

MEMORANDUM

TO: GREG BURSILL (DENNIS FAMILY CORPORATION)

FROM: PETER MALINAS/ANTHONY DELLISOLA (GTA CONSULTANTS)

DATE: 6 MAY 2013

OUR REF: 13M1241100

PAGE 1 OF 8

RE: **HARDYS ROAD, CLYDE NORTH**
REVIEW OF TRAFFIC DESIGN ELEMENTS OF EXTERNAL INTERSECTIONS

As requested, GTA Consultants has had an opportunity to undertake preliminary design works for Hardys Road, Clyde North in response to the development of DFC land located on the north-east corner of the Pound Road / Hardys Road intersection.

The following memorandum sets out a short response to the works completed.

Intersection of Berwick Cranbourne Road / Hardys Road / Linsell Boulevard (interim)

The attached drawing 13M1241100-01P2 shows an interim roundabout treatment for this intersection. The roundabout control is typical of interim treatments within the vicinity of the site and confirmed by VicRoads. The existing Berwick Cranbourne Road / Linsell Boulevard intersection is at capacity and to be removed by others following the realignment of Linsell Boulevard to the south.

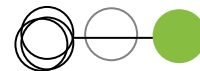
The design shown considers the ultimate title boundary constraints on all four corners and the limitations associated with the interim setbacks on the existing lots (approximately 10) on the north-east corner.

The design shows the ultimate northern carriageway forming the interim east-west alignment of Hardys Road (one lane in each direction) and localised flaring at the roundabout to provide two circulation lanes. Hardys Road is proposed to be a 34m wide road (two-way, 4 lane road) in its ultimate form.

Version 2 of the plan is shown in the attached drawing 13M1241100-02 P1 which considers the duplication of Linsell Boulevard (west of Berwick Cranbourne Road).

In both these scenarios, no additional land is required beyond the available road reserve. It is noted that these designs are based on the absolute minimum guidelines given the interim nature. Indeed, although specific desirable guidelines have not been achieved in all instances, the principle and intent surrounding these guidelines are generally met which include traffic lane widths, merge and diverge tapers.

Subsequently, GTA has also undertaken a roundabout design at this intersection to the desirable minimum guidelines, however it requires encroachment in to land on the northeast and southeast corners. As per the above, the design achieves the desirable standards for traffic lane widths,



merge and diverge tapers and additionally the central island size and circulating carriageway width. This design is shown in the attached drawing 13M1241100-SK01-01 P4.

Intersection of Hardys Road / Pound Road (ultimate)

The attached drawing 13M1241100-03 P2 shows the intersection alignment and geometry required to facilitate the ultimate Hardys Road / Pound Road intersection. Pound Road is to function as a two-way, 6 lane arterial road with Hardys Road (west of Pound Road) functioning as a two-way, four lane arterial road. To the east of Pound Road, Hardys Road provides direct access to the DFC site and is downgraded to a two-way, two lane road with flaring at the intersection to accommodate turning lanes / slip lanes. The provision for double right turn lanes is shown on the north approach (from north to west) with the potential to increase the single right turn to double right turn on the west approach and south approach.

A review of the horizontal alignment of Pound Road at this location indicates a minimum radius of 406m (western kerb/northbound carriageway). Austroads Guide to Road Design Part 3 : Geometric Design, Figure 7.7 indicates that for a design speed of 80km/hr curves of between 300m and 400m are acceptable based on superelevations of between 4% and 3% respectively.

On this basis, the current alignment as conceptually shown is satisfactory.

Intersection of Hardys Road / Pound Road (unmade)

The intersection of Hardys Road / Pound Road has been reviewed based on the scenario of Hardys Road being constructed while Pound Road remains an unmade road to provide direct access to the DFC site. In this scenario, it is recommended that Hardys Road be prioritised over Pound Road as shown in the attached drawing 13M1241100-04 P2. Pound Road is staggered to suit the road reservation and alignment. No turn lanes are required given the limited traffic volumes anticipated along Pound Road in the initial scenario.

Intersection of Hardys Road / Pound Road (roundabout)

The intersection of Hardys Road / Pound Road has also been reviewed based on the scenario of both Hardys Road and Pound Road are constructed, allowing direct access to The DFC site via a roundabout control as shown in drawing 13M1241100-05 P2. This roundabout has been designed with one circulating lane and caters for all vehicles up to and including 19m Semi-trailers.

Due to the available road reserve, the roundabout has been designed in accordance with desirable minimum guidelines based on a proposed approach speed of 70km/h.

PLOTTED BY : Anthony Dell'Isola
 ON 6/05/2013 AT 2:27:32 PM

AMENDMENTS						
ISSUE	DATE	DESCRIPTION	BY	CHK.	APP.	
P2	9.11.12	ADDED CROSS-SECTION, MINOR AMENDMENTS	A.Y.	A.D.	P.J.M.	
P1	7.11.12	INITIAL ISSUE	A.Y.	A.D.	P.J.M.	

GENERAL NOTES						
1. ALL DIMENSIONS AND RADII ARE IN METRES AND ARE TO THE FACE OF KERB AND CHANNEL.						
2. BASE INFORMATION OBTAINED FROM BEVERIDGE WILLIAMS.						
3. GTA CONSULTANTS DOES NOT TAKE ANY RESPONSIBILITY FOR THE ACCURACY OF THE EXISTING CONDITIONS BASE ON WHICH THE SETOUT DETAIL IS BASED. PRIOR TO COMMENCEMENT OF CONSTRUCTION, THE EXISTING CONDITIONS INCLUDING UNDERGROUND SERVICES SHOULD BE VERIFIED ON SITE.						
4. DECLARED MAIN ROAD - BERWICK - CRANBOURNE ROAD - SPEED ZONE 80KM/H						
LOCAL ROAD - LINSELL BOULEVARD - SPEED ZONE 70KM/H						
LOCAL ROAD - HARDYS ROAD - SPEED ZONE 50KM/H						

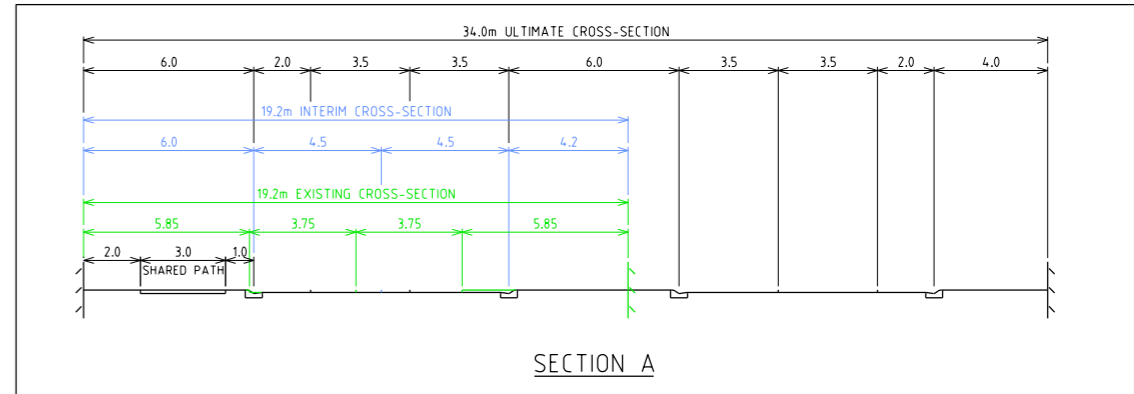
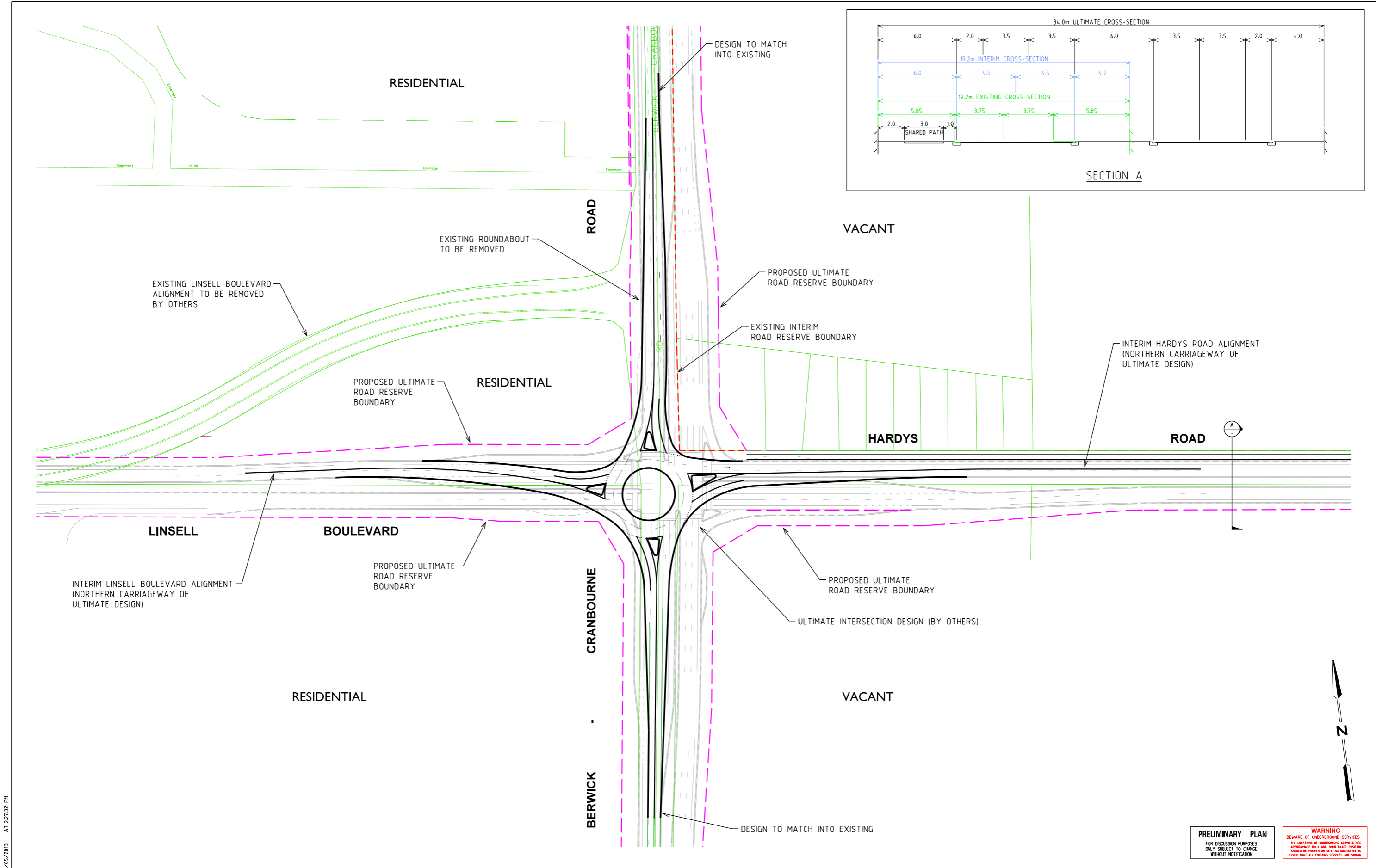
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DRAWN A.YIANNOUDES	DRAFTING CHECK
APPROVED BY	DATE APPROVED FOR INITIAL ISSUE 7 NOVEMBER '12
SCALE A3 Ver.	CAD FILE NO. 13M1241100-01P2.dgn



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CLIENT DENNIS FAMILY CORPORATION	
INTERIM ROUNDABOUT DESIGN BERWICK - CRANBOURNE ROAD, LINSELL BOULEVARD AND HARDYS ROAD CLYDE NORTH CONCEPT LAYOUT	
MELWAY REF. 134/K3	DRAWING NO. 13M1241100-01
ISSUE P2	



WARNING
 BEWARE OF UNDERGROUND SERVICES
 THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE. ONLY A TRUE EXACT POSITION SHOULD BE PROVIDED ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

PRELIMINARY PLAN
 FOR DISCUSSION PURPOSES
 ONLY. SUBJECT TO CHANGE
 WITHOUT NOTIFICATION.

ON 6/05/2013 AT 2:30:00 PM
PLOTTED BY : Anthony Dell'Isola

AMENDMENTS				
P1	9.11.12	INITIAL ISSUE	A.Y.	A.D.
ISSUE	DATE	DESCRIPTION	BY	CHK.

GENERAL NOTES				
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3. GTA CONSULTANTS DOES NOT TAKE ANY RESPONSIBILITY FOR THE ACCURACY OF THE EXISTING CONDITIONS BASE ON WHICH THE SETOUT DETAIL IS BASED. PRIOR TO COMMENCEMENT OF CONSTRUCTION, THE EXISTING CONDITIONS INCLUDING UNDERGROUND SERVICES SHOULD BE VERIFIED ON SITE.				
4. DECLARED MAIN ROAD - BERWICK - CRANBOURNE ROAD - SPEED ZONE 80KM/H				
LOCAL ROAD - LINSSELL BOULEVARD - SPEED ZONE 70KM/H				
LOCAL ROAD - HARDYS ROAD - SPEED ZONE 50KM/H				

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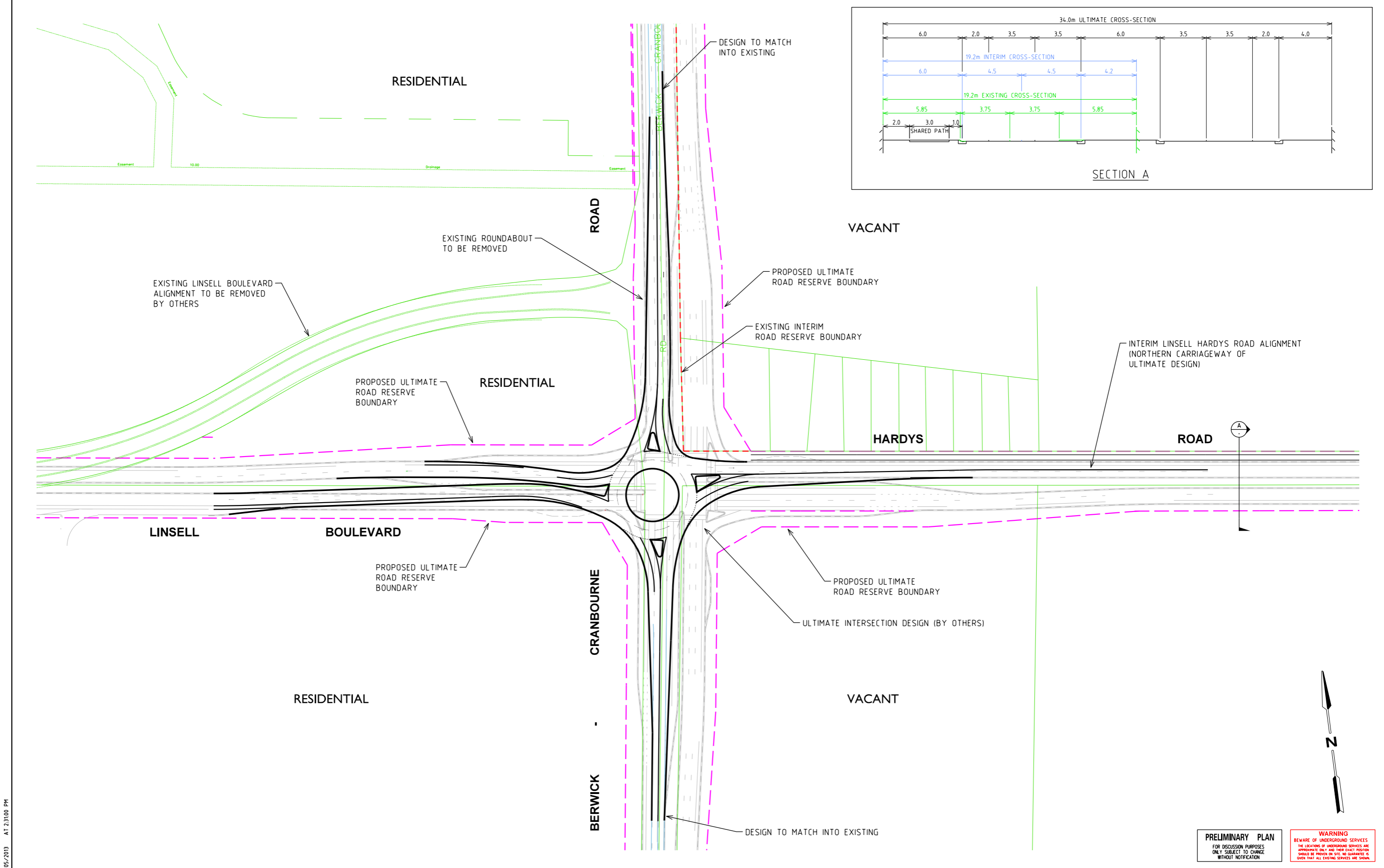


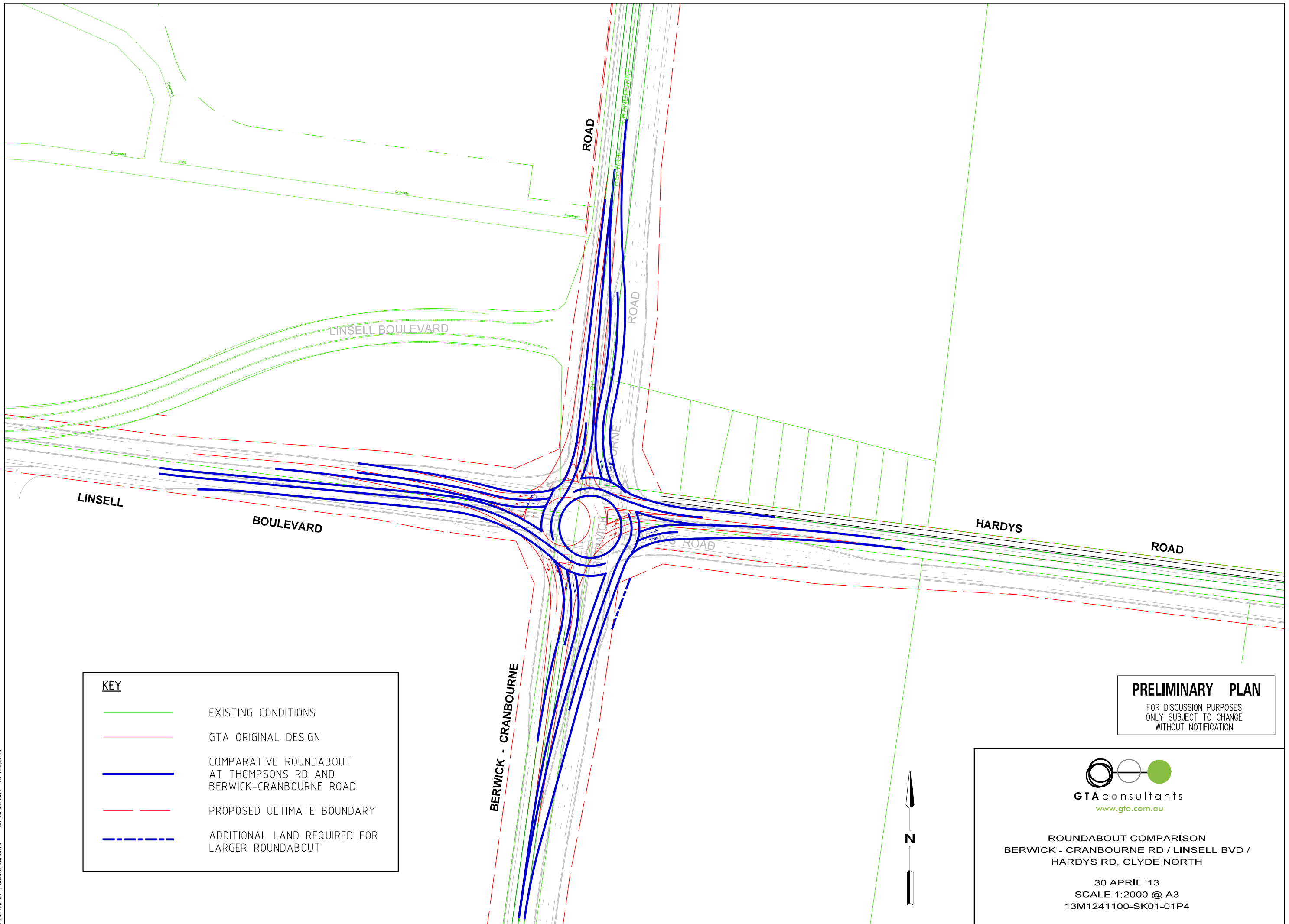
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CLIENT DENNIS FAMILY CORPORATION	
INTERIM ROUNDABOUT DESIGN BERWICK - CRANBOURNE ROAD, LINSSELL BOULEVARD (DUPLICATED) AND HARDYS ROAD, CLYDE NORTH CONCEPT LAYOUT	
MELWAY REF. 134/K3	DRAWING NO. 13M1241100-02
ISSUE P1	





PRELIMINARY PLAN

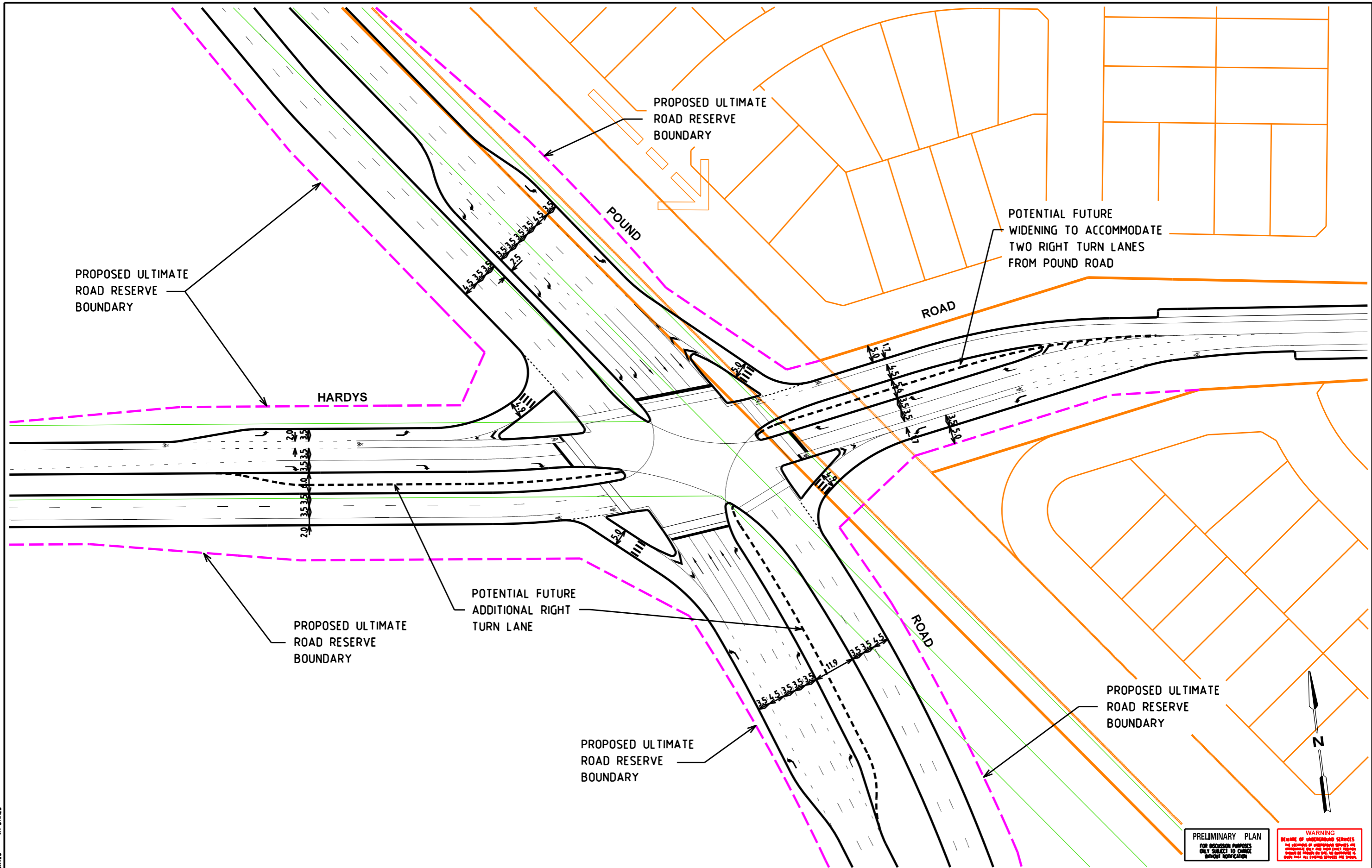
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ROUNDAABOUT COMPARISON
BERWICK - CRANBOURNE RD / LINSSELL BVD /
HARDYS RD, CLYDE NORTH

30 APRIL '13
SCALE 1:2000 @ A3
13M1241100-SK01-01P4



AMENDMENTS			
PI	20.04.13	HARDYS ROAD EAST REALIGNED	R.E. A.D. P.J.M.
PI	13.11.12	INITIAL ISSUE	R.E. A.D. P.J.M.
ISSUE	DATE	DESCRIPTION	BY CHK. APP.

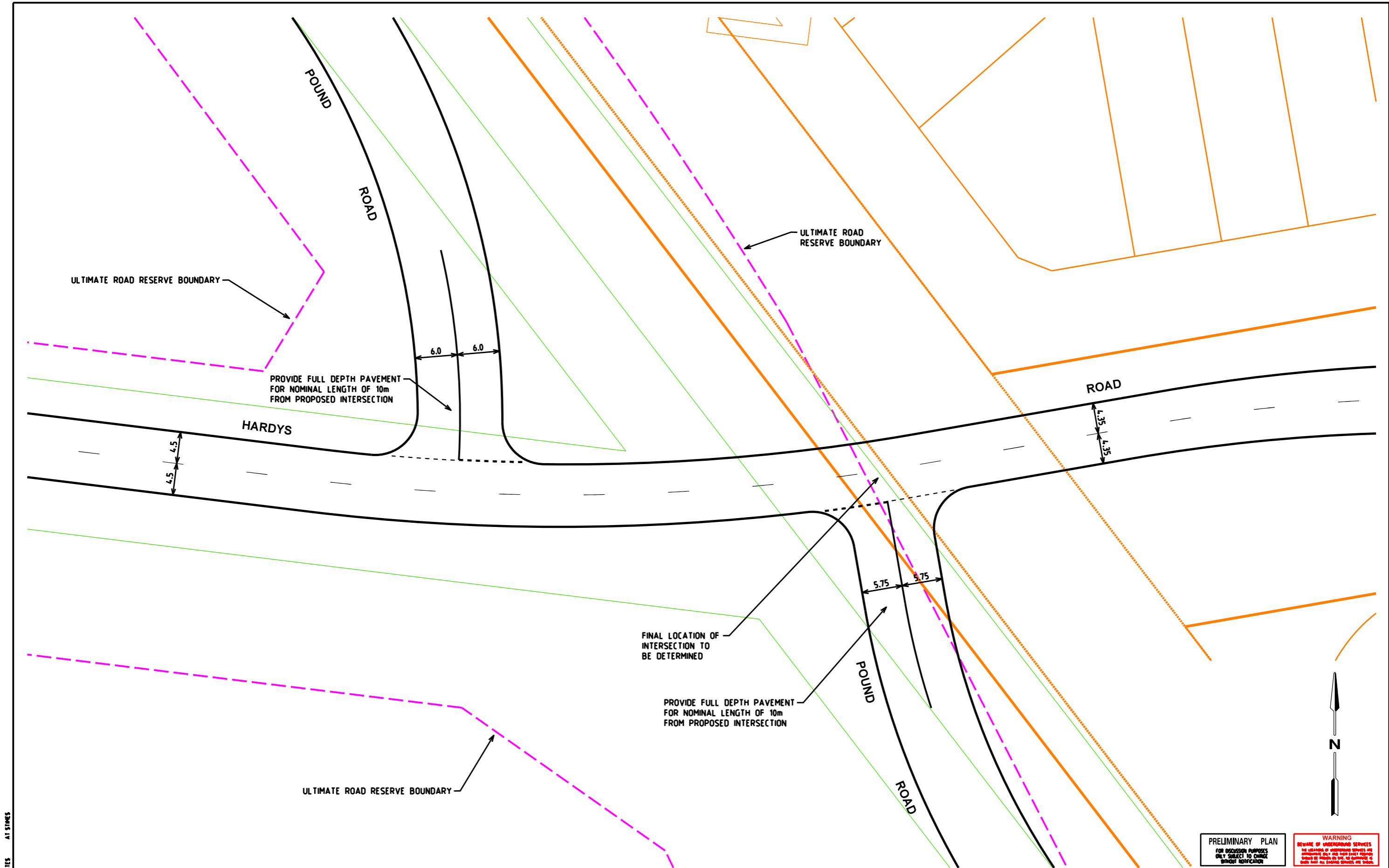
GENERAL NOTES			
1.	ALL DIMENSIONS AND RADII ARE IN METRES AND ARE TO THE FACE OF KERB AND CHANNEL.		
2.	BASE INFORMATION OBTAINED FROM BEVERIDGE WILLIAMS.		
3.	GTA CONSULTANTS DOES NOT TAKE ANY RESPONSIBILITY FOR THE ACCURACY OF THE EXISTING CONDITIONS BASE ON WHICH THE SETOUT DETAIL IS BASED. PRIOR TO COMMENCEMENT OF CONSTRUCTION, THE EXISTING CONDITIONS INCLUDING UNDERGROUND SERVICES SHOULD BE VERIFIED ON SITE.		
4.	DECLARED MAIN ROAD - POUND ROAD - SPEED ZONE 80KM/H LOCAL ROAD - HARDYS ROAD - SPEED ZONE 70KM/H		

DESIGNED R. CARBARNES	DESIGN CHECK
DRAWN R. CARBARNES	DRAFTING CHECK
APPROVED BY	DATE APPROVED FOR INITIAL ISSUE 13 NOVEMBER '12
SCALE A3 1:1000	CAD FILE NO. SFILES

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CLIENT DENNIS FAMILY CORPORATION	MELWAY REF. 134/K3	DRAWING NO. 13M1241100-03	ISSUE P2
ULTIMATE INTERSECTION DESIGN POUND ROAD / HARDYS ROAD CLYDE NORTH			
CONCEPT LAYOUT			



ON SCALES AT TIMES
PLOTTED BY : SUSANNAH

AMENDMENTS				
P2	24.04.13	INTERSECTION DESIGN ALTERED TO STAGGERED POUND ROAD APPROACH	A.Y.	A.D.
P1	12.11.12	INITIAL ISSUE	A.Y.	A.D.
ISSUE	DATE	DESCRIPTION	BY	CHK.

GENERAL NOTES

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APPROVED BY	DATE APPROVED FOR INITIAL ISSUE
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CLIENT DENNIS FAMILY CORPORATION

INTERIM INTERSECTION DESIGN
POUND ROAD/HARDYS ROAD
CLYDE NORTH

CONCEPT LAYOUT

MELWAY REF. 135/H4
DRAWING NO. 13M1241100-04
ISSUE P2

PLOTTED BY : Eryne Sandouget
 ON 5/6/2013 AT 25:00 PM

AMENDMENTS						
P2	06.05.13	AMEND TO SINGLE LANE ROUNDABOUT		E.S.	A.M.D.	P.M.
P1	24.04.13	INITIAL ISSUE		A.M.D.	P.D.	P.M.
ISSUE	DATE	DESCRIPTION		BY	CHK.	APP.

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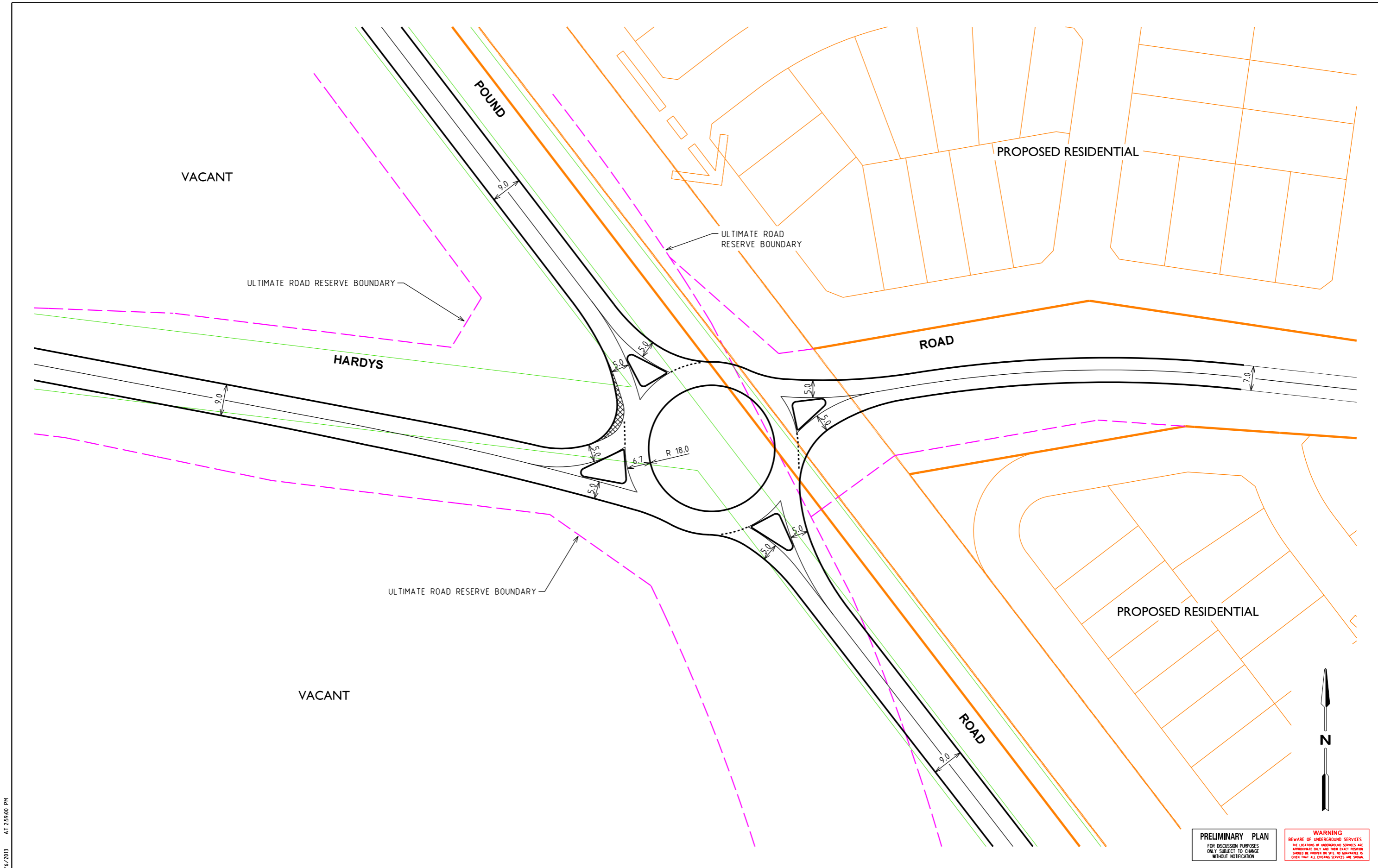
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DRAWN	A.DELL'ISOLA	DRAFTING CHECK	
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CLIENT	DENNIS FAMILY CORPORATION		
	INTERIM INTERSECTION DESIGN POUND ROAD/HARDYS ROAD CLYDE NORTH		
	CONCEPT LAYOUT - INTERIM ROUNDABOUT		
MELWAY REF.	DRAWING NO.	ISSUE	
135/H4	13M1241100-05	P2	

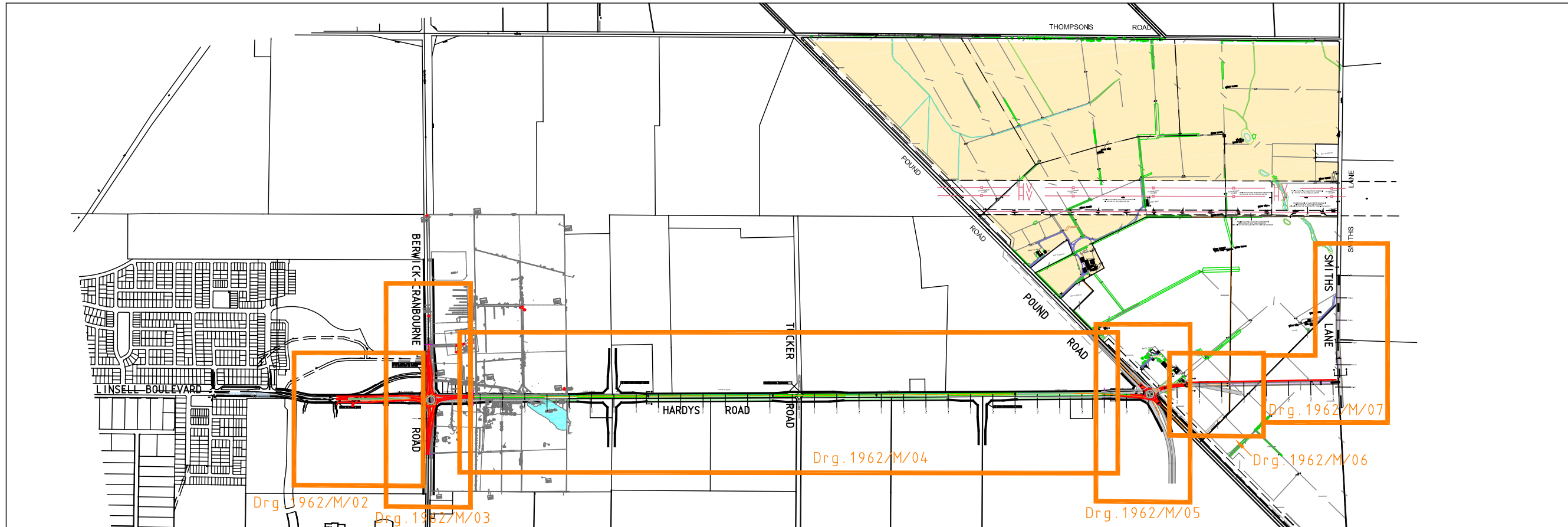


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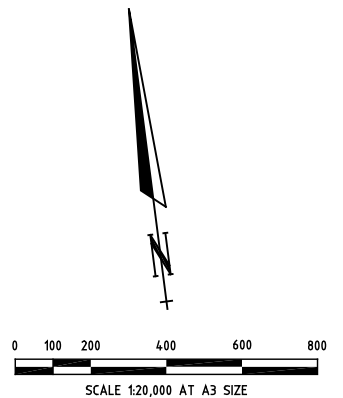
HARDYS ROAD, CLYDE NORTH

CITY OF CASEY



DRAWING INDEX

1962/M/01	DCP COSTINGS COVER SHEET 1
1962/M/02	DCP COSTINGS SHEET 2 OF 7
1962/M/03	DCP COSTINGS SHEET 3 OF 7
1962/M/04	DCP COSTINGS SHEET 4 OF 7
1962/M/05	DCP COSTINGS SHEET 5 OF 7
1962/M/06	DCP COSTINGS SHEET 6 OF 7
1962/M/07	DCP COSTINGS SHEET 7 OF 7



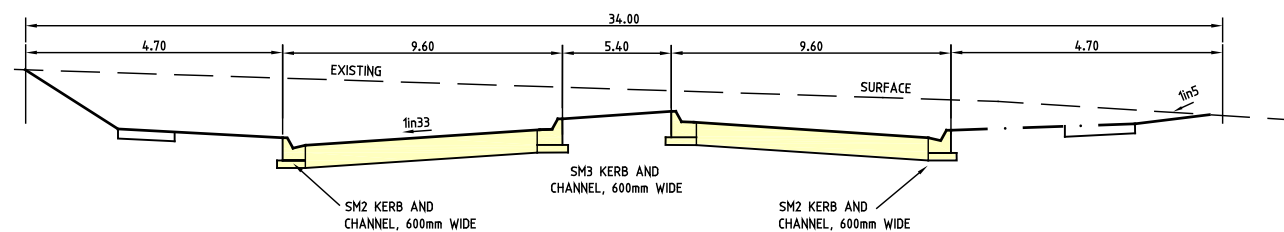
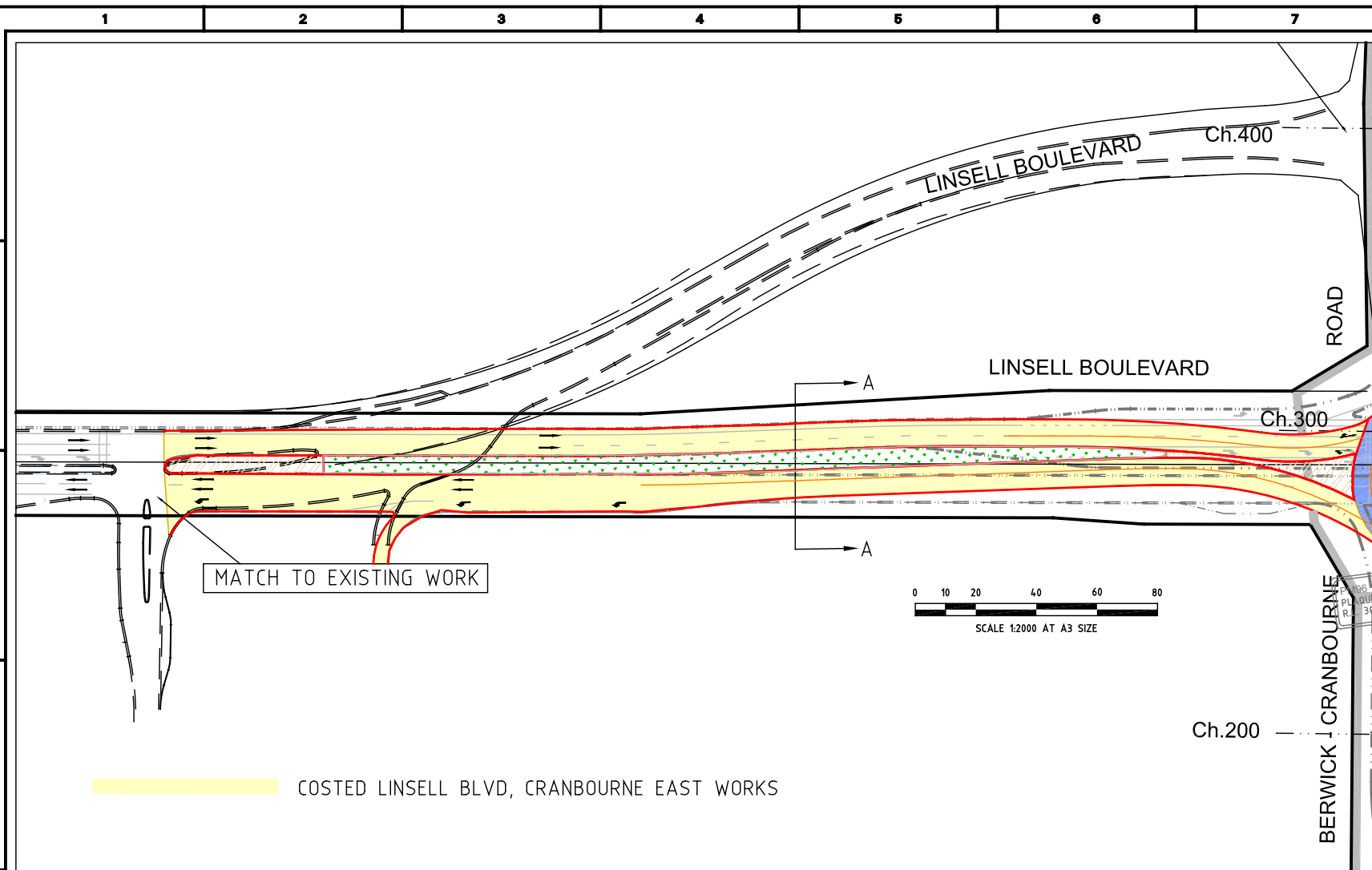
REF.	REVISION	DATE	APPD.
P2	COST UPDATED	16-04-13	T.D
P1	RE-ISSUED ADDRESSING DFC COMMENTS	12-12-12	T.D

DPM
DENNIS, PRICE & MILLER PTY. LTD.
A.C.N. 006 550 803
CONSULTING CIVIL ENGINEERS & PROJECT MANAGERS
22 Business Park Drive Notting Hill 3168
Telephone: (03) 9538 5000, Facsimile: (03) 9538 5050

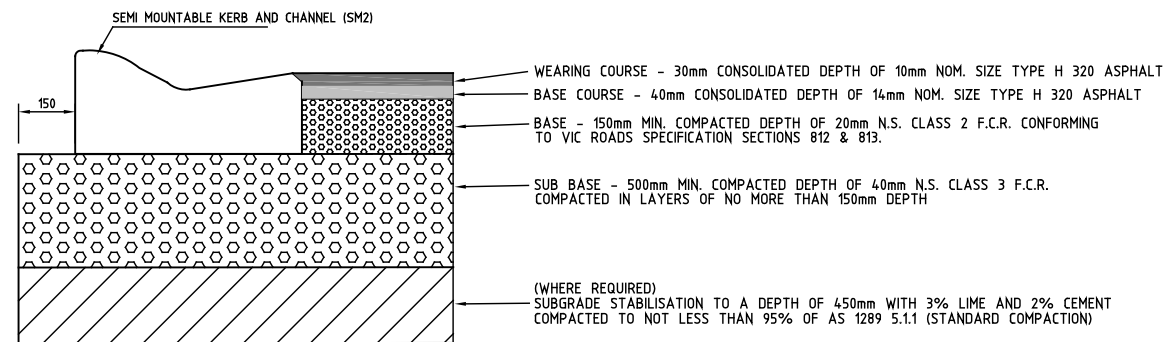
DRAWN: J. Ng
DESIGNED:
CHECKED: L.Papazois
AUTHORISED: T.Davoli
DATE: Dec, 2012

MUNICIPALITY: **CITY OF CASEY**
PROJECT: **HARDYS ROAD**
DETAILS: **DCP COSTINGS COVER SHEET**

SCALE 1:2000
LEVEL DATUM AHD
SHEET 1 OF 7
DRAWING No. **1962/M/01**



LINSELL BLVD - TYPICAL CROSS SECTION A-A



PAVEMENT DETAIL - LINSELL BOULEVARD

N.T.S.
TOTAL MINIMUM DEPTH 720mm
(DESIGN MIN. EQUILIBRIUM CBR=5)

PRELIMINARY ESTIMATE FOR THE CONSTRUCTION OF LINSSELL BOULEVARD 2 No. CARRIAGEWAYS'S APPROX 380m OF 2 No. CARRIAGEWAYS (9.0m F/F) (WEST OF BERWICK CRANBOURNE ROAD ROUNDABOUT)				Date:	SCHEDULE 'A' May, 2013
ITEM	DESCRIPTION OF WORK (EXCLUDES INTERSECTION WORKS)	QTY	UNT	UNIT RATE \$	AMOUNT \$
1.00	BULK EARTHWORKS				
	Cut / Fill:	9,400	cu m	14.00	131,600.00
2.00	EXISTING PAVEMENT WORKS (Excludes existing pavement unaffected by works)				
(a)	Saw cut Existing Pavement	120	lm	15.00	1,800.00
(b)	Breakout & removal of redundant paving (New Road Area Only)	2,510	sq m	39.50	99,145.00
3.00	DENSITY TESTING	48	No	208.00	9,984.00
4.00	UNSATABLE SUBGRADE (Provisional)				
(a)	40mm NDCR	1,300	cu m	76.20	99,060.00
(b)	Selected Fill	500	cu m	32.25	16,125.00
5.00	CONCRETE WORKS				
(a)	-SM2 & SM3	1,706	lm	39.15	66,789.90
6.00	CONCRETE PAVING (Including crushed rock bedding)				
(a)	- 125mm thick reinforced - 3.0m Shared Pathway (Two Sides)	2,223	sq m	45.20	100,479.60
(b)	- 200mm thick reinforced - Median	820	sq m	105.70	86,674.00
(c)	Concrete cylinder strength tests - Provisional Qty	20	No	207.00	4,140.00
7.00	PAVEMENT WORKS				
(a)	Subgrade Stabilisation - 450mm Depth	8,620	sq m	23.65	203,863.00
(b)	Sub Base Layer - 500mm Depth	8,620	sq m	45.15	389,193.00
(c)	Base Layer - 150mm Depth	7,340	sq m	13.81	101,365.40
(d)	Asphalt Layers - 70mm Depth	7,340	sq m	31.30	229,742.00
8.00	DRAINAGE PIPES	540	lm		62,730.00
9.00	DRAINAGE PITS	15	No		31,090.00
10.00	CONNECTIONS TO PROPOSED / EXISTING	1	No	566.00	566.00
11.00	AGRICULTURAL DRAINS	1,706	lm	14.42	24,600.52
12.00	LINE MARKING & SIGNAGE	1	Item	15,000.00	15,000.00
13.00	ELECTRICAL INSTALLATION WORKS				
(a)	Street Lighting Conduits	450	lm	18.55	8,347.50
(b)	Lighting Service Pit Installation	8	No	139.00	1,112.00
14.00	TRAFFIC MANAGEMENT	1	Item	30,000.00	30,000.00
15.00	ENVIRONMENTAL CONTROLS	1	Item	6,900.00	6,900.00
16.00	SITE FACILITIES	1	Item	22,253.00	22,253.00
17.00	SITE SECURITY FENCE	840	lm	10.30	8,652.00
18.00	STREET LIGHTING (Incl Supply & Installation of Cabling & 8 No. Lights)	1	Item	60,000.00	60,000.00
	ESTIMATED CONSTRUCTION COST:				1,811,211.92
19.00	CONTINGENCY SUM 20%	1	Item	363,000.00	363,000.00
20.00	COUNCIL CHECKING & SUPERVISION FEES	1	Item	58,870.00	58,870.00
21.00	ENGINEERING FEES:	1	Item	155,770.00	155,770.00
	TOTAL ESTIMATED COST:				2,388,851.92
	ADOPTED COST (Excl G.S.T.):				2,390,000.00

The information provided on this plan should be considered as "Preliminary" and used for discussion purposes only.

The information is subject to variation following survey, geotechnical investigation, design and formal discussions with the relevant authorities.

Pavement compositions are based on a recently constructed section of Linsell Boulevard.

No allowance has been made for the relocation of existing services.

The cost associated with drainage works only allows for storm water flows from the section of pavement works shown on the plan. No allowance has been made for external catchments.

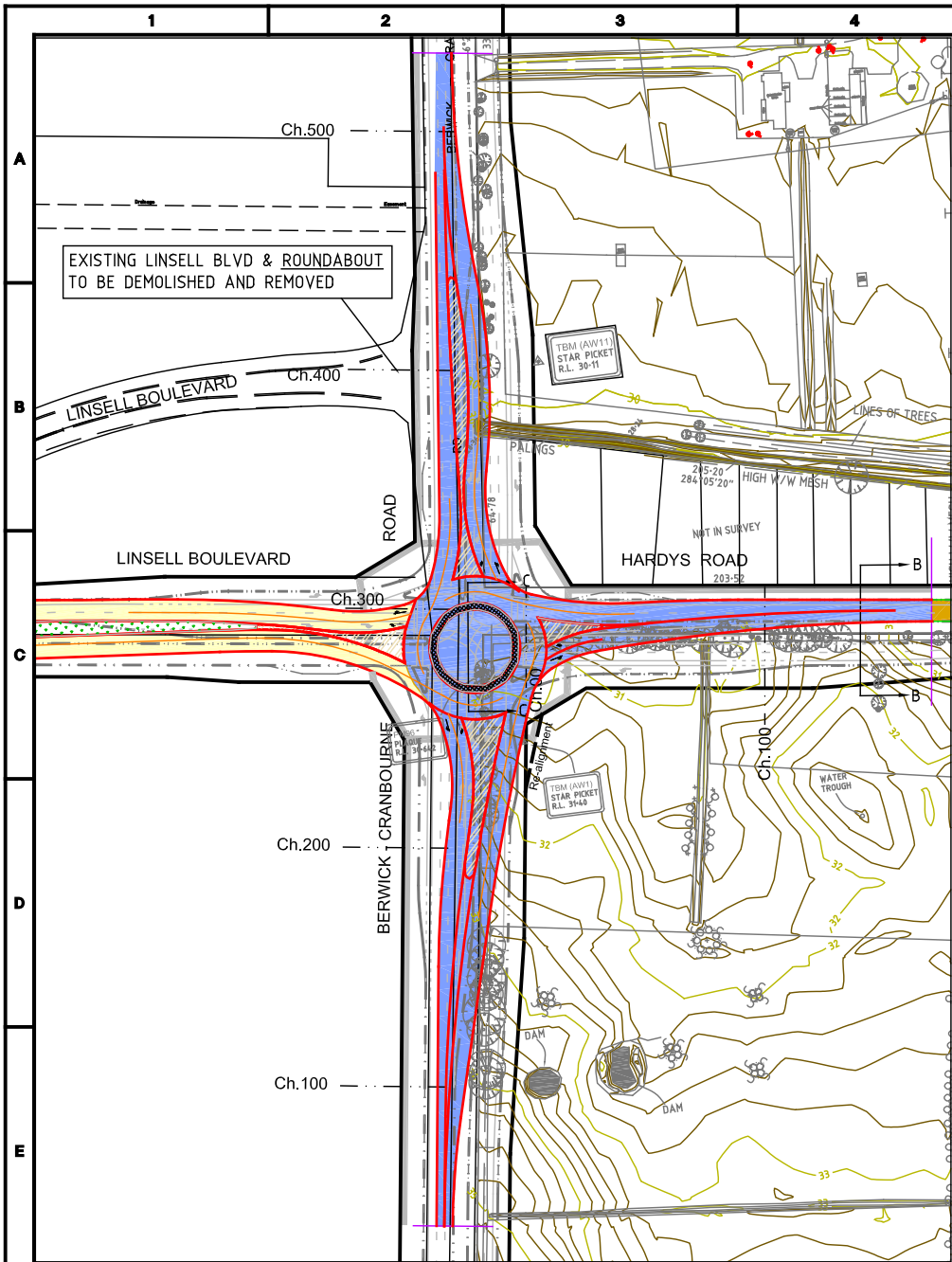
No allowance has been made for storm water quality works.

No allowance has been made for landscaping / street trees within the road reserve.

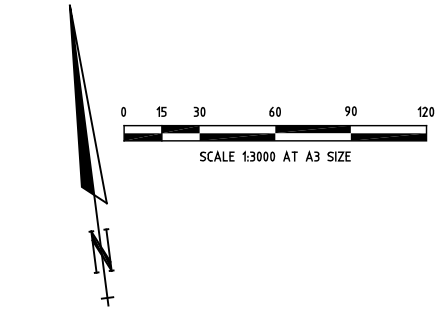
No allowance has been made for the removal and reinstatement of the existing section of Linsell Boulevard west of the roundabout.

Construction rates are based on current sub-divisional works in the Casey area. All rates exclude G.S.T.

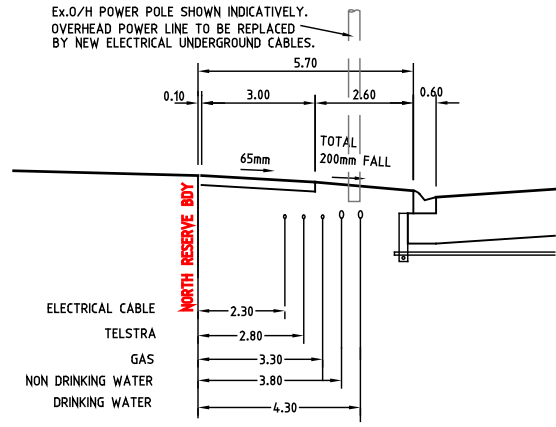
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COSTED INTERSECTION WORKS BERWICK- CRANBOURNE/HARDYS ROADS

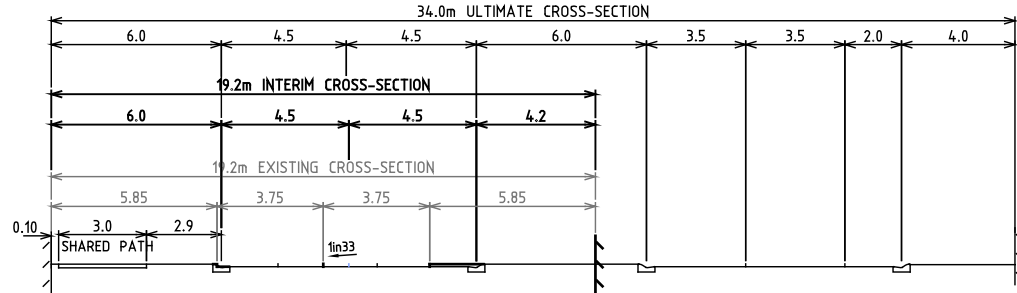


The information provided on this plan should be considered as "Preliminary" and used for discussion purposes only. The information is subject to variation following survey, geotechnical investigation, design and formal discussions with the relevant authorities. Pavement compositions are based on a recently constructed section of Linsell Boulevard. No allowance has been made for the relocation of existing services. The cost associated with drainage works only allows for storm water flows from the section of pavement works shown on the plan. No allowance has been made for external catchments. No allowance has been made for storm water quality works. No allowance has been made for landscaping / street trees within the road reserve. No allowance has been made for the removal and reinstatement of the existing section of Linsell Boulevard west of the roundabout. Construction rates are based on current sub-divisional works in the Casey area. All rates exclude G.S.T.

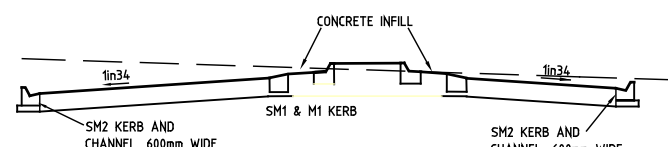


SERVICES OFFSET DETAIL

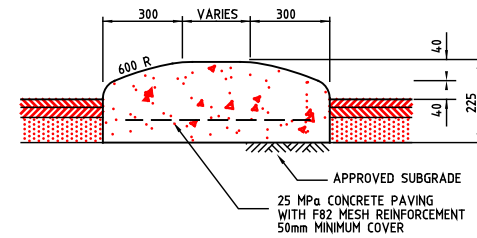
NTS



HARDYS ROAD - TYPICAL CROSS SECTION B-B

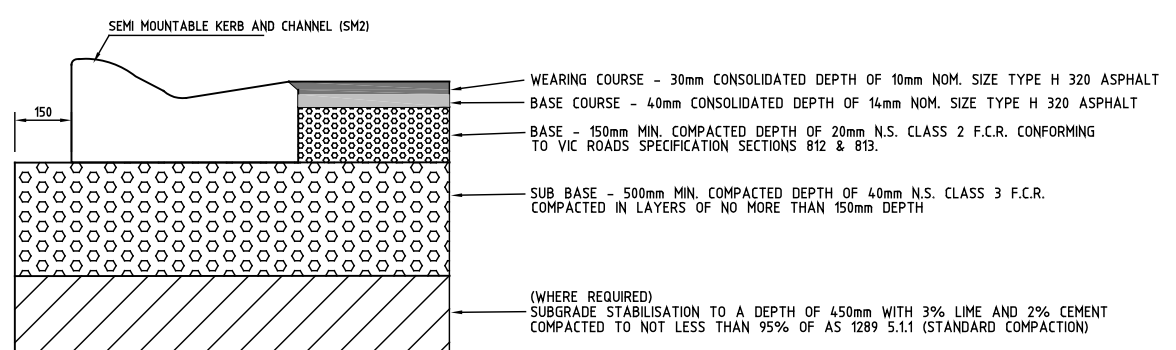


TYPICAL CROSS SECTION C-C



SPLITTER ISLAND DETAIL

NTS



PAVEMENT DETAIL - BERWICK CRANBOURNE ROAD & HARDYS ROAD

N.T.S.

PRELIMINARY ESTIMATE FOR THE CONSTRUCTION OF INTERSECTION WORKS (HARDY'S ROAD & BERWICK - CRANBOURNE ROAD)				SCHEDULE 'A' Date: May, 2013	
ITEM	DESCRIPTION OF WORK	QTY	UNT	UNIT RATE \$	AMOUNT \$
1.00	BULK EARTHWORKS Cut/Fill:	12,000	cu m	14.00	168,000.00
2.00	EXISTING PAVEMENT WORKS (a) Saw cut Existing Pavement	550	lm	15.00	8,250.00
	(b) Breakout & removal of existing paving in Berwick Cranbourne Rd (Excludes Existing Linsell Blvd west of existing Roundabout)	6,355	sq m	39.50	251,022.50
3.00	DENSITY TESTING	63	No	208.00	13,104.00
4.00	UNSUITABLE SUBGRADE (Provisional)				
	(a) 40mm NDCR	1,900	cu m	76.20	144,780.00
	(b) Selected Fill	500	cu m	32.25	16,125.00
5.00	CONCRETE WORKS				
	(a) -SM2 & SM3	1,200	lm	39.15	46,980.00
	(b) -SM3 (Islands & Roadabout)	615	lm	39.15	24,077.25
	(c) -M1 (Roundabout)	100	lm	30.95	3,095.00
6.00	CONCRETE PAVING (Including crushed rock bedding)				
	(a) - 125mm thick reinforced - 3.0m Shared Pathway (North & West Side Only)	2,360	sq m	45.20	106,672.00
	(b) - 200mm thick reinforced Concrete (Roundabout Apron & Islands)	1,480	sq m	105.70	156,436.00
	(c) Concrete cylinder strength tests - Provisional Qty	20	No	207.00	4,140.00
7.00	PAVEMENT WORKS				
	(a) Subgrade Stabilisation - 450mm Depth	12,502	sq m	23.65	295,672.30
	(b) Sub Base Layer - 500mm Depth	12,502	sq m	45.15	564,465.30
	(c) Base Layer - 150mm Depth	9,750	sq m	13.81	134,647.50
	(d) Asphalt Layers - 70mm Depth (Includes Re-sheet Area)	9,750	sq m	31.30	305,175.00
8.00	DRAINAGE PIPES (Road Drainage Only)	884	lm		248,690.00
9.00	DRAINAGE PITS (Road Drainage Only)	33	No		68,750.00
10.00	CONNECTIONS TO PROPOSED / EXISTING	2	No	3,500.00	7,000.00
11.00	AGRICULTURAL DRAINS	1,915	lm	14.42	27,614.30
12.00	LINE MARKING & SIGNAGE	1	Item	20,370.00	20,370.00
13.00	ELECTRICAL INSTALLATION WORKS				
	(a) Street Lighting Conduits	550	lm	18.55	10,202.50
	(b) Lighting Service Pit Installation	12	No	139.00	1,668.00
	(c) Electrical Civil Works - incl installation of H.V & L.V conduits. (Relocation Works)	1	Item	60,000.00	60,000.00
	(d) U/G H.V. Electricity Cables incl switch cabinets, kiosk substations & removal of O/H cables	1	Item	170,000.00	170,000.00
14.00	TRAFFIC MANAGEMENT	1	Item	100,000.00	100,000.00
15.00	ENVIRONMENTAL CONTROLS	1	Item	6,900.00	6,900.00
16.00	SITE FACILITIES	1	Item	22,253.00	22,253.00
17.00	SITE SECURITY FENCE	750	lm	10.30	7,725.00
18.00	STREET LIGHTING (Incl Supply & Installation of Cabling & 12 No. Lights)	1	Item	72,000.00	72,000.00
ESTIMATED CONSTRUCTION COST:					3,065,814.65
19.00	CONTINGENCY SUM 20%	1	Item	614,000.00	614,000.00
20.00	COUNCIL CHECKING & SUPERVISION FEES	1	Item	99,640.00	99,640.00
21.00	ENGINEERING FEES:	1	Item	263,670.00	263,670.00
TOTAL ESTIMATED COST:					4,043,124.65
ADOPTED COST (Excl G.S.T.):					4,050,000.00

P4	COSTS UPDATED	16-04-13	T.D
P3	ROUNDBOUT REVISD AND COST UPDATED	15-04-13	T.D
P2	SERVICES OFFSET DETAIL ADDED, BIKE LANE REMOVED, 3m PATH MOVED 0.1m FROM NORTH BDY.	03-04-13	T.D
P1	RE-ISSUED ADDRESSING DFC COMMENTS	12-12-12	T.D
REF.	REVISION	DATE	APPD.



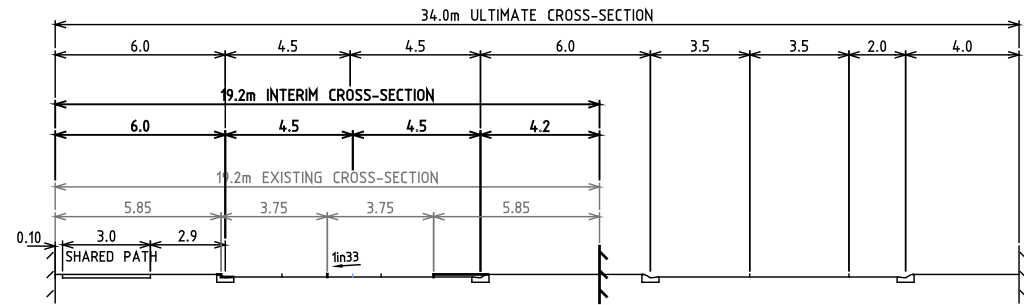
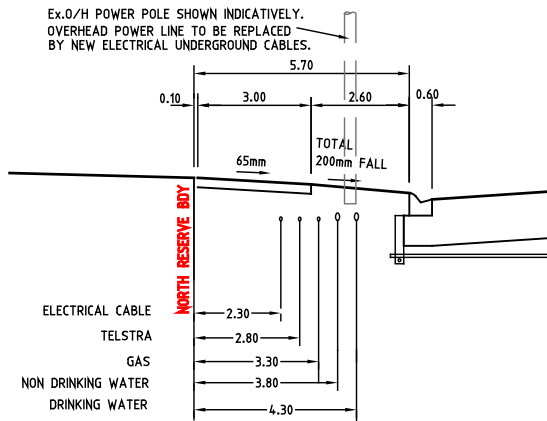
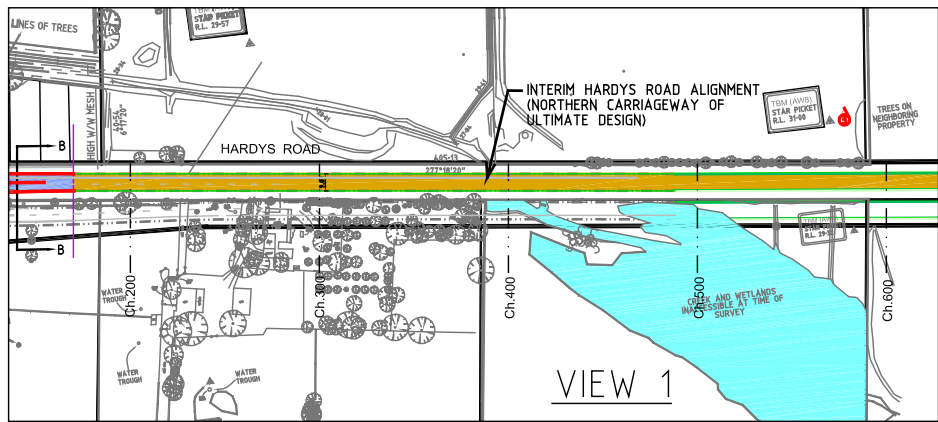
DENNIS, PRICE & MILLER PTY. LTD.
A.C.N. 006 550 803
CONSULTING CIVIL ENGINEERS & PROJECT MANAGERS
22 Business Park Drive Notting Hill 3168
Telephone: (03) 9538 5000, Facsimile: (03) 9538 5050

DRAWN: J. Ng
DESIGNED:
CHECKED: L.Papazois
AUTHORISED: T.Davoli
DATE: Dec, 2012

MUNICIPALITY:
PROJECT:
DETAILS:

CITY OF CASEY
HARDYS ROAD
DCP COSTINGS SHEET 3 OF 7

SCALE 1:2000
LEVEL DATUM AHD
SHEET 3 OF 7
DRAWING No.
1962/M/03

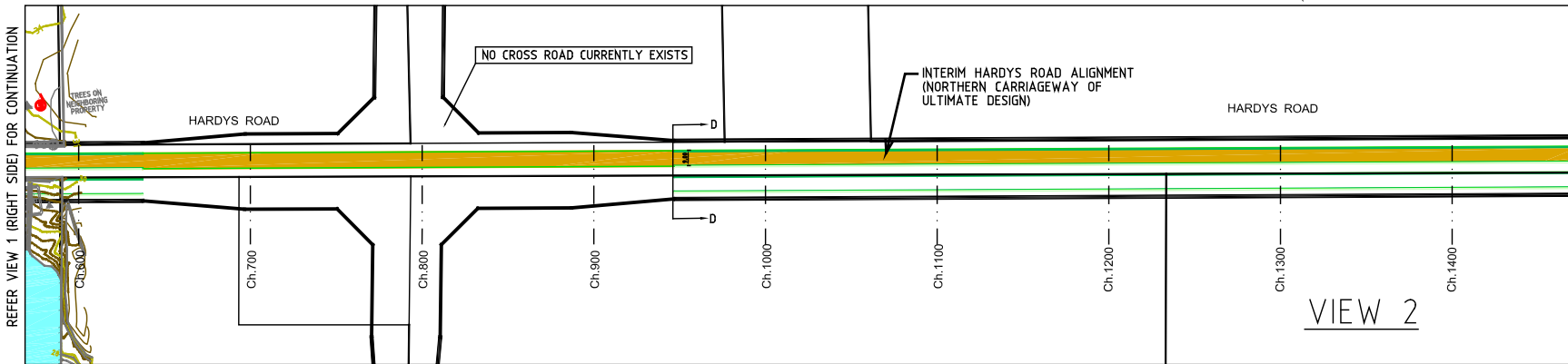


TYPICAL CROSS SECTION D-D

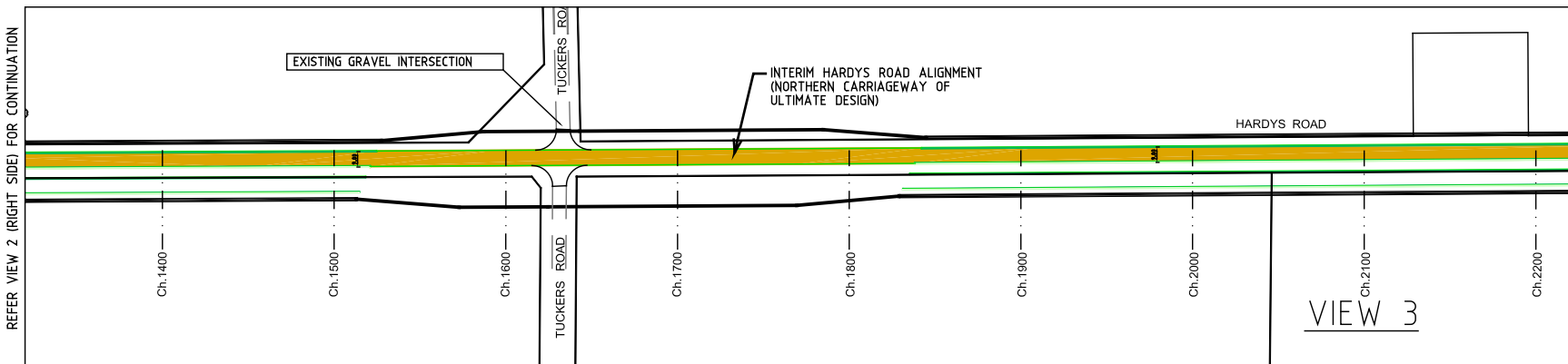
NOTE: REFER TO DRG.No.1962/M/04 FOR PAVEMENT DETAIL

SERVICES OFFSET DETAIL

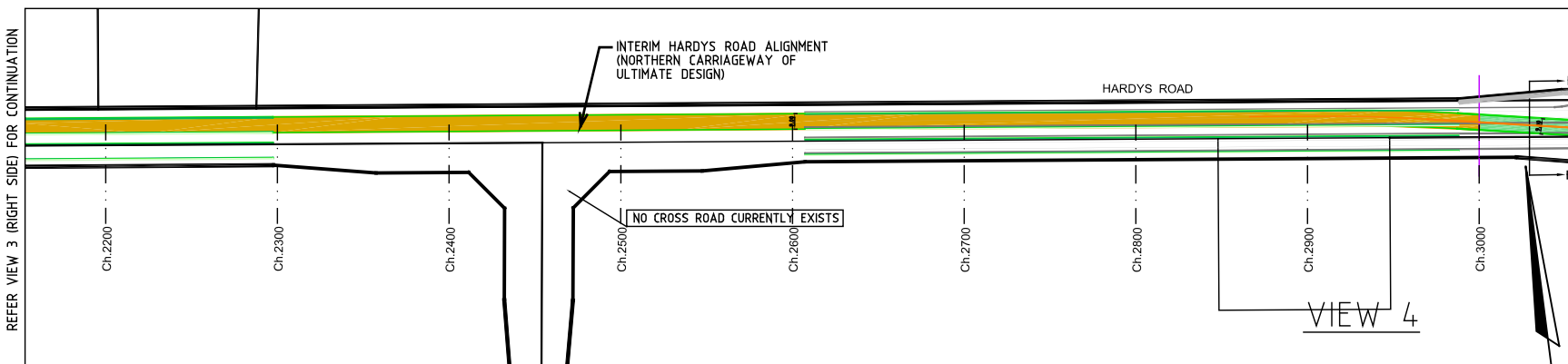
NTS



VIEW 2

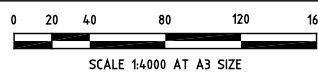


VIEW 3



VIEW 4

COSTED HARDY'S ROAD WORKS



PRELIMINARY ESTIMATE FOR THE CONSTRUCTION OF HARDY'S ROAD NORTHERN CARRIAGEWAY - SECTION 1 (BETWEEN BERWICK CRANBOURNE RD & POUND RD INTERSECTIONS)				SCHEDULE 'A'	
Date: May, 2013					
2,874m OF NORTHERN CARRIAGEWAY (9.0m F/F)					
ITEM	DESCRIPTION OF WORK (EXCLUDES INTERSECTION WORKS)	QTY	UNIT	UNIT RATE \$	AMOUNT \$
1.00	BULK EARTHWORKS				
	Cut / Fill:	46,000	cu m	14.00	644,000.00
2.00	DENSITY TESTING	240	No	208.00	49,920.00
3.00	UNSUITABLE SUBGRADE (Provisional)				
(a)	40mm NDCR	4,270	cu m	76.20	325,374.00
(b)	Selected Fill	1,000	cu m	32.25	32,250.00
4.00	CONCRETE WORKS				
(a)	-SM2 & SM3	5,748	lm	39.15	225,034.20
(b)	Edge Strip	17	lm	45.00	765.00
5.00	CONCRETE PAVING (Including crushed rock bedding)				
(a)	- 125mm thick reinforced - Shared Pathway (One Side)	8,622	sq m	45.20	389,714.40
(b)	Concrete cylinder strength tests - Provisional Qty	60	No	207.00	12,420.00
6.00	PAVEMENT WORKS				
(a)	Subgrade Stabilisation - 450mm Depth	28,453	sq m	23.65	672,913.45
(b)	Sub Base Layer - 500mm Depth	28,453	sq m	45.15	1,284,652.95
(c)	Base Layer - 150mm Depth	24,142	sq m	13.81	333,401.02
(d)	Asphalt Layers - 70mm Depth	24,142	sq m	31.30	755,644.60
7.00	DRAINAGE PIPES	2,800	lm		649,810.00
8.00	DRAINAGE PITS	73	No		131,920.00
9.00	CULVERT CROSSING (Clyde Creek) - 3 No x 3000mm x 1200mm	1	Item	500,000.00	500,000.00
10.00	CONNECTIONS TO PROPOSED / EXISTING	3	No	3,500.00	10,500.00
11.00	AGRICULTURAL DRAINS	5,748	lm	14.42	82,886.16
12.00	LINE MARKING & SIGNAGE	1	Item	25,000.00	25,000.00
13.00	ELECTRICAL INSTALLATION WORKS				
(a)	Street Lighting Conduits	2,874	lm	18.55	53,312.70
(b)	Lighting Service Pit Installation	65	No	139.00	9,035.00
(c)	Electrical Civil Works - incl installation of HV & LV conduits.	2,874	lm		360,000.00
(d)	U/G H.V. Electricity Cables incl switch cabinets, kiosk substations & removal of O/H cables	1	Item	960,000.00	960,000.00
14.00	TRAFFIC MANAGEMENT	1	Item	60,000.00	60,000.00
16.00	ENVIRONMENTAL CONTROLS	1	Item	3,000.00	3,000.00
17.00	SITE FACILITIES	1	Item	22,253.00	22,253.00
18.00	SITE SECURITY FENCE	2,910	lm	10.30	29,973.00
19.00	STREET LIGHTING (Incl Supply & Installation of Cabling & 65 No. Lights)	1	Item	390,000.00	390,000.00
ESTIMATED CONSTRUCTION COST:					8,013,779.48
20.00	CONTINGENCY SUM 20%	1	Item	1,603,000.00	1,603,000.00
21.00	COUNCIL CHECKING & SUPERVISION FEES	1	Item	260,450.00	260,450.00
22.00	ENGINEERING FEES:	1	Item	689,190.00	689,190.00
TOTAL ESTIMATED COST:					10,566,419.48
ADOPTED COST (Excl G.S.T.):					10,570,000.00

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The information is subject to variation following survey, geotechnical investigation, design and formal discussions with the relevant authorities.
Pavement compositions are based on a recently constructed section of Linsell Boulevard and a Typical Connector Street.
No allowance has been made for the relocation of existing services.
The cost associated with drainage works only allows for storm water flows from the section of pavement works shown on the plan. No allowance has been made for external catchments.
No allowance has been made for storm water quality works.
No allowance has been made for landscaping / street trees within the road reserve.
Construction rates are based on current sub-divisional works in the Casey area. All rates exclude G.S.T.

P4	COST UPDATED	16-04-13	T.D
P3	COST UPDATED	15-04-13	T.D
P2	SERVICES OFFSET DETAIL ADDED, BIKE LANE REMOVED, 3m PATH MOVED 0.1m FROM NORTH BDY.	03-04-13	T.D
P1	RE-ISSUED ADDRESSING DFC COMMENTS	12-12-12	T.D
REF.	REVISION	DATE	APPD.

DPM
DENNIS, PRICE & MILLER PTY. LTD.
A.C.N. 006 550 803
CONSULTING CIVIL ENGINEERS & PROJECT MANAGERS
22 Business Park Drive Notting Hill 3168
Telephone: (03) 9538 5000, Facsimile: (03) 9538 5050

DRAWN: J. Ng
DESIGNED:
CHECKED: L.Papazois
AUTHORISED: T.Davoli
DATE: Dec, 2012

MUNICIPALITY: **CITY OF CASEY**
PROJECT: **HARDY'S ROAD**
DETAILS: **DCP COSTINGS SHEET 4 OF 7**

SCALE 1:2000
LEVEL DATUM AHD
SHEET 4 OF 7
DRAWING No.
1962/M/04



N.T.S.

TOTAL MINIMUM DEPTH 720mm
(DESIGN MIN. EQUILIBRIUM CBR=5)



NTS

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No allowance has been made for storm water quality works.

No allowance has been made for landscaping / street trees within the road reserve.

Construction rates are based on current sub-divisional works in the Casey area. All rates exclude G.S.T.

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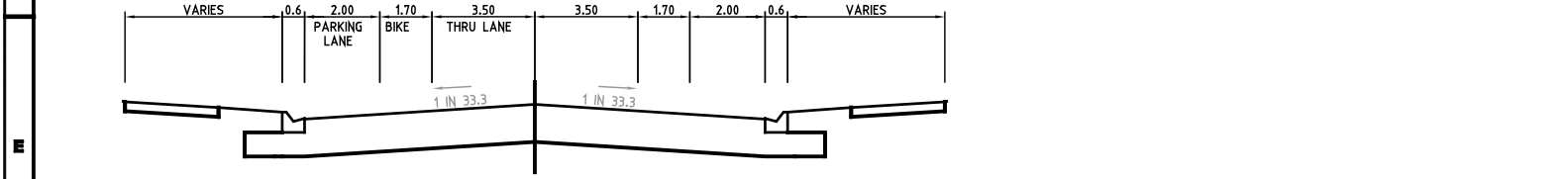
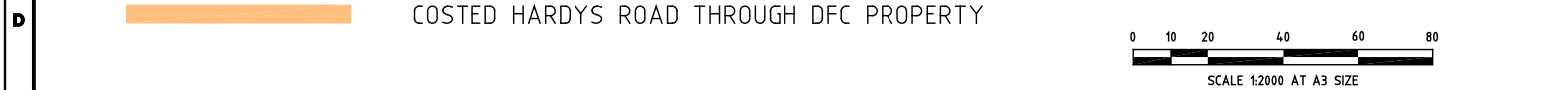
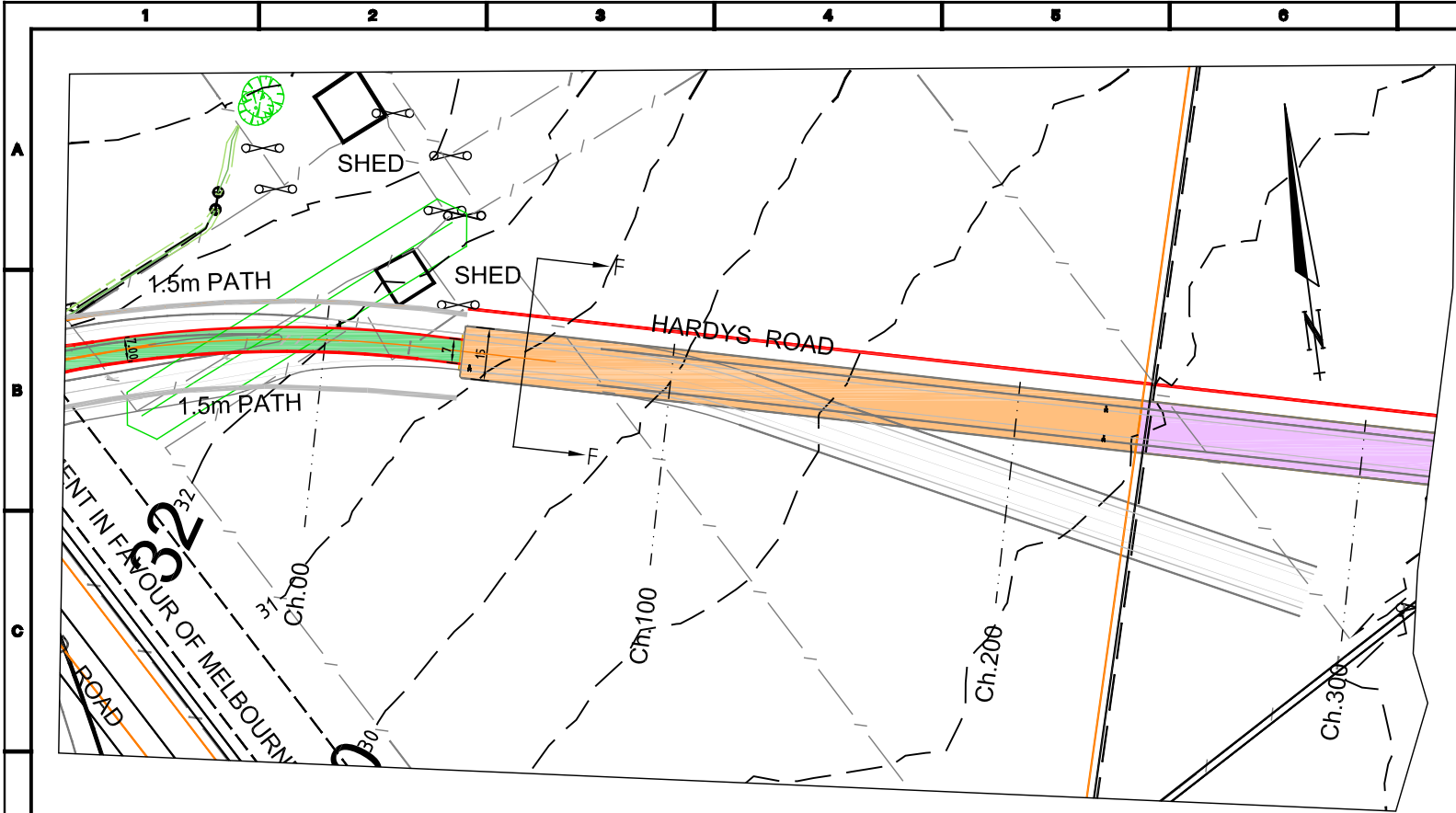
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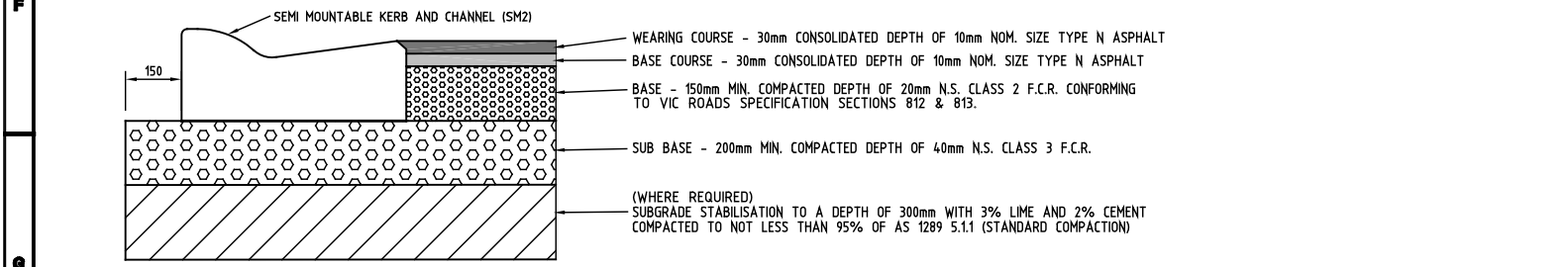
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12



HARDYS ROAD THROUGH DFC PROPERTY
TYPICAL SECTION F-F
N.T.S.



PAVEMENT DETAIL - HARDYS ROAD THROUGH DFC PROPERTY
N.T.S.
TOTAL MINIMUM DEPTH 410mm
(DESIGN MIN. EQUILIBRIUM CBR=5)

PRELIMINARY ESTIMATE FOR THE CONSTRUCTION OF CONNECTOR ROAD THROUGH DFC PROPERTY (237m LENGTH & 15m WIDTH MEASURED FACE TO FACE)					SCHEDULE 'A'	
					Date:	May, 2013
ITEM	DESCRIPTION OF WORK	QTY	UNIT	UNIT RATE	AMOUNT	
				\$	\$	
1.00	BULK EARTHWORKS					
	Cut/Fill:	4,000	cu m	14.00		56,000.00
2.00	DENSITY TESTING	15	No	208.00		3,120.00
3.00	UNSUITABLE SUBGRADE (Provisional)					
(a)	40mm NDCR	600	cu m	76.20		45,720.00
(b)	Selected Fill	200	cu m	32.25		6,450.00
4.00	CONCRETE WORKS					
(a)	-SM2	474	lm	39.15		18,557.10
5.00	CONCRETE PAVING (Including crushed rock bedding)					
(a)	- 125mm thick reinforced - 1.5m Both Sides of Connector Road	711	sq m	45.20		32,137.20
(b)	Concrete cylinder strength tests - Provisional Qty	10	No	207.00		2,070.00
6.00	PAVEMENT WORKS					
(a)	Subgrade Stabilisation - 450mm Depth	3,655	sq m	23.65		86,440.75
(b)	Sub Base Layer - 200mm Depth	3,655	sq m	19.20		70,176.00
(c)	Base Layer - 150mm Depth	3,300	sq m	13.81		45,573.00
(d)	Asphalt Layers - 60mm Depth	3,300	sq m	33.76		111,408.00
7.00	DRAINAGE PIPES (Road Drainage Only)	296	lm			28,300.00
8.00	DRAINAGE PITS (Road Drainage Only)	8	No			16,900.00
9.00	CONNECTIONS TO PROPOSED / EXISTING	1	No	566.00		566.00
10.00	AGRICULTURAL DRAINS	474	lm	14.42		6,835.08
11.00	LINE MARKING & SIGNAGE	1	Item	3,000.00		3,000.00
12.00	ELECTRICAL INSTALLATION WORKS					
(a)	Street Lighting Conduits	240	lm	18.55		4,452.00
(b)	Lighting Service Pit Installation	5	No	139.00		695.00
13.00	ENVIRONMENTAL CONTROLS	1	Item	6,900.00		6,900.00
14.00	SITE FACILITIES	1	Item	22,253.00		22,253.00
15.00	SITE SECURITY FENCE	515	lm	10.30		5,304.50
16.00	STREET LIGHTING (Incl Supply & Installation of Cableing & 5 No. Lights)	1	Item	30,000.00		30,000.00
ESTIMATED CONSTRUCTION COST:						602,857.63
17.00	CONTINGENCY SUM 20%	1	Item	121,000.00		121,000.00
18.00	COUNCIL CHECKING & SUPERVISION FEES	1	Item	19,600.00		19,600.00
19.00	ENGINEERING FEES:	1	Item	51,850.00		51,850.00
TOTAL ESTIMATED COST:						795,307.63
ADOPTED COST (Excl G.S.T.):						800,000.00

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No allowance has been made for storm water quality works.

No allowance has been made for landscaping / street trees within the road reserve.

Construction rates are based on current sub-divisional works in the Casey area. All rates exclude G.S.T.

