

Area for planting (Koala movement corridor)

Proposed Koala Exclusion Fence to be completed as part of the current proposal

Proposed Koala Exclusion Fence to be completed as part of the previous proposal (Stages 8-12 of Blackrocks Estate)

SOURCE: Ardill Payne & Partners  
 File No. new.dwg  
 SCALE: 1 : 3 000 @ A3  
**JAMES WARREN & ASSOCIATES PTY LIMITED**  
 Environmental Consultants

CLIENT: Ardill Payne & Partners  
 PROJECT: Koala Plan of Management  
 DA Stages 13 & 14  
 Black Rocks, NSW  
 Shire of Tweed

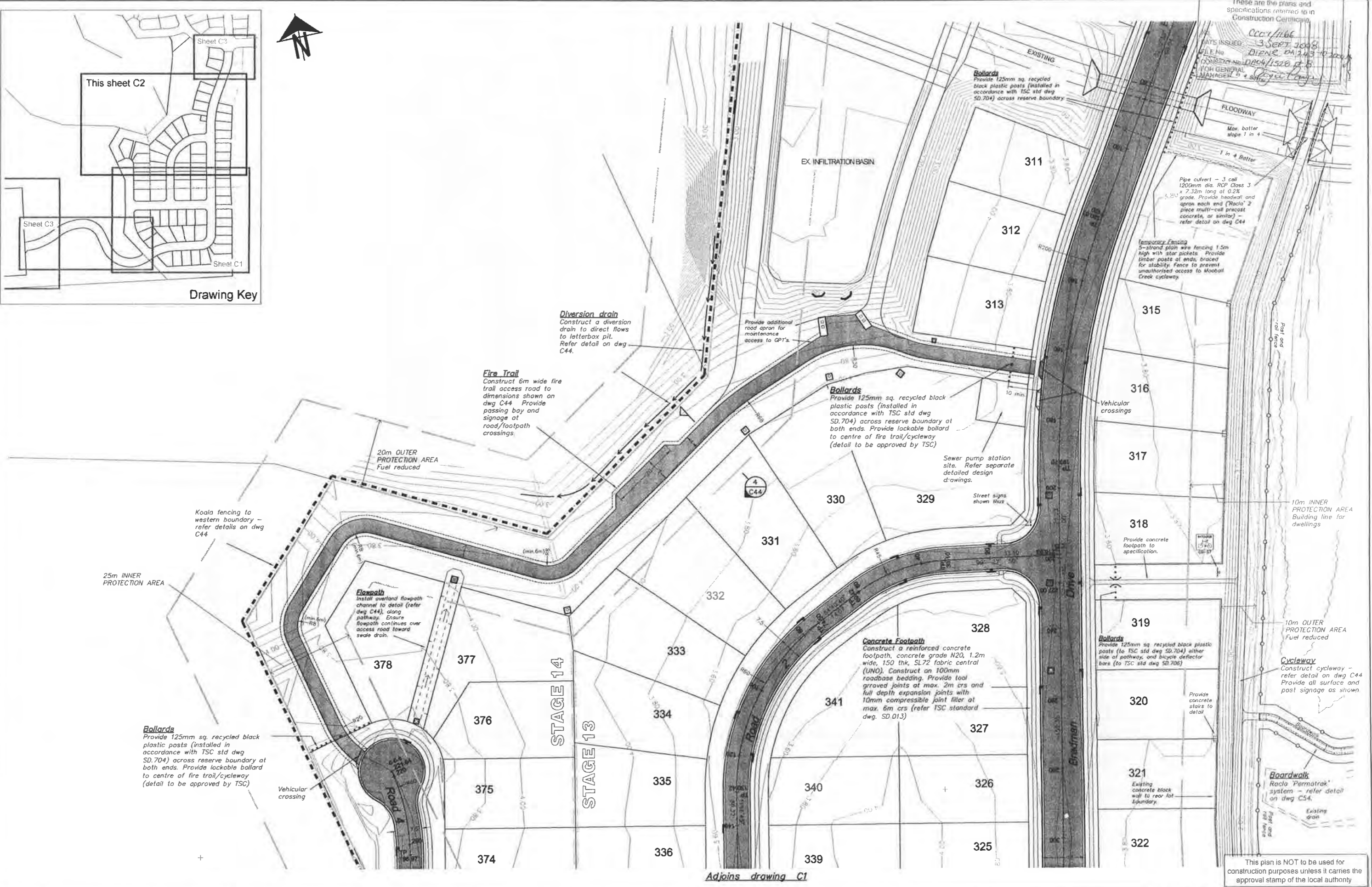
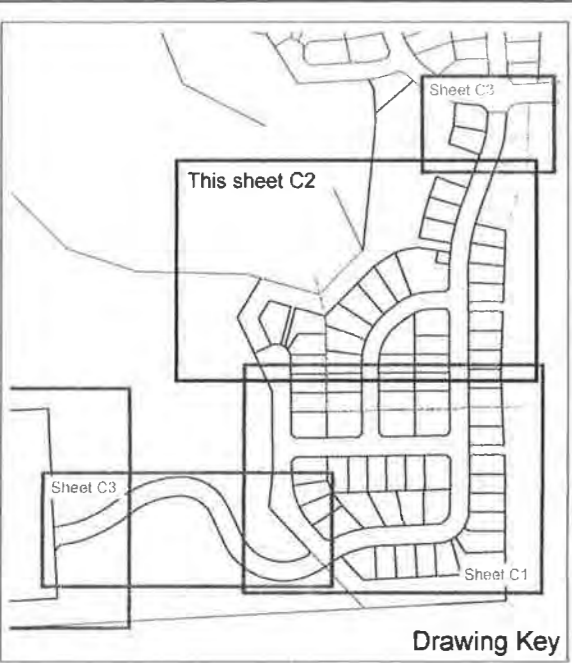
FIGURE 4  
 PREPARED: SD  
 DATE: 21 September 2004  
 FILE: 98049\_kpom\_layout.dwg

TITLE:  
**PROPOSED KOALA EXCLUSION FENCE AND CROSSING AREA**





**TWEED SHIRE COUNCIL**  
 These are the plans and specifications referred to in Construction Certificate  
 DATE ISSUED: 03 SEP 2008  
 FILE No: 3088  
 Dwg No: 5017-13/14  
 PROJECT No: DDC4/1528 P. 2  
 FOR GENERAL MANAGER'S & SURVEYOR'S SIGNATURE



This plan is NOT to be used for construction purposes unless it carries the approval stamp of the local authority

Issue	Date	Amendment	App'd
B	15-8-08	General revision for Council approval	TJC
A	19-5-06	General revision for Council approval	TJC

BLACK ROCKS ESTATE PTY LTD

Project: **BLACK ROCKS BY THE SEA**  
 STAGES 13 & 14  
 POTTSVILLE

Title: **Site Layout Plan 2**

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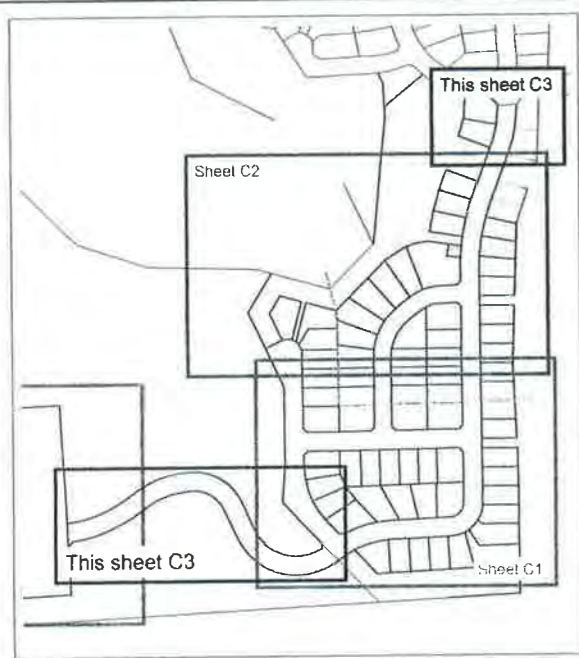
**ARDILL PAYNE & PARTNERS**  
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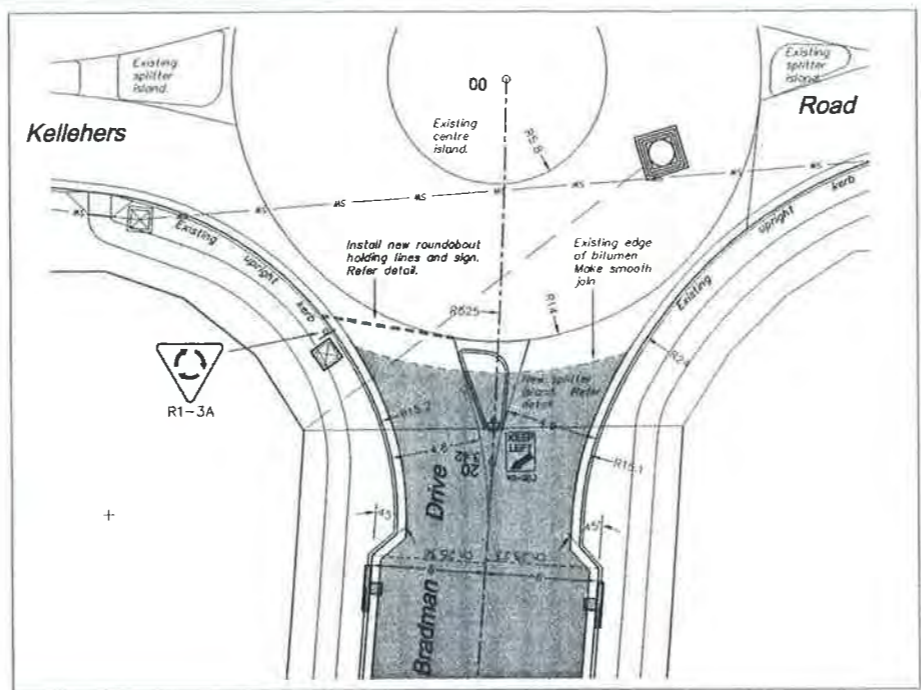
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Design	PB	Scale at A1	1: 500
Drawn	PB	Datum	-
Date	21-09-07	File No	5017-1314-plans
Checked	J.P. Payne	Approved	A.P.
Job No	5017-13/14	Dwg No	C2
		Issue	B



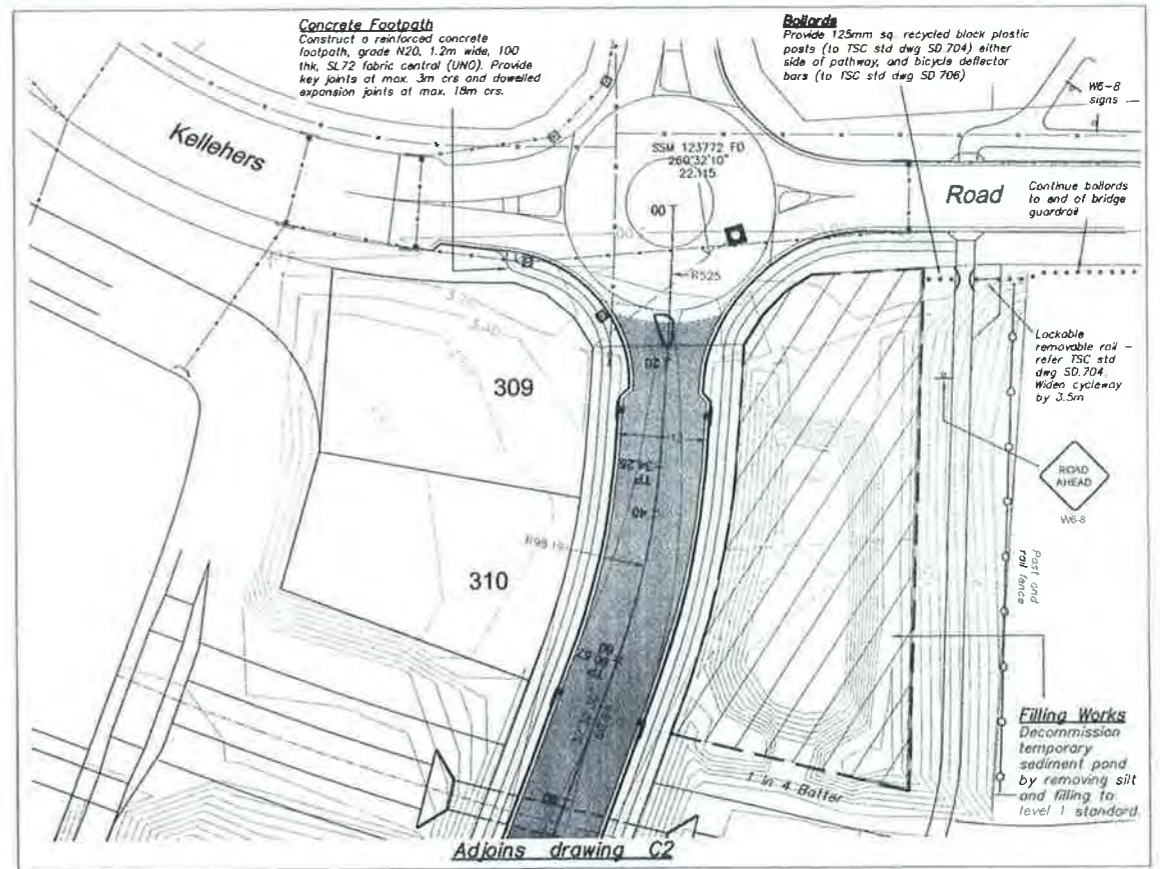


Drawing Key



Inset - Roundabout Entry

Scale 1:200

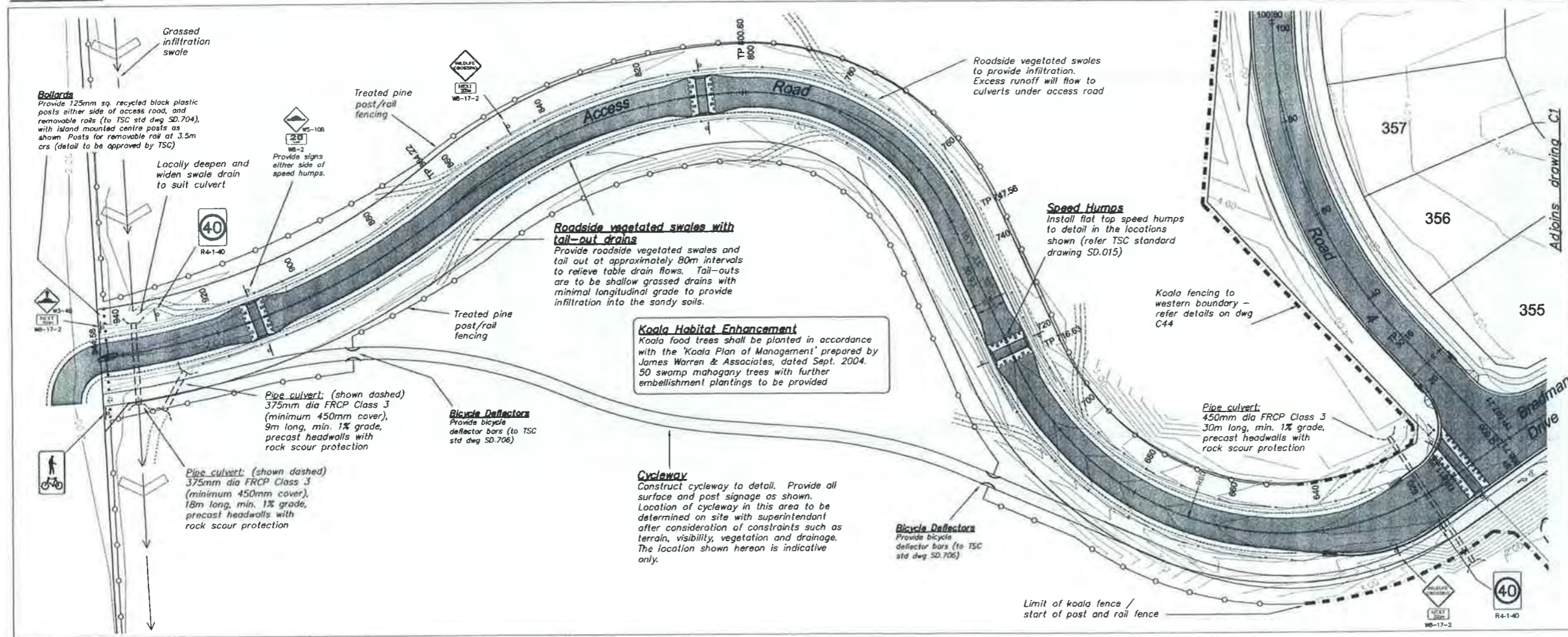


Inset - North

Scale 1:500

Inset - West

Scale 1:500



Note - Allotment Filling Specification - Level 1

1. Topsoil shall be stripped from the affected area to a minimum depth of 100mm, and stockpiled in an approved location for later respreading
2. Before filling is commenced, the contractor shall remove all silt, debris and vegetation from drains and gullies. Any unsuitable material shall be removed and disposed of as directed by the Engineer
3. Before filling is commenced, the stripped surface shall be compacted for a depth of 250mm to a dry density ratio of more than 95% standard where the compaction test is in accordance with AS 1289. Contractor is to provide to the Engineer a contour plan of the compacted subgrade.
4. Soil fill to allotments shall comprise CONTROLLED FILL as defined in AS 2870 (Residential Slabs and Footings), and placed, compacted and tested in accordance with AS 3798 (Earthworks for Commercial and Residential Developments). Certification by an approved Geotechnical or Structural Engineer shall be on a level 1 basis in accordance with AS 3798 and Councils Geotechnical Policy
5. Filling shall be carried up in horizontal layers not more than 300mm thick (loose measurement), and placed, compacted to satisfy the following requirements  
COHESIONLESS SOILS - Density index more than 85% where compaction test in accordance with AS 1289  
COHESIVE SOILS - Dry density ratio of more than 95% standard where compaction test is in accordance with AS 1289
6. Imported fill shall be approved by the Geotechnical or Structural Engineer
7. The principal shall engage an approved Geotechnical Testing Authority (GTA) for testing and certification
8. After the filling has been approved, the topsoil shall be spread to a minimum thickness of 100 mm so that the levels of the finished topsoil conform to the levels and contours shown on the drawing
9. The GTA shall provide the Engineer with a copy of the compaction test results and Certification for each filled allotment. The Contractor shall provide a Work-as-Executed plan of the finished surface levels. Certification shall be provided by a Geotechnical or Structural Engineer to a level 1 standard, and in accordance with Council's Geotechnical Policy

**TWEED SHIRE COUNCIL**

These are the plans and specifications referred to in Construction Certificate No.

No. CC07/1166

DATE ISSUED 13 SEPT 2008

FILE No. DA04/1152B, pt. B

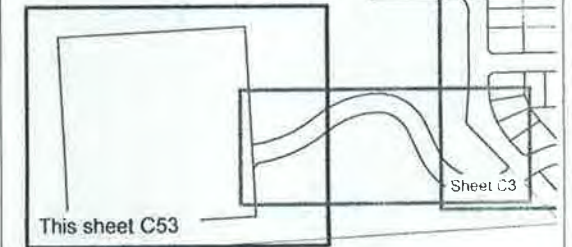
CONSENT No. DIPNR DA 243-10-2004

FOR GENERAL MANAGER [Signature]

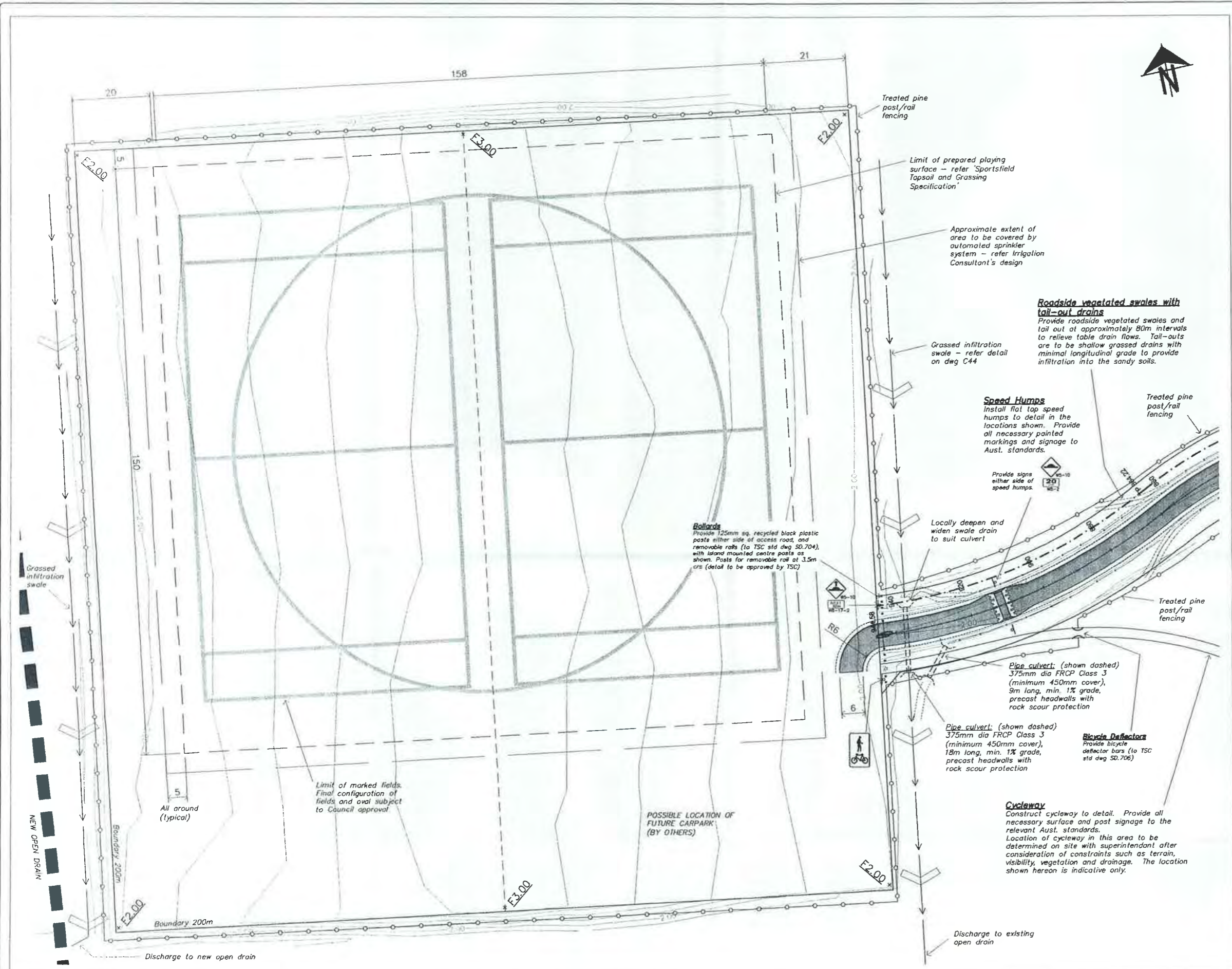
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B A	15-8-08	General revision for Council approval General revision for Council approval	TJC TJC	Project: <b>BLACK ROCKS ESTATE PTY LTD</b>	Title: <b>BLACK ROCKS BY THE SEA</b> STAGES 13 & 14 POTTSVILLE	Title: <b>Site Layout Plan 3</b>	ARDILL PAYNE & PARTNERS CONSULTING CIVIL AND STRUCTURAL ENGINEERS PROJECT MANAGERS TOWN PLANNERS AND SURVEYORS 79 Tamar Street P.O. Box 20 BALLINA NSW 2478 A.B.N. 113 861 522 12	Telephone: 02 6686 3280 Facsimile: 02 6686 7920 e-mail: info@ardillpayne.com.au Website: www.ardillpayne.com.au	Design	PB	Scale at A1	1:500			
	Date								21-09-07	File No.	5017-1314-plans				
Issue	19-5-08	Amendment	App'd	Project:	BLACK ROCKS ESTATE PTY LTD	Title:	ARDILL PAYNE & PARTNERS	Telephone:	02 6686 3280	Design	PB	Scale at A1	1:500		
										Project Managers	PB	Date	21-09-07	File No.	5017-1314-plans
										Checked	[Signature]	Approved	A.P.	Job No.	5017-13/14
										Dwg No.	C3	Issue	B		





Drawing Key



Adjusts drawing C3

**Sportsfield Topsoil and Grassing Specification**

- Subgrade**  
 1. The slope of the subgrade shall be continuous with no depressions or minor ridges. The subgrade shall be compacted to no more than 95% MMD. Rollers and heavy machinery, such as large dozers and scrapers, shall not be used.  
 2. Once the subgrade levels are achieved the subgrade shall be ripped to 350mm and lightly harrowed to break up large clods.  
 3. The subgrade SHALL NOT be worked while it is wet.  
 4. Once the subgrade has been ripped, gypsum shall be added at the rate of 500g per square metre.  
 5. Irrigation shall be installed after the subgrade has been ripped.
- Topsoiling - Sports Fields Proper**  
 1. Sportsfields shall be finished with min. 150mm of topsoil as defined below.  
 2. The depth of topsoil may be reduced where the site topsoil has been tested and complies with the topsoil specification. Written approval is required from Tweed Shire Council before varying the topsoil depth.  
 3. The topsoil shall be a sandy loam. The following Particle Size Distribution table can be used as a guide only. Once the topsoil approximates this specification, it shall be tested to meet the remaining criteria.
- | Particle Size Range (mm) | % Retained |
|--------------------------|------------|
| > 2.0                    | 0          |
| 1.0-2.0                  | 0-10       |
| 0.106-1.0                | 65-80      |
| < 0.106                  | 20-35      |
| < 0.002 (clay)           | 4-12       |
4. Topsoil must have the following properties:  
 - a drainage rate in the range of 50-300mm/hr  
 - a pH of between 6 and 7  
 - an even range of friable soil particle sizes that limits compaction and loss of drainage capabilities, and encourages root development  
 - an Organic Carbon content of between 2% and 4%  
 - a Calcium Base Saturation of 65-75% (1100-1300ppm)  
 - a Magnesium Base Saturation of 10-16% (150-180ppm)  
 - a Potassium Base Saturation of 3-5% (180-216ppm)  
 - a Sodium Base Saturation of less than 3% (less than 70ppm)
- Grass Species**  
 1. The surface shall be derocked by hand if necessary as a final preparation prior to grass seeding.  
 2. The grass species shall be either 'TifSport' or 'Wintergreen'. An alternative species suitable for sportsfields in the Pottsville area can be submitted to Council for approval.  
 3. Grassed areas shall be watered until established.
- Surrounding Verges and Borders**  
 1. Min. 150mm of clean loam topsoil.  
 2. On completion of topsoiling all areas shall be grass seeded with kikuyu, couch or other approved grass and watered until established.
- Finished Levels**  
 1. The design levels are the finished surface levels after topsoiling.

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A	15-8-08	Topsoil specification revised; fencing & gates added	TJC
Issue	Date	Amendment	App'd

BLACK ROCKS ESTATE PTY LTD

Project: **BLACK ROCKS BY THE SEA**  
 STAGES 13 & 14  
 POTTSVILLE

Title: **Sports Fields Details**

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Design	TC	Scale at A1	1:500
Drawn	TC	Detail	-
Date	12-02-08	Filename	5017-1314-plans
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Job No.	5017-13/14	Dwg. No.	C53
Issue			A