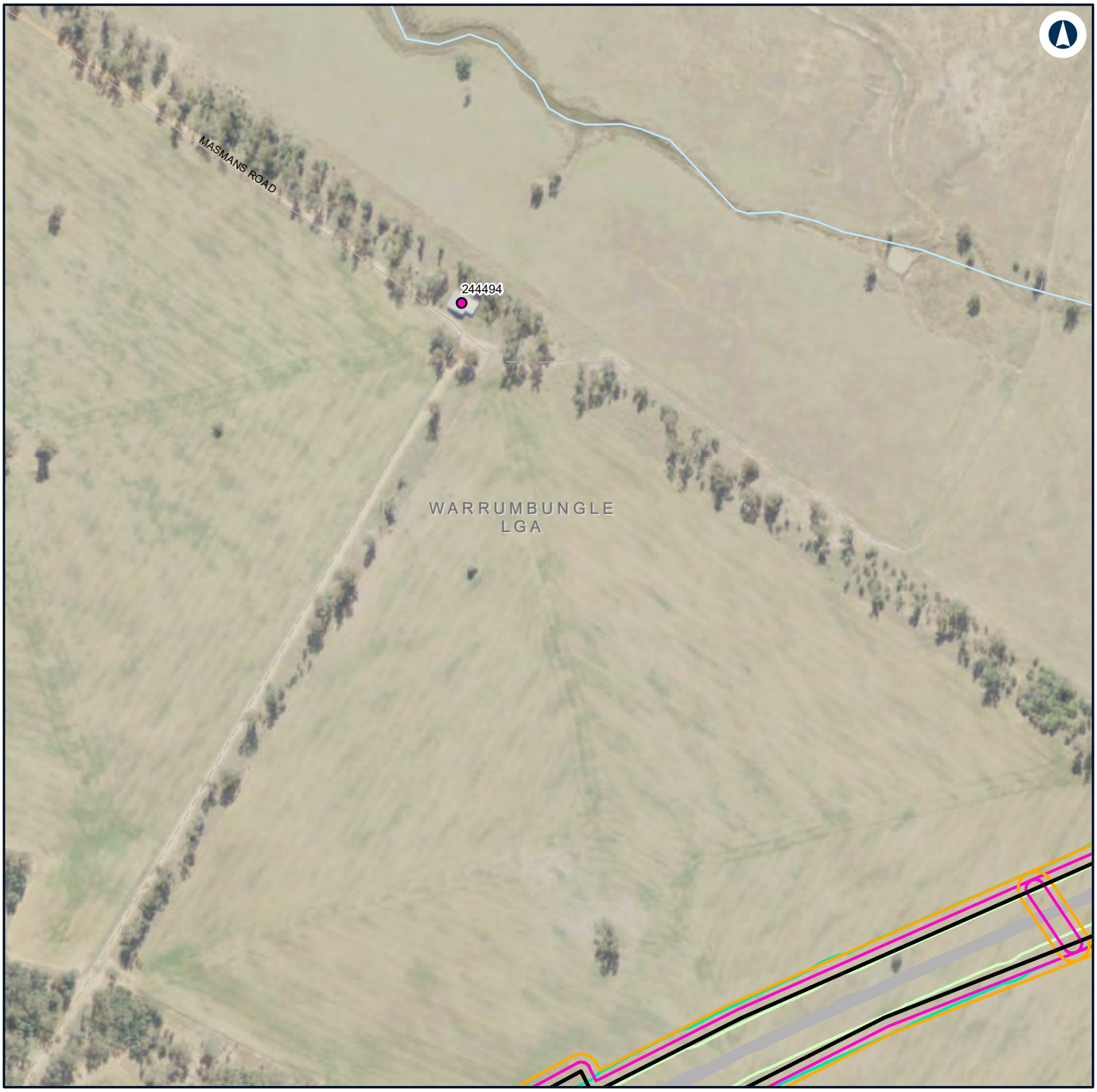

LEGEND

- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 76 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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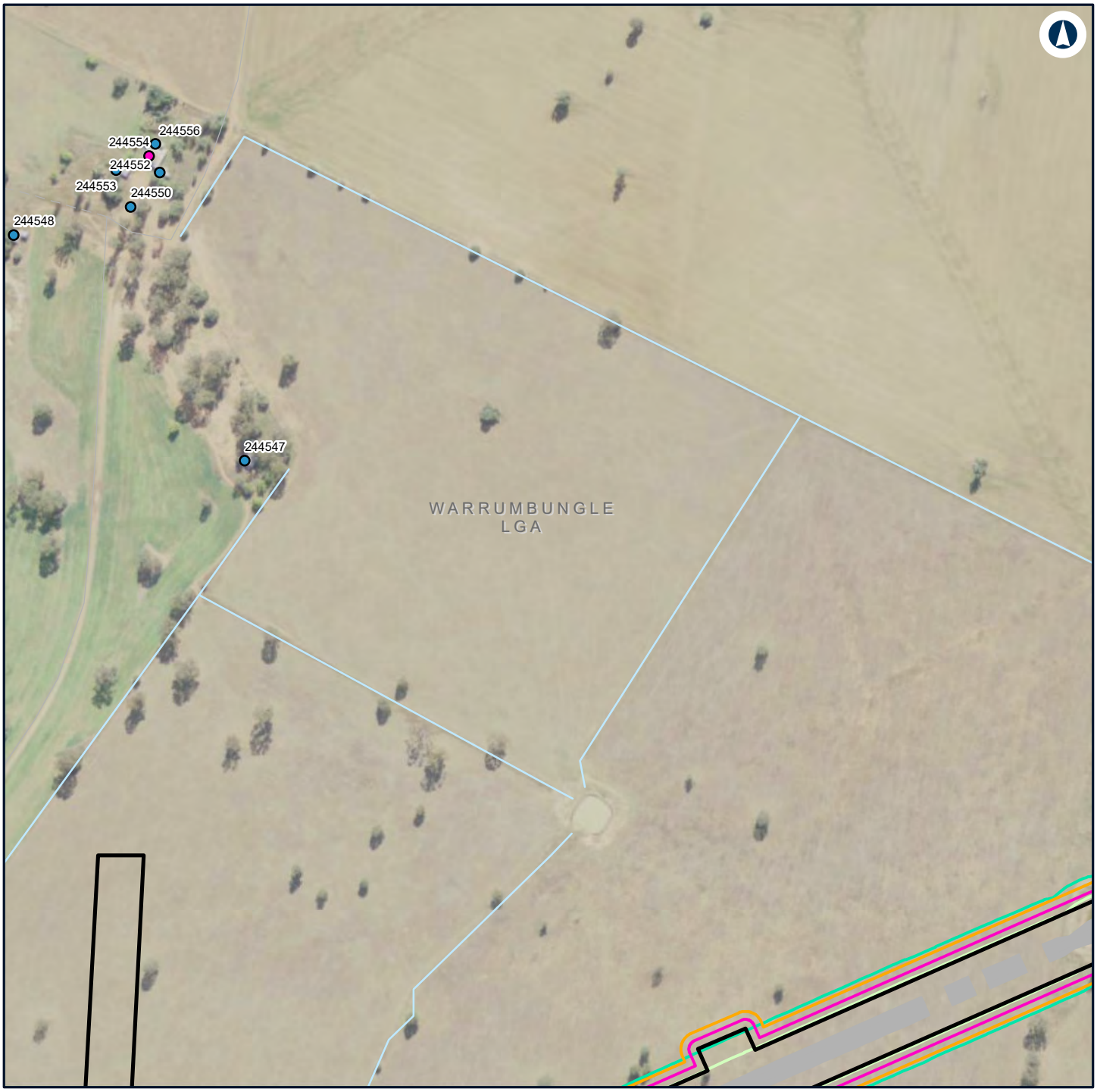

LEGEND

- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 77 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 78 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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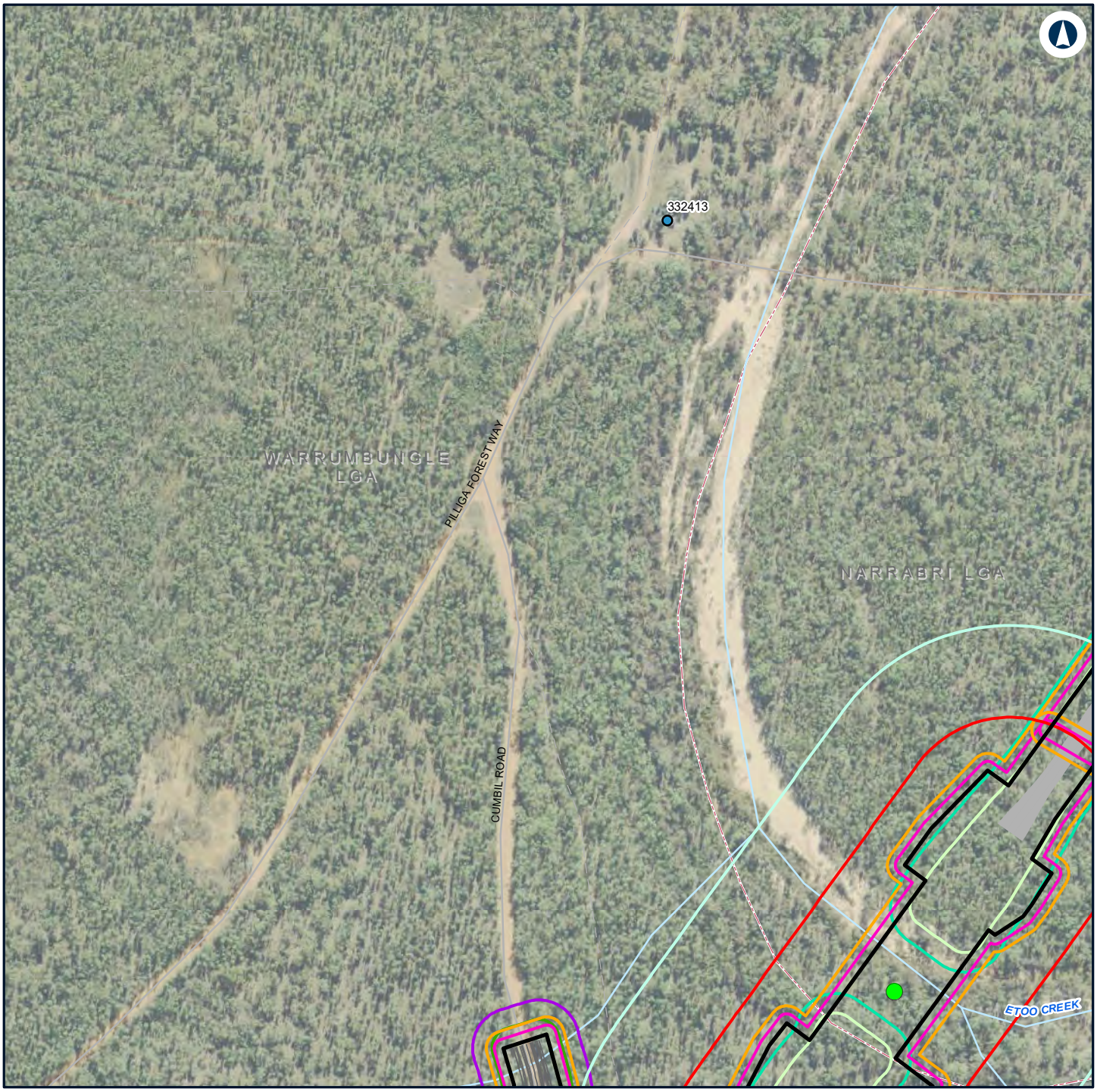

LEGEND

- Bridge centre
- Road design
- Contruction footprint
- Rail earthworks extent
- Bridges (Impact piling) – Heritage structures: 3mm/s, 180m
- Bridges (Impact piling) – Standard buildings: 5mm/s, 100m
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Road earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Road earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 79 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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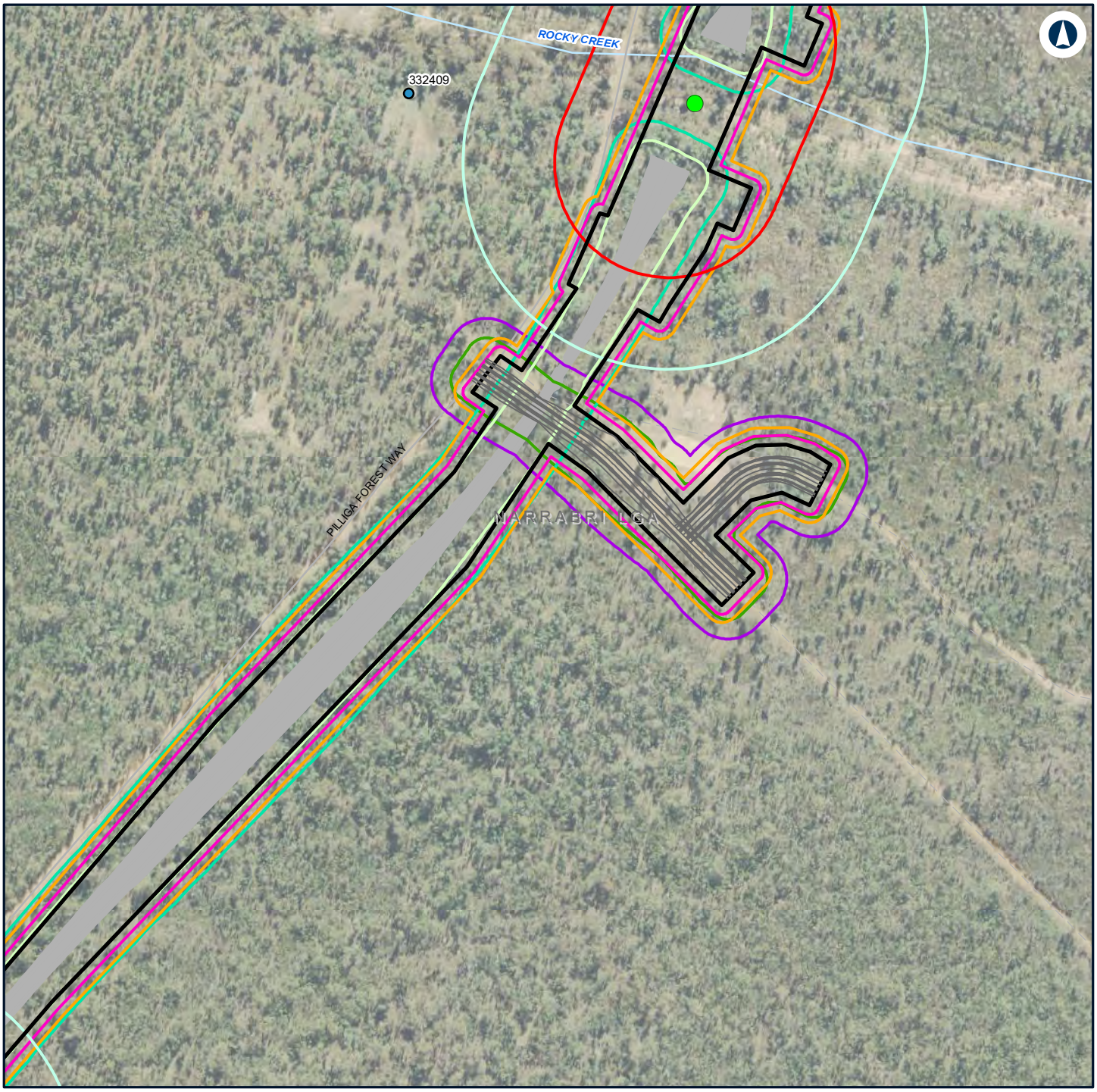

LEGEND

- Bridge centre
- Road design
- Contruction footprint
- Rail earthworks extent
- Bridges (Impact piling) – Heritage structures: 3mm/s, 180m
- Bridges (Impact piling) – Standard buildings: 5mm/s, 100m
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Road earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Road earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 80 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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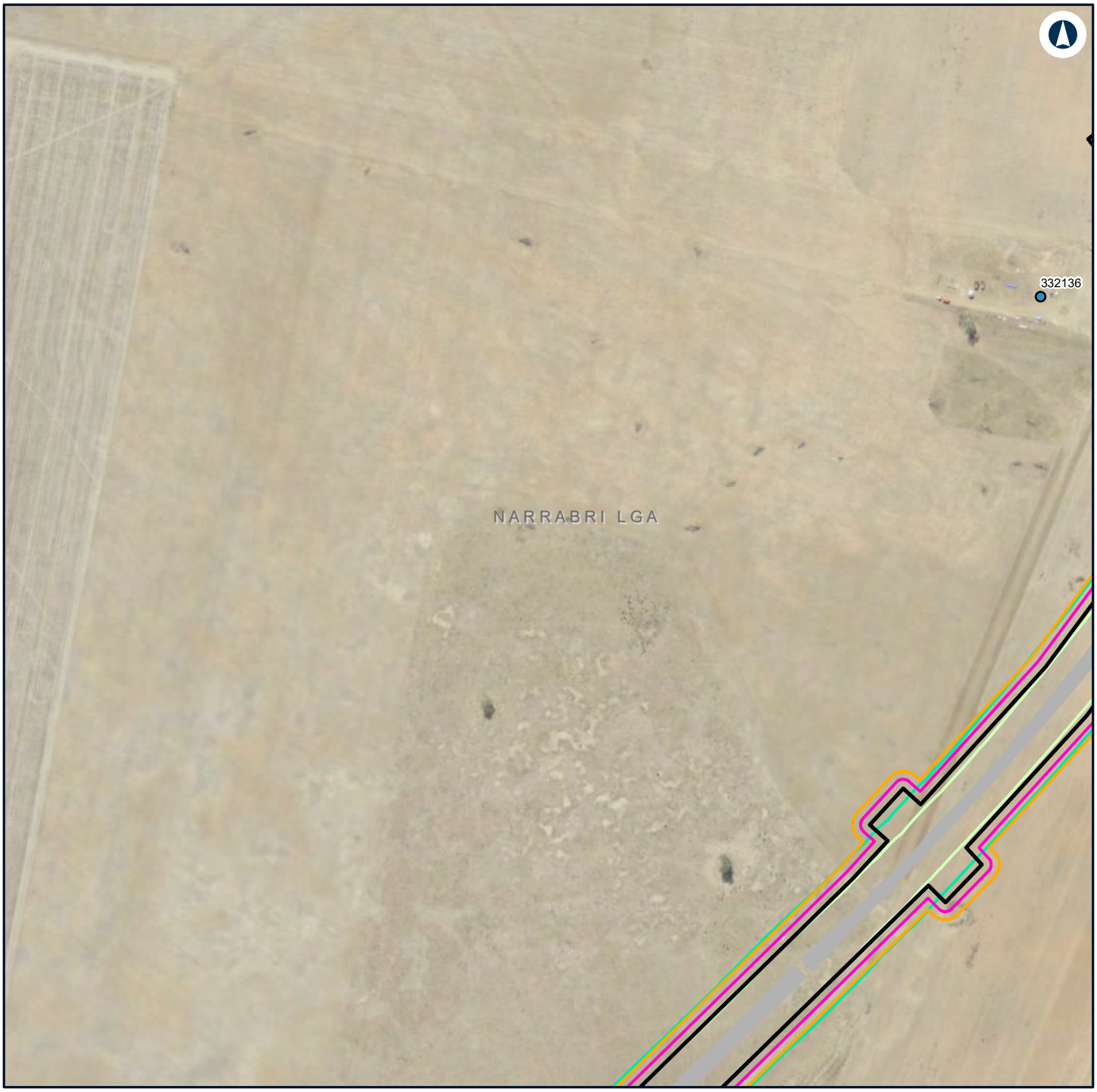

LEGEND

- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 81 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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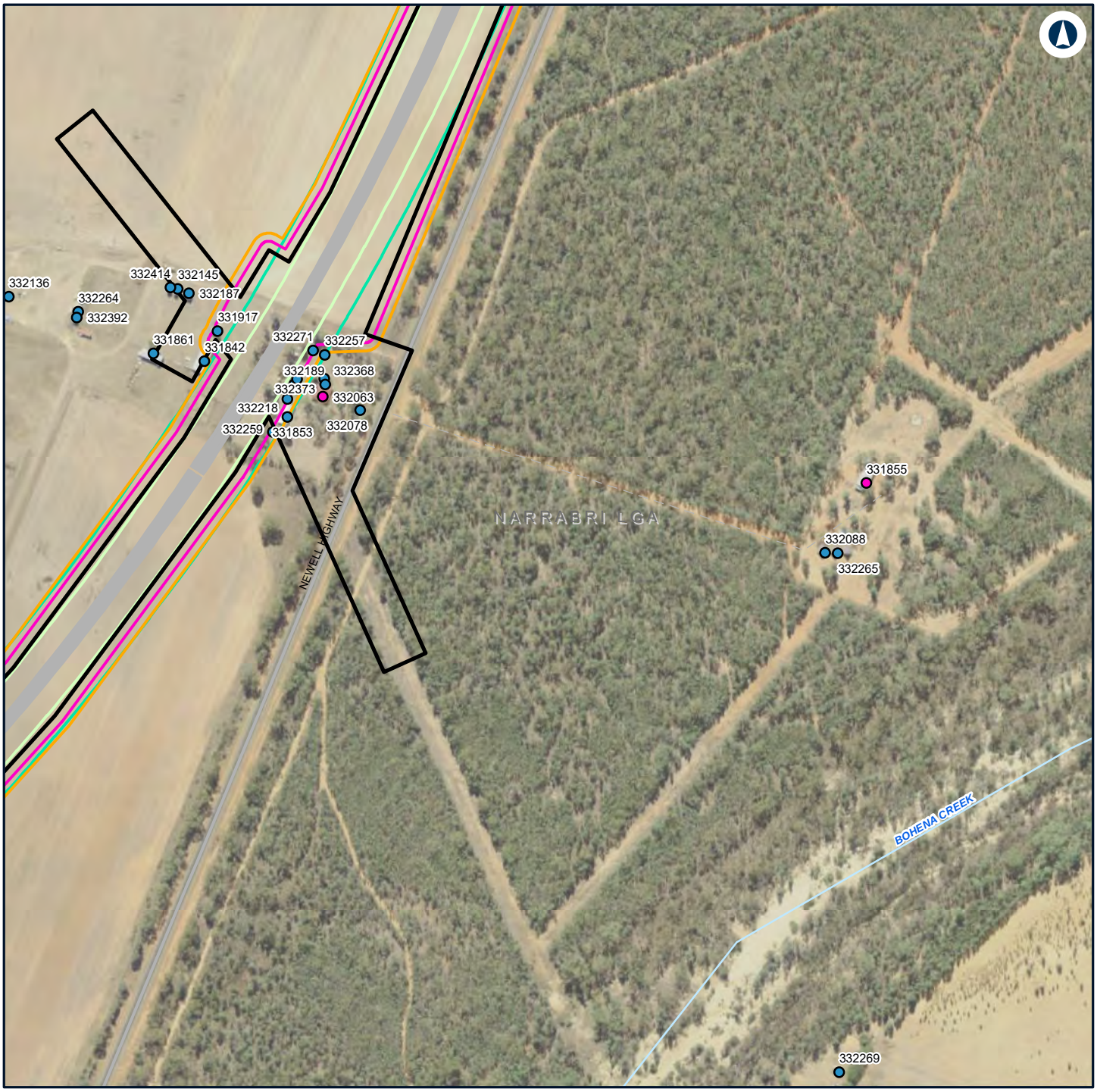

LEGEND

- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 82 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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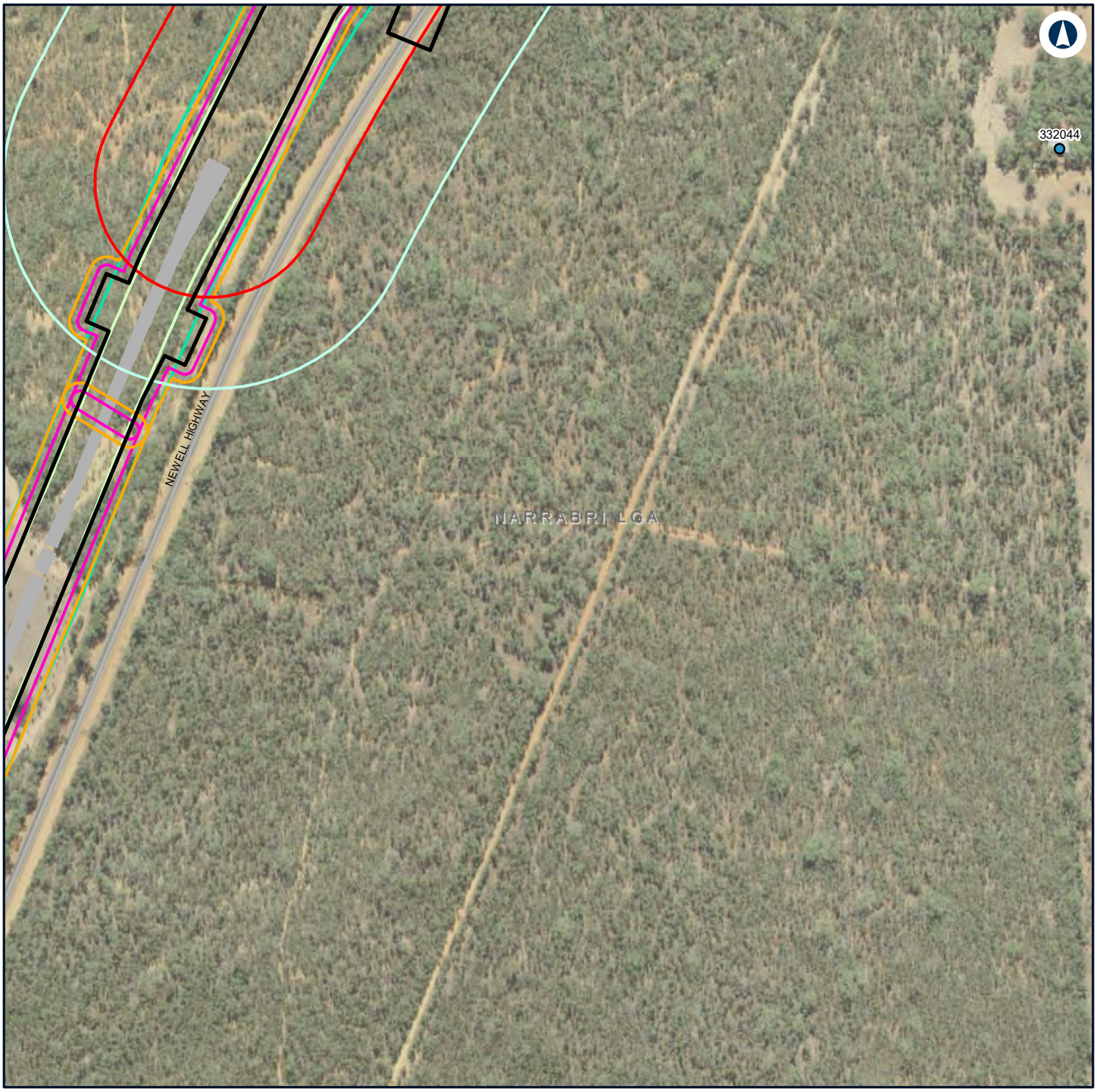

LEGEND

- Contruction footprint
- Rail earthworks extent
- Bridges (Impact piling) – Heritage structures: 3mm/s, 180m
- Bridges (Impact piling) – Standard buildings: 5mm/s, 100m
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 83 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

- Contruction footprint
- Bridges (Impact piling) – Heritage structures: 3mm/s, 180m
- Bridges (Impact piling) – Standard buildings: 5mm/s, 100m
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 84 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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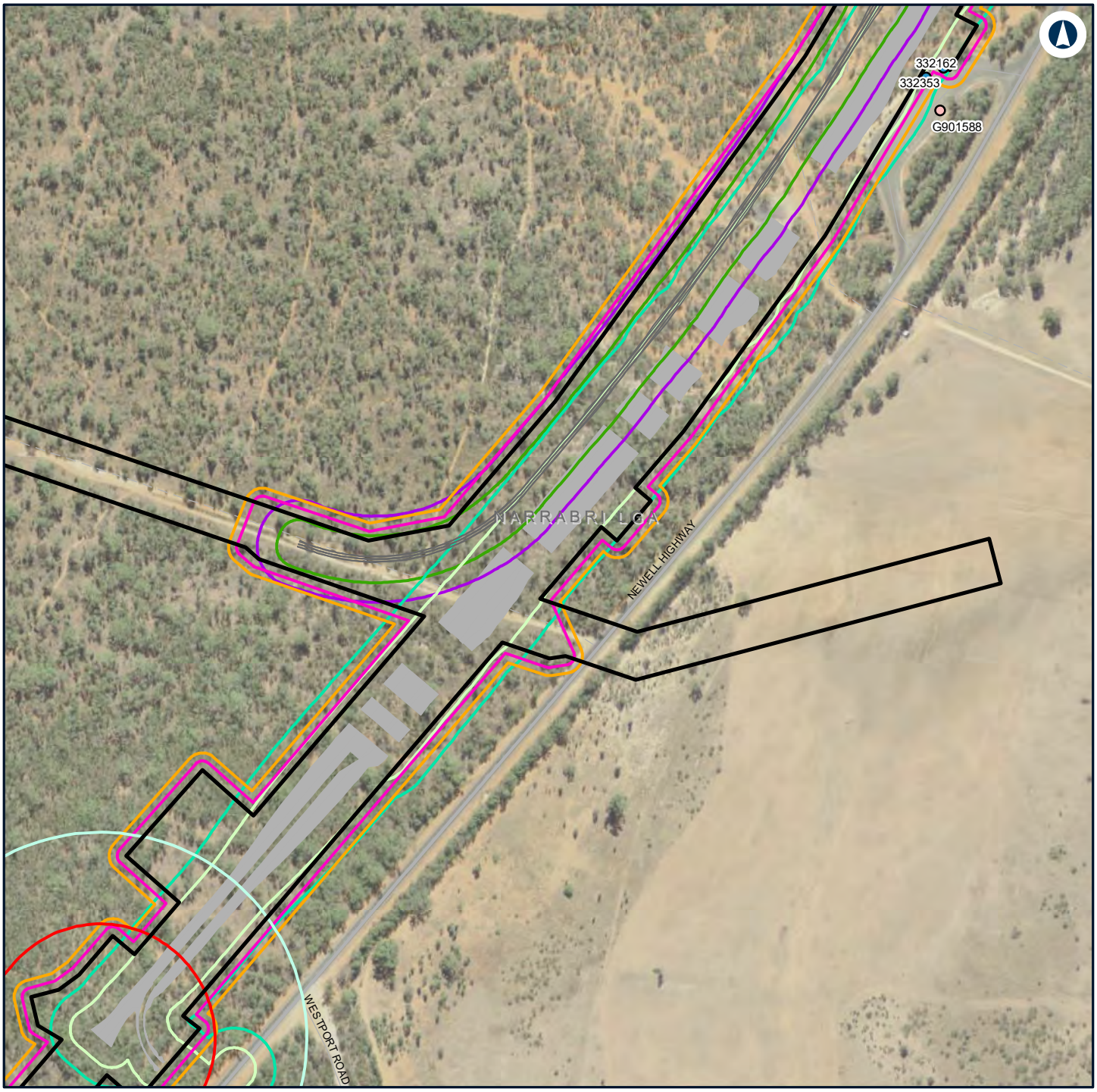

LEGEND

- Road design
- Contruction footprint
- Rail earthworks extent
- Bridges (Impact piling) – Heritage structures: 3mm/s, 180m
- Bridges (Impact piling) – Standard buildings: 5mm/s, 100m
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Road earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Road earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other
- Passive recreation

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 85 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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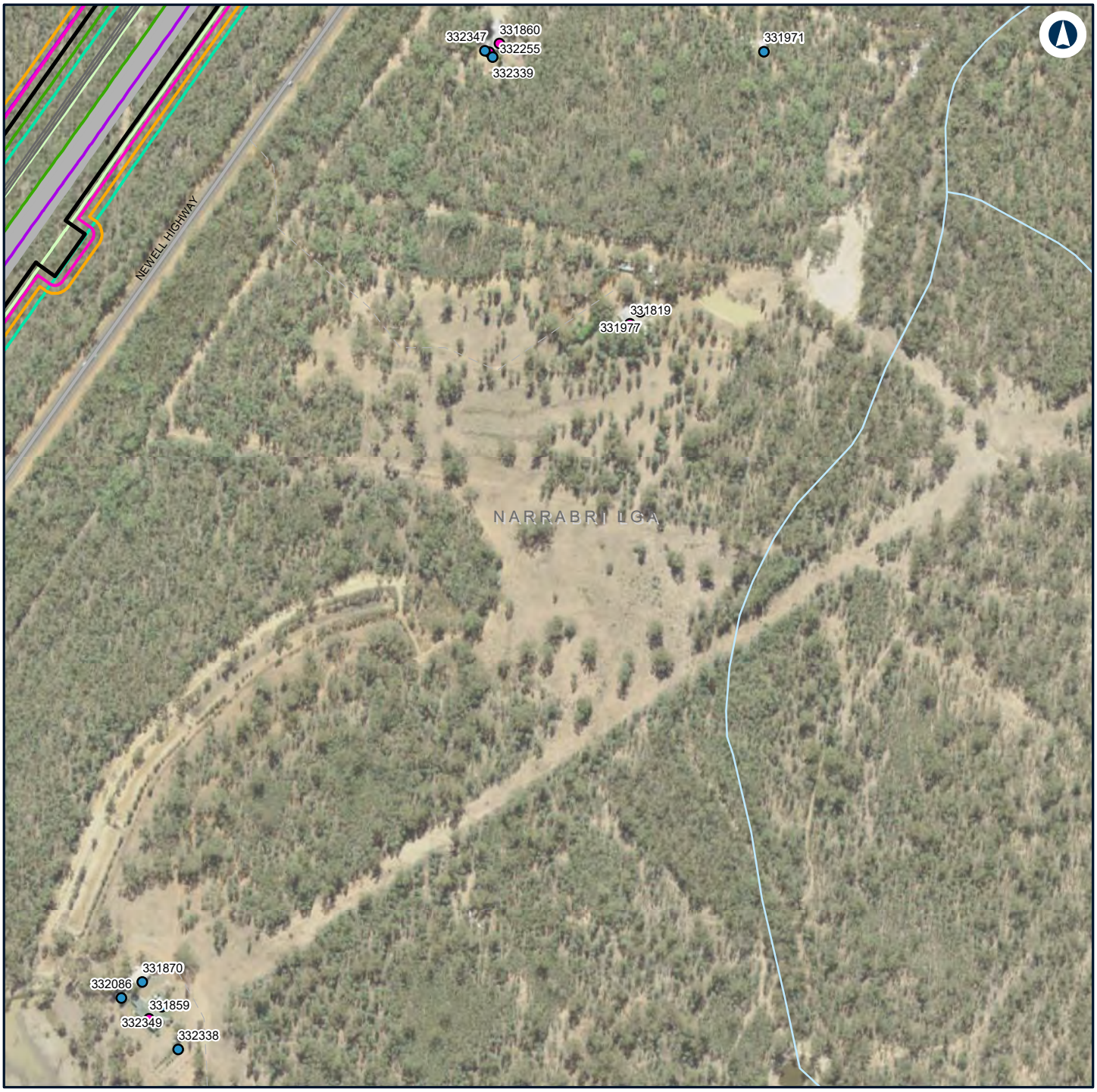

LEGEND

- Road design
- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Road earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Road earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 86 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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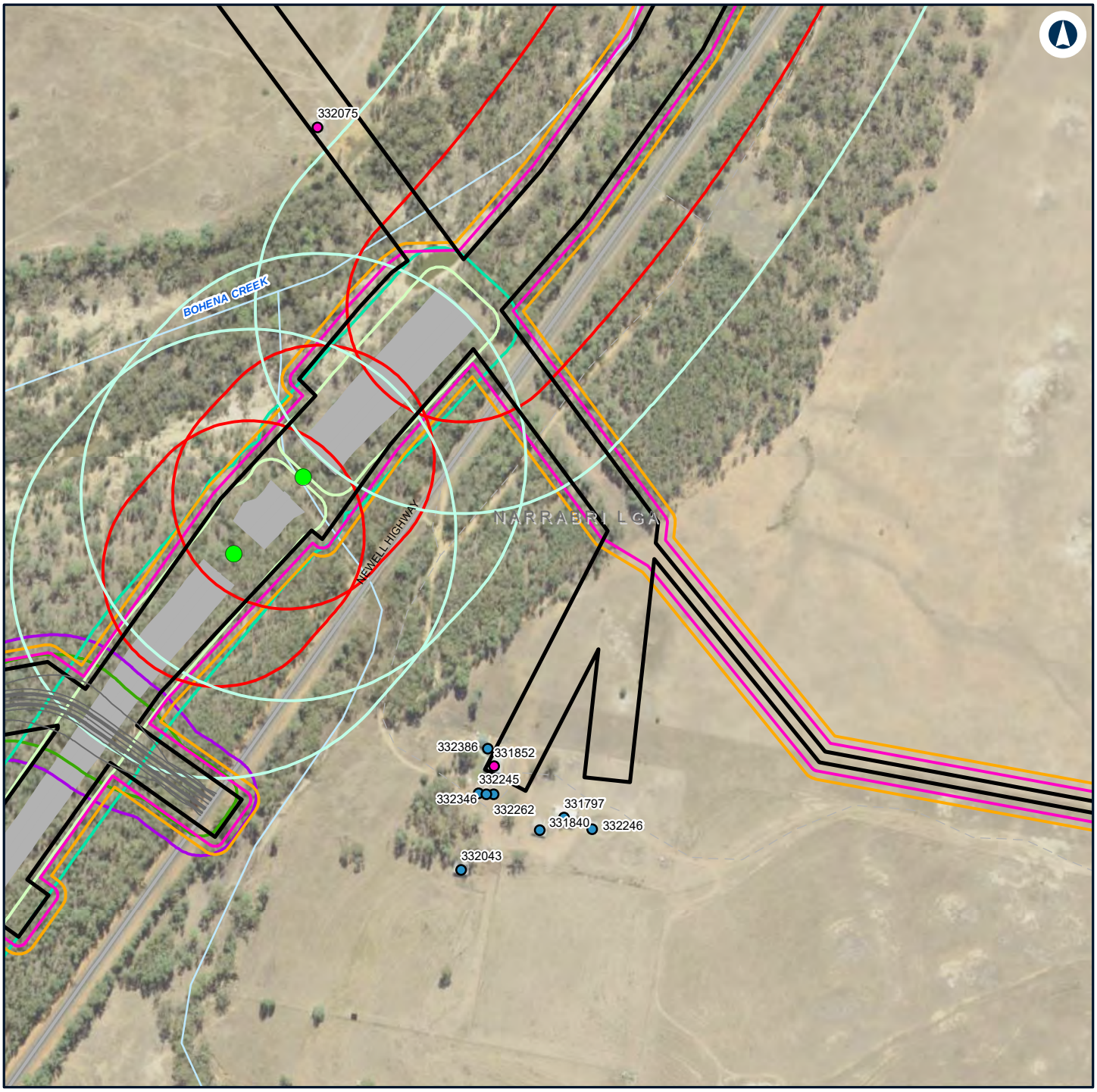

LEGEND

- Bridge centre
- Road design
- Contruction footprint
- Rail earthworks extent
- Bridges (Impact piling) – Heritage structures: 3mm/s, 180m
- Bridges (Impact piling) – Standard buildings: 5mm/s, 100m
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Road earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Road earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 87 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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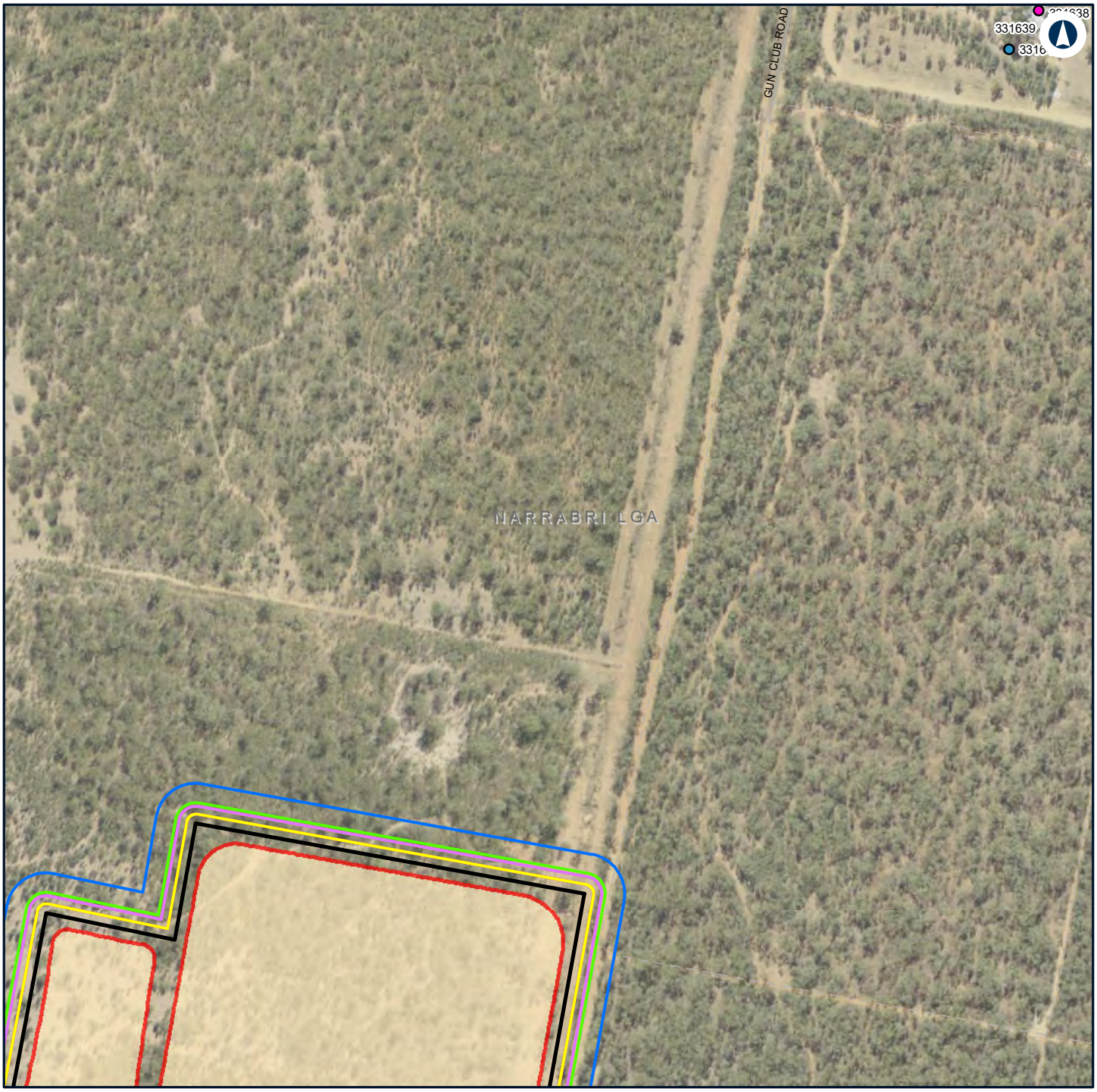

LEGEND

- Contruction footprint
- Borrow pits (Dozer) – Heritage structures: 3mm/s, 15m
- Borrow pits (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Borrow pits (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Borrow pits (Dozer) – Standard buildings: 5mm/s, 8m
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 88 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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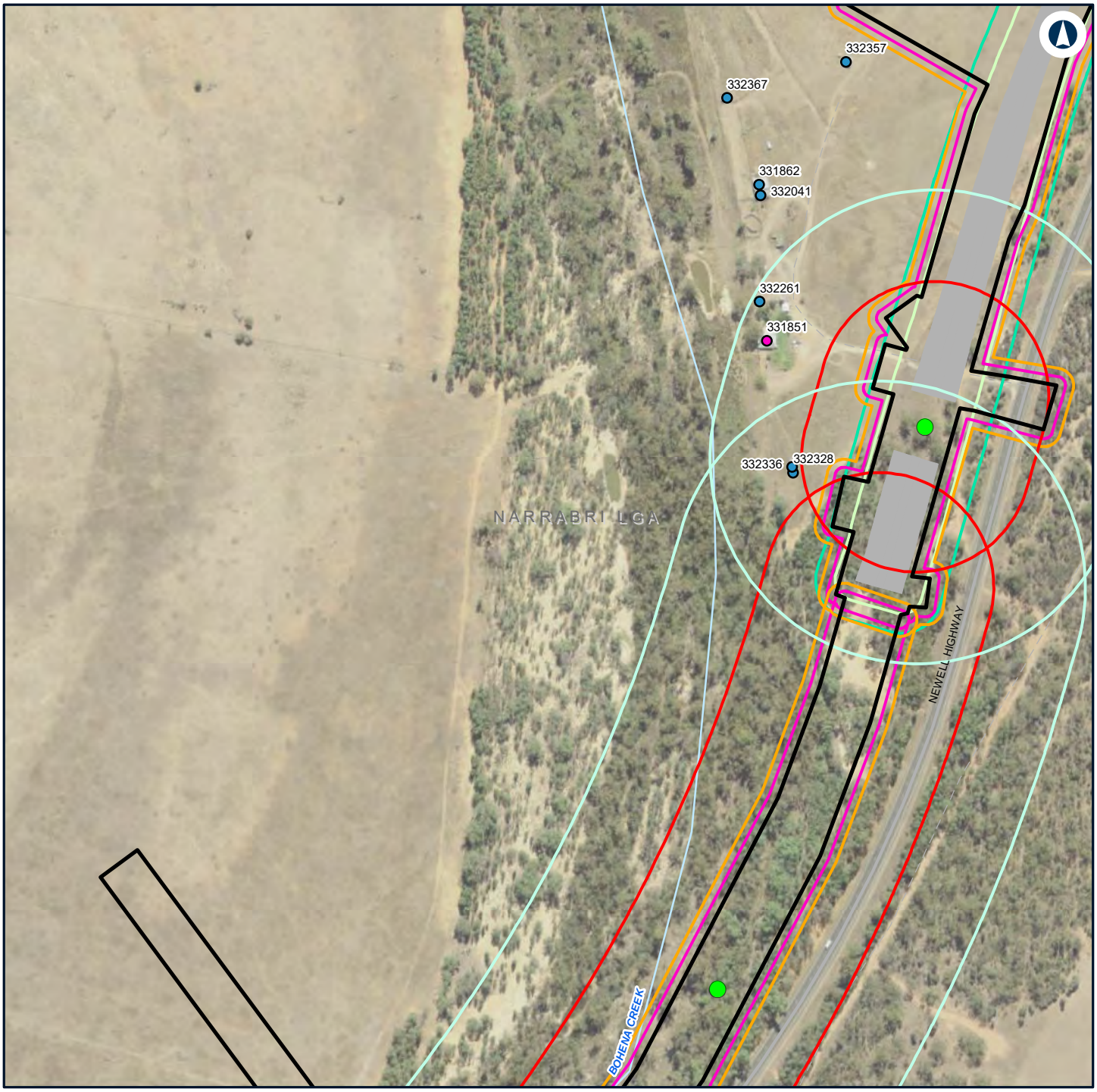

LEGEND

- Bridge centre
- Contruction footprint
- Rail earthworks extent
- Bridges (Impact piling) – Heritage structures: 3mm/s, 180m
- Bridges (Impact piling) – Standard buildings: 5mm/s, 100m
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 89 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
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Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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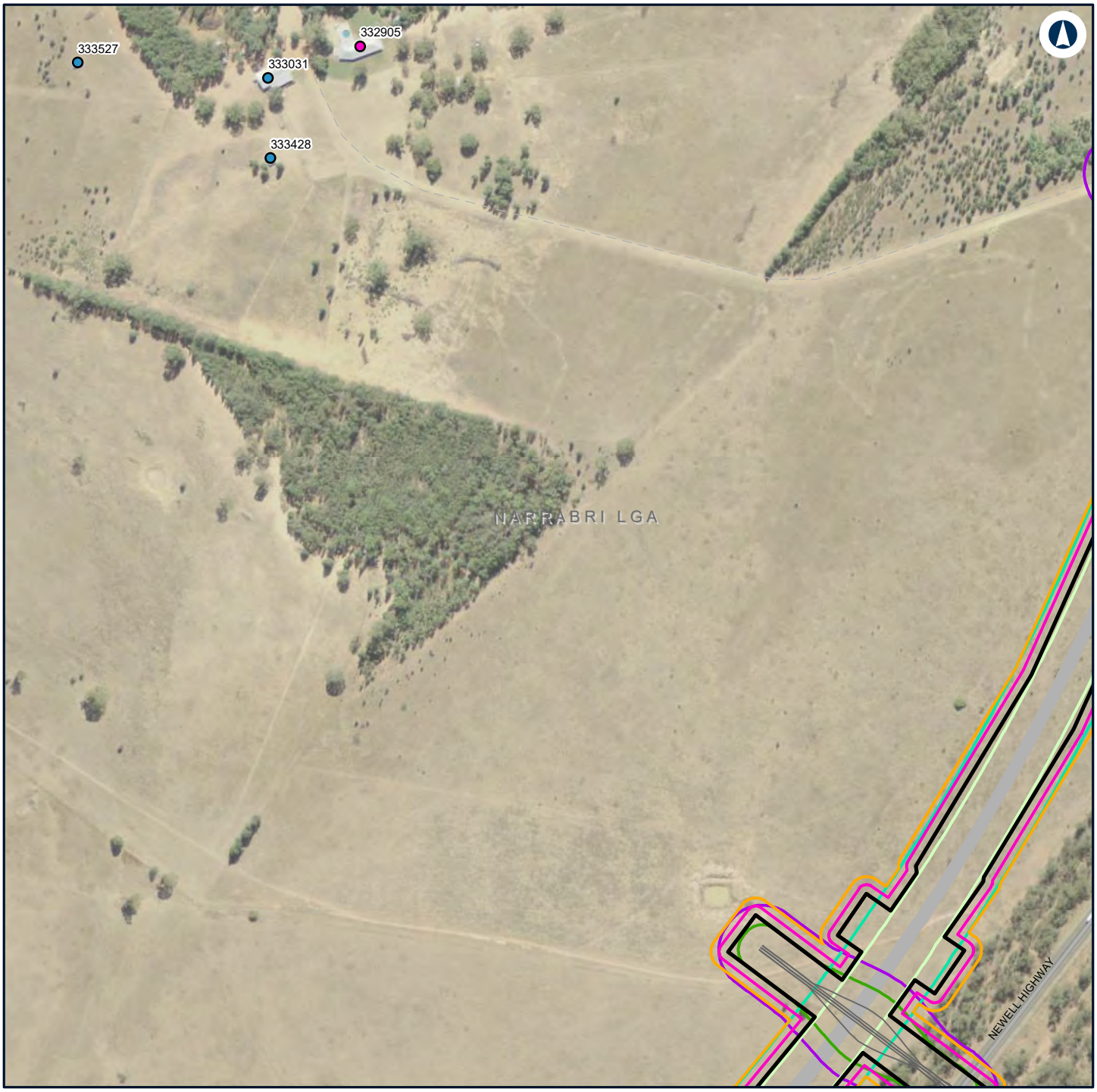

LEGEND

- Road design
- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Road earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Road earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 90 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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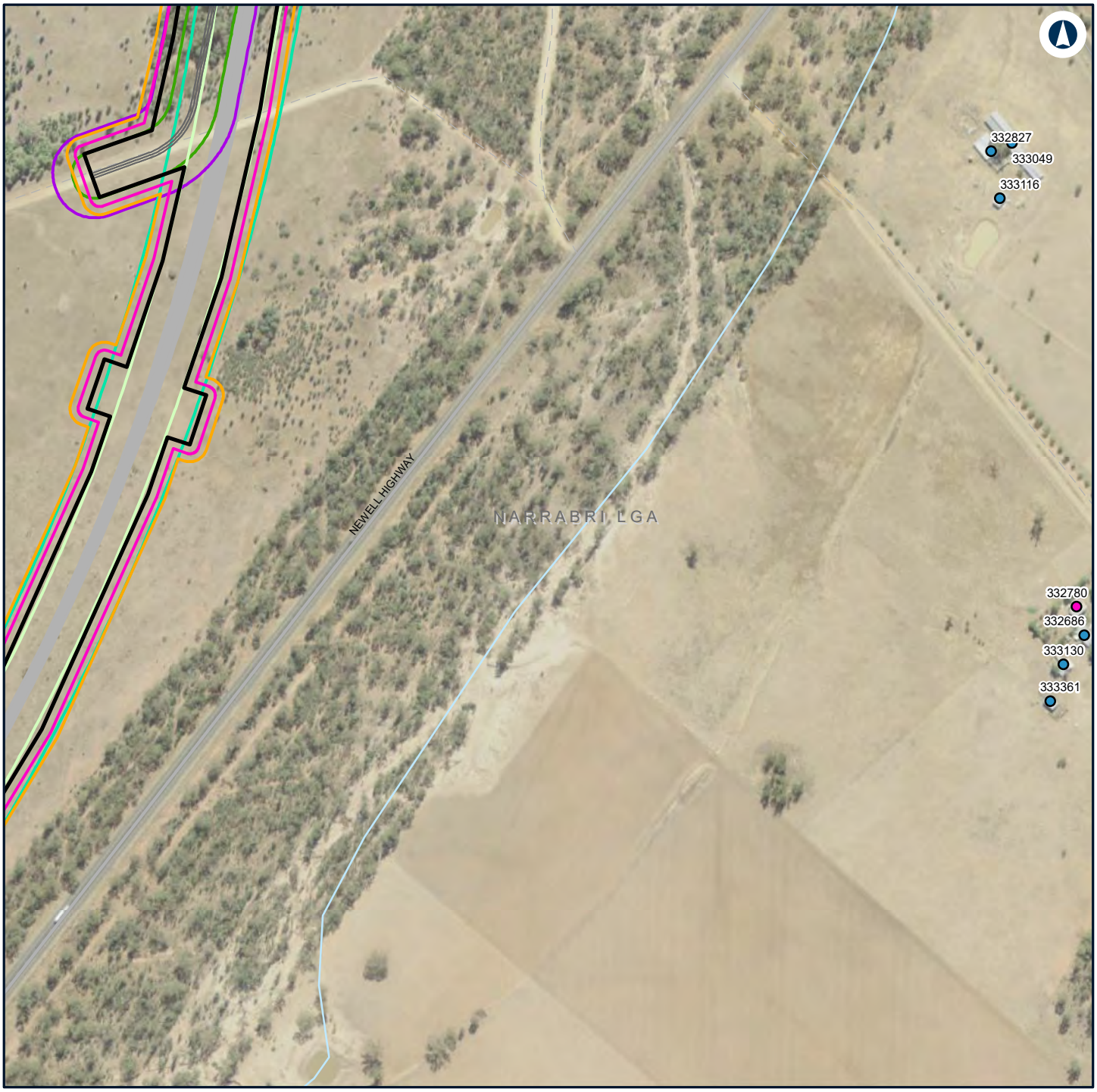

LEGEND

- Road design
- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Road earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Road earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 91 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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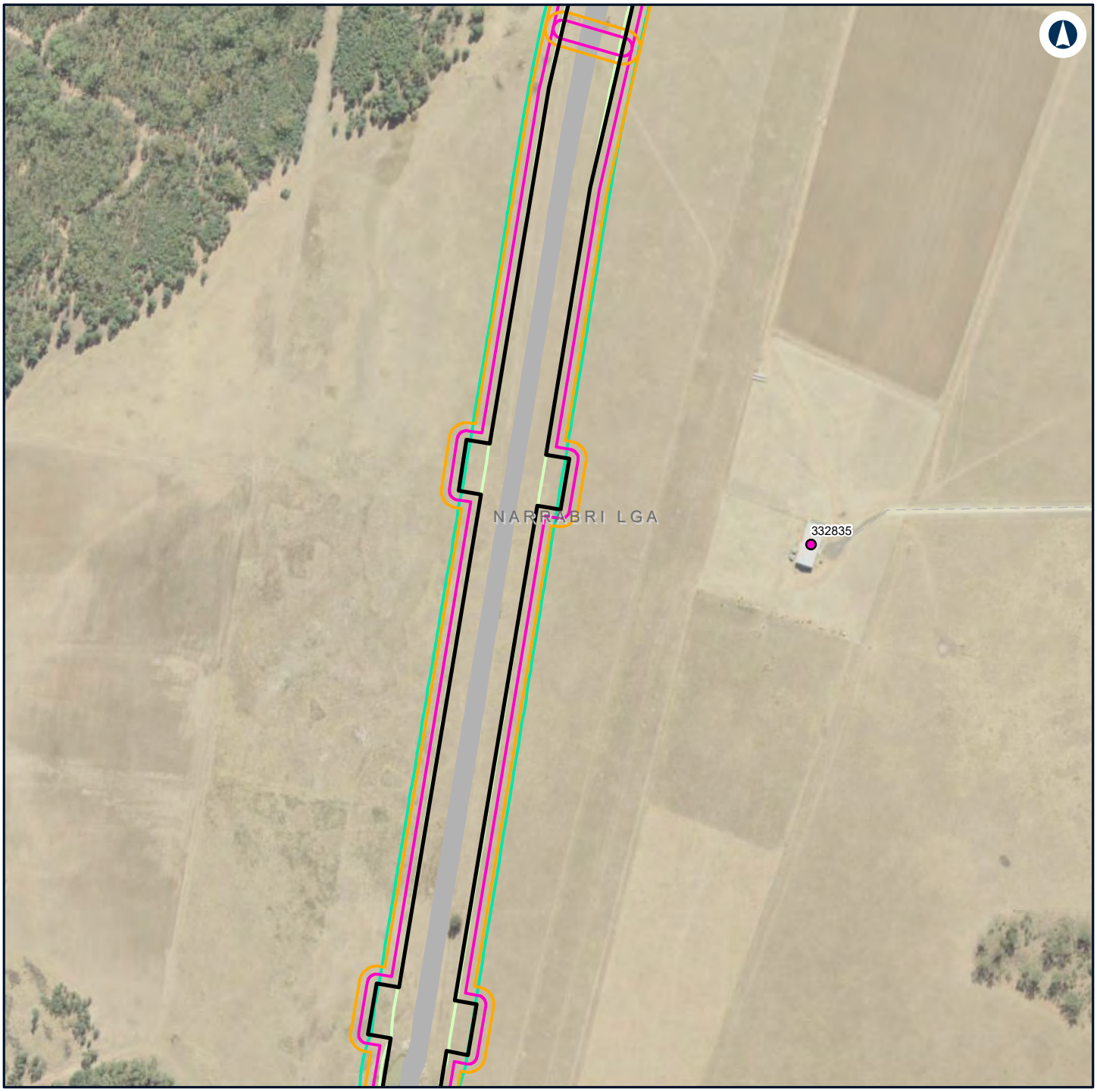

LEGEND

- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 92 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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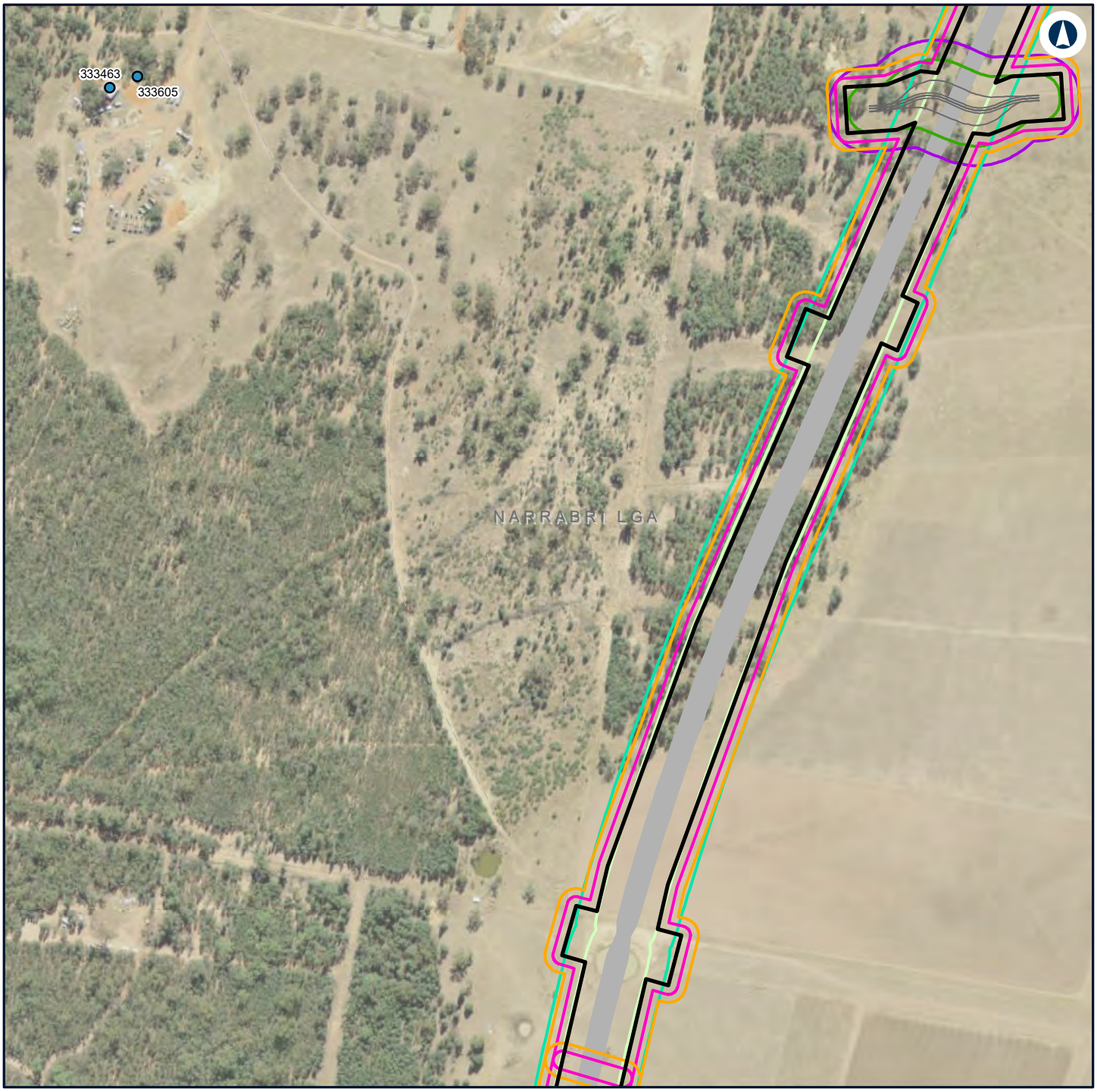

LEGEND

- Road design
- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Road earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Road earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 93 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

- Road design
- Contruction footprint
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Road earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Road earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 94 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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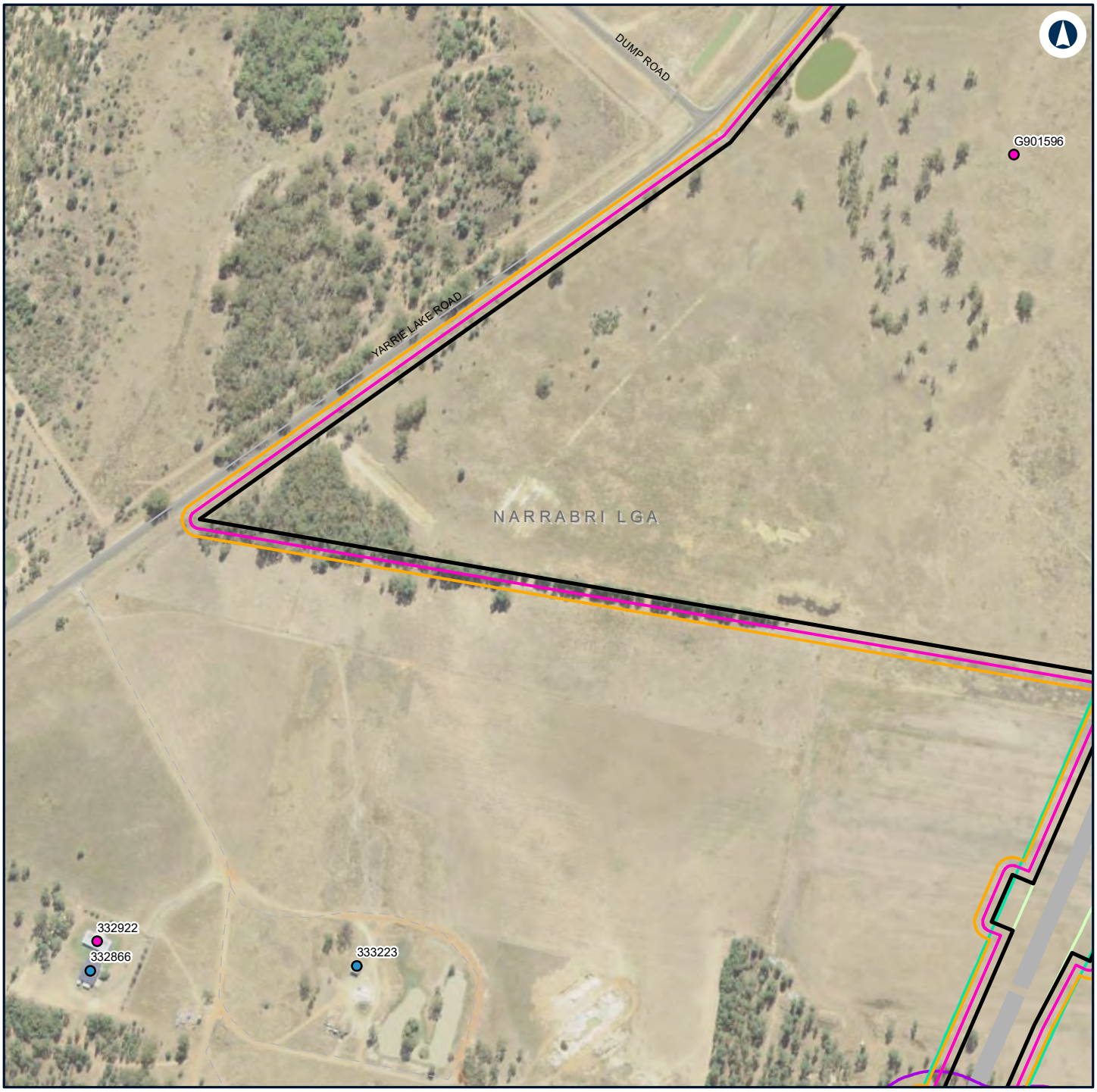

LEGEND

- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Road earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 95 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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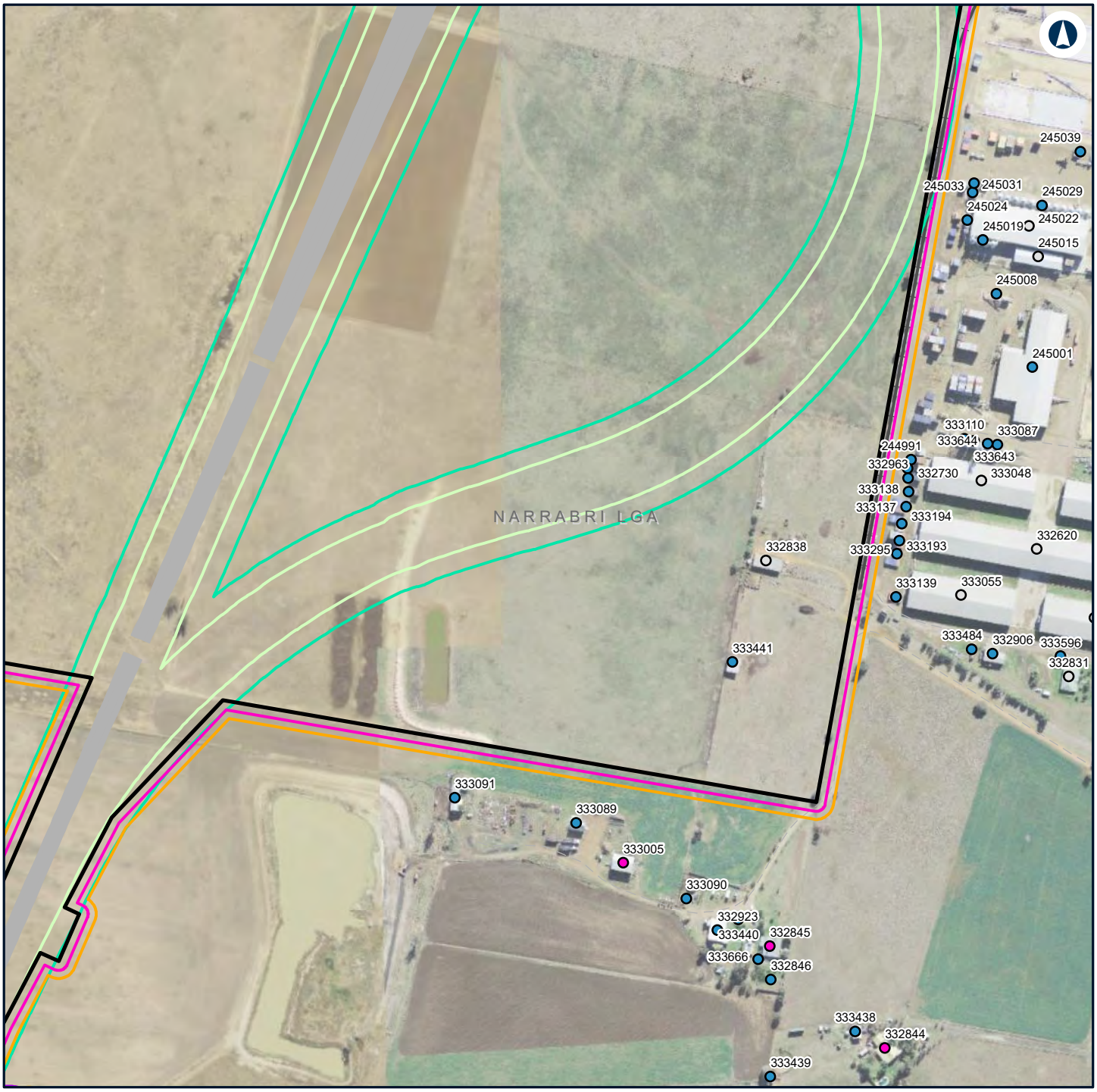

LEGEND

- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Road earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Commercial/Industrial
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 96 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

- Contruction footprint
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Commercial/Industrial
- Other

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 97 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
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Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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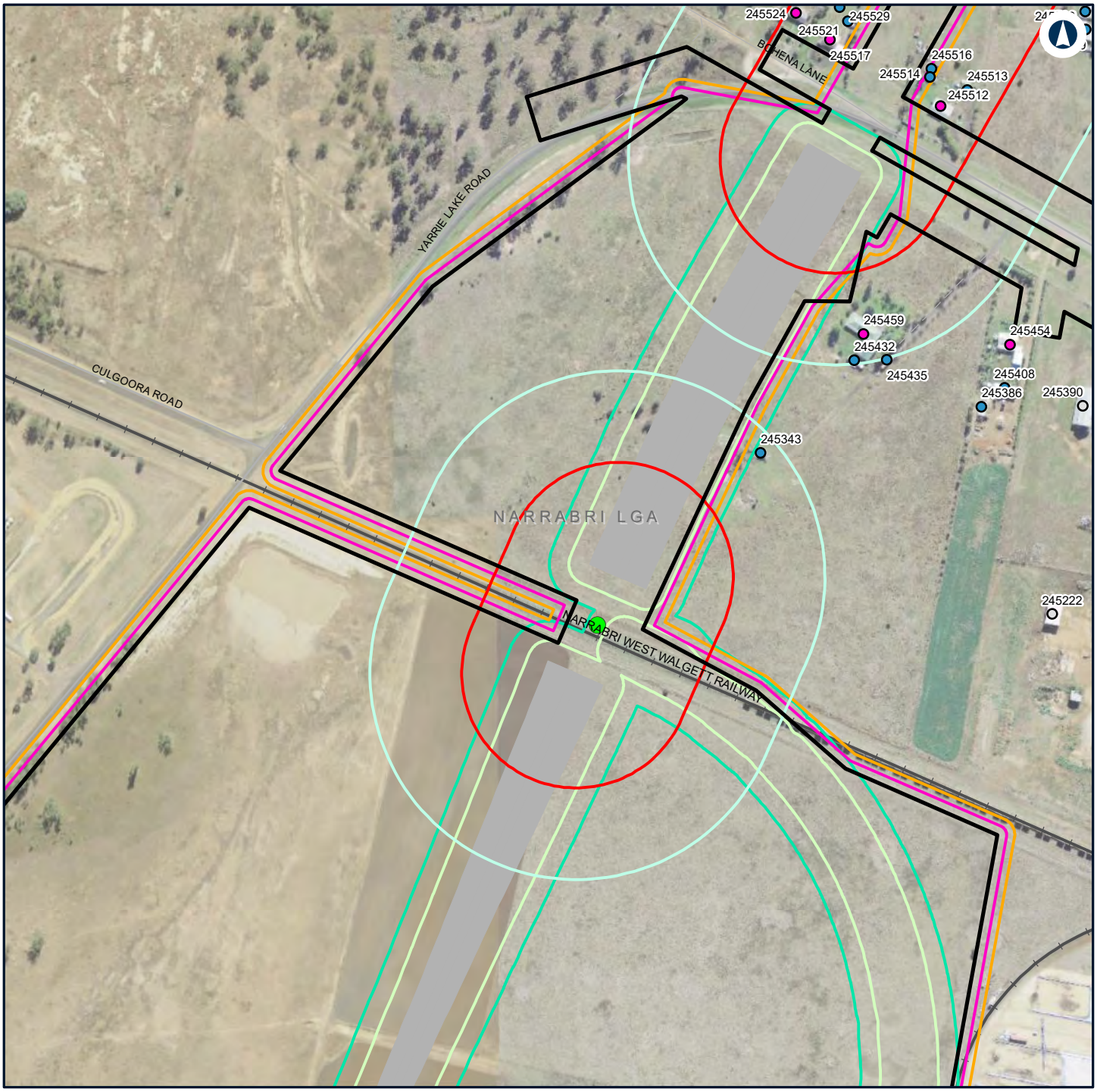

LEGEND

- Bridge centre
- Contruction footprint
- Rail earthworks extent
- Bridges (Impact piling) – Heritage structures: 3mm/s, 180m
- Bridges (Impact piling) – Standard buildings: 5mm/s, 100m
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Commercial/Industrial
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 98 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
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Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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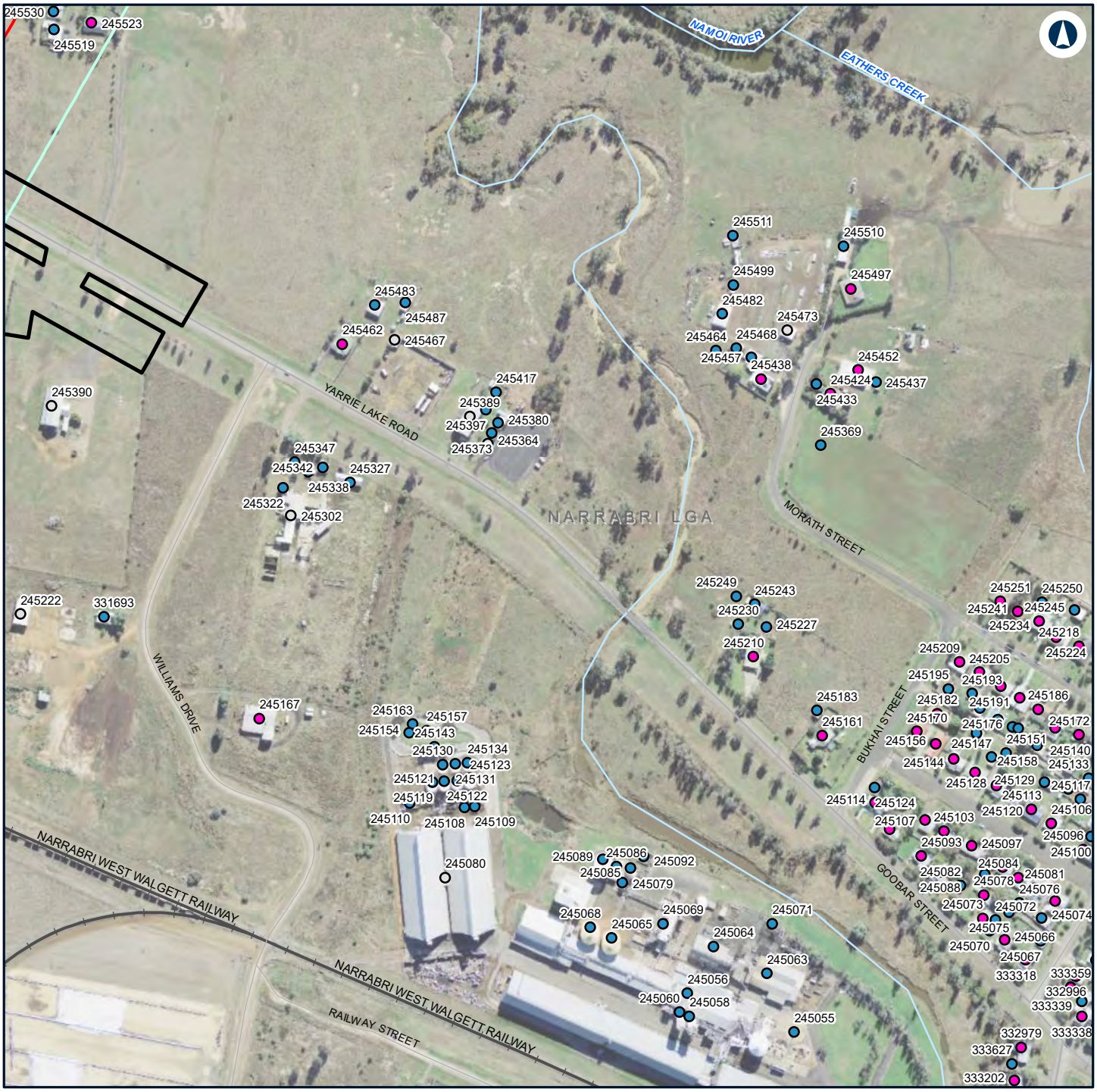

LEGEND

- Contruction footprint
- Bridges (Impact piling) – Heritage structures: 3mm/s, 180m
- Bridges (Impact piling) – Standard buildings: 5mm/s, 100m
- Commercial/Industrial
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 99 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
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Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

- Contruction footprint
- Bridges (Impact piling) – Heritage structures: 3mm/s, 180m
- Bridges (Impact piling) – Standard buildings: 5mm/s, 100m
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Commercial/Industrial
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 100 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
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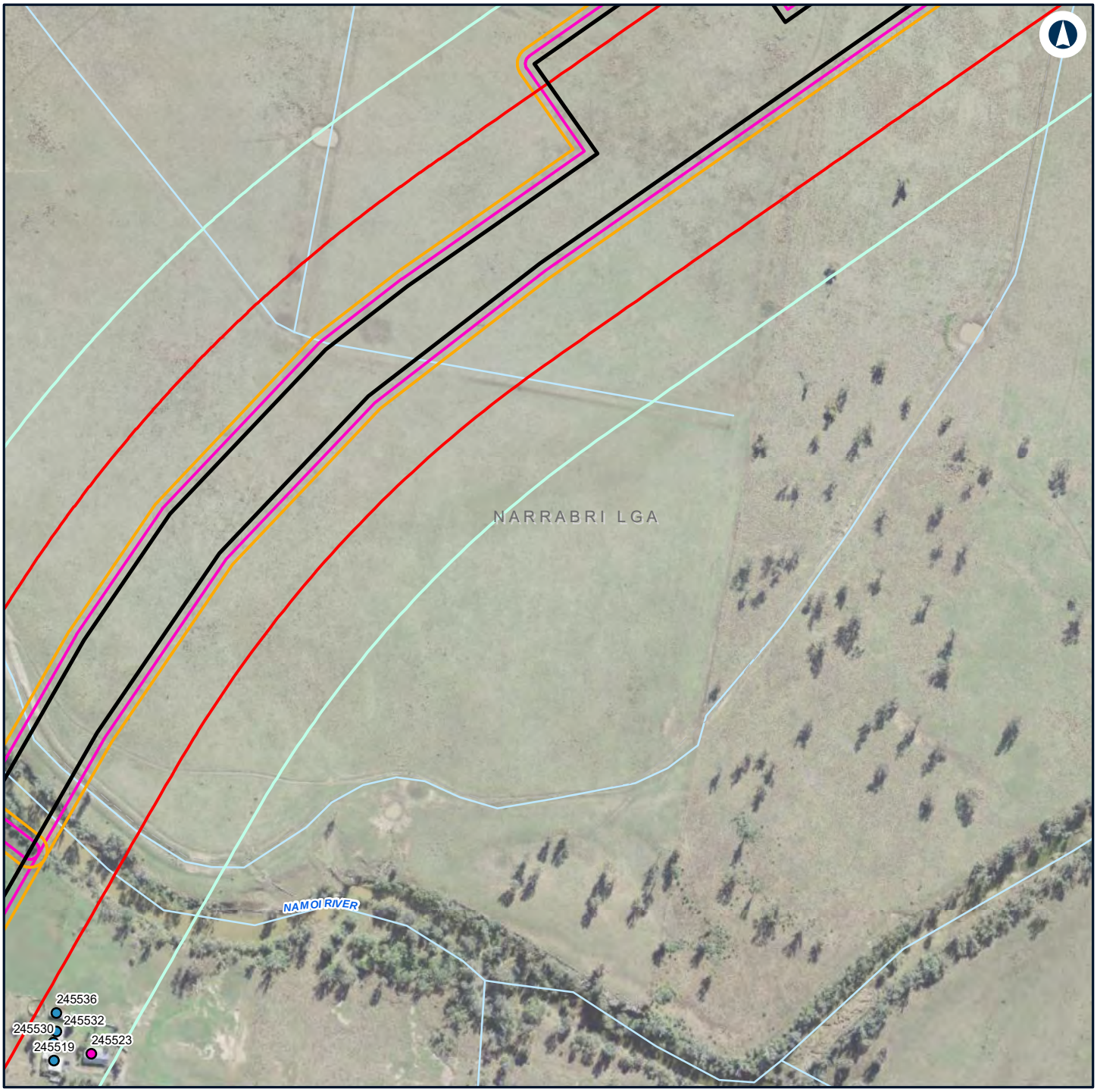

LEGEND

- Contruction footprint
- Bridges (Impact piling) – Heritage structures: 3mm/s, 180m
- Bridges (Impact piling) – Standard buildings: 5mm/s, 100m
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 101 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
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Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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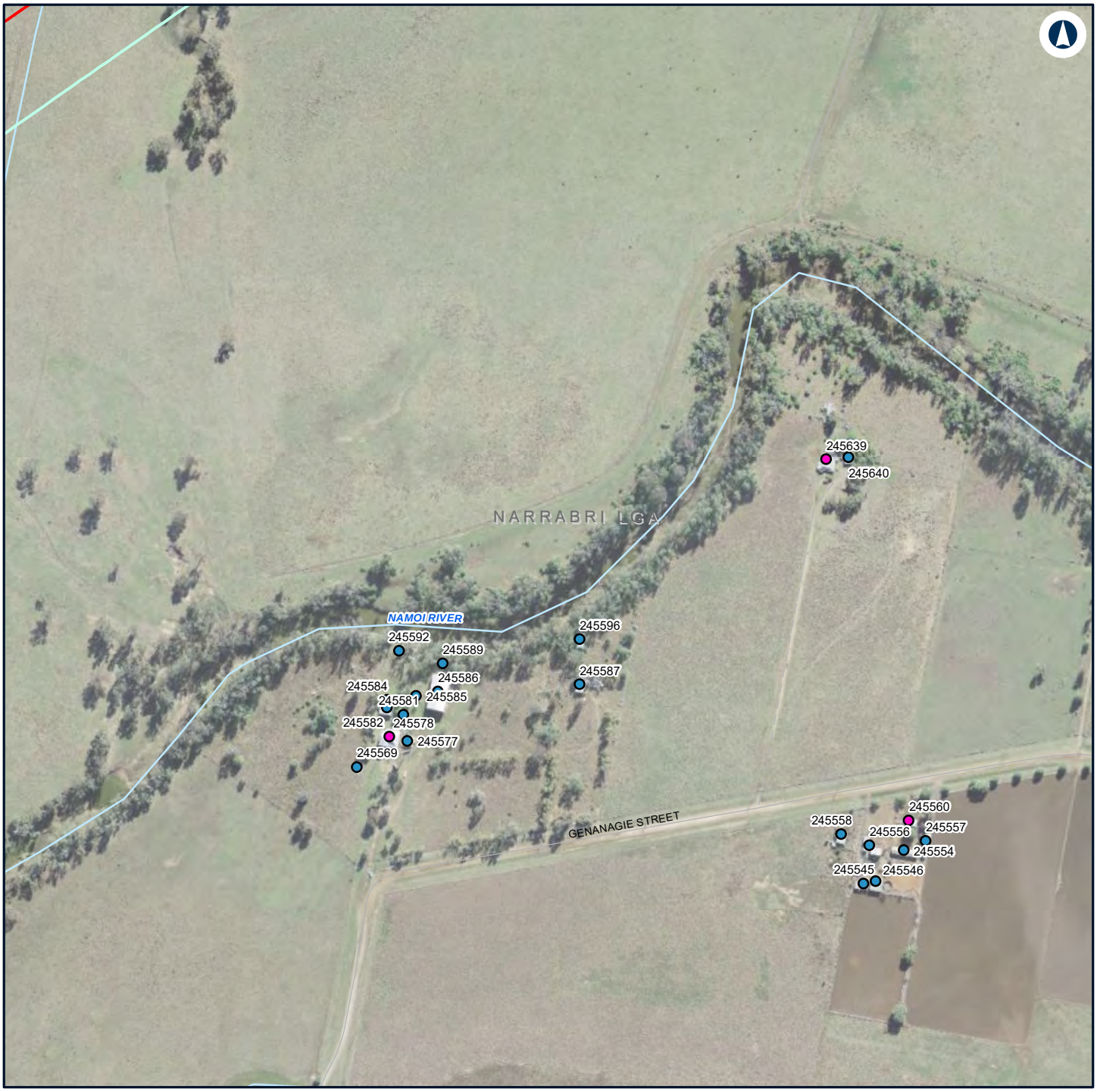

LEGEND

- Bridges (Impact piling) – Heritage structures: 3mm/s, 180m
- Bridges (Impact piling) – Standard buildings: 5mm/s, 100m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 102 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
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Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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LEGEND

- Contruction footprint
- Bridges (Impact piling) – Heritage structures: 3mm/s, 180m
- Bridges (Impact piling) – Standard buildings: 5mm/s, 100m
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 103 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
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Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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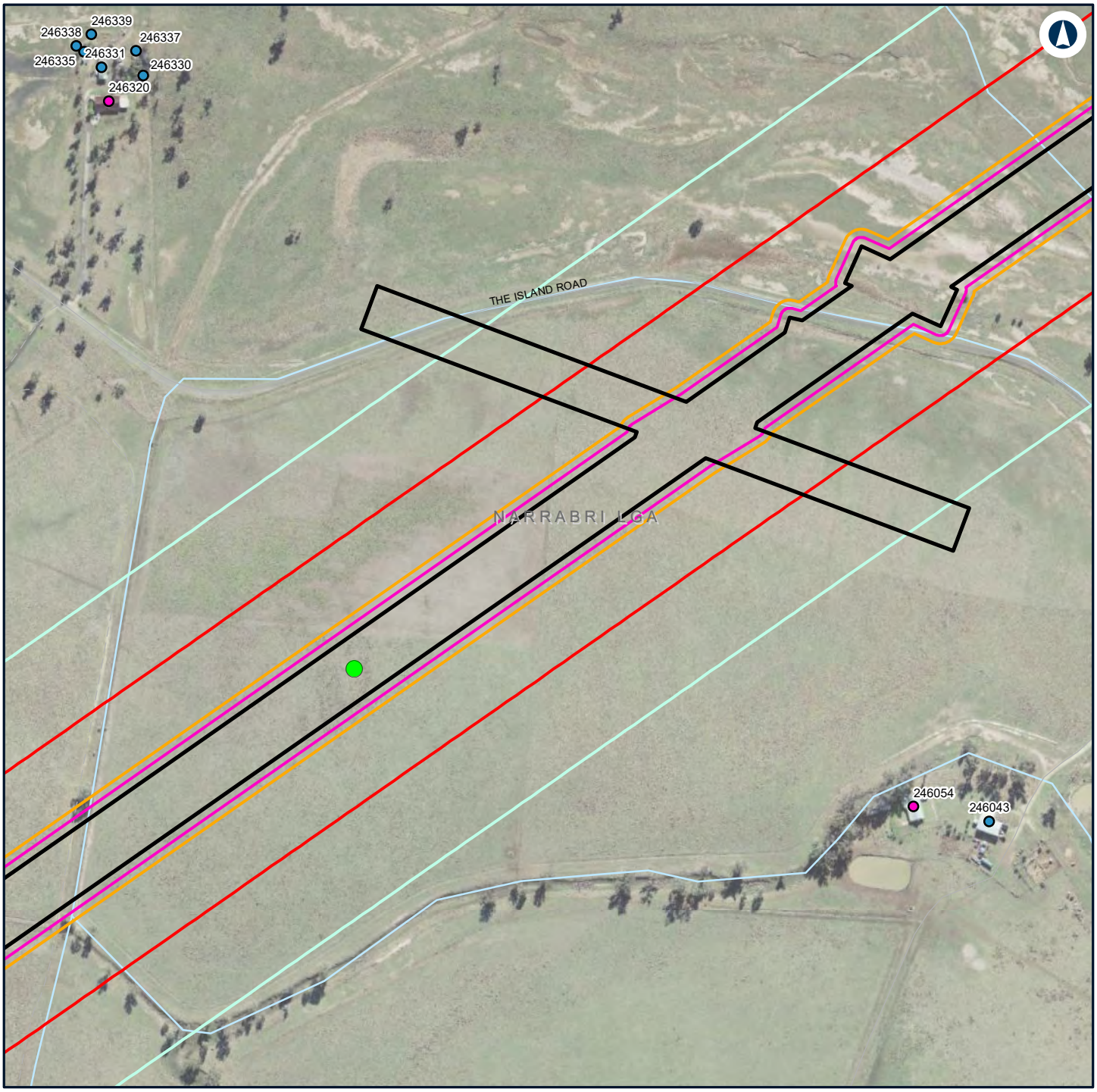

LEGEND

- Bridge centre
- Contruction footprint
- Bridges (Impact piling) – Heritage structures: 3mm/s, 180m
- Bridges (Impact piling) – Standard buildings: 5mm/s, 100m
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 104 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

INLAND RAIL ARTC

The Australian Government is delivering Inland Rail through the Australian Rail Track Corporation (ARTC), in partnership with the private sector.

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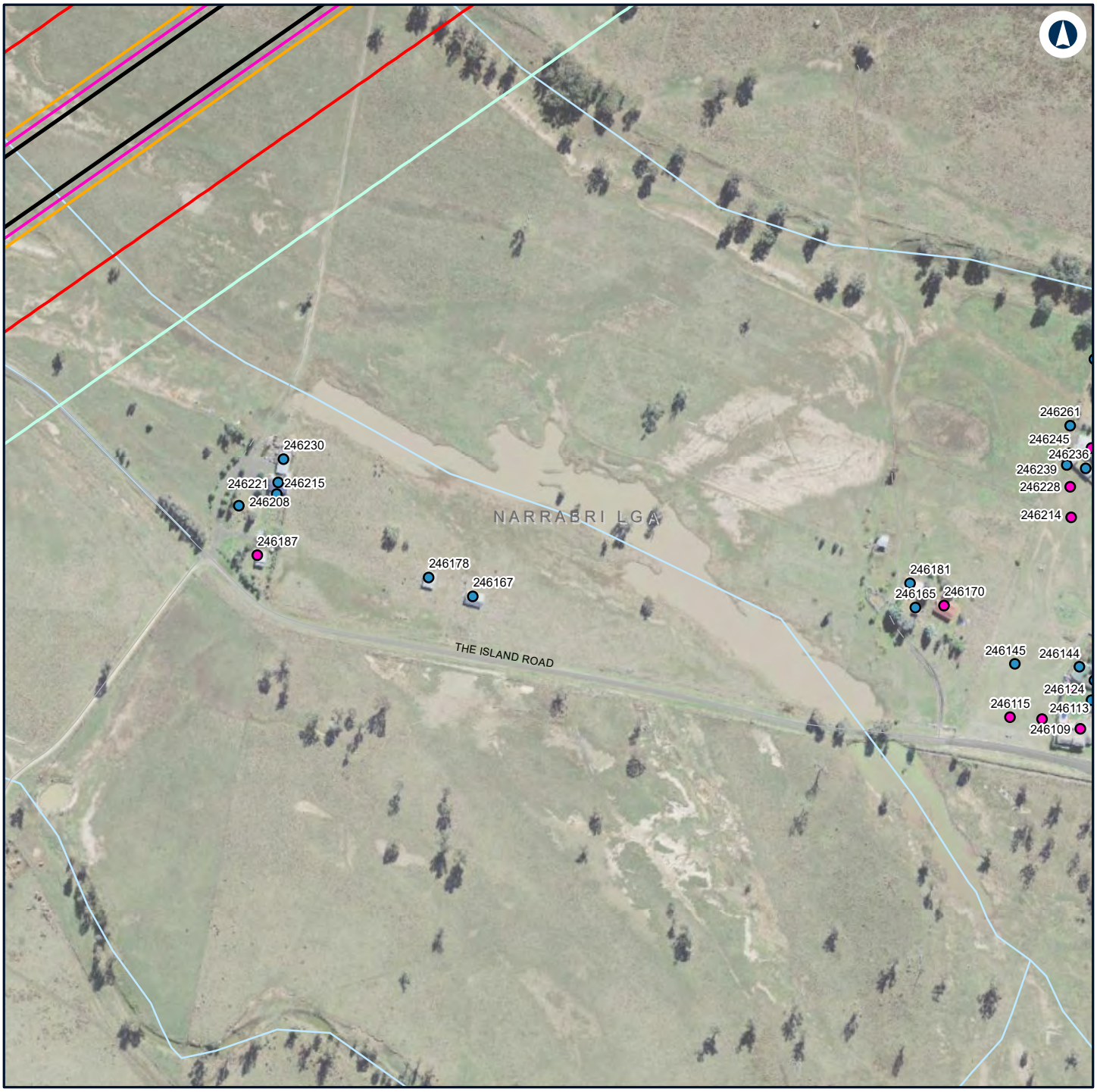

LEGEND

- Contruction footprint
- Bridges (Impact piling) – Heritage structures: 3mm/s, 180m
- Bridges (Impact piling) – Standard buildings: 5mm/s, 100m
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 105 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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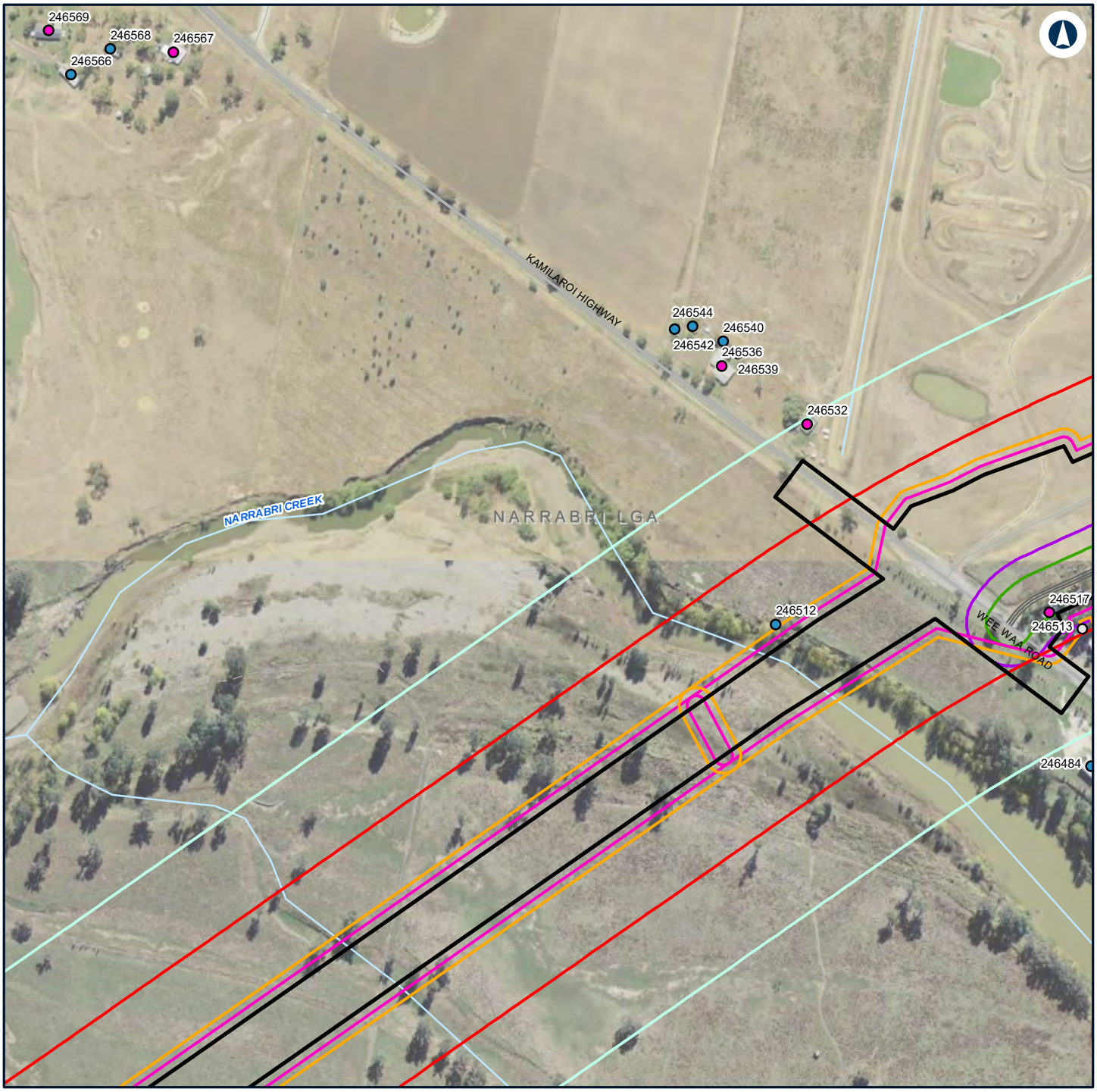

LEGEND

- Road design
- Contruction footprint
- Bridges (Impact piling) – Heritage structures: 3mm/s, 180m
- Bridges (Impact piling) – Standard buildings: 5mm/s, 100m
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Road earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Road earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m

- Commercial/Industrial
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 106 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
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Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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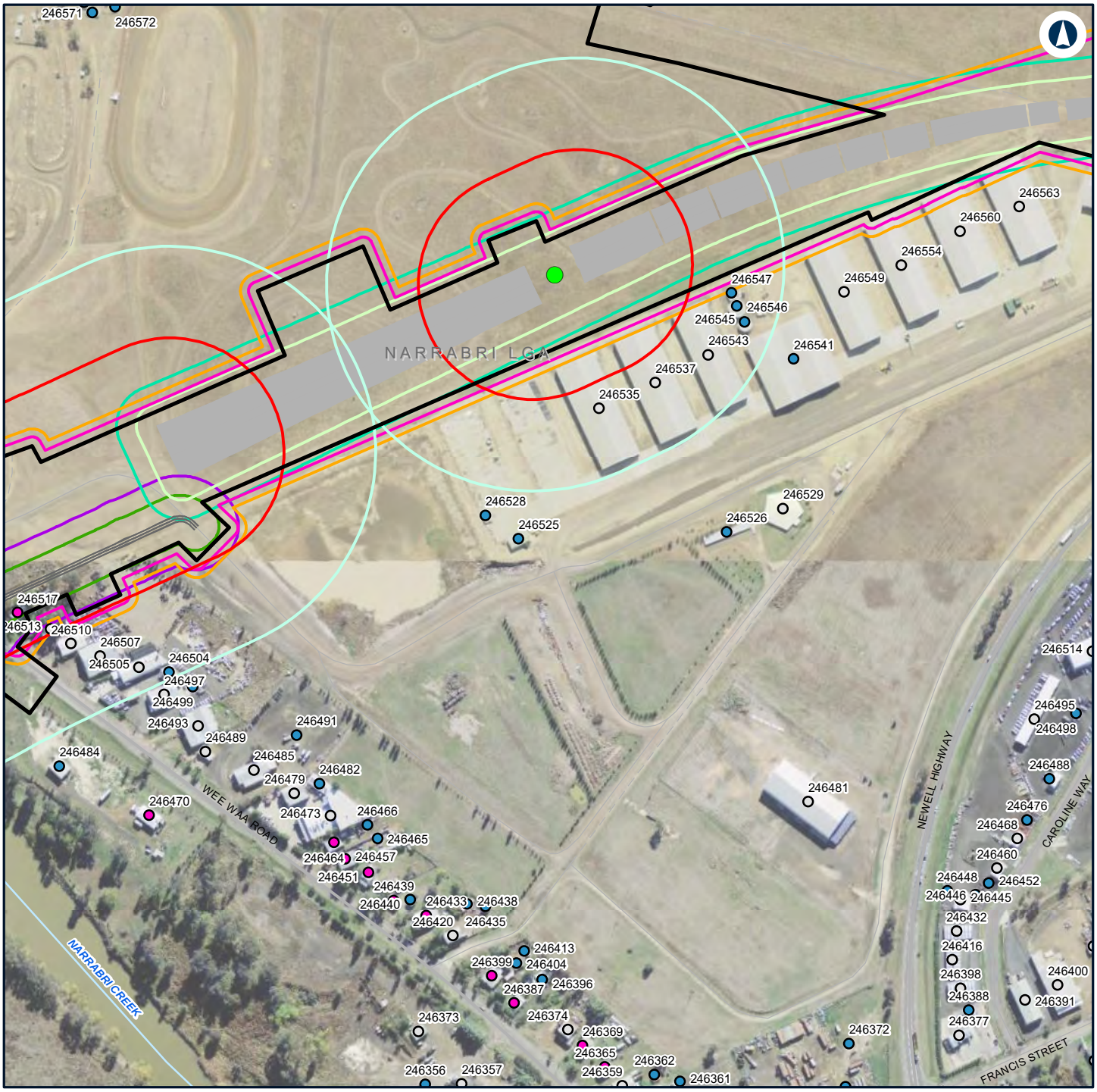

LEGEND

- Bridge centre
- Road design
- Contruction footprint
- Rail earthworks extent
- Bridges (Impact piling) – Heritage structures: 3mm/s, 180m
- Bridges (Impact piling) – Standard buildings: 5mm/s, 100m
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Road earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Road earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Active recreation
- Commercial/Industrial
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 107 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
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Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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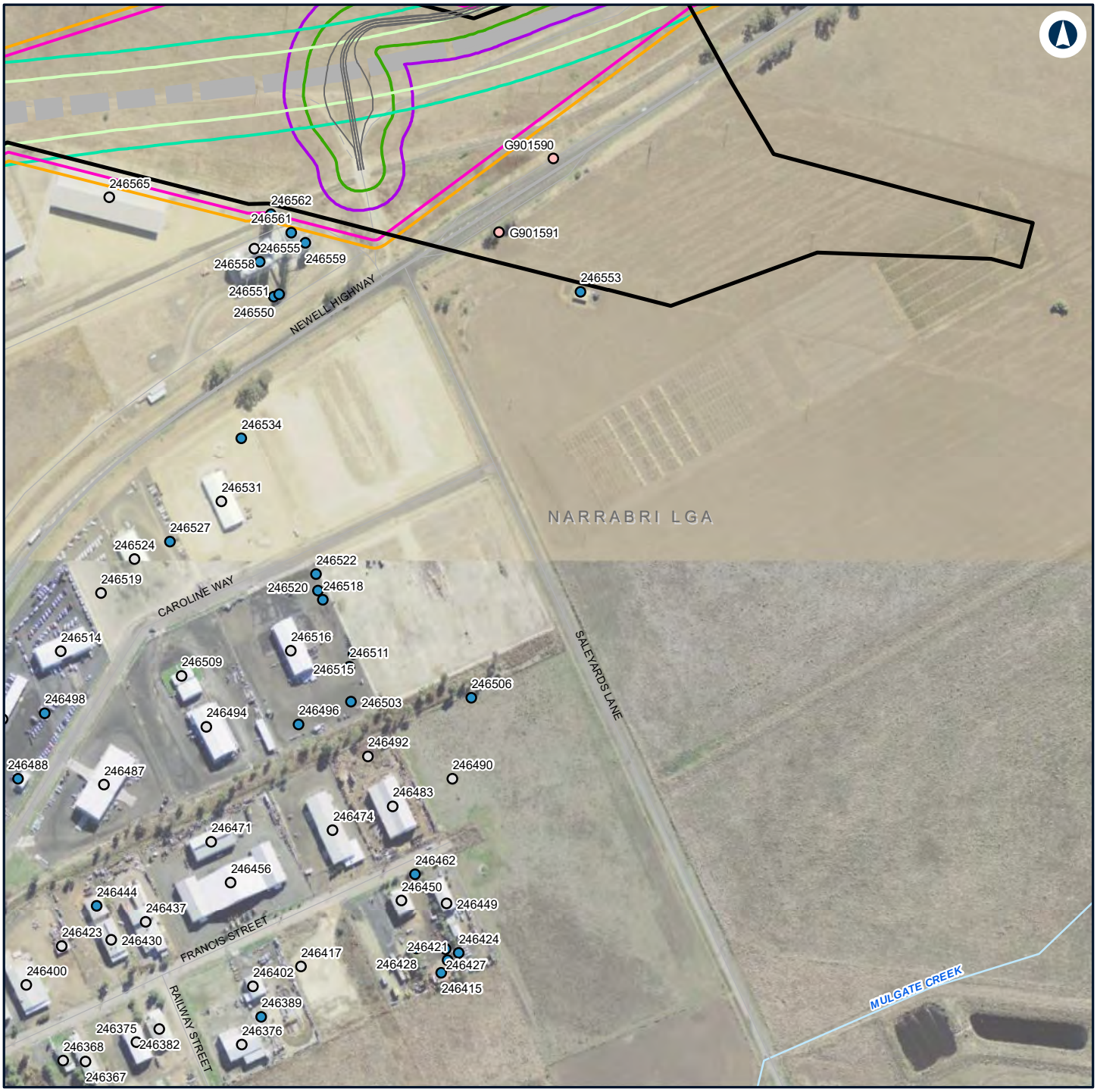

LEGEND

- Road design
- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Road earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Road earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Commercial/Industrial
- Other
- Passive recreation

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 108 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

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Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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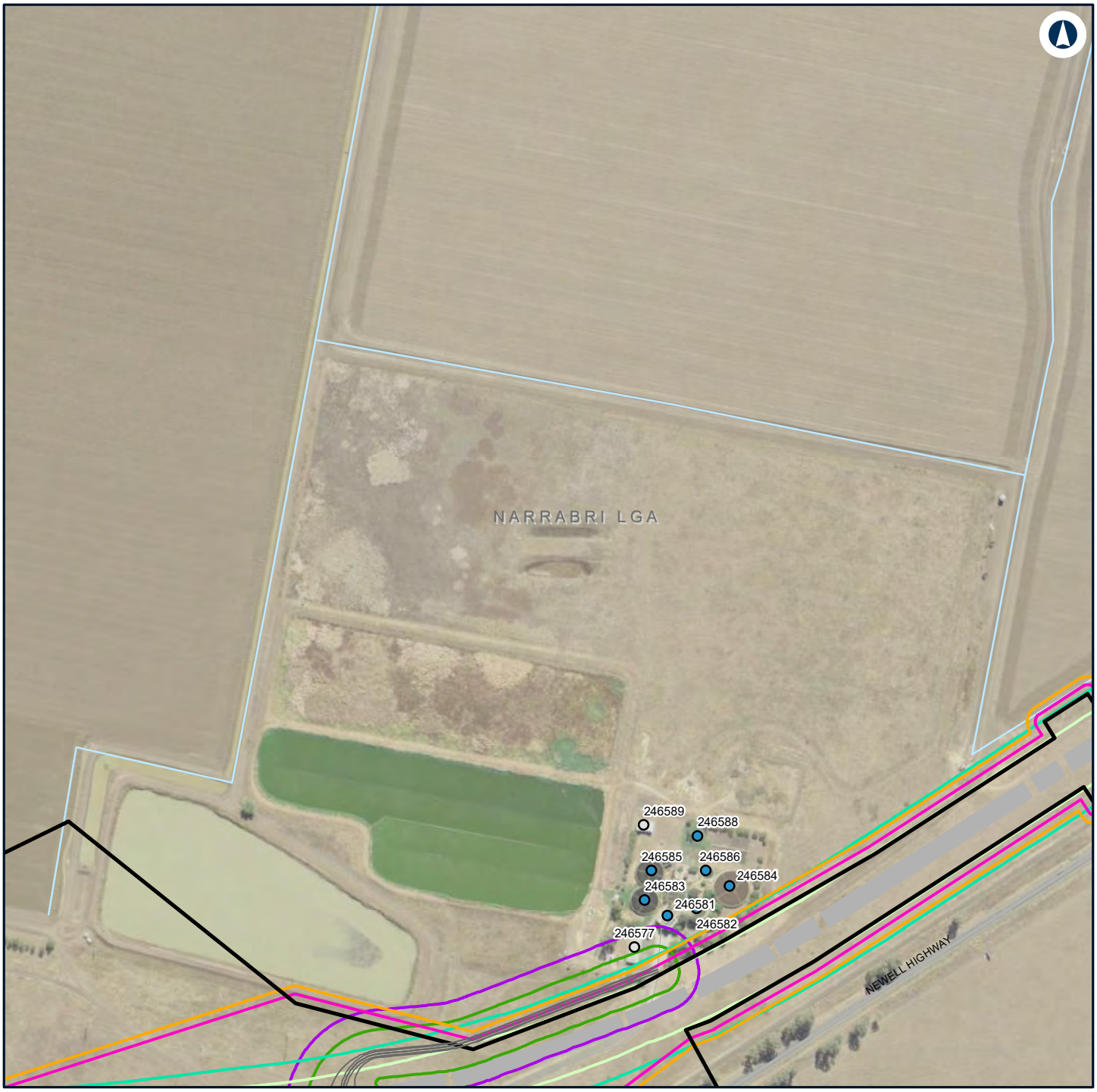

LEGEND

- Road design
- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Road earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Road earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Commercial/Industrial
- Other

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 109 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
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Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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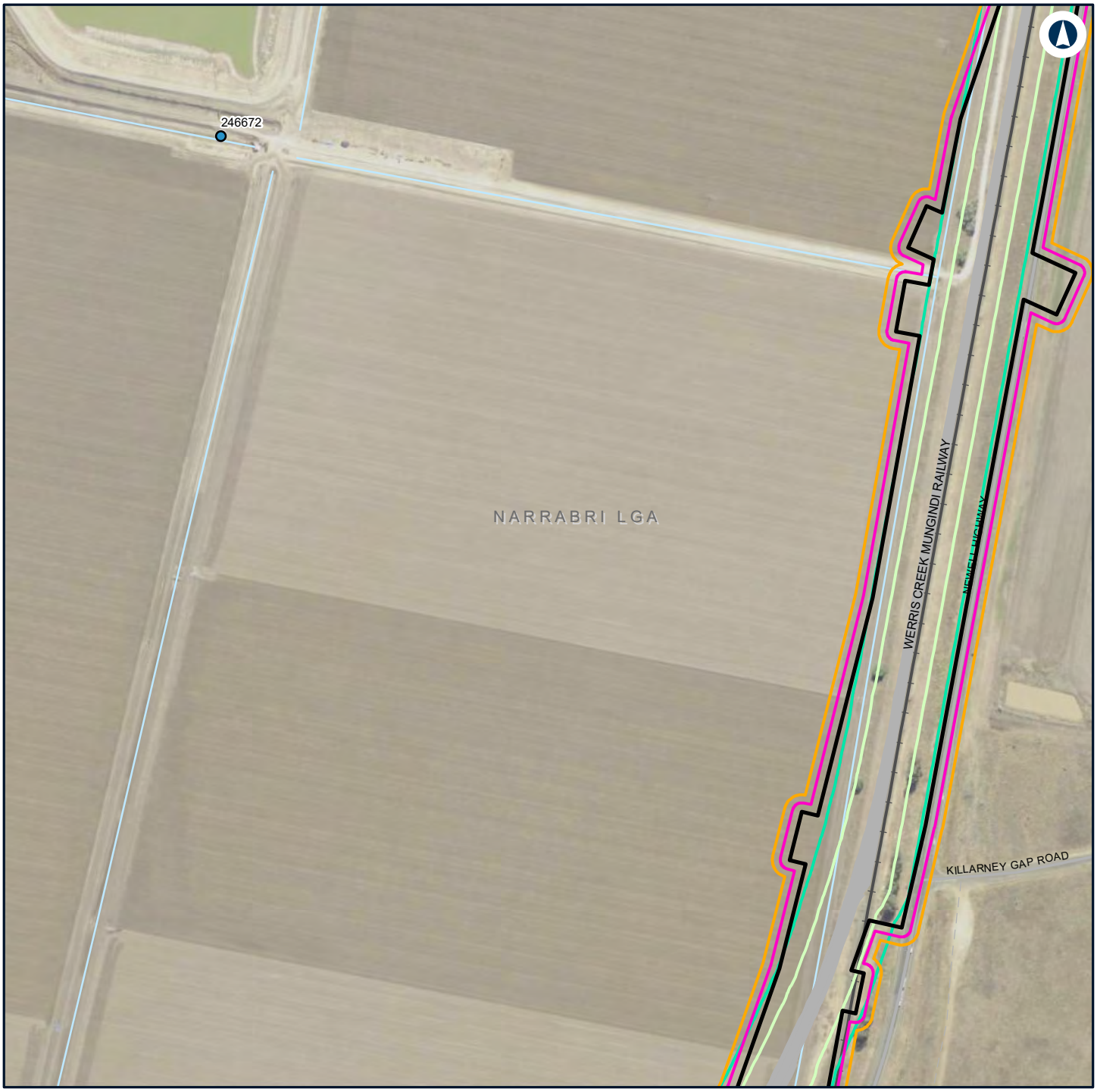

LEGEND

- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 110 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

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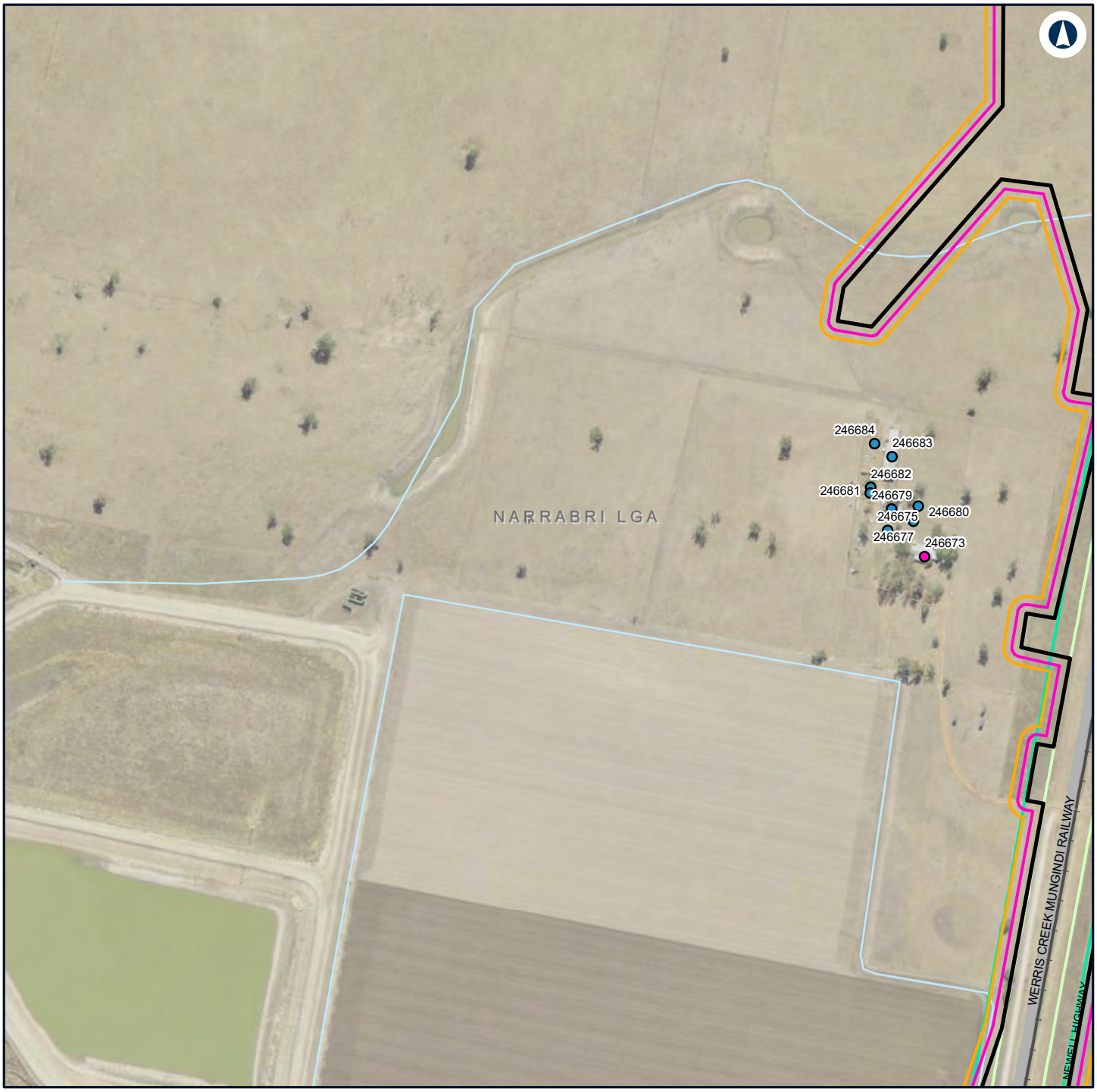

LEGEND

- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 111 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

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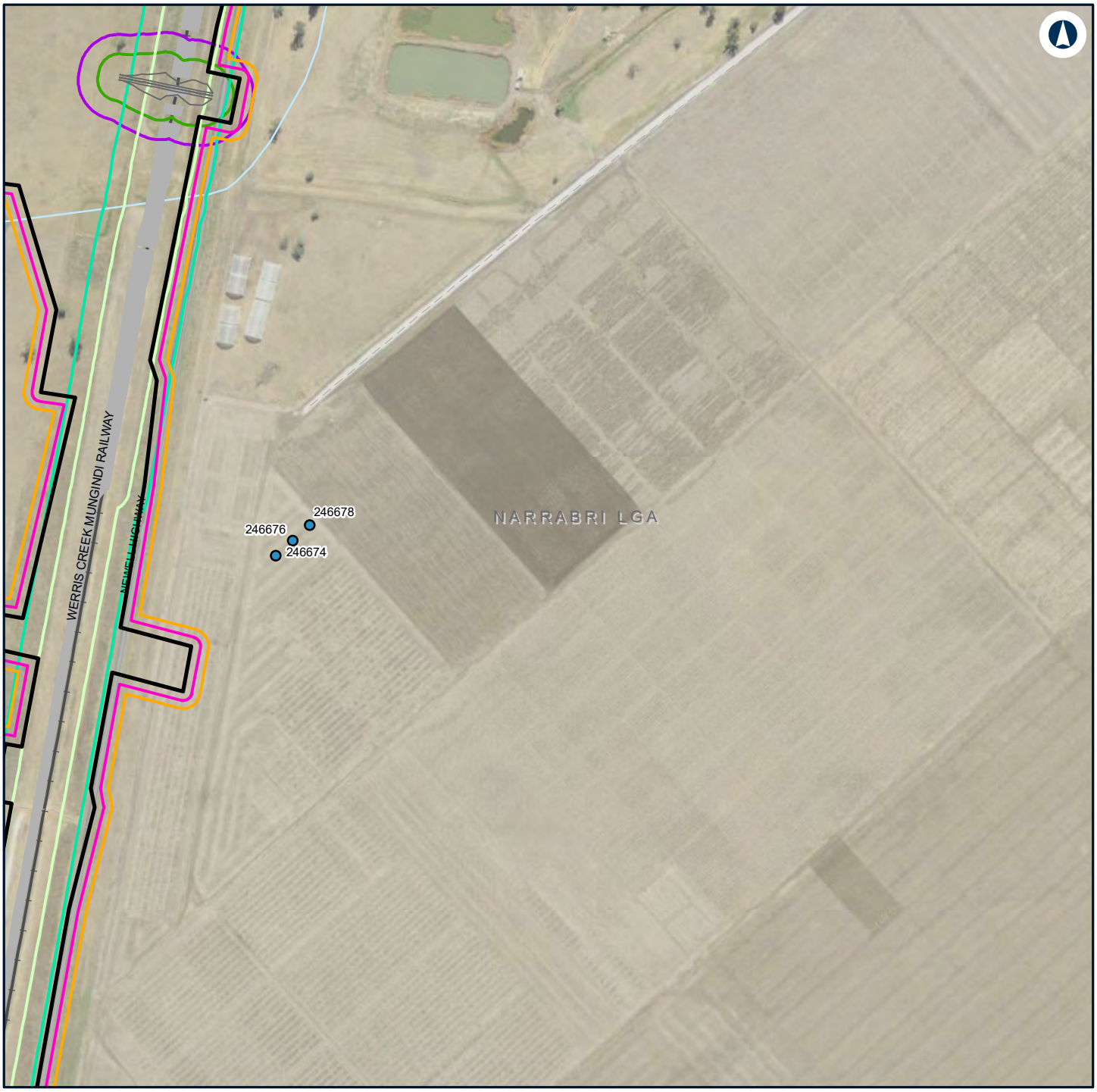

LEGEND

- Road design
- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Road earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Road earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Other

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 112 OF 113

0 0.1 0.2 Km

Coordinate System: GDA 1994 MGA Zone 55

Date: 16/07/2020 Paper: A4
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Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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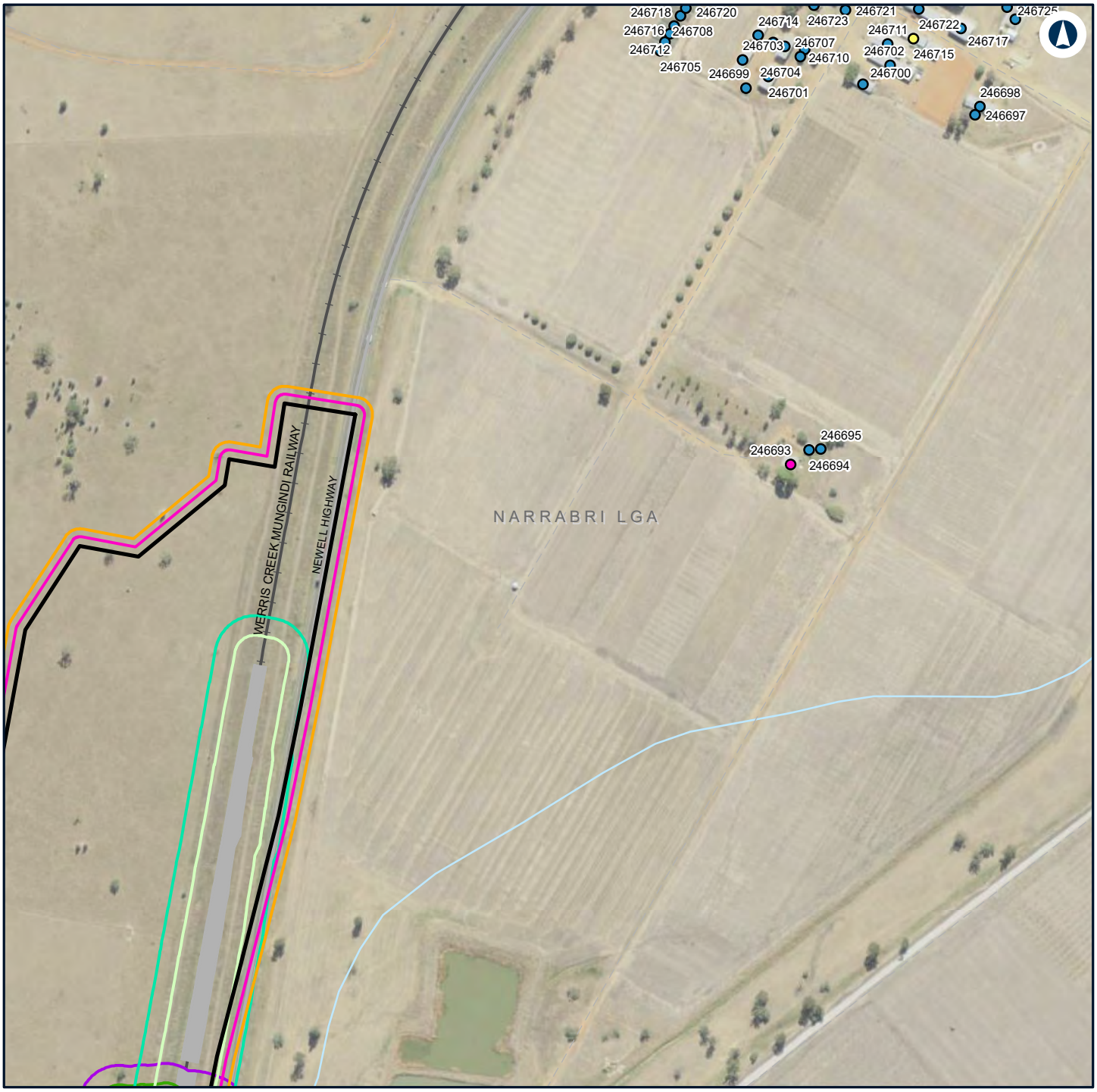

LEGEND

- Contruction footprint
- Rail earthworks extent
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Road earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Road earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m
- Community
- Other
- Residential

NARROMINE TO NARRABRI Construction vibration buffers, Structural damage Appendix N - MAP 113 OF 113

0 0.1 0.2 Km

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