Benchmark Infrastructure Costing - Result Application

Result Application – Donnybrook and Woodstock PSP

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Disclaimer

Cardno have made a number of assumptions for the extraction and use of the underlying data as outlined within this document. Cardno as far as practicable have included sufficient units and rates to provide budget-costing data only, Cardno assumes no liability for losses incurred through changes to quantities or increases in construction costs or overheads. The values and quantities included within this document are not intended for use in construction pricing and do not constitute a Bill of Quantities.

Functional layouts provided for all civil components are for information only and shall not be used for space proofing / boundary extents. The final arrangement of all civil components is subject to detailed design by qualified people or organisations, after appropriate due diligence investigations relevant to specific sites and project scope.

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1 Introduction

Cardno was initially engaged by the Victorian Planning Authority (VPA) to undertake an assessment of infrastructure costings for a series on non-standard infrastructure items within the Precinct Structure Plan. The costings produced are based on the rates and lump sums recommended as part of the Review of Benchmark infrastructure Costings project by Cardno. Where gaps in available cost data were identified, they were supplemented with Cardno's internal costing rates.

The nominated non-standard infrastructure item as part of the was:

Bridge BR-01 - Two lane interim road bridge spanning Merri Creek and Melbourne Sydney Railway along Cameron Street with concept designs provided by the way. The concept designs were prepared by Adams Engineering

The costing of this infrastructure item was detailed in the previous version of this report; 'V170524 Donnybrook and Woodstock costing, version D01, 06.06.18".

Following the issue of this initial report, the Donnybrook Woodstock ICP was exhibited and subsequently a stakeholder feedback process was completed. Feedback was received from Whittlesea City Council, Mirvac and Dennis Family Corporation. The detailed recommendations form Cardno's analysis of stakeholder feedback is provided in Cardno report 'Donnybrook Woodstock ICP Stakeholder Feedback Review' (version D02, 13.02.2019).

Cardno subsequently updated this costing report based on the feedback received and the recommendations provided in the stakeholder feedback review report. The costings produced within this report are also based on the rates and lump sums recommended as part of the Review of Benchmark infrastructure Costings project by Cardno (version D06, 14.03.2019). The D06 version of the benchmark report accommodates recommendations from the stakeholder engagement process unique to the benchmark project. Where gaps in available cost data were identified, they were supplemented with Cardno's internal costing rates.

As part of the updating process;

- 5 intersections from IN-01 to IN-05 were re-designed to be based on a new brief from the VPA. This brief instructed the aforementioned intersections to be redesigned to 'fit inside the existing road reserve and for the extents along Donnybrook Road to be designed to 80km/h'.
- 10 intersections from IN-06 to IN-17, excluding IN-08 and IN-16 were costed based on modified bespoke ICP drawings (the exhibited ICP previously applied benchmark template costs for these intersections). Modification were done to reduce design speeds to 60km/h where previously higher design speeds were adopted;
- Intersections IN-08 and IN-09 were based on the exhibited ICP designs;
- Intersection IN-16 was based on the benchmark intersection item 15;
- Estimates for bridges BR-01 and BR-05 were revisited (exhibited ICP applied benchmark templates for BR-05);
- Estimates for bridges BR-03 and BR-04 were revisited to account for Growling Grass Frog habitat requirements (exhibited ICP applied benchmark templates for BR-03 and BR-04);
- Costs for community and recreational facilities SR-03 and SR-05 were revisited (exhibited ICP applied benchmark templates for both facilities).

A number of assumptions were adopted in order to apply the rates from the Review of Benchmark costing project and to produce the final costing data for these infrastructure elements. These assumptions and the final costs are outlined in subsequent sections of the report. For detailed extractions of the quantities and rates please refer to Appendix A.

2 Results and Discussion

2.1 Methodology and Assumptions

The following methodology, design specifications and assumptions were adopted in producing the cost estimates for the nominated infrastructure items.

2.1.1 Intersection projects

The estimates for the intersections were produced by extracting certain quantities from the CAD drawings provided by the VPA and adopting quantities from the Benchmark Infrastructure costing project for the remaining items.

Quantities that were extracted from the VPA-provided CAD drawings included:

> Pavement areas (including concrete medians);

> Footpath and Shared use path areas;

> Kerb Lengths;

> Landscaping areas;

> Subsoil drainage;

> Earthworks;

> Ancillaries (such as top soil and seeding, sub-surface drains allowance for both no fines concrete and screenings, line marking, signage, this is not an exhaustive list).

The following assumptions were adopted to produce road section estimations:

> Site preparation quantities are derived from the total area of the intersection works;

> Earthworks are calculated from pavement boxing;

> Variable pavement thickness for differing pavement types;

> Additional subgrade preparation assumed for 20% of total pavement area;

> Footpath and SUP quantified in a single line item (as advised by the VPA, costed for a single side of the road only);

> Drainage pits, pipes and trees are calculated by prorate method, using the extents of the bespoke intersections in comparison to similar civil components in the Benchmark Infrastructure Costing report (refer to Review of Benchmark infrastructure Costings project, version D06, 14.03.2019 for civil component details).

In addition to the above, based on the feedback received from stakeholders the following additional elements were allowed for.

> Rock excavation in the Donnybrook area;

Feedback from WT Partnership (WTP) indicated that 35% of the excavation volume was assumed to be in rock. WTP indicated that the 35% volume was verbally agreed with council officers based upon conditions encountered on previous projects.

Cardno geotechnical engineers provided geotechnical information from boreholes drilled in immediately adjacent parcels of land. These documents were used to obtain an impression about the underlying geology and the depth to Basalt rock. The information showed that the depth to rock varied between 0.3m to several meters below surface level. Interpolation of these details showed that when excavating to the pavement depth, rock could be encountered across 10% of the excavation volume. To accommodate uncertainty around site specific conditions this allowance was increased to 20% of the excavation volume. Suitable rates for this item were provided by Cardno construction engineers based on recent tender information available to them.

> Utility relocations and protection costs;

Several stakeholder feedback reports outlined the need for asset protection and/or utility relocation costs. This item has been deemed relevant for IN-17 based on a DBYD review.

Following the redesign of intersections IN-01 to IN-05, the new designs were re-analysed against DBYD plans to identify if potential relocations or protection of utilities was required.

The following items were noted during this exercise;

> A 300Ø high pressure gas main runs along the northern boundary of Donnybrook Road affecting intersections IN-01, IN-02 and IN-03. The depth of the gas main is unknown. Cardno has assumed that the gas authority may be reluctant to relocate the entire length of the gas pipe. Therefore, allowances have been made to increase the depth of the gas main where new primary arterial pavements are proposed;

> A water main runs along the northern boundary of Donnybrook Road affecting intersections IN-01, IN-02 and IN-03 as well. Similar to the gas main, depths are unknown and Cardno has assumed that the water authority may be reluctant to relocate the entire length of the utility. Allowances have also been made to increase the depth of the water main where new primary arterial pavements are proposed;

> A series of power poles exist along the northern boundary of Donnybrook Road. A desktop review showed that recent works have been conducted to relocate the power poles to the north away from the existing road reserve. However, a few power poles are still affected by the proposed design. Allowances have been made to relocate power poles affected;

> Communication conduits run along the length of Donnybrook road. The offsets to the road reserve change along the length of the road.

2.1.2 Bridge projects

BR-01 has been costed for the interim layout based on the longitudinal and cross section concept design drawings, ref. 140638 – C002 to C003 prepared by Adams Engineering. Two options were costed as part of the initial costings exercise. The bridge concepts differed in length but contain the same cross section design width. Option 1 is a 130m long span bridge while Option 2 is a 176m long span bridge, both utilising Super T beam decks and Reinforced Earth precast concrete panels for the approach road fill embankment. The design extent of earthworks was not outlined in detail in the concept drawings, therefore, a total of 5,000m3 of reinforced earth was adopted to be required based on previous projects. Road pavement on the approach is excluded from the costing. The bridge total cost has been arranged for both design options which also includes footings, kerbs, approach slabs, barriers and pavement.

As part of the updating process, the costing for bridge option 2 was revisited as this was the design adopted in the ICP.

In addition, BR-05 was costed as the benchmark layout deck area previously adopted for the exhibited ICP differed slightly to the proposed ICP design by Adams Engineering.

Noteworthy items costed for the two bridges include;

> Occupation costs – occupation costs are based on previous PSP/DCP (indexed) information. Cardno structural engineers have advised that that occupation would likely take place over five weekends;

> Rail impact barriers – barriers have been costed based on the Adams Engineering design. As this is a niche item, rates have been derived from Rawlinsons Australian Construction Handbook (2019 edition-37);

> Bridge anti-throw barrier – costs for bridge anti throw barriers have been updated.

2.1.3 Culvert projects

Two culvert crossings meeting specific requirements for Growling Grass Frog (GGF) habitats was costed as part of the updating process. The costings were based on a Cardno amended design originally produced by DPM consulting on behalf of Dennis Family Corporation.

2.1.4 Sporting fields/pavilion projects

Feedback from stakeholders was received for SR-03 and SR-05. The feedback specified that all components proposed in the PSP have not been included in the costings. Costings have therefore been adjusted to include for the PSP proposed items that can be funded through the ICP (as advised by the VPA).

Donnybrook Woodstock PSP outlines the following items as potential components of SR-03:

> 3 X soccer pitches

> Community garden

> Pavilion with 6 change rooms and 60m2 community meeting space.

Potential components of SR-05 are:

> 8 X netball courts

> 6 X tennis courts

> 2 X lawn bowls

> 1 X skate park

> Community garden

> Shared pavilion

> 1 X indoor 6 court stadium.

Notable items proposed within the PSP but which aren't ICP allowable items include;

> Community gardens;

> Skate parks;

> Indoor sporting stadiums.

2.2 Results of Estimations

Results of the estimation process (rounded to the nearest thousand) are outlined in Table 2-1 below. Refer to Appendix A for full price extraction data and quantities. The P50 Estimates and P90 Estimates denote that there is a 50% chance and 90% chance respectively of covering the total actual project cost. Refer to the Benchmark Infrastructure Costing report for details of the Monte-Carlo statistical analysis utilised to produce the recommended rates for P50 and P90 estimates.

Table 2-1 Cost Estimates

Project	Description	Reference material	P50 Estimate($)	P90 Estimate($)
IT-01	**Donnybrook Road & Connector Street:** Construction of a primary arterial to connector road 4-way intersection (interim treatment).	V181544-TR-SK-0001	5,496,000	6,228,000
IT-02	**Donnybrook Road & Connector Street:** Construction of a primary arterial to connector road 4-way intersection (interim treatment).	V181544-TR-SK-0002	5,540,000	6,261,000
IT-03	**Donnybrook Road & Patterson Drive:** Construction of a primary arterial to secondary arterial road 4-way intersection (interim treatment).	V181544-TR-SK-0003	6,414,000	7,213,000
IT-04	**Donnybrook Road & Koukoura Drive:** Construction of a primary arterial to a secondary arterial road 4-way intersection (interim treatment).	V181544-TR-SK-0004	6,841,000	7,719,000

IT-05	**Donnybrook Road & Connector Street:** Construction of a primary arterial to connector road 3-way intersection (interim treatment).	V181544-TR-SK-0005	5,461,000	6,151,000
IT-06	**Hayes Hill Boulevard & Patterson Drive:** Construction of a secondary arterial to boulevard connector road 4-way intersection (interim treatment).	V181544-TR-SK-0006	3,731,000	4,249,000
IT-07	**Hayes Hill Boulevard & Koukoura Drive:** Construction of a secondary arterial to boulevard connector road 4-way intersection (interim treatment).	V181544-TR-SK-0007	4,249,000	4,837,000
IT-08	**Hayes Hill Boulevard & Merriang Road:** Construction of a boulevard connector to secondary arterial 3-way intersection (interim treatment).	OMG-14094-CLP208-E	2,073,000	2,326,000
IT-09	**Cameron Street & Connector Street:** Construction of a secondary arterial to connector road 4-way intersection (interim treatment).	OMG-14094-CLP209-E	3,830,000	4,327,000
IT-10	**Cameron Street & Patterson Drive:** Construction of a secondary arterial to a secondary arterial road 4-way intersection (interim treatment).	V181544-TR-SK-0010	5,291,000	5,969,000
IT-11	**Cameron Street & Koukoura Drive:** Construction of a secondary arterial to secondary arterial 4-way intersection (interim treatment).	V181544-TR-SK-0011	5,551,000	6,271,000
IT-12	**Cameron Street & Merriang Road:** Construction of a connector road to secondary arterial 3-way intersection (interim treatment).	V181544-TR-SK-0012	2,134,000	2,392,000
IT-13	**Gunns Gully Road & Connector St:** Construction of a primary arterial to connector road 3-way intersection (interim treatment).	V181544-TR-SK-0013	4,498,000	5,106,000
IT-14	**Gunns Gully Road & Patterson Drive:** Construction of primary arterial to a secondary arterial 4-way intersection (interim treatment).	V181544-TR-SK-0014	7,384,000	8,337,000
IT-15	**Gunns Gully Road & Koukoura Drive:** Construction of a primary arterial to a secondary arterial 4-way intersection (Connector road north of Gunns Gully Road) (interim treatment).	V181544-TR-SK-0015	6,650,000	7,562,000
IT-16	**Patterson Drive & Connector St:** Construction of secondary arterial to connector 3-way intersection (interim treatment).	V181544-CI-DG-2025/2026	3,566,000	4,027,000
IT-17	**Patterson Drive & Connector St:** Construction of secondary arterial to connector 3-way intersection (interim treatment).	V181544-TR-SK-0017	3,212,000	3,628,000
BR-01	**2 lane interim road bridge -** spanning Merri Creek and Melbourne-Sydney Railway	Adams 140638-C003/C004	19,483,000	22,885,000
BR-03	**Hayes Hill Boulevard St GGF Culverts**	V181544-WE-SK002	2,990,000	3,438,000
BR-04	**Cameron Street GGF Culverts**	V181544-WE-SK001	2,901,000	3,336,000

BR-05	**2 lane interim road bridge**	Adams 140638-C006/C007	6,599,000	7,738,000
SR-03	**Sporting reserve (excluding pavilion)**	N/A	6,877,000	8,024,000
SR-05	**Sporting reserve (excluding pavilion)**	N/A	7,629,000	8,902,000

Result Application – Donnybrook and Woodstock PSP

APPENDIX A

DETAILED COST SHEETS

Appendix A	
Description:	IN-01 Primary - Connector T-Intersection (Donnybrook Road & Hayes Hill Boulevard/Langley Park Drive)
Civil Component Number:	IN-01

Group	Sub Item	Qty	Unit	Rate (P50)	Amount (P50)	Rate (P90)	Amount (P90)
Siteworks/ Earthworks	Site Preperation	23740	m2	3.68	87363.20	4.96	117750.40
	Earthworks	5325	m3	34.07	181422.75	40.52	215769.00
Road Pavement	Primary Arterial Pavement	6909	m2	169.62	1171904.58	186.26	1286870.34
	Secondary Arterial Pavement	0	m2	127.01	0.00	133.78	0.00
	Collector Arterial Pavement	720	m2	105.15	75708.00	112.44	80956.80
	Subgrade Preparation	1526	m2	14.22	21699.72	16.16	24660.16
	Pavement Rehab	0	m2	51.58	0.00	59.32	0.00
	Pavement Other	0	m2	0.00	0.00	0.00	0.00
Concrete Works	Kerb and Channel	1608	m	54.81	88134.48	60.90	97927.20
	Cycle Path	0	m2	76.59	0.00	91.94	0.00
	SUP/ Footpath	1795	m2	63.51	114000.45	73.63	132165.85
	Traffic Island	208	m2	77.60	16140.80	84.07	17486.56
Drainage	Drainage Pipe 300mm CR Bfilled	0	m	179.85	0.00	197.96	0.00
	Drainage Pipe 375mm CR Bfilled	450	m	259.10	116595.00	282.96	127332.00
	Drainage Pipe 450mm CR Bfilled	105	m	299.43	31440.15	334.33	35104.65
	Drainage Pipe 525mm CR Bfilled	0	m	403.86	0.00	448.03	0.00
	Drainage - pits	15	No.	2565.39	38480.85	2806.10	42091.50
	Drainage – Sub-soil drainage	1608	m	33.88	54479.04	43.40	69787.20
	Drainage Culvert	0	No.	0.00	0.00	0.00	0.00
Traffic signals	Traffic Signals (all inclusive)	3	Item/ Per Leg	109730.28	329190.84	128786.34	386359.02
Landscape	Tree Planting	0	No.	303.34	0.00	363.01	0.00
	Landscaping	14097	m2	21.61	304636.17	25.16	354680.52
	Topsoil Seeding	14097	m2	7.21	101639.37	8.44	118978.68
Street Lighting	Street Lighting - Road	0	m	216.34	0.00	225.67	0.00
	Street Lighting - Intersections	3	Item/ Per Leg	48468.93	145406.79	55617.74	166853.22
Misc	Regulatory Signage	16	Item	338.43	5414.88	380.39	6086.24
	Line marking	6591	m2 of Pavement	3.11	20498.01	4.09	26957.19
	Landscape maintenance (intersections)	1	Item	71344.66	71344.66	88131.43	88131.43
	Landscape maintenance (roads)	0	m2 of l'scape	2.90	0.00	2.96	0.00
	Tactile Pavers (Hazard only)	18	Item	292.43	5263.74	319.78	5756.04
Other	Rock excavation	1065	m3	100.00	106500.00	115.00	122475.00
	Gas and water utility allowance	1	Item	280000.00	280000.00	308000.00	308000.00
	Relocation of power poles	1	Item	40000.00	40000.00	44000.00	44000.00
	Existing pavement removal	5800	m2	65.00	377000.00	71.50	414700.00
	Telstra relocation	1	Item	37800.00	37800.00	41580.00	41580.00
Delivery	Council Fees	1	%	3.25	124217.06	3.25	140804.92
	VicRoads Fees	1	%	1.00	38220.63	1.00	43324.59
	Traffic Management	1	%	5.00	191103.17	5.00	216622.95
	Environmental Management	1	%	0.50	19110.32	0.50	21662.30
	Surveying and Design	1	%	5.00	191103.17	5.00	216622.95
	Supervision and Project management	1	%	9.00	343985.71	9.00	389921.31
	Site Establishment	1	%	2.50	95551.59	2.50	108311.48
	Contingency	1	%	15.00	573309.52	15.00	649868.85
Total	Excluding Delivery				**3,822,063**		**4,332,459**
	Including Delivery				**5,398,665**		**6,119,598**

Appendix A	
Description:	IN-02 Primary - Connector Intersection (Donnybrook Road & Connector Street)
Civil Component Number:	IN-02

Group	Sub Item	Qty	Unit	Rate (P50)	Amount (P50)	Rate (P90)	Amount (P90)
Siteworks/ Earthworks	Site Preperation	19610	m2	3.68	72164.80	4.96	97265.60
	Earthworks	5357	m3	34.07	182512.99	40.52	217065.64
Road Pavement	Primary Arterial Pavement	6883	m2	169.62	1167494.46	186.26	1282027.58
	Secondary Arterial Pavement	0	m2	127.01	0.00	133.78	0.00
	Collector Arterial Pavement	815	m2	105.15	85697.25	112.44	91638.60
	Subgrade Preparation	1539.6	m2	14.22	21893.11	16.16	24879.94
	Pavement Rehab	0	m2	51.58	0.00	59.32	0.00
	Pavement Other	0	m2	0.00	0.00	0.00	0.00
Concrete Works	Kerb and Channel	1491	m	54.81	81721.71	60.90	90801.90
	Cycle Path	0	m2	76.59	0.00	91.94	0.00
	SUP/ Footpath	1997	m2	63.51	126829.47	73.63	147039.11
	Traffic Island	115	m2	77.60	8924.00	84.07	9668.05
Drainage	Drainage Pipe 300mm CR Bfilled	0	m	179.85	0.00	197.96	0.00
	Drainage Pipe 375mm CR Bfilled	583	m	259.10	151055.30	282.96	164965.68
	Drainage Pipe 450mm CR Bfilled	100	m	299.43	29943.00	334.33	33433.00
	Drainage Pipe 525mm CR Bfilled	0	m	403.86	0.00	448.03	0.00
	Drainage - pits	18	No.	2565.39	46177.02	2806.10	50509.80
	Drainage – Sub-soil drainage	1491	m	33.88	50515.08	43.40	64709.40
	Drainage Culvert	0	No.	0.00	0.00	0.00	0.00
Traffic signals	Traffic Signals (all inclusive)	3	Item/ Per Leg	109730.28	329190.84	128786.34	386359.02
Landscape	Tree Planting	0	No.	303.34	0.00	363.01	0.00
	Landscaping	9422	m2	21.61	203609.42	25.16	237057.52
	Topsoil Seeding	9422	m2	7.21	67932.62	8.44	79521.68
Street Lighting	Street Lighting - Road	0	m	216.34	0.00	225.67	0.00
	Street Lighting - Intersections	3	Item/ Per Leg	48468.93	145406.79	55617.74	166853.22
Misc	Regulatory Signage	16	Item	338.43	5414.88	380.39	6086.24
	Line marking	7698	m2 of Pavement	3.11	23940.78	4.09	31484.82
	Landscape maintenance (intersections)	1	Item	71344.66	71344.66	88131.43	88131.43
	Landscape maintenance (roads)	0	m2 of l'scape	2.90	0.00	2.96	0.00
	Tactile Pavers (Hazard only)	18	Item	292.43	5263.74	319.78	5756.04
Other	Rock excavation	1071.4	m3	100.00	107140.00	115.00	123211.00
	Gas and water utility allowance	1	Item	268000.00	268000.00	294800.00	294800.00
	Telstra relocation	1	Item	280830.00	280830.00	308913.00	308913.00
	Relocate power poles	1	Item	20000.00	20000.00	22000.00	22000.00
	Existing pavement removal	4646	m2	65.00	301990.00	71.50	332189.00
Delivery	Council Fees	1	%	3.25	125287.24	3.25	141581.94
	VicRoads Fees	1	%	1.00	38549.92	1.00	43563.67
	Traffic Management	1	%	5.00	192749.60	5.00	217818.36
	Environmental Management	1	%	0.50	19274.96	0.50	21781.84
	Surveying and Design	1	%	5.00	192749.60	5.00	217818.36
	Supervision and Project management	1	%	9.00	346949.27	9.00	392073.05
	Site Establishment	1	%	2.50	96374.80	2.50	108909.18
	Contingency	1	%	15.00	578248.79	15.00	653455.09
Total	Excluding Delivery				**3,854,992**		**4,356,367**
	Including Delivery				**5,445,176**		**6,153,369**

Appendix A	
Description:	IN-03 Primary - Secondary T-Intersection (Donnybrook Road & Patterson Drive)
Civil Component Number:	IN-03

Group	Sub Item	Qty	Unit	Rate (P50)	Amount (P50)	Rate (P90)	Amount (P90)
Siteworks/ Earthworks	Site Preperation	20014	m2	3.68	73651.52	4.96	99269.44
	Earthworks	7511	m3	34.07	255899.77	40.52	304345.72
Road Pavement	Primary Arterial Pavement	7738	m2	169.62	1312519.56	186.26	1441279.88
	Secondary Arterial Pavement	3115	m2	127.01	395636.15	133.78	416724.70
	Collector Arterial Pavement	0	m2	105.15	0.00	112.44	0.00
	Subgrade Preparation	2170.6	m2	14.22	30865.93	16.16	35076.90
	Pavement Rehab	0	m2	51.58	0.00	59.32	0.00
	Pavement Other	0	m2	0.00	0.00	0.00	0.00
Concrete Works	Kerb and Channel	2666	m	54.81	146123.46	60.90	162359.40
	Cycle Path	0	m2	76.59	0.00	91.94	0.00
	SUP/ Footpath	1951	m2	63.51	123908.01	73.63	143652.13
	Traffic Island	1186	m2	77.60	92033.60	84.07	99707.02
Drainage	Drainage Pipe 300mm CR Bfilled	0	m	179.85	0.00	197.96	0.00
	Drainage Pipe 375mm CR Bfilled	670	m	259.10	173597.00	282.96	189583.20
	Drainage Pipe 450mm CR Bfilled	118	m	299.43	35332.74	334.33	39450.94
	Drainage Pipe 525mm CR Bfilled	0	m	403.86	0.00	448.03	0.00
	Drainage - pits	22	No.	2565.39	56438.58	2806.10	61734.20
	Drainage – Sub-soil drainage	2666	m	33.88	90324.08	43.40	115704.40
	Drainage Culvert	0	No.	0.00	0.00	0.00	0.00
Traffic signals	Traffic Signals (all inclusive)	3	Item/ Per Leg	109730.28	329190.84	128786.34	386359.02
Landscape	Tree Planting	0	No.	303.34	0.00	363.01	0.00
	Landscaping	6024	m2	21.61	130178.64	25.16	151563.84
	Topsoil Seeding	6024	m2	7.21	43433.04	8.44	50842.56
Street Lighting	Street Lighting - Road	0	m	216.34	0.00	225.67	0.00
	Street Lighting - Intersections	3	Item/ Per Leg	48468.93	145406.79	55617.74	166853.22
Misc.	Regulatory Signage	16	Item	338.43	5414.88	380.39	6086.24
	Line marking	10853	m2 of Pavement	3.11	33752.83	4.09	44388.77
	Landscape maintenance (intersections)	1	Item	71344.66	71344.66	88131.43	88131.43
	Landscape maintenance (roads)	0	m2 of l'scape	2.90	0.00	2.96	0.00
	Tactile Pavers (Hazard only)	18	Item	292.43	5263.74	319.78	5756.04
Other	Rock excavation	1502.2	m3	100.00	150220.00	115.00	172753.00
	Existing pavement removal	6185	m2	65.00	402025.00	71.50	442227.50
	Relocate power poles	1	Item	20000.00	20000.00	22000.00	22000.00
	Gas and water utility allowance	1	Item	144800.00	144800.00	159280.00	159280.00
	NBN relocation	1	Item	42000.00	42000.00	46200.00	46200.00
	Telstra relocation	1	Item	231495.00	231495.00	254644.50	254644.50
Delivery	Council Fees	1	%	3.25	147577.81	3.25	165944.16
	VicRoads Fees	1	%	1.00	45408.56	1.00	51059.74
	Traffic Management	1	%	5.00	227042.79	5.00	255298.70
	Environmental Management	1	%	0.50	22704.28	0.50	25529.87
	Surveying and Design	1	%	5.00	227042.79	5.00	255298.70
	Supervision and Project management	1	%	9.00	408677.02	9.00	459537.66
	Site Establishment	1	%	2.50	113521.40	2.50	127649.35
	Contingency	1	%	15.00	681128.37	15.00	765896.11
Total	Excluding Delivery				**4,540,856**		**5,105,974**
	Including Delivery				**6,413,959**		**7,212,188**

Appendix A	
Description:	IN-04 - Primary - Secondary T-Intersection (Donnybrook Road & Koukoura Drive)
Civil Component Number:	IN-04

Group	Sub Item	Qty	Unit	Rate (P50)	Amount (P50)	Rate (P90)	Amount (P90)
Siteworks/ Earthworks	Site Preperation	19800	m2	3.68	72864.00	4.96	98208.00
	Earthworks	9573	m3	34.07	326152.11	40.52	387897.96
Road Pavement	Primary Arterial Pavement	10310	m2	169.62	1748782.20	186.26	1920340.60
	Secondary Arterial Pavement	0	m2	127.01	0.00	133.78	0.00
	Collector Arterial Pavement	0	m2	105.15	0.00	112.44	0.00
	Subgrade Preparation	2062	m2	14.22	29321.64	16.16	33321.92
	Pavement Rehab	0	m2	51.58	0.00	59.32	0.00
	Pavement Other	0	m2	0.00	0.00	0.00	0.00
Concrete Works	Kerb and Channel	2725	m	54.81	149357.25	60.90	165952.50
	Cycle Path	0	m2	76.59	0.00	91.94	0.00
	SUP/ Footpath	1912	m2	63.51	121431.12	73.63	140780.56
	Traffic Island	1215	m2	77.60	94284.00	84.07	102145.05
Drainage	Drainage Pipe 300mm CR Bfilled	0	m	179.85	0.00	197.96	0.00
	Drainage Pipe 375mm CR Bfilled	644	m	259.10	166860.40	282.96	182226.24
	Drainage Pipe 450mm CR Bfilled	94	m	299.43	28146.42	334.33	31427.02
	Drainage Pipe 525mm CR Bfilled	0	m	403.86	0.00	448.03	0.00
	Drainage - pits	19	No.	2565.39	48742.41	2806.10	53315.90
	Drainage – Sub-soil drainage	2725	m	33.88	92323.00	43.40	118265.00
	Drainage Culvert	0	No.	0.00	0.00	0.00	0.00
Traffic signals	Traffic Signals (all inclusive)	3	Item/ Per Leg	109730.28	329190.84	128786.34	386359.02
Landscape	Tree Planting	0	No.	303.34	0.00	363.01	0.00
	Landscaping	6363	m2	21.61	137504.43	25.16	160093.08
	Topsoil Seeding	6363	m2	7.21	45877.23	8.44	53703.72
Street Lighting	Street Lighting - Road	0	m	216.34	0.00	225.67	0.00
	Street Lighting - Intersections	3	Item/ Per Leg	48468.93	145406.79	55617.74	166853.22
Misc.	Regulatory Signage	16	Item	338.43	5414.88	380.39	6086.24
	Line marking	10310	m2 of Pavement	3.11	32064.10	4.09	42167.90
	Landscape maintenance (intersections)	1	Item	71344.66	71344.66	88131.43	88131.43
	Landscape maintenance (roads)	0	m2 of l'scape	2.90	0.00	2.96	0.00
	Tactile Pavers (Hazard only)	18	Item	292.43	5263.74	319.78	5756.04
Other	Rock excavation	1914.6	m3	100.00	191460.00	115.00	220179.00
	Existing pavement removal	5960	m2	65.00	387400.00	71.50	426140.00
	Telecom relocation	1	Item	613525.00	613525.00	674877.50	674877.50
Delivery	Council Fees	1	%	3.25	157388.28	3.25	177587.41
	VicRoads Fees	1	%	1.00	48427.16	1.00	54642.28
	Traffic Management	1	%	5.00	242135.81	5.00	273211.40
	Environmental Management	1	%	0.50	24213.58	0.50	27321.14
	Surveying and Design	1	%	5.00	242135.81	5.00	273211.40
	Supervision and Project management	1	%	9.00	435844.46	9.00	491780.51
	Site Establishment	1	%	2.50	121067.91	2.50	136605.70
	Contingency	1	%	15.00	726407.43	15.00	819634.19
Total	Excluding Delivery				**4,842,716**		**5,464,228**
	Including Delivery				**6,840,337**		**7,718,222**

Appendix A	
Description:	IN-05 Primary - Connector T-Intersection (Donnybrook Road & Connector Street)
Civil Component Number:	IN-05

Group	Sub Item	Qty	Unit	Rate (P50)	Amount (P50)	Rate (P90)	Amount (P90)
Siteworks/ Earthworks	Site Preperation	14450	m2	3.68	53176.00	4.96	71672.00
	Earthworks	5652	m3	34.07	192563.64	40.52	229019.04
Road Pavement	Primary Arterial Pavement	6951	m2	169.62	1179028.62	186.26	1294693.26
	Secondary Arterial Pavement	0	m2	127.01	0.00	133.78	0.00
	Collector Arterial Pavement	1274	m2	105.15	133961.10	112.44	143248.56
	Subgrade Preparation	1645	m2	14.22	23391.90	16.16	26583.20
	Pavement Rehab	0	m2	51.58	0.00	59.32	0.00
	Pavement Other	0	m2	0.00	0.00	0.00	0.00
Concrete Works	Kerb and Channel	1420	m	54.81	77830.20	60.90	86478.00
	Cycle Path	0	m2	76.59	0.00	91.94	0.00
	SUP/ Footpath	2333	m2	63.51	148168.83	73.63	171778.79
	Traffic Island	103	m2	77.60	7992.80	84.07	8659.21
Drainage	Drainage Pipe 300mm CR Bfilled	0	m	179.85	0.00	197.96	0.00
	Drainage Pipe 375mm CR Bfilled	550	m	259.10	142505.00	282.96	155628.00
	Drainage Pipe 450mm CR Bfilled	118	m	299.43	35332.74	334.33	39450.94
	Drainage Pipe 525mm CR Bfilled	0	m	403.86	0.00	448.03	0.00
	Drainage - pits	18	No.	2565.39	46177.02	2806.10	50509.80
	Drainage – Sub-soil drainage	1420	m	33.88	48109.60	43.40	61628.00
	Drainage Culvert	0	No.	0.00	0.00	0.00	0.00
Traffic signals	Traffic Signals (all inclusive)	3	Item/ Per Leg	109730.28	329190.84	128786.34	386359.02
Landscape	Tree Planting	0	No.	303.34	0.00	363.01	0.00
	Landscaping	3260	m2	21.61	70448.60	25.16	82021.60
	Topsoil Seeding	3260	m2	7.21	23504.60	8.44	27514.40
Street Lighting	Street Lighting - Road	0	m	216.34	0.00	225.67	0.00
	Street Lighting - Intersections	3	Item/ Per Leg	48468.93	145406.79	55617.74	166853.22
Misc	Regulatory Signage	0	Item	338.43	0.00	380.39	0.00
	Line marking	8225	m2 of Pavement	3.11	25579.75	4.09	33640.25
	Landscape maintenance (intersections)	1	Item	71344.66	71344.66	88131.43	88131.43
	Landscape maintenance (roads)	0	m2 of l'scape	2.90	0.00	2.96	0.00
	Tactile Pavers (Hazard only)	18	Item	292.43	5263.74	319.78	5756.04
Other	Rock excavation	1130.4	m3	100.00	113040.00	115.00	129996.00
	Telecom relocation	1	Item	556600.00	556600.00	612260.00	612260.00
	Existing pavement removal	5750	m2	65.00	373750.00	71.50	411125.00
	Relocate Power poles	1	Item	10000.00	10000.00	11000.00	11000.00
Delivery	Council Fees	1	%	3.25	123901.91	3.25	139555.19
	VicRoads Fees	1	%	1.00	38123.66	1.00	42940.06
	Traffic Management	1	%	5.00	190618.32	5.00	214700.29
	Environmental Management	1	%	0.50	19061.83	0.50	21470.03
	Surveying and Design	1	%	5.00	190618.32	5.00	214700.29
	Supervision and Project management	1	%	9.00	343112.98	9.00	386460.52
	Site Establishment	1	%	2.50	95309.16	2.50	107350.14
	Contingency	1	%	15.00	571854.96	15.00	644100.86
Total	Excluding Delivery				**3,812,366**		**4,294,006**
	Including Delivery				**5,384,968**		**6,065,283**

Appendix A	
Description:	IN-06 - Secondary - Connector Intersection (Hayes Hill Boulevard & Patterson Drive)
Civil Component Number:	IN-06

Group	Sub Item	Qty	Unit	Rate (P50)	Amount (P50)	Rate (P90)	Amount (P90)
Siteworks/ Earthworks	Site Preperation	28702	m2	3.68	105623.36	4.96	142361.92
	Earthworks	3520	m3	34.07	119926.40	40.52	142630.40
Road Pavement	Primary Arterial Pavement	0	m2	169.62	0.00	186.26	0.00
	Secondary Arterial Pavement	4207	m2	127.01	534331.07	133.78	562812.46
	Collector Arterial Pavement	1586	m2	105.15	166767.90	112.44	178329.84
	Subgrade Preparation	1158.6	m2	14.22	16475.29	16.16	18722.98
	Pavement Rehab	0	m2	51.58	0.00	59.32	0.00
	Pavement Other	0	m2	0.00	0.00	0.00	0.00
Concrete Works	Kerb and Channel	1523	m	54.81	83475.63	60.90	92750.70
	Cycle Path	0	m2	76.59	0.00	91.94	0.00
	SUP/ Footpath	2209	m2	63.51	140293.59	73.63	162648.67
	Traffic Island	1249	m2	77.60	96922.40	84.07	105003.43
Drainage	Drainage Pipe 300mm CR Bfilled	0	m	179.85	0.00	197.96	0.00
	Drainage Pipe 375mm CR Bfilled	210	m	259.10	54411.00	282.96	59421.60
	Drainage Pipe 450mm CR Bfilled	575	m	299.43	172172.25	334.33	192239.75
	Drainage Pipe 525mm CR Bfilled	0	m	403.86	0.00	448.03	0.00
	Drainage - pits	24	No.	2565.39	61569.36	2806.10	67346.40
	Drainage – Sub-soil drainage	1824	m	33.88	61797.12	43.40	79161.60
	Drainage Culvert	0	No.	0.00	0.00	0.00	0.00
Traffic signals	Traffic Signals (all inclusive)	4	Item/ Per Leg	109730.28	438921.12	128786.34	515145.36
Landscape	Tree Planting	41	No.	303.34	12436.94	363.01	14883.41
	Landscaping	7359	m2	21.61	159027.99	25.16	185152.44
	Topsoil Seeding	7359	m2	7.21	53058.39	8.44	62109.96
Street Lighting	Street Lighting - Road	0	m	216.34	0.00	225.67	0.00
	Street Lighting - Intersections	4	Item/ Per Leg	48468.93	193875.72	55617.74	222470.96
Misc.	Regulatory Signage	10	Item	338.43	3384.30	380.39	3803.90
	Line marking	5793	m2 of Pavement	3.11	18016.23	4.09	23693.37
	Landscape maintenance (intersections)	1	Item	71344.66	71344.66	88131.43	88131.43
	Landscape maintenance (roads)	0	m2 of l'scape	2.90	0.00	2.96	0.00
	Tactile Pavers (Hazard only)	24	Item	292.43	7018.32	319.78	7674.72
Other	Rock excavation	704	m3	100.00	70400.00	115.00	80960.00
Delivery	Council Fees	1	%	3.25	85840.59	3.25	97742.30
	VicRoads Fees	1	%	1.00	26412.49	1.00	30074.55
	Traffic Management	1	%	5.00	132062.45	5.00	150372.76
	Environmental Management	1	%	0.50	13206.25	0.50	15037.28
	Surveying and Design	1	%	5.00	132062.45	5.00	150372.76
	Supervision and Project management	1	%	9.00	237712.41	9.00	270670.98
	Site Establishment	1	%	2.50	66031.23	2.50	75186.38
	Contingency	1	%	15.00	396187.36	15.00	451118.29
Total	Excluding Delivery				**2,641,249**		**3,007,455**
	Including Delivery				**3,730,764**		**4,248,031**

Appendix A	
Description:	IN-07 - Secondary - Connector Intersection (Hayes Hill Boulevard & Koukoura Drive)
Civil Component Number:	IN-07

Group	Sub Item	Qty	Unit	Rate (P50)	Amount (P50)	Rate (P90)	Amount (P90)
Siteworks/ Earthworks	Site Preperation	20628	m2	3.68	75911.04	4.96	102314.88
	Earthworks	3981	m3	34.07	135632.67	40.52	161310.12
Road Pavement	Primary Arterial Pavement	4476	m2	169.62	759219.12	186.26	833699.76
	Secondary Arterial Pavement	0	m2	127.01	0.00	133.78	0.00
	Collector Arterial Pavement	1460	m2	105.15	153519.00	112.44	164162.40
	Subgrade Preparation	292	m2	14.22	4152.24	16.16	4718.72
	Pavement Rehab	0	m2	51.58	0.00	59.32	0.00
	Pavement Other	0	m2	0.00	0.00	0.00	0.00
Concrete Works	Kerb and Channel	1424	m	54.81	78049.44	60.90	86721.60
	Cycle Path	0	m2	76.59	0.00	91.94	0.00
	SUP/ Footpath	2351	m2	63.51	149312.01	73.63	173104.13
	Traffic Island	3442	m2	77.60	267099.20	84.07	289368.94
Drainage	Drainage Pipe 300mm CR Bfilled	0	m	179.85	0.00	197.96	0.00
	Drainage Pipe 375mm CR Bfilled	210	m	259.10	54411.00	282.96	59421.60
	Drainage Pipe 450mm CR Bfilled	630	m	299.43	188640.90	334.33	210627.90
	Drainage Pipe 525mm CR Bfilled	0	m	403.86	0.00	448.03	0.00
	Drainage - pits	25	No.	2565.39	64134.75	2806.10	70152.50
	Drainage – Sub-soil drainage	2017	m	33.88	68335.96	43.40	87537.80
	Drainage Culvert	0	No.	0.00	0.00	0.00	0.00
Traffic signals	Traffic Signals (all inclusive)	4	Item/ Per Leg	109730.28	438921.12	128786.34	515145.36
Landscape	Tree Planting	46	No.	303.34	13953.64	363.01	16698.46
	Landscaping	6835	m2	21.61	147704.35	25.16	171968.60
	Topsoil Seeding	6835	m2	7.21	49280.35	8.44	57687.40
Street Lighting	Street Lighting - Road	0	m	216.34	0.00	225.67	0.00
	Street Lighting - Intersections	4	Item/ Per Leg	48468.93	193875.72	55617.74	222470.96
Misc.	Regulatory Signage	10	Item	338.43	3384.30	380.39	3803.90
	Line marking	1460	m2 of Pavement	3.11	4540.60	4.09	5971.40
	Landscape maintenance (intersections)	1	Item	71344.66	71344.66	88131.43	88131.43
	Landscape maintenance (roads)	0	m2 of l'scape	2.90	0.00	2.96	0.00
	Tactile Pavers (Hazard only)	24	Item	292.43	7018.32	319.78	7674.72
Other	Rock excavation	796.2	m3	100.00	79620.00	115.00	91563.00
Delivery	Council Fees	1	%	3.25	97761.96	3.25	111288.31
	VicRoads Fees	1	%	1.00	30080.60	1.00	34242.56
	Traffic Management	1	%	5.00	150403.02	5.00	171212.78
	Environmental Management	1	%	0.50	15040.30	0.50	17121.28
	Surveying and Design	1	%	5.00	150403.02	5.00	171212.78
	Supervision and Project management	1	%	9.00	270725.44	9.00	308183.00
	Site Establishment	1	%	2.50	75201.51	2.50	85606.39
	Contingency	1	%	15.00	451209.06	15.00	513638.34
Total	Excluding Delivery				**3,008,060**		**3,424,256**
	Including Delivery				**4,248,885**		**4,836,761**

Appendix A	
Description:	IN-08 Secondary - Connector T-Intersection (Hayes Hill Boulevard & Merriang Road)
Civil Component Number:	IN-08

Group	Sub Item	Qty	Unit	Rate (P50)	Amount (P50)	Rate (P90)	Amount (P90)
Siteworks/ Earthworks	Site Preperation	8495	m2	3.68	31261.60	4.96	42135.20
	Earthworks	2359	m3	34.07	80371.13	40.52	95586.68
Road Pavement	Primary Arterial Pavement	0	m2	169.62	0.00	186.26	0.00
	Secondary Arterial Pavement	2947	m2	127.01	374298.47	133.78	394249.66
	Collector Arterial Pavement	912	m2	105.15	95896.80	112.44	102545.28
	Subgrade Preparation	771.8	m2	14.22	10975.00	16.16	12472.29
	Pavement Rehab	0	m2	51.58	0.00	59.32	0.00
	Pavement Other	0	m2	0.00	0.00	0.00	0.00
Concrete Works	Kerb and Channel	351	m	54.81	19238.31	60.90	21375.90
	Cycle Path	0	m2	76.59	0.00	91.94	0.00
	SUP/ Footpath	1310	m2	63.51	83198.10	73.63	96455.30
	Traffic Island	183	m2	77.60	14200.80	84.07	15384.81
Drainage	Drainage Pipe 300mm CR Bfilled	0	m	179.85	0.00	197.96	0.00
	Drainage Pipe 375mm CR Bfilled	140	m	259.10	36274.00	282.96	39614.40
	Drainage Pipe 450mm CR Bfilled	350	m	299.43	104800.50	334.33	117015.50
	Drainage Pipe 525mm CR Bfilled	0	m	403.86	0.00	448.03	0.00
	Drainage - pits	21	No.	2565.39	53873.19	2806.10	58928.10
	Drainage – Sub-soil drainage	351	m	33.88	11891.88	43.40	15233.40
	Drainage Culvert	0	No.	0.00	0.00	0.00	0.00
Traffic signals	Traffic Signals (all inclusive)	0	Item/ Per Leg	109730.28	0.00	128786.34	0.00
Landscape	Tree Planting	43	No.	303.34	13043.62	363.01	15609.43
	Landscaping	3150	m2	21.61	68071.50	25.16	79254.00
	Topsoil Seeding	3150	m2	7.21	22711.50	8.44	26586.00
Street Lighting	Street Lighting - Road	0	m	216.34	0.00	225.67	0.00
	Street Lighting - Intersections	3	Item/ Per Leg	48468.93	145406.79	55617.74	166853.22
Misc.	Regulatory Signage	5	Item	338.43	1692.15	380.39	1901.95
	Line marking	3859	m2 of Pavement	3.11	12001.49	4.09	15783.31
	Landscape maintenance (intersections)	1	Item	71344.66	71344.66	88131.43	88131.43
	Landscape maintenance (roads)	0	m2 of l'scape	2.90	0.00	2.96	0.00
	Tactile Pavers (Hazard only)	18	Item	292.43	5263.74	319.78	5756.04
Other	Rock excavation	471.8	m3	100.00	47180.00	115.00	54257.00
	Existing pavement removal	2530	m2	65.00	164450.00	71.50	180895.00
Delivery	Council Fees	1	%	3.25	47691.97	3.25	53495.78
	VicRoads Fees	1	%	1.00	14674.45	1.00	16460.24
	Traffic Management	1	%	5.00	73372.26	5.00	82301.19
	Environmental Management	1	%	0.50	7337.23	0.50	8230.12
	Surveying and Design	1	%	5.00	73372.26	5.00	82301.19
	Supervision and Project management	1	%	9.00	132070.07	9.00	148142.15
	Site Establishment	1	%	2.50	36686.13	2.50	41150.60
	Contingency	1	%	15.00	220116.78	15.00	246903.58
Total	Excluding Delivery				**1,467,445**		**1,646,024**
	Including Delivery				**2,072,766**		**2,325,009**

Appendix A	
Description:	IN-09 - Secondary - Connector Intersection (Cameron Street & Connector Street)
Civil Component Number:	IN-09

Group	Sub Item	Qty	Unit	Rate (P50)	Amount (P50)	Rate (P90)	Amount (P90)
Siteworks/ Earthworks	Site Preperation	16127	m2	3.68	59347.36	4.96	79989.92
	Earthworks	4198	m3	34.07	143025.86	40.52	170102.96
Road Pavement	Primary Arterial Pavement	0	m2	169.62	0.00	186.26	0.00
	Secondary Arterial Pavement	4835	m2	127.01	614093.35	133.78	646826.30
	Collector Arterial Pavement	2108	m2	105.15	221656.20	112.44	237023.52
	Subgrade Preparation	1388.6	m2	14.22	19745.89	16.16	22439.78
	Pavement Rehab	0	m2	51.58	0.00	59.32	0.00
	Pavement Other	0	m2	0.00	0.00	0.00	0.00
Concrete Works	Kerb and Channel	1495	m	54.81	81940.95	60.90	91045.50
	Cycle Path	0	m2	76.59	0.00	91.94	0.00
	SUP/ Footpath	2218	m2	63.51	140865.18	73.63	163311.34
	Traffic Island	1891	m2	77.60	146741.60	84.07	158976.37
Drainage	Drainage Pipe 300mm CR Bfilled	0	m	179.85	0.00	197.96	0.00
	Drainage Pipe 375mm CR Bfilled	210	m	259.10	54411.00	282.96	59421.60
	Drainage Pipe 450mm CR Bfilled	545	m	299.43	163189.35	334.33	182209.85
	Drainage Pipe 525mm CR Bfilled	0	m	403.86	0.00	448.03	0.00
	Drainage - pits	24	No.	2565.39	61569.36	2806.10	67346.40
	Drainage – Sub-soil drainage	1718	m	33.88	58205.84	43.40	74561.20
	Drainage Culvert	0	No.	0.00	0.00	0.00	0.00
Traffic signals	Traffic Signals (all inclusive)	4	Item/ Per Leg	109730.28	438921.12	128786.34	515145.36
Landscape	Tree Planting	41	No.	303.34	12436.94	363.01	14883.41
	Landscaping	3954	m2	21.61	85445.94	25.16	99482.64
	Topsoil Seeding	3954	m2	7.21	28508.34	8.44	33371.76
Street Lighting	Street Lighting - Road	0	m	216.34	0.00	225.67	0.00
	Street Lighting - Intersections	4	Item/ Per Leg	48468.93	193875.72	55617.74	222470.96
Misc.	Regulatory Signage	10	Item	338.43	3384.30	380.39	3803.90
	Line marking	6943	m2 of Pavement	3.11	21592.73	4.09	28396.87
	Landscape maintenance (intersections)	1	Item	71344.66	71344.66	88131.43	88131.43
	Landscape maintenance (roads)	0	m2 of l'scape	2.90	0.00	2.96	0.00
	Tactile Pavers (Hazard only)	24	Item	292.43	7018.32	319.78	7674.72
Other	Rock excavation	839.6	m3	100.00	83960.00	115.00	96554.00
Delivery	Council Fees	1	%	3.25	88116.60	3.25	99553.02
	VicRoads Fees	1	%	1.00	27112.80	1.00	30631.70
	Traffic Management	1	%	5.00	135564.00	5.00	153158.49
	Environmental Management	1	%	0.50	13556.40	0.50	15315.85
	Surveying and Design	1	%	5.00	135564.00	5.00	153158.49
	Supervision and Project management	1	%	9.00	244015.20	9.00	275685.28
	Site Establishment	1	%	2.50	67782.00	2.50	76579.24
	Contingency	1	%	15.00	406692.00	15.00	459475.47
Total	Excluding Delivery				**2,711,280**		**3,063,170**
	Including Delivery				**3,829,683**		**4,326,727**

Appendix A	
Description:	IN-10 - Secondary - Secondary Intersection (Cameron Street & Patterson Drive)
Civil Component Number:	IN-10

Group	Sub Item	Qty	Unit	Rate (P50)	Amount (P50)	Rate (P90)	Amount (P90)
Siteworks/ Earthworks	Site Preperation	27244	m2	3.68	100257.92	4.96	135130.24
	Earthworks	5769	m3	34.07	196549.83	40.52	233759.88
Road Pavement	Primary Arterial Pavement	0	m2	169.62	0.00	186.26	0.00
	Secondary Arterial Pavement	7467	m2	127.01	948383.67	133.78	998935.26
	Collector Arterial Pavement	1921	m2	105.15	201993.15	112.44	215997.24
	Subgrade Preparation	1877.6	m2	14.22	26699.47	16.16	30342.02
	Pavement Rehab	0	m2	51.58	0.00	59.32	0.00
	Pavement Other	0	m2	0.00	0.00	0.00	0.00
Concrete Works	Kerb and Channel	1950	m	54.81	106879.50	60.90	118755.00
	Cycle Path	0	m2	76.59	0.00	91.94	0.00
	SUP/ Footpath	2460	m2	63.51	156234.60	73.63	181129.80
	Traffic Island	3204	m2	77.60	248630.40	84.07	269360.28
Drainage	Drainage Pipe 300mm CR Bfilled	0	m	179.85	0.00	197.96	0.00
	Drainage Pipe 375mm CR Bfilled	260	m	259.10	67366.00	282.96	73569.60
	Drainage Pipe 450mm CR Bfilled	913	m	299.43	273379.59	334.33	305243.29
	Drainage Pipe 525mm CR Bfilled	0	m	403.86	0.00	448.03	0.00
	Drainage - pits	41	No.	2565.39	105180.99	2806.10	115050.10
	Drainage – Sub-soil drainage	2548	m	33.88	86326.24	43.40	110583.20
	Drainage Culvert	0	No.	0.00	0.00	0.00	0.00
Traffic signals	Traffic Signals (all inclusive)	4	Item/ Per Leg	109730.28	438921.12	128786.34	515145.36
Landscape	Tree Planting	61	No.	303.34	18503.74	363.01	22143.61
	Landscaping	12192	m2	21.61	263469.12	25.16	306750.72
	Topsoil Seeding	12192	m2	7.21	87904.32	8.44	102900.48
Street Lighting	Street Lighting - Road	0	m	216.34	0.00	225.67	0.00
	Street Lighting - Intersections	4	Item/ Per Leg	48468.93	193875.72	55617.74	222470.96
Misc	Regulatory Signage	24	Item	338.43	8122.32	380.39	9129.36
	Line marking	7467	m2 of Pavement	3.11	23222.37	4.09	30540.03
	Landscape maintenance (intersections)	1	Item	71344.66	71344.66	88131.43	88131.43
	Landscape maintenance (roads)	0	m2 of l'scape	2.90	0.00	2.96	0.00
	Tactile Pavers (Hazard only)	24	Item	292.43	7018.32	319.78	7674.72
Other	Rock excavation	1153.8	m3	100.00	115380.00	115.00	132687.00
Delivery	Council Fees	1	%	3.25	121733.40	3.25	137326.46
	VicRoads Fees	1	%	1.00	37456.43	1.00	42254.30
	Traffic Management	1	%	5.00	187282.15	5.00	211271.48
	Environmental Management	1	%	0.50	18728.22	0.50	21127.15
	Surveying and Design	1	%	5.00	187282.15	5.00	211271.48
	Supervision and Project management	1	%	9.00	337107.87	9.00	380288.66
	Site Establishment	1	%	2.50	93641.08	2.50	105635.74
	Contingency	1	%	15.00	561846.46	15.00	633814.44
Total	Excluding Delivery				**3,745,643**		**4,225,430**
	Including Delivery				**5,290,721**		**5,968,419**

Appendix A	
Description:	IN-11 - Secondary - Secondary Intersection (Cameron Street & Koukoura Drive)
Civil Component Number:	IN-11

Group	Sub Item	Qty	Unit	Rate (P50)	Amount (P50)	Rate (P90)	Amount (P90)
Siteworks/ Earthworks	Site Preperation	26410	m2	3.68	97188.80	4.96	130993.60
	Earthworks	5743	m3	34.07	195664.01	40.52	232706.36
Road Pavement	Primary Arterial Pavement	5837	m2	169.62	990071.94	186.26	1087199.62
	Secondary Arterial Pavement	0	m2	127.01	0.00	133.78	0.00
	Collector Arterial Pavement	2933	m2	105.15	308404.95	112.44	329786.52
	Subgrade Preparation	1754	m2	14.22	24941.88	16.16	28344.64
	Pavement Rehab	0	m2	51.58	0.00	59.32	0.00
	Pavement Other	0	m2	0.00	0.00	0.00	0.00
Concrete Works	Kerb and Channel	1962	m	54.81	107537.22	60.90	119485.80
	Cycle Path	0	m2	76.59	0.00	91.94	0.00
	SUP/ Footpath	2581	m2	63.51	163919.31	73.63	190039.03
	Traffic Island	7095	m2	77.60	550572.00	84.07	596476.65
Drainage	Drainage Pipe 300mm CR Bfilled	0	m	179.85	0.00	197.96	0.00
	Drainage Pipe 375mm CR Bfilled	260	m	259.10	67366.00	282.96	73569.60
	Drainage Pipe 450mm CR Bfilled	965	m	299.43	288949.95	334.33	322628.45
	Drainage Pipe 525mm CR Bfilled	0	m	403.86	0.00	448.03	0.00
	Drainage - pits	42	No.	2565.39	107746.38	2806.10	117856.20
	Drainage – Sub-soil drainage	2428	m	33.88	82260.64	43.40	105375.20
	Drainage Culvert	0	No.	0.00	0.00	0.00	0.00
Traffic signals	Traffic Signals (all inclusive)	4	Item/ Per Leg	109730.28	438921.12	128786.34	515145.36
Landscape	Tree Planting	64	No.	303.34	19413.76	363.01	23232.64
	Landscaping	3274	m2	21.61	70751.14	25.16	82373.84
	Topsoil Seeding	3274	m2	7.21	23605.54	8.44	27632.56
Street Lighting	Street Lighting - Road	0	m	216.34	0.00	225.67	0.00
	Street Lighting - Intersections	4	Item/ Per Leg	48468.93	193875.72	55617.74	222470.96
Misc	Regulatory Signage	16	Item	338.43	5414.88	380.39	6086.24
	Line marking	0	m2 of Pavement	3.11	0.00	4.09	0.00
	Landscape maintenance (intersections)	1	Item	71344.66	71344.66	88131.43	88131.43
	Landscape maintenance (roads)	0	m2 of l'scape	2.90	0.00	2.96	0.00
	Tactile Pavers (Hazard only)	24	Item	292.43	7018.32	319.78	7674.72
Other	Rock excavation	1148.6	m3	100.00	114860.00	115.00	132089.00
Delivery	Council Fees	1	%	3.25	127719.42	3.25	144277.20
	VicRoads Fees	1	%	1.00	39298.28	1.00	44392.98
	Traffic Management	1	%	5.00	196491.41	5.00	221964.92
	Environmental Management	1	%	0.50	19649.14	0.50	22196.49
	Surveying and Design	1	%	5.00	196491.41	5.00	221964.92
	Supervision and Project management	1	%	9.00	353684.54	9.00	399536.86
	Site Establishment	1	%	2.50	98245.71	2.50	110982.46
	Contingency	1	%	15.00	589474.23	15.00	665894.76
Total	Excluding Delivery				**3,929,828**		**4,439,298**
	Including Delivery				**5,550,882**		**6,270,509**

Appendix A	
Description:	IN-12 - Secondary - Connector T-Intersection (Cameron Street & Merriang Road)
Civil Component Number:	IN-12

Group	Sub Item	Qty	Unit	Rate (P50)	Amount (P50)	Rate (P90)	Amount (P90)
Siteworks/ Earthworks	Site Preperation	8196	m2	3.68	30161.28	4.96	40652.16
	Earthworks	2489	m3	34.07	84800.23	40.52	100854.28
Road Pavement	Primary Arterial Pavement	0	m2	169.62	0.00	186.26	0.00
	Secondary Arterial Pavement	3085	m2	127.01	391825.85	133.78	412711.30
	Collector Arterial Pavement	990	m2	105.15	104098.50	112.44	111315.60
	Subgrade Preparation	815	m2	14.22	11589.30	16.16	13170.40
	Pavement Rehab	0	m2	51.58	0.00	59.32	0.00
	Pavement Other	0	m2	0.00	0.00	0.00	0.00
Concrete Works	Kerb and Channel	380	m	54.81	20827.80	60.90	23142.00
	Cycle Path	0	m2	76.59	0.00	91.94	0.00
	SUP/ Footpath	1510	m2	63.51	95900.10	73.63	111181.30
	Traffic Island	109	m2	77.60	8458.40	84.07	9163.63
Drainage	Drainage Pipe 300mm CR Bfilled	0	m	179.85	0.00	197.96	0.00
	Drainage Pipe 375mm CR Bfilled	210	m	259.10	54411.00	282.96	59421.60
	Drainage Pipe 450mm CR Bfilled	379	m	299.43	113483.97	334.33	126711.07
	Drainage Pipe 525mm CR Bfilled	0	m	403.86	0.00	448.03	0.00
	Drainage - pits	21	No.	2565.39	53873.19	2806.10	58928.10
	Drainage – Sub-soil drainage	735	m	33.88	24901.80	43.40	31899.00
	Drainage Culvert	0	No.	0.00	0.00	0.00	0.00
Traffic signals	Traffic Signals (all inclusive)	0	Item/ Per Leg	109730.28	0.00	128786.34	0.00
Landscape	Tree Planting	46	No.	303.34	13953.64	363.01	16698.46
	Landscaping	1677	m2	21.61	36239.97	25.16	42193.32
	Topsoil Seeding	1677	m2	7.21	12091.17	8.44	14153.88
Street Lighting	Street Lighting - Road	0	m	216.34	0.00	225.67	0.00
	Street Lighting - Intersections	3	Item/ Per Leg	48468.93	145406.79	55617.74	166853.22
Misc.	Regulatory Signage	9	Item	338.43	3045.87	380.39	3423.51
	Line marking	4075	m2 of Pavement	3.11	12673.25	4.09	16666.75
	Landscape maintenance (intersections)	1	Item	71344.66	71344.66	88131.43	88131.43
	Landscape maintenance (roads)	0	m2 of l'scape	2.90	0.00	2.96	0.00
	Tactile Pavers (Hazard only)	24	Item	292.43	7018.32	319.78	7674.72
Other	Rock excavation	497.8	m3	100.00	49780.00	115.00	57247.00
	Existing pavement removal	2530	m2	65.00	164450.00	71.50	180895.00
Delivery	Council Fees	1	%	3.25	49085.89	3.25	55025.35
	VicRoads Fees	1	%	1.00	15103.35	1.00	16930.88
	Traffic Management	1	%	5.00	75516.75	5.00	84654.39
	Environmental Management	1	%	0.50	7551.68	0.50	8465.44
	Surveying and Design	1	%	5.00	75516.75	5.00	84654.39
	Supervision and Project management	1	%	9.00	135930.16	9.00	152377.90
	Site Establishment	1	%	2.50	37758.38	2.50	42327.19
	Contingency	1	%	15.00	226550.26	15.00	253963.16
Total	Excluding Delivery				**1,510,335**		**1,693,088**
	Including Delivery				**2,133,348**		**2,391,486**

Appendix A	
Description:	IN-13 - Primary - Connector T-Intersection (Gunns Gully Road & Connector St)
Civil Component Number:	IN-13

Group	Sub Item	Qty	Unit	Rate (P50)	Amount (P50)	Rate (P90)	Amount (P90)
Siteworks/ Earthworks	Site Preperation	25497	m2	3.68	93828.96	4.96	126465.12
	Earthworks	5127	m3	34.07	174676.89	40.52	207746.04
Road Pavement	Primary Arterial Pavement	6402	m2	169.62	1085907.24	186.26	1192436.52
	Secondary Arterial Pavement	0	m2	127.01	0.00	133.78	0.00
	Collector Arterial Pavement	1027	m2	105.15	107989.05	112.44	115475.88
	Subgrade Preparation	1485.8	m2	14.22	21128.08	16.16	24010.53
	Pavement Rehab	0	m2	51.58	0.00	59.32	0.00
	Pavement Other	0	m2	0.00	0.00	0.00	0.00
Concrete Works	Kerb and Channel	1422	m	54.81	77939.82	60.90	86599.80
	Cycle Path	0	m2	76.59	0.00	91.94	0.00
	SUP/ Footpath	2215	m2	63.51	140674.65	73.63	163090.45
	Traffic Island	4350	m2	77.60	337560.00	84.07	365704.50
Drainage	Drainage Pipe 300mm CR Bfilled	0	m	179.85	0.00	197.96	0.00
	Drainage Pipe 375mm CR Bfilled	165	m	259.10	42751.50	282.96	46688.40
	Drainage Pipe 450mm CR Bfilled	586	m	299.43	175465.98	334.33	195917.38
	Drainage Pipe 525mm CR Bfilled	0	m	403.86	0.00	448.03	0.00
	Drainage - pits	23	No.	2565.39	59003.97	2806.10	64540.30
	Drainage – Sub-soil drainage	2143	m	33.88	72604.84	43.40	93006.20
	Drainage Culvert	0	No.	0.00	0.00	0.00	0.00
Traffic signals	Traffic Signals (all inclusive)	3	Item/ Per Leg	109730.28	329190.84	128786.34	386359.02
Landscape	Tree Planting	65	No.	303.34	19717.10	363.01	23595.65
	Landscaping	3160	m2	21.61	68287.60	25.16	79505.60
	Topsoil Seeding	3160	m2	7.21	22783.60	8.44	26670.40
Street Lighting	Street Lighting - Road	0	m	216.34	0.00	225.67	0.00
	Street Lighting - Intersections	3	Item/ Per Leg	48468.93	145406.79	55617.74	166853.22
Misc	Regulatory Signage	16	Item	338.43	5414.88	380.39	6086.24
	Line marking	7429	m2 of Pavement	3.11	23104.19	4.09	30384.61
	Landscape maintenance (intersections)	1	Item	71344.66	71344.66	88131.43	88131.43
	Landscape maintenance (roads)	0	m2 of l'scape	2.90	0.00	2.96	0.00
	Tactile Pavers (Hazard only)	24	Item	292.43	7018.32	319.78	7674.72
Other	Rock excavation	1025.4	m3	100.00	102540.00	115.00	117921.00
Delivery	Council Fees	1	%	3.25	103491.02	3.25	117483.05
	VicRoads Fees	1	%	1.00	31843.39	1.00	36148.63
	Traffic Management	1	%	5.00	159216.95	5.00	180743.15
	Environmental Management	1	%	0.50	15921.69	0.50	18074.32
	Surveying and Design	1	%	5.00	159216.95	5.00	180743.15
	Supervision and Project management	1	%	9.00	286590.51	9.00	325337.67
	Site Establishment	1	%	2.50	79608.47	2.50	90371.58
	Contingency	1	%	15.00	477650.84	15.00	542229.45
Total	Excluding Delivery				**3,184,339**		**3,614,863**
	Including Delivery				**4,497,879**		**5,105,994**

Appendix A	
Description:	IN-14 - Primary - Secondary Intersection (Gunns Gully Road & Patterson Drive)
Civil Component Number:	IN-14

Group	Sub Item	Qty	Unit	Rate (P50)	Amount (P50)	Rate (P90)	Amount (P90)
Siteworks/ Earthworks	Site Preperation	44949	m2	3.68	165412.32	4.96	222947.04
	Earthworks	9085	m3	34.07	309525.95	40.52	368124.20
Road Pavement	Primary Arterial Pavement	7729	m2	169.62	1310992.98	186.26	1439603.54
	Secondary Arterial Pavement	5604	m2	127.01	711764.04	133.78	749703.12
	Collector Arterial Pavement	0	m2	105.15	0.00	112.44	0.00
	Subgrade Preparation	2666.6	m2	14.22	37919.05	16.16	43092.26
	Pavement Rehab	0	m2	51.58	0.00	59.32	0.00
	Pavement Other	0	m2	0.00	0.00	0.00	0.00
Concrete Works	Kerb and Channel	2688	m	54.81	147329.28	60.90	163699.20
	Cycle Path	0	m2	76.59	0.00	91.94	0.00
	SUP/ Footpath	2759	m2	63.51	175224.09	73.63	203145.17
	Traffic Island	6777	m2	77.60	525895.20	84.07	569742.39
Drainage	Drainage Pipe 300mm CR Bfilled	0	m	179.85	0.00	197.96	0.00
	Drainage Pipe 375mm CR Bfilled	260	m	259.10	67366.00	282.96	73569.60
	Drainage Pipe 450mm CR Bfilled	1100	m	299.43	329373.00	334.33	367763.00
	Drainage Pipe 525mm CR Bfilled	0	m	403.86	0.00	448.03	0.00
	Drainage - pits	44	No.	2565.39	112877.16	2806.10	123468.40
	Drainage – Sub-soil drainage	3704	m	33.88	125491.52	43.40	160753.60
	Drainage Culvert	0	No.	0.00	0.00	0.00	0.00
Traffic signals	Traffic Signals (all inclusive)	4	Item/ Per Leg	109730.28	438921.12	128786.34	515145.36
Landscape	Tree Planting	72	No.	303.34	21840.48	363.01	26136.72
	Landscaping	8553	m2	21.61	184830.33	25.16	215193.48
	Topsoil Seeding	8553	m2	7.21	61667.13	8.44	72187.32
Street Lighting	Street Lighting - Road	0	m	216.34	0.00	225.67	0.00
	Street Lighting - Intersections	4	Item/ Per Leg	48468.93	193875.72	55617.74	222470.96
Misc.	Regulatory Signage	16	Item	338.43	5414.88	380.39	6086.24
	Line marking	13333	m2 of Pavement	3.11	41465.63	4.09	54531.97
	Landscape maintenance (intersections)	1	Item	71344.66	71344.66	88131.43	88131.43
	Landscape maintenance (roads)	0	m2 of l'scape	2.90	0.00	2.96	0.00
	Tactile Pavers (Hazard only)	24	Item	292.43	7018.32	319.78	7674.72
Other	Rock excavation	1817	m3	100.00	181700.00	115.00	208955.00
Delivery	Council Fees	1	%	3.25	169885.59	3.25	191819.05
	VicRoads Fees	1	%	1.00	52272.49	1.00	59021.25
	Traffic Management	1	%	5.00	261362.44	5.00	295106.24
	Environmental Management	1	%	0.50	26136.24	0.50	29510.62
	Surveying and Design	1	%	5.00	261362.44	5.00	295106.24
	Supervision and Project management	1	%	9.00	470452.40	9.00	531191.22
	Site Establishment	1	%	2.50	130681.22	2.50	147553.12
	Contingency	1	%	15.00	784087.33	15.00	885318.71
Total	Excluding Delivery				**5,227,249**		**5,902,125**
	Including Delivery				**7,383,489**		**8,336,751**

Appendix A	
Description:	IN-15 - Primary - Secondary - Connector Intersection: (Gunns Gully Road & Koukoura Drive)
Civil Component Number:	IN-15

Group	Sub Item	Qty	Unit	Rate (P50)	Amount (P50)	Rate (P90)	Amount (P90)
Siteworks/ Earthworks	Site Preperation	35693	m2	3.68	131350.24	4.96	177037.28
	Earthworks	7117	m3	34.07	242476.19	40.52	288380.84
Road Pavement	Primary Arterial Pavement	9208	m2	169.62	1561860.96	186.26	1715082.08
	Secondary Arterial Pavement	0	m2	127.01	0.00	133.78	0.00
	Collector Arterial Pavement	996	m2	105.15	104729.40	112.44	111990.24
	Subgrade Preparation	2040.8	m2	14.22	29020.18	16.16	32979.33
	Pavement Rehab	0	m2	51.58	0.00	59.32	0.00
	Pavement Other	0	m2	0.00	0.00	0.00	0.00
Concrete Works	Kerb and Channel	2171	m	54.81	118992.51	60.90	132213.90
	Cycle Path	0	m2	76.59	0.00	91.94	0.00
	SUP/ Footpath	2865	m2	63.51	181956.15	73.63	210949.95
	Traffic Island	5205	m2	77.60	403908.00	84.07	437584.35
Drainage	Drainage Pipe 300mm CR Bfilled	0	m	179.85	0.00	197.96	0.00
	Drainage Pipe 375mm CR Bfilled	260	m	259.10	67366.00	282.96	73569.60
	Drainage Pipe 450mm CR Bfilled	855	m	299.43	256012.65	334.33	285852.15
	Drainage Pipe 525mm CR Bfilled	0	m	403.86	0.00	448.03	0.00
	Drainage - pits	39	No.	2565.39	100050.21	2806.10	109437.90
	Drainage – Sub-soil drainage	2861	m	33.88	96930.68	43.40	124167.40
	Drainage Culvert	0	No.	0.00	0.00	0.00	0.00
Traffic signals	Traffic Signals (all inclusive)	4	Item/ Per Leg	109730.28	438921.12	128786.34	515145.36
Landscape	Tree Planting	66	No.	303.34	20020.44	363.01	23958.66
	Landscaping	17419	m2	21.61	376424.59	25.16	438262.04
	Topsoil Seeding	17419	m2	7.21	125590.99	8.44	147016.36
Street Lighting	Street Lighting - Road	0	m	216.34	0.00	225.67	0.00
	Street Lighting - Intersections	4	Item/ Per Leg	48468.93	193875.72	55617.74	222470.96
Misc.	Regulatory Signage	16	Item	338.43	5414.88	380.39	6086.24
	Line marking	10204	m2 of Pavement	3.11	31734.44	4.09	41734.36
	Landscape maintenance (intersections)	1	Item	71344.66	71344.66	88131.43	88131.43
	Landscape maintenance (roads)	0	m2 of l'scape	2.90	0.00	2.96	0.00
	Tactile Pavers (Hazard only)	24	Item	292.43	7018.32	319.78	7674.72
Other	Rock excavation	1423.4	m3	100.00	142340.00	115.00	163691.00
Delivery	Council Fees	1	%	3.25	152988.50	3.25	173986.02
	VicRoads Fees	1	%	1.00	47073.38	1.00	53534.16
	Traffic Management	1	%	5.00	235366.92	5.00	267670.81
	Environmental Management	1	%	0.50	23536.69	0.50	26767.08
	Surveying and Design	1	%	5.00	235366.92	5.00	267670.81
	Supervision and Project management	1	%	9.00	423660.45	9.00	481807.45
	Site Establishment	1	%	2.50	117683.46	2.50	133835.40
	Contingency	1	%	15.00	706100.75	15.00	803012.42
Total	Excluding Delivery				**4,707,338**		**5,353,416**
	Including Delivery				**6,649,115**		**7,561,700**

Appendix A	
Description:	IN-16 - Secondary - Connector T-Intersection (Patterson Drive & Connector St)
Civil Component Number:	IN-16

Group	Sub Item	Qty	Unit	Rate (P50)	Amount (P50)	Rate (P90)	Amount (P90)
Siteworks/ Earthworks	Site Preperation	14710	m2	3.68	54132.80	4.96	72961.60
	Earthworks	5065	m3	34.07	172564.55	40.52	205233.80
Road Pavement	Primary Arterial Pavement	0	m2	169.62	0.00	186.26	0.00
	Secondary Arterial Pavement	6454	m2	127.01	819722.54	133.78	863416.12
	Collector Arterial Pavement	482	m2	105.15	50682.30	112.44	54196.08
	Subgrade Preparation	1329	m2	14.22	18898.38	16.16	21476.64
	Pavement Rehab	0	m2	51.58	0.00	59.32	0.00
	Pavement Other	0	m2	0.00	0.00	0.00	0.00
Concrete Works	Kerb and Channel	1458	m	54.81	79912.98	60.90	88792.20
	Cycle Path	170	m2	76.59	13020.30	91.94	15629.80
	SUP/ Footpath	940	m2	63.51	59699.40	73.63	69212.20
	Traffic Island	407	m2	77.60	31583.20	84.07	34216.49
Drainage	Drainage Pipe 300mm CR Bfilled	140	m	179.85	25179.00	197.96	27714.40
	Drainage Pipe 375mm CR Bfilled	0	m	259.10	0.00	282.96	0.00
	Drainage Pipe 450mm CR Bfilled	450	m	299.43	134743.50	334.33	150448.50
	Drainage Pipe 525mm CR Bfilled	0	m	403.86	0.00	448.03	0.00
	Drainage - pits	21	No.	2565.39	53873.19	2806.10	58928.10
	Drainage – Sub-soil drainage	1958	m	33.88	66337.04	43.40	84977.20
	Drainage Culvert	0	No.	0.00	0.00	0.00	0.00
Traffic signals	Traffic Signals (all inclusive)	3	Item/ Per Leg	109730.28	329190.84	128786.34	386359.02
Landscape	Tree Planting	41	No.	303.34	12436.94	363.01	14883.41
	Landscaping	2175	m2	21.61	47001.75	25.16	54723.00
	Topsoil Seeding	2175	m2	7.21	15681.75	8.44	18357.00
Street Lighting	Street Lighting - Road	0	m	216.34	0.00	225.67	0.00
	Street Lighting - Intersections	3	Item/ Per Leg	48468.93	145406.79	55617.74	166853.22
Misc.	Regulatory Signage	5	Item	338.43	1692.15	380.39	1901.95
	Line marking	6936	m2 of Pavement	3.11	21570.96	4.09	28368.24
	Landscape maintenance (intersections)	1	Item	71344.66	71344.66	88131.43	88131.43
	Landscape maintenance (roads)	0	m2 of l'scape	2.90	0.00	2.96	0.00
	Tactile Pavers (Hazard only)	18	Item	292.43	5263.74	319.78	5756.04
Other	Rock excavation	2942	m3	100.00	294200.00	115.00	338330.00
Delivery	Council Fees	1	%	3.25	82034.51	3.25	92653.16
	VicRoads Fees	1	%	1.00	25241.39	1.00	28508.66
	Traffic Management	1	%	5.00	126206.94	5.00	142543.32
	Environmental Management	1	%	0.50	12620.69	0.50	14254.33
	Surveying and Design	1	%	5.00	126206.94	5.00	142543.32
	Supervision and Project management	1	%	9.00	227172.49	9.00	256577.98
	Site Establishment	1	%	2.50	63103.47	2.50	71271.66
	Contingency	1	%	15.00	378620.81	15.00	427629.97
Total	Excluding Delivery				**2,524,139**		**2,850,866**
	Including Delivery				**3,565,346**		**4,026,849**

Appendix A	
Description:	IN-17 - Secondary - Connector T-Intersection (Patterson Drive & Connector St)
Civil Component Number:	IN-17

Group	Sub Item	Qty	Unit	Rate (P50)	Amount (P50)	Rate (P90)	Amount (P90)
Siteworks/ Earthworks	Site Preperation	16853	m2	3.68	62019.04	4.96	83590.88
	Earthworks	3773	m3	34.07	128546.11	40.52	152881.96
Road Pavement	Primary Arterial Pavement	0	m2	169.62	0.00	186.26	0.00
	Secondary Arterial Pavement	4435	m2	127.01	563289.35	133.78	593314.30
	Collector Arterial Pavement	1054	m2	105.15	110828.10	112.44	118511.76
	Subgrade Preparation	1221.6	m2	14.22	17371.15	16.16	19741.06
	Pavement Rehab	0	m2	51.58	0.00	59.32	0.00
	Pavement Other	0	m2	0.00	0.00	0.00	0.00
Concrete Works	Kerb and Channel	1255	m	54.81	68786.55	60.90	76429.50
	Cycle Path	0	m2	76.59	0.00	91.94	0.00
	SUP/ Footpath	1808	m2	63.51	114826.08	73.63	133123.04
	Traffic Island	732	m2	77.60	56803.20	84.07	61539.24
Drainage	Drainage Pipe 300mm CR Bfilled	0	m	179.85	0.00	197.96	0.00
	Drainage Pipe 375mm CR Bfilled	140	m	259.10	36274.00	282.96	39614.40
	Drainage Pipe 450mm CR Bfilled	502	m	299.43	150313.86	334.33	167833.66
	Drainage Pipe 525mm CR Bfilled	0	m	403.86	0.00	448.03	0.00
	Drainage - pits	21	No.	2565.39	53873.19	2806.10	58928.10
	Drainage – Sub-soil drainage	1544	m	33.88	52310.72	43.40	67009.60
	Drainage Culvert	0	No.	0.00	0.00	0.00	0.00
Traffic signals	Traffic Signals (all inclusive)	3	Item/ Per Leg	109730.28	329190.84	128786.34	386359.02
Landscape	Tree Planting	41	No.	303.34	12436.94	363.01	14883.41
	Landscaping	4326	m2	21.61	93484.86	25.16	108842.16
	Topsoil Seeding	4326	m2	7.21	31190.46	8.44	36511.44
Street Lighting	Street Lighting - Road	0	m	216.34	0.00	225.67	0.00
	Street Lighting - Intersections	3	Item/ Per Leg	48468.93	145406.79	55617.74	166853.22
Misc.	Regulatory Signage	10	Item	338.43	3384.30	380.39	3803.90
	Line marking	6108	m2 of Pavement	3.11	18995.88	4.09	24981.72
	Landscape maintenance (intersections)	1	Item	71344.66	71344.66	88131.43	88131.43
	Landscape maintenance (roads)	0	m2 of l'scape	2.90	0.00	2.96	0.00
	Tactile Pavers (Hazard only)	24	Item	292.43	7018.32	319.78	7674.72
Other	Rock excavation	754.6	Item	100.00	75460.00	115.00	86779.00
	Gas protection slab	1	Item	70500.00	70500.00	70500.00	70500.00
Delivery	Council Fees	1	%	3.25	73893.77	3.25	83454.72
	VicRoads Fees	1	%	1.00	22736.54	1.00	25678.38
	Traffic Management	1	%	5.00	113682.72	5.00	128391.88
	Environmental Management	1	%	0.50	11368.27	0.50	12839.19
	Surveying and Design	1	%	5.00	113682.72	5.00	128391.88
	Supervision and Project management	1	%	9.00	204628.90	9.00	231105.38
	Site Establishment	1	%	2.50	56841.36	2.50	64195.94
	Contingency	1	%	15.00	341048.16	15.00	385175.63
Total	Excluding Delivery				**2,273,654**		**2,567,838**
	Including Delivery				**3,211,537**		**3,627,070**

Appendix A	
Description:	BRIDGE BR-01 - 176m
Civil Component Number:	BR-01

Group	Sub Item	Qty	Unit	Rate (P50)	Amount P(50)	Rate (P90)	Amount P(90)
Earthworks	Site Preperation	7923	m2	3.68	29,156.64	6.62	52,450.26
	Earthworks	13262	m3	50.07	664,028.34	54.62	724,370.44
On-Structure Works	Retaining Walls, abutments, footings	incl	No	369,439.34	0.00	415,928.97	0.00
	Bridge Deck	incl	m2	1,258.48	0.00	2,060.14	0.00
	Guard Rails/ Balustrade	incl	m	2,355.21	0.00	3,032.46	0.00
	Transition Slab	2	No	33,425.31	66,850.62	38,439.11	76,878.22
	Overall Super T Cost	2410	m2	4,425.57	10,665,623.70	5,226.40	12,595,624.00
Off Structure	Guard Rails/ Balustrade	300	m	187.10	56,130.00	224.54	67,362.00
	GREAT Terminal	4	No	8,767.42	35,069.68	13,875.66	55,502.64
	Off structure barrier	0	Item	1,565.45	0.00	2,311.95	0.00
Other	Anti Throw barrier	52	m	270.00	14,040.00	310.50	16,146.00
	Reinforced Earth embankment	1	Item	337,469.90	337,469.90	388,090.39	388,090.39
	Pier protection barrier	1	Item	60,000.00	60,000.00	69,000.00	69,000.00
	Occupations cost	1	Item	1,393,000.00	1,393,000.00	1,601,950.00	1,601,950.00
Delivery	Council Fees	1	%	3.25	432,944.49	3.25	508,539.65
	VicRoads Fees	1	%	1.00	133,213.69	1.00	156,473.74
	Traffic Management	1	%	5.00	666,068.44	5.00	782,368.70
	Environmental Management	1	%	0.50	66,606.84	0.50	78,236.87
	Surveying and Design	1	%	5.00	666,068.44	5.00	782,368.70
	Supervision and Project management	1	%	9.00	1,198,923.20	9.00	1,408,263.66
	Site Establishment	1	%	2.50	333,034.22	2.50	391,184.35
	Contingency	1	%	20.00	2,664,273.78	20.00	3,129,474.79
Total	Excluding Delivery				**13,321,369**		**15,647,374**
	Including Delivery				**19,482,502**		**22,884,284**

Appendix A	
Description:	Hayes Hill Blvd Culverts
Civil Component Number:	BR-03

Group	Sub Item	Qty	Unit	Rate (P50)	Amount (P50)	Rate (P90)	Amount (P90)
Sitework and Earthwork	Site Preperation	2250	m2	3.68	8280.00	4.23	9522.00
	Diversion works (item)	1	Item	10000.00	10000.00	11500.00	11500.00
	Waterway re-shaping	1	Item	5000.00	5000.00	5750.00	5750.00
	Stripping of topsoil (m2)	2250	m2	3.90	8775.00	4.49	10091.25
	Excavation (m3)	1015	m3	37.00	37555.00	42.55	43188.25
	Formation of batters (m3)	2000	m3	15.00	30000.00	17.25	34500.00
Drainage Structure	**Main Channel Culverts**						
	3000x1500 RCBC	51	lm	5000.00	$ 255,000.00	5750.00	293250.00
	3000Clear Span Link Slab	34	lm	2500.00	$ 85,000.00	2875.00	97750.00
	Nom. 3500 Wide Base Slab	51	lm	3000.00	$ 153,000.00	3450.00	175950.00
	2400x900 RCBC	34	lm	4000.00	$ 136,000.00	4600.00	156400.00
	2400 Clear Span Link Slab	34	lm	2000.00	$ 68,000.00	2300.00	78200.00
	1800x900 Grated Pit with 500mm wide concrete apron	5	No.	7000.00	$ 35,000.00	8050.00	40250.00
	1200x900 Grated Pit with 500mm wide concrete apron	2	No.	6000.00	$ 12,000.00	6900.00	13800.00
	Terrestrial Culverts (C1)						
	2100x900 RCBC	51	lm	3500.00	$ 178,500.00	4025.00	205275.00
	2100Clear Span Link Slab	34	lm	2000.00	$ 68,000.00	2300.00	78200.00
	Nom. 2600 Wide Base Slab	51	lm	2500.00	$ 127,500.00	2875.00	146625.00
	1200x900 Grated Pit with 500mm wide concrete apron	5	No.	6000.00	$ 30,000.00	6900.00	34500.00
	Terrestrial Culverts (C2)						
	2100x900 RCBC	51	lm	3500.00	$ 178,500.00	4025.00	205275.00
	2100Clear Span Link Slab	34	lm	2000.00	$ 68,000.00	2300.00	78200.00
	Nom. 2600 Wide Base Slab	51	lm	2500.00	$ 127,500.00	2875.00	146625.00
	1200x900 Grated Pit with 500mm wide concrete apron	5	No.	6000.00	$ 30,000.00	6900.00	34500.00
	Headwalls						
	To suit Multi 3000x1500 & 2400x900 RCBC Outlet	2	No.	80000.00	$ 160,000.00	92000.00	184000.00
	To suit Multi 2100x900 RCBC Outlet	4	No.	60000.00	$ 240,000.00	69000.00	276000.00
	Concrete Check Weir						
	300mm thick, min 1m deep concrete Check Weir. Inc Rock work	20	lm	750.00	$ 15,000.00	862.50	17250.00
On Structure	Vehicle Barrier	200	lm	247.50	49500.00	284.63	56925.00
Delivery	Council Fees	1	%	3.25	68773.58	3.25	79089.61
	Authority Fees	1	%	1.00	21161.10	1.00	24335.27
	Traffic Management	1	%	5.00	105805.50	5.00	121676.33
	Environmental Management	1	%	0.50	10580.55	0.50	12167.63
	Surveying and Design	1	%	5.00	105805.50	5.00	121676.33
	Supervision and Project management	1	%	9.00	190449.90	9.00	219017.39
	Site Establishment	1	%	2.50	52902.75	2.50	60838.16
	Contingency	1	%	15.00	317416.50	15.00	365028.98
Total	Excluding Delivery				**2,116,110**		**2,433,527**
	Including Delivery				**2,989,005**		**3,437,356**

Appendix A	
Description:	Cameron St Culverts
Civil Component Number:	BR-04

Group	Sub Item	Qty	Unit	Rate (P50)	Amount (P50)	Rate (P90)	Amount (P90)
Sitework and Earthwork	Site Preperation	2250	m2	3.68	8280.00	4.23	9522.00
	Diversion works (item)	1	Item	10000.00	10000.00	11500.00	11500.00
	Waterway re-shaping	1	Item	5000.00	5000.00	5750.00	5750.00
	Stripping of topsoil (m2)	2250	m2	3.90	8775.00	4.49	10091.25
	Excavation (m3)	1015	m3	37.00	37555.00	42.55	43188.25
	Formation of batters (m3)	2000	m3	15.00	30000.00	17.25	34500.00
Drainage Structure	**Main Channel Culverts**						
	3000x1500 RCBC	45	lm	5000.00	$ 225,000.00	5750.00	258750.00
	3000Clear Span Link Slab	30	lm	2500.00	$ 75,000.00	2875.00	86250.00
	Nom. 3500 Wide Base Slab	45	lm	3000.00	$ 135,000.00	3450.00	155250.00
	2400x900 RCBC	30	lm	4000.00	$ 120,000.00	4600.00	138000.00
	2400 Clear Span Link Slab	30	lm	2000.00	$ 60,000.00	2300.00	69000.00
	1800x900 Grated Pit with 500mm wide concrete apron	10	No.	7000.00	$ 70,000.00	8050.00	80500.00
	1200x900 Grated Pit with 500mm wide concrete apron	4	No.	6000.00	$ 24,000.00	6900.00	27600.00
	Terrestrial Culverts (C1)						
	2100x900 RCBC	45	lm	3500.00	$ 157,500.00	4025.00	181125.00
	2100Clear Span Link Slab	30	lm	2000.00	$ 60,000.00	2300.00	69000.00
	Nom. 2600 Wide Base Slab	45	lm	2500.00	$ 112,500.00	2875.00	129375.00
	1200x900 Grated Pit with 500mm wide concrete apron	10	No.	6000.00	$ 60,000.00	6900.00	69000.00
	Terrestrial Culverts (C2)						
	2100x900 RCBC	45	lm	3500.00	$ 157,500.00	4025.00	181125.00
	2100Clear Span Link Slab	30	lm	2000.00	$ 60,000.00	2300.00	69000.00
	Nom. 2600 Wide Base Slab	45	lm	2500.00	$ 112,500.00	2875.00	129375.00
	1200x900 Grated Pit with 500mm wide concrete apron	10	No.	6000.00	$ 60,000.00	6900.00	69000.00
	Headwalls						
	To suit Multi 3000x1500 & 2400x900 RCBC Outlet	2	No.	80000.00	$ 160,000.00	92000.00	184000.00
	To suit Multi 2100x900 RCBC Outlet	4	No.	60000.00	$ 240,000.00	69000.00	276000.00
	Concrete Check Weir						
	300mm thick, min 1m deep concrete Check Weir	20	lm	750.00	$ 15,000.00	862.50	17250.00
On Structure	Vehicle Barrier	200	lm	247.50	49500.00	284.63	56925.00
Delivery	Council Fees	1	%	3.25	66726.08	3.25	76734.99
	Authority Fees	1	%	1.00	20531.10	1.00	23610.77
	Traffic Management	1	%	5.00	102655.50	5.00	118053.83
	Environmental Management	1	%	0.50	10265.55	0.50	11805.38
	Surveying and Design	1	%	5.00	102655.50	5.00	118053.83
	Supervision and Project management	1	%	9.00	184779.90	9.00	212496.89
	Site Establishment	1	%	2.50	51327.75	2.50	59026.91
	Contingency	1	%	15.00	307966.50	15.00	354161.48
Total	Excluding Delivery				**2,053,110**		**2,361,077**
	Including Delivery				**2,900,018**		**3,335,021**

Appendix A	
Description:	BRIDGE BR-05 - 50m
Civil Component Number:	BR-05

Group	Sub Item	Qty	Unit	Rate (P50)	Amount P(50)	Rate (P90)	Amount P(90)
Earthworks	Site Preperation	2500	m2	3.68	9,200.00	6.62	16,550.00
	Earthworks	12313	m3	50.07	616,511.91	54.62	672,536.06
On-Structure Works	Retaining Walls, abutments, footings	incl	No	369,439.34	0.00	415,928.97	0.00
	Bridge Deck	incl	m2	1,258.48	0.00	2,060.14	0.00
	Guard Rails/ Balustrade	incl	m	2,355.21	0.00	3,032.46	0.00
	Transition Slab	2	No	33,425.31	66,850.62	38,439.11	76,878.22
	Overall Super T Cost	850	m2	4,425.57	3,761,734.50	5,226.40	4,442,440.00
Off Structure	Guard Rails/ Balustrade	120	m	187.10	22,452.00	224.54	26,944.80
	GREAT Terminal	4	No	8,767.42	35,069.68	13,875.66	55,502.64
	Off structure barrier	0	Item	1,565.45	0.00	2,311.95	0.00
Other							
Delivery	Council Fees	1	%	3.25	146,634.11	3.25	171,952.68
	VicRoads Fees	1	%	1.00	45,118.19	1.00	52,908.52
	Traffic Management	1	%	5.00	225,590.94	5.00	264,542.59
	Environmental Management	1	%	0.50	22,559.09	0.50	26,454.26
	Surveying and Design	1	%	5.00	225,590.94	5.00	264,542.59
	Supervision and Project management	1	%	9.00	406,063.68	9.00	476,176.65
	Site Establishment	1	%	2.50	112,795.47	2.50	132,271.29
	Contingency	1	%	20.00	902,363.74	20.00	1,058,170.34
Total	Excluding Delivery				**4,511,819**		**5,290,852**
	Including Delivery				**6,598,535**		**7,737,871**

Appendix A	
Description:	SR-03 - Sporting and Recreational Facilities
Civil Component Number:	SR-03

Group	Sub Item	Qty	Unit	Rate (P50)	Amount P(50)	Rate (P90)	Amount P(90)
Playing Fields	Football Field	0	No	805074.24	0.00	860162.38	0.00
	Cricket Pitch	0	No	24049.94	0.00	28173.45	0.00
	Cricket Nets	0	No	49791.30	0.00	57497.73	0.00
	Soccer Field	3	No	526667.50	1580002.50	597198.85	1791596.55
	Netball Court	0	No	83143.13	0.00	98076.30	0.00
	Tennis Court	0	No	65422.94	0.00	72602.00	0.00
Lighting	Lighting Netball Court	0	No	22802.95	0.00	24396.01	0.00
	Lighting Tennis	0	No	21415.84	0.00	24493.23	0.00
	Lighting Soccer	3	No	73003.05	219009.15	97409.90	292229.70
	Lighting Football	0	No	163494.28	0.00	201714.52	0.00
Landscaping	Landscaping Construction	28000	m2	20.28	567840.00	26.19	733320.00
	Landscaping Establishment (12wk)	28000	m2	1.12	31360.00	1.29	36120.00
	Landscape maintenance-1 year/2 summers	28000	m2	2.90	81200.00	2.94	82320.00
Car Parking	Pavement	2740	m2	94.73	259560.20	109.24	299317.60
	Kerb and Channel	440	m	55.04	24217.60	60.11	26448.40
	Drainage Pipes	500	m	177.49	88745.00	192.51	96255.00
	Drainage Pits	22	No	2611.95	57462.90	2802.77	61660.94
	Car Park Lighting	2572	m2	15.13	38914.36	17.31	44521.32
	Linemarking/ Signage	2740	m2/pavement	3.26	8932.40	4.07	11151.80
Site Works	Site Preperation	60000	m2	3.68	220800.00	4.71	282600.00
	Footpaths and paved areas	750	m2	63.65	47737.50	71.96	53970.00
Services	Stormwater Drainage	1	Item	251068.39	251068.39	285507.93	285507.93
	Sewer	1	Item	52065.67	52065.67	62444.50	62444.50
	Water	1	Item	75629.58	75629.58	88426.00	88426.00
	Gas	1	Item	16727.49	16727.49	20125.23	20125.23
	Light & power	1	Item	231657.53	231657.53	286561.25	286561.25
	Communications	1	Item	46504.09	46504.09	65834.30	65834.30
	Fire	1	Item	25236.69	25236.69	27694.32	27694.32
Miscellaneous	Gates	1	Item	689.27	689.27	740.17	740.17
	Interchange shelter	10	Item	8443.47	84434.70	9944.59	99445.90
	Fencing	1000	m	91.87	91870.00	106.27	106270.00
	Signage	10	No	0.00	0.00	0.00	0.00
Irrigation	Irrigation Soccer	3	Item	40441.04	121323.12	43757.35	131272.05
	Irrigation Football	0	Item	72462.96	0.00	82052.35	0.00
Other	Access Road	1350	m2	217.50	293625.00	225.71	304708.50
	Playground	1	No	415857.14	415857.14	464304.86	464304.86
	Tree Planting	30	No	200.00	6000.00	230.00	6900.00
Delivery	Council Fees	1	%	3.25	160500.28	3.25	187256.76
	Authority Fees	1	%	0.00	0.00	0.00	0.00
	Traffic Management	1	%	2.00	98769.41	2.00	115234.93
	Environmental Management	1	%	0.50	24692.35	0.50	28808.73
	Survey/Design	1	%	5.00	246923.51	5.00	288087.32
	Supervision & Project Management	1	%	9.00	444462.33	9.00	518557.17
	Site Establishment	1	%	2.50	123461.76	2.50	144043.66
	Environmentally sustainable design	1	%	2.00	98769.41	2.00	115234.93
	Contingency	1	%	15.00	740770.54	15.00	864261.95
Total	Excluding Delivery				**4,938,470**		**5,761,746**
	Including Delivery				**6,876,820**		**8,023,232**

NOTE:
Benchmark Item 42 adopted as base. Items tweaked to accommodate PSP potential items.
Items not part of the ICP (however are potential components in the PSP);
1)Community Garden

Appendix A	
Description:	SR-05 - Sporting and Recreational Facilities
Civil Component Number:	SR-05

Group	Sub Item	Qty	Unit	Rate (P50)	Amount P(50)	Rate (P90)	Amount P(90)
Playing Fields	Football Field	0	No	805074.24	0.00	860162.38	0.00
	Cricket Pitch	0	No	24049.94	0.00	28173.45	0.00
	Cricket Nets	0	No	49791.30	0.00	57497.73	0.00
	Lawn Balls	2	No	102300.00	204600.00	117645.00	235290.00
	Netball Court	8	No	83143.13	665145.04	98076.30	784610.40
	Tennis Court	6	No	65422.94	392537.64	72602.00	435612.00
Lighting	Lighting Netball Court	8	No	22802.95	182423.60	24396.01	195168.08
	Lighting Tennis	6	No	21415.84	128495.04	24493.23	146959.38
	Lighting Soccer	0	No	73003.05	0.00	97409.90	0.00
	Lighting Football	0	No	163494.28	0.00	201714.52	0.00
Landscaping	Landscaping Construction	38000	m2	20.28	770640.00	26.19	995220.00
	Landscaping Establishment (12wk)	38000	m2	1.12	42560.00	1.29	49020.00
	Landscape maintenance-1 year/2 summers	38000	m2	2.90	110200.00	2.94	111720.00
Car Parking	Pavement	5465	m2	94.73	517699.45	109.24	596996.60
	Kerb and Channel	510	m	55.04	28070.40	60.11	30656.10
	Drainage Pipes	560	m	177.49	99394.40	192.51	107805.60
	Drainage Pits	28	No	2611.95	73134.60	2802.77	78477.56
	Car Park Lighting	4190	m2	15.13	63394.70	17.31	72528.90
	Linemarking/ Signage	5465	m2/pavement	3.26	17815.90	4.07	22242.55
Site Works	Site Preperation	100000	m2	3.68	368000.00	4.71	471000.00
	Footpaths and paved areas	875	m2	63.65	55693.75	71.96	62965.00
Services	Stormwater Drainage	1	Item	251068.39	251068.39	285507.93	285507.93
	Sewer	1	Item	52065.67	52065.67	62444.50	62444.50
	Water	1	Item	75629.58	75629.58	88426.00	88426.00
	Gas	1	Item	16727.49	16727.49	20125.23	20125.23
	Light & power	1	Item	231657.53	231657.53	286561.25	286561.25
	Communications	1	Item	46504.09	46504.09	65834.30	65834.30
	Fire	1	Item	25236.69	25236.69	27694.32	27694.32
Miscellaneous	Gates	2	Item	689.27	1378.54	740.17	1480.34
	Interchange shelter	10	Item	8443.47	84434.70	9944.59	99445.90
	Fencing	1300	m	91.87	119431.00	106.27	138151.00
	Signage	20	No	0.00	0.00	0.00	0.00
Irrigation	Irrigation Soccer	0	m	40441.04	0.00	43757.35	0.00
	Irrigation Football	0	Item	72462.96	0.00	82052.35	0.00
Other	Access Road	1980	m2	217.50	430650.00	225.71	446905.80
	Playground	1	m2	415857.14	415857.14	464304.86	464304.86
	Tree Planting	40	No	200.00	8000.00	230.00	9200.00
Delivery	Council Fees	1	%	3.25	178049.47	3.25	207751.49
	Authority Fees	1	%	0.00	0.00	0.00	0.00
	Traffic Management	1	%	2.00	109568.91	2.00	127847.07
	Environmental Management	1	%	0.50	27392.23	0.50	31961.77
	Survey/Design	1	%	5.00	273922.27	5.00	319617.68
	Supervision & Project Management	1	%	9.00	493060.08	9.00	575311.82
	Site Establishment	1	%	2.50	136961.13	2.50	159808.84
	Environmentally sustainable design	1	%	2.00	109568.91	2.00	127847.07
	Contingency	1	%	15.00	821766.80	15.00	958853.04
Total	Excluding Delivery				**5,478,445**		**6,392,354**
	Including Delivery				**7,628,735**		**8,901,352**

NOTE:
Benchmark Item 43 adopted as base. Items tweaked to accommodate PSP potential items.
Items not part of the ICP (however are potential components in the PSP);
1)Skate Park
2)Community Garden
3) Indoor stadium

Result Application – Donnybrook and Woodstock PSP

APPENDIX B

SUPPORTING DRAWINGS

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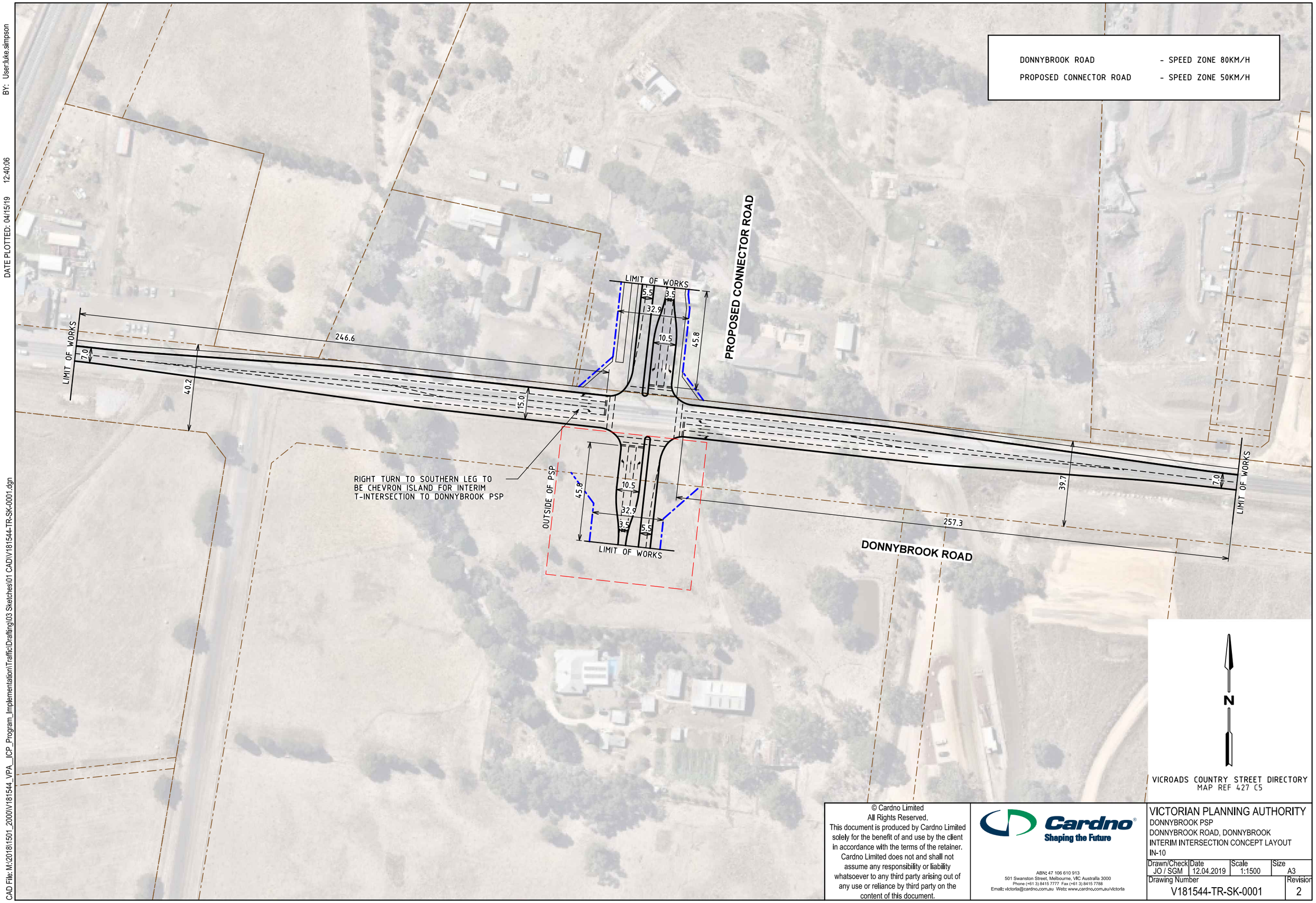

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DONNYBROOK PSP
DONNYBROOK ROAD, DONNYBROOK
INTERIM INTERSECTION CONCEPT LAYOUT
IN-10

Drawn/Check	Date	Scale	Size
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Drawing Number	Revision
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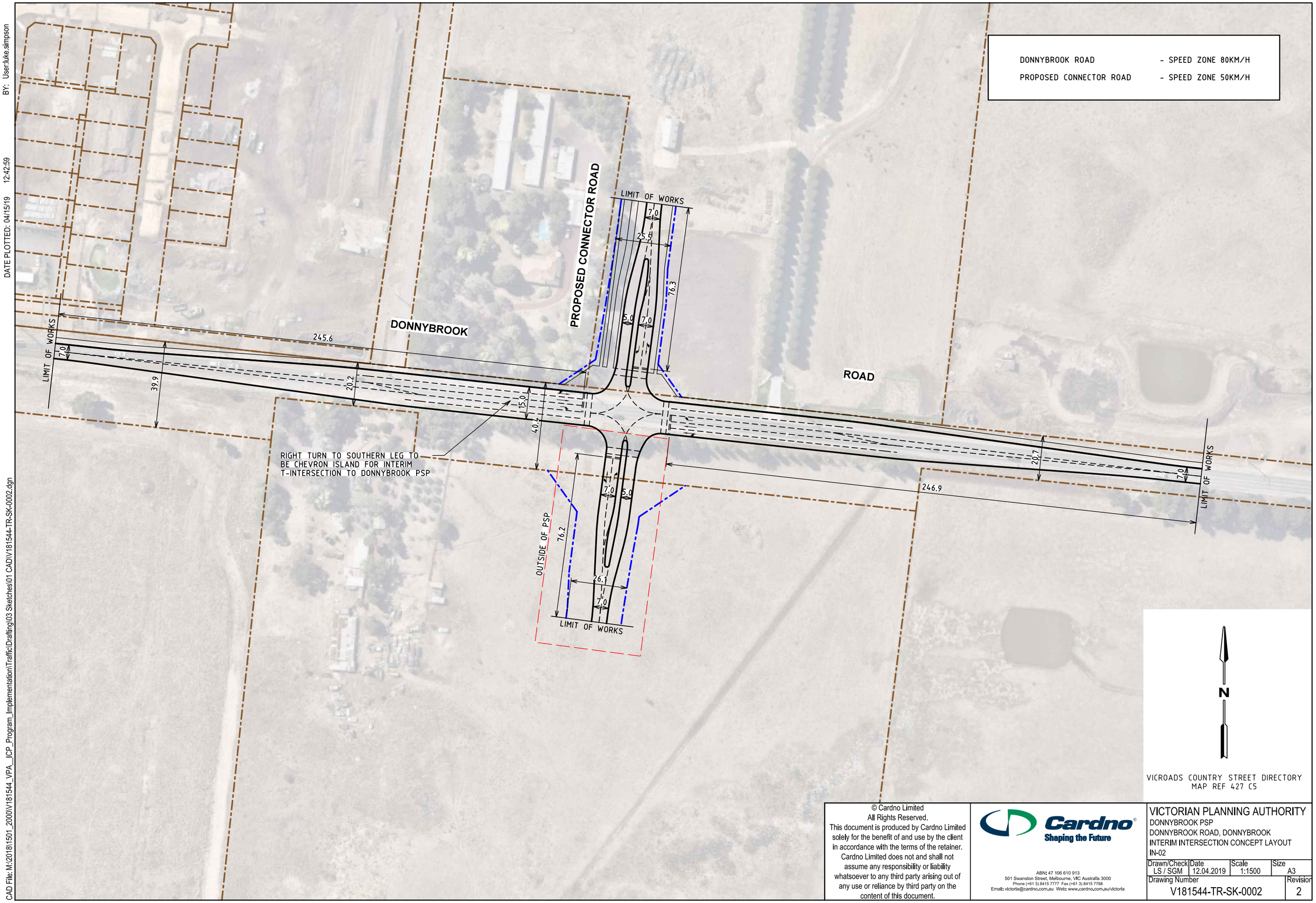

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IN-02

Drawn/Check	Date	Scale	Size
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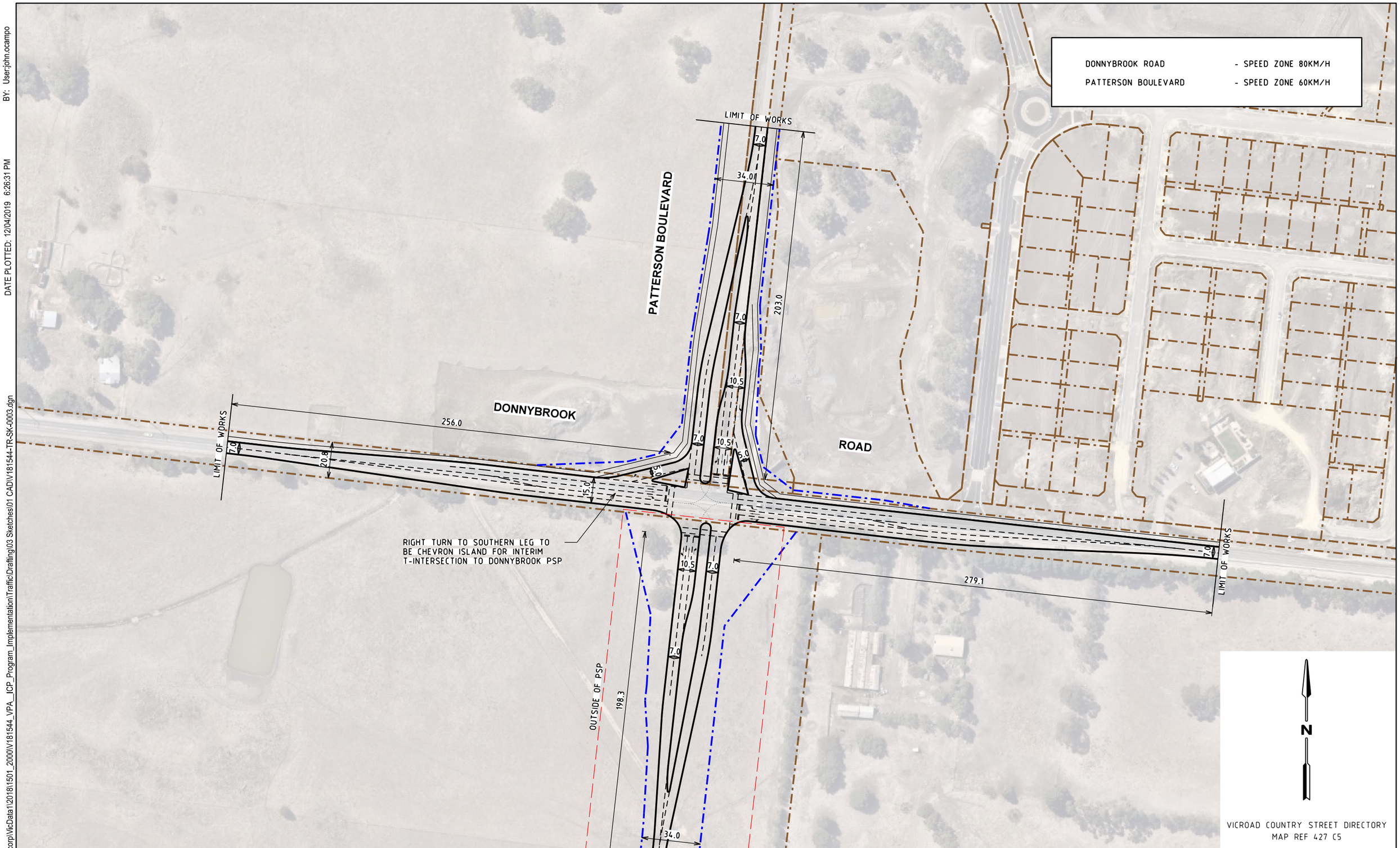

VICROAD COUNTRY STREET DIRECTORY
MAP REF 427 C5

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INTERIM INTERSECTION CONCEPT LAYOUT
IN-03

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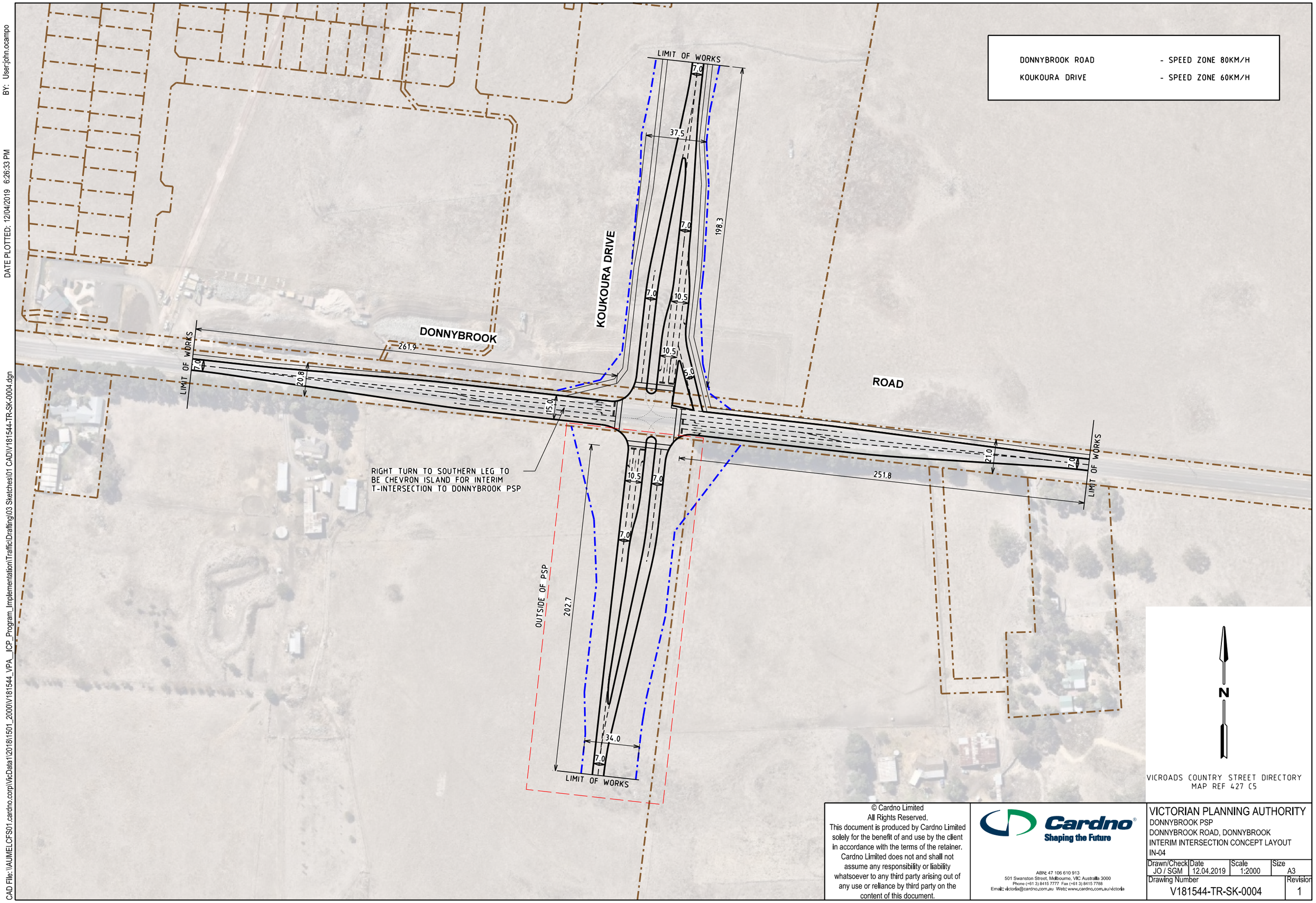

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IN-04

Drawn/Check	Date	Scale	Size
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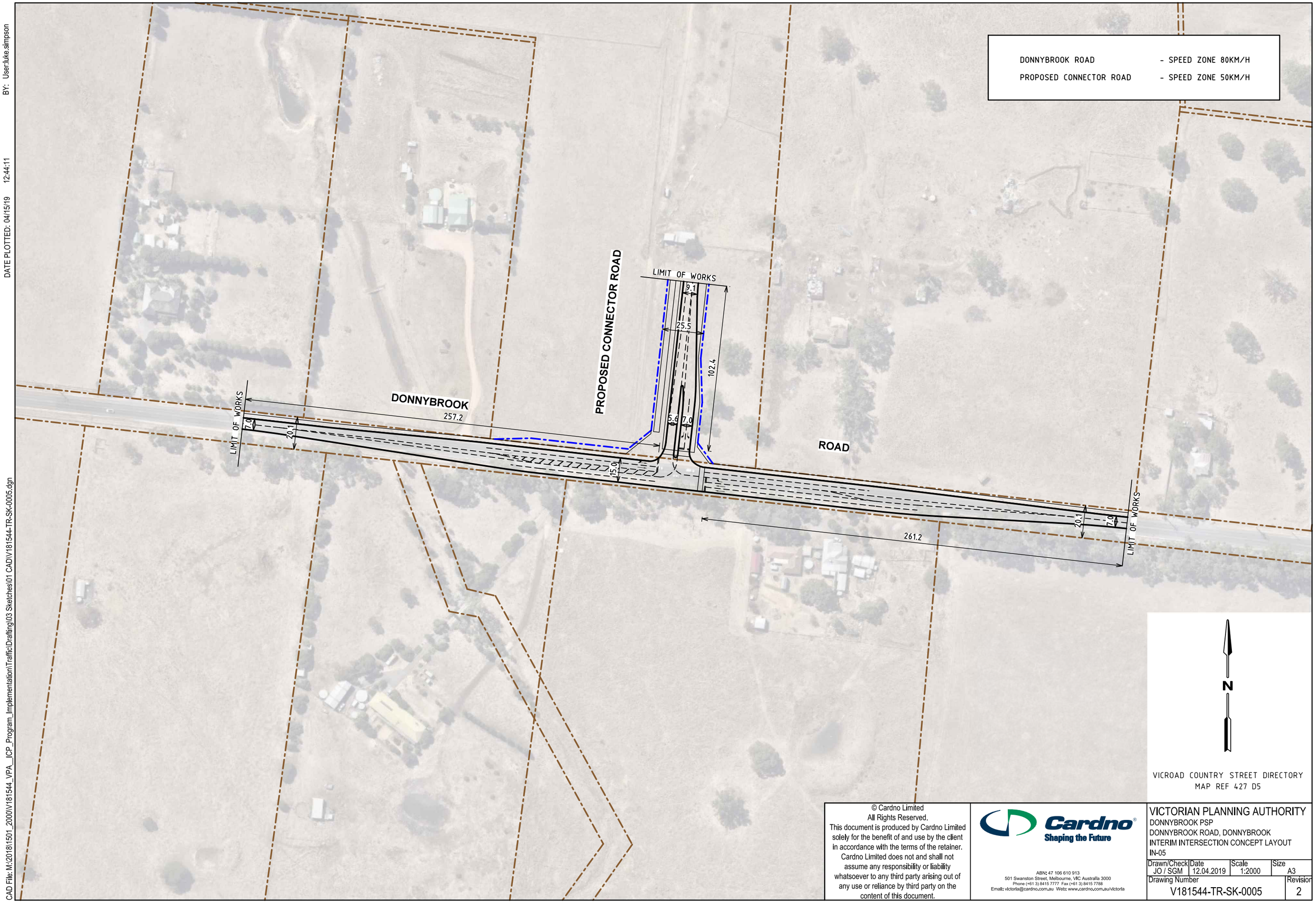

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IN-05

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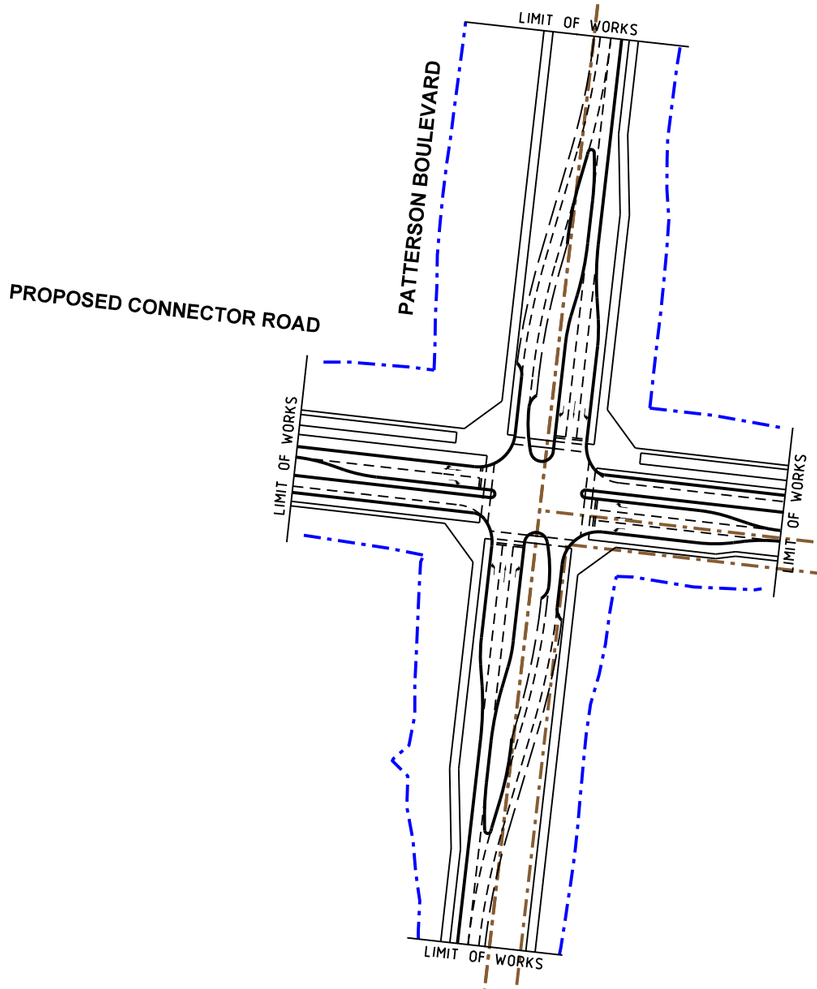
AND SECONDARY ARTERIAL ROAD SPEEDS TO 60KM/H



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INTERIM INTERSECTION CONCEPT LAYOUT
IN-06

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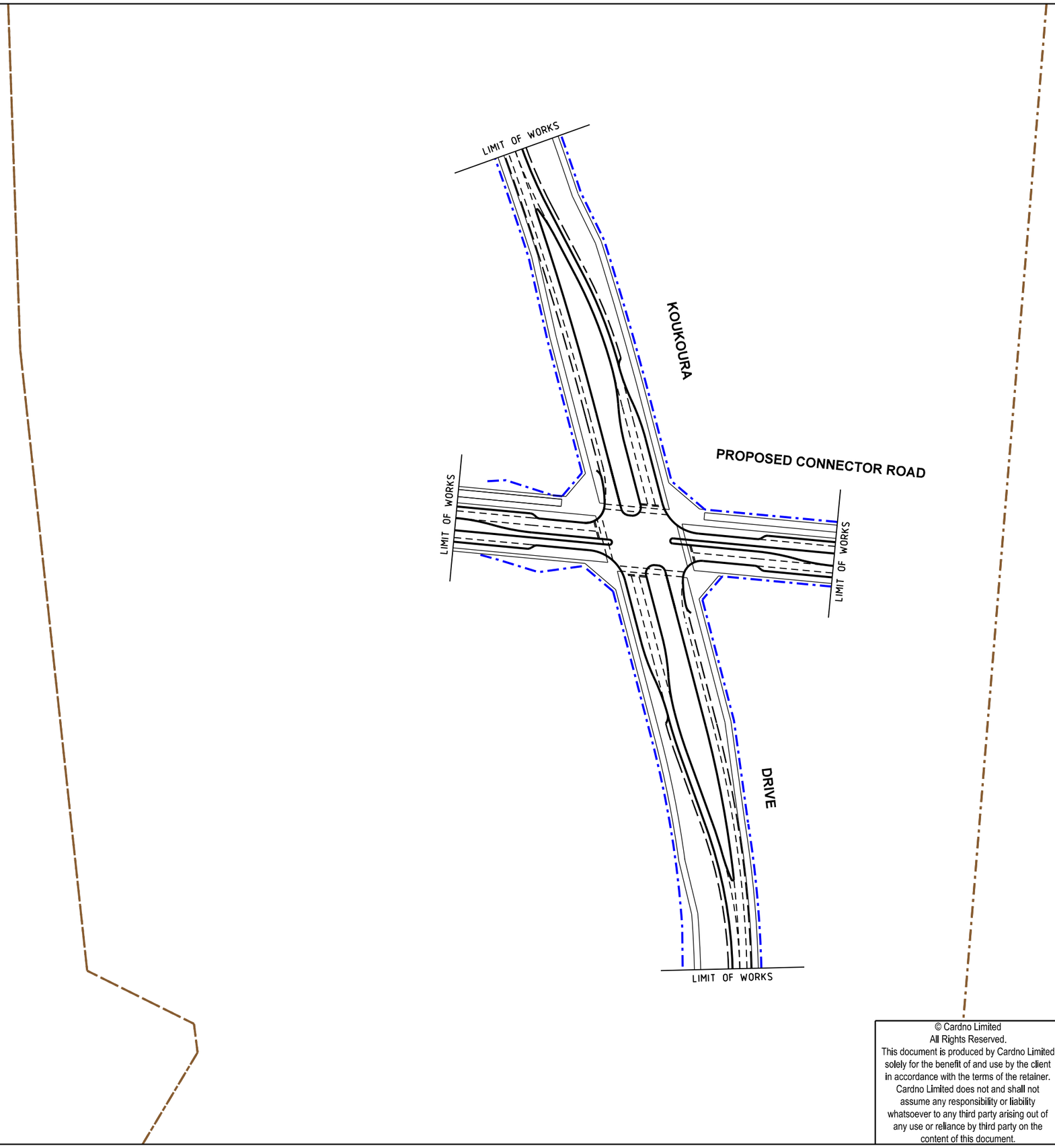

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INTERIM INTERSECTION CONCEPT LAYOUT
IN-07

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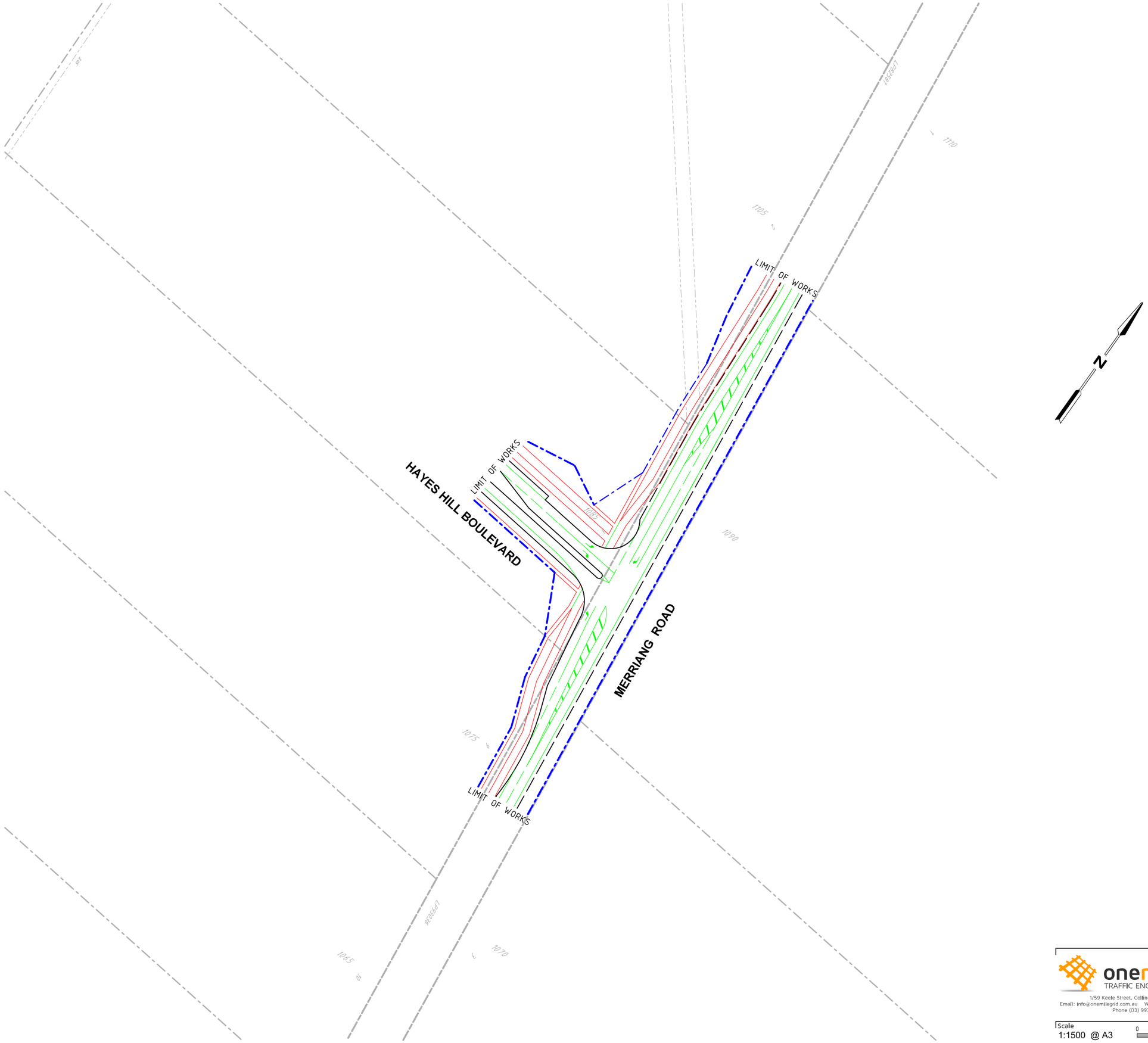

onemilegrid
TRAFFIC ENGINEERING

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Phone (03) 9939 8250

Drawing Title
DONNYBROOK PSP
INTERIM INTERSECTION CONCEPT LAYOUT
IN-08

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TCW	RBH	NA

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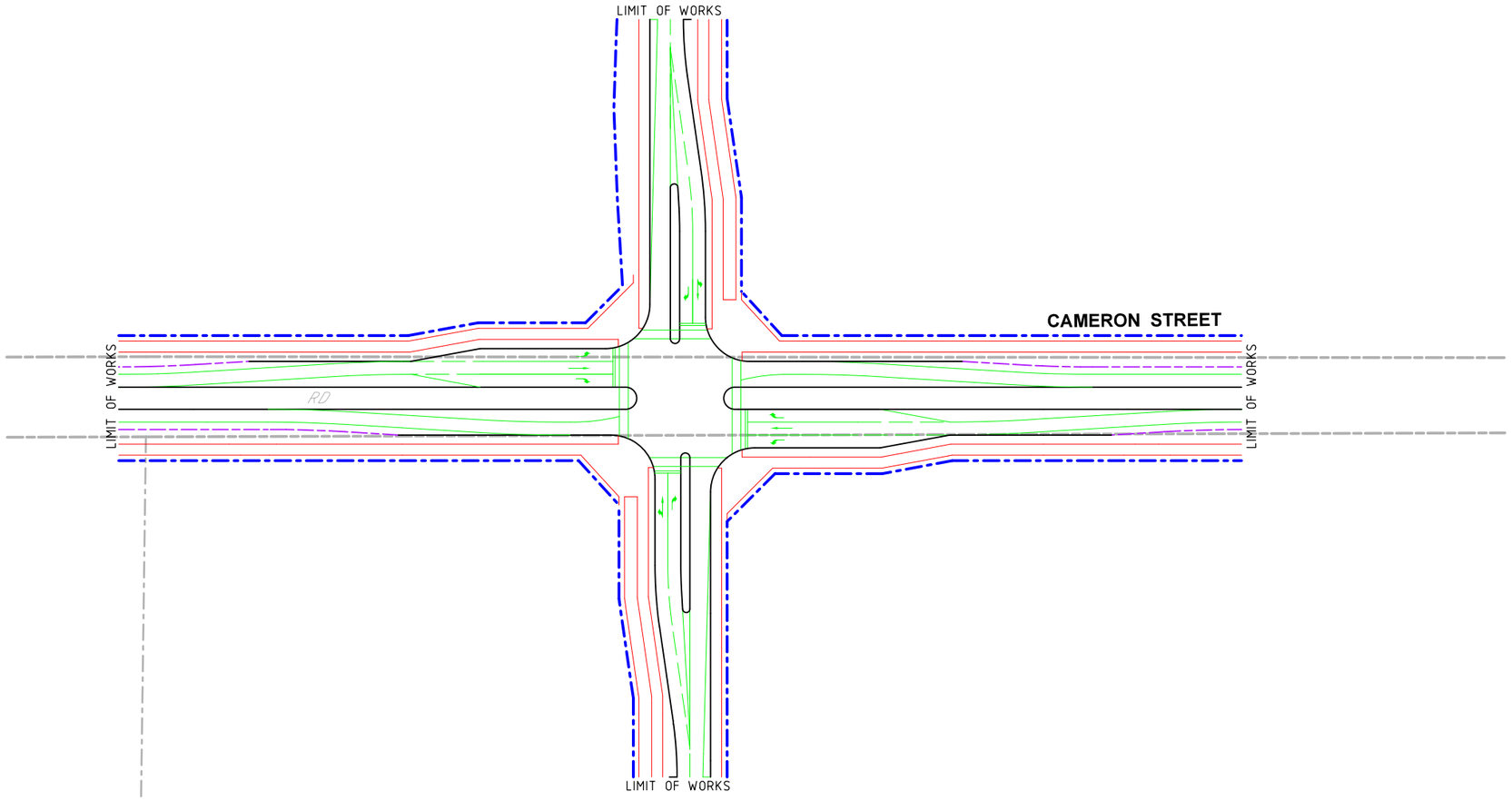

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Drawing Title
DONNYBROOK PSP
INTERIM INTERSECTION CONCEPT LAYOUT
IN-09

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TCW	RBH	NA

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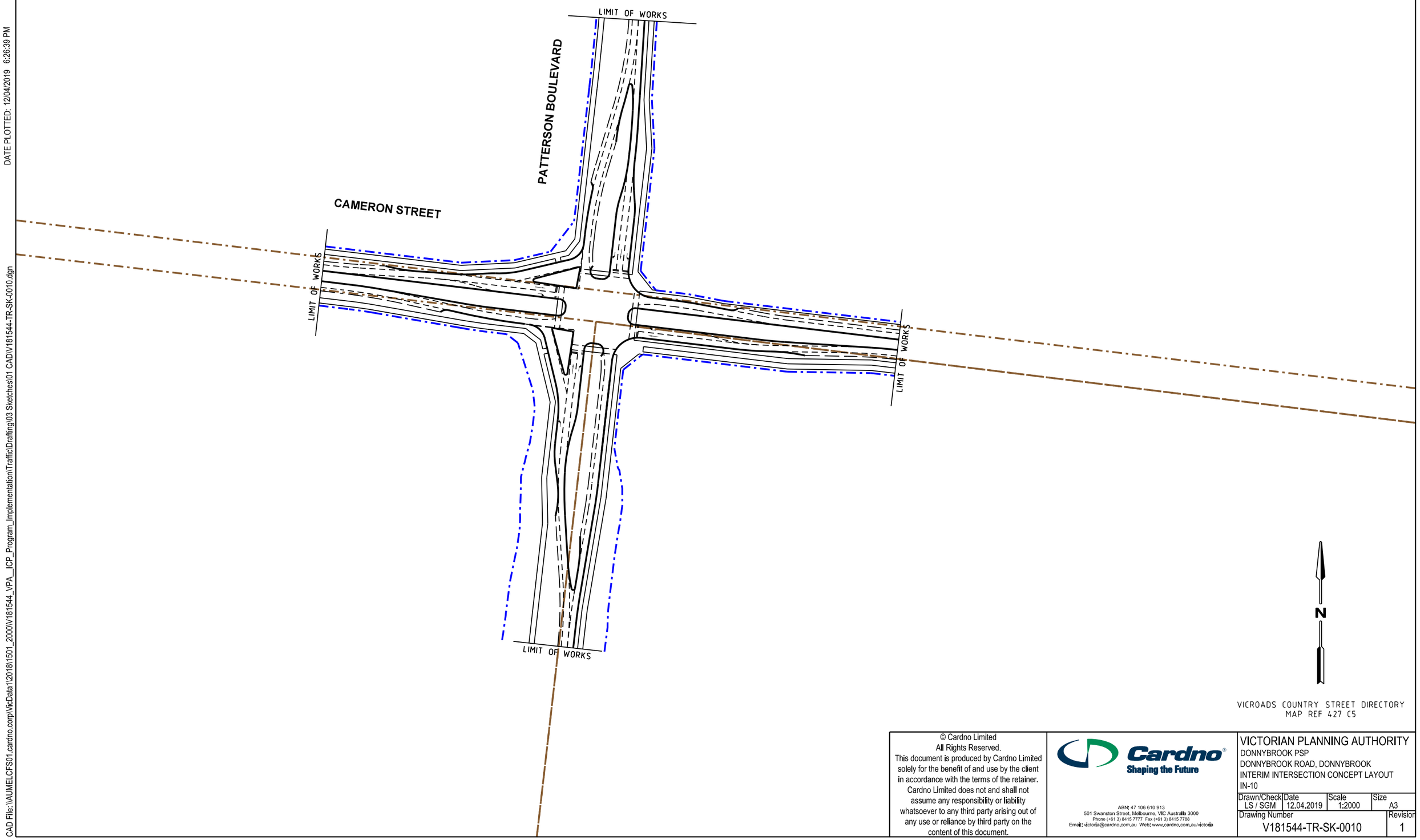

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DONNYBROOK PSP
DONNYBROOK ROAD, DONNYBROOK
INTERIM INTERSECTION CONCEPT LAYOUT
IN-10

Drawn/Check	Date	Scale	Size
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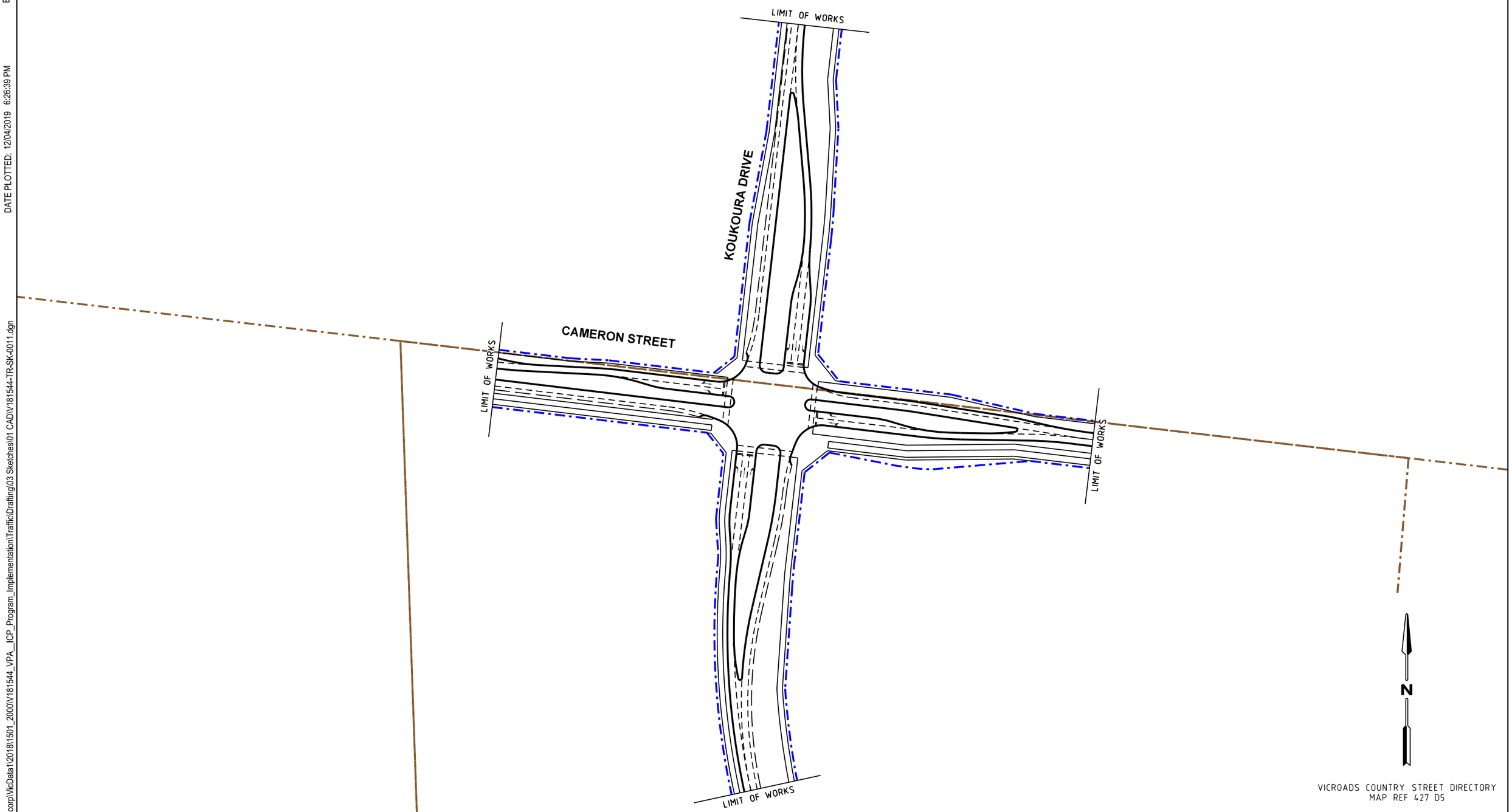

VICROADS COUNTRY STREET DIRECTORY
MAP REF 427 D5

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VICTORIAN PLANNING AUTHORITY
DONNYBROOK PSP
DONNYBROOK ROAD, DONNYBROOK
INTERIM INTERSECTION CONCEPT LAYOUT
IN-11

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Drawing Number	Revision
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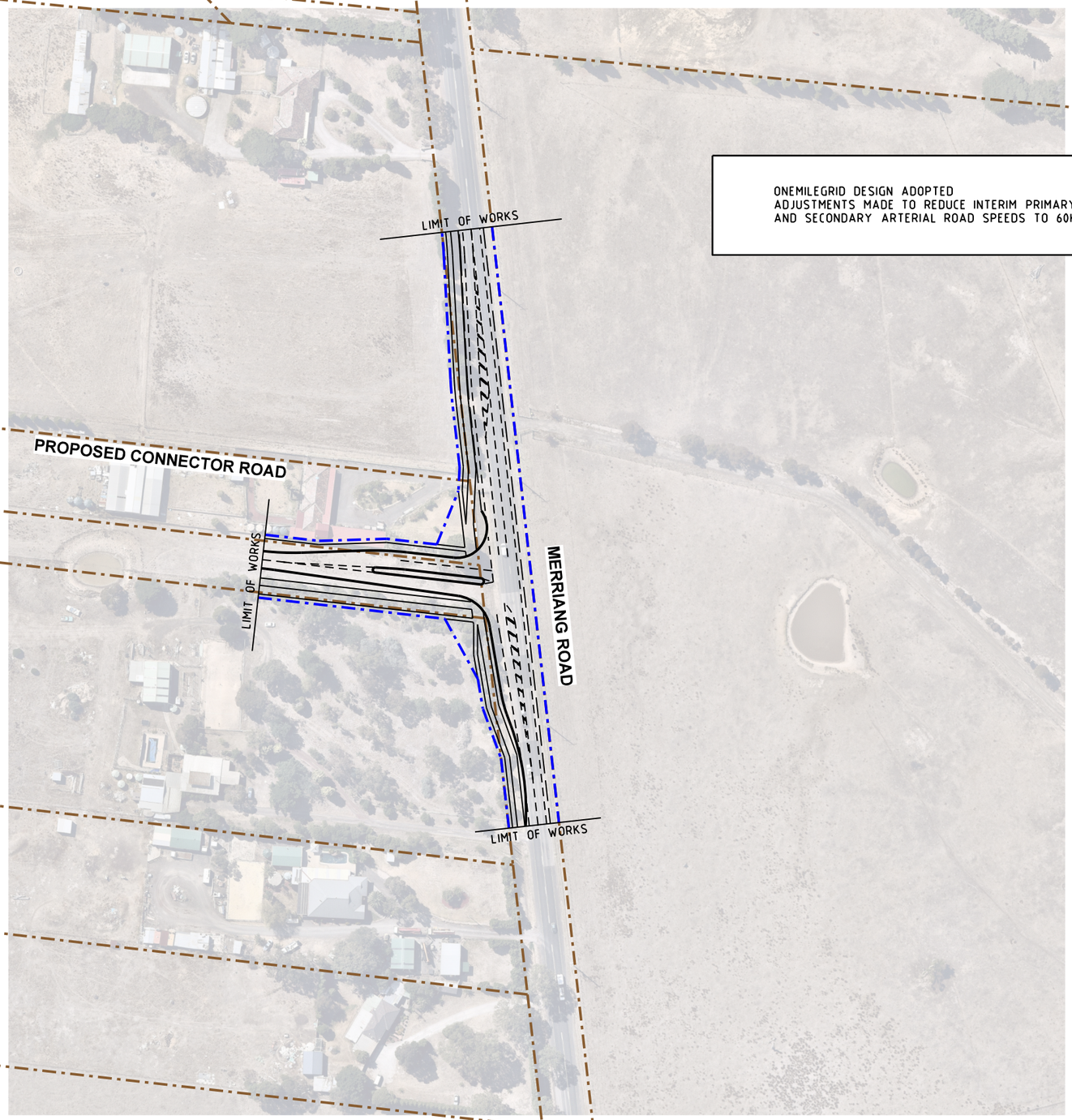

ONEMILEGRID DESIGN ADOPTED
ADJUSTMENTS MADE TO REDUCE INTERIM PRIMARY ARTERIAL AND SECONDARY ARTERIAL ROAD SPEEDS TO 60KM/H

N

VICROADS COUNTRY STREET DIRECTORY
MAP REF 427 C5

Cardno
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ABN: 47 106 610 913
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VICTORIAN PLANNING AUTHORITY
DONNYBROOK PSP
DONNYBROOK ROAD, DONNYBROOK
INTERIM INTERSECTION CONCEPT LAYOUT
IN-12

Drawn/Check	Date	Scale	Size
LS / SGM	12.04.2019	1:2000	A3

Drawing Number	Revision
V181544-TR-SK-0012	1

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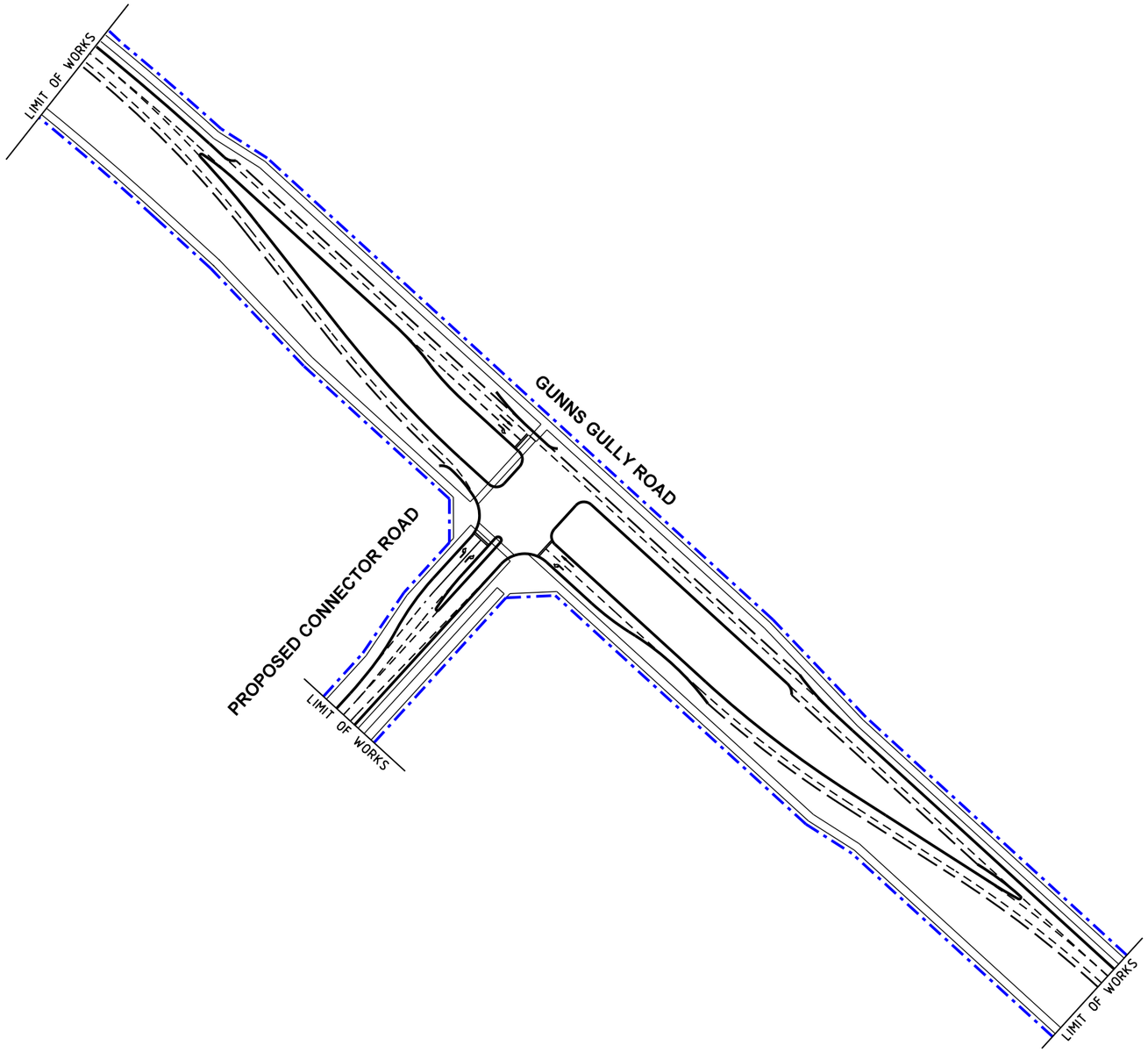
DATE PLOTTED: 12/04/2019 6:26:40 PM
BY: User:john.ocampo

ONEMILEGRID DESIGN ADOPTED
ADJUSTMENTS MADE TO REDUCE INTERIM PRIMARY ARTERIAL
AND SECONDARY ARTERIAL ROAD SPEEDS TO 60KM/H



N

VICROADS COUNTRY STREET DIRECTORY
MAP REF 427 C5

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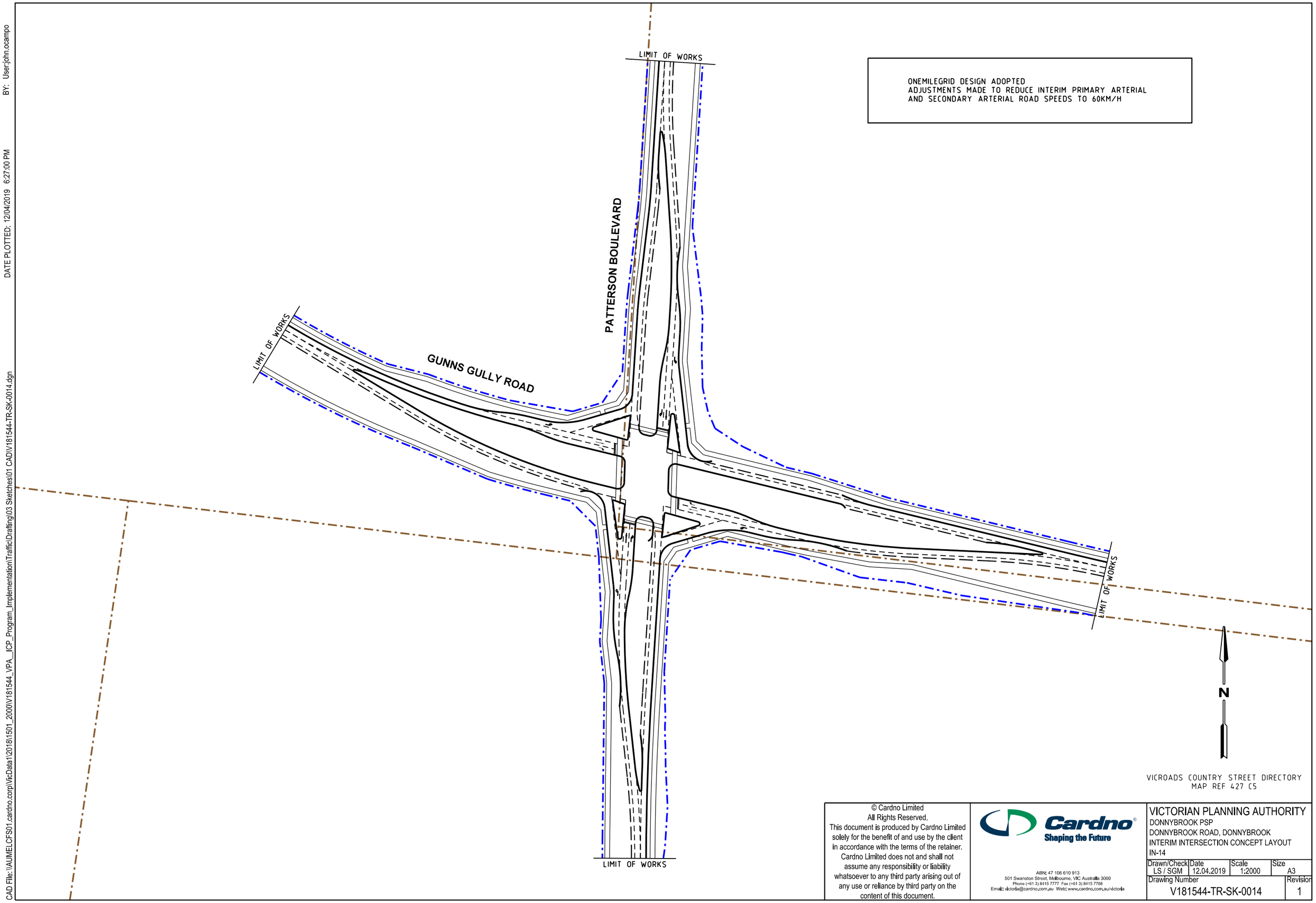
VICTORIAN PLANNING AUTHORITY
DONNYBROOK PSP
DONNYBROOK ROAD, DONNYBROOK
INTERIM INTERSECTION CONCEPT LAYOUT
IN-13

Drawn/Check	Date	Scale	Size
LS / SGM	12.04.2019	1:2000	A3

Drawing Number	Revision
V181544-TR-SK-0013	1

CAD File: \\AUMELCFS01.cardno.corp\VicData1\2018\1501_2000\V181544_VPA__ICP_Program_Implementation\Traffic\Drafting\03 Sketches\01 CAD\V181544-TR-SK-0013.dgn
DATE PLOTTED: 12/04/2019 6:26:59 PM
BY: User:john.ocampo



ONEMILEGRID DESIGN ADOPTED
ADJUSTMENTS MADE TO REDUCE INTERIM PRIMARY ARTERIAL
AND SECONDARY ARTERIAL ROAD SPEEDS TO 60KM/H

VICROADS COUNTRY STREET DIRECTORY
MAP REF 427 C5

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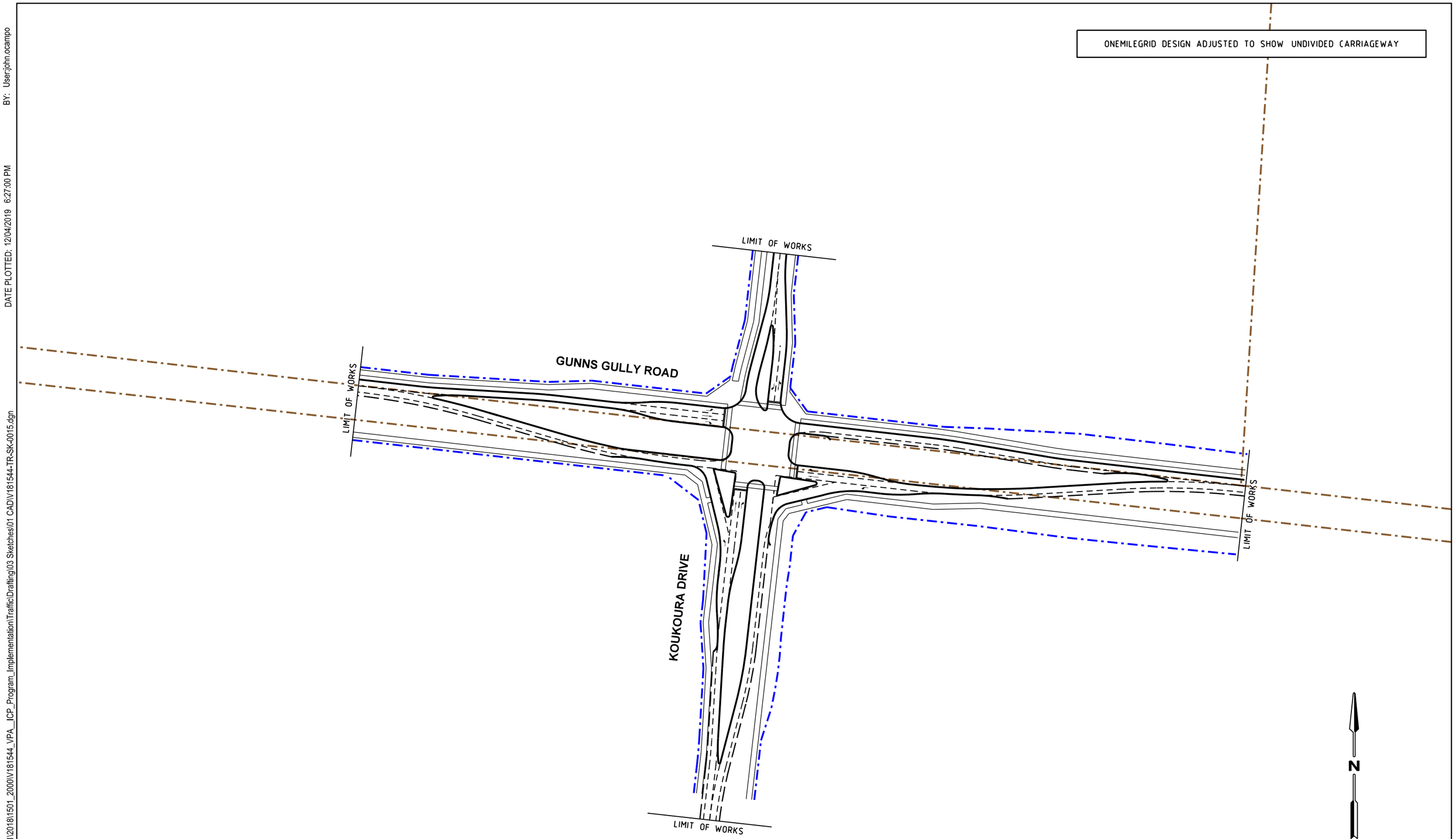
VICTORIAN PLANNING AUTHORITY
DONNYBROOK PSP
DONNYBROOK ROAD, DONNYBROOK
INTERIM INTERSECTION CONCEPT LAYOUT
IN-14

Drawn/Check	Date	Scale	Size
LS / SGM	12.04.2019	1:2000	A3

Drawing Number	Revision
V181544-TR-SK-0014	1

CAD File: \\AUMELCFS01.cardno.corp\VicData1\2018\1501_2000\V181544_VPA__ICP_Program_Implementation\Traffic\Drafting\03 Sketches\01 CAD\V181544-TR-SK-0014.dgn
DATE PLOTTED: 12/04/2019 6:27:00 PM
BY: User:john.ocampo

ONEMILEGRID DESIGN ADJUSTED TO SHOW UNDIVIDED CARRIAGEWAY



VICROADS COUNTRY STREET DIRECTORY
MAP REF 427 D4

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ABN: 47 106 610 913
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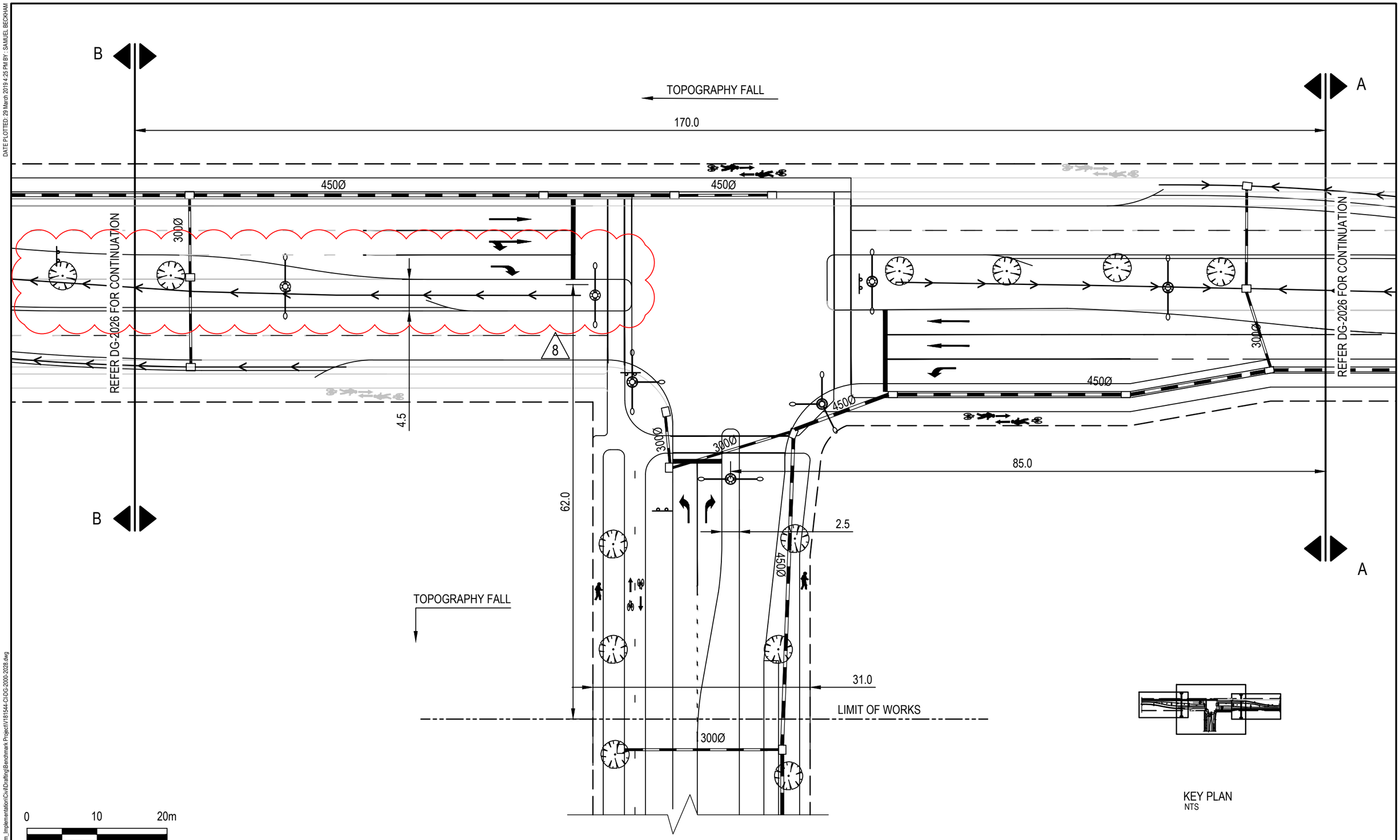
VICTORIAN PLANNING AUTHORITY
DONNYBROOK PSP
DONNYBROOK ROAD, DONNYBROOK
INTERIM INTERSECTION CONCEPT LAYOUT
IN-15

Drawn/Check	Date	Scale	Size
JO / SGM	12.04.2019	1:2000	A3

Drawing Number	Revision
V181544-TR-SK-0015	1

CAD File: \\AUMELCFS01.cardno.corp\VicData1\20181501_2000\V181544_VPA__ICP_Program_Implementation\Traffic\Drafting\03 Sketches\01 CAD\V181544-TR-SK-0015.dgn
DATE PLOTTED: 12/04/2019 6:27:00 PM
BY: User:john.ocampo

DATE PLOTTED: 29 March 2019 4:25 PM BY: SAMUEL BECKHAM



KEY PLAN
NTS

Rev	Date	Description	Des.	Verif.	Appd.
8	29/03/2019	ADDRESS VPA COMMENTS	SB		
7	12/03/2019	ADDRESS STAKEHOLDER COMMENTS	CM		
6	28/02/2019	ADDRESS STAKEHOLDER COMMENTS V.2.	CM		
5	4/02/2019	ADDRESS STAKEHOLDER COMMENTS	CM		
4	05/07/2018	ADDRESS VPA COMMENTS	CM		
3	29/06/2018	ADDRESS VPA COMMENTS	CM		
2	19/03/2018	ADDRESS VPA COMMENTS	VA		
1	14/12/2017	PRELIMINARY ISSUE	RVR		

NORTH

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		Date
Drawn	NPV	14/12/2017
Checked	MEA	14/12/2017
Designed	RVR	
Verified		
Approved		

Client: VICTORIAN PLANNING AUTHORITY

Project: BENCH MARK INFRASTRUCTURE COSTING

Title: ITEM 15
SECONDARY TO CONNECTOR BLVD INTERSECTION
INTERIM

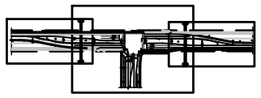
Status: PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Scale: 1:500
Size: A3

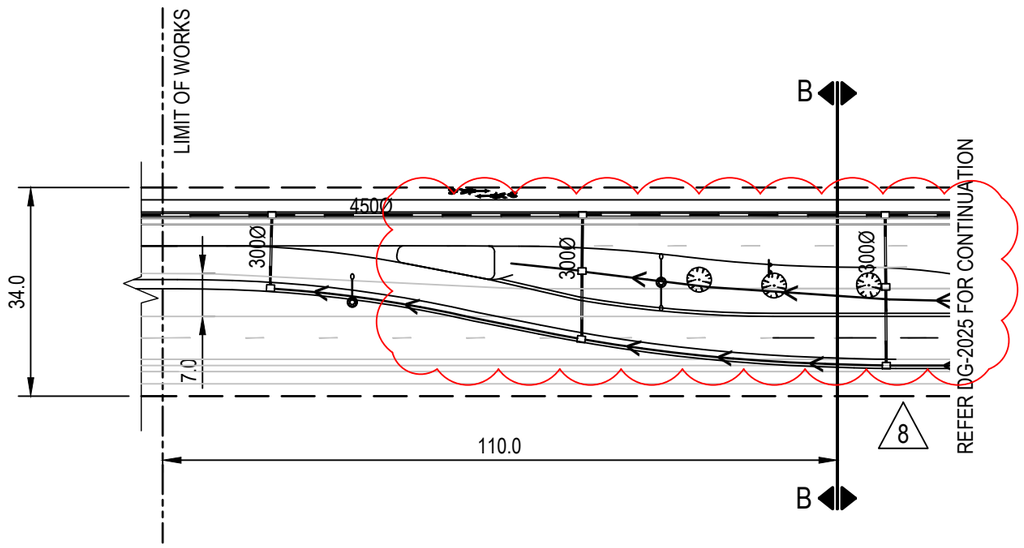
Drawing Number: V181544-CI-DG-2025
Revision: 8

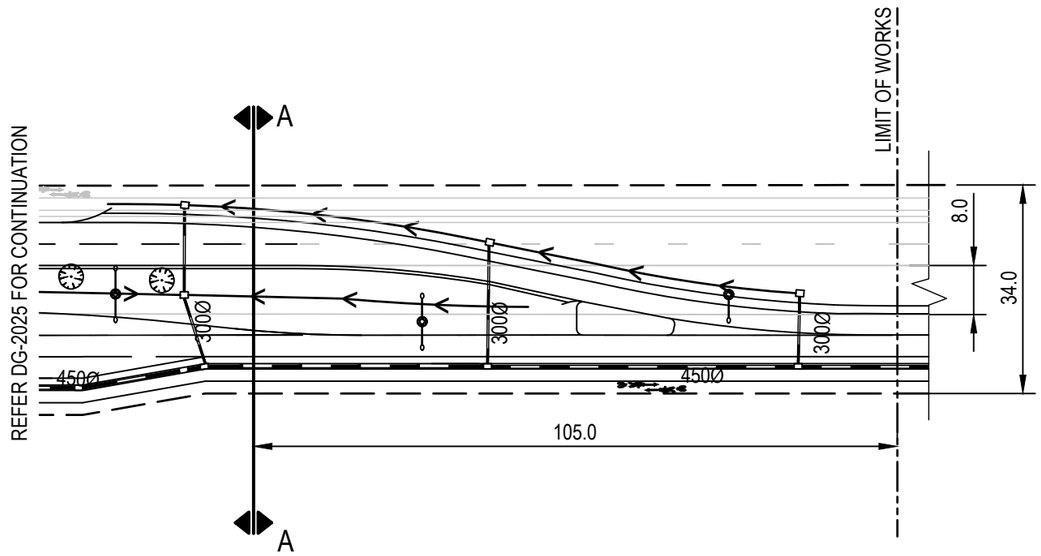
XREF's:
CAD File: M:\2018\1501_2000\V181544_VPA_ICP_Program_Implementation\Civil\Drafting\Benchmark Project\V181544-CI-DG-2000-2028.dwg

DATE PLOTTED: 29 March 2019 4:25 PM BY: SAMUEL BECKHAM



KEY PLAN
NTS





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SCALE 1:1000 @A3

Rev	Date	Description	Des.	Verif.	Appd.
8	29/03/2019	ADDRESS VPA COMMENTS	SB		
7	12/03/2019	ADDRESS STAKEHOLDER COMMENTS	CM		
6	28/02/2019	ADDRESS STAKEHOLDER COMMENTS V.2.	CM		
5	4/02/2019	ADDRESS STAKEHOLDER COMMENTS	CM		
4	05/07/2018	ADDRESS VPA COMMENTS	CM		
3	29/06/2018	ADDRESS VPA COMMENTS	CM		
2	19/03/2018	ADDRESS VPA COMMENTS	VA		
1	14/12/2017	PRELIMINARY ISSUE	RVR		

NORTH

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Melbourne VIC 3000
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Web: www.cardno.com.au

Drawn NPV	Date 14/12/2017	
Checked MEA	Date 14/12/2017	
Designed RVR	Date	
Verified	Date	
Approved	Date	

Client: VICTORIAN PLANNING AUTHORITY

Project: BENCH MARK INFRASTRUCTURE COSTING

Title: ITEM 15
SECONDARY TO CONNECTOR BLVD INTERSECTION
INTERIM

Status: PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Scale: 1:1000

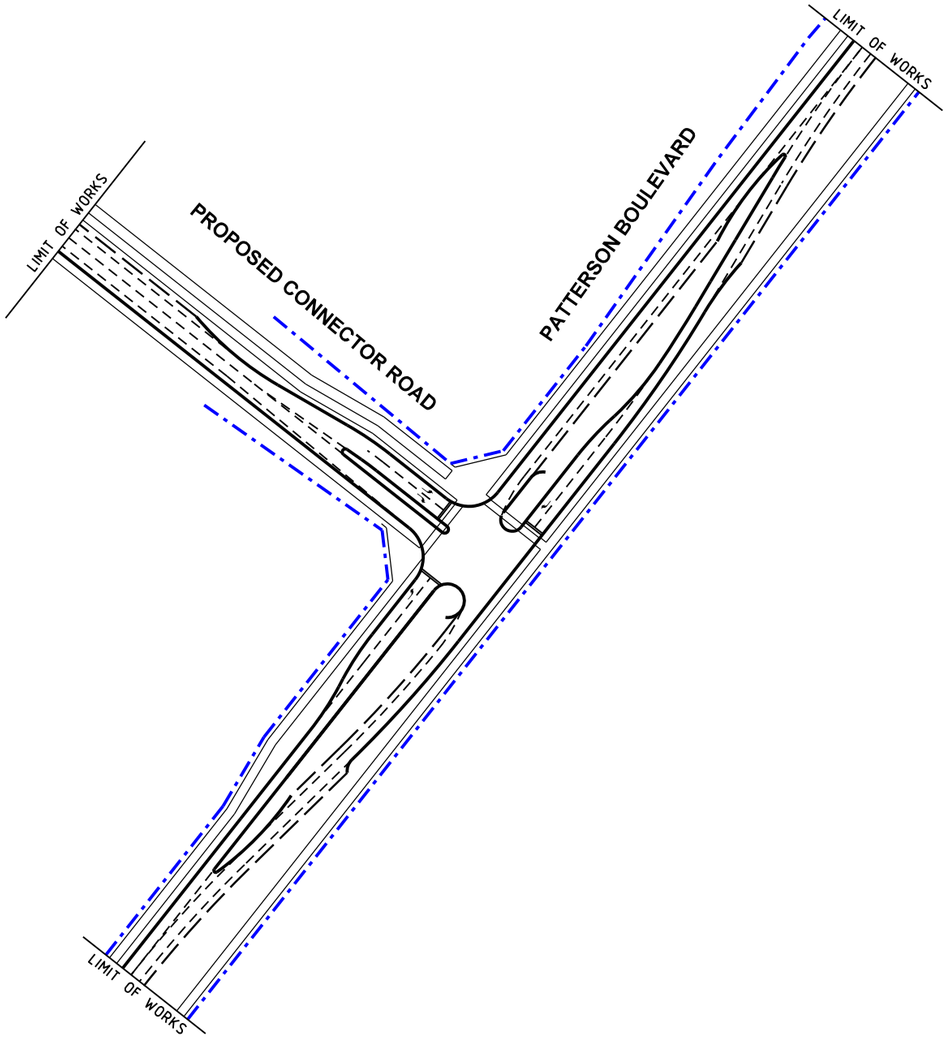
Size: A3

Drawing Number: V181544-CI-DG-2026

Revision: 8

XREF's:
CAD File: M:\2018\181501_2000\V181544_VPA_ICP_Program_Implementation\Civil\Drafting\Benchmark Project\V181544-CI-DG-2000-2028.dwg

ONEMILEGRID DESIGN ADOPTED
ADJUSTMENTS MADE TO REDUCE INTERIM PRIMARY ARTERIAL
AND SECONDARY ARTERIAL ROAD SPEEDS TO 60KM/H



N

VICROADS COUNTRY STREET DIRECTORY
MAP REF 427 C5

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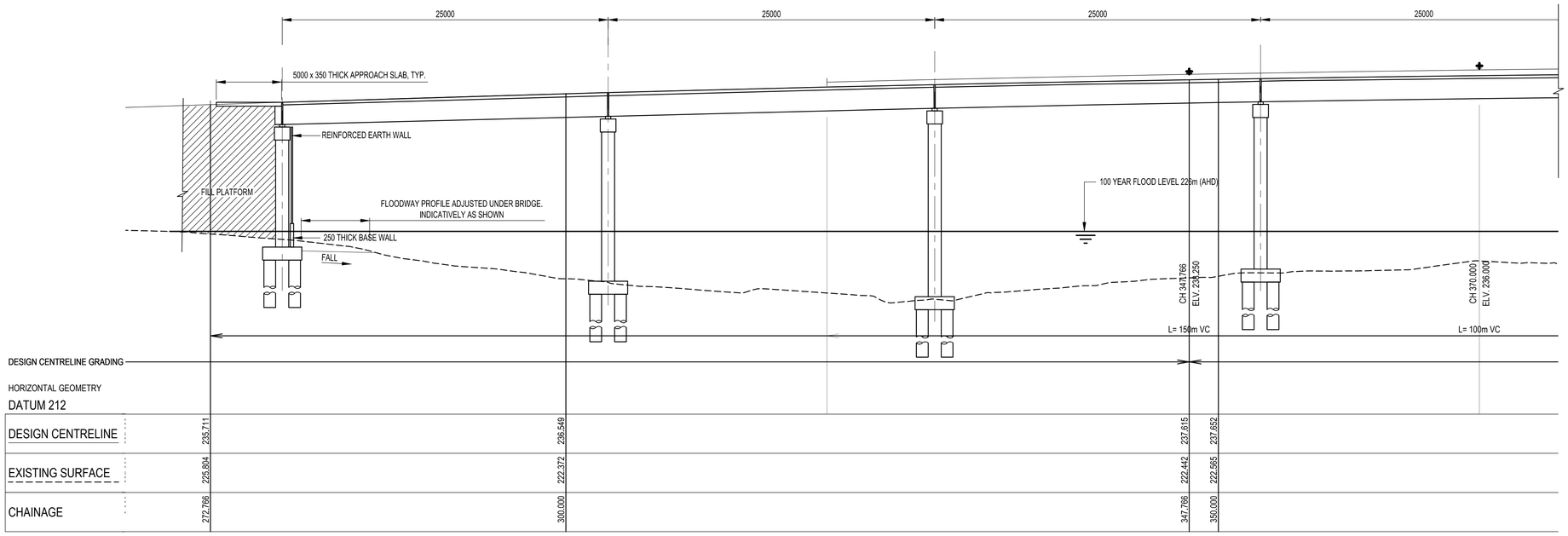
VICTORIAN PLANNING AUTHORITY
DONNYBROOK PSP
DONNYBROOK ROAD, DONNYBROOK
INTERIM INTERSECTION CONCEPT LAYOUT
IN-17

Drawn/Check	Date	Scale	Size
LS / SGM	12.04.2019	1:2000	A3

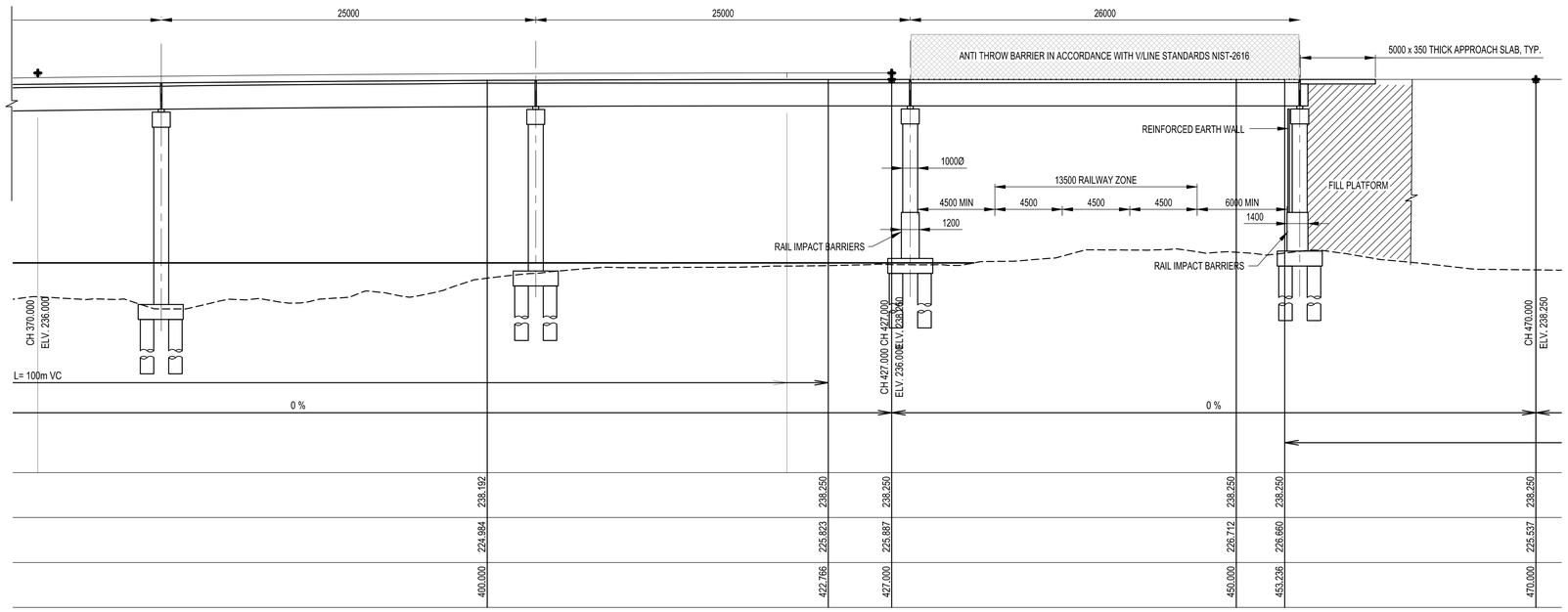
Drawing Number	Revision
V181544-TR-SK-0017	1

CAD File: \\AUMELCFS01.cardno.corp\VicData1\2018\1501_2000\V181544_VPA_ICP_Program_Implementation\Traffic\Drafting\03 Sketches\01 CAD\V181544-TR-SK-0017.dgn
DATE PLOTTED: 12/04/2019 6:27:01 PM
BY: User:john.ocampo



BRIDGE 1 (OPTION 2) LONGITUDINAL SECTION

HOR 1 : 200
VER 1 : 200



BRIDGE 1 (OPTION 2) LONGITUDINAL SECTION - CONTINUATION

HOR 1 : 200
VER 1 : 200

Issue	Description	Date
2	PRELIMINARY ISSUE	23/09/15
1	PRELIMINARY ISSUE	19/03/15

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Client
ONE MILE GRID

Architect
JCA LAND CONSULTANTS

Title
BRIDGE 1 (OPTION 2)
LONGITUDINAL SECTION

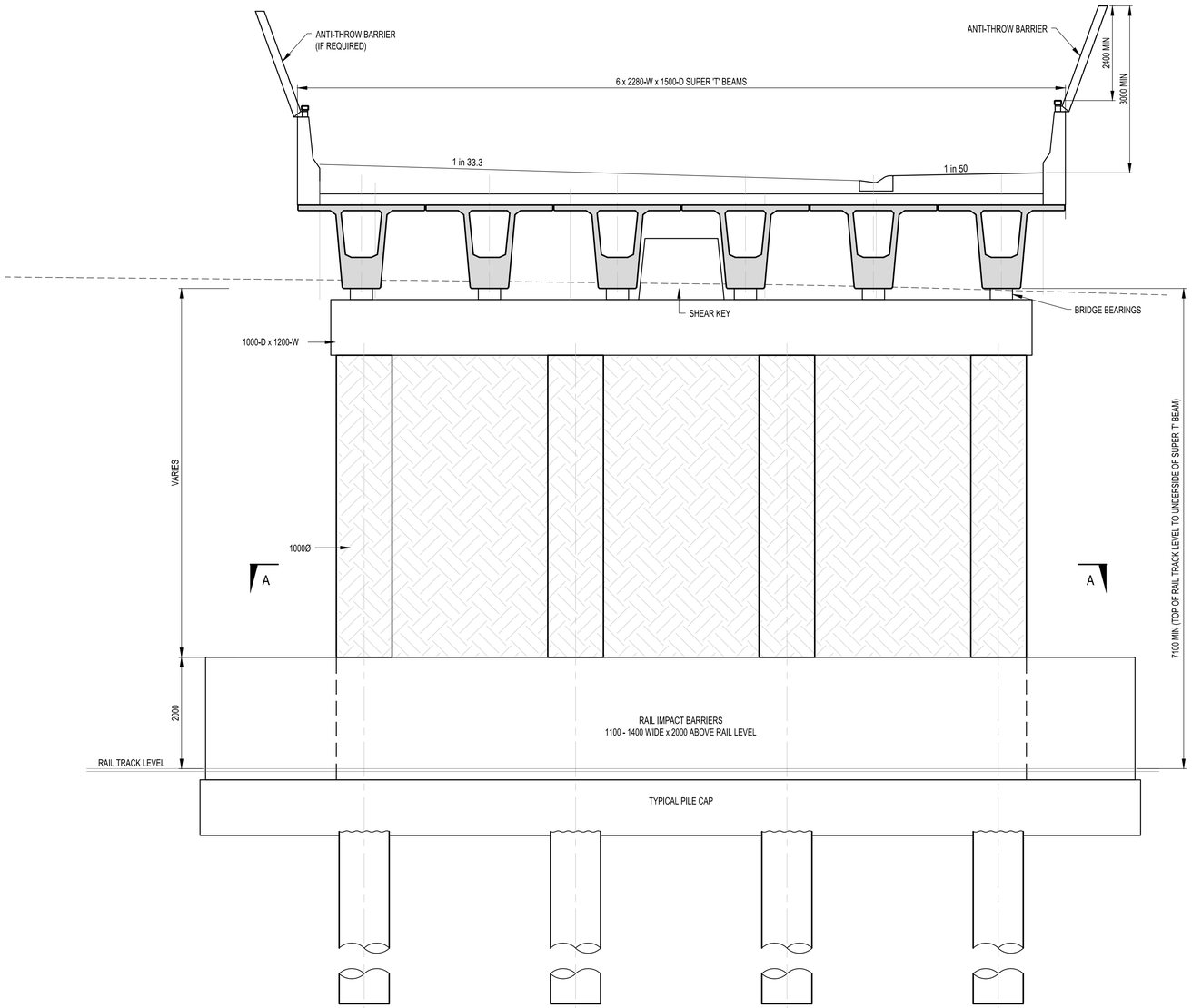
Designed	AS	Drawn	JL	North
Project Leader	AS	Certified		
Project Director		Sheet Size	A1	

Plotted 9/23/2015 4:06 PM by Jeremy Luttrell

PRELIMINARY ISSUE
NOT TO BE USED FOR CONSTRUCTION

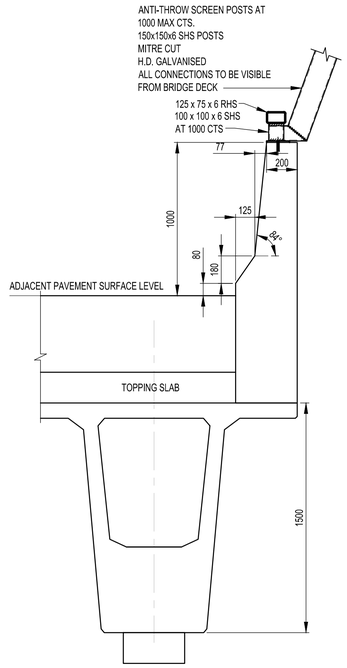
Project	Drawing	Revision
140638	C003	2

BRIDGE DESIGN, DONNYBROOK AND WOODSTOCK PSP - MERRIANG ROAD, DONNYBROOK AND WOODSTOCK



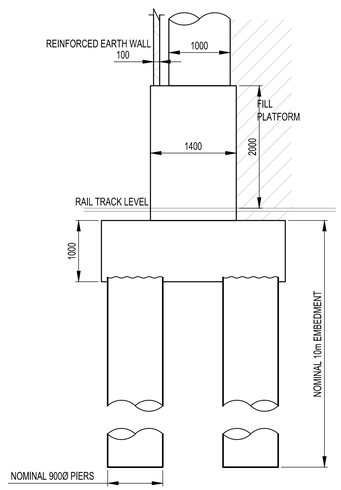
BRIDGE 1 (INTERIM) TYPICAL CROSS SECTION ADJACENT TO RAILWAY ZONE

SCALE 1:50



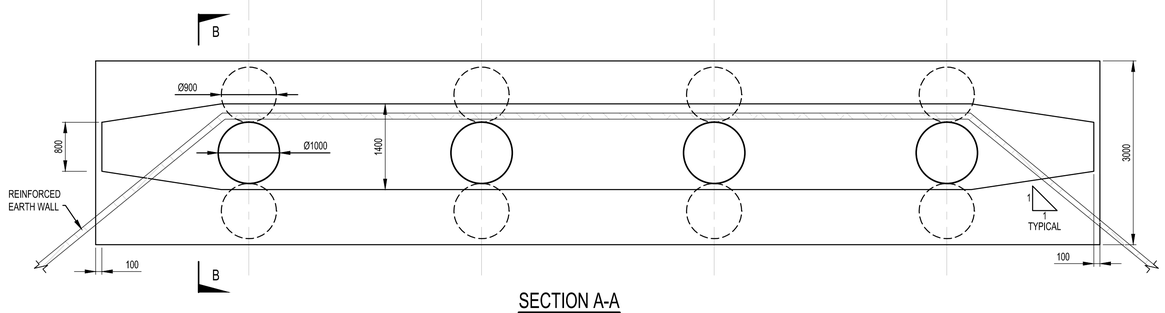
1500-D 'T' BEAM BARRIER DETAIL

SCALE 1:20



SECTION B-B

SCALE 1:50



SECTION A-A

SCALE 1:50

Issue	Description	Date
2	PRELIMINARY ISSUE	23/09/15
1	PRELIMINARY ISSUE	19/03/15

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Client
ONE MILE GRID

Architect
JCA LAND CONSULTANTS

Title
BRIDGE 1 (INTERIM) TYPICAL CROSS-SECTION ADJACENT TO RAILWAY ZONE

Designed	AS	Drawn	JL
Project Leader	AS	Certified	
Project Director		Sheet Size	A1

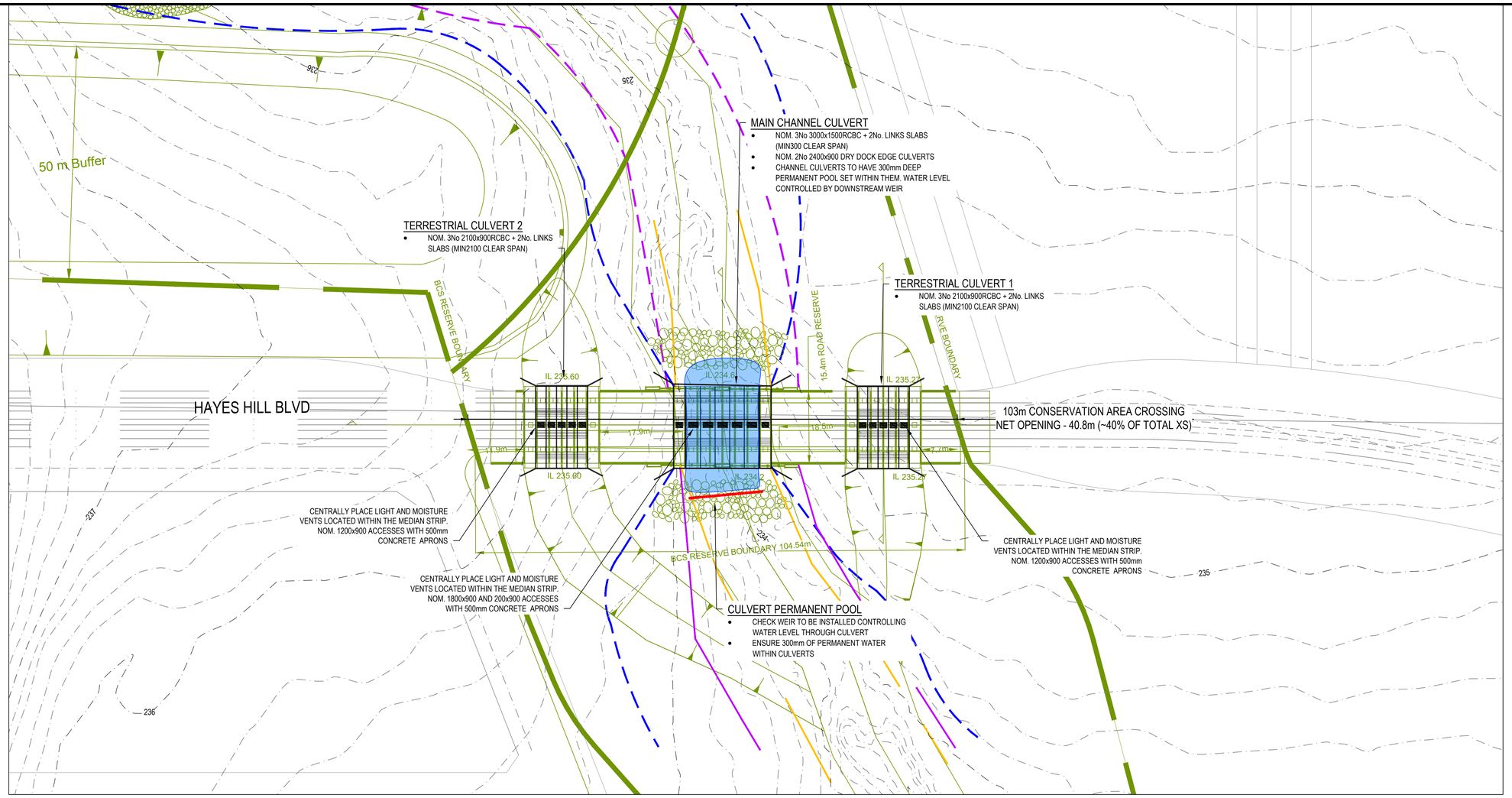
Plotted 9/23/2015 4:07 PM by Jeremy Luttrell

North

PRELIMINARY ISSUE
NOT TO BE USED FOR CONSTRUCTION

Project	Drawing	Revision
140638	C004	2

BRIDGE DESIGN, DONNYBROOK AND WOODSTOCK PSP - MERRIANG ROAD, DONNYBROOK AND WOODSTOCK



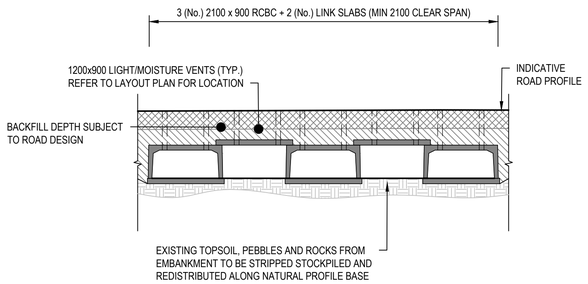
HAYES HILL BLVD CULVERT PLAN

SCALE 1:500

LEGEND

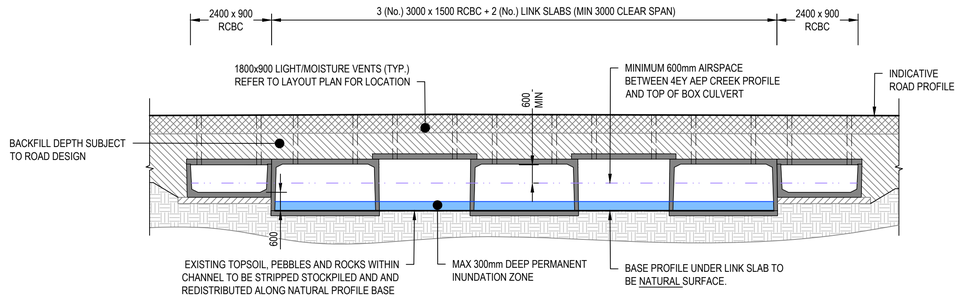
- DPM DESIGN CONTOURS - MAJOR
- DPM DESIGN CONTOURS - MINOR
- PROPOSED BATTER
- 1% AEP WATER LEVEL
- 2% AEP WATER LEVEL
- 10% AEP WATER LEVEL
- 4EY WATER LEVEL
- PROPOSED CHECK WEIR
- PROPOSED CULVERT WITH MOISTURE VENT
- PROPOSED HEADWALL
- LANDSCAPING (BY OTHERS)
- OBSTRUCTIVE LANDSCAPE PLANTING (BY OTHERS)
- FLOODWAY CHANNEL INVERT
- PROPOSED ROCK BEACHING
- PERMANENT POOL

NOTE: DPM DESIGN SHOWN IN BACKGROUND IN GREEN



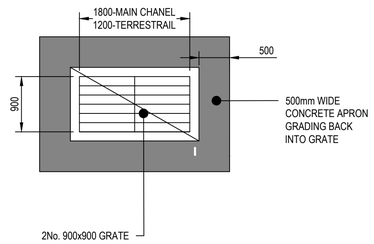
TERRESTRIAL TYPICAL

SCALE 1:100m



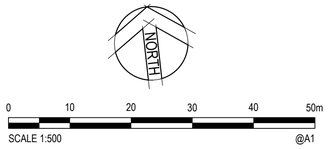
MAIN CHANNEL TYPICAL

SCALE 1:100m



LIGHT/MOISTURE VENT TYPICAL

SCALE 1:50m



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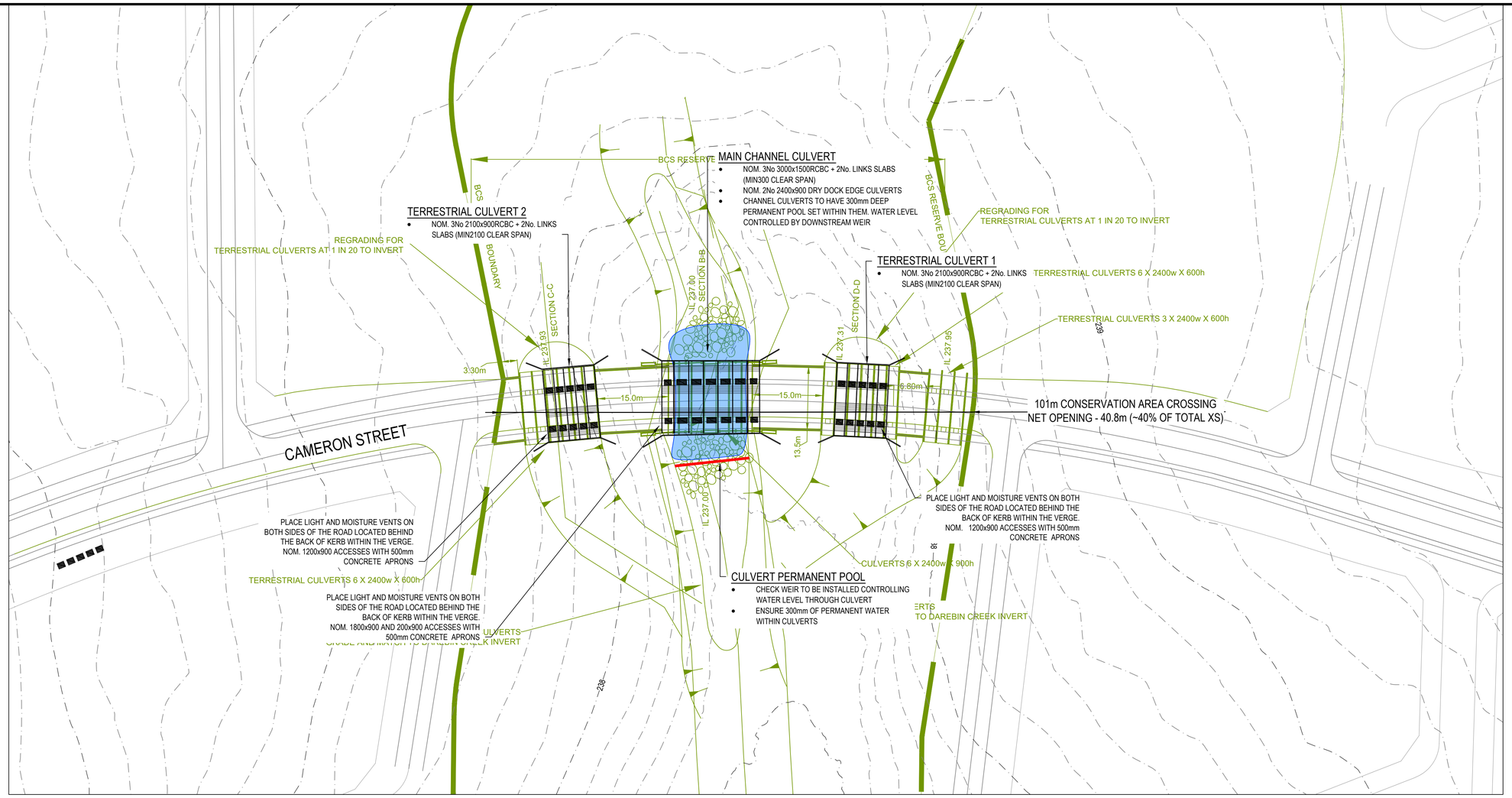
Web: www.cardno.com.au

VICTORIAN PLANNING AUHTORITY
HAYES HILL BOULEVARD CULVERT PLAN & TYPICAL SECTIONS

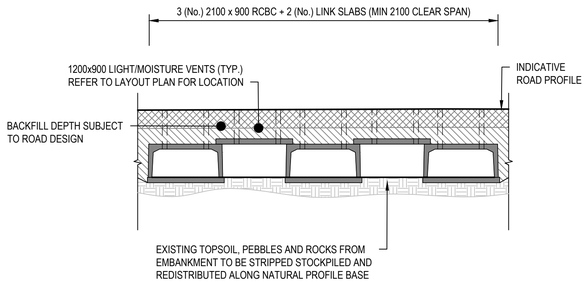
MELWAYS REF	Date	Scale	Size
367, J6	25/03/19	AS SHOWN	A1

Drawing Number	Revision
V181544-WE-SK002	1



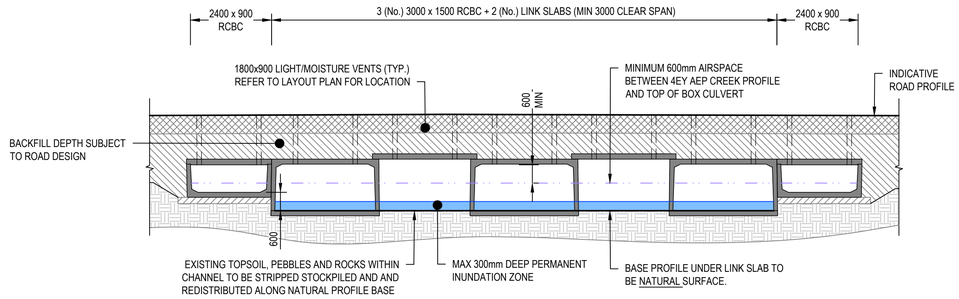
CAMERON ST CULVERT PLAN

SCALE 1:500



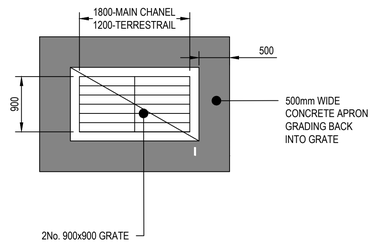
TERRESTRIAL TYPICAL

SCALE 1:100m



MAIN CHANNEL TYPICAL

SCALE 1:100m



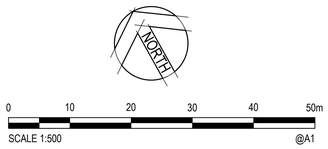
LIGHT/MOISTURE VENT TYPICAL

SCALE 1:50m

LEGEND

- DPM DESIGN CONTOURS - MAJOR
- DPM DESIGN CONTOURS - MINOR
- PROPOSED BATTER
- 1% AEP WATER LEVEL
- 2% AEP WATER LEVEL
- 10% AEP WATER LEVEL
- 4EY WATER LEVEL
- PROPOSED CHECK WEIR
- PROPOSED CULVERT WITH MOISTURE VENT
- PROPOSED HEADWALL
- LANDSCAPING (BY OTHERS)
- OBSTRUCTIVE LANDSCAPE PLANTING (BY OTHERS)
- FLOODWAY CHANNEL INVERT
- PROPOSED ROCK BEACHING
- PERMANENT POOL

NOTE: DPM DESIGN SHOWN IN BACKGROUND IN GREEN



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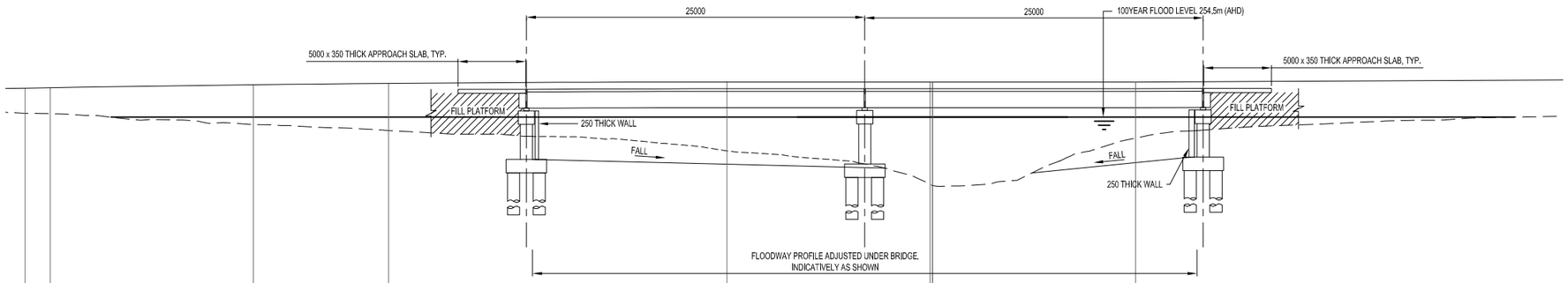
Web: www.cardno.com.au

VICTORIAN PLANNING AUHTORITY
CAMERON STREET CULVERT PLAN
& TYPICAL SECTIONS

MELWAYS REF	Date	Scale	Size
367, J6	25/03/19	AS SHOWN	A1

Drawing Number	Revision
V181544-WE-SK001	1



L= 50m VC

DESIGN CENTRELINE GRADING: 1.69 % | 0 % | 0 % | 0 % | 0.5 %

HORIZONTAL GEOMETRY

DATUM 227

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EXISTING SURFACE	254.788	254.752	253.855	253.504	252.009	249.515	249.444	252.948	
CHAINAGE	3883.138	3885.000	3900.000	3910.000	3935.000	3950.000	3950.779	15.000	

BRIDGE 7 LONGITUDINAL SECTION

HOR 1 : 200

VER 1 : 200

Issue	Description	Date
2	PRELIMINARY ISSUE - TITLE AMENDED AS REQUEST	26/07/18
1	PRELIMINARY ISSUE	19/03/15

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Client
ONE MILE GRID

Architect
JCA LAND CONSULTANTS

Title
BRIDGE 7 (ICP PROJECT ID:BR-05)
LONGITUDINAL SECTION

Designed	AS	Drawn	JL
Project Leader	AS	Certified	
Project Director		Sheet Size	A1

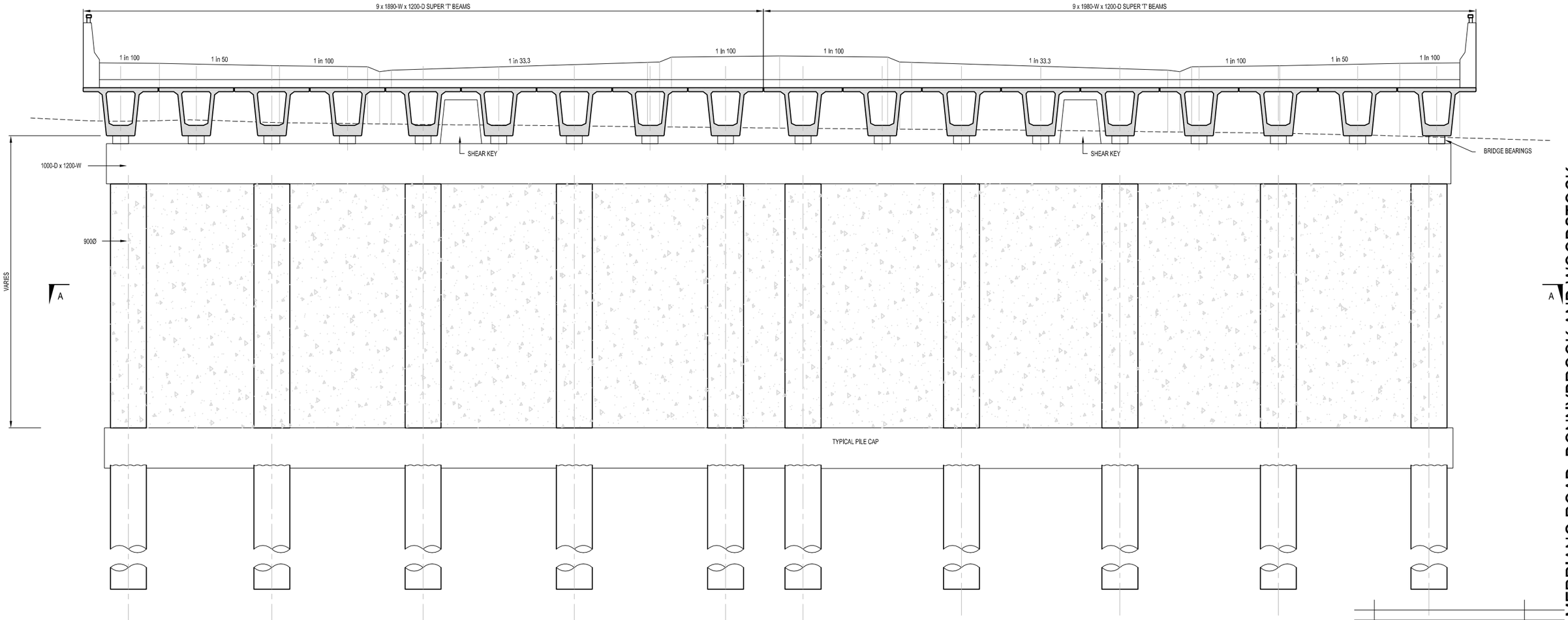
North

Plotted 7/26/2018 2:08 PM by Harry Jin

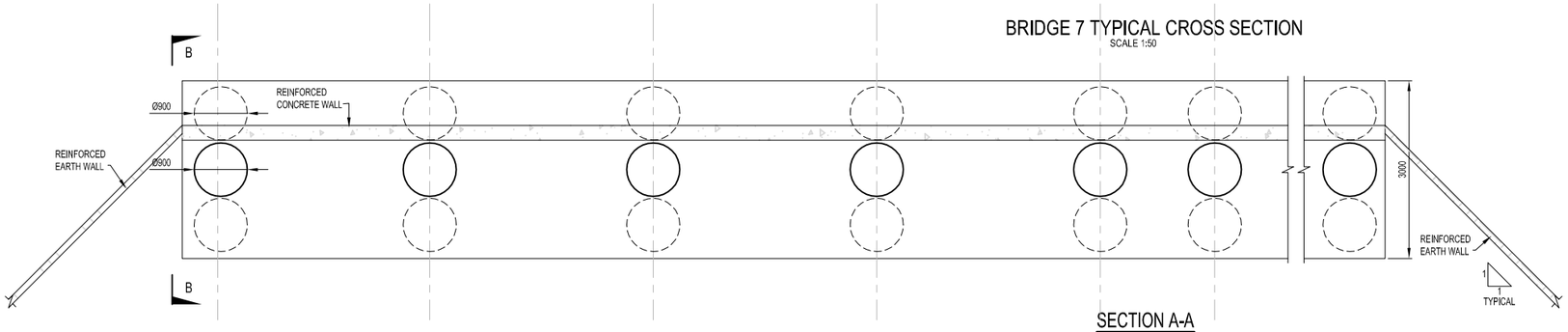
PRELIMINARY ISSUE
NOT TO BE USED FOR CONSTRUCTION

Project	Drawing	Revision
140638	C006	2

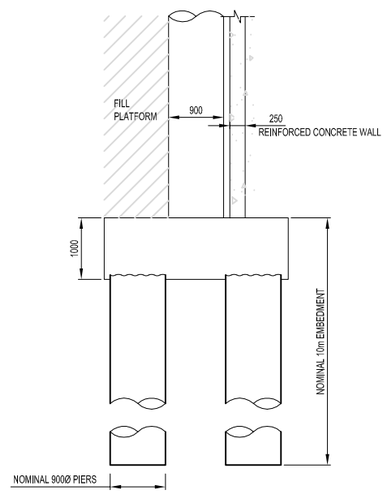
BRIDGE DESIGN, DONNYBROOK AND WOODSTOCK PSP - MERRIANG ROAD, DONNYBROOK AND WOODSTOCK



BRIDGE 7 TYPICAL CROSS SECTION
SCALE 1:50



SECTION A-A
SCALE 1:50



SECTION B-B
SCALE 1:50

Issue	Description	Date
2	PRELIMINARY ISSUE - TITLE AMENDED AS REQUEST	26/07/18
1	PRELIMINARY ISSUE	19/03/15

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Client
ONE MILE GRID

Architect
JCA LAND CONSULTANTS

Title
BRIDGE 7 (ICP PROJECT ID:BR-05)
TYPICAL CROSS-SECTION

Designed	AS	Drawn	JL
Project Leader	AS	Certified	
Project Director		Sheet Size	A1

Plotted: 7/26/2018 2:10 PM by Harry Jin

North

PRELIMINARY ISSUE
NOT TO BE USED FOR CONSTRUCTION

Project	Drawing	Revision
140638	C007	2

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