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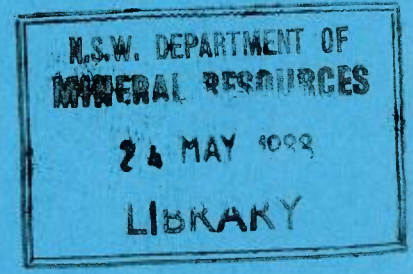
Environmental impact statement for the extraction of sand near
the Macdonald River at Retreat

~~L88/0153~~



J. GOODWIN

**ENVIRONMENTAL
IMPACT STATEMENT
FOR THE EXTRACTION
OF SAND
NEAR THE
MACDONALD RIVER
AT
RETREAT**

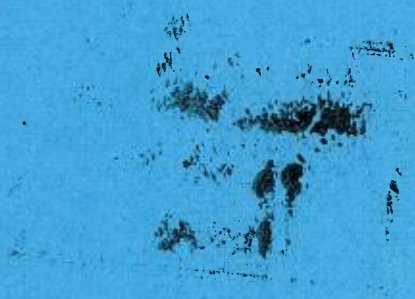


prepared by

**T.J. Stewart & Company Pty. Ltd.
Consultant Surveyors
Armidale**



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**ENVIRONMENTAL IMPACT STATEMENT
FOR THE EXTRACTION OF SAND
NEAR THE MACDONALD RIVER
AT
"RETREAT"**

prepared by



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JANUARY, 1988

[42827] Form 4

ENVIRONMENTAL PLANNING AND ASSESSMENT ACT, 1979 (SECTION 77(3)(d))
ENVIRONMENTAL IMPACT STATEMENT

This Statement has been prepared by or on behalf of J. GOODWIN.....
..... being the applicant making the development
application referred to below.

The Statement accompanies the development application made in respect of the
development described as follows:—

The extraction and haulage of sand from deposits adjacent
MacDonald River, Retreat.

The development application relates to the land described as follows:—

No. Street

Locality/suburb Retreat.....

Real property description Portion 4, Parish Retreat, County Inglis.....

Certificate of Title Volume 12463, Folio 61

(e.g. Lot, D.P./M.P.S., vol./fol., Parish, Portion)

The contents of this statement, as required by clause 34 of the Environmental
Planning and Assessment Regulation, 1980, are set forth in the accompanying pages.

Name, Qualifications and Address of
person who prepared Environmental Im-
pact Statement

TERENCE JAMES STEWART

CONSULTING SURVEYOR

P.O. BOX 212

ARMIDALE, N.S.W. 2350

Certificate.

I, Terence James Stewart, of T.J. Stewart & Co. Pty. Ltd.,
hereby certify that I have prepared the contents of this Statement in accordance with
clauses 34 and 35 of the Environmental Planning and Assessment Regulation, 1980.

Signature

20th January, 1988

Date

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INTRODUCTION

1.0 INTRODUCTION

1.1 OBJECTIVE OF THE PROPOSAL

J. Goodwin seeks Development Consent to extract sand from a single site adjacent to MacDonalld River west of Retreat near the Kingstown-Retreat Road.

The extractive operations are in fact already in existence, having been in operation for a period prior to this. However, further operation is the subject of a Development Application to Council supported by this Environmental Impact Statement.

The purpose of the sand extraction at this site is to provide a reliable source of sand which is of good quality for use in the construction industry as well as for inclusion in concrete.

This deposit will meet part of the requirements of the construction industry as it is within a reasonable distance of the main market area of Tamworth.

The proposal is for the operation of sand extraction, cleaning, loading and transportation and on the site will provide regard to the environment and will, in its operational procedures, consider all aspects in its planning.

It is proposed to provide environmental protection controls into the planning and operation of the site so as to minimise adverse impact.

The extractive proposal is under the Environmental Planning and Assessment Act 1979, Schedule 3 defined as "designated development". With lodgement of a Development Application, an Environmental Impact Statement has to accompany such and this document has been prepared to fulfil that requirement of the Act.

1.2 SCOPE OF THE STATEMENT

1.2.1 Department of Environment and Planning

The Environment Impact Statement for the site identifies and assesses the environmental impacts, the resources, and includes actions required to minimise any adversity to the area. It has been prepared in accordance with Regulations 34 and 35 of the Environmental Planning and Assessment Regulations 1980. The Director of the N.S.W. Department of Environment and Planning has been consulted as to completing the preparation of the statement and matters of the form and contents of the statement have been addressed and taken into account.

The requirements of the Director are attached herewith in Appendix 3.

The major components of the Statement are:

- (a) a full description of the designated development proposed by the development application;

- (b) a statement of the objectives of the proposed designated development;
- (c) a full description of the existing environment likely to be affected by the proposed designated development.
- (d) identification and analysis of the likely environmental interactions between the proposed designated development and the environment;
- (e) analysis of the likely environmental impacts or consequences of carrying out the proposed designated development (including implications for use and conservation of energy);
- (f) justification of the proposed designated development in terms of environmental, economic and social considerations;
- (g) measures to be taken in conjunction with the proposed designated development to protect the environment and an assessment of the likely effectiveness of those measures;
- (g) details of energy requirements of the proposed development and measures to be taken to conserve energy;
- (h) any feasible alternatives to the carrying out of the proposed designated development and reasons for choosing the latter;
- (i) consequences of not carrying out the proposed designated development.

1.2.2 Department of Water Resources

The Department of Water Resources has also been consulted as to preparation of the Statement and matters of the form and contents of the Statement have been addressed and also taken into account.

The requirements of the Department are attached hereto as Appendix 4.

The major issues to be addressed in the requirements of the Department are:

- * Characteristics of the resource
- * Quantity of materials to be extracted
- * Expected life of the operation and proposed staging
- * Design criteria adopted for water control and storage works to manage the natural runoff, site runoff and effluents, tailings waters, groundwater inflow and overburden and stockpile leachates
- * Methods of extraction/plans of operations
- * Type of machinery and equipment to be used
- * Proposals for progressive rehabilitation of the site and assurances of effective completion

- * Any proposals for the diversion of streamflow
- * Access arrangements - bridges and causeways
- * Disposal of waste material/location of stockpiles
- * Bed and bank stability of the river during and after the operations
- * Details of bedrock outcrops, sediment and material gradings and any likely changes due to extraction
- * Details of floods and any likely effects of the operation on flood liability of surrounding lands
- * Possible effects of flooding on the operations
- * Effects on river and groundwater flow
- * Rates of downstream movement of bed material
- * Effect of extraction on sediment transport rate of the river
- * Effects of the extraction on possible downstream and upstream siltation, sedimentation and erosion
- * Effects of excavation on trees and other bank vegetation
- * Effects of extraction on the groundwater hydrology of the site and surrounding area
- * Any likely cumulative effects of the proposed operation when considered together with other operations in the vicinity
- * The proposed final use of the site and likely effectiveness of rehabilitation
- * Any other specific matters specified by the Department of Water Resources for the specific site.

1.2.3 Soil Conservation Service

The Soil Conservation Service has also been consulted but have no actual requirements except as to the safeguard of the area and its rehabilitation. These matters to be considered on information provided in the statement.

1.2.4 State Pollution Control Commission

The State Pollution Control Commission was interviewed and the proposal was discussed and it's considered that their requirements have been covered in the report and include noise pollution by vehicles and action to protect the River from pollution.

1.3 OPERATOR

The operator of the extraction is J. Goodwin who owns a small business associated with transport of materials.

This business has its base in Tamworth and one of the operations is to collect and supply sand to market in Tamworth and possibly surrounding locality thereto.

To be able to effect this operation, J. Goodwin requires consent from Parry Shire Council to continue extraction within the area where prior extractions have taken place.

1.4 OUTLINE OF PROPOSED DEVELOPMENT

The proposed operations will be conducted in several stages as the market requirements are made. At present, there is an existing area from which extractions have been made.

It is proposed to extend this area westerly to be shown as Area B.

On completion of Area B, the Area C will be developed and when exhausted, Area D will be developed as the last stage.

Because the operations are only small, being a single person enterprise, it is envisaged that these areas will be sufficient.

SUMMARY

2.0 SUMMARY

2.1 OBJECTIVES

J. Goodwin is seeking Development Consent to extract sand from the property of D.S. and D.S.J. White, Kingstown-Retreat Road adjacent to the north bank of the MacDonald River to provide fine sand to a market in Tamworth and surrounding districts.

The extraction process is to be a 'dry' extraction with screening of the raw sand and then loading for transportation to the New England Highway.

Total extraction will average 180m^3 per week with a possibility of some peak periods but this will be dictated by market requirement.

In all, there is only a total projected supply of some 10000m^3 .

Extraction will be by a front end loader which will deliver to a screening plant on site. After screening, the sand loader will supply a single truck for transport to Tamworth.

It is emphasised that this is only a small operation with a single loader and single truck.

Employment will consist of only one person, being the owner, J. Goodwin, who will carry out all the operations.

The total life of the operation is estimated at only $2.1/4$ years based on a raw supply of 10000m^3 and weekly removal of 180m^3 for four weeks and then four weeks of no operation.

No blasting operation will occur and the activities will be confined to a truck, screening plant and loader.

Operations will be from and including extraction, processing and haulage of material from the site between 8.00 a.m. and 4.00 p.m. week days, and 8.00 a.m. to 4.00 p.m. Saturday during periods of peak demand. There will be no extraction, processing or haulage on Sundays and Public Holidays. During operating times, activities will not be continuous but spasmodic due to the single operator.

2.2 MANAGEMENT

In the operation of the site, the company will comply with all legislation controls, State Government and Local Council controls and conditions thereto and will obtain necessary licences such as a permit under Section 23A of the Rivers and Foreshores Improvement Act.

Management will include all safeguards to the environment, will control and keep any environmental adverse effect to a minimum and will be conscious of protecting the environment at all times.

2.3 ENVIRONMENTAL IMPACT

There will be strict adherence to any requirement of State and Local Government conditions and there will be no extraction taking place in the River area, and every protection will be given to the water quality and no detrimental effect will be caused to the geomorphology, geology, flora and fauna.

There will be no loss to existing flora and fauna and impacts on archaeological sites will be very low. There will be some small visual impact from the operation but, due to the isolation of the site and the low population of the district, this will be lower than other more populated areas or where there is high density traffic on roads.

Dust may be generated under certain conditions, especially dry and hot windy days, but control of operation will ensure minimum impact and there will be no nuisance caused to neighbouring houses.

The operation will have built-in safeguards to reduce the level of atmospheric pollution and will comply with all requirements of the State Pollution Control Commission as well as including preventive measures against pollution of the River.

There are no dwellings within 2 km of the site and the site is obscured from all by terrain, timber, etc. except for possibly the homestead of "Lochlee" north of the site that may observe the trucking operation and perhaps some excavating at a later stage (west area of C and area D) but with topsoil stockpiling acting as a visual barrier, the operating area would hardly be noticeable.

No alternative site is considered that has less impact on the environment and has such reasonable access as this site. Availability of areas is selective and the subject area is the locality considered having the least impact.

No extraction could cause unemployment of the owner/operator and could place such in an uneconomic and non-viable business as the use of the area supplements the total income. No extraction would create less available material to a total market within the Tamworth district.

There is a demand for this type of sand for the progress of development of the Tamworth district as it can be supplied, at present, at a competitive rate and, with this, is the fact that it is good quality sand.

**DESCRIPTION OF
THE ENVIRONMENT**

3.0 DESCRIPTION OF THE EXISTING ENVIRONMENT

3.1 LOCATION

The site is approximately 82 kilometres north of Tamworth by bitumen road highway, being the New England Highway to Bendemeer.

From Bendemeer, the road is bitumen to the Glen Bower Road turnoff to the west, being at a bridge from which the road changes to good standard gravel road to the site. These access roads are known as Watsons Creek Road, Retreat Road and the Kingstown Road.

A bridge has to be crossed over the MacDonald River at Retreat and apparently this bridge is satisfactory to the type of transporting vehicle.

Locality plans herewith show the access to the site and include:

- Figure 1 - District and regional roads
- Figures 2-4 (Sheets 1-3) - Transport route from Bendemeer to site
- Figure 5 - Local roads and access to site

The area is also 70 km south-west of Armidale.

3.2 LAND TENURE

The site occupies part of a larger property owned by D.S. and D.S.J. White and the subject area for extraction is within Portion 4, Parish of Retreat, County of Inglis, Shire of Parry.

In accordance with title searches, the immediate Portion and adjacent Portion are as follows:

Owner D.S. and D.S.J. White	Portion 4, Parish Retreat
of "Comara"	C.T. Vol 12463, Fol. 61
Kingstown	Portion 15, Parish Retreat
	C.T. Vol. 14257, Fol. 79
	Portion 25, Parish Retreat
	C.T. Vol. 1526, Fol. 182
	Portion 16, Parish Retreat
	C.T. Vol. 12463, Fol. 60
	Portion 24, Parish Retreat
	C.T. Vol. 12463, Fol. 59

On the opposite side of the River immediate to the site, the area being Portion 46, Parish of Pringle has been subdivided into 40-50 ha Lots with some Lots 70 ha and about 490 ha. This was carried out under D.P. 701445 and owned by Marler Pty. Ltd. It appears from inspection that there has been very little interest in the market for these Lots as there is no activity noticed near the River of new fencing, etc. There are no new dwellings thereon within the visual area of the site as to the subdivision.

Figure 10 shows the land tenure of the site and Appendix 4 includes all copies of title information and portion plans, etc.

It is noted that the titles have ownership to the north bank of the MacDonalld River and the site is fully enclosed within the title to Portion 4.

3.3 ZONING

Under Parry Shire Council Interim Development Order No.2 for the old Shire of Cockburn to which it operates, the land is zoned Non-urban "A" under paragraph 1(a) as shown on Figure 11.

Extractive Industries are permitted within the zoning subject to consent of Council under Column III.

The site is part of a large property used for the grazing of stock, being sheep and cattle.

The district comprises medium to large holdings, all used for grazing purposes.

The prior operations of extracting sand were under this I.D.O. No.2. Parry Shire Council have recently prepared a Local Environment Plan and this was Gazetted on 16th October, 1987 (Figures 13 and 14).

The land as shown in Figure 12 is zoned 1(a) as a General Rural Zone.

Under the description of the zone in Figure 15, paragraph 1(f) states one of the objectives of the zone is:

- (f) to permit the development of mines and offensive and hazardous industries, where required, in an environmentally acceptable manner.

and further, under 1(a):

- (a) to enable the continuation of traditional forms of rural land use and occupation and encourage consolidation of

The subject area under Schedule 3 of the Environmental Planning and Assessment Regulation 1980 is development defined as designated development by virtue of paragraph (n) is stating an extractive industry described as:

- (i) the winning of extractive material, not being coal, petroleum, or any mineral within the meaning of the Mining Act, 1973; or
- (ii) an industry or undertaking not being a mine, which depends for its operations on the winning of extractive material from the land which it is carried on,
but not being extractive industries on land to which Sydney Regional Environmental Plan No.11 - Penrith Lakes Scheme for the time being.

Now under the Environmental Planning and Assessment Model Provision 1980, extraction industry is further defined to include extractive material:

- (a) the winning of extractive material; or
- (b) an industry or undertaking not being a mine, which depends on the winning of extractive material from the land upon which it is carried on;

"extractive material" means sand, gravel, clay, turf, soil, rock, stone or similar substances.

In Parry Shire Council L.E.P. 1987 Zone 1(A) to which the area is located, it does not list extractive industry as: 5. prohibited; 3. only with development consent; or 2. without development consent.

Under paragraph 4 being advertised development and then only with development consent are included; all those developments not being subject to paragraphs 3, 4, 5 (Figure 15) and extraction industry thus comes under the inclusion here.

The sand extraction is therefore a permitted development subject to Advertisement and Development Consent and due to Schedule 3 is a designated development requiring a development application with an Environmental Impact Statement.

3.4 SERVICES

Electricity and telephone services are near the site. However, it is not expected that these services will be required in the operation.

3.5 ACCESS

Access to the site is by the Bendemeer-Retreat Road which is a good standard all-weather bitumen road with a section of reconstructed good quality gravel surface. A bridge over the MacDonald River appears to be within the safety requirement as other vehicles of similar weight are seen to use it, such as stock transport vehicles. Also, there are no weight limitation signs on the bridge. This bridge serves as a direct communication to Kingstown and other areas in the locality.

From the bridge, access is then by the Retreat-Kingstown Road for 2 km where the private property is entered on the crest of a hill through a double gate with the site southerly by a single access track suitable for the operation. This track follows a gentle sloping ridge and is in good order and condition.

Transportation of the majority of the material is from the site to Bendemeer and via the highway to other outlets including Tamworth. There will be possible occasions when the material may be required to outlets to the north but the operator can see no real market in this direction. It considers all its operations will be to the south.

Access to and from the site will be on Shire controlled roads to Bendemeer and south to Tamworth, etc. by Department of Main Roads controlled highways.

The access roads in the district are shown on Figure 1, while Figures 2-5 show the immediate transport routes and those to be used by the Company.

3.6 ARCHAEOLOGY

From an inquiry at the Site Register of the National Parks and Wildlife Service at Armidale, it was advised there are no known sites of artefacts within the area and there are no records indicating the likelihood of such.

Under the N.S.W. National Parks and Wildlife Act 1974 there are regulations to protect and preserve all Aboriginal relics. The operator is fully aware of his legal obligations of the meaning, significance and nature of Aboriginal sites and should there be any remote chance of location of any relic then the operator will immediately cease operation and consult with the Service. The Service did advise that it was a possibility in the locality to perhaps find "stone flakes" or "canoe trees" as the only Aboriginal relics. A study of the area shows no canoe trees, nor matured eucalyptus trees.

3.7 TOPOGRAPHY

The site area comprises undulating country with some level area associated thereto. The general area contains rolling hills off the Moonbi and Nandewar Ranges and the MacDonalld River meanders through the valley with varying undulating side slopes.

Much of the country has been cleared for grazing and left are shade trees with some large gum on the riverbanks and edges as well as oak trees.

The site will not cause or create for any further destruction of existing trees. The site itself has no trees thereon and such site is no closer than about 20 metres to the River edge. All existing Riverbank trees are no more than 10 metres therefrom.

Figure 6 shows the timber density of the area.

Figure 16 shows the MacDonalld River catchment area of 1,450 km².

Figure 17 shows the ground slope of the area and region.

Figure 18 shows the relief of the area and region.

Figure 19 shows the contours of the immediate area.

3.8 GEOLOGY

North of the township of Bendemeer, the MacDonalld River flows through a series of granitic plutons (see Chestnut and others, 1969: Manilla 1:250,000 Geological Sheet SH56-9). The most significant pluton is that belonging to the Bundarra Suite, a narrow elongate belt of coarse-grained quartz, feldspars, biotite-cordierite bearing S-type adamellites of about 275 million years in age. The rock type is uniformly porphyritic (i.e. the feldspar phenocrysts), of consistent composition, and weathers to produce a quartz sand wash in the rivers. (P.G. Flood - U.N.E. 1987)

Normal geological processes are an ongoing feature of this area and further weathering, erosion and transportation of granite wash will continue to replenish sand in the riverbed.

3.9 GEOMORPHOLOGY

The MacDonald River is a tributary of the Namoi River system, a large basin area of about 43,050 km² in mid-northern New South Wales.

The average annual discharge of all streams in the Namoi basin is estimated at 762 million m³. This is equivalent to a depth over the whole catchment area of 18 mm or 2.2% of the annual rainfall.

Highest natural stream flows occur usually from November through January, with May through to July being a period of low flows (Water Resources Commission, 1980).

The MacDonald River commences in the Great Dividing Range in the Northern Tablelands in the Niangala-Brackendale area with the Cobrabald River to then flow into the MacDonald River System. The upper areas of the catchment are all basaltic formation in the main and then change into the granite country west of Walcha Road as the lower slopes are engaged by the River System.

Figure 21 to Figure 25 are surveyed cross sections from the River at the site and extend from bank to upper ridge on the north.

Figure 27 is a detailed site plan showing the contours of the extractive area to one metre intervals. The various cross-sections are noted as 1-6 inclusive with their respective chainage. The datum for the levels is assumed. Figure 28 is the area of existing extraction and is a larger scale of part of the area of Figure 27.

3.10 CLIMATE

There is no official meteorological station in the locality and climatic considerations have been ascertained from those at Tamworth and Armidale.

3.10.1 Rainfall

Rainfall for the Tamworth region is approximately 673 mm per annum and for the Armidale region is approximately 800 mm per annum with lowest falls occurring in autumn and winter months. Rain days per month vary from 8-10 with the greatest number during the spring and summer months. Figures 28-1 to 28-4 show the rainfall and percentile for January/April/July/October median and Figure 28-5 the Mean Rainfall Days. Figure 28-6 shows the average monthly evaporation for the four periods January/April/July/October.

3.10.2 Temperature

Mean monthly temperatures vary for Tamworth from 15°C in July to 31°C in January while Armidale has a mean in July of 6°C to 20°C in January. Monthly mean minimum is lowest in July with 3°C in Tamworth and 0°C in Armidale with monthly mean maximum highest in Tamworth of 31°C in January while in Armidale it is 27°C in January.

3.10.3 Winds

Statistics show that the prevailing winds are from the south-east for five months of the year. The maximum consistent wind is about August to September.

At the site during morning periods, winds would be gentle and generally easterly during the hotter months and they would be westerly during the colder months. Afternoon winds are likely to be stronger and from the west throughout the year but stronger during winter periods.

The site area would, by its topography, have a large effect on the surface winds and with the protection of surrounding hills there would be direction and speed effects to the more open areas of recordings.

Inversion layers form during the colder months and are close to the ground prior to sunrise and generally disperse by late morning.

3.11 AIR QUALITY

The site is surrounded by grazing land and further away is the occasional cropped land. Dust levels in the atmosphere would be, at the site, very low and would vary in accordance with traffic use of the rural roads and agricultural activity, rainfall and wind.

It can be said that dust levels would be higher in dry periods with strong winds and lowest in rainfall periods with low winds.

At the site, atmospheric quality can be described as rural clean with contaminants limited to dust from the rural road, stock movement, ploughing and fertilisation plus agricultural and road machinery fumes.

3.12 FLORA AND FAUNA

There is very little natural habitat in the area due to land clearing and land usage for stocking. There is evidence of rabbit and the occasional fox and apart from general stock, there was no other animal life observed at the site. It would be expected that there are mobs of kangaroos in the area.

Figure 6 shows area of timber cover for the recluse[?] of bird life and these areas provide a habitat for birds and allow them to use the surrounding areas to return to the more vegetated areas.

In the subject area bird life is low due to the sparse vegetation of trees but, as stated, the areas of heavy to medium timber allow homes for the birds.

3.13 VISUAL ASPECT

The site is not visible from the main thoroughfares being the Kingstown-Retreat Road, Retreat Road and Retreat-Manilla Road.

It is visible from the road that serves the properties "Comara" and "Strathalbyn".

Should we show these located? Plan!!

This road at present serves these two properties which comprises the owners thereto and any employees relating to the working of the properties.

During a visit to the site for 5 hours, not one vehicle was noticed on the road. This road is located on the south side of the River and adjacent the site of a small holding subdivision of numerous Lots which to date appear to have a small interest in the market. There are no houses located on such within viewing distance of the sand area and on reflection, the area of small holdings is isolated and would be in the best interest to the environment if left as a grazing concern. The subdivision should not in my opinion be considered as an influence to the extraction area.

At the same time, consideration will be given to reducing the impact of the visual impact to this road.

There are no walking tracks in the locality and usage of the area is restricted to mainly local residents and any travelling through traffic. The area is not considered a tourist locality.

3.14 LAND USE

3.14.1 Agriculture

The surrounding area is used for grazing of stock, being cattle and sheep and the properties at the site are large holdings with more medium holdings further from the site. Some pockets of cultivation occur for cash cropping and supplementary stock feeding.

The site itself has been prior used for grazing and forms part of a property in extensive grazing pursuit.

3.14.2 Extractive Industries

Sand extraction is limited in the area to the subject site and has only been occurring for the last 1.1/2 years. Operations have consisted of extracting from an area away from the River, on its north bank, above flood level and at normal flow; the excavation is some 6 metres above water level and some 25 metres therefrom.

Excavation is from some 2 metres deep on the side closer to the River, decreasing to 1 metre on the side furthest from the River. The excavation has been about 13 metres wide and about 135 metres in length.

The activity has consisted of stockpiling topsoil on both sides of the excavation and then extracting sand to its base level, screening and transporting to Tamworth. The total area subject to existing extraction is 3761 m² or 0.376 hectares and a total removal including topsoil of 5500 m³. The area of operation is devoid of trees with existing riverbank trees undisturbed and not affected by the operation. Such trees are about 10-20 metres from the edge of operations.

Soil erosion has been minimum with some slight gully erosion (about 200 mm deep) only on the north excavation slopes but this would be corrected in regrading and such erosion has only occurred in the confines of the exposed extraction area.

Drawing to 27
The operator has, prior to the introduction of this study, cut a channel out of the extractive area to relieve surface water ponding in the extraction area. The lowest point of the extraction area is 97.7 metres R.L. The outlets of the drainage channel has a R.L. of 97.9.

A management scheme is to be introduced with collector drains and sediment ponds to collect storm water and rain runoff that contains any pollutants from the site. Settlement in the ponds would then allow clear water to be released to the natural drainage system. *Fig 27*

The channel system within the existing operation is criticised for its non-ability to protect the River water quality but, with operation having ceased, no further pollutants are envisaged from entering or having the ability to enter the River.

3.14.3 Residential

The nearest existing residential sites are both 2 km north and 2 km east. No residence is in line of visible sight of the existing excavation and only the residence of "Locheil" 2 km north may visually see the sight in the future when extrusion eventually takes place in Areas C and D, Figure 27.

All residences in the area are associated with properties used for extensive grazing pursuit and are on large holdings.

3.14.4 Recreation

The area is not used for any recreation and no recreation areas exist.

3.14.5 Public Utilities

Except for normal rural property services of electricity, telephone and Shire Roads, there are no other public utilities within this area.

There is no private irrigation usage of the River within the site area.

3.15 RIVER CHARACTERISTICS

The MacDonald River has its catchment in the Great Dividing Range in the Cobrabald etc. River System that, downstream, forms the MacDonald River Basin. This River winds through low slopes, granite country with some steep sided ranges thereto. The general area has been extensively cleared and the instability of the soil has resulted in the River collecting suspended sand particles and depositing them downstream in areas of decreased velocity. Evidence from aerial photographs over the years show the River to be extending its deposition increasingly choking the River and is carrying this out in a continuing process. It is possible it finally could find its way to Keepit Dam.

This collection is a continuing process and from known investigation, the River is transporting an average of 13,000 m³ annually of suspended material.

At the site, the River contains a large size waterhole that on its bed is appearing to be filled with sand deposits. The River is reducing itself to a small and narrow surface flow under normal times with pocketing into waterholes such as at the site which unfortunately will eventually fill with sand deposition. At Retreat there is a gauging station operated by the Department of Water Resources. Data from this station has been analysed to estimate the flooding hazard at the site.

3.16 NOISE

The existing noise levels are consistent with the rural nature of the land and are considered to be no more than 30-35 dba. Noise is generated from low volume road traffic, wind in trees, insect activity, farm machinery, bird calls and stock.

**DESCRIPTION OF
THE PROPOSED
DEVELOPMENT**

4.0 DESCRIPTION OF THE PROPOSED DEVELOPMENT

4.1 PROJECT DESCRIPTION

The purpose of the project is to continue exploitation of the sand deposits in the immediate vicinity of the right bank of the MacDonald River being the higher bank levels and located on a high bench prior to the start of a gradual rising ridge area.

It is proposed to extend the area in use towards the west as shown on Areas B, C and D in Figure 26. Area A that has been exploited, has an area of 3761 m². The areas of extension are:

Area B - 3700 m²
Area C - 1750 m²
Area D - 1250 m²

The location of current and proposed extraction are shown on Figure 26 with the area already extracted shown on Figure 27. All extraction and further extraction are on private land and are situated from 15/20 metres to 70 metres from the Riverbank.

4.2 METHOD OF EXTRACTION

The operation will take place over three areas being Areas B, C and D, Figure 27 in an orderly fashion with Area B worked first, proceeding to Area C and finally Area D.

The method of extraction is to remove topsoil overburden which is shallow and about 100/200 mm deep and to stockpile on adjacent sides to provide storage areas for re-use and also to provide both visual and noise barriers. The operation will be carried out by front end loader.

Because of the porous nature of the topsoil, air and water is allowed to move through the stockpile and the seeds therein remain alive for considerable periods and thus, on rehabilitation, there are seeds for regrowth or coverage of natural plants. The stockpile heap will be kept clear of a natural drainage on the top side and on the south side will not interfere with the River being at a minimum at least 15 metres from the riverbank.

The topsoil stockpiling on the River side will be continuous to provide a maximum reduction of visual and noise impact to the south.

There will be no run over by machinery nor compaction on completion of the topsoil stockpile.

The sand will then be extracted by front end loader on a gradual process westerly. The sand will be delivered to a screening plant where small stockpiling will occur. The screening plant will be moved in accord with the face of extraction to reduce overall machinery movement in the site and for best economic operation.

The stockpiled material, as screened, is then loaded into an articulated vehicle for transport to Tamworth. This articulated vehicle is a registered haulage truck with a dog trailer of total capacity of 18 metres. Stockpiling will only be of low volume because of the low volume of total output and the single person operation.

All sand removals contain, from experience, a degree of moisture inherent in the undersurface material. The sand is fine and being a pervious material has a high ability to absorb water. This will give a low dust ingredient and with the operation at such a small scale, very little dust generation will be created as excavation to haulage truck will have the sand virtually in a moist state. As mentioned, very little stockpiling of screened material will exist as the operator will only excavate sufficient at a time to fill the haulage vehicle.

From the existing excavated area, depth of operation will be from 1.0 metres to 2.0 metres as the harder unsuitable bed material then occurs. This bed material provides a firm base for operations.

A diagram of the material flow is shown in Figure 29.

No extraction operations shall be commenced within 40 metres of the MacDonald River bank until a permit under Section 23A of the Rivers and Foreshores Improvement Act has been obtained from the Department of Water Resources, and any conditions imposed in relation thereto shall be adhered to.

4.3 LAND CLEARING

As mentioned, the area of extraction devoid of timber and only contains natural grasses.

Land clearing will consist of removal of topsoil and stockpiling along edges of extraction to provide both buffer areas for noise and visual reduction and for use in rehabilitation.

4.4 EXTRACTIVE RATE AND LIFE OF OPERATION

From survey of the areas remaining in deposit, it has been calculated that reserves are only small and from the surface areas and using an average depth of 1.5 metre volumes are:

Area B - 5500 m³
Area C - 2500 m³
Area D - 2000 m³

Total reserve is 10,000 m³ of fine sand.

The extraction rate will be two loads a day = 36 m³ to be extracted for a period of four weeks' duration.

Per week, there is a removal and haulage of 180 m³ on a normal five day week. For four weeks, this amounts to 720 m³.

The operator then supplements his income from other sources and there will be a break from excavation for a further four weeks.

The site will then be operated on a four week on and four week off situation.

For a year, the total estimated output is 4320 m3.

Thus, the life of the operation is 2.1/4 years.

4.5 PROCESSING OPERATION

not rocky
The raw material excavated will be immediately screened on site by a single screening plant. The screened material is then loaded onto the haulage truck with only sufficient sand screened for the operation. No other processing will take place and the screening plant will be only in operation for short duration.

4.6 TRANSPORT

The operation will produce only 36 m3 a day, being two loads a day or ten loads a Monday to Friday week for a period of four weeks, then a period of four weeks of no operation. It will only be necessary to operate on Saturday under peak demand and then this may occur if the week's production has been down due to a day of no activity.

Normal road-type tip truck with a dog trailer will be used and maintained by the operator.

The main transport route is shown on Figures 2-5 with loaded vehicle travelling south to Bendemeer then New England Highway to Tamworth and north along the same route as an empty vehicle.

4.7 EQUIPMENT

Mobile equipment will be used and comprises three items, being:

1. Volvo LM 846 front end loader with 1.8 m3 bucket
1. Portable fine sand basic screening plant *? wet or dry*
1. Volvo F10, 10-wheel tipper truck of 10 m3 capacity with 8-wheel dog trailer of 8 m3 to give a total of 18 m3.

4.8 EMPLOYMENT

There will only be one person employed being the operator/applicant who resides in the city of Tamworth.

4.9 ENERGY REQUIREMENT

Only diesel fuel is to be used and this will be consumed by the front end loader, screening plant and truck.

Total consumption rate at the site will be about 500 litres a month during operations.

Additional fuel consumption will occur by the truck when operating outside the site will average about 35 litres an operating day.

The direct transport route is shown from the site (Figures 2-5) and the standard of the roads as well as satisfactory road grades when loaded will result in least possible fuel requirement.

4.10 HOURS OF OPERATION

Onsite hours of operation are from 8.00 a.m. to 4.00 p.m. Monday to Friday, with peak requirement 8.00 a.m. to 4.00 Saturday.

As notified, the operation will be for a month on site and a month off site. Operations will not be continuous and on site activities during weeks of operation will also not be continuous, as the extraction and haulage is by one person and, after excavation and screening, the site is vacated during haulage and there will only be a maximum of two trips a day.

There is no Sunday or Public Holiday extraction work or haulage.

4.11 FUTURE DEVELOPMENT

There is no proposal to expand operations beyond those described and mentioned in this report. It is also considered that the area, as designated on Figure 27 (Areas A, B, C and D) are the total reserves of the area.

**ENVIRONMENT
FACTORS
– CONTROL AND
MANAGEMENT**

5.0 ENVIRONMENTAL FACTORS - CONTROL AND MANAGEMENT

5.1 PROJECT IMPACT

Impact from the project will be controlled and is expected to be minimal.

The significant impact of the project is:

- (a) Potentiality for dust generated from the screening plant to loading to truck movement from the site across gravel roads to a point immediately south of "Tilmunda" Station where, across a bridge, a bitumen road commences.
- (b) Potential for noise from equipment operation.
- (c) Transportation of material along public roads.
- (d) Potential for River pollution by oil products from excavating machinery, storm runoff to River carrying oil products, organic material, exposed topsoil, and eroded soil from exposed areas.
- (e) Siting of facilities and potential for fuel and oil leakage from containers.
- (f) Stockpiling of materials.
- (g) Erosion of River bank from extraction and operation.

With application of the following mitigating actions and procedures these impacts will be reduced to a minimum and are not expected to cause undue stress and concern and are pollution controlled measures.

5.2 TRANSPORT

Vehicles in use for transport of the sand material will be a normal bogey vehicle with dog trailer that will comply with appropriate registration procedures and the vehicle is modern and in good repair.

The haulage vehicle will only be operated on two trips a day, that is, two empty to the site and two laden from the site.

The local rural roads are observed as carrying little traffic and the addition of two trips a day by a haulage truck is not considered of any significant impact to the district road usage or likely to cause severe deterioration to the roads.

Other users of the road system in similar operation occur at Tilmunda Station where there is a maximum of four haulage trucks a day, with mostly only two trips a day.

Also, at the junction with Watson Creek Road, another sand extraction operator would use that section of Retreat Road. The number of haulage trucks by that operation using the public road is unknown but it is not considered that there is a continuous flow of haulage vehicles but more of occasional haulage throughout the day.

Although traffic counts have not been carried out on the Retreat Road, observation of use of the road has not disclosed a use that is of concern.

North of the Watson Creek turn-off observation has shown low volume of traffic.

The driver of the haulage vehicle is the operator/applicant and has been extracting sand from the area for a period and is considered conversant and experienced with full knowledge of the roads and vehicles. Also he has full knowledge of school bus operations and there is no obvious danger situation generated by the use of the road system by this vehicle.

5.3 ATMOSPHERIC QUALITY

Possible sources of air pollution generated from the operation and corrective actions are:

5.3.1 Vehicle Dust

Dust generation from vehicles passing to and from the site on the gravel section of roads with possible highest concentration on the unformed sections of access with the property but the access is partly grassed and will only have a truck passing over such 4 times a day with a period of one month of no activity.

To alleviate the potential for dust, truck speeds will be kept to an operating minimum and traffic areas within the site will be restricted to minimum operation. It is considered that dust levels from the private access road will be very low.

5.3.2 Exhaust Emission

Exhaust emission from all equipment which are all diesel powered.

The registered trucks are required to conform to the requirement of registration, while all on-site machinery will comply with the requirements of the Clean Air Regulations Act 1964.

5.3.3 Site Dust

Dust generated from excavation, screening and loading of vehicles.

The topsoil by its organic material and grass coverage will generate only low levels of dust, and further, the soil of the area is large-grained sandy loam which, with its grass cover, does not induce creation of dust.

The excavated sand has a moist characteristic and with immediate screening, and then loading into the haulage vehicle there is little dust that can be generated, and the only creation of dust that can be seen is if some over-screening allowed a small stockpile to be created for the next load some hours later when the screened sand could dry.

If limited dust is noticed to be created, operation will be restricted to slow speed of excavation, low dumping to screening and truck loading. Also if conditions are such that there are strong winds and the possibility of excessive dust being created, more so if the conditions are hot, then the screening plant will not be operated during these times.

5.4 NOISE

Noise will be generated by plant and equipment. Firstly, noise created by the operation will be restricted to the hours of operation. The potential noise sources are the truck, screening plant and front end loader.

All engine driven plant (truck, front end loader and screening plant) will be fitted with exhaust mufflers and engine shielding to ensure noise levels do not exceed recommended limits.

All equipment shall comply with the Noise Control Act and Regulations of 1975 as well as the haulage vehicle complying with the requirement for registration and operation during registration.

The operator will keep the noise dba for the area to no higher than 5 dba to give an overall dba for 90L of 35-40 dba.

5.5 VISUAL QUALITY

Views of the operation are only noticeable from the "Comara" Road and only occasional traffic uses the Road being property associated vehicles and persons.

There is the situation of possible view from the "Lochiel" homestead some 2 km north over part of the operation that will occur in the future in the western areas of extraction.

At present this site is not visible to any house. The main traffic routes are fully obscured from the site and no visual observation can be made of users of these roads.

The direct views will comprise direct sight of stockpiled topsoil but more unnoticeable when piled as a row along the south section and after disturbance has settled and grass growth appears on the surface.

On site machinery will be visible but here the equipment is contained within the excavated area and part of the machinery will be obscured, if not all, with the stockpiled topsoil so located as to be an acoustic and visual barrier and then with about 1 metre of topsoil pile and 1-2 metres of excavation there is an obscured height availability of up to 3 metres.

All visual observation from the "Comara" Road are close to a horizontal plane.

The haulage vehicle will only on 4 occasions be able to be observed during the day and when in transit from the public road to the site (about 297 metres) and also possibly when parked. All observations will be restricted to the little used "Comara" Road and later a section of the extraction from "Lochiel" homestead.

There will be no storage of fuel and oils on the site and it is envisaged no necessity for water closet facilities.

The screening plant and front end loader either stationary or mobile cannot be seen as having any significant impact as they are below ground level in majority of operation, only two items of equipment and then when in operation are only slow moving. Also the material moved has a moisture content and little or no dust visual impact will be generated.

As the whole operation is very small in comparison to the surround, and further the landform and existing vegetation along the River, the extracting areas will have a visual impact that is considered in the minima.

The area will be rehabilitated as progress occurs from one area to another leaving no more than about 3700 m² of exposed area.

5.6 SAFEGUARDS DURING FLOODING

The excavation areas are at present 6 metres above normal river level and at the end of Area D the lower excavation area is envisaged at 3 metres above normal river level.

Flood data from Retreat provided by Department of Water Resources, Armidale has been analysed. This station is located 2 km upstream of site of proposed extraction and has a catchment area of 1760 km². Records from the station are available for 1966-1982.

TABLE 1

Flood Frequency Analysis, MacDonald River at Retreat

ARI (Years)	Peak Flow (M ³ /5)
2	130
5	260
10	370
25	540
50	680

Hydraulic analysis of the river channel at the site of the proposed extraction has been used to estimate the flood levels. These hydraulic computations were checked against the official rating curve used by the Department of Water Resources for the river at Retreat.

TABLE 2
Estimated Flood Levels

ARI (Years)	Water Level (m)* (Arbitrary datum as used in all site details)
2	93.8
5	94.8
10	95.6
25	96.7
50	97.7

NOTE: Pool level adjacent to site 91.9m.

From the data in Table 2 and the site contours shown in Figure 27 it can be seen that:

- i) Area D would be inundated at the peak of a flood having an ARI of 10 years. During a 25 year ARI flood, Area D could be inundated to a maximum depth of 1 metre with a velocity of about 1.5 m/s. This velocity could be safely withstood without scour, once the area had been rehabilitated.
- ii) The lower portion of Area C would be subject to similar flooding to Area D. The majority of the area would not be flooded until the peak of a flood with an ARI of about 15 years.
- iii) Areas B and A would be substantially free from inundation at the peak of a flood with an ARI in excess of 25 years. Once the area has been rehabilitated the depth and velocity of any flood flow across these areas would not be sufficient to cause any erosion.

Flooding therefore poses no threat to the site once rehabilitation has been completed. During working of the site there is a small chance that the lower lying areas could be covered for a short duration at the peak of a flood with an ARI of greater than 10 years. Under these circumstances, erosion would be minimal because the proposed method of operation would create a series of separate basins which will restrict through flow and thus limit any erosion. Operations would cease during any flood which affected the site. The limited extent of the site would cause no perceptible change in flooding of surrounding lands.

5.7 RIVER POLLUTION

Possible sources of water-borne pollution of the river are:

- * oil and fuel leakage from plant
- * vegetation debris from the site
- * sediment derived from the road or the working area

Oil and fuel leakage will be minimised by carrying out vehicle maintenance operation away from the site. Any spills or leakage, when observed, will be cleared up by removal of contaminated soil from the site and burial in a safe location.

Vegetation debris will be minimal because the site is free from any trees and shrubs within the proposed work area. Any old roots extracted during operation will be removed from the site and burnt. All grass will be retained with the topsoil which will be stockpiled on flood-free land.

Sedimentation will be prevented by the provision of sedimentation ponds within each work area. The pond in each area will be the first section opened up. Extraction of sand will be carried out in a manner which ensures that all drainage from the site and access roads will be directed into the sedimentation pond. Each sedimentation pond will be sized to contain the expected total runoff from a ten year ARI storm of 12 hours' duration. The maximum depth of water would be restricted to 1 metre to ensure adequate opportunity for sediment to settle out. The outlet to the pond will be sized so that the pond would take 12 hours to empty after a 12 hour 10 year ARI storm.

Runoff from the hillslope above the extraction site will be prevented from entering the work area by a series of diversion banks. The diversion banks have been designed to carry the 10 year ARI runoff across the slope and to discharge into natural stable waterways running down to the river.

5.7.1 Diversion Bank Design

Diversion bank design - based on Australian Rainfall and Runoff 1987.

Total catchment area above site = 12 ha.

Time of concentration = 20 minutes.

Rainfall intensity for ARI of 10 years = 75 mm/hr.

Peak Flow = 1.0 M 3/s.

Narrow base bank with:	Channel Width	= 2m
	Upslope batter	= 1:6
	Bank batter	= 1:1.5
	Longitudinal slope	= 0.5%
	Low retardence vegetation	
	Required Depth of flow	= 0.35 m
	Velocity of Flow	= 0.8 m/s

This velocity is safe for sandy soil with low retardence vegetation. Therefore design is safe.

5.7.2 Volume of Runoff into Sedimentation Pond

Permeable sandy soil remains in the bottom of the excavation area. Estimated hydraulic conductivity 5 mm/hr. Therefore maximum runoff coefficient for long duration storm = 0.25.

From Australian Rainfall and Runoff (1987), 12 hour storm for ARI of 10 years = 6.6 mm/hr.

$$\begin{aligned} \text{Total 12 hour rainfall} &= 79.2 \text{ mm} \\ \text{Total volume of runoff/M}^2 &= 79.2 \times 0.25 \text{ L} \\ &= 20 \text{ L/M}^2 \\ \text{Maximum exposed area} &= 3700 \text{ M}^3 \\ \text{Runoff volume for 12 hour storm} &= 20 \times 3700 \text{ L} \\ &= 74 \text{ M}^3 \end{aligned}$$

Allow water to pond to max. depth of 1 metre, to enhance sedimentation.

5.7.3 Outlet for Sedimentation Pond

Outlet pipe to be installed in base of pond during active use of pond (i.e. prior to rehabilitation).

Restrict flow to empty storm volume over about 12 hours in order to allow sediment deposition and prevent downstream erosion.

$$\text{Required Flow Rate} = 2.0 \text{ L/s}$$

See Figure 31 for typical cross-section design.

5.8 RIVER BANK EROSION

The extraction process has been designed to prevent bank erosion.

Specific measures include:

1. No excavation closer than 15 metres to the River.
2. No removal of any trees and no removal between the existing stock fence and the River.
3. No removal of any of the natural bank area.
4. Protection and maintenance of existing natural drainage line and no excavation within 5 metres of such.
5. Drainage from ponded areas to be over grassed areas and not allowed to provide concentrated water flows. Also to be on lowest grades available.

5.9 EROSION, SEDIMENTATION AND STABILITY

Rainfall runoff will be higher in excavated areas due to the exposed soil with no natural cover and further the base material on the bed of the excavated area is less pervious than the upper layers.

Secondly the sides are gentle ridges and are shown on the cross-section diagram (Figures 20-25).

Catchment drain (apparently natural) occurs along the top side of the excavated areas and further areas, collecting ridge run-off and dispersing into the River in an orderly manner.

Two small watercourses exist at each end of the area and these assist in keeping surface run-off away from the site.

The extracted area will collect water from its own area and not from adjacent areas. This run-off will be collected and controlled in overflow.

The overall soil nature, the small size of the excavated area and the management control will create no outside erosion, sediment transport or instability to the area.

Any erosion that occurs will only be in the excavated side banks which will be controlled by collection in ponds and then attended to in rehabilitation.

5.10 VEGETATION

The extraction area has no trees or shrubs only grass cover. Existing trees are on the river bank, being oak and scattered small gums that exist in the north east. The operator will not interfere with the existing vegetation except for grass cover and under the rehabilitation programme the area will be returned to a stable grassed one.

5.11 BIRD AND ANIMAL

As there is no intention to interfere with any existing trees, there will only be a very minimal impact on bird life. Most bird life is mobile and would accommodate itself during operations, leaving and returning as work on site is in action and no action.

5.12 LAND USE

The site and surrounding areas are at present used for rural purposes. This operation will not affect the land use of the surrounding area as the land use of grazing is major compared to the subject sand extraction which is minor.

However, the actual site will be used for sand extraction but stock can as part of a larger fenced area, use the site for any grazing fodder. The effect upon the grazing usage of the whole property is very minimal and it is accepted that it would have no effect upon total carrying capacity. The use of stock in the area will not create a danger thereto, due to shallow operations.

5.13 ENERGY CONSERVATION

Procedures to be adopted to minimise energy usage are:

1. Regular servicing and maintenance of mobile equipment.
2. Operating machinery only as required and in an efficient manner to eliminate unnecessary usage.

5.14 CONTROL OF OPERATION

The operation will be subject to complying with conditions imposed by the Parry Shire Council, Legislative Control of N.S.W. which will be by the Clear Air, Clean Water and Noise Control Acts and regulations in regard to operating hours, and transport routes, etc., imposed by Council as conditions, will all be compiled with. Also any controls and regulations by the Water Resources Commission and, if involved, the Crown Lands Office insofar as leasing of the River bed area.

5.15 WASTE MATERIAL

Oil and fuel leakages that may occur will be collected in sediment ponds as well as any surface soil material during rain periods. These polluted materials will be allowed to settle in the ponds and left for eventual covering in rehabilitation. Should the need require, the ponds will be cleaned and the waste material used for backfill in deeper areas of the excavation after it has dried out.

Organic and unwanted material from the screening operation will be used for backfill. If approved by the Soil Conservation Service for re-topsoiling, then the material will be correctly stored for that usage.

5.16 ABORIGINAL SITES AND RELICS

The advice by the National Parks and Wildlife Service indicates that there are no sites or relics within the proposed extraction area and hence there is no impact in this respect. As prior mentioned, the only possible relics are "stone flakes" or "canoe trees".

There are no matured eucalyptus trees in the area and, further, the operation area is devoid of timber or the likelihood of interfering or disturbing any trees.

Should, however, any ground relic be found in excavation, the National Parks and Wildlife Service will be immediately notified and operation will cease until appropriate action has been taken to recover or protect such relics.

5.17 REHABILITATION

The Rehabilitation Management Plan has a four-fold purpose.

1. To rehabilitate land such that it may be returned to productive agricultural use. The policy of the operator/applicant is that which applies to mining sites generally in New South Wales. That is that land should be rehabilitated to a standard so that its value to agriculture will be at least equal to that prior to mining.

2. To rehabilitate the mined land so that the soil surface is stable and erosion and pollution is minimised.
3. To rehabilitate the area such that the aesthetics of the site are not reduced in quality. This includes the removal from the site of all items of mining equipment and rubbish.
4. To forward plan the mining operation and the rehabilitation procedure so that potential problems are discussed and solved before they are allowed to develop.

The initial removed overburden will, as exhaustion occurs in each sub-area, be returned to the site and then after complete exhaustion, the land will be fully rehabilitated so as to provide an even graded surface, and a grassed surface to provide an area at least equal to that prior to operation.

A typical extraction procedure is illustrated in Figure 32 and contains the following sequence of operations.

1. Site Preparation

- i) Construct contour catch drain upslope from work area.
- ii) Remove and stockpile topsoil from area reserved for sedimentation pond.
- iii) Excavate sand from sedimentation pond.
- iv) Install outlet pipe from sedimentation pond.

2. Sand Extraction

- i) Remove and stockpile topsoil from each section to be excavated (maximum exposed area to be equivalent to 1 month working).
- ii) Extract sand and remove for screening and stockpiling.
- iii) Extraction process will be planned to ensure that free drainage towards the sedimentation pond can occur at all times.

3. Rehabilitation

- i) Progressively rehabilitate each section after removal of sand by:
 - spreading topsoil to minimum depth of 5 cm
 - apply fertilizer and seed mixture as follows:

Pasture Species	Kg/Ha
Paspalum	2
Phalaris	5
Sub Clover	2
White Clover	2
Couch Sps	2
Japanese Millet	2
or Oats	2

Fertilizer being Starter 15R or equivalent will be used to aid plant growth. as the area does indicate slight acidity and lack of suitable soil bacteria due to its sandy component all clover species will be lime pelleted and inoculated prior to sowing.

ii) At completion of mining out each major area (A,B,C, or D) carry out the following tasks:

- complete rehabilitation of last mined area.
- rehabilitate sedimentation pond area.
- cut outlet channel from low point in sedimentation pond through berm to allow drainage to the River.

Dimensions of channel to be:

Bed Width	5 m
Side batter	2:1
Max. Grade	0.5%

- Rehabilitate channel bed with seed and fertilizer mixture as used for rehabilitation and cover channel bed with coarse weave hessian (or similar) to be well anchored to ground.

5.18 CONCLUSION

1. The existing environment of the proposal and its site have already been disturbed by previous land-use including agricultural (grazing, clearing) and sand extraction.
2. The development site contains no known desposits or sites of Aboriginal significance.
3. Extraction of the site can be made with minimal disruption to the surrounding district, especially by its minor size, the larger grazing properties and scattered population.

4. The proposed methods to protect the environment are both feasible and effective.
5. Rehabilitation areas will allow the post-extraction landform to be blended into the surrounding land as well as returning an area to its original grazing use in keeping with the locality without detriment to the environment.

**ANALYSIS OF
ENVIRONMENTAL
INTERACTION
AND IMPACT**

6.0 ANALYSIS OF ENVIRONMENTAL INTERACTIONS AND IMPACTS

6.1 GEOLOGY AND GEOMORPHOLOGY

The area is predominant granitic pluton which weathers to produce a quartz sand wash. The surrounding high areas of granitic boulder mass would support the downward weathering action to deposit on the banks, etc., as for example has occurred on the subject site.

Where caught, these have deposited over once richer agricultural loam formed at a level when it was prone to flooding and less erosion of granitic areas has occurred in the River Basin.

The granitic character of the area does not produce high quality agriculture land and with hot summers often grass cover is limited and the improved grasses do tend to find it difficult to survive.

The sand extractors will not injure the agriculture viability of the the land in the area which is used for grazing pursuits. The replacement of the topsoil cover will return the land to its original viability.

6.2 BANK EROSION

Bank erosion and instability to the Bank will not be increased by the project for the reasons already explained as well as there is no excavation to occur to the bank area, and within the upper bank closer than 15 metres.

6.3 WATER POLLUTION

By the controls imposed on both machinery and run-off and the return of the excavation to be contained and protected areas, potential impact for pollution of the River by transportation into it of man created wastage and fuel/oil spillage and unwanted materials as well as created erosion is extremely low.

The effect of the operation on the River downstream is considered to not in any way deteriorate the water quality.

All requirements by the State Pollution Control Commission, Soil Conservation Service and Department of Water Resources will be complied with.

6.4 NOISE POLLUTION

The requirement to the operating machinery to comply with Noise Control Standards and the fact that the area is sparsely populated will have little impact to the community.

The nearest dwelling is some 2 km from the site and no noise should be heard from the site. There is, between the site and such buildings higher ground as well as vegetation through trees, to absorb any noise that could be created from a direct wind. Although no specific report has been obtained for the site it is considered that such an issue of noise factors

is of no significant effect to the local environment and as advised the operator will keep any increase in noise pollution to a maximum of increase by 5dba.

Any requirement by the State Pollution Control Commission will be strictly adhered to.

All equipment used on the sites, and where used for haulage, will be maintained in a state of sound mechanical order and in such a manner that noise emission levels are regulated so that the loss of accoustical amenity to the occupants of nearby residence will be minimal.

6.5 DUST POLLUTION

There will be the potential for dust to be generated from truck movement to the site from the end of the bitumen access road, screen operation and front end loader movement on the fine sand area.

However, as mentioned this is only a small operation and the owner/applicant will be excavating, screening and loading on the one operation and the sand will be moisture laden for the majority of its movement. It is only perhaps if the screened material is kept for a short time between trips that drying could occur and then the possibility of some minor dust.

Controls on dust have been mentioned herein to enable this to be kept to a minimum. The access road because of limited use will provide little dust potential but should it be noticed then, truck speed will be kept to a minimum and the dust if created will have an impact of only short duration.

Within the site, control is to effected when required to include low dumping and low speeds of machinery. The screening plant should not generate a high dust impact by its low profile and only using sand material which should, in all consequence, be to a degree, moisture laden.

The applicant, however, will compy with any reasonable requirement of Parry Shire Council with regard to dust control as well as to any requirement of the State Pollution Control Commission.

6.6 ROADING ?

The low number of movements of the truck using the site will have very little impact upon the district and it is considered the vehicle will cause very little deterioration (if any) to the existing Shire Road System. Transportation is in the main contained to one direct access road to the New England Highway with the truck only carrying loads of permitted weight.

The truck travels to the site empty and its use of the road is shared by passenger vehicles, omnibus, wool trucks, table top trucks, livestock transport and other haulage trucks.

By visual observation little deterioration has occurred to the roading over the years and in the past the gravel section has been upgraded by the Shire in recent years.

Maintenance to the bitumen section appears to be the occasional pothole filling by manual means with the gravel section perhaps graded by Council during normal maintenance programmes.

It cannot be seen that the haulage vehicle will have a calculated impact upon any deterioration of the road. In total of all the heavy vehicles using the road no apparent increase is seen in Council expenditure as all maintenance appears normal.

6.7 FLORA AND FAUNA

Existing trees and river bank trees will not be disturbed. In fact there will be no disturbance to any vegetation except grasses occupying the fine sand deposition areas.

With the low scale of the operation and the prior clearing operations the impact on flora and fauna will be very low.

On rehabilitation the area will be returned to its original flora and fauna with the increase of grasses by those additional types sown.

6.8 VISUAL IMPACT

The visual impact is not of a high order. Contributing to the low visual impact is non-visibility from main thoroughfares, some screening by river oaks from a very low volume access road, visual observation in a horizontal plane, below ground operation having part or all of equipment coupled with an acoustic and visual barrier in the placement of top soil stockpiling and natural berm and also low population. Only one dwelling will have some visual impact and this is 2 km distant and at a higher level. Also it will only be able to observe operation at the latter stage of the development and not during the full course of operation.

Every attempt will be made to keep the visual impact as low as possible.

6.9 ARCHAEOLOGY

The area is considered by the National Parks and Wildlife Service as having a very low profile as to Aboriginal sites and relics and impact to disturbance or any possible destruction is very low.

6.10 LAND ZONING

Both the old Interim Development Order and the new Local Environmental Plan of the Parry Shire Council allow for extractive industries within the area that is zoned and used as Rural but subject to Council consent and Advertising.

There will be no requirements for any rezoning.

6.11 LAND USE

The relation of the proposed extractive areas to the grazing land surrounding has no impact that will be adverse to the agricultural use of the land.

The extractive site on the grazing area is very low in percentile comparison. There is no potential area for injury to stock.

6.12 ENERGY RESOURCES

The impact on energy resources is considered of very low rate and in fact negligible when the site operation is estimated to use only 500 litres of diesel fuel per month or 5 a day for a Monday to Friday operation and then every alternative month with no operation.

6.13 HEALTH AND SAFETY

The area of extraction will have, by the fact of using only sand material, no detrimental effect to health. The area is a pleasant one with air of high quality.

The extractive processes will not create any hazards with all normal precautions observed by machinery operation.

Operators will always be aware of stock and the truck driver (applicant) is fully conscious of local requirements and to always observe traffic regulations.

The extractive processes will not create any public dangers as the areas are fenced out to the public and do not require any deep excavation.

6.14 EMPLOYMENT

The operations will only employ one person (part-time). No further generation of employment will occur but it will give a continual employment to the operator/applicant.

The operation does have an indirect effect upon others as the provision of the sand allows others in the industries associated thereto to maintain supply of raw material and thus continuing employment.

The operator purchases wearable goods, servicing, fuel, spares from the City of Tamworth as well as living with his family in the City. The operation therefore has a small positive impact on the general community and well-being of the economy of Tamworth.

6.15 CUMULATIVE EFFECT

It is understood there are only a few operations of sand extraction in the MacDonald River area and these are small scale ventures.

With Environmental Impact Statements to be supplied to Parry Shire Council by all operators, a controlled and orderly programme will occur of the sand extraction of the River and adjacent areas.

As has been stated, the extractions here and no doubt others in the area will provide a further benefit to the environment.

It is not seen that the subject application will have any overall cumulative effect that is adverse to the locality.

6.16 CONCLUSION

The obvious realization is that this is a small scale operation by a single person desiring to excavate sand to supplement his income and such extraction being only for 6 months of the year.

The costs of machinery etc. are high and the returns are low and the applicant is fully conscious of complying with all requirements and protecting his asset so as to provide continuing employment and nett income.

The operation being only small (total area will not exceed 10,500m² all up (1.05 ha) with an estimated total volume of 10,000m³, it will by its management and inherent characteristics have very little impact upon the environment.

**JUSTIFICATION OF
THE PROPOSED
DEVELOPMENT
AND ALTERNATIVES**

7.0 JUSTIFICATION OF THE PROPOSED DEVELOPMENT AND ALTERNATIVES

7.1 REQUIREMENT OF SAND EXTRACTION

In all concrete used throughout the construction industry, sand and gravel are the two major raw material components. It is fundamental that these raw materials be of good quality and in the case of sand, it must be in accord with State Standards as set down by the Australian Standards Association and of contractor specifications be free of foreign material, be clean, screened and will offer a sound and stable matrix with cement. Also where sand is used for other purposes such as bedding material it has to be of good quality.

By the very nature of natural means, sand to these requirements is found associated with water activity. The river system where granite with its quartz component is the geological formation provides the material in economic quantities. The river collects the weathered quartz from the granite breakdown and transports it to deposit it in areas when it can no longer hold it in suspension and this occurs in low velocity areas, in the lee of obstructed areas, etc. By the very action of the river water, it is able to segregate the various matters in suspension so that sand is deposited in high elevations and small particle matter such as silts which are carried further downstream.

The finer white sands that are also deposited in the subject area have resulted from upper ground in situ erosion and overland flow deposition as well as possible low volume discharges from the River in ^{the} ~~time~~ of earlier geological history.

7.2 ECONOMIC CONCEPTS

Besides the location of the supply is the relationship of the market and compatible supply areas. The relation of the location to the market is a dictating factor as to ability to land the material competitively and this is directly affected by transport costs which are related to vehicle type, performance, road conditions and distance and required costs by licence etc.

Another major factor is that the supply to the market must be of a quality as expressed prior.

The subject extraction area being of small scale which is a cost efficient operation is able to supply part of the required market of the City of Tamworth and also to tender and win contracts for supplying of quality sand to other construction sites. Fine sand is in limited quality in the region and the subject area fulfils the overall market requirements to total supply.

With an available market, any denial to extraction would cause alternative supplies to be brought in from other areas that would be more expensive to the consumer.

7.3 SOCIAL FACTORS

The extraction at the site provides employment for one person and thus income as well as indirect income to others in the Tamworth region. This gives the project both financial and social merit amplified by the current economic climate of hardship in obtaining employment and the resultant social impact to the individual.

7.4 FUTURE DEMAND

Statistics show Tamworth and Parry Shire Council as both growing in population and there would be a continuing demand on sand material for the construction industry. Further, this demand is expected to remain at a steady rate with the application/owner having varying peak times as he supplies fixed contracts and wins others.

7.5 ENVIRONMENTAL ISSUES

The area subjects itself to the least possible impact on the environment and those issues that stand out as potential for creating adverse impact can be controlled, reduced and mitigated by management procedures, environmental control adhering to legislative control, planned action that are all addressed in this report.

The area is remote and the existing sand cover over those areas above the River bank and to the north of such, are causing poor quality land at the surface and the extraction of such sand will, not deteriorate the environment. Further, the fact that the sand extraction can be carried economically and support the equipment and manpower shows it is an optimum usage of the land.

7.6 ALTERNATIVE MATERIALS

Sand at this stage shows that there is at present no economic alternative to the construction of concrete and as a base material for construction sites.

Tests have been carried out on slag as a by-product of steel mills as an alternative to sand but this has shown to be with technology at this stage to be unsuccessful and it could be many years before a successful substitute can be found for natural sand which is locally available and economically viable to provide to the markets.

7.7 ALTERNATIVE LOCATIONS

The subject location is within an area of private property and offers the most economic situation. It also affords the highest return, the greatest security and has ease of access.

It is in an area of low environmental impact and also within an ideal area as discussed for quantity of supply.

7.8 DEVELOPMENT ALTERNATIVES

The development programme as discussed herein is the only viable alternative and has the least adverse impact on the environment. It allows full utilization of equipment, confined area of operation and an ability to rehabilitate back to original grazing operation.

7.9 NO DEVELOPMENT ALTERNATIVE

- (a) No action would mean variable quality of sand from other external areas and long transport distances and thus higher prices.
- (b) Without development, the employment and indirect benefit to others would discontinue with financial and social consequences. On a community basis consumers which include Local and State Government bodies would pay more for the product.
- (c) If other sites were selected, there could be a potential for greater impact on the environment in an adverse manner. The subject area offers the lowest possible impact to the environment.

REFERENCE

8.0 REFERENCES

- Department of Environment and Planning 1985 - Population projections for Non-Metropolitan Local Government Areas in N.S.W.
- Environmental Planning and Assessment Act 1979 and Regulations.
- Guidelines for Application of Environmental Impact Policy.
- Clean Water Act 1970 and Regulations.
- Noise Control Act 1975 and Regulations.
- State Pollution Control Commission Act 1975 and Regulations 1985.
- Atlas of New England - 1977 - D. Lea, J. Pigram, L. Greenwood.
- Sediment Transport Capacity of the MacDonalld River by P. Jamieson and S. Perrens.
- Geology of Tilmunda by P.G. Flood.
- National Parks and Wildlife Service - Register of Aboriginal Artefacts.
- Resource Planning 1987 - Environmental Impact Statements on Cockburn and Peel River granite and sand extraction.
- Department of Meteorology.
- Parry Shire Council Interim Development Order No.2 (Cockburn Shire).
- Environmental Impact Statement - P.J. Steel, Mitchell College.
- Crown Land Consolidation Act.
- Environment Impact Statement and Sand Extraction - Tilmunda Station - T.J. Stewart & Co.
- Extraction Operations and Rehabilitation at Menagle-Downes and Moore.
- Parry Shire Council Local Environmental Plan 1987.

APPENDIX 1

**TITLES TO LAND
AND PORTION PLANS**

NEW SOUTH WALLS

CERTIFICATE OF TITLE

REAL PROPERTY ACT, 1900

TORRENS TITLE
Register

Vol. 14257 Fol. 79

Prior Title (Crown Grant)

Vol. 4756 Fol. 220



EDITION ISSUED

22 10 1980

I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

[Signature]
Registrar General.



14257
Fol. 79

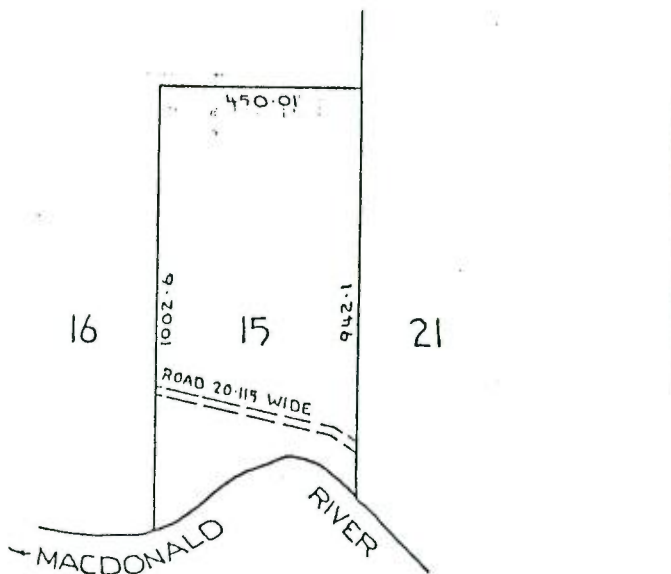
(Page 1) Vol.

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON



PLAN SHOWING LOCATION OF LAND

LENGTHS ARE IN METRES



AREA: 40.47 ha
THIS AREA DOES NOT INCLUDE
THE AREA OF THE ROAD

REDUCTION RATIO 1:12500

579311 R.A

ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Portion 15 in the Shire of Parry Parish of Retreat County of Inglis.
EXCEPTING THEREOUT the road shown in the plan hereon and the minerals reserved by the Crown grant.

FIRST SCHEDULE

DONALD SPENCER WHITE of Manilla, Grazier and DOREEN SHIRLEY JOAN WHITE his wife, as Tenants in Common in equal shares.

SECOND SCHEDULE

1. Reservations and conditions, if any, contained in the Crown grant above referred to.
2. N579754 Mortgage to Bank of New South Wales.
3. 839311 Mortgage to Rural Bank of New South Wales, T992610

WARNING: THIS DOCUMENT MUST NOT BE REMOVED FROM THE REGISTRAR GENERAL'S OFFICE.

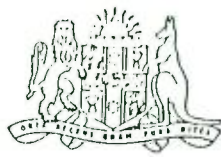
CERTIFICATE OF TITLE

TORRENS TITLE Register

REAL PROPERTY ACT, 1900

Vol. **12463** Fol. **61**

Edition issued 12-6-1974.



NEW SOUTH WALES

Crown Grant Vol. 148 Fol. 199

Prior Title Vol. 282 Fol. 230

12463 Fol. 61

(Page 1) Vol.

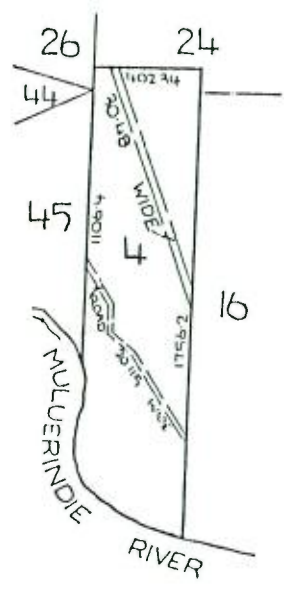
I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

Jawatson
Registrar General.



PLAN SHOWING LOCATION OF LAND

LENGTHS ARE IN METRES



AREA : 64.35 ha
THIS AREA DOES NOT INCLUDE
THE AREA OF THE ROAD

REDUCTION RATIO 1:20 000

ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Portion 4 in the Shire of Cockburn Parish of Retreat and County of Inglis. EXCEPTING THEREOUT the road shown in the plan hereon.

FIRST SCHEDULE

~~HITCHHINER FRANK DOMINIAN of Manila, Grazing.~~

SECOND SCHEDULE

1. Reservations and conditions, if any, contained in the Crown Grant above referred to.
2. Easement for Transmission Line created by Resumption No. K474453 affecting the part of the land within described shown as "30.48 wide" in the plan hereon.

WARNING: THIS DOCUMENT MUST NOT BE REMOVED FROM THE LAND TITLES OFFICE.

ERSO CAU D AG ALTE DR AD O TH TIFI DR AN TIFIC ATTOR HEREON

CERTIFICATE OF TITLE

TORRENS TITLE
Register

NEW SOUTH WALES

REAL PROPERTY ACT, 1900

First Title This Folio

Vol. 15261 Fol. 182

Prior Title Crown Land (FI 106730)

EDITION ISSUED



17 9 1984

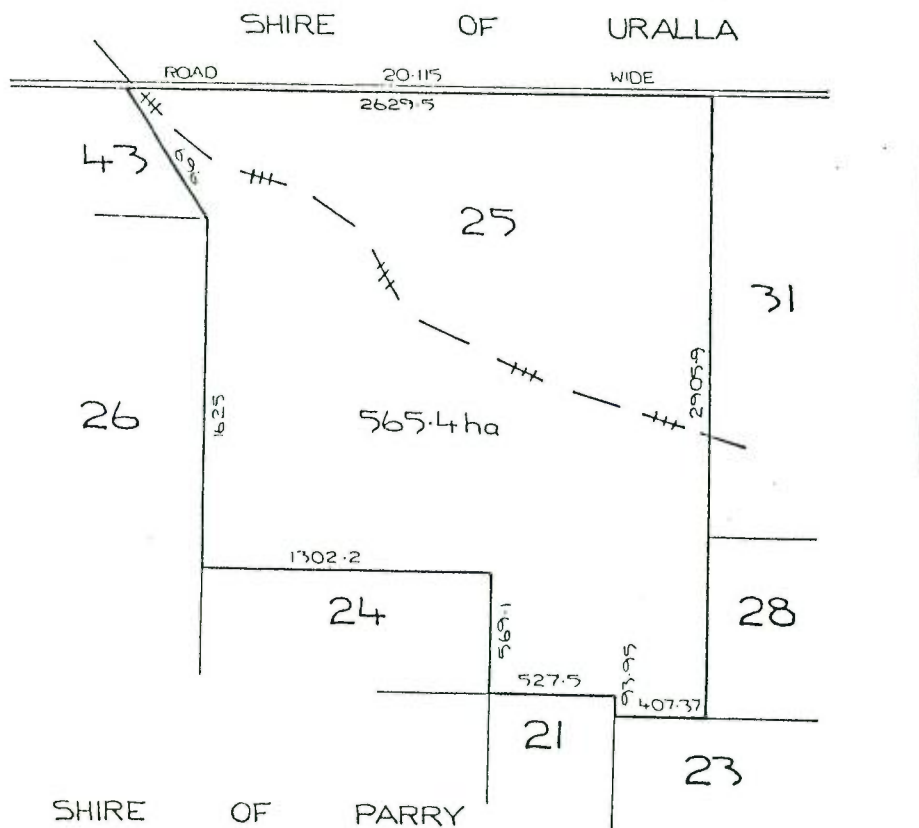
I certify that the person named in the First Schedule is the registered proprietor of an estate in fee simple (or such other estate or interest as is set out below) in the land described subject to the recordings appearing in the Second Schedule and to the provisions of the Real Property Act, 1900.

[Signature]
Registrar General.



PLAN SHOWING LOCATION OF LAND

LENGTHS ARE IN METRES



LAND REFERRED TO

Portion 25 in the Shires of Uralla and Parry Parish of Retreat County of Inglis.

FIRST SCHEDULE

DONALD SPENCER WHITE and DOREEN SHIRLEY JOAN WHITE, as Tenants in Common in Equal Shares.

SECOND SCHEDULE

1. Land excludes minerals and is subject to reservations and conditions in favour of the Crown - See Memorandum 5700000A.
2. Conditional Purchase 1962/2 Armidale - subject to the provisions of the Crown Lands Consolidation Act, 1913, particularly as regards -
 - (a) PAYMENT OF BALANCE OF PURCHASE AND OTHER MONEYS;
 - (b) forfeiture provisions;
 - (c) restrictions on subdivision, see s.257.
3. Book 3118 No.268 Mortgage to Westpac Banking Corporation.
4. Book 3427 No.114 Mortgage to State Bank of New South Wales.

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED

9th November, 1984

(Page 1) Vol. 15261 Fol. 182

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HERECY

CERTIFICATE OF TITLE

REAL PROPERTY ACT, 1900

TORRENS TITLE
Register

NEW SOUTH WALES

Vol. **12463** Fol. **60**

Prior Title (Crown Grant)
Vol. 4534 Fol. 227



Edition issued 12-6-1974.

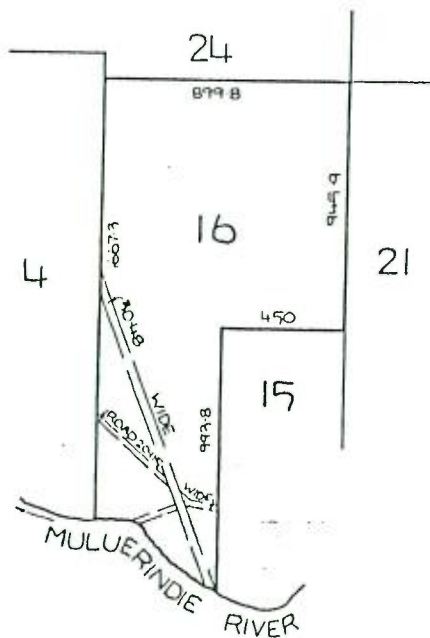
I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

Jawatson
Registrar General.



PLAN SHOWING LOCATION OF LAND

LENGTHS ARE IN METRES



AREA : 121.4 ha
THIS AREA DOES NOT INCLUDE
THE AREA OF THE ROADS

N579752 L.J.P.

J.P.

REDUCTION RATIO 1:20000

ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Portion 16 in the Shire of Cockburn Parish of Retreat and County of Inglis. EXCEPTING THEREOUT the roads shown in the plan hereon and the minerals reserved by the Crown Grant.

FIRST SCHEDULE

~~FRANCIS DONOHUE of Manila, Grantee.~~

SECOND SCHEDULE

1. Reservations and conditions, if any, contained in the Crown Grant above referred to.
2. Easement for Transmission Line created by Resumption No. K474453 affecting the part of the land above described shown as "30.48 wide" in the plan hereon.

WARNING: THIS DOCUMENT MUST NOT BE REMOVED FROM THE LAND TITLES OFFICE.

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

(Page 1) Vol. **12463** Fol. **60**

9th November, 1987

CERTIFICATE OF TITLE

TORRENS TITLE
Register

NEW SOUTH WALES

REAL PROPERTY ACT, 1900

Vol. **12463** Fol. **59**

Prior Title (Crown Grant)
Vol.4534 Fol.228



Edition issued 12-6-1974.

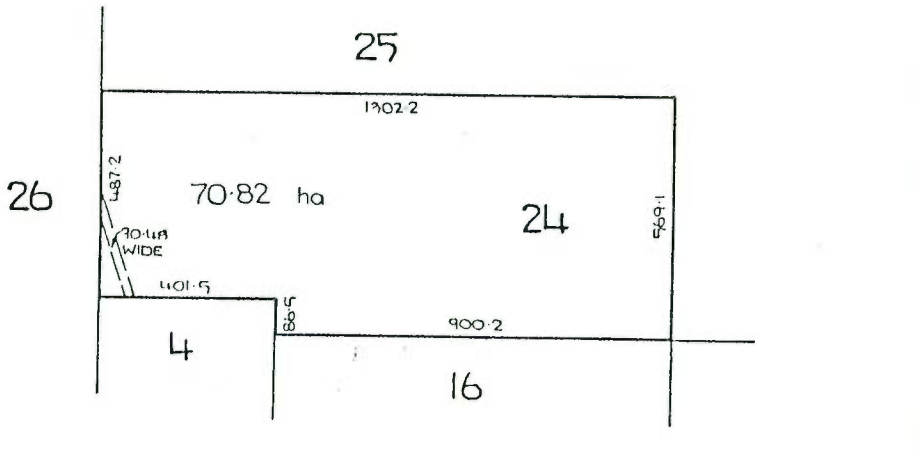
I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

J. J. J.
Registrar General.



PLAN SHOWING LOCATION OF LAND

LENGTHS ARE IN METRES



N579752 *J.J.J.*

REDUCTION RATIO 1:12500

ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Portion 24 in the Shire of Cockburn Parish of Retreat and County of Inglis. EXCEPTING THEREOUT the minerals reserved by the Crown Grant.

FIRST SCHEDULE

~~KITCHENER FRANK DONELAN of MANILLA, Grazier~~

SECOND SCHEDULE

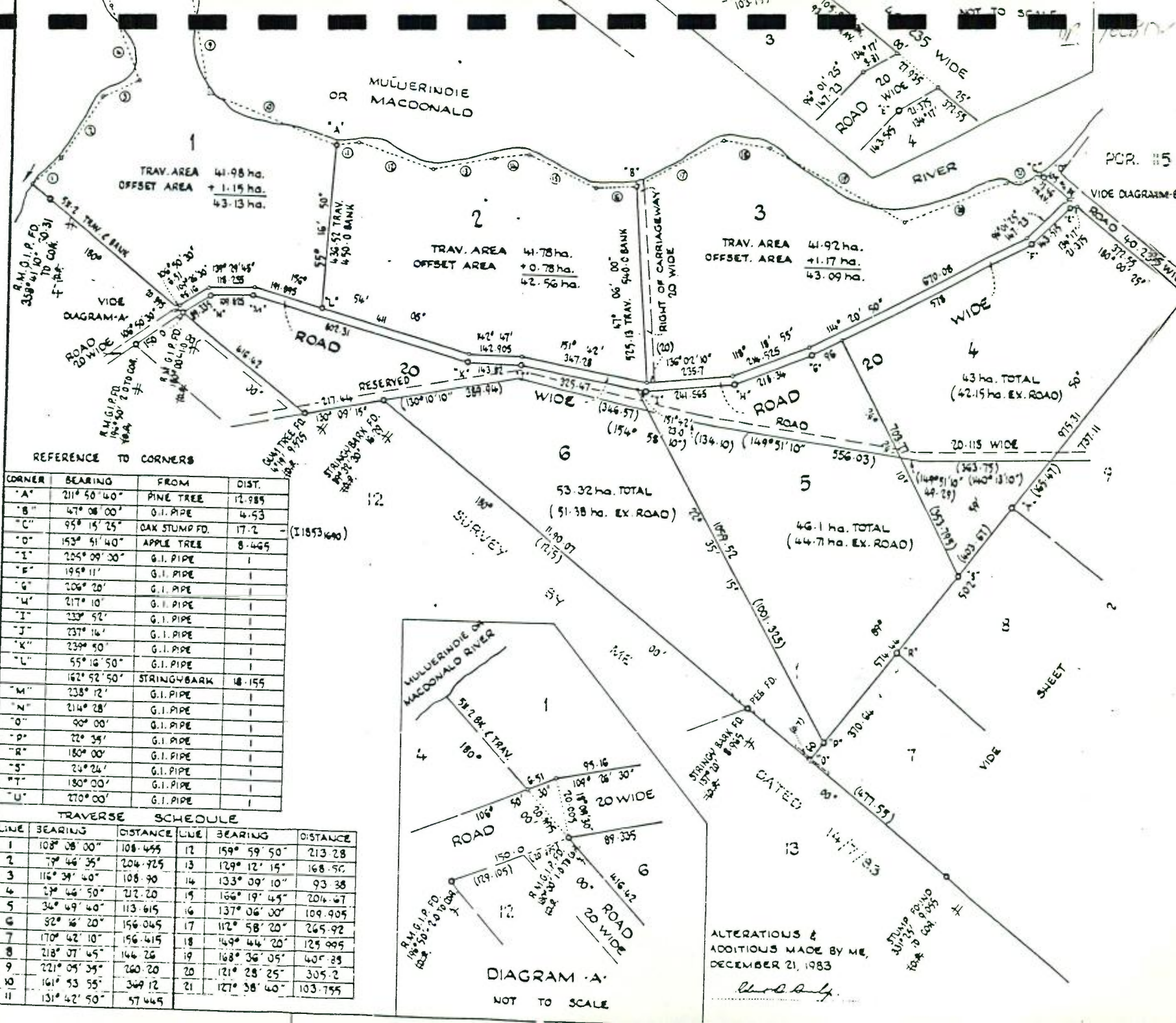
1. Reservations and conditions, if any, contained in the Crown Grant above referred to.
2. Easement for Transmission Line created by Resumption No.K474453 affecting the part of the land above described shown as "30.48 wide" in the plan hereon.

WARNING: THIS DOCUMENT MUST NOT BE REMOVED FROM THE LAND TITLES OFFICE.

(Page 1) Vol. 12463 Fol. 59

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREOF

FEINT
KALSA



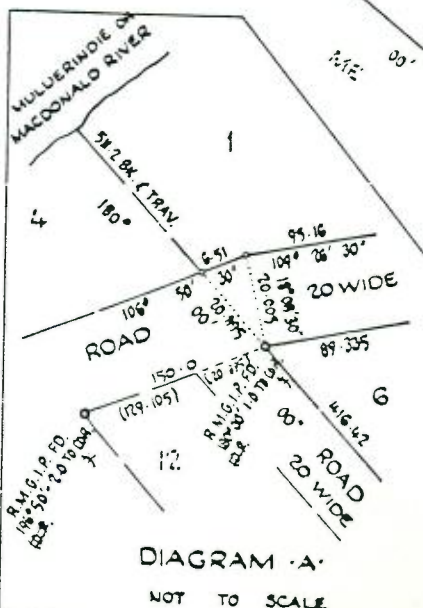
REFERENCE TO CORNERS

CORNER	BEARING	FROM	DIST.
"A"	211° 50' 40"	PINE TREE	12.985
"B"	47° 08' 00"	G.I. PIPE	4.53
"C"	95° 15' 25"	OAK STUMP FD.	17.2
"D"	153° 51' 40"	APPLE TREE	8.449
"E"	225° 09' 30"	G.I. PIPE	1
"F"	195° 11'	G.I. PIPE	1
"G"	206° 20'	G.I. PIPE	1
"H"	217° 10'	G.I. PIPE	1
"I"	233° 52'	G.I. PIPE	1
"J"	237° 16'	G.I. PIPE	1
"K"	239° 50'	G.I. PIPE	1
"L"	55° 16' 50"	G.I. PIPE	1
"M"	162° 52' 50"	STRINGYBARK	18.155
"N"	238° 12'	G.I. PIPE	1
"O"	214° 28'	G.I. PIPE	1
"P"	90° 00'	G.I. PIPE	1
"Q"	22° 34'	G.I. PIPE	1
"R"	180° 00'	G.I. PIPE	1
"S"	24° 24'	G.I. PIPE	1
"T"	180° 00'	G.I. PIPE	1
"U"	270° 00'	G.I. PIPE	1

TRAVERSE SCHEDULE

LINE	BEARING	DISTANCE	LINE	BEARING	DISTANCE
1	108° 08' 00"	108.455	12	159° 59' 50"	213.28
2	7° 46' 35"	204.725	13	129° 12' 15"	168.50
3	116° 34' 40"	108.90	14	133° 09' 10"	93.38
4	2° 46' 50"	212.20	15	166° 19' 45"	204.67
5	36° 49' 40"	113.615	16	137° 06' 30"	109.905
6	92° 16' 20"	156.045	17	112° 58' 20"	265.92
7	170° 42' 10"	156.415	18	149° 44' 20"	125.995
8	218° 07' 45"	146.26	19	168° 36' 05"	405.39
9	221° 05' 35"	260.20	20	121° 28' 25"	305.2
10	161° 53' 55"	369.12	21	127° 38' 40"	103.755
11	131° 42' 50"	57.645			

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Metroplitan
10 Days Act.
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1887 Act



ALTERATIONS &
ADDITIONS MADE BY ME,
DECEMBER 21, 1983

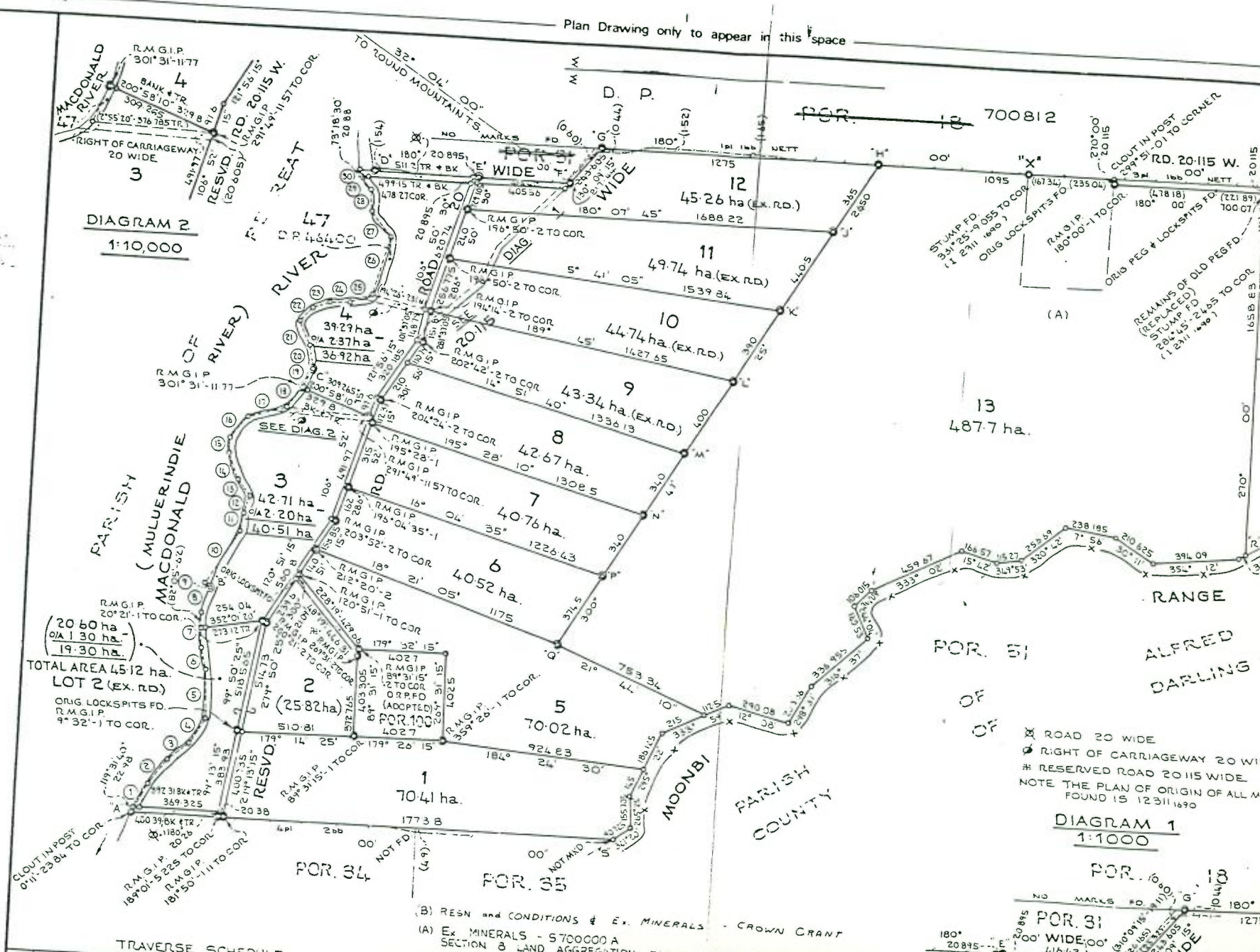
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PLAN FORM 2

Signatures and seals only



DIAGRAM 2
1:10,000



Plan Drawing only to appear in this space

✕ ROAD 20 WIDE
 ○ RIGHT OF CARRIAGEWAY 20 WIDE
 # RESERVED ROAD 20.115 WIDE
 NOTE THE PLAN OF ORIGIN OF ALL MARKS FOUND 15 12311 1690

DIAGRAM 1
1:1000

(B) RESN and CONDITIONS & Ex. MINERALS - CROWN GRANT
 (A) Ex. MINERALS - 5700000A
 SECTION 8 LAND AGGREGATION TAX MANAGEMENT ACT

TRANSVERSE SCHEDULE

PARISH OF
 ALFRED
 DARLING

PARISH OF
 MOONBI

PARISH OF
 MACDONALD
 (MULDERINDIE)

(20.60 ha
 OR 1.30 ha
 19.30 ha)
 TOTAL AREA 45.12 ha
 LOT 2 (EX. RD.)
 ORIG LOCKSPITS FD.
 R.M.G.I.P.
 9° 32' -1 TO COR.

CLOUT IN POST
 0°11' 23.84" TO COR.
 R.M.G.I.P.
 187°01' 52.25" TO COR.
 R.M.G.I.P.
 181° 50' -111 TO COR.

BANK & TR.
 309 225
 12° 55' 10" 376 785 TR.
 R.M.G.I.P.
 301° 31' -11 77
 RIGHT OF CARRIAGEWAY
 20 WIDE.

RESVD. RD.
 20.115 W
 (20.605)
 291° 47' -115 TO COR.

R.M.G.I.P.
 301° 31' -11 77
 SEE DIAG. 2

R.M.G.I.P.
 301° 31' -11 77
 20° 21' -1 TO COR.

R.M.G.I.P.
 301° 31' -11 77
 20° 21' -1 TO COR.

R.M.G.I.P.
 301° 31' -11 77
 20° 21' -1 TO COR.


R.M.G.I.P.
 301° 31' -11 77
 20° 21' -1 TO COR.

R.M.G.I.P.
 301° 31' -11 77
 20° 21' -1 TO COR.

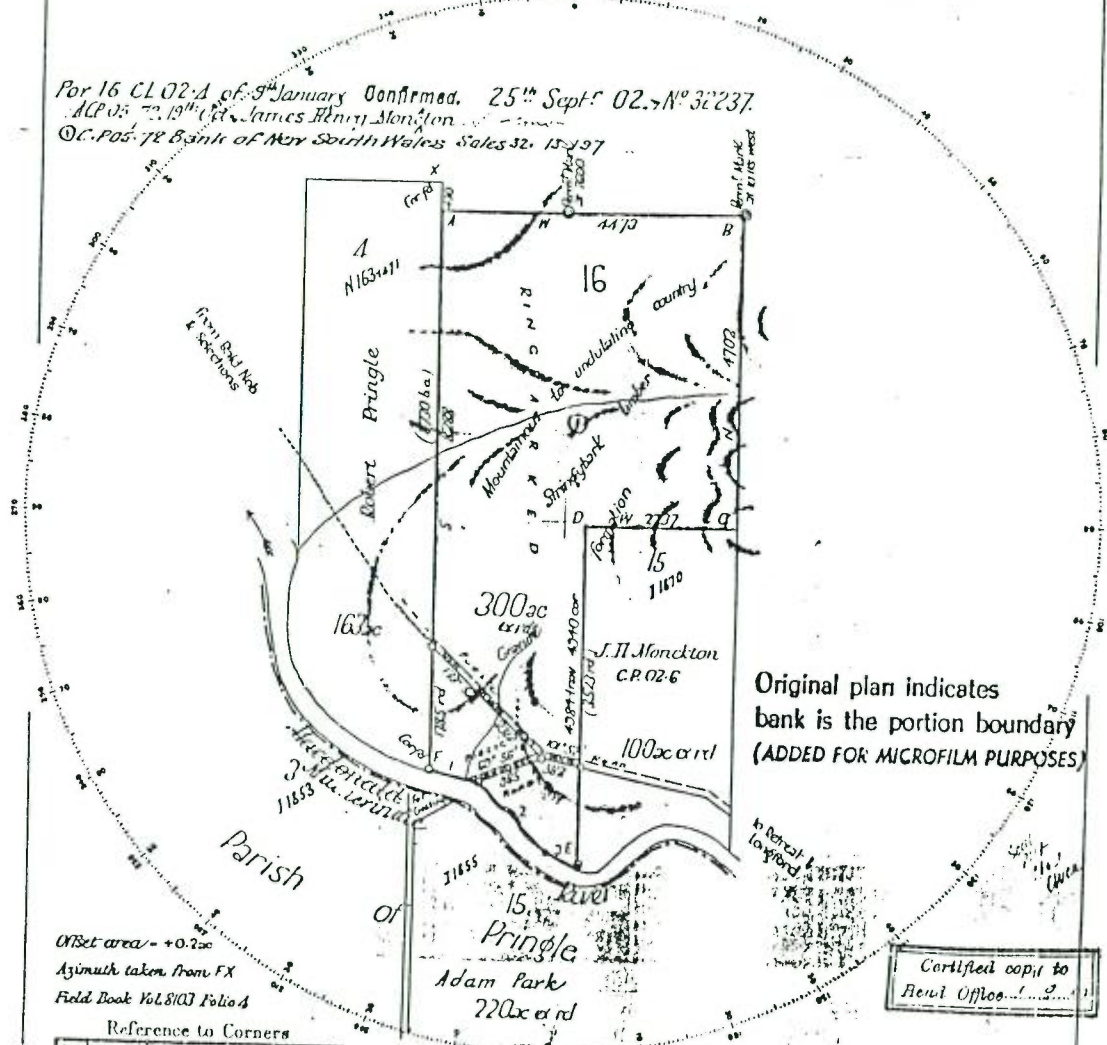
R.M.G.I.P.
 301° 31' -11 77
 20° 21' -1 TO COR.

R.M.G.I.P.
 301° 31' -11 77
 20° 21' -1 TO COR.

R.M.G.I.P.
 301° 31' -11 77
 20° 21' -1 TO COR.


PLAN OF PORTION 16
 County of Inglis Parish of Retreat
 Land District of Armidale Land Board District of Armidale
 Resumed Area N^o 395^a Retreat Pastoral Holding Western Division
 Applied for under the 48th Section of the Crown Lands Act of 1891 by James Henry Monkton

For 16 CL 02-A of 9th January Confirmed, 25th Sept^r 02. N^o 32237.
 ACP 05 72 19th Oct James Henry Monkton
 O.C. 105-72 Bank of New South Wales Sales 32. 15. 1917



UNSet area - +0.200
 Azimuth taken from FX
 Field Book Vol 8103 Folio 4

Reference to Corners

Line	Bearing	From	Links	Mon Truss
A	77 ^o 48'	Shringlebark	155.6	16
B	221 ^o 56'	Shringlebark	61.2	16
C	205 ^o 41'	Shringlebark	51	15. 16
D		Numbered Stake		15. 16
E	69 ^o 40'	Apple	18.6	15. 16
F	107 ^o 0'	Corn	15	4 16

Value of Improvements
 Arising out of the S^o

Reference to Traverses

Line	Bearing	Distance
1	101 ^o 48'	758
2	137 ^o 55'	1150
3	114 ^o 53'	508

I hereby certify that I in person made and on the 26th May 1902 completed the survey represented on this plan on which are written the bearings and lengths of the lines measured by me and I declare that the survey has been executed in accordance with the regulations published for the guidance of Licensed Surveyors and the provisions of the Department of Lands.

TIC *James Bell* Licensed Surveyor
 Transmitted to the District Surveyor with my letter of 30th May 1902/25
 oucher N^o 0236 Passed J. H. S. 1/10/02
 Calculation Book N^o 7166 Folio 18
 Checked and Corrected *H. J. Old* 23rd July 1902
 Examined *S. H. R. 5th Aug 02*
 Plan approved *G. H. 6th August 1902*
W. L. D. Draftsman in Charge.

Scale 20 Chains to an Inch.

J. 1871 1690

Drawn for beho.

1889

1827

Plan of

3 Portions of Land in the County of Inglis

Applied for to purchase by R. Pringle under the 7th Clause
of the Land Act of 1861.

in Right of the "Retreat" run

Scale, 20 Chains to an Inch

2nd Class Settled, late Settled Dist

Sale at Perth on 25th April 1870

WINDYBOTS 2, 1, E

PORTIONS 4 & 5.

Part of No. 10, 1850 and 40 lots not bid for

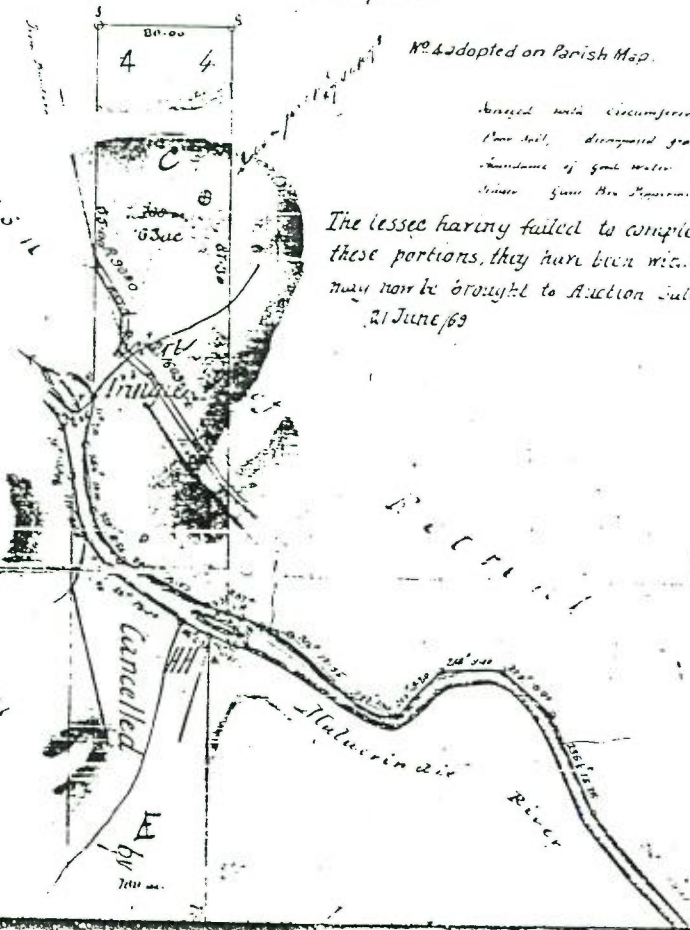
" " 4th 1855 with C. per. Solded by R. Pringle

see for road R. 1880, as resumed 3rd June 68, from part 4

163-1471

163-

8701



The lessee having failed to complete the purchase of
these portions, they have been re-drawn from lease and
may now be brought to Auction Sale on 27th June 1889
at 11 o'clock

21 June 69

← 6400 →
No. 1
R. Pringle
4.50
512.00
5.1



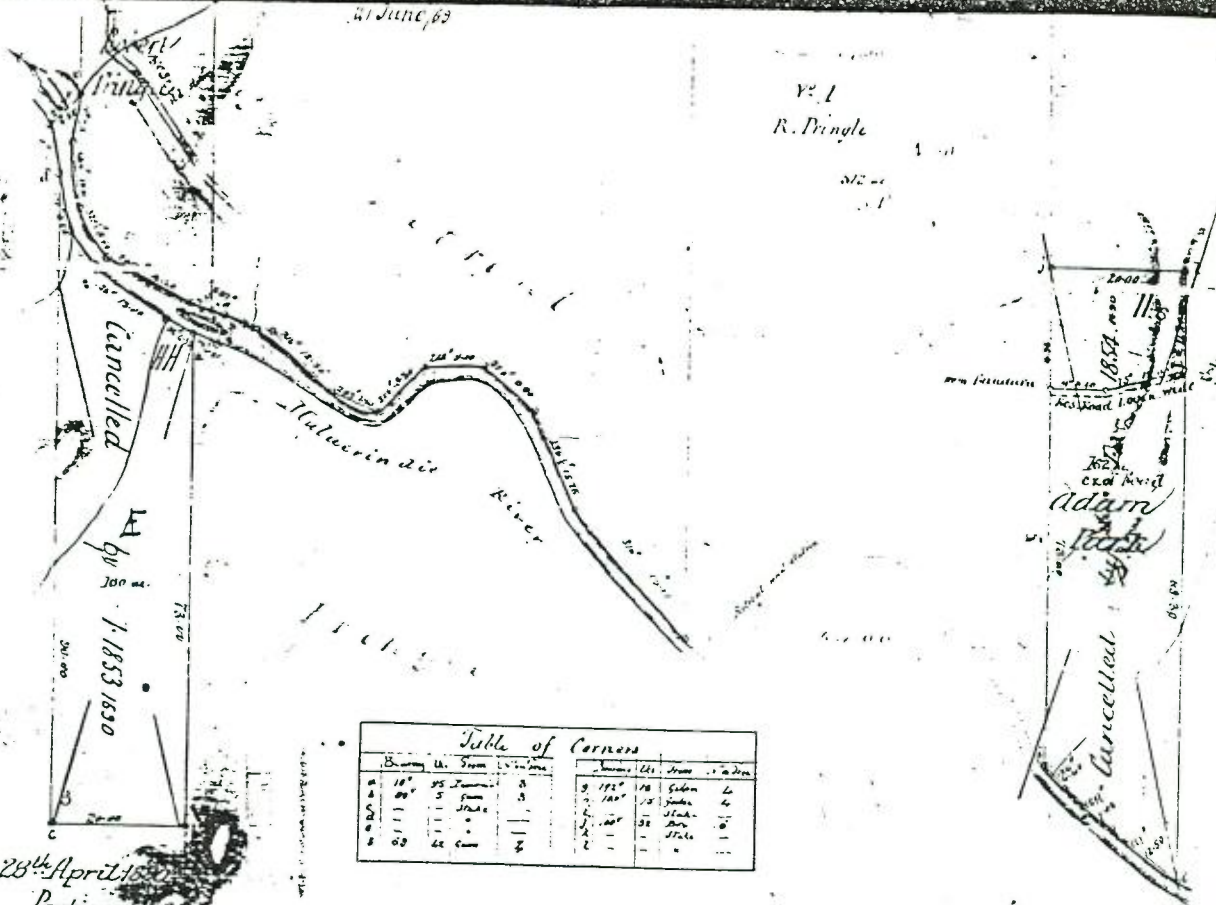
10
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850
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870
880
890
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910
920
930
940
950
960
970
980
990
1000

471

21 June 63

V.1

R. Dingle



163-1471

Table of Corners

Boundary	U.	Sum	U.	Sum	U.	Sum
A	18°	95	20°	115	22°	135
B	20°	5	22°	5	24°	5
C	1	1	1	1	1	1
D	1	1	1	1	1	1
E	1	1	1	1	1	1
F	1	1	1	1	1	1
G	1	1	1	1	1	1
H	1	1	1	1	1	1
I	1	1	1	1	1	1
J	1	1	1	1	1	1
K	1	1	1	1	1	1
L	1	1	1	1	1	1
M	1	1	1	1	1	1
N	1	1	1	1	1	1
O	1	1	1	1	1	1
P	1	1	1	1	1	1
Q	1	1	1	1	1	1
R	1	1	1	1	1	1
S	1	1	1	1	1	1
T	1	1	1	1	1	1
U	1	1	1	1	1	1
V	1	1	1	1	1	1
W	1	1	1	1	1	1
X	1	1	1	1	1	1
Y	1	1	1	1	1	1
Z	1	1	1	1	1	1

Sale at Armidale 28th April 1850
 Country lots III, II Portions
 Five etc etc above lots not bid for.

1850 for sale of 20th March 1850
 Sold to Adam Park (3m⁰⁰) sale complete

Transmission to the Survey General
 and my order of the same time in and sale.
 Adam Park 17th 20th 2

IN 163-1471

163-1471

7 0 1

Partly cancels T 630 1660



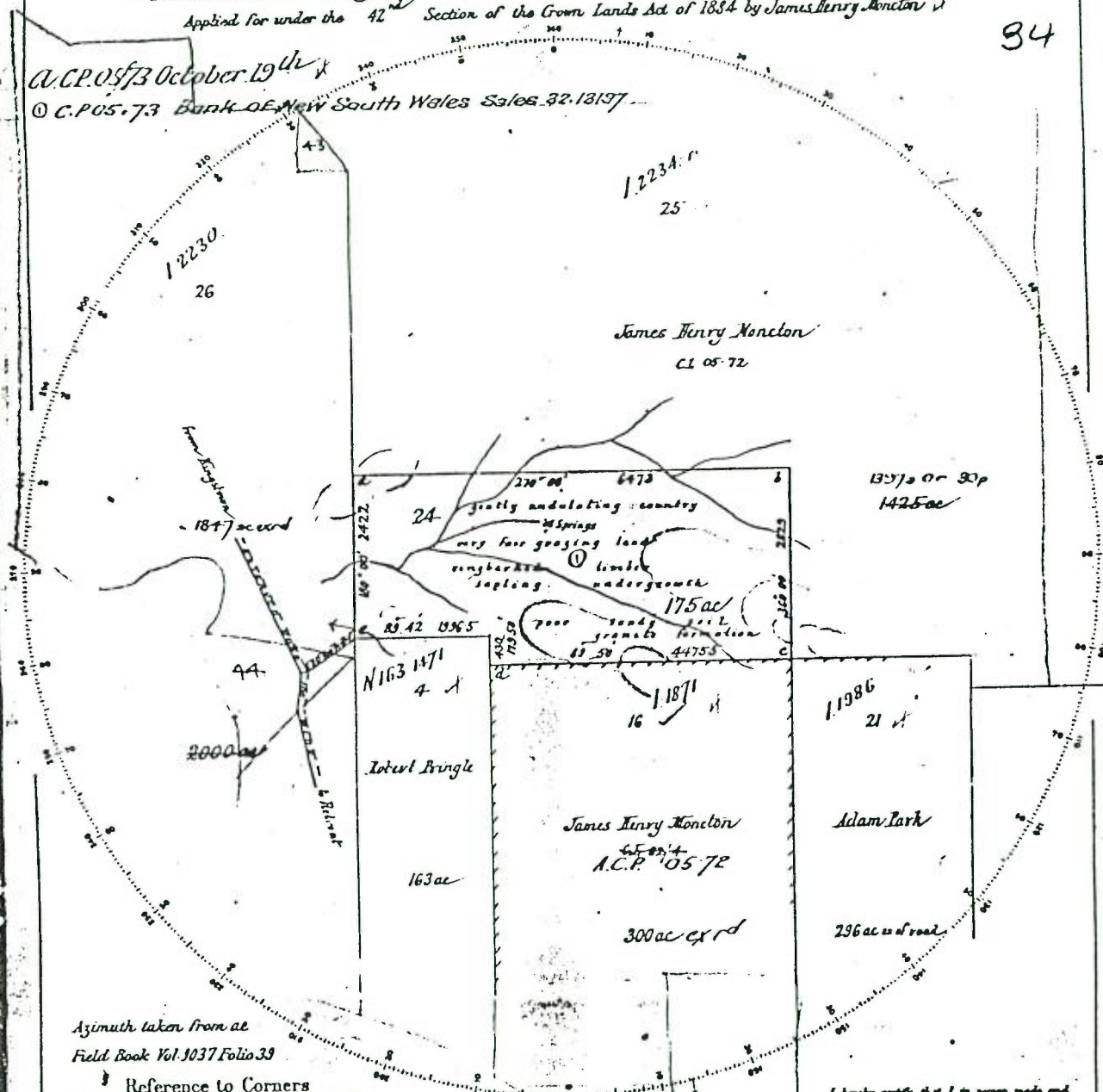
PLAN OF PORTION 24
 County of Inglis
 Land District of Armidale
 Parish of Retreat
 Land Board District of Armidale

Resumed Area N^o Retreat N^o 395a Pastoral Holding Eastern Division
 Applied for under the 42nd Section of the Crown Lands Act of 1884 by James Henry Moncton

34

A.C.P. 05/73 October 19th

© C.P. 05.73 Bank of New South Wales Sales 32-13197



Azimuth taken from at
 Field Book Vol. 1037 Folio 39

Reference to Corners

Corner	Bearing	From	Links	N ^o on Plan
a	198 20	St Park	24.5	24-25
b	300 07	Dead	41.6	24-25
c	221 30	St Park	61.2	16-21 24-25
d	272 26	St Park	155.6	16-24
e	69 50	Dead	41.2	4-24

Reference to Traverse

Line	Bearing	Distance
1	118 11	175
2	270 00	247.3
3	122 34	12234.0
4	187 11	1877
5	119 86	11986
6	198 20	19820
7	300 07	30007
8	221 30	22130
9	272 26	27226
10	69 50	6950

I hereby certify that I in person made and on the 30th July 1906 completed the survey represented on this plan on which are written the bearings and lengths of the lines measured by me and I declare that the survey has been conducted in accordance with the regulations published for the guidance of Licensed Surveyors and the practice of the Department of Lands.

James Henry Moncton Licensed Surveyor
 Presented to the District Surveyor with my letter of 30th August 1906
 Voucher N^o 06/73 Passed 9.10.06
 Calculation Book N^o 0114 Folio
 Checked and Charted [Signature] 7th Sept 06
 Examined and
 Plan approved 9 October 1906
 [Signature]

Value of Improvements wire fences on South boundary £7.10.0 (total) Ringbarking £4.7.6

Scale 20 Chains to an Inch

STANDARD TRACING
 PREPARED

12233.1690



300/19

PLAN OF PORTION 15

County of Inglis
Land District of Armidale

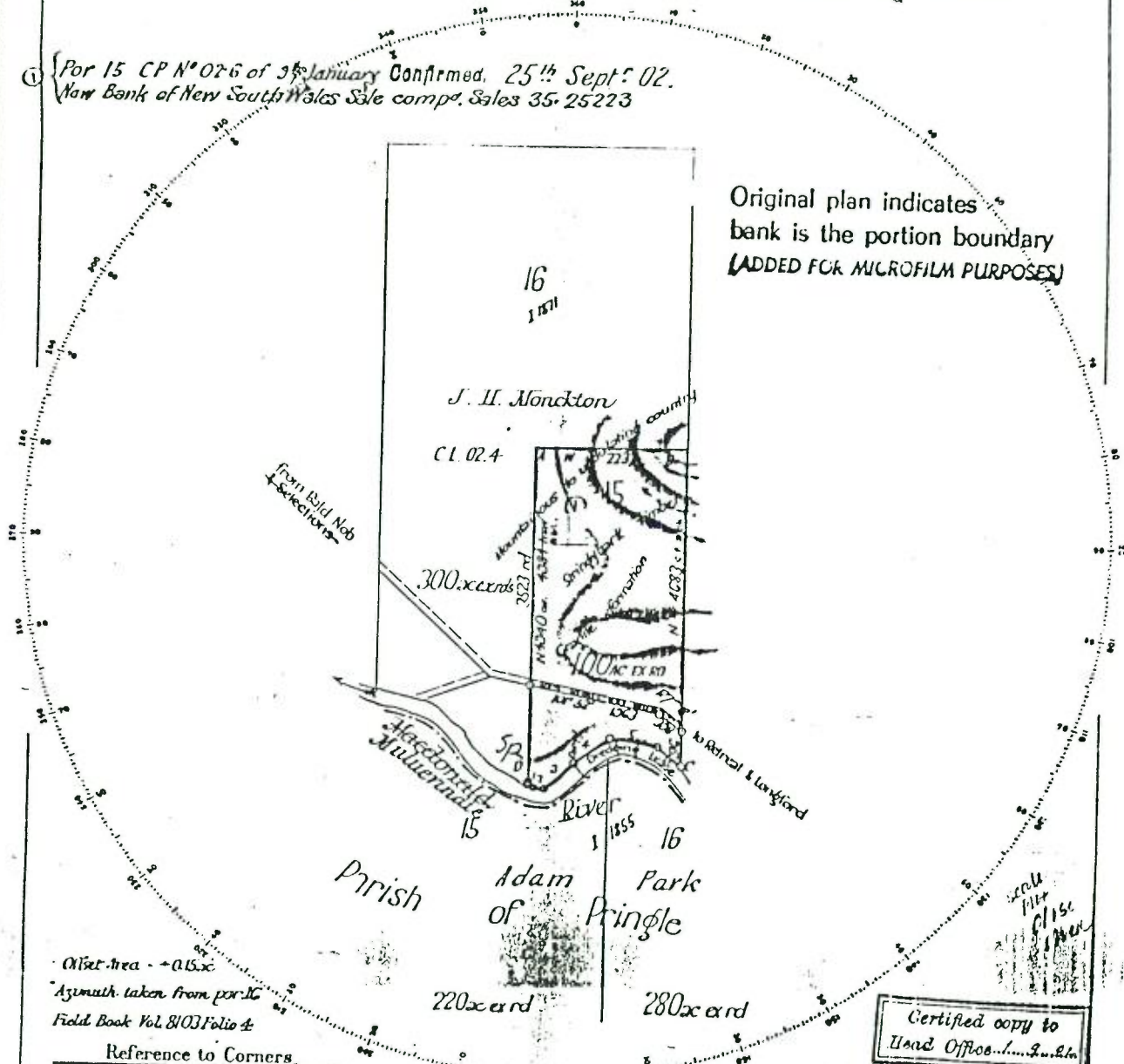
Parish of Retreat
Land Board District of Armidale

Resumed Area N^o 395^a Retreat Pastoral Holding Eastern Division

Applied for under the 26th Section of the Crown Lands Act of 1884 by James Henry Monckton

For 15 CP N^o 026 of 3rd January Confirmed, 25th Sept^r 02.
New Bank of New South Wales Sale comp. Sales 35. 25223

Original plan indicates
bank is the portion boundary
(ADDED FOR MICROFILM PURPOSES)



Area - 0.15 ac
Azimuth taken from per 16
Field Book Vol. 8103 Folio 4

Reference to Corners

Corner	Bearing	From	Links	N ^o on Trip
A	Numbered Stake			15. 10
B	215° 14'	Stringybark	51	15. 10
C	13° 54'	Apple	9.8	15
D	181° 40'	Apple	8.6	15 10

Value of improvements
1000 ac Ramboorling £ 2.151

Reference to Traverses

Line	Bearing	Distance
1	114° 53'	102
2	55° 5'	157
3	47° 13'	50 1/2
4	53° 12'	633
5	37° 30'	700
6	127° 8'	400

I hereby certify that I in person made and on the 16th May 1902 completed the survey represented on this plan as with are written the bearings and lengths of the lines measured by me and I declare that the survey has been executed in accordance with the regulations published for the guidance of Licensed Surveyors and the practice of the Department of Lands.

J. Campbell Licensed Surveyor
Examined in the District Survey with my bear of 30th May 1902/24
Teacher N^o 25 Passed 14/6 5/5 for £ 8-2-9
Calculation Book N^o 1266 Folio 47
Checked and Corrected H. H. Holdwell 23rd July 1902
Examined *J. H. H. H.* August 02
Plan approved 6th August 1902

Scale 20 Chains to an Inch

J. H. H. Draftsman in Charge.

J. 1870 1690

APPENDIX 2

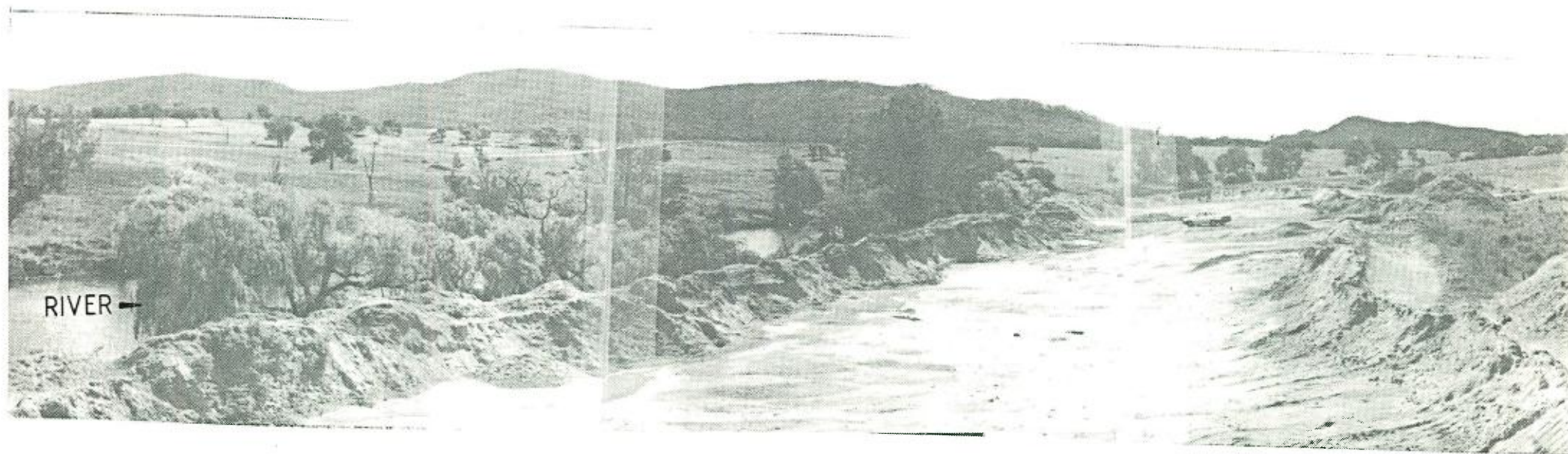
PHOTOGRAPHS



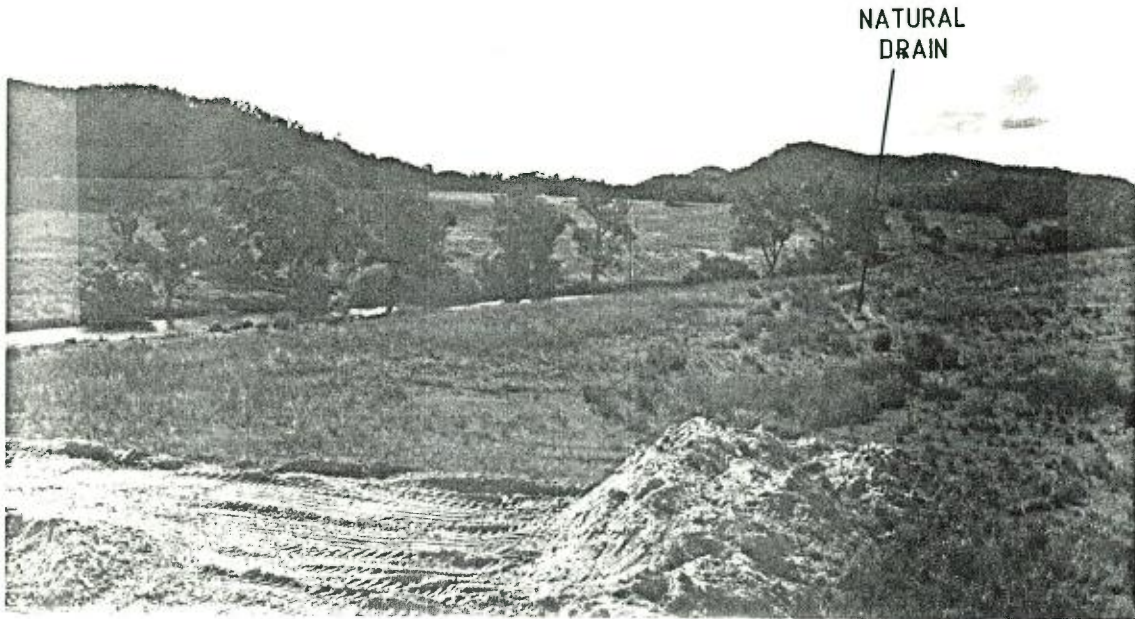
EXISTING EXTRACTION AREA- VIEW WEST TO EAST
SHOWING ALSO TOPSOIL HEAPS ETC.



EXISTING EXTRACTIONS- VIEW WEST TO EAST



EXISTING EXTRACTIONS-VIEW EAST TO WEST AND SHOWING
MACDONALD RIVER ON LEFT SIDE



SHOWING PROPOSED AREAS B/C AND D

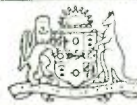


PHOTOGRAPH SHOWING EXTENT OF TOPSOIL BARRIERS
IN RELATION TO RIVER AND BANKS

NOTE- STABILITY OF SLOPES ON LONG TERM EXISTING STOCKPILES

APPENDIX 3

**SPECIFICATIONS OF THE
N.S.W. DEPARTMENT OF
ENVIRONMENT AND PLANNING**

**Department of Environment and Planning**

Jarnia Agencies,
P.O. Box 778,
TAMWORTH. N.S.W. 2340 93

Remington Centre
175 Liverpool Street, Sydney 2000
Box 3927 G.P.O. Sydney 2001
DX. 15 Sydney

Telephone: (02) 266 7111 Ext. 7235

Contact: V. Thomson
Our reference: DNT87/1337

Your reference:

20 MAY 1987

Dear Sir,

RE: PROPOSED SAND EXTRACTION, PORTIONS 4,15,16,24 PART
PORTION 25, LOT 46, D.P. 46400, PARISH OF RETREAT, PARRY
SHIRE

Thank you for your letter of 1st April, 1987 indicating that you are consulting with the Director with regard to the preparation of an environmental impact statement (EIS) for the above development.

2. As development consent is required for the proposal and it is a designated development within the meaning of Schedule 3 of the Environmental Planning and Assessment Regulation, 1980, as amended, an EIS must accompany the development application to the Parry Shire Council. The EIS shall be prepared in accordance with clause 34 of the Regulation and shall bear a certificate required by clause 26(1)(b) of the Regulation (see Attachment No.1).

3. The Director has no specific requirements pursuant to clause 35 of the Regulation in regard to the form or content of the EIS.

4. Attachment No.2 is a guide to the type of information most likely to be relevant to the development you propose; not all of the matters raised therein may be appropriate for consideration in the EIS for your proposal; equally, the guide is not exhaustive.

5. In preparing your EIS you should approach Parry Shire Council and take into account any comments Council considers may apply to its determination of the proposal.

6. Should you require any further information regarding this matter please do not hesitate to contact us again.

Yours faithfully,

B. Adams 20/5/87

B. Adams,
A/Manager Assessments Branch,
As Delegate for the Director

DEPARTMENT OF ENVIRONMENT AND PLANNING
ATTACHMENT No.1

STATUTORY REQUIREMENTS FOR ENVIRONMENTAL IMPACT STATEMENTS.

In accordance with Part IV of the Environmental Planning and Assessment Act, 1979, an environmental impact statement (EIS) must meet the following requirements:

Pursuant to clause 34 of the Environmental Planning and Assessment Regulation, 1980, as amended, the contents of an EIS shall include the following matters:

- (a) full description of the designated development proposed by the development application;
- (b) a statement of the objectives of the proposed designated development;
- (c) a full description of the existing environment likely to be affected by the proposed designated development, if carried out;
- (d) identification and analysis of the likely environmental interactions between the proposed designated development and the environment;
- (e) analysis of the likely environmental impacts or consequences of carrying out the proposed designated development (including implications for use and conservation of energy);
- (f) justification of the proposed designated development in terms of environmental, economic and social considerations,
- (g) measures to be taken in conjunction with the proposed designated development to protect the environment and an assessment of the likely effectiveness of those measures;
- (g1) details of energy requirements of the proposed development and measures to be taken to conserve energy;
- (h) any feasible alternatives to the carrying out of the proposed designated development and reasons for choosing the latter; and
- (i) consequences of not carrying out the proposed development.

The EIS must also take into account any matters required by the Director of Environment and Planning pursuant to clause 35 of the Regulation, which may be included in the attached letter.

The EIS must bear a certificate as required by clause 26(1)(b) of the Regulation.

DEPARTMENT OF ENVIRONMENT AND PLANNING
ATTACHMENT No.2

ADVICE ON THE PREPARATION OF AN ENVIRONMENTAL IMPACT STATEMENT (EIS) FOR AN EXTRACTIVE INDUSTRY.

A definition of extractive industry may be found in paragraph (n) to Schedule 3 of the Environmental Planning and Assessment Regulation, 1980, (as amended). These industries are operations undertaken for the purpose of winning sand, gravel, clay, turf, soil, rock, stone or similar substances. The definition of extractive industry specifically excludes coal, petroleum or minerals which are prescribed under the Mining Act, 1973. Extractive industries may take the form of dredging operations, quarrying operations, turf farms or various forms of land excavation etc. Processing of extracted material on the same site as the winning of the material may also constitute an extractive industry.

Extractive industries have prompted considerable public controversy in the past since, among other things, they affect visual amenity, generate heavy vehicle movements, raise dust and cause disturbance through noise and blasting. This is the prime reason for designation of extractive industries under the Environmental Planning and Assessment Act, 1979.

The purpose of this paper is to outline various issues relevant to the preparation and consideration of an EIS for extractive industries. It is intended to assist the preparation of the EIS. However, it is the applicant's responsibility to identify and address as fully as possible the matters relevant to the specific development proposal in complying with the requirements for EIS preparation (see Attachment No.1).

The matters nominated in this paper are not intended as a comprehensive identification of all issues which may arise in respect of an extractive industry. Some of the issues nominated may not be relevant to a specific proposal. On the other hand, there may be other issues, not included, that are appropriate for consideration in the EIS.

Information provided should be clear, succinct and objective and where appropriate be supported by maps, plans, diagrams or other descriptive detail. The purpose of the EIS is to enable members of the public, the consent authority (usually the Council) and the Department of Environment and Planning to properly understand the environmental consequences of the proposed development.

1. Description of the proposal.

The description of the proposal should provide general background information on the location and extent of the works proposed, an indication of adjacent developments, and details of the site, land tenure, zonings and relevant forward planning proposals and any other land use constraints.

The EIS should address the compatibility of the proposal with any regional strategy for extractive industries in the area and with the provisions of the Local Environmental Plans for existing and proposed development.

This section should provide specific information on the nature, intent and form of the development. It should, as far as possible, include such details as the processes involved (highlighting any proposed crushing or blasting), disposal of wastes, landscaping and site rehabilitation. A description should also be provided of associated operations such as the transport of materials and use of the end product if likely to have environmental implications.

Particular details that may be relevant include:

- . Characteristics and economic significance of the resource
- . Possible availability of alternative resources.
- . Quantity of materials to be extracted.
- . Methods of extraction / plans of operations.
- . Details of any blasting and/or crushing.
- . Effects of vibrations.
- . Type of machinery and equipment to be used.
- . Expected life of the operation.
- . Number of persons to be employed.
- . Hours of operation.
- . Details of necessary stockpiling.
- . Access arrangements - truck routes, truck numbers etc.
- . Site drainage and erosion controls.
- . Proposals for rehabilitation.

2. Description of the Environment.

This should provide details of the environment in the vicinity of the development site and also of aspects of the environment likely to be affected by any facet of the proposal. In this regard, physical, natural, social, archaeological and economic aspects of the environment should be described to the extent necessary for assessment of the environmental impact of the proposed development.

3. Analysis of Environmental Impacts.

Environmental impacts usually associated with extractive industries are listed below. Where relevant to the specific proposal, these should be addressed in the EIS, taking into account the adequacy of safeguards proposed to minimise them.

- . The flow of any affected rivers or watercourses.
- . The effect of the extraction on the sediment transport rate of any affected rivers or watercourses.
- . The bed and bank stability of any affected rivers during and after completion of the operations.
- . Any possible siltation, sedimentation or downstream effects of the operation.
- . Any likely cumulative effects of the proposed operation when considered together with other operations in the vicinity.
- . Details of floods and any likely effects of the operation on flood liability of surrounding lands.
- . The possible effects of flooding on the operation.
- . Effects on flora and fauna.
- . The agricultural viability of the landholding.
- . Likely noise/vibration disturbance caused by the operations, including transport operations, on nearby residences.
- . Other impacts of trucking movements, including access over railways and onto highways.
- . Dust nuisance likely to be caused.
- . Effects on water quality of nearby watercourses.
- . Disposal of waste material.
- . Effects on the visual environment.
- . Any likely affectation of sites of Aboriginal archaeological or European heritage value if located in the vicinity of operations.

In addition, any potential for hazard or risks to public safety and any proposals to monitor and reduce environmental impacts should be included.

4. Contact with relevant Government Authorities.

In preparing the EIS, it is suggested that authorities, such as those listed below, should be consulted and their comments taken into account in the EIS.

- . The State Pollution Control Commission in regard to air, water and noise impacts and relevant pollution control legislation requirements;
- . The Soil Conservation Service regarding appropriate erosion control and rehabilitation procedures;
- . The Department of Agriculture if prime agricultural land may be affected by the proposal; and
- . The Heritage Council of NSW if the proposal is likely to affect any place or building having heritage significance for the State; the National Parks and Wildlife Service if aboriginal places or relics are likely to be affected.

It is the responsibility of the person preparing the EIS to determine those Departments relevant to the proposed development.

APPENDIX 4

**SPECIFICATIONS OF THE
N.S.W. DEPARTMENT OF
WATER RESOURCES**



Water Resources Commission

T.J. Stewart & Co.,
P.O. Box 212,
ARMIDALE, N.S.W. 2350

Ibis House
201/211 Miller Street,
Box 952, P.O.,
North Sydney,
N.S.W. 2060
Telegrams: "Aquacomm"
Telex: "Watcom" 21188



Contact: Name Mr. K. Roberts
Our reference 87/9027
Telephone: 922 0121
Extension 687

10 DEC 1987

Dear Mr. Stewart,

Subject: Excavation by J. Goodwin on the property of D. White

Attached is a list of matters that should be covered in an E.I.S. for sand and gravel extractions of the bed and banks or within 40 m. of rivers, as requested.

Of particular concern to us is that the site must be free-draining to the river. Currently, the site is being excavated such that it ponds water behind the excavated bank. This may lead to bank instability and possible diversion of flow. Also of concern is that the site be progressively rehabilitated and revegetated.

As the operation is within 40 metres of the river bank a permit under Section 23A of the Rivers & Foreshores Improvement Act must be obtained prior to operation continuing (copy attached). The Department has no objections in principle to an operation at this site if undertaken subject to appropriate conditions. Attached is a list of likely conditions that may be applied to this site.

Should you have further enquiries, please phone Mr. K. Roberts at the above extension.

Yours sincerely,

for I.F. Chivers,
Secretary.

(Encl.)

MATTERS THAT SHOULD BE COVERED IN E.I.S. FOR PROPOSED SAND AND GRAVEL
EXTRACTIONS OF THE BED AND BANKS OR WITHIN 40 m OF RIVERS

PARTICULAR MATTERS TO BE COVERED INCLUDE:

- * Characteristics of the resource
- * Quantity of materials to be extracted
- * Expected life of the operation and proposed staging
- * Design criteria adopted for water control and storage works to manage the natural runoff, site runoff and effluents, tailings water, groundwater inflow and overburden and stockpile leachates
- * Methods of extraction/Plans of operations
- * Type of machinery and equipment to be used
- * Proposals for progressive rehabilitation of the site and assurances of effective completion
- * Any proposals for the diversion of streamflow.
- * Access arrangements - bridges and causeways
- * Disposal of waste material/location of stockpiles
- * Bed and bank stability of the river during and after the operations
- * Details of bedrock outcrops, sediment and material gradings and any likely changes due to extraction
- * Details of floods and any likely effects of the operation on flood liability of surrounding lands
- * Possible effects of flooding on the operations
- * Effects on river and groundwater flow
- * Rates of downstream movement of bed material
- * Effect of extraction on sediment transport rate of the river
- * Effects of the extraction on possible downstream and upstream siltation, sedimentation and erosion
- * Effects of excavation on trees and other bank vegetation
- * Effects of extraction on the groundwater hydrology of the site and surrounding area
- * Any likely cumulative effects of the proposed operation when considered together with other operations in the vicinity
- * The proposed final use of the site and likely effectiveness of rehabilitation
- * Any other specific matters specified by the Department of Water Resources for the specific site.

EXTRACT FROM RIVERS AND FORESHORES IMPROVEMENT
ACT, 1948, No. 20
REMOVAL OF SOIL FROM OR IN PROXIMITY TO BANKS OF RIVERS
SECTION 23A

1. In this section -

"make an excavation" includes cause or allow an excavation to be made;

"protected river land" means -

- (a) land that is the bank or bed of a river;
- (b) land that is not more than 40 metres from the top of the bank of a river;
or
- (c) material at any time deposited, naturally or otherwise and whether or not in layers, on land referred to in paragraphs (a) and (b);

"remove soil" includes cause or allow soil to be removed.

(1A) NO person shall, except with the permission of the Constructing Authority -

- (a) make an excavation on, in or under protected river land; or
- (b) remove soil from protected river land.

- 2. (a) Application for a permit under this section shall be made in writing in the prescribed form to the Constructing Authority and shall specify the land in respect of which the permit is desired and supply full particulars of the work proposed to be undertaken.
- (b) The Constructing Authority may, after such investigation as the Constructing Authority may deem necessary, refuse any permit applied for under this section or may grant the same subject to such limitations and conditions (including a condition limiting the time the permit shall remain in force) as the Constructing Authority may think fit.
- (c) The Constructing Authority may at any time revoke or vary any permit issued under the provisions of this section.

3. Any person who -

- (a) contravenes subsection (1A); or
- (b) fails to comply with any of the limitations or conditions for the time being attached to any permit granted to him under subsection (2),

shall be guilty of an offence and shall -

- (c) where the person is not a corporation - be liable to a penalty not exceeding \$5,000; or
- (d) where the person is not a corporation - be liable to a penalty not exceeding \$10,000.

4. Where -

- (a) any excavation has been made on, in or under protected river land or any soil has been removed from protected river land contrary to the provisions of this section or any limitations or conditions for the time being attached to a permit granted under the provisions of this section, whether the excavation or removal was effected before or after the commencement of the Rivers and Foreshores Improvement (Amendment) Act, 1982; or

- (b) the Constructing Authority is of the opinion that any excavation on, in or under any land (other than protected river land) or the removal of soil from any land (other than protected river land), whether effected before or after the commencement of the Rivers and Foreshores Improvement (Amendment) Act, 1982 -
- (i) has damaged or detrimentally affected or is likely to damage or detrimentally affect protected river land; or
 - (ii) is likely to cause, whether directly or indirectly, a river to change its course,

the Constructing Authority may by notice in writing direct -

- (c) the person who is the owner or occupier of the land on, in or under which the excavation has been made or from which soil has been removed; or
- (d) the person who has made the excavation or who has removed the soil,

to carry out, in such manner and within such time as may be specified in the notice, such of the following kinds of works as the Authority considers are necessary and as are specified in the notice:-

- (e) works to repair any damage caused to protected river land by reason of the excavation or removal of soil;
- (f) works to ensure that protected river land will not be damaged or detrimentally affected or further damaged or detrimentally affected, as the case may require, by the excavation or removal of soil;
- (g) works to correct any change caused, whether directly or indirectly, to the course of a river by reason of the excavation or removal of soil;
- (h) works to ensure that a river will not be caused or further caused, as the case may require, to change its course, whether directly or indirectly, by reason of the excavation or removal of soil;
- (i) where a river has changed, or is likely to change, its course by reason of the excavation or removal of soil and the Constructing Authority has determined that in the circumstances it would be expedient to change the course of the river-works to ensure that the river follows a course as determined by the Constructing Authority.

5. If any person fails to comply with the terms of any notice given to him pursuant to sub-section (4), the Constructing Authority may authorise any other person to enter upon the land in respect of which such notice has been given and thereby to carry out the works specified in such notice and may recover the cost incurred in so doing from that firstmentioned person in any court of competent jurisdiction as a debt due and owing by him to the Constructing Authority and until repayment such cost shall be a charge on the land.

6. The provisions of sub-sections (1), (2), (3), (4) and (5) shall not apply to or in respect of the exercise of any rights lawfully exercisable:-

- (a) under -
 - (i) Part II of the Water Act 1912;
 - (ii) a license, group license, authority or permit in force under that Act; or
 - (iii) an approval in force under Part VIII of that Act;
- (b) under any lease, license, permit or other right issued under the provisions of the Acts relating to mining or under the provisions of the Crown Lands Consolidation Act, 1913, as amended by subsequent Acts, or
- (c) by any statutory body or by any Council

7. Where the Constructing Authority is of the opinion that an excavation made on, in or under any land, or the removal of soil from any land, in the exercise of any of the rights referred to in sub-section (6) (whether before or after the commencement of the Rivers and Foreshores Improvement (Amendment) Act, 1982) -

- (a) has damaged or detrimentally affected or is likely to damage or detrimentally affect protected river land; or
- (b) has caused or is likely to cause, whether directly or indirectly, a river to change its course,

the Constructing Authority may by notice in writing direct the person, statutory body or council by whom or on whose behalf any such excavation has been made or any such soil has been removed to carry out in such manner and within such time as may be specified in the notice, such of the kinds of works referred to in paragraphs (e)-(i) of sub-section (4) as the Authority considers are necessary and as are specified in the notice.

8. If any person or council fails to comply with the terms of any notice given pursuant to sub-section (7) of this section the Constructing Authority may authorise any person to enter upon the land in respect of which such notice has been given and thereby to carry out the works specified in such notice and may recover the cost incurred in so doing from such first-mentioned person or from such council, by him or by it to the Constructing Authority.

9. For the purpose of this section the Constructing Authority, or any person authorised by it, may enter upon and inspect any land.

10. In this section:-

"Constructing Authority" means the Minister for Public Works or the Commission, respectively, according as to whether the waters of the river above or immediately adjacent to the land on, in or under which an excavation has been made or from which soil has been removed are tidal waters or are not tidal waters, as the case may be.

"Soil" means the surface of any land and all matter or material whatsoever lying beneath that surface.

11. Notwithstanding the definition of "Constructing Authority" in sub-section ten of this section, the Maritime Service Board of New South Wales shall be the Constructing Authority for the purpose of this section in any case where -

- (a) the bed of the river; or
- (b) the bed of the river immediately adjacent to the land,

on, in or under which soil has been removed, is vested in that Board.

"Owner", in relation to land, includes every person who jointly or severally, whether at law or in equity -

- (a) is entitled to the land for any estate of freehold in possession; or
- (b) is a person to whom the Crown has lawfully contracted to sell the land under the Crown Lands Acts or any other Act relating to the alienation of lands of the Crown; or
- (c) is entitled to receive, or is in receipt of, or if the land were let to a tenant would be entitled to receive, the rents and profits thereof, whether as beneficial owner, trustee, mortgagee in possession, or otherwise; or

- (d) is the holder of a lease from the Crown or any statutory body representing the Crown.

"River" includes any stream of water, whether perennial or intermittent, flowing in a natural channel, or in a natural channel artificially improved, or in an artificial channel which has changed the course of the stream of water and any affluent, confluent, branch, or other stream into or from which the river flows and, in the case of a river running to the sea or into any coastal bay or inlet or into a coastal lake, includes the estuary of such river and any arm or branch of same and any part of the river influenced by tidal waters.

CONDITIONS ATTACHED TO THE PERMIT GRANTED

TO:

TO EXCAVATE OR REMOVE:

ON, IN, UNDER OR FROM PROTECTED RIVER LAND IN OR NEAR THE STREAM
 KNOWN AS:

AT A SITE DESCRIBED AS:

1. The location and nature of the operation as shown on plan number retained in the office of the Department of Water Resources (copy attached) shall not be altered.
2. Operations shall be conducted in such a manner that no excavation takes place below the limit lines shown in red on plan number Any depression below the limit lines must be filled.
3. The cross-sections shown on plan number shall be permanently marked so that their position can be readily ascertained.
4. Cross sections numbered shown on plan number shall be surveyed to Department specifications every from the date of this permit and the survey plots sent to the Department. Permanent bench marks shall be established for these sections outside the area disturbed by the operations.

EXCAVATION ON & WITHIN BANKS:

5. Operations shall not take place on the stream bank at a level of less than metres above the normal low flow level of the stream. Trees and grass growing along the toe and the face of the stream bank and at a level of less than metres above normal low flow level shall be maintained and not damaged.
6. The surfaces of the banks are to be maintained at an even longitudinal grade smooth and free from holes or ridges.
7. The operation shall be carried out in stages involving successive sections along the stream each metres long. A quantity of the original excavated topsoil sufficient to cover all areas of operation to a depth of mm must be stockpiled. This soil shall be progressively spread over the area where operations have been completed after the subsoil has been prepared by roughening. The topsoil surface of the area of operations shall be progressively contour ploughed, regrassed and maintained to prevent erosion. In addition, the following species of shrubs and/or trees shall be established at a spacing of no more than ... metres:
8. A fence around the rehabilitated area shall be constructed to keep stock off while the vegetation becomes established.
9. All runoff from the site, or other streams or drains passing through disturbed areas, must be conveyed by pipe or lined channel to the base of the bank of the stream.

21. NORMAL LOW FLOW WATER LEVEL shall be defined as
.....
.....
.....

CONDITIONS APPLICABLE TO ALL EXCAVATIONS

22. Excavated material shall be transported from the extraction site or shall be stored on the adjacent flood plain. Where material is stored, it shall not be allowed to accumulate unnecessarily and shall be removed should the operation cease. A stockpile to meet 14 days supply of material is considered acceptable.

23. All scrub, undergrowth and timber removed from the area of operation shall be burnt or otherwise disposed of so that the debris cannot be swept back into the stream during a flood. Burning shall not be carried out unless a permit is obtained from the relevant Authority.

24. If in the opinion of any responsible officer of the Department of Water Resources any work is being carried out in such a manner as it may damage or detrimentally affect the stream, or damage or interfere in any way with any work, the operation on that section of the said stream shall cease forthwith upon written or oral direction of such officer.

25. No interference shall be made to the flow of water in the stream except the excavation of a pool for the purpose of the obtaining of water for the operation of a treatment plant or water supply pump.

26. If the operation will involve the installation of any pumping plants or construction of any dams, levees, cuttings, diversion channels or the like, on defined watercourses, application must be made to this Department to have any such works licensed under the provisions of Part II or Part VIII of the Water Act. Any licence issued would be conditional on the observance of the Clean Waters Act and regulations thereunder.

27. A copy of this letter of permission must be displayed at the site office at all times or alternatively made available to Department officers upon request.

28. The Department shall be notified of any change in site management.

29. If the operation is to cease, the Department of Water Resources is to be notified three months in advance of the date of cessation of the operation. The rehabilitation of the area to the satisfaction of the Department is the responsibility of the permit holder and the owner or occupier of the land. This work must be completed prior to the closure of the operation.

30. This permission is to apply for a period of from the date of this permit.

31. Should the permit holder desire to continue operations after the expiry of this permit, an application for renewal shall be lodged three months prior to the expiry date of this permit. The application will be reviewed in the light of any changes in the state of the stream and the compliance of the permit holder with the above conditions.

32. The permit holder and the owner or occupier of the land are responsible for any excavation or soil removal undertaken by any other person or company at the site.

33. This permit is not transferrable to any other person or Company and does not allow operations at any other site.

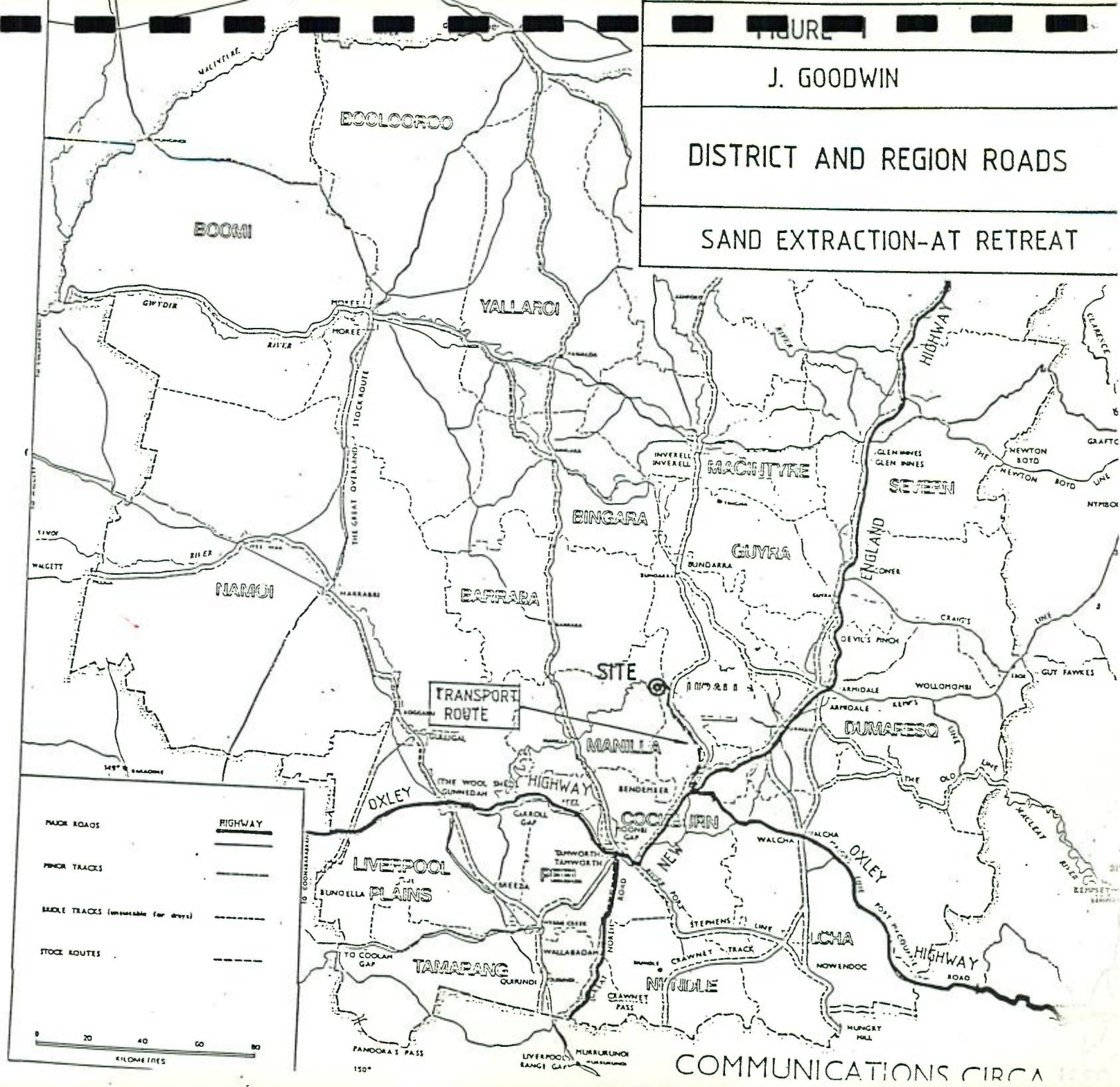
34. This permission does not allow an extractive industry at the site unless development consent or an existing use determination has been obtained from Council.

FIGURES

J. GOODWIN

DISTRICT AND REGION ROADS

SAND EXTRACTION-AT RETREAT



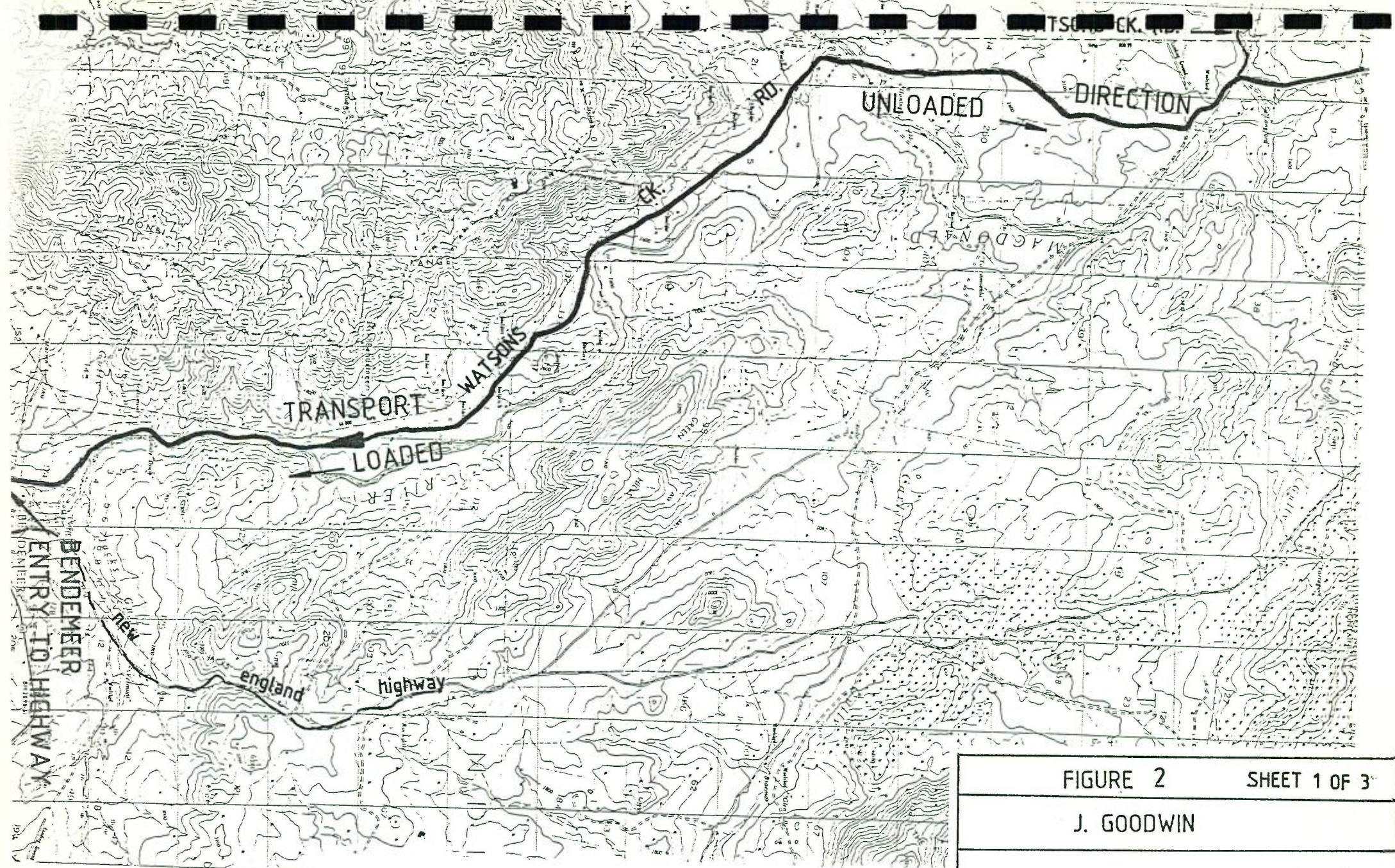


FIGURE 2 SHEET 1 OF 3

J. GOODWIN

TRANSPORT ROUTE

SAND EXTRACTION-AT RETREAT

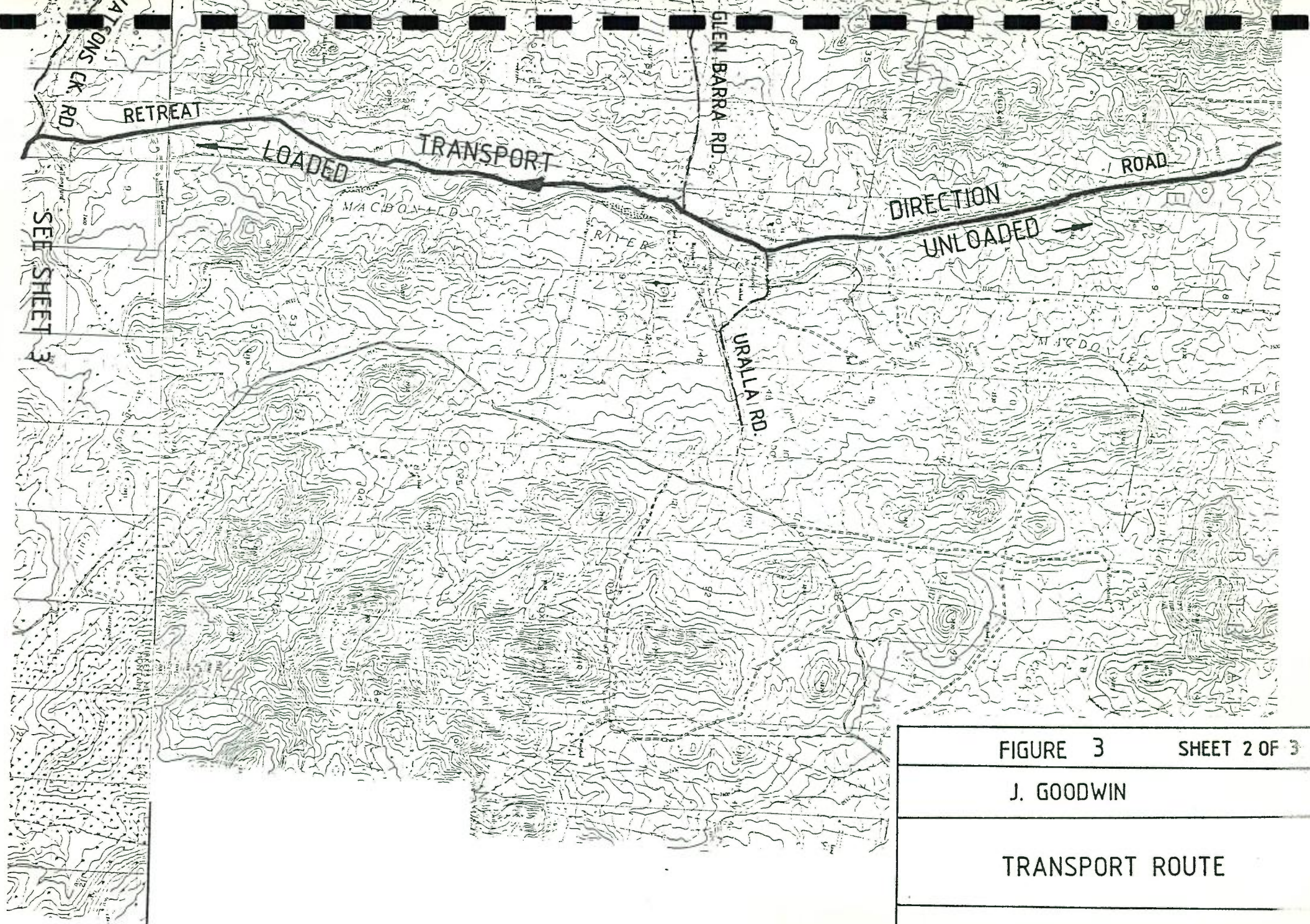


FIGURE 3 SHEET 2 OF 3

J. GOODWIN

TRANSPORT ROUTE

SAND EXTRACTION-AT RETREAT

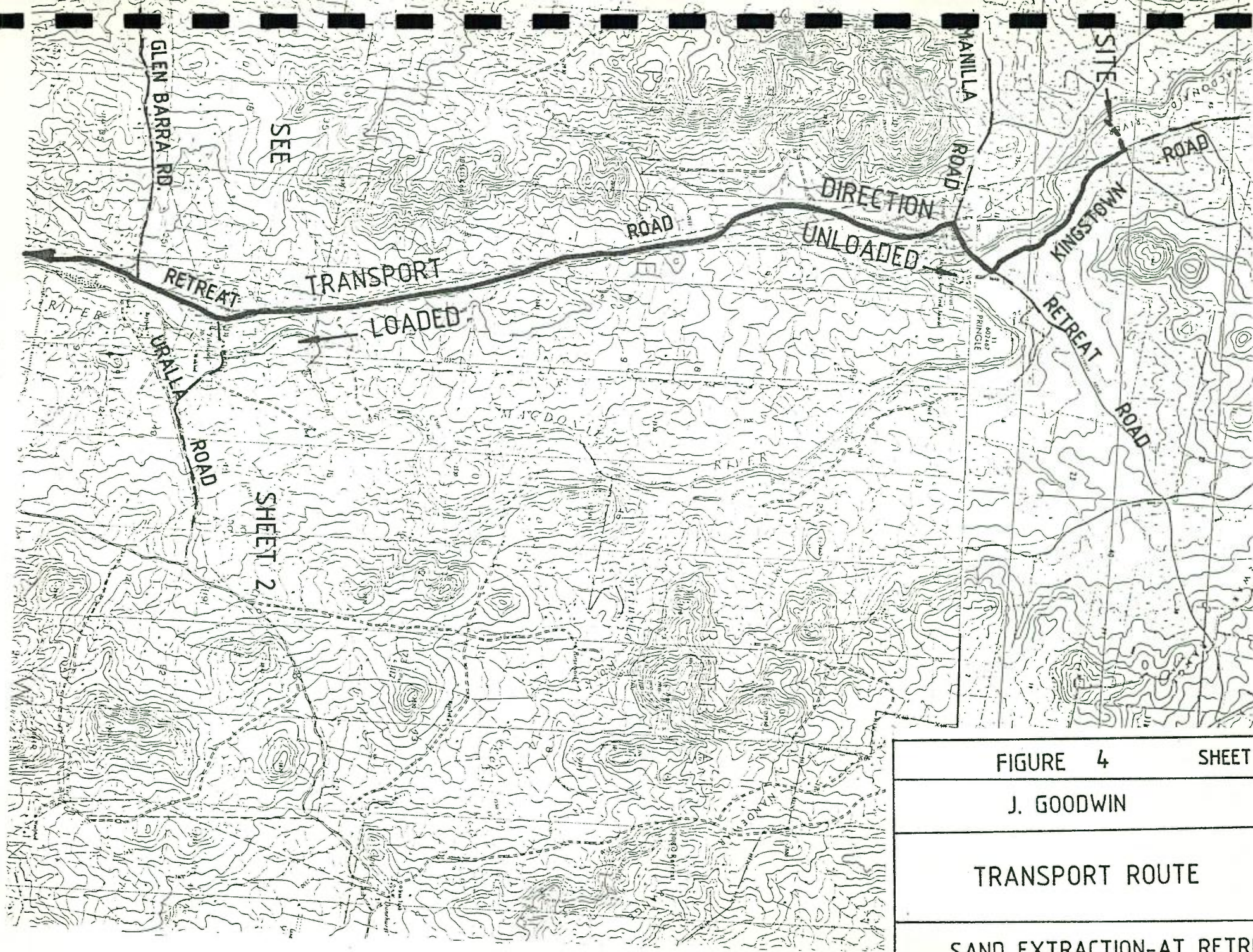


FIGURE 4

SHEET 3 OF 3

J. GOODWIN

TRANSPORT ROUTE

SAND EXTRACTION-AT RETREAT

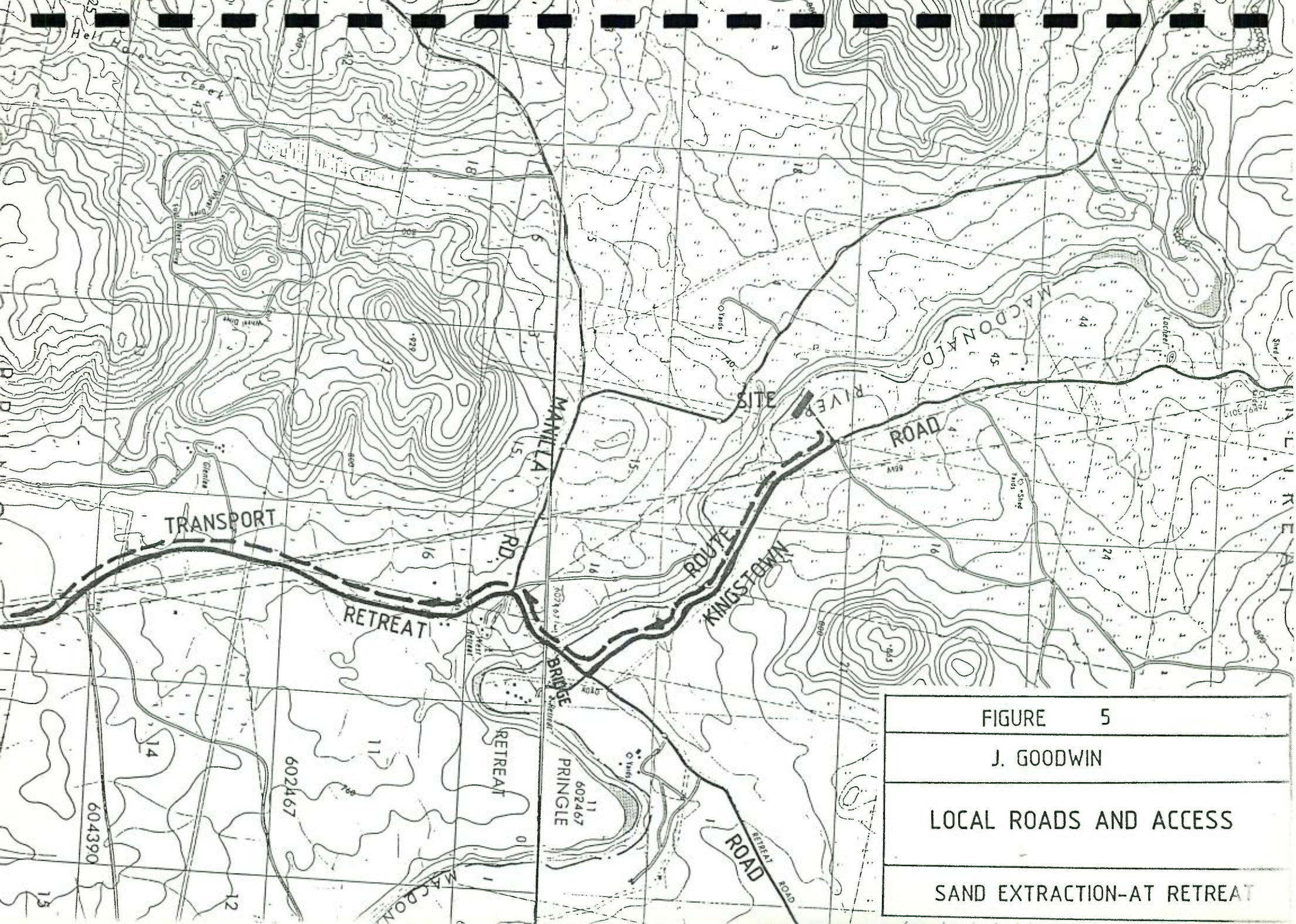


FIGURE 5

J. GOODWIN

LOCAL ROADS AND ACCESS

SAND EXTRACTION-AT RETREAT

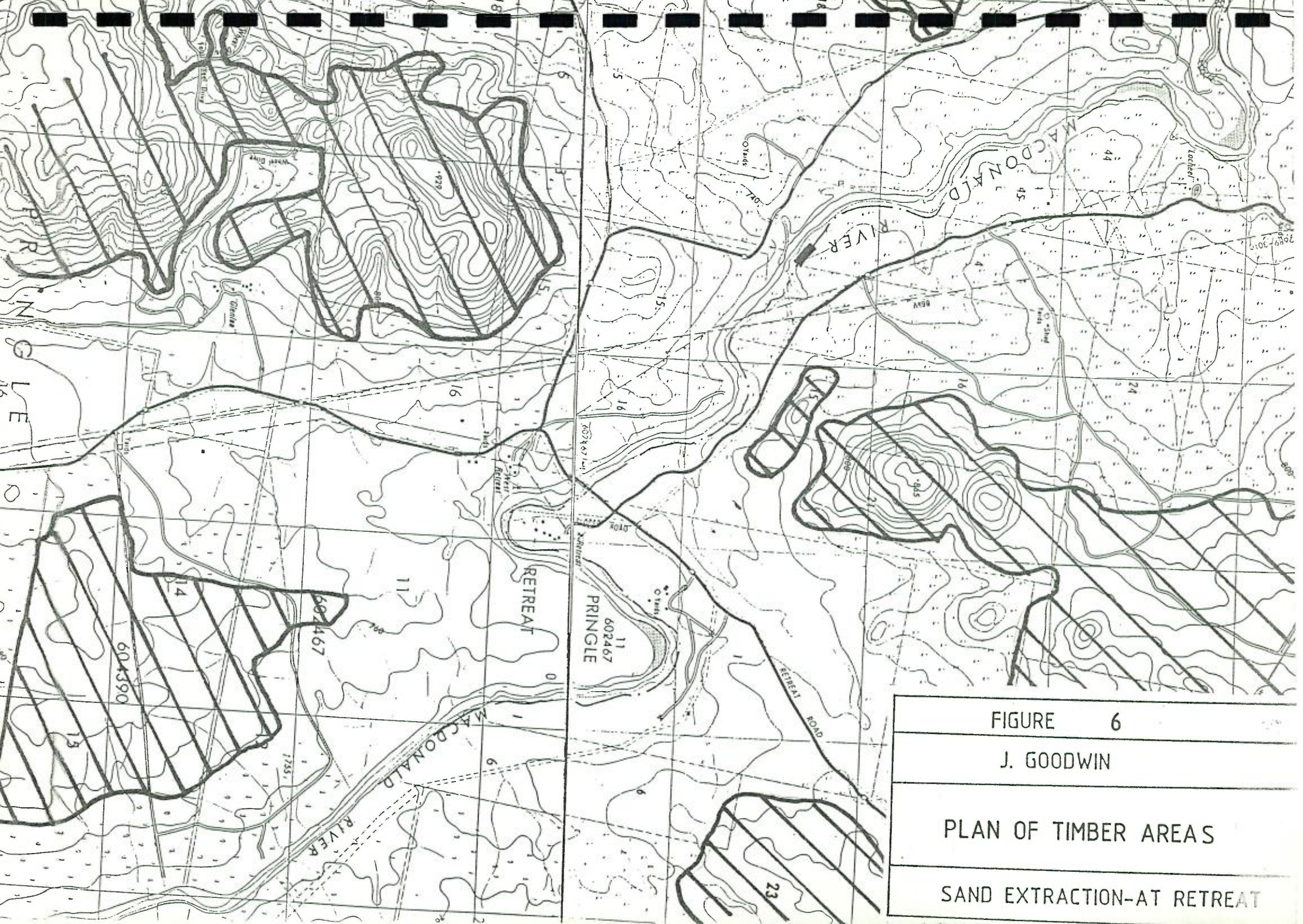
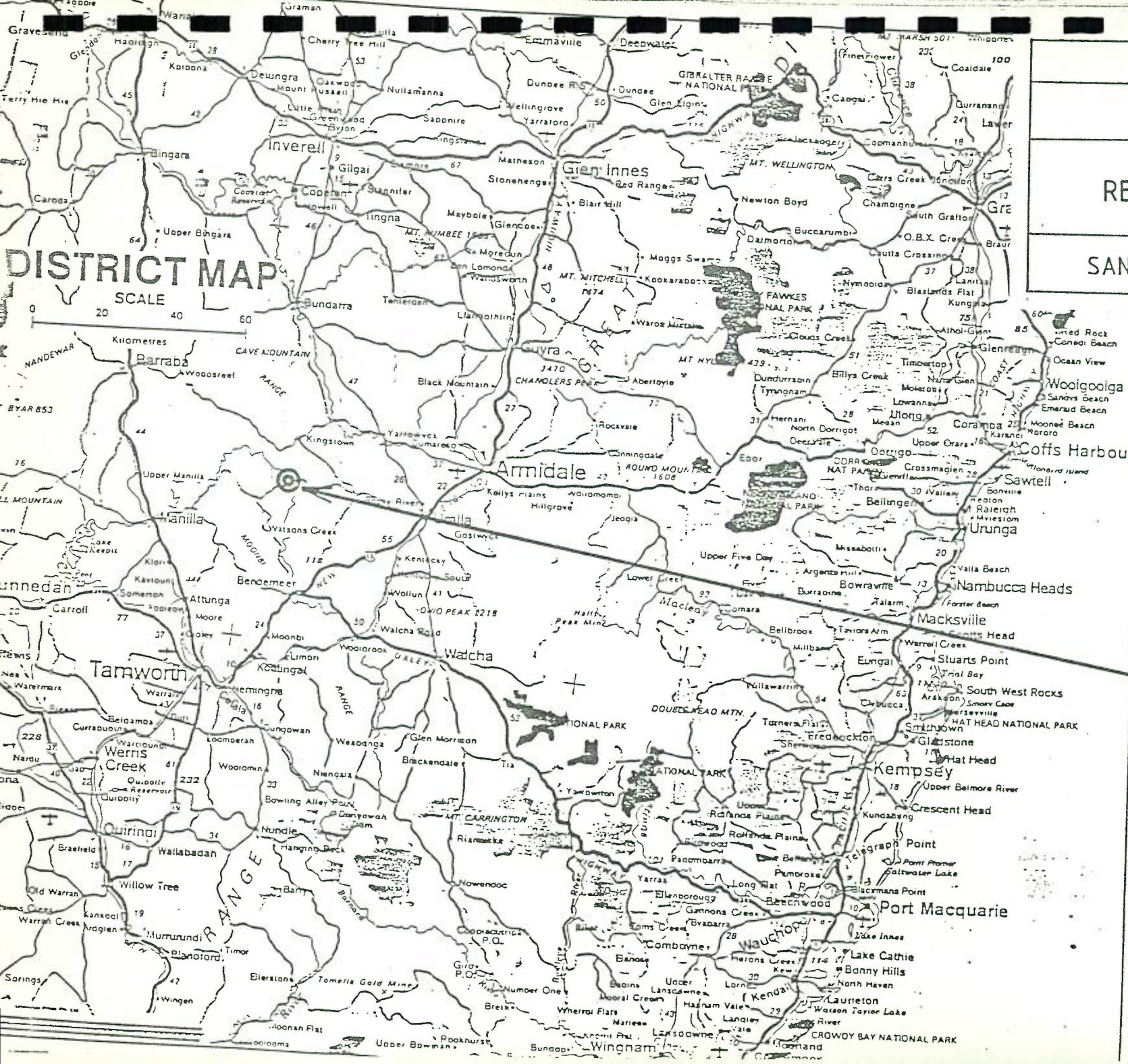


FIGURE 6

J. GOODWIN

PLAN OF TIMBER AREAS

SAND EXTRACTION-AT RETREAT



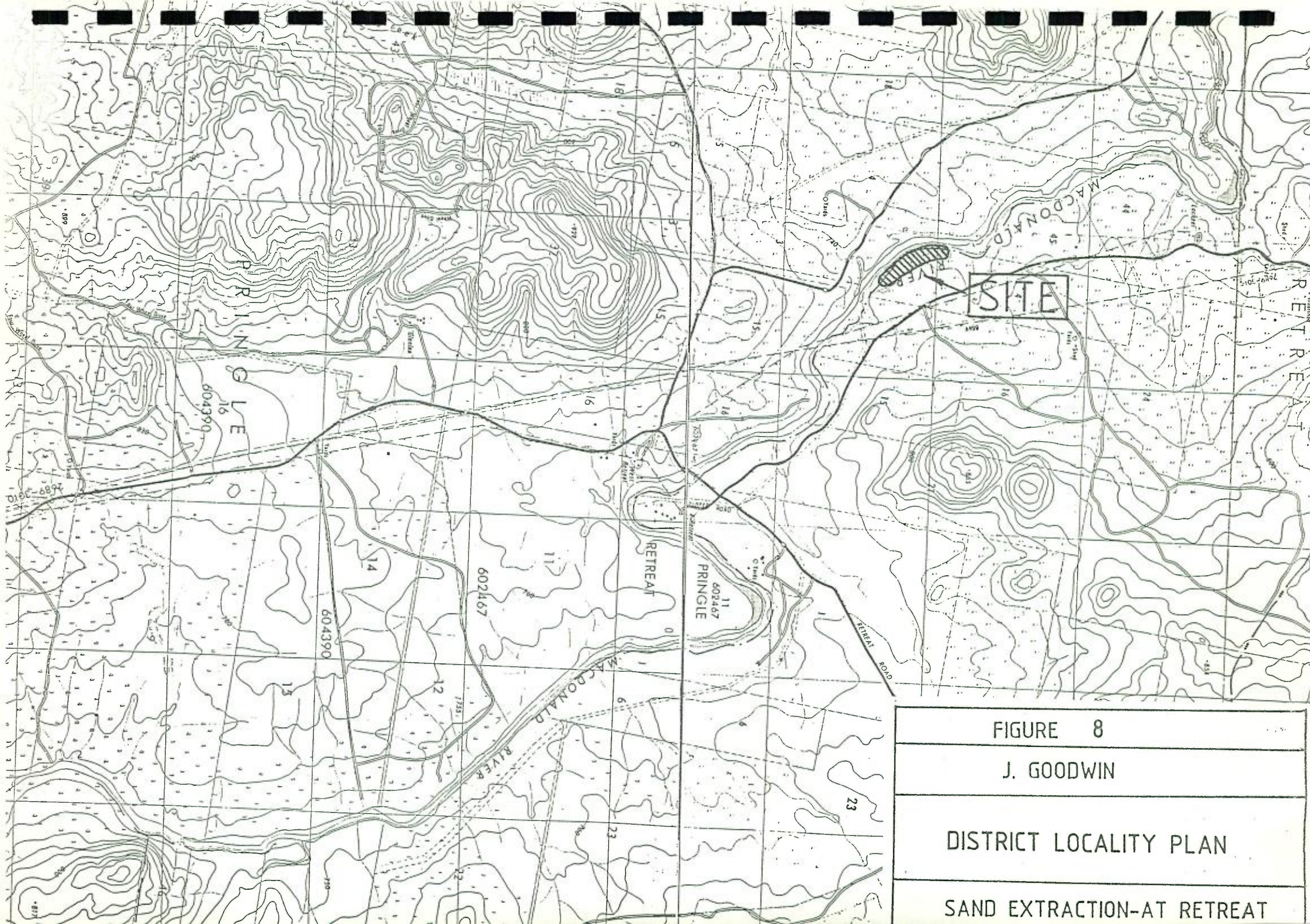
DISTRICT MAP

SCALE

0 20 40 60
Kilometres

FIGURE 7
J. GOODWIN
REGION LOCALITY PLAN
SAND EXTRACTION-AT RETREAT

SAND EXTRACTION SITE



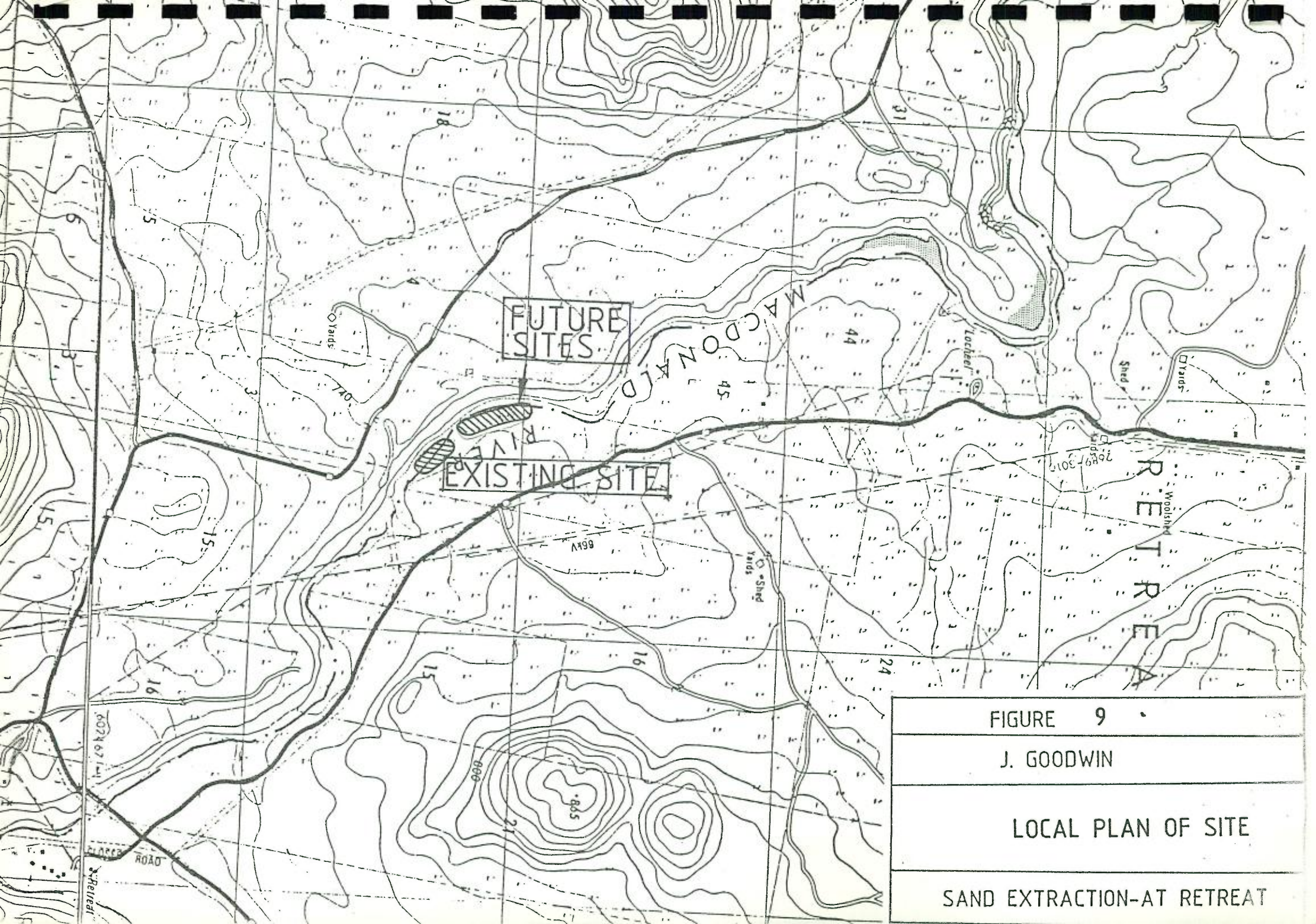
SITE

FIGURE 8

J. GOODWIN

DISTRICT LOCALITY PLAN

SAND EXTRACTION-AT RETREAT



FUTURE SITES

EXISTING SITE

MACDONALD

RETREAT

FIGURE 9

J. GOODWIN

LOCAL PLAN OF SITE

SAND EXTRACTION-AT RETREAT

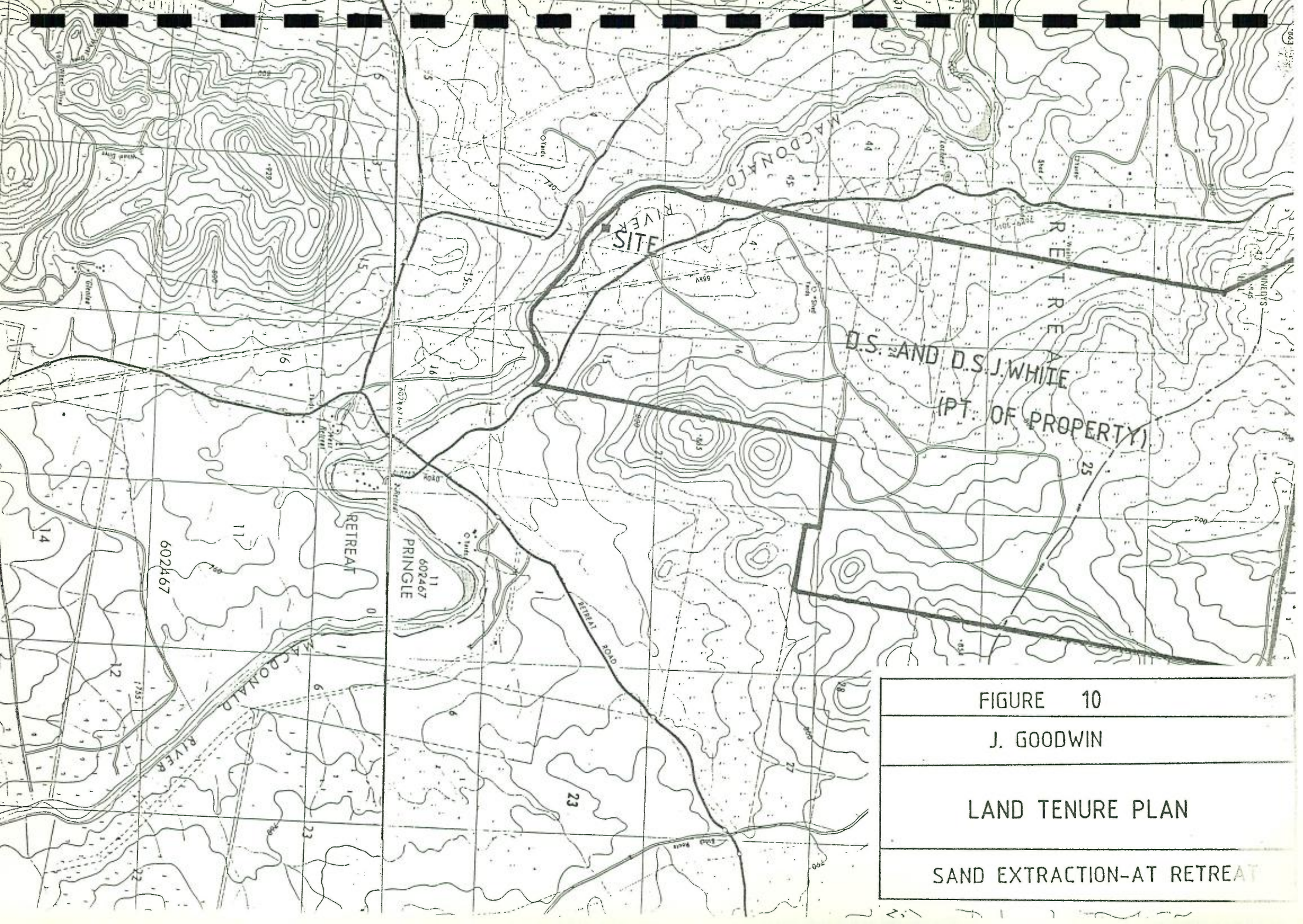


FIGURE 10

J. GOODWIN

LAND TENURE PLAN

SAND EXTRACTION-AT RETREAT

LOCAL GOVERNMENT ACT, 1919

NOTIFICATION OF RESCISSION OF INTERIM DEVELOPMENT ORDER NO. 1—SHIRE OF COCKBURN AND THE MAKING OF INTERIM DEVELOPMENT ORDER NO. 2—SHIRE OF COCKBURN

WHEREAS in pursuance of a direction dated 1st November, 1972, by the Minister for Local Government pursuant to section 342GA of the Local Government Act, 1919, the Authority has commenced the preparation of a Scheme under Part XIX of the said Act; and whereas having considered a report furnished by the said Authority, in pursuance of section 342G of the said Act, I, the Minister for Planning and Environment, do, by this my notification—

- (a) rescind Interim Development Order No. 1—Shire of Cockburn, as published in Government Gazette No. 118 of 3rd October, 1969; and
- (b) make an interim development order as set out in Schedule "B" hereto permitting, regulating, restricting, or prohibiting or conferring upon Cockburn Shire Council powers, authorities, duties and functions with respect to permitting, regulating, restricting or prohibiting interim development on the land described in Schedule "A" hereto, being land which is proposed to be included in the said Scheme, pending the coming into operation of such Scheme. (44 L 1)

Sydney, *John Curran* Minister for Planning and Environment, 1974.

SCHEDULE "A"

All land within the Shire of Cockburn.

SCHEDULE "B"

- 1. This Order may be cited as "Interim Development Order No. 2—Shire of Cockburn".
- 2. (1) In this Order, unless inconsistent with the context of subject-matter—
"Appointed day" means the day upon which this Order is gazetted.

"Council" means the Council of the Shire of Cockburn
 "Existing building" and "existing work" mean respectively a building or work erected, constructed or carried out before the appointed day.
 "Existing use" means a use of a building, work or land for the purpose for which it was used immediately before the appointed day.
 "I.D.C. Map" means the series of maps bound in a book the title sheet of which is marked "Shire of Cockburn Interim Development Control Map referred to in Interim Development Order No. 2—Shire of Cockburn" and deposited in the office of the Council, or a duplicate series of the said maps, similarly bound and identified, deposited in the office of the Authority.
 "Zone" means land shown on the I.D.C. Map by distinctive colouring or edging or in some distinctive manner for the purpose of indicating the restrictions imposed by this Order on development.

(2) The provisions contained in the set of standard or model provisions adopted by the Minister for Local Government on the recommendation of the State Planning Authority of New South Wales and published in Government Gazette No. 88 of 17th July, 1970, are adopted, wholly, by reference for the purposes of this Order.

3. Subject to the provisions of this Order, development which—

- (a) may be carried out without the consent of the Council;
- (b) may be carried out only with the consent of the Council;
- (c) may be carried out only with the consent of the Council and the concurrence of the Authority; and
- (d) may not be carried out;

in each of the zones specified in Column I of the table to this clause is shown opposite the respective zones in Columns II, III, IV and V of the table.

TABLE

Column I	Column II	Column III	Column IV	Column V
Zone and colour or indication on I.D.C. Map	Development which may be carried out without the consent of the Council	Development which may be carried out only with the consent of the Council	Development which may be carried out only with the consent of the Council and the concurrence of the Authority	Development which may not be carried out
1. Non-urban (a) Non-urban "A" Light brown.	Agriculture, other than pig-keeping, poultry farming and cattle lot feeding; dwelling-houses referred to in clause 13 (1) (a); forestry.	Development other than that permitted by Column II or IV or prohibited by Column V.	Dwelling-houses other than those referred to in clause 13 or clause 17; industries other than extractive industries, home industries, offensive or hazardous industries and rural industries.	Motor showrooms; residential buildings; shops other than general stores.
(b) Non-urban "B" Light brown with dark scarlet edging and lettered I (b).	Agriculture, other than pig-keeping, poultry farming and cattle lot feeding; forestry.	Development other than that permitted by Column II or IV or prohibited by Column V.	Caravan parks; dwelling-houses other than those referred to in clause 13 or clause 17; hotels; industries other than extractive industries, home industries, offensive or hazardous industries or rural industries; mines; refreshment rooms; service stations.	Dulk stores; car repair stations; commercial premises; junk yards; liquid fuel depots; motor showrooms; offensive or hazardous industries; residential buildings; roadside stalls; shops; timber yards; transport terminals; warehouses.
(c) Non-urban "C" (High-way Service Area). Light brown with scarlet edging and lettered I (c).		Dwelling-houses ancillary to other permissible uses; caravan parks; hotels; motels; refreshment rooms; service stations; shops; subdivision.		Development other than that permitted by Column III.
2. Village or township. Uncoloured with dark scarlet edging and lettered V.		Development other than that prohibited by Column V.		Institutions; junk yards within 90 metres of a main road; mines; offensive or hazardous industries.

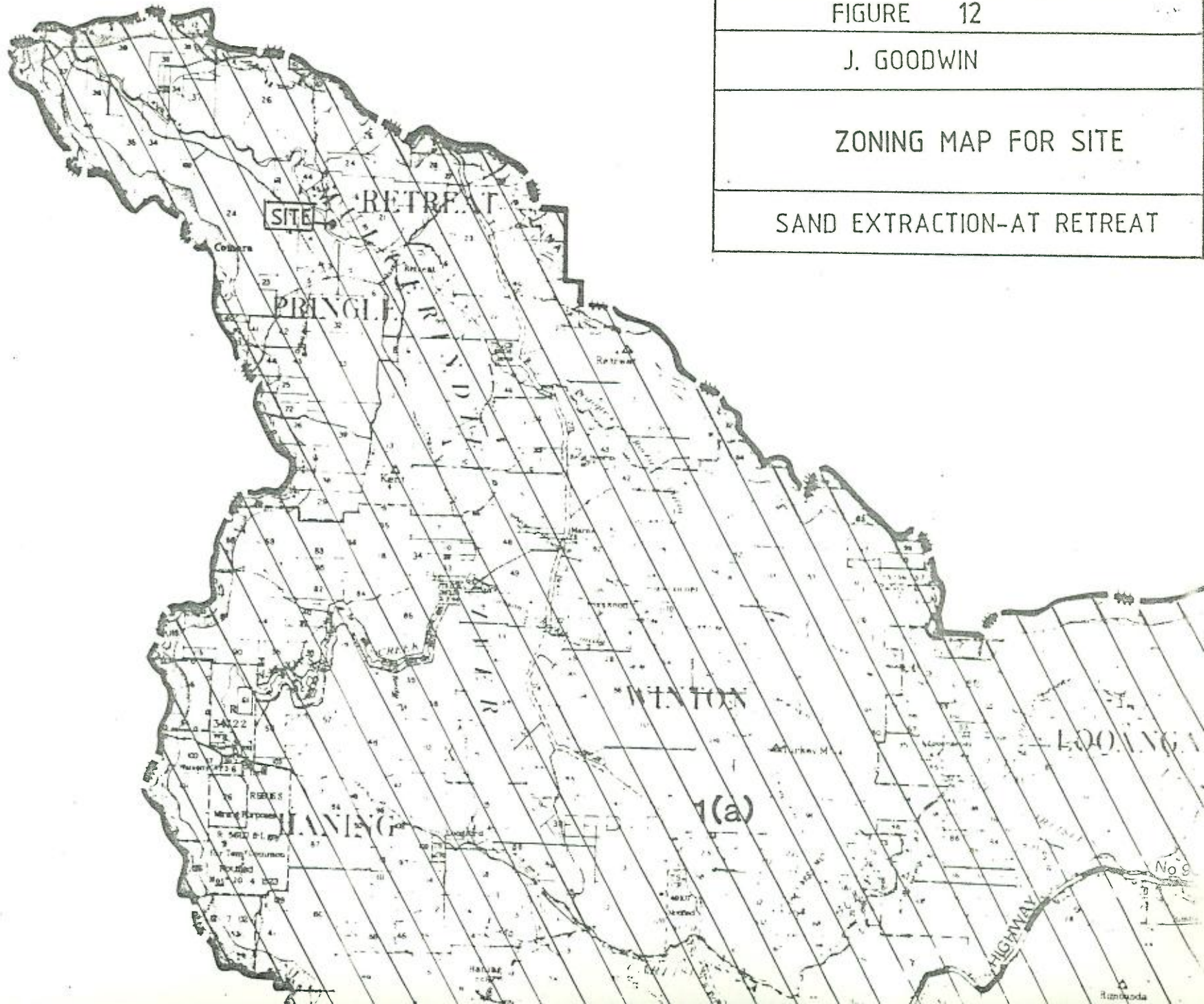
FIGURE 11

FIGURE 12

J. GOODWIN

ZONING MAP FOR SITE

SAND EXTRACTION-AT RETREAT





Government Gazette

OF THE STATE OF

NEW SOUTH WALES

PUBLISHED BY AUTHORITY

No. 162]

FRIDAY, 16 OCTOBER

[1987

POISONS ACT 1966—PROCLAMATION

(L.S.) L. W. STREET, *Lieutenant-Governor*.

I, Sir LAURENCE WHISTLER STREET, *Lieutenant-Governor* of the State of New South Wales, pursuant to section 8 (6) of the Poisons Act 1966, upon the recommendation of the Minister for Health, made on the recommendation of the Poisons Advisory Committee, and with the advice of the Executive Council, do, by this my Proclamation, amend the Poisons List as set forth in the Schedule below.

Signed and sealed at Sydney, this fourteenth day of October, 1987.

By His Excellency's Command,

PETER ANDERSON, *Minister for Health*.

GOD SAVE THE QUEEN!

SCHEDULE

The Poisons List is amended—

- (1) by omitting from Schedule Two the following substance:
BUFEXAMAC in preparations for external therapeutic use containing 5 per cent or less of bufexamac.
- (2) (a) by omitting from Schedule Two in respect of the matter relating to HUMAN CHORIONIC GONADOTROPHIN the words "packed for use on not more than two test occasions";
- (b) by omitting from Schedule Two in respect of the matter relating to HUMAN CHORIONIC GONADOTROPHIN ANTIBODY the words "packed for use on not more than two test occasions";
- (c) by inserting in Schedule Two in appropriate alphabetical order the following substance:
NAPROXEN as the only therapeutically active substance in preparations labelled only for the treatment of spasmodic dysmenorrhea in packs each containing 12 doses or less.
- (3) (a) by omitting from Schedule Three the following substance:
NAPROXEN as the only therapeutically active substance in preparations labelled only for the treatment of spasmodic dysmenorrhea in packs each containing 12 doses or less.

- (b) by inserting in Schedule Three in appropriate alphabetical order the following substances:

LOPERAMIDE in packs of 8 unit doses or less containing 2 milligrams or less of loperamide per unit dose.

TIOCONAZOLE in preparations for external human use containing 1 per cent or less of tioconazole as the only therapeutically active ingredient and labelled only for the treatment of fungal infections of the skin.

- (4) (a) by omitting from Schedule Four the following substance:

DISODIUM ETIDRONATE.

HUMAN CHORIONIC GONADOTROPHIN ANTIBODY in preparations for human pregnancy testing except where Schedule Two of the Poisons List applies.

METHAQUALONE.

- (b) by omitting from Schedule Four the following substance:

BUFEXAMAC except where Schedule Two of the Poisons List applies.

and by inserting instead the following substance:

BUFEXAMAC except in preparations for external human therapeutic use containing 5 per cent or less of bufexamac and in suppositories.

- (c) by omitting from Schedule Four in respect of the matter relating to NAPROXEN the matter "Three" and by inserting instead the matter "Two".

- (d) by omitting from Schedule Four the following substance:

LOPERAMIDE.

and by inserting instead the following substance:

LOPERAMIDE except where Schedule Three of the Poisons List applies.

- (e) by omitting from Schedule Four the following substance:

TIOCONAZOLE.

and by inserting instead the following substance:

TIOCONAZOLE except where Schedule Three of the Poisons List applies.

- (f) by omitting from Schedule Four in respect of the matter relating to SELENIUM the word "sheep;" and by inserting instead the words "sheep or cattle;"

ENVIRONMENTAL PLANNING AND ASSESSMENT ACT
1979

PARRY LOCAL ENVIRONMENTAL PLAN 1987

the Minister for Planning and Environment, in pursuance of section 70 of the Environmental Planning and Assessment Act 1979, make the local environmental plan set out hereunder. (85-1826)

BOB CARR,
Minister for Planning and Environment.

Sydney, 6th October, 1987.

PART I
PRELIMINARY

Citation

1. This plan may be cited as "Parry Local Environmental Plan 1987".

Aims, objectives, etc.

2. (1) The principal aim of this plan is to update and consolidate the planning controls for land within the Shire of Parry.

(2) The particular objectives relating to the zones created by this plan are set out in relation to the respective zones in the Table to clause 9.

Land to which plan applies

3. This plan applies to all land within the Shire of Parry as shown on the map, with boundaries as indicated on the map.

Relationship to other environmental planning instruments

4. This plan repeals—

- (a) Interim Development Order No. 1—Shire of Parry;
- (b) Parry Local Environmental Plans Nos 1, 2 and 3; and
- (c) such other deemed environmental planning instruments and local environmental plans as, immediately before the appointed day, applied to the land to which this plan applies, to the extent only to which those instruments and plans so applied to that land.

Interpretation

5. (1) In this plan, except in so far as the context or subject-matter otherwise indicates or requires—

"animal boarding, breeding and training establishment" means a building or place which is used for the purposes of the breeding, boarding, keeping or training, for gain or reward, of horses, dogs or cats, and includes a riding school;

"appointed day" means 9th October, 1986;

"arterial road" means Main Roads 63, 105, 130, 553, 579 and State Highways 9 and 11;

"caravan park" means land used (to an extent that, by the operation of section 289F of the Local Government Act 1919, a licence is required) for the placement of caravans (or of caravans and other movable dwellings);

"cluster development" means the erection on a single allotment of land of 3 or more dwelling-houses;

"Council" means the Council of the Shire of Parry;

"demolition", in relation to a building or work, means the damaging, defacing, destruction, pulling down or removal of the building or work, in whole or in part;

"existing holding" means—

(a) except as provided by paragraph (b), the area of a lot, portion or parcel of land as it was at the appointed day; or

(b) where, as at the appointed day, a person owned 2 or more adjoining or adjacent lots, portions or parcels of land, the aggregation of the areas of those lots, portions or parcels as they were on the appointed day;

"extractive industry" means—

- (a) the winning of an extractive material; or
- (b) an industry or undertaking, not being a mine, which depends for its operations on the winning of an extractive material from the land upon which it is carried on;

"extractive material" means sand, gravel, clay, turf, soil, rock, stone or a similar substance, but does not include any metal or mineral;

"feed lot" means a building or place in or on which cattle, sheep, poultry, pigs or other livestock are held for the purpose of nurturing either wholly or partly by a feeding method other than natural grazing;

"flood-prone land" means land which is below the 1 in 100 year flood level and includes land which would be inundated if a dam burst;

"floodway" means the channel of a river or stream and those portions of the flood plain adjoining the channel which are required to carry and discharge floodwaters, and includes land which is below the 1 in 20 year flood level;

"prime crop and pasture land" means land to which this plan applies which is identified as "Class 1", "Class 2" or "Class 3" land or as land of merit for special agricultural uses on a map prepared by or on behalf of the Director-General of Agriculture and deposited in the offices of the Department of Agriculture and includes any such land on which pig or poultry establishments are located;

"recreation area" means—

- (a) a children's playground;
- (b) land used for sporting activities or sporting facilities;
- (c) land used by the Council to provide recreational facilities for the physical, cultural or intellectual welfare of the community;
- (d) land used by a body of persons associated for the purposes of the physical, cultural or intellectual welfare of the community,

but does not include a showground or racecourse;

"recreational vehicle facility" means an establishment that provides facilities for the use as a recreational activity of vehicles or motor cycles;

"the map" means the map marked "Parry Local Environmental Plan 1987";

"tourist facility" means an establishment providing—

- (a) holiday accommodation;
- (b) permanent accommodation;
- (c) time-share accommodation; or
- (d) recreational activities,

which establishment may include shops primarily intended to serve the needs of permanent or temporary residents or visitors or tourists or include a recreation facility, camping ground, caravan park, holiday cabin, hotel, motel, playground, refreshment room or a club used in conjunction with any such activities.

(2) In this plan, except in so far as the context or subject-matter otherwise indicates or requires—

- (a) a reference to a building or place used for a purpose includes a reference to a building or place intended to be used for that purpose;
- (b) a reference to a map is a reference to a map deposited in the office of the Council;
- (c) a reference to land within a zone specified in the Table to clause 9 is a reference to land shown on the map in the manner indicated in clause 8 as the means of identifying land of the zone so specified; and
- (d) a reference to a flood level is a reference to a flood level shown on maps held in the offices of the Department of Water Resources.

(3) Where, because of the scale of a map or for any other reason, there is any dispute as to whether land is prime crop and pasture land, the land shall be treated as prime crop and pasture land for

the purpose of this plan if it is certified to the Council to be so by the Director-General of Agriculture.

Adoption of model provisions

6. (1) The Environmental Planning and Assessment Model Provisions 1980, other than—

- (a) the definitions of "advertisement", "arterial road", "extractive material", "map", "tourist facilities" and "units for aged persons" in clause 4 (1); and
- (b) clauses 8 (7), 15, 29, 32, 33, and 34.

are adopted for the purposes of this plan.

Consent authority

7. The Council shall be the consent authority for the purposes of this plan.

PART 2

ZONES

Zones indicated on the map

8. For the purposes of this plan, land to which this plan applies shall be in a zone specified hereunder if the land is shown on the map in the manner specified hereunder in relation to that zone—

- Zone No. 1 (a) (General Rural Zone)—edged heavy black and lettered "1 (a)";
- Zone No. 1 (b) (General Agriculture Zone)—edged heavy black and lettered "1 (b)";
- Zone No. 1 (c) (Hobby Farms Zone)—edged heavy black and lettered "1 (c)";
- Zone No. 1 (d) (Small Holdings Zone)—edged heavy black and lettered "1 (d)";
- Zone No. 1 (e) (Rural Residential Zone)—edged heavy black and lettered "1 (e)";
- Zone No. 1 (f) (Forestry Zone)—edged heavy black and lettered "1 (f)";
- Zone No. 2 (v) (Village Zone)—edged heavy black and lettered "V";
- Zone No. 6 (a) (Existing Open Space Zone)—edged heavy black and lettered "6 (a)".

Zone objectives and development control table

9. (1) The objectives of a zone are set out in the Table to this clause under the heading "Objectives of zone" appearing in the matter relating to the zone.

(2) Except as otherwise provided by this plan, in relation to land within a zone specified in the Table to this clause, the purposes (if any)—

- (a) for which development may be carried out without development consent;
- (b) for which development may be carried out only with development consent;
- (c) for which development may be carried out only with development consent and which must be advertised in the same manner as designated development; and
- (d) for which development is prohibited,

are specified under the headings "Without development consent", "Only with development consent", "Advertised development—only with development consent" and "Prohibited", respectively, appearing in the matter relating to the zone.

(3) Except as otherwise provided by this plan, the Council may consent to the carrying out of development on land to which this plan applies only where the Council is of the opinion that the carrying out of the development is consistent with the objectives of the zone within which the development is proposed to be carried out.

TABLE

ZONE No. 1 (a) (GENERAL RURAL ZONE)

1. Objectives of zone

The objectives of this zone are—

- (a) to enable the continuation of traditional forms of rural land use and occupation and encourage consolidation of

existing undersize allotments and their conversion into productive commercial farmholdings;

(b) to ensure that development is carried out on land within the zone in a manner which conserves, enhances and does not adversely affect the environmental and scenic qualities of the land;

(c) to conserve crop and pasture land in units or holdings which may be efficiently used for forms of agriculture common in the locality;

(d) to ensure that new rural holdings created by subdivision are of a suitable size for their proposed use;

(e) to enable other secondary forms of development which are associated with rural activities, or which support tourism, to be accommodated in an environmentally acceptable manner;

(f) to permit the development of mines and offensive and hazardous industries, where required, in an environmentally acceptable manner; and

(g) to permit the development of intensive commercial horticulture and specialised agriculture where fertile land and a reliable water supply are available.

2. Without development consent

Agriculture (other than animal boarding, breeding or training establishments, pig keeping, feed lots or poultry establishments).

3. Only with development consent

Agriculture (being animal boarding, breeding or training establishments, pig keeping, feed lots, or poultry establishments); bulk stores; bus depots; bushfire fighting establishments; cemeteries; child care centres; commercial stock and sale yards; community centres; dwelling-houses; educational establishments; forestry; garbage disposal areas; general stores; home industries; home occupations; hospitals; industries; institutions; junk yards; liquid fuel depots; mines; picnic grounds; places of public worship; plant depots (machinery); professional consulting rooms; public buildings; racecourses; reception establishments; recreation establishments; research establishments; retail plant nurseries; riding schools; road transport terminals; roadside stalls; sawmills; showgrounds; stock transport terminals; timber yards; tourist facilities; units for the aged or disabled; utility installations (other than gas holders or generating works); veterinary hospitals; veterinary surgeons' establishments.

4. Advertised development—only with development consent

Any purpose other than a purpose included in item 2, 3 or 5.

5. Prohibited

Motor showrooms; residential buildings (other than dwelling-houses); shops (other than general stores).

ZONE No. 1 (b) (GENERAL AGRICULTURE ZONE)

1. Objectives of zone

The objectives of this zone are—

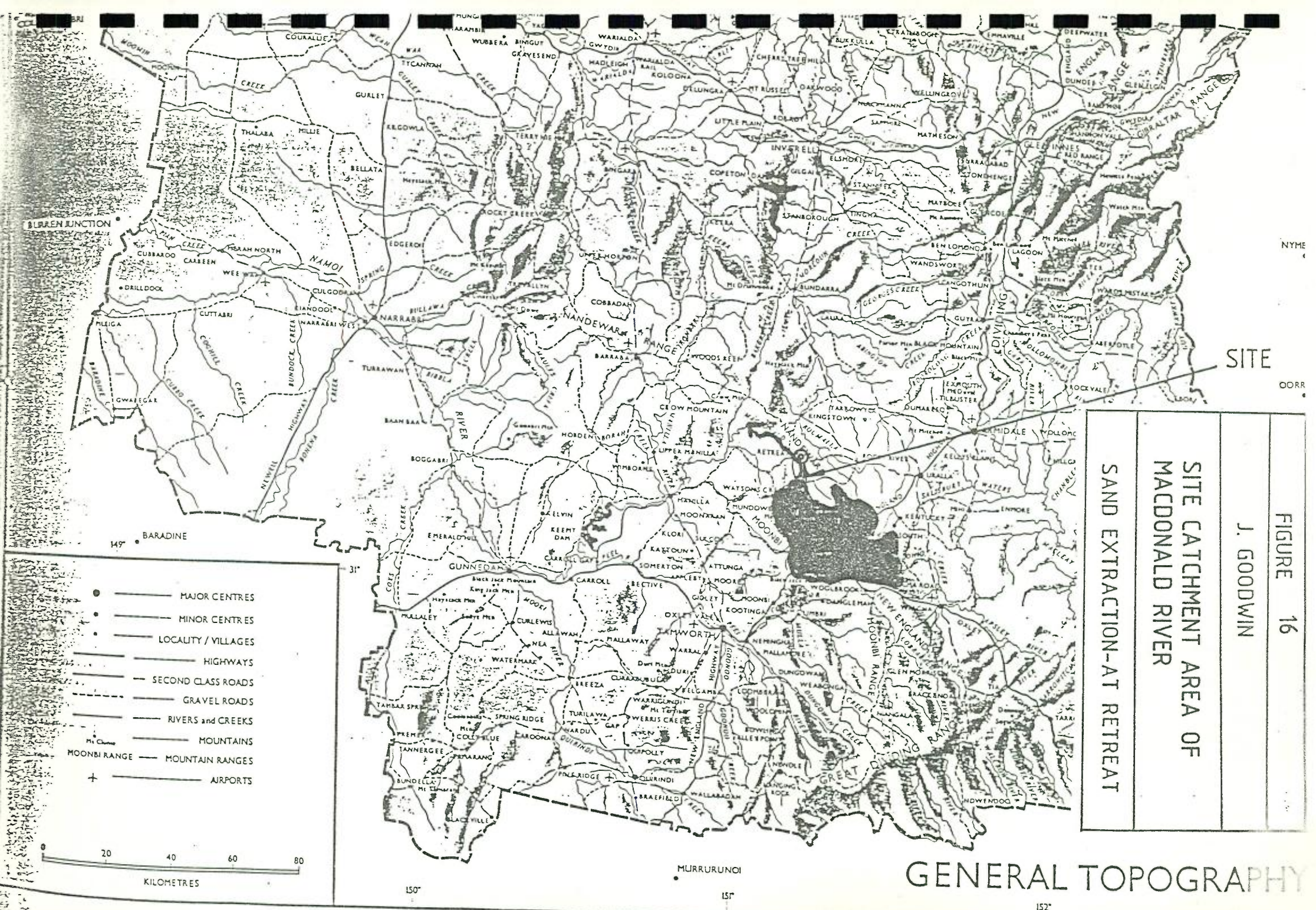
(a) to enable the continuation of traditional forms of rural land use and occupation and encourage consolidation of existing undersized allotments and their conversion into productive commercial farmholdings;

(b) to conserve prime crop and pasture land in units or holdings which may be efficiently used for forms of agriculture common in the locality;

(c) to discourage fragmentation of landholdings into holdings which are inadequate to support commercial farming practices;

(d) to enable other forms of development which are associated with rural activities and which require an isolated location, or which support tourism, and recreational activities to be accommodated in an environmentally acceptable manner;

(e) to ensure that the type and intensity of development is appropriate, having regard to the characteristics of the



SITE

NYME

COOR

FIGURE 16
 J. GOODWIN
 SITE CATCHMENT AREA OF
 MACDONALD RIVER
 SAND EXTRACTION-AT RETREAT

GENERAL TOPOGRAPHY

- MAJOR CENTRES
- MINOR CENTRES
- LOCALITY / VILLAGES
- HIGHWAYS
- - - SECOND CLASS ROADS
- - - GRAVEL ROADS
- RIVERS and CREEKS
- MOUNTAINS
- MOUNTAIN RANGES
- + AIRPORTS

0 20 40 60 80
 KILOMETRES

149°

31°

150°

151°

152°

MURRURUNOI

BUREN JUNCTION

BARADINE

CLOW MOUNTAIN

WATSONS CREEK

MOONBI

AMWORTH

BRAEFIELD

COOR

FIGURE 17.

J. GOODWIN

GROUND SLOPE MAP

SAND EXTRACTION-AT RETREAT

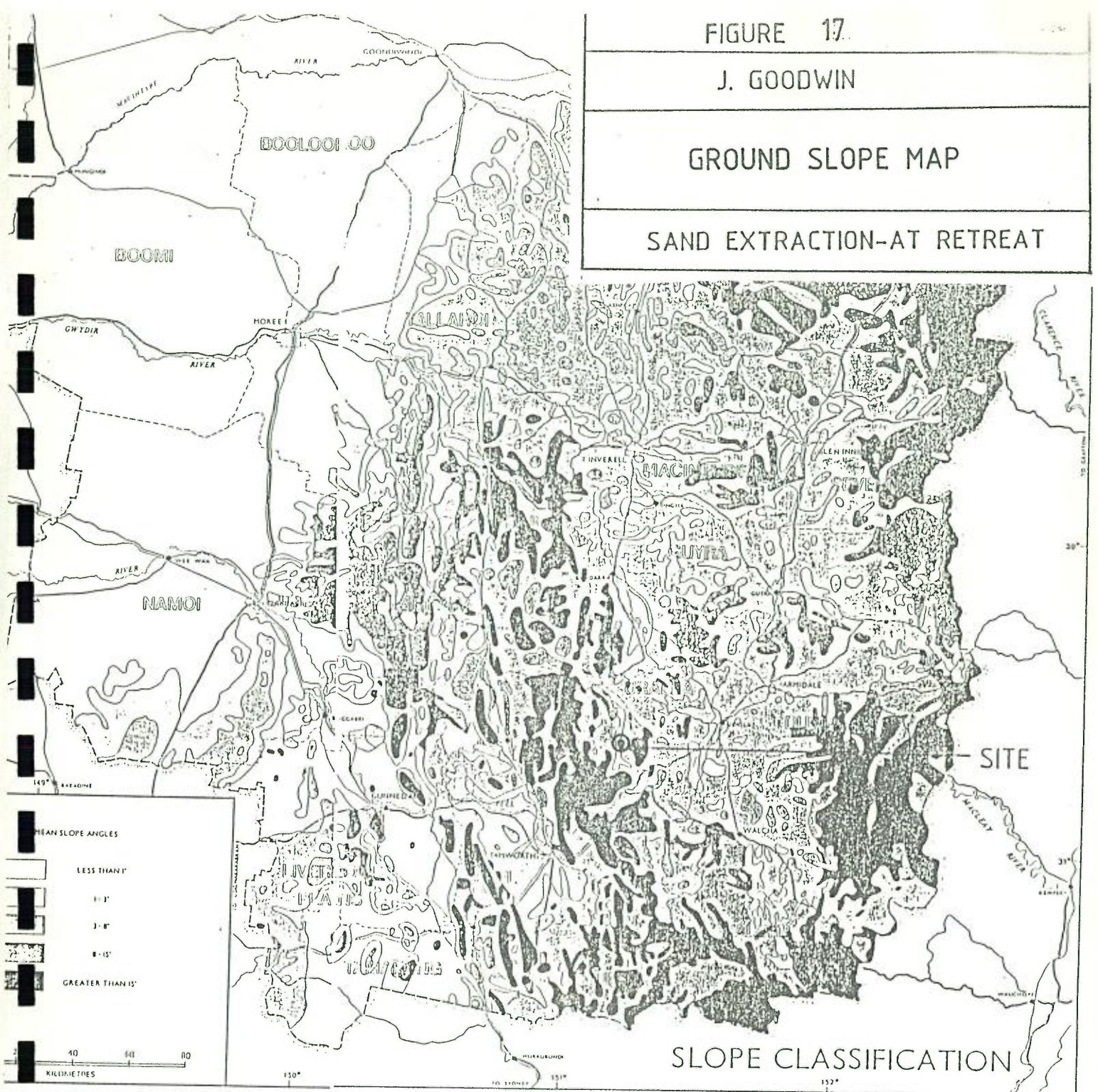
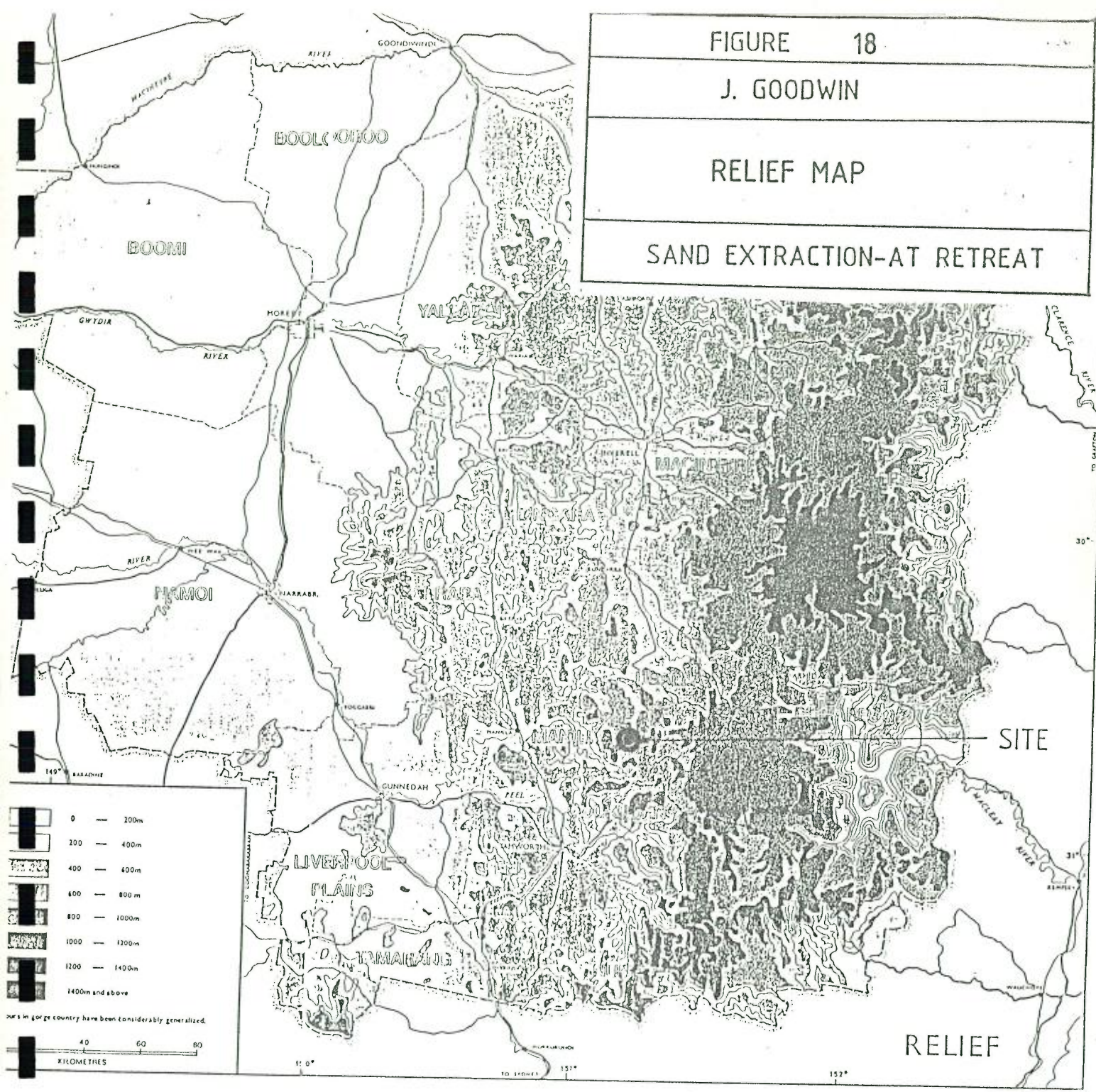


FIGURE 18

J. GOODWIN

RELIEF MAP

SAND EXTRACTION-AT RETREAT



RELIEF

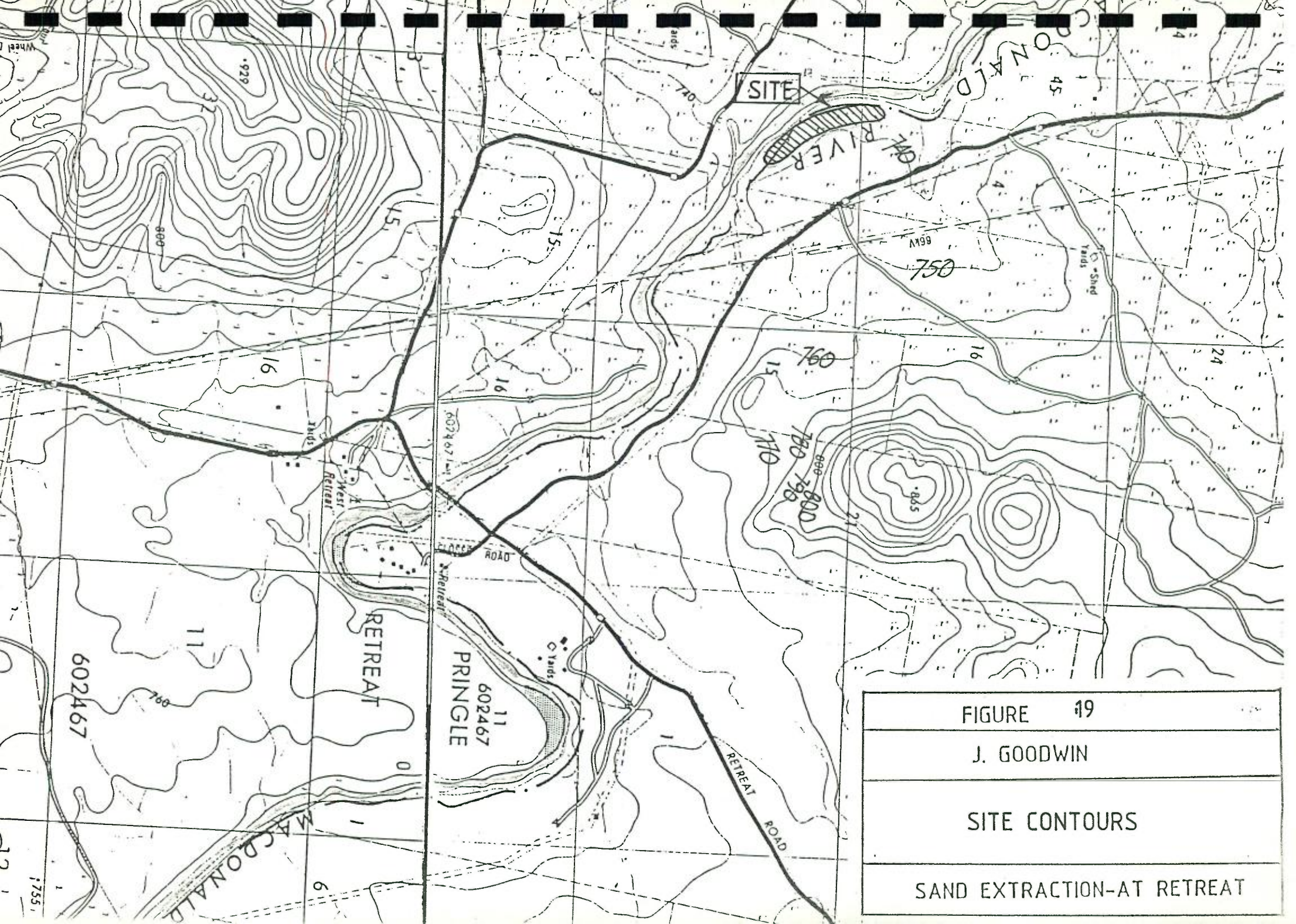
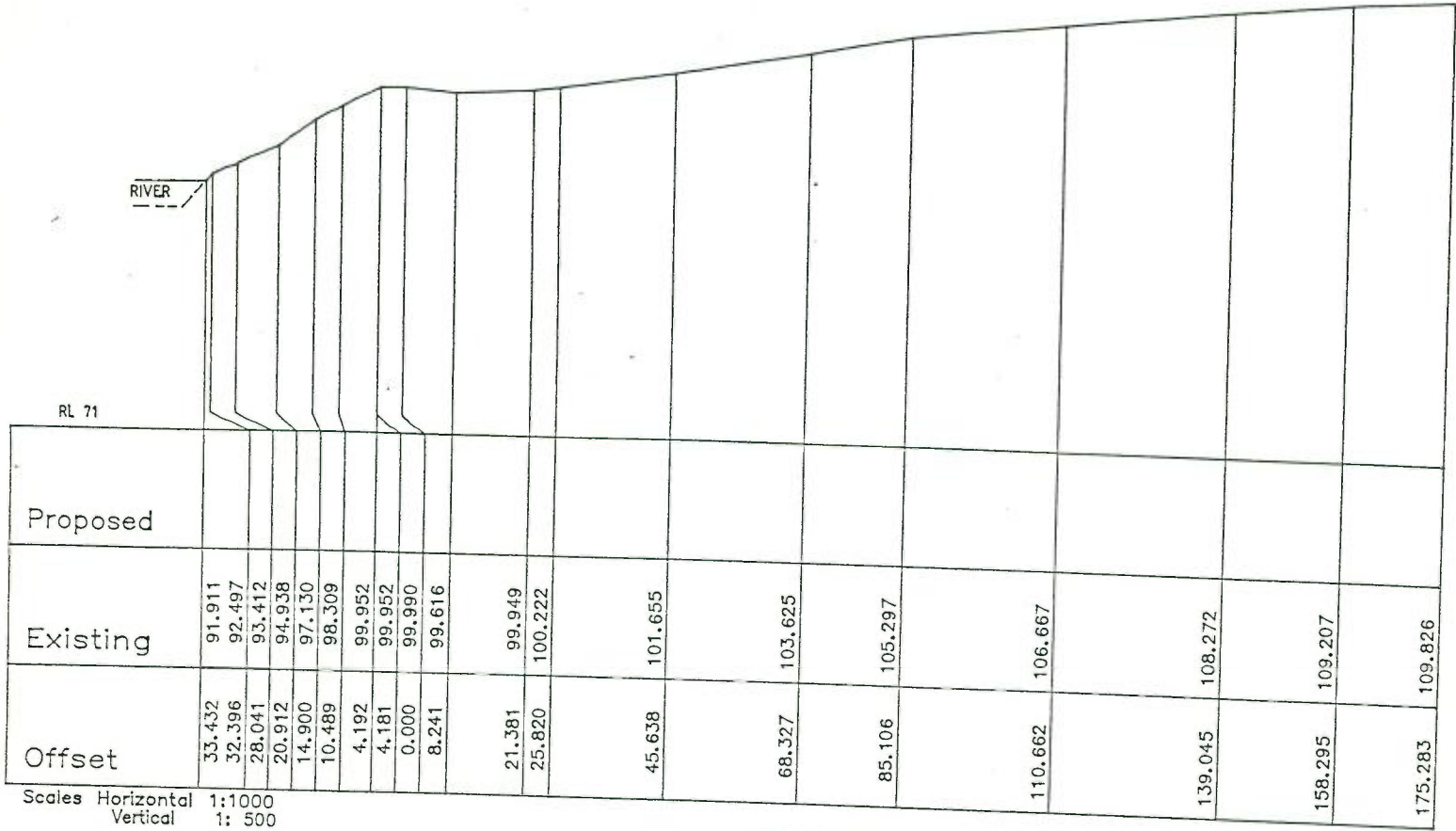


FIGURE 19
J. GOODWIN
SITE CONTOURS
SAND EXTRACTION-AT RETREAT



Scales Horizontal 1:1000
Vertical 1: 500

LOOKING DOWNSTREAM

0.000

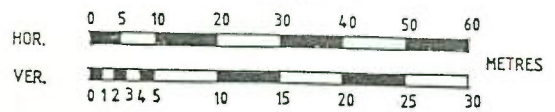
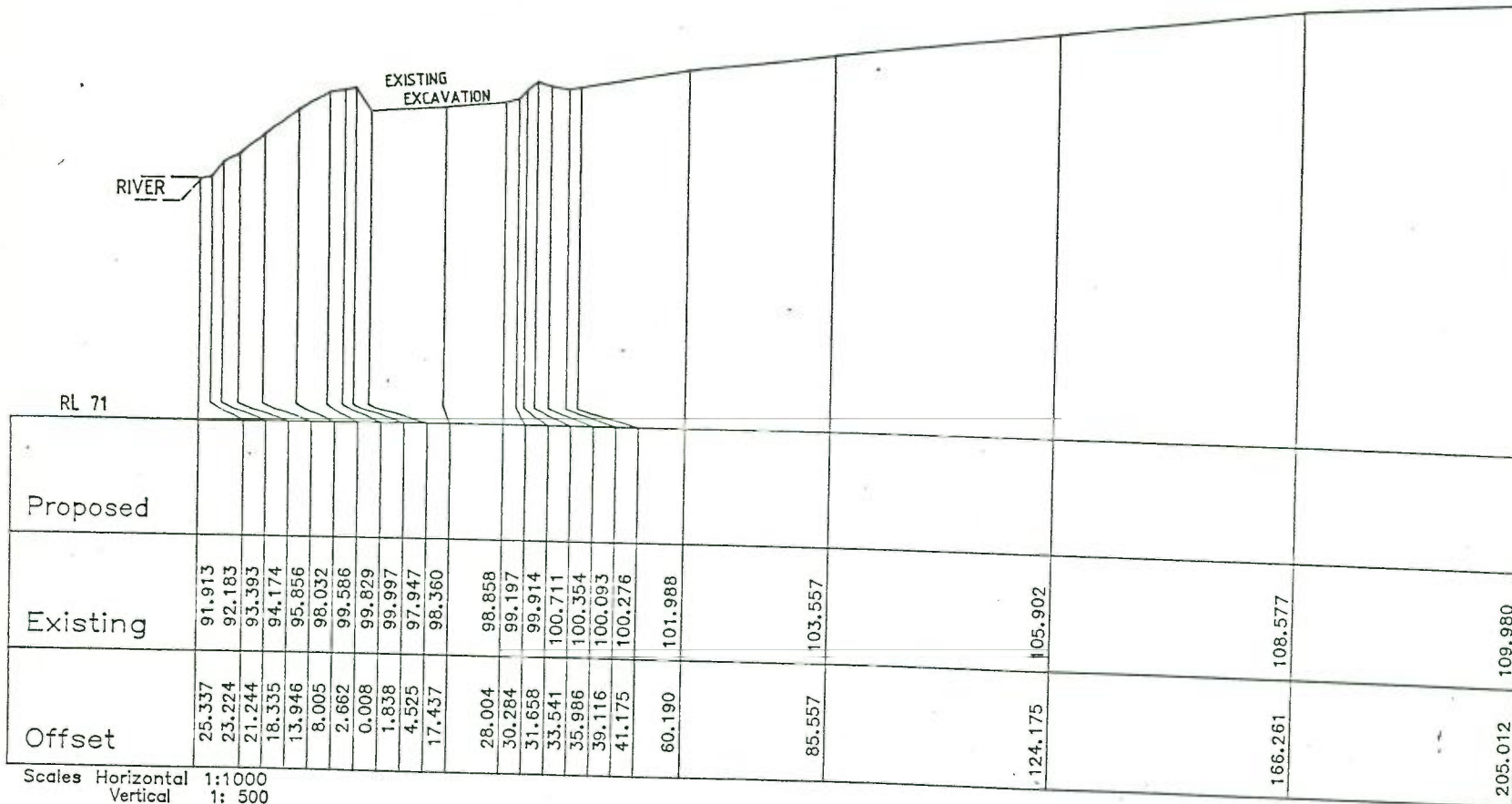


FIGURE 20

J.GOODWIN			
MACDONALD RIVER- RETREAT			
SHIRE OF PARRY			
CROSS SECTIONS- AT SITE			
CHAINAGE 00		NO. 1	
REF. 4505	NO. SHEETS 6	SHEET NO. 1	DATUM ASSUMED



LOOKING DOWNSTREAM

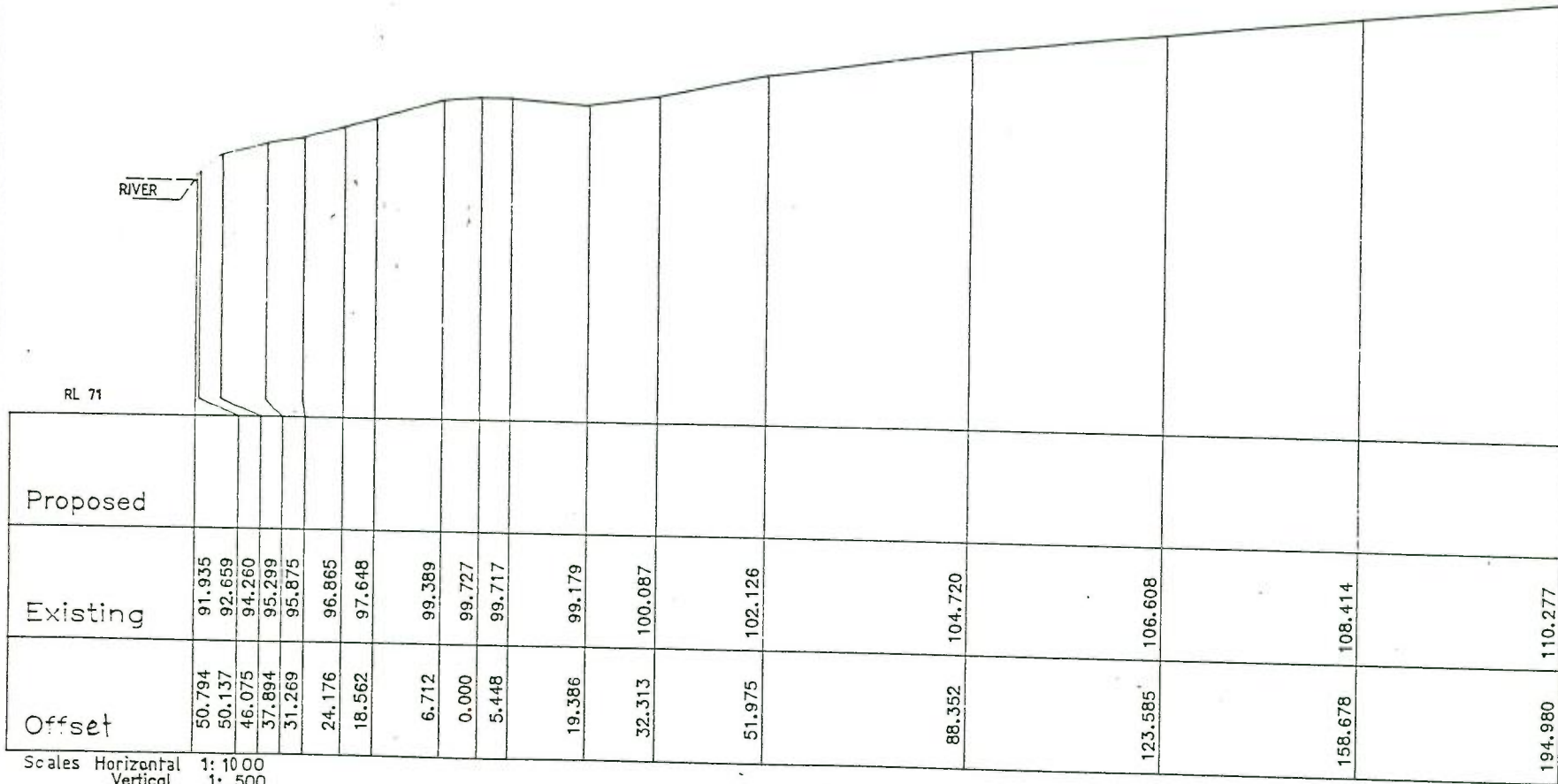
106.530

Scales Horizontal 1:1000
Vertical 1: 500



FIGURE 21

J.GOODWIN			
MACDONALD RIVER- RETREAT			
SHIRE OF PARRY			
CROSS SECTIONS- AT SITE			
CHAINAGE		106	NO. 2
REF. 4505	NO. SHEETS 8	SHEET NO. 2	DATUM ASSUMED



Scales Horizontal 1: 1000
Vertical 1: 500

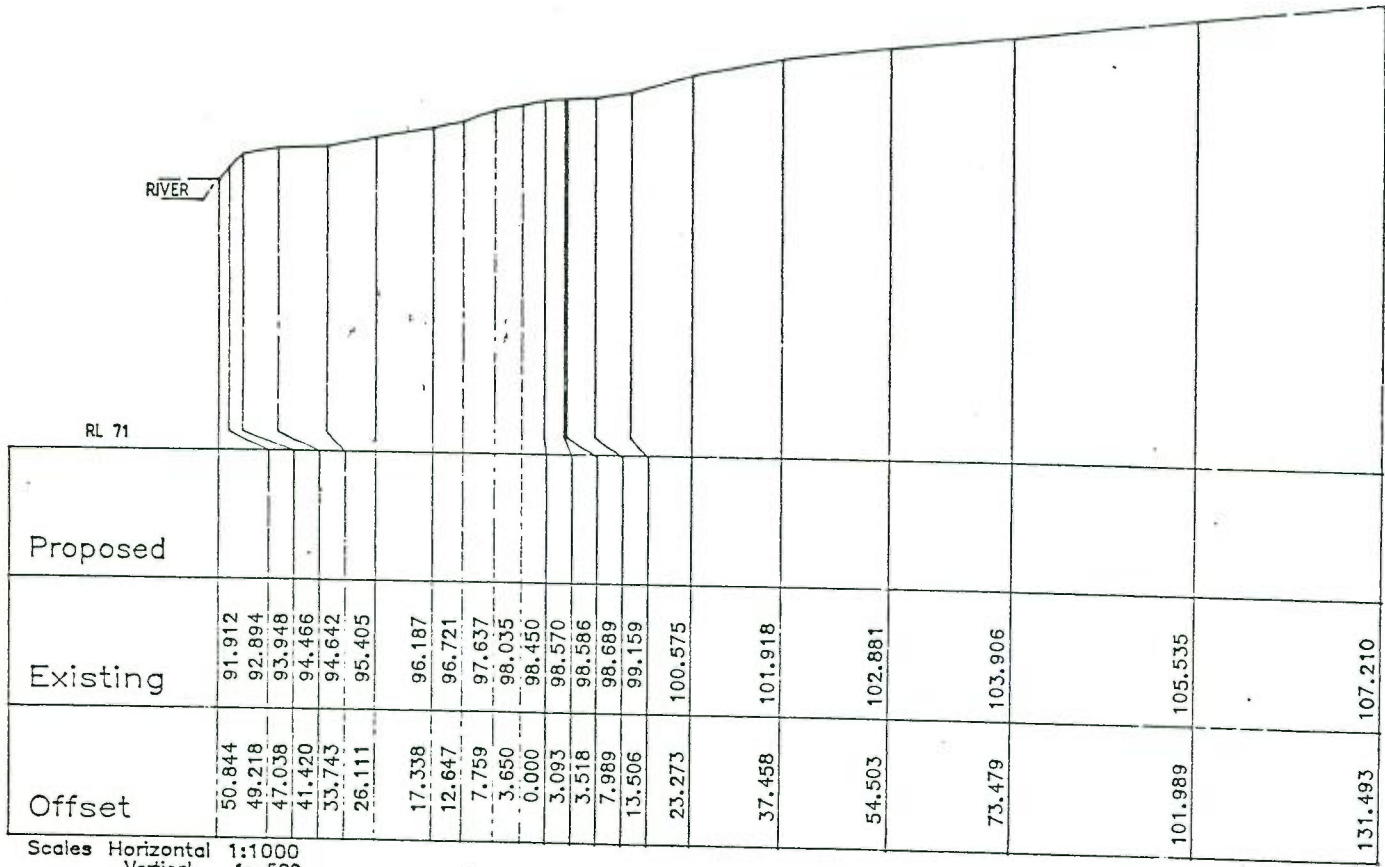
LOOKING DOWNSTREAM



J.GOODWIN			
MACDONALD RIVER- RETREAT			
SHIRE OF PARRY			
CROSS SECTIONS- AT SITE			
CHAINAGE 196		NO. 3	
REF. 4505	NO. SHEETS 6	SHEET NO. 3	DATUM ASSUMED

196.477

FIGURE 22



Scales Horizontal 1:1000
Vertical 1: 500

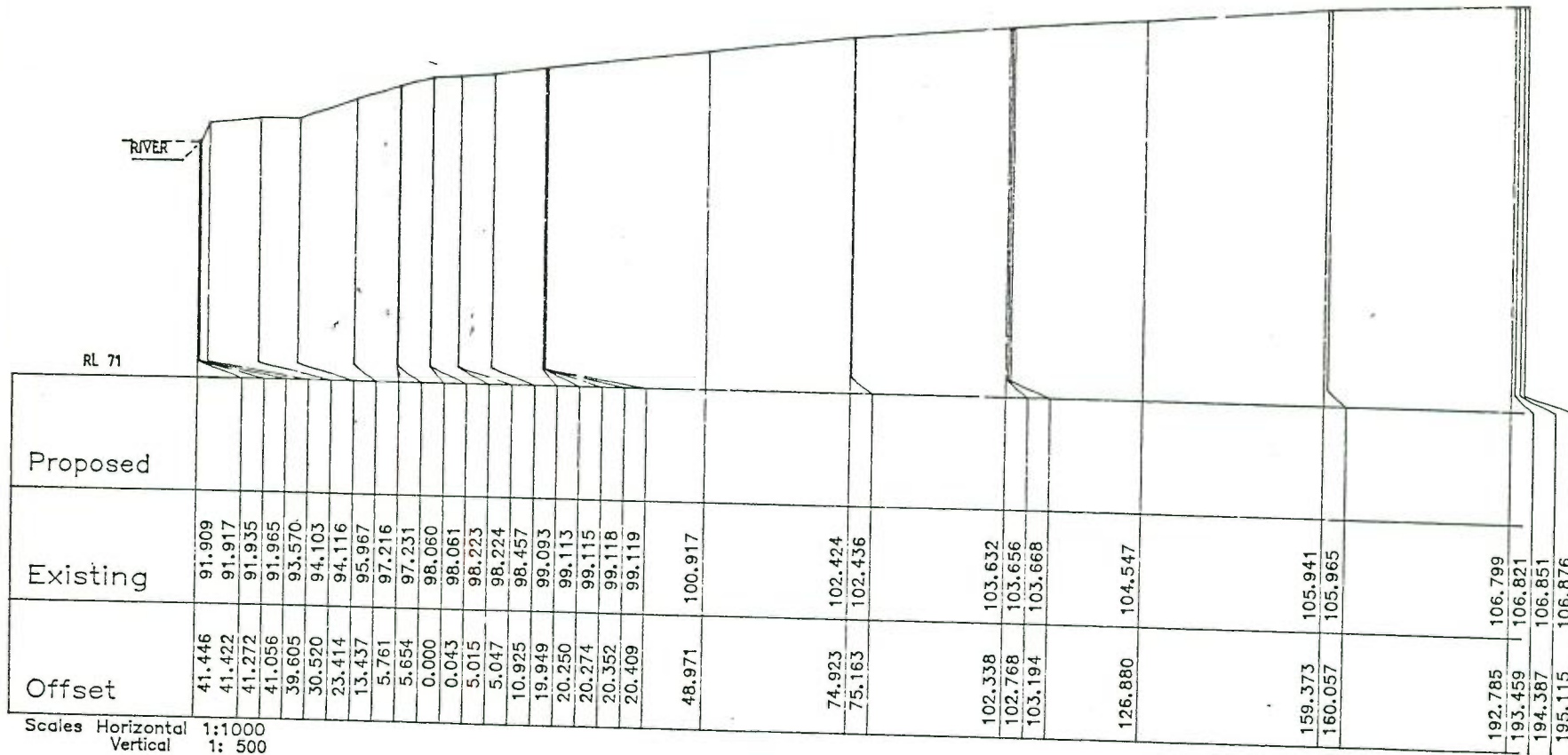
LOOKING DOWNSTREAM

297.986



FIGURE 23

J.GOODWIN			
MACDONALD RIVER- RETREAT			
SHIRE OF PARRY			
CROSS SECTIONS- AT SITE			
CHAINAGE 297		NO. 2	
REF. 4505	NO. SHEETS 6	SHEET NO. 4	DATUM ASSUMED



Scales Horizontal 1:1000
Vertical 1: 500

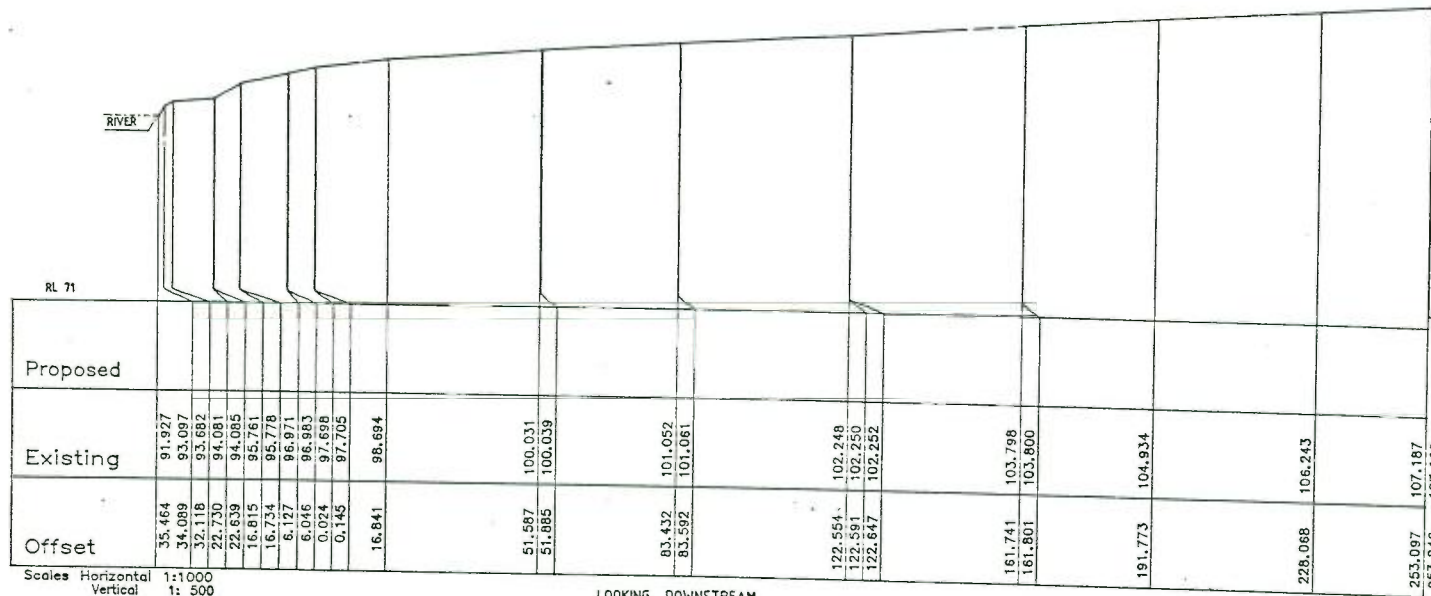
LOOKING DOWNSTREAM

395.353



J.GOODWIN			
MACDONALD RIVER- RETREAT			
SHIRE OF PARRY			
CROSS SECTIONS- AT SITE			
CHAINAGE 395		NO. 5	
REF. 4505	NO. SHEETS 6	SHEET NO. 5	DATUM ASSUMED

FIGURE 24



Scales Horizontal 1:1000
Vertical 1: 500

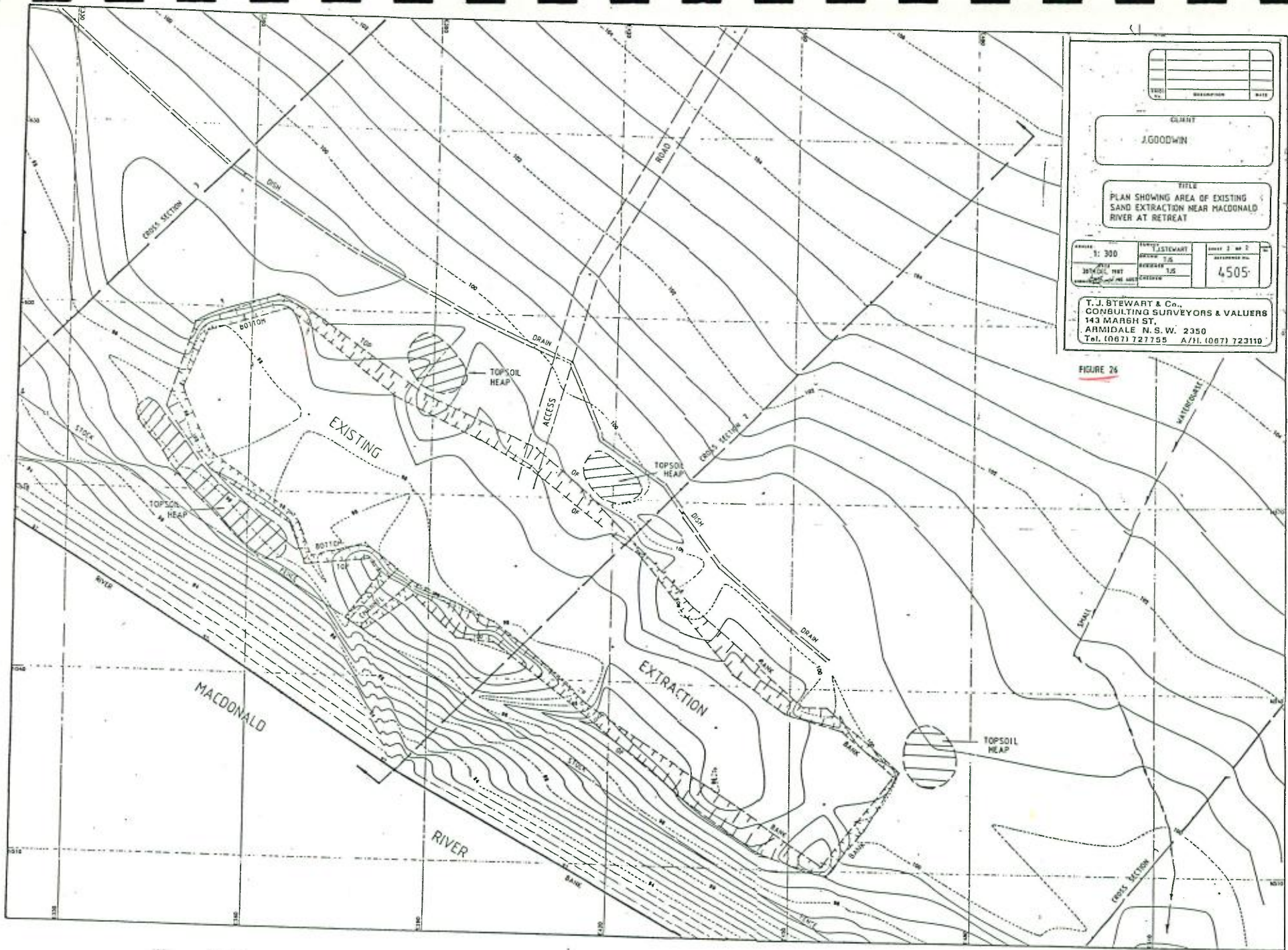
LOOKING DOWNSTREAM

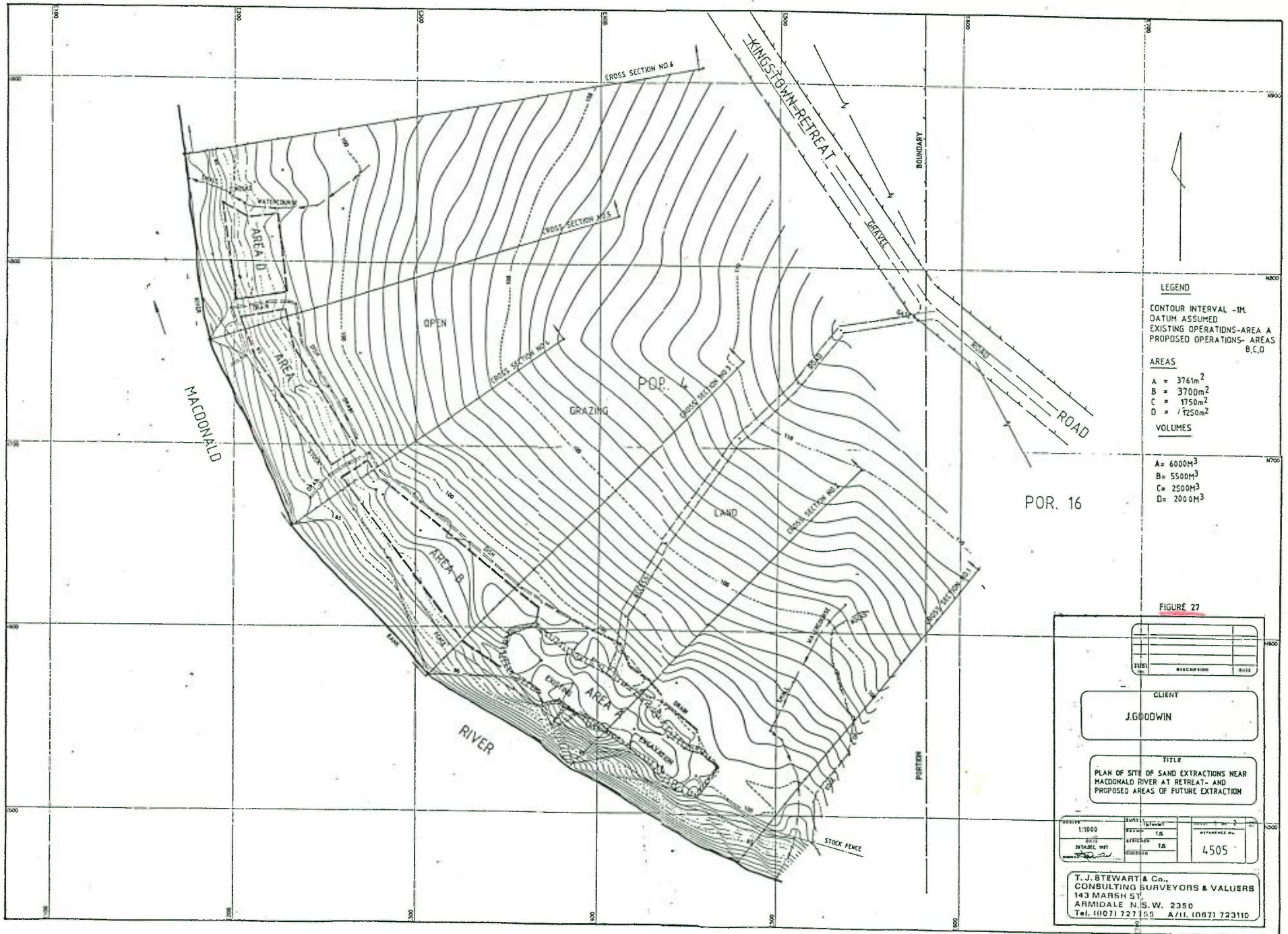
492.494



J.GOODWIN			
MACDONALD RIVER- RETREAT			
SHIRE OF PARRY			
CROSS SECTIONS- AT SITE			
CHAINAGE		492	NO. 6
REF. 4505	NO. SHEETS 6	SHEET NO. 5	DATUM ASSUMED

FIGURE 25





LEGEND
 CONTOUR INTERVAL -1M
 DATUM ASSUMED
 EXISTING OPERATIONS- AREA A
 PROPOSED OPERATIONS- AREAS B,C,D

AREAS
 A = 3761m²
 B = 3700m²
 C = 1750m²
 D = 19250m²

VOLUMES
 A = 6000M³
 B = 5500M³
 C = 2500M³
 D = 2000M³

FIGURE 27

DATE	DESCRIPTION	BY

CLIENT
J.GOODWIN

TITLE
 PLAN OF SITE OF SAND EXTRACTIONS NEAR
 MACDONALD RIVER AT RETREAT AND
 PROPOSED AREAS OF FUTURE EXTRACTION

SCALE 1:1000	DATE 1.5	REFERENCE NO. 2
BY T.J.S.	REVISED 1.5	4505

T. J. STEWART & Co.,
 CONSULTING SURVEYORS & VALUERS
 143 MARSH ST.
 ARMIDALE N.S.W. 2350
 Tel. (067) 727 155 A/11.1067) 723110

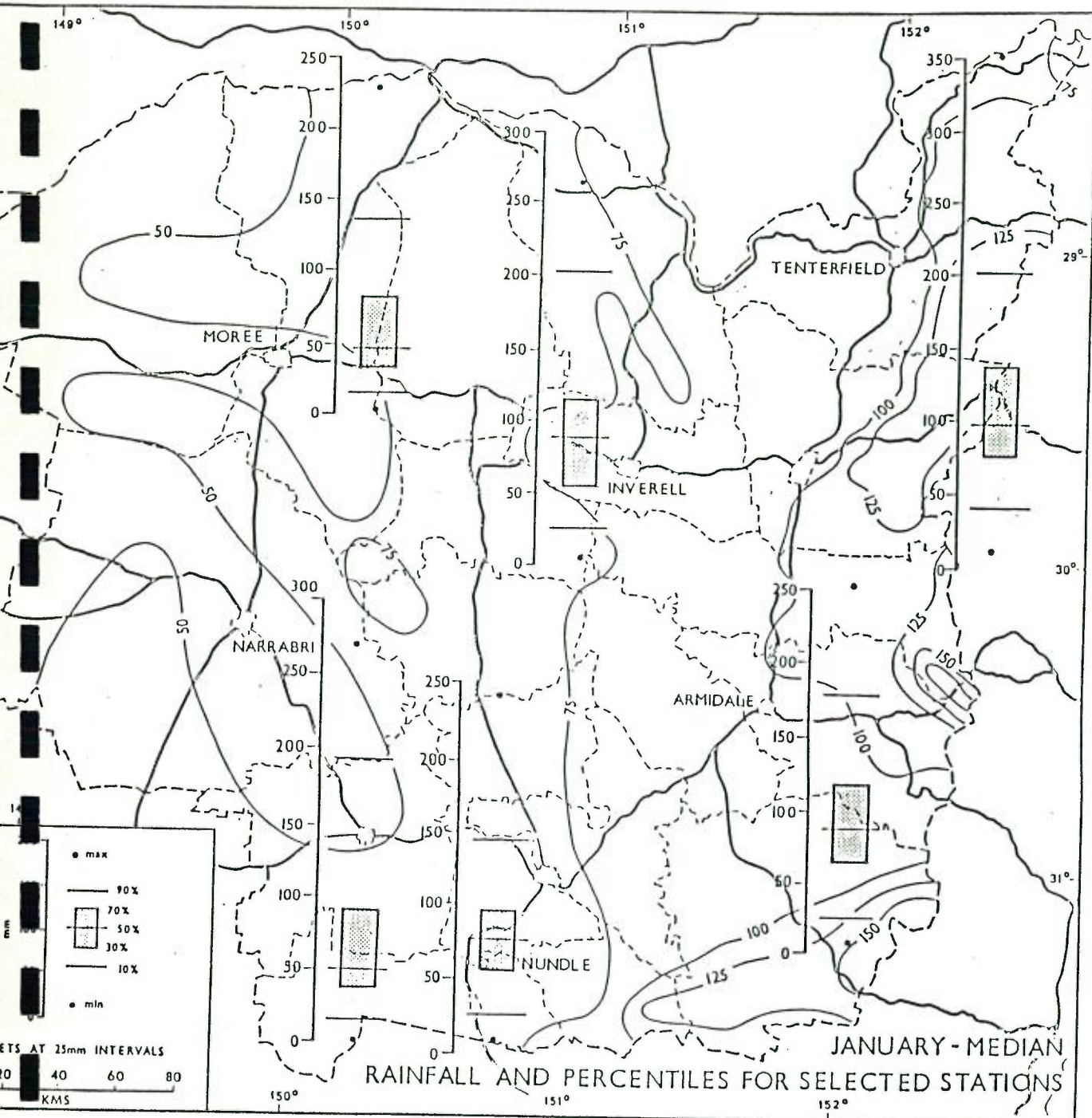


FIGURE 28-1

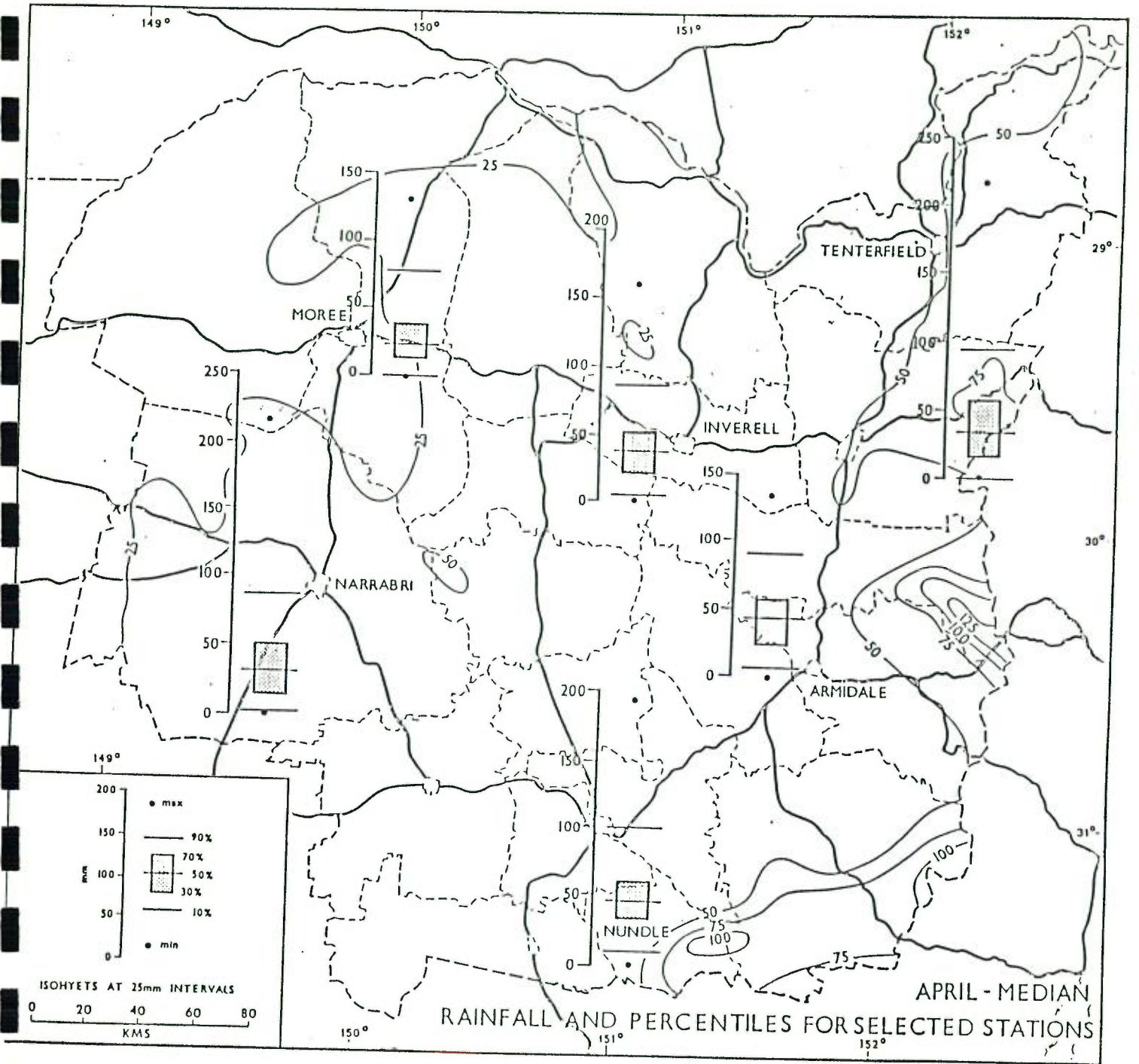


FIGURE .28-2

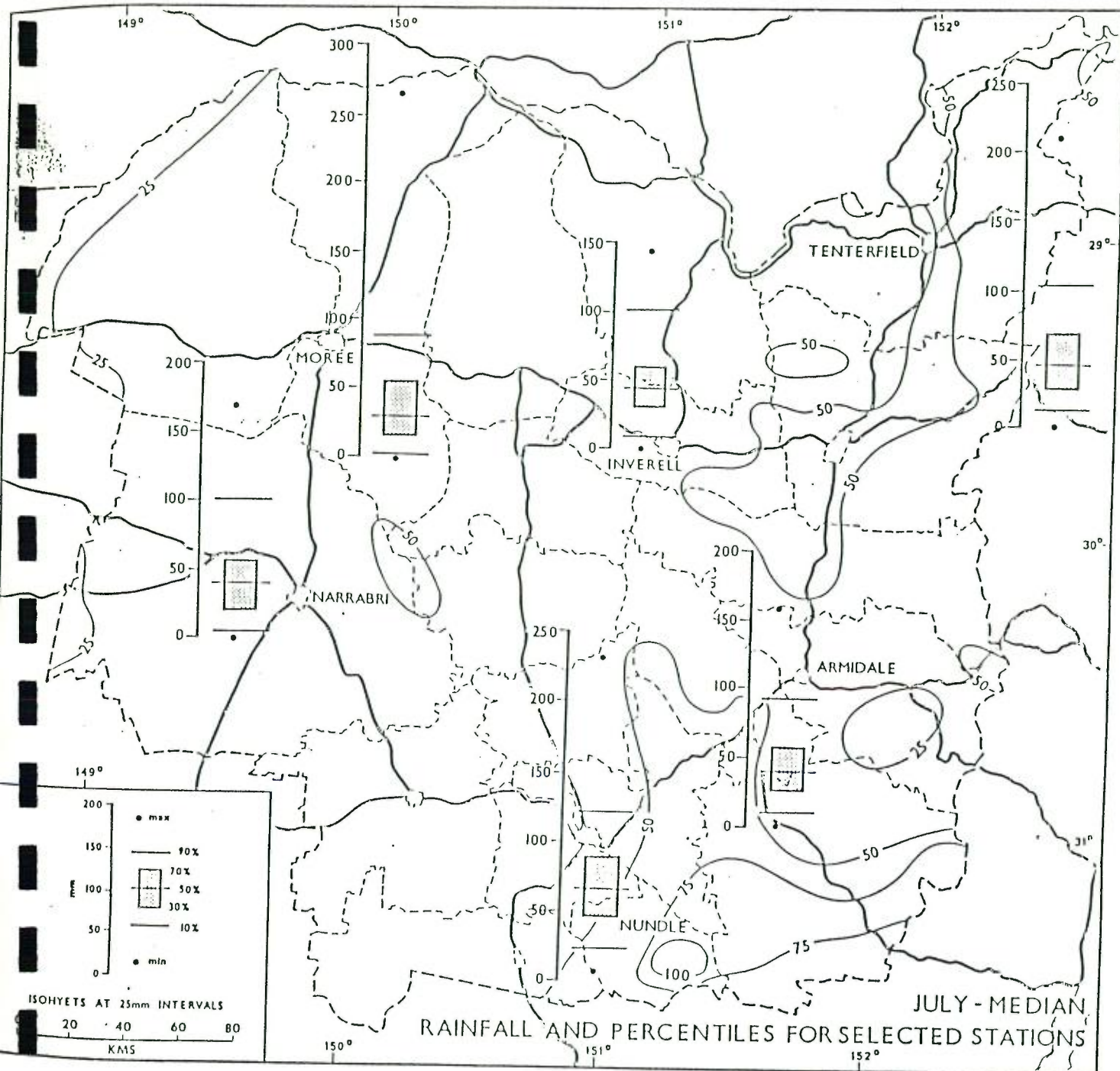


FIGURE 28.3

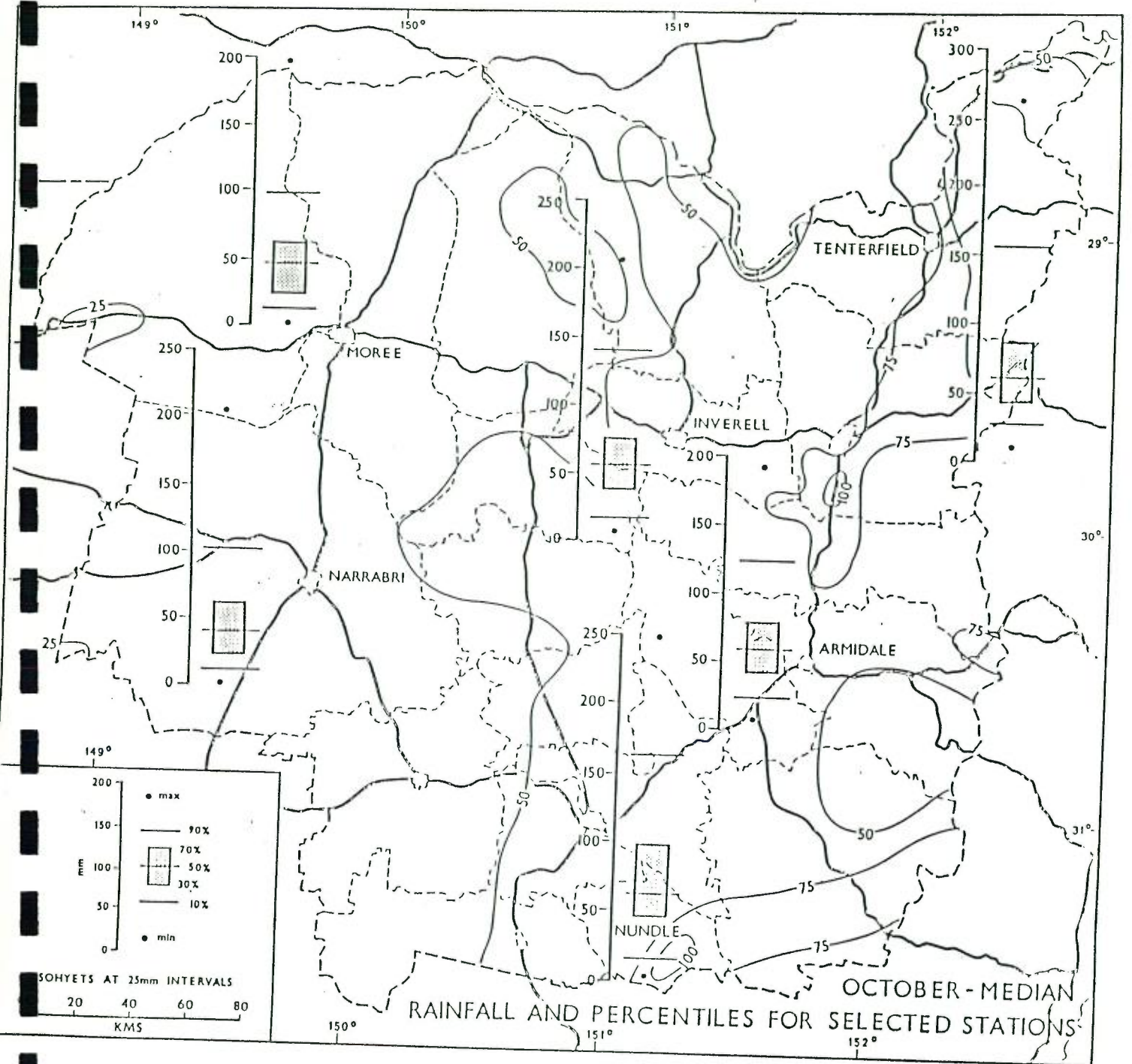


FIGURE 28-4

MEAN ANNUAL RAINDAYS

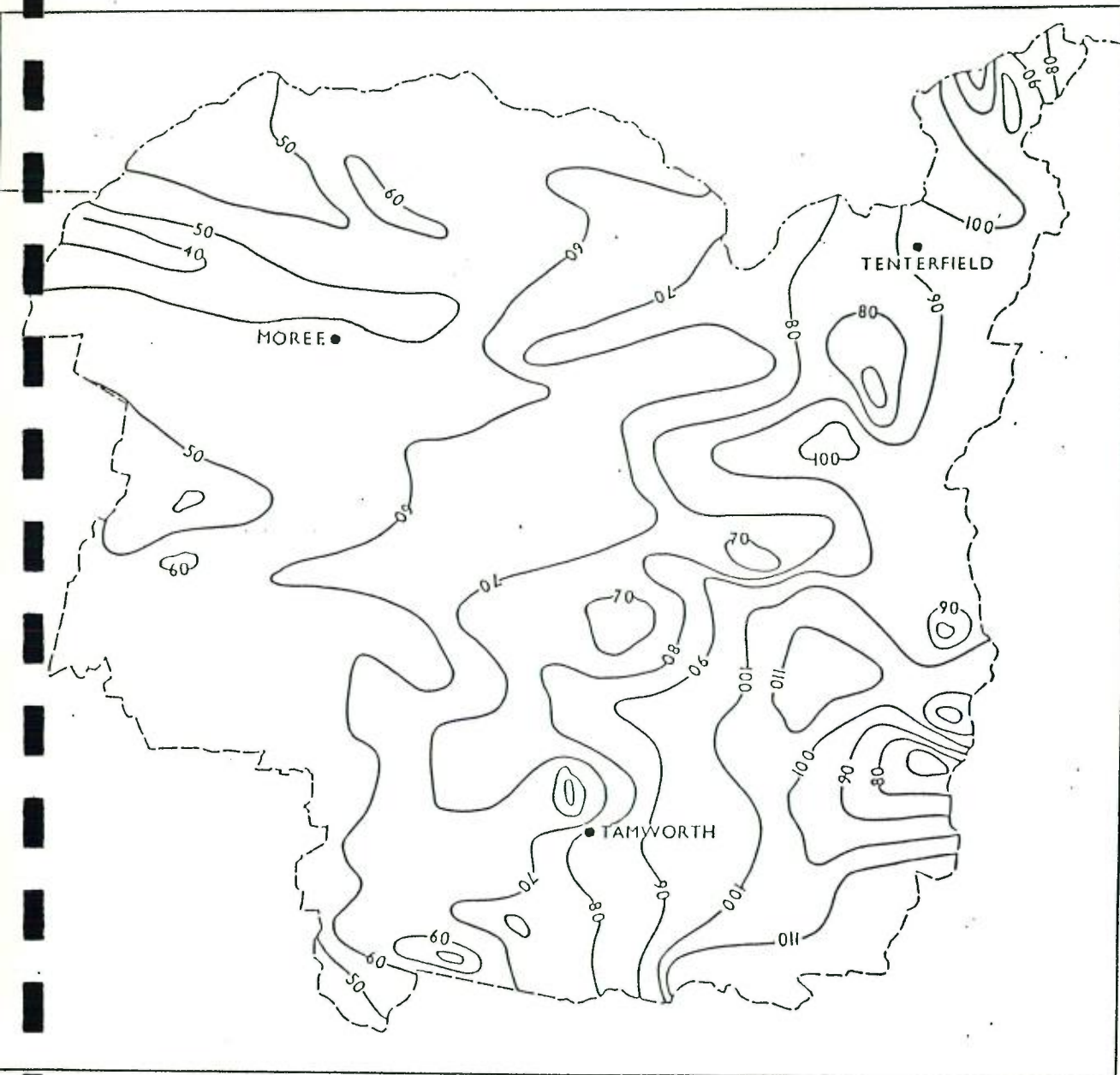
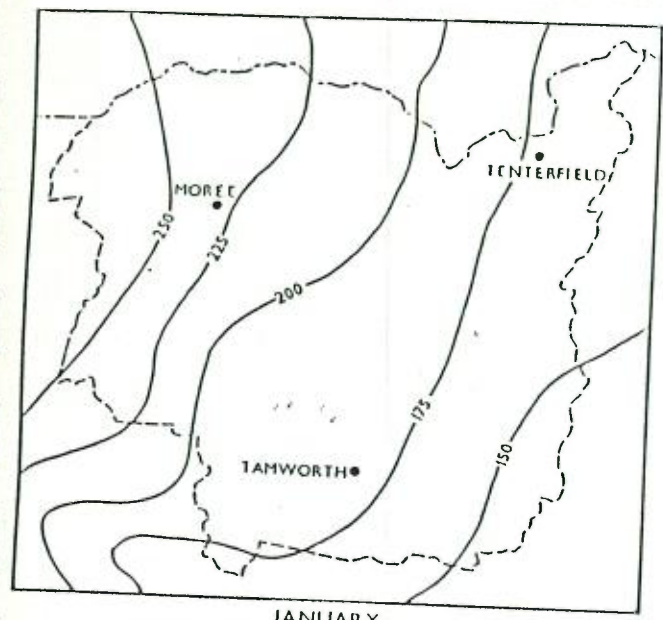
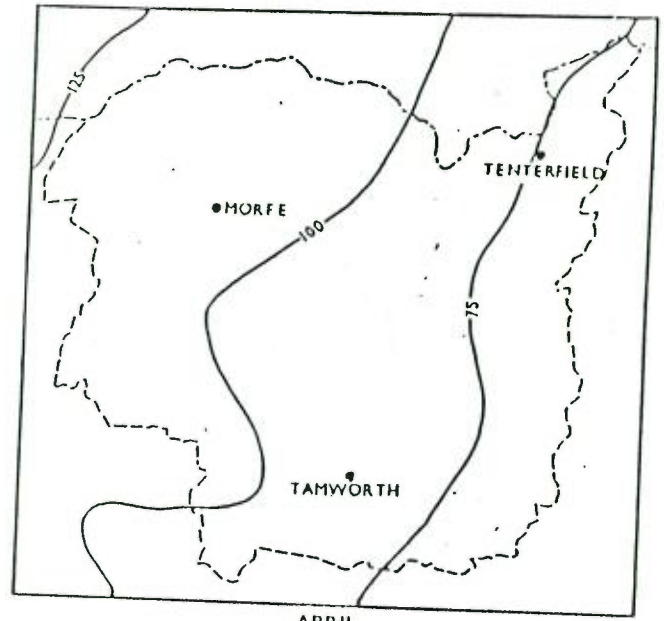


FIGURE 28-5

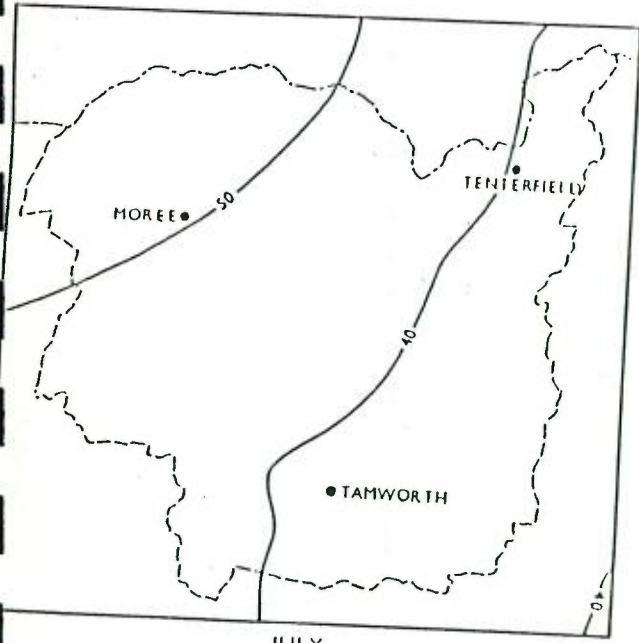
AVERAGE MONTHLY EVAPORATION(mm)
(AUSTRALIAN SUNKEN TANK VALUES)



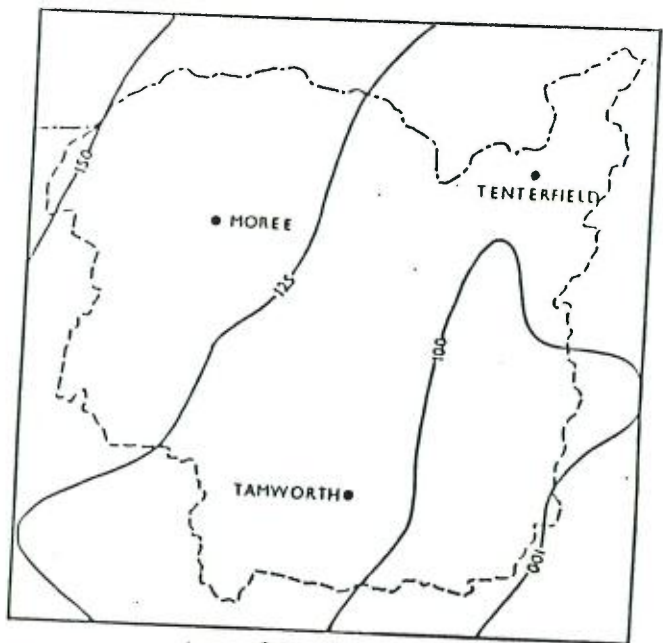
JANUARY



APRIL



JULY



OCTOBER

FIGURE 28-6

MATERIAL FLOW DIAGRAM

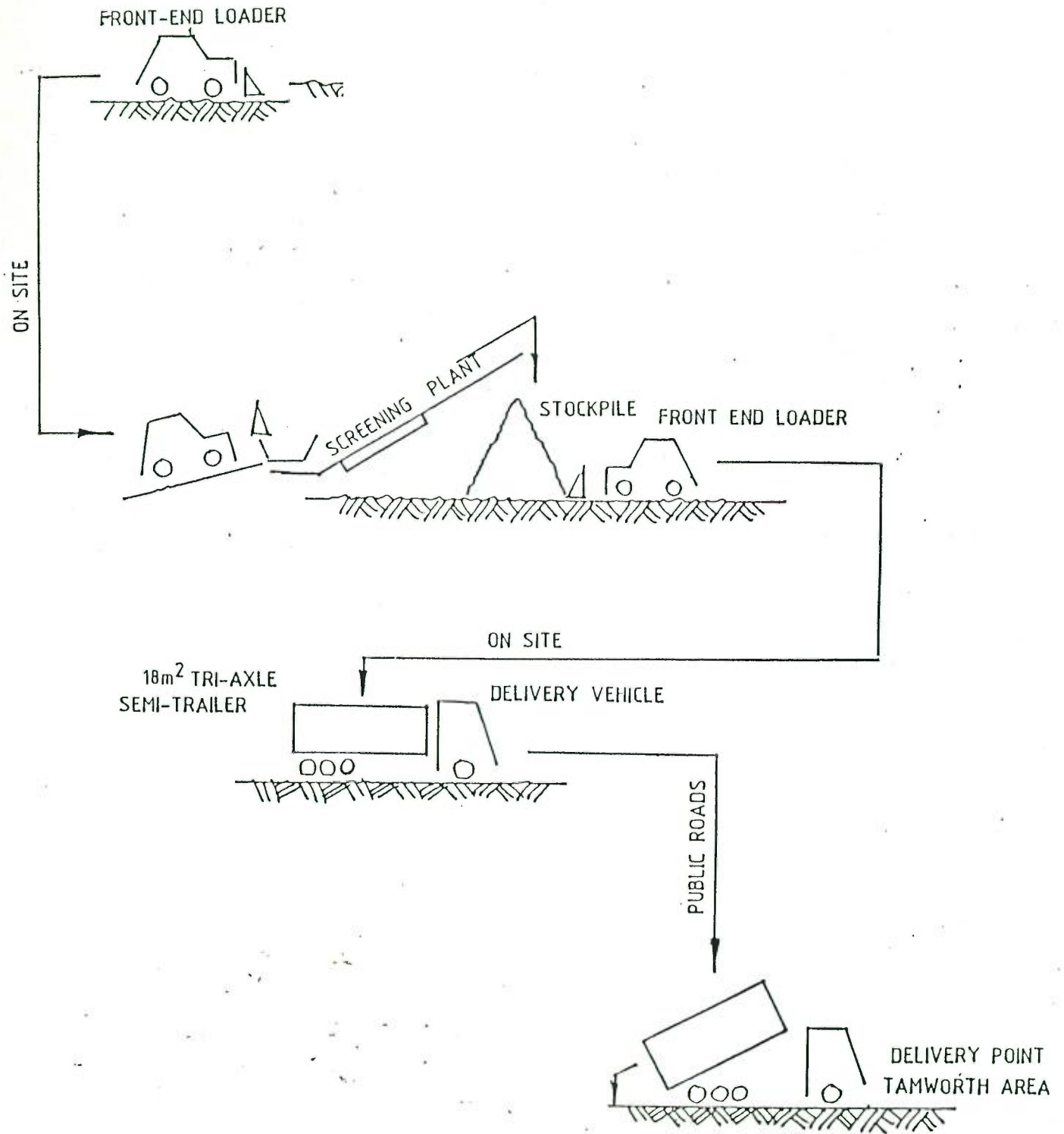


FIGURE 29

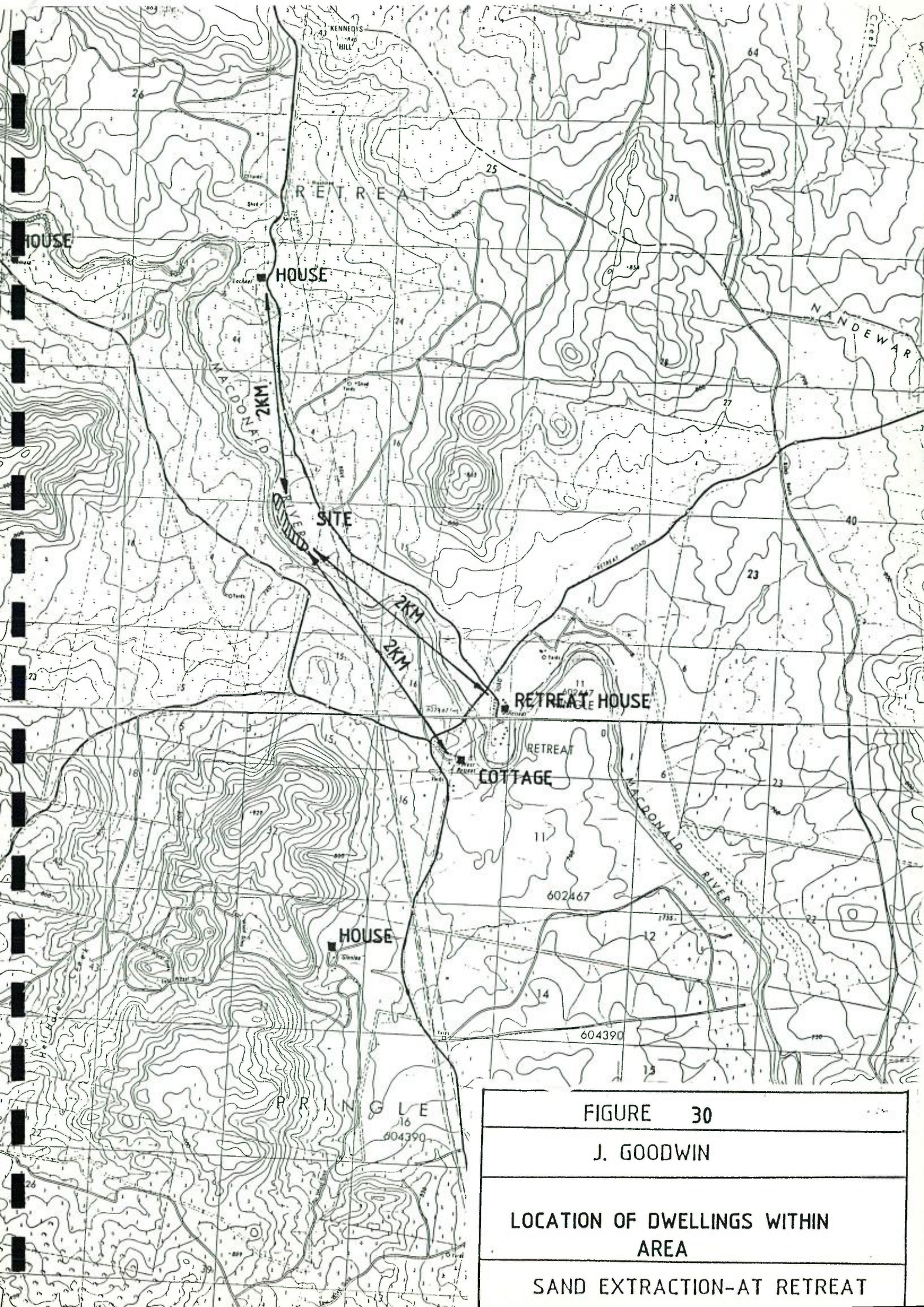
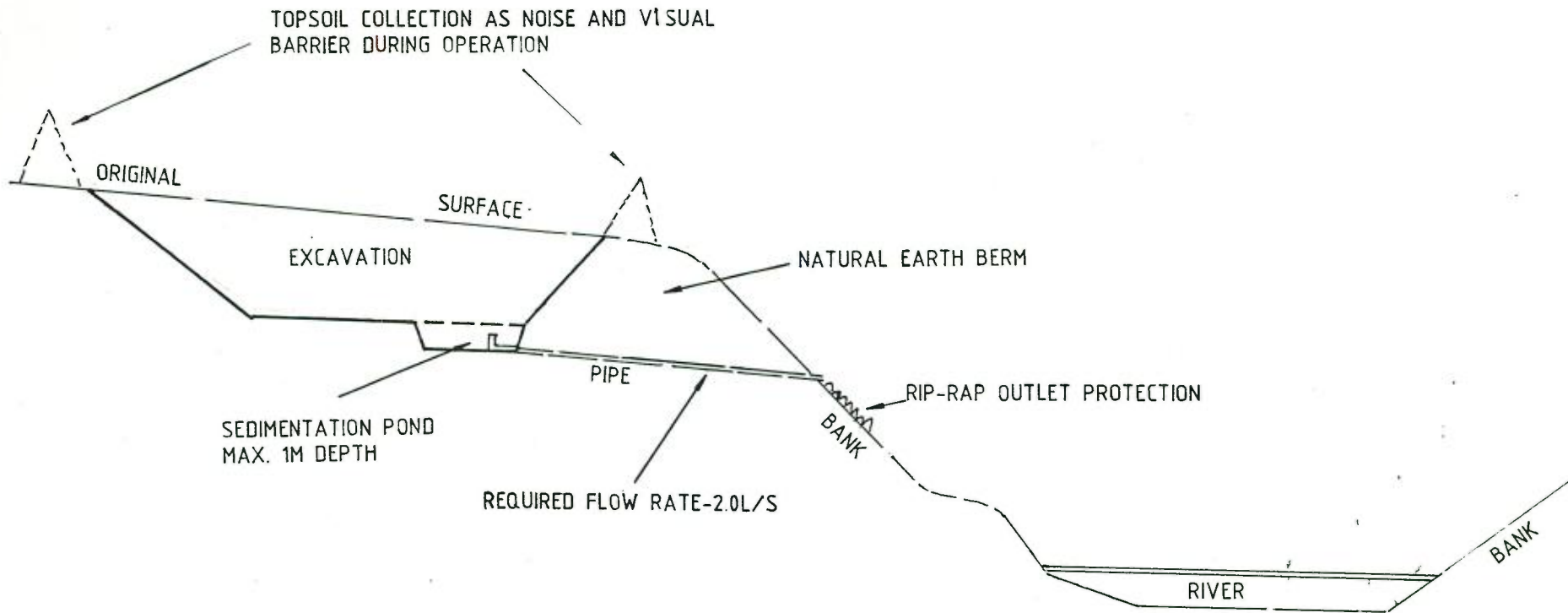


FIGURE 30

J. GOODWIN

LOCATION OF DWELLINGS WITHIN
AREA

SAND EXTRACTION-AT RETREAT



PLAN SHOWING TYPICAL CROSSSECTION
AND METHOD OF PREVENTING DOWNSTREAM
EROSION AND POLLUTION

TYPICAL EXTRACTION PROCESS

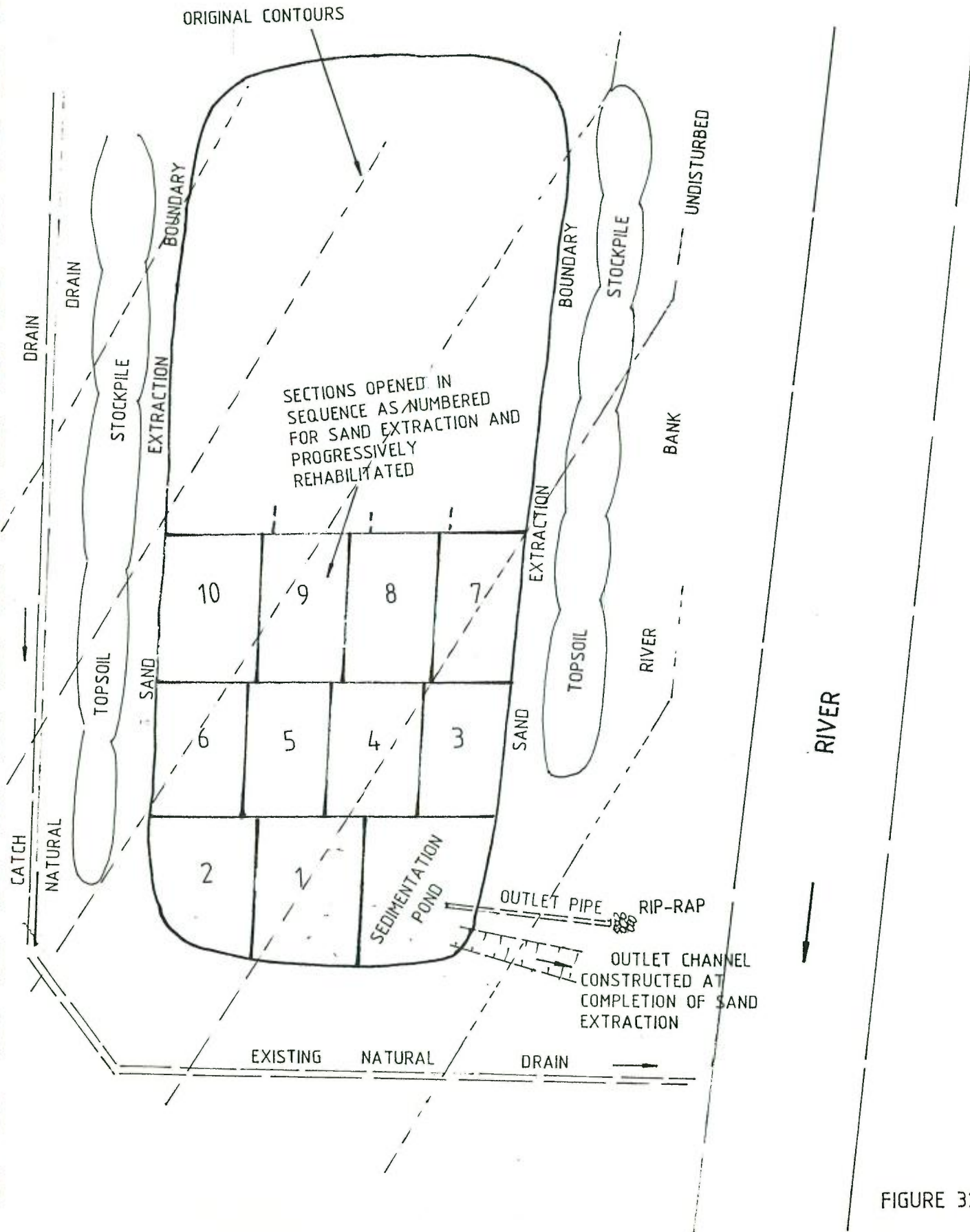


FIGURE 32

GOODWIN, J

E19

478

Extraction of sand near the
Macdonald River at Retreat