

Project Approval

Section 75J of the *Environmental Planning & Assessment Act 1979*

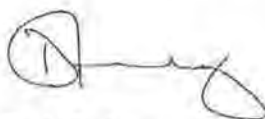
Under delegation of the Minister for Planning and Infrastructure executed on 14 September 2011, the Planning Assessment Commission of New South Wales (the Commission) approves the project application referred to in Schedule 1, subject to the conditions referred to in Schedule 2 and the proponent's Statement of Commitments in Schedule 3.

These conditions are required to:

- prevent, minimise, and/or offset adverse environmental impacts;
- set standards and performance measures for acceptable environmental performance; and
- provide for the ongoing environmental management of the project.



Paul Forward
Member of the Commission



David Furlong
Member of the Commission

Sydney

2 August 2012

SCHEDULE 1

Application No.:

05_0198

Proponent:

WDLG Pty Ltd, ATF Dickinson Superannuation Fund, M Walmsley,
R Walmsley, H Mabbutt and D Miller

Approval Authority:

Minister for Planning and Infrastructure

Land:

Lot 1 DP 134787, Lot 1 DP 167380, Lot 2 DP 961928 and Lot 5
DP 1117326 at Walmsleys Road and Stott Street, Bilambil
Heights.

Project:

85 lot subdivision comprising:

- 77 Torrens title residential lots,
 - a 6 lot Community Title scheme (5 residential and 1 neighbourhood property),
 - a public reserve lot,
 - sewage pumping station lot, and
 - associated roads, stormwater and utility infrastructure
-

SCHEDULE 2

RECOMMENDED CONDITIONS OF APPROVAL

MAJOR PROJECT NO. 05_0198

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DEFINITIONS

Advisory Notes	Advisory information relating to the approval but do not form a part of this approval.
Proponent	WDLC Pty Ltd, ATF Dickinson Superannuation Fund, M Walmsley, P Walmsley, H Mabbutt and D Miller, or anyone else entitled to act on this approval.
Application	The project application and the accompanying drawings plans and documentation described in Conditions A3 and A4.
BCA	Building Code of Australia
Construction	Any works, including earth and building works
Council	Tweed Shire Council
Certifying Authority	Means a person who is authorised by or under section 109D of the Act to issue a construction certificate under Part 4A of the Act; or in the case of Crown development, a person qualified to conduct a Certification of Crown Building works
Day	The period from 7am to 6pm on Monday to Saturday, and 8am to 6pm on Sundays and Public Holidays
Department	Department of Planning and Infrastructure or its successors
Director-General	Director-General of the Department of Planning and Infrastructure, or nominee/delegate
Director General's approval, agreement or satisfaction	A written approval from the Director- General (or nominee/delegate) Where the Director-General's approval, agreement or satisfaction is required under a condition of this approval, the Director-General will endeavour to provide a response within one month of receiving an approval, agreement or satisfaction request. The Director-General may ask for additional information if the approval, agreement or satisfaction request is considered incomplete. When further information is requested, the time taken for the Applicant to respond in writing will be added to the one month period.
EEC	Endangered ecological community
Evening	The period from 6pm to 10pm
EPA	Environment Protection Authority, or its successor
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulation	or <i>Environmental Planning and Assessment Regulation 2000</i>
Incident	A set of circumstances that causes or threatens to cause material harm to the environment, and/or breaches or exceeds the limits or performance measures/criteria in this approval
Minister	Minister for Planning and Infrastructure, or nominee
Night	The period from 10pm to 7am on Monday to Saturday, and 10pm to 8am on Sundays and Public Holidays
NOW	NSW Office of Water, or its successor

OEH	Office of the Environment and Heritage, or its successor
PCA	Principal Certifying Authority, or in the case of Crown development, a person qualified to conduct a Certification of Crown Building works
PPR	Preferred Project Report
Reasonable and Feasible	Reasonable relates to the application of judgement in arriving at a decision, taking into account: mitigation benefits, cost of mitigation versus benefits provided, community views and the nature and extent of potential improvements. Feasible relates to engineering considerations and what is practical to build
RMS	Roads and Maritime Services Division, Department of Transport or its successor
Subject Site	Lot 1 DP 134787, Lot 1 DP 167380, Lot 2 DP 961928 and Lot 5 DP 1117326.

PART A—ADMINISTRATIVE CONDITIONS

A1 Project Description

Project approval is granted only to carrying out the project described in detail below:

- 1) Subdivision of Lot 1 DP134787, Lot1 DP167380, Lot 2 DP961928, and Lot 5 DP1117326.
- 2) Creation of 77 residential housing lots.
- 3) Creation of a 6 lot Community Title scheme (5 residential, 1 neighbourhood property).
- 4) Creation of an open space lot for public recreation reserve.
- 5) Dedication of land for roads, public parks and public infrastructure.
- 6) Site rehabilitation works to stabilise current land slip hazards.
- 7) Construction of roads, footpaths, access driveways, revetment structures, earthworks and drainage infrastructure.

A2 Staging

The project is to be constructed in six (6) stages, generally in accordance with Revision F of Plan 35054 dated 04.05.11 prepared by Landsurv Pty Ltd, incorporating the lots as follows:

- (1) Stage 1 comprises lots 1-13 inclusive, incorporating roads and public reserve (see note (a) below).
- (2) Stage 2 comprises lots 14-31 inclusive incorporating roads.
- (3) Stage 3 comprises Community Title subdivision containing six lots.
- (4) Stage 4 comprises lots 32-40 inclusive incorporating roads.
- (5) Stage 5 comprises lots 41-61 inclusive incorporating roads and sewer pumping station.
- (6) Stage 6 comprises lots 63-79 inclusive incorporating roads.

Note (a). The public reserve, shown as part of Stage 1, together with a road access shall be constructed prior to the issuing of a subdivision certificate for more than 25% of the approved allotments and associated roads and services.

Subject to any conditions of approval, staging of allotment and/or road construction may vary in sequence and timing. Essential infrastructure associated with and including, but not limited to, roads, roundabouts, bus routes, footpaths, parks, services, landscaping and environmental management, shall be constructed as specified in the staging listed above or as otherwise provided in these conditions and the proponent's Statement of Commitments. Any revised staging plan that varies the stage boundaries or components listed in (1) – (6) inclusive, and subject to note (a) of this condition, shall be submitted for the approval of the Director General, prior to the issuing of a Construction Certificate for subdivision works.

A3 Project in Accordance with Plans

The project will be undertaken in accordance with the Environmental Assessment, the Preferred Project Report and the following drawings:

Subdivision Design Drawings prepared by Landsurv Pty Ltd			
Drawing No.	Revision	Name of Plan	Date
35054 (Sheets 1, 2, 3 in 3 sheets))	F	Plan of Proposed Subdivision	04.05.11

Engineering Drawings prepared by Opus Quantec McWilliam			
Drawing No.	Revision	Name of Plan	Date
203057 Fig.4.0		Proposed Cut and Fill Contours	October,2011
203057 Fig 6.0		Erosion and Sediment Control Plan	October 2011
203057 Fig 7.0		Road Layout Plan	October 2011
203057 Fig 7.1		Site Cross Sections	October 2011
203057 Fig 7.2		Site Cross Sections	October 2011
203057 Fig 8.0		Walmsleys Road Longitudinal Section and Typical Cross Section	October 2011
203057 Fig 9.0		Road 1 Longitudinal Section and Typical Cross Section	October 2011
203057 Fig 10.0		Road 2 Longitudinal Section and Typical Cross Section	April 2009
203057 Fig 11.0		Road 3 Longitudinal Section and Typical Cross Section	October 2011
203057 Fig 12.0		Road 5 Longitudinal Section and Typical Cross Section	October 2011
203057 Fig 12.1		Right of Carriageway No.1 Longitudinal Section and Typical Cross Sections	April 2010
203057 Fig 12.2		Right of Carriageway No.2 Longitudinal Section and Typical Cross Sections	April 2010
203057 Fig 12.3		Right of Carriageway No.3 Longitudinal Section and Typical Cross Section	April 2010
203057 Fig 12.4		Right of Carriageway No.4 Longitudinal Section and Typical Cross Section	April 2010
203057 Fig 13.0		Water Cycle Management Plan Pre-Development	October 2011
203057 Fig 14.0		Water Cycle Management Plan Post-Development	October 2011
203057 Fig 15.0		Services Plan	October 2011
203057 Fig 16.0		Proposed Grades Analysis	August 2010
203057 SK20100303		Indicative Restriction of Use Layout Plan	June 2011
203057 SK20100713		Walmsley Road Extension Proposed 1 in 4 Batter	July, 2010
203057 SK20100809-01	Rev A	Proposed Local Park Grade Compliance Schematic	August 2010
203057 SK20100809-02	Rev A	Proposed Local Park Grade Compliance Schematic	August 2010
203057 SK20100921		Proposed Energy Dissipater & Level Spreaders	
Landscape Drawings prepared by Form Landscape Architects			
Drawing No.	Revision	Name of Plan	Date
91105 DA03 P2		Landscape Masterplan	08 Dec 10
91105 DA03 P3		Landscape Masterplan	08 Dec 10
91105 DA03 P4		Landscape Masterplan - Pedestrian	08 Dec 10

		Pathways	
91105 DA03 P5		Landscape Masterplan - Trees In Public Places	08 Dec 10
91105 DA03 P6		Landscape Masterplan - Public Park Concept	08 Dec 10
91105 DA03 P7		Tree Suitability List	08 Dec 10

A4 Project in Accordance with Documents

The project will be undertaken in accordance with the following documents:

- (1) *Environmental Assessment Report* dated November, 2006, as revised June 2009 prepared by Darryl Anderson Consulting Pty Ltd; and,
- (2) *Preferred Project Report/Response to Submissions* prepared by Darryl Anderson Consulting Pty Ltd dated October 2011;

A5 Inconsistency between documents

In the event of any inconsistency between conditions of this approval, the proponent's Statement of Commitments and the drawings/documents referred to in Conditions A3 and A4, the conditions of this approval shall prevail to the extent of the inconsistency.

A6 Lapsing of Approval

This approval shall lapse 5 years after the date on which it is granted, unless the works subject to this approval have been commenced before that time.

Monetary Contributions

A7 Section 94 Monetary Contributions

- 1) Prior to the endorsement of a Subdivision Certificate for each stage of the subdivision, the Proponent must pay, in proportion to the additional lots created by that stage, the following contributions to Council pursuant to Section 94 of the *Environmental Planning and Assessment Act (1979)*:

Section 94 Plan No 5 – Local Open Space (2009) - Structured			
	No. of ET	\$ per ET	Sub-Total
Stage 1	8	\$602 (base rate \$575)	\$3,371.20*
Stage 2	18	\$602 (base rate \$575)	\$7,585.20*
Stage 3	5	\$602 (base rate \$575)	\$2,107.00*
Stage 4	9	\$602 (base rate \$575)	\$3,792.60*
Stage 5	21	\$602 (base rate \$575)	\$8,849.40*
Stage 6	17	\$602 (base rate \$575)	\$7,163.80*
Section 94 Plan No 4 - Tweed Road Contribution Plan (2012) (*refer to 2 below for heavy haulage contribution, included)			
	No. of Trips	\$ per trip	Sub-Total
Stage 1	52	\$2860 (base rate \$2836)	\$103,890.13*
Stage 2	117	\$2860 (base rate \$2836)	\$233,752.79*
Stage 3	32.5	\$2860 (base rate \$2836)	\$64,931.33*
Stage 4	58.5	\$2860 (base rate \$2836)	\$116,876.39*
Stage 5	136.5	\$2860 (base rate \$2836)	\$272,711.59*
Stage 6	110.5	\$2860 (base rate \$2836)	\$220,766.52*

Section 94 Plan No 11 - Tweed Shire Library Facilities (2009)			
	No. of ET	\$ per ET	Sub-Total
Stage 1	8	\$816 (base rate \$792)	\$4,569.60*
Stage 2	18	\$816 (base rate \$792)	\$10,281.60*
Stage 3	5	\$816 (base rate \$792)	\$2,856.00*
Stage 4	9	\$816 (base rate \$792)	\$5,140.80*
Stage 5	21	\$816 (base rate \$792)	\$11,995.20*
Stage 6	17	\$816 (base rate \$792)	\$9,710.40*
Section 94 Plan No 12 - Bus Shelters (2009)			
	No. of ET	\$ per ET	Sub-Total
Stage 1	8	\$62 (base rate \$60)	\$347.20*
Stage 2	18	\$62 (base rate \$60)	\$781.20*
Stage 3	5	\$62 (base rate \$60)	\$217.00*
Stage 4	9	\$62 (base rate \$60)	\$390.60*
Stage 5	21	\$62 (base rate \$60)	\$911.40*
Stage 6	17	\$62 (base rate \$60)	\$737.80*
Section 94 Plan No 13 - Environ Cemetery (2009)			
	No. of ET	\$ per ET	Sub-Total
Stage 1	8	\$121 (base rate \$101)	\$677.60*
Stage 2	18	\$121 (base rate \$101)	\$1,524.60*
Stage 3	5	\$121 (base rate \$101)	\$423.50*
Stage 4	9	\$121 (base rate \$101)	\$762.30*
Stage 5	21	\$121 (base rate \$101)	\$1,778.70*
Stage 6	17	\$121 (base rate \$101)	\$1,439.90*
Section 94 Plan No 15 - Community Facilities (2010)			
	No. of ET	\$ per ET	Sub-Total
Stage 1	8	\$1352 (base rate \$1305.6)	\$7,571.20*
Stage 2	18	\$1352 (base rate \$1305.6)	\$17,035.20*
Stage 3	5	\$1352 (base rate \$1305.6)	\$4,732.00*
Stage 4	9	\$1352 (base rate \$1305.6)	\$8,517.60*
Stage 5	21	\$1352 (base rate \$1305.6)	\$19,874.40*
Stage 6	17	\$1352 (base rate \$1305.6)	\$16,088.80*
Section 94 Plan No 18 - Council Administration Offices and Technical Support Facilities (2009)			
	No. of ET	\$ per ET	Sub-Total
Stage 1	8	\$1812.62 (base rate \$1759.9)	\$10,150.67*
Stage 2	18	\$1812.62 (base rate \$1759.9)	\$22,839.01*
Stage 3	5	\$1812.62 (base rate \$1759.9)	\$6,344.17*
Stage 4	9	\$1812.62 (base rate \$1759.9)	\$11,419.51*
Stage 5	21	\$1812.62 (base rate \$1759.9)	\$26,645.51*
Stage 6	17	\$1812.62 (base rate \$1759.9)	\$21,570.18*
Section 94 Plan No 22 - Cycleways (2009)			
	No. of ET	\$ per ET	Sub-Total
Stage 1	8	\$460 (base rate \$447)	\$2,576.00*
Stage 2	18	\$460 (base rate \$447)	\$5,796.00*
Stage 3	5	\$460 (base rate \$447)	\$1,610.00*
Stage 4	9	\$460 (base rate \$447)	\$2,898.00*
Stage 5	21	\$460 (base rate \$447)	\$6,762.00*
Stage 6	17	\$460 (base rate \$447)	\$5,474.00*

Section 94 Plan No 26 - Shirewide Regional Open Space (2009) – Casual			
	No. of ET	\$ per ET	Sub-Total
Stage 1	8	\$1064 (base rate \$1031)	\$5,958.40*
Stage 2	18	\$1064 (base rate \$1031)	\$13,406.40*
Stage 3	5	\$1064 (base rate \$1031)	\$3,724.00*
Stage 4	9	\$1064 (base rate \$1031)	\$6,703.20*
Stage 5	21	\$1064 (base rate \$1031)	\$15,640.80*
Stage 6	17	\$1064 (base rate \$1031)	\$12,661.60*
Section 94 Plan No 26 - Shirewide Regional Open Space (2009) – Structured			
	No. of ET	\$ per ET	Sub-Total
Stage 1	8	\$3730 (base rate \$3619)	\$20,888.00*
Stage 2	18	\$3730 (base rate \$3619)	\$46,998.00*
Stage 3	5	\$3730 (base rate \$3619)	\$13,055.00*
Stage 4	9	\$3730 (base rate \$3619)	\$23,499.00*
Stage 5	21	\$3730 (base rate \$3619)	\$54,831.00*
Stage 6	17	\$3730 (base rate \$3619)	\$44,387.00*
TOTAL CONTRIBUTIONS PAYABLE			
Stage 1		\$160,000	
Stage 2		\$360,000	
Stage 3		\$100,000	
Stage 4		\$180,000	
Stage 5		\$420,000	
Stage 6		\$340,000	
TOTAL		\$1,560,000	

*includes adjustments to ensure compliance with the Minister's direction relating to the maximum contribution payable per lot

2) Roads: Heavy Haulage Component

The Tweed Road Contribution S94 Plan No. 4, Sector 4_4

Payment of a contribution pursuant to Section 94 of the Act and the Heavy Haulage (Extractive materials) provisions of Tweed Road Contribution Plan No. 4 - Version 5.1.1 prior to the issue of a construction certificate or subdivision certificate for any stage, whichever occurs first. The contribution shall be based on the following formula:-

$\$Con_{TRCP - Heavy} = Prod. \times Dist \times \$Unit \times (1 + Admin.)$, where:

$\$Con_{TRCP - Heavy}$ heavy haulage contribution, and:

Prod. projected demand for extractive material to be hauled to the site over life of project in tonnes

Dist. average haulage distance of product on Shire roads (trip one way)

\$Unit the unit cost attributed to maintaining a road as set out in Section 6.4 (currently 2.5c per tonne per kilometre)

Admin. Administration component - 5% - see Section 6.5

(This contribution applies to each stage of development but is not repeated for each stage in this document for legibility purposes)

3) Timing and Method of Payment

The contribution shall be paid in the form of cash or bank cheque, made out to Tweed Shire Council. For accounting purposes, the contribution may require separate payment for each of the categories above and you are advised to check with Council.

Evidence of the payment to Council, shall be submitted to the Certifying Authority prior to the issue of the Subdivision Certificate for each stage of the project.

4) Section 94 Plans

A copy of the Section 94 contribution plans may be inspected at the Civic and Cultural Centres, Tumbulgum Road, Murwillumbah and Brett Street, Tweed Heads.

A8 Section 64 Monetary Contributions

- 1) Contributions plans relevant to the subdivision include:
 - a) Water Development Services Plan No.3
 - b) Sewer Contributions - Banora Point
- 2) Prior to the endorsement of a Subdivision Certificate for each stage of the subdivision, the Proponent must pay, in proportion to the additional lots created by that stage, the following contributions to Council pursuant to Section 64 of the *Local Government Act 1993*.

STAGES	Water Development Servicing Plan No.3		Sewer Banora	
	Calculation/ET	Total	Calculation/ET	Total
Stage 1	10.8 ET @ \$11571	\$131220	12 ET @ \$5560	\$70056
Stage 2	18 ET @ \$11571	\$218700	18 ET @ \$5560	\$105084
Stage 3	5.2 ET @ \$11571	\$63180	5 ET @ \$5560	\$29190
Stage 4	9.2 ET @ \$11571	\$111780	9 ET @ \$5560	\$52542
Stage 5	21.6 ET @ \$11571	\$262440	21 ET @ \$5560	\$122598
Stage 6	17.4 ET @ \$11571	\$211410	17 ET @ \$5560	\$99246

- 3) These charges to remain fixed for a period of twelve (12) months from the date of this approval and thereafter in accordance with the rates applicable in Council's adopted Fees and Charges current at the time of payment.
- 4) A copy of the Section 64 contribution plans may be inspected at the Civic and Cultural Centres, Tumbulgum Road, Murwillumbah and Brett Street, Tweed Heads.

PART B—PRIOR TO ISSUE OF CONSTRUCTION CERTIFICATE FOR SUBDIVISION WORKS

Subdivision Design Modifications

B1 Through site access for pedestrians and bicycles only

The proposed Road No 1 shall be terminated in a new cul-de-sac head, between lots 21 and 68, to ensure there is no vehicular access through to the existing Stott Street. The formerly proposed road reserve between lots 21 and 68 must be landscaped and dedicated to Council, to ensure its future availability, if required.

The proponent shall prepare an amended road design to comply with this condition to the satisfaction of Council and the required works must be completed prior to the issue of a Subdivision Certificate for more than 50% of the approved allotments and associated roads and services.

B2 Intersection of Walmsley Road and Stott Street

The proponent shall design and construct a suitable traffic management facility at the intersection of Walmsley Road and Stott Street, to the satisfaction of Council. Construction

shall be completed prior to the issue of a Subdivision Certificate for more than 50% of the approved allotments and associated roads and services.

Note: As Road No 1 (see condition B1 above) is no longer a through road, it is unlikely that this intersection would require a bus accessible roundabout.

B3 *Lot Layout and Access to Sewage Pumping Station*

The layout of proposed Lots 55, 56, 57 and 62 and access to the sewage pumping station in Stage 5 shall be revised as follows:

- a) The access handle proposed for lot 55 shall be included into lot 62 and be used to provide exclusive access to the proposed Pumping Station;
- b) The width of proposed lot 56 shall be reduced by 1 metre along its southern boundary;
- c) The space created in point b) above shall be incorporated into proposed lot 55 and together with the access handle to proposed lot 57, be used to accommodate a common right of access to both of those lots with a minimum width of 5 metres.

B4 *Community Title Road*

- a) No physical road formation or associated works is to occupy the Environmental Management Area (EMA), other than within an approved Asset Protection Zone, within Lot C1 of the Community Title subdivision.
- b) A plan showing the physical road works located outside of the defined and approved EMA, subject to item (a) above, shall be provided for approval of the Certifying Authority prior to the release of the Construction Certificate for Stage 3.
- c) The Community Title Management Statement is to be amended to specify that no road or associated works shall be constructed within the EMA, subject to item (a) above.

For the purposes of this condition the EMA shall be the 15 metres width, closest to the adjacent sensitive vegetation.

B5 *Noise Attenuation*

The subdivision proposal shall be implemented in accordance with the recommendations as contained in the submitted Noise Impact Report dated 30 October 2007, by CRG Traffic and Acoustics Pty Ltd.

B6 *Subdivision*

- 1) Notwithstanding any other condition of this approval but subject to condition AN12, separate Construction Certificates may be issued for bulk earthworks and for civil works. The carrying out of bulk earthworks may be commenced prior to the issue of a Construction Certificate for civil works where it can be demonstrated all works are compatible with the civil works subject to compliance with the following conditions: A3, B1, B2, B3(a), B6, B7, B8, B9, B11, B12, B16, and conditions in Part C and Part D of this approval.
- 2) Prior to the issue of a Construction Certificate the following detail in accordance with Councils adopted Development Design and Construction Specifications shall be submitted to the satisfaction of the Certifying Authority.
 - a. copies of compliance certificates relied upon
 - b. four (4) copies of detailed engineering plans and specifications. The detailed plans shall include but are not limited to the following:
 - i. earthworks

- ii. roadworks/furnishings
- iii. stormwater drainage
- iv. water supply works
- v. sewerage works
- vi. landscaping works
- vii. sedimentation and erosion management plans
- viii. location of all service conduits (water, sewer, Country Energy and Telstra)

Note: The *Environmental Planning and Assessment Act 1979* makes no provision for works under the *Water Management Act 2000* and Section 138 of the *Roads Act 1993* to be certified by an Accredited Certifier.

B7 Construction Compliance Bond and Long Service Levy

- 1) Prior to the issue of a Construction Certificate for each stage of the subdivision, a cash bond or bank guarantee (unlimited in time) shall be lodged with Council for an amount based on 1% of the value of the works (minimum \$1,000). The bond may be called up at any time and the funds used to rectify any non-compliance with the conditions of this consent which are not being addressed to the satisfaction of the General Manager or his delegate. The bond will be refunded, if not expended, when the final Subdivision/Occupation Certificate is issued.
- 2) In accordance with Section 109F(i) of the Environmental Planning and Assessment Act 1979 (as amended), a construction certificate for subdivision works or building works shall not be issued until any long service levy payable under Section 34 of the Building and Construction Industry Long Service Payments Act, 1986 (or where such levy is payable by instalments, the first instalment of the levy) has been paid. Council is authorised to accept payment. Where payment has been made elsewhere, proof of payment is to be provided.

Remediation / Earthworks

B8 Geotechnical Compliance

Each stage shall be preceded by an endorsement of detailed earthworks design plans by a practicing geotechnical engineer to certify compliance of the plans and implementation strategy with the conclusions and recommendations of the geotechnical reports, submitted with the EA, numbered JU/04/810 (dated June/July 2004 and May 2009) and NO/03/699 (dated December 2003/January 2004) prepared by Maiden Geotechnics.

B9 Cut and Fill levels

- 1) Cut and fill levels for each stage within the project are to be generally in accordance with Opus Quantec McWilliam Drawing 203057 Fig 4.0 dated October, 2011, Proposed *Cut and Fill Contours*. Design plans are to be approved by Council prior to issue of the Construction Certificate for each stage of the project.
- 2) The source of any fill material is to be identified and reported by a practicing geotechnical engineer certifying that the material is suitable for the intended purpose prior to the issue of the Construction Certificate for each stage of the subdivision. The report is to include any conditions on the use of the material and a report from a registered NATA laboratory on the soil properties of the fill material.

B10 Site Regrading

- 1) Site regrading undertaken for all stages of the project must be undertaken in accordance with *Tweed Shire Council's Development Design Specification D6 – Site Regrading*. Evidence of compliance with this specification must be provided to Council for approval prior to issue of the Construction Certificate for each stage of the project.

- 2) At the interface between the areas subject to vegetation management and earthworks proposals, and to ensure vegetation management objectives are achieved, earthworks are not permitted closer than 5 metres to vegetation management works at the eastern and western boundaries of the site.

B11 Retaining Walls

- 1) All retaining structures and batters shall be designed in accordance with Tweed Shire Council's Development Design Specification D6 - Site Regrading. Permissible retaining wall and batter heights are specified in Table D6.1, except that side and rear boundary structures in residential subdivisions are subject to Note 1 of D6.05.4(1), rather than D6.04.4(1).
- 2) All retaining structures and batters must comply with Development Design Specification D6 - Site Regrading. Where variations to this specification are proposed, they must be accompanied by a design report that demonstrates that the proposed varied design achieves a positive engineering, urban design or environmental outcome, which is superior to a compliant design.
- 3) Design detail including surcharge loads for any retaining walls to be erected on the site must be submitted to the Certifying Authority for approval prior to issue of a Construction Certificate for each stage of the project, in accordance with AS 4678, *Tweed Shire Council Development Control Plan Part A14 - Cut and Fill on Residential Land* and Councils Development Design and Construction Specifications. Design detail is to be supported by certification of adequacy of design from a suitably qualified structural engineer.
- 4) Details from a Structural Engineer are to be submitted to the Certifying Authority for approval prior to the issue of a Construction Certificate for each stage of the subdivision for all retaining walls, footings, structures or the like. The design should take into consideration the zone of influence on the sewer main or other underground infrastructure and include a certificate of sufficiency of design.

Note: Ground anchors (to retain excavated material) within Council or private property are not permitted without prior consent from the property owner being obtained. If the land owner is Council, approval is required from the General Manager or his delegate, and the anchors are required to be removed upon completion of the works, unless a compensation amount is negotiated with Council.

B12 Pre-Construction Dilapidation Reports

The Proponent is to engage a qualified structural engineer to prepare a Pre-Construction Dilapidation Report detailing the current structural condition of all existing and adjoining buildings, infrastructure and roads. The report shall be submitted to the satisfaction of the Certifying Authority prior to the issue of the Construction Certificate for each stage. A copy of the report is to be forwarded to Council.

Construction Management

B13 Construction Management Plan

- 1) Prior to the issue of a Construction Certificate for each stage of the project, a Construction Management Plan shall be submitted to and approved by the Certifying Authority. A copy of the approved plan shall be submitted to Council. The Plan shall address, but not be limited to, the following matters where relevant:
 - a) hours of work;
 - b) contact details of site manager;
 - c) traffic and pedestrian management;

- d) noise and vibration management;
 - e) construction waste management;
 - f) erosion and sediment control; and,
 - g) flora and fauna management, including tree protection works.
- 2) The site earthworks are to be staged and limited to the proposed staged areas 1 to 6 inclusive or a 5ha maximum total area at any time to reduce exposed areas. Works are to be topsoiled and seeded immediately after completion to protect the exposed areas from water and wind erosion. The earthwork staging details are to be shown on the Construction Certificate.

B14 Traffic & Pedestrian Management Plan

Prior to the issue of a Construction Certificate for each stage of the project, a Traffic and Pedestrian Management Plan in accordance with AS1742 and RTA publication 'Traffic Control at Works Sites' Version 2 shall be prepared by an RTA accredited person, and shall be submitted to and approved by the Certifying Authority. Safe public access shall be provided at all times. The Plan shall address, but not be limited to, the following matters:

- (1) ingress and egress of vehicles to the site,
- (2) loading and unloading, including construction zones,
- (3) predicted traffic volumes, types and routes, and
- (4) pedestrian and traffic management methods.

The Proponent shall submit a copy of the approved plan to Council.

Traffic & Parking

B15 Road Junction

In order to ensure that vehicles exit/enter the site or road network in a safe manner, the following works must be installed:

Walmsleys Road / Nabilla Street Intersection as per drawing 203057 SK20100913-5 - to be modified so that no obstruction occurs to vehicles exiting from existing residential driveways.

Details of the type, location and operation of the device are to be submitted to the satisfaction of the Certifying Authority prior to the issue of the Construction Certificate for Stage 1 or 6.

Subdivision Works

B16 Stormwater (prior to Issue of Construction Certificate)

- 1) All stormwater drainage outlets shall be designed to discharge to a lawful point of discharge, being a Council drainage system, existing watercourse or easement, and shall discharge via stormwater quality control devices, energy dissipation devices and level spreaders as required by Council specifications D5 and D7 to minimise adverse impacts of the development on downstream property. All stormwater discharge onto Lot 6 DP1117326 must satisfy the existing "restriction on the use of land" burdening that land such that it "reflects the existing natural drainage pattern of the catchment". The design and location of all stormwater outlets and related treatment and mitigation structures must consider and make provision for future access for maintenance to the satisfaction of Council.
- 2) All interallotment drainage systems shall be designed in accordance with Development Design Specification D5 – Stormwater Drainage Design, catering for minor and major storm events, with appropriate consideration for blockages, bends,

freeboard to adjoining residential development, and adjacent earth retaining structures. Where practical, interallotment drainage systems shall discharge to the public stormwater drainage system rather than discharge separately, to minimise the number of outlets.

- 3) Staging plans for the subdivision must provide the necessary stormwater infrastructure to fully service each stage of the development, to the satisfaction of Council.
- 4) Engineering calculations and/or modelling of peak stormwater discharges for a range of storm intensities and durations shall be provided with the Construction Certificate application to demonstrate any on site detention / retention requirements for individual allotments in order to mitigate adverse downstream impacts. Any measures identified for individual allotments (e.g. rainwater tank sizing, available storage volumes) shall be registered on each land title at subdivision certificate stage.
- 5) Permanent stormwater quality treatment shall be provided in accordance with the following:
 - a) The Construction Certificate Application shall detail stormwater management for the occupational or use stage of the development in accordance with Section D7.07 of Council's *Development Design Specification D7 - Stormwater Quality*. Permanent stormwater quality treatment shall comply with section 5.5.3 of the *Tweed Urban Stormwater Quality Management Plan* and Council's *Development Design Specification D7 - Stormwater Quality*.
 - b) The stormwater and site works shall incorporate water sensitive design principles and where practical, integrated water cycle management.
 - c) Specific Requirements to be detailed within the Construction Certificate application include shake down area along the haul route immediately before the intersection with the road reserve.
 - d) A Construction Certificate Application for works that involve any of the following:
 - connection of a private stormwater drain to a public stormwater drain
 - installation of stormwater quality control devices
 - erosion and sediment control works will not be approved until prior separate approval to do so has been granted by Council under s.68 of the *Local Government Act, 1993*.

Applications for these works must be submitted on Council's standard s.68 stormwater drainage application form accompanied by the required attachments and the prescribed fee.

- e) Erosion and Sediment Control shall be provided in accordance with the following:
 - The Construction Certificate Application must include a detailed erosion and sediment control plan prepared in accordance with Section D7.07 of *Development Design Specification D7 - Stormwater Quality*.
 - Construction phase erosion and sediment control shall be designed, constructed and operated in accordance with *Tweed Shire Council Development Design Specification D7 - Stormwater Quality* and its Annexure A – "Code of Practice for Soil and Water Management on Construction Works".

Road Design

B17 Roads

- 1) Kerb and gutter, stormwater drainage, full road width pavement including traffic facilities (roundabouts, median islands etc.) and paved footpaths shall be constructed along the full length of the new roads.
- 2) All roads shall be designed in accordance with the relevant requirements of Council. Final road design plans shall be prepared by a qualified practising Civil Engineer and submitted to the Certifying Authority prior to the issue of a Construction Certificate for below ground works for each stage of the project.
- 3) Rumble Bar Delineators including line marking are to be provided on Walmsleys Road crest at the start of Walmsleys Road extension in front of the existing driveways. Line marking and Rumble Bar Delineators are to physically reduce the running lanes to 3.0m. Appropriate "Crest Signs" and "No Parking" signs are to be provided.

B18 Regulatory Signage

All traffic regulatory signage and line marking is to be shown on the Construction Certificate application for each stage of the subdivision.

B19 Driveways

The Construction Certificate application for each stage of the subdivision is to demonstrate that all lots in the steeper sections of the subdivision can be serviced by a driveway in accordance with Council's design and construction specifications.

B20 Footpaths

A concrete footpath 1.2 metres wide is to be constructed on a compacted base along the entire frontage of the site in accordance with the councils Development Design and Construction Specifications and Standard Drawing SD013.

Twenty four (24) hours notice is to be given to the councils Engineering & Operations Division before placement of concrete to enable formwork and sub grade to be inspected.

B21 Section 138 Application

Application shall be made to Council under Section 138 of the *Roads Act 1993* for works pursuant to this approval located within the road reserve for each stage of the project. The engineering plan submission must include copies of compliance certificates relied upon and details relevant to but not limited to the following: -

- 1) Road works/furnishings;
- 2) Stormwater drainage;
- 3) Water and sewerage works;
- 4) Sediment and erosion control plans;
- 5) Location of all services/conduits; and,
- 6) Traffic control plan.

Landscaping

B22 Parks

- 1) Prior to the release of a Construction Certificate for each stage of the development a detailed landscape plan prepared by a qualified landscape architect must be submitted for all areas of casual open space, structured open space and streetscapes

to be dedicated to Council. Such plan(s) must be approved by the Manager, Recreation Services, Tweed Shire Council and include embellishments such as listed in Councils Subdivision Manual (Section A5 of the Tweed Development Control Plan) and Development Design Specification (D14) and related Standard Drawings and include grassing, landscaping, seating, playground equipment and shade cover. The plans must provide slope information and indicate all underground services. Where play equipment is installed a minimum area of 10m around the equipment is to be turfed and the remaining area seeded.

- 2) This detailed plan may include variations to the Landscape Masterplan if sought by Council. This could include allowing for future access to the area described as the 'Eastern Conservation Zone' should it become public land.
- 3) The developer is to liaise with Council's Recreation Services Unit regarding the final design and embellishment of this park.
- 4) Any playgrounds included in landscape plans must comply with the guidelines established in the 'Playground Audit for Tweed Shire Council' (July 2009). Appendix 3 of this establishes a procedure for assessing nearby hazards and mitigation measures. New subdivisions designed after development of these guidelines must ensure no playground facility has a Facility Risk Rating exceeding 13 as defined in Table 3A7 of that document.

Vegetation Management

B23 Vegetation Management Plan

A Vegetation Management Plan (VMP) shall be prepared for the site in accordance with the recommendations contained in report prepared by Biolink Ecological Consultants, dated June 2011, Appendix III, that proposes Objectives and Guiding Principles. The report is to be submitted (and a copy forwarded to the department) for the approval of Tweed Shire Council prior to the issue of a Construction Certificate for subdivision works.

Bushfire Management

B24 Asset Protection Zones

- 1) Asset Protection Zones (APZs) in each stage are to be provided in accordance with the Ecological Bushfire Planning Assessment in the Biolink Ecological Consultants report dated June 2011, as contained within the Environmental Management Area, illustrated on the proposed subdivision plans in condition A3 . Details of the APZs are to be provided, accompanied by RFS endorsement, to the satisfaction of the Certifying Authority prior to the release of the Construction Certificate for each stage.
- 2) Asset Protection Zones in each Stage are to be provided on private land, in accordance with *Planning for Bushfire Protection* (2006). Details and a plan showing the APZs, accompanied by RFS endorsement, are to be provided to the satisfaction of the Certifying Authority prior to the release of the Construction Certificate for each Stage.
- 3) Thinning of Camphor Laurel trees within the APZ for Lots 38, 39, 40, 55, 57, 59, 60 and 61 is required in order to comply with *Planning for Bushfire Protection 2006* as part of the on going maintenance of adequate bushfire protection.

Monitoring

B25 Stormwater Monitoring Plan

In order to demonstrate that the stormwater management system satisfactorily complies with the intended design and the *Tweed Shire Council Development Control Plan Stormwater Design Specification*, a Stormwater Monitoring Plan shall be submitted with the s68 Stormwater Application to Council for approval prior to issue of the Construction Certificate for the first stage of the project. Due to the proximity of the SEPP 14 wetlands, the plan shall consider the appropriate water quality objectives of the *Tweed Urban Stormwater Quality Management Plan, 2012*, for drainage of stages 4, 5 and 6 for approval of the council.

PART C—PRIOR TO COMMENCEMENT OF WORKS

Notification Requirements

C1 Notice to be Given Prior to Commencement / Excavation

- 1) The Principal Certifying Authority and Council shall be given written notice, at least 48 hours prior to the commencement of excavation, shoring or underpinning works on the site for each stage of the project.
- 2) The Principal Certifying Authority is to be given a minimum of 48 hours notice prior to any critical stage inspection or any other inspection nominated by the Principal Certifying Authority via the notice under Section 81A of the *Environmental Planning and Assessment Act 1979*.

C2 Notifying Adjoining Neighbours

- 1) Where any pumps used for dewatering operations are proposed to be operated on a 24-hour basis, the owners of adjoining premises shall be notified accordingly prior to commencement of such operations for any stage of the project.
- 2) All pumps used for onsite dewatering operations are to be installed on the site in a location that will minimise any noise disturbance to neighbouring or adjacent premises and be acoustically shielded to the satisfaction of Council so as to prevent the emission of offensive noise as a result of their operation.

Public Risk

C3 Public Risk Liability

- 1) The proponent shall provide to the PCA copies of Public Risk Liability Insurance to a minimum value of \$10 Million for the period of commencement of works until the completion of the defects liability period.
- 2) Where the construction work is on or adjacent to public roads, parks or drainage reserves the development shall provide and maintain all warning signs, lights, barriers and fences in accordance with AS 1742 (Manual of Uniform Traffic Control Devices). The contractor or property owner shall be adequately insured against Public Risk Liability and shall be responsible for any claims arising from these works.

C4 Site Safety

Prior to the commencement of works for each stage of the subdivision, the applicant shall ensure that a Site-Specific Safety Management Plan and Safe Work Methods for the subject site have been prepared and put in place in accordance with either:-

- a) Occupation Health and Safety and Rehabilitation Management Systems Guidelines, 3rd Edition, NSW Government, or
- b) AS4804 Occupation Health and Safety Management Systems - General Guidelines on Principles Systems and Supporting Techniques.
- c) WorkCover Regulations 2000

Structural Works

C5 *Structural Details*

Prior to the commencement of construction at each stage of the project, the Proponent shall submit to the satisfaction of the Principal Certifying Authority structural drawings prepared and signed by a suitably qualified practising Structural Engineer that comply with:

- (1) the relevant clauses of the BCA,
- (2) the relevant project approval,
- (3) drawings and specifications comprising the Construction Certificate, and
- (4) the relevant Australian Standards listed in the BCA (Specification A1.3).

C6 *Filling of the Site*

Once the Construction Certificate has been issued for each stage of the subdivision, any change in the source of fill must be notified to the Certifying Authority and approval obtained to the new source prior to the import of any of the material. A report from a practicing geotechnical engineer certifying that the new source material is suitable for the intended purpose must be provided. The report must include any conditions on the use of the material and a report from a registered NATA laboratory on the soil properties of the fill material including contamination.

C7 *Retaining Walls*

Prior to commencement of works for any stage of the project a certificate of adequacy of design, signed by a practising Structural Engineer on all proposed retaining walls in excess of 1.2m in height, must be provided to the Principal Certifying Authority. The certificate must also address any loads or possible loads on the wall from structures adjacent to the wall and must be supported by a geotechnical assessment of the founding material.

Pollution Control

C8 *Erosion and Sediment Control*

Prior to commencement of work on the site for each stage of the project, all erosion and sedimentation control measures are to be installed and operational including the provision of a "shake down" area where required to the satisfaction of the Principal Certifying Authority.

Road Construction

C9 *Pavement Design*

- 1) Before the commencement of the relevant stages of road construction for each stage of the project, pavement design detail including reports from a Registered NATA Consultant shall be submitted to Council for approval and demonstrating.
 - a. That the pavement has been designed in accordance with *Tweed Shire Council's Development Design Specification, D2*.
 - b. That the pavement materials to be used comply with the specifications tabled in Council's Construction Specifications, C242-C245, C247, C248 and C255.
 - c. That site fill areas have been compacted to the specified standard.

- d. That supervision of Bulk Earthworks has been to Level 1 and frequency of field density testing has been completed in accordance with Table 8.1 of AS 3798-1996.
- 2) During the relevant stages of road construction, reports shall be submitted to the Principal Certifying Authority by a Registered NATA Geotechnical firm demonstrating.
 - a. That the pavement layers have been compacted in accordance with Council's adopted Design and Construction Specifications.
 - b. That pavement testing has been completed in accordance with Table 8.1 of AS 3798 including the provision of a core profile for the full depth of the pavement.
- 3) Temporary turning areas and associated signage must be provided for refuse vehicles at the end of roads which will be extended in subsequent stages. The temporary turning areas shall be constructed with a minimum 150mm pavement (CBR 45) and shall have a right of carriageway registered over the turning area until such time as the road is extended.

Services

C10 Existing Services

The proponent shall accurately locate and identify any existing sewer main, stormwater line or other underground infrastructure within or adjacent to the site and the Principal Certifying Authority advised of its location and depth prior to commencing works for each stage of the subdivision and ensure there shall be no conflict between the proposed development and existing infrastructure prior to start of any works.

C11 Drawing Reticulated Water

Where water is to be drawn from Councils reticulated system, the proponent shall: -

- 1) Make application for the hire of a Tweed Shire Council metered standpipe including Councils nomination of point of extraction.
- 2) Apply for Councils nomination of a point of extraction specific to the development where a current standpipe approval has been issued
- 3) Pay relevant fees in accordance with Councils adopted fees and charges.

C12 Contact Telephone Number

Prior to the commencement of the works for each stage of the project, the Proponent shall forward to the Department and Council a 24 hour telephone number to be operated for the duration of the construction works.

C13 Movement of Trucks Transporting Waste Material

The proponent shall notify the Roads and Traffic Authority's Traffic Management Centre (TMC) of the truck route(s) to be followed by trucks transporting waste material from the site, prior to the commencement of the removal of any waste material from the site for each stage of the project.

C14 Stormwater – (prior to Commencement of Works)

Prior to commencement of work on the site all erosion and sedimentation control measures are to be installed and operational including the provision of a "shake down" area where required to the satisfaction of the Principal Certifying Authority.

In addition to these measures the core flute sign provided with the stormwater approval under Section 68 of the *Local Government Act, 1993*, is to be clearly displayed on the most prominent position of the sediment fence or erosion control device which promotes awareness of the importance of the erosion and sediment controls provided.

This sign is to remain in position for the duration of the project.

PART D—DURING CONSTRUCTION

Construction Management

D1 Approved Plans to be On-site

A copy of the approved and certified plans, specifications and documents incorporating conditions of approval and certification shall be kept on the site at all times and shall be readily available for perusal by any officer of the Department, Council or the PCA.

D2 Site Notice

A site notice(s) shall be prominently displayed at the boundaries of the site for the purposes of informing the public of project details including, but not limited to:

- 1) Details of the Builder, Principal Certifying Authority and Structural Engineer for all stages of the project;
- 2) The approved hours of work;
- 3) the name of the site/project manager, the responsible managing company (if any), its address and 24 hour contact phone number for any inquiries, including construction/noise complaint are to be displayed on the site notice; and
- 4) To state that unauthorised entry to the site is not permitted.

D3 Site security

It is the responsibility of the applicant to restrict public access to the construction works site, construction works or materials or equipment on the site when construction work is not in progress or the site is otherwise unoccupied in accordance with WorkCover NSW requirements and Occupational Health and Safety Regulation 2001.

D4 Protection of Trees – Street Trees

All street trees planted as part of the project shall be protected at all times during construction. Any tree on the footpath, which is damaged or removed during construction of any stage of the project, shall be replaced, to the satisfaction of Council.

D5 Protection of Trees – On-site Trees

All trees on the site that are not approved for removal are to be suitably protected by way of tree guards, barriers or other measures as necessary are to be provided to protect root system, trunk and branches, during construction of any stage of the project.

Thinning of Camphor Laurel trees within the APZ for Lots 38, 39, 40, 55, 57, 59, 60 and 61 is required in order to comply with *Planning for Bushfire Protection 2006* as part of the on going maintenance of adequate bushfire protection.

D6 Dust Control Measures

Adequate measures shall be taken to prevent dust from affecting the amenity of the neighbourhood during construction for each stage of the project. In particular, the following measures must be adopted:

- (1) Physical barriers shall be erected at right angles to the prevailing wind direction or shall be placed around or over dust sources to prevent wind or activity from generating dust emissions,

- (2) Earthworks and scheduling activities shall be managed to coincide with the next stage of project to minimise the amount of time the site is left cut or exposed,
- (3) All materials shall be stored or stockpiled at the best locations,
- (4) The surface should be dampened slightly to prevent dust from becoming airborne but should not be wet to the extent that run-off occurs,
- (5) All vehicles carrying spoil or rubble to or from the site shall at all times be covered to prevent the escape of dust or other material,
- (6) All equipment wheels shall be washed before exiting the site using manual or automated sprayers and drive-through washing bays,
- (7) Gates shall be closed between vehicle movements and shall be fitted with shade cloth, and
- (8) Cleaning of footpaths and roadways shall be carried out regularly.
- (9) All topsoil stockpiles are to be sprayed with dust suppression material such as "hydromulch", "dustex" or equivalent. All haul roads shall be regularly watered or treated with dust suppression material or as directed on site.

D7 Environmental Health

All work associated with this approval is to be carried out so as not to impact on the neighbourhood, adjacent premises or the environment. All necessary precautions, covering and protection shall be taken to minimise impact from:

- noise, water or air pollution,
- dust during filling operations and also from construction vehicles, and
- material removed from the site by wind.

D8 Removal of Material

No soil, sand, gravel, clay or other material shall be disposed of off the site without the prior written approval of Council.

D9 Surrounding Road Carriageways

The surrounding road carriageways are to be kept clean of any material carried onto the roadway by construction vehicles. Any work carried out by Council to remove material from the roadway will be at the proponent's expense and any such costs are payable prior to the issue of a Subdivision Certificate/Occupation Certificate.

D10 Burning of Vegetation

The burning off of trees and associated vegetation felled by clearing operations or builders waste is prohibited. All such materials shall either be recycled or disposed of in a manner acceptable to the Council's General Manager or his delegate. .

Site Maintenance

D11 Erosion and Sediment Control

All erosion and sediment control measures, as designed in accordance with the approved plans are to be effectively implemented and maintained at or above design capacity for the duration of the construction works for each stage of the project to the satisfaction of the council, and until all ground disturbed by the works has been stabilised and rehabilitated so that it no longer acts as a source of sediment.

D12 *Disposal of Seepage and Stormwater*

Any seepage or rainwater collected on-site during construction shall not be pumped to the street stormwater system unless separate prior approval is given in writing by Council.

Geotechnical

D13 *Geotechnical Engineer*

A suitably qualified Geotechnical Engineer is required onsite during remediation of the identified landslips of the site to:

- i.) Confirm the competency of the base;
- ii.) Identify the points of seepage entry; and,
- iii.) Provide instructions on the construction of the seepage control.

D14 *Filling source.*

All imported fill material shall be from an approved source. Prior to the commencement of filling operations details of the source of fill, description of material and documentary evidence that the fill material is free of any contaminants, and details of the proposed haulage route shall be submitted to Tweed Shire Council for the approval of the General Manager or delegate.

D15 *Filling of the Site*

- 1) Proposed earthworks shall be carried out in accordance with AS 3798, "Guidelines on Earthworks for Commercial and Residential Developments". The earthworks shall be monitored by a Registered Geotechnical Testing Consultant to a level 1 standard in accordance with AS 3798. A certificate from a registered Geotechnical Engineer certifying that the filling operations comply with AS3798 shall be submitted to the Principal Certifying Authority upon completion.
- 2) During filling operations,
 - a) No filling is to be placed hydraulically within twenty metres (20m) of any boundary that adjoins private land that is separately owned.
 - b) Fill adjacent to these boundaries is to be placed mechanically.
 - c) All fill and cut batters shall be contained wholly within the subject land.
 - d) All topsoil to be re-spread and the site to be grassed and landscaped including battered areas.

Monitoring

D16 *Monitoring of Stormwater Management System*

- 1) The stormwater drainage system shall be monitored throughout construction of each stage of the project to demonstrate that it satisfactorily complies with the intended design and the *Tweed Shire Council's Development Control Plan Stormwater Design Specification*. Amendments to the system may be required to ensure compliance.
- 2) Monitoring shall continue post-construction in accordance with water quality guidelines in the Stormwater Monitoring Plan, required by Condition B25 for Stages 4, 5 and 6 for up to 5 years following the completion of the last of these stages, until the

council is satisfied with the performance of the stormwater management system, whichever is soonest.

Noise and Vibration

D17 Hours of Work

The hours of construction for all stages of the project, including the delivery of materials to and from the site, shall be restricted as follows:

- (1) between 7:00 am and 6:00 pm, Mondays to Fridays inclusive;
- (2) between 8:00 am and 1:00 pm, Saturdays;
- (3) no work on Sundays and public holidays.

Works may be undertaken outside these hours where:

- (4) the delivery of materials is required outside these hours by the Police or other authorities;
- (5) it is required in an emergency to avoid the loss of life, damage to property and/or to prevent environmental harm;
- (6) the work is approved through the Construction Noise and Vibration Management Plan; and
- (7) residents likely to be affected by the works are notified of the timing and duration of these works at least 48 hours prior to the commencement of the works.

D18 Construction Noise Objective

- 1) The construction noise objective for all stages of the project is to manage noise from construction activities (as measured by a L_{A10} (15minute) descriptor) so it does not exceed the background L_{A90} noise level by more than 5dB(A).
- 2) Background noise levels are those identified in the Environmental Assessment or otherwise identified in the approved Construction Management Plan. The Proponent shall implement all feasible noise mitigation and management measures with the aim of achieving the construction noise objective.
- 3) Any activities that have the potential for noise emissions that exceed the objective must be identified and managed in accordance with the approved Construction Management Plan.
- 4) If the noise from a construction activity is substantially tonal or impulsive in nature (as described in Chapter 4 of the NSW Industrial Noise Policy), 5dB(A) must be added to the measured construction noise level when comparing the measured noise with the construction noise objective.

D19 Construction Noise Management

For all stages of the project, the Proponent shall:

- (1) schedule rock breaking, rock hammering, sheet piling, pile driving and any similar activity only between the following hours unless otherwise approved in the Construction Management Plan:
 - (a) 9.00 am to 12.00 pm, Monday to Friday;
 - (b) 2.00 pm to 5.00 pm Monday to Friday; and
 - (c) 9.00 am to 12.00 pm, Saturday

- (2) ensure that wherever practical and where sensitive receivers may be affected,, piling activities are completed using bored piles. If driven piles are required they must only be installed where approved in the Construction Management Plan.

D20 *Vibration Criteria*

For all stages of the project, vibration resulting from construction of all stages of the project must not exceed the evaluation criteria presented in the *Environmental Noise Management – Assessing Vibration: A Technical Guide* (DEC, 2006).

D21 *Use of Crushing Plant Machinery*

The use of crushing plant machinery, mechanical screening or mechanical blending of materials must be subject to a separate development application with Council.

Stormwater and Drainage

D22 *Stormwater*

- 1) Inter allotment drainage shall be provided to all lots where roof water for dwellings cannot be conveyed to the street gutter by gravitational means.
- 2) All stormwater gully lintels shall have the following notice cast into the top of the lintel: 'DUMP NO RUBBISH, FLOWS INTO CREEK' or similar wording in accordance with Council's adopted Design and Construction Specification.
- 3) Regular inspections shall be carried out by the Supervising Engineer on site to ensure that adequate erosion control measures are in place and in good condition both during and after construction.
- 4) Additional inspections are also required by the Supervising Engineer after each storm event to assess the adequacy of the erosion control measures, make good any erosion control devices and clean up any sediment that has left the site or is deposited on public land or in waterways.
- 5) This inspection program is to be maintained until the maintenance bond is released or until Council is satisfied that the site is fully rehabilitated.

Heritage

D23 *Impact of Below Ground (Sub-surface) Works – Non-Aboriginal Objects*

If any archaeological relics are uncovered during the course of the work in any stage of the project, then all works shall cease immediately in that area and the NSW Heritage Office contacted. Depending on the possible significance of the relics, an archaeological assessment and an excavation permit under the NSW *Heritage Act 1977* may be required before further works can continue in that area.

D24 *Impact of Below Ground (Sub-surface) Works – Aboriginal Objects*

In the event that future works during any stage of the project disturb Aboriginal cultural materials, works at or adjacent to the material must stop immediately. Temporary fencing must be erected around the site and the material must be identified by an independent and appropriately qualified archaeological consultant. The Regional Archaeologist of the Cultural Heritage Unit of the Department of Environment and Climate Change, Coffs Harbour, the Tweed Byron Local Aboriginal Land Council (TBLALC) and the Ngunduwal/Minjungbal descendents must be informed. These groups will advise on the most appropriate course of action to follow. Works must not resume at the location without the prior written consent of

the Department of Environment and Climate Change, the Tweed Byron LALC and the Ngunduwal/Minjungbal descendants.

D25 Compulsory Inspections

Tweed Shire Council shall be given a minimum 24 hours notice to carry out the following compulsory inspections in accordance with Tweed Shire Council Development Control Plan, Part A5 - Subdivision Manual, Appendix D. Inspection fees are based on the rates contained in Council's current Fees and Charges:-

Roadworks

Pre-construction commencement erosion and sedimentation control measures

Completion of earthworks

Excavation of sub grade

Pavement - sub-base

Pavement - pre kerb

Pavement - pre seal

Pathways, footways, cycleways - formwork/reinforcement

Final inspections - on maintenance

Off Maintenance inspection

Water Reticulation, Sewer Reticulation, Drainage

Excavation

Bedding

Laying/jointing

Manholes/pits

Backfilling

Permanent erosion and sedimentation control measures

Drainage channels

Final inspection - on maintenance

Off maintenance

Sewer Pump Station and Lift Stations

Excavation

Formwork/reinforcement

Hydraulics

Mechanical/electrical

Commissioning - on maintenance

Off maintenance

Stormwater Quality Control Devices (other than proprietary devices)

For detail refer to Water By Design - Technical Guidelines

Earthworks and filter media

Structural components

Operational establishment

Commissioning - on maintenance

Off maintenance

Council's role is limited to the above mandatory inspections and does not include supervision of the works, which is the responsibility of the Developers Supervising Consulting Engineer.

The EP&A Act, 1979 (as amended) makes no provision for works under the Water Management Act 2000 to be certified by an "accredited certifier".

The fee for the above-mentioned inspections shall be invoiced upon completion of all civil works, and subject to the submission of an application for a 'Subdivision Works Compliance Certificate'.

PART E—PRIOR TO ISSUE OF SUBDIVISION CERTIFICATE

E1 Part 4A Certificate

Prior to the registration of final subdivision plan in the Office of the Registrar-General, a Part 4A certificate shall be obtained under section 109D(1)(d) of the *Environmental Planning and Assessment Act 1979* for each stage of the subdivision.

E2 Compliance Certificate

Prior to the application for a Subdivision Certificate for each stage of the subdivision a Compliance Certificate or Certificates shall be obtained from Council or an accredited certifier for the following:-

- a) Compliance Certificate - Roads
- b) Compliance Certificate - Water Reticulation
- c) Compliance Certificate - Sewerage Reticulation
- d) Compliance Certificate – Drainage
- e) Compliance Certificate – Sewerage Pump Station

Note:

1. All compliance certificate applications must be accompanied by documentary evidence from the developers Subdivision Works Accredited Certifier (SWAC) certifying that the specific work for which a certificate is sought has been completed in accordance with the terms of the development consent, the construction certificate, Tweed Shire Council's Development Control Plan Part A5 - Subdivisions Manual and Councils Development Design and Construction Specifications.
2. The EP&A Act, 1979 (as amended) makes no provision for works under the *Water Management Act 2000* to be certified by an "accredited certifier".

Remediation / Earthworks

E3 Retaining Walls

All retaining walls are to be certified by a suitably qualified geotechnical/structural engineer. The certification is to be submitted with the Subdivision Certificate application for each affected staged of the subdivision and shall state that the retaining walls have been designed and constructed in accordance with AS4678-2002 Earth Retaining Structures and are structurally sound.

Geotechnical

E4 Geotechnical Certification

Prior to issue of a Subdivision Certificate for any stage of the project, the consultant geotechnical engineer is to certify the following on site:

- The remediation of all nominated slips on the site; and,
- All lots in the subdivision are to be certified as being sound for building construction purposes, classifying the soil type, and addressing the adequate bearing capacities of the soils in accordance with AS 2870, Residential Slabs and Footings Construction and the submission of soil compaction and bearing capacity test results for the filled areas.

This certification shall be provided to Council prior to the release of the Subdivision Certificate for the first stage of the project.

E5 Dilapidation Report

A second dilapidation report is to be prepared by a suitably qualified engineer at the completion of the works for each stage of the project to ascertain if any structural damage has occurred to the adjoining and adjacent buildings, infrastructure and roads. The report is to be compared with the first dilapidation report and recommend a course of action to carry out repairs if required. The report is to be submitted to the Principle Certifying Authority, prior to issue of the Subdivision Certificate for each stage of the project.

Traffic and Access

E6 Civil works

- 1) All civil works approved with the Construction Certificate are to be completed to the satisfaction of Council prior to issue of a Subdivision Certificate for each stage of the project. All works are to be completed in accordance with Council's *Subdivision Code* (as current at the time of commencement).
- 2) Any damage caused to public infrastructure (roads, footpaths, water and sewer mains, power and telephone services etc) during construction of the development shall be repaired in accordance with Council's adopted Design and Construction Specifications prior to the issue of a Subdivision Certificate for each stage of the project.

Bushfire Management

E7 Asset Protection Zones (APZ)

- 1) Prior to the issue of the Subdivision Certificate for the relevant Stage, certification from a Fire Protection Association Australia (FPA Australia) accredited Bushfire Planning And Design (BPAD) certified practitioner, must be submitted to the PCA, confirming that the subject development complies with the Rural Fire Service's General Terms of Approval imposed under Section 100B of the Rural Fires Act 1997 on the consent.
- 2) No dwellings shall be constructed within the APZ. Private open space, communal open space, roads, backyards and pools are permissible in the APZ.
- 3) Thinning of Camphor Laurel trees within the APZ for Lots 38, 39, 40, 55, 57, 59, 60 and 61 is required in order to comply with *Planning for Bushfire Protection 2006* as part of the on going maintenance of adequate bushfire protection.

E8 Registration of Easements / Restrictions to use / Right of carriageways

- 1) The creation of easements for services, rights of carriageways and restrictions as to user are applicable under Section 88B of the *Conveyancing Act 1919*, including (but not limited to) the following:
 - a. Easements for sewer, water supply and drainage over all public services/infrastructure on private property.
 - b. Right of carriageway over the approved driveway access, subject to the outcomes required in condition B2, is to benefit Council and provide access in perpetuity to the sewer pump station.

- c. Drainage Easements are to be placed over all subsurface drains and interallotment drainage, benefiting and burdening the property owners. Maintenance of the subsurface drains is to be included in the 88B instrument.
 - d. Right of carriageways are to benefit and burden the property owners. Maintenance of the right of carriageways is to be shared between the property owners. Provision is also to be included in the 88B to provide public access to the proposed parks, nominating Council as the benefiting authority.
 - e. Use of site regrading on sloping residential subdivision sites to manufacture flat earth platforms is not permitted. Future dwellings on these sites are to use building techniques suitable to sloping sites.
- 2) Pursuant to Section 88BA of the Conveyancing Act (as amended) the Instrument creating the right of carriageway/easement to drain water shall make provision for maintenance of the right of carriageway/easement by the owners from time to time of the land benefited and burdened and are to share costs equally or proportionally on an equitable basis.
 - 3) Any Section 88B Instrument creating restrictions as to user, rights of carriageway or easements which benefit Council shall contain a provision enabling such restrictions, easements or rights of way to be revoked, varied or modified only with the consent of Council.
 - 4) Privately owned infrastructure on community land may be subject to the creation of statutory restrictions, easements etc in accordance with the *Community Land Development Act 1989*, *Strata Schemes Management Act 1996*, *Conveyancing Act 1919*, or other applicable legislation.
 - 5) In addition to the above certification, the following is to be included in the Section 88B Instrument to accompany the final plan of subdivision.
 - a. A restriction to user for each lot that has the benefit of a retaining wall that prevents any cut or fill greater than 0.3m in vertical height within a zone adjacent to the wall that is equal to the height of the wall.
 - b. Each lot burdened and or benefited by a Type 1 wall as defined in AS4678-2002 Earth Retaining Structures, shall contain a restriction as to user advising the landowner of the need to maintain the wall in accordance with that standard.
 - c. A restriction as to user burdening all lots that prevents use of site regrading on sloping (natural slope >10%) residential subdivision sites to manufacture flat earth platforms suitable for construction of concrete slab-on-ground dwellings. Dwellings on these sites are to use building techniques suitable to sloping sites such as piled or piered foundations.
 - d. A Restriction as to User for any indicated Asset Protection Zone. No dwellings are to be constructed in this area. The Restriction as to User shall advise the landowner of the need to maintain this area as an Asset Protection Zone.

The restriction is to be clearly marked on the plan of subdivision and Council is to be nominated as the sole party to vary, modify and/or extinguish the restriction.

- 6) A public positive covenant is to be created under Section 88E of the *Conveyancing Act 1919*, to require that the land the subject to the VMP is to be maintained in accordance with the requirements of the VMP.

E9 Defects Liability Bond

- 1) Prior to the issue of a Subdivision Certificate for each stage of the project a defect liability bond (in cash or unlimited time Bank Guarantee) shall be lodged with Council.

- 2) The bond shall be based on 5% of the value of the works (minimum \$1,500) which will be held by Council for a period of 12 months from the date on which the Subdivision Certificate is issued. It is the responsibility of the proponent to apply for refund following the remedying of any defects arising within the 6 month period.
- 3) Prior to the issue of a Subdivision Certificate for each stage of the project, a maintenance bond equal to 25% of the contract value of the footpath construction works shall be lodged for a period of 3 years or until 80% of the lots fronting paved footpaths are built on.
- 4) Alternatively, the developer may elect to pay a cash contribution to the value of the footpath construction works plus 25% in lieu of construction and Council will construct the footpath when the subdivision is substantially built out. The cost of these works shall be validated by a schedule of rates.
- 5) A bond shall be lodged prior to the issue of the Subdivision Certificate to ensure that the landscaping is maintained by the developer for a period of 6 months from the date of issue of a Subdivision Certificate. The amount of the bond shall be 20% of the estimated cost of the landscaping or \$3000 whichever is the greater.
- 6) The six (6) months Defects Liability Period commences upon the registration of the Plan of Subdivision for each stage of the project.
- 7) Any damage to property (including pavement damage) is to be rectified to the satisfaction of the General Manager or his delegate prior to the issue of a Subdivision Certificate for each stage of the project. Any work carried out by Council to remove material from the roadway will be at the Developers expense and any such costs are payable prior to the issue of a Subdivision Certificate.

E10 Embellishment of Open Space

Prior to the release of a Subdivision Certificate for each stage of the project, casual open space is to be embellished consistent with the approved detailed landscape plans. The exception to this is playground equipment and softfall. The developer must provide the appropriate level area for the play equipment with a minimum fall of 1:100. Installation of the play equipment and softfall however is not to occur until 20% of the relevant stage's allotments are occupied. The developer must provide a bank guarantee or cash contribution equivalent to the cost of purchase and installation of such items prior to release of the Subdivision Certificate for each stage. Council will undertake the installation at the appropriate time.

E11 Works as Executed Plans (Open Space)

Prior to issue of a Subdivision Certificate, Work as Executed Plans (WAX) must be submitted for all landscaped casual and active open space. These must show all underground services, irrigation systems and the location of concrete paths, structures, other park infrastructure and garden bed outlines.

The plans are to be certified by a registered surveyor or consulting engineer.

Two categories of WAX plans are to be provided:

- a) the original approved plan with any variation to this indicated, and
- b) plan showing only the actual as constructed information.

The plans are to be submitted in the following formats:

- 2 paper copies of the same scale and format as the approved landscape plan.
- A PDF version on CD or an approved medium.
- Electronic copy in DWG or DXF format on CD or an approved medium.

Services

E12 Utilities –Telephone and Electricity Services and Federal Government's National Broadband Network (NBN)

- 1) The project is to be connected to all available services (water, electricity and telephone) prior to issue of the Subdivision Certificate for each stage of the project. Such connections, and any extension of services required to the development, are to be carried out at full cost to the Proponent.
- 2) In accordance with the Federal Government's National Broadband Network (NBN) initiatives, the subdivision is required to provide a pit and conduit network to allow for the installation of fibre to the home (FTTH) broadband services.
- 3) The production of written evidence from the local telecommunications supply authority certifying that satisfactory arrangements have been made for the provision of underground telephone supply must be submitted prior to issue of a Subdivision Certificate for each stage of the project.
- 4) The production of written evidence from the local electricity supply authority certifying that reticulation of underground electricity has been completed prior to issue of a Subdivision Certificate for each stage of the project.
- 5) The reticulation to include the provision of fully installed electric street lights to the relevant Australian standard. Such lights to be capable of being energised following a formal request by Council.
- 6) The submission to the Certifying Authority and subsequent registration of the required right of carriageway/easement for services/restrictions-as-to-users is required.

E13 Water Supply and Sewer

- 1) Prior to issuing a Subdivision Certificate for each stage of the project, reticulated water supply and outfall sewerage reticulation shall be provided to all lots within the subdivision in accordance with Tweed Shire Council's Development Control Plan Part A5 - Subdivisions Manual, Councils Development Design and Construction Specifications and the Construction Certificate approval.
- 2) The site of the sewage pumping station shall be transferred to Council in fee simple, at no cost to Council within 28 days of the date of registration of the plan of subdivision.
- 3) Note: The *Environmental Planning and Assessment Act 1979* makes no provision for works under the Water Management Act, 2000 to be certified by an Accredited Certifier.
- 4) Water meters are to be located outside of the vehicle paths within the rights of carriageway of battleaxe lots.

E14 Infrastructure / Work As Executed Plans

- 1) The Proponent is to construct, at own cost, all civil and service infrastructure works to service each stage of the subdivision, in accordance with the Construction Certificate under the supervision of an engineer or surveyor approved by the Council.
- 2) Prior to the issue of a Subdivision Certificate for each stage of the subdivision, Works as Executed Plans shall be submitted in accordance with the provisions of Council's Development Control Plan A5 - Subdivisions Manual and Council's Development Design and Construction Specification, D13 - Engineering Plans.
- 3) The plans are to be endorsed by a Registered Surveyor or a Consulting Engineer Certifying that:

- a. all drainage lines, sewer lines, services and structures are wholly contained within the relevant easement created by the subdivision;
- b. the plans accurately reflect the Work as Executed.

Note: Where works are carried out by Council on behalf of the proponent it is the responsibility of the proponent to prepare and submit works-as-executed plans.

E15 Drainage

- 1) Prior to the issue of a Subdivision Certificate for each stage of the project, and also prior to the end of defects liability period, a CCTV inspection of the stormwater pipes and sewerage system including joints and junctions will be required to demonstrate that the standard of the stormwater system is acceptable to Council.
- 2) Any defects identified by the inspection are to be repaired in accordance with Council's adopted Development Design and Construction Specification.
- 3) All costs associated with the CCTV inspection and repairs shall be borne by the proponent.

E16 Assets Created

Council's standard "Asset Creation Form" shall be completed (including all quantities and unit rates) and submitted to Council with the application for Subdivision Certificate.

E17 Survey Marks

Where new state survey marks and/or permanent marks are placed a copy of the locality sketch relating to the marks shall be submitted to Council within three months of registration of the Subdivision Certificate for each stage of the subdivision in accordance with the Survey Practices Regulation.

E18 Street Names

- 1) The proponent shall obtain the written approval of Council to the proposed road/street names and be shown on the Plan of Subdivision accompanying the application for a Subdivision Certificate for the first stage of the subdivision.
- 2) Application for road naming shall be made on Council's Property Service Form and be accompanied by the prescribed fees as tabled in Council's current Revenue Policy - "Fees and Charges". The application shall also be supported by sufficient detail to demonstrate compliance with Council's Road Naming Policy.

Open Space / Landscaping

E19 Landscape Entry Statement Areas

No structures or entry statement signs are to be located on public land or road reserves at the entry statement areas of the development.

E20 Landscaping and Open Space maintenance

The developer is to undertake maintenance operations on all streetscapes, casual open space and structured open space for a minimum of 12 months after the Subdivision is registered with the Land Titles Office. This is the establishment period for new plantings. Such maintenance will include all soft landscaping, particularly mowing and weed control. Any power and water consumption costs during this period must also be met by the developer.

E21 Vegetation Management Maintenance

All works associated with the Vegetation Management Plan (excluding ongoing maintenance) are to be completed to the satisfaction of Council prior to the release of the Subdivision Certificate for Stage 4, 5 or 6 (whichever comes first).

The land subject to the VMP is to be maintained in perpetuity in accordance with the with the VMP recommendations.

Dedication of Land

E22 Dedication of Open Space

The Proponent must make necessary arrangements for the dedication of the open space areas to Council within the subdivision prior to release of the Subdivision Certificate for each stage of the project.

E23 Dedication of Internal Roads

All internal roads shall be constructed by the proponent and (excluding constructed roads within the Community Title Scheme) are to be dedicated to Council as public roads prior to issue of a Subdivision Certificate for each stage of the project. Upon dedication and at the end of the maintenance period Council will be responsible for the on-going maintenance of the roads.

ADVISORY NOTES

AN1 Compliance Certificate, Water Supply Authority Act, 2000

Prior to issuing a Subdivision Certificate, a Compliance Certificate shall be provided to the approval authority showing that the project has met with the detailed requirements of the relevant water supply authority for the region that the subject site is located within.

The developer shall obtain the Compliance Certificate from the relevant local water supply authority and produce this to the satisfaction of:

- (1) the certifying authority before release of the Construction Certificate,
- (2) the approval authority before the release of the Subdivision Certificate, and
- (3) the principal certifying authority prior to occupation.

AN2 Requirements of Public Authorities for Connection to Services

The Proponent shall comply with the requirements of any public authorities (e.g. Energy Australia, Telstra Australia, AGL, etc) in regard to the connection to, relocation and/or adjustment of the services affected by the construction of the proposed structure. Any costs in the relocation, adjustment or support of services shall be the responsibility of the Proponent. Details of compliance with the requirements of any relevant public authorities are to be submitted to the satisfaction of the Certifying Authority prior to the issue of the Construction Certificate.

AN3 Compliance with Building Code of Australia

The Proponent is advised to consult with the Certifying Authority about any modifications needed to comply with the BCA prior to submitting the application for a Construction Certificate.

AN4 Structural Capability for Existing Structures

The structural capabilities of any existing structure will need to meet the requirements of the BCA and may require engaging a structural engineer.

AN5 Use of Mobile Cranes

The Proponent shall obtain all necessary permits required for the use of mobile cranes on or surrounding the site, prior to the commencement of works. In particular, the following matters shall be complied with to the satisfaction of the PCA:

- (1) For special operations including the delivery of materials, hoisting of plant and equipment and erection and dismantling of on site tower cranes which warrant the on street use of mobile cranes, permits must be obtained from Council:
 - (a) at least 48 hours prior to the works for partial road closures which, in the opinion of Council will create minimal traffic disruptions, and
 - (b) at least 4 weeks prior to the works for full road closures and partial road closures which, in the opinion of Council, will create significant traffic disruptions.
- (2) The use of mobile cranes must comply with the approved hours of construction and shall not be delivered to the site prior to 7.30am without the prior approval of Council.

AN6 Stormwater drainage works or effluent systems

A Construction Certificate for works that involve any of the following:

- (1) water supply, sewerage and stormwater drainage work (including connection of a private stormwater drain to a public stormwater drain, installation of stormwater quality control devices or erosion and sediment control works); and
- (2) management of waste.

as defined by Section 68 of the Local Government Act, 1993 will not be issued until prior separate approval to do so has been granted by Council under Section 68 of that Act. Applications for these works must be submitted on Council's standard Section 68 application form accompanied by the required attachments and the prescribed fees.

AN7 Temporary Structures

An approval under Section 68 of the *Local Government Act 1993* must be obtained from the Council for the erection of the temporary structures. The application must be supported by a report detailing compliance with the provisions of the Building Code of Australia.

Structural certification from an appropriately qualified practicing structural engineer must be submitted to the Council with the application under Section 68 of the *Local Government Act 1993* to certify the structural adequacy of the design of the temporary structures.

AN8 Disability Discrimination Act

This application has been assessed in accordance with the *Environmental Planning and Assessment Act 1979*. No guarantee is given that the proposal complies with the *Disability Discrimination Act 1992*. The Proponent/owner is responsible to ensure compliance with this and other anti-discrimination legislation. The *Disability Discrimination Act 1992* covers disabilities not catered for in the minimum standards called up in the Building Code of Australia which references AS 1428.1 - Design for Access and Mobility. AS1428 Parts 2, 3 & 4 provides the most comprehensive technical guidance under the *Disability Discrimination Act 1992* currently available in Australia.

AN9 Commonwealth Environment Protection and Biodiversity Conservation Act 1999

The Commonwealth Environment Protection and Biodiversity Conservation Act 1999 provides that a person must not take an action which has, will have, or is likely to have a significant impact on a matter of national environmental significance (NES) matter; or Commonwealth land, without an approval from the Commonwealth Environment Minister.

This application has been assessed in accordance with the New South Wales Environmental Planning & Assessment Act, 1979. The determination of this assessment has not involved any assessment of the application of the Commonwealth legislation. It is the proponent's responsibility to consult Environment Australia to determine the need or otherwise for Commonwealth approval and you should not construe this grant of approval as notification to you that the Commonwealth Act does not have application. The Commonwealth Act may have application and you should obtain advice about this matter. There are severe penalties for non-compliance with the Commonwealth legislation.

AN10 Airspace Controls

- (1) The Commonwealth airspace approvals should be obtained prior to construction for any building or structure which would constitute a "controlled activity" under the Commonwealth Airports Act, by virtue of penetration of the OLS and/or PANS-OPS surfaces of Gold Coast Airport.

- (2) Commonwealth airspace approvals are also to be obtained for any temporary penetration of the airspace for erection of construction cranes prior to construction.
- (3) With regard to the approvals for any building or structure under the BCA, consultation is to be undertaken with the Gold Coast Airport during the preparation of the applications to ascertain criteria for height limit determination.

AN11 Roof area for water tanks

A minimum roof area of 160m² is required for any housing development that is to be connected to an on site water tank.

AN12 Certification

Construction Certificate

Prior to the commencement of subdivision works, the proponent must obtain a Construction Certificate from either the Council or an accredited certifier for each stage of the subdivision before any subdivision work can commence for the relevant stage.

Civil work in accordance with an approval or development consent for any stage must not be commenced until a Construction Certificate for the civil work has been issued in accordance with Councils Development Construction Specification C101 by the consent authority, or an accredited certifier, and the person having the benefit of the approval or development consent has appointed;

- a principal certifying authority,
- a Subdivision Works Accredited Certifier (SWAC) to certify the compliance of the completed works. The SWAC must be accredited in accordance with Tweed Shire Council DCP Part A5 – Subdivision Manual, Appendix C with accreditation in accordance with the Building Professionals Board Accreditation Scheme. As a minimum the SWAC shall possess accreditation in the following categories:

C4: Accredited Certifier – Stormwater management facilities construction compliance

C6: Accredited Certifier – Subdivision road and drainage construction compliance

The SWAC shall provide documentary evidence to Council demonstrating current accreditation with the Building Professionals Board prior to commencement of works.

Note: For subdivisions creating 5 new allotments or less, OR the value of new public infrastructure is less than \$30,000, then the SWAC may be substituted for an Institute of Engineers Australia Chartered Professional Engineer (Civil College) with NPER registration.

Subdivision Certificate

Prior to registration of a plan of subdivision under Division 3 of Part 23 of the *Conveyancing Act 1919* for any allotments in any stage within the subdivision a Subdivision Certificate pursuant to Section 109C(1)(d) of the EP&A Act must be obtained from the Council or an accredited certifier for each stage of the subdivision.

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SCHEDULE 3
STATEMENT OF COMMITMENTS
(OCTOBER 2001)

MAJOR PROJECT NO. 05_0198

REVISED STATEMENT OF COMMITMENTS

DRAFT COMMITMENTS	
DEVELOPMENT IN ACCORDANCE WITH PLANS	
OBJECTIVE	ACTION
To ensure that the development is carried out in general accordance with the approval.	The development shall be carried out in general accordance with the approved plans.
TRAFFIC	
OBJECTIVE	ACTION
To ensure that safe and efficient vehicular and pedestrian access is provided to the site.	Connect Stott Street and Walmsleys Road as part of Stage 1.
FLORA AND FAUNA	
OBJECTIVE	ACTION
Protect existing threatened species of flora and biodiversity. Rehabilitate 7(d) zoned land.	- Final subdivision design shall demonstrate that the rare and/or threatened flora species (<i>A. whitei</i>, <i>E. globosa</i>, <i>L. pulchella</i> and <i>M. tetraphylla</i>) that occur in close proximity to the 2(c)/7(d) boundary are located and appropriately identified and/or signposted such that they remain unaffected by any activities (including provision of any asset protection zones for bushfire management purposes) associated with development of the site. - A Vegetation Management Plan (VMP) (based on the "Proposed Vegetation Management Plan, Objectives and Guiding Principles, of Appendix III of the revised Ecological and Bushfire Planning Assessment, Final Report, June 2011 (at Annexure M) will be prepared for 7(d) zones within the study area and submitted to the Consent Authority for endorsement. The VMP will be developed in consultation with the NSW Office of Environment and Heritage and will be completed prior to the issue of a Subdivision Certificate. The VMP will detail not only measures that diminish the threat of invasive species, facilitate the removal of Camphor Laurel and other weed species, support restoration of the rainforest communities and protect threatened flora species and remnant vegetation on the site, but also the means by which this will be achieved. - A Section 88B Restriction shall be created on Lots 38 to 40 and 54 to 61 requiring cats to be kept indoors at all times. - The VMP shall incorporate scoped and appropriate performance requirements for the restoration of the notophyll rainforest across the 7(d)-zone (for example, in relation to the diversity and density of plantings, seedling survival and growth rates, cumulative crown coverages, and the abundance and diversity of weed species) referenced to appropriate benchmarks (such as comparable, undisturbed vegetation communities). - Prior to the commencement of development works, all rare and/or threatened flora species that occur within 25m either side of the 2(c)D(d) zoning interface will be located and appropriately identified and/or signposted such that they remain unaffected by any activities (including provision of Asset Protection Zones (APZs) for bushfire purposes). - Street landscaping of the proposed development precinct will make extensive use of suitable species of endemic rainforest vegetation, including the use of native groundcover/shrub layer.

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DRAFT COMMITMENTS	
	- Vegetation modification for the purposes of establishing APZs will be restricted to the removal of Camphor Laurel trees only. - All land zoned 7(d) will exclude any disturbance or landform changes. - The edge of the buffer zone to the EEC shall be identified by bollards or the like to reduce edge effects.
Rehabilitate that part of Lot 61 zoned 7(d).	That part of proposed Lot 61 zoned 7(d) Environmental Protection (Scenic Escarpment) will be rehabilitated in accordance with a Vegetation Management Plan and a Title Restriction will be registered on the lot requiring the Vegetation Management Plan to be implemented.
CONSTRUCTION IMPACTS	
OBJECTIVE	ACTION
Protect existing utilities in and adjacent to the site.	- Clearly mark the location of underground utilities with permanent markers. - Notify relevant utility authorities if any damage occurs. - Ensure that power, telephone, water and sewer reticulation is provided to each allotment in accordance with Tweed Shire Council's normal policies.
Minimise nuisance to adjacent residents and adjoining properties.	Prepare a Construction Management Plan for approval by the Department of Planning prior to the issue of a construction certificate.
Construction traffic and parking (employees)	Designate a suitable area for a construction compound (including worker's amenities and employee parking), on the construction certificate drawings.
Working Hours	Construction site work including the entering and leaving of vehicles is limited to the following hours, unless otherwise permitted by Council: - Monday to Saturday from 7.00am to 6.00pm. No work to be carried out on Sundays or Public Holidays. The proponent is responsible to instruct and control subcontractors regarding hours of work.
Noise Mitigation	- All reasonable steps shall be taken to muffle and acoustically baffle all plant and equipment. In the event of complaints from the neighbours, which Council deem to be reasonable, the noise from the construction site is not to exceed the following: A. Short Term Period - 4 weeks. LAeq noise level measured over a period of not less than 15 minutes when the construction site is in operation, must not exceed the background level by more than 20dB(A) at the boundary of the nearest likely affected residence. B. Long term period -the duration. LAeq noise level measured over a period of not less than 15 minutes when the construction site is in operation, must not exceed the background level by more than 15dB(A) at the boundary of the nearest affected residence.
Access Control	It is the responsibility of the applicant to restrict public access to the construction works site, construction works or materials or equipment on the site when construction work is not in progress or the site is otherwise unoccupied in accordance with Workcover NSW requirements and Occupational Health and Safety Regulation 2001.

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Amenity Generally	- All work associated with this approval is to be carried out so as not to impact on the neighbourhood, adjacent premises or the environment. All necessary precautions, covering and protection shall be taken to minimise impact from: - - Noise, water or air pollution - dust during filling operations and also from construction vehicles - material removed from the site by wind.
Vegetation Burning	The burning off of trees and associated vegetation felled by clearing operations or builders waste is prohibited. Such materials shall either be recycled or disposed of in a manner acceptable to Councils General Manager or his delegate.
Dust	- Ensure that small areas only are disturbed at any one time and are promptly revegetated following completion of earthworks. - Ensure that appropriate dust abatement measures are implemented during the construction phase including appropriate use of water carts.
Vibration	Ensure that vibratory compaction equipment is not used within 100m of existing dwelling houses.
Water Quality Management	- Prepare a Water Quality Management Plan prior to commencing work in accordance with Tweed Shire Council's Urban Stormwater Management Plan. - Ensure that the Water Quality Management Plan is complied with. - Stormwater management implementation with respect to staging of the subdivision, including verification of the site requirements for onsite detention/retention, shall be addressed in detail in the Construction Certificate Application. - Install appropriate erosion and sedimentation control devices (filter fences, hay bales, catch drains, etc.) prior to commencing construction and any other site works. - Discharged hardstand areas to lawns and gardens. - Runoff from road pavements will be collected and treated by proprietary gross pollutant traps such as Humeceptor.
Damage to Existing Buildings During Construction	Prior to construction commencing ensure that an inspection of existing buildings adjacent to the construction site is completed and any existing faults are documented.
Waste Materials	Ensure that waste materials suitable for recycling are stockpiled and suitably disposed of.
Public Safety	- Ensure that appropriate signage is installed at the entry points to the site. - Ensure that all employees are suitably inducted on OH & S responsibilities.
GENERAL	
OBJECTIVE	ACTION
Occupational Health and Safety	Ensure that all obligations under the Occupational Health and Safety Act are complied with.

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DRAFT COMMITMENTS	
Design Guidelines	- The proponents will develop design guidelines in consultation with Tweed Shire Council and in accordance with the Future Residential Character and Built Form Report (BDA Architecture, 18/10/07). - Built form cladding shall be lightweight and earthy tones and building designs shall be slope sensitive.
Walmsleys Road	- The proponents will upgrade Walmsleys Road from the end of the existing bitumen to proposed Road No. 1 (Walmsleys Road/Stott Street connection) in accordance with Tweed Shire Council standards with an 11m pavement width. - Details of the vertical alignment design shall accompany the Construction Certificate Application to ensure a smooth, safe transition and appropriate sight distance.
Interallotment Drainage	Interallotment drainage will be provided including easements in accordance with the requirements of Tweed Shire Council's Development Design Specification 5.
Drainage through Lot 13 (proposed public reserve)	A drainage reserve shall be created through Lot 13 to accommodate overland stormwater flows with details to accompany the Construction Certificate Application.
Interallotment Batters	Interallotment batters shall comply with Clause D6.06A(2) of the Development Design Specification D6 – Site Regrading.
Batters for Battleaxe Lot Accesses	Details of batters proposed for battleaxe lot accesses demonstrating that compliant driveways and adequate building envelopes are achievable shall accompany the Construction Certificate Application.
Right of Carriageway – Off Street Parking	For battleaxe lots a Section 88B Instrument shall create a restriction on use requiring at least 1 visitor car parking space to be provided on each lot.
Road Gradients	Road gradients are not to exceed 12% with details to be included in the Construction Certificate Application.
Footpath Widths – Roads 2, 3 and 4	Minimum footpath width of 4.25m is required with details to accompany the Construction Certificate Application.
Pavement Widths – Road 5	- The pavement width is to be 5.5m or 6m with details to accompany the Construction Certificate Application. - An adequate footpath width is required with details to accompany the Construction Certificate Application.
Parks	- Proposed Lot 13 (park) will be embellished in accordance with Tweed Development Control Plan 2008, Section A5 – Subdivision Manual. - Drainage and maintenance issues on the eastern boundary of the proposed park are to be addressed in the detailed design to accompany the Construction Certificate Application. - Dam fill and earthworks stabilising requirements will be addressed in the detailed design to accompany the Construction Certificate Application. - A Detailed Landscaping Plan for the proposed park shall accompany the Construction Certificate Application.
Planting Details	Planting details shall comply with Council's standard drawings, particularly SD701, Tree and Shrub Planting Detail.

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DRAFT COMMITMENTS	
CULTURAL HERITAGE	
OBJECTIVE	ACTION
Ensure That Cultural Heritage Material Is Appropriately Managed	• If any cultural heritage material is discovered during construction the Office of Environment and Heritage must be notified and appropriate approvals/studies must be undertaken. • In the event that Aboriginal objects or cultural matters of significance are identified the proponent is to develop appropriate mitigation measures with the local Aboriginal community and the subdivision layout amended if necessary with the approval of the Department of Planning. • In the event that human remains are located during the project, a protocol to halt all works in the immediate area should be followed to prevent any further impacts to the find or finds. The local police and Office of Environment and Heritage are to be notified. If the remains are found to be of Aboriginal origin and the police consider the site is not an investigation site for criminal activities, Office of Environment and Heritage is to be contacted and notified of the situation. Works are not to resume in the designated area until approval in writing from the Police and Office of Environment and Heritage. • If Aboriginal cultural objects are uncovered due to the development activities, all works must halt in the immediate area to prevent any further impacts to the find or finds. A suitably qualified archaeologist and Aboriginal community representatives must be contacted to determine the significance of the find(s). The site is to be registered in Office of Environment and Heritage's Aboriginal Heritage Information Management System (AHIMS) and the management outcome for the site included in the information provided to the AHIMS. AHIMS contact details: Phone: (02) 9585 6470, address: Level 6, 43 Bridge Street, Hurstville, NSW, 2220, email: ahims@environment.nsw.gov.au.
GEOTECHNICAL STABILITY	
OBJECTIVE	ACTION
Ensure That Each Lot Is Suitable for the Erection of a Dwelling House	To address geotechnical and earthworks issues, the following actions are proposed: • <u>Ground Improvement Techniques – eastern depressions</u> The existing ground conditions at this area can be rectified as follows: - Excavate the colluvium and stockpile the material. - Remove cobbles, boulders and oversize rocks from the stockpile. - Backfill with sorted material (less the oversize rocks, cobbles and boulders). The backfill shall be placed in layers not exceeding 0.5m (uncompacted) and compacted to at least 100% standard dry density ratio. Each layer should be tested. Full-time supervision of the earthworks operation is strongly recommended. Along the top of the slope, the construction of the proposed road should involve removal of the colluvium. The new pavement should be established over the bedrock.

Darryl Anderson Consulting Pty Ltd

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Town Planning & Development Consultants

DRAFT COMMITMENTS

- **The Southern Slopes**

Buildings should be limited to lightweight pole homes. Foundations should be either steel posts or reinforced concrete piers. They should extend at least 1.0 metre past the toe of the slope, or be socketed into bedrock. The rock socket length shall not be less than 50% of the total post or pier length.

- **The Deep Gully Area**

The existing colluvium at the deep gully should be removed. The area may be backfilled with suitable material to the design formation level. The fill shall be placed at slopes of not steeper than 1 in 2.5, and compacted to standard dry ratio of at least 100%.

- **Other Areas**

The ridge crest and adjacent slopes are adequately stable for normal residential development. Independent soils tests and site classifications are recommended for the individual allotments.

- **General**

The factors of safety against failure of the existing slopes are generally in excess of 2.0 and hence, adequate for the proposed development to proceed. The following specific issues, however, need to be addressed to ensure adequate stability of the entire site.

- **Organic fill – Site A**

The organic fill identified at the areas of test pits 6; 6A & 7 should be removed and replaced with compacted clay fill. The imported fill shall be of low to medium plasticity clays/gravelly clays/sandy clay, and should be compacted to dry density ratio of not less than 100% (standard).

- **Stockpile – Site B**

The existing stockpile between the subject site and the aged care facility is not likely to be stable in the long-term. It is, however, understood that the entire stockpile shall be removed upon completion of the age care facilities. It is recommended that this office be contacted for the inspection of the excavation works to ensure that adequate stable batter slopes are maintained.

- **Ground Improvement Techniques: Eastern Depressions**

It is recommended that existing colluvium over the area identified as the "eastern depression" should be removed. The material may be excavated and discarded or stockpiled for re-use, following removal of the boulders, cobbles, and oversize materials. The backfill shall be placed in layers not exceeding 0.5m (uncompacted), and compacted to at least 100% standard dry density ratio. Bulk earthworks, including road works, are to be conducted under engineering supervision by this office.

Preparation of the proposed access road subgrade should include an excavation of, at least, 1.0m of the existing formation. The subgrade replacement shall comply with Tweed Shire Council specification. The material shall be placed and compacted to, at least, 100% standard dry density ratio.

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DRAFT COMMITMENTS	
	Ground Improvement Techniques: The Southern Slopes Buildings over the designated Southern Slopes should be limited to lightweight pole homes. Foundations should be either steel posts or reinforced concrete piers. They should extend at least 1.0 metre past the toe of the slope and be socketed into bedrock. The rock socket length shall not be less than 1.0m. Ground Improvement Techniques: The Filled Gully The existing sections of the site situated within the gully are considered unsuitable for residential building construction due to presence of fill. The proposed subdivision allotments 68 to 73 are mostly affected. The area can, however, be engineered to improve on the stability and, consequently, its suitability for residential development. As part of the re-engineering exercise, existing fill should be removed, and the area presented for re-assessment. It is unlikely that existing fill shall be suitably for re-use as structural fill. The excavated material may, however, be stockpiled for further assessment. Certification of the suitability of the re-engineered site for residential development by an experienced geotechnical engineer should be required, prior to the issue of a subdivision certificate. Ground Improvement Techniques: Ridge-tops & Adjacent Slopes The ridges and adjacent slopes are adequately stable for normal residential development. Footings for these buildings should be adequately socketed into bedrock. Each subdivision allotment should be independently engineered for the intended structure. Full geotechnical investigation should be insisted. Routine "soil test" for the classification of the site, as defined in AS2870-1996, may be inadequate. - An update of the Geotechnical report (or an alternative approach prior to Stage 3 subdivision certificate application) listed under Annex 12 of the Environmental Assessment, Part 1 is required as some of the recommendations in that report are obsolete. This is particularly important for progressing Stage 3 of the development (the community title area/proposed Lot 80) eg. Section 6.3 of that report requires further inspection of the site in this area upon completion of the aged-care facility.
BUSHFIRE	
OBJECTIVE	ACTION
To comply with Planning for Bushfire Protection, 2006.	- A minimum 25m combined asset protection zone and Ecological Management Area must be located wholly within the boundaries of the lots within the 2(c) zoned area. - A Section 88B Covenant shall be created requiring the asset protection zone area to be maintained as a mowed lawn with any plantings restricted to endemic lowland rainforest species such that no more than 20% of the asset protection zone area is covered by tree canopy or tree crowns to be separated by a minimum distance of 2m to 5m. - Where canopy thinning is required, tree removal is restricted to camphor laurels only. - Rear fencing of residential allotments abutting the 7(d) zoned areas must include a gate to facilitate access for fire fighting purposes.

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DRAFT COMMITMENTS	
	- At the commencement of subdivision works and in perpetuity the entire site shall be managed as an APZ as outlined within Appendices 2 & 5 of Planning for Bush Fire Protection 2006 and the NSW Rural Fire Service's document Standards for asset protection zones. - The proposed 25 metre APZ and Ecological Management Area to the west of proposed Lot 54 <u>lie outside the boundary of the property</u> and is required to be protected and maintained in perpetuity. The APZ shall be managed as outlined within Appendices 2 & 5 of Planning for Bush Fire Protection 2006 and the NSW Rural Fire Service's document Standards for asset protection zones. - An easement shall be created over the APZ west of Lot 54. - The proposed reticulated water supply shall comply with the requirements for services as outlined within section 4.1.3 of Planning for <i>Bush Fire 2006</i>. - The proposed public and private roads shall comply with the requirements of section 4.1.3 (1) of Planning for <i>Bush Fire Protection 2006</i>. A perimeter road <u>is not required</u> in this instance. - Landscaping, restoration and regeneration works within the site is to comply with the principles of Appendix 5 of Planning for <i>Bush Fire Protection 2006</i>.
TELECOMMUNICATIONS	
OBJECTIVE	ACTION
Provide appropriate telecommunications services.	The applicant shall provide "fibre to the home" (FTTH) telecommunications infrastructure throughout the subdivision, in accordance with the requirements of Council and the relevant service providers."
SERVICES	
OBJECTIVE	ACTION
To provide services in accordance with Tweed Shire Council requirements.	- Council requires that the PRV be located in Walmsleys Road near the boundary of Lot 1 DP167380 and Lot 1 DP1034976. - Rainwater tanks will be provided for all future dwelling houses on each lot. - The proponents shall provide a water supply system capable of serving all lots in the development by connection to the Tweed Shire Water Supply System including all works necessary in accordance with the provisions of Tweed Shire Council Development Design Specification D11. - The subdivision will provide that the following minimum Sewer and Water requirements are mandatory for development on each lot created: Single Dwellings: Minimum 5000L rainwater tank roof area connected to it. Multi Dwellings & other buildings: Rainwater tanks to be provided on a similar basis connecting 80% - 90% of the roof area - These tanks shall be plumbed to provide water for external uses, toilet flushing and laundry cold water for washing machines.

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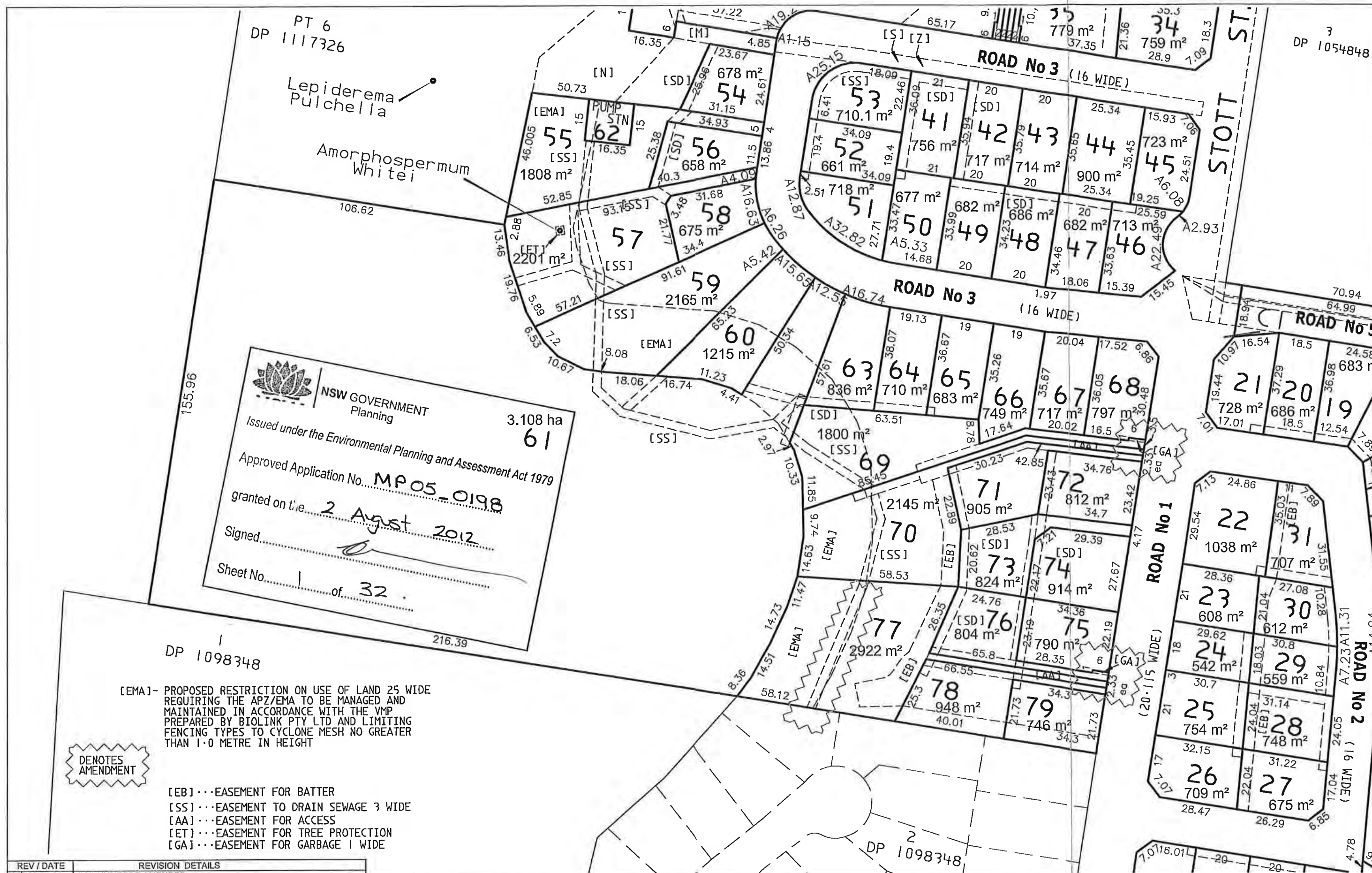
DRAFT COMMITMENTS

- The subdivision shall be seweraged by conventional gravity sewerage including the construction of a sewerage pump station to service the lots west of Stott Street. The gravity sewer shall provide a connection point for further development to the south. A review of the risk of overflow at SPS2050 Bolwarra PI shall be carried out and any works required to ensure a low risk will be provided.
- Sewerage shall be designed in accordance with the provisions of Tweed Shire Council Development Design Specification D12.
- Development contributions under S64 of the Local Government Act shall be made in accordance with Council requirements and at the prevailing rates.
- No physical works occur in any current or future (Draft as advertised) Environmental Protection zones. This includes clearing, roads, fences, provision of services, erosion and sediment control devices and access.
- The high voltage power lines shall be diverted underground as identified in the bushfire assessment prepared by Biolink.

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Town Planning & Development Consultants



[EMA]- PROPOSED RESTRICTION ON USE OF LAND 25 WIDE
REQUIRING THE APZ/EMA TO BE MANAGED AND
MAINTAINED IN ACCORDANCE WITH THE VMP
PREPARED BY BIOLINK PTY LTD AND LIMITING
FENCING TYPES TO CYCLONE MESH NO GREATER
THAN 1.0 METRE IN HEIGHT

DENOTES
AMENDMENT

[EB]...EASEMENT FOR BATTER
[SS]...EASEMENT TO DRAIN SEWAGE 3 WIDE
[AA]...EASEMENT FOR ACCESS
[ET]...EASEMENT FOR TREE PROTECTION
[GA]...EASEMENT FOR GARBAGE 1 WIDE

REV / DATE	REVISION DETAILS
F 04.05.11	LOT NUMBERS AMENDED
	LOT REDESIGN LOTS 35-40, ROAD 4 REMOVED
	REVISED APZ-EMA AREA LOTS 38-40
	GARBAGE AREAS ADDED TO TOP OF RIGHT OF CARRIAGEWAYS
	NEIGHBOURHOOD PROPERTY INCREASED IN SIZE
	BATTER EASEMENTS ADDED
	SEWER CONNECTION AND EASEMENT ADDED TO LOT 2 DP 1098348
	SEWER PUMP STATION SITE MOVED

LANDSURV PTY LTD
REGISTERED SURVEYORS & DEVELOPMENT CONSULTANTS
14 ENID STREET TWEED HEADS NSW 2485
Ph. (07) 55366467 Fax (07)55367489 email: macsurv@landsurv.com.au

PLAN OF PROPOSED SUBDIVISION OF
LOT 1 DP 167380, LOT 1 DP 134787, LOT 2 DP 961928 AND
LOT 5 DP 1117326, WALMSLEYS ROAD AND
STOTT STREET, BILAMBIL HEIGHTS
CLIENT: WALMSLEY AND DICKINSON

LEVEL DATUM	SCALE 1: 1250
DATE OF SURVEY	REVISION F
DATE 04.05.11	SHEET 2 OF 3
DRAWN GMB	JOB No
CHECKED BG	35054
CAD FILE No. 35054-PROP	

**DENOTES
AMENDMENT**

SEE

4m

SHEET 2

[EMA]- PROPOSED RESTRICTION ON USE OF LAND 25 WIDE
REQUIRING THE APZ/EMA TO BE MANAGED AND
MAINTAINED IN ACCORDANCE WITH THE VMP
PREPARED BY BIOLINK PTY LTD AND LIMITING
FENCING TYPES TO CYCLONE MESH NO GREATER
THAN 1.0 METRE IN HEIGHT

REV / DATE	REVISION DETAILS
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	SEWER PUMP STATION SITE MOVED

[illegible]NSW GOVERNMENT
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Approved Application No. MP 05-0192

granted on the 2 August 2012

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[X]
5

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DP

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RC

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The geological cross-section illustrates the subsurface geology of the study area. Key features include:

- Geological Units:** The section shows several distinct geological units, including the **Quaternary** (top layer), **Neogene** (middle layer), and **Paleogene** (bottom layer).
- Structural Features:** A prominent **Normal Fault** is shown, dipping to the right. Other features include **Unconformities** and **Discontinuities**.
- Topography:** The surface topography is indicated by a dashed line at the top of the section.
- Scale and Orientation:** A scale bar at the bottom indicates a distance of **6.54** units. The orientation is marked with **N** (North) and **S** (South).

STOTT

Technical drawing of a roof plan. It shows a rectangular area with dimensions 24.51 and 1.06. A label A2 is present. The drawing includes dashed lines and a curved line.

759
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A22.4
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VAR

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15.3
17.52

35.65

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16 w

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m²
m²
34.23
6

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40
20
19

756
[SD]
21

7 m²

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AD

13

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18 m
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2.82
A16

2.51

46.26

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78 m
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56
58 m

5
75 m

59
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6

50
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50
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18

1

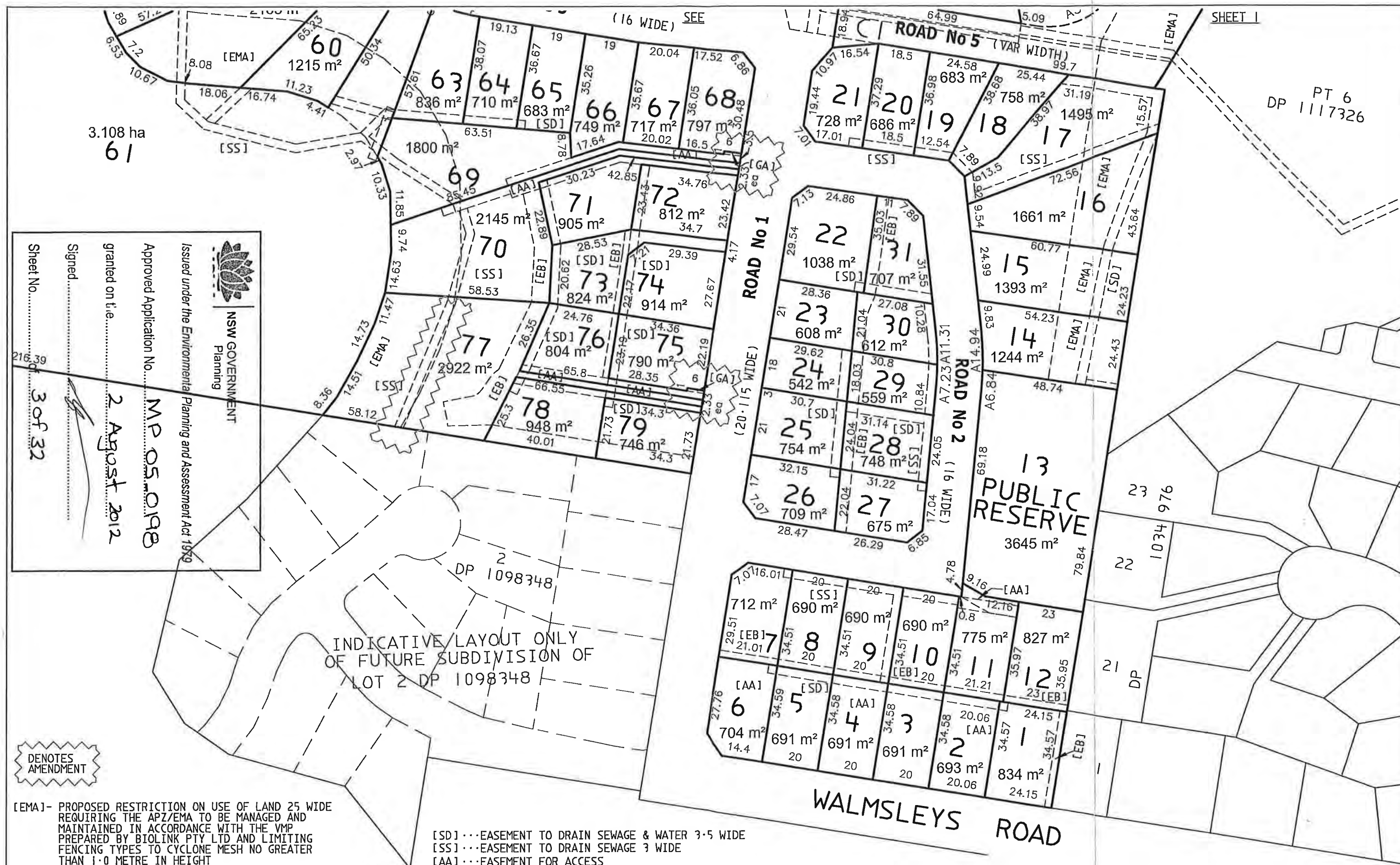
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REV / DATE	REVISION DETAILS
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PLAN OF PROPOSED SUBDIVISION OF LOT 1 DP 167380, LOT 1 DP 134787, LOT 2 DP 961928 AND LOT 5 DP 1117326, WALMSLEYS ROAD AND STOTT STREET, BILAMBIL HEIGHTS		SHEET 1
CLIENT: WALMSLEY AND DICKINSON		

LEVEL DATUM		SCALE 1: 125
DATE OF SURVEY		REVISION F
DATE	04.05.11	SHEET 1 OF 3
DRAWN	GMB	JOB No
CHECKED	BG	3505
CAD FILE No. 35054-PROP		



REV / DATE	REVISION DETAILS
F 04.05.11	LOT NUMBERS AMENDED
	LOT REDESIGN LOTS 35-40, ROAD 4 REMOVED
	REVISED APZ-EMA AREA LOTS 38-40
	GARBAGE AREAS ADDED TO TOP OF RIGHT OF CARRIAGEWAYS
	NEIGHBOURHOOD PROPERTY INCREASED IN SIZE
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LOT 1 DP 167380, LOT 1 DP 134787, LOT 2 DP 961928 AND
LOT 5 DP 1117326, WALMSLEYS ROAD AND
STOTT STREET, BILAMBIL HEIGHTS
CLIENT: WALMSLEY AND DICKINSON

LEVEL DATUM	SCALE 1: 1250
DATE OF SURVEY	REVISION F
DATE 04.05.11	SHEET 3 OF 3
DRAWN GMB	JOB No
CHECKED BG	35054
CAD FILE No. 35054-PROP	





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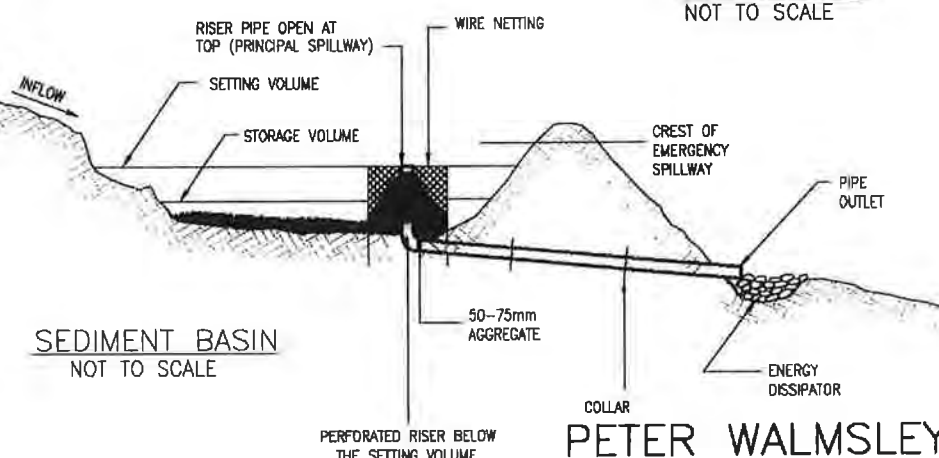
Signed.....

Sheet 5 of 32



SECTION 1

CHECK DAM
NOT TO SCALE



SEDIMENT BASIN
NOT TO SCALE

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LES & JIM DICKINSON

PROPOSED RESIDENTIAL
SUBDIVISION

WALMSLEYS ROAD
BILAMBIL HEIGHTS

FIGURE 6.0

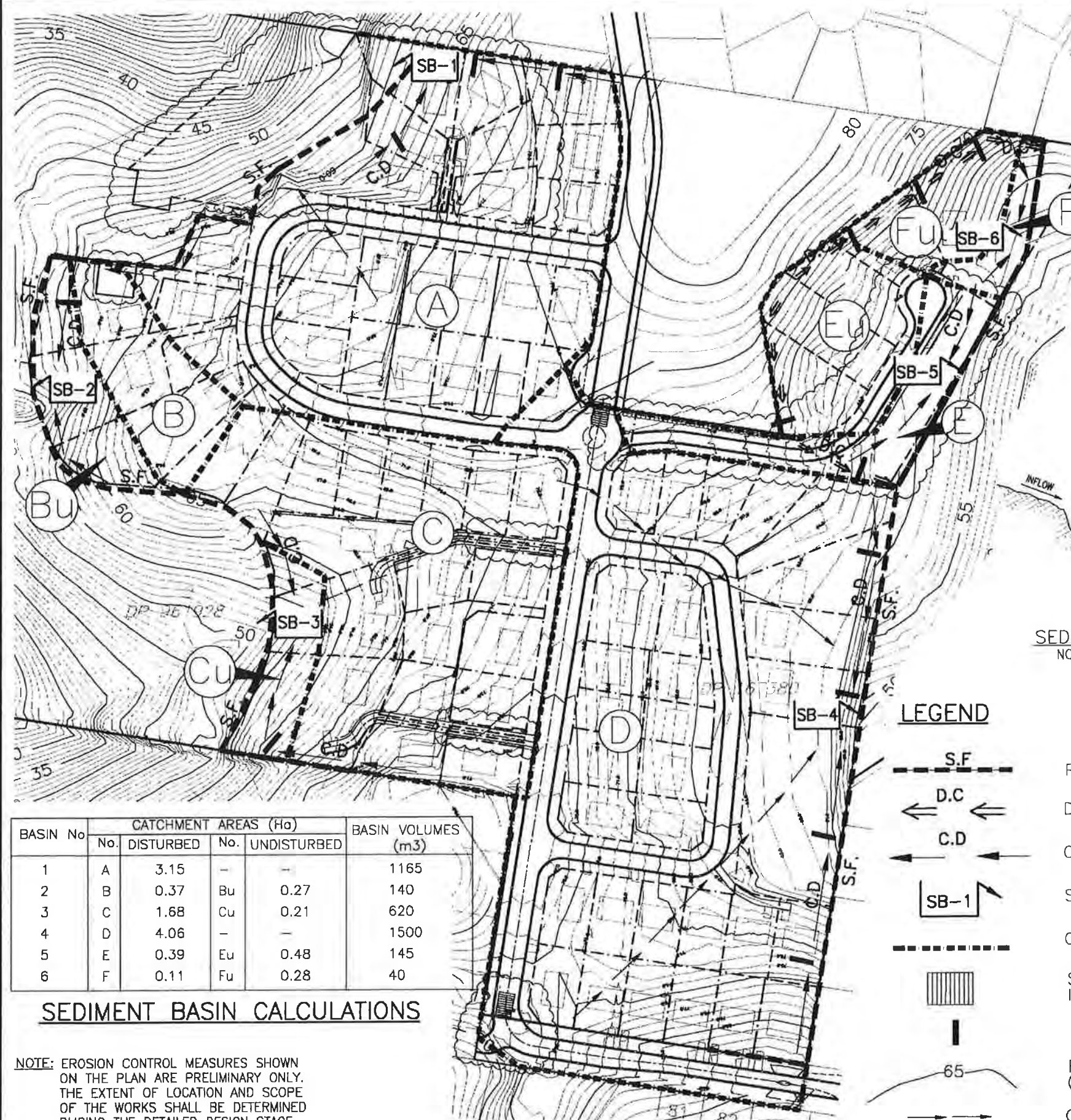
EROSION & SEDIMENT
CONTROL PLAN

OPUS QANTEC McWILLIAM



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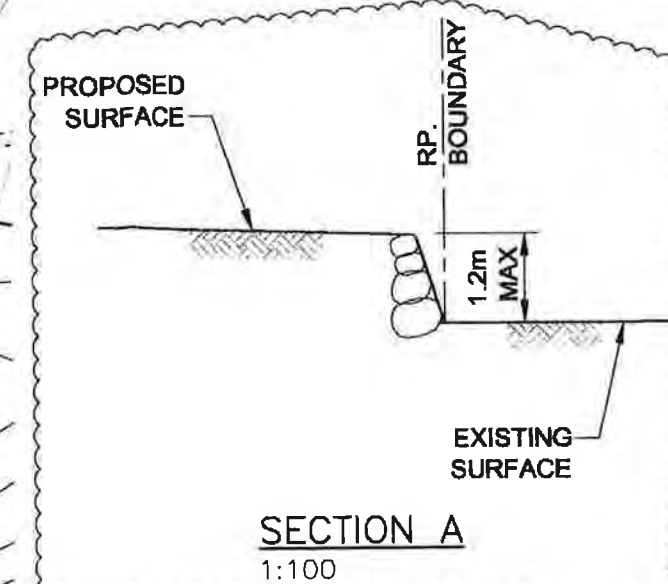
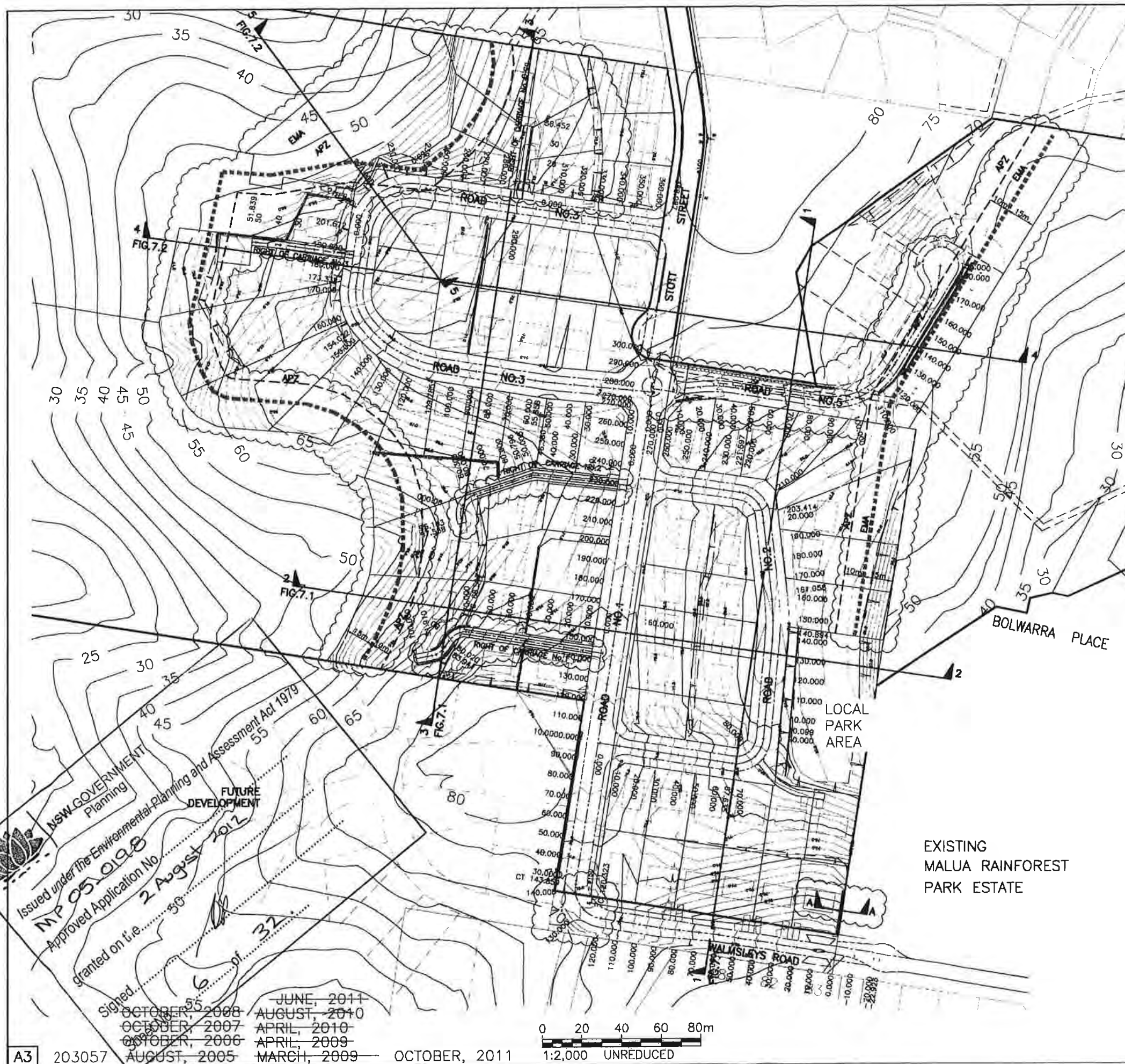
BASIN No	CATCHMENT AREAS (Ha)				BASIN VOLUMES (m ³)
	No.	DISTURBED	No.	UNDISTURBED	
1	A	3.15	-	-	1165
2	B	0.37	Bu	0.27	140
3	C	1.68	Cu	0.21	620
4	D	4.06	-	-	1500
5	E	0.39	Eu	0.48	145
6	F	0.11	Fu	0.28	40

SEDIMENT BASIN CALCULATIONS

NOTE: EROSION CONTROL MEASURES SHOWN ON THE PLAN ARE PRELIMINARY ONLY. THE EXTENT OF LOCATION AND SCOPE OF THE WORKS SHALL BE DETERMINED DURING THE DETAILED DESIGN STAGE.

OCTOBER, 2007
OCTOBER, 2006
AUGUST, 2005
FEBRUARY, 2005
APRIL, 2009
MARCH, 2009
JANUARY, 2009
OCTOBER, 2008
OCTOBER, 2011
APRIL, 2010

NOTE: SURVEY INFORMATION FROM MCLAUCHLAN
SURVEYING DRAWING NUMBER 37401



LEGEND

- 45 — FINISHED SURFACE CONTOURS (1.0m INTERVALS)
- PROPOSED RETAINING WALL
- - - APZ - - - ASSET PROTECTION ZONE
- - - PROPOSED BATTER
- EMA ENVIRONMENTAL MANAGEMENT AREA

NOTE: REFER FIGURES 7.1 & 7.2 FOR SECTIONS.

**PETER WALMSLEY,
LES & JIM DICKINSON**
PROPOSED RESIDENTIAL
SUBDIVISION

WALMSLEYS ROAD & STOTT STREET
BILAMBIL HEIGHTS N.S.W.

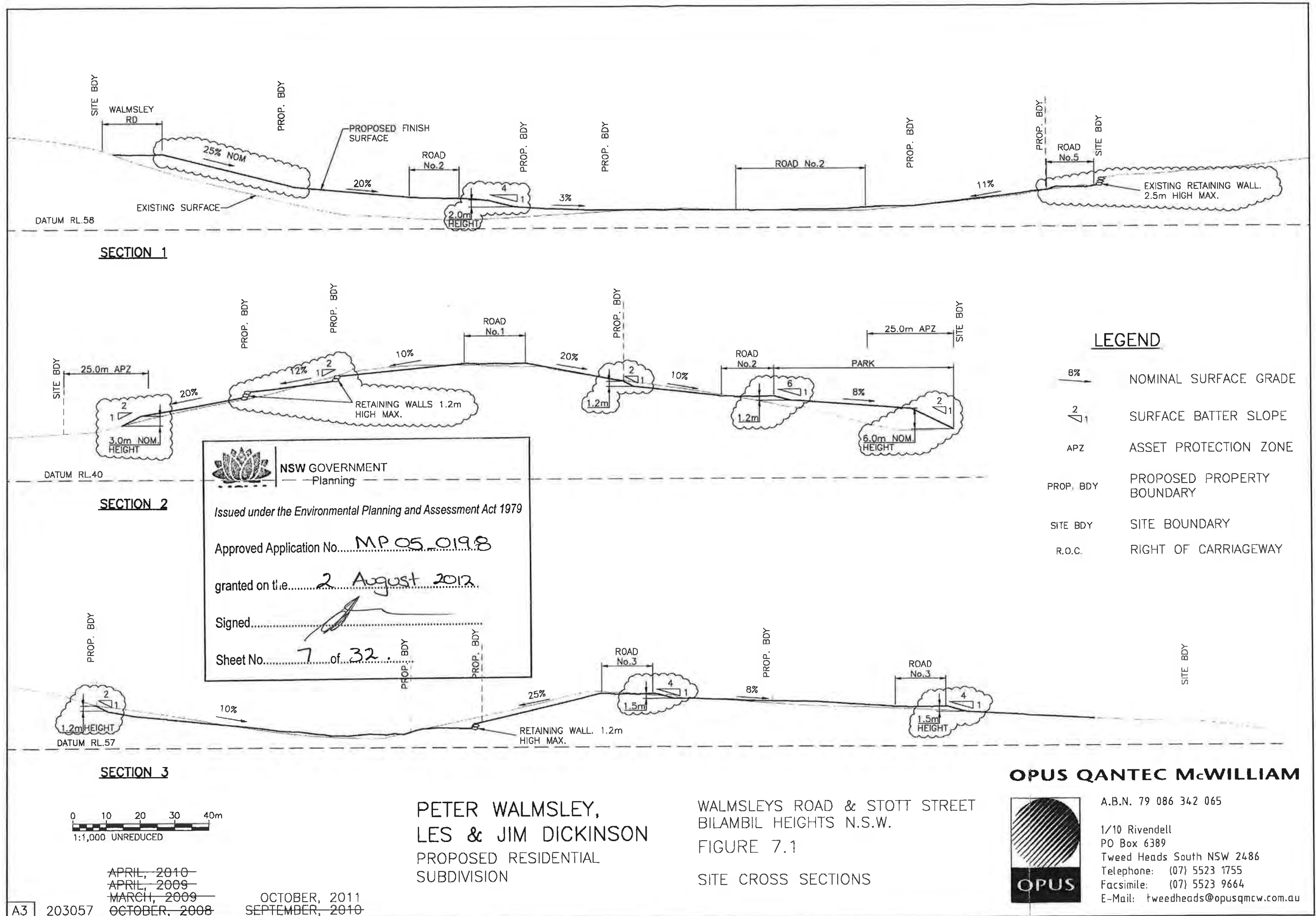
FIGURE 7.0
ROAD LAYOUT PLAN

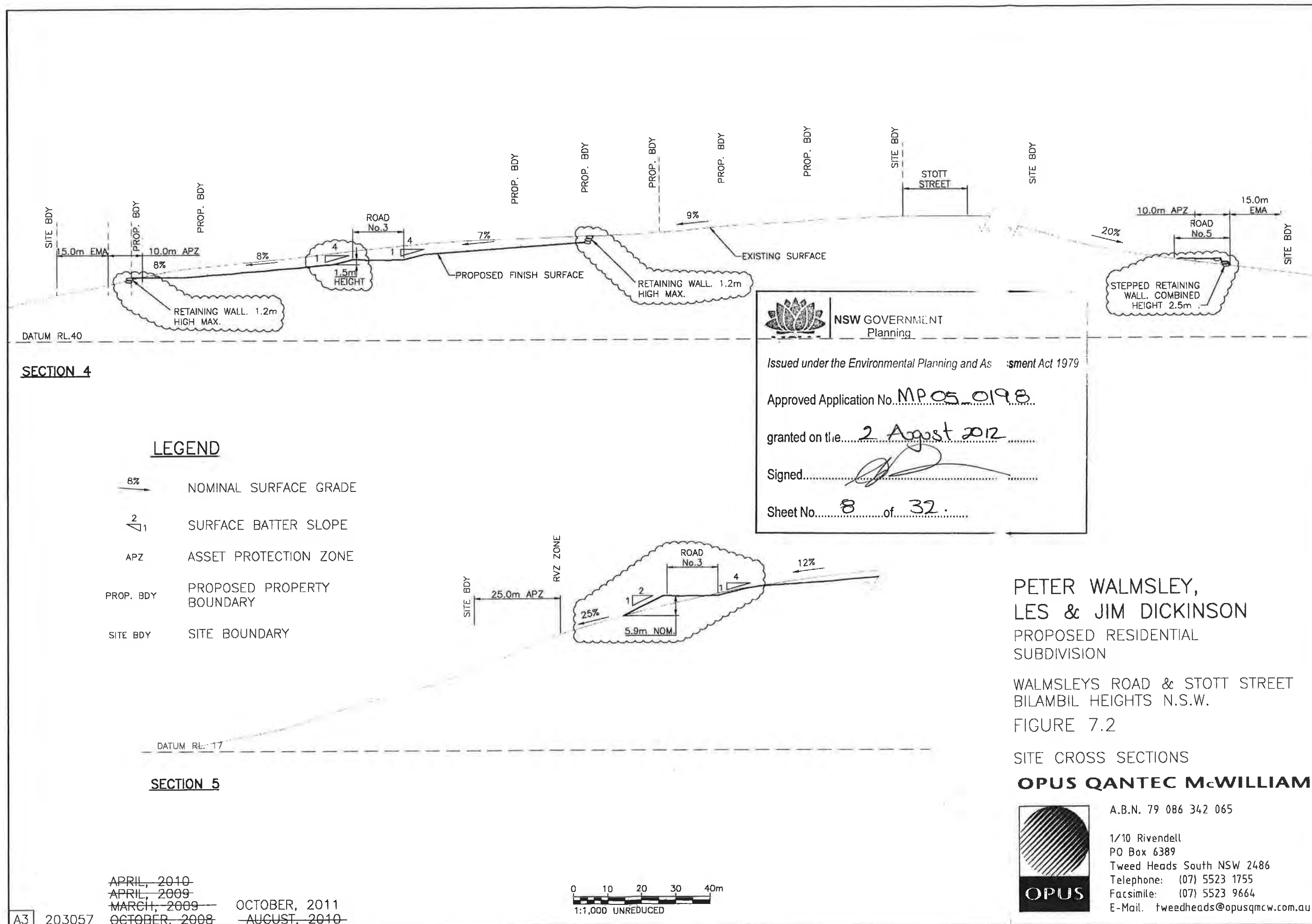
OPUS QANTEC McWILLIAM



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Tweed Heads South NSW 2486
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Facsimile: (07) 5523 9664
E-Mail: tweedheads@opusqmcw.com.au

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MP 05 0198
Approved Application No.
granted on tie.
Signed
JUNE, 2011
AUGUST, 2010
APRIL, 2010
APRIL, 2009
MARCH, 2009
OCTOBER, 2011
OCTOBER, 2008
OCTOBER, 2007
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AUGUST, 2005





PETER WALMSLEY,
 LES & JIM DICKINSON
 PROPOSED RESIDENTIAL
 SUBDIVISION

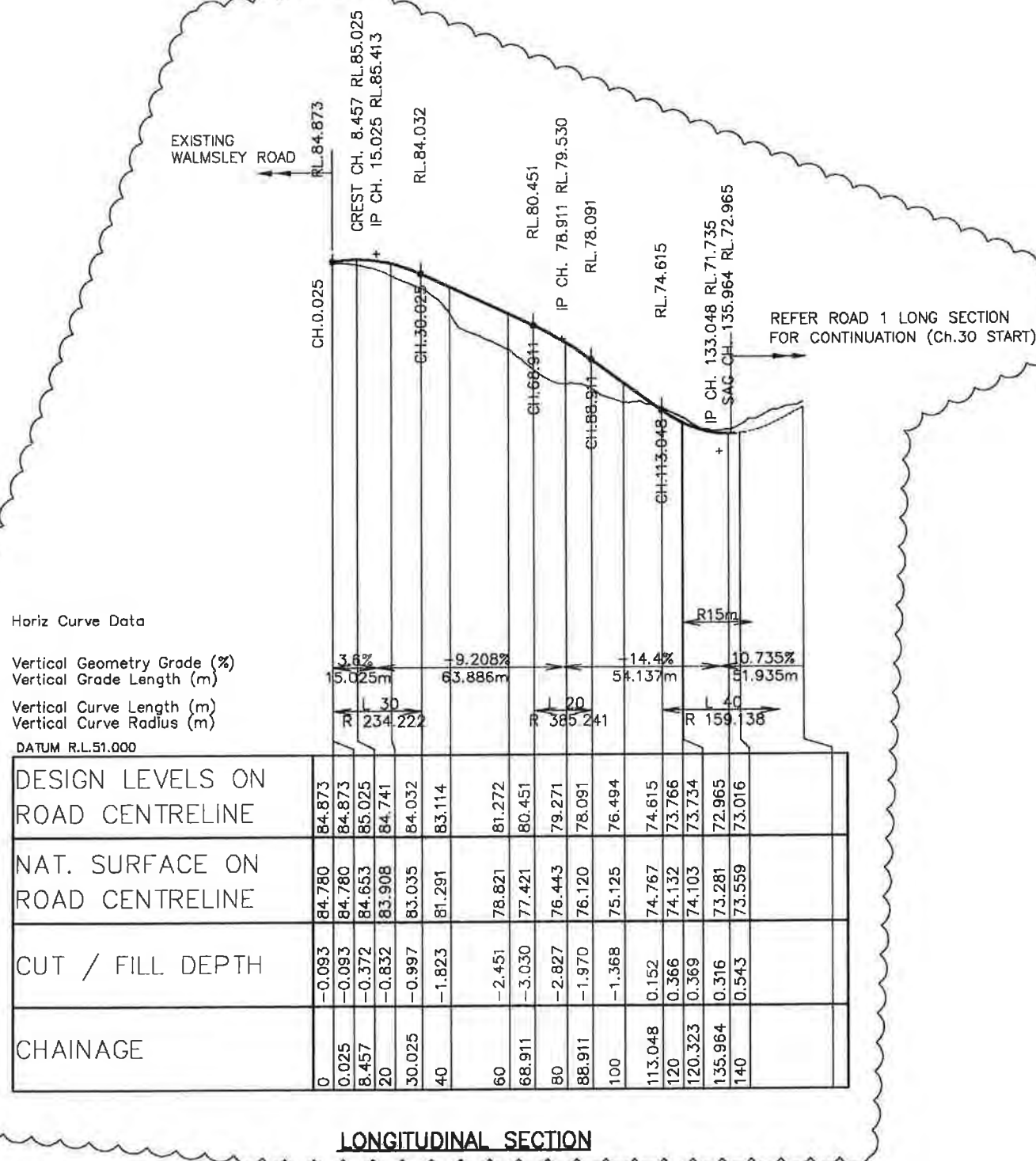
WALMSLEYS ROAD & STOTT STREET
 BILAMBIL HEIGHTS N.S.W.
 FIGURE 7.2

SITE CROSS SECTIONS
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A3 203057
~~APRIL, 2010~~
~~APRIL, 2009~~
~~MARCH, 2009~~
~~OCTOBER, 2008~~
 OCTOBER, 2011
 AUGUST, 2010



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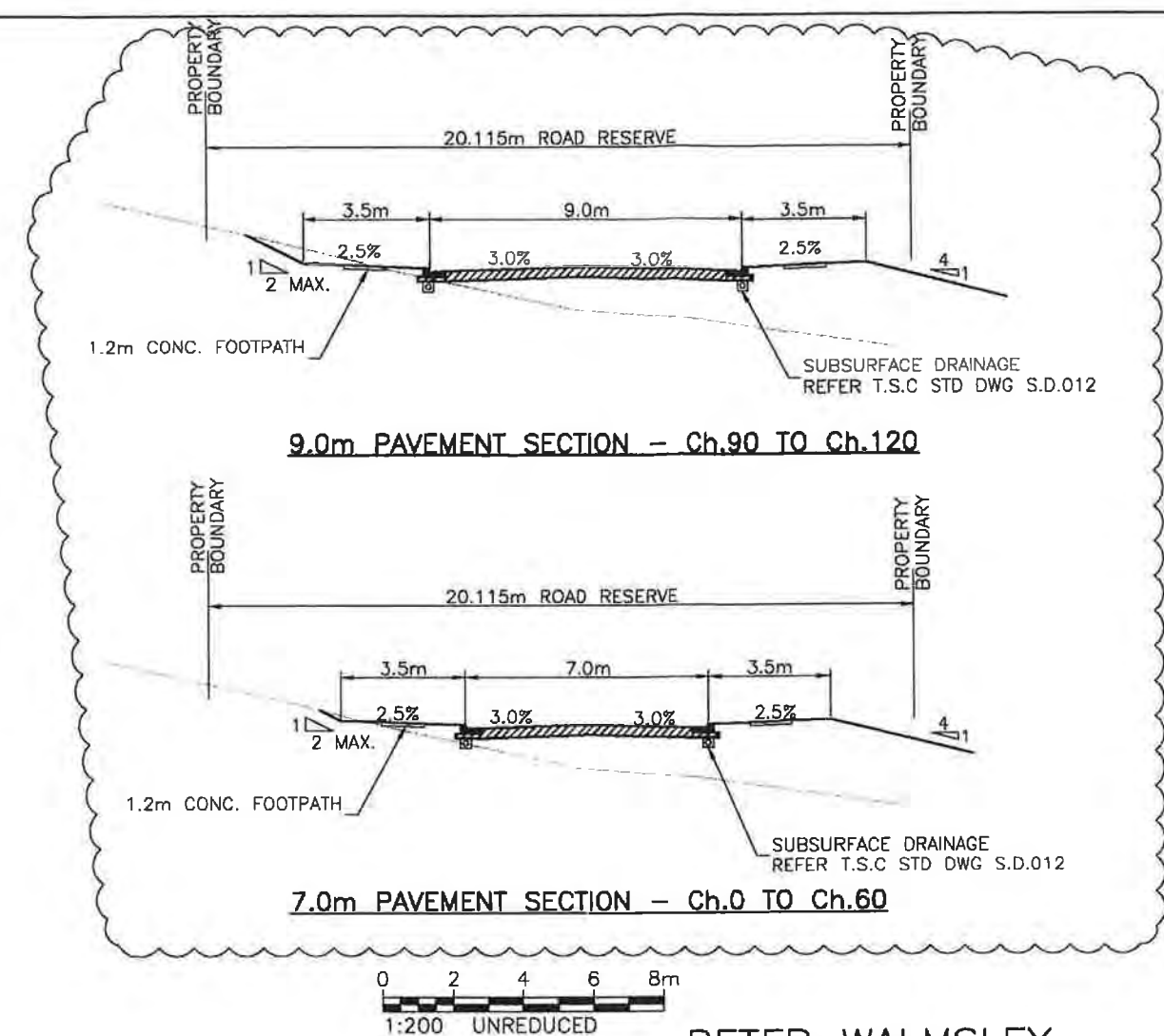
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granted on the 2 August 2012

Signed: [Signature]

Sheet No. 9 of 22



PETER WALMSLEY,
LES & JIM DICKINSON

PROPOSED RESIDENTIAL
SUBDIVISION

WALMSLEYS ROAD & STOTT STREET
BILAMBIL HEIGHTS N.S.W.

FIGURE 8.0

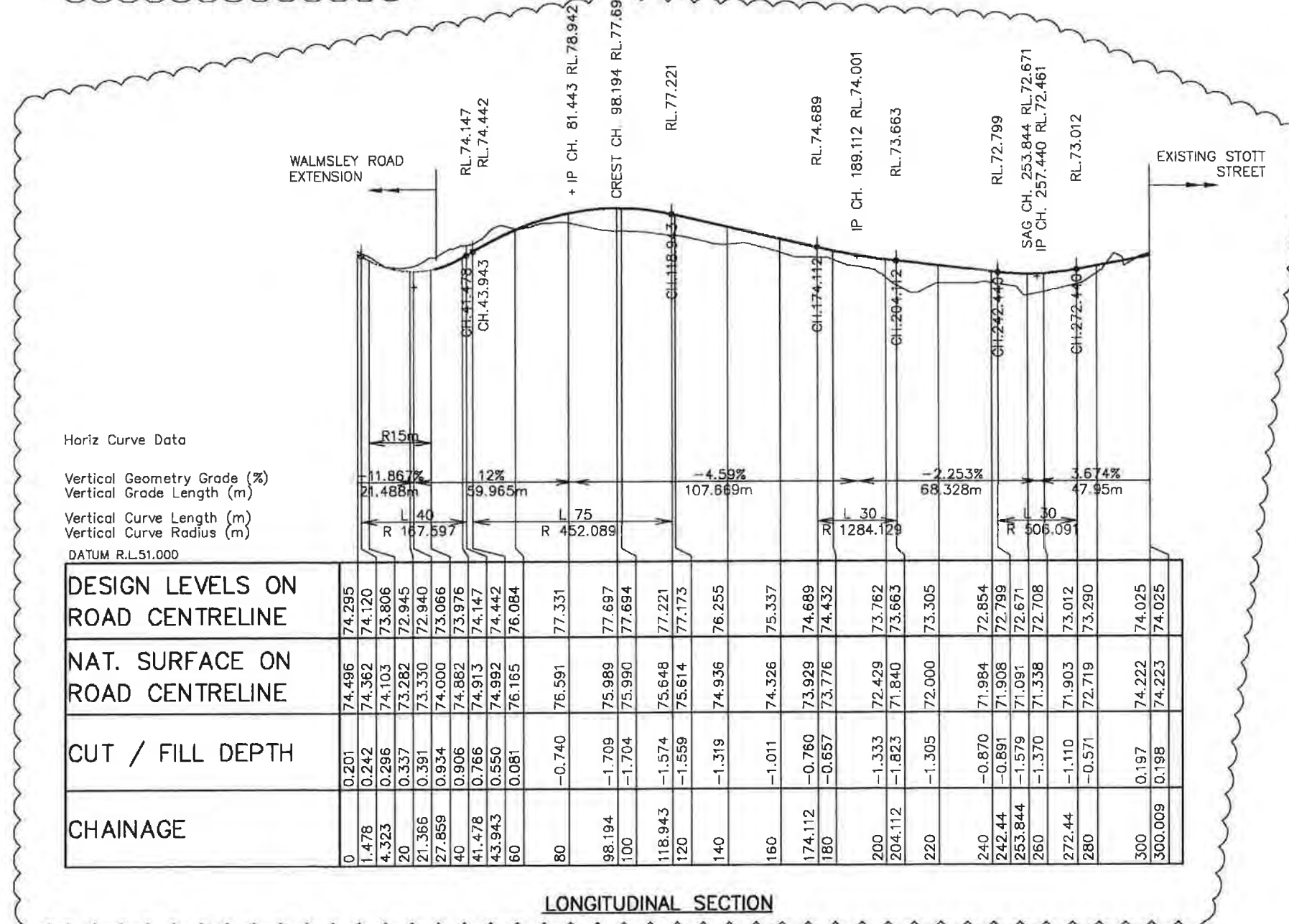
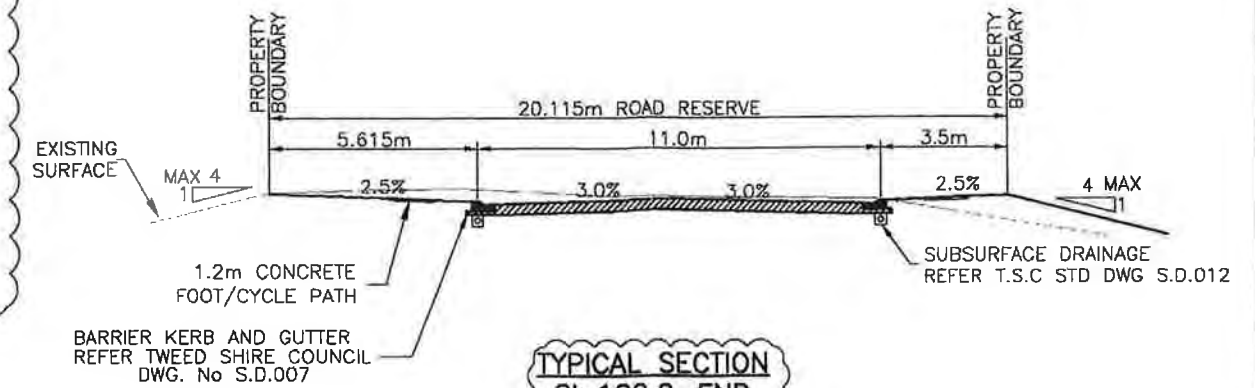
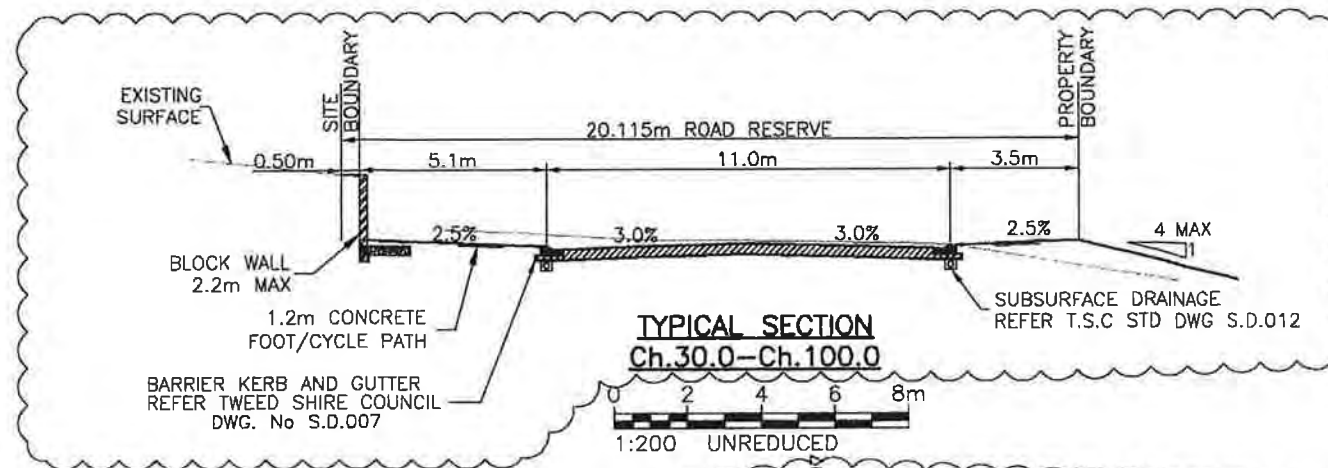
WALMSLEYS ROAD LONGITUDINAL
SECTION AND TYPICAL CROSS
SECTION

OPUS QANTEC McWILLIAM

A.B.N. 79 086 342 065

1/10 Rivendell
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granted on the 2 August 2012

Signed [Signature]

Sheet No. 10 of 32

PETER WALMSLEY,
LES & JIM DICKINSON

PROPOSED RESIDENTIAL
SUBDIVISION

WALMSLEYS ROAD & STOTT STREET
BILAMBIL HEIGHTS N.S.W.

FIGURE 9.0

ROAD 1 LONGITUDINAL SECTION
AND TYPICAL CROSS SECTION

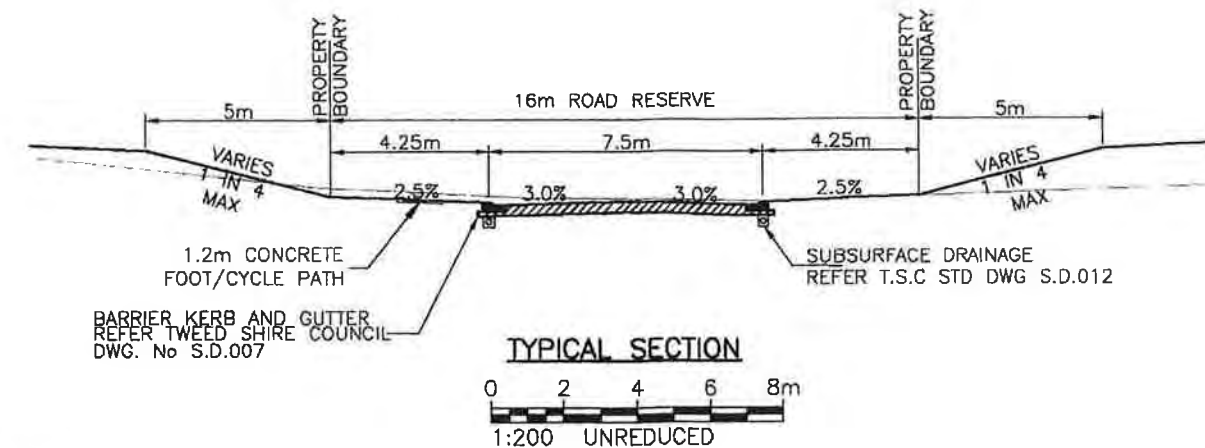
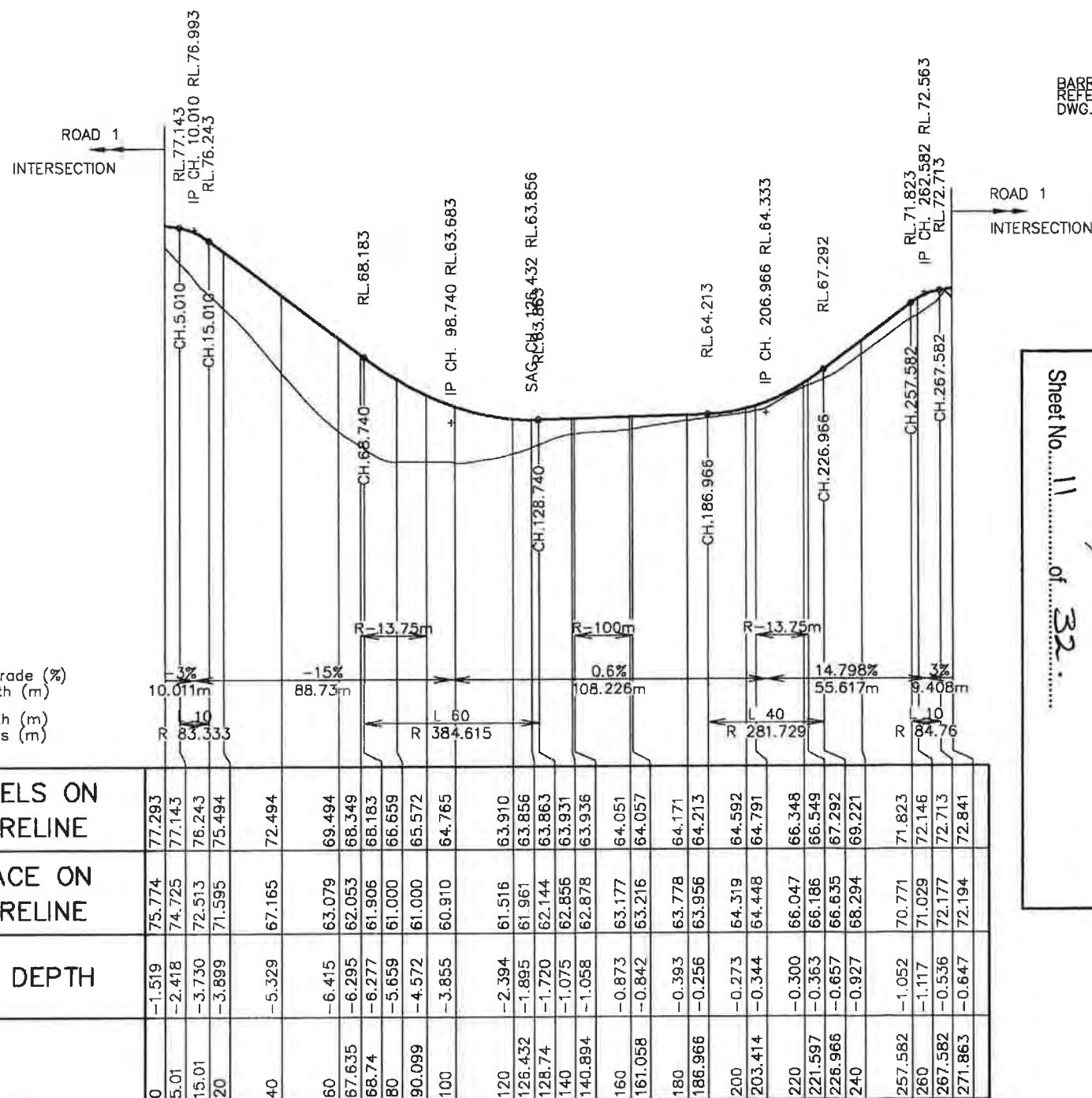
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APRIL, 2009
MARCH, 2009
OCTOBER, 2008
OCTOBER, 2006
JUNE, 2005

OCTOBER, 2011
AUGUST, 2010



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Approved Application No. **MP 05 0198**

granted on the **2 August 2012**

Signed *[Signature]*

Sheet No. **11** of **32**

PETER WALMSLEY,
LES & JIM DICKINSON

PROPOSED RESIDENTIAL
SUBDIVISION

WALMSLEYS ROAD & STOTT STREET
BILAMBIL HEIGHTS N.S.W.

FIGURE 10.0

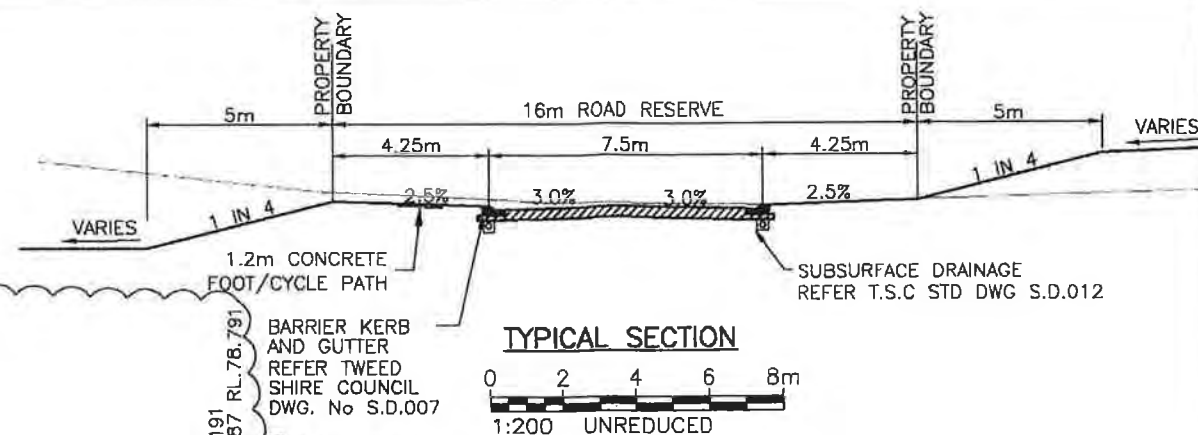
ROAD 2 LONGITUDINAL SECTION
AND TYPICAL CROSS SECTION

OPUS QANTEC McWILLIAM



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1/10 Rivendell
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Facsimile: (07) 5523 9664
E-Mail: tweedheads@opusqmcw.com.au



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PETER WALMSLEY,
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WALMSLEYS ROAD & STOTT STREET
BILAMBIL HEIGHTS N.S.W.

FIGURE 11.0

ROAD 3 LONGITUDINAL SECTION
AND TYPICAL CROSS SECTION

OPUS QANTEC McWILLIAM



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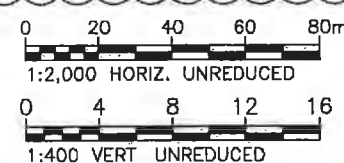
Horiz Curve Data

Vertical Geometry Grade (%)
Vertical Grade Length (m)

Vertical Curve Length (m)
Vertical Curve Radius (m)

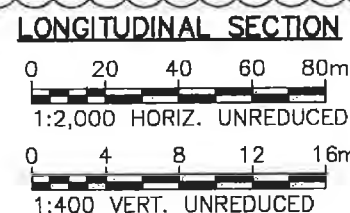
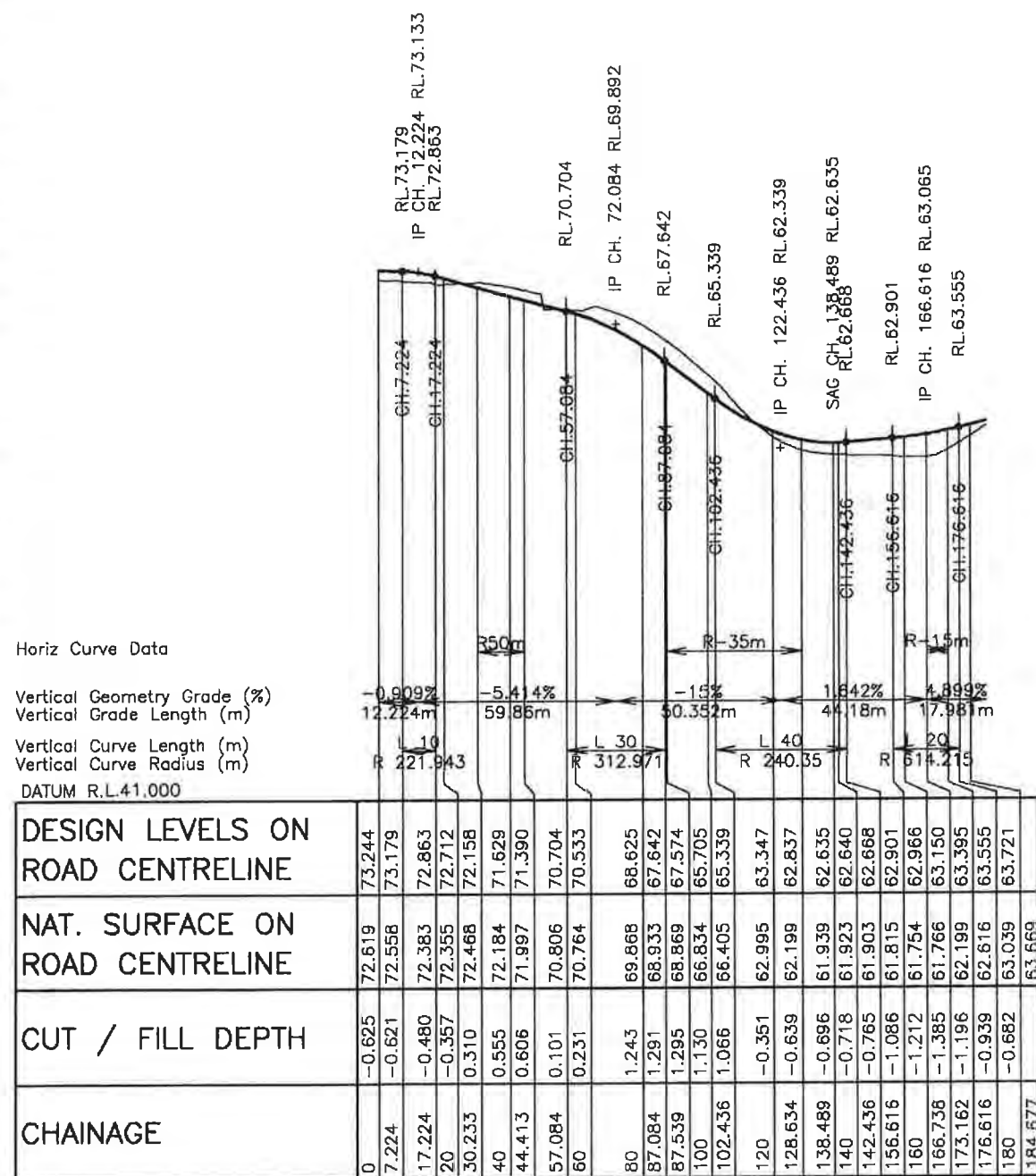
DATUM R.L.40.000

NAT. SURFACE ON ROAD CENTRELINE	72.660	72.920	73.302	73.670	73.667	73.676	73.505	76.116	75.691	74.535	74.248	73.923	74.043	72.938	72.411	72.031	72.027	71.570	71.047	70.524	70.085	68.230	67.277	66.648	64.192	63.899	62.146	61.707	62.233	62.316	63.083	65.276	67.951	70.554	73.192	75.315	77.538	77.757	78.642	78.642
CUT / FILL DEPTH	-0.667	-0.254	0.188	0.112	0.101	-0.072	0.746	1.181	0.754	-0.372	-0.580	-0.382	0.200	0.295	0.354	0.498	0.586	1.789	2.214	2.354	2.632	2.376	2.224	2.111	1.046	0.843	-0.591	-1.094	-1.757	-1.742	-1.454	-1.144	-0.869	-0.666	-0.428	-0.705	-0.653	-0.647	-0.305	-0.305
DESIGN LEVELS ON ROAD CENTRELINE	73.327	73.174	73.114	73.558	73.566	73.747	74.758	74.935	74.937	74.907	74.828	74.305	73.843	72.643	72.057	71.533	71.441	69.781	68.833	68.171	67.453	65.854	65.053	64.537	63.146	63.056	62.737	62.802	63.990	64.057	64.537	66.420	68.820	71.220	73.620	76.020	78.191	78.404	78.947	78.947
CHAINAGE	0	5.104	9.111	20	20.104	22.305	40	49.899	51.223	55.858	60	72.305	80	100	109.765	118.503	120	140	148.503	154.022	160	173.332	180	184.305	200	201.672	214.305	220	239.341	240	244.305	260	280	300	320	340	358.087	360	368.087	368.087



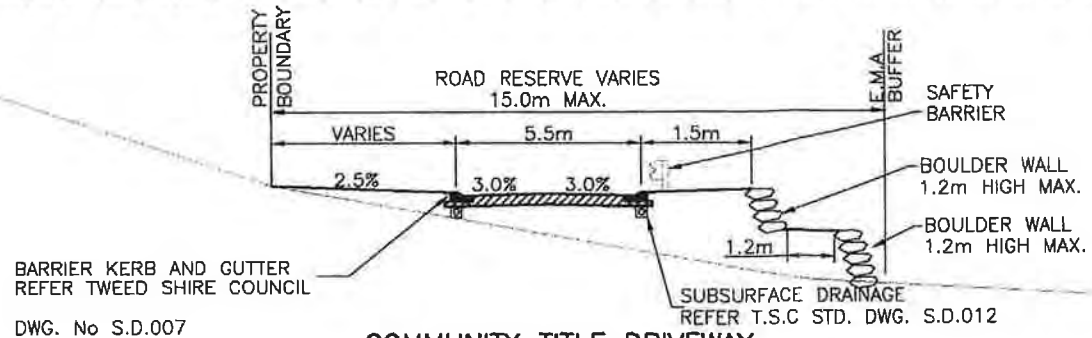
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OCTOBER, 2011
APRIL, 2010

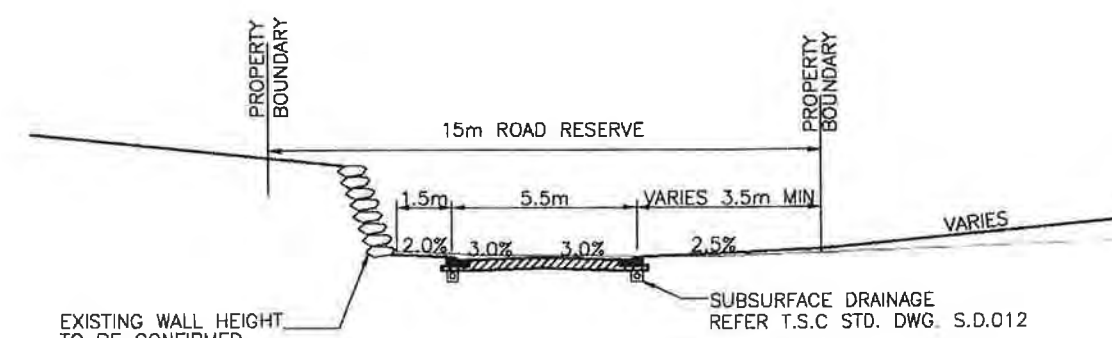


APRIL, 2009
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AUGUST, 2005
JUNE, 2005

OCTOBER, 2011
SEPTEMBER 2010
AUGUST, 2010



COMMUNITY TITLE DRIVEWAY
TYPICAL SECTION
CH120.0-END



COMMUNITY TITLE DRIVEWAY
TYPICAL SECTION
CH0.0-CH120.0



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Sheet No. **13** of **32**

WALMSLEYS ROAD & STOTT STREET
BILAMBIL HEIGHTS N.S.W.

FIGURE 12.0

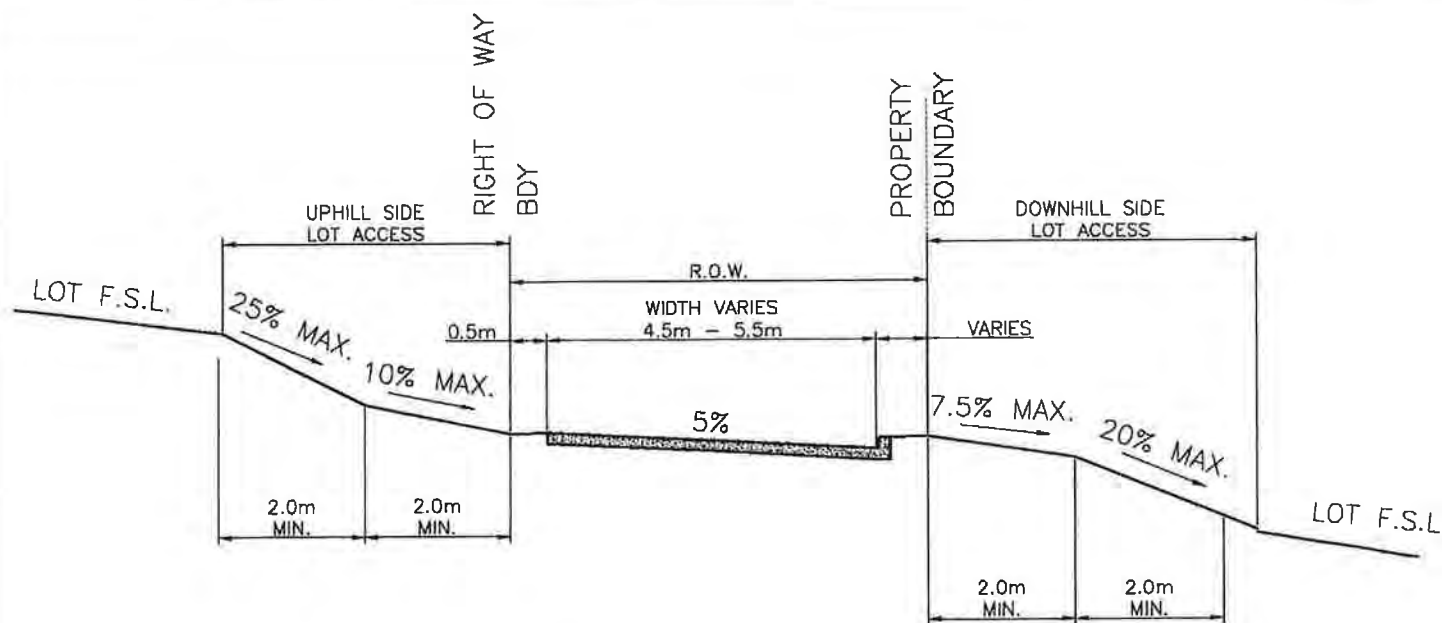
ROAD 5 LONGITUDINAL SECTION
AND TYPICAL CROSS SECTION

OPUS QANTEC McWILLIAM

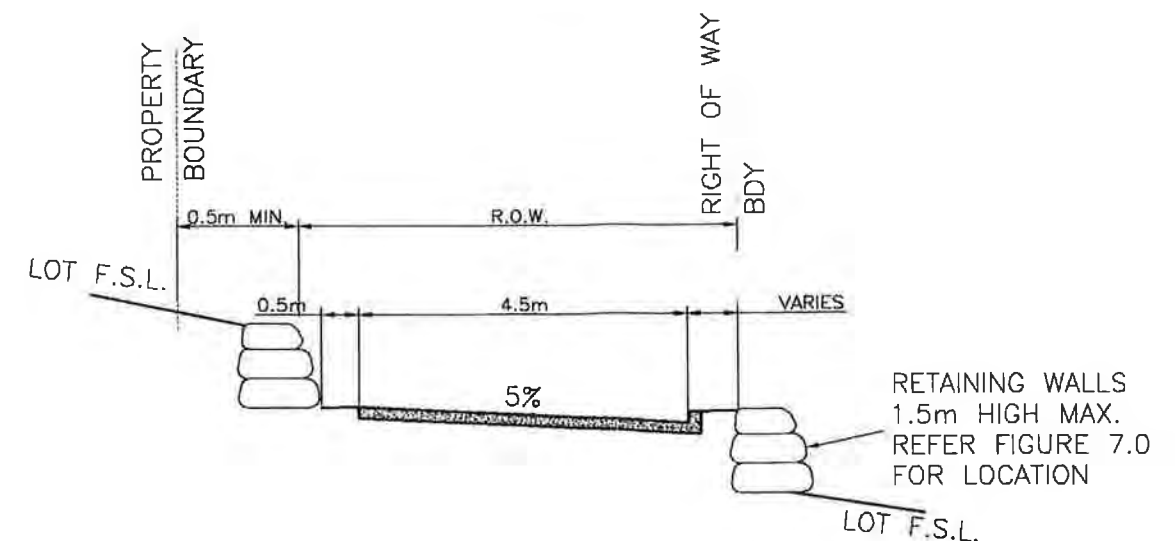
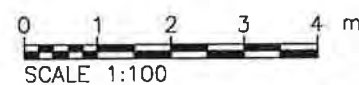


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TYPICAL SECTION CH00 TO CH70 and CH85 TO END



TYPICAL SECTION CH 70 to 85

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Horiz Curve Data

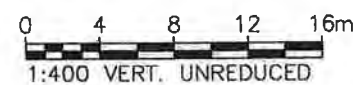
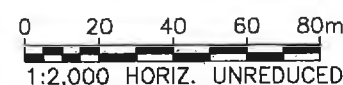
Vertical Geometry Grade (%)
Vertical Grade Length (m)

Vertical Curve Length (m)
Vertical Curve Radius (m)

DATUM R.L.45.000

NAT. SURFACE ON ROAD CENTRELINE	75.721	77.114	76.746	76.227	75.210	71.778	69.722	68.516	68.517	68.670	68.670	68.675	67.977	67.206	66.428
CUT / FILL DEPTH	-0.011	1.945	1.975	2.322	2.346	0.729	-0.080	0.666	0.670	1.490	1.830	2.027	1.712		
DESIGN LEVELS ON ROAD CENTRELINE	75.732	75.168	74.771	73.906	73.864	71.050	69.802	67.850	67.846	67.180	66.845	65.951	65.494		
CHAINAGE	0	20	30.294	40	40.294	60	68.517	80	80.02	83.941	85.911	91.91	95.911	100	

LONGITUDINAL SECTION



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BILAMBIL HEIGHTS N.S.W.

FIGURE 12.1

RIGHT OF CARRIAGEWAY No.1
LONGITUDINAL SECTION
AND TYPICAL CROSS SECTIONS

OPUS QANTEC McWILLIAM



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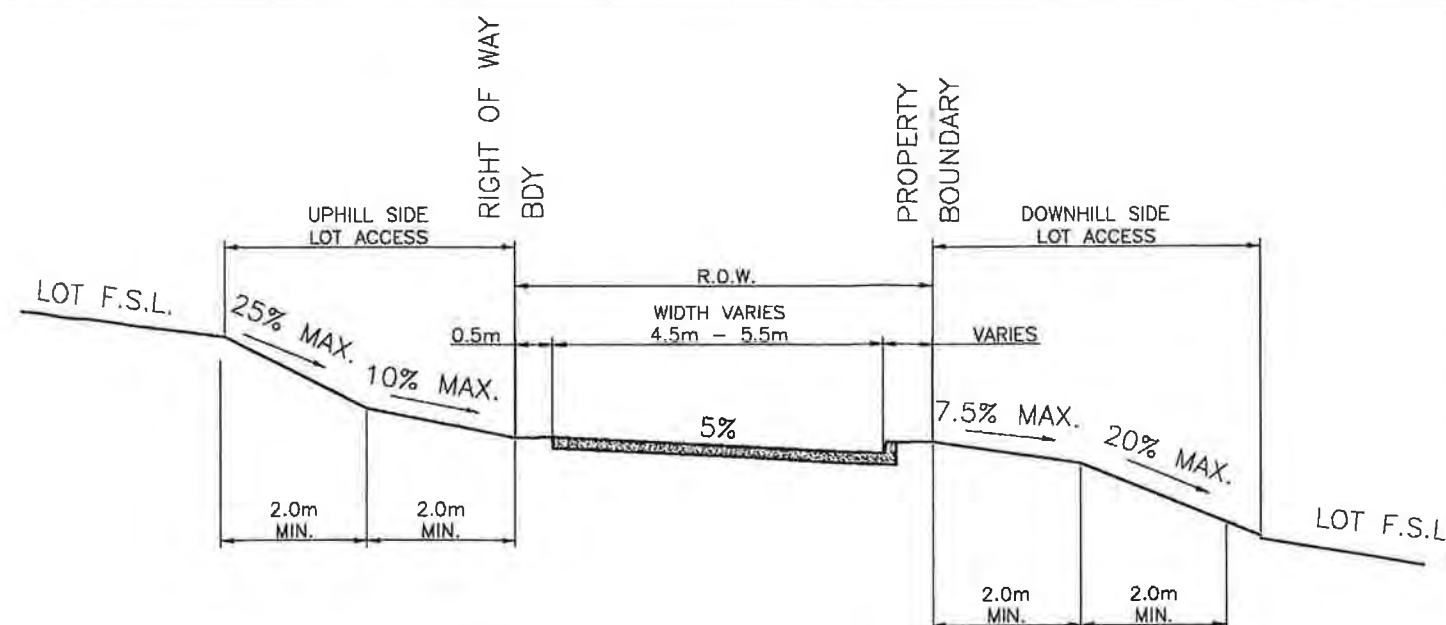
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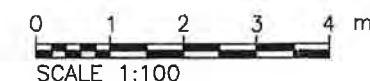
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TYPICAL SECTION CH00 TO CH70 and CH85 TO END



Horiz Curve Data

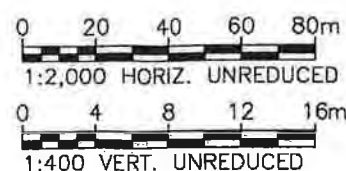
Vertical Geometry Grade (%)
Vertical Grade Length (m)

Vertical Curve Length (m)
Vertical Curve Radius (m)

DATUM R.L.10.000

NAT. SURFACE ON ROAD CENTRELINE	72.000	72.000	72.000	71.863	70.791	68.567	67.994	66.479	66.459	64.827	63.199	63.151	62.590	60.445	60.545	60.780
CUT / FILL DEPTH	-0.895	0.563	1.000	1.497	1.811	0.248	0.132	-0.441	-0.449	-0.567	-0.159	-0.155	-0.181	-1.240	-1.061	
DESIGN LEVELS ON ROAD CENTRELINE	72.895	71.437	71.000	70.365	68.980	68.319	67.861	66.920	66.908	65.393	63.359	63.305	62.771	61.685	61.607	
CHAINAGE	0	16.204	20	26.204	40	46.38	50.796	59.877	60	69.877	80	80.305	83.374	93.374	95.193	97.558

LONGITUDINAL SECTION



PETER WALMSLEY,
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WALMSLEYS ROAD & STOTT STREET
BILAMBIL HEIGHTS N.S.W.

FIGURE 12.2

RIGHT OF CARRIAGEWAY No.2
LONGITUDINAL SECTION
AND TYPICAL CROSS SECTIONS

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Horiz Curve Data

Vertical Geometry Grade (%) 2.544% +10.0%

Vertical Grade Length (m) 4.27m 47.569m

Vertical Curve Length (m)

Vertical Curve Radius (m)

DATUM R.L.39.000

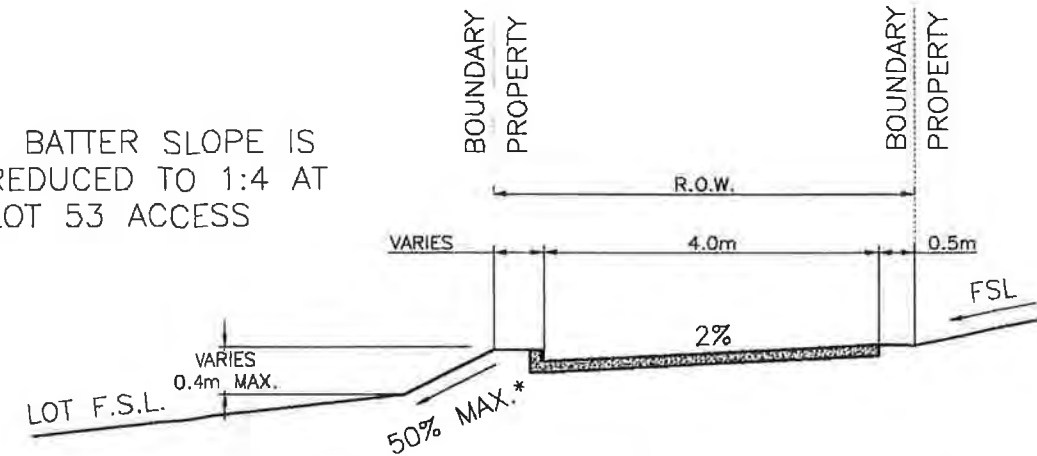
NAT. SURFACE ON ROAD CENTRELINE	65.584	63.381	61.515	60.488
CUT / FILL DEPTH	1.515	0.855	1.089	1.305
DESIGN LEVELS ON ROAD CENTRELINE	64.069	62.604	60.604	59.420
CHAINAGE	0	20	40	51.839

RIGHT OF CARRIAGEWAY — LOTS 53 & 60

0 20 40 60 80m
1:2,000 HORIZ. UNREDUCED

0 4 8 12 16m
1:400 VERT. UNREDUCED

* BATTER SLOPE IS
REDUCED TO 1:4 AT
LOT 53 ACCESS



TYPICAL LOT ACCESS DRIVEWAY— LOTS 53 & 60

0 1 2 3 4 m
SCALE 1:100

PETER WALMSLEY,
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WALMSLEYS ROAD & STOTT STREET
BILAMBIL HEIGHTS N.S.W.

FIGURE 12.3

RIGHT OF CARRIAGEWAY No. 3
LONGITUDINAL SECTION
AND TYPICAL CROSS SECTION

OPUS QANTEC McWILLIAM



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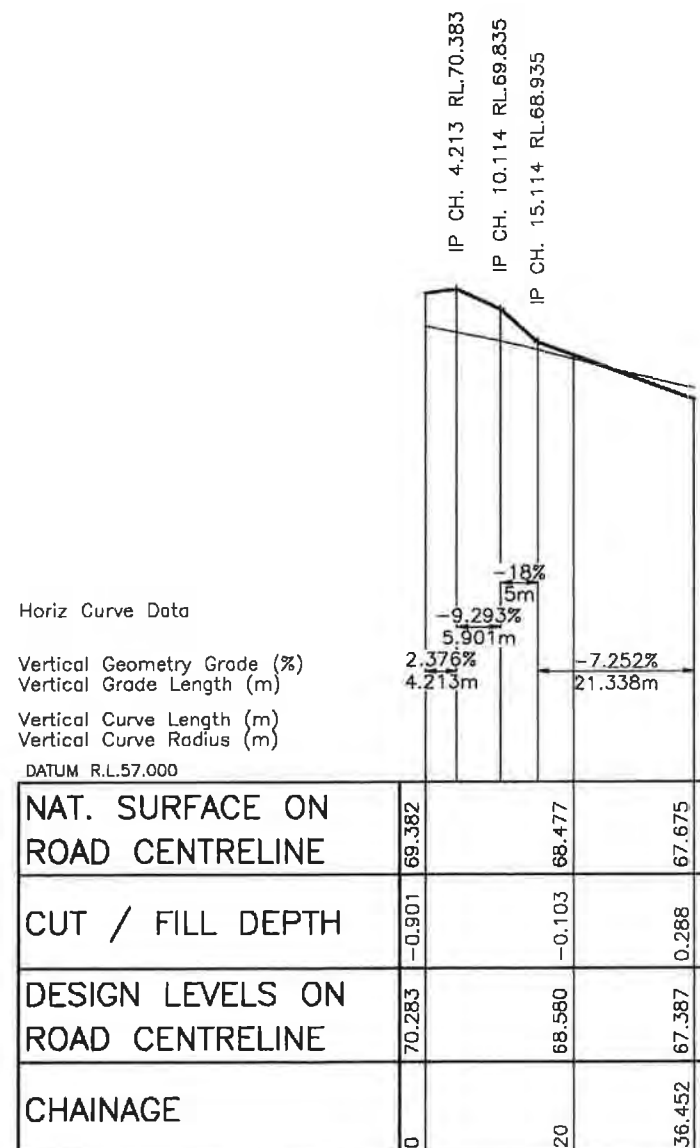
PO Box 6389

Tweed Heads South NSW 2486

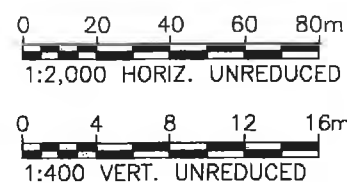
Telephone: (07) 5523 1755

Facsimile: (07) 5523 9664

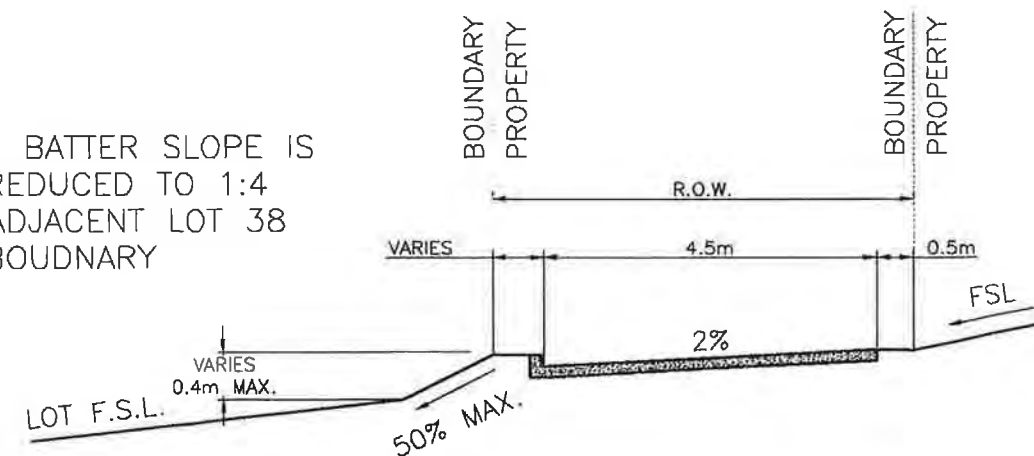
E-Mail: tweedheads@opusqmcw.com.au



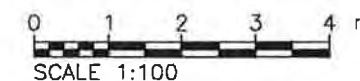
RIGHT OF CARRIAGEWAY – LOTS 35 TO 37



* BATTER SLOPE IS
REDUCED TO 1:4
ADJACENT LOT 38
BOUDNARY



TYPICAL LOT ACCESS DRIVEWAY– LOTS 35 TO 37



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WALMSLEYS ROAD & STOTT STREET
BILAMBIL HEIGHTS N.S.W.

FIGURE 12.4

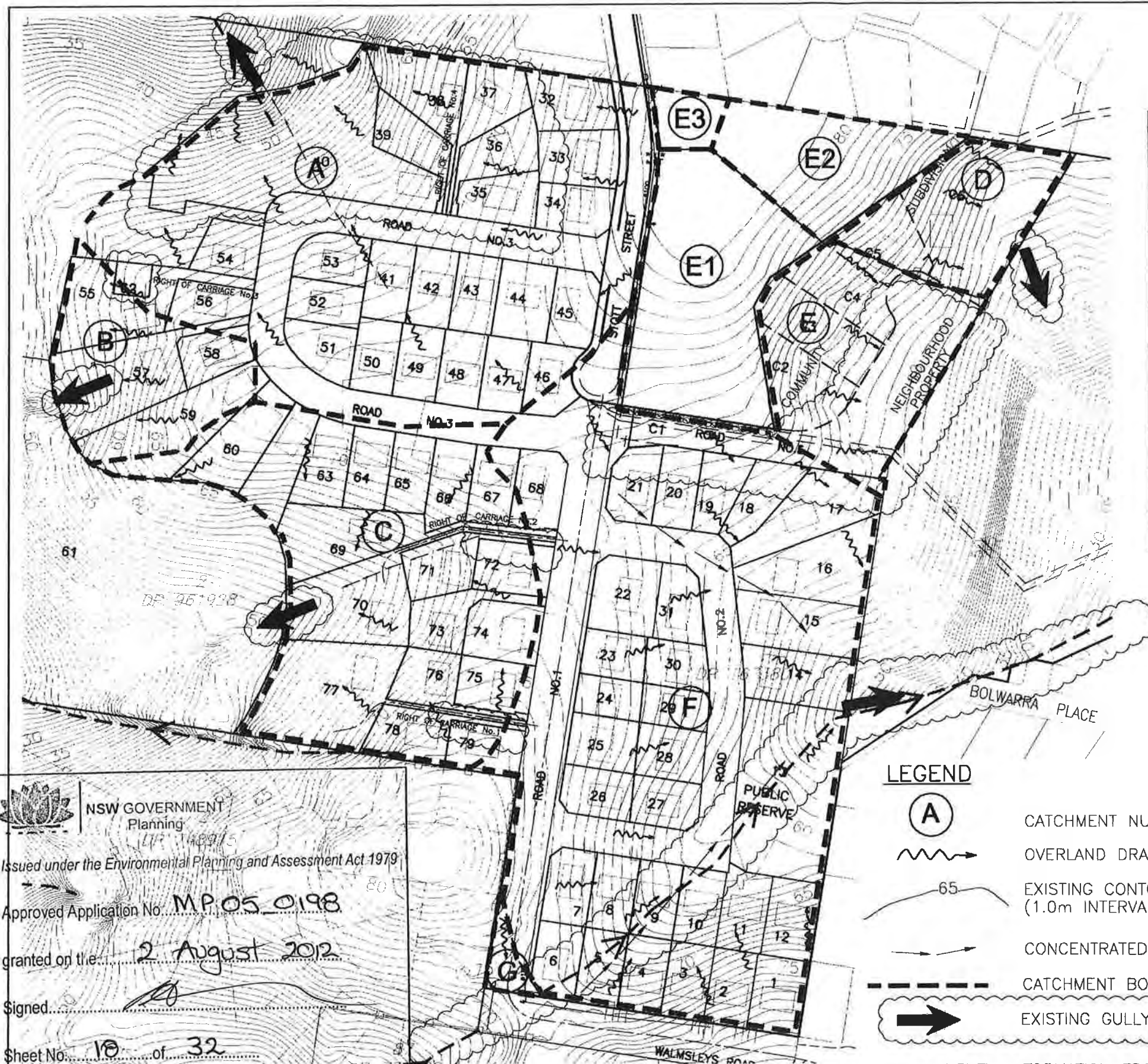
RIGHT OF CARRIAGEWAY No. 4
LONGITUDINAL SECTION
AND TYPICAL CROSS SECTION

OPUS QANTEC McWILLIAM



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DRAINAGE CALCULATIONS

CATCHMENT	AREA (ha)	t_c (min)	I_5 (mm/hr)	C_5	Q_5 (m ³ /s)	I_{100} (mm/hr)	C_{100}	Q_{100} (m ³ /s)
(A)	3.3	16	126.46	0.665	0.771	199.40	0.840	1.535
(B)	0.57	13	138.51	0.665	0.146	217.40	0.840	0.289
(C)	1.95	12	143.29	0.665	0.516	224.53	0.840	1.022
(D)	0.39	11	148.57	0.665	0.107	232.37	0.840	0.211
(E)	0.76	12	143.29	0.665	0.201	224.53	0.840	0.398
(F)	4.19	18	119.87	0.665	0.928	189.52	0.840	1.853
(G)	0.05	10	154.43	0.665	0.014	241.07	0.840	0.028
(E1)	0.72	10	154.43	0.817	0.252	241.07	1.032	0.498
(E2)	0.40	8	168.44	0.817	0.153	261.83	1.032	0.300
(E3)	0.08	13	138.51	0.817	0.025	217.40	1.032	0.050

PETER WALMSLEY,
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WALMSLEYS ROAD
BILAMBIL HEIGHTS

FIGURE 13.0

WATER CYCLE MANAGEMENT PLAN
PRE-DEVELOPMENT

OPUS QANTEC McWILLIAM



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Sheet No. 10 of 32

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OCTOBER, 2007
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AUGUST, 2005
FEBRUARY, 2005

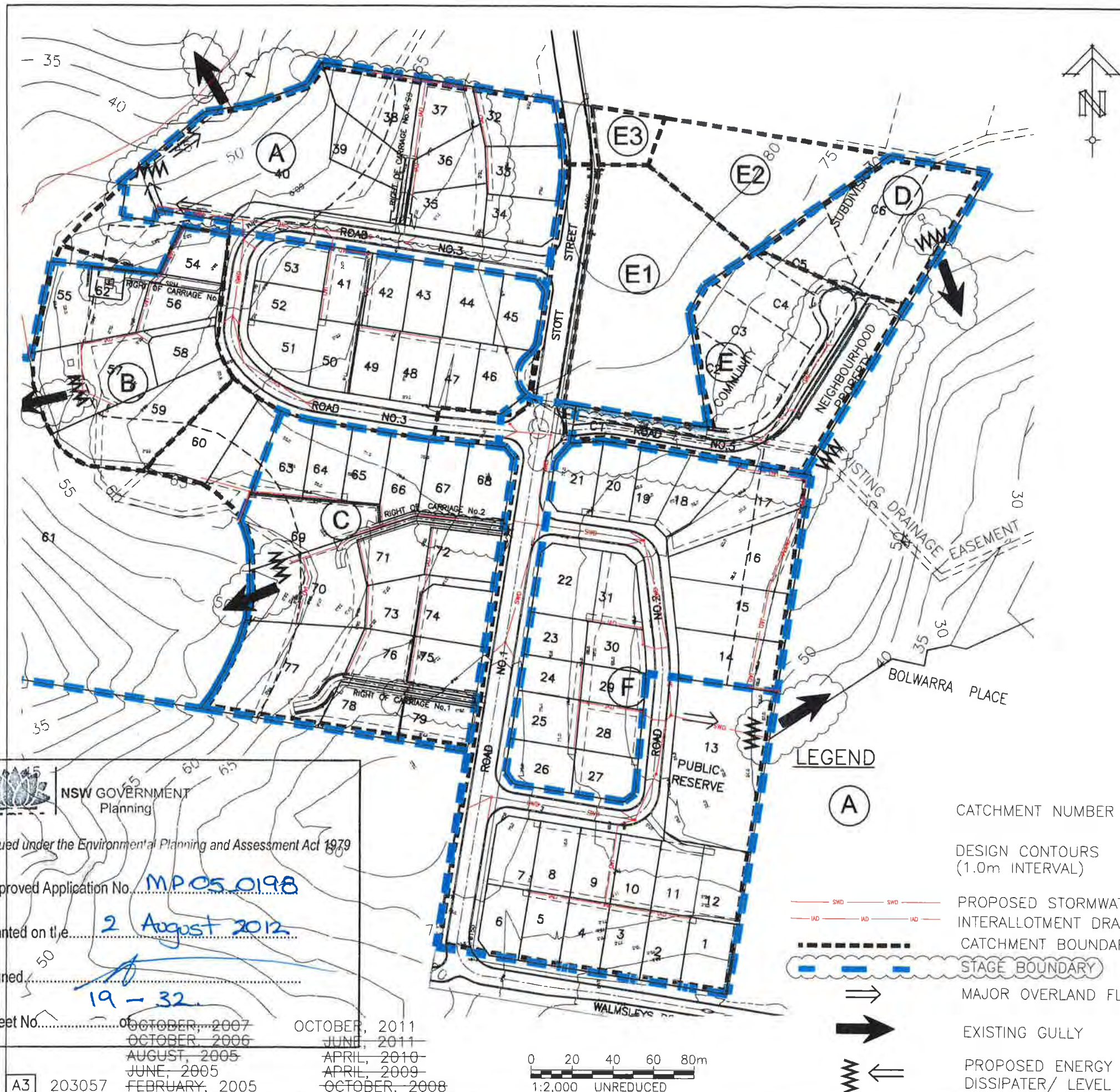
OCTOBER, 2011
JUNE, 2011
APRIL, 2010

0 20 40 60 80m
1:2,000 UNREDUCED

LEGEND

- (A) CATCHMENT NUMBER
- ~~~~~ OVERLAND DRAINAGE DIRECTION
- 65 EXISTING CONTOURS (1.0m INTERVAL)
- CONCENTRATED FLOW PATH
- - - CATCHMENT BOUNDARY
- EXISTING GULLY

NOTE: SURVEY INFORMATION FROM MCLAUCHLAN
SURVEYING DRAWING NUMBER 37401



DRAINAGE CALCULATIONS

CATCHMENT	AREA (ha)	t_c (min)	I_5 (mm/hr)	c_5	Q_5 (m ³ /s)	I_{100} (mm/hr)	C_{100}	Q_{100} (m ³ /s)
(A)	3.15	12	143.29	0.741	0.929	224.53	0.936	1.838
(B)	0.63	10	154.43	0.741	0.200	241.07	0.936	0.390
(C)	2.02	10	154.43	0.741	0.640	241.07	0.936	1.270
(D)	0.45	7	176.99	0.741	0.164	274.44	0.936	0.321
(E)	0.86	10	154.43	0.741	0.273	241.07	0.936	0.539
(F)	4.06	10	154.43	0.741	1.291	241.07	0.936	2.545
(E1)	0.72	10	154.43	0.817	0.252	241.07	1.032	0.498
(E2)	0.40	8	168.44	0.817	0.153	261.83	1.032	0.300
(E3)	0.08	13	138.51	0.817	0.025	217.40	1.032	0.050

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WALMSLEYS ROAD
BILAMBIL HEIGHTS

FIGURE 14.0
WATER CYCLE MANAGEMENT PLAN
POST DEVELOPMENT

OPUS QANTEC McWILLIAM



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Sheet No. **203057**
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OCTOBER, 2006
AUGUST, 2005
JUNE, 2005
FEBRUARY, 2005
OCTOBER, 2011
JUNE, 2011
APRIL, 2010
APRIL, 2009
OCTOBER, 2008

0 20 40 60 80m
1:2,000 UNREDUCED

CATCHMENT NUMBER

DESIGN CONTOURS
(1.0m INTERVAL)

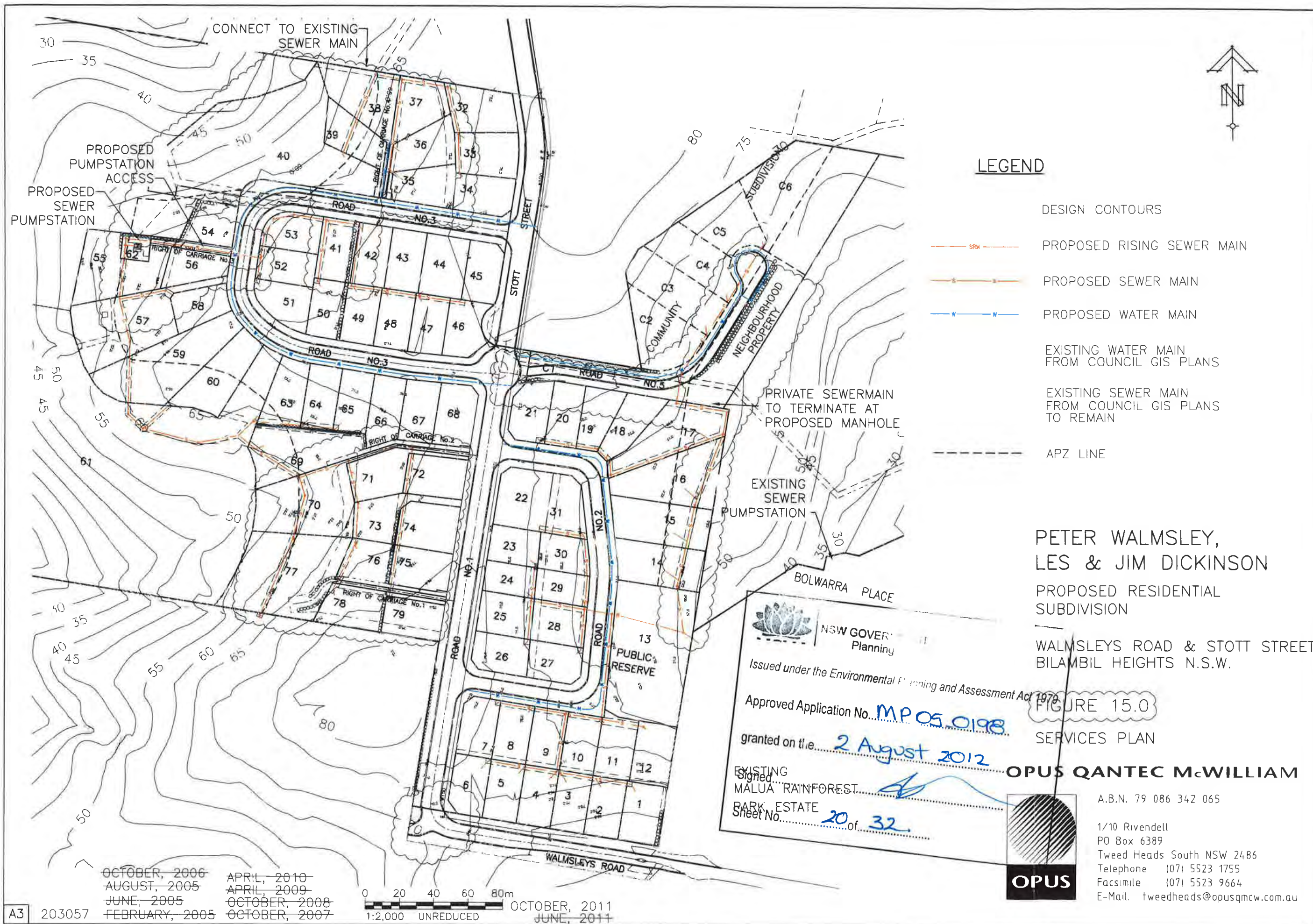
PROPOSED STORMWATER/
INTERALLOTMENT DRAINAGE
CATCHMENT BOUNDARY

STAGE BOUNDARY

MAJOR OVERLAND FLOW PATH

EXISTING GULLY

PROPOSED ENERGY
DISSIPATER/ LEVEL SPREADER



LEGEND

- DESIGN CONTOURS
- PROPOSED RISING SEWER MAIN
- PROPOSED SEWER MAIN
- PROPOSED WATER MAIN
- EXISTING WATER MAIN FROM COUNCIL GIS PLANS
- EXISTING SEWER MAIN FROM COUNCIL GIS PLANS TO REMAIN
- APZ LINE

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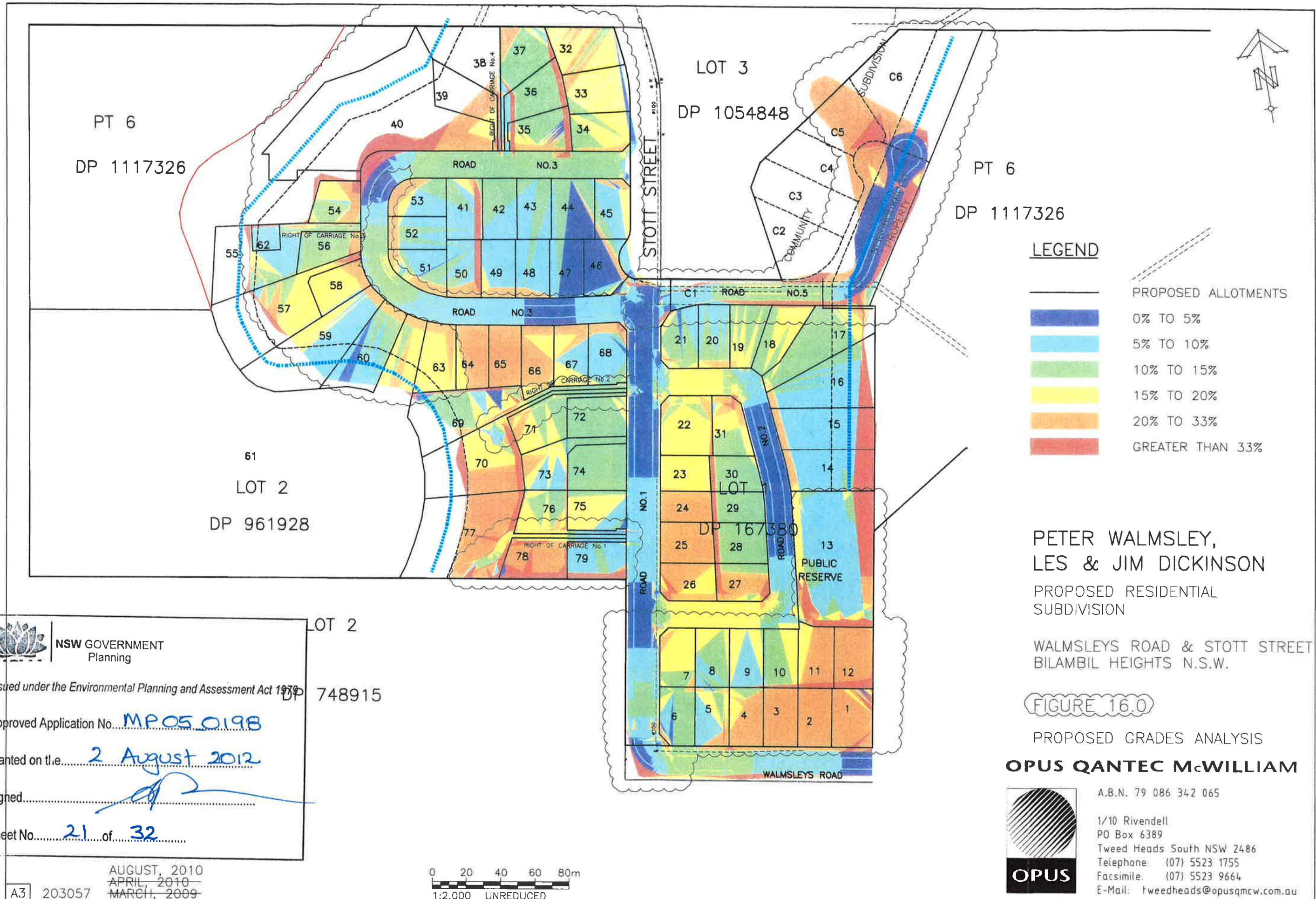
Signed
MALUA RAINFOREST
PARK ESTATE
Sheet No. **20** of **32**

FIGURE 15.0
SERVICES PLAN

OPUS QANTEC McWILLIAM



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E-Mail. tweedheads@opusqmcw.com.au



LEGEND

- PROPOSED ALLOTMENTS
- 0% TO 5%
- 5% TO 10%
- 10% TO 15%
- 15% TO 20%
- 20% TO 33%
- GREATER THAN 33%

**PETER WALMSLEY,
LES & JIM DICKINSON**

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BILAMBIL HEIGHTS N.S.W.

FIGURE 16.0

PROPOSED GRADES ANALYSIS

OPUS QANTEC McWILLIAM



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FOR
DISCUSSION
PURPOSES ONLY

LEGEND

-  PROPOSED RETAINING WALL
-  PROPOSED EASEMENTS (INDICATIVE ONLY)
-  PROPOSED BATTER
-  PROPOSED ENVIRONMENTAL MANAGEMENT AREA
-  PROPOSED BUILDING ENVELOPE

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SKETCH SK20100303

INDICATIVE RESTRICTION OF USE
LAYOUT PLAN

OPUS QANTEC McWILLIAM



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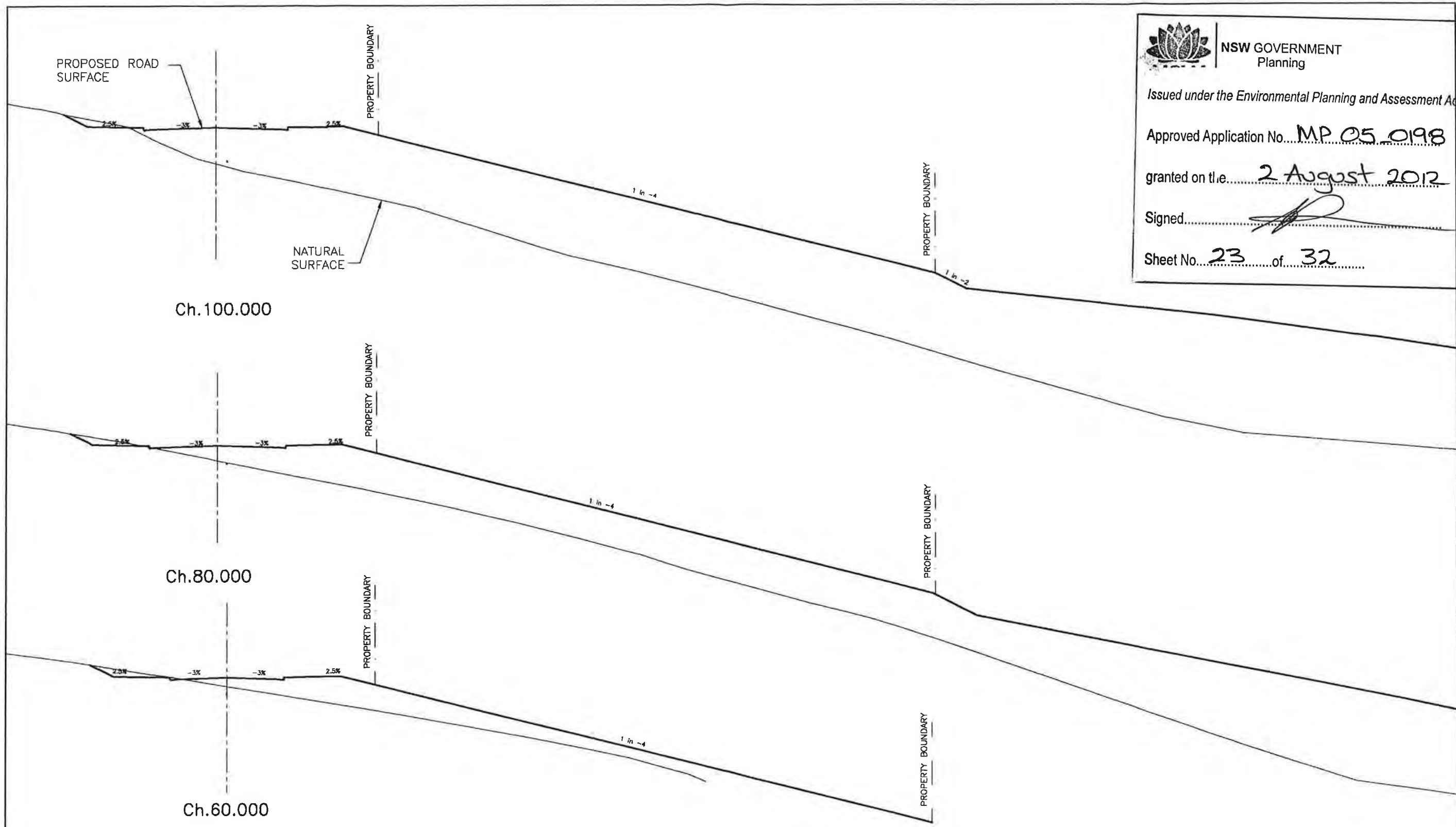
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PETER WALMSLEY,
LES & JIM DICKINSON
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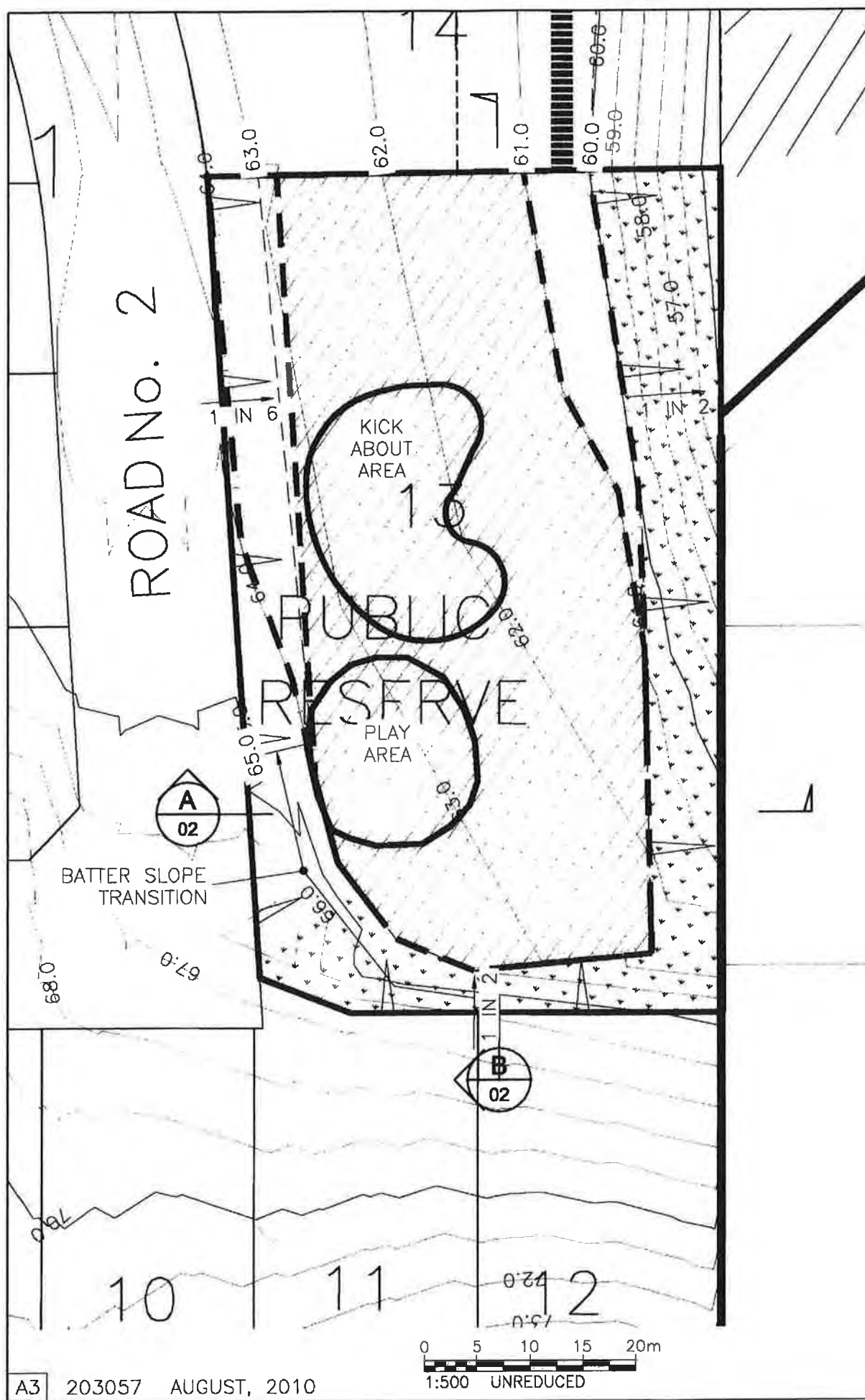
WALMSLEYS ROAD & STOTT STREET
BILAMBIL HEIGHTS N.S.W.

SKETCH SK20100713
WALMSLEY ROAD EXTENSION
PROPOSED 1 in 4 BATTER

OPUS



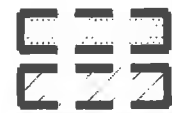
A.B.N. 79 086 342 065
1/10 Rivendell
PO Box 6389
Tweed Heads South NSW 2486
Telephone: (07) 5523 1755
Facsimile: (07) 5523 9664
E-Mail: tweedheads@opus.com.au



LEGEND



TOTAL SITE AREA OF LOCAL PARK
3,652m²



ACTUAL AREA OF LOCAL PARK (1:6 SLOPES OR LESS) = 2562m²



AREA OF LOCAL PARK NO GREATER THAN 8% = 2120m²



STEEP BATTERS (1:2 MAX) TO BE DENSELY
VEGETATED

COMPLIANCE CALCULATIONS

MIN. TSC AREA FOR LOCAL PARK = 2500m²

ACTUAL AREA FOR LOCAL PARK = 2562m²

COMPLIES WITH TSC DCP REQUIREMENT

% OF AREA NO GREATER THAN 8% SLOPE

= 2120m² / 2562m²

= 82.7%

COMPLIES WITH TSC DCP REQUIREMENT

PETER WALMSLEY,
LES & JIM DICKINSON

PROPOSED RESIDENTIAL
SUBDIVISION

WALMSLEYS ROAD & STOTT STREET
BILAMBIL HEIGHTS N.S.W.

SK20100809 - 01 REV A

PROPOSED LOCAL PARK
GRADE COMPLIANCE SCHEMATIC

OPUS



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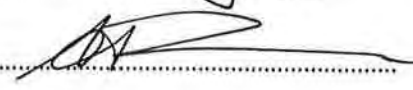
E-Mail: tweedheads@opus.com.au

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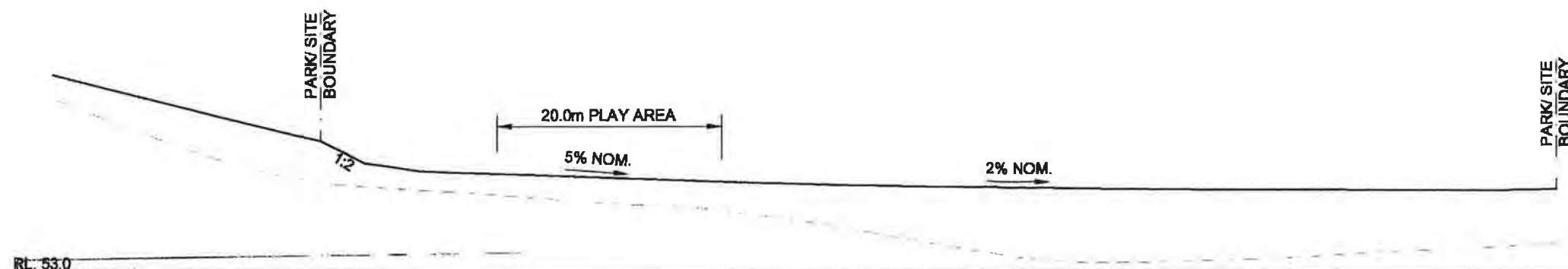
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RL. 53.0



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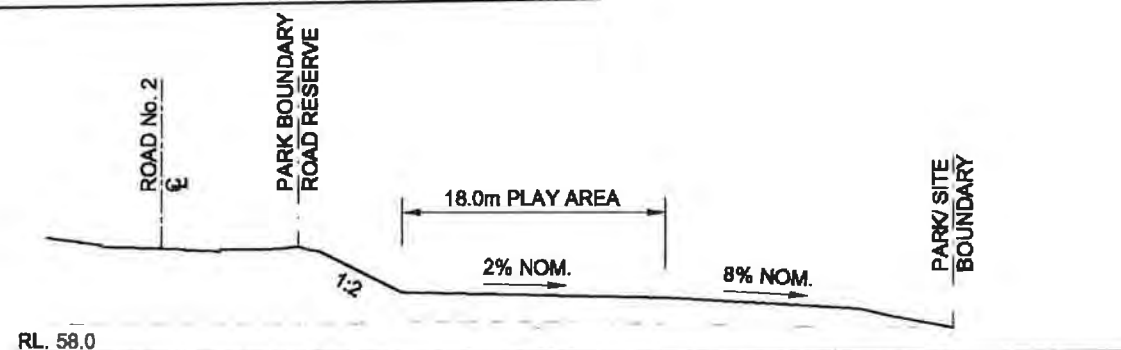
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SECTION **B**
1:500 01



RL. 58.0

SECTION **A**
1:500 01

0 5 10 15 20m
1:500 UNREDUCED

PETER WALMSLEY,
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SUBDIVISION

WALMSLEYS ROAD & STOTT STREET
BILAMBIL HEIGHTS N.S.W.

SK20100809 - 02 REV A

PROPOSED LOCAL PARK
GRADE COMPLIANCE SCHEMATIC

OPUS



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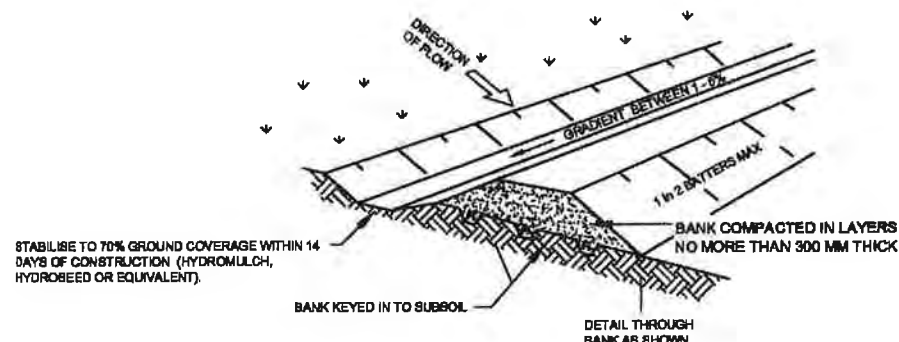
1/10 Rivendell
PO Box 6389

Tweed Heads South NSW 2486

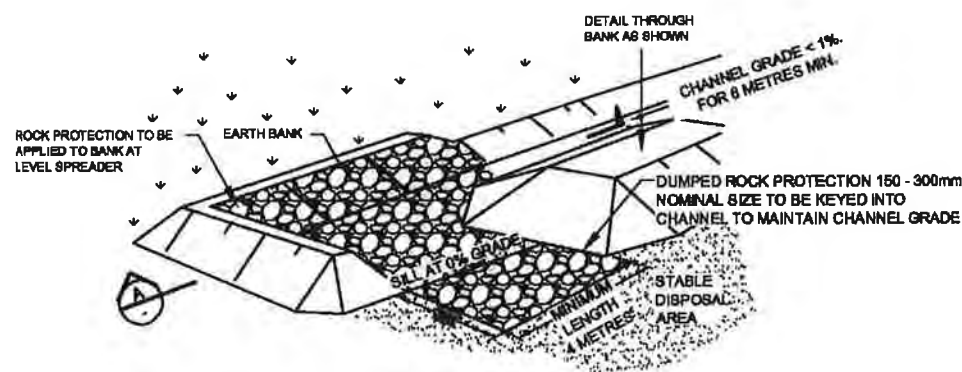
Telephone: (07) 5523 1755

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TYPICAL SECTION

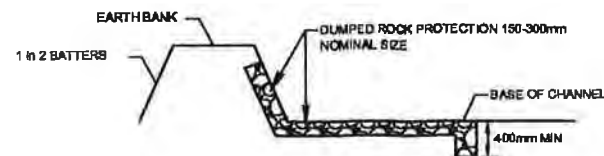


LEVEL SPREADER

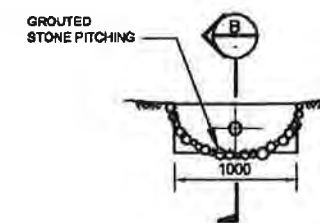
EARTH BANK DETAIL

SCALE N.T.S.

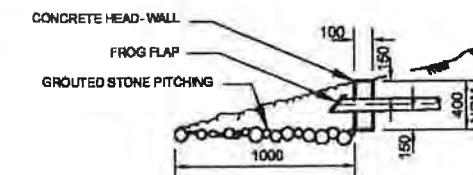
- NOTES:
1. CONSTRUCT DRAINS WITH CIRCULAR, PARABOLIC OR TRAPEZOIDAL CROSS SECTIONS RATHER THAN V SHAPED.
 2. CHANNEL AND LEVEL SPREADER TO BE MAINTAINED AFTER EVERY RAINFALL EVENT TO REMOVE ACCUMULATED SEDIMENT AND ENSURE INTEGRITY OF DUMPED ROCK.



SECTION A
SCALE N.T.S.

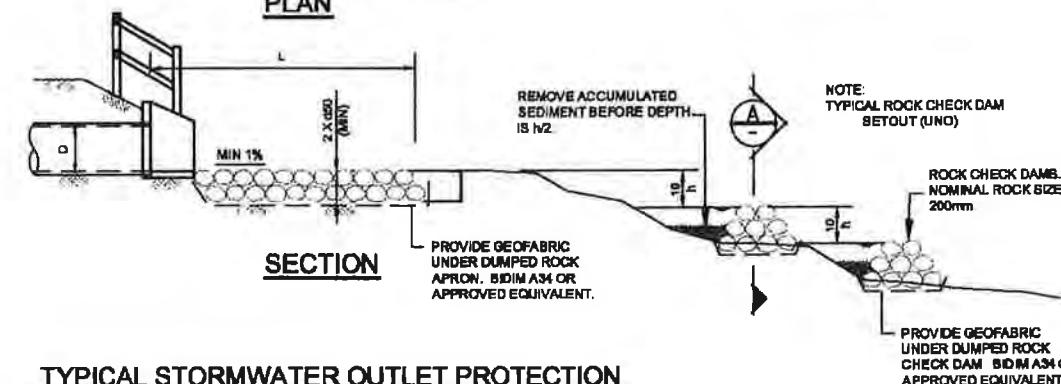
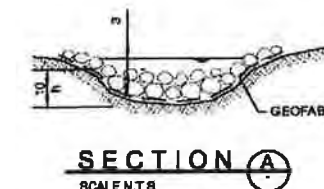
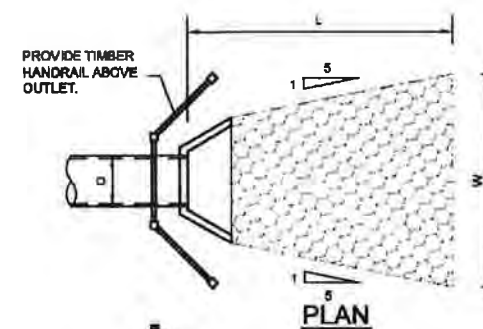


ELEVATION



SECTION B

OUTLET TO NATURAL SURFACE FOR PIPES < 225Ø
SCALE N.T.S.



TYPICAL STORMWATER OUTLET PROTECTION
SCALE N.T.S.

HEADWALL NOTES:

1. PRECISE LOCATION OF ALL OUTLETS TO BE CONFIRMED ON SITE BY SUPERINTENDENT PRIOR TO CONSTRUCTION. HEADWALLS TO BE LOCATED TO ACHIEVE MINIMUM DISTURBANCE AND IMPACT ON EXISTING VEGETATION.
2. ALL HEADWALLS TO BE INSTALLED IN ACCORDANCE WITH QDMR STD DWG 1305



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LES & JIM DICKINSON

PROPOSED RESIDENTIAL
SUBDIVISION

WALMSLEYS ROAD & STOTT STREET
BILAMBIL HEIGHTS N.S.W.

SKETCH SK20100921

PROPOSED ENERGY DISIPATOR &
LEVEL SPREADERS



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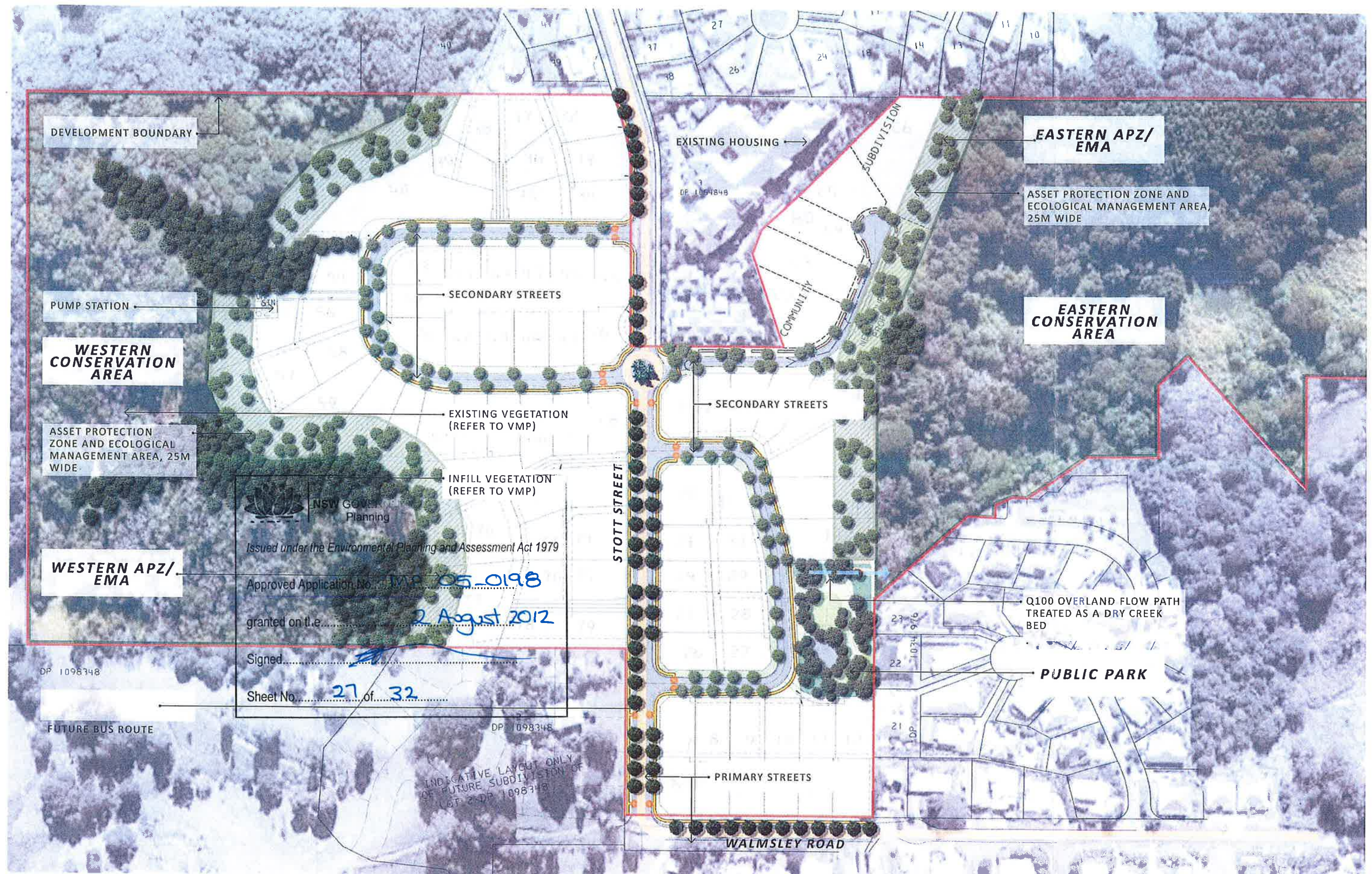


FIG. 01

LANDSCAPE MASTERPLAN

91105 | 08 DEC 10 | DA03 | NORTH | SCALE 1:2000 @ A3
PROJECT BILAMBIL HEIGHTS | CLIENT DICKINSON AND WALMSLEY

01 LANDSCAPE BACKGROUND

The existing landscape of Walmsley Road is that of old farming land on the crest of the ridge, largely cleared of original vegetation and

- Flanked on the east and west by steeper slopes covered with camphor laurel infested stands of vegetation, and
- Flanked on the north and south by standard suburban sub-divisions
- Within the camphor laurel forest are
- A number of identifiable vegetation communities of lesser extent as well as
- A number of small sites of rare or threatened endemic flora

The flora situation is described in the Ecological and Bushfire Planning Assessment of Lot 1 DP 167380, Lot 2 DP 961928 & Lot 4 DP 1054848 prepared by Biolink Ecological Consultants in June 2008.

02 LANDSCAPE OBJECTIVES IN THE VMP

In the current VMP (Proposed Vegetation Management Plan prepared by Biolink Ecological Consultants) one of the proposed objectives is

- Enhancing a measure of east-west connectivity across the proposed development precinct
- This objective states that tree species utilised for streetscape purposes should be
- Native rainforest species endemic to the local area and
- Selected from early-later secondary and mature phase rainforest species.

03 LANDSCAPE MASTERPLAN

A meshing of the subdivisional development objectives and the ecological objectives results in a landscape consisting broadly of

- A functional and visual street hierarchy consisting of
- Primary residential streets - a central road corridor (future bus route) connecting the existing residential subdivisions to the north and south of the site
 - Secondary residential streets and private roads
 - Residential allotments flanking the central road corridor
 - A small local park within the residential area
 - Large areas on the east and west sides of the site set aside as conservation areas to protect and maintain the EEC's (Endangered Ecological Communities)
 - APZ's (Asset Protection Zones) lying across the rear of the residential properties on the boundary of the conservation areas.
 - An east/west tree/fauna corridor lining the east/west roads connecting the major conservation areas including the EEC's

LANDSCAPE DESIGN INTENT

91105 | 08 DEC 10 | DA03

PROJECT BILAMBIL HEIGHTS | CLIENT DICKINSON AND WALMSLEY

04 LANDSCAPE PLANNING AND DESIGN RESPONSIBILITIES

The planning and design responsibilities for the overall landscape fall into two categories

- Landscape conservation works directed by Biolink Ecological Consultants - all works required in the conservation areas, the EEC's and the APZ's
- Urban landscape works directed by Form Landscape Architects - all public works within the sub-division area (other than APZ work) including streetscapes and the park. Within this document this is described as the Landscape Masterplan

05 URBAN LANDSCAPE STRATEGY

The design intent of the Landscape Strategy Plan is to enhance the public spaces of the proposed subdivision by creating a landscape that responds to various ecological, cultural and visual objectives. Specific intentions are

- To meet Objective 4 as stated in the VMP by providing an east/west tree/fauna corridor connecting the major conservation areas
- To utilise trees and other plant species that meet one or more of the criteria stated below. The more criteria that are met the better the selection.
- Species that are endemic to the area
- Species that are native and suitable to the regional bioclimate
- Species that are of low water requirement
- Species that are drought tolerant
- Species that are generally available through commercial plant nurseries
- To create a visual street hierarchy through appropriate tree selection and ground finishes
- To merge seamlessly with the local and regional landscape character of Bilambil Heights which includes both remnant rainforest and suburbia.

06 PLANT SUITABILITY LISTS

The lists displayed below are categorised according to the landscape situations on site and are drawn as much as possible from the Biolink reports and VMP for the site.

07 LANDSCAPE SITUATIONS

The principal landscape categories requiring different plant selections include

- The roundabout
- Primary streets - Walmsley Rd
- Secondary streets - other streets and private road
- The public park
- Park generally
- Better planting

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08 TREES TO THE ROUNDABOUT

The roundabout is to form a major visual focal point within the road network and will contain one or more iconic native rainforest trees such as native figs. Minimum planting container size should be 200L if planted as a single specimen or 100 L each for trees planted as a small cluster.

09 TREES TO MAJOR STREETS

To create a sense of street hierarchy the major streets will be lined with native rainforest trees having an iconic form and /or iconic colour such as Hoop Pine, Blue Quandong or Illawarra Flame Tree. Minimum planting container size should be 45L.

10 TREES TO SECONDARY STREETS

These streets should be less formal than the major streets and planted with a range of native rainforest trees to create the east/west fauna connections recommended by Biolink. Commonly available suitable street trees include Brush Box, Tuckeroo and Macaranga. Minimum planting container size should be 45L.

11 TREE PLANTING GENERALLY

Tree locations shown on plans are indicative of the proposed location and density. They are subject to detail study of roads and road conditions. Minimum planting container size should be 45L.

12 UNDERSTOREY PLANTING

Understorey planting generally will be plants native to the area where possible or native to the Tweed Valley Region. Planting categories consist of

- Shrubs for use in streets and parks
eg Acacia bakeri, Alpinia caerulea, Cordyline petiolaris, Cordyline stricta, Cyathea cooperi, Doodia aspera, Pittosporum undulatum, Syzgium australe, Westringia fruticosa
- Strap leaf clump forming plants to 1.0m high for use in streets and park
eg Dianella, Isolepis nodosa, Liriope, Lomandra hystrix, Lomandra longifolia

Ornamental grasses and sedges
eg Pennesetum, Poa, Isolepis nodosa

- Ground covers of various types
eg Hardenbergia violacea, Myoporum parviflorum
- Spreading ground covers for bank planting in park
eg Cissus antarctica

Minimum planting container size should be tube stock.

Minimum plant density should be an average of 4 plants per square metre.

13 TURF

The choice of turf should be one of the commonly available drought tolerant turf grasses such as

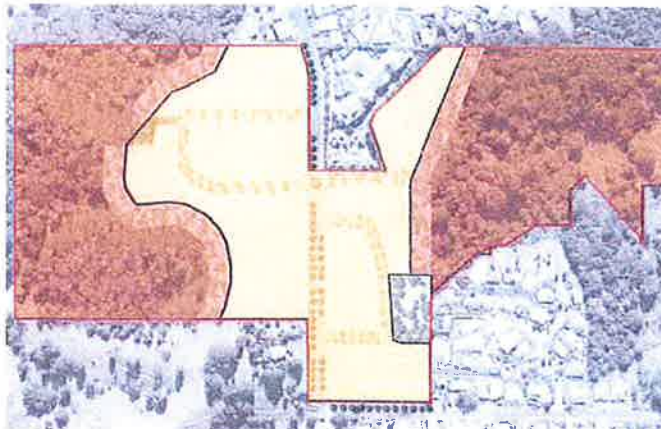
- Cynodon dactylon Green couch

14 GROUND FINISHES

The choice of ground finishes should reflect concerns for local character, the use of recycled materials and site specific functions including maintenance. Proposed finishes include

- Decorative gravel
- Hoop pine bark
- Recycled concrete or brick

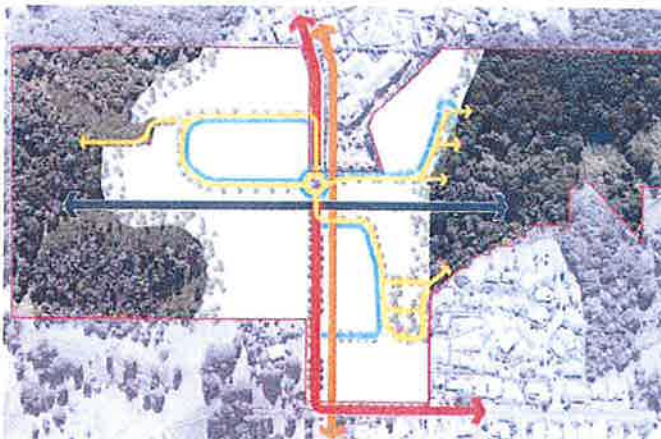
FIG. 02



LANDSCAPE PLANNING AND DESIGN RESPONSIBILITIES

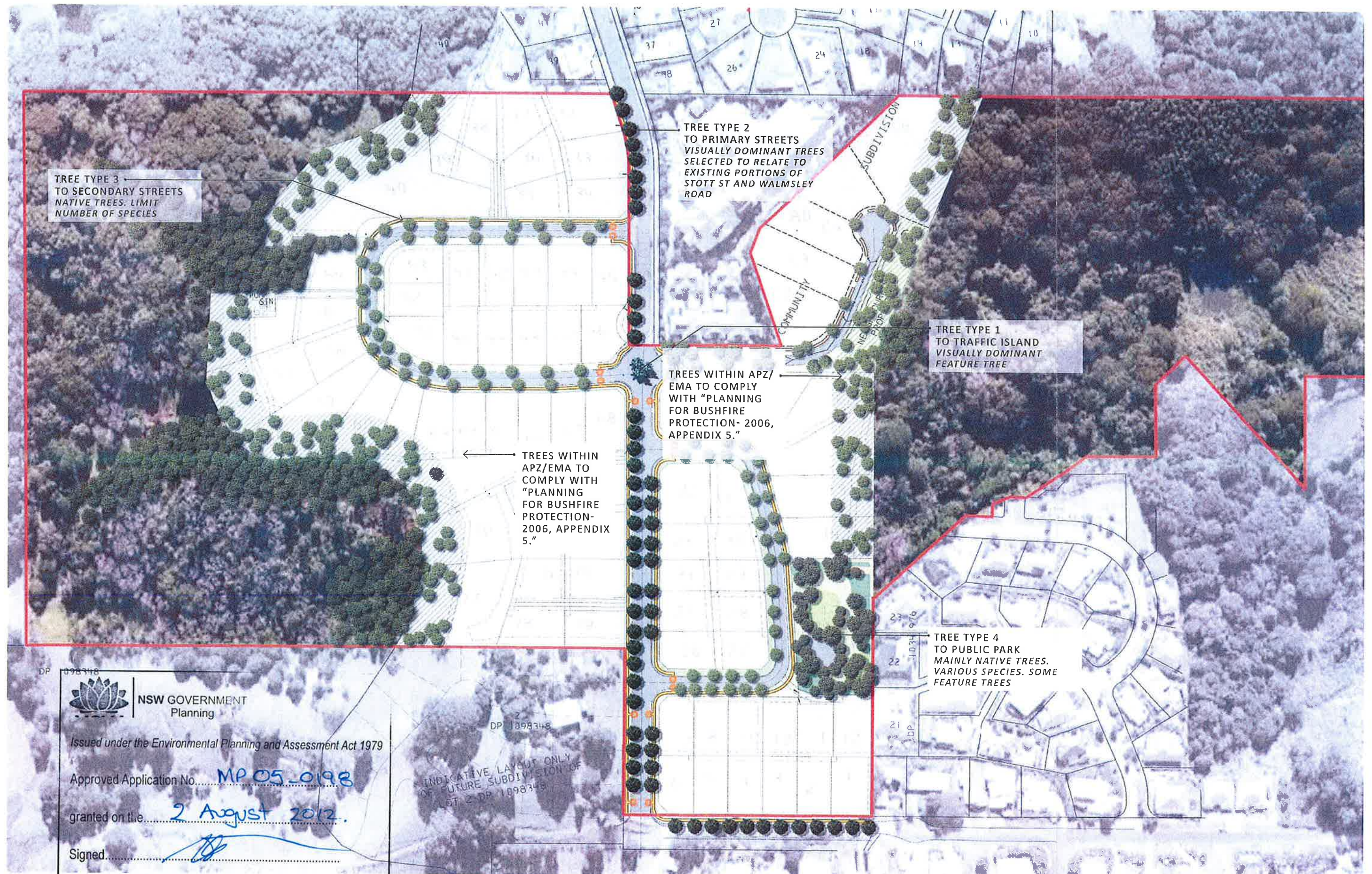
- LANDSCAPE CONSERVATION WORKS DIRECTED BY CONSULTING ECOLOGIST
- LANDSCAPE URBAN WORKS DIRECTED BY CONSULTING LANDSCAPE ARCHITECT

FIG. 03



URBAN LANDSCAPE STRATEGY

- EAST/WEST TREE/FAUNA CORRIDORS
- PRIMARY STREETS
- MERGE VEGETATION CHARACTER WITH CONSERVATION AREAS
- SECONDARY STREETS
- MERGE VEGETATION AND BUILT FORM CHARACTER WITH SURROUNDING SUBDIVISIONS
- TERTIARY STREETS



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LANDSCAPE MASTERPLAN – TREES IN PUBLIC PLACES

91105 | 08 DEC 10 | DA03 | NORTH  | SCALE 1:2000 @ A3
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NOTE: TREE NUMBERS AND SPACINGS ARE INDICATIVE ONLY.
FIG. 05

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FIG. 06



LANDSCAPE MASTERPLAN – PUBLIC PARK CONCEPT

91105 | 08 DEC 10 | DA03 | NORTH | SCALE 1:500 @ A3

PROJECT BILAMBIL HEIGHTS | CLIENT DICKINSON AND WALMSLEY

TREES - ROUNDABOUT		REF
Ficus obliqua	Small Leafed Fig	1
Ficus rubignosa	Port Jackson Fig	1
Ficus virens	White Fig	1
Ficus watkinsiana	Strangler Fig	1
TREES - PRIMARY STREETS		
Araucaria cunninghamii	Hoop Pine	1
Brachychiton acerifolius	Illawarra Flame Tree	1
Elaeocarpus grandis	Blue Quandong	
TREES - SECONDARY STREETS		
Alphitonia excelsa	Red Ash	1
Brachychiton acerifolius	Illawarra Flame Tree	1
Cupaniopsis anacardioides	Tuckeroo	1
Diploglottis australis	Native Tamarind	1
Elaeocarpus reticulatus	Blueberry Ash	1
Flindersia bennettiana	Bennetts Ash / Crows Ash	1
Lepiderema pulchella	Fine Leafed Tuckeroo	1, 2
Lophostemon confertus	Brush Box	1
Macaranga tanarius	Macaranga	1
Melaleuca quinquinervia	Broad Leaved Paperbark	1
Stenocarpus salignus	Fire Wheel Tree	1
TREES - PARK		
Alphitonia excelsa	Red Ash	1
Araucaria cunninghamii	Hoop pine	1
Archontophoenix cunninghamiana	Bangalow Palm	1
Brachychiton acerifolius	Illawarra Flame Tree	1
Corymbia intermedia	Pink Bloodwood	1
Cupaniopsis anacardioides	Tuckeroo	1
Diploglottis australis	Native Tamarind	1
Elaeocarpus reticulatus	Blueberry Ash	1
Eucalyptus microcorys	Tallowwood	1
Eucalyptus propinqua	Grey gum	1
Flindersia bennettiana	Bennetts Ash / Crows Ash	1
Lepiderema pulchella	Fine Leafed Tuckeroo	1, 2
Lophostemon confertus	Brush Box	1
Macaranga tanarius	Macaranga	1
Melaleuca quinquinervia	Broad Leaved Paperbark	1
Stenocarpus salignus	Fire Wheel Tree	1

UNDERPLANTING	
SHRUBS	
Acacia bakeri	Marblewood
Alpinia caerulea	Native Ginger
Cordyline petiolaris	Broad Leaved Palm Lily
Cordyline stricta	Narrow Palm Lily
Cyathea cooperi	Cooper's Tree Fern
Dianella caerulea	Flax/Paroo Lilly
Doodia aspera	Prickly Rasp Fern
Melaleuca thymifolia	Thyme-leaf Honey-myrtle
Pittosporum undulatum	Sweet Pittosporum
Syzigum australe	Lilly Pilly / Bush Christmas
Westringia fruticosa	Coastal Rosemary
Austromyrtus dulcis	Midgen Berry
Hovea acutifolia	Hovea
CLUMP FORMING PLANTS	
Dianella	Flax Lily
Isolepsis nodosa	Knobby Club Rush
Liriope	Liriope
Lomandra hystrix	Slender Mat Rush
Lomandra Little Joey	Dwarf Lomandra
Lomandra longifolia	Mat Rush
ORNAMENTAL GRASSES	
Pennisetum	
Poa	
Isolepsis nodosa	Knobby Club Rush
GROUND COVERS	
Hardenbergia violacea	Happy Wanderer
Myoporum parviflorum	Creeping Boobialla
SPREADING GROUND COVERS	
Cissus antarctica	Kangaroo Vine

- References
- Species present on site in existing simple notophyll rainforest. Identified in Ecological & Bushfire Assessment report by Biolink Ecological Consultants dated June 2008.
 - Species present on site and classed as threatened flora. Identified in Ecological & Bushfire Assessment report by Biolink Ecological Consultants dated June 2008.



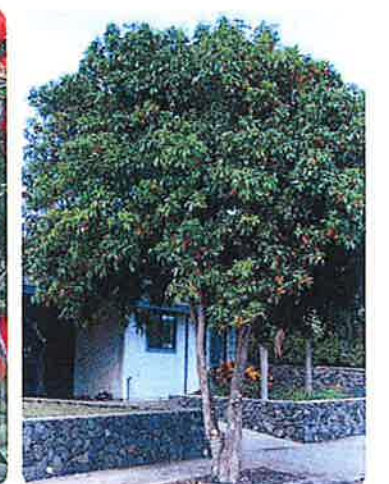
ARAUCARIA CUNNINGHAMIA
HOOP PINE



BRACHYCHITON ACERIFOLIUS
FLAME TREE



CALLISTEMON VIMINALIS
BOTTLEBRUSH



CUPANIOPSIS ANACARDIOIDES
TUCKEROO



WATERHOUSIA FLORIBUNDA
WEEPING LILLY PILLY



SYZYGIIUM LEUHAMII
SMALL LEAVED LILLY PILLY

PLANT SUITABILITY LIST

91105 | 08 DEC 10 | DA03

PROJECT BILAMBIL HEIGHTS | CLIENT DICKINSON AND WALMSLEY

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