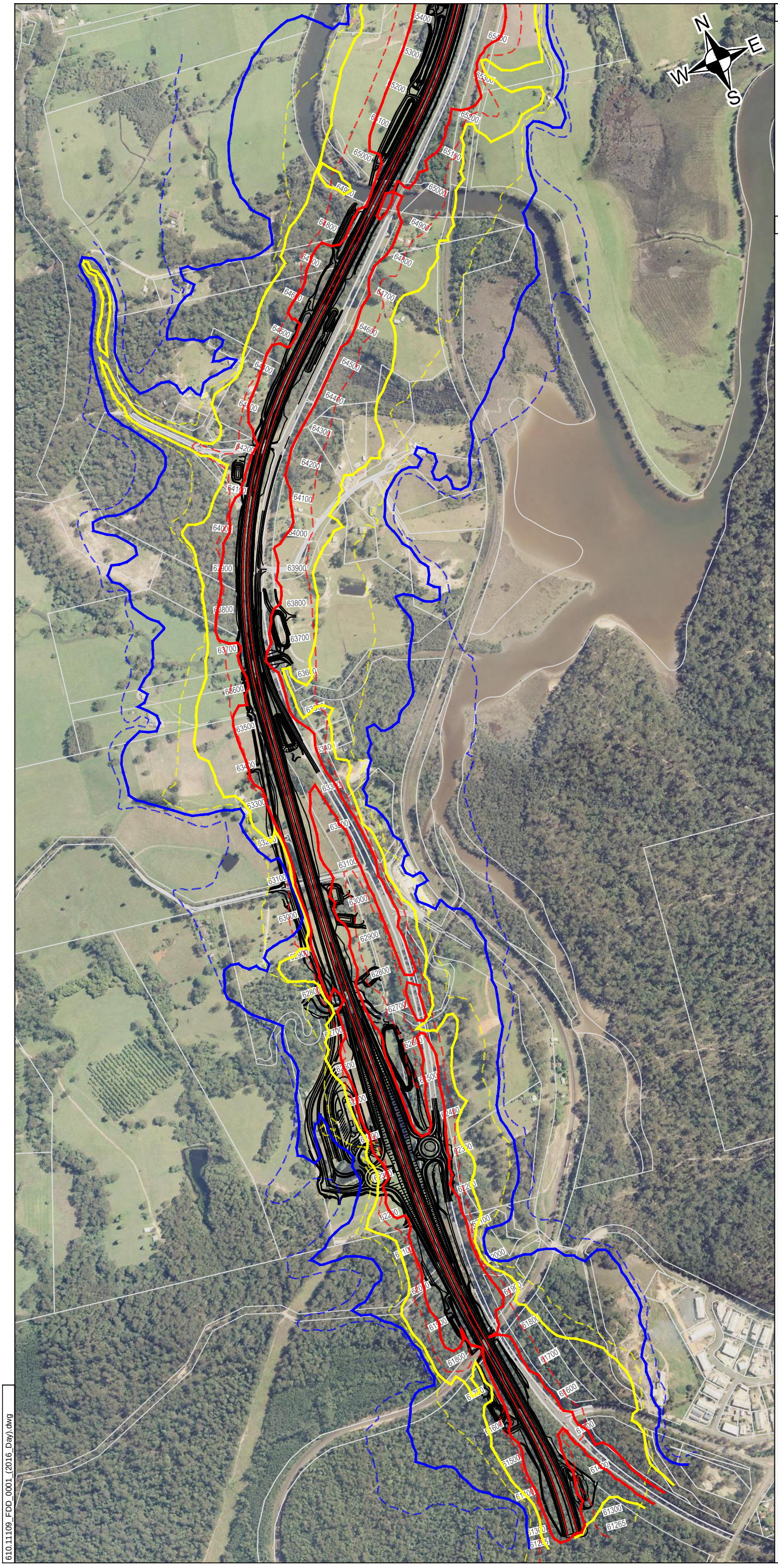
Appendix D

Noise Contour Plots



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LEGEND

- 65 dBA Noise Limiting Contour
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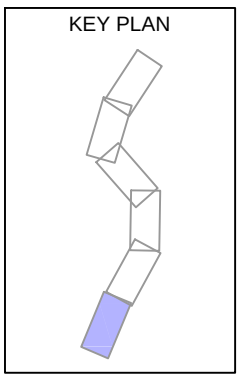
- 55 dBA Noise Limiting Contour
- 65 dBA Final Design Contour
- 60 dBA Final Design Contour
- 55 dBA Final Design Contour
- Low Noise Pavement
- Cadastral Boundary
- Design

KEY PLAN



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Revision	By	Chk'd By	Date	Comments
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Scale
1:10,000 @ A3

Date
02/2014

Drawing Number
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Revision
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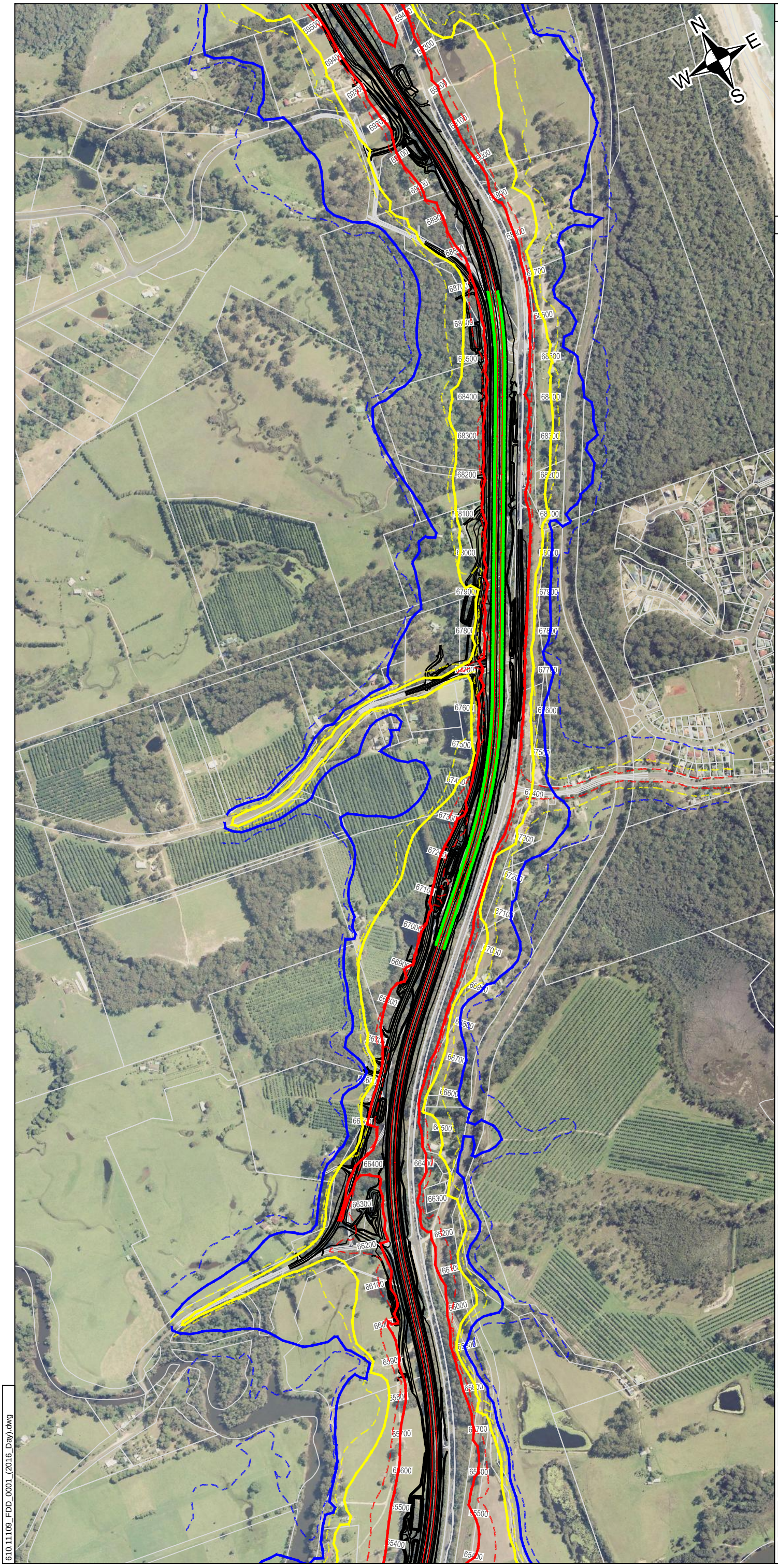

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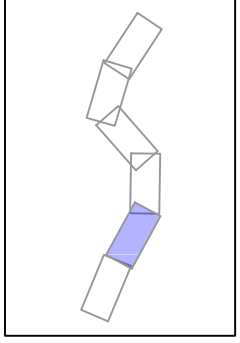

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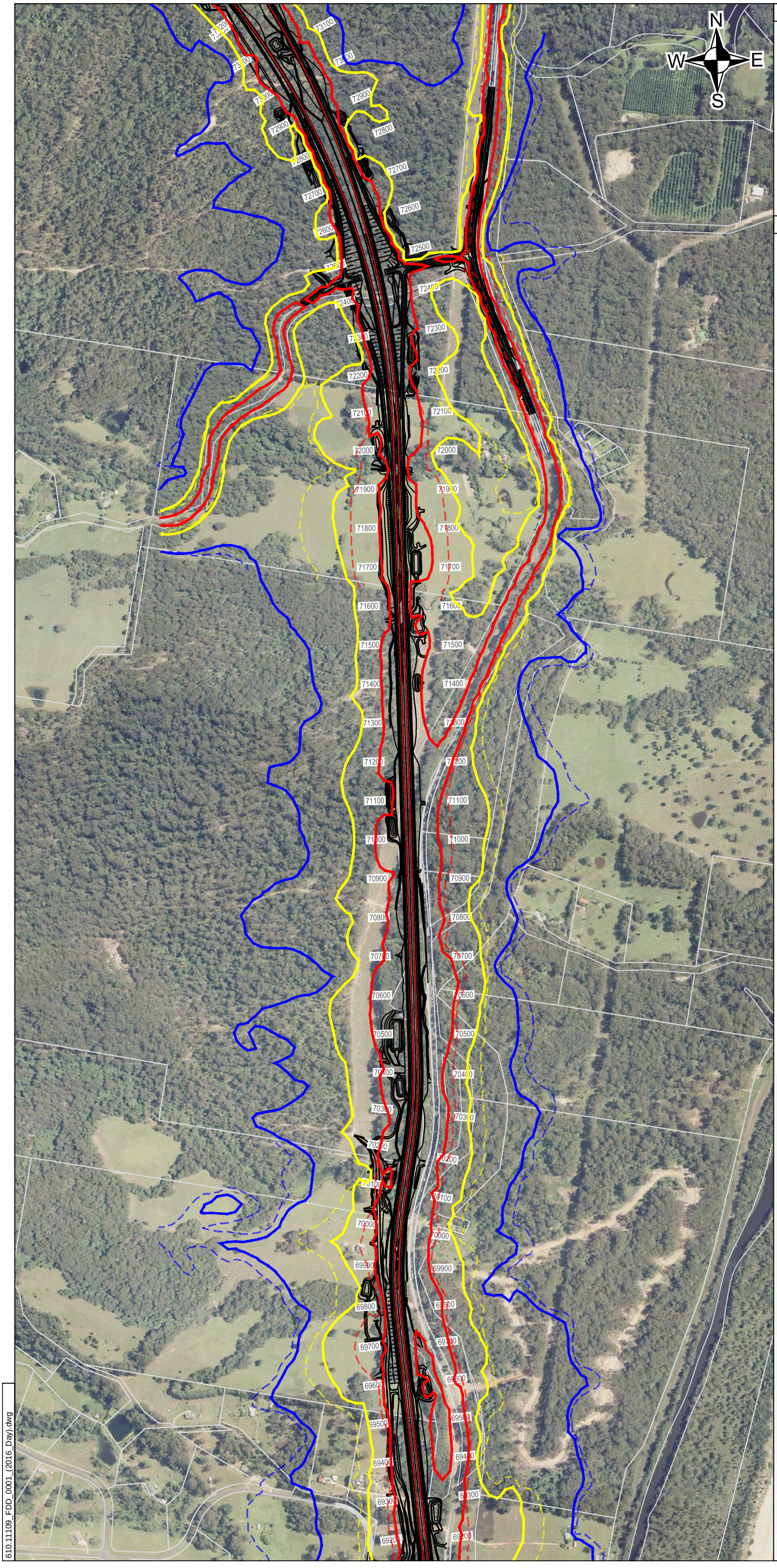

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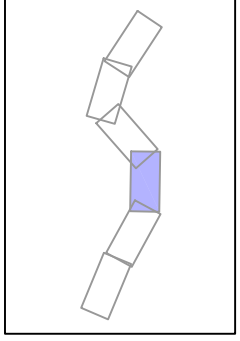

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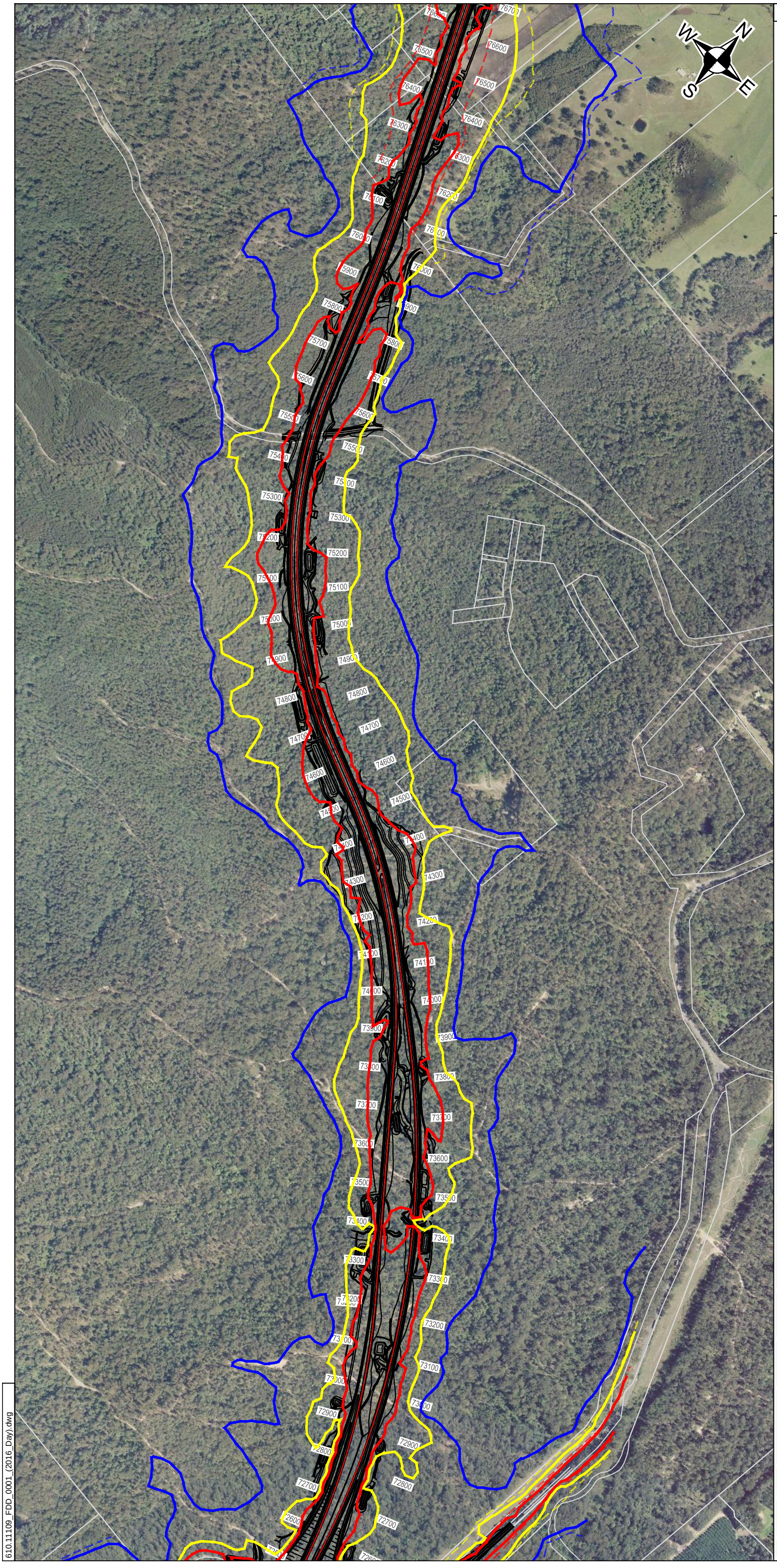

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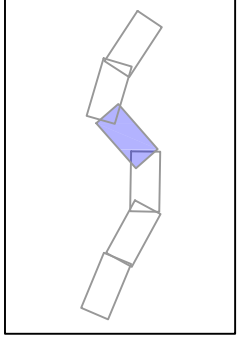

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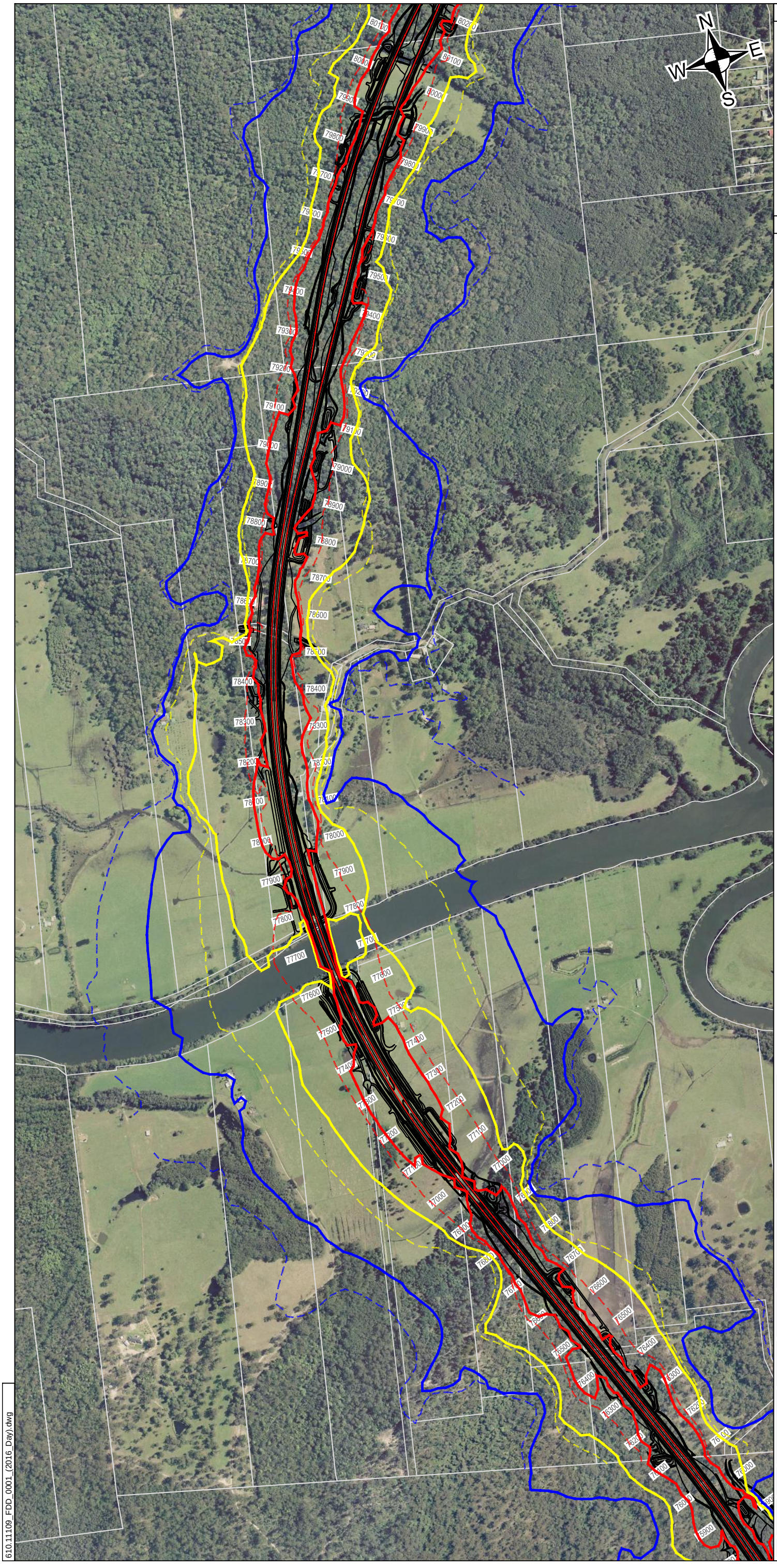

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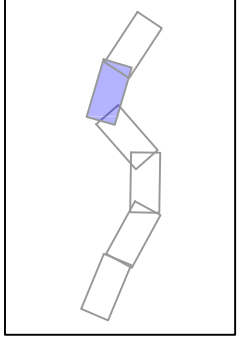

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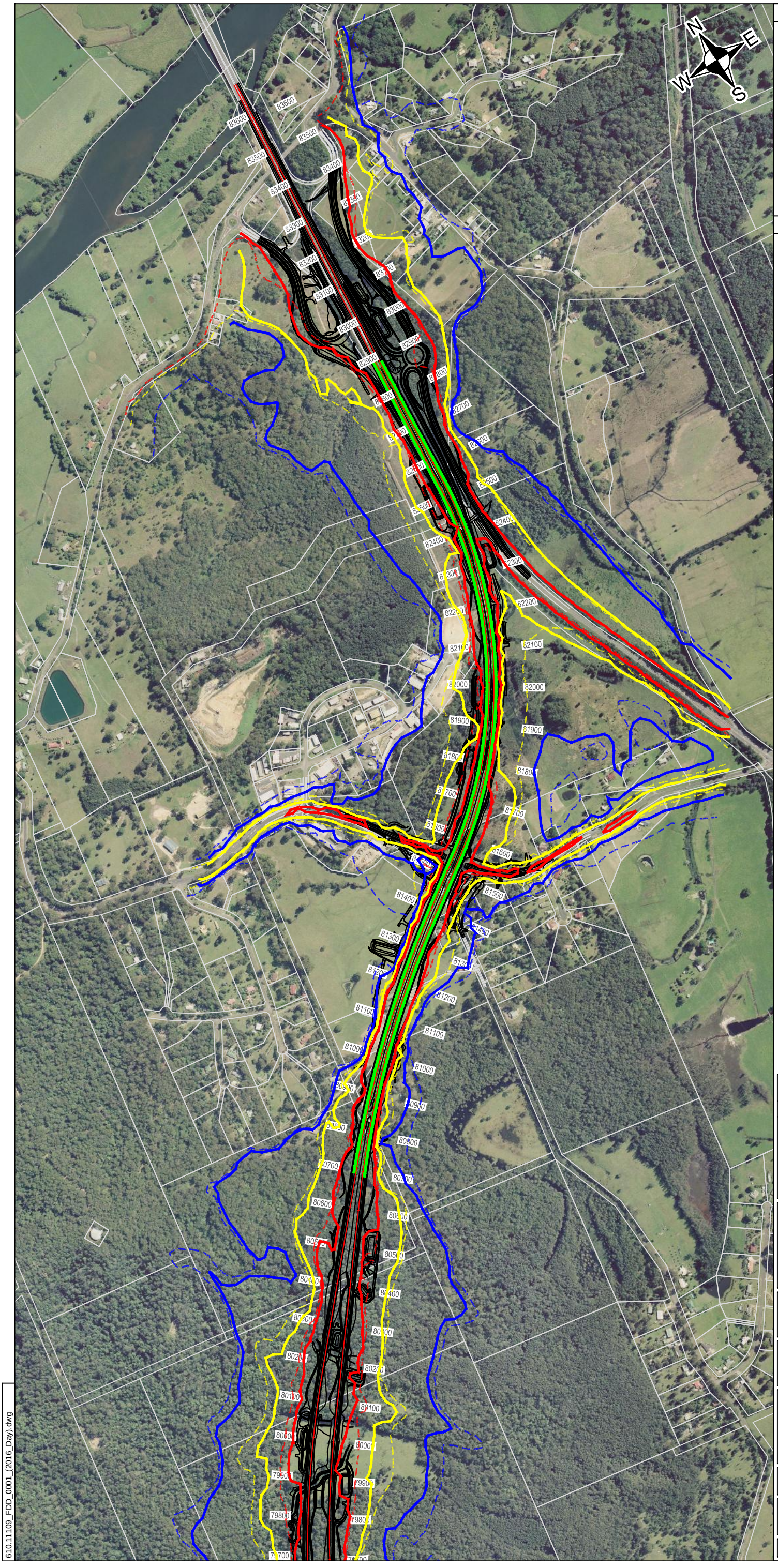

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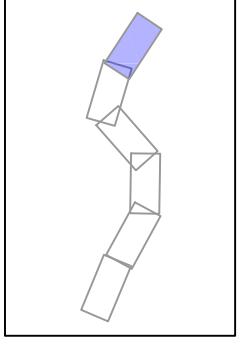

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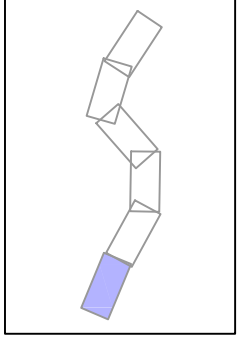

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Drawing Title
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2016 Night-time - LAeq(9hour)

Scale	Date
1:10,000 @ A3	02/2014

Drawing Number	Revision
610.11109_FDD_002	0

610.11109_FDD_0002_(2016_Night).dwg

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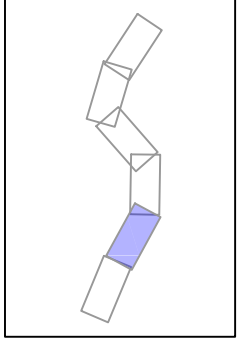

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Revision	By	Chk'd By	Date	Comments
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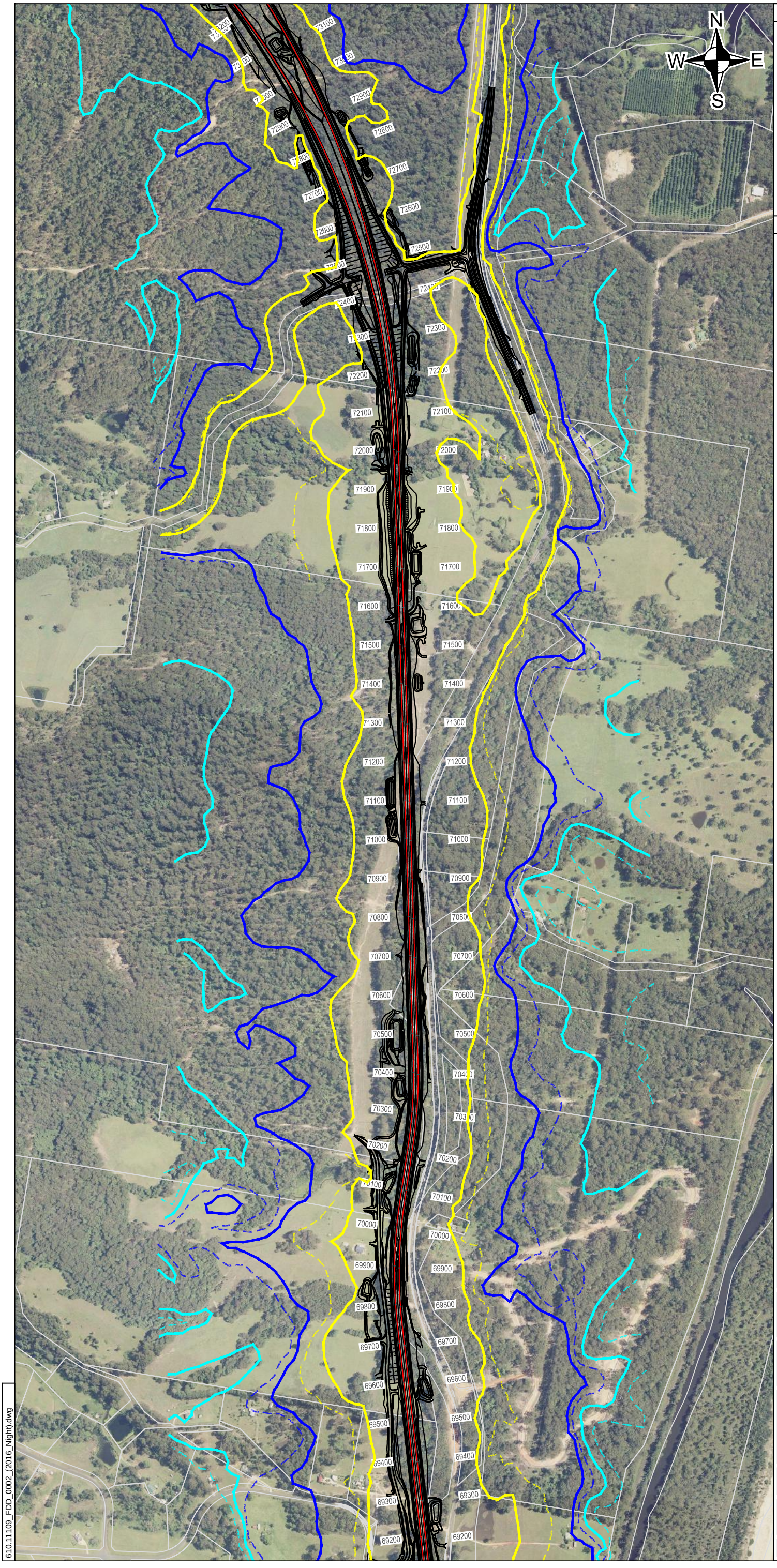

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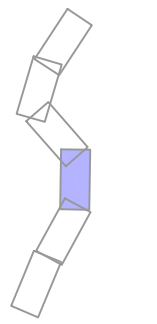

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Revision	By	Chk'd By	Date	Comments
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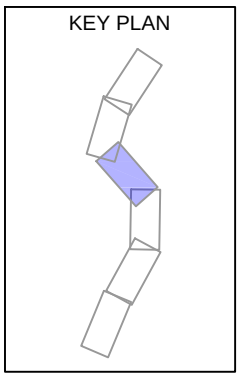

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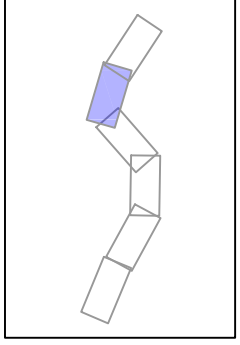

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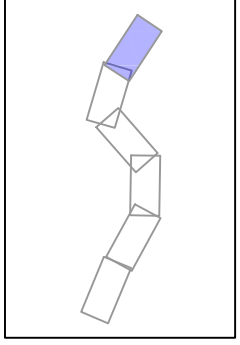

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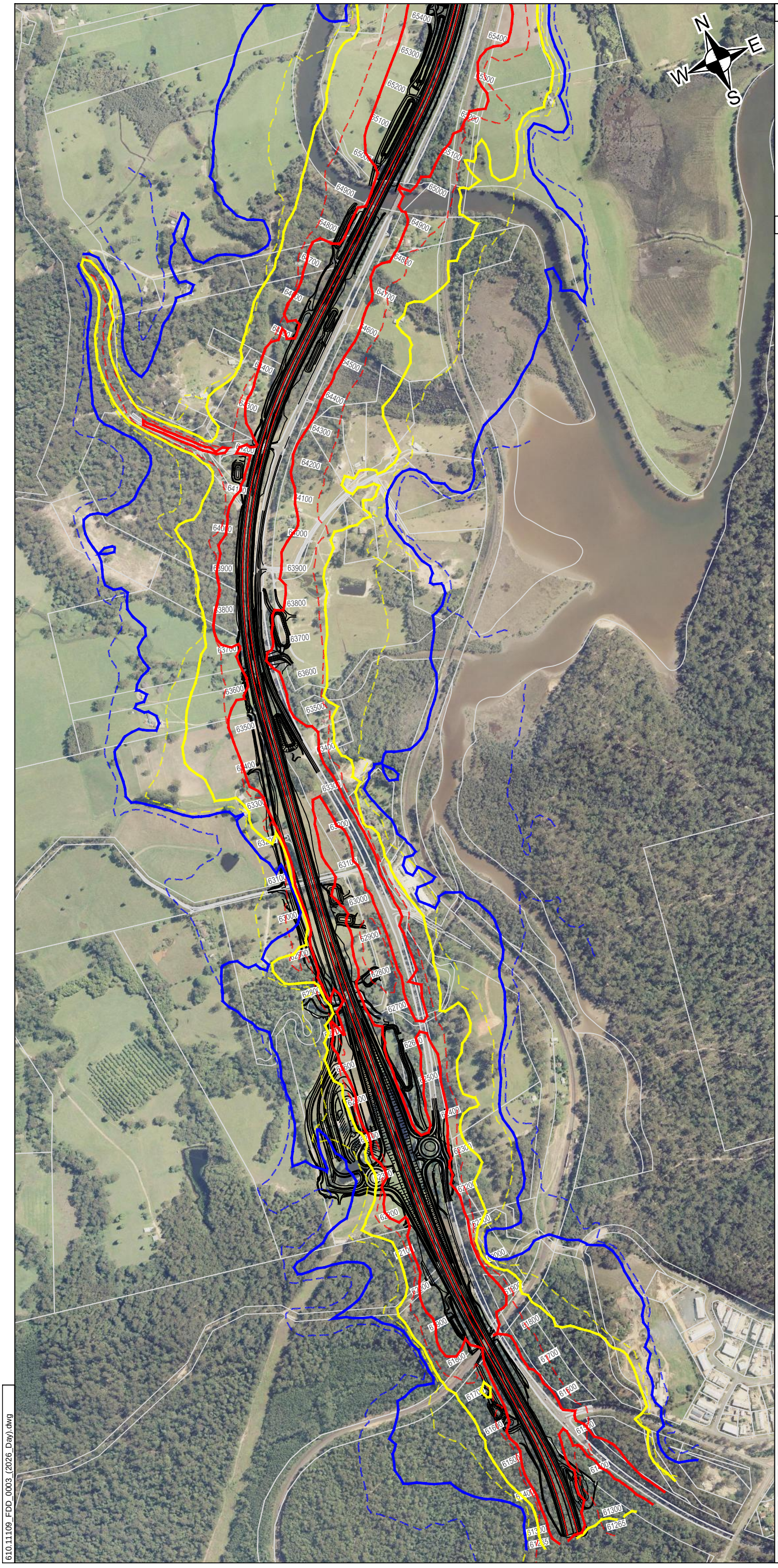

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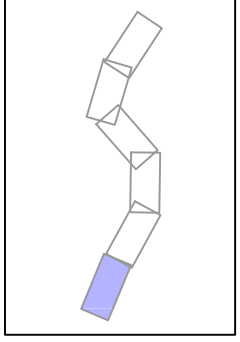

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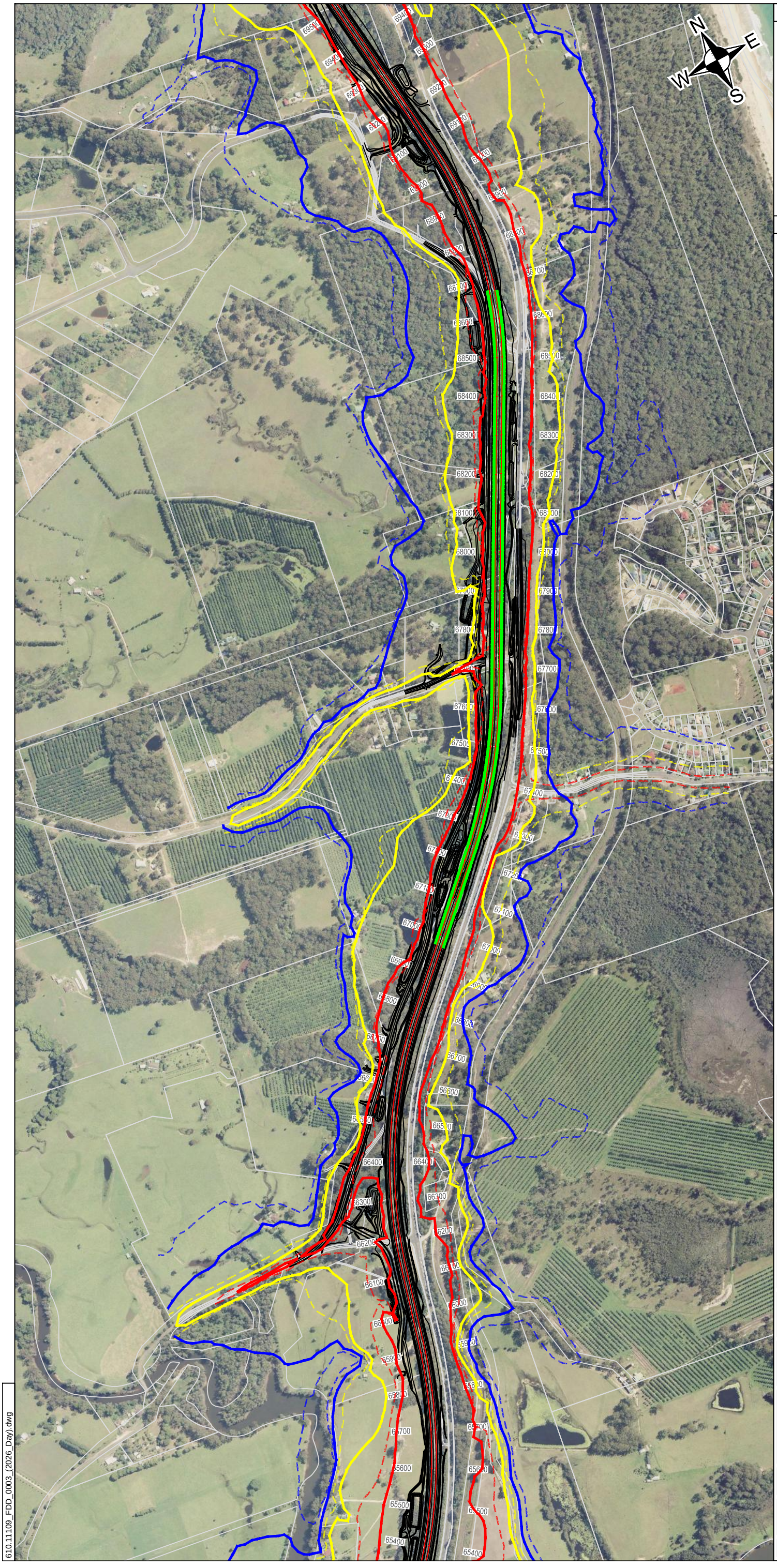

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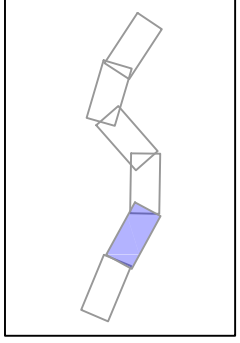
- 55 dBA Final Design Contour
- Low Noise Pavement
- Cadastral Boundary
- Design

KEY PLAN



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Metres
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Revision	By	Chk'd By	Date	Comments
0	ALW	MH	02/2014	

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Drawing Title
FDD
Noise Contour Comparison
2026 Daytime - LAeq(15hour)

Scale
1:10,000 @ A3

Date
02/2014

Drawing Number
610.11109_FDD_003

Revision
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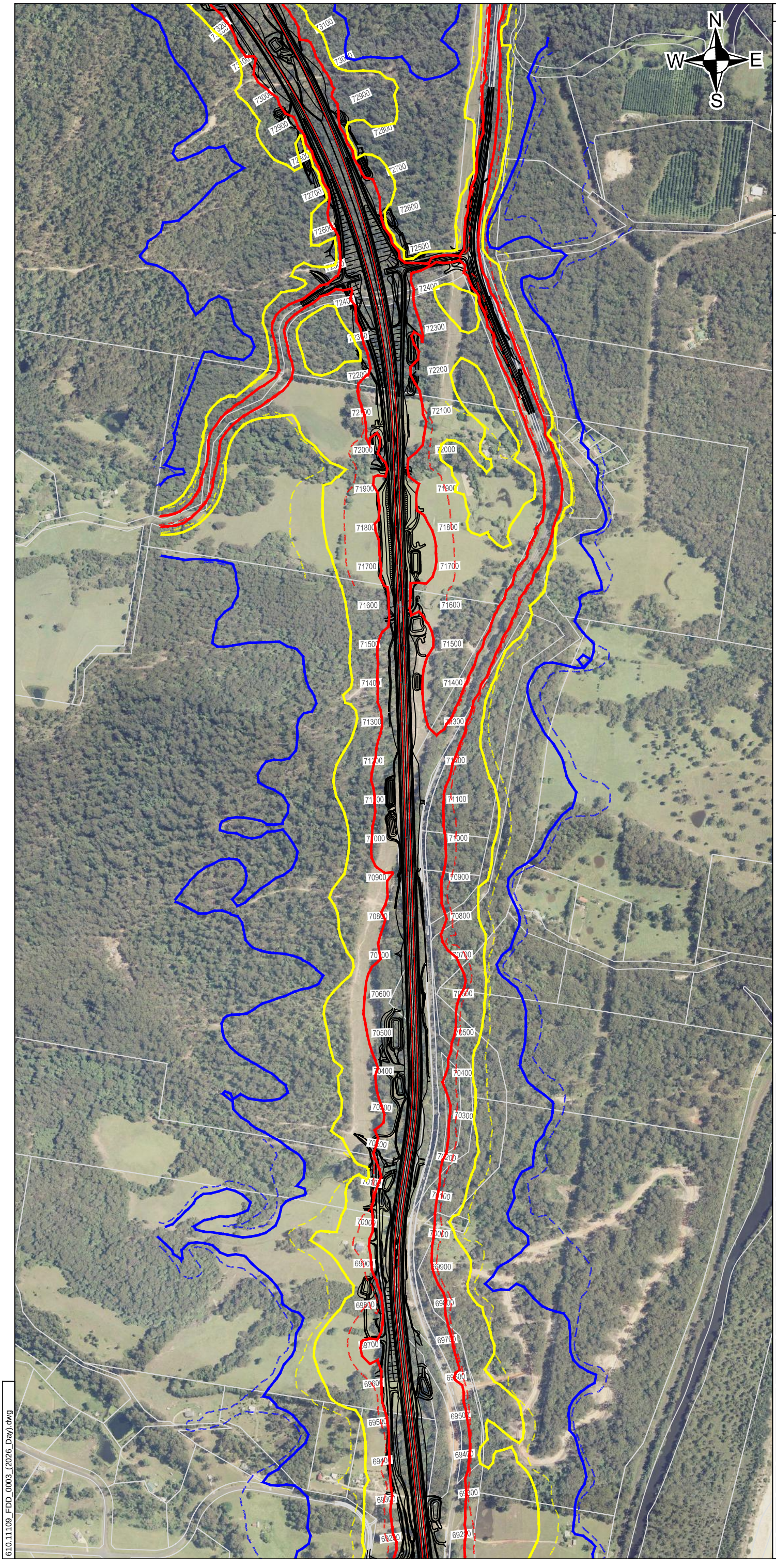
610.11109_FDD_0003_(2026_Day).dwg



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LEGEND

- 65 dBA Noise Limiting Contour
- 60 dBA Noise Limiting Contour
- 55 dBA Noise Limiting Contour
- 65 dBA Final Design Contour
- 60 dBA Final Design Contour
- 55 dBA Final Design Contour
- Low Noise Pavement
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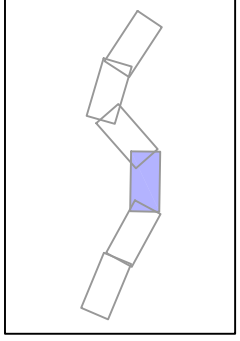
- Design

KEY PLAN



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Date
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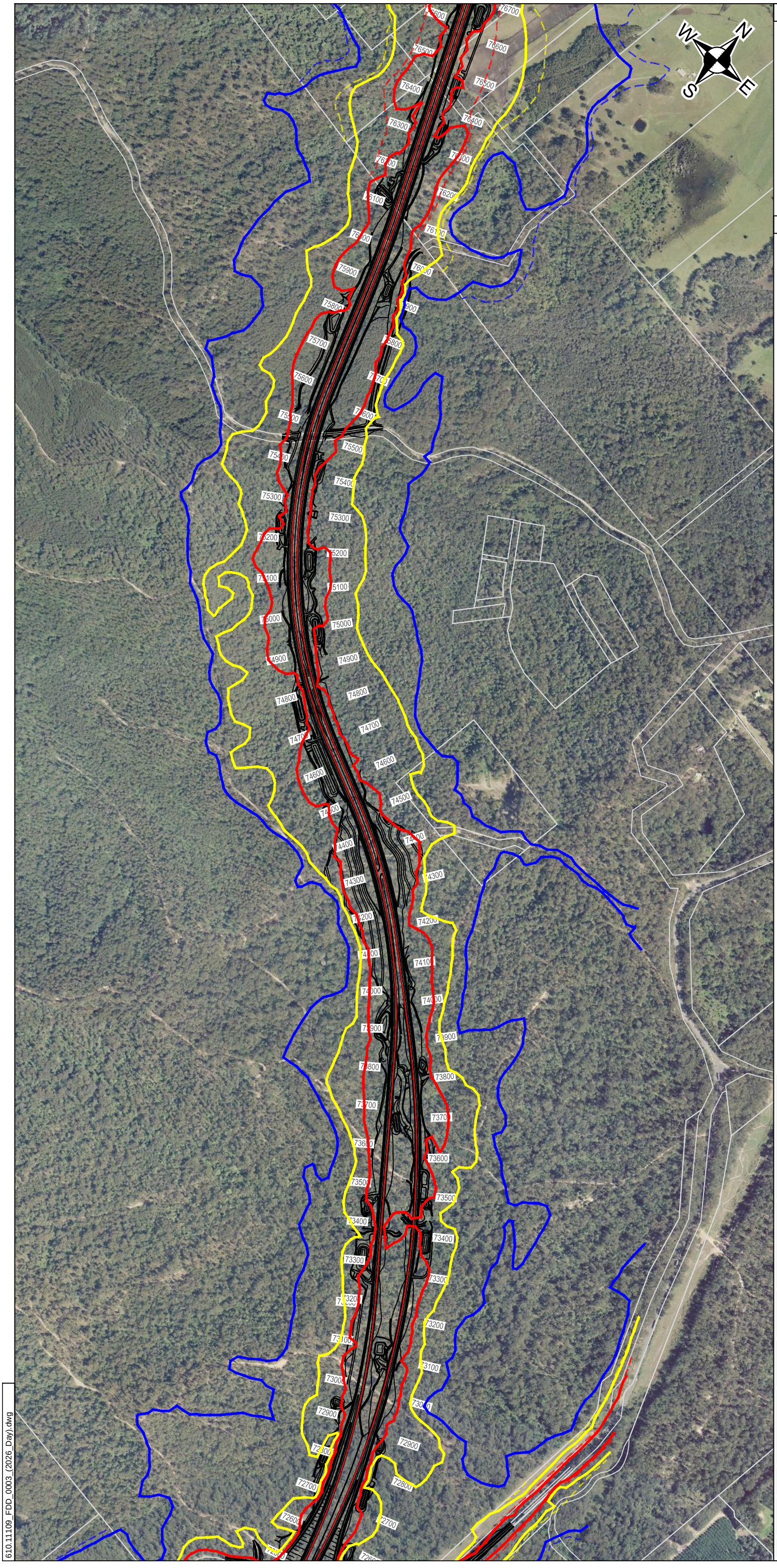

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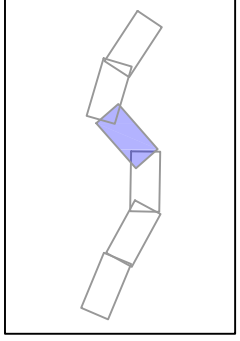

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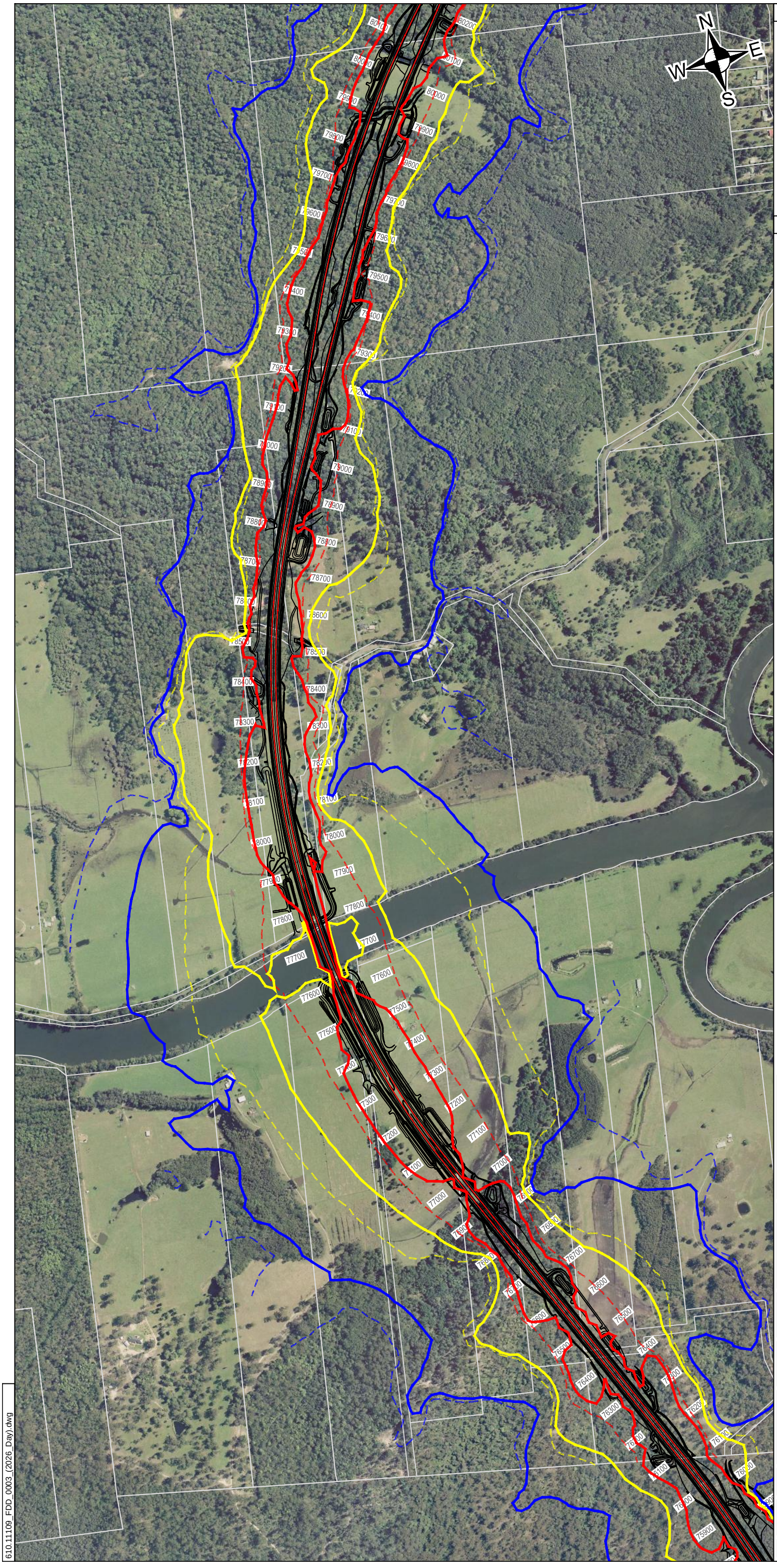

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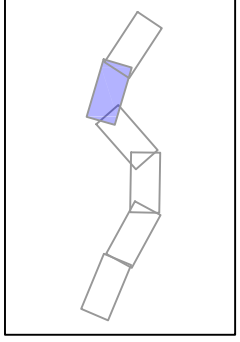

0 100 200 300 400 600

Metres
1:10,000

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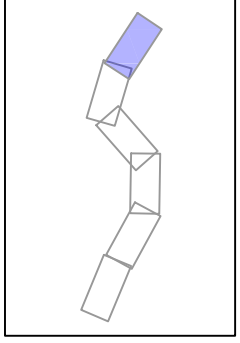

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Metres
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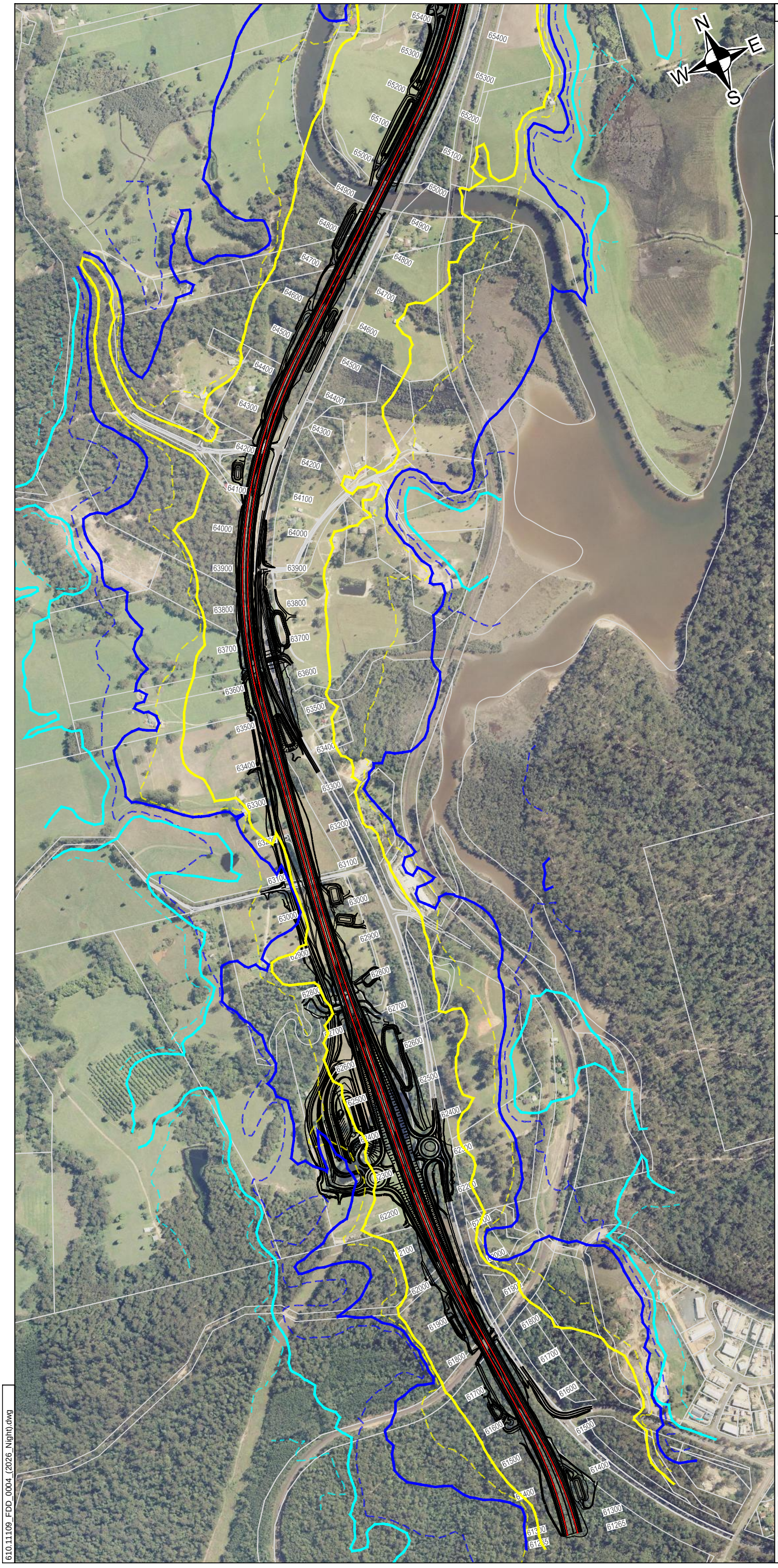

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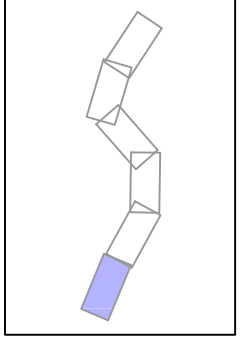

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Drawing Title
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2026 Night-time - LAeq(9hour)

Scale
1:10,000 @ A3

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Drawing Number
610.11109_FDD_004

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610.11109_FDD_0004_(2026_Night).dwg

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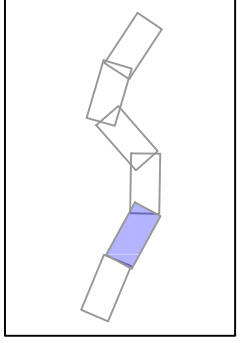

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Revision	By	Chk'd By	Date	Comments
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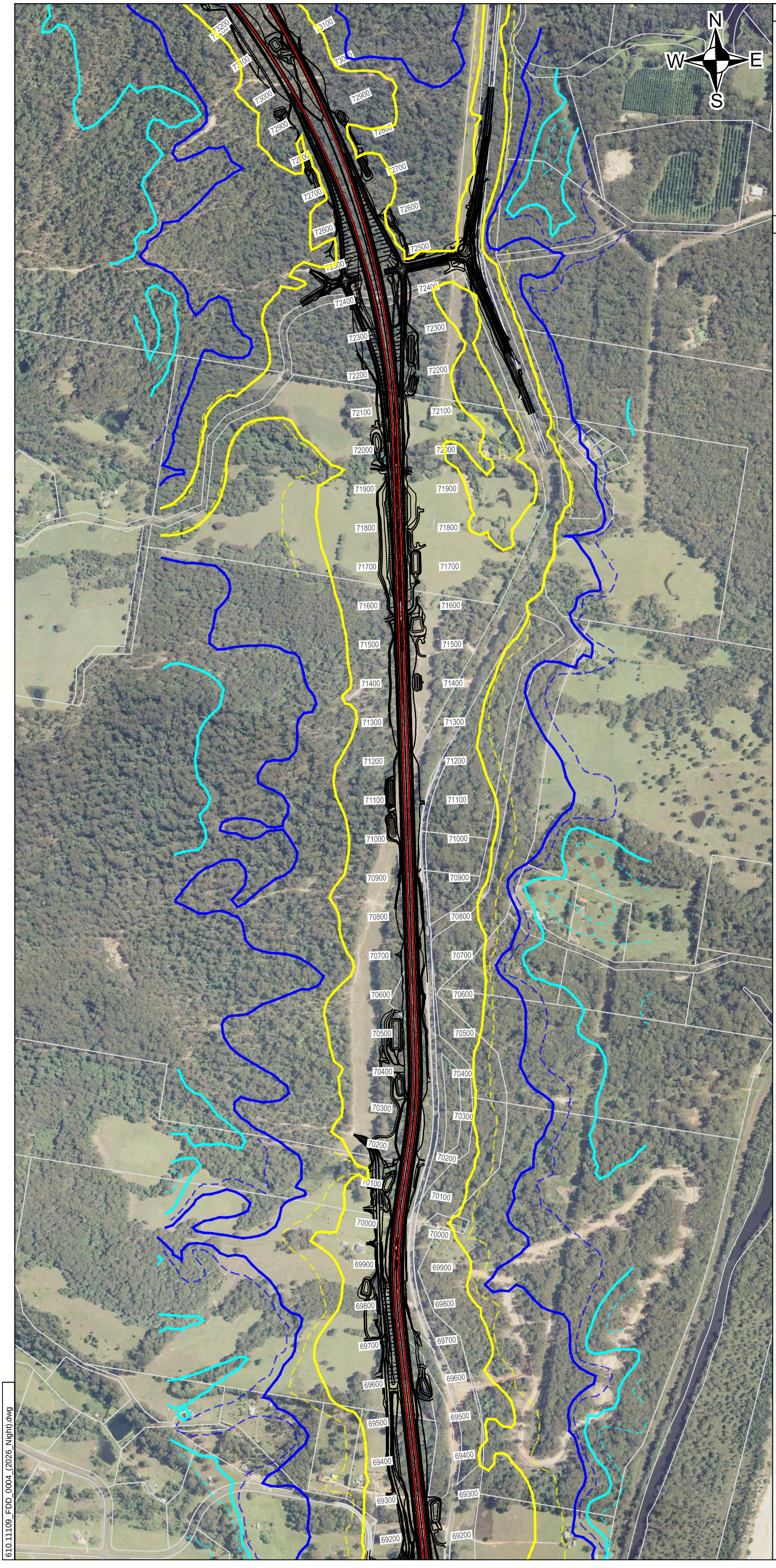

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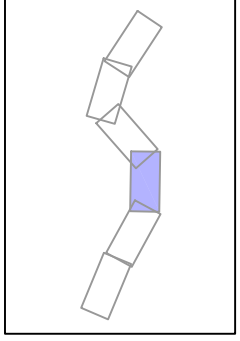

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Metres
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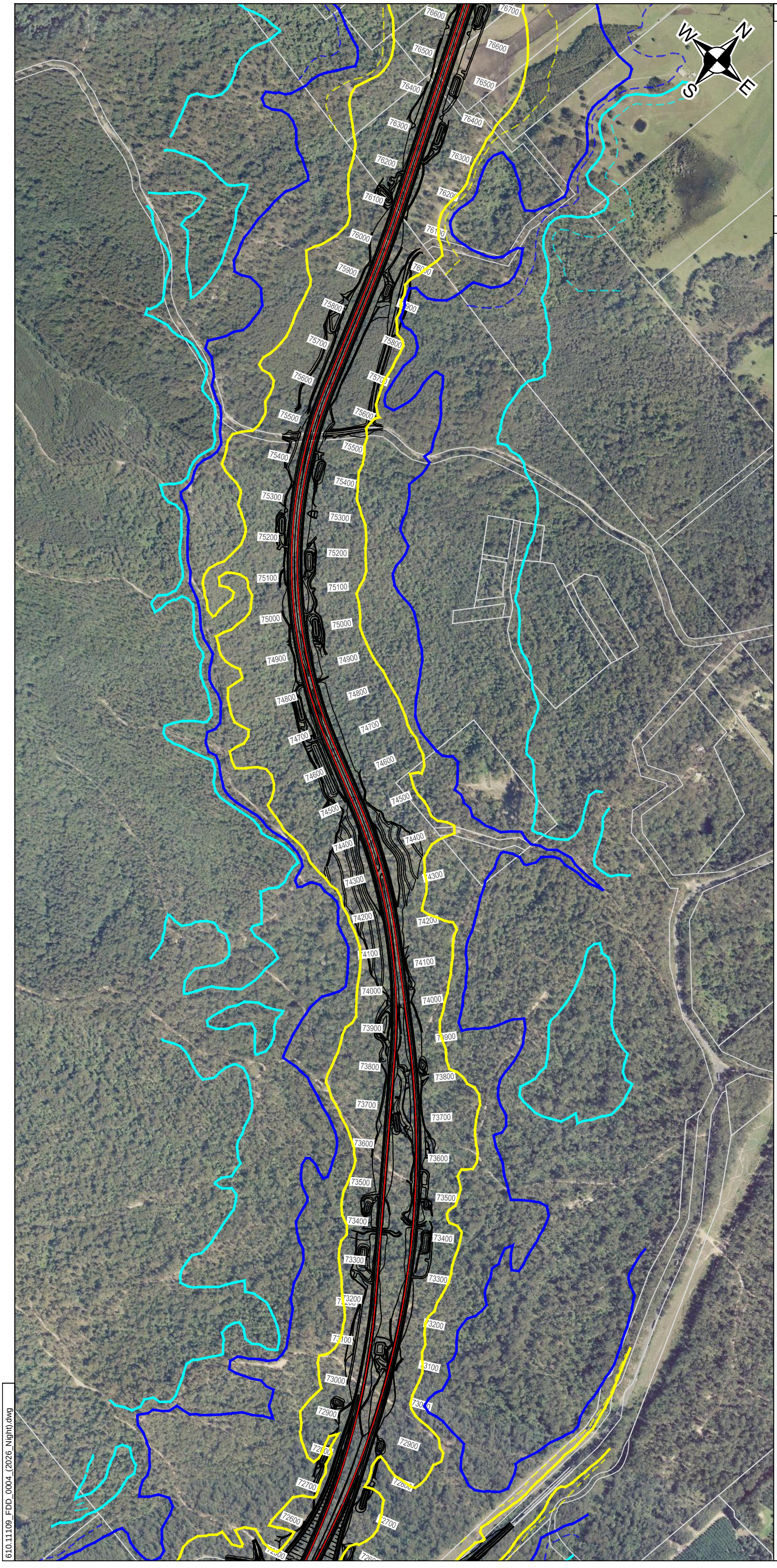

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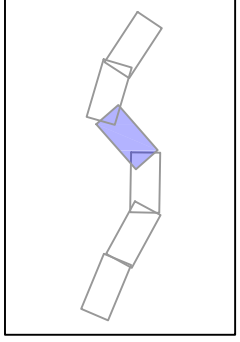

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Metres
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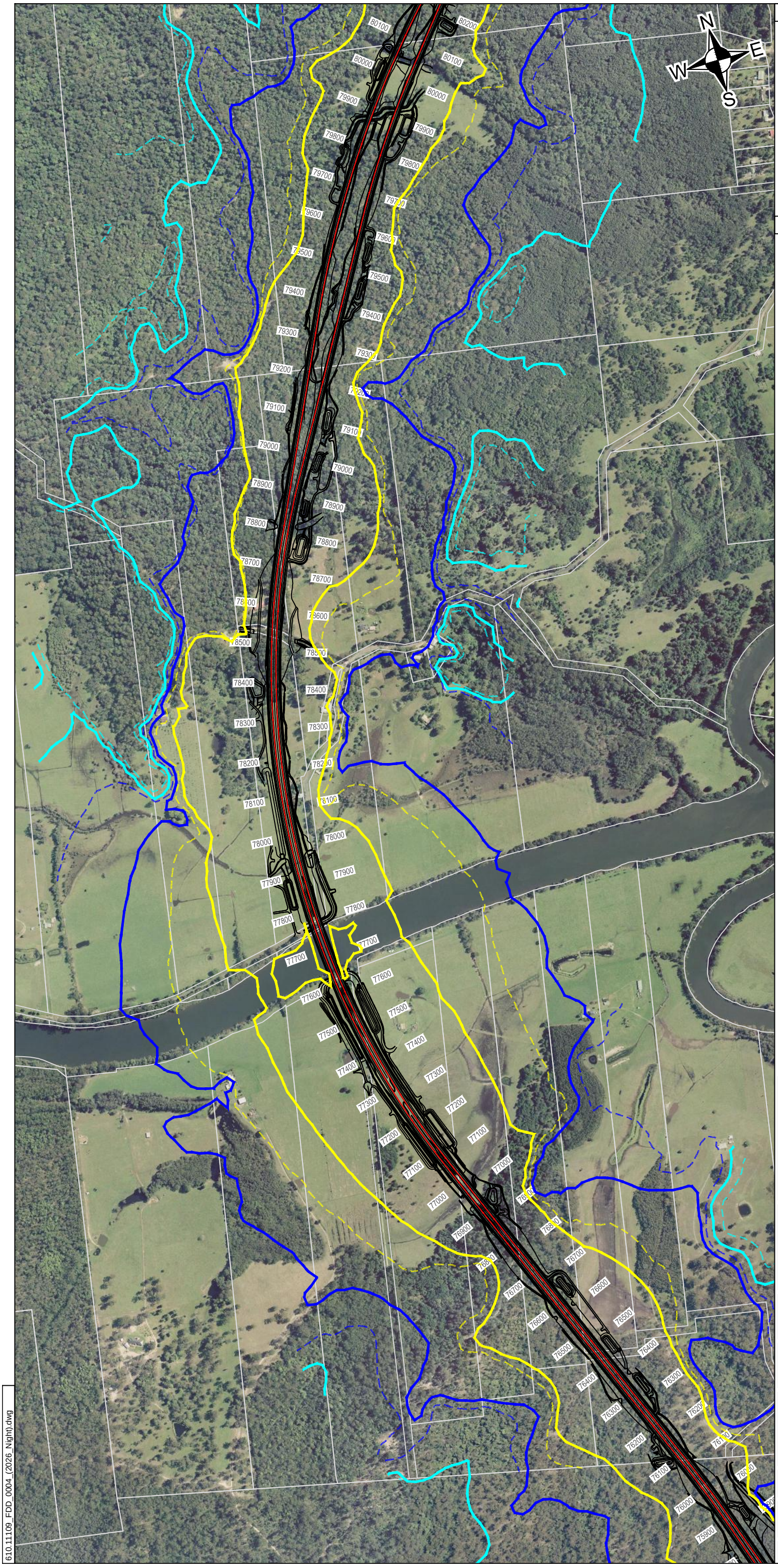

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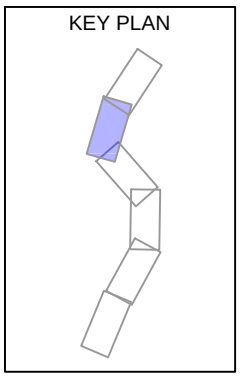

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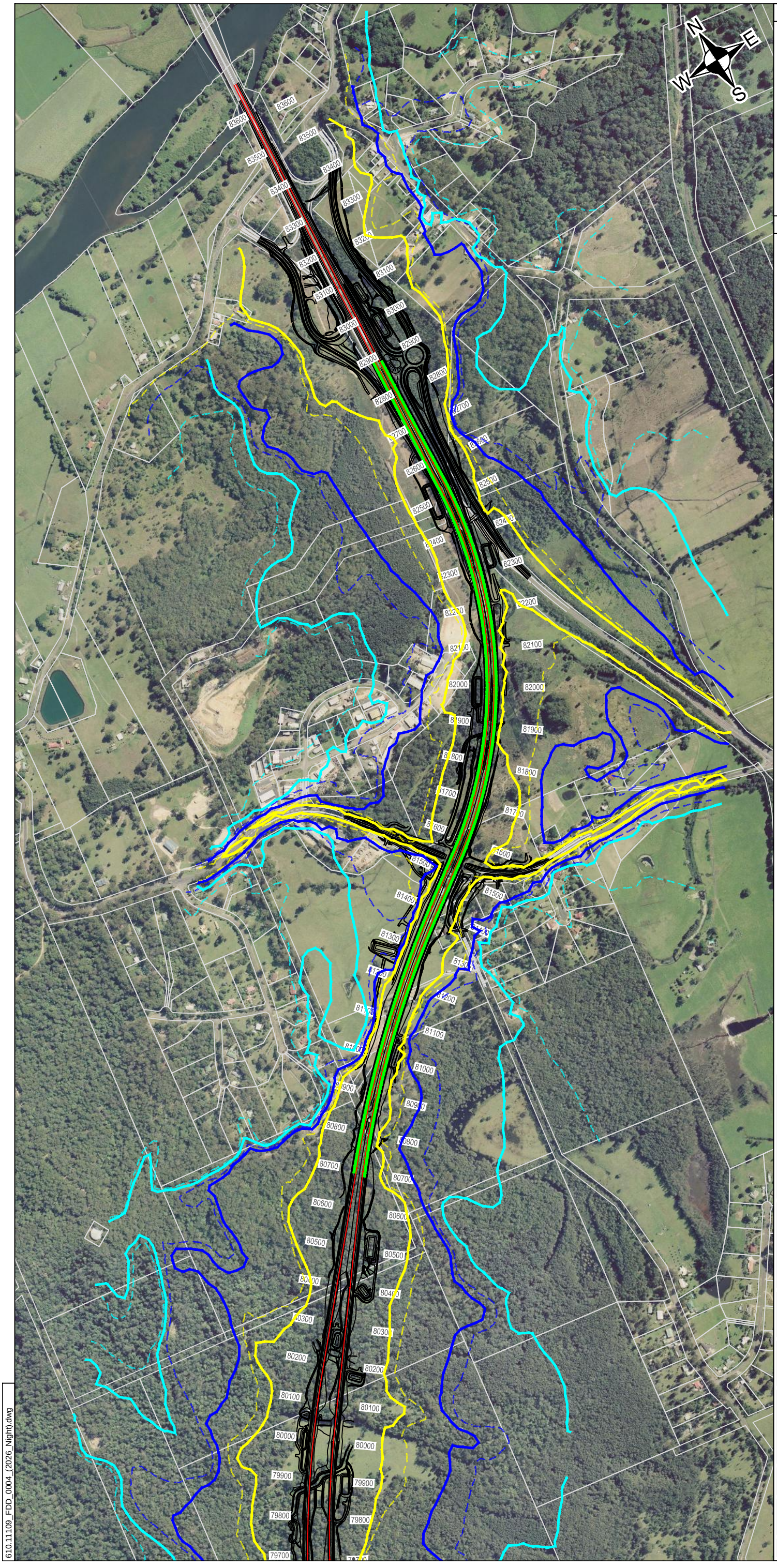

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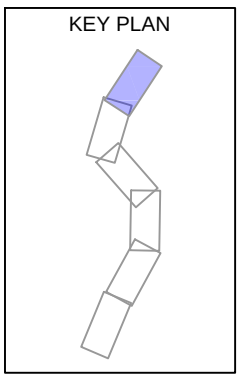

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Metres
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610.11109_FDD_0004_(2026_Night).dwg

Appendix E

Receiver Predictions, Appendix 4.6

Receiver Predictions - SWTC Appendix 4.6_RFT1

Count	Rec. ID	Co-ordinates		2026 Design Noise Levels (dBA)			
				Appendix 4.6 Targets		Final Design Highest Noise Level	
		X	Y	Daytime LAeq(15hr)	Night-time LAeq(9hr)	Daytime LAeq(15hr)	Night-time LAeq(9hr)
1	1630	497299	6612270	60	60	59	59
2	1631	497197	6612390	58	58	53	53
3	1632	497717	6612490	62	63	59	58
4	1634	497431	6612644	65	65	64	64
5	1635	497729	6612710	64	65	59	59
6	1636	497705	6612780	68	68	65	65
7	1637	497303	6612960	60	60	59	59
8	1639	497967	6613190	63	63	60	60
9	1640	498033	6613230	63	63	60	60
10	1642	497994	6613320	64	65	62	62
11	1643	498038	6613340	63	64	62	62
12	1644	498202	6613340	60	61	59	59
13	1647	497743	6613570	64	65	62	63
14	1649	497691	6613630	61	61	60	60
15	1650	497865	6613640	68	69	66	67
16	1651	497736	6613670	61	62	60	61
17	1652	498263	6613670	65	65	63	63
18	1653	497846	6613720	58	59	58	58
19	1654	498374	6613820	68	68	65	65
20	1655	498110	6613890	66	66	65	65
21	1656	497814	6613930	58	58	58	58
22	1659	498860	6614010	62	63	60	60
23	1660	497856	6614130	57	57	56	56
24	1663	498477	6614400	63	63	60	60
25	1666	498548	6614490	63	63	60	60
26	1669	498813	6614800	64	64	62	62
27	1677	499217	6615190	66	66	64	64
28	1678	498749	6615560	57	57	51	51
29	1679	498979	6615300	57	57	57	57
30	1682	499544	6615500	61	61	60	60
31	1714	499307	6615770	61	61	61	61
32	1722	499330	6615800	60	60	59	59
33	1755	499694	6616110	60	60	59	59
34	1762	499593	6616150	58	58	57	57
35	1766	499709	6616180	57	57	59	59
36	1770	499631	6616190	58	58	55	55
37	1771	499664	6616190	58	59	58	58
38	1791	500259	6616450	63	63	62	62
39	1794	500051	6616580	62	62	62	62

Receiver Predictions - SWTC Appendix 4.6_RFT1

Count	Rec. ID	Co-ordinates		2026 Design Noise Levels (dBA)			
				Appendix 4.6 Targets		Final Design Highest Noise Level	
		X	Y	Daytime LAeq(15hr)	Night-time LAeq(9hr)	Daytime LAeq(15hr)	Night-time LAeq(9hr)
40	1795	500465	6616800	62	63	62	62
41	1798	499974	6616940	56	56	56	56
42	1799	500627	6617050	58	59	57	57
43	1800	500369	6617350	66	67	65	65
44	1804	500077	6617460	56	56	55	55
45	1805	500818	6617556	60	60	59	59
46	1809	500310	6617700	63	63	62	62
47	1810	500198	6617710	59	59	58	58
48	1814	500014	6617890	56	56	54	54
49	1816	500555	6618340	63	63	60	60
50	1825	500697	6620330	61	61	60	60
51	1859	496988	6624310	54	55	53	53
52	1860	498577	6624370	55	55	54	54
53	1922	498342	6624800	58	58	56	56
54	2117	497065	6625400	55	56	53	53
55	2137	496961	6625478	55	55	53	53
56	2200	498137	6625650	58	58	55	55
57	2221	498212	6625700	56	57	54	54
58	2260	498157	6625800	59	60	58	58
59	2267	498218	6625830	57	57	54	54
60	2268	497498	6625820	61	62	58	58
61	2294	498069	6625900	58	59	57	57
62	2318	497719	6625960	64	64	63	63
63	2736	499538	6627894	52	53	52	52
64	2741	498939	6627924	61	61	59	59
65	2744	499542	6627949	52	53	52	52
66	2751	499550	6627996	52	52	50	51
67	2752	499058	6628010	60	61	59	59
68	2754	498779	6628015	51	51	50	49
69	2759	499503	6628060	59	60	56	56
70	2762	499044	6628080	54	54	52	52
71	2763	499755	6628089	51	51	49	49
72	2764	499549	6628090	57	58	57	57
73	2766	499608	6628117	56	56	55	55
74	2768	499056	6628131	53	53	52	52
75	2771	499884	6628140	59	57	55	54
76	2772	499754	6628140	60	58	59	58
77	2775	499665	6628150	58	57	59	58
78	2778	499086	6628177	52	53	51	51

Receiver Predictions - SWTC Appendix 4.6_RFT1

Count	Rec. ID	Co-ordinates		2026 Design Noise Levels (dBA)			
				Appendix 4.6 Targets		Final Design Highest Noise Level	
		X	Y	Daytime LAeq(15hr)	Night-time LAeq(9hr)	Daytime LAeq(15hr)	Night-time LAeq(9hr)
79	2779	499934	6628200	61	59	60	57
80	2782	500023	6628210	59	58	56	55
81	2783	499829	6628212	59	59	58	57
82	2788	500125	6628270	57	57	55	55
83	2789	500073	6628269	58	58	56	56
84	2799	499156	6628547	51	51	47	47
85	2827	500503	6629600	57	57	57	57
86	2833	500488	6629690	56	56	55	55
87	2835	499841	6629770	58	58	55	55
88	2837	499911	6629810	63	63	61	60
89	2838	500468	6629790	59	59	58	58
90	2839	499863	6629800	57	57	57	56
91	2841	499874	6629810	63	62	58	57
92	2844	500462	6629830	59	59	58	58
93	2845	500444	6629870	60	60	59	58
94	2851	500411	6629900	63	63	61	61
95	2855	500445	6629930	61	60	59	59
96	2856	500446	6629950	62	62	60	59
97	2862	500412	6630020	63	63	63	62
98	2864	500299	6630160	67	67	66	66
99	4003	497909	6613200	64	65	61	61
100	4005	498098	6613010	60	60	58	58
101	4006	498088	6613270	60	60	60	60
102	4007	498234	6613240	59	60	57	57
103	4010	500453	6629900	60	60	58	58
104	4041	500622	6617970	62	62	62	62
105	5001	500298	6618300	64	65	65	65
106	5002	500889	6617492	58	59	57	57

Note: Red shading indicates a predicted exceedance of the noise targets.

Appendix F

ECRTN Assessment

No.	Receiver ID	Applicable Criteria	2016 Future Existing Noise Level[1]		Applicable ECRTN Criteria[2]		Most Affected Facade Noise Level (dBA)[3,4]				2026 Future Design "Exceedance" at Most Affected Facade (dBA)					
							2016 Future		2026 Future Design		Daytime LAeq(15hr)			Night-time LAeq(9hr)		
			Daytime LAeq(15hr)	Night-time LAeq(9hr)	Daytime LAeq(15hr)	Night-time LAeq(9hr)	Daytime LAeq(15hr)	Night-time LAeq(9hr)	Daytime LAeq(15hr)	Night-time LAeq(9hr)	Exceed. "A"[5]	Exceed. "B"[6]	Acute?	Exceed. "A"[5]	Exceed. "B"[6]	Acute?
1	1623	r	45	45	60	55	50	50	51	50	-	-	-	-	-	-
2	1625	r	44	44	60	55	48	48	49	48	-	-	-	-	-	-
3	1626	r	43	42	60	55	47	47	48	48	-	-	-	-	-	-
4	1627	r	42	42	60	55	47	47	48	48	-	-	-	-	-	-
5	1628	r	43	42	60	55	47	47	48	47	-	-	-	-	-	-
6	1630	r	51	51	60	55	58	58	59	59	-	-	-	4	8.0	-
7	1631	r	50	49	60	55	52	52	53	53	-	-	-	-	-	-
8	1632	r	51	51	60	55	55	55	56	56	-	-	-	1	5.3	-
9	1634	r	57	56	60	58	63	63	64	64	4	7.1	-	9	7.6	Yes
10	1635	r	59	58	60	60	58	58	59	59	-	-	-	-	-	-
11	1636	r	61	60	63	62	62	62	63	63	-	-	-	8	2.8	Yes
12	1637	r	52	52	60	55	58	58	59	59	-	-	-	4	6.7	-
13	1638	r	46	46	60	55	52	52	53	52	-	-	-	-	-	-
14	1639	r	54	54	60	55	60	60	60	60	-	-	-	5	6.4	Yes
15	1640	r	54	54	60	55	60	59	60	60	-	-	-	5	6.8	Yes
16	1642	r	57	56	60	58	61	61	62	62	2	5.4	-	7	5.7	Yes
17	1643	r	56	56	60	58	61	61	62	62	2	5.5	-	7	5.8	Yes
18	1644	r	54	53	60	55	58	58	59	59	-	-	-	4	5.5	-
19	1647	r	55	55	60	57	61	62	62	63	2	6.5	-	8	7.6	Yes
20	1649	r	55	55	60	57	58	59	60	60	-	-	-	5	5.4	Yes
21	1650	r	57	57	60	59	66	66	66	67	6	9.2	Yes	12	9.6	Yes
22	1651	r	52	52	60	55	59	60	60	61	-	-	-	6	9.0	Yes
23	1652	r	59	59	60	61	62	62	63	63	3	4.0	-	8	4.1	Yes
24	1653	r	49	49	60	55	57	57	58	58	-	-	-	3	-	-
25	1654	r	58	58	60	60	61	61	61	61	1	3.1	-	6	3.3	Yes
26	1655	r	59	58	60	60	65	65	65	65	5	6.7	Yes	10	7.0	Yes
27	1656	r	51	50	60	55	57	57	58	58	-	-	-	3	7.5	-
28	1657	r	49	48	60	55	50	50	52	52	-	-	-	-	-	-
29	1659	r	55	54	60	55	60	59	60	60	-	-	-	5	6.0	Yes
30	1660	r	50	49	60	55	55	55	56	56	-	-	-	1	-	-
31	1661	r	47	47	60	55	52	52	53	53	-	-	-	-	-	-
32	1663	r	54	53	60	55	59	59	60	60	-	-	-	5	6.7	Yes
33	1664	r	46	46	60	55	51	51	52	52	-	-	-	-	-	-
34	1666	r	53	53	60	55	59	59	60	60	-	-	-	5	6.6	Yes
35	1669	r	55	55	60	57	62	62	62	62	2	7.1	-	7	7.3	Yes
36	1670	r	47	47	60	55	52	52	53	53	-	-	-	-	-	-
37	1673	r	47	47	60	55	52	52	53	53	-	-	-	-	-	-
38	1675	r	46	46	60	55	51	51	52	52	-	-	-	-	-	-
39	1677	r	57	57	60	59	61	61	61	61	1	4.3	-	6	4.3	Yes
40	1678	r	46	45	60	55	50	50	51	51	-	-	-	-	-	-
41	1678EA	r	51	50	60	55	55	55	56	56	-	-	-	1	5.4	-
42	1679	r	52	52	60	55	55	55	57	57	-	-	-	2	5.1	-
43	1682	r	53	53	60	55	57	57	58	58	-	-	-	3	4.8	-
44	1686	r	60	60	62	62	56	56	58	57	-	-	-	-	-	-
45	1689	r	51	51	60	55	49	49	50	50	-	-	-	-	-	-
46	1697	r	57	57	60	59	55	54	56	55	-	-	-	-	-	-
47	1703	r	45	45	60	55	50	50	50	51	-	-	-	-	-	-
48	1709	r	55	55	60	57	50	50	51	51	-	-	-	-	-	-
49	1714	r	55	54	60	55	60	60	61	61	1	6.2	-	6	6.3	Yes
50	1718	r	57	57	60	59	54	54	55	55	-	-	-	-	-	-
51	1720	r	57	57	60	59	49	48	50	49	-	-	-	-	-	-
52	1721	r	51	51	60	55	50	50	51	51	-	-	-	-	-	-
53	1722	r	51	51	60	55	58	58	59	59	-	-	-	4	7.9	-
54	1729	r	51	51	60	55	50	49	51	50	-	-	-	-	-	-
55	1730	r	58	58	60	60	50	50	51	51	-	-	-	-	-	-
56	1731	r	56	56	60	58	50	49	51	50	-	-	-	-	-	-
57	1736	r	47	47	60	55	49	48	50	49	-	-	-	-	-	-
58	1737	r	51	50	60	55	50	50	51	51	-	-	-	-	-	-
59	1738	r	51	51	60	55	50	50	51	51	-	-	-	-	-	-
60	1740	r	50	49	60	55	49	49	50	50	-	-	-	-	-	-
61	1744	r	51	51	60	55	50	49	51	50	-	-	-	-	-	-
62	1748	r	48	48	60	55	49	49	50	50	-	-	-	-	-	-
63	1753	r	49	49	60	55	50	50	51	51	-	-	-	-	-	-
64	1755	r	55	54	60	55	55	55	57	56	-	-	-	1	2.1	-
65	1762	r	55	54	60	55	56	56	57	57	-	-	-	2	2.2	-
66	1763	r	49	49	60	55	51	50	52	51	-	-	-	-	-	-
67	1766	r	55	54	60	55	56	55	57	56	-	-	-	1	2.1	-
68	1767	r	49	49	60	55	51	51	52	51	-	-	-	-	-	-
69	1770	r	53	53	60	55	54	54	55	55	-	-	-	-	-	-
70	1771	r	54	54	60	55	55	55	56	56	-	-	-	1	2.1	-
71	1772	r	50	50	60	55	50	50	51	51	-	-	-	-	-	-
72	1773	r	50	50	60	55	52	51	53	52	-	-	-	-	-	-
73	1774	r	53	53	60	55	53	53	54	54	-	-	-	-	-	-
74	1777	r	52	52	60	55	53	52	54	53	-	-	-	-	-	-
75	1779	r	50	50	60	55	51	50	52	51	-	-	-	-	-	-
76	1781	r	49	48	60	55	53	52	53	53	-	-	-	-	-	-
77	1782	r	54	54	60	55	55	55	56	56	-	-	-	1	1.9	-
78	1783	r	50	50	60	55	50	50	51	51	-	-	-	-	-	-
79	1785	r	51	50	60	55	52	52	53	53	-	-	-	-	-	-
80	1788	r	54	54	60	55	56	56	57	57	-	-	-	2	3.0	-
81	1789	r	50	50	60	55	51	51	52	51	-	-	-	-	-	-
82	1790	r	51	51	60	55	53	53	54	54	-	-	-	-	-	-
83	1791	r	61	60	63	62	61	61	62	62	-	-	-	-	-	Yes
84	1792	r	48	48	60	55	49	49	50	50	-	-	-	-	-	-
85	1794	r	59	58	60	60	61	61	62	62	2	3.3	-	7	3.5	Yes
86	1795	r	62	62	64	64	61	61	62	62	-	-	-	-	-	Yes
87	1798	r	53	53	60	55	55	55	56	56	-	-	-	1	3.0	-
88	1799	r	55	55	60	57	56	56	57	57	-	-	-	-	-	-
89	1800	r	57	57	60	59	65	65	65	65	5	8.1	Yes	10	8.3	Yes
90	1804	r	50	50	60	55	54	54	55	55	-	-	-	-	-	-
91	1805	r	55	55	60	57	58	58	59	59	-	-	-	4	4.5	-
92	1809	r	56	56	60	58	61	61	62	62	2	6.3	-	7	6.5	Yes
93	1810	r	50	50	60	55	57	57	58	58	-	-	-	3	7.7	-
94	1811	r	48	48	60	55	54	54	55	55	-	-	-	-	-	-
95	1813	r	44	44	60	55	51	51	52	52	-	-	-	-	-	-
96	1814	r	47	47	60	55	53	53	54	54	-	-	-	-	-	-
97	1816	r	56	56	60	58	59	59	60	60	-	-	-	5	4.3	Yes
98	1817	r	45	45	60	55	50	50	51	51	-	-	-	-	-	-
99	1818	r	44	44	60	55	49	49	50	50	-	-	-	-	-	-
100	1819	r	55	55	60	57	56	56	57	57	-	-	-	-	-	-

No.	Receiver ID	Applicable Criteria	2016 Future Existing Noise Level[1]		Applicable ECRTN Criteria[2]		Most Affected Facade Noise Level (dBA)[3,4]				2026 Future Design "Exceedance" at Most Affected Facade (dBA)					
							2016 Future		2026 Future Design		Daytime LAeq(15hr)			Night-time LAeq(9hr)		
			Daytime LAeq(15hr)	Night-time LAeq(9hr)	Daytime LAeq(15hr)	Night-time LAeq(9hr)	Daytime LAeq(15hr)	Night-time LAeq(9hr)	Daytime LAeq(15hr)	Night-time LAeq(9hr)	Exceed. "A"[5]	Exceed. "B"[6]	Acute?	Exceed. "A"[5]	Exceed. "B"[6]	Acute?
101	1823	r	45	44	60	55	47	46	47	47	-	-	-	-	-	-
102	1824	r	54	54	60	55	54	54	55	55	-	-	-	-	-	-
103	1825	n	56	56	56.5	56.5	59	59	60	60	5	3.5	-	10	3.8	Yes
104	1826	r	56	56	60	58	55	54	56	55	-	-	-	-	-	-
105	1827	r	56	56	60	58	55	54	56	55	-	-	-	-	-	-
106	1828	r	58	58	60	60	55	55	56	56	-	-	-	-	-	-
107	1841	n	45	45	55	50	55	55	56	56	1	-	-	6	-	-
108	1844	r	55	54	60	55	50	49	50	49	-	-	-	-	-	-
109	1845	r	57	56	60	58	52	51	52	51	-	-	-	-	-	-
110	1846	n	52	51	55	51.5	48	47	49	48	-	-	-	-	-	-
111	1850	n	47	46	55	50	47	47	48	48	-	-	-	-	-	-
112	1851	r	55	54	60	55	49	48	50	49	-	-	-	-	-	-
113	1852	r	62	62	64	64	57	56	57	56	-	-	-	-	-	-
114	1859	n	<30	<30	55	50	52	52	53	53	-	-	-	3	-	-
115	1860	n	30	<30	55	50	53	53	54	54	-	-	-	4	-	-
116	1922	n	<30	<30	55	50	55	55	56	56	1	-	-	6	-	-
117	1958	n	31	30	55	50	58	58	59	59	4	-	-	9	-	-
118	1960a	n	<30	<30	55	50	65	66	66	67	11	-	Yes	17	-	Yes
119	1960b	n	<30	<30	55	50	63	63	63	64	8	-	-	14	-	Yes
120	2117	n	<30	<30	55	50	52	52	53	53	-	-	-	3	-	-
121	2137	n	<30	<30	55	50	52	52	53	53	-	-	-	3	-	-
122	2200	n	35	34	55	50	54	54	55	55	-	-	-	5	-	-
123	2221	n	33	32	55	50	53	53	54	54	-	-	-	4	-	-
124	2240	n	<30	<30	55	50	64	64	65	65	10	-	Yes	15	-	Yes
125	2260	n	<30	<30	55	50	57	57	58	58	3	-	-	8	-	-
126	2267	n	<30	<30	55	50	53	53	54	54	-	-	-	4	-	-
127	2268	n	<30	<30	55	50	58	58	58	58	3	-	-	8	-	-
128	2294	n	<30	<30	55	50	56	56	57	57	2	-	-	7	-	-
129	2318	n	<30	<30	55	50	62	62	63	63	8	-	-	13	-	Yes
130	2736	n	35	33	55	50	51	51	52	52	-	-	-	2	-	-
131	2741	n	30	<30	55	50	58	58	59	59	4	-	-	9	-	-
132	2744	n	35	33	55	50	51	51	52	52	-	-	-	2	-	-
133	2746	n	37	36	55	50	45	45	46	46	-	-	-	-	-	-
134	2748	n	38	37	55	50	46	46	47	47	-	-	-	-	-	-
135	2749	n	39	37	55	50	45	45	46	46	-	-	-	-	-	-
136	2750	n	36	34	55	50	46	46	47	47	-	-	-	-	-	-
137	2751	n	34	33	55	50	50	50	50	51	-	-	-	1	-	-
138	2752	n	43	41	55	50	58	58	59	59	4	-	-	9	-	-
139	2753	n	38	36	55	50	45	44	45	45	-	-	-	-	-	-
140	2754	n	40	39	55	50	49	49	50	49	-	-	-	-	-	-
141	2755	n	36	34	55	50	46	46	47	47	-	-	-	-	-	-
142	2756	n	38	37	55	50	45	44	46	45	-	-	-	-	-	-
143	2757	n	40	39	55	50	48	47	48	48	-	-	-	-	-	-
144	2758	n	41	39	55	50	45	44	45	45	-	-	-	-	-	-
145	2759	n	44	43	55	50	56	55	56	56	1	-	-	6	-	-
146	2760	n	37	35	55	50	43	42	43	43	-	-	-	-	-	-
147	2762	n	43	41	55	50	52	51	52	52	-	-	-	2	-	-
148	2763	n	40	38	55	50	48	48	49	49	-	-	-	-	-	-
149	2764	n	47	45	55	50	56	56	57	57	2	-	-	7	-	-
150	2765	n	38	36	55	50	43	42	44	43	-	-	-	-	-	-
151	2766	n	47	45	55	50	55	54	55	55	-	-	-	5	-	-
152	2767	r	53	51	60	55	57	54	57	54	-	-	-	-	-	-
153	2768	n	43	42	55	50	51	51	52	52	-	-	-	2	-	-
154	2769	n	47	45	55	50	51	49	51	50	-	-	-	-	-	-
155	2770	r	55	52	60	55	58	55	58	55	-	-	-	-	-	-
156	2771	n	47	44	55	50	52	50	52	51	-	-	-	1	-	-
157	2772	n	54	52	55	52.5	59	57	59	58	4	-	-	8	6.0	-
158	2773	n	38	37	55	50	43	43	44	43	-	-	-	-	-	-
159	2774	n	40	39	55	50	45	45	46	45	-	-	-	-	-	-
160	2775	n	51	49	55	50	58	57	59	58	4	-	-	8	-	-
161	2776	n	48	46	55	50	57	57	58	57	3	-	-	7	-	-
162	2778	n	42	41	55	50	50	50	51	51	-	-	-	1	-	-
163	2779	r	56	53	60	55	60	56	60	57	-	-	-	2	3.3	-
164	2780	n	40	38	55	50	45	44	45	45	-	-	-	-	-	-
165	2781	n	38	37	55	50	43	42	44	43	-	-	-	-	-	-
166	2782	n	51	49	55	50	55	54	56	55	1	-	-	5	-	-
167	2783	n	50	49	55	50	57	57	58	57	3	-	-	7	-	-
168	2784	n	38	37	55	50	43	42	44	43	-	-	-	-	-	-
169	2785	r	53	52	60	55	53	51	53	52	-	-	-	-	-	-
170	2786	r	59	59	60	61	56	54	55	54	-	-	-	-	-	-
171	2787	n	42	41	55	50	48	47	48	48	-	-	-	-	-	-
172	2788	r	55	54	60	55	55	54	55	55	-	-	-	-	-	-
173	2789	n	51	50	55	50.5	55	55	56	56	1	-	-	6	5.5	-
174	2790	n	42	40	55	50	47	46	47	47	-	-	-	-	-	-
175	2791	n	40	39	55	50	45	44	46	45	-	-	-	-	-	-
176	2792	n	39	37	55	50	44	43	45	44	-	-	-	-	-	-
177	2793	n	39	37	55	50	44	44	45	45	-	-	-	-	-	-
178	2799	n	41	39	55	50	47	46	47	47	-	-	-	-	-	-
179	2803	r	50	48	60	55	54	51	54	52	-	-	-	-	-	-
180	2817	r	48	47	60	55	50	50	51	50	-	-	-	-	-	-
181	2824	r	43	42	60	55	46	45	47	46	-	-	-	-	-	-
182	2827	r	52	52	60	55	56	56	57	57	-	-	-	2	5.0	-
183	2828	r	47	46	60	55	50	49	50	50	-	-	-	-	-	-
184	2829	r	49	48	60	55	53	52	53	53	-	-	-	-	-	-
185	2830	r	49	49	60	55	53	52	53	53	-	-	-	-	-	-
186	2832	r	47	46	60	55	51	50	51	51	-	-	-	-	-	-
187	2833	r	51	50	60	55	55	54	55	55	-	-	-	-	-	-
188	2835	r	52	51	60	55	55	54	55	55	-	-	-	-	-	-
189	2836	r	46	45	60	55	49	48	50	49	-	-	-	-	-	-
190	2837	r	56	55	60	57	60	59	61	60	1	4.5	-	5	5.1	Yes
191	2838	r	53	52	60	55	57	57	58	58	-	-	-	3	5.7	-
192	2839	r	54	52	60	55	56	55	57	56	-	-	-	1	3.9	-
193	2840	r	47	46	60	55	49	48	50	49	-	-	-	-	-	-
194	2841	r	55	54	60	55	57	56	58	57	-	-	-	2	3.7	-
195	2842	r	52	50	60	55	51	50	52	51	-	-	-	-	-	-
196	2843	r	56	53	60	55	52	51	52	52	-	-	-	-	-	-
197	2844	r	53	52	60	55	58	57	58	58	-	-	-	3	5.7	-
198	2845	r	54	53	60	55	58	57	59	58	-	-	-	3	5.7	-
199	2848	r	46	45	60	55	48	47	49	48	-	-	-	-	-	-
200	2851	r	56	55	60	57	61	60	61	61	1	5.0	-	6	5.7	Yes

No.	Receiver ID	Applicable Criteria	2016 Future Existing Noise Level[1]		Applicable ECRTN Criteria[2]		Most Affected Facade Noise Level (dBA)[3,4]				2026 Future Design "Exceedance" at Most Affected Facade (dBA)					
							2016 Future		2026 Future Design		Daytime LAeq(15hr)			Night-time LAeq(9hr)		
			Daytime LAeq(15hr)	Night-time LAeq(9hr)	Daytime LAeq(15hr)	Night-time LAeq(9hr)	Daytime LAeq(15hr)	Night-time LAeq(9hr)	Daytime LAeq(15hr)	Night-time LAeq(9hr)	Exceed. "A"[5]	Exceed. "B"[6]	Acute?	Exceed. "A"[5]	Exceed. "B"[6]	Acute?
201	2852	r	45	44	60	55	49	48	50	49	-	-	-	-	-	-
202	2854	r	61	59	63	61	56	56	57	57	-	-	-	-	-	-
203	2855	r	54	53	60	55	59	58	59	59	-	-	-	4	5.6	-
204	2856	r	55	54	60	55	60	59	60	59	-	-	-	4	5.6	-
205	2857	r	47	45	60	55	50	49	51	50	-	-	-	-	-	-
206	2858	r	46	45	60	55	48	47	49	48	-	-	-	-	-	-
207	2862	r	58	56	60	58	63	61	63	62	3	4.9	-	7	5.9	Yes
208	2863	r	53	52	60	55	54	53	55	54	-	-	-	-	-	-
209	2864	r	61	60	63	62	66	65	66	66	6	5.6	Yes	11	5.9	Yes
210	4003	r	55	55	60	57	61	61	61	61	1	6.1	-	6	6.5	Yes
211	4005	r	53	52	60	55	57	57	58	58	-	-	-	3	5.4	-
212	4006	r	53	53	60	55	59	59	60	60	-	-	-	5	6.7	Yes
213	4007	r	51	51	60	55	56	56	57	57	-	-	-	2	5.9	-
214	4010	r	53	53	60	55	58	57	58	58	-	-	-	3	5.6	-
215	4041	r	56	56	60	58	59	59	60	60	-	-	-	5	3.7	Yes
216	4111	r	51	50	60	55	54	53	54	54	-	-	-	-	-	-
217	4118	r	52	52	60	55	52	52	53	53	-	-	-	-	-	-
218	4130	r	52	51	60	55	53	52	53	53	-	-	-	-	-	-
219	4300	r	45	44	60	55	47	46	48	47	-	-	-	-	-	-
220	5001	r	57	57	60	59	64	64	65	65	5	8.2	Yes	10	8.3	Yes
221	5002	r	52	52	60	55	57	56	57	57	-	-	-	2	5.2	-
222	6000	n	40	38	55	50	46	45	46	46	-	-	-	-	-	-
223	6001	n	41	39	55	50	46	45	47	46	-	-	-	-	-	-

Note 1 The 2016 Future Existing is the "baseline" scenario and is used to determine the existing road traffic noise level in the absence of the project, predicted at the year of opening. This scenario makes use of the existing alignment geometry.

Note 2 The ECRTN criteria is determined from guidance in ECRTN/ENMM. Where the existing noise level ia already above the ECRTN base criteria then the applicable criteria becomes the existing noise level plus the relevant allowance factor.

Note 3 The 2016 Future and 2026 Future Design noise levels are based on the 100% Design of the highway with all noise controls included in the modelling.

Note 4 The most affected facade per receiver is presented in this table. The most affected facade is not necessarily the facade with the highest noise level.

Note 5 Exceedance of ECRTN base criteria if facade exceeds applicable criteria.

Note 6 Increase due to project if facade exceeds and ECRTN base criteria are already exceeded in Future Existing.

Appendix G

Non-conformances

	Roads & Maritime Services
Pacific Highway Upgrade Nambucca Heads to Urunga	A.B.N.

RFI RESPONSE

Ref No: RMS-000077 **Date Sent:** 16 September 2013

To:	Abigroup Contractors Pty Limited	**Attn:**	Michael Hassey	**Phone:**	0419 557 774
Cc:	Abigroup Contractors Pty Limited	**Attn:**	Colin Forrester	**Phone:**	0424 145 390
	Abigroup Contractors Pty Limited		Jason Moran		0418 486 354
	Hyder Consulting		Graham Richardson		
	Hyder Consulting		Amara Talan		
	Hyder Consulting		Hyder Project Mailbox		
	Roads & Maritime Services		Colton Tooth		
	Roads & Maritime Services		Daniel Wright		
	Roads & Maritime Services		Michael Drake		
	Roads & Maritime Services		Kelly Hall		
	Roads & Maritime Services		ADMIN ADMIN		
	SLR Consulting Pty Ltd		Antony Williams		02 9428 8100
From:	Mike Cragg, Roads & Maritime Services			**Orig. Ref. No.:**	
Re:	RE: Single point receiver levels			**Response required by:**	

RMS approves this RFI, pursuant to Clause 15.7(c)(i) noting the following :

RMS have reviewed the noise level exceedances at single point receivers 1766, 1798, 2775 and 5001 and have determined the non conformance can be accepted as the Preliminary Detailed Design 2026 Design Noise Levels for Night-time LAeq(9hr) for the identified receivers do not trigger additional architectural mitigation requirements at the locations.

Roads & Maritime Services

tel: fax : Email: mike.cragg@n2u.com.au

Discipline: **Area:** **Location:**

----- Original Message -----

	Abigroup Contractors Pty Limited
Pacific Highway Upgrade Nambucca Heads to Urunga	A.B.N.

Abigroup
Constructing Australia's Future

REQUEST FOR INFORMATION

Ref No:	ABI-000092			**Date Sent:**	14 August 2013
To:	Roads & Maritime Services	**Attn:**	Mike Cragg	**Phone:**	
Cc:	Roads & Maritime Services	**Attn:**	Colton Tooth	**Phone:**	
	Roads & Maritime Services		Daniel Wright		
	Roads & Maritime Services		Michael Drake		
	Roads & Maritime Services		Kelly Hall		
	Roads & Maritime Services		ADMIN ADMIN		
	SLR Consulting Pty Ltd		Antony Williams		02 9428 8100
	Abigroup Contractors Pty Limited		Colin Forrester		0424 145 390
	Abigroup Contractors Pty Limited		Jason Moran		0418 486 354
	Hyder Consulting		Graham Richardson		
	Hyder Consulting		Amara Talan		
	Hyder Consulting		Hyder Project Mailbox		
From:	Michael Hassey, Abigroup Contractors Pty Limited			**Orig. Ref. No.:**	
Re:	Single point receiver levels			**Response required by:**	

Mike

Please find below a RFI related to noise level exceedences at single point receivers.

Could you please review this RFI and advise RMS position.

thanks

Regards

Michael

Minor Variation Proposal in Accordance with Clause 15.7(a) –

Detail –

Noise Limiting Receiver Predictions for the year 2026, which are to be maintained by the project, are presented in Appendix 4.6_RFT1 of the SWTC. A noise level prediction for each assessment receiver is presented for both the daytime and night-time periods.

Facade noise levels have been predicted at each noise sensitive receiver identified in Appendix 4.6_RFT1.

A comparison of the Preliminary Detailed Design noise predictions against the Appendix 4.6_RFT1 targets are presented in Table 3 of the Preliminary Detailed Design Report for Design Lot NV1 in the PDD submission.

For the Preliminary Detailed Design predictions, the highest individual facade level per receiver was used in the assessment.

The predicted noise level exceed the design level at four locations, which are shown in Table 1 below:

Table 1 - Locations where Receiver Predictions Exceed the Appendix 4.6_RFT1 Noise Targets

Count	Rec. ID	Co-ordinates		2026 Design Noise Levels (dBA)			
				Appendix 4.6 Targets		Prelim. Detailed Design	
		X	Y	Daytime LAeq(15hr)	Night-time LAeq(9hr)	Daytime LAeq(15hr)	Night-time LAeq(9hr)
35	1766	499709	6616180	57	57	59	59
41	1798	499974	6616940	56	56	56	57

Count	Rec. ID	Co-ordinates		2026 Design Noise Levels (dBA)			
				Appendix 4.6 Targets		Prelim. Detailed Design	
		X	Y	Daytime LAeq(15hr)	Night-time LAeq(9hr)	Daytime LAeq(15hr)	Night-time LAeq(9hr)
77	2775	499665	6628150	58	57	59	59
105	5001	500298	6618300	64	65	65	65

A comparison of the 2026 Preliminary Detailed Design Noise Contours with the Noise Limiting Contours at the above four locations has been undertaken.

- The 2026 Preliminary Detailed Design noise levels given in Table 4 indicate that for receiver 1766, the daytime and night-time noise levels are predicted to be 2 dB above the corresponding Appendix 4.6_RFT1 Target noise levels.
- It is however noted that the Preliminary Detailed Design Noise Contours are typically consistent with, or well within, the Noise Limiting Contours for the vast majority of the area surrounding this receiver in both 2026 scenarios. A small section of exceedance (around 10 to 15 m) is apparent near chainage 67,600.
- A comparison of the Appendix 4.6_RFT1 Target noise levels for the receivers surrounding receiver 1766 indicates that receiver 1766 has Target noise levels that are 3 dB lower than receiver 1755, yet receiver 1755 is of a similar setback distance from the main carriageway alignment (which is the main source of traffic noise in the area) and of similar elevation above the road way. Receiver 1766 also has lower Targets that receiver 1771, yet receiver 1766 is located closer to the main carriageway than receiver 1771.
- It is noted that the 2026 Preliminary Detailed Design noise level predictions comply with all other receiver Target noise levels in the area surrounding receiver 1766.
- As such, in the absence in any major design changes in this location for the Preliminary Detailed Design alignment, and given the above discussion, the apparent isolated exceedance at receiver 1766 is considered of minor significance.
- For receivers 1798, 2775 and 5001 the Preliminary Detailed Design Noise Contours are consistent with, or well within, the Noise Limiting Contours for the 2026 scenarios. The apparent exceedances of the Target noise levels therefore appear to be inconsistent with the noise contour calculations.

Additional data is presented in the Preliminary Detailed Design report for Design Lot NV1.

On this basis, Abigroup requests that RMS accept non-conforming predicted noise levels at each of the four locations listed in Table 1.

Reason –

Avoidance of design changes on the basis of apparent inconsistencies and minor exceedances of predicted noise levels

Effect on Contractors Work –
Nil

Effect on Road User Safety –
Nil.

Project Verifier Review -
Hyder has reviewed this RFI and has no objection to it being proposed to RMS. Please refer to attached file "*ABI-000092 PV Review.pdf*" for documentation of this review.

Environmental Consistency Review Checklist –

Please refer to attached Environmental Consistency Review Checklist "*NH2U-CC-NV-0001_PDD NV1_0.pdf*", which has been prepared for this non-conformance

This proposed Minor Variation:

A. will not adversely affect the functionality, integrity or aesthetics of any of the elements of the Contractor's Work or the performance standards required by the deed; and

B. will not adversely affect the quality standards required under the deed.

Could you please confirm approval of this Minor Variation or advise any further information required for its assessment.

Regards

Michael Hassey

Abigroup Contractors Pty Limited

.
tel:0419 557 774 fax : Email: michael.hassey@abigroup.com.au

Discipline: **Area:** **Location:**

Lend Lease

Request for Information

221378: Nambucca Heads to Urunga (NH2U)
PSW: Project Site Works

Issued To	NH2U Design Team		
Attention	Michael Hassey		
Fax No		**Phone No**	

RFI No	PSW 00052A
Status	10: Engineer Closure

Subject	Noise contour exceedances

Originator	Michael Hassey
Date Raised	10-Jan-2014
Response Reqd By	28-Nov-2013

Information Request

Minor Variation Proposal in Accordance with Clause 15.7(a) –

Detail –

Reference to the noise contours documented within the SDD Noise and Vibration Report (NH2U-RP-NV-0001) indicates that the Substantial Detailed Design Noise Contours correlate well with the Noise Limiting Contours (Please refer to Appendices A and B of the Noise and Vibration Report)

For the vast majority of the project area, the Substantial Detailed Design Noise Contours are compliant with the Noise Limiting Contours in each of the four assessment scenarios.

For a small number of isolated locations the Preliminary Detailed Design Noise Contours can be seen to exceed the Noise Limiting Contours by relatively small distances (ie around 5 to 10 m). At around 100 m from the road side, a modelling accuracy of ±1 dB equates to a change in distance of around ±25 m. Given that ±2 dB is the accepted accuracy of the CoRTN algorithms, where isolated small exceedances exist which are within a ±1 dB tolerance distance, the exceedance has been considered to be well with the accepted accuracy of the noise modelling procedure.

The following provides a summary and discussion of the notable minor exceedance locations:

• 67,600 to 67,900, west of alignment, adjacent to East West Road – in this section the 100% Design Noise Contours exceed the Noise Limiting Contours by up to 10 to 15 m, in the area near to East West Road. Given that the exceedance location is immediately adjacent to the carriageway and over a relatively short distance, the exceedance is considered marginal. Reference to the single point receiver predictions in Section 7.4 indicates that compliance with the Target Noise Levels is apparent for the 100% Design at all apart from one location, at which the Target Noise Level appears to be inconsistent with the targets for the surrounding receivers.

• 72,000 to 72,300, east of alignment, adjacent to Pacific Highway – in this section the 100% Design Noise Contours exceed the Noise Limiting Contours by up to 10 m, in the area adjacent to the Existing Pacific Highway. The difference between the contours appears likely to be due to differences in ground elevation data. Given that the difference equates to less than 1 dB and the affected location is within a forest, the exceedance is considered marginal.

• 72,000, west of alignment, along Ballards Road – in this section the 100% Design Noise Contours exceed the Noise Limiting Contours by up to 10 m, for an approximately 200m long section of Ballards Road. Given that the difference equates to less than 1 dB and that there are no receivers in the vicinity of this location the exceedance is considered marginal.

• 78,700 to 78,900, west of alignment – in this section the 100% Design Contours are around 10 m to 25 m outside the Noise Limiting Contours. This feature is most apparent in the daytime contours. The 100% Design Contours are up to 0.5 to 1 dB higher than the Noise Limiting Contours. Given the location is within a forest, the exceedance is considered of negligible significance.

• 81,500, east of alignment, adjacent to Short Cut Road – in this section the 100% Design Contours exceed the Noise Limiting Contours immediately adjacent to Short Cut Road for an approximately 100 m long section to the east of the main alignment. Given that the single point receiver predictions indicate compliance with the Target Noise Levels is apparent for the 100% Design at all nearby locations, this small exceedance is considered minor.

• 81,700 to 82,500, east of alignment, adjacent to Pacific Highway – in this section the 100% Design Contours are up to around 20 m outside the Noise Limiting Contours. Given this exceedance occurs over a small area and is only apparent in the 2016 Daytime LAeq(15hour) scenario, the exceedance is considered of negligible significance. Reference to the single point receiver predictions indicates that compliance with the Target Noise Levels is apparent for the 100% Design at all nearby locations.

Reason –

Avoidance of design changes on the basis of apparent inconsistencies and minor exceedances of predicted noise levels

Effect on Contractors Work –

Nil

Effect on Road User Safety –

Nil.

Environmental Consistency Review Checklist –

Please refer to attached Environmental Consistency Review Checklist "NH2U-CC-NV-0003_SDD NV1_0.pdf", which has been prepared for this non-conformance

This proposed Minor Variation:

A. will not adversely affect the functionality, integrity or aesthetics of any of the elements of the Contractor"s Work or the performance standards required by the deed; and

B. will not adversely affect the quality standards required under the deed.

Could you please confirm approval of this Minor Variation or advise any further information required for its assessment.

Attachments
Nh2U - NV1 - Comparison between PDD and SDD noise contours.jpg

Construction/Project Manager Action			
Name	Mike Cragg	**Date**	24-Mar-2014
Signature			
Action Preference			

Status	**Updated By**	**Signature**	**Date**
1: Notification	Michael Hassey		05-Mar-2014 14:01
8: RMS Acceptance	Mike Cragg		07-May-2014 15:04

Status	**Entered By**	**Comment**	**Date**
1: Notification	Michael Hassey	The SDD Moise and Vibration assessment was based on the SDD alignemnt model as submitted within the SDD Design Lot for RD1 and RD2 As discussed, the impact of the changes in road alignment do not create large changes in the noise contours The attached sketch shows a comparison between the PDD and SDD noise contours in the locaiton referred to in RMS SDD Review Comment Number 24. this comparison shows little movement in the contours in this area	05-Mar-2014 14:01
8: RMS Acceptance	Mike Cragg	RMS approves this RFI pursuant to clause 15.7(c)(i)	07-May-2014 15:03

Type of Change	
Acceptance Type	Minor Variation 15.7 RFI

Request for Information

Issued To	NH2U Design Team		
Attention	Michael Hassey		
Fax No		**Phone No**	

RFI No	PSW 00053A
Status	10: Engineer Closure

Subject	ERCTN exceedances

Originator	Michael Hassey
Date Raised	10-Jan-2014
Response Reqd By	28-Nov-2013

Information Request

Minor Variation Proposal in Accordance with Clause 15.7(a) –

Detail –

Clause 4.24 (l)(ii) states that:
"Further to any other requirements of the Environmental Documents and the Environmental Assessment in relation to noise mitigation measures, the Contractor must design and provide at-road operational noise mitigation measures:

to maintain operational noise levels of 60 dB(A) I 55dB(A) LA eq 15hr (day) or less and 55dB(A) I 50dB (A) LAeq9hr (night) or less, for the years 2016 (at opening) and 2026 (ten years after opening) for redeveloped new roads respectively as appropriate at the ocations identified by the respective noise contour lines described in Figures 9.19 and 9.20 of Appendix 9 of the Scope of Works and Technical Criteria"

A number of ECRTN exceedance locations are at receivers which are not identified in Appendix 4.6.pdf of the SWTC. These locations are summarised in Table 1 (attached)

Full documentation of the Noisw and Vibration modelling is provided in the Substantial Detailed Design Noise and Vibration Report (NH2U-RP-NV-0001), which wsa issued on 22/11/2013, but which is too large to attach to this RFI

Some of these receivers were identified in the EA, however they were not included in Appendix_4.6.pdf.

The other receivers were not identified in either document.

Lend Lease request accpetance of these exceenances and requests that RMS advise if they wish any further action from Lend Lease in relation to the identified exceedances.

It is noted that these exceedances are not located at any locations where there are nose contour exceedances.

Environmental Consistency Review Checklist –
Please refer to attached Environmental Consistency Review Checklist "NH2U-CC-NV-0004_PDD NV1_0.pdf", which has been prepared for this non-conformance

This proposed Minor Variation:
A. will not adversely affect the functionality, integrity or aesthetics of any of the elements of the Contractor"s Work or the performance standards required by the deed; and
B. will not adversely affect the quality standards required under the deed.
Could you please confirm approval of this Minor Variation or advise any further information required for its assessment

Construction/Project Manager Action			
Name	Mike Cragg	**Date**	07-May-2014
Signature			
Action Preference			

Status	Updated By	Signature	Date
1: Notification	Michael Hassey		05-Mar-2014 13:36
8: RMS Acceptance	Mike Cragg		07-May-2014 15:05

Status	Entered By	Comment	Date
1: Notification	Michael Hassey	Responses to RMS comments on the PDD Submission have now been sent (TB Review Comment REsponse ABI-000428) LL requests that RMS revisit this RFI now that the responses have been provided	05-Mar-2014 13:33
8: RMS Acceptance	Mike Cragg	RMS approves this RFI pursuant to Clause 15.7(c)(i)	07-May-2014 14:49
8: RMS Acceptance	Mike Cragg	RMS approves this RFI pursuant to clause 15.7(c)(i)	07-May-2014 15:05

Type of Change	
Acceptance Type	Minor Variation 15.7 RFI

Appendix H

RMS Review Comments

Abigroup
Constructing Australia's Future

Design Review Comment Sheet - RMS

Design Report No.	NH2U-RP-NV-0001
Design Lot & Title	NV1 Operational
Design Phase	Substantial Detailed Design (100%)
Date Issued	22-November-2013

Reviewer Name 1	Yvonne Bowles, Con Tsitsos, John O'Donnell
Reviewer Name 2	
Reviewer Name 3	
Date of Review	

COMPLIANCE STATUS
- O Observation / Comment
- D From info currently provided not able to determine whether design / proposal is compliant.
- N Non-Compliant
- M Minor non-compliance for immediate action but subsequently documented in next stage

RESPONSE AGREEMENT STATUS
- O Open
- C Closed
- CS Closed SUBJECT TO additional action / information by Abigroup

REVIEWER							ABIGROUP / DESIGNER		REVIEWER		
Item	Document Reference	Rev	Reviewer Initials	Reviewer Comments	Project Deed Ref	Compliance	Response Comments	By	Reviewer Close-out Comments	Response Status	Date Closed
1	General		CT	There is no discussion of noise walls in the report. I understand none were identified in the Environmental Assessment for this section of the upgrade but this needs to be stated and justified (to satisfy Cl 4.25(c)(xx))			Noise barrier discussion added to Table 4.of FDD submission		Closed subject to review of FDD submission	CS	27-Feb-14
2	General		CT	There is no mentioned of whether bridge joints have been designed, selected and installed to reduce vehicle noise impacts			Bridge joint discussion addded to Table 4..of FDD submission		Closed subject to review of FDD submission	CS	27-Feb-14
3	Section 4.2		CT	Change typo error ECTRN to ECRTN. Check this throughout report and correct all occurrences of error.			Typo corrected in FDD submission		Closed subject to review of FDD submission	CS	27-Feb-14
4	Section 5.3, Table 3		CT	Change heading for columnes 8 & 9 from INP Periods to ECRTN Periods			Typo corrected in FDD submission		Closed subject to review of FDD submission	CS	27-Feb-14
5	Appendix E & Appendix F		CT	There are inconsistencies between the 100% design noise levels in columns 7 & 8 of Appendix E table and columns 10 & 11 of Appendix F table (ie: Receiver Ids 1632, 1636, 1654, 1677, 1682, 1755, 1766, 1771, 2771 and 4041 do not match up and need to be amended. Please check all values to ensure correctness throughout.			The different numbers between Appendix E and Appendix F are correct. This is due to Appendix E being based on the highest noise level, whereas Appendix F is the most affected facade. See discussion in Section 7.6 (paragraph 3) and column headings in the appendices. No changes made.		Closed subject to re-review of FDD submission	CS	27-Feb-14
6	General		YB	It is suggested the report clearly reiterate the parts of Cl 4.24 in relation to at house mitigation and at road mitigation to cover off the contractual requirements and who is responsible for what, and the items the contractor is to remain compliant with.			Text added to Section 4.4 in FDD submission		Closed subject to review of FDD submission	CS	27-Feb-14
7	Section 1.0		YB	Last para, update from Abigroup to Lend Lease			Done - in FDD submission		Closed subject to review of FDD submission	CS	27-Feb-14
8	Section 4.1		YB	Last para clarification - "*The proposed criteria are to be applied as targets, applicable to the future volumnes of traffic projected to occur in 10 years' time* " - please clarify 10 years time from when ? Post opening ?			Text changed to "applicable to the future volumes of traffic projected to occur 10 years after project opening." in FDD submission		Closed subject to review of FDD submission	CS	27-Feb-14
9	Section 5.2		YB	Last para, remove the "Sydney" before Bureau of Meterology. Is a whole Australian Government site.			Will be included in the FDD submission		Closed subject to review of FDD submission	CS	27-Feb-14
10	Table 7		YB	Update Waterfall Way Interchange Northbound On Ramp column 1 from 4540 to 4510 in accordance with Table 9.9 of SWTC			Will be included in the FDD submission		Closed subject to review of FDD submission	CS	27-Feb-14
11	Section 7.0		YB	First para, update from "*..... Operational noise levels from the project in* ***to*** *distinct ways* " to "**two**"			Will be included in the FDD submission		Closed subject to review of FDD submission	CS	27-Feb-14

REVIEWER							ABIGROUP / DESIGNER		REVIEWER		
Item	Document Reference	Rev	Reviewer Initials	Reviewer Comments	Project Deed Ref	Compliance	Response Comments	By	Reviewer Close-out Comments	Response Status	Date Closed
12	Section 7.1		YB	Please clarify and provide discussion to horizontal alignment changes that have occurred between concept to final detailed design. I am aware of changes north of Burkes Lane where alignment has been raised by up to 1m however all design must be checked and changes identified with discussion.			Section 7.1 re-written to include all design changes.- In FDD submission		Closed subject to review of FDD submission	CS	27-Feb-14
13	Section 7.4		YB	RMS can confirm Appendix 4.6 lists the highest noise level at each receiver for both Day and Night for the 2026 Design Noise Levels. This is not necessarily the most affected façade.			Text change in Section 7.1 on the basis of this advice. - in FDD submission		Closed subject to review of FDD submission	CS	27-Feb-14
14	Section 7.4 or 7.4.1		YB	It is suggested the report provide discussion on previously approved RFI (RFI 000077) in which RMS accepted the exceedances identified at Receiver 1766, 2775 and 5001 in the preliminary detailed design. The exceedances have not changed with the substantial detailed design and therefore could also be assumed acceptable however background discussion must be provided. Also important to note that each of the receivers with exceedances have been identified to receive at house artchitectural noise mitigation.			Section 7.4.2 added which refers to RFI 000077.- in FDD submission		Closed subject to review of FDD submission	CS	27-Feb-14
15	Table 10		YB	RMS notes in regard to 1678EA - the identified receiver was known as 1678 in the EA and has been treated for at house noise mitigation. The second building identified in this report is a shed at the rear of the property. It is unclear what has happened with this ?			Text added.in FDD submission		Closed subject to review of FDD submission	CS	27-Feb-14
16	Table 10		YB	RMS notes in regard to 1782 - the RMS assessment found the noise generated was from local road (East West Road) and not the main alignment			Text added.in FDD submission		Closed subject to review of FDD submission	CS	27-Feb-14
17	Table 10		YB	RMS notes in regard to 1788 - the RMS assessment found the noise generated was from local road (East West Road) and not the main alignment			Text added.in FDD submission		Closed subject to review of FDD submission	CS	27-Feb-14
18	Table 10		YB	RMS notes in regard to 1841 - this is a communications tower. No treatment required.			Text added.in FDD submission		Closed subject to review of FDD submission	CS	27-Feb-14
19	Table 10		YB	RMS notes in regard to 1958 - an agreement was reached when partial acquisition of the land was undertaken between landowner and RMS where compensation was paid for landowner to undertake their own noise mitigation. No treatment required.			Text added.in FDD submission		Closed subject to review of FDD submission	CS	27-Feb-14
20	Table 10		YB	RMS notes in regard to 1960a & b - RMS owned land. Buildings are derelict and treatment for noise is not an option.			Text added.in FDD submission		Closed subject to review of FDD submission	CS	27-Feb-14
21	Table 10		YB	Suggested comments for 2240 - RMS owned land. Lend Lease are using this house during construction as an ancillary facility. It should have been identified for treatment and will be done when property is to be sold.			Text added.in FDD submission		Closed subject to review of FDD submission	CS	27-Feb-14
22	Table 10		YB	Suggested comments for 2776 - this building has been demolished as part of the upgrade.			Text added.in FDD submission		Closed subject to review of FDD submission	CS	27-Feb-14

REVIEWER							ABIGROUP / DESIGNER		REVIEWER		
Item	Document Reference	Rev	Reviewer Initials	Reviewer Comments	Project Deed Ref	Compliance	Response Comments	By	Reviewer Close-out Comments	Response Status	Date Closed
23	Section 7.7		YB	An Environmental Assessment and Consistency Review were conducted by RMS and were provided as Information Documents 241 and 242 during tender phase. It is suggested Section 7.7 be updated to reflect this EA as update noise assessments were undertaken and will provide more specific information to justify Lend Lease position in regard to notable noise impacts.			Section will be re-written on basis of Info Docs.		Closed subject to review of FDD submission	CS	27-Feb-14
24	General		YB	Please confirm noise contours include all vertical and horizontal design changes. This is in reference to the previously mentioned alignment height increase north of Burkes Lane, for which the contours do not seem to have significantly altered between preliminary design and substantial design.			Very marginal changes of a few metres are apparent in the contours around Burkes Lane. The changes to the alignment are not suffient to result in any signficant noise contour changes. Section 7.1 re-written to include all changes. - In FDD submission		Closed subject to review of FDD submission	CS	27-Feb-14
25	Section 2.0 pg A 8		JOD	This report requires EPA consultation. Appreciate advice when this report will be ready for that to occur.			Consultation will be carried out using the FDD report		OK.	C	27-Feb-14
26	Table 7 pg 21.			North of Nambucca Heads daytime traffic increase is approx 1.8 %/ yr. Is this correct based on RMS numbers provided in the contract docs.			The assessment is based on predicted future trafficnumbers identified in Table 9.9 Appendix 9 of the SWTC We are unable to comment on the basis of these predicted traffic volumes		OK.	C	27-Feb-14
27	Section 7.1 pg 23		JOD	This notes "An assessment of the impact of this change on the noise contours was previously undertaken. This exercise concluded that a marginal shift in the noise contours to the west of around 10 to 20 m was apparent for an approximately 800 m long section adjacent to the alignment change. For the current design, this change is however noted as not being significant enough to result in any exceedances of the Noise Limiting Contours or additional property treatments over the receivers documented in the SWTC". It is not clear what this previous exercise is or when. This information/ facts needs to be clearer. The information relating to the change "not being significant enough to result in any exceedances of the Noise Limiting Contours or additional property treatments over the receivers documented in the SWTC" needs to be clearer as the statement is very general. The section below contradicts this as there are outlined exceedances of the contours and properties.			Section to be expanded with all changes since Concept Design.		OK.	C	27-Feb-14
28	Section 7.2 pg		JOD	This notes that a new RFI will be raised for the altered contour non conformances.			Noted.		Closed subject to submssion and acceptance of the RFI	CS	27-Feb-14
29	Table 11 pg 28		JOD	It is not clear why there arent any notes re the four properties without notes if they are new residences etc.			Notes added re RMS advice.in FDD submission		OK.	C	27-Feb-14

REVIEWER							ABIGROUP / DESIGNER		REVIEWER		
Item	Document Reference	Rev	Reviewer Initials	Reviewer Comments	Project Deed Ref	Compliance	Response Comments	By	Reviewer Close-out Comments	Response Status	Date Closed
30	Section 7.7 pg 29		JOD	This notes "Given the detailed design location of the Nambucca Heads Rest Area has now been moved to be significantly more distant from the closest receivers, no notable noise impacts from the operation of the Rest Area are considered likely". This assessment is very general (appears just based on changed distances) and there is no reference to modelling against criteria in the NSW Industral Noise Policy, day/ night, for the new site. In addition, MCoA C 12 a0 requires "confirm the operational noise predictions of the project based on detailed design. This operational noise assessment shall be based on an appropriately calibrated noise model (which has incorporated additional noise monitoring, where necessary for calibration purposes). The assessment shall specifically include verification of noise levels at Nambucca Heads Rest Area, based on additional noise monitoring undertaken at this location". MCoa C 12 b0 likely applies.			Assessment of Rest Area to be compelted against INP.		OK	C	27-Feb-14
31	Section 7.8 pg 30		JOD	This notes maxinum noise level assessment is not being undertaken. This does not take into account detailed design changes since the EA, proposed exceedances of the contours and at residences, additional receivers identified since the EA and MCoA C 12 a0 and b) requirements. RMS beklieves this assessment is required.			Discussions with RMS noise division (Simon Kean) indicated that re-assessment of maximum noise levels during detailed design is unecessary due to maximum noise levesl not being a decisive criterion, as detailed in the ENMM. Repeating the maximum noise level assessment adds no addtional value to the assessment. EA assessment is considered sufficient.		OK based on RMS advice.	C	27-Feb-14
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Appendix I

Project Verifier Review Comments

Design Review Comment Sheet - PV

Design Report No.	**NH2U-RP-NV-0001**
Design Lot & Title	**NV1 Operational Noise & Vibration**
Design Phase	**Pre-Final Detailed Design**
Date Issued	**19-March-2014**

Reviewer Name 1	CB - Craig Beyers, Air Noise and Environment (for Hyder Consulting)
Reviewer Name 2	CR - Claire Richardson, Air Noise and Environment (for Hyder Consulting)
Reviewer Name 3	
Date of Review	**25-March-2014**

COMPLIANCE STATUS

O Observation / Comment
D From info currently provided not able to determine whether design / proposal is compliant.
N Non-Compliant
M Minor non-compliance for immediate action but subsequently documented in next stage

RESPONSE AGREEMENT STATUS

O Open
C Closed
CS Closed SUBJECT TO additional action / information by Abigroup

REVIEWER							ABIGROUP / DESIGNER		REVIEWER		
Item	Document Reference	Rev	Reviewer Initials	Reviewer Comments	Project Deed Ref	Compliance	Response Comments	By	Reviewer Close-out Comments	Response Status	Date Closed
1	All documents	0	CR	No Comments							