



**ORIGINAL DRAWINGS**  
(These are the originals only if this text is RED)

**MURRAY SHIRE COUNCIL**  
Construction Certificate Approval  
Application Number: 15/122  
Approval Date: 16 March 2015  
Leigh Robins  
Director of Engineering

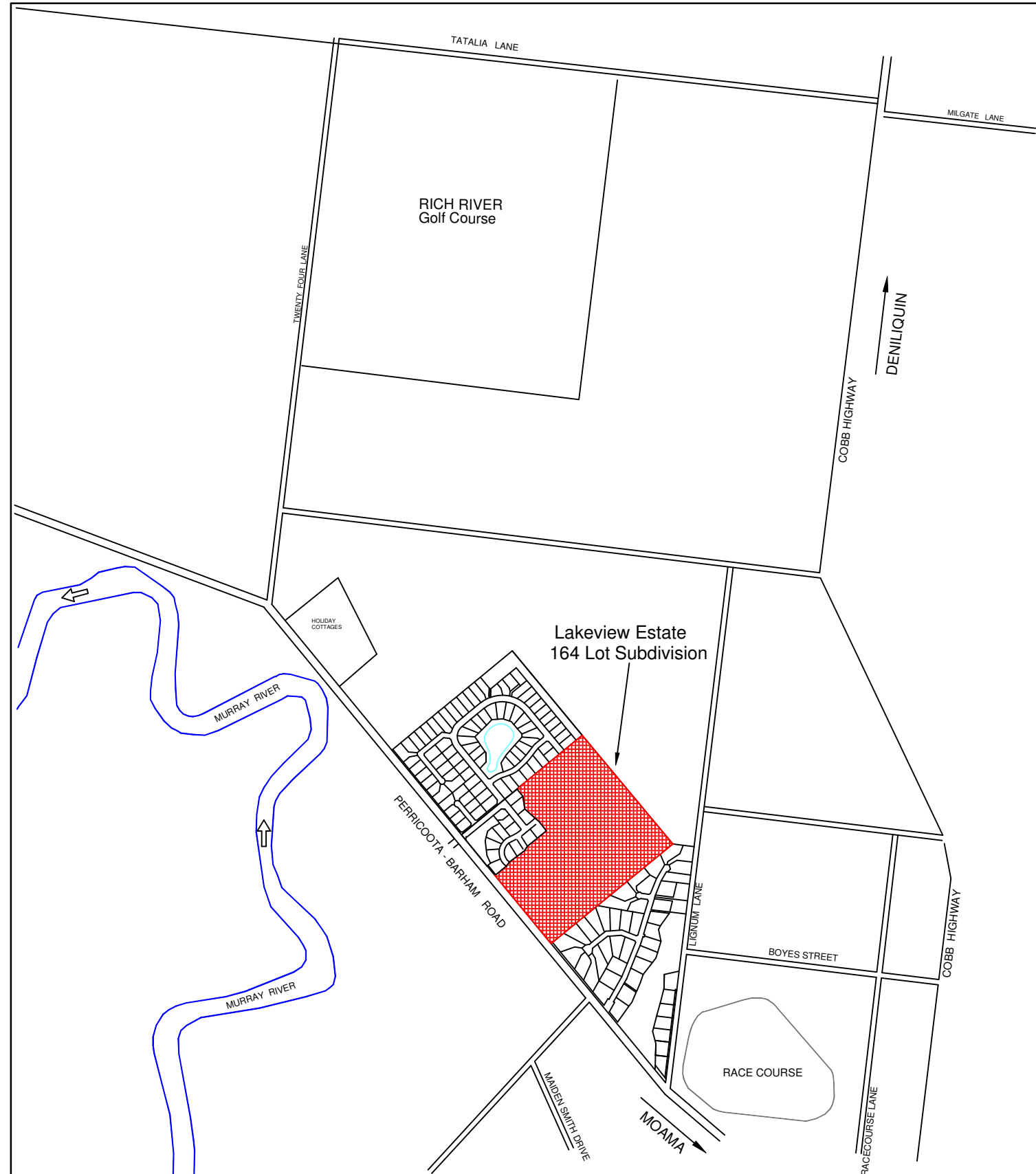
# Villawood Properties Pty Ltd

## Lakeview Estate - Stage 2

Drawing file: 14168 FP.dwg	LTO Ref: -	Council Ref: DA 173/11	Ref: 14168	Version: 2
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**LOCALITY PLAN - MOAMA**

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2	Murray Shire Council Amendments	20/01/2015
1	Original Issue	27/11/2014
0	Draft	-
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Designed	Checked
G.McCoomb	R.Dawborn
Jan 2015	Jan 2015
Approved	

Notes/Legend

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Project Managers  
Development Consultants

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NOT TO SCALE  
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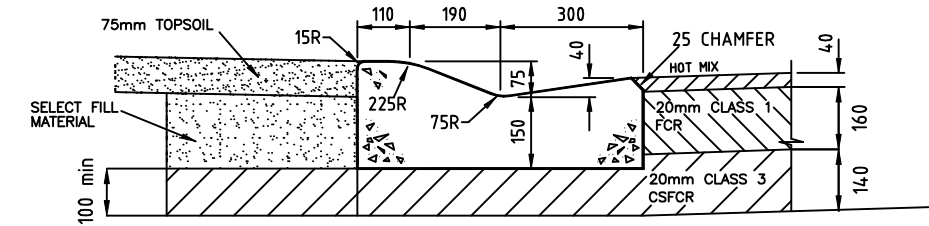
Murray Shire Council - Moama					
Villawood Properties Pty Ltd					
Lakeview Estate - Stage 2					
Index & Locality Plan					
Council Ref:	Our Ref:	Version	Sheet		
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# GENERAL NOTES

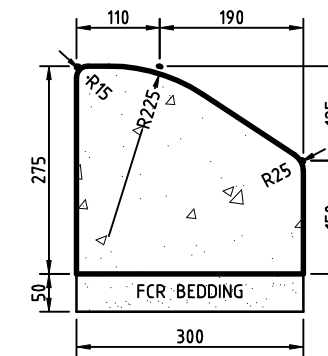
1. Works are to comply with the current standards and specifications of the municipality. Contract is in accordance with AS2124-1992 including annexures.
2. This stage consists of lots 58 to 71.
3. The contractor must adhere to the code of practise for "Safety Precautions in Trenching Operations" under the "Occupational Health and Safety Act 2004". All workers on this site must have a current OH&S General Induction for Construction Working NSW Certificate (White Card).
4. The contractor must contact all servicing authorities to arrange service locations prior to commencement of excavation for this project.
5. Easements shown on these plans are 2.0m wide drainage easements, sewer easements shown on these plans are 3.0m wide, unless indicated otherwise.
6. Drainage pipes and pits are to be at 1.0m offset to property boundaries unless shown otherwise.
7. Drainage pipes 300mm diameter and greater are to be rubber ring joint class 2 reinforced concrete unless shown otherwise. Pipes 225mm diameter and less are to be rubber ring joint uPVC.
8. Pits (including lids) are to be constructed in accordance with the current standards of the Murray Shire Council. Side entry pits in rollover kerb & channel are to be constructed using an approved rollover type lintel.
9. Property drainage connections (150mm diameter) are to be provided in all easement pits, and in road drainage pits where shown. Property drainage connections are to be 150mm diameter uPVC SN8 and to have 600mm minimum cover. Connections to extend into properties by a minimum of 1.0m in length. 150mm PVC pipes shown in the road reserve are for house drain connections. Property connections shall be marked with a PVC riser pipe to 600mm above ground.
10. Step irons are not to be provided in any drainage pits.
11. Pipe stubs are to consist of one full pipe length unless shown otherwise.
12. Finished levels for Side Entry Pits must be determined from kerb levels, and lids should be sloped to suit nature strips etc. The FSL's indicated in the pit schedule are not kerb levels.
13. All trenches crossing pavement areas or beneath kerb or footpath are to be backfilled with 3% cement stabilised fine crushed rock.
14. Fill areas are to be cleared and stripped of all organic material and topsoil prior to placement of selected fill material. Fill areas are to be inspected by the supervising Engineer prior to any fill being placed. Fill is to be placed and compacted in layers, with a minimum compaction of 95% of the maximum dry density as determined by the standard compaction test being achieved. 98% of maximum dry density must be achieved within road pavement areas.
15. All concrete must have a minimum compressive strength of 25MPa at 28 days. Kerb & Channel concrete must have an equivalent strength using not less than 280kg of cement per m3 of concrete.
16. Maximum driveway grade for any allotment is 1 in 7.
17. Minimum finished grade on any allotment is 1 in 150.
18. Raw and treated water services crossing roads to be 32mm PN8 poly (if two properties being connected) or 25mm PN8 poly (if single property connected) sleeved in 50mm Class 12 uPVC service conduits.
19. Raw and treated water tappings including saddles, 20mm Ø copper service connections, meter cock (treated) and gate valve (raw) to be provided 1m inside allotments. Tapping saddles are to be gunmetal style only.
20. All sewer manhole covers are to be solid ductile iron Class D covers and frame with concrete surround.
21. 50mm diameter Class 12 uPVC service conduits are to be provided for water and gas services at the locations indicated on the plans.
22. Electricity cable conduits are to be installed as shown on the Power cable reticulation plan, in accordance with the requirements and specifications of Essential Energy.
23. NBN conduits are to be installed as shown on the NBN cable plan.
24. The location of all service conduits is to be marked 5mm into the face of both kerbs, immediately above the conduit with a uniform 50mm high letter (W,G,E,T etc.). Where conduits cross footpaths, the location is to be marked in the path (near the edge) in the same fashion.
25. Nature strips are to be topsoiled to a depth of approximately 100mm using material stockpiled from stripping, or approved imported material.
26. Pavement Testing. Tests to be completed at a frequency of 1 test per 500m2 of pavement with test locations approximately 1 metre offset from the kerb & measured at 2/3 of the layer depth. Court bowls to be tested in 3 locations & intersections in 2. Pavement material to be placed and compacted in layers with minimum compaction of 100% of the maximum dry density as determined by the modified compaction test being achieved.
27. All drainage and sewer pipes are to be inspected via CCTV after installation with a copy to be provided to the Murray Shire Council.
28. Side entry pit throat clearance to be 100mm max.
29. All pit lids to be constructed by Terra Firma Industries.
30. Street lighting of roundabout to be located in the centre of roundabout.
31. Street lighting of intersection with Perricoota Road & Lakeview Drive to be provided.

## KERB SECTIONS

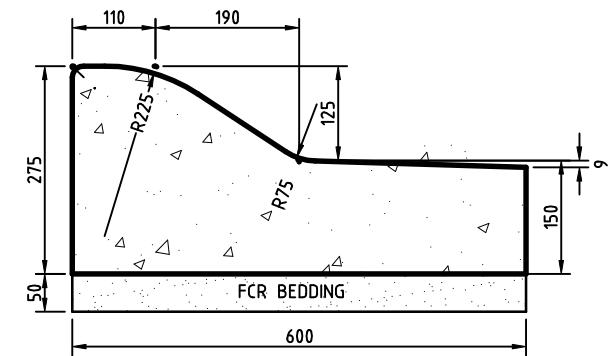
### SHIRE OF MURRAY MODIFIED SM2 K&C & PAVEMENT DETAILS



### ROUNDBABOUT SPLITTER ISLAND DETAIL (SM1)



### MEDIAN & ROUNDBABOUT CENTRE ISLAND DETAIL (SM3)



MURRAY SHIRE COUNCIL  
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Director of Engineering

6			Designed	Checked	Notes/Legend
5			G.McCoomb	R.Dawborn	
4			Jan 2015	Jan 2015	
3			Approved		
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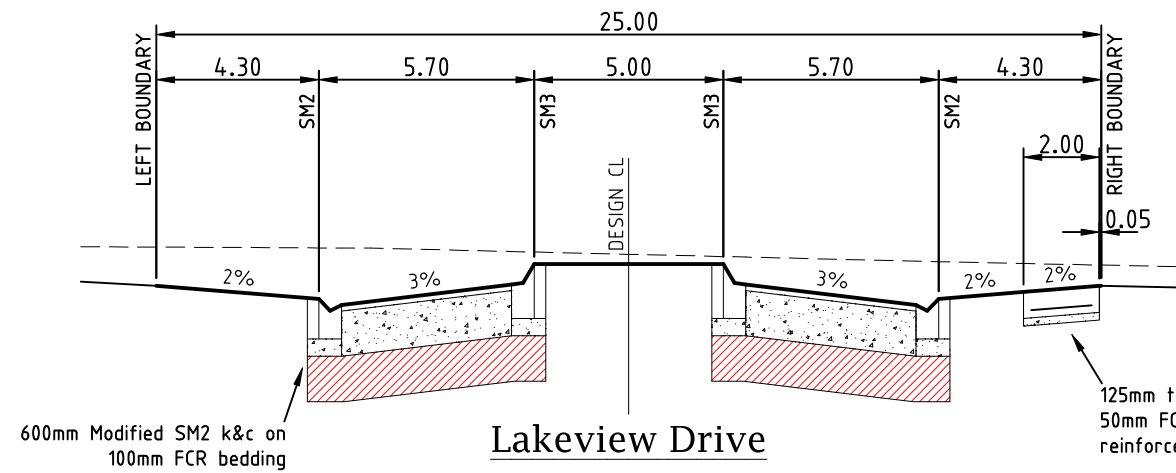
Murray Shire Council - Moama

Villawood Properties Pty Ltd  
Lakeview Estate - Stage 2  
General Notes & Kerb Details

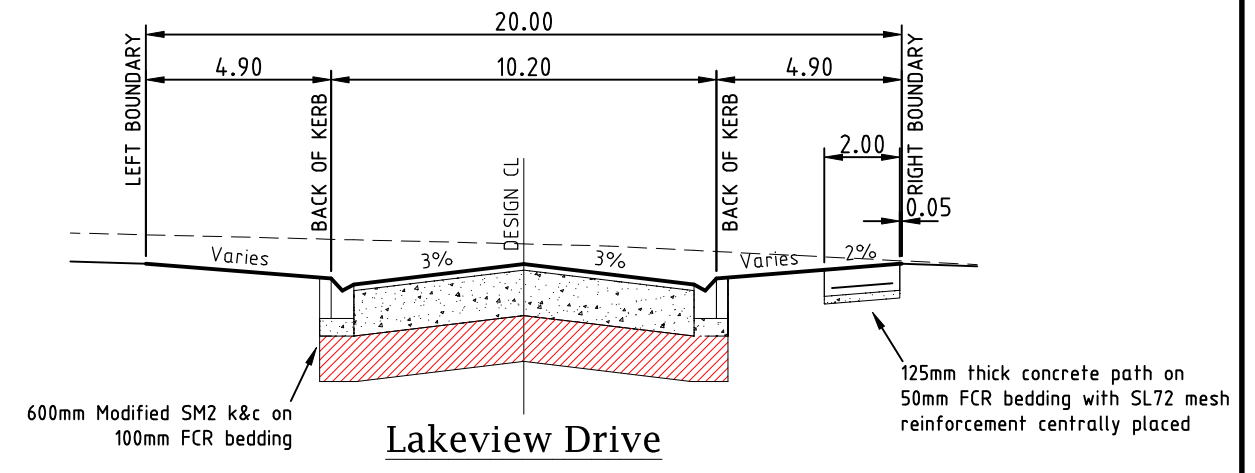
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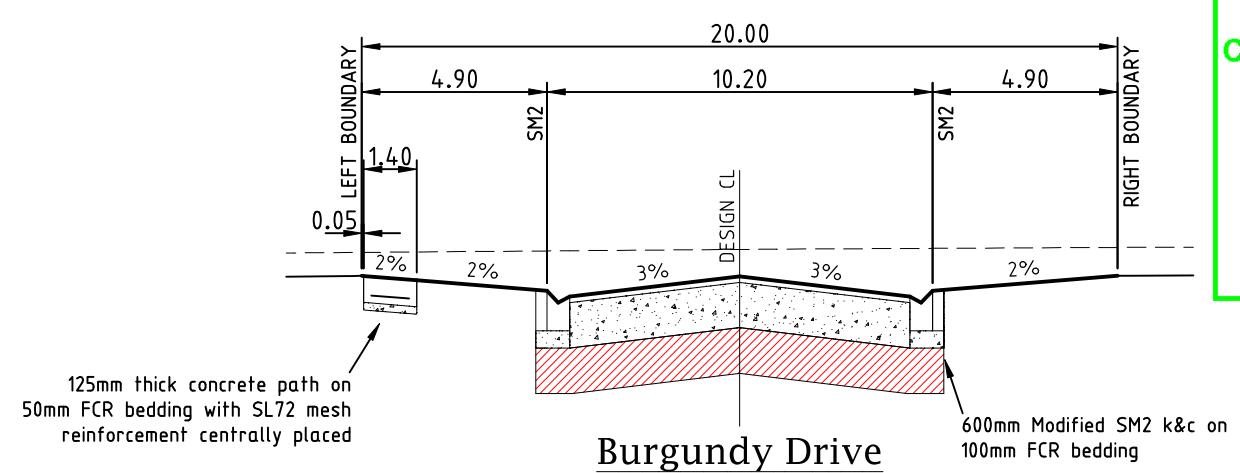
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2 of 32



Lakeview Drive  
CH 21.45-61.78

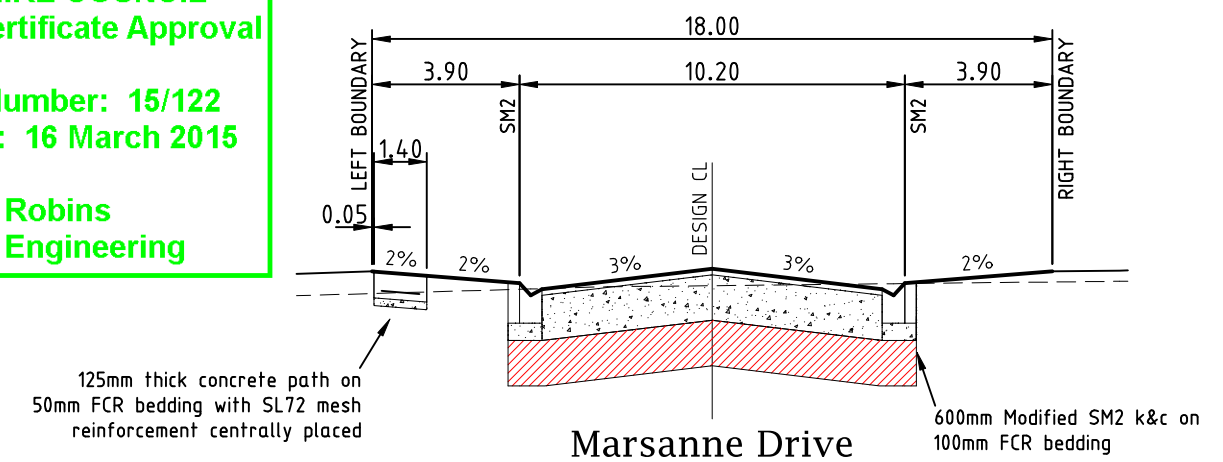


Lakeview Drive  
CH 112.69-238.06

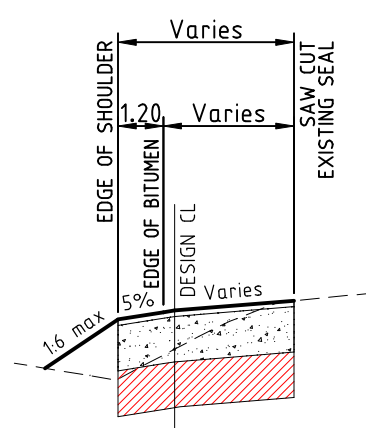


Burgundy Drive  
CH 280-280.27

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**Director of Engineering**



Marsanne Drive  
CH 27.68-40



Perricoota Road  
CH 0-224.02

### Pavement Composition & Notes

1. PAVEMENT COMPOSITION: LAKEVIEW DRIVE, BURGUNDY DRIVE, MARSANNE DRIVE & PERRICOOTA ROAD)
  - a) 40mm DEPTH HOT MIX ASPHALT
  - b) 160mm DEPTH CONSOLIDATED 20mm CLASS 1 FCR (BASE COURSE)
  - c) 140mm DEPTH CONSOLIDATED 20mm CLASS 3 FCR (SUBBASE)
  - d) 300mm DEPTH IN SITU STABILISATION OF SUBGRADE MATERIAL (3% LIME BY MASS)
  
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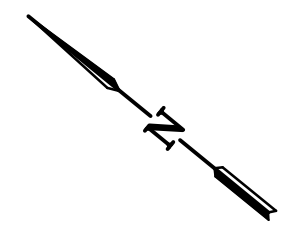
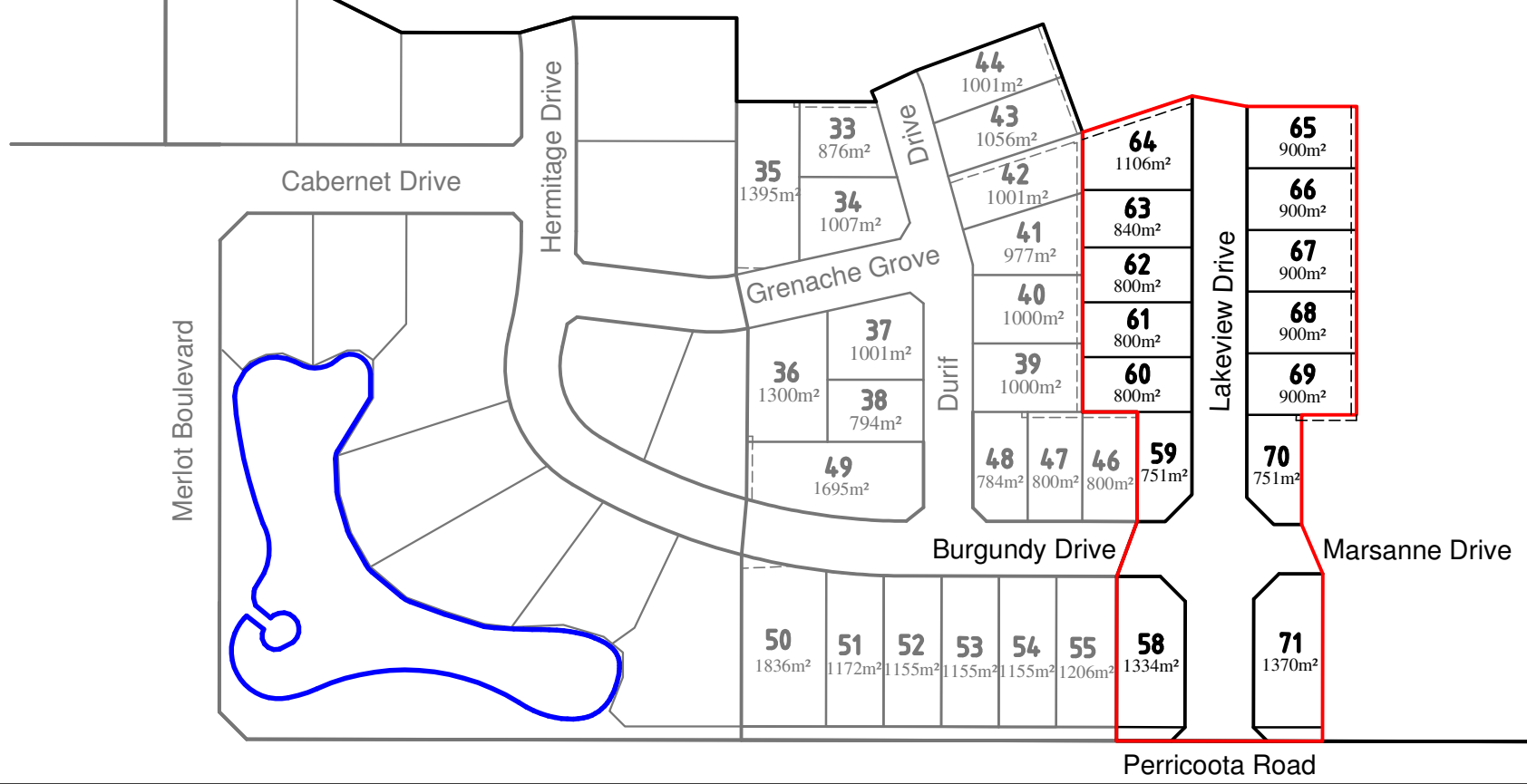
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Villawood Properties Pty Ltd					
Lakeview Estate - Stage 2					
Typical Cross Sections					
Council Ref:	Our Ref:	Version	Sheet		
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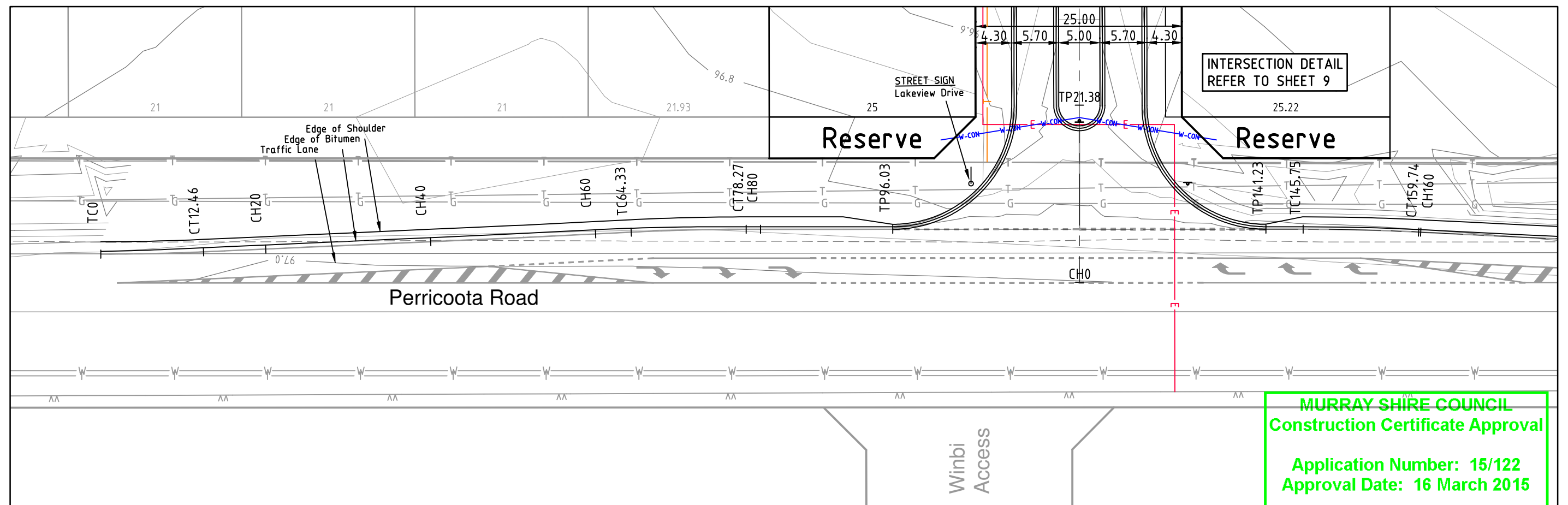
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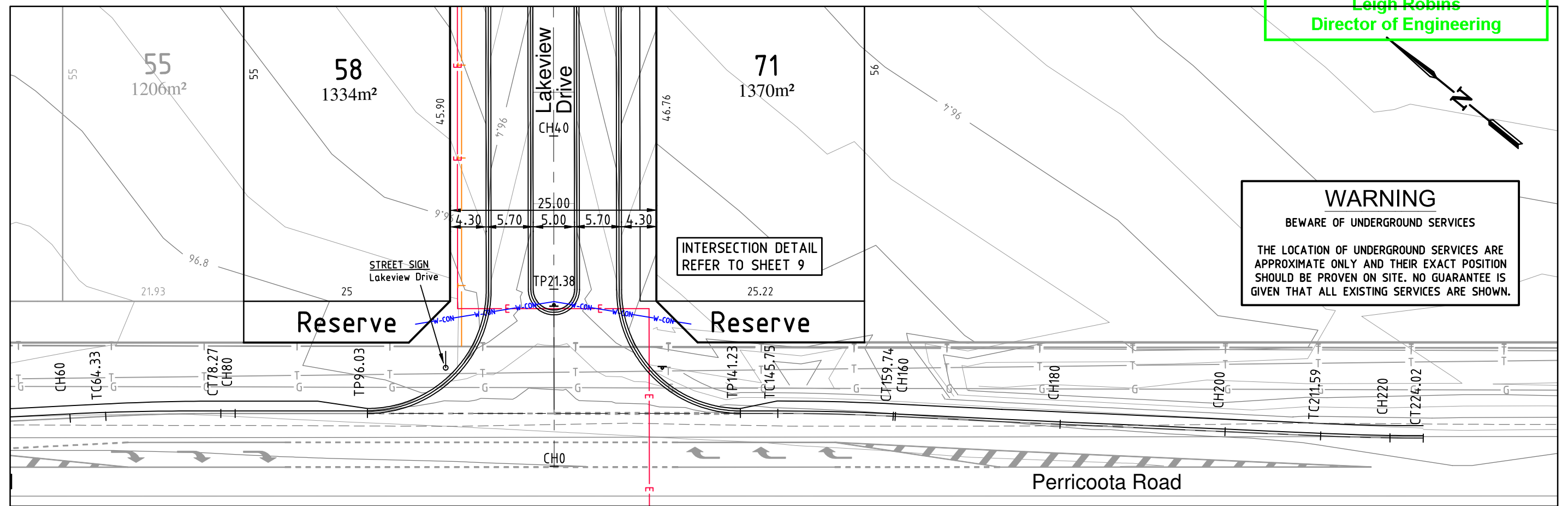
Murray Shire Council - Moama  
Villawood Properties  
Lakeview Estate - Stage 2  
Overall Layout Plan

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INTERSECTION DETAIL  
REFER TO SHEET 9

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**WARNING**  
BEWARE OF UNDERGROUND SERVICES  
  
THE LOCATION OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

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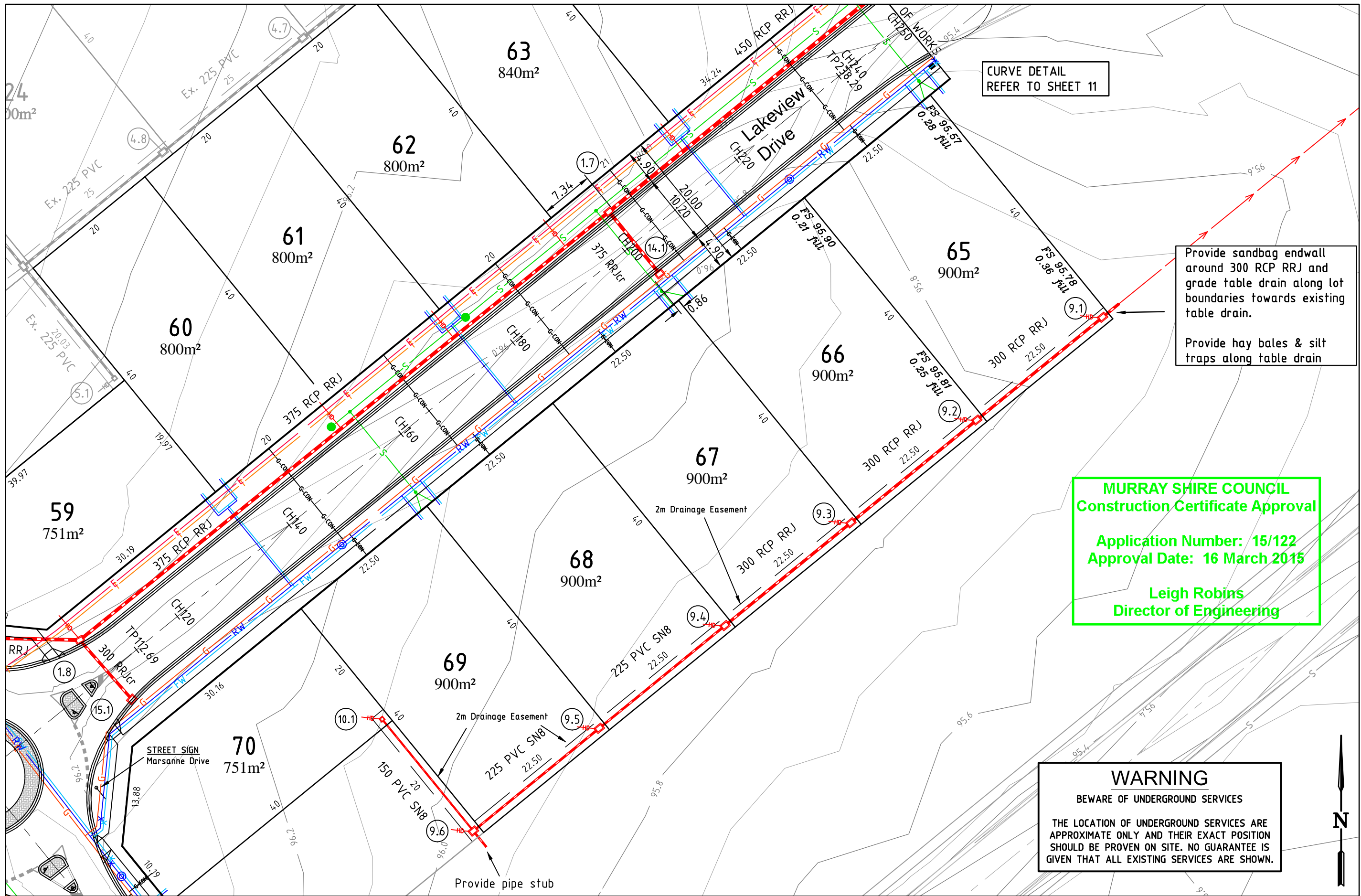
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Murray Shire Council - Moama  
Villawood Properties  
Lakeview Estate - Stage 2  
Layout Plan





CURVE DETAIL  
REFER TO SHEET 11

Provide sandbag endwall around 300 RCP RRJ and grade table drain along lot boundaries towards existing table drain.

Provide hay bales & silt traps along table drain

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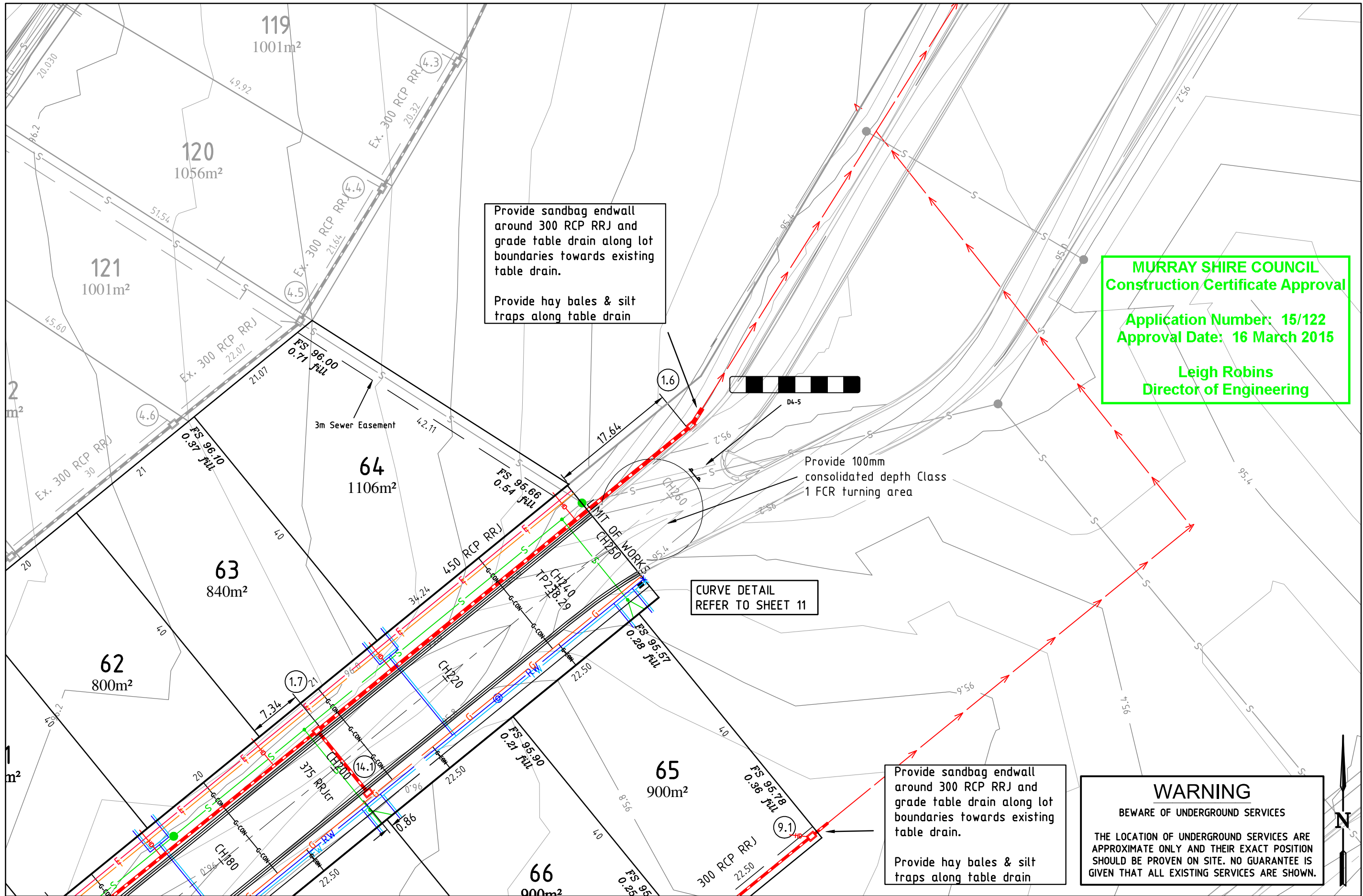
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Murray Shire Council - Moama  
Villawood Properties  
Lakeview Estate - Stage 2  
Layout Plan 3





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Scale (m) H 1:500 0 5 10

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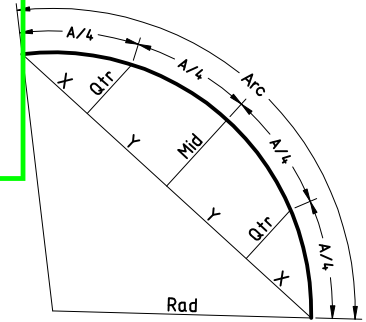
Murray Shire Council - Moama  
**Villawood Properties  
Lakeview Estate - Stage 2  
Layout Plan 4**

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**Curve Setout Detail**

Alignment O (Back of Kerb)

Point no	Easting	Northing	RL
O 1	296104.745	6002890.662	96.750
O 2	296101.228	6002891.018	96.764
O 3	296101.584	6002894.535	96.750
O 4	296103.884	6002890.204	96.756
O 5	296102.913	6002890.111	96.761
O 6	296101.980	6002890.397	96.763
O 7	296100.770	6002891.879	96.763
O 8	296100.677	6002892.850	96.760
O 9	296100.963	6002893.783	96.756

Curve no	I	Radius	Arc	Mid Ord	Qtr Ord	X	Y	I	Mid Ord RL
O 1 2	90.000	2.500	3.927	0.732	0.542	0.811	0.957	0.982	96.761
O 2 3	90.000	2.500	3.927	0.732	0.542	0.811	0.957	0.982	96.760

Alignment P (Back of Kerb)

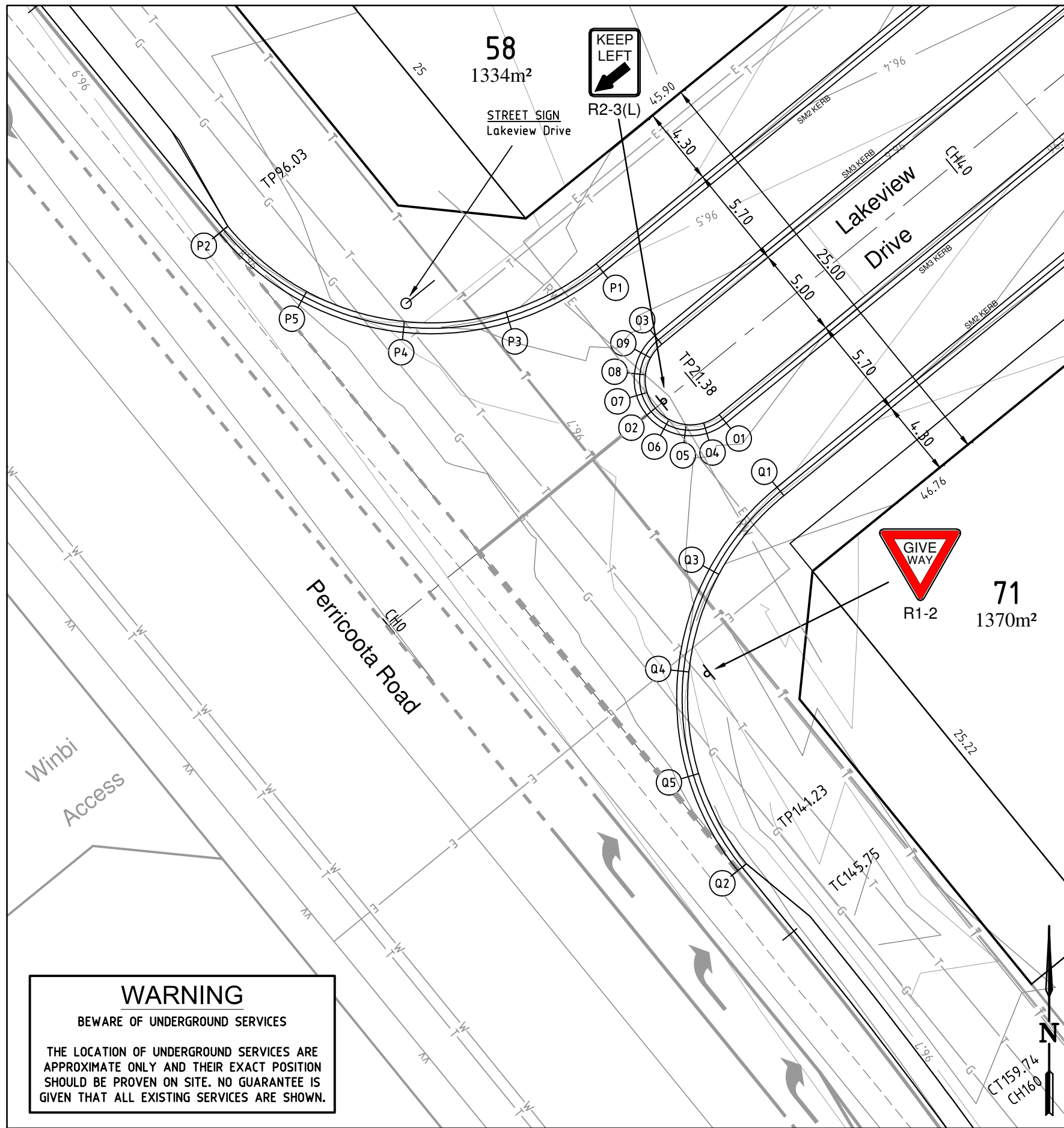
Point no	Easting	Northing	RL
P 1	296097.979	6002898.951	96.548
P 2	296077.704	6002901.018	96.865
P 3	296093.012	6002896.314	96.613
P 4	296087.413	6002895.781	96.724
P 5	296082.038	6002897.433	96.827

Curve no	I	Radius	Arc	Mid Ord	Qtr Ord	X	Y	I	Mid Ord RL
P 1 2	90.086	14.400	22.641	4.225	3.127	4.674	5.516	5.660	96.724

Alignment Q (Back of Kerb)

Point no	Easting	Northing	RL
Q 1	296108.297	6002886.203	96.548
Q 2	296106.233	6002865.959	96.819
Q 3	296104.723	6002881.874	96.609
Q 4	296103.077	6002876.508	96.708
Q 5	296103.607	6002870.920	96.794

Curve no	I	Radius	Arc	Mid Ord	Qtr Ord	X	Y	I	Mid Ord RL
Q 1 2	-89.914	-14.400	22.598	4.210	3.116	4.669	5.506	5.649	96.708



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Scale (m) H 1:250 0 2.5 5

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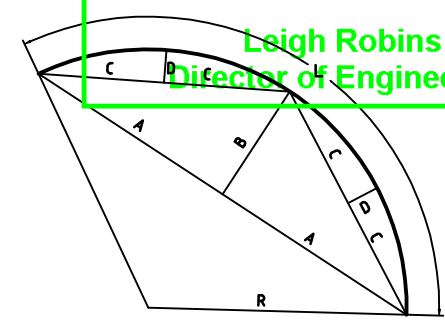
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Lakeview Estate - Stage 2  
Intersection Detail Plan

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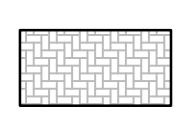
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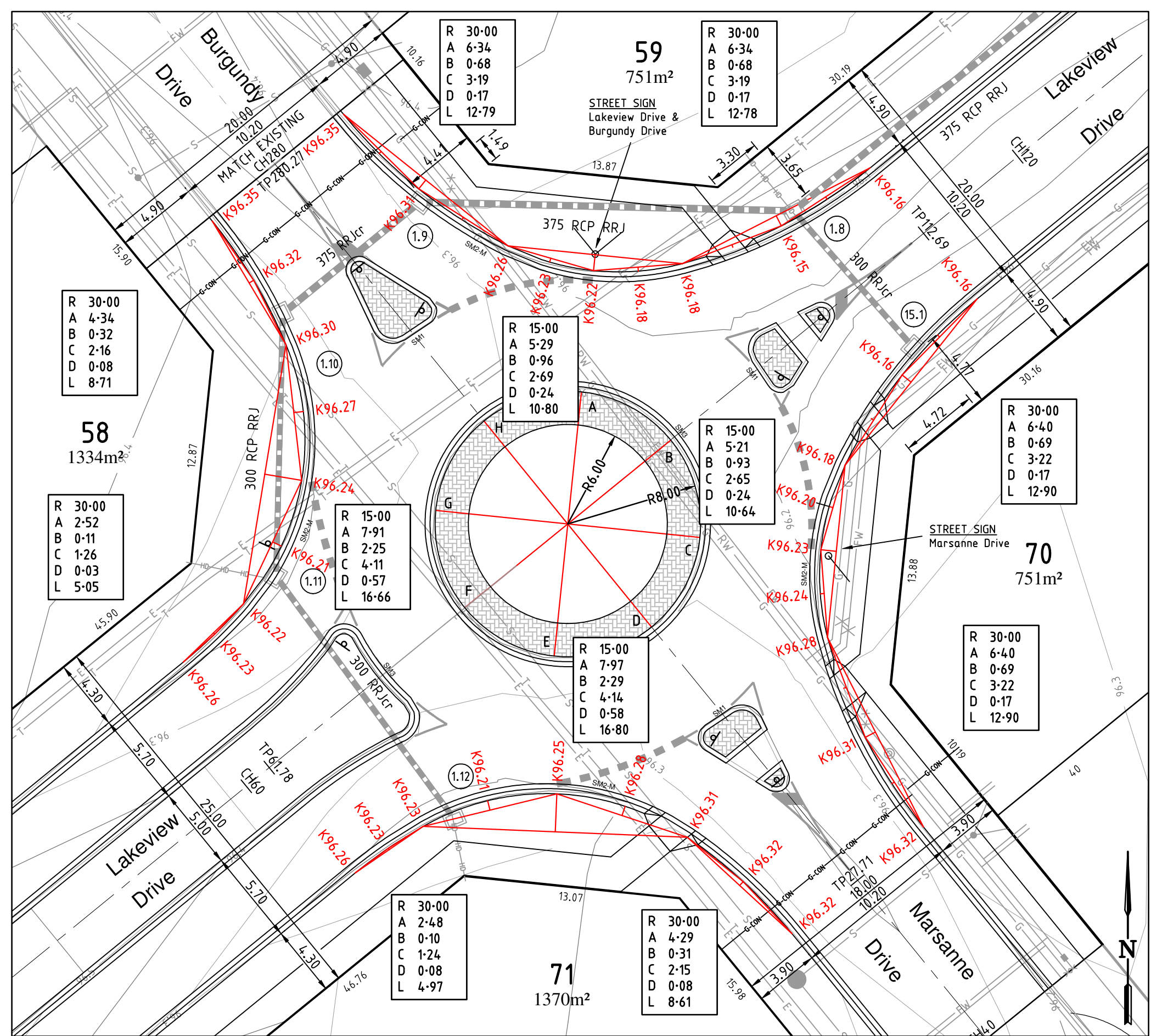
**Curve Setout Detail**

Point no	Easting	Northing	BCK RL
A	296153.219	6002940.740	96.379
B	296158.607	6002937.831	96.383
C	296160.360	6002931.965	96.399
D	296157.452	6002926.577	96.412
E	296151.585	6002924.824	96.441
F	296146.197	6002927.733	96.500
G	296144.444	6002933.549	96.435
H	296147.353	6002938.987	96.426



Concrete: 32MPa 200mm depth patterned concrete with SL82 reinforcement mesh centrally placed on bar chairs. Colour & pattern yet to be determined.

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3		
2	Murray Shire Council Amendments	20/01/2015
1	Original Issue	27/11/2014
0	Draft	-

Designed	Checked
G.McCoomb	R.Dawborn
Jan 2015	Jan 2015
Approved	

Notes/Legend  
PLEASE NOTE THAT CONTOURS SHOWN ON PLAN INDICATE THE APPROXIMATE FINISHED SURFACE. CONTOUR INTERVAL 0.1m

**TERRACO**  
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Project Managers  
Development Consultants

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Scale (m) H 1:250

All lengths are in metres and all levels are to Australian Height Datum (Original Sheet Size is A3)

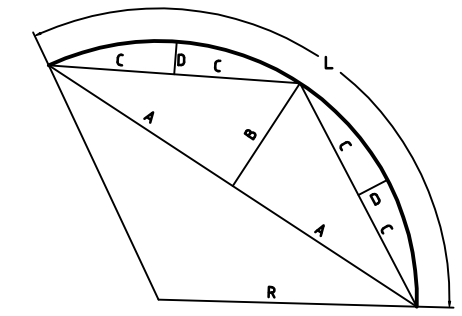
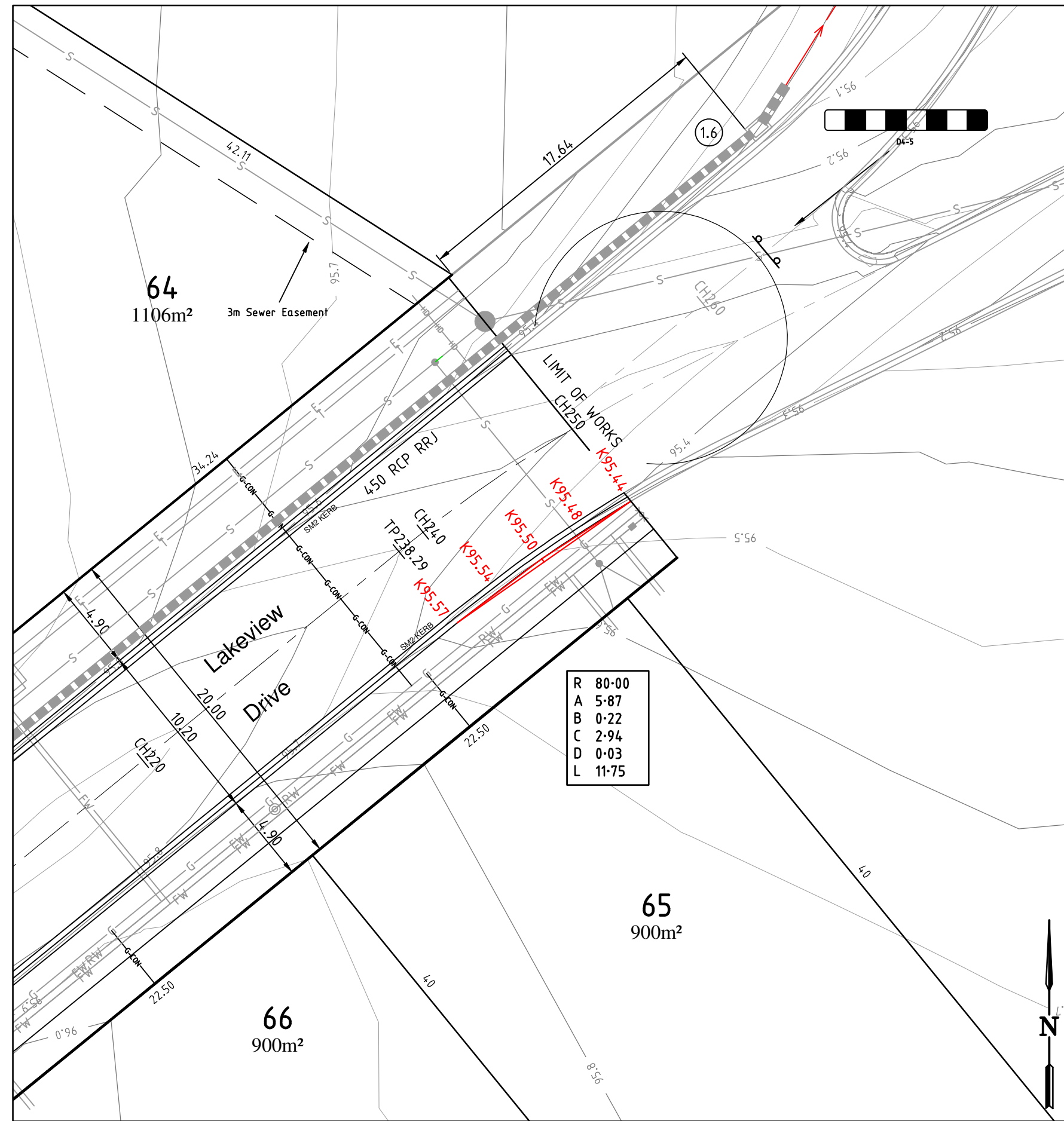
Drawing file: 14168 DETAIL.dwg LTO Ref: - Council Ref: DA 173/11 Our Ref: 14168 Version: 2 Sheet: 10 of 32

Murray Shire Council - Moama  
Villawood Properties  
Lakeview Estate - Stage 2  
Roundabout Detail Plan

**MURRAY SHIRE COUNCIL**  
**Construction Certificate Approval**

Application Number: 15/122  
 Approval Date: 16 March 2015

Leigh Robins  
 Director of Engineering



**Curve Setout Detail**

**WARNING**  
 BEWARE OF UNDERGROUND SERVICES

THE LOCATION OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

R	80.00
A	5.87
B	0.22
C	2.94
D	0.03
L	11.75

6		
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2	Murray Shire Council Amendments	20/01/2015
1	Original Issue	27/11/2014
0	Draft	-
Ver	Revision Description	Date

Designed	G.McCoomb	Checked	R.Dawborn
	Jan 2015		Jan 2015
Approved			

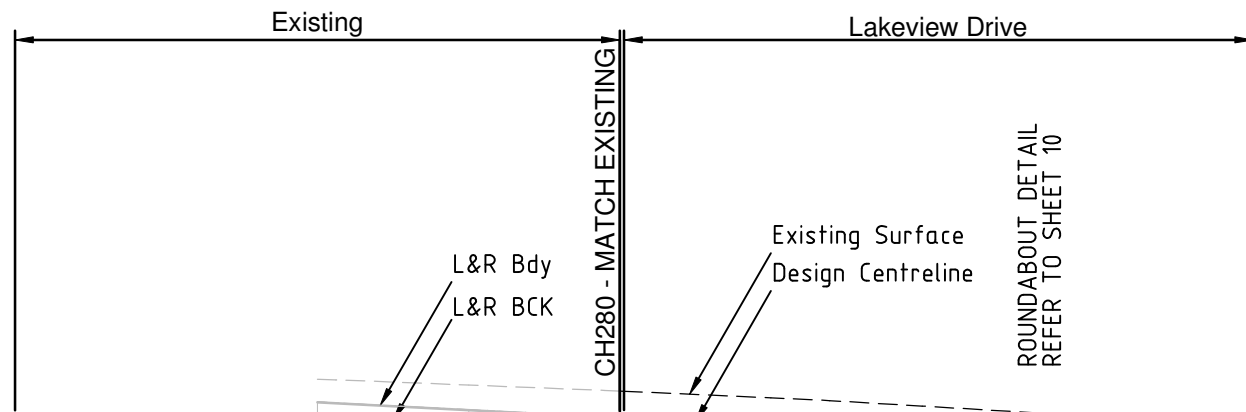
**Notes/Legend**  
 PLEASE NOTE THAT CONTOURS SHOWN ON PLAN INDICATE THE APPROXIMATE FINISHED SURFACE. CONTOUR INTERVAL 0.1m

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Scale (m)	H 1:250	0	2.5	5	
All lengths are in metres and all levels are to Australian Height Datum (Original Sheet Size is A3)					
Drawing file:	LTO Ref:	Council Ref:	Our Ref:	Version	Sheet
14168 DETAIL.dwg	-	DA 173/11	14168	2	11 of 32

Murray Shire Council - Moama  
**Villawood Properties**  
 Lakeview Estate - Stage 2  
 Curve Detail Plan

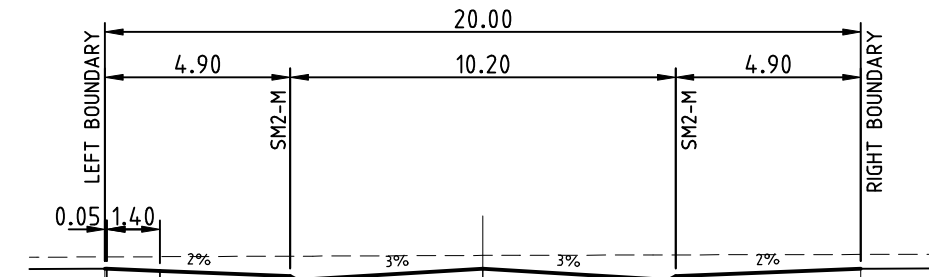


Horiz Curve Data  
V.C. Length (m)  
Design Cline Grade (%)  
DATUM R.L.93

Design Surface Centreline Levels	96.55	96.50	96.44	96.44	96.39	96.34	96.30	96.30
Left Design Level Back of Kerb	96.45	96.40	96.35	96.35				
Right Design Level Back of Kerb	96.45	96.40	96.35	96.35				
Design Surface Left Building Line	96.55	96.50	96.45	96.45				
Design Surface Right Building Line	96.55	96.50	96.45	96.45				
Existing Surface	96.70	96.66	96.62	96.62	96.58	96.52	96.47	
Chainage	260.00	270.00	280.00	280.27	290.00	300.00	307.95	308.06

Scales Hor 1 : 500  
(A3 orig) Ver 1 : 50

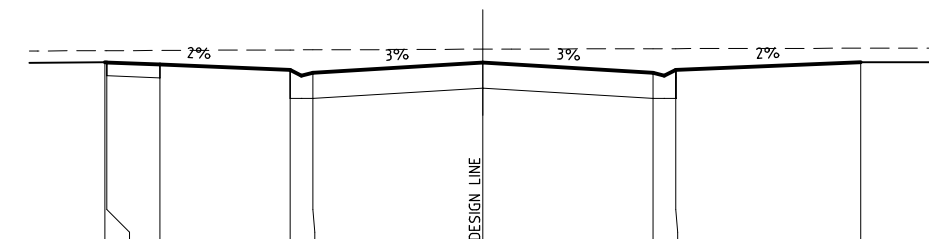
LONGITUDINAL SECTION - BURGUNDY DRIVE



Datum 94

Design Level	96.445	96.444	96.416	96.347	96.307	96.442	96.307	96.347	96.445
Existing Surface	96.6	96.6	96.603	96.61	96.611	96.62	96.626	96.627	96.633
Offset	-10	-9.95	-8.55	-5.1	-4.5	0	4.5	5.1	10

TP 280.273



Datum 94

Design Level	96.447	96.446	96.418	96.349	96.309	96.444	96.309	96.349	96.447
Existing Surface	96.602	96.602	96.604	96.611	96.612	96.621	96.627	96.628	96.634
Offset	-10	-9.95	-8.55	-5.1	-4.5	0	4.5	5.1	10

CH 280 - MATCH EXISTING

6			Designed	Checked	Notes/Legend
5			G.McCoomb	R.Dawborn	
4			Jan 2015	Jan 2015	
3			Approved		
2	Murray Shire Council Amendments	20/01/2015			
1	Original Issue	27/11/2014			
0	Draft	-			
Ver	Revision Description	Date			

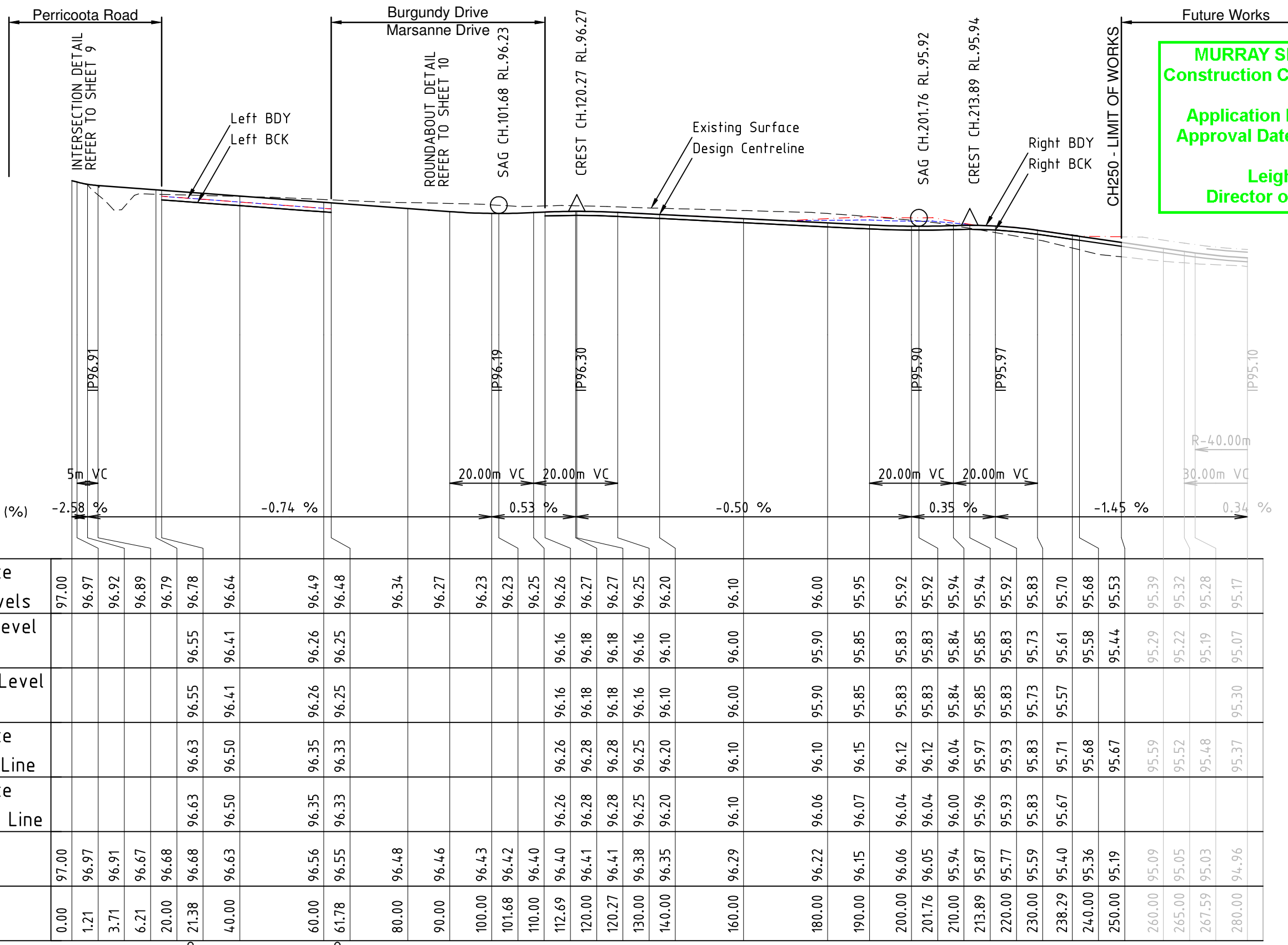
**TERRACO**  
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Scale (m) H 1:200 0 2 4  
V 1:100 0 1 2  
All lengths are in metres  
and all levels are to Australian Height Datum  
(Original Sheet Size is A3)

Drawing file: 14168 BURGUNDY.dwg LTO Ref: - Council Ref: DA 173/11 Our Ref: 14168 Version 2 Sheet 12 of 32

Murray Shire Council - Moama  
Villawood Properties  
Lakeview Estate - Stage 2  
Burgundy Drive Longitudinal & Cross Sections



**MURRAY SHIRE COUNCIL**  
 Construction Certificate Approval  
  
 Application Number: 15/122  
 Approval Date: 16 March 2015  
  
 Leigh Robins  
 Director of Engineering

Horiz Curve Data  
 V.C. Length (m)  
 Design Cline Grade (%)  
 DATUM R.L.88

**LONGITUDINAL SECTION - LAKEVIEW DRIVE**

Scales Hor 1 : 1000  
 (A3 orig) Ver 1 : 100

6			Designed	Checked
5			G.McCoomb	R.Dawborn
4			Jan 2015	Jan 2015
3			Approved	
2	Murray Shire Council Amendments	20/01/2015		
1	Original Issue	27/11/2014		
0	Draft	-		
Ver	Revision Description	Date		

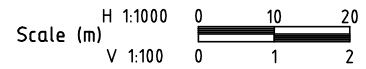
Notes/Legend	



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Scale (m)



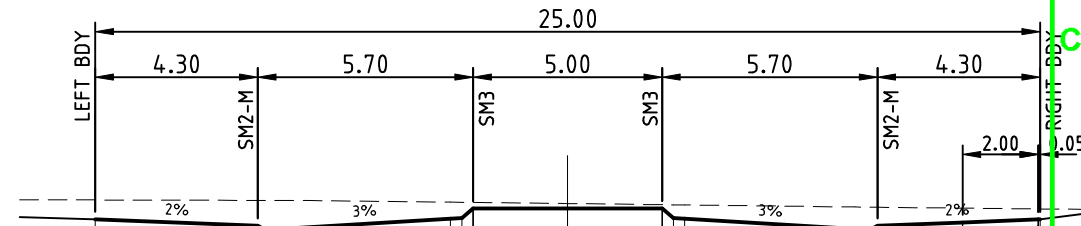
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V 1:100 0 1 2

All lengths are in metres  
and all levels are to Australian Height Datum  
(Original Sheet Size is A3)

Drawing file: LTO Ref:  
14168 LAKEVIEW.dwg -

Murray Shire Council - Moama				
<b>Villawood Properties</b>				
Lakeview Estate - Stage 2				
Lakeview Drive Longitudinal Section				
Drawing file:	LTO Ref:	Council Ref:	Our Ref:	Version
14168 LAKEVIEW.dwg	-	DA 173/11	14168	2
Sheet		13 of 32		

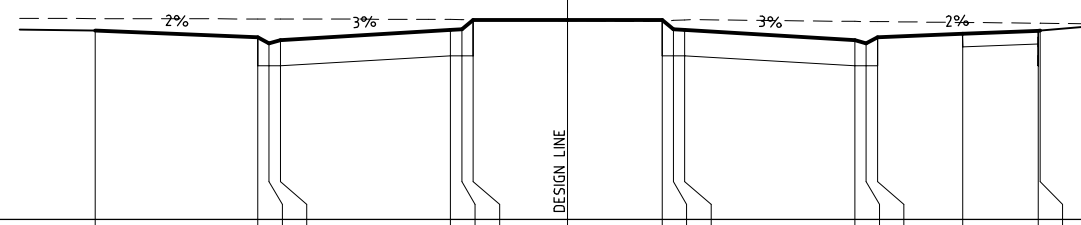
**MURRAY SHIRE COUNCIL**  
**Construction Certificate Approval**  
 Application Number: 15/122  
 Approval Date: 16 March 2015  
 Leigh Robins  
 Director of Engineering



Datum 94

Design Level	Existing Surface	Offset
96.348	96.604	-12.5
96.262	96.599	-8.2
96.182	96.598	-7.9
96.222	96.598	-7.6
96.357	96.575	-3.1
96.366	96.573	-2.8
96.491	96.571	-2.5
96.491	96.556	0
96.491	96.542	2.5
96.366	96.54	2.8
96.357	96.538	3.1
96.222	96.511	7.6
96.182	96.509	7.9
96.262	96.508	8.2
96.307	96.496	10.45
96.347	96.485	12.45
96.348	96.485	12.5

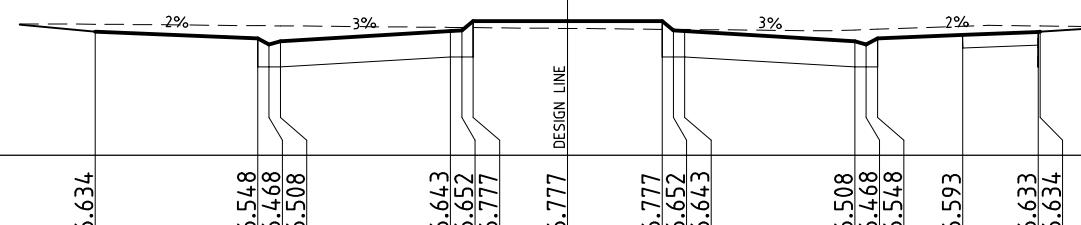
CH 60



Datum 94

Design Level	Existing Surface	Offset
96.496	96.656	-12.5
96.41	96.651	-8.2
96.33	96.651	-7.9
96.37	96.651	-7.6
96.505	96.644	-3.1
96.514	96.643	-2.8
96.639	96.641	-2.5
96.639	96.63	0
96.639	96.627	2.5
96.514	96.632	2.8
96.505	96.637	3.1
96.37	96.619	7.6
96.33	96.617	7.9
96.41	96.616	8.2
96.455	96.604	10.45
96.495	96.594	12.45
96.496	96.594	12.5

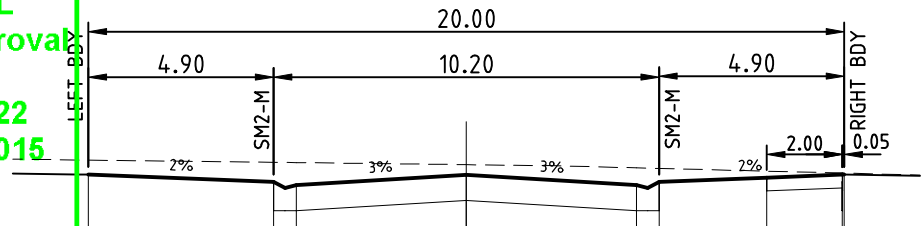
CH 40



Datum 95

Design Level	Existing Surface	Offset
96.634	96.735	-12.5
96.548	96.716	-8.2
96.468	96.714	-7.9
96.508	96.713	-7.6
96.643	96.693	-3.1
96.652	96.691	-2.8
96.777	96.69	-2.5
96.777	96.679	0
96.777	96.667	2.5
96.652	96.666	2.8
96.643	96.665	3.1
96.508	96.657	7.6
96.468	96.662	7.9
96.548	96.668	8.2
96.593	96.707	10.45
96.633	96.712	12.45
96.634	96.711	12.5

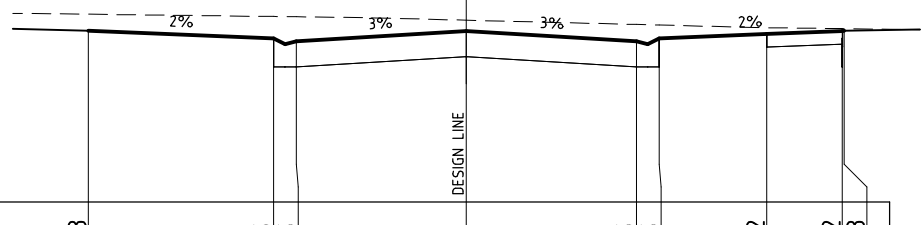
TP 21.381



Datum 94

Design Level	Existing Surface	Offset
96.277	96.469	-10
96.179	96.439	-5.1
96.139	96.435	-4.5
96.274	96.408	0
96.139	96.366	4.5
96.179	96.359	5.1
96.236	96.322	7.95
96.276	96.297	9.95
96.277	96.297	10

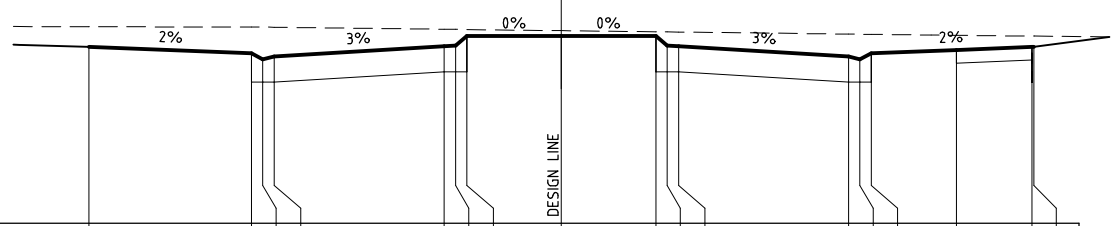
CH 120



Datum 94

Design Level	Existing Surface	Offset
96.263	96.483	-10
96.165	96.453	-5.1
96.125	96.449	-4.5
96.26	96.404	0
96.125	96.347	4.5
96.165	96.339	5.1
96.222	96.305	7.95
96.262	96.292	9.95
96.263	96.292	10

TP 112.687



Datum 94

Design Level	Existing Surface	Offset
96.335	96.601	-12.5
96.249	96.596	-8.2
96.169	96.595	-7.9
96.209	96.594	-7.6
96.344	96.567	-3.1
96.353	96.565	-2.8
96.478	96.564	-2.5
96.478	96.549	0
96.478	96.534	2.5
96.353	96.532	2.8
96.344	96.53	3.1
96.209	96.503	7.6
96.169	96.502	7.9
96.249	96.5	8.2
96.294	96.487	10.45
96.334	96.477	12.45
96.335	96.476	12.5

TP 61.782

6		
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2	Murray Shire Council Amendments	20/01/2015
1	Original Issue	27/11/2014
0	Draft	-
Ver	Revision Description	Date

Designed G.McCoomb Jan 2015	Checked R.Dawborn Jan 2015	Notes/Legend
Approved		

**TERRACO**  
 Civil Engineers  
 Project Managers  
 Development Consultants

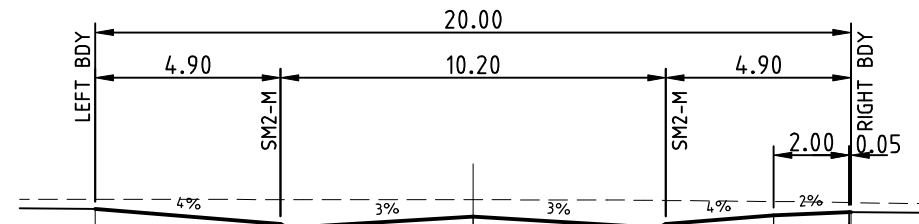
Terraco P/L  
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 Corner Jewell Court  
 & Rowena Street  
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 Ph: 03 5442 5799  
 Fax: 03 5441 5506  
 E: info@terraco.com.au

Scale (m)  
 H 1:200 0 2 4  
 V 1:100 0 1 2

All lengths are in metres  
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 (Original Sheet Size is A3)

Drawing file: 14168 LAKEVIEW.dwg  
 LTO Ref: -  
 Council Ref: DA 173/11  
 Our Ref: 14168  
 Version: 2  
 Sheet: 14 of 32

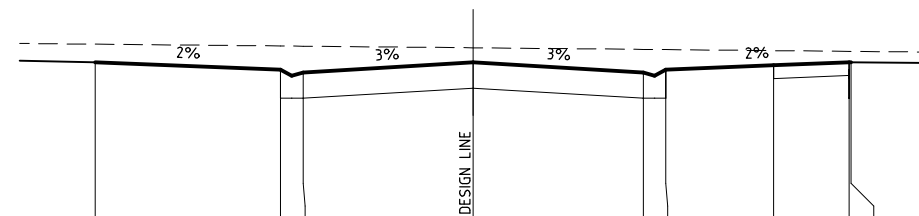
Murray Shire Council - Moama  
 Villawood Properties  
 Lakeview Estate - Stage 2  
 Lakeview Drive Cross Sections



Datum 94

Offset	Existing Surface	Design Level
-10	96.229	96.101
-5.1	96.227	95.905
-4.5	96.226	95.865
0	96.224	96
4.5	96.217	95.865
5.1	96.214	95.905
7.95	96.201	96.019
9.95	96.187	96.059
10	96.186	96.061

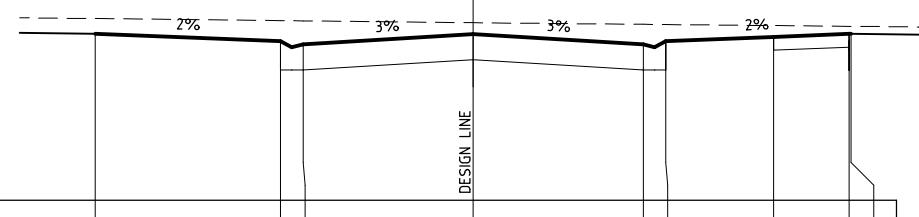
CH 180



Datum 94

Offset	Existing Surface	Design Level
-10	96.341	96.103
-5.1	96.317	96.005
-4.5	96.315	95.965
0	96.293	96.1
4.5	96.272	95.965
5.1	96.269	96.005
7.95	96.256	96.062
9.95	96.246	96.102
10	96.246	96.103

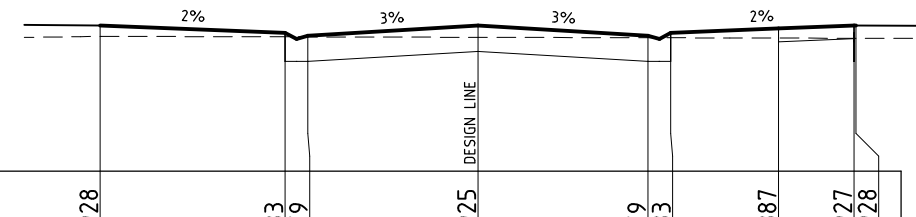
CH 160



Datum 94

Offset	Existing Surface	Design Level
-10	96.404	96.203
-5.1	96.377	96.105
-4.5	96.374	96.065
0	96.349	96.2
4.5	96.328	96.065
5.1	96.325	96.105
7.95	96.312	96.162
9.95	96.302	96.202
10	96.302	96.203

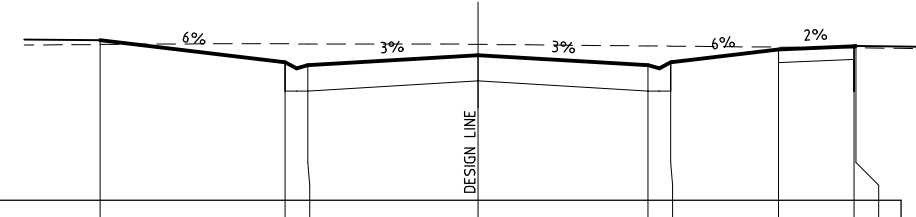
CH 140



Datum 94

Offset	Existing Surface	Design Level
-10	95.782	95.928
-5.1	95.776	95.83
-4.5	95.776	95.79
0	95.77	95.925
4.5	95.764	95.79
5.1	95.763	95.83
7.95	95.76	95.887
9.95	95.757	95.927
10	95.757	95.928

CH 220



Datum 94

Offset	Existing Surface	Design Level
-10	96.062	96.12
-5.1	96.07	95.826
-4.5	96.07	95.786
0	96.063	95.921
4.5	96.043	95.786
5.1	96.04	95.826
7.95	96.027	95.997
9.95	96.018	96.037
10	96.017	96.04

CH 200

Ver	Revision Description	Date
6		
5		
4		
3		
2	Murray Shire Council Amendments	20/01/2015
1	Original Issue	27/11/2014
0	Draft	-

Designed	Checked
G.McCoomb	R.Dawborn
Jan 2015	Jan 2015
Approved	

Notes/Legend

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Project Managers  
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Scale (m)  
H 1:200 0 2 4  
V 1:100 0 1 2

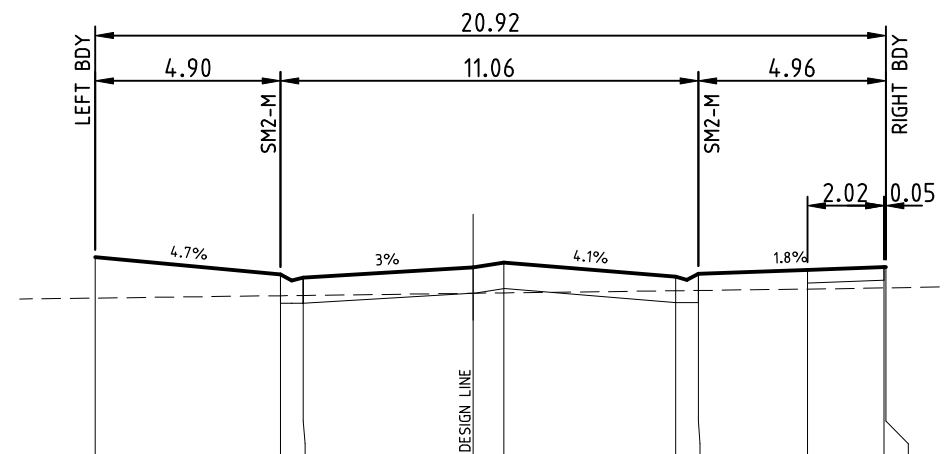
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and all levels are to Australian Height Datum  
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Drawing file: 14168 LAKEVIEW.dwg  
LTO Ref: -

Murray Shire Council - Moama  
Villawood Properties  
Lakeview Estate - Stage 2  
Lakeview Drive Cross Sections 2

Council Ref: DA 173/11	Our Ref: 14168	Version: 2	Sheet: 15 of 32
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Datum 93

Offset	Existing Surface	Design Level
-10	95.129	95.669
-5.1	95.16	95.44
-4.5	95.163	95.4
0	95.192	95.535
0.809	95.197	95.597
5.355	95.225	95.411
5.961	95.229	95.45
8.843	95.247	95.502
10.867	95.262	95.539
10.918	95.262	95.54

CH 250 - LIMIT OF WORKS



Datum 94

Offset	Existing Surface	Design Level
-10	95.292	95.683
-5.1	95.325	95.585
-4.5	95.329	95.545
0	95.36	95.68
0.048	95.361	95.69
4.548	95.391	95.509
5.148	95.395	95.549
7.998	95.41	95.605
9.998	95.407	95.645
10.048	95.407	95.646

CH 240

Ver	Revision Description	Date
6		
5		
4		
3		
2	Murray Shire Council Amendments	20/01/2015
1	Original Issue	27/11/2014
0	Draft	-

Designed	Checked
G.McCoomb	R.Dawborn
Jan 2015	Jan 2015
Approved	

Notes/Legend

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Fax: 03 5441 5506  
E: info@terraco.com.au

Scale (m)  
H 1:200  
V 1:100

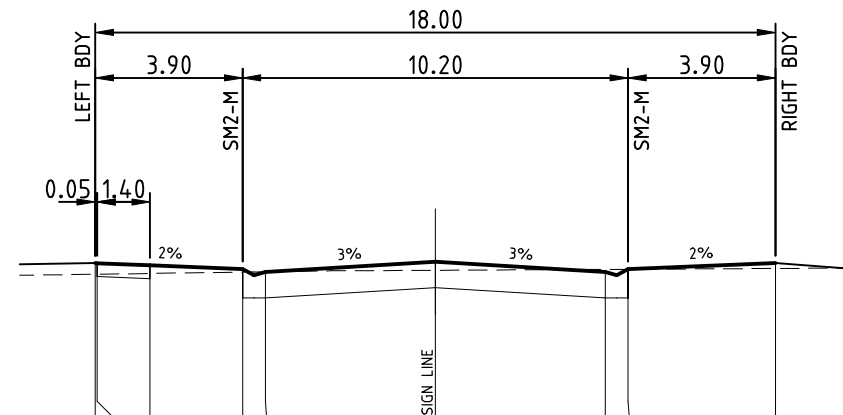
All lengths are in metres  
and all levels are to Australian Height Datum  
(Original Sheet Size is A3)

Drawing file: 14168 LAKEVIEW.dwg  
LTO Ref: -

Murray Shire Council - Moama  
Villawood Properties  
Lakeview Estate - Stage 2  
Lakeview Drive Cross Sections 3

Council Ref:	Our Ref:	Version	Sheet
DA 173/11	14168	2	16 of 32

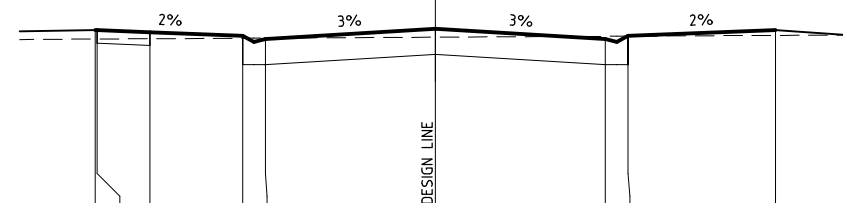




Datum 94

Design Level	Existing Surface	Offset
96.327	96.181	-9
96.326	96.181	-8.95
96.298	96.191	-7.55
96.249	96.209	-5.1
96.209	96.213	-4.5
96.344	96.233	0
96.209	96.245	4.5
96.249	96.247	5.1
96.327	96.257	9

CH 40 - LIMIT OF WORKS



Datum 94

Design Level	Existing Surface	Offset
96.399	96.279	-9
96.398	96.279	-8.95
96.37	96.283	-7.55
96.321	96.29	-5.1
96.281	96.291	-4.5
96.416	96.303	0
96.281	96.315	4.5
96.321	96.317	5.1
96.399	96.327	9

TP 27.709

Ver	Revision Description	Date
6		
5		
4		
3		
2	Murray Shire Council Amendments	20/01/2015
1	Original Issue	27/11/2014
0	Draft	-

Designed	Checked
G.McCoomb	R.Dawborn
Jan 2015	Jan 2015
Approved	

Notes/Legend

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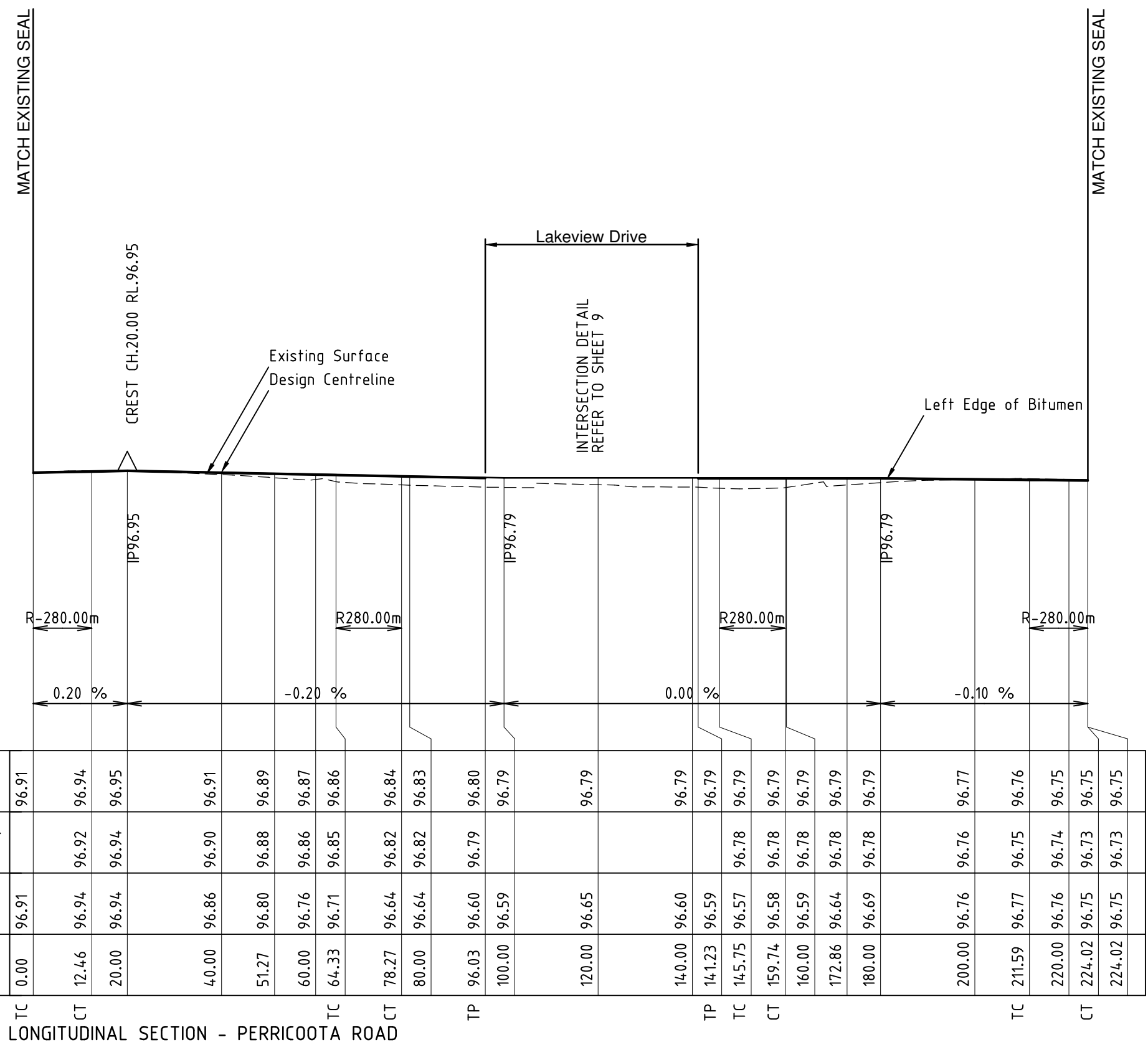
Scale (m) H 1:200 0 2 4  
V 1:100 0 1 2

All lengths are in metres  
and all levels are to Australian Height Datum  
(Original Sheet Size is A3)

Drawing file: 14168 MARSANNE.dwg  
LTO Ref: -

Murray Shire Council - Moama  
Villawood Properties  
Lakeview Estate - Stage 2  
Marsanne Drive Cross Sections

Council Ref:	Our Ref:	Version	Sheet
DA 173/11	14168	2	18 of 32



Scales Hor 1 : 1000  
(A3 orig) Ver 1 : 100

LONGITUDINAL SECTION - PERRICOOTA ROAD

6			Designed	Checked
5			G.McCoomb	R.Dawborn
4			Jan 2015	Jan 2015
3			Approved	
2	Murray Shire Council Amendments	20/01/2015		
1	Original Issue	27/11/2014		
0	Draft	-		
Ver	Revision Description	Date		

Notes/Legend	
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**TERRACO**  
Civil Engineers  
Project Managers  
Development Consultants

Terraco P/L  
ABN 12 681 695 776  
Corner Jewell Court  
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Bendigo Vic 3550  
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Scale (m)  
H 1:1000 0 10 20  
V 1:100 0 1 2

All lengths are in metres  
and all levels are to Australian Height Datum  
(Original Sheet Size is A3)

Drawing file: 14168 PERRICOOTA.dwg  
LTO Ref: -

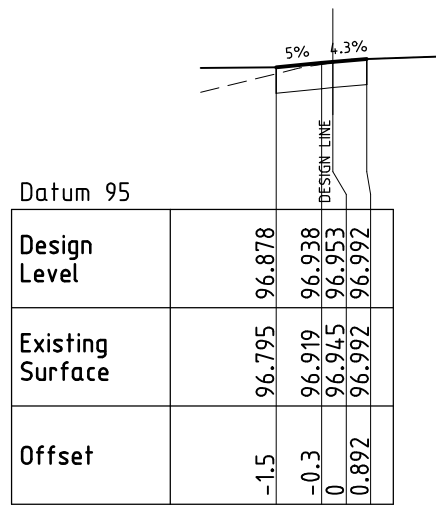
Murray Shire Council - Moama  
Villawood Properties  
Lakeview Estate - Stage 2  
Perricoota Road Longitudinal Section

Council Ref:	Our Ref:	Version	Sheet
DA 173/11	14168	2	19 of 32

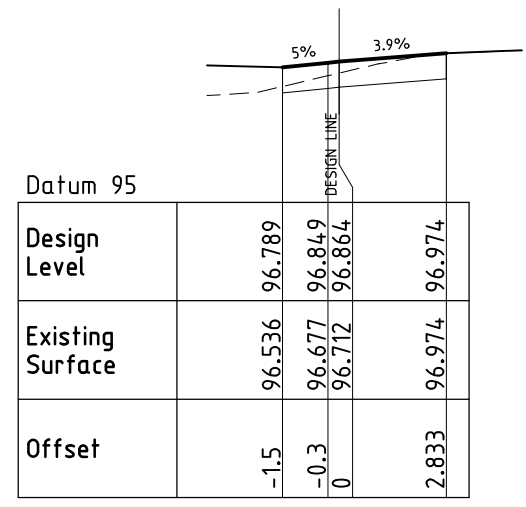
**MURRAY SHIRE COUNCIL**  
**Construction Certificate Approval**

Application Number: 15/122  
 Approval Date: 16 March 2015

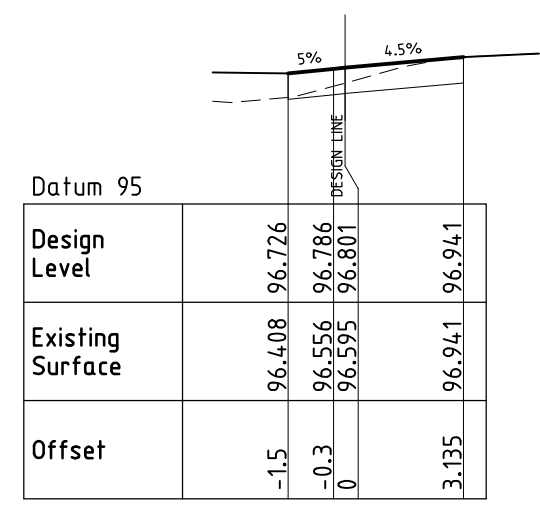
Leigh Robins  
 Director of Engineering



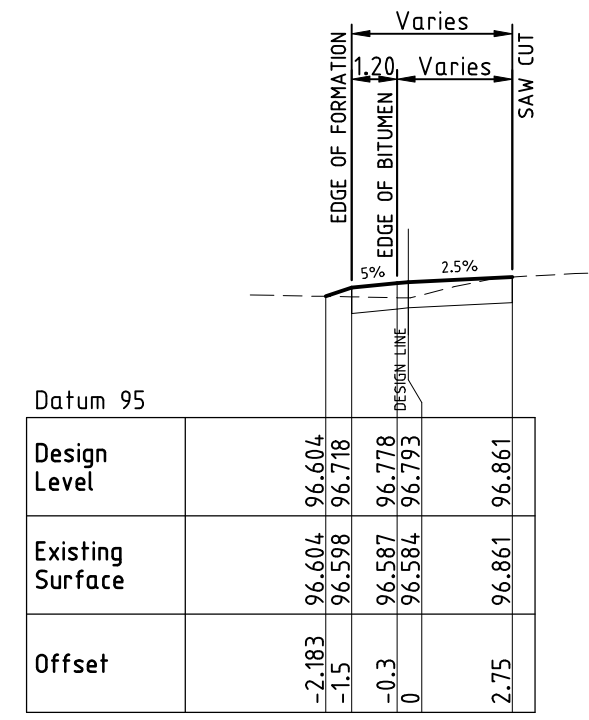
CH 20



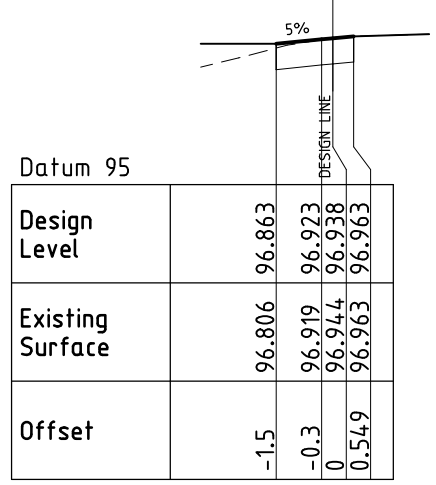
TC 64.326



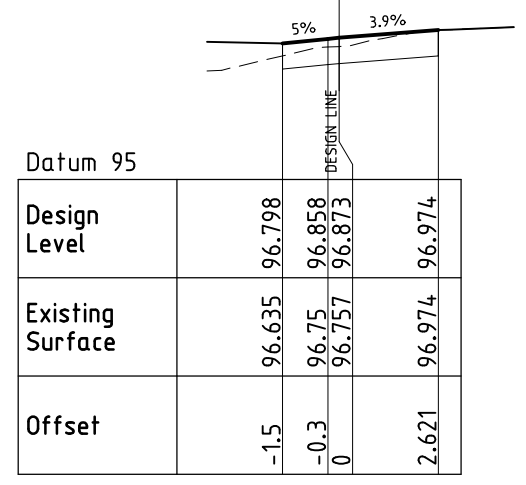
TP 96.033



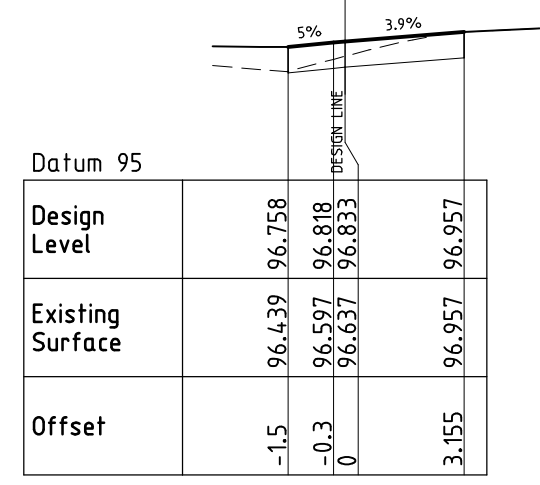
CT 159.743



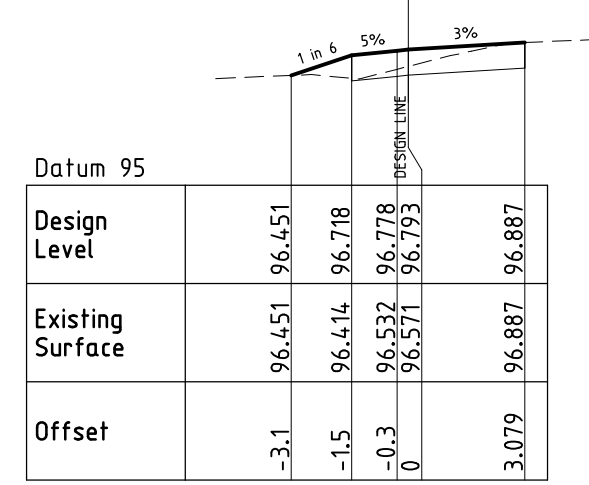
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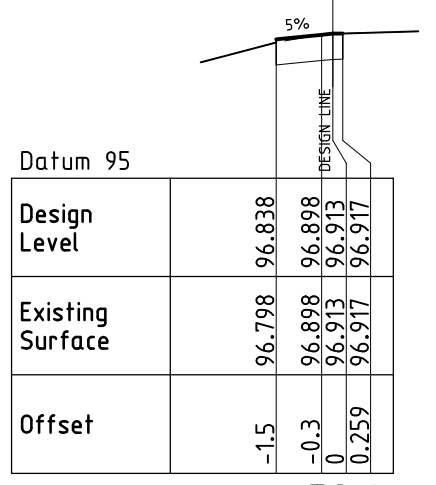
CH 60



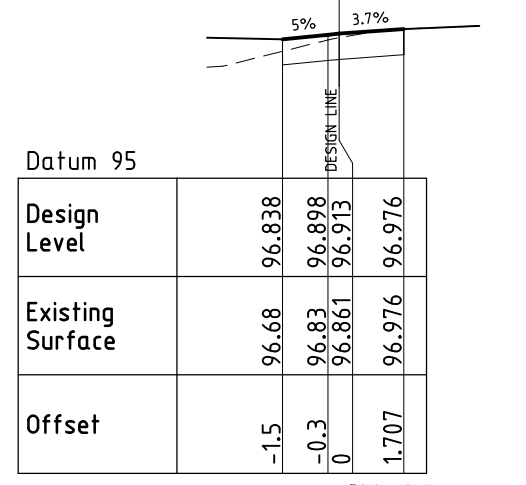
CH 80



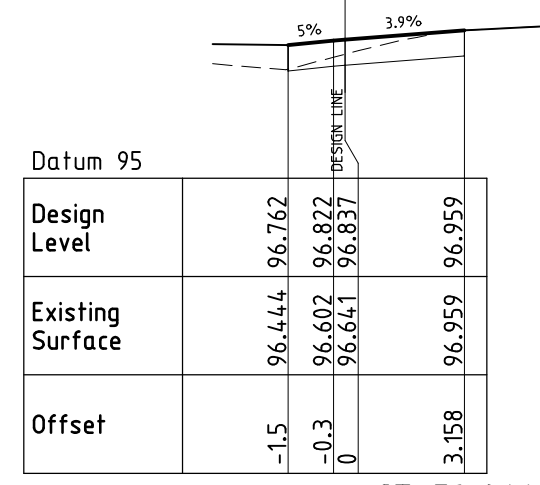
TC 145.755



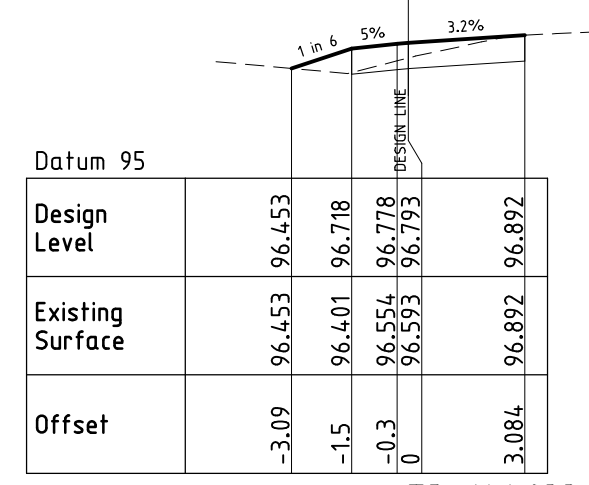
TC 0



CH 40



CT 78.266



TP 141.233

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2	Murray Shire Council Amendments	20/01/2015
1	Original Issue	27/11/2014
0	Draft	-
Ver	Revision Description	Date

Designed	G.McCoomb	Jan 2015
Checked	R.Dawborn	Jan 2015
Approved		

Nofes/Legend

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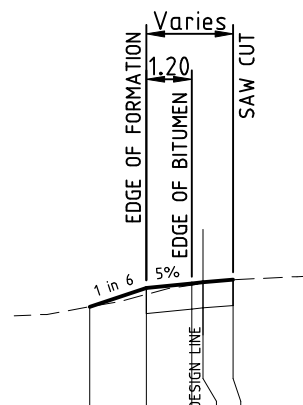
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 V 1:100

All lengths are in metres  
 and all levels are to Australian Height Datum  
 (Original Sheet Size is A3)

Drawing file: 14168 PERRICOOTA.dwg  
 LTO Ref: -

Murray Shire Council - Moama  
 Villawood Properties  
 Lakeview Estate - Stage 2  
 Perricoota Road Cross Sections

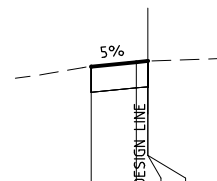
Council Ref:	DA 173/11	Our Ref:	14168	Version:	2	Sheet:	20 of 32
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Datum 95

Design Level	96.448	96.698	96.758	96.773	96.806
Existing Surface	96.448	96.673	96.736	96.761	96.806
Offset	-3.002	-1.5	-0.3	0	0.796

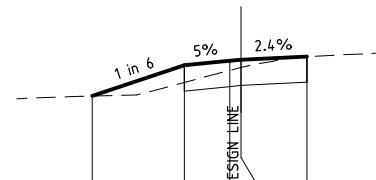
CH 200



Datum 95

Design Level	96.674	96.734	96.749	96.749
Existing Surface	96.675	96.743	96.749	96.749
Offset	-1.5	-0.3	0	0.004

CT 224.024



Datum 95

Design Level	96.312	96.718	96.778	96.793	96.834
Existing Surface	96.312	96.492	96.65	96.689	96.834
Offset	-3.939	-1.5	-0.3	0	1.74

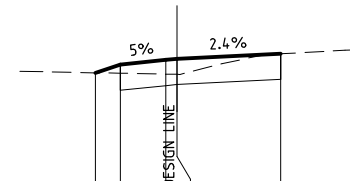
CH 180



Datum 95

Design Level	96.678	96.738	96.753	96.759
Existing Surface	96.678	96.753	96.758	96.759
Offset	-1.5	-0.3	0	0.029

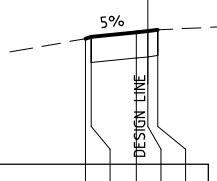
CH 220



Datum 95

Design Level	96.608	96.718	96.778	96.793	96.86
Existing Surface	96.608	96.602	96.59	96.588	96.86
Offset	-2.161	-1.5	-0.3	0	2.738

CH 160



Datum 95

Design Level	96.662	96.687	96.747	96.762	96.779
Existing Surface	96.662	96.674	96.76	96.774	96.779
Offset	-1.647	-1.5	-0.3	0	0.269

TC 211.588

6			Designed	Checked
5			G.McCoomb	R.Dawborn
4			Jan 2015	Jan 2015
3			Approved	
2	Murray Shire Council Amendments	20/01/2015		
1	Original Issue	27/11/2014		
0	Draft	-		
Ver	Revision Description	Date		

Notes/Legend



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Scale (m)

H 1:200	0	2	4
V 1:100	0	1	2

All lengths are in metres  
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(Original Sheet Size is A3)

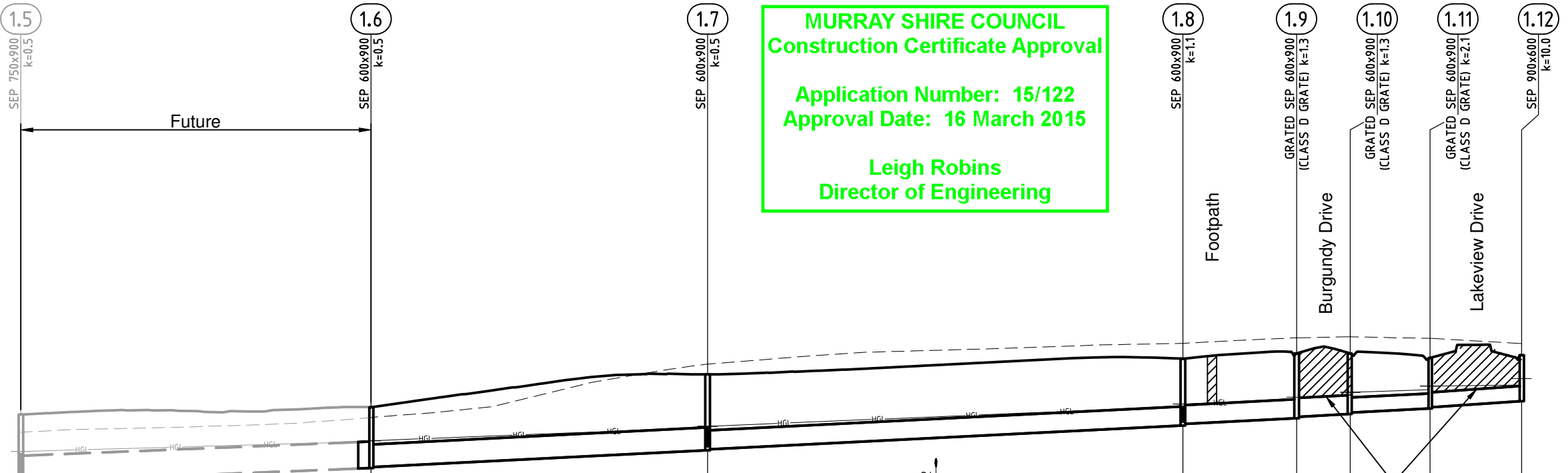
Drawing file:	LTO Ref:	Council Ref:	Our Ref:	Version	Sheet
14168 PERRICOOTA.dwg	-	DA 173/11	14168	2	21 of 32

Murray Shire Council - Moama  
Villawood Properties  
Lakeview Estate - Stage 2  
Perricoota Road Cross Sections 2

**MURRAY SHIRE COUNCIL**  
**Construction Certificate Approval**

Application Number: 15/122  
 Approval Date: 16 March 2015

Leigh Robins  
 Director of Engineering



Design Flow (L/s) 189  
 Pipe Capacity (L/s) 305  
 Actual Velocity (m/s) 1.48  
 Full pipe vel (m/s) 0.87

Pipe Size (mm) 525  
 (Type) RCP RRJ

Pipe Grade (1 in) 250  
 (%) 0.400

Datum R.L. 87.0

Provide pipe stub  
 for future use

	150mm SEWER IL 93.41		150mm SEWER IL 92.50	150mm SEWER IL 92.68		150mm SEWER IL 93.43	150mm SEWER IL 94.02		150mm SEWER IL 92.71									
Design Flow (L/s)	189		167	228		105	141		82	61	36							
Pipe Capacity (L/s)	305		228	228		141	141		141	78	90							
Actual Velocity (m/s)	1.48		1.56	1.56		1.39	1.39		1.32	1.22	1.20							
Full pipe vel (m/s)	0.87		1.05	1.05		0.95	0.95		0.74	0.86	0.50							
Pipe Size (mm)	525		450	450		375	375		375	300	300							
(Type)	RCP RRJ		RCP RRJ	RCP RRJ		RCP RRJ	RCP RRJ		RCRRJ cr	RCP RRJ	RCRRJ cr							
Pipe Grade (1 in)	250		200	200		200	200		200	200	150							
(%)	0.400		0.500	0.500		0.500	0.500		0.500	0.500	0.667							
Datum R.L.	87.0								87.0									
Invert	93.696	93.80	93.994	94.014	94.09	94.12	94.348	94.368	94.59	94.839	94.869	94.982	95.012	95.065	95.095	95.175	95.200	95.321
Depth to Inv. From FSL	1.36	1.34	1.21	1.19			1.50	1.48		1.32	1.29	1.28	1.25	1.20	1.17	1.01	0.98	0.91
H.G.L. Levels	94.30	94.33	94.52	94.54			94.80	94.83		95.21	95.27	95.36	95.40	95.44	95.50	95.55	95.62	95.64
Finished Surface	95.06		95.20				95.85			96.16		96.27		96.27		96.18		96.23
Existing Surface	94.71		95.00				96.06			96.47		96.58		96.60		96.57		96.46
Pipe length & Chainage	76.18	69.48	145.67		66.76	212.43	94.30		306.73	22.54	329.26	10.62	339.88	15.86	355.74	18.16		373.90

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2	Murray Shire Council Amendments	20/01/2015
1	Original Issue	27/11/2014
0	Draft	-
Ver	Revision Description	Date

Designed	G.McCoomb	Checked	R.Dawborn
	Jan 2015		Jan 2015
Approved			

Notes/Legend

**TERRACO**  
 Civil Engineers  
 Project Managers  
 Development Consultants

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 V 1:100 0 1 2

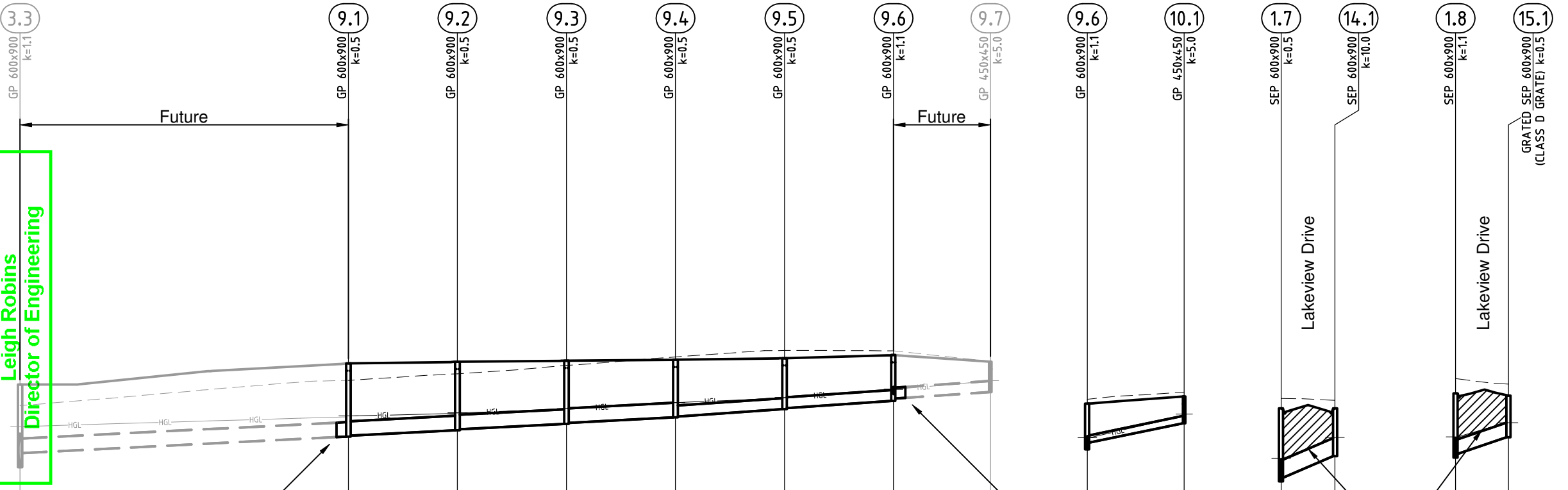
All lengths are in metres  
 and all levels are to Australian Height Datum  
 (Original Sheet Size is A3)

Drawing file: 14168 DRAINAGE.dwg  
 LTO Ref: -

Murray Shire Council - Moama  
 Villawood Properties  
 Lakeview Estate - Stage 2  
 Drainage Longitudinal Sections

Council Ref:	Our Ref:	Version	Sheet
DA 173/11	14168	2	22 of 32

**MURRAY SHIRE COUNCIL**  
Construction Certificate Approval  
Application Number: 15/122  
Approval Date: 16 March 2015  
**Leigh Robins**  
Director of Engineering



Provide pipe stub for future use

Provide pipe stub for future use

3% CSFCR Backfill

Design Flow (L/s) 60  
Pipe Capacity (L/s) 78  
Actual Velocity (m/s) 1.21  
Full pipe vel (m/s) 0.84

Pipe Size (mm) 300  
(Type) RCP RRJ

Pipe Grade (1 in) 200  
(%) 0.500

Datum R.L. 87.0

	3.3	9.1	9.2	9.3	9.4	9.5	9.6	9.7	9.6	10.1	1.7	14.1	1.8	15.1
Invert	93.639 93.931 93.98	94.270 94.290	94.402 94.422	94.535 94.555	94.667 94.687	94.837 94.857	95.007 95.057	95.190	95.007 95.147	95.547	94.348 94.423 88.0	94.867	94.839 94.914 88.0	95.259
Depth to Inv. From FSL	1.71 1.41	1.51 1.49	1.41 1.39	1.30 1.28	1.19 1.17	1.05 1.03	0.95 0.90	0.62	0.95 0.81	0.55	1.50 1.43	0.99	1.32 1.25	0.86
H.G.L. Levels	94.41 94.48	94.68 94.70	94.75 94.76	94.83 94.84	94.97 94.97	95.06 95.08	95.23 95.25	95.42	95.23 95.25	95.70	94.80 94.83	95.24	95.21 95.27	95.56
Finished Surface	95.34	95.78	95.81	95.84	95.86	95.89	95.95	95.81	95.95	96.10	95.85	95.85	96.16	96.12
Existing Surface	94.91	95.43	95.57	95.74	95.91	96.05	96.04	95.82	96.04	96.19	96.06	96.02	96.47	96.35
Pipe length & Chainage	0.00 9.81 9.81	67.78	22.50 90.28	22.50 112.78	22.50 135.28	22.50 157.78	22.50 180.28	20.00 200.28	0.00 20.00	20.00	0.00 11.10	11.10	0.00 10.90	10.90

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2	Murray Shire Council Amendments	20/01/2015
1	Original Issue	27/11/2014
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Designed	G.McCoomb	Jan 2015
Checked	R.Dawborn	Jan 2015
Approved		

Notes/Legend	
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Scale (m)  
H 1:1,000 0 10 20  
V 1:100 0 1 2

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Drawing file: 14168 DRAINAGE.dwg  
LTO Ref: -

Murray Shire Council - Moama  
Villawood Properties  
Lakeview Estate - Stage 2  
Drainage Longitudinal Sections 2

Council Ref:	DA 173/11	Our Ref:	14168	Version:	2	Sheet:	23 of 32
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## GENERAL NOTES

1. All works are to be carried out in accordance with Murray Shire Council and current Water Services Association of Australia standards and specifications.
2. Contract is in accordance with AS2124-1992.
3. The contractor must locate all services prior to commencement of any works.
4. Sewers are to be 150mm Ø uPVC RRJ class SN8 (SEH grade) unless shown otherwise.
5. Sewer Jump Up levels shown refer to the required level at the property connection point 1.0m inside the property boundary. All Jump Ups to be brought up a minimum of 1.0m above the surface.
6. All sewer manhole covers to be solid ductile iron Class D cover and frame with concrete surround.
7. The level of all existing outfall sewers must be checked by the contractor prior to work commencing.
8. The contractor must adhere to the code of practise as "Excavation Work Code of Practice" under section 274 of the Work Health and Safety Act 2011. All workers on this site must have a current WH&S General Induction for Construction Work in NSW Certificate (White Card).
9. The contractor is not permitted to break into an existing live pipeline, enter a live manhole, or remove the cover of an existing live manhole unless given permission by the Supervising Engineer.
10. All properties are to be fully reinstated to the satisfaction of the Supervising Engineer.
11. All new sewers must be pressure tested. Where the contractor does not have a Quality Assurance system in place, all pipes must be inspected by the Supervising Engineer.
12. Confined Space Entry must be in accordance with Work Health and Safety requirements. Contractor must not enter a Confined Space until all required information has been submitted to Terraco.
13. All hatched areas on longitudinal sections indicate 20mm Class 3 FCR backfill.
14. All future stub end to be capped.
15. All sewer pipes are to be inspected by CCTV after installation, with a copy to be provided to the Murray Shire Council.

### Asset Recording Requirements

The contractor must record all construction details including invert levels and locations of manholes, sewer ends and oblique branches, and testing details, using appropriate "line sheets".

The information is to be provided to the supervising engineer in a suitable form to enable detailed "as constructed" plans to be produced. Line sheets are available from Terraco, or the contractor may use their own if approved by Terraco prior to works commencing. The information is to be provided within 1 week of the completion of the works. Claims for payment for construction may be delayed until the line sheets have been received by the supervising engineer.

The following standard backfill requirements apply to all trenching works.

For PVC pipes:

- a) Minimum bedding sand under pipe - 75mm
- b) Minimum sand backfill above pipe - 100mm
- c) Minimum sand backfill either side of pipe - 100mm

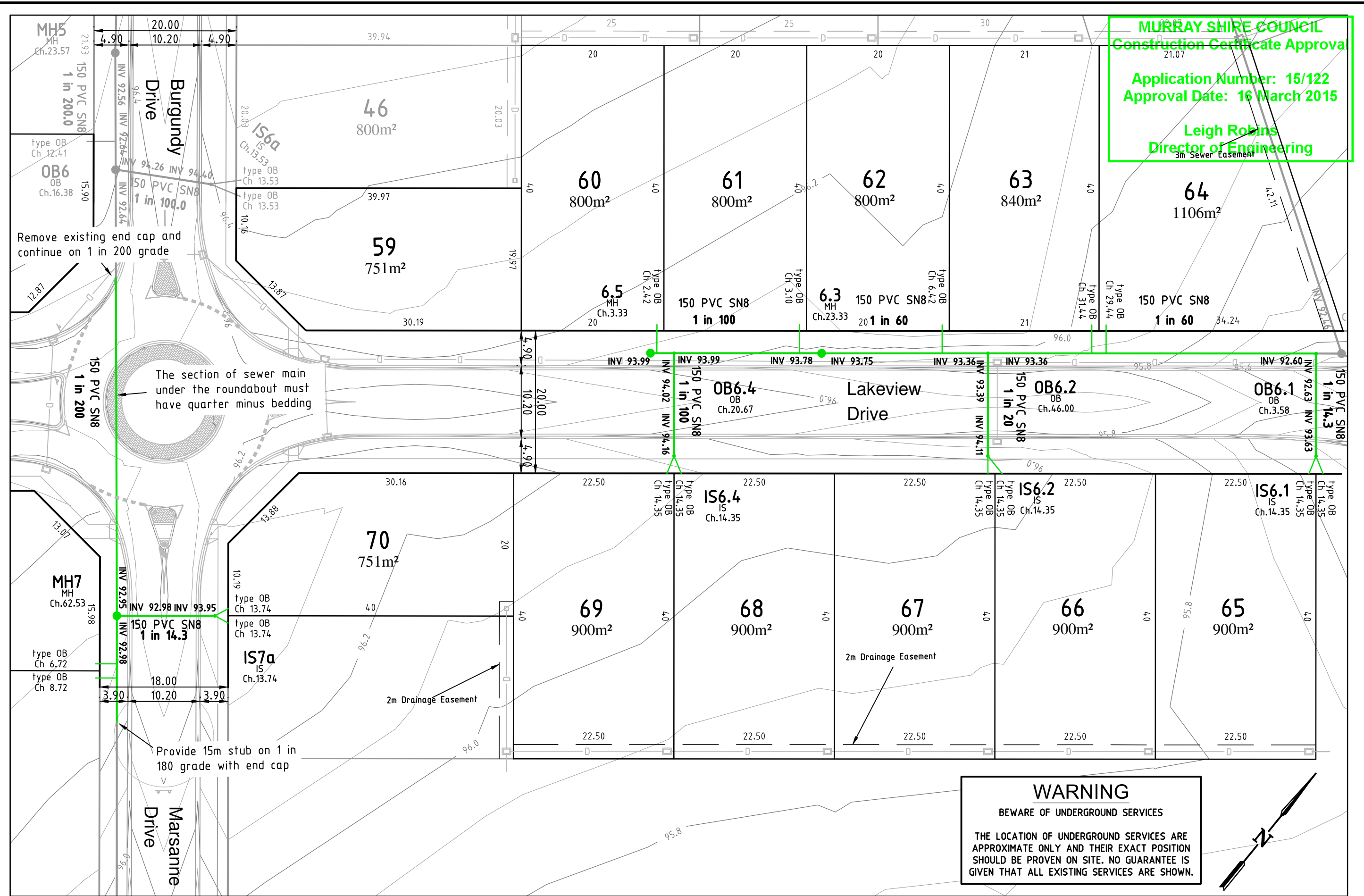
For concrete pipes:

- a) Minimum bedding sand under pipe - 75mm
- b) Minimum sand backfill to string line.
- c) Minimum sand backfill either side of pipe - 100mm

Select backfill to 100mm above the pipe. Should the excavated material be unsuitable, sand backfill to be provided a minimum 100mm above the pipe.

6			Designed G.McCoomb Jan 2015	Checked R.Dawborn Jan 2015	Notes/Legend	 <b>TERRACO</b> Civil Engineers Project Managers Development Consultants	Terraco P/L ABN 12 681 695 776 Corner Jewell Court & Rowena Street Bendigo Vic 3550 Ph: 03 5442 5799 Fax: 03 5441 5506 E: info@terraco.com.au	All lengths are in metres and all levels are to Australian Height Datum (Original Sheet Size is A3)				Murray Shire Council - Moama Villawood Properties Lakeview Estate - Stage 2 Sewer Notes			
5			Approved						Drawing file:	LTO Ref:	Council Ref:	Our Ref:	Version	Sheet	
4									14168 SEWER.dwg	-	DA 173/11	14168	2	25 of 32	
3															
2	Murray Shire Council Amendments	20/01/2015													
1	Original Issue	27/11/2014													
0	Draft	-													
Ver	Revision Description	Date													

**MURRAY SHIRE COUNCIL**  
**Construction Certificate Approval**  
 Application Number: 15/122  
 Approval Date: 16 March 2015  
 Leigh Robins  
 Director of Engineering



**WARNING**  
 BEWARE OF UNDERGROUND SERVICES  
 THE LOCATION OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

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	Jan 2015		Jan 2015
Approved			

**Notes/Legend**  
 PLEASE NOTE THAT CONTOURS SHOWN ON PLAN INDICATE THE APPROXIMATE FINISHED SURFACE. CONTOUR INTERVAL 0.1m

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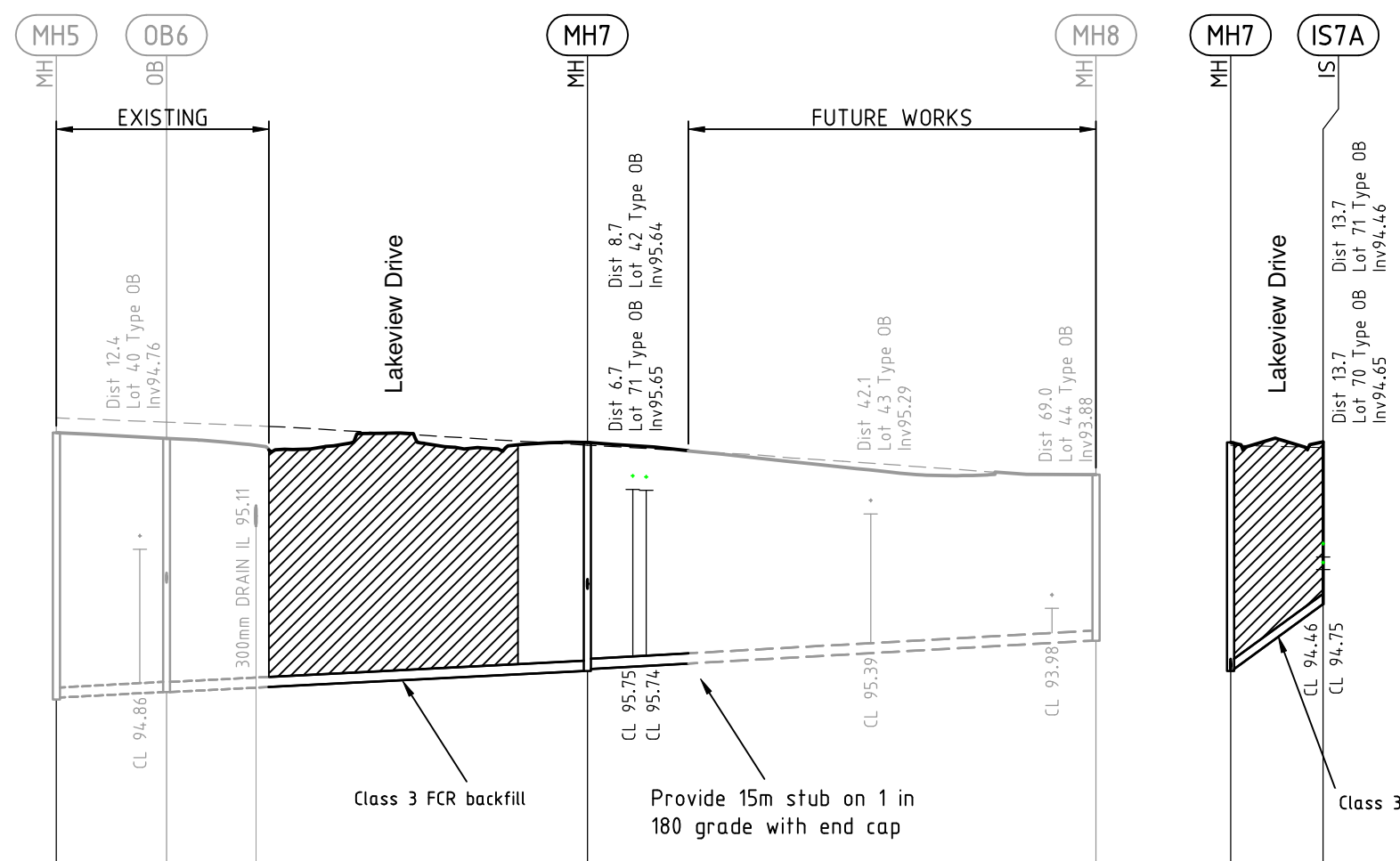
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 LTO Ref: -

Murray Shire Council - Moama					
Villawood Properties					
Lakeview Estate - Stage 2					
Sewer Layout Plan					
Council Ref:	DA 173/11	Our Ref:	14168	Version:	2
Sheet	26 of 32				

**MURRAY SHIRE COUNCIL**  
**Construction Certificate Approval**

**Application Number: 15/122**  
**Approval Date: 16 March 2015**

**Leigh Robins**  
**Director of Engineering**



Pipe Size (mm)	150	150	150	150
Type	PVC SN8	PVC SN8	PVC SN8	PVC SN8
Pipe Grade (1 in)	200	200	180	14.3
(%)	0.500%	0.500%	0.556%	7.000%
Datum R.L.	85.0			
Invert	92.529	92.559	92.641	92.641
Depth to Invert From FSL	3.97	3.94	3.77	3.77
Finished Surface	96.494	96.409	96.347	95.870
Existing Surface	96.713	96.648	96.308	95.870
Chainage	173.63	16.38	190.01	13.28
			203.29	62.53
			252.54	75.55
			328.09	

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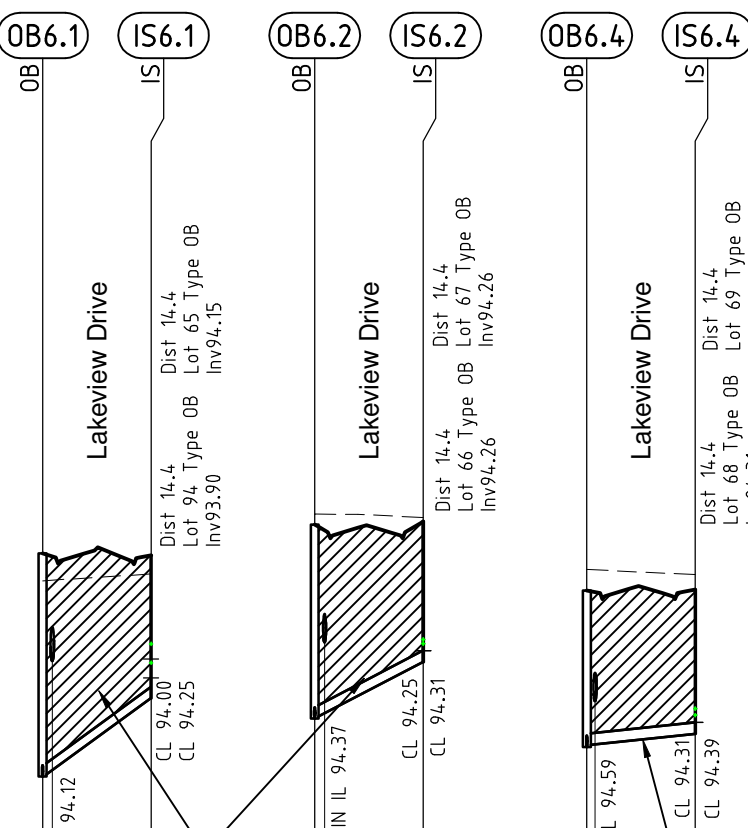
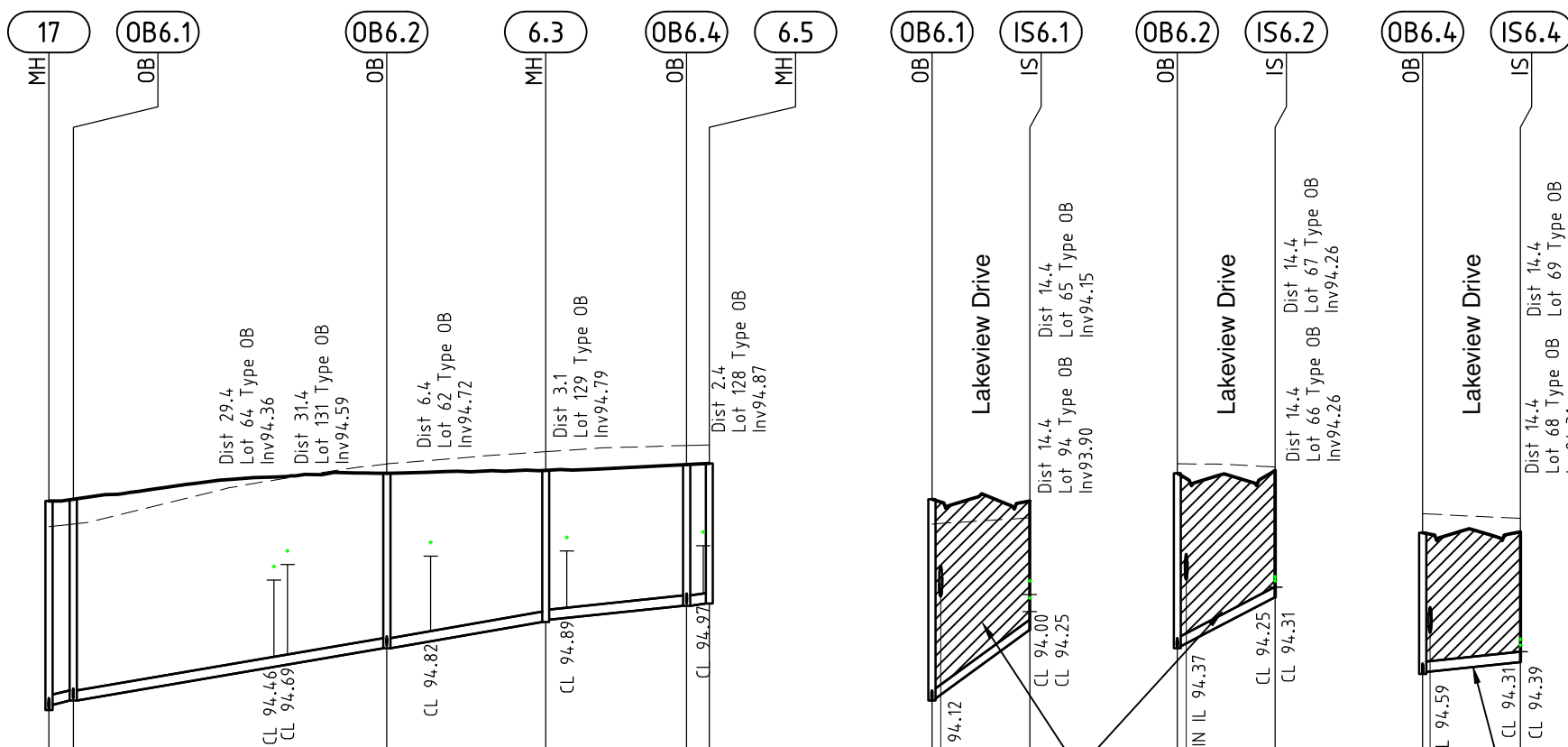
Terraco P/L  
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 H 1:1,000 0 10 20  
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Murray Shire Council - Moama				
Villawood Properties				
Lakeview Estate - Stage 2				
Sewer Longitudinal Sections				
Council Ref:	Water Ref:	Our Ref:	Version	Sheet
DA 173/11	DA 173/11	14168	2	27 of 32



Pipe Size (mm)	150	150	150	150	150						
Type	PVC SN8	PVC SN8	PVC SN8	PVC SN8	PVC SN8						
Pipe Grade (1 in) (%)	60.0 1.667%	60.0 1.667%	60.0 1.667%	100.0 1.000%	100 1.000%						
Datum R.L.	85.0										
Invert	92.456	92.536	92.595	92.595	93.362	93.362	93.751	93.781	93.988	93.988	94.021
Depth to Invert From FSL	3.07	2.99	2.95	2.95	2.57	2.57	2.22	2.19	2.07	2.07	2.05
Finished Surface	95.522	95.550	95.931	95.931	95.972	95.972	96.058	96.074	96.345	96.345	96.074
Existing Surface	95.148	95.186	96.067	96.067	96.247	96.247	96.336	96.345	96.345	96.345	96.074
Chainage	0.00	3.58	3.58	46.00	49.58	23.33	72.90	20.67	93.58	3.33	96.90

Invert	92.595	92.625	93.630	93.362	93.392	94.110	93.988	94.018	94.161
Depth to Invert From FSL	2.95	2.92	1.89	2.57	2.54	1.86	2.07	2.04	1.91
Finished Surface	95.550	95.522	95.970	95.931	95.970	96.071	96.058	96.071	96.071
Existing Surface	95.186	95.276	96.067	96.067	96.024	96.268	96.336	96.268	96.268
Chainage	0.00	14.35	14.35	0.00	14.35	14.35	0.00	14.35	14.35

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2	Murray Shire Council Amendments	20/01/2015
1	Original Issue	27/11/2014
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Ver	Revision Description	Date

Designed	G.McCoomb	Checked	R.Dawborn
	Jan 2015		Jan 2015
Approved			
Notes/Legend			

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Project Managers  
Development Consultants

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Scale (m)  
H 1:1000 0 10 20  
V 1:100 0 1 2

All lengths are in metres  
and all levels are to Australian Height Datum  
(Original Sheet Size is A3)

Drawing file: 14168 SEWER.dwg  
LTO Ref: -

Murray Shire Council - Moama  
Villawood Properties  
Lakeview Estate - Stage 2  
Sewer Longitudinal Sections 2

Council Ref:	Our Ref:	Version	Sheet
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# WATER MAIN NOTES

1. Water Main offset to be 2.9m (Filtered) and 3.3m (Raw) unless shown otherwise.
2. All works are to be carried out in accordance with the current standard's of Murray Shire Council.
3. Contract is in accordance with AS2124-1992.
4. The Contractor must locate all services prior to works commencing.
5. All water service road crossings to be 32mm PN8 poly (if two properties being connected) or 25mm PN8 poly (if single property connected). Each service to be sleeved in 50mm Class 12 uPVC.
6. The Contractor must supply all assemblies, cast iron covers, surrounds and indicator posts for stop valves (SV) and hydrants (HYD).
7. All water mains to be RRJ PVC-M Series 1 Class 9 except under road pavement where Series 1 Class 12 is to be used.
8. Water tapplings (Treated and Raw) including tapping saddles and 20mm dia. copper service connections, meter cock (treated) and ball valve quick action (raw) to be provided 1.0m within each lot. Tapping saddles are to be gunmetal style only. See Standard Drawing.
9. Water meter stop taps are to be installed on filtered water connections.
10. Ball valves quick action are to be installed on raw water connections
11. All stop valves are to be Anti Clockwise Closing (ACC).
12. All services to be installed to provide minimum cover to finished surface.
13. All road crossing trenches to be compacted to a minimum of 95% standard compaction ratio.
14. All road crossings for services to be backfilled with 3% stabilised FCR.

**MURRAY SHIRE COUNCIL**  
Construction Certificate Approval

Application Number: 15/122  
Approval Date: 16 March 2015

Leigh Robins  
Director of Engineering

## Asset Recording Requirements

The contractor must record all construction details including offsets of mains and locations of fittings such as valves, tees fire plugs etc, and testing details, using appropriate "line sheets".  
The information is to be provided to the supervising engineer in a suitable form to enable detailed "as constructed" plans to be produced.

## TOTAL WORK

SIZE	TYPE	CLASS	LENGTH (m)
100mm	PVC-M	9	378
100mm	PVC-M	12	83

The following standard backfill requirements apply to all trenching works.

For PVC pipes:

- a) Minimum bedding sand under pipe - 75mm
- b) Minimum sand backfill above pipe - 100mm
- c) Minimum sand backfill either side of pipe - 100mm

For concrete pipes:

- a) Minimum bedding sand under pipe - 75mm
- b) Minimum sand backfill to string line.
- c) Minimum sand backfill either side of pipe - 100mm

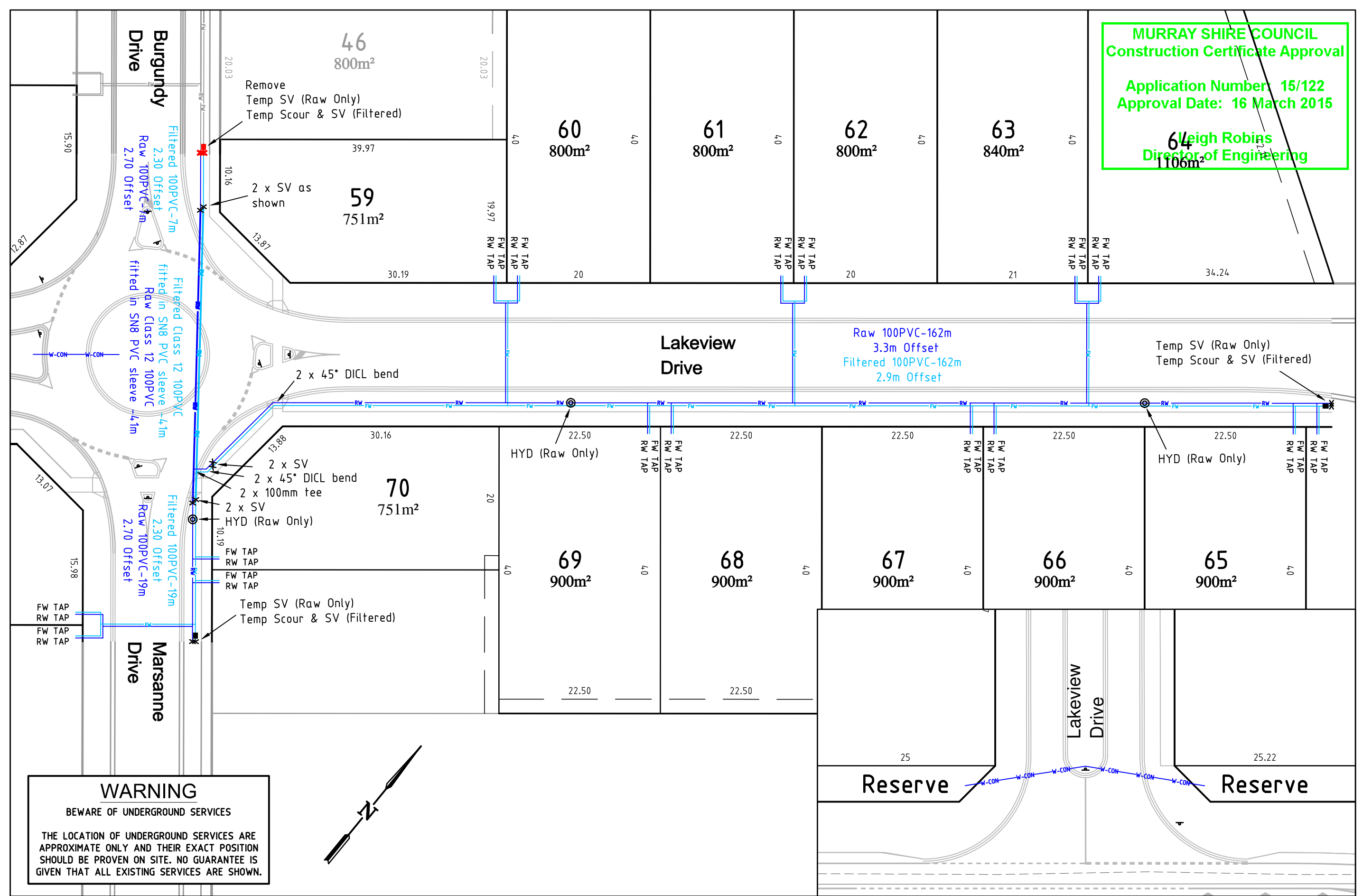
Select backfill to 100mm above the pipe. Should the excavated material be unsuitable, sand backfill to be provided a minimum 100mm above the pipe.

Street	Back of Kerb	Filt. Water	Raw Water	Gas	Power	Telstra	Sewer
Lakeview Drive	4.30 & 4.90	2.90 SE	3.30 SE	3.80 SE	0.90 NW	1.40 NW	3.15 NW
Burgundy Drive	4.90	2.30 NE	2.70 NE	3.20 NE	0.90 SW	1.40 SW	3.15 SW
Marsanne Drive	3.90	2.30 NE	2.70 NE	3.20 NE	0.90 SW	1.40 SW	2.40 SW

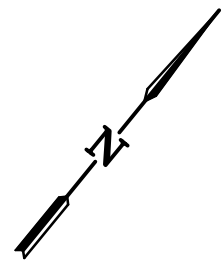
## Service Offsets

6			Designed G.McCoomb Jan 2015	Checked R.Dawborn Jan 2015	Notes/Legend	 <b>TERRACO</b> Civil Engineers Project Managers Development Consultants	Terraco P/L ABN 12 681 695 776 Corner Jewell Court & Rowena Street Bendigo Vic 3550 Ph: 03 5442 5799 Fax: 03 5441 5506 E: info@terraco.com.au	All lengths are in metres and all levels are to Australian Height Datum (Original Sheet Size is A3)				Murray Shire Council - Moama Villawood Properties Lakeview Estate - Stage 2 Water Notes			
5			Approved					Drawing file:	LTO Ref:	Council Ref:	Our Ref:	Version	Sheet		
4								14168 WATER.dwg	-	DA 173/11	14168	2	29 of 32		
3															
2	Murray Shire Council Amendments	20/01/2015													
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**MURRAY SHIRE COUNCIL**  
**Construction Certificate Approval**  
 Application Number: 15/122  
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 Leigh Robins  
 Director of Engineering



**WARNING**  
 BEWARE OF UNDERGROUND SERVICES  
 THE LOCATION OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.



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Approved		

Notes/Legend

:FILTERED		:S.V.	
:RAW		:F.P.	
:CONDUIT		:SCOUR	

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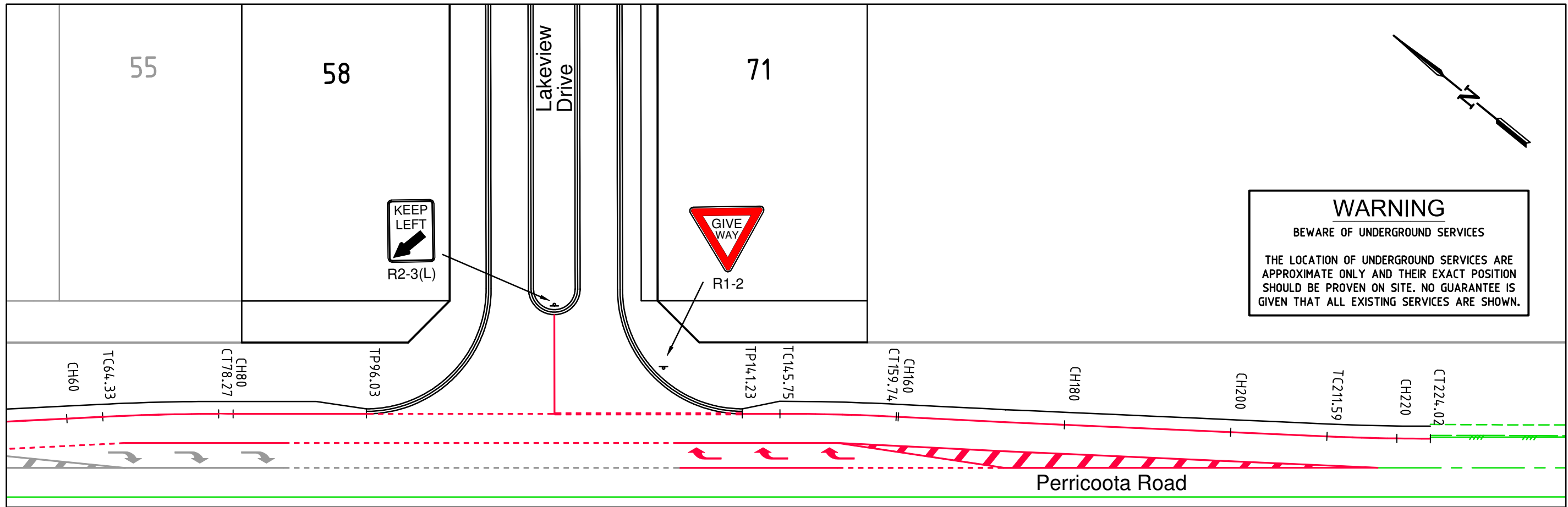
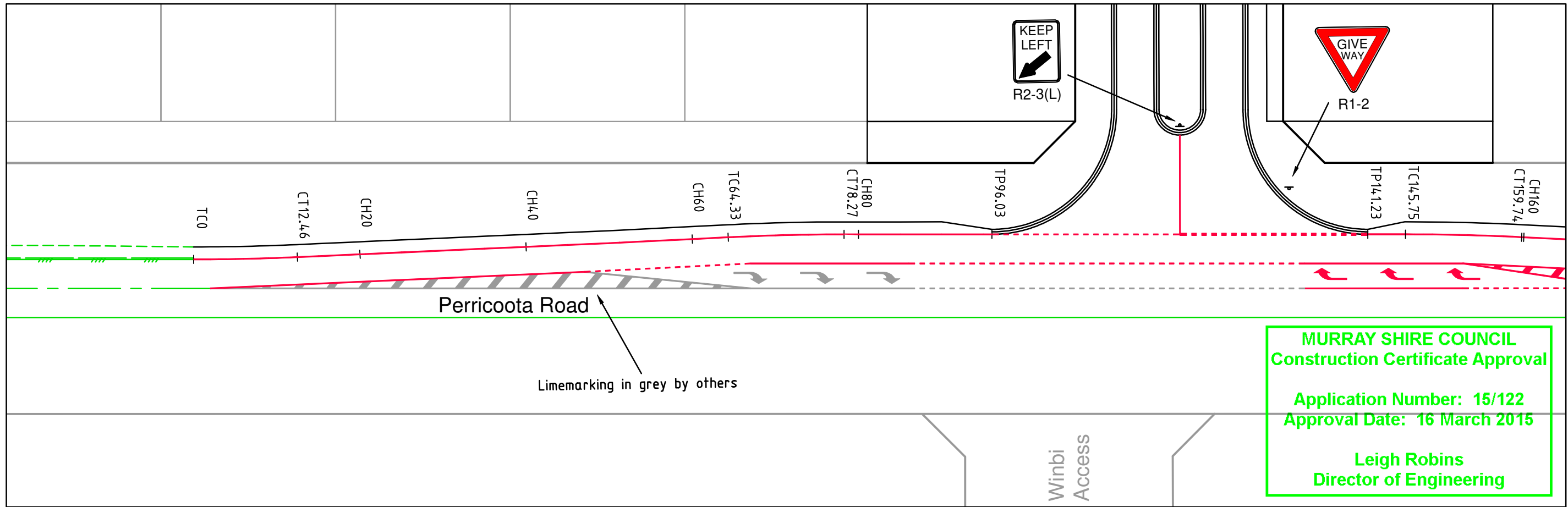
Scale (m)

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All lengths are in metres  
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 (Original Sheet Size is A3)

Drawing file: 14168 WATER.dwg  
 LTO Ref: -

Murray Shire Council - Moama					
Villawood Properties Lakeview Estate - Stage 2					
Water Plan					
Council Ref:	DA 173/11	Our Ref:	14168	Version	2
Sheet	30 of 32				



6					
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H 1:500

Scale (m)

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Drawing file: 14168 LINEMARKING.dwg	LTO Ref: -	Council Ref: DA 173/11	Our Ref: 14168	Version 2	Sheet 31 of 32
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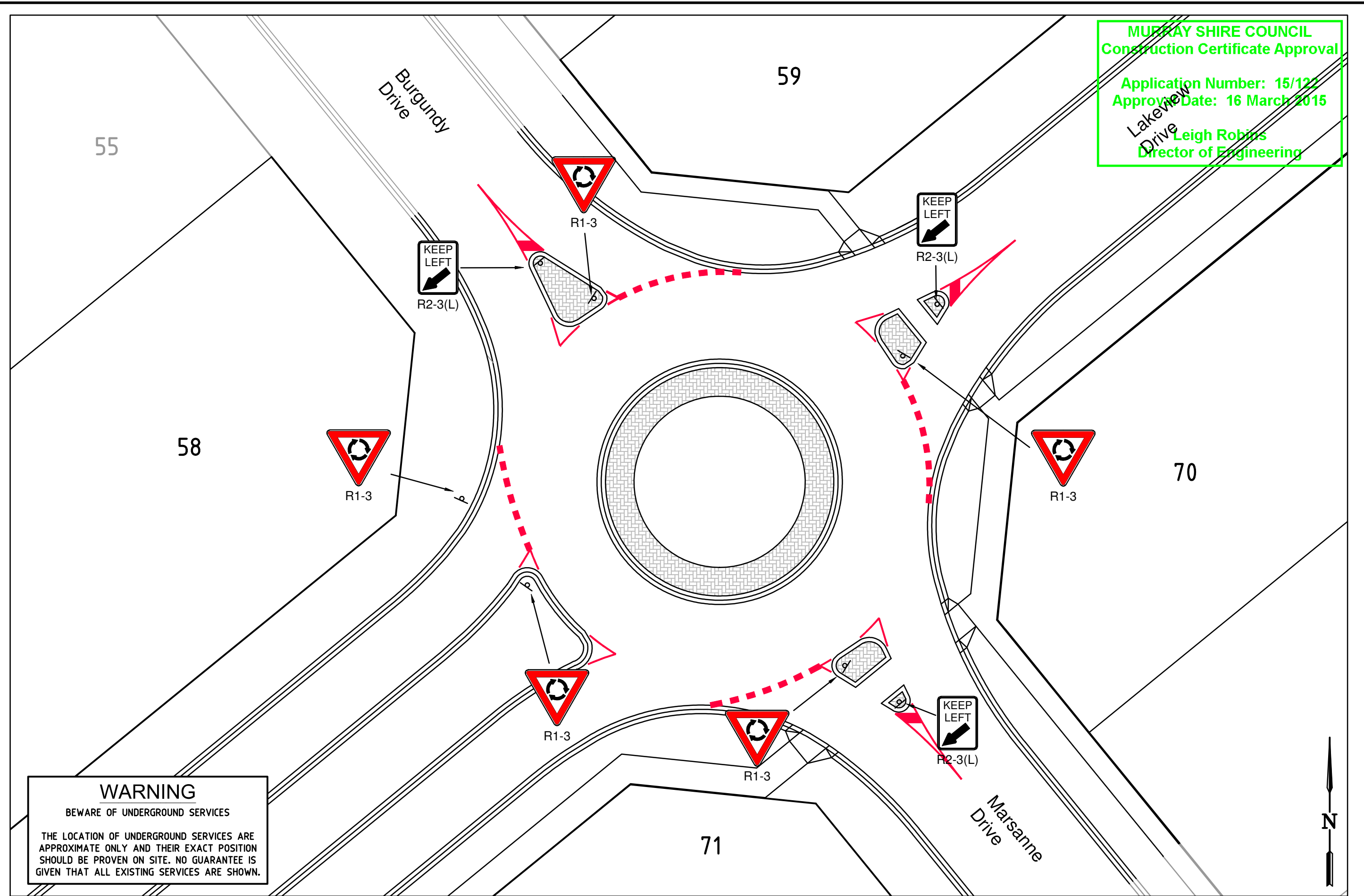
Murray Shire Council - Moama

**Villawood Properties**  
Lakeview Estate - Stage 2

**Linemarking Plan**



MURRAY SHIRE COUNCIL  
 Construction Certificate Approval  
 Application Number: 15/122  
 Approval Date: 16 March 2015  
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Scale (m) H 1:250 0 2.5 5

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Drawing file: 14168 LINEMARKING.dwg  
 LTO Ref: -  
 Council Ref: DA 173/11  
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Murray Shire Council - Moama  
 Villawood Properties  
 Lakeview Estate - Stage 2  
 Linemarking Plan 2