



SERVICING STRATEGY
for
THE PROPOSED RIVERSIDE
DEVELOPMENT AND IMMEDIATE
ENVIRONS
LOTS 10 & 40 in DP 270100
RIVERSIDE AT TEA GARDENS

***PREPARED BY
TATTERSALL LANDER
PTY LTD
DEVELOPMENT CONSULTANTS
November 2012***



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INTRODUCTION

The Proposal

Crighton Properties has engaged Tattersall Lander Pty Ltd to undertake the development of an appropriate and coordinated servicing strategy for Riverside and adjoining environs. The servicing strategy has been prepared in consultation with the appropriate Services Agencies and includes:-

- MidCoast Water for Water & Sewer Reticulation.
- Essential Energy for Electrical Reticulation.
- Telstra & NBN Co for Communications.

Natural Gas is not available and has not been pursued.

This Servicing Strategy has been prepared to consider a holistic approach for the provision of essential services to the area of north Tea Gardens and to be a lead document for the reticulation of major services to other adjoining areas as well as to the future potential major development sites of North Shearwater, Hawks Nest North, Myall River Downs and the partly serviced Tea Gardens Industrial Park and Shearwater.

A copy of the overall Servicing Strategy Project Site is contained within Appendices C, D and E. Note that Riverside is highlighted and adjoining parcels/future development projects are indicated.

Great Lakes Council has prepared a Tea Gardens & Hawks Nest Conservation & Development Strategy as a strategic document to direct the decision making for the development of identified areas. Riverside is one of the identified areas for development and as it is adjoining the current extents of Tea Gardens is a pivotal development for the reticulation of essential services to most other potential developments to the north, east and west of the site.

As part of the Conservation & Development Strategy, the provision of essential reticulated services is provided through the Riverside project and as can be seen when viewing the attached plans, the intent of the C&DS is adequately addressed. It is to be

noted that in discussions with MidCoast Water, other more appropriate servicing for Hawks Nest North are also considered.

Site Description

The Riverside Project contains land that is generally to the east of Myall Street, north of the Myall Quays Commercial Precinct and Shoreline Drive, south of Toonang Drive and adjoins the Myall River.

The land is generally flat in nature and cleared of any significant vegetation. The proposed Development Plan has evolved to produce a particular footprint that seeks to achieve a balanced outcome within the constraints of the site and the various legislative, planning and operational aspects that can be legitimately achieved.

The site constraints with the land being of a generally flat nature have contributed to MidCoast Water undertaking the construction and commissioning of a state of the art Vacuum Sewer Pumping Station which is located off Spinifex Avenue, west of Myall Street. This type of infrastructure has become a viable option and for this site, an ideal technology that has significant positive environmental outcomes.

Tattersall Lander has prepared a servicing strategy for the roll out of the reticulated sewer servicing for all lands within the catchment that this critical infrastructure facility can legitimately service. These plans, included in Appendix C, have yet to be formally approved by MidCoast Water but their development has provided MidCoast Water the opportunity to commence the introduction of sewer services to the adjoining Tea Gardens Industrial Park and the North Shearwater project.

Areas to the southern side of the Riverside development site are already serviced by a reticulated gravity sewer system and reticulated water supply. Redundancies in the water supply have been developed to assist MidCoast Water in guaranteeing the provision of its services to other areas within Tea Gardens and this has provided a higher level of supply for MidCoast Water customers.

Reticulated water supplies are available to the current Commercial Area and in part these services are being utilised to service the proposed development. Extensions to the reticulated water system are indicated in Appendix D. Note that with the reticulated water, MidCoast Water is going to provide a second supply to Hawks Nest via the North Shearwater, Riverside and the Hawks Nest North developments. Currently MidCoast Water are somewhat exposed if the single pipe water supply over the Singing Bridge to Hawks Nest is disrupted.

Essential Energy is currently proposing to relocate and significantly upgrade its electrical supply network and this work is currently being undertaken. A relocated Substation is under consideration and its new location is indicated. Existing overhead and underground services have been identified and indicated. Appendix E contains relevant details.



Photograph 1 – Typical Landform to the north of the Shopping Centre

Land Ownership

Lot 40 DP 270100 is owned by Crighton Properties Pty. Limited and Lot 10 is owned by Geoff Cox, Managing Director, Crighton Properties. Copies of the Titles are contained in *Appendix B*. Adjoining lands that contain the MidCoast Water Vacuum Sewer Pump Station are owned by Myall River Downs Pty Ltd and this Company is under the Crighton Properties umbrella.

Adjoining Development



Photograph 2 – Commercial/Retail Centre on Myall Quays Boulevard

All of the existing development that has either development approval or is constructed in the vicinity of the Shopping Centre or the most northern extremities of Stages 7 and 8 are adequately serviced by reticulated services from existing trunk infrastructure. Parts of the servicing of these areas will be appropriately extended to support the servicing of the new areas.

Reticulation of Sewer Services

Appendix C contains plans for the reticulation of the Vacuum Sewer system. The overall system currently envisages a roll out of 10 vacuum lines. Three (3) of these lines are to be directed towards Riverside, the Tea Gardens Industrial Park (currently under redesign) and North Shearwater. Other vacuum lines are being rolled out to accommodate the already approved Hermitage Retirement Village. A Sludge Rising Main servicing MidCoast Water's Bore Fields situated on land to the north of Lot 10 DP 270100 is being accommodated within the Riverside development.

This type of vacuum sewer system has significant environmental advantages over the usual gravity service. Typical advantages are:-

1. Less pumping stations and this means less potential for environmental discharges.
2. Less pumping stations requiring long term maintenance.
3. Significantly less long term groundwater infiltration as the system uses welded plastic PE pipes.
4. Significantly less access chamber infiltration from stormwater as the system uses less access chambers. In some cases there is up to 500m between access chambers on the trunk mains.
5. Higher pipe depths so that the water table will be intercepted less often.
6. Significantly lower wet weather allowances providing higher control of flows experienced at the treatment plant at Hawks Nest.

Disadvantages of the system only relate to the location of the services into the front of the dwellings, generally the footpath, and for Greenfield developments, this presents an additional service that needs to be accommodated. Access to valve chambers on a 24 hour basis is one of the requirements of the service. A typical footpath allocation has been prepared and is included in Appendix G.

Riverside would have required the provision of at least eight conventional pumping or lifting stations and this service has been completely replaced by one coordinated

vacuum system. A significant reduction in infrastructure costs and future maintenance costs that are inherent with these services has been achieved.

The commissioning of the Vacuum Sewer Pumping Station creates the situation of a hugely underutilised facility. The approval of the Riverside development options will enable this facility to commence an appropriate servicing regime and as it has a significant reduction in overall environmental impact, the utilisation of the facility needs to commence without undue delay.

Reticulation of Water Services

Appendix D contains a proposed reorganisation of major water supply services from the existing dual supplies in Myall Street to a triple main pipe supply via North Shearwater. This third supply will also be potentially extended to Hawks Nest North via a connection point at the northern parts of the Riverside project.

In addition to the reticulation of potable water, the Riverside Planning Group are currently investigating the potential with MidCoast Water for the reticulation of “grey water” to all new residences within Riverside and areas to the north and west. This “third pipe solution” has the potential to marginally reduce the trunk main sizing and future demands on the potable water supply from the bore fields to the north of Tea Gardens.

Redundancies within the system for reticulated water have been designed to accommodate overall MidCoast Water requirements and the introduction of this third water main will have significant advantages to all existing clients in the current Tea Gardens/Hawks Nest supply area.

MidCoast Water has, in anticipation of the imminent extension of development options for the north of Tea Gardens, recently completed the upgrading and augmentation of potable water storages at the Viney Creek Road Reservoirs. An additional 8.1ML reservoir has been commissioned and will provide sufficient capacity for the future immediate (~10 – 15 years) potable water requirements from the various potential developments.

MidCoast Water has a secure coastal bore water supply that has a known supply capacity far in excess of the requirements of the currently considered potential developments at Riverside, Myall River Downs to the west of Riverside, North Shearwater to the north of Riverside and Hawks Nest North.

Reticulation of Electrical and Communication Services

Electrical (refer Appendix E) and Communications (Appendix F) are considered to be merely an extension of existing services. Crighton Properties has already provided Essential Energy with proposed layouts so that they can commence designs for the accommodating of the major new linkages from the existing overhead supplies.

Again these services are providing redundancies to the provision of services which will significantly help in the reduction of brown outs that are of continuing concern in Tea Gardens. Essential Energy are also relocating their main supply substation further west along Viney Creek Road and are currently constructing this substation facility as well as incorporating an adjoining Maintenance Service Depot. Additionally, Essential Energy are also undertaking a major 33Kv substation alongside the Freeway adjacent to Viney Creek Road East.

Communication upgrades have already seen Telstra provide additional services to Tea Gardens. Telstra have provided “fibre to the node” for The Hermitage and have offered via its “Smart Communities” program, the provision of services to the other parts of Riverside. In addition, discussions with NBN Co have indicated that when the project is finally approved, their services will, after some further considerations, be more than likely provided and arrangements with or in parallel with Telstra will be arranged.

Existing infrastructure includes fibre-optic technology and this is available along Myall Street connecting the main Telstra Depot/Communications Tower to the Pacific Highway network.

CONCLUSION

This Servicing Strategy provides for the logical and practical understanding for the provision of essential services for all future residents of Riverside and other adjoining developments. The redundancies that are created are providing high level future resident satisfaction and Service Agency support. The new technology of a Vacuum Sewer service has significant environmental attributes including:-

- Dramatic reduction in Sewer Pumping Station Facilities (cost/environmental discharges).
- Reduce excavations and therefore less groundwater interceptions.
- Negligible wet weather impacts on the infrastructure.

This Pumping Station has been commissioned in 2007 and now provides services to The Hermitage (another Crighton development activity) and the service mains will be extended and made available to provide services for the initial lots made developable in Riverside. Backlog programs for the Tea Gardens Industrial Area and Shearwater will also be accommodated in the roll out of these services.

MidCoast Water has also provided sufficient spare capacity with the augmentation of the potable water storages at the Viney Creek Road Reservoirs to ensure that development is not inhibited or restricted by any lack of supply capacity.

Other services like the third water main, communications and electrical reticulation will be provided as part of a coordinated process that is appropriately timed in conjunction with developer needs and Service Authority requirements.

Due to the holistic approach for the provision of services to all areas of the Strategy, undue demands on Supply Authorities is not considered to be excessive and as the Agencies have been historically engaged at all times with the provision of their services for other already produced developments, this good working relationship is a feature of the Crighton Properties operations.

Appendix A:

Development Application Plan

Appendix B:

Copy of Certificate of Title

ACS SEARCH PTY LTD

PO Box A1155, Sydney South NSW 1235. Phone: 02 9267 9728 Fax: 02 9267 9226

<http://acssearch.urbispro.com.au>

Note: Information contained in this document is provided by GlobalX Information Services Pty Ltd (ABN 99 073 436 414)
www.globalx.com.au an approved broker.

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 10/270100

SEARCH DATE	TIME	EDITION NO	DATE
-----	----	-----	----
24/4/2007	3:10 PM	3	13/7/2005

LAND

LOT 10 IN COMMUNITY PLAN DP270100
AT TEA GARDENS
LOCAL GOVERNMENT AREA GREAT LAKES
PARISH OF COWEAMBAH COUNTY OF GLOUCESTER
TITLE DIAGRAM DP270100

FIRST SCHEDULE

GEOFFREY JOHN COX

(T 5333813)

SECOND SCHEDULE (7 NOTIFICATIONS)

- 1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
- 2 INTERESTS RECORDED ON REGISTER FOLIO 1/270100
- 3 BK 864 NO 856 LAND EXCLUDES MINERALS WITHIN THE PART SHOWN SO
BURDENED IN THE TITLE DIAGRAM
- 4 DP738450 RESTRICTION(S) ON THE USE OF LAND AFFECTING THE PART
SHOWN SO BURDENED IN THE TITLE DIAGRAM
- 5 DP786548 RESTRICTION(S) ON THE USE OF LAND AFFECTING THE PART
SHOWN SO BURDENED IN THE TITLE DIAGRAM
- 6 5333814 MORTGAGE TO STATE BANK OF NEW SOUTH WALES LIMITED
- 7 AB527646 THIS LOT DOES NOT FORM PART OF A COMMUNITY SCHEME

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

ACS SEARCH PTY LTD

PO Box A1155, Sydney South NSW 1235. Phone: 02 9267 9728 Fax: 02 9267 9226

<http://acssearch.urbispro.com.au>

Note: Information contained in this document is provided by GlobalX Information Services Pty Ltd (ABN 99 073 436 414)
www.globalx.com.au an approved broker.

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 34/270100

SEARCH DATE	TIME	EDITION NO	DATE
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24/4/2007	3:11 PM	1	6/7/2004

LAND

LOT 34 IN COMMUNITY PLAN DP270100
AT TEA GARDENS
LOCAL GOVERNMENT AREA GREAT LAKES
PARISH OF COWEAMBAH COUNTY OF GLOUCESTER
TITLE DIAGRAM DP270100

FIRST SCHEDULE

CRIGHTON PROPERTIES PTY LIMITED

SECOND SCHEDULE (11 NOTIFICATIONS)

- 1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
- 2 INTERESTS RECORDED ON REGISTER FOLIO 1/270100
- 3 ATTENTION IS DIRECTED TO THE MANAGEMENT STATEMENT OF THE COMMUNITY SCHEME FILED WITH THE COMMUNITY PLAN
- 4 BK 864 NO 856 LAND EXCLUDES MINERALS
- 5 DP738450 EASEMENT TO DRAIN WATER 6 METRE(S) WIDE AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM
- 6 DP738450 RESTRICTION(S) ON THE USE OF LAND
- 7 DP786548 RESTRICTION(S) ON THE USE OF LAND
- 8 DP270100 EASEMENT FOR WATER SUPPLY 3 METRE(S) WIDE, 4 METRES WIDE AND VARIABLE AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM (DOC.4)
- 9 DP270100 EASEMENT FOR TRANSMISSION 1 METRE WIDE, 4 METRES WIDE & VARIABLE AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM (DOC.4)
- 10 AA682643 MORTGAGE TO AUSTRALIA AND NEW ZEALAND BANKING GROUP LIMITED OF THE PART FORMERLY IN 25/270100
- 11 DP270100 EASEMENT TO DRAIN WATER VARIABLE WIDTH AFFECTING THE WHOLE OF THE LAND ABOVE DESCRIBED (DOC.8)

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

Appendix C:

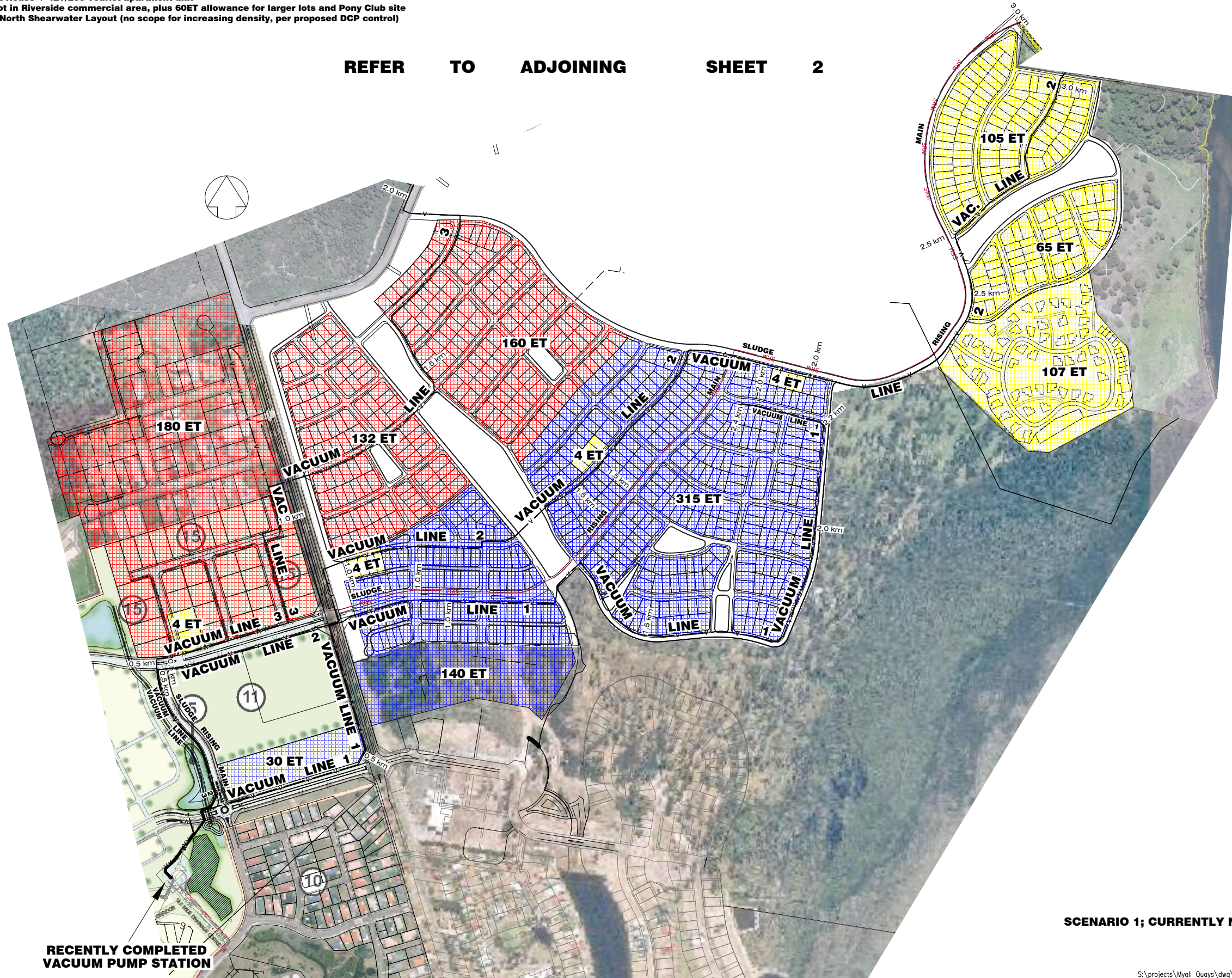
Reticulated Vacuum Sewer Servicing Strategy

ASSUMPTIONS;

- 1ET/1000m² for Industrial Lots (Typically 1.5 ET Max.)
- 8ET allowance for existing residue lot at North Western end of exist industrial area)
- 4ET allowance for former landfill site
- 2ET per existing lot in Shearwater Estate (excluding 5 lots from strata subdivision)
- 1ET for reservoir site
- 13ET/Ha of residential land within Riverside Estate
- 1ET/Eco-Tourist House + 4ET/Eco-Tourist apartment unit
- 1ET/standard lot in Riverside commercial area, plus 60ET allowance for larger lots and Pony Club site
- 1ET/Lot within North Shearwater Layout (no scope for increasing density, per proposed DCP control)

VACUUM LINE	CAPACITY	ET TAKEUP	AVAILABLE CAPACITY	INDICITIVE MAIN LENGTH
1	675	485	190	2.4 km
2	675	675	0	4.7 km
3	675	670	5	3.5 km
SRM	Sludge Rising Main TBA	N/A	TBA	4.5+ km

REFER TO ADJOINING SHEET 2



SCENARIO 1; CURRENTLY NOMINATED CATCHMENT LOADINGS

S:\projects\Myall Quays\dwg\M.C.W. W & S STRATEGY\910370-myll quays (riverside) w & s strategy.dwg

REV.	AMENDMENT	DESIGN	DRAWN	CHECKED	APPROVED	DATE
J	Revised Lot Layout	DWK	DWK			31/08/12*
I	Modify Route Selection & ET Count	DWK	DWK			1/12/11*
H	Revised Development Footprint	AV	AV	DWK*	BL*	1/12/11*
G	Revised Riverside Layout & ET Count	AV	AV	DWK*	BL*	1/11/10*

FILE No.: 910370	DRAWN:	SCALE:
SHEET 1 OF 2	CHECKED:	HORIZONTAL: 1:4000
DATE:	PASSED:	PLOT SCALE: 1:2
		SHEET SIZE: A1
		Local Government Area: GREAT LAKES

CO-ORDINATE SYSTEM:	DATUM:
HORIZONTAL: NORTH	B.M. ADOPTED:
VERTICAL: NORTH	Ri:
MIDCOAST WATER PROJECT ASSET No.	PLOT FILE/DWG No.: 20600220
	Plotted 16:37 23/11/12

TATTERSALL LANDER PTY LTD	2 Bourke St.	P.O.Box 580
DEVELOPMENT CONSULTANTS	RAYMOND TERRACE	2324
ENGINEERING, SURVEYING & PLANNING	Phone	(02) 49871500
Email: admin@talland.net.au	Fax	(02) 49871733

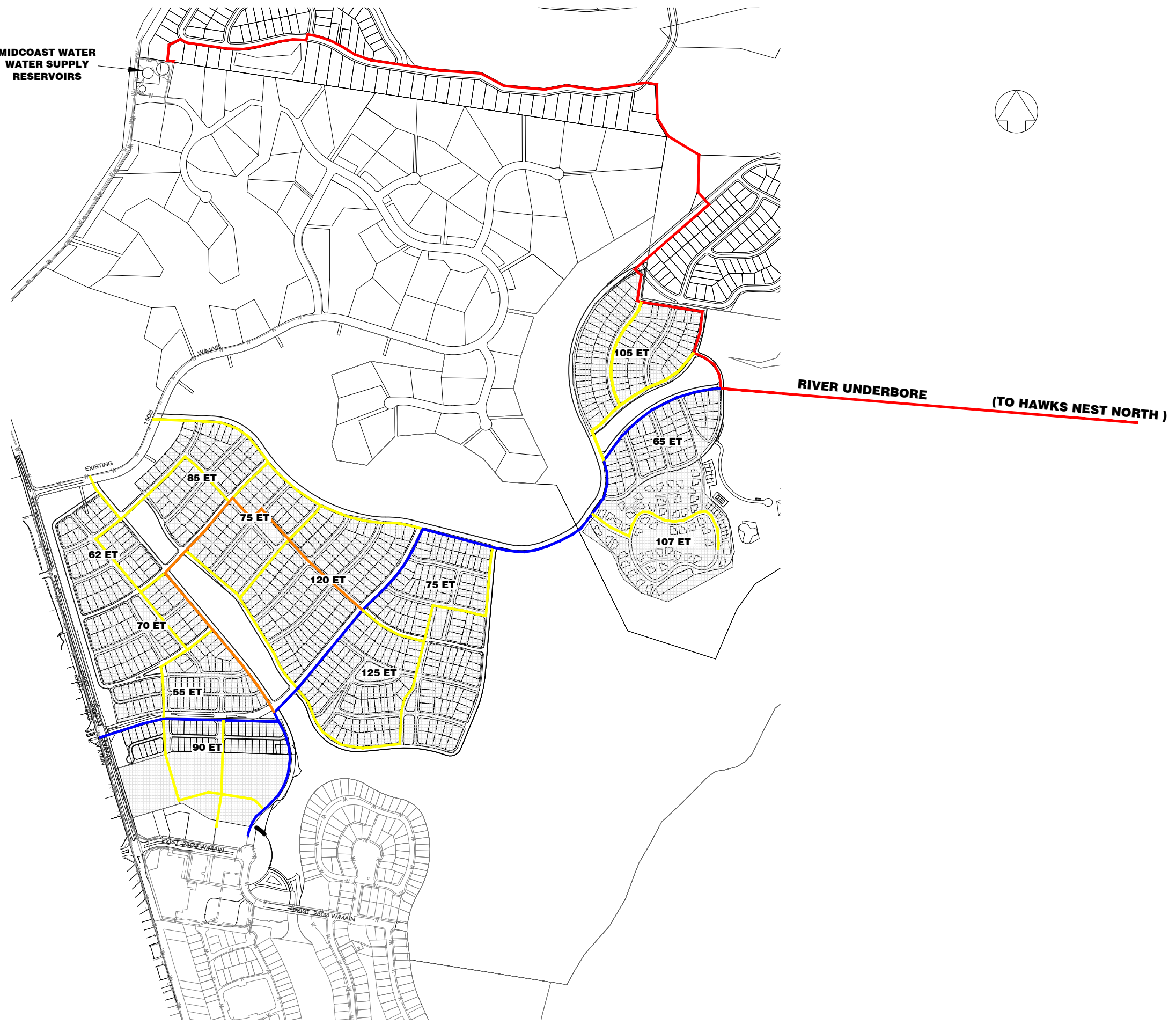
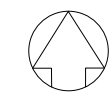
PROJECT	
FUTURE SERVICING OF TEA GARDENS RIVERSIDE ESTATE & INDUSTRIAL AREA VACUUM SEWER SERVICING STRATEGY	

Appendix D:

Reticulated Water Servicing Strategy

- 375 WATER MAIN
- 250 WATER MAIN
- 200 WATER MAIN
- 150 WATER MAIN

MIDCOAST WATER
WATER SUPPLY
RESERVOIRS

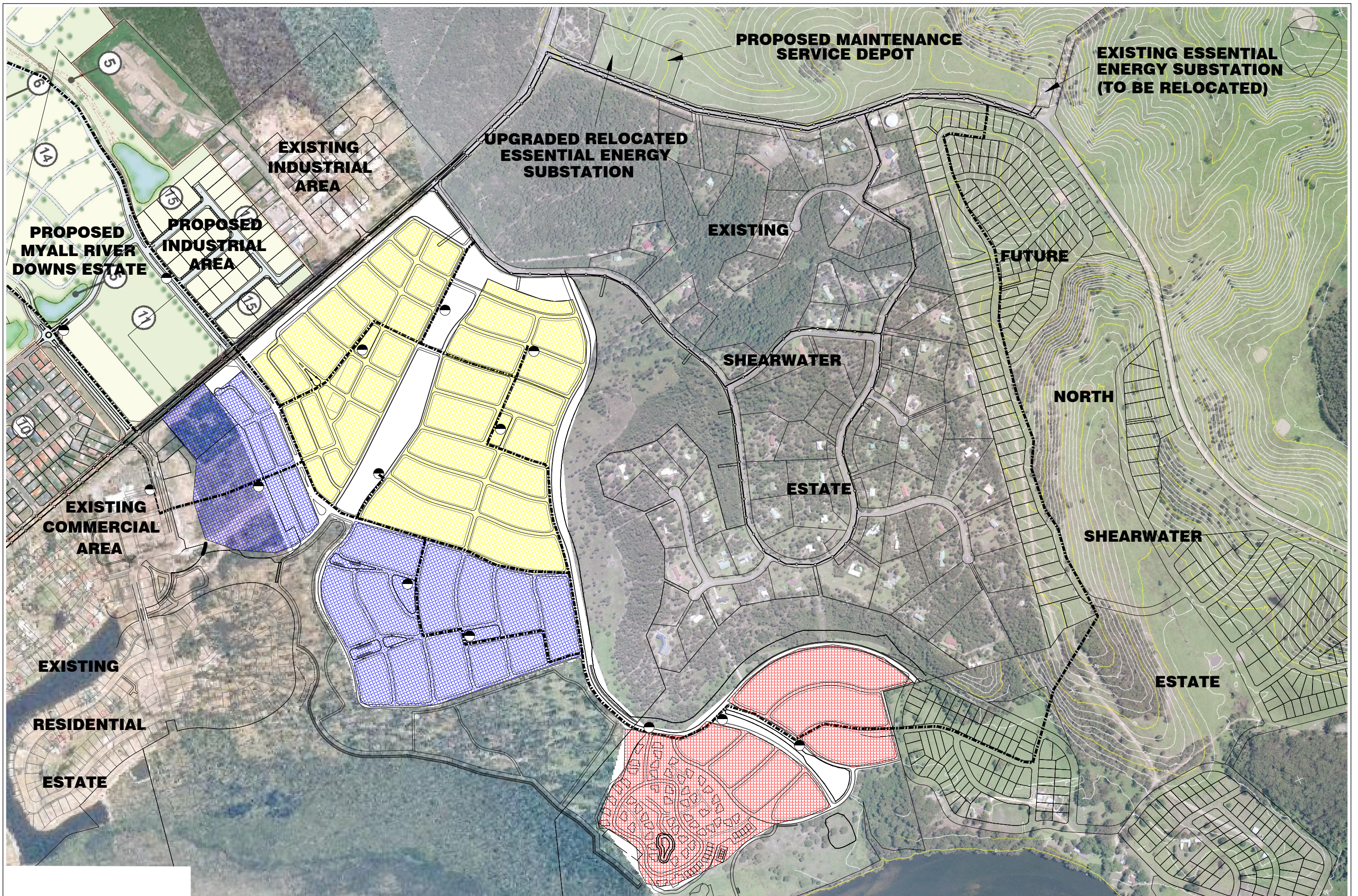


S:\projects\Myall Quays\dwg\M.C.W. W & S STRATEGY\910370-myal quays (riverside) w & s strategy.dwg

AMENDMENTS:						FILE No.: 910370	DRAWN:	SCALE:	HORIZONTAL		VERTICAL		TATTERSALL LANDER PTY LTD DEVELOPMENT CONSULTANTS ENGINEERING, SURVEYING & PLANNING Email: admin@talland.net.au	2 Bourke St. P.O.Box 580 RAYMOND TERRACE 2324 Phone (02) 49871500 Fax (02) 49871733	PROJECT FUTURE SERVICING OF TEA GARDENS RIVERSIDE WATER SERVICING STRATEGY
REV.	AMENDMENT	DESIGN	DRAWN	CHECKED	APPROVED	DATE		HORIZONTAL:	CO-ORDINATE SYSTEM:	DATUM:	B.M. ADOPTED:				
G	Revised Lot Layout	DWK	DWK					1:5000	EAST:						
F	Revised Development Footprint	AV	AV	DWK*	BL*	1/12/11*		PLOT SCALE: 1:2	NORTH:						
E	Revised Riverside Layout & ET Count	AV	AV	DWK*	BL*	1/11/10*		SHEET SIZE: A1							
D	Masterplan Image Update	DWK	DWK	AV*	BL*	23/03/09*		Local Government Area GREAT LAKES							
						SHEET 1 OF 1	CHECKED:		MIDCOAST WATER PROJECT ASSET No.		PLOT FILE/DWG No.: 20600198				
						DATE:	PASSED:				Plotted 16:36 23/11/12				

Appendix E:

Reticulated Electrical Servicing Strategy



RIVERSIDE ESTATE

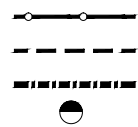
STAGE
1
2
3

EXISTING OVERHEAD POWER

EXISTING UNDERGROUND POWER

PROPOSED 11KV TRUNK UNDERGROUND POWER

PROPOSED KIOSK



E	Revised Layout	DWK	DWK					
D	Revised PAC Supported Riverside Layout	AV	AV	-	-	30/08/12*		
C	Revised Riverside Layout	AV	AV	DWK*	BL*	1/11/10*		
B	Revised Layout	DWK	DWK	AV*	BL*	03/07/08*		
REV	DETAILS OF AMENDMENT	DESIGNED	DRAWN	CHECKED	APPROVED	DATE		

* Denote the original signature and date when revision was issued.

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FUTURE SERVICING OF
 TEA GARDENS
 RIVERSIDE
 ELECTRICAL SERVICING STRATEGY

COUNCIL GREAT LAKES	REFERENCE 20700087
PARISH COWEAMABH	SHEET SIZE A1
SCALE 1:4000	SHEET No. 1
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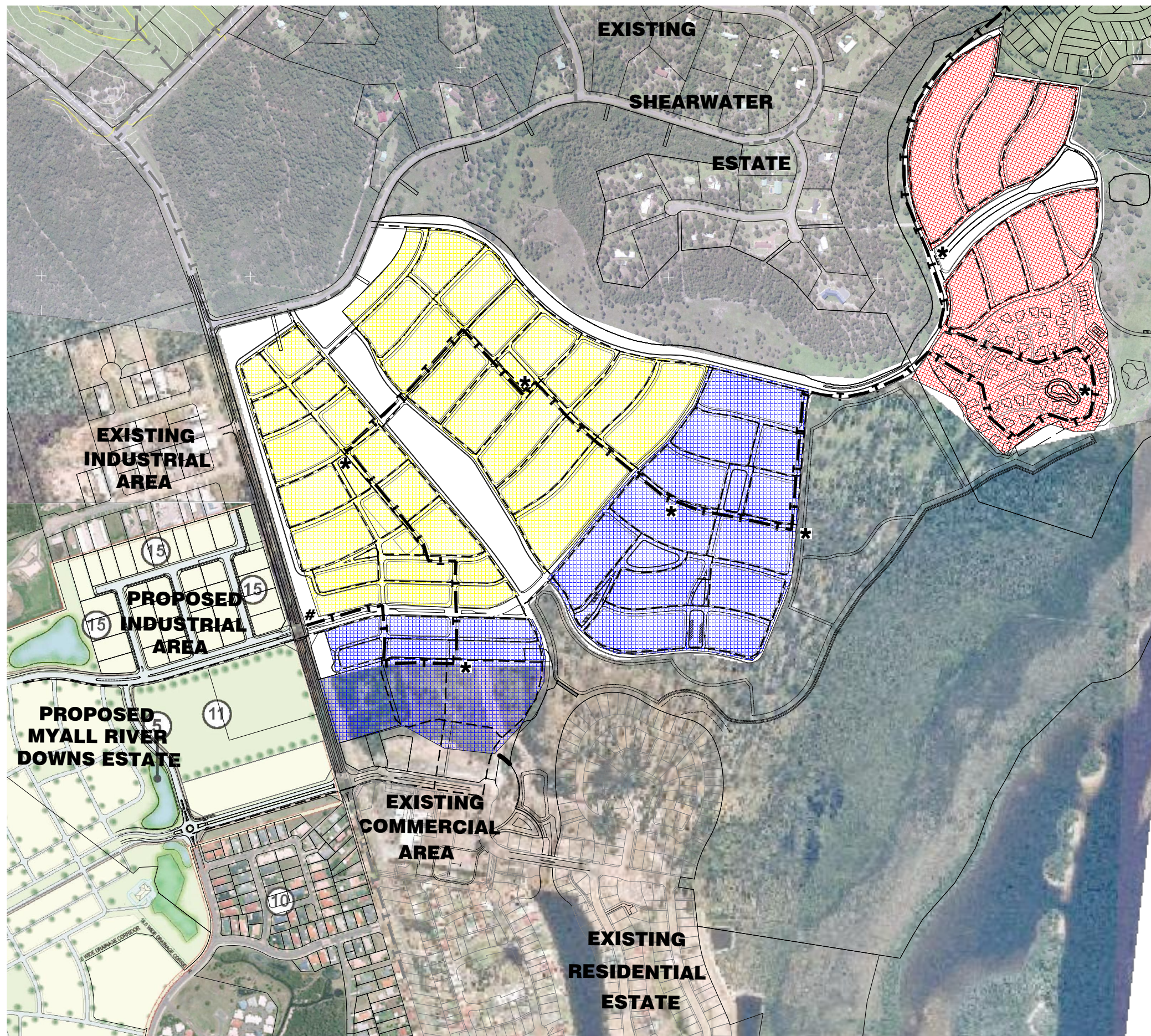
CLIENT: CRIGHTON PROPERTIES PTY LTD

JOB No.: 910370

COMPUTER FILE : S:\projects\Myall Quays\dwg\M.C.W. W & S STRATEGY\910370-myall quays (riverside) elec strategy.dwg

Appendix F:

Communications Servicing Strategy



RIVERSIDE ESTATE

STAGE
1
2
3

- EXISTING OPTICAL FIBRE CABLE
- PROPOSED DISTRIBUTION NETWORK CABLE
- PROPOSED LOCAL NETWORK CABLE
- PROPOSED FIBRE ACCESS NODE
- PROPOSED FIBRE DISTRIBUTION HUB

- T
- T
- #
- *

REV	DETAILS OF AMENDMENT	DESIGNED	DRAWN	CHECKED	APPROVED	DATE
E	Revised Layout	DWK	DWK			
D	Revised PAC Supported Riverside Layout	AV	AV			30/08/12*
C	Revised Riverside Layout	AV	AV	DWK*	BL*	1/11/10*
B	Revised Layout	DWK	DWK	AV.*	BL.*	03/07/08*

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 Fax (02) 49871733 Phone (02) 49871500

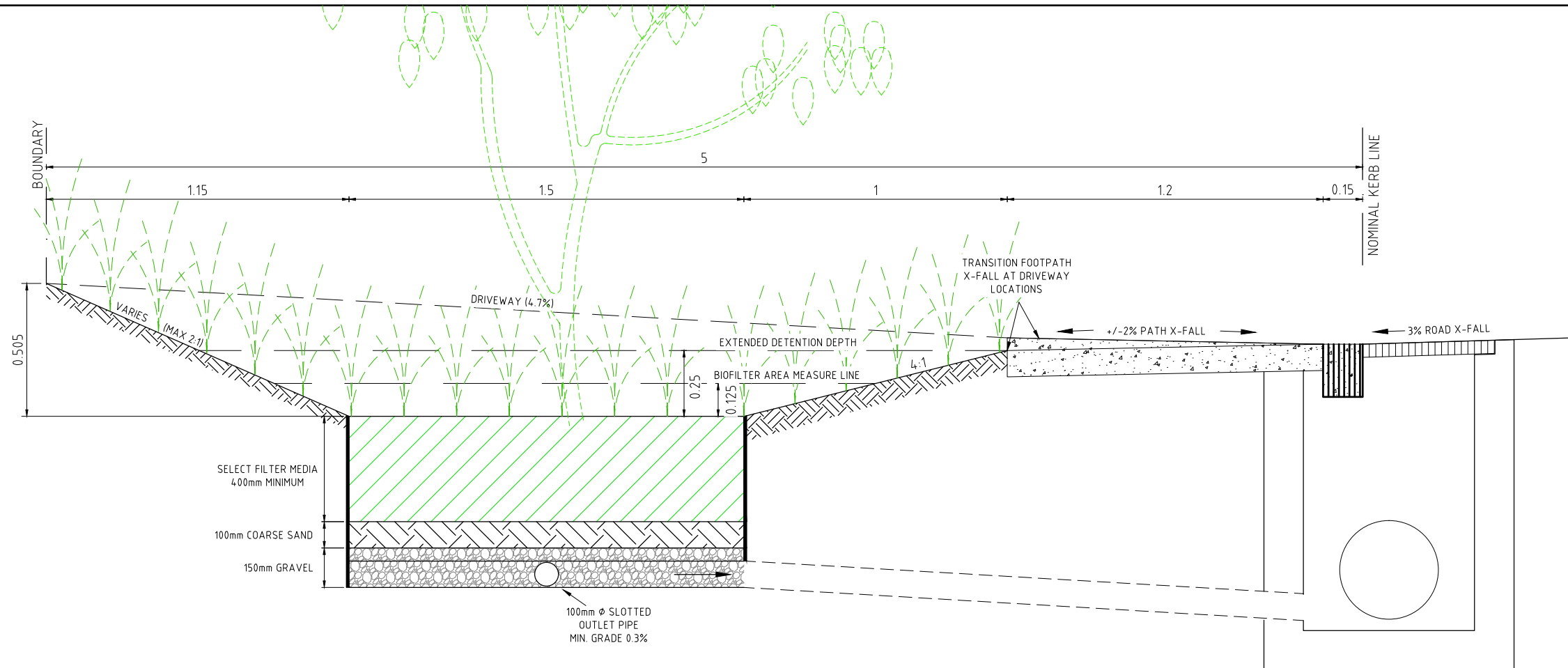
FUTURE SERVICING OF
 TEA GARDENS
 RIVERSIDE
 COMMUNICATIONS SERVICING STRATEGY

COUNCIL GREAT LAKES	REFERENCE 20700088
PARISH COWEAMABH	SHEET SIZE A1
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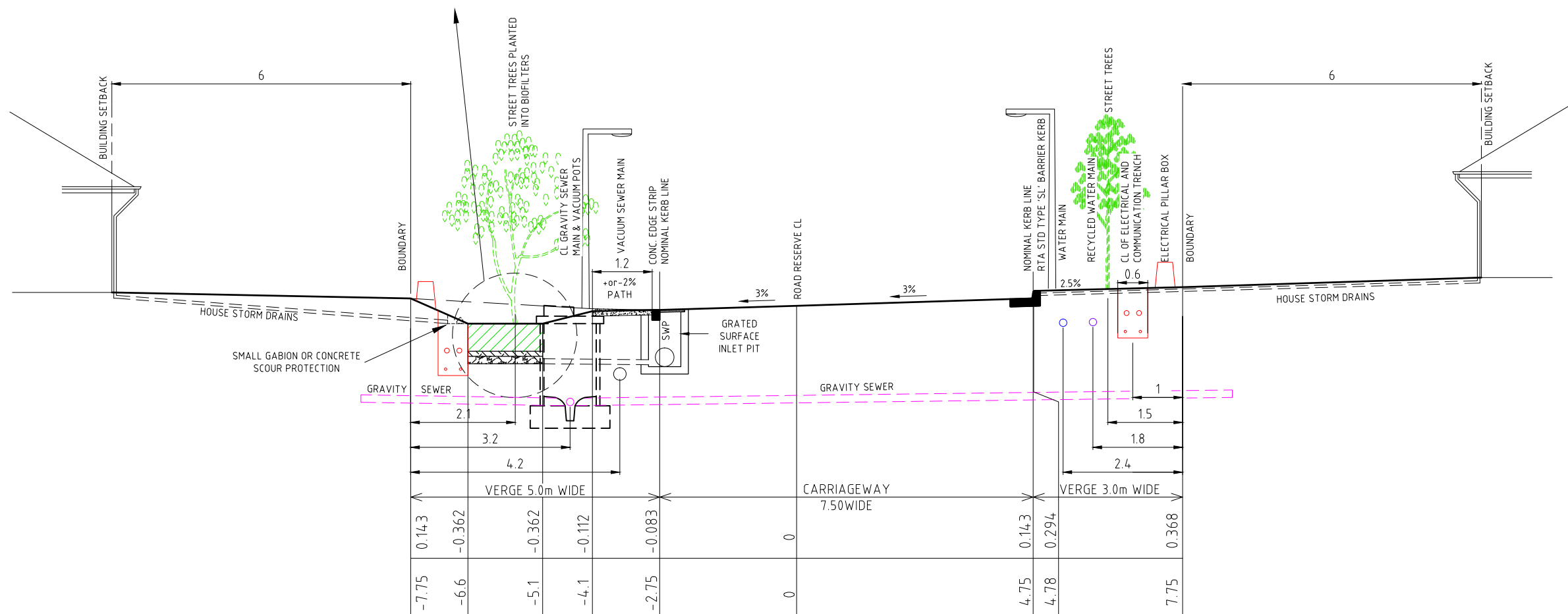
* Denote the original signature and date when revision was issued.

Appendix G:

Typical Footpath Service Allocations



TYPICAL 5.0m WIDE VERGE PROFILE WITH BIO-FILTER DETAIL



T.S. 1 TYPICAL SECTION
ROAD 15.5m WIDE
SCALE 1:50

REV	DETAILS OF AMENDMENT	DESIGNED	DRAWN	CHECKED	APPROVED	DATE
A	Original Issue	AV	AV			

TATTERSALL
LANDER Pty Ltd
DEVELOPMENT CONSULTANTS

SCALE :	SHEET No. : 5	FILE : 21200151	SHEET SIZE
COMPUTER FILE : S:\projects\Myall Quays\dwg\STG9\insertion of Biofilters into Riverside Lot Layout.dwg	JOB No. : 201479	DATE : Plotted 16:54 14/11/12	A1

- TYPICAL CATCHMENT ANALYSIS:**
- TOTAL CATCHMENT AREA = 7316m²
 - IMPERVIOUS CATCHMENT AREA = 4390m²(60% IMP.)
 - AREA OF FILTER MEDIA = 74.3m²
 - AREA OF FILTER MEDIA AS A PERCENTAGE OF TOTAL CATCHMENT AREA = 1.0%
 - AREA OF FILTER MEDIA AS A PERCENTAGE OF IMPERVIOUS CATCHMENT AREA = 1.7%
 - AREA OF HALF DETENTION DEPTH = 126.9m²
 - AREA OF HALF DETENTION DEPTH AS A PERCENTAGE OF TOTAL CATCHMENT AREA = 1.73%
 - AREA OF HALF DETENTION DEPTH AS A PERCENTAGE OF IMPERVIOUS CATCHMENT AREA = 2.9%



LEGEND

- STREET TREES
- PROPOSED WATER MAIN
- PROPOSED RECYCLED WATER MAIN
- PROPOSED VACUUM SEWER MAIN
- PROPOSED GRAVITY MAIN
- CENTERLINE LINE OF ELECTRICAL AND COMMUNICATION TRENCH
- PROPOSED VACUUM POT/SEWER ACCESS CHAMBER
- DRIVEWAY
- LIGHT POLE
- BIOFILTER (INCLUDING PLANTED BATTER SLOPES)
- GRATED SURFACE INLET PIT
- WATER SERVICE CONNECTION
- RECYCLED WATER SERVICE CONNECTION
- MAILBOX
- KERB LINE
- VACUUM SEWER EXTERNAL VALVE PIT
- 1.2m WIDE FOOTPATH
- CATCHMENT BOUNDARIES

**TYPICAL RESIDENTIAL STREET DETAIL
INCORPORATING BIOFILTRATION SWALES**

REV	DETAILS OF AMENDMENT	DESIGNED	DRAWN	CHECKED	APPROVED	DATE
A	Original Issue	AV	AV			

TATTERSALL LANDER Pty Ltd
DEVELOPMENT CONSULTANTS

SCALE: 1:250 for A1 Size Plot

SHEET No.: 16
JOB No.: 201479
DATE: Plotted 16/54 14/11/12

FILE: 21200152
DATE: 16/54 14/11/12

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