

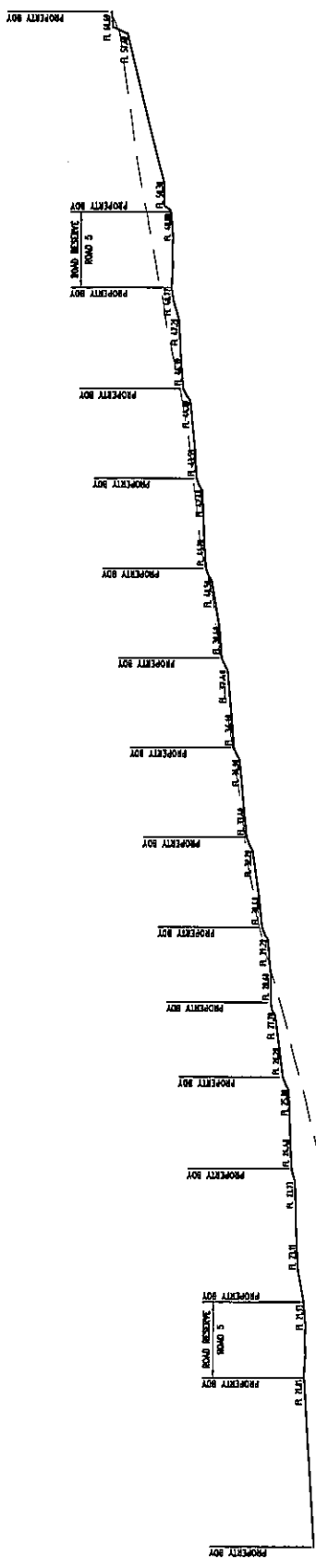
SK2760
 METRICON 8
 17-11-2010
 09-374
 D.A. PROJECT APPL. No. MP09-0165



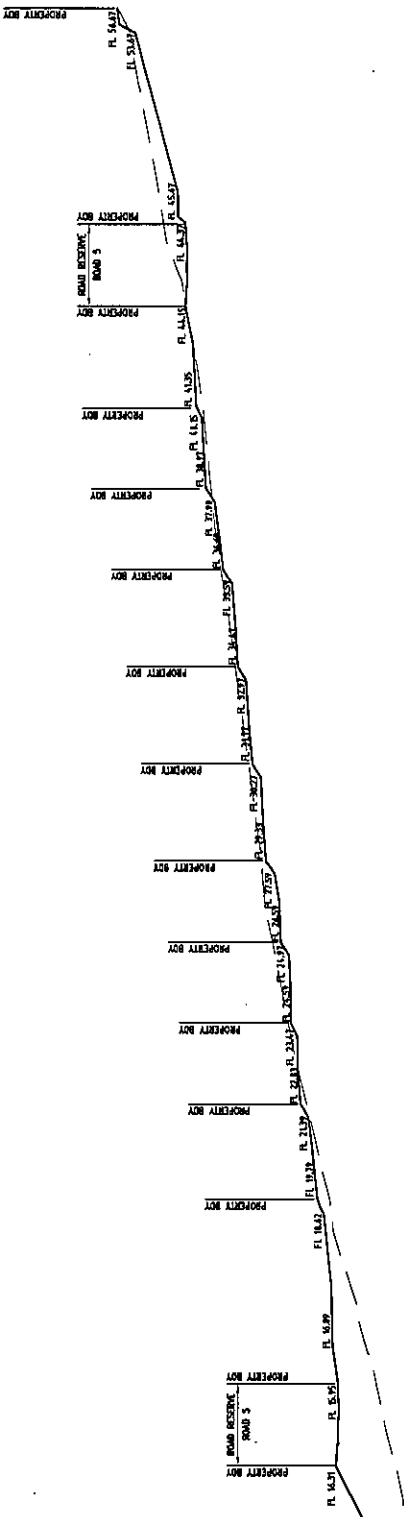
BradLees
 CONSULTING

METRICON (QLD) PTY LTD
 ALTITUDE 1 - FRASER DRV. TERRANORA
 BUILDING PAD LAYOUT & SECTIONS
 Sheet 3 of 3





DATUM RL - 11



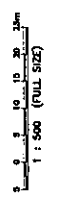
DATUM RL - 11

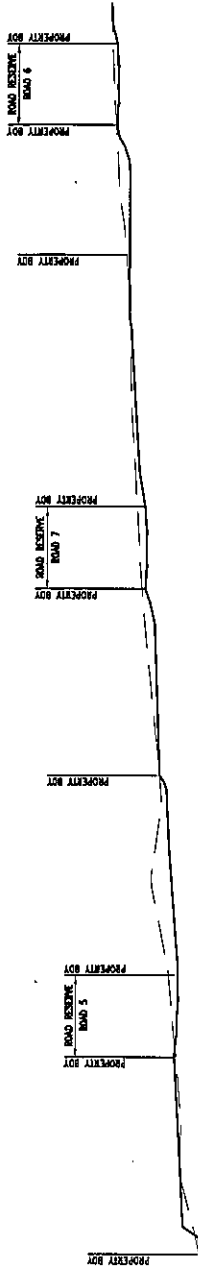
D.A. PROJECT APPL. No. MP09-0166
09-374

SK2761
REVISION 6
17-11-2010

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CONSULTING

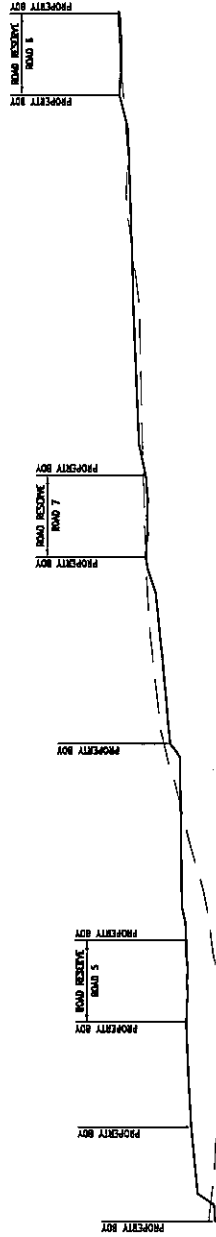
METRICON (QLD) PTY LTD
ALTITUDE 1 - FRASER DRY, TERRANORA
BUILDING PAD SECTIONS
Sheet 1 of 2





DATUM PL. 64

SECTION **F6**
SCALE 1:500



DATUM PL. 54

SECTION **F7**
SCALE 1:500

METRICON (QLD) PTY LTD
ALTITUDE 1 - FRASER DRY, TERRANORA
BUILDING PAD SECTIONS
 Sheet 2 of 2

D.A. PROJECT APPL. No. MP09-0186
09-374
 30-04-2010
 RICHMOND A



APPENDIX 13

- 09-374 – SK2763 Bulk Earthworks Staging Plan

PRELIMINARY EARTHWORKS VOLUMES

STAGE	CUT Vol. m ³	FILL Vol. m ³
1	137,900	31,800
2	63,700	117,000
3	320,200	347,300
TOTAL	521,800	496,100

NOTE:
EARTHWORKS VOLUMES ARE APPROXIMATE SOLID VOLUMES ONLY AND SUBJECT TO FINAL DETAIL DESIGN.

LEGEND

- FILL 5m to 13.5m
- CUT 5m to 8.0m
- STAGE 1 EARTHWORKS
- STAGE 2 EARTHWORKS
- STAGE 3 EARTHWORKS

EARTHWORKS AREAS

TOTAL SITE AREA = 34.32 ha
 CUT AREA >5.0m HEIGHT = 1.67 ha
 FILL AREA >5.0m DEPTH = 4.38 ha*
 % OF TOTAL AREA >5.0m = 17.8%*
 * INCLUDES THE AREA OF FILL SPECIFIC TO THE RAISING AND FORMATION OF THE CENTRAL OPEN DRAIN = 3.15ha



METRICON (QLD) PTY LTD
ALTITUDE 1 – FRASER DRY, TERRANORA
EARTHWORKS STAGING PLAN

D.A. PROJECT APPL. No. WPO9-0166
 09-574
 17-11-2010
BradLees
 CONSULTING
 SK2763
 REVISION 8
 17-11-2010

APPENDIX 14

- Extract from Report by Parsons Brinckerhoff

3.13.4 Recommendations

There are opportunities within Area E to include a diverse number of passive and active recreational open space areas with accessible locations and flexibility for the changing needs of the population. The proximity of the Market Parade and Glen Ayr Drive open spaces presents the opportunity to form an open space linkage.

Although the lot yield and population for Area E has not been established, open space will be provided at approximately 4ha of open space per 1,000 head of population.

3.14 Services

3.14.1 Water supply

3.14.1.1 Bulk water Supply

Tweed Shire Council has a strategy for providing bulk water supply for up to 160,000 population in the Shire, with connections currently provided to approximately 65,000 population. Council's strategy includes options for raising Clarrie Hall Dam to increase storage capacity and the construction of an additional dam at Byrill Creek where Council has already purchased approximately 80% of the land required.

With recent legislative changes and drought events in the Shire, Tweed Shire Council is re-examining options for providing bulk water supply. A critical aim of this review is to ensure that bulk water supply for future population will be sustainable. Council has currently commissioned a study to prepare and integrated water cycle plan and it is likely that as a result of this study that estimates for population able to be supplied with bulk water will be revised down. This study will examine Council's current strategy for bulk water supply and investigate the impacts of introducing new measures for water conservation and control (D Oxenham, pers. comm., 2004).

This should not effect development with a short time horizon such as Area E but may have impacts on development in the Shire with a longer time horizon.

3.14.1.2 Supply to Area E

The water supplied in the vicinity of Area E comes from Clarrie Hall Dam via the Bray Park filtration plant through to the North Tumbulgam reservoir (Martin Findlater & Associates Pty Ltd, 1995).

A water conveyancing master plan prepared by GHD in 1999 based on developments scheduled to have taken place by 2011, which are in addition to the general increase in population, included a 4,000 EP development on Area E. This study indicated a number of capital works in the water supply system required to service the 2011 population but none specifically for Area E.

GHD's conveyancing study was conducted based on a peak day demand of 850L/person/day and an average day demand of 450L/person/day (GHD 1999).

The Duroby main is a 600 mm water main that traverses the northern boundary of Area E and is supplied from the North Tumbulgum reservoir (Alex Abedrabbo, pers. comm., 2003). In addition to the Duroby main there is a second 150mm (pers comm. Alex Abedrabbo, 26th June 2003) water main that runs along the southern boundary of Area E along Terranora Road, with two reservoirs at Rayles Lane (GHD 1999). The GHD analysis was undertaken assuming that the Duroby main would supply 3,000 EP while the Terranora Road main would supply 1,000 EP (GHD 1999).

The GHD report was based on trunk mains and although it shows that there is generally sufficient pressure to supply the future water demands in the distribution system after required capital works, it did not extend to the minor reticulation system. Hence, it did not identify areas of low or high pressure within Area E. There is no requirement for a reservoir on Area E identified in the GHD report (GHD 1999), however the Draft Interim Strategic Plan - Cobaki/Bilambil Heights/Terranora (TSC, 1995) stated that a site of sufficient size for a 5ML reservoir was required on site to service the area (TSC, 1995). The requirement for a reservoir has been confirmed by Council staff however it has been advised that only a 3 ML reservoir will be required within the site (Alexandra Abedrabbo, pers comm., June 2003).

Discussions with TSC have identified that the 600 mm Duroby main is the preferred water supply for Area E and a pipeline connecting the proposed 3ML reservoir with the 600mm Duroby main will be required (Alexandra Abedrabbo pers comm. June 2003). There is sufficient capacity from the North Tumbulgum reservoir to service Area E, provided a reservoir is constructed on site (Alex Abedrabbo pers comm. June 2003).

The North Tumbulgum reservoir is at approximately 115 m AHD. The recommended elevation within Area E for a reservoir is 130 m AHD. While the majority of the site is lower than the North Tumbulgum reservoir, a booster pump from the 600mm Duroby main to the reservoir may be required. A network analysis including main and booster pump (if required) sizing will therefore be necessary.

The footprint required for a 3 ML reservoir, which is approximately 30 m in diameter involve 1000m². The land required for the 3 ML reservoir must be provided by the proponents for rezoning of the land at no cost to the community (TSC, 1995).

The footprint for the reservoir including some allowance for construction on slope and access requirements is 0.25 ha. The preferred location for this reservoir is in the vicinity of the intersection of Terranora Road and Mahers Lane. The approximate cost for a 3 ML reservoir is \$665,000 (Land & Water Conservation, 1999). This cost does not include land acquisition and power supply. Costs for the provision of the reservoir, pipeline and booster pumps will be required to be met by developers within Area E. Internal reticulation of water will also be required to be constructed by developers.

Developers will also be required to pay Tweed Shire Council's 2003/2004 developer charges for water of \$4110.00 per single equivalent tenement (TSC, 2003).

Figure 3.40 identifies water supply infrastructure.

3.14.2 Sewerage

The Banora Point Sewage Treatment Plant (STP) has an existing capacity to treat 62,500 equivalent persons (EP) with a license to discharge 50,000 EP. The current load on the Banora Point STP is approximately 45,000 EP.

APPENDIX 15

- History of Consultation with Tweed Shire Council

File Note

Wednesday 17 March 2010

Subject: Area E - 300 Lot Development by Metricon
Meeting with BradLees Consulting
File Reference: MP09_0166
Time: 10:30am
Date of occurrence: 11 March 2010
Present: Brian Lees, Fredy Rey (BradLees Consulting),
Peter Pennycuick (TSC Water Unit)

BradLees Consulting requested the meeting to discuss water supply and sewerage issues in relation to the above project. This project is the first to application within the Area E urban release area and is located at the eastern end of the area bounded by Fraser Drive and the Parkes Lane area.

Water Supply:

PP advised that the strategy for water supply for the whole of Area E relied upon a reservoir to be constructed by the developers in the south-western corner of the development area with all the area below about contour 110 m AHD to be serviced by that reservoir. The balance above that level can be serviced from the existing Rayles Lane Reservoir. There is no spare capacity in the Chambers Reservoir to serve any of the proposed development area. This presents a difficulty for development beginning on the eastern end of the area.

BL advised that it was not practical to proceed with the reservoir at the initial stage and that it had been understood from the Parsons Brinkerhoff study that initial supply could be obtained from Fraser Drive.

PP advised he was not aware of that particular advice.

PP suggested that it may be possible to obtain a temporary supply from the 600mm trunk main on the northern edge of the site, but that the hydraulic grade line could vary significantly, particularly once Cobaki Lakes begins to draw significant amounts of water from the system. A pressure reducing valve would be necessary as the static pressure in the main will exceed the maximum pressure for the attached reticulation system during periods of low demand in the network. Approval for this possible interim connection could only be given for a limited period as the uptake in Cobaki Lakes and other development in the northern area would increase the likelihood of inadequate pressure as time goes on, and would depend upon detailed modelling of the system.

BL requested advice on the hydraulic grade line under various conditions.

Sewerage:

PP advised that the strategy for sewerage this area had been included in the Banora Point Sewerage Strategy Study 1999. A pdf version was supplied to FR.

This provided for a regional sewer pump station (SPS) generally in the lowest part of this particular development proposal. Sewerage from areas west that could not gravitate to this pump station would require a local SPS to transfer it to this pump station. Flow from Terranora Village would be diverted into this regional SPS and initially re-pumped through the existing main. The strategy provided for a couple of alternative interim arrangements

with the final development requiring a new trunk main from the regional SPS to the Banora Point Wastewater Treatment Plant.

The option of providing a local sewer pump station in the low point of this development and the regional SPS in the larger valley of Area E was discussed and considered feasible.

BL suggested that the small SPS could perhaps be connected to the same discharge manhole in Fraser Drive as the Terranora Village SPS.

PP advised that this would depend upon the capacity of

- a) the gravity sewer
- b) SPS3018
- c) SRM3018 (150 and 250 combined).

PP advised that the gravity sewer has good capacity in the steeper sections but that it may be marginal once it reaches the flatter sections of Fraser Drive. The capacity of SPS3018 will need to be verified.

Peter Pennycuik
Strategic and Assets Engineer
Water Unit

Brian Lees

From: Fredy Reys
Sent: Monday, 22 March 2010 10:10 AM
To: Brian Lees
Subject: FW: Area E - 600mm trunk main hydraulic grade line
Attachments: image001.png; image002.png

FYI

Should you require any further information please do not hesitate to contact our office.

Regards

Fredy

Fredy Reyes
Civil Designer
for and on behalf of
BradLees Consulting

Level 1, 34 Thomas Drive, Chevron Island QLD 4217 - PO Box 2293, Southport QLD 4215 Ph. 07 5528 6411 Fax 07 55286422
8 Pikki Street, Maroochydore QLD 4558 - PO Box 1722, Sunshine Plaza QLD 4558 Ph. 07 5451 1994 Fax 07 5451 1963
Unit 29, 11 - 13 Pearl Street, Kingscliff NSW 2487 - PO Box 1623, Kingscliff NSW 2487 - Ph 02 6674 8133 Fax 02 6674 5003

From: Peter Pennycuick [mailto:PeterP@TWEED.nsw.gov.au]
Sent: Friday, 19 March 2010 10:36 AM
To: Fredy Reys
Cc: Cheryl Jackson
Subject: Area E - 600mm trunk main hydraulic grade line

Fredy, Brian,

Further to your request for hydraulic grade line data in relation to the 300 Lot subdivision you are looking at in Area E, please note the following information extracted from our conveyancing network model.

This relates to Junction 3575 which is approximately 90m west Lot 1 DP798632 where the main turns northward. Existing ground level approximately 1.0m

2011 Average Day Scenario - Max Head 113.9m AHD	Min Head 96.7m AHD
2011 Maximum Day Scenario - Max Head 113.9m AHD	Min Head 87.4m AHD
2021 Average Day Scenario - Max Head 113.9m AHD	Min Head 95.1m AHD
2021 Maximum Day Scenario - Max Head 113.8m AHD	Min Head 83.8m AHD

113.94m AHD represents the operational TWL of the North Tumbulgum Reservoir that supplies the trunk main.

Hence, supply from the trunk main would require a PRV to limit maximum pressure in the lower areas, but it could not be used to give reliable supply to the higher areas of the development, say above 60m AHD.

To make the temporary connection work for higher areas, a temporary booster pump system might be necessary, but this could not guarantee fire flows at hydrants if the fire coincided with a blackout (which I have seen happen).

If the high area were to obtain supply from Chambers reservoir (which is currently over committed already), it is likely that a temporary booster would be needed for the highest areas (above 70m AHD) anyway. We might be able to add just the very top section to Chambers on a temporary basis with a temporary booster system, but like the connection to the 600mm trunk main, it would have to be for a strictly limited period.

Another point in relation to the design of the water reticulation system, the connection to the future supply from the 3ML reservoir should be included in the design of the subdivision and provided during construction.

(Cheryl, please register this email.)

Peter Pennycuick | Strategic and Assets Engineer
Community and Natural Resources - Water Unit



p (02) 6670 2638 | f (02) 6670 2751 | e peterp@tweed.nsw.gov.au | w www.tweed.nsw.gov.au
Civic and Cultural Centre Tumbulgum Road Murwillumbah NSW 2484 | PO Box 816 Murwillumbah NSW 2484 | ABN: 90 178 732 496

Customer Service: (02) 6670 2400 | 1300 292 872

Our values: transparency | customer focus | fairness | reliability | progressiveness | value for money | collaboration

Please consider the environment before printing this email. One tonne of paper is equivalent to 13 trees and 30 PL of water.

From: Fredy Reys [mailto:Fredy@bradlees.com.au]
Sent: Wednesday, 17 March 2010 4:01
To: Peter.Pennycuick
Subject: RE: File Note BradLees Consulting Mtg 11-3-2010.doc

Hi Peter,

Thanks for the information/meeting.

Should you require any further information please do not hesitate to contact our office.

Regards

Fredy

Fredy Reyes
Civil Designer
for and on behalf of
BradLees Consulting

Level 1, 34 Thomas Drive, Chevron Island QLD 4217 - PO Box 2293, Southport QLD 4215 Ph. 07 5528 6411 Fax 07 55286422

8 Pikki Street, Maroochydore QLD 4558 - PO Box 1722, Sunshine Plaza QLD 4558 Ph. 07 5451 1994 Fax 07 5451 1963

Unit 29, 11 - 13 Pearl Street, Kingscliff NSW 2487 - PO Box 1623, Kingscliff NSW 2487 - Ph 02 6674 8133 Fax 02 6674 5003

From: Peter Pennycuick [mailto:PeterP@TWEED.nsw.gov.au]
Sent: Wednesday, 17 March 2010 2:05 PM
To: Fredy Reys
Subject: FW: File Note BradLees Consulting Mtg 11-3-2010.doc

Fredy, Brian,

Attached is my file note from our meeting last Thursday.

Peter Pennycuick | Strategic ad Assets Engineer
Community and Natural Resources - Water Unit



p (02) 6670 2638 | f (02) 6670 2751 | e peterp@tweed.nsw.gov.au | w www.tweed.nsw.gov.au

ALTITUDE 1
Subject: Minutes of DAP Meeting
Tweed Shire Council
26 March 2010.

File: 09-374

2. APPOINTMENT:

Addressed By: Darryl Anderson - Darryl Anderson Consulting, Neil Sutherland – Gilbert Sutherland, Brian Lees – Bradlees Consulting, Stuart Campbell, Shaun Nicholson – Metricon QLD Pty Ltd

Postal Address: Suite 7, Corporate House, 8 Corporation Circuit, Tweed Heads South, NSW, 2486

Present: Messrs Rowena Michel, Acting Manager Development Assessment; Danny Rose, Planning & Infrastructure Engineer; Barry Stegeman, Acting Manager Building & Environmental Health, John Zawadzki, Traffic/Infrastructure Engineer, Mick Denny, Senior Development Engineer and Kristin-Lee McIntyre (recorder)

Property Description: Lot 1 DP 304649, Lot 1 DP 175235, Lot 1 DP 781687, Lot 2 DP 778727, Lot 1 DP 781697, Lot 1 DP 169490 and Lots 40 & 43 DP 254416, Fraser Drive Terranora.

Land No:

Proposal: Proposed 300 Lot Subdivision (Major Project 09_0166 Altitude 1 Development at Terranora). This proposal known as Altitude 1 forms part of the broader Urban Release Area known as AREA E.

Comments:

1. Planning Comments

Issues:

Permissibility

- The land is zoned 2(c) Urban Expansion and 7(a) Environmental Protection (Wetlands and Littoral Rainforests) under Tweed LEP 2000 and the proposed development is permissible with consent. The Tweed LEP 2000 is available on Council's website at www.tweed.nsw.gov.au/planningservice/TweedLEP2000.pdf.

Part 3A Assessment

The DOP has identified the proposal as subject to a Part 3A assessment and issued Director General's Requirements for the proposal (refer attached) The DOP is the consent authority however council officers raise matters of concern below. Details in relation to these matters are attached.

Relevant SEPP's and referrals

- The site is located within the Coastal zone and State Environmental Planning Policy No. 71 applies.
- SEPP 14
- Any works within 40m of a waterbody should be referred to the Department of Environment Climate Change and Water.
- The site is bushfire prone and should be referred to the Rural Fire Service.
- SEPP (North Coast Regional Environmental Plan) 1988, particular attention is drawn to Clause 32(b)(4) in relation to overshadowing of coastal foreshore open space

- Provision of water. Note that further discussions are required on the comments in relation to water. Council officers agreed to organize a further meeting with Anthony Burnham, Manager of Water in conjunction with discussions in relation to traffic and roads as above.
- Requirements in relation to Sewer
- Landforming
- Stormwater concerns and lawful point of discharge.
- Internal road geometry

Additional plans and details required in the Environmental Assessment should include (but is not limited to the following):

- Historical land uses and contamination risks (A DECCW Accredited Site Auditor would be required to oversee the contamination investigation and remediation)
- Site Audit Statement certifying the land is suitable for the proposed use.
- Geotechnical stability of the land.
- Flora and Fauna assessment addressing: fauna-wildlife corridor values of the site, wetland conservation value – wetland corridor values of the site, threatened flora recorded in the vicinity should be targeted in surveys, threatened fauna should be addressed, key fish habitat values should be addressed, SEPP 14 wetland and buffer should be addressed, proposed clearing of native vegetation and fauna habitat, effects to groundwater, proposed avoidance, mitigation and or compensatory measures proposed.
- Proposed works including cut and fill and location/depth of retaining walls/batters.
- A statement of landscaping intent should be provided.
- The application should include a site analysis identifying surrounding land use, site constraints and opportunities (etc).
- Visual analysis

Heritage: Aboriginal

- The Tweed Shire area has a rich history of former Aboriginal settlement and activity. Under strict cultural protocols, the surveyed evidence of known and potential sites of Aboriginal significance is kept confidential among the local Aboriginal community as well as the NSW State Government's National Parks and Wildlife Service. These sites often contained highly significant items or relics which require careful and specialised investigation and conservation management.

The Tweed LEP 2000 contains specific provisions which sets out the planning processes required for development proposals affecting those known or potential sites of Aboriginal heritage significance. Such development will require a cultural heritage investigation as part of any DA or rezoning, consultation with the local Aboriginal community, and may also require Integrated Development approval from the Department of Environment, Climate Change and Water (DECCW).

If you wish to check if any property you are interested in is affected by the above issues, you should contact either the Tweed Byron Local Aboriginal

Attachment – DAP Appointment – 26 March 2010

Traffic Issues

Traffic network planning for Area E is reliant on Broadwater Parkway, and its eastern connection to Fraser Drive, at a location yet to be confirmed. The proposal attempts to remain independent of Broadwater Parkway, and provide a "temporary connection" to Fraser Drive approximately 120m north of the existing Parkes Lane intersection.

This proposal is not supported by Council. There is no certainty that the future Broadwater Parkway will ever be constructed "by others". The alignment of the Broadwater Parkway has yet to be confirmed, let alone approved, given the environmental, slope, and probable geotechnical constraints. While construction of the Parkway presents difficulties for the proponents due to the multiple land ownership in Area E, it is considered to be a reasonable requirement given the proposal's location at the eastern extent of the urban release area, adjacent to Fraser Drive.

Previous concept plans have shown a road connection to Fraser Drive north of Terranora Road however this was only anticipated to be a minor connection which would be subject to left in – left out traffic control without impacting on the existing Parkes Lane and Glen Ayr Drive intersections with Fraser Drive. It has always been considered by Council to be an additional connection to Fraser Drive, not an alternative to Broadwater Parkway.

The subdivision will generate about 258 vehicles per hour at peak hour. This is a significant 'temporary' traffic volume.

Council shall oppose the subject subdivision unless approval for and construction of Broadwater Parkway from (and including) the Fraser Drive intersection to the north to at least the proposed roundabout adjacent to Stage 7 is included in the proposal. This necessitates involvement of landholders of Lot 1 DP 814255, Lot 2 DP 713031, Lot 3 DP 713031, Lot 1 DP 798632, and possibly Lot 2 DP 814255 depending on final alignment.

The proposed Broadwater Parkway connection with Fraser Drive will need to:

- Accommodate all traffic from the proposed subdivision
- Be readily upgradable to a signalised intersection for future stages of development in the Area E urban release area
- Accommodate the future four-laning of Fraser Drive. The proponents are not required to carry out four-laning of Fraser Drive, but would still be required to provide any necessary widening for turning lanes etc. on Fraser Drive to service the subdivision.

The applicant must dedicate the road reserve and provide a detailed design for the remainder of Broadwater Parkway to the western extent of Stage 10 of the subdivision. The detailed design must demonstrate compliant vertical and horizontal alignments, and this may result in amendments to the proposed subdivision layout. For example, the relatively sharp corner shown for the Broadwater Parkway at the north western corner of the proposal is unacceptable as a 150m radius minimum corner is required for a 70 km/h design speed, or 90m radius for a 60km/h design speed. This requires changes to the Stage 9 and 10 design. The western termination

Stormwater Issues

The subdivision discharges its stormwater via a central drainage reserve onto private land (Lot 227 DP755740). The applicant must demonstrate that this is a lawful point of discharge for stormwater, by obtaining owners consent or creating easements. This issue is essential for compliance with DCP A5 - Subdivision Manual, and therefore Council's support for the subdivision.

If this first issue can be resolved, the applicant must demonstrate that the stormwater discharge onto Lot 227, which contains SEPP 14 wetlands, is suitable in terms of water quality and quantity. This will require compliance with:

- Development Design Specification D7 - Stormwater Quality (currently under review to adopt "Water By Design" best practice WSUD from SEQ)
- Any additional ecological constraints regarding the SEPP 14 environment.

Further consideration of the provisions of the Cobaki-Terranora Broadwater CEMP regarding impacts of the development on Trutes Bay should be provided.

All stormwater infrastructure upstream of Lot 227 must assume zero future maintenance of any discharge flow paths or channels through Lot 227, due to environmental constraints. This must be considered in tailwater assumptions for hydraulic design of the subdivision.

Erosion and sediment control is also essential to protect the downstream environment from adverse impacts. An erosion and sediment management plan is required and must consider the construction stages of the subdivision, as well as measures to ensure adequate control during the house building phase throughout the subdivision, such as temporary sediment basins.

A stormwater management plan is required to address all of these issues.

The subdivision design does not properly consider stormwater measures required to protect residential land from overland flooding. House lots are located at the bottom of steep roadways, without any allowance being made for continuing overland flow paths through to the drainage reserve (e.g. lots 605, 606, 715, 716, 720, 721, 1021, 1022). Stage 4 also appears to require a drainage reserve in the vicinity of lot 431 through to the north west to cater for major storm flows. To properly address this overland flow issue, significant amendments to the lot and road layout are needed.

Section 94 Issues

The Department of Planning's \$20,000 cap per allotment on developer contributions will significantly affect the delivery of key community infrastructure in Area E. Prior to introduction of the cap, Area E was subject to contributions in excess of \$20,000, due largely to a Local Area Contribution (LAC) for Broadwater Parkway in the Tweed Road Contribution Plan (CP No.4). Council applied unsuccessfully for a variation to the cap for Area E, citing the land constraints and the need to provide the Parkway in an equitable and orderly manner, however this request was denied by the Planning Minister. As such, the LAC cannot be applied, and the applicant will therefore be responsible for delivery of the eastern portion of the Parkway without any ready means of recouping this investment from other benefitting landholders in the urban release area.

Sewer:

The sewerage strategy for this area is for a regional pump station to be located in the low area from which sewage would be pumped in a new sewer rising main to the Banora Point Wastewater Treatment Plant. Several interim solutions were proposed which would enhance the capacity of the existing sewer rising main (SRM) from Terranora Village to the BPWWTP.

Bradlees Consulting has proposed a different interim solution based on the proposed development. It would have a local sewer pump station (SPS) that would pump through a new SRM to the same gravity sewer manhole into which the existing Terranora SRM discharges.

The viability of this would depend upon the capacity available in the flatter sections of the gravity system, SPS3018 and SRM3018 which currently pumps through two parallel SRM to BPWWTP.

Detailed analysis including testing of the SPS is required before this option can be approved. It is unlikely that here will be adequate long term capacity, but this may be a short term interim solution, with the permanent discharge being to the proposed regional SPS.

Provision within the sewer reticulation is required for the connection of the Parkes Lane area to sewer at a later date.

Relocation of Existing Services

It has been suggested that pending detailed design, the existing trunk water main and sewer rising main through Area E may need to be relocated to be in a more suitable location and not excessively deep. No information as to the final levels of the development in relation to the existing services is currently available to Water Unit, so the proponent should be alerted to the potential issue.

Common Works

The proposed 3 ML Reservoir, Water Pump Station and pumping mains are common to all of Area E and within the LES (PB 2004) are proposed to be funded and constructed by the developer.

Accordingly, it would be advantageous for all involved developers to come to a cost sharing agreement for these works.

The Regional SPS and SRM however are likely to be funded by S64 contributions or in the case of a developer constructing the wet well S64 contributions may fund the marginal difference in the construction of the larger wet well.

Contaminated Land

The site has been previously used for cropping for a number of years. Given this history and the intended high yield residential use proposed for the site, a DECCW Accredited Site Auditor would need to be engaged to oversee the contamination

existing overland drainage opportunities which is in accordance with WSUD objectives.

- The EA should address impacts of increased traffic on the existing local street network.
- The internal road layout must maximise connectivity internal to the development and external to future and existing urban development.

Environmental Impacts

- Flora and Fauna assessment is required, addressing: fauna-wildlife corridor values of the site, wetland conservation value – wetland corridor values of the site, threatened flora recorded in the vicinity should be targeted in surveys, threatened fauna should be addressed, key fish habitat values should be addressed, SEPP 14 wetland and buffer should be addressed, proposed clearing of native vegetation and fauna habitat, effects to groundwater, proposed avoidance, mitigation and or compensatory measures proposed. Various relevant ecological mapping included below.
- The EA should address how the adjoining wetlands or any areas proposed to be dedicated to Council will be managed, given Council does not have the resources for on-going maintenance costs.
- Erosion and sediment controls for the subdivision and subsequent building works must be addressed, with particular regard to the sensitivity of the receiving water body (SEPP14).

Brian Lees

From: Jenny [jenny@daconsulting.com.au]
Sent: Friday, 9 April 2010 9:46 AM
To: Stuart Campbell; Shaun Nicholson; sutherland.nm@groupgs.com; Brian Lees
Subject: FW: Altitude 1
Attachments: image002.jpg; image001.jpg; Option 2.pdf; Option 1.pdf

Brian

Thanks for that correction, updated version below.

Regards

Darryl Anderson
Director



DARRYL ANDERSON CONSULTING PTY LTD
TOWN PLANNING & DEVELOPMENT CONSULTANTS

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From: Jenny
Sent: Thursday, 8 April 2010 12:29 PM
To: Stuart Campbell; Shaun Nicholson; Neil Sutherland (sutherland.nm@groupgs.com); 'Brian Lees'
Subject: Altitude 1

Gents

My notes and outcomes of the meeting with Council today are as follows:

In attendance:

Tweed Shire Council	Metricon
Vince Connell	Stuart Campbell
Patrick Knight	Brian Lees
Lindsay McGavin	Neil Sutherland
Petria Jukes	Darryl Anderson
John Zawadzki	
Mick Denny	
Peter Pennycuik	
Danny Rose	

Item 1 – Broadwater Parkway

Patrick Knight tabled two concept design options for the alignment of Broadwater Parkway copies of which are attached. Option 1 only involves acquisition from two properties and is preferred in that respect. However, **Brian** as discussed could you refine the design and address the intersection spacing including, if possible, moving the

alignment to the east to avoid the EEC and locating the alignment in the outer 50m of the 100m wetland buffer. You can obtain CAD copies of the drawings from Paul Morgan (paulm@tweed.nsw.gov.au).

Option 2 in my view does not warrant further consideration in view of its obvious implications for Altitude 1.

Item 2 – Temporary Intersection Fraser Drive

Patrick Knight accepted in principle that a temporary intersection is feasible and based on the additional plans tabled by Brian, John Zawadzki generally acknowledged that a satisfactory intersection design could be achieved however Patrick does not support the temporary intersection beyond about 50 lots and his strongly preferred position is that Broadwater Parkway be constructed up front but he acknowledged the funding difficulties and delays in obtaining the road corridor. I think he will be amenable to a temporary intersection for up to about 150 lots as long as Metricon are committed to have the Parkway constructed prior to release of say the 151 lot subject to Council acquiring the corridor.

Item 3 – Finalising Draft Development Control Plan and Section 94 Plan

Vince and Patrick indicated that they do not support Altitude 1 until the Development Control Plan and Section 94 Plan are in place. They indicated that this could be done within about four months and Vince is to submit a report to Council hopefully to the May meeting advising Councillors of the present status of the Development Control Plan and the proposed way forward.

Item 4 – Section 94 Contributions

Patrick Knight advised that unless all applicable contributions were paid Council could not support Altitude 1 as funds would not be available from any other source to provide the infrastructure. As this would exceed the \$20000 cap the Department of Planning would have to agree to the final amount. I advised the meeting that I had forwarded an email request to Chris Wilson at the Department of Planning seeking his advice in relation to the Department agreeing to an amount greater than \$20000.

It was agreed that because Attitude 1 is within a discrete catchment and includes independent stormwater quality management measures a credit for the total Area E stormwater contribution should be justifiable. On that basis contributions would be as follows:

Draft Section 94 Plan No. 27 – Tweed Shire Urban Release Area E

Active Open Space	2584.40
Casual Open Space	Not applicable to Altitude 1 as casual open space will be dedicated and embellished on site.
Wetland	1154.84
Habitat	483.21
Community Buildings	1382.24
Cycleway	335.47
Stormwater	A credit should apply as Altitude 1 will provide independent stormwater management facilities.
SUBTOTAL	5940.16

Current Section 94 Plans

Tweed Shire Council Administration	1759.90
Cycleway	447.00
TRCP	13527.00
Library	792.00
Bus Shelter	60.00
Cemetery	120.00

Regional Open Space (Structured)	3619.00
Regional Open Space (Casual)	1031.00
SUBTOTAL	21355.90

TOTAL SECTION 94 CONTRIBUTIONS PER LOT FOR ALTITUDE 1 = \$27296.06

Patrick advised that the TRCP contribution is under review and is likely to increase significantly so we could assume a total Section 94 contribution of say \$30000 per lot. Stuart indicated that this amount is probably acceptable to Metricon.

Item 5 – Water Reservoir

Peter Pennycuick advised that the Local Environmental Study dealt with water supply at a macro level but the problem is the Rayles Lane reservoir is not high enough to provide sufficient head for the elevated lots in Altitude 1. Because of time constraints this issue was not discussed in detail or resolved but clearly Council will need to acquire the reservoir site and the question of who pays and whether Section 64 water headworks credits apply needs to be resolved. **Brian** can you take these issues up with Peter?

Item 6 – Sewer

Peter Pennycuick agreed to provide a fee for Council to undertake the network analysis to determine what upgrading of rising mains and pump stations is required, if any.

Item 7 – Addressing the Elected Council at Community Access

Stuart do you have a preferred time and date or should we await presentation of Vince's report to Council?

All

I trust that my notes are a reasonably accurate reflection of outcomes but please feel free to add/amend as you see fit.

Regards

Darryl Anderson
Director

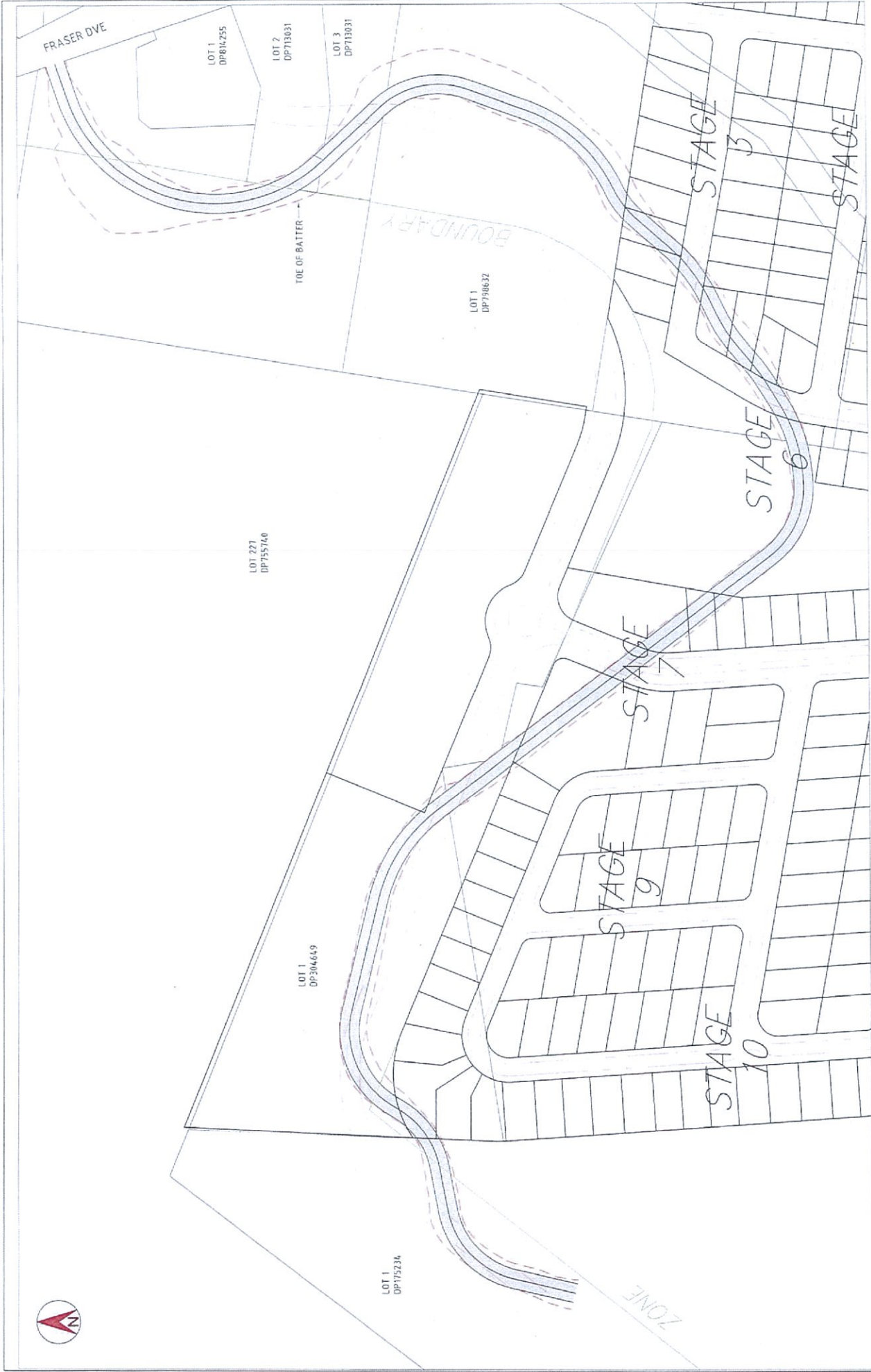


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DRAWING NUMBER: **OPTION 2**

PROJECT: MAHERS LANE - FRASER DRIVE, TERRANORA
 PROPOSED CONNECTION ROAD

PLAN TITLE: LAYOUT
 SHOWING PROPOSED DEVELOPMENT

ALCAD FILE No. 04AUTOCAD.DRAWING\$IN\$C\$R

DATE: _____ DATE: _____

DESIGN ENGINEER: _____

DESIGNED: N.R. 2010 DESIGN NO. _____ DATE: _____

DRAWN: N.R. 2010 DRAWING NO. _____

CHECKED: N.R. 2010 CHECKED BY: _____

HORIZONTAL DATUM: MSA CO-ORDS ADOPTED: PM

VERTICAL DATUM: AND

SCALE: 1:1000 0 10 20 40 60 80 100 m

SCALE: 1:2000

PLAN

DESIGN UNIT

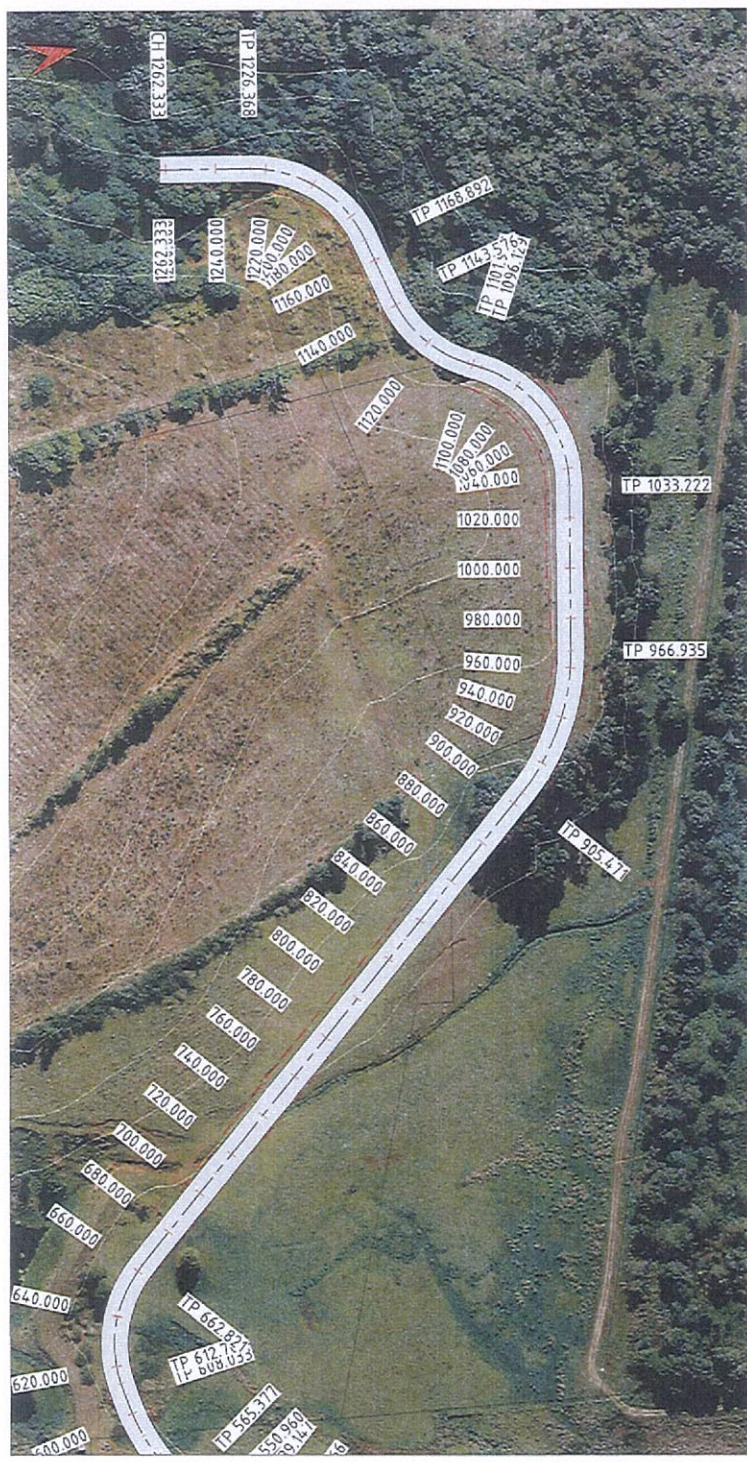
COUNCIL OFFICES
 MURWILLUMBAH NSW 2484

PHONE: 08 83302400
 FAX: 08 8332510
 WEBSITE: www.tweedshire.nsw.gov.au

NOTE: FULL SEE ON ORIGINAL AT 250% AND 200% 100% 100%

ISSUE	ORIGINAL ISSUE	N.R.	DATE	INITIALS	DATE
A		2010			

THIS SHEET MAY BE REDUCED



PLAN
AT SCALE 1:2000
AT SCALE 1:2000

VOLUMES		NET (FILL)
CUT	FILL	4081 Cu. M.
16067 Cu. M.	20148 Cu. M.	



Ch 260,000



Ch 200,000



Ch 160,000

OPTION 2
SAMPLE CROSS SECTIONS
AT SCALE 1:500

LONG SECTION
AT SCALE 1:2000 (VERTICAL AND HORIZONTAL)

STATION	DESIGN SURFACE	NATURAL SURFACE	OFFSET
1240.000	124.000	124.000	0.000
1230.000	123.000	123.000	0.000
1220.000	122.000	122.000	0.000
1210.000	121.000	121.000	0.000
1200.000	120.000	120.000	0.000
1190.000	119.000	119.000	0.000
1180.000	118.000	118.000	0.000
1170.000	117.000	117.000	0.000
1160.000	116.000	116.000	0.000
1150.000	115.000	115.000	0.000
1140.000	114.000	114.000	0.000
1130.000	113.000	113.000	0.000
1120.000	112.000	112.000	0.000
1110.000	111.000	111.000	0.000
1100.000	110.000	110.000	0.000
1090.000	109.000	109.000	0.000
1080.000	108.000	108.000	0.000
1070.000	107.000	107.000	0.000
1060.000	106.000	106.000	0.000
1050.000	105.000	105.000	0.000
1040.000	104.000	104.000	0.000
1030.000	103.000	103.000	0.000
1020.000	102.000	102.000	0.000
1010.000	101.000	101.000	0.000
1000.000	100.000	100.000	0.000
990.000	99.000	99.000	0.000
980.000	98.000	98.000	0.000
970.000	97.000	97.000	0.000
960.000	96.000	96.000	0.000
950.000	95.000	95.000	0.000
940.000	94.000	94.000	0.000
930.000	93.000	93.000	0.000
920.000	92.000	92.000	0.000
910.000	91.000	91.000	0.000
900.000	90.000	90.000	0.000
890.000	89.000	89.000	0.000
880.000	88.000	88.000	0.000
870.000	87.000	87.000	0.000
860.000	86.000	86.000	0.000
850.000	85.000	85.000	0.000
840.000	84.000	84.000	0.000
830.000	83.000	83.000	0.000
820.000	82.000	82.000	0.000
810.000	81.000	81.000	0.000
800.000	80.000	80.000	0.000
790.000	79.000	79.000	0.000
780.000	78.000	78.000	0.000
770.000	77.000	77.000	0.000
760.000	76.000	76.000	0.000
750.000	75.000	75.000	0.000
740.000	74.000	74.000	0.000
730.000	73.000	73.000	0.000
720.000	72.000	72.000	0.000
710.000	71.000	71.000	0.000
700.000	70.000	70.000	0.000
690.000	69.000	69.000	0.000
680.000	68.000	68.000	0.000
670.000	67.000	67.000	0.000
660.000	66.000	66.000	0.000
650.000	65.000	65.000	0.000
640.000	64.000	64.000	0.000
630.000	63.000	63.000	0.000
620.000	62.000	62.000	0.000
610.000	61.000	61.000	0.000
600.000	60.000	60.000	0.000

PROJECT: MAHERS LANE - FRASER DRIVE, BANORA PT
PROPOSED CONNECTION ROAD

DESIGN UNIT
TWEED SHIRE COUNCIL

DESIGN ENGINEER: [Name]
CHECK ENGINEER: [Name]
DRAWN: [Name]
CHECKED: [Name]

DATE: [Date]
DATE: [Date]

DESIGN NO: [Number]
SURVEY NO: [Number]
REVISION/RATIO: [Number]
COORDINATES ADDED: PM
AND

PLAN TITLE: PLAN, LONG SECTION, VOLUMES AND SAMPLE CROSS SECTIONS

DRAWING NUMBER: [Number]
SHEET 3 OF 3 SHEETS
ISSUE: A

ACAD FILE No: [Number]

NOTE: FULL SIZE ON ORIGINAL A1

150' 150' 150'

