SITE ANALYSIS FOR SUITABILITY OF ON SITE WASTE WATER DIPSOSAL

PROPOSED ELEVEN LOT SUBDIVISION

LOT 3 DP 1041314
LOT 70 DP 818506
MILLINGANDI ROAD
MILLINGANDI

REPORT No. 050629
20th APRIL 2005

Prepared for:
N CLEMENTS
C/O ROBERT WEB SURVEYING
35 FLINDERS STREET
EDEN

Prepared By C D Watts & Associates
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Bairnsdale VIC 3875

Executive Summary

Property Address:	Lot 3 and Lot 70 Millingandi Road Millingandi New South Wales
Inspection Date:	November 2004
Site Description:	The allotments are situated on the Southern side of Boggy Creek road and Millingandi road Millingandi. Allotments are all cleared and have been used for grazing. There is a significant gully system running through the property from South to North and eventually discharges into the Merimbula Lake.
Proposal:	Subdivide existing allotments into eleven new allotments of approximately 1.8 hectares to 0.53 hectares.
Land Capability:	Classified as 'Fair' to Good', suitable for disposal of waste water on site. Average site soil percolation rate yielded from testing 30 - 72mm/hr.
Report Main Points:	Land capability assessment yields that the subject land is suitable for the proposed development. Site yields suitable soil permeability test results for on site waste water disposal utilizing mini treatment plants producing min. 20-30 grade effluent and an on site disposal systems using sub surface drip irrigation

1.1 Client Brief

C D Watts and Associates were engaged to undertake a Land Capability Assessment (LCA) at the site of the proposed eleven lot subdivision Millingandi Road Millingandi and report on the sites suitability for on site wastewater disposal for the future dwellings built on the newly created allotments.

2.1 Description of the Property

The proposed site for the future subdivision is situated on the Southern side of Boggy Creek Road and Millingandi Road Millingandi.

The intention of this proposal is to create eleven new allotments. The allotments will vary in area from 1.8 hectares to 0.52 hectares. Following sale, single dwellings will be constructed on the new allotments.

The existing dwelling will be situated on Lot 1 (1.64 hectares). Currently the dwelling utilizes a septic tank and ground absorption trenches for disposal of wastewater on site and will be contained with in the new Lot boundaries with adequate buffer distances. The system is reported to be working satisfactorily.

The site is bounded on the South by a forested area and to the North, East and West by cleared land used for rural residential land purposes. The Princes highway Merimbula by-base is situated to the East of the subject land and Merimbula Lake is approximately 600m to further the East of the site. Generally the land falls inward either east or West to a significant gully system which runs through the subject land from South to North. Site grades are steeper along the gully. The gully system has a relatively small catchment area in the order of 100 hectares. The gully system runs north of the allotment and then turns to the East and discharges into Merimbula Lake with a stream flow distance of approximately 1000m.

The land is currently cleared and has been used for grazing purposes. Occasional Grey gums are scattered around the site and along the gully. There is no significant erosion on the site. There are three small dams situated around the site, namely on proposed Lot 1, 4 and 8. With careful placement of Building envelopes and wastewater absorption field envelopes on the sites, the dams should be unaffected by the proposed development.

Soil conditions can generally be described by two regions namely east of the gully and West of the gully. To the East of the gully the soil comprises of fawn/grey sandy silt changing at approximately 250mm below surface level to light brown fawn sandy silt with some gravel, then becoming more clayey and reddish with depth. Whilst East of the gully the soil comprise of dark fawn/grey loamy silt changing at approximately 250mm below surface level to orange/yellow silty clay.

2.2 Land Characteristics

Site Drainage/Flood Potential.

The proposed allotments will be well drained and are not subject to flooding. The sites are not likely to generate significant additional storm water runoff.

Site slope / Landslip potential.

The proposed building sites generally have slight to moderate grades. The potential for landslip is considered to be minimal.

Seasonal water table.

The potential for a seasonal perched water table is considered to be low given the good site grades and the silty sandy soil profile.

Rainfall and evaporation.

Records kept by the Bureau of Meteorology indicate an annual rainfall for the area of between 750 to 800mm/yr (Green Cape and Merimbula airport respectively). Pan evaporation figures are not available for the area. Rainfall figures are considered as fair in terms of site assessment parameters.

2.3 Soil Permeability Test Results

Soil percolation tests were carried out at the various sites (Ref: Site Plan 1.). The test results are used to determine the soils absorption characteristics and these values are used to assist in the site evaluation process.
This test is known as the "falling-head method" and is well recognized and used throughout Australia. The test procedure is more fully described in Ref: 1

Testing consists of the excavation of 100mm diameter bore holes at each of the sites as indicated on the site plan, to a depth of approximately 400mm. The bore holes where filled with water to a depth of approximately 250mm and allowed to soak for at least one hour. Following soaking the bore holes where topped up to 250mm and the fall was measured at 10 minute intervals with the water level being topped up to 250mm between readings. The soil percolation rate is the uniform rate achieved toward the end of the measurements. This rate is averaged across the sites and multiplied by six to achieve a per hour soil percolation result

Results summary:

SITE		TEST RESULT	AVERAGE SOIL PERCOLATION RATE	
Lot 1.	A	6 mm/10min.	36	mm/hr
Lot 2.	B	15 mm/10min.	90	mm/hr
Lot 2.	C	12 mm/10min.	72	mm/hr
Lot 3.	D	11 mm/10min,	66	mm/hr
Lot 4.	E	18 mm/10min,	108	mm/hr
Lot 5.	F	8 mm/10min.	48	mm/hr
Lot 6.	G	10 mm/10min.	60	mm/hr
Lot 7.	H	11 mm/10min.	66	mm/hr
Lot 8.	I	15 mm/10min,	90	mm/hr
Lot 9.	J.	5 mm/10min,	30	mm/hr
	K	5 mm/10min.	30	mm/hr
Lot 10.	L	5 mm/10min.	30	mm/hr
	M	3 mm/10min.	18	mm/hr
Lot 11.	N	5 mm/10min,	30	mm/hr

SITE ANALYSIS LOTS 2 – 7

Soil Characteristics

Soil conditions generally comprise of dark fawn/grey loamy silt changing at approximately 250mm below surface level to orange/yellow silty clay. Refer Bore log profiles attached.

Soil permeability

If we adopt a figure of 72 mm/hr as being a typical value, the size of the wastewater absorption field for an average dwelling could be determined as follows:

Wastewater yield for a single three bedroom dwelling

3 Bedroom dwelling 5 persons @ 150* Lt/day = 750 L/Day
*Assumes standard water reduction fixtures and non-reticulated water supply

From Table 6.1 REF 1:	
Soil Permeability:	0.35 m/day
Long term Effluent infiltration rate:	10 l/m2/day.
From Table 1 REF 8:	
Soil percolation rate:	72 mm/hr or 21 min/25mm.
Design hydraulic loading:	35 mm/m^2 day.
Total area required @ 1000 l/d	30 m^2 ADOPT 108 m^2.
Wasteflow pipe required:	45m ADOPT 200m Min.
@ 0.6 x 0.6m spacing	
Wasteflow flow rate @ 100kPa:	1430 l/hr.
Daily irrigation time:	Approx. 30 mins per day

Assessment

With reference to the Land Capability Assessment table it can be seen that the site rates as 'Good' or a rating of 2 out of a possible 1 – 5, with 1 as being the best rating. The most limiting factors identified in the assessment table is the allotment sizes, however with the use of mini treatment plants and sub surface drip irrigation the required area for the wastewater absorption field is substantially reduced and the buffer distances may be also be reduced. With treated waste, any potential environmental risk is also substantially reduced.

Based on the above site analysis and soil permeability test results it is in our opinion that the soil type and profile on this site is suitable for disposal of wastewater on site, by the use of mini treatment plants producing min. 20-30 grade effluent and an on site disposal systems using sub surface drip irrigation such as Geoflow Wasteflow™ or Netafim™ disposal system.

SITE ANALYSIS LOTS 8 – 10.

Soil Characteristics

Soil conditions generally comprise of fawn/grey sandy silt changing at approximately 250mm below surface level to light brown fawn sandy silt with some gravel, then becoming more clayey and reddish with depth. Refer Bore log profiles attached.

Soil permeability

If we adopt a figure of 30 mm/hr as being a typical value, the size of the wastewater absorption field for an average dwelling could be determined as follows:

Wastewater yield for a single three bedroom dwelling:
3 Bedroom dwelling 5 persons @ 150* Lt/day = 750 l/Day.
*Assumes standard water reduction fixtures and non-reticulated water supply.

From Table 6.1	REF 1:	
Soil Permeability:		0.12 m/day.
Long term Effluent infiltration rate:		7 l/mx2/day.
From Table 1	REF 8:	
Soil percolation rate:		30 mm/hr or 50 min/25mm.
Design hydraulic loading:		15 mm/m^2 day.
Total area required @ 1000 l/d.		65 m^2 ADOPT 108 m^2
Wasteflow pipe required:		105m ADOPT 200m Min.
@ 0.6 x 0.6m spacing		
Wasteflow flow rate @ 100kPa:		1430 l/hr.
Daily irrigation time:		Approx. 30 mins per day.

Assessment

With reference to the Land Capability Assessment table it can be seen that the site rates as 'Good' or a rating of 2 out of a possible 1 – 5, with 1 as being the best rating. The most limiting factors identified in the assessment table is firstly the allotment sizes, however with the use of mini treatment plants and sub surface drip irrigation the required area for the wastewater absorption field is substantially reduced and the buffer distances may be also be reduced. Any potential environmental risk is also substantially reduced with the use of mini treatment plants. Secondly the clayey nature of the soil type rates less favorably, however the soil permeability rates as good and with the use of sub surface drip irrigation the sites are acceptable for the containment and treatment of treated waste water on site. Based on the above site analysis and soil permeability test results it is in our opinion that the soil type and profile on this site is suitable for disposal of wastewater on site, by the use of mini treatment plants producing min. 20-30 grade effluent and an on site disposal systems using sub surface drip irrigation such as Geoflow Wasteflow™ or Netafim™ disposal system.

2.4 Recommendations

From the test results it can be seen that for an average three bedroom dwelling on this site a wastewater absorption field of around 108m² for sub surface drip irrigation is required for each dwelling. The attached site plan shows potential building envelopes and corresponding waste water absorption field envelopes demonstrating that each allotment has sufficient area and adequate buffer distances to adjoining properties and areas of environmental significance.

Siting of the proposed wastewater disposal field envelopes can generally be as indicated on the attached site plan. However, positioning of the envelopes should be done on a site-specific basis following establishment of the title boundaries and confirmation of allotment grades. The following factors will need to be considered when positioning wastewater disposal field envelopes on the allotments and should be determined during field Survey work: Ref. 7, Table 5.

- Standard siting guidelines as per the requirements of the Bega Valley Shire Council guidelines.
- At least 6m up slope or 3m down slope of any title boundary.
- At least 40m from any water way or farm dam.

The following additional conditions are to be observed in addition to those set out by the local Council.

1. The quality of waste water used for sub surface irrigation must comply with the following limits:

Biochemical Oxygen Demand.	Max: 20mg/l.
Suspended solids	Max: 30 mg/l
Faecal coliforms	Max: 10 organisms per 100/ml
Free chlorine	Max: 2mg/l. Min: 0.5 mg/l.

2. The system has been designed on a standard 600mm by 600mm layout (wasteflow pipes are installed at 600mm centers with emitters spaced at 600mm along the waste flow pipes). The emitters are rated at 4 l/hr.

3. The pipes are installed between 150mm to 250mm below the ground unless noted otherwise.

4. The disposal field is to be sown with lawn grasses as soon as possible on completion of works. This will stabilize the soil and allow for the vegetation to take up the waste water.

5. Only water from the treatment plant is permitted to enter the disposal system.

6. Vehicles or heavy equipment is not permitted on the disposal field as damage to

the pipe work may result.

7. Spikes, tent pegs, garden stakes etc are not to be driven into the ground in the disposal field as damage may be caused to the pipe work.

8. An on going maintenance program is to be instigated to ensure that both the treatment plant and irrigation system are properly maintained and serviced to ensure proper operation.

Wastewater generated on each proposed allotment will be treated on site and disposed on site by sub surface drip irrigation, the allotments are of an adequate size and the soil is of adequate quality to ensure the containment of wastewater onsite. The adjoining properties are unlikely to be adversely effected by the proposed development and due to the significant buffer distance to the Merimbula Lake edge it is unlikely that any measurable effect could be recorded at this point. The wastewater generated on the sites will be treated to at least 20-30 grade prior to disposal further reducing any potential risks.

The allotments are unlikely to generate significant additional storm water runoff. Storm water runoff generated from roofed and paved areas will be discharged on to the allotment in a controlled manner and flow overland to existing drainage channels/gullies. Following establishment of the sites the storm water should be clean from any waste or silt and be adequately filtered before reaching the coastal area. During construction adequate measures must be taken to control erosion and contain dirty storm water on site. Refer general notes on the attached site plan.

3.0 Summary

Following the Land Capability Assessment on this site it is our opinion that the allotments are suitable for on site waste water disposal utilizing mini treatment plants producing min. 20-30 grade effluent and an on site disposal systems using sub surface drip irrigation. This will be subject to the confirmation of Building envelopes and wastewater disposal field envelopes on each lot following the establishment of Lot boundaries and further testing and system design at the Building application stage.

Adequate maintenance and checking of the proposed systems should be established as apart of the Building approvals process.

Chris Watts MIE (Aust.), B.E Civil, C.P Eng.

3.0 Appendix

Soil Percolation Test Results.

Bore log profiles.

Land Capability Assessment Table

Test Site location plans.

Ref 1. "CODE OF PRACTICE SEPTIC TANKS."
EPA Publication 451 – 1996.

Ref 2. "ON SITE DOMESTIC WATEWATER MANAGEMENT"
AS 1547:2000.

Ref 3. "LAND CAPABILITY ASESSMENT FOR ONSITE DOMESTIC WATEWATER MANAGEMENT". EPA Publication No. 746 2001

Ref 4. "LAND CAPABILITY ASESSMENT FOR ONSITE DOMESTIC WATEWATER MANAGEMENT". EPA Publication No. 746.1 2003

Ref 5. "SEPTIC TANKS CODE OF PRACTICE."
EPA Publication 891 – 2003.

Ref 6. "CERTIFICATE OF APPROVAL: Soil absorption/Transpiration systems." EPA Publication CA 1.2/03 – 2003.

Ref 7. "ON SITE SEWAGE MANAGEMENT FOR SINGLE HOUSEHOLDS." EPA NSW Publication 1998.

Ref 8. "SUBSURFACE IRRIGATION SYSTEMS AS ASPPLIED TO ON-SITE EFFLUENT DISPOSAL OF WASTEWATER." TRIANGLE FILTRATION.

Ref 9. "ON-SITE SEWAGE MANAGEMENT." DEVELOPMENT CONTROL PLAN N). 5 BEGAVALLEY SHIRE COUNCIL.

Ref 10. "STATE ENVIRONMENTAL PLANNING POLICY No. 71 COASTAL PROTECTION.

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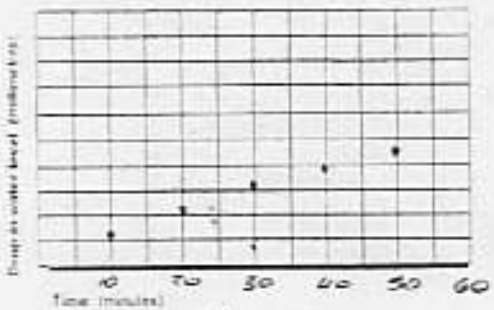
APPENDIX ONE

PERCOLATION TEST RESULTS

100



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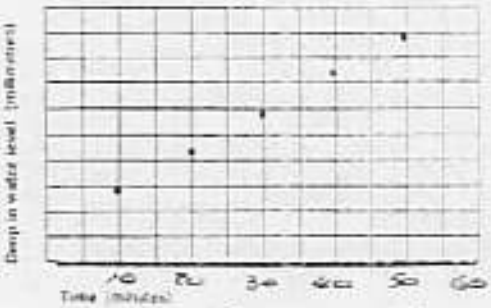

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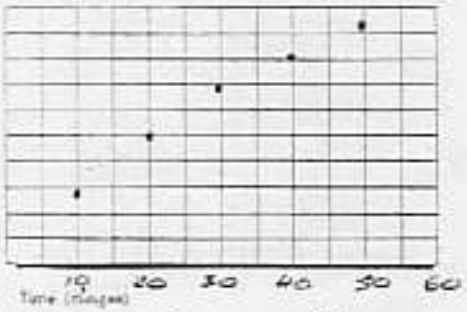

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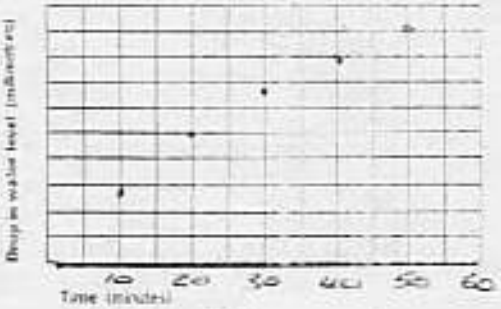

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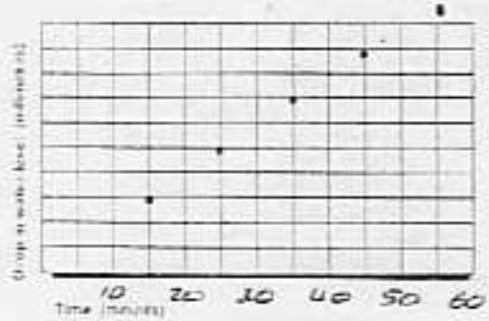

TEST HOLE No E. 18.

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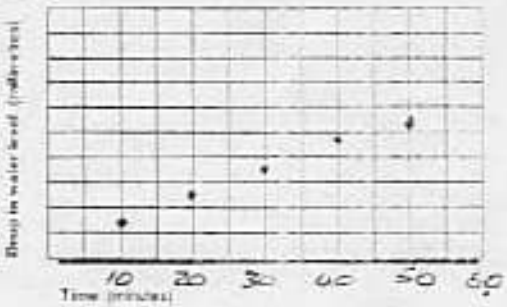

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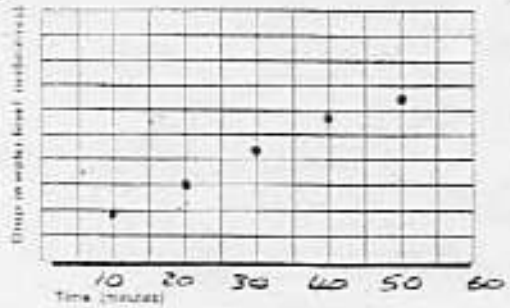

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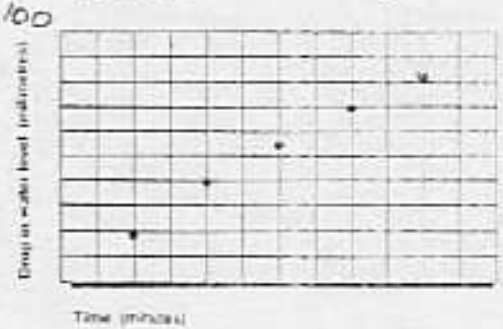


TEST HOLE No H. 11.

BORE LOG.

CLIENT: N CLEMENTS
REFERENCE No: 050629
PROJECT: MILLINGADI ROAD MILLINGANDI
DATE: MAY 2005

SOIL DESCRIPTION	DEPTH	CLASSIFICATION	COMMENTS	FOUNDING DEPTH
BORE No. SP1				
SILT: FAWN/GREY LOAMY		MH	dry dense	
CLAY: YELLOW/ORANGE SILTY	0.5	CL	moist stiff	
	1.0			
END OF BORE	1.5			
	2.0			
BORE No. SP2				
SILT: FAWN/GREY SANDY		MH	dry firm dry	
SILT: LIGHT BROWN/FAWN SANDY	0.5	SM		
CLAY: REDDISH FAWN SANDY	1.0	CL	moist stiff	
END OF BORE	1.5			
	2.0			

TABLE 1. **LAND CAPABILITY ASSESSMENT TABLE**

LOTS 2 - 7 MILLINGANDI		LAND CAPABILITY CLASS RATING				
LAND FEATURES		VERY GOOD (1)	GOOD (2)	FAIR (3)	POOR (4)	VER / POOR (5)
SITE DRAINAGE				MODERATE		
SITE AREA RESTRAINTS	PHYSICAL			LIMITED		
	ENVIRONMENTAL			LIMITED		
FLOOD/INUNDATION POTENTIAL		NOT SUBJECT TO FLOODING				
DISTANCE TO ENVIRONMENTALLY SENSITIVE AREA		>200m				
SLOPE (%)			LOTS 10-14 2 - 8%		LOTS 1-9 12 - 20%	
LANDSLIP		LOW POTENTIAL				
SEASONAL WATER TABLE DEPTH		>2m				
RAINFALL (mm/yr) SALE			750mm			
PAN EVAPORATION (mm/yr)			N/A			
SOIL PROFILE	STRUCTURE		MODERATE			
	PROFILE DEPTH	> 2m				
	SODICITY esp%		3 - 6			
	SHRINKAGE		SLIGHT			
	PERCOLATION RATE mm/hr	72mm/hr				
	STONINESS (%)	< 10 %				
	EMERSON TEST		4			
	SALINITY	—				

SOIL SALINITY INFORMATION UNAVAILABLE, NO EVIDENCE OF SOIL SALINITY ON SITE.
REFER REF: 7 TABLE 4, 6

TABLE 1 LAND CAPABILITY ASSESSMENT TABLE

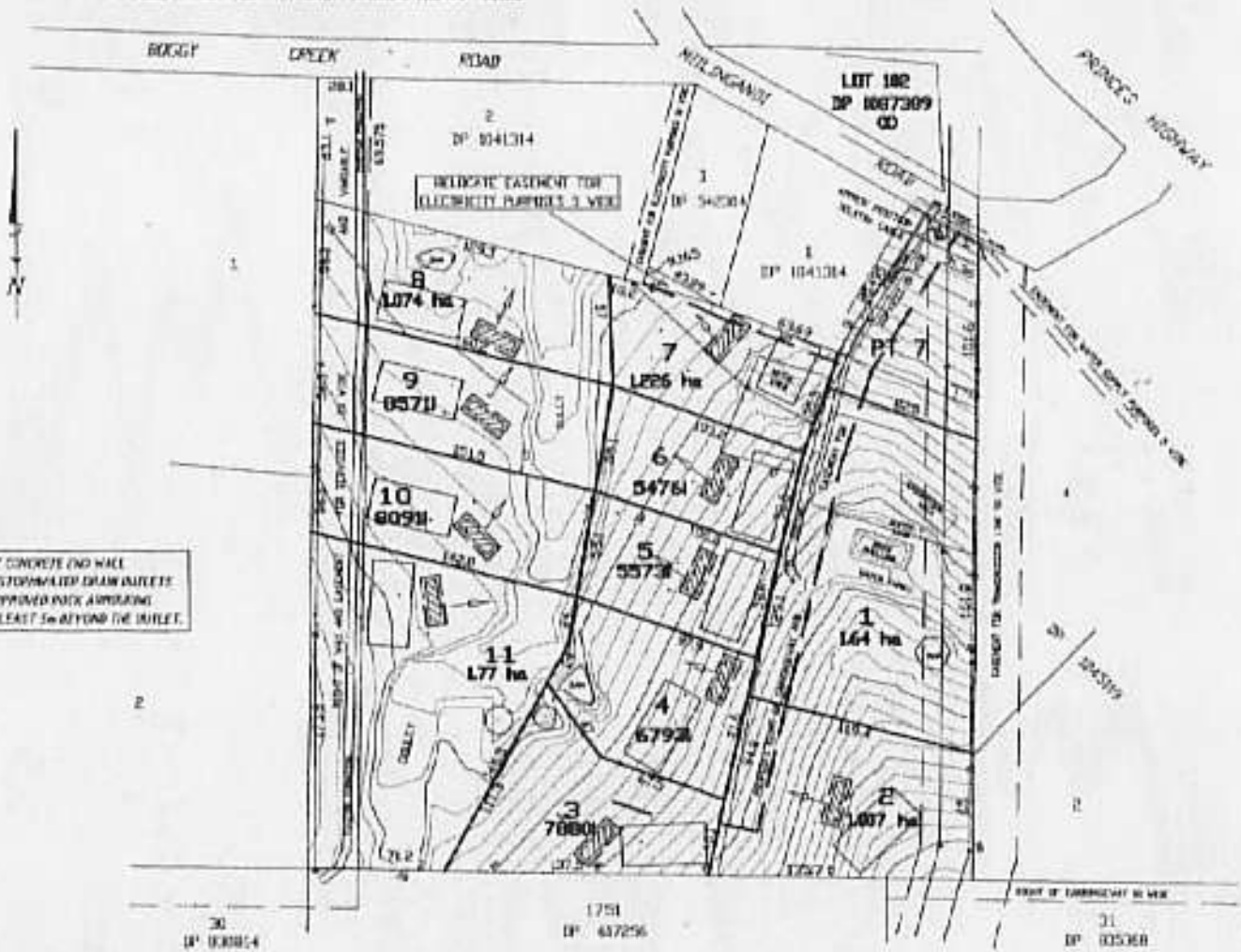
LOTS 8 -11 MILLINGANDI		LAND CAPABILITY CLASSIFATING				
LAND FEATURES		VERY GOOD (1)	GOOD (2)	FAIR (3)	POOR (4)	VERY POOR (5)
SITE DRAINAGE				MODERATE		
SITE AREA RESTRAINTS	PHYSICAL			LIMITED		
	ENVIRONMENTAL			LIMITED		
FLOOD/INUNDATION POTENTIAL		NOT SUBJECT TO FLOODING				
DISTANCE TO ENVIRONMENTALLY SENSITIVE AREA		~200m				
SLOPE (%)			LOTS 10-14 2 - 8%		LOTS 1-9 (2 - 20%	
LANDSLIP		LOW POTENTIAL				
SEASONAL WATER TABLE DEPTH		>2m				
RAINFALL (mm/yr) SALE			750mm			
PAN EVAPORATION (mm/yr)			N/A			
SOIL PROFILE	STRUCTURE			WEAK		
	PROFILE DEPTH	> 2m				
	SODICITY esp%		3 - 6			
	SHRINKAGE			MODERATE		
	PERCOLATION RATE mm/hr		30 mm/hr			
	STONINESS (%)	<10 %				
	EMERSON TEST		7			
	SALINITY	—				

SOIL SALINITY INFORMATION UNAVAILABLE, NO EVIDENCE OF SOIL SALINITY ON SITE.

REFER REF: 7 TABLE 4, 6

REF: 3

A EASEMENT FOR WATER MAIN 3 WIDE
B EASEMENT FOR WATER SUPPLY PURPOSES 5 WIDE AND VARIABLE
C EASEMENT FOR WATER SUPPLY PURPOSES 3 WIDE
D PURPOSES EASEMENT FOR WATER SUPPLY PURPOSES 5 WIDE AND VARIABLE



PROVIDE CONCRETE END WALL TO ALL STORMWATER DRAIN OUTLETS WITH APPROVED ROCK APRONING FOR AT LEAST 5m BEYOND THE OUTLET.

PROPOSED BUILDING ENVELOPE 1000m2

ALLOTMENT AREAS SUBJECT TO FINAL SURVEY.
CONTOUR INTERVAL 2m.

SITE PLAN

SCALE 1:2500

20m
10m
WASTE WATER ABSORPTION FIELD 185m2
WASTE WATER ABSORPTION FIELD ENVELOPE 200m2

SITE GRADES

GENERAL NOTES

IT IS THE BUILDERS RESPONSIBILITY TO ENSURE
- THAT ALL WORKS ON THE SITE ARE PERFORMED IN ACCORDANCE WITH THE RELEVANT DOCUMENTATION.
- THAT ALL SUB CONTRACTORS ARE INFORMED AS TO THE SPECIAL REQUIREMENTS OF THE SITE AND TO SUPERVISE SUB CONTRACTORS WORKS.
- THAT ALL WORKS ARE PERFORMED IN ACCORDANCE WITH THESE DETAILS.

1. SITE CLEARING
RESTRICTION OF VEGETATION AND DISTURBANCE OF SOIL IS TO BE RESTRICTED TO THE MINIMUM REQUIRED FOR THE DEVELOPMENT.
EXISTING TREES TO REMAIN ARE TO BE CLEARLY MARKED AND A BARRIER ZONE OF AT LEAST 3m MAINTAINED AROUND THE PERIMETER.
TOPSOIL STOCK PILES AND EXPOSED AREAS ARE TO BE PROTECTED OF DIVERTED TO CONTROL DUST.

2. EXCAVATIONS
PRIOR TO COMMENCING EARTH WORKS, TEMPORARY DIVERSION WORKS ARE TO BE COMPLETED.
EARTH WORKS SHALL BE OF POSSIBLE BE PERFORMED DURING DRIER PERIODS.
RUNOFF IS TO BE PREVENTED FROM ENTERING THE EXPOSED AREAS BY THE CONSTRUCTION OF DIVERSION DRAINS/BANKS AROUND THE SITE.
RUNOFF DERIVED FROM THE SITE IS TO BE CONTAINED ON THE SITE AND DISCHARGED AT AN APPROVED POINT.
SITE CUTTING BATTERS ARE TO BE CONTOUR RIPPED, TOPSOILED AND MULCHED AS SOON AS POSSIBLE ON COMPLETION OF EARTH WORKS.
TRENCHES FOR SERVICES INCLUDING STORMWATER ARE TO BE BACKFILLED AS SOON AS POSSIBLE. DISTURBED AREAS ARE TO BE TOPSOILED, FERTILISED AND SEEDED WITHIN 10 DAYS OF BACK FILLING.

3. DRAINAGE
DIVERSION DRAINS/BANKS ARE TO BE CONSTRUCTED AROUND THE SITE AT A GRADE OF NOT MORE THAN 5% TO PREVENT RUNOFF FROM ENTERING THE SITE.
RUNOFF FROM THE SITE IS TO BE COLLECTED AND DISCHARGED AT A SUITABLY STABLE AREA WITH SEDIMENT TRAPS AND A LEVEL SPREADER.
SEDIMENT TRAPS SHALL BE CONSTRUCTED FROM BALES OF HAY STAKED TO THE GROUND AND BY THE USE OF FILTER FABRIC FENCES. SEDIMENT TRAPS ARE TO BE CLEANED REGULARLY.
DRAINAGE CHANNELS ARE TO BE LINED WITH GRASS OF MULCH MATTING FOR LOW FLOW SHALLOW DRAINS AND/OR ROCK ARMOURED OR PAVED FOR STEEPER HIGH FLOW DRAINS.
EROSION SHOULD BE MONITORED AND IF OCCURRING IS TO BE REPAIRED.

4. ROAD WORKS
DRAINAGE WORKS TO ROADS AND PAVED AREAS TO BE INSTALLED AND PROPERLY MAINTAINED AS SOON AS PRACTICAL AFTER EXCAVATION IS COMPLETED.
ROAD PAVEMENTS ARE TO BE PLACED AS SOON AS POSSIBLE.

5. SITE REVEGETATION
SITE TOPSOIL STOCKPILES ARE TO BE CONTOUR RIPPED PRIOR TO STABILISATION.
EXPOSED AREAS ARE TO BE SPREAD WITH 100mm OF TOPSOIL AND MULCHED AS SOON AS PRACTICAL ENDING THE WORKS.
MULCH IS TO CONSIST OF STRAW, WOOD CHIPS, TAR BARK, SUGAR CANE MULCH, ETC. MULCH IS TO BE PLACED AT A RATE OF 30 TON PER HECTARE. ON SLOPES EXCEEDING 10% THE MULCH IS TO BE HELD IN POSITION WITH PLASTIC MESH STAPLED TO THE GROUND.
SELECTED PLANT SPECIES AND OR GRASSES TO BE PLANTED AS INDICATED ON THE DRAWINGS.
WATER AS NECESSARY TO ENSURE GOOD GRASS STRIKE RATES ARE STRONG GROWTH.

- The alterations or substitutions without written permission.
2. Builder to check and confirm all details and report any variations to the Engineer for clarification.

C D WATTS & ASSOCIATES
CHARTERED PROFESSIONAL ENGINEERS

DATE	ISSUE	DESCRIPTION
AMENDMENTS		

ISSUE	DATE
PRINTS	

TITLE: SITE PLAN
PROJECT: PROPOSED 14 LOT SUBDIVISION, NEILENGARVEY ROAD, NEILENGARVEY
CLIENT: N CLEMENTS

DESIGN	CHECKED	ENGINEERS REF No.
		050629
DRAWN	CHECKED	DATE: JUNE 05

FILE NOTE: A3

DRG No.	SHEET
050629-S1	1 of 1

SITE PLAN

Job No. 050629

CLIENT: N. CLEMENTS

PROJECT: MILLINGANDI RD MILLINGANDI

DATE: JUNE 05

TEST BY: