

MRT Beaconsfield Reservoir Area Rehabilitation Program 2001



**Version 2
Dated 7/5/01
Nigel Bedford**

Summary

The aim of this documentation is to provide a rational basis for the initial rehabilitative treatment of land owned and administered by various Tasmanian Government Departments in the Beaconsfield area (see Reference Document 2.). The document will provide the various public sector authorities with both an overview and detail on the works proposed to be undertaken under the Mining Trust Rehabilitation Fund in the Beaconsfield reservoir area.

The Conservation Volunteers Australia have already undertaken a survey of the areas and have proposed priorities for treatment under a hierarchy advised by Mineral Resources Tasmania. They have indicated that the highest priority for treatment is shared by Areas 6, 3, 52, 14, 15, 16, 17, 27, 28, 29, and 33 (see Reference Document 3.). These areas have been further inspected by Nigel Bedford and Wojciech Grun (Mining Engineer of MRT) to confirm the priorities. Areas 1, 1a and 3a have been added subsequently for both strategic and economic reasons. Areas 7, 7a and 8 are within the Dans Hill Forest Reserve and have been deleted from the planned works due to risk to threatened species.

Scope of Works

Works prescribed at each location have been detailed on individual spreadsheets, and hard copies are attached at Appendix A.

The plan is to treat all the prioritised areas by a combination of the following:

- Drainage improvements, contouring to minimise erosion, topsoil recovery and spreading
- Endemic plant seeding
- Herbicide spraying of noxious weeds
- General rubbish removal
- Vehicle wreck removal
- Drainage improvements

To carry out the major works associated with the project an Earthworks Contractor will be selected on the following criteria:

1. Type of equipment proposed
2. Timing
3. Emergency Response Plan (incl. Lighting of no fires, Hydrocarbon Management and Spill Kit onsite availability)
4. Hygiene Procedure Checklist
5. Traffic Management (Uniform traffic control devices proposed)
6. Evidence of Insurances
7. Exclusions from Tender
8. Total Price

The Earthworks Contractor will undertake all works described herein (unless specifically excluded) under the terms of a formal Minor Works Contract AS 4305.

Area 52 is an old rubbish dump (estimate of rubbish volume between 200m³ and 400m³) that is severely infested with several noxious weed species (including pampas and gorse). It is not considered prudent to remove the rubbish prior to weed treatment so initially this area will be herbicide sprayed to minimise the risk of weed propagation.

Weed eradication in Area 52 is not considered part of the major works to be undertaken by the Earthworks Contractor.

The rubbish and car body removal is not considered part of the major works to be undertaken by the Earthworks Contractor, but liaison and assistance in loading rubbish and car bodies onto vehicles supplied by others will be required. MRT are currently in negotiations with both the West Tamar Council and the Australian Conservation Trust to facilitate refuse removal with outcomes unknown at this time.

MRT Beaconsfield Reservoir Area Rehabilitation Program 2001

Closing of the access from Holwell Road into Area 15 is subject to approval by others and may be deleted from works undertaken by the Earthworks Contractor.

Closure of the access road from Tattersall Road to York Road through Area 33 has been approved by the Lands Dep't and is included in works to be undertaken by the Earthworks Contractor.

Works By Others

The West Tamar Council must be approached to upgrade there rainfall runoff management on Mining Lease 21M/1985 so that rainfall runoff does not flow down the access to Area 6 and subsequently into the Forest Reserve. This responsibility is with Wojciech Grun of Mineral Resources Tasmania.

Nigel Bedford will be responsible for:

- Selection and delivery of the weed management portion of treatment of Area 52 in conjunction with Wojciech Grun of Mineral Resources Tasmania.
- Supervision of the Earthworks Contractor and provide a Clerk of Works Service to Mineral Resources Tasmania.
- Supervising the seeding and fertilising of treated areas in conjunction with Wojciech Grun of Mineral Resources Tasmania.
- The provision of a Completion Report on the project.

Reference Documents

1. Detailed Drawings of Rehabilitation Sites at Beaconsfield (Prepared by the Conservation Volunteers of Australia for Mineral Resources Tasmania).
2. Tasmap 1:25000 Series No.4843 – Beaconsfield.
3. Marked up copies aerial photograph Beaconsfield 11 and BellBay 51

Appendix A

1. Individual Rehabilitation Plans for Areas 3, 3a, 1, 1a, 52, 14, 15, 16, 17, 27, 28, 29, and 33

BEACONSFIELD DETAIL DRAWINGS.

- TO BE READ IN CONJUNCTION WITH MAPS:

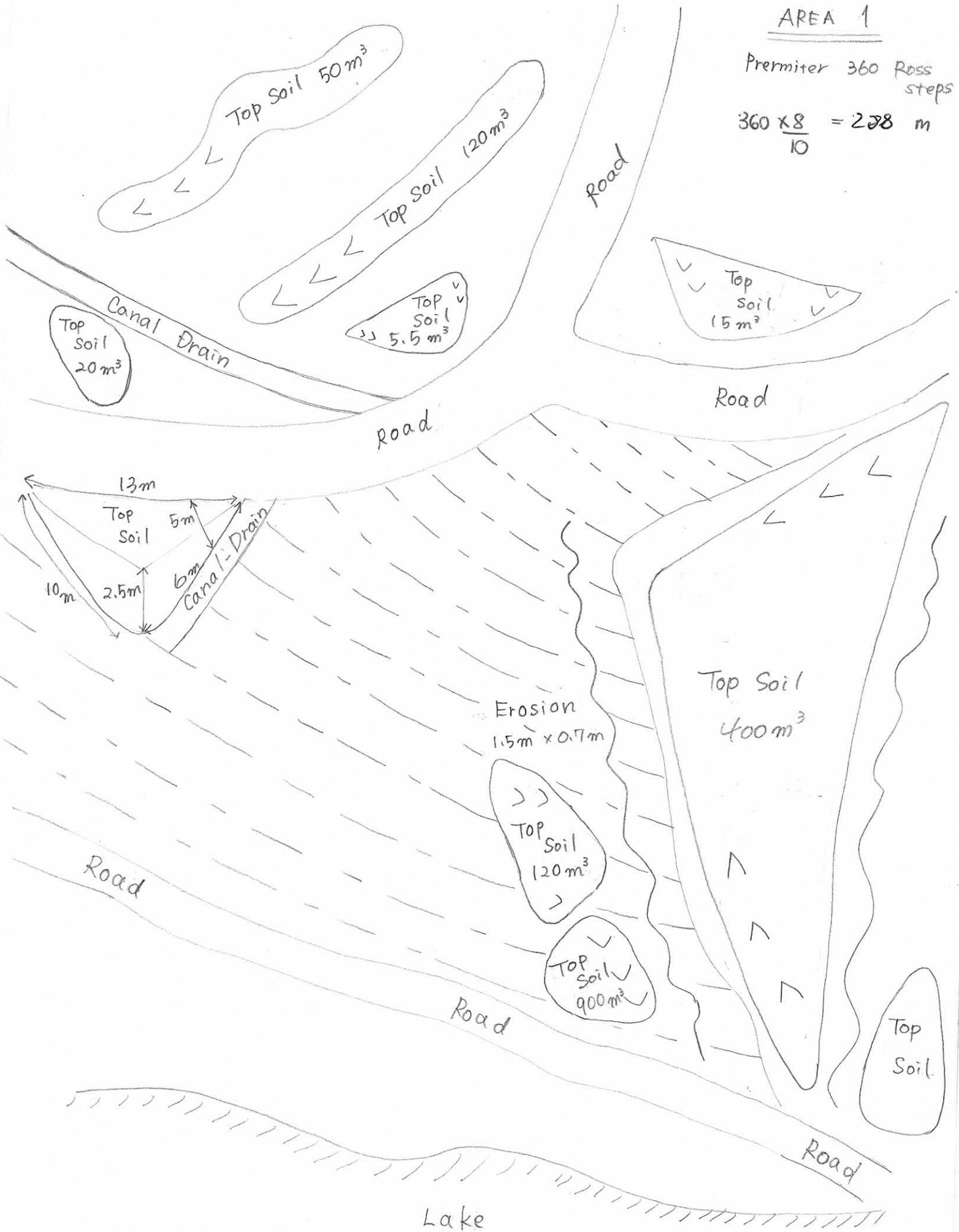
- BEACONSFIELD 11
- BELL BAY 51

Prepared by Conservation Volunteers Australia
for Mineral Resources Tasmania.

AREA 1

Perimeter 360 Ross steps

$$360 \times \frac{8}{10} = 288 \text{ m}$$



PLAN I

5 cm

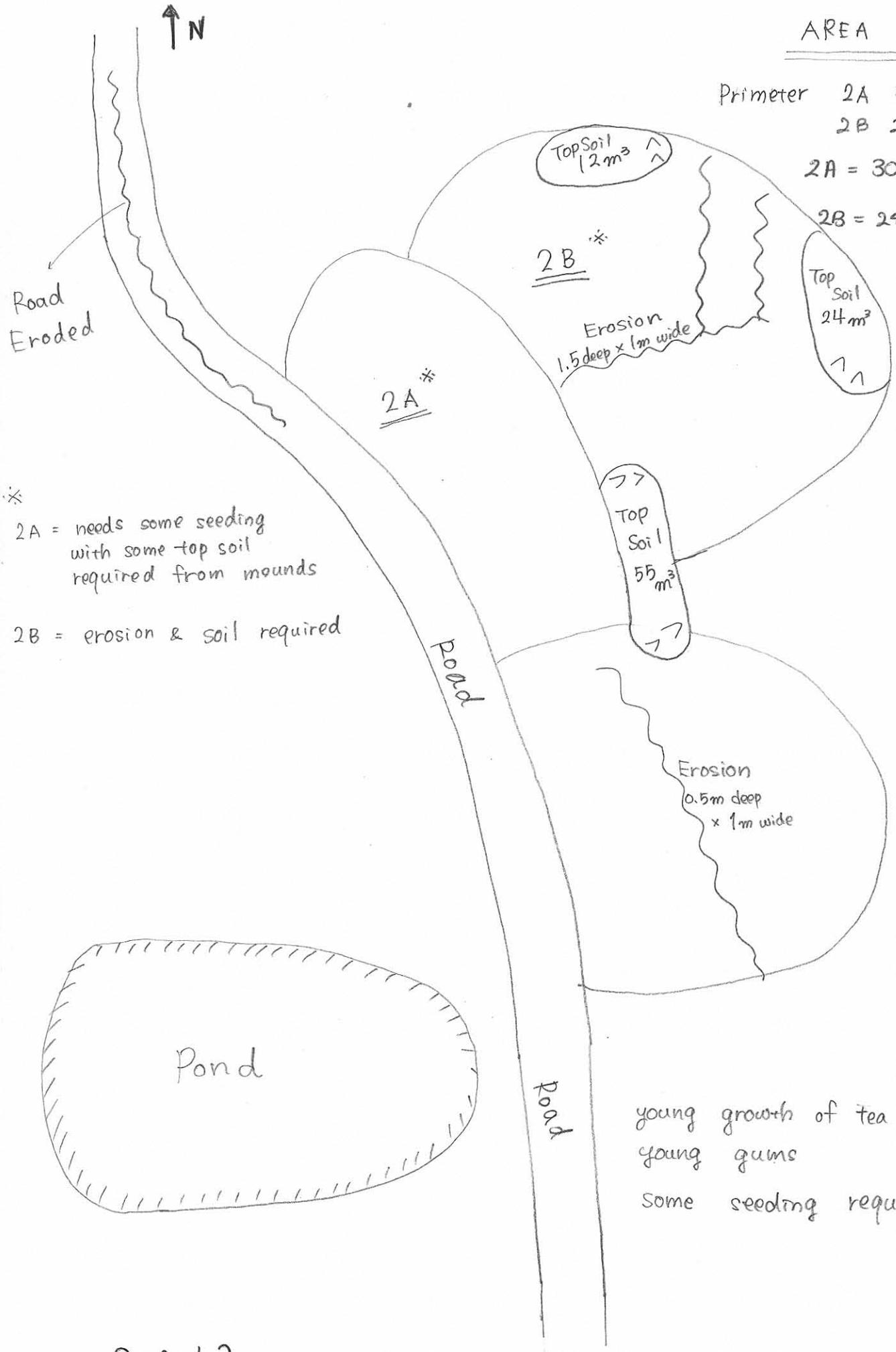


AREA 2

Perimeter 2A 300 steps
 2B 247 steps

$$2A = 300 \times \frac{8}{10} = 276m$$

$$2B = 247 \times \frac{8}{10} = 227m$$



* 2A = needs some seeding with some top soil required from mounds
 2B = erosion & soil required

young growth of tea trees & young gums
 some seeding required

PLAN 2

5 cm

Perimeter
 $450 \times \frac{8}{10} = 414 \text{ m}$

250m
to Spanish heath

Scallop shells

perimeter = 450 m

30m³

Gum trees
& tea trees

30m³

425m³

150m

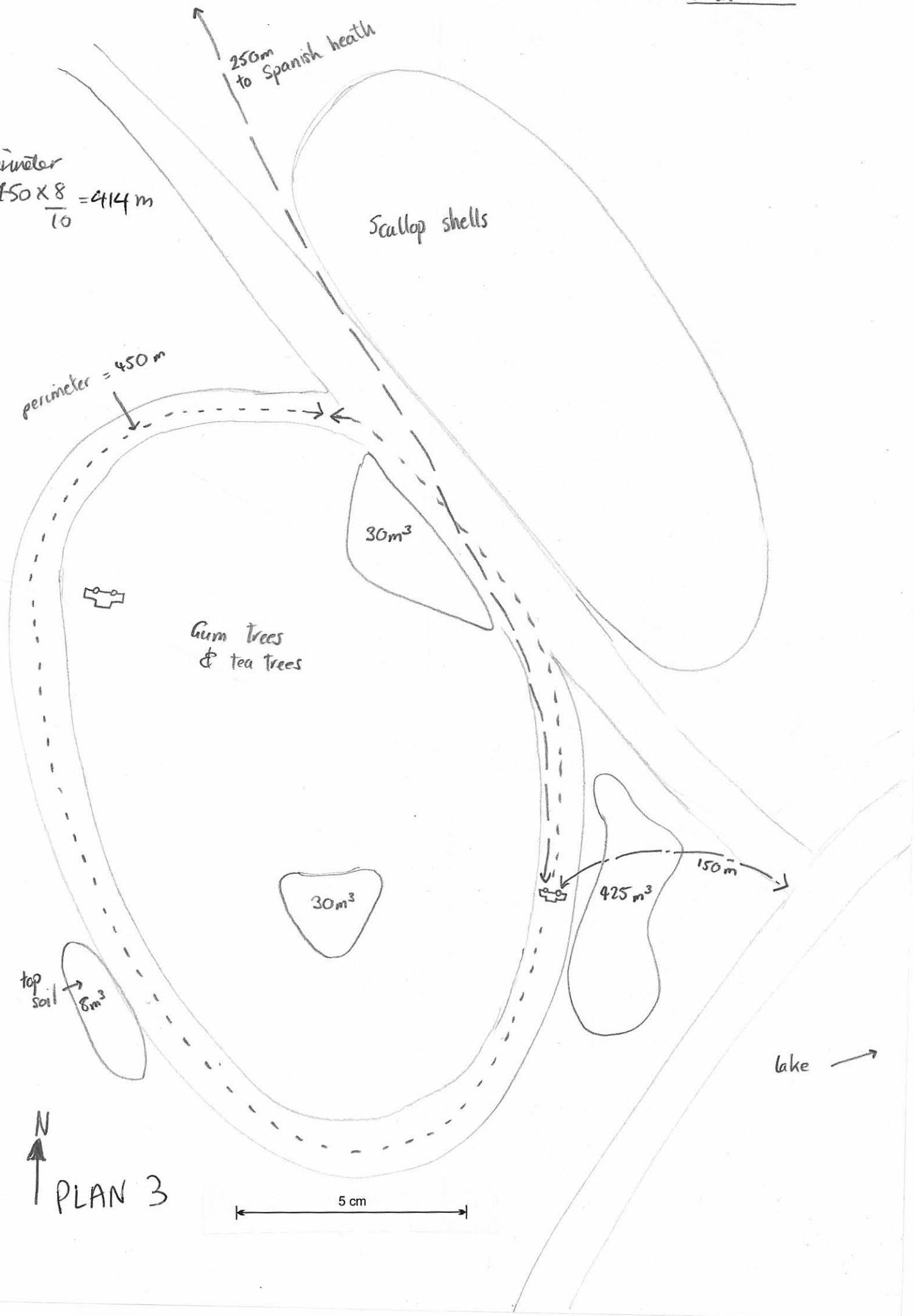
top soil
8m³

lake

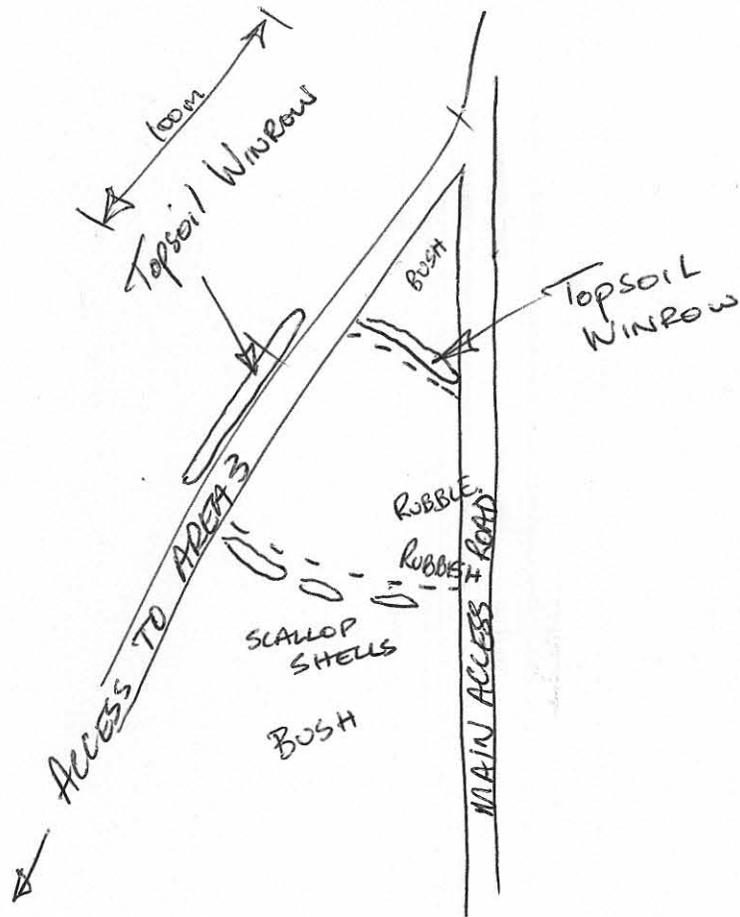


PLAN 3

5 cm

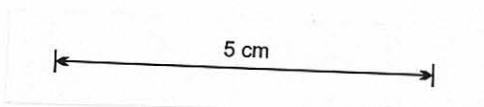


AREA 3A.

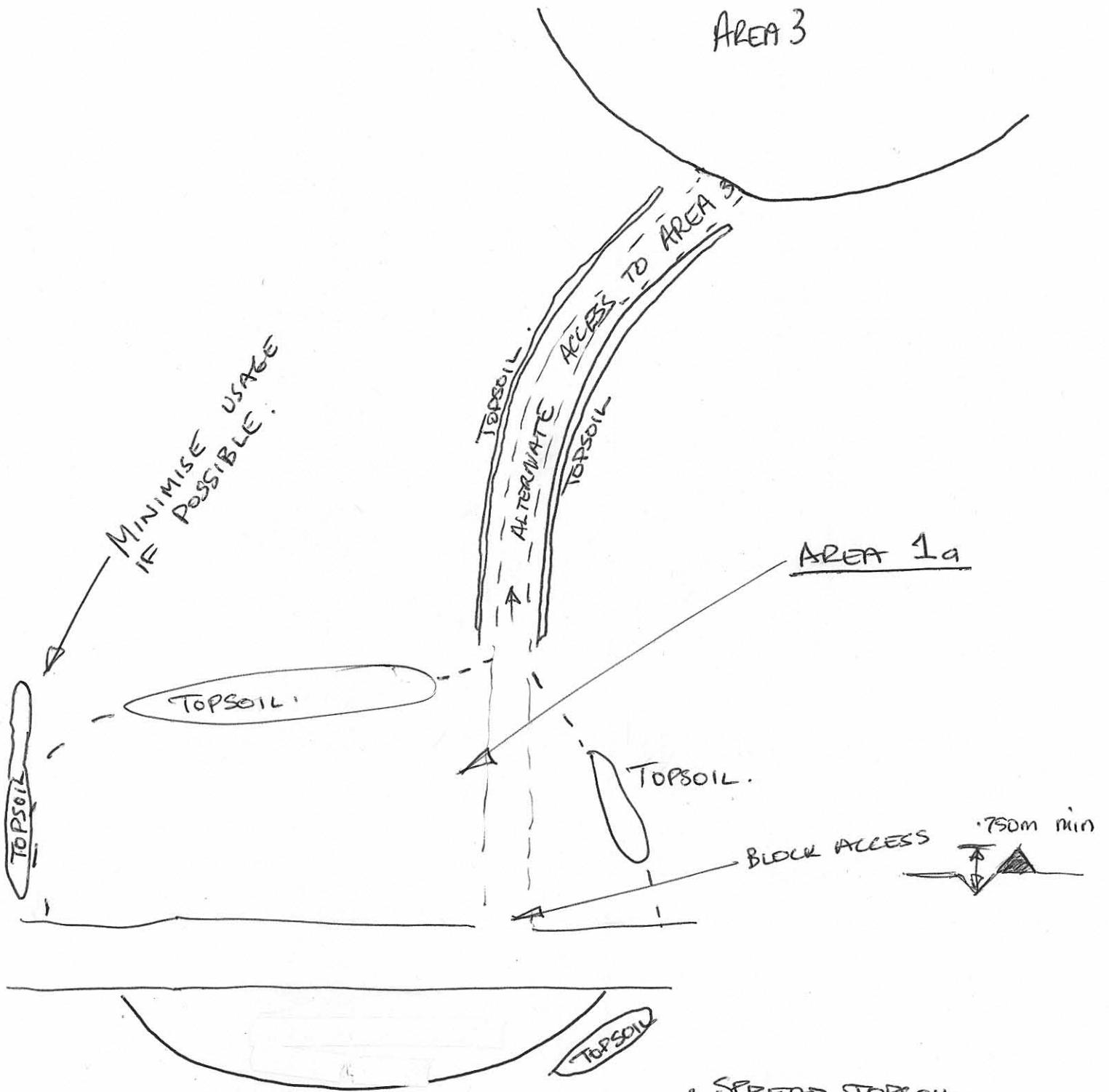


- REMOVE RUBBISH
- SPREAD BUILDING RUBBLE
- LEAVE SHELLS
- RECOVER TOPSOIL FROM PERIMETER WINROWS AND SPREAD
- LIGHTLY RIP ON CONTOURS
- USE TOPSOIL ON OPP. SIDE ACCESS ROAD TO AREA 3 TO CREATE 0.5m HIGH BOND AT BOTTOM SLOPE.

PLAN 4

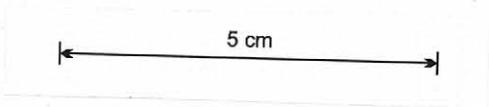


RB.
13/4/01



- SPREAD TOPSOIL
- LIGHTLY RIP ON CONTOURS

PLAN 5



4

to Area 2 500m →

Spanish
heath

rubbish



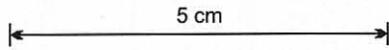
More seed needed



Scallop shells



Area No. 4



PLAN 6



PLAN 7

5cm

80m

Area N°6

Rubbish CAR.

Eroded Area
2m deep
1.5m Wide

T-Tree's
Gum Tree's

Vegetation

Eroded
Tea-Tree's
Gum Tree's

Vegetation Gum Tree's

Top soil 120m³

To Area X

150 m

150 m

More seed Area

eroded Area

Tea trees & Guava trees Area

old car

Bank sand 80m³

Bank sand 150 m³ Not registered

P-116 area

10m² Rubbish

Road

Road

Road

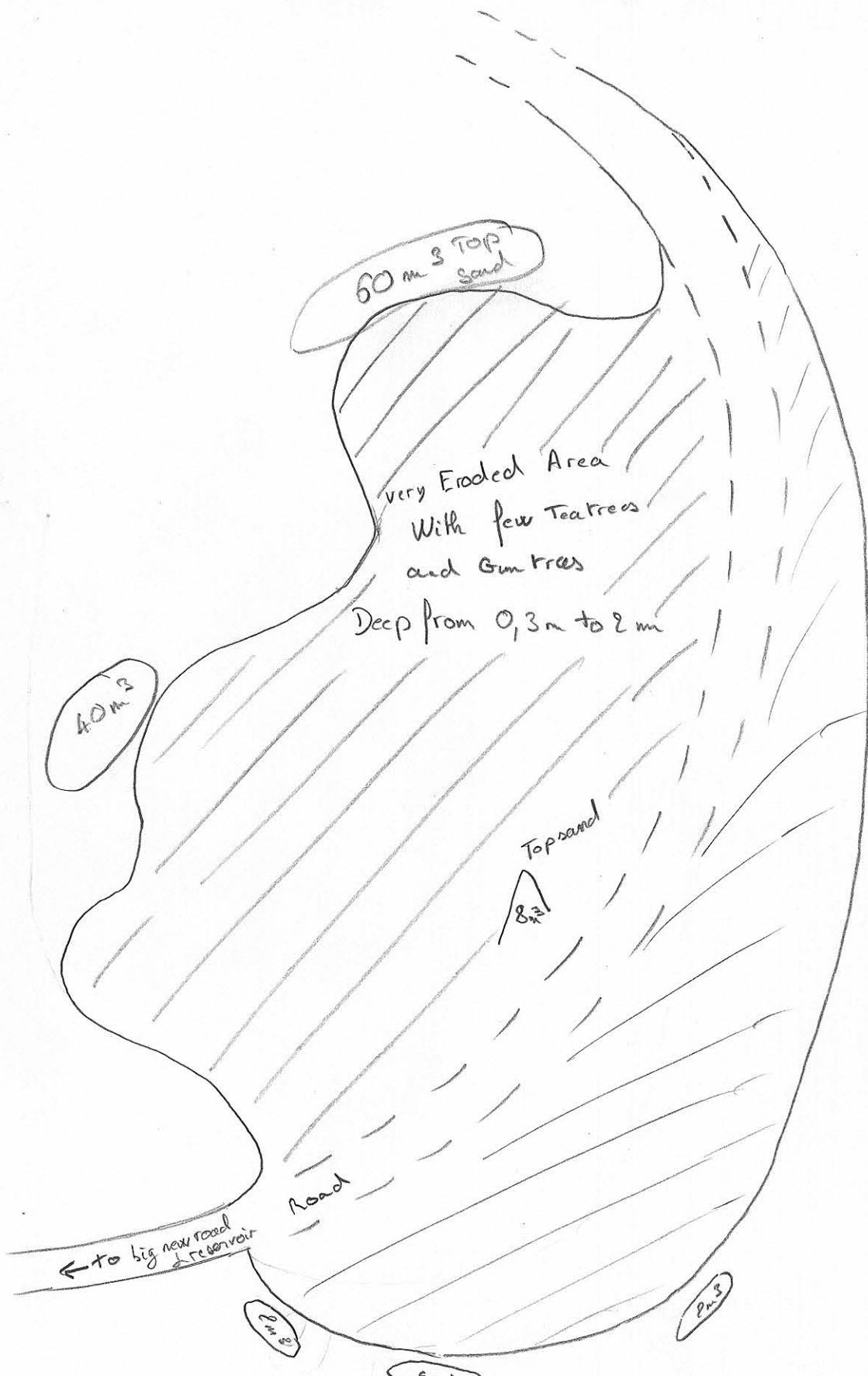
To Area 6.5

5055
550 x 8 = 506
506 x 8 = 4048



5 cm

PLAN 8



perimeter 740m
 $740 \times \frac{8}{10} = 680 \text{ m}$

very Eroded Area
 With few Teatrees
 and Gum trees
 Deep from 0,3m to 2m

PLAN 10

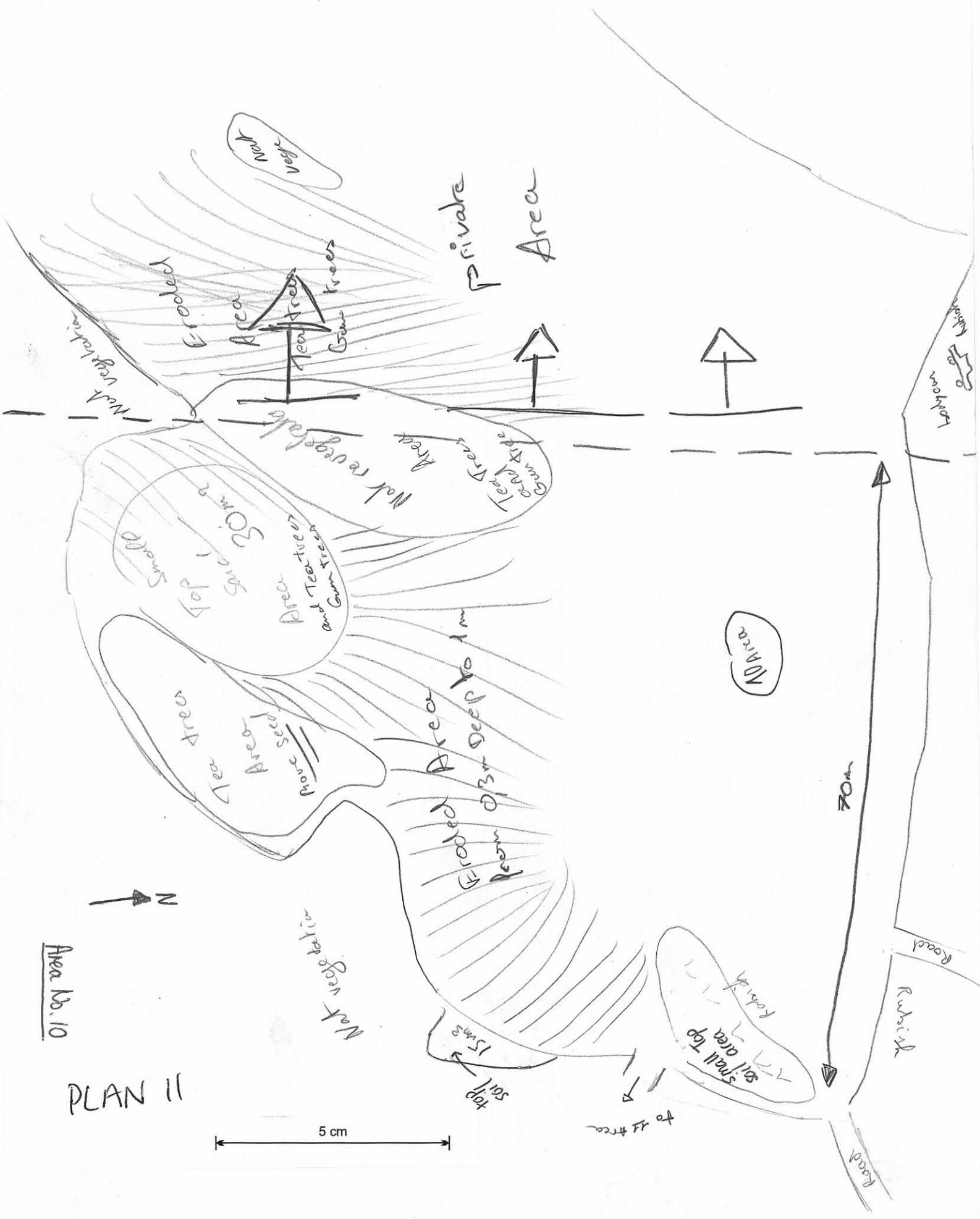
Area No. 9

PLAN II

Area No. 10



5 cm

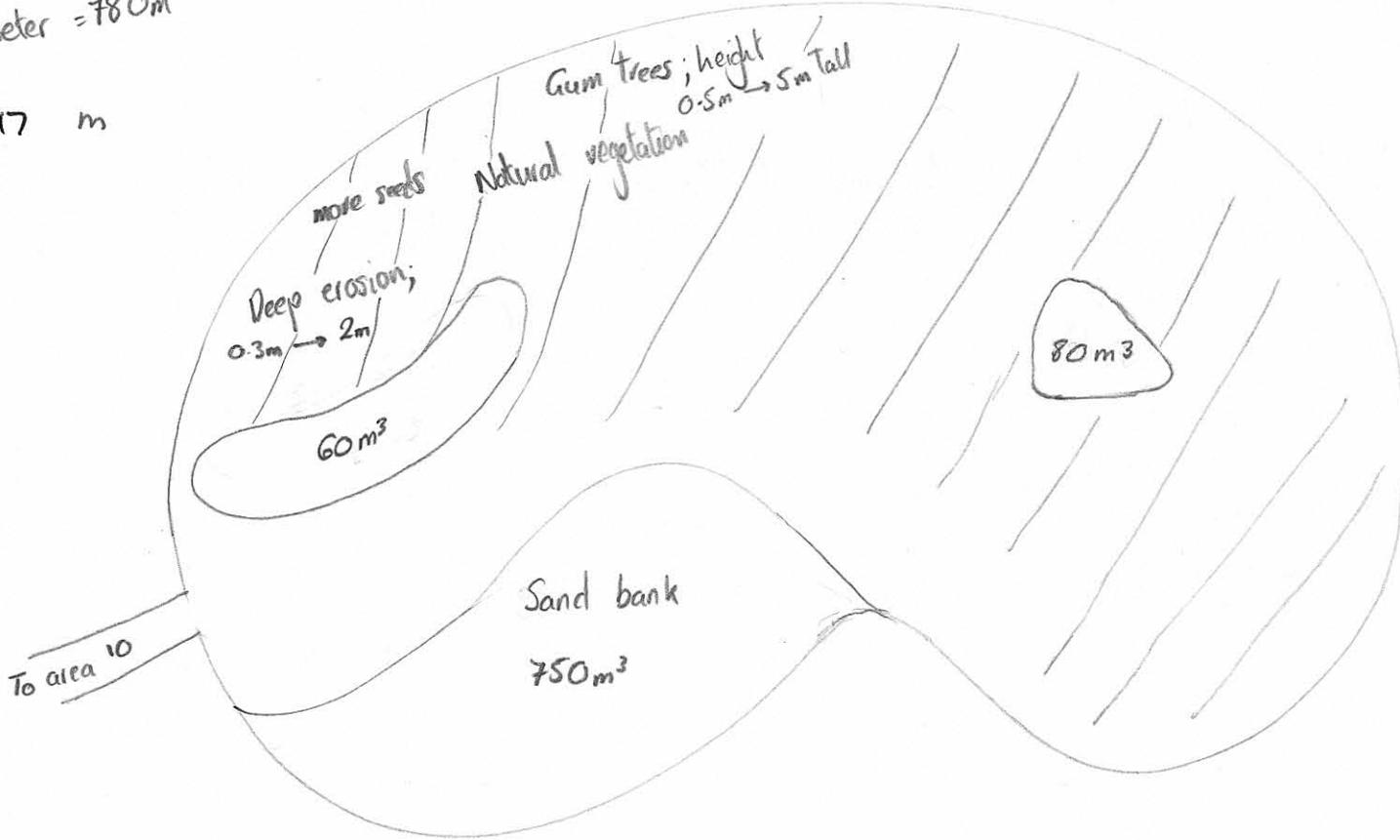


320m

perimeter = 780m

$$\frac{\text{perimeter}}{780} \times 8 = 717 \text{ m}$$

PLAN 12



2

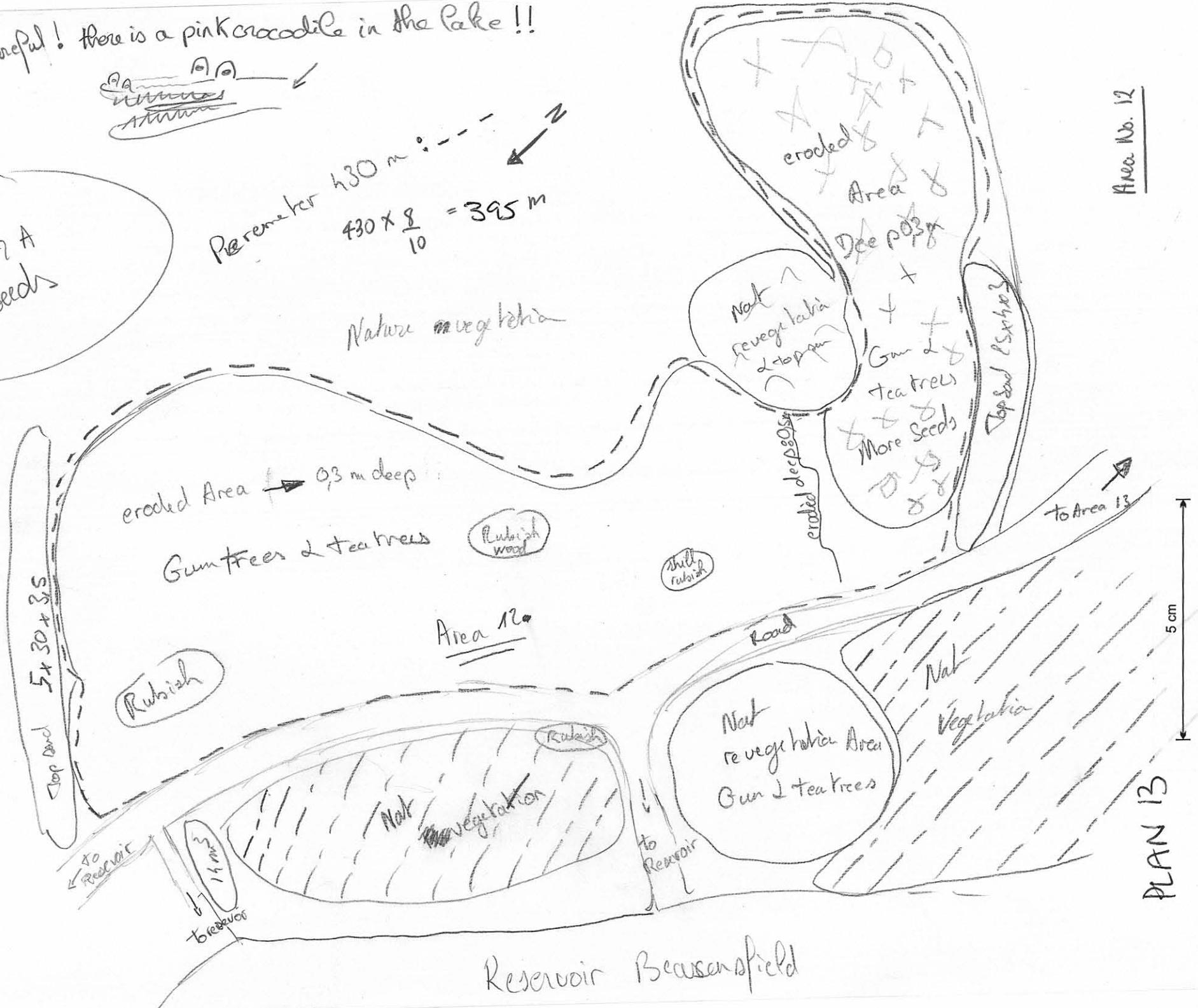
Note: Be careful! there is a pink crocodile in the lake!!



17 A
More seeds

Perimeter 430 m
 $430 \times \frac{8}{10} = 344 \text{ m}$

Natural vegetation

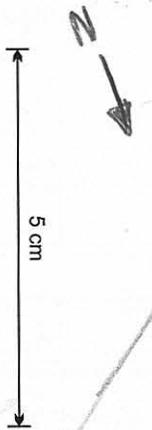


Area No. 12

PLAN 13

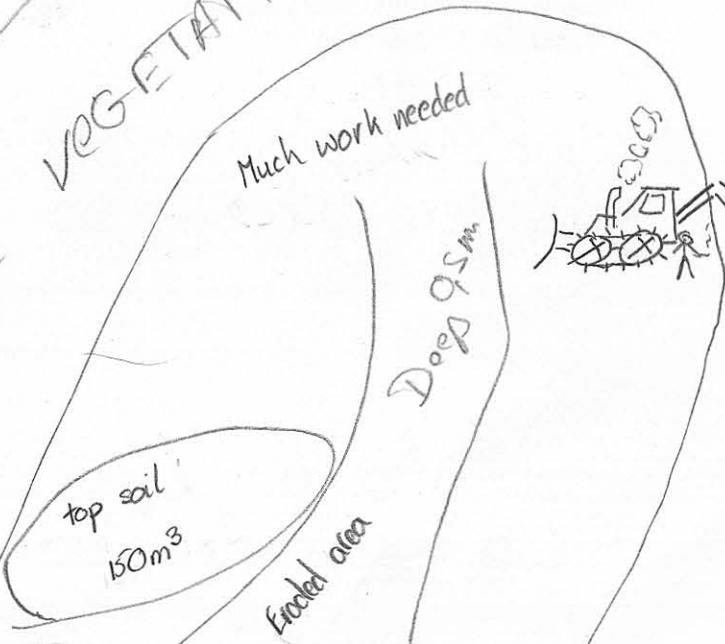
Reservoir Beausensfield

PLAN 14



Big Road

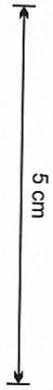
NATUREL VEG-ETATION . . .



To big road

To Area 12 and Reservoir

PLAN 15

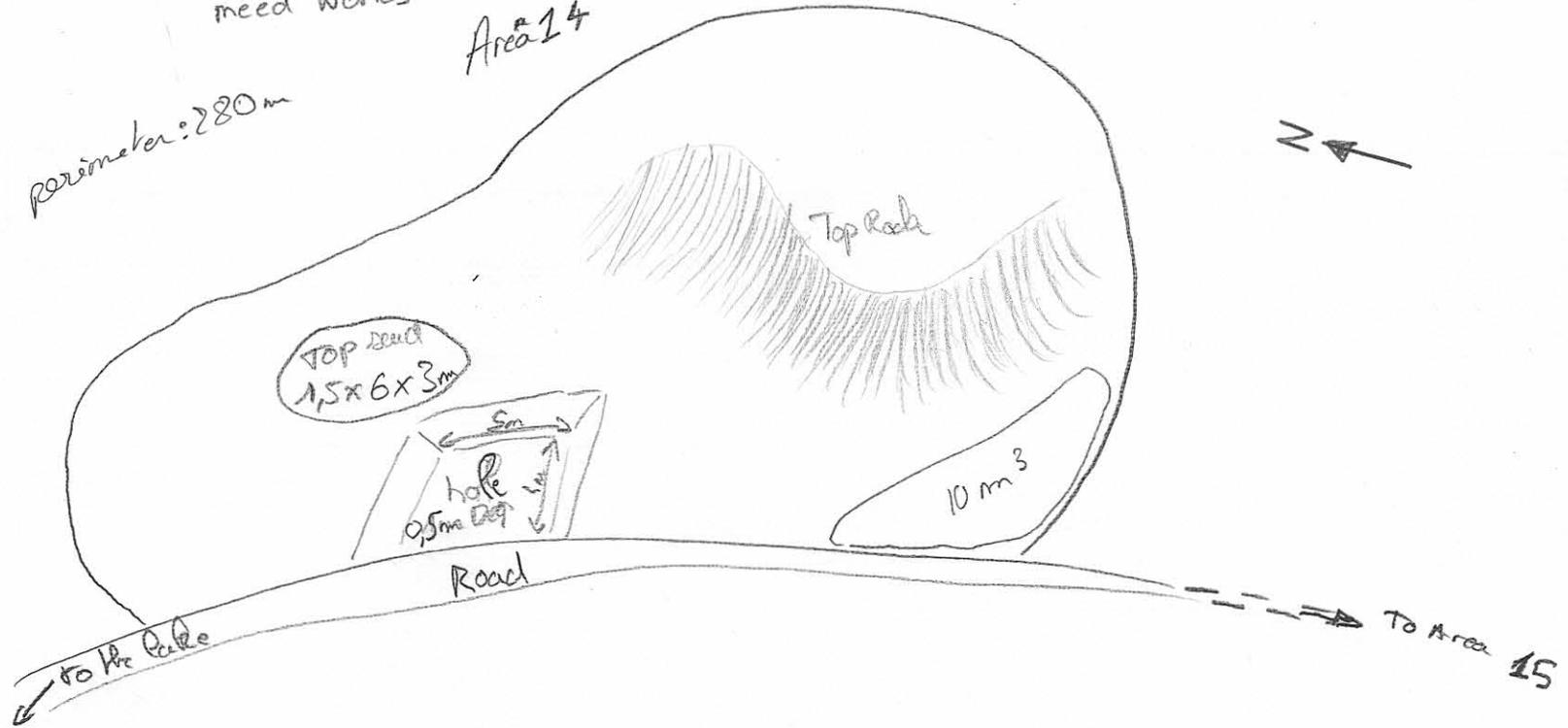


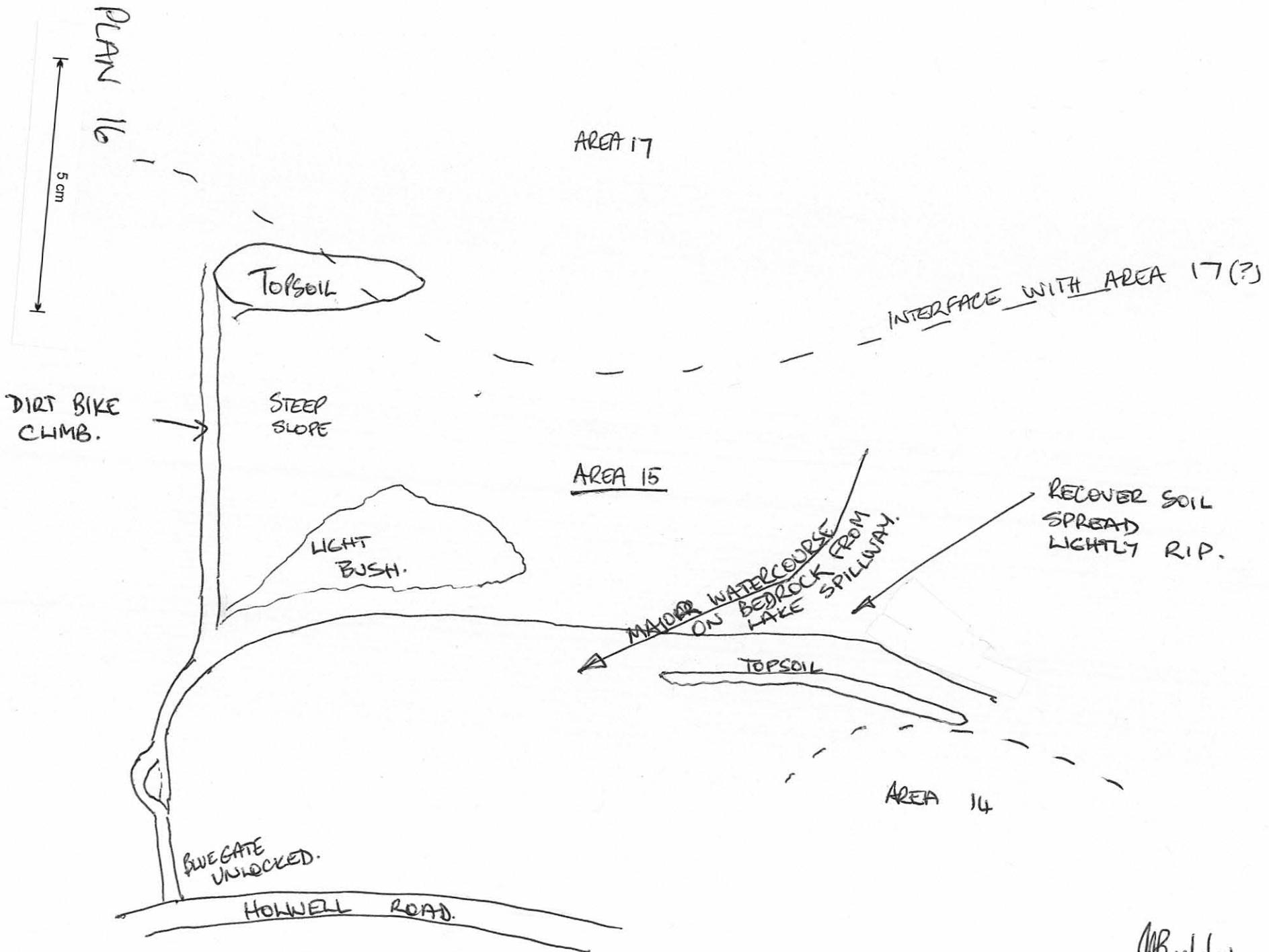
Area: few Gum & few trees
need works
Perimeter: 280 m

Area 14

Area 14

Perimeter
 $280 \times \frac{8}{10}$
= 224 m





PLAN 16

5 cm

AREA 17

Topsoil

INTERFACE WITH AREA 17 (?)

DIRT BIKE CLIMB.

STEEP SLOPE

AREA 15

LIGHT BUSH.

MAJOR WATERCOURSE ON BEDROCK FROM LAKE SPILLWAY.

RECOVER SOIL SPREAD LIGHTLY R.I.P.

TOPSOIL

AREA 14

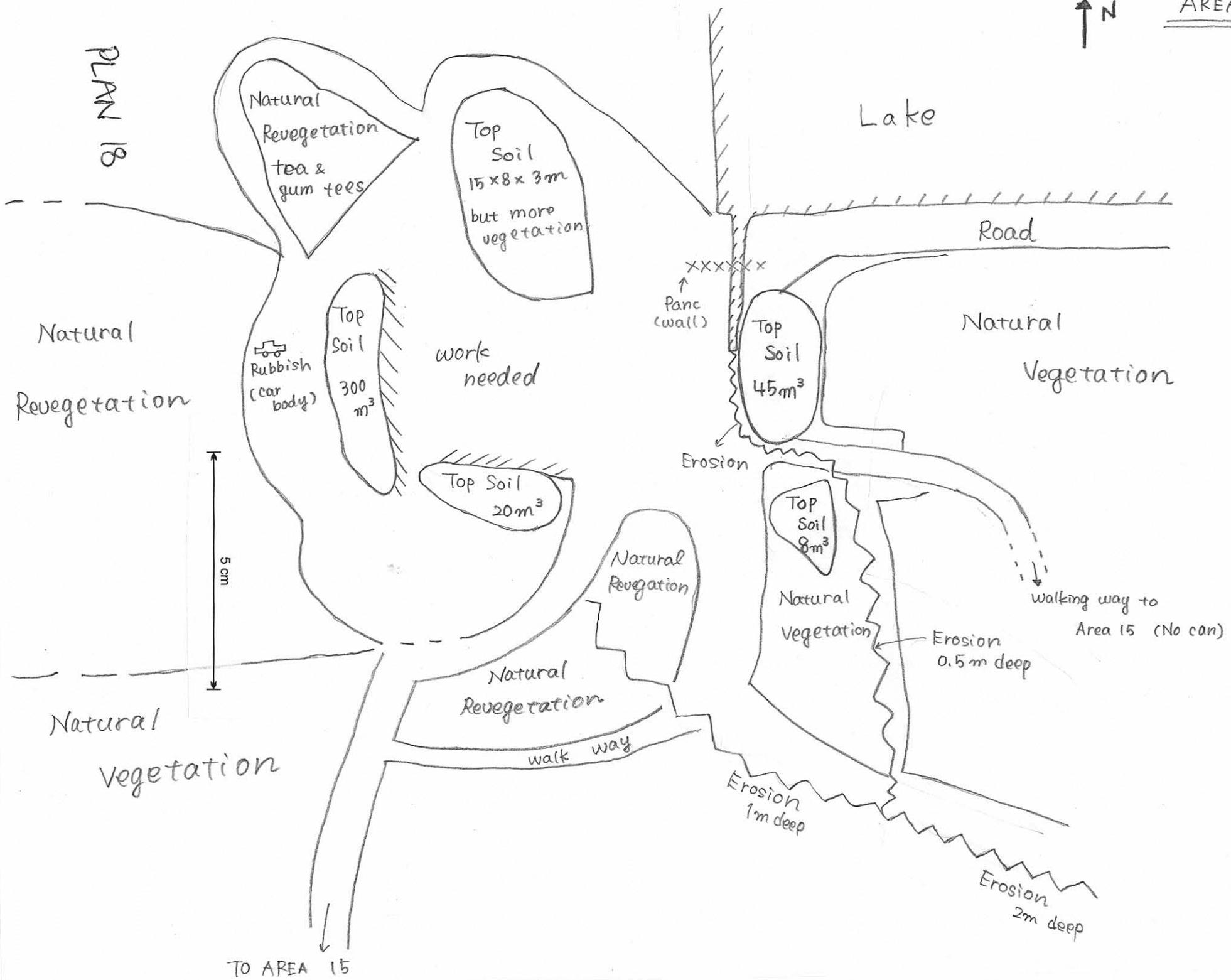
GATE UNLOCKED.

HOWELL ROAD.

AB 18/4/01
N.T.S.

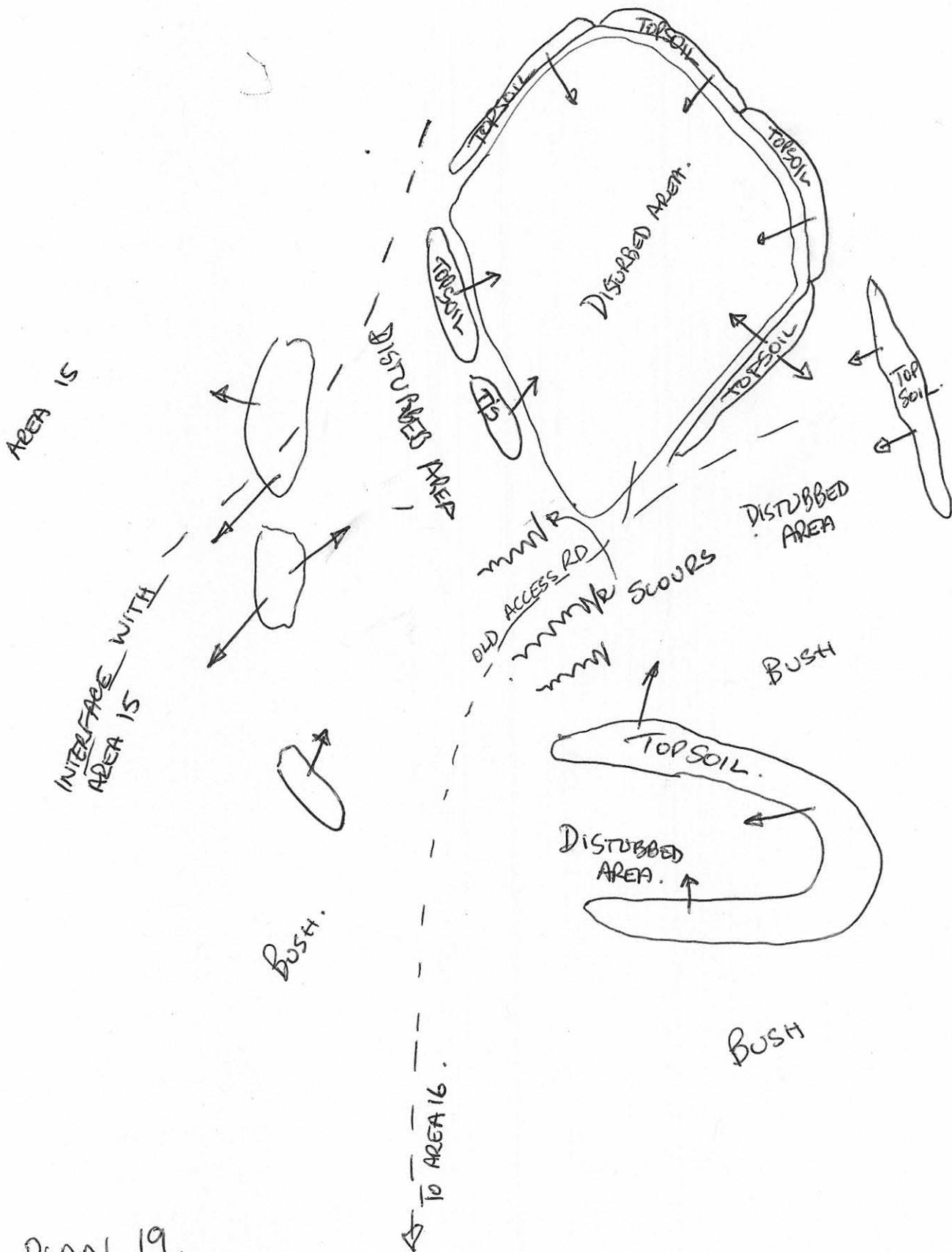


PLAN 18



TO AREA 15

AREA 17



PLAN 19.

5 cm

MB 12/4/01
N.T.S.



Area 16

Perimeter $580 \times \frac{9}{10} = 522 \text{ m}$

top soil 30 m^3

9 m^3

580 clare steps

rubbish perimeter

40 m^3
top soil

18 m^3

36 m^3

6 m^3

top soil 40 m^3

5 m^3

7 m^3

Tree debris

50 m^3

30 m^3

20 m^3

80 m^3

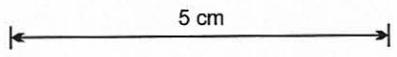
36 m^3

trench

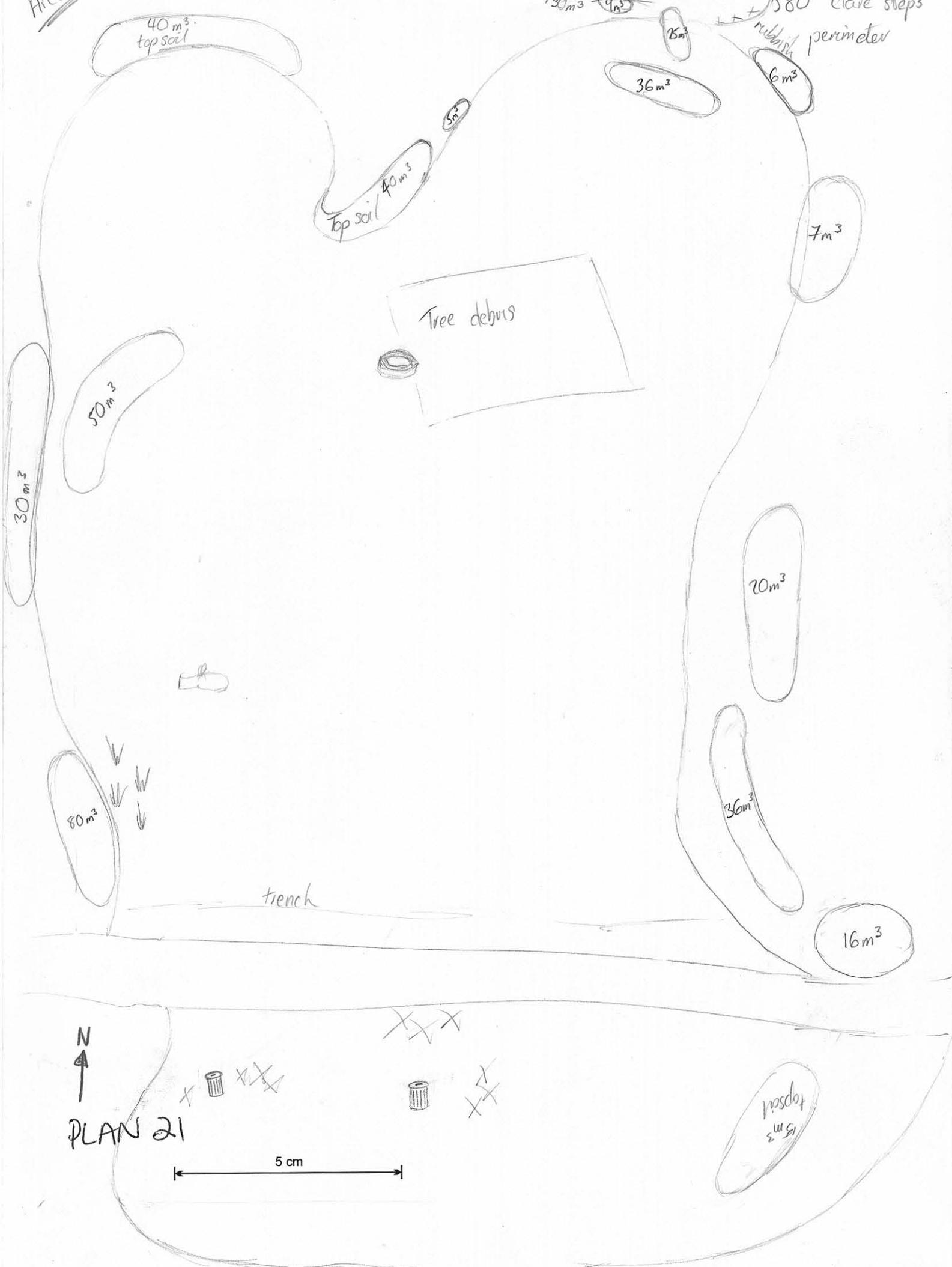
16 m^3



PLAN 21



topsoil 15 m^3



PLAN 23

5 cm

Area 21

Natural Vegetation

26 m³

44 m³ (B)

108 m³ (A)

136 m³
some trees

15 m³

25 m³

Eroded Area
natural vegetation
but need more seeds

per = AREA 21 (A)
580 1055 steps
To area 21 (A)

Slowly vegetation
but need more seeds



$$580 \times \frac{8}{10} = 533 \text{ m}$$

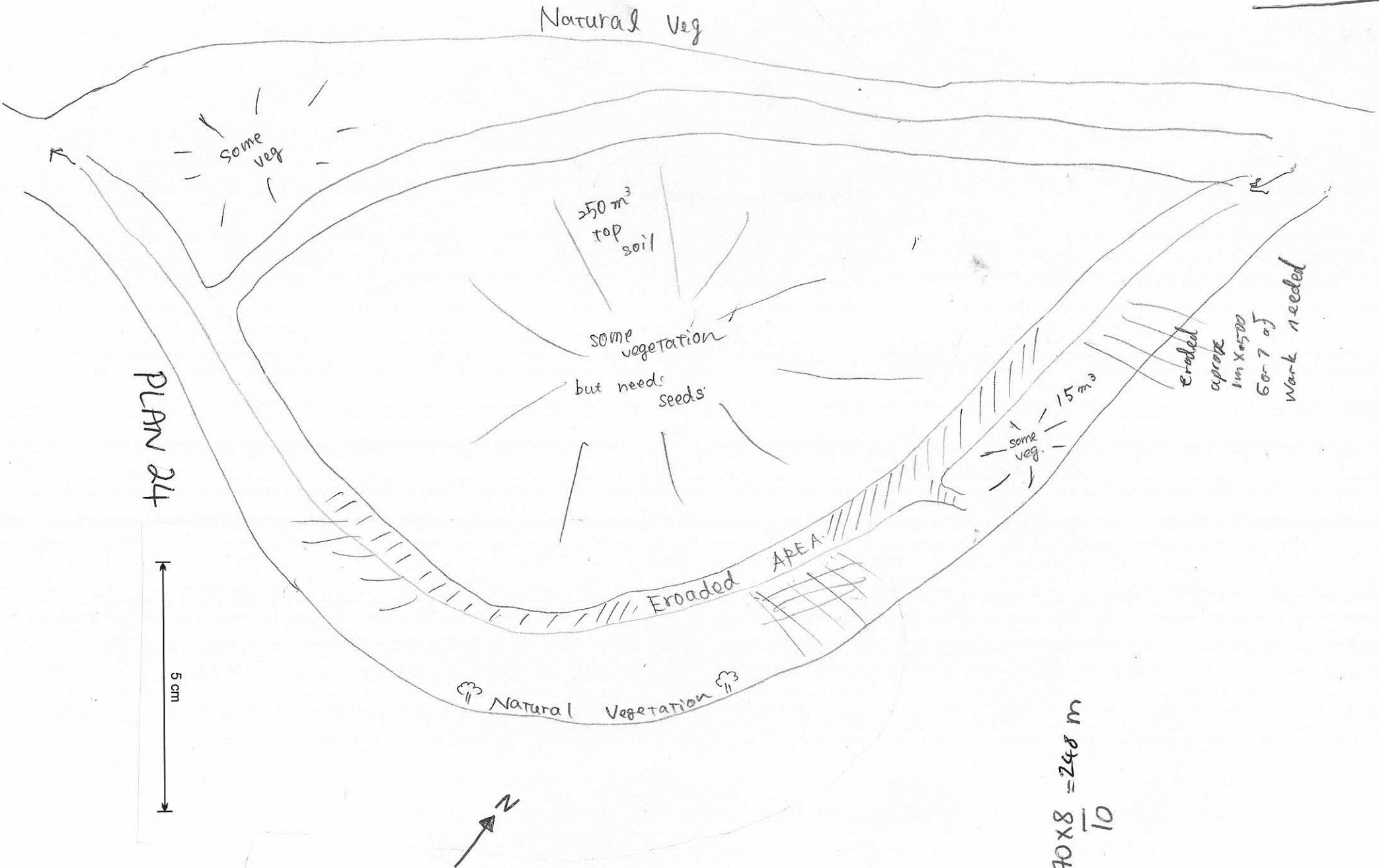
rubbish.

some rubbish

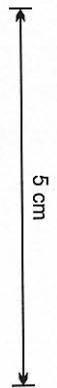
From main track

perimeter = 270 Ross steps

AREA 22



PLAN 24



$$\frac{270 \times 8}{10} = 248 \text{ m}$$

$$112 \times \frac{9}{10} = 102m$$

$$185 \times \frac{9}{10} = 168m$$

Perimeter = 112 steps (Michelle)

(A)

Perimeter (B) = 185 steps (Michelle)

Area 23

VEGETATION
(Much decay)

Rubbish

vegetation

Rubble +
rubbish

1m³ + 6m³

Erosion

20
vegetation
(trees)

Water
source?

light vegetation

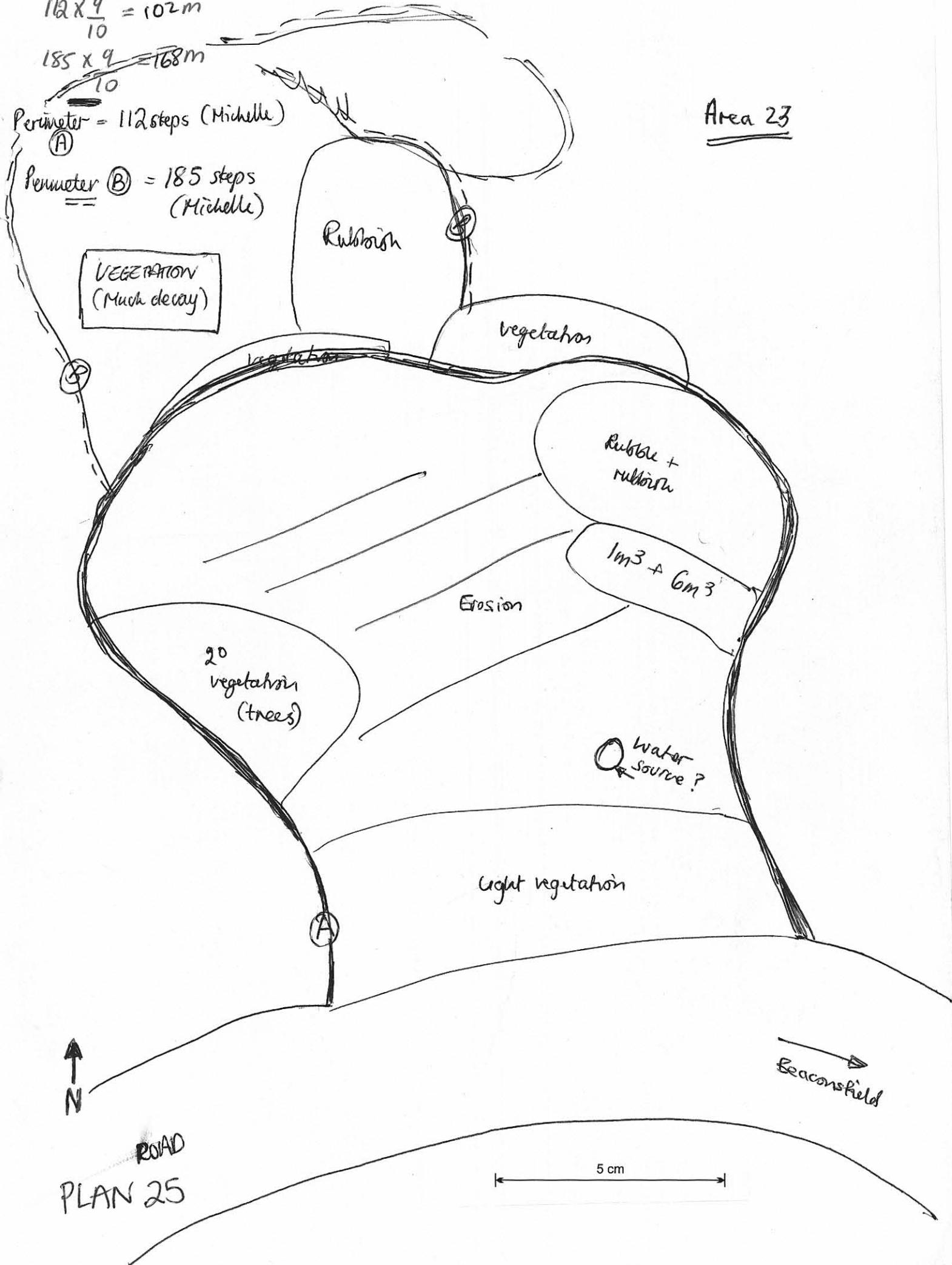


Beaconsfield

ROAD

PLAN 25

5 cm



Area 24

Quarry

Top soil 2m³

Young trees

Top soil 40m³

Trees (Blackwood & Gum)

Rubbish = metal, glass, tiles

Rubbish Erosion

Rubbish

ROCKY GROUND

Very sparse vegetation, very little top soil, no decaying leaf litter

Rubbish
MOSSES

Brambles

MOSSES

PLAN 26

5 cm

N
Perimeter = 340 steps (Michelle)
 $340 \times \frac{9}{10} = 309 \text{ m}$

Trees
Rubbish

Trees
Rubbish

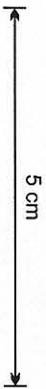
Thistle
Rocks

AREA 25

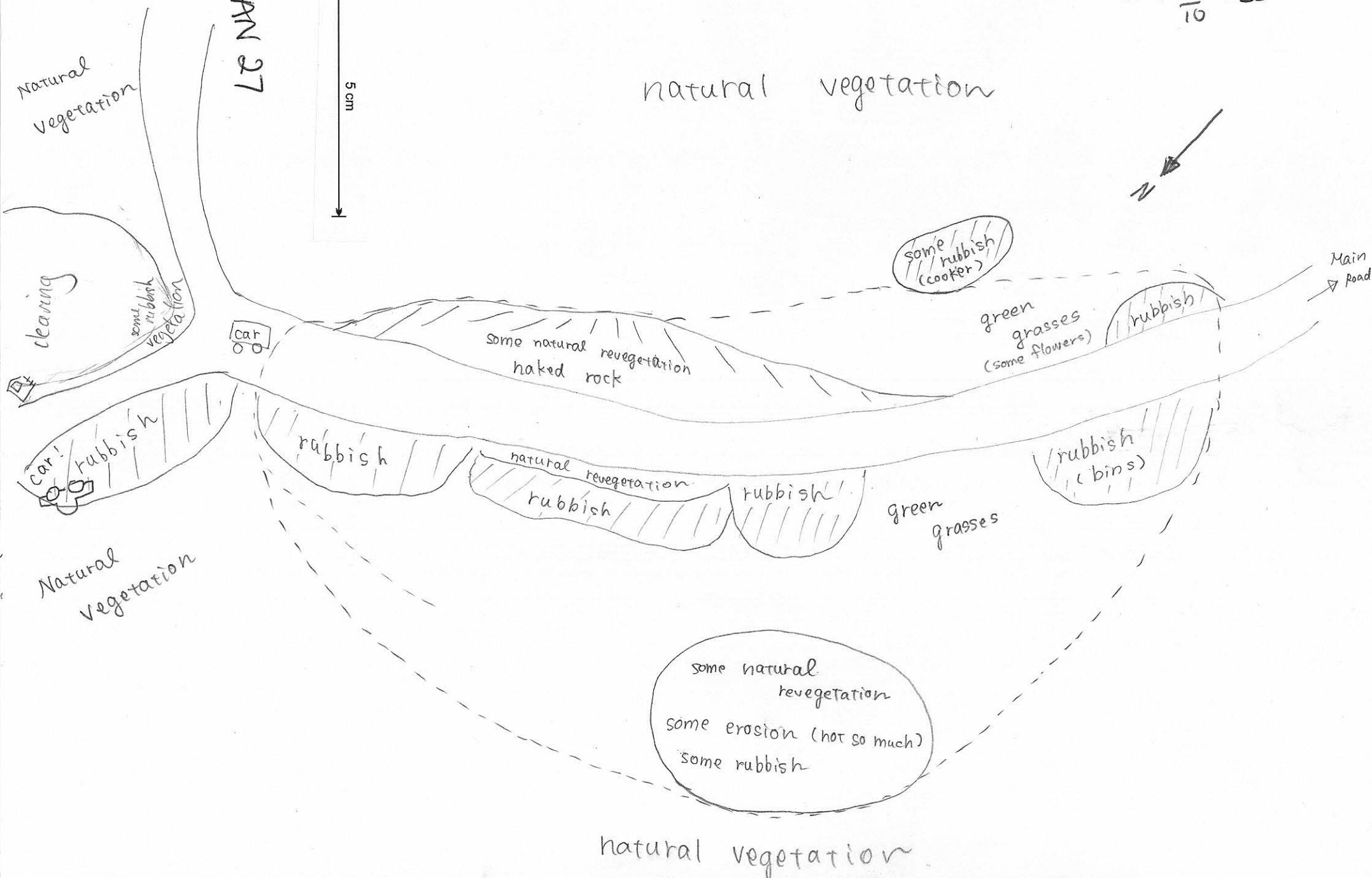
perimeter = 252 Michelle steps

$$252 \times \frac{9}{10} = 227 \text{ m}$$

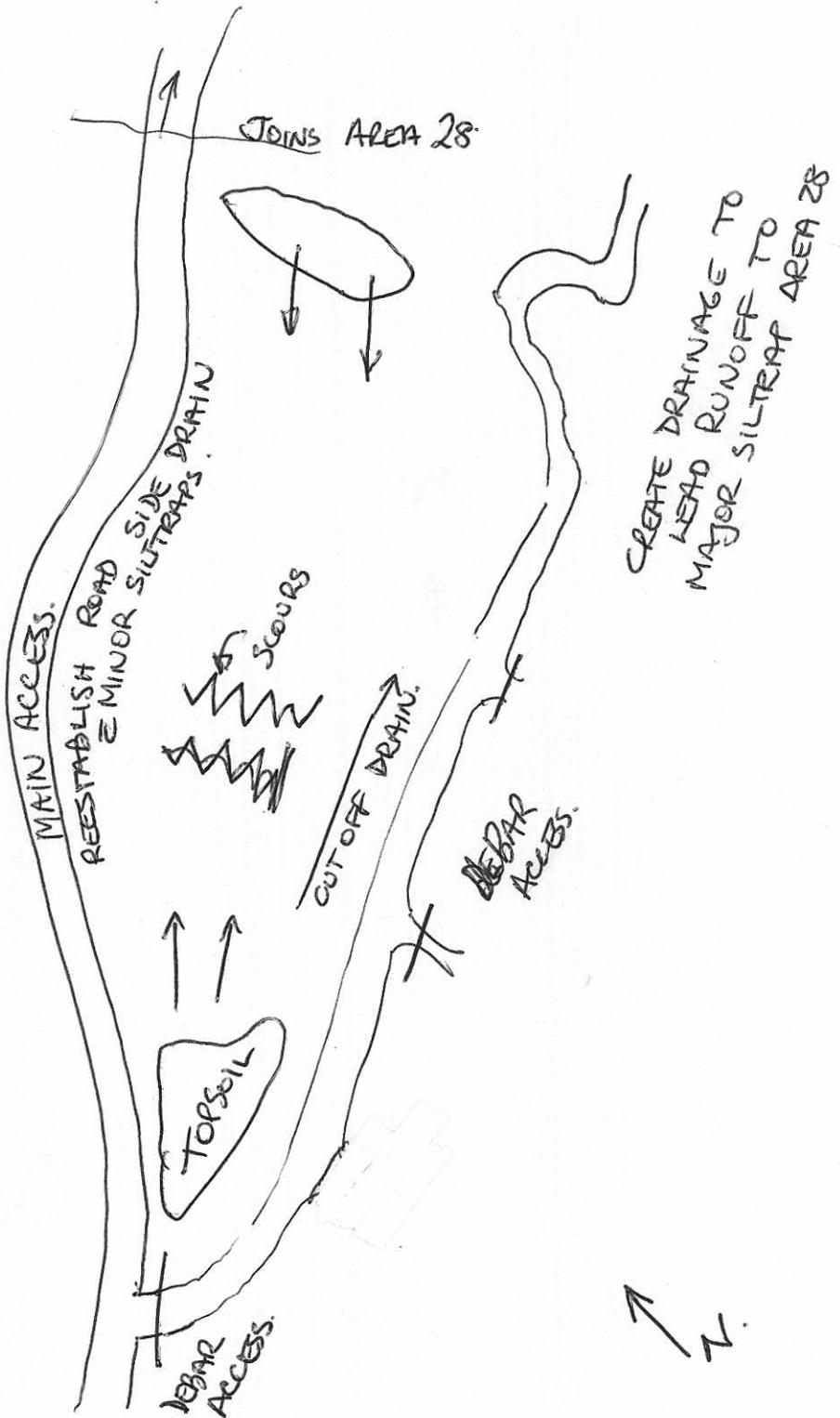
PLAN 27



natural vegetation



AREA 27



PLAN 28

5 cm

18/4/01
N.T.S.

Perimeter =
580 steps
(Ross)

$$580 \times \frac{8}{16} = 533\text{m}$$



Top soil



Spars
revegetation

100 m³
Top Soil

little
revegetation

Rubbish

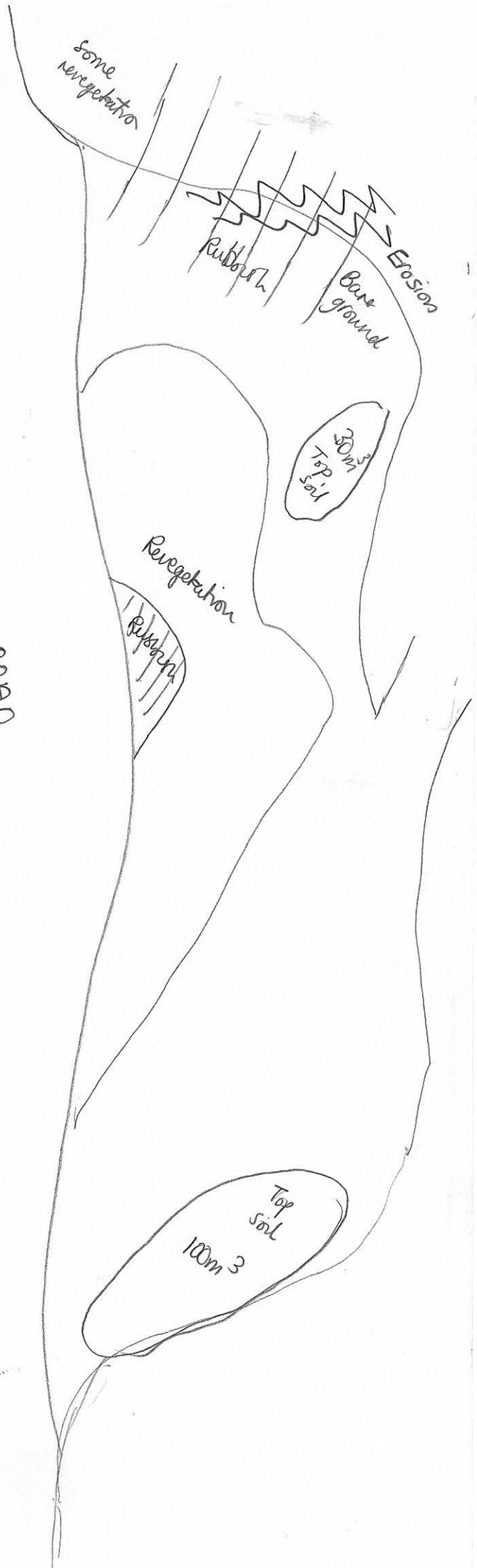
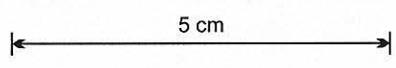
500 m³
Top soil

Rubbish

Revegetation

500 m³
Top soil

Area 26 PLAN 29

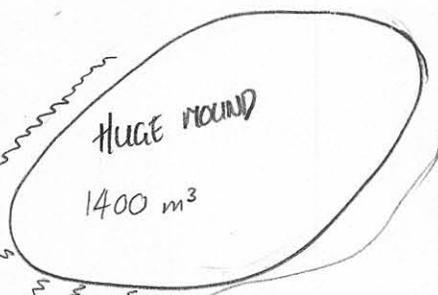
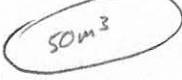
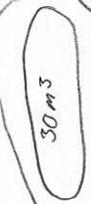
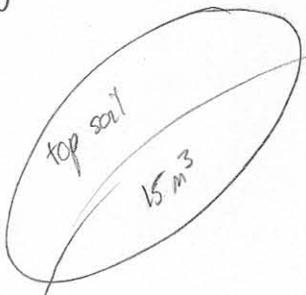


Perimeter = 430
Willem's steps

$$430 \times \frac{8}{10} = 344m$$

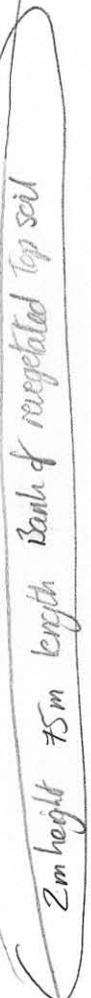
Natural veg.

Nat. veg.



Very bare ground

Natural vegetation

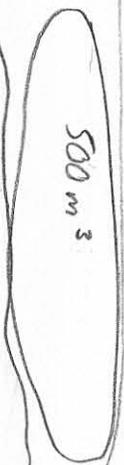


Some revegetation mostly tea tree

Bank 50m length 2m height

ROAD

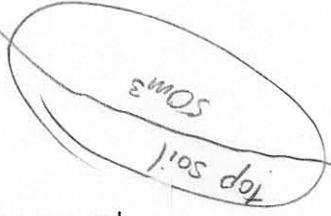
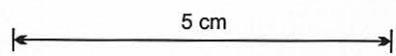
severe erosion



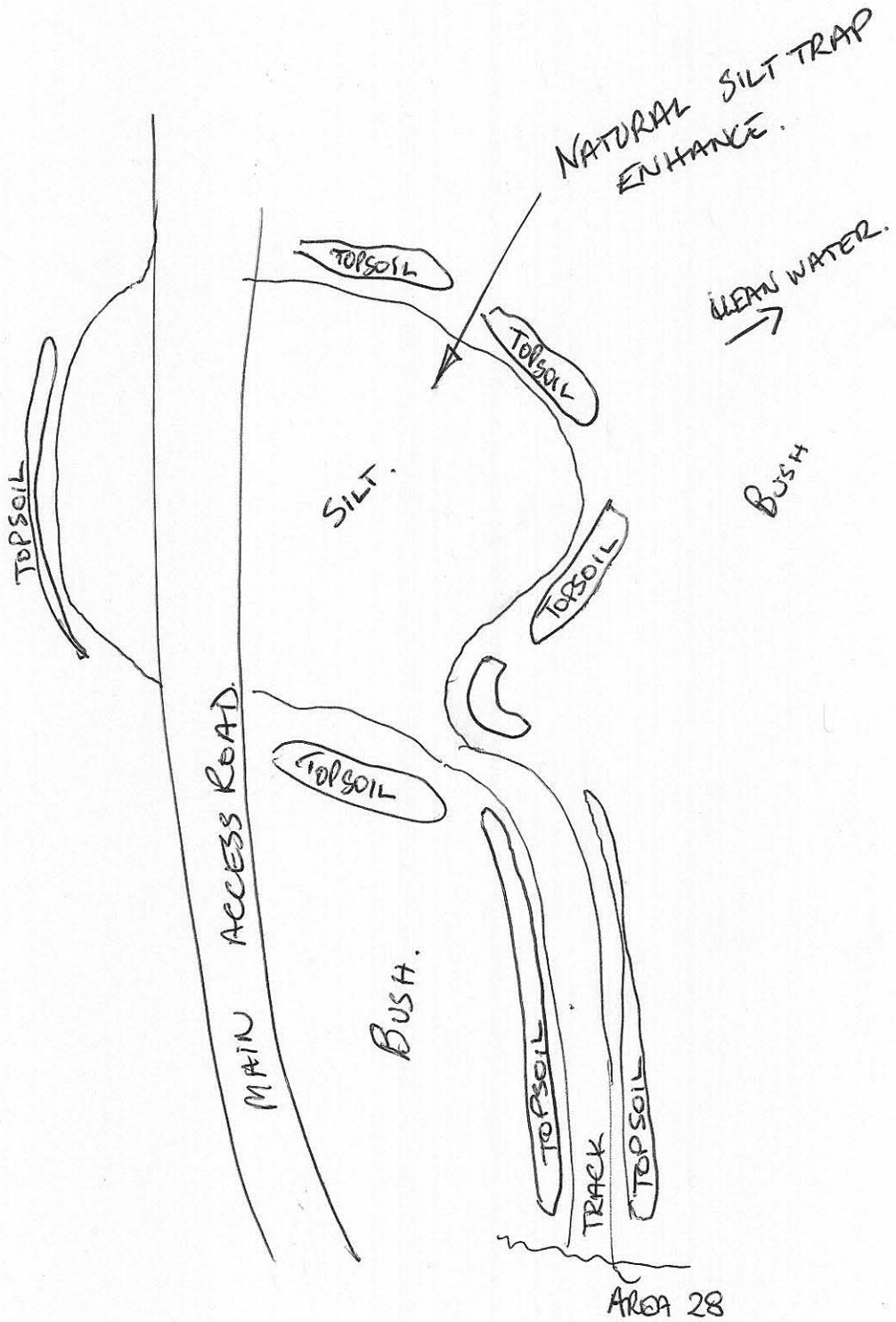
Nat. Veg.



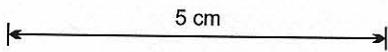
PLAN 30



AREA 29



PLAN 31



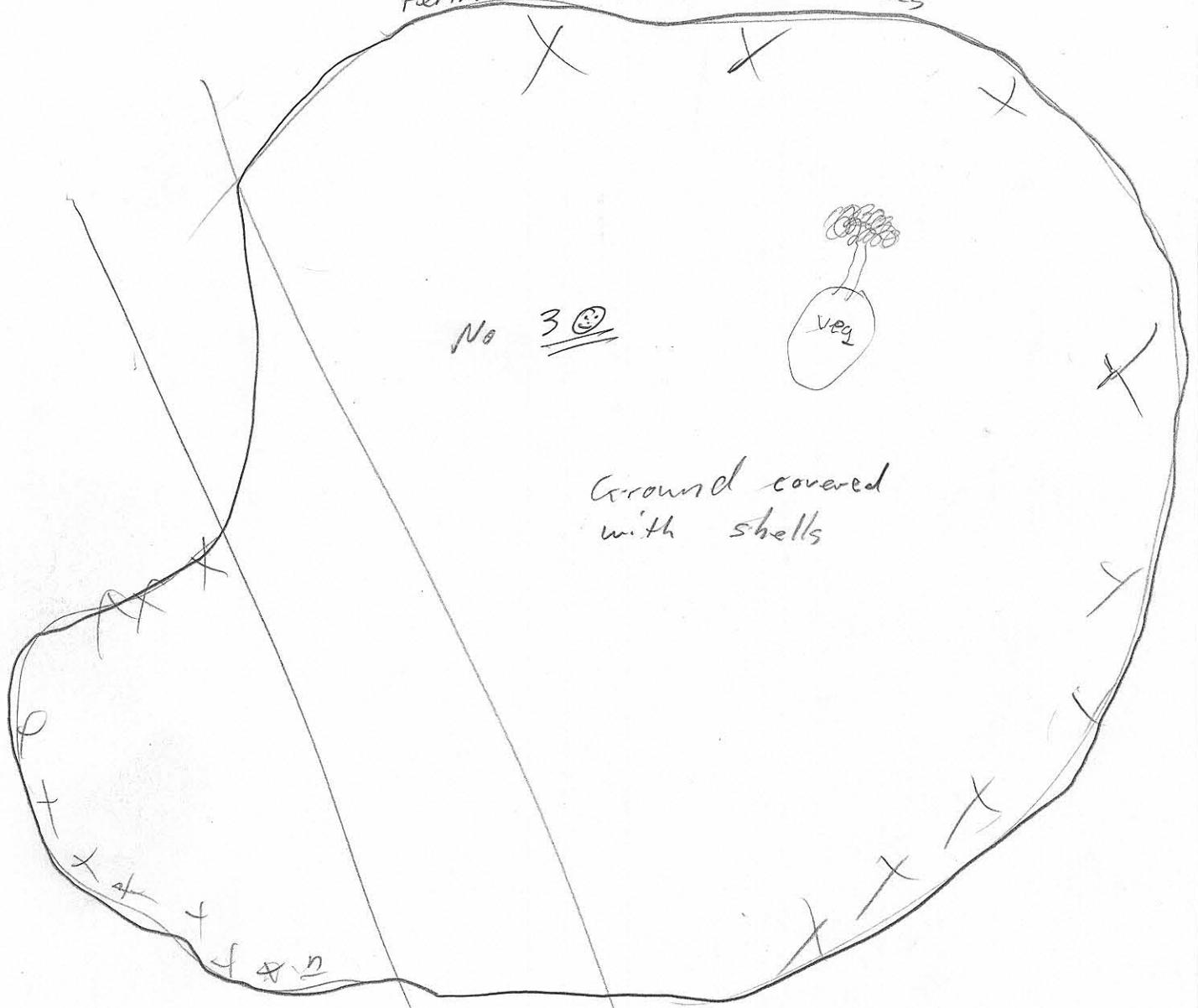
MB 18/4/01
NTS.

Note No-29
has little regrowth
needs seeding

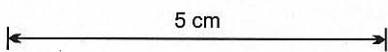
$$200 \times \frac{9}{10} = 184 \text{ m}$$



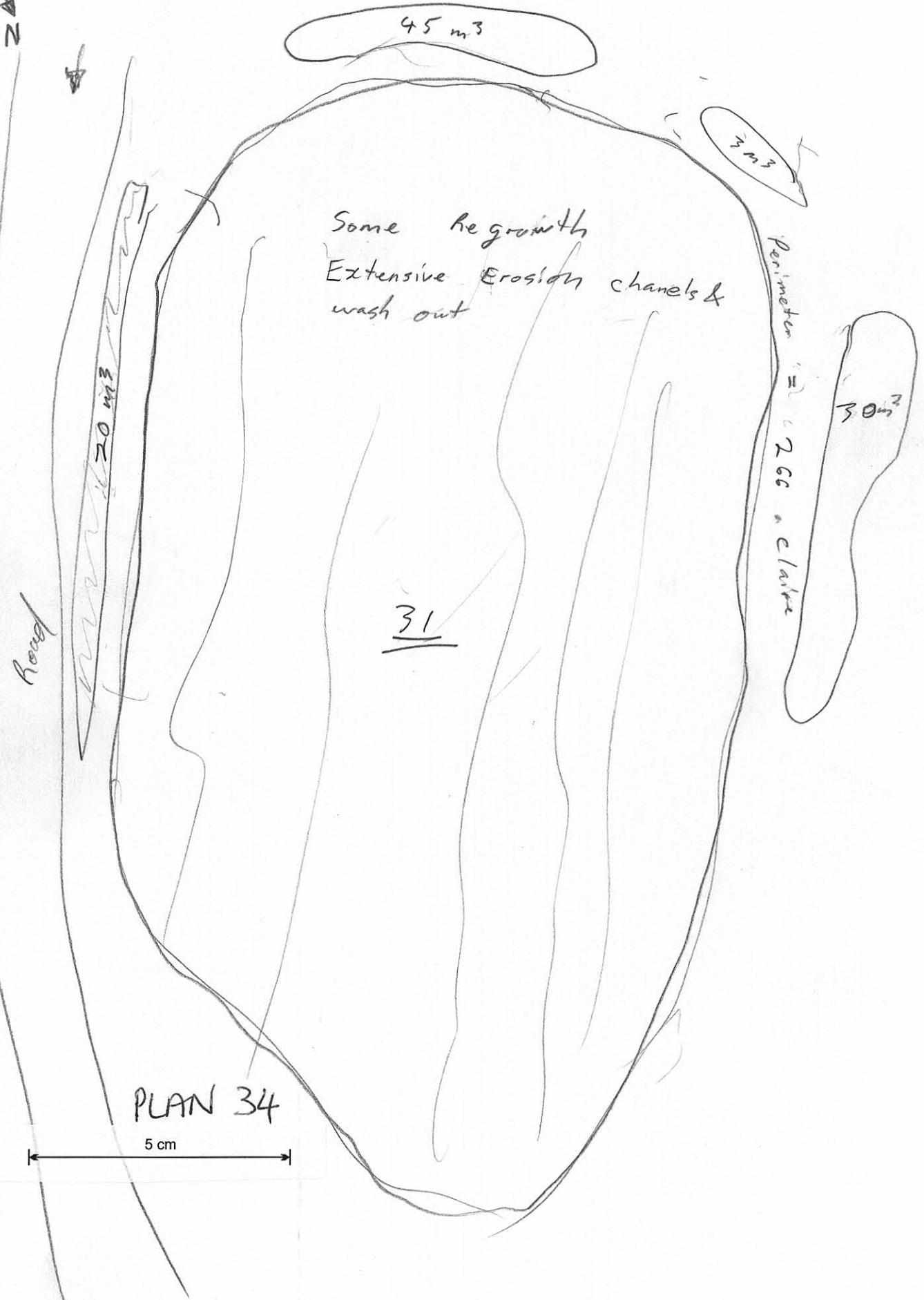
Perimeter 200 Elaire's strides



PLAN 33



$$266 \times \frac{9}{10} = 242m$$



Some Regrowth
Extensive Erosion chanel's &
wash out

31

Road

20 m²

45 m³

30 m³

Perimeter = 266 a chain

30 m²

PLAN 34

5 cm

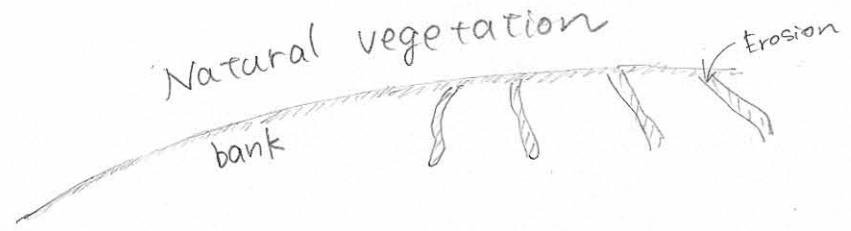
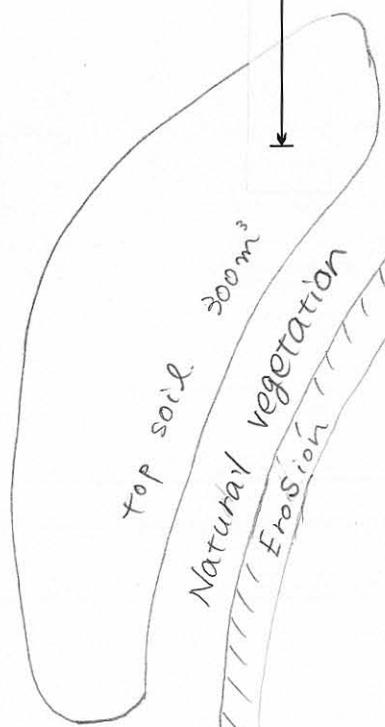
perimeter 230 steps (Claire)

AREA 32

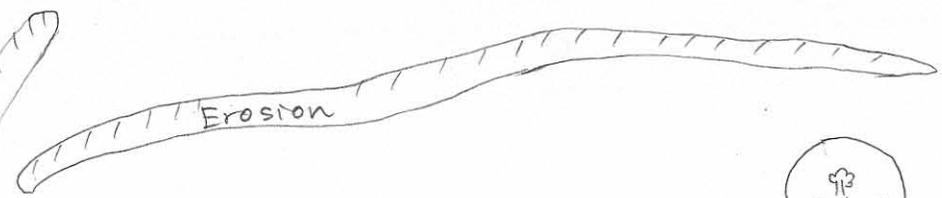
$$230 \times \frac{9}{10} = 209 \text{ m}$$

PLAN 35

5 cm



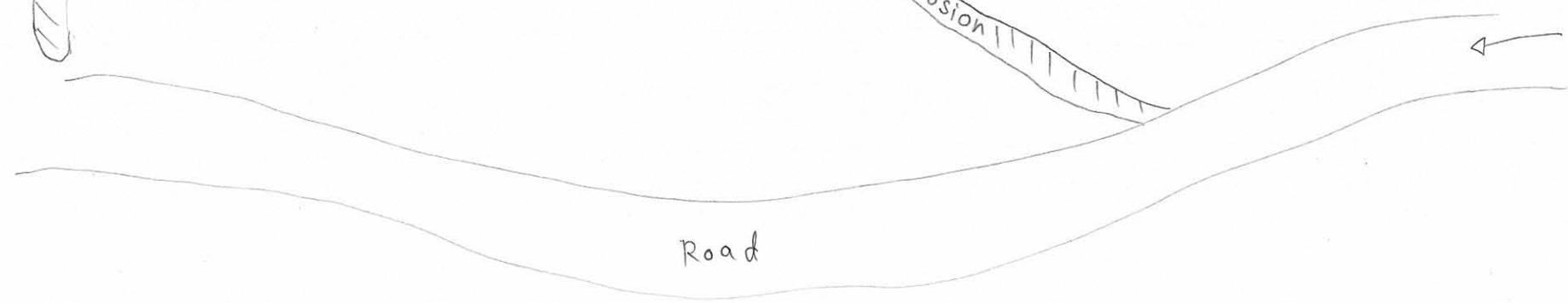
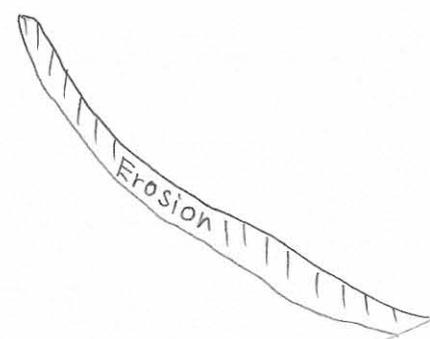
need more seeds



some vegetation but need more seeds



Natural Vegetation



Area 33

PLAN 36

5 cm

N

Revegetation

50m³
Top soil

15m³
Top soil

Revegetation

Grasses

Grasses

More seed needed

BANK
1.5m high

BANK

~2m high

Revegetation

2m width

Barren Land

5m³
top soil

Some
revegetation

More
seed
needed

Water &
Mosses

Erosion

Erosion

Erosion

20m³
top
soil

Revegetation
2000
m²

Rubbish

3m
width

BANK

Revegetation

$290 \times \frac{9}{10} = 263m$

ROAD

Rubbish

AREA 34

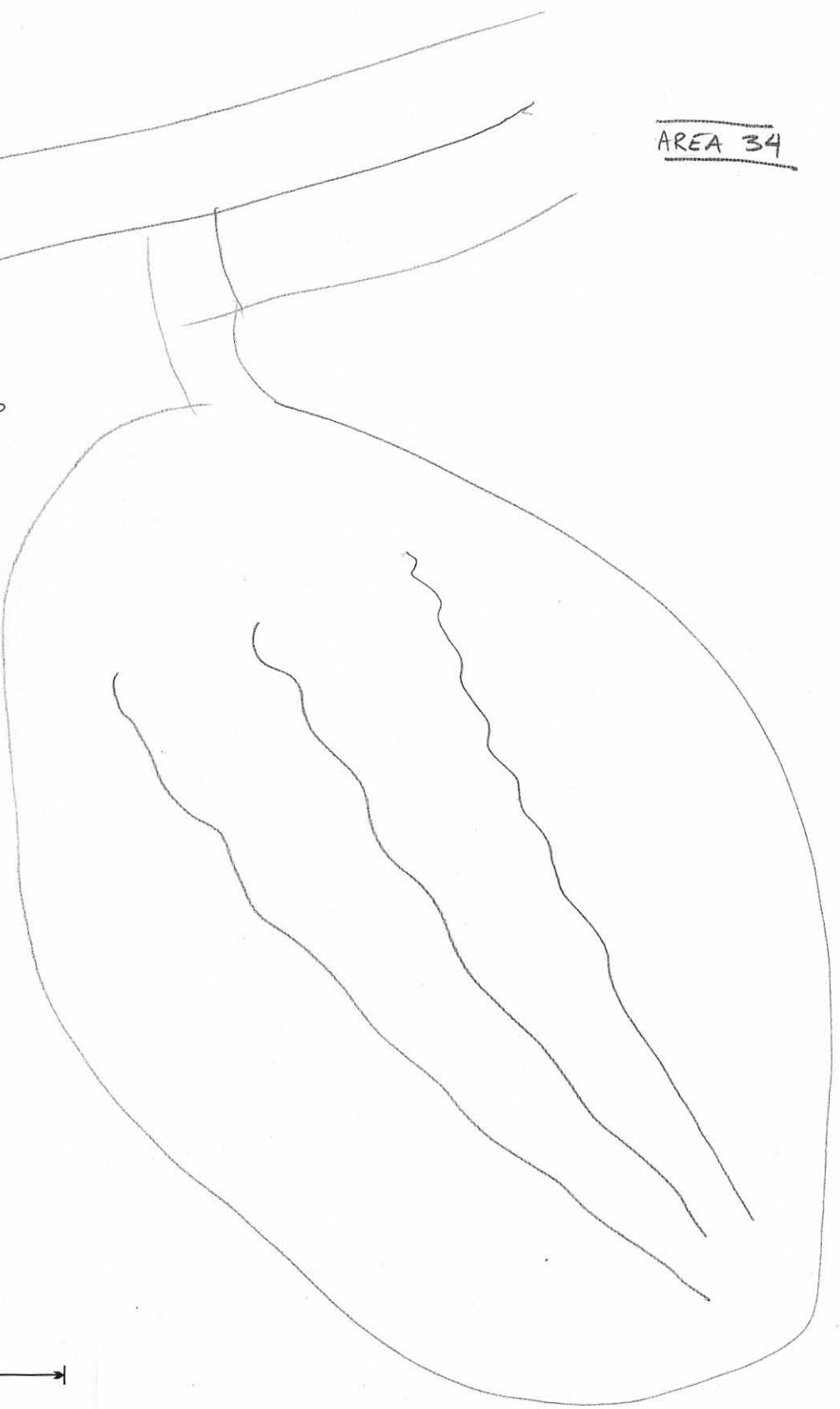
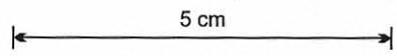
EROSION CHANNELS UP
TO 1/2 M DEEP

REVEGETATING WELL
WITH TEA TREE &
EUCALYPTS, REASONABLE
YOUNG GROWTH
PERIMETER = 209
(Michelle stops)

$$209 \times \frac{9}{10} = 190 \text{ m}$$



PLAN 37



5 cm

PLAN 38

Rubbish

GOOD REVEG



EROSION



GOOD REVEG.
BUT ROUGH & ERODED
UNDERFOOT

TO AREA 33



RUBBISH

TEA TREE

PERIMETER = 336.
(Michelle Steps)

$$336 \times \frac{9}{10} = 305 \text{ m}$$

AREA 35



No. 36

07/11/38

no significant
top soil

natural vegetation

good revegetation
but rough &
eroded
underneath

97 steps
(Mike) =
perimeter

garbage

erosion

ladder

car seat

good revegetation
but rough &
eroded

underneath

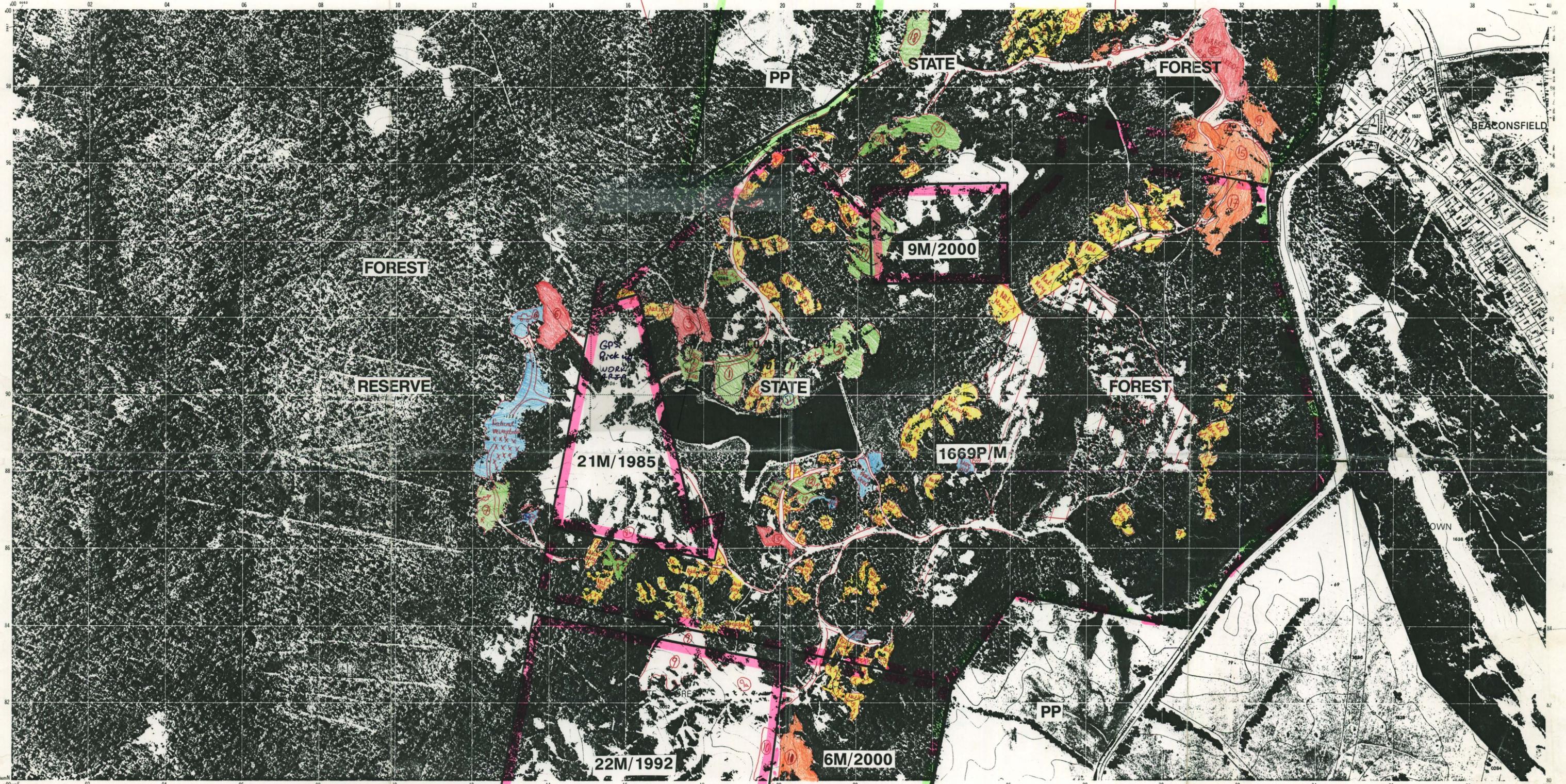
perimeter =
70 steps
(Michelle)

tires

natural vegetation

200

3



LOCALITY DIAGRAM



PRODUCTION Mapping Division, Lands Department, Hobart, 1982.
 PHOTOGRAPHY Wide angle flown 0430 hours UT, 19th February, 1981.
 RELIABILITY Orthophoto produced on Wild PEBB-DN1 equipment to meet National Mapping Council standards of map accuracy horizontally 90% of detail within 2.5 metres of true position and vertically within 2.5 metres except in areas where relief is obscured by dense vegetation.
 NOMENCLATURE has been produced mainly from records of the Nomenclature Board of Tasmania, but not all have necessarily been approved.
 CORRECTIONS To assist in correcting future editions of this map, users noting errors or omissions are invited to write to the Director of Mapping, G.P.O. Box 444, Hobart, Tasmania, 7001.
 AMENDMENTS to boundaries and names are carried out at regular intervals. Date of latest amendments to this copy was November, 1982.
 UNIQUE PARCEL IDENTIFIER To give a land parcel reference, prefix the parcel number with the municipality number.

HORIZONTAL DATUM: Australian Geodetic Datum 1966.
 VERTICAL DATUMS: Tasmanian Mainland: Australian Height Datum (Tas). Offshore islands: Mean Sea Level.
 GRID: 200 metre intervals on Australian Map Grid, Zone 55.
 PROJECTION: Universal Transverse Mercator on Australian National Spheroid.
 MAGNETIC VARIATION True Grid and Magnetic North are shown diagrammatically for the centre of this map. Magnetic North is correct for and moves easterly about 0.1° every three years.
 BOUNDARIES of land parcels are NOT authoritative. Compilation is from surveys as at Oct. 1982. Some ROADS implied by name and/or boundary are not part of the PUBLIC road network and access may be restricted or impassable. Some implied roads have been licensed or leased (e.g. for grazing) and entry over them may constitute TRESPASS. Most roads and tracks appearing on the orthophoto imagery without names or boundaries are PRIVATE. Full particulars concerning boundaries or roads are available from the Registrar-Generals Department or Lands Department.

Municipality name _____ eg PORTLAND
 Municipality number _____ eg 58
 Ward name _____ eg RAILTON
 Ward number _____
 Crown reserve boundary _____
 Undefined boundary _____
 Land parcel boundary and number _____ / -0088
 Spot elevation _____ -862

- SCALE 1:5 000
 1 millimetre represents 5 metres
- CONTOUR INTERVAL 5 METRES
- Caravan park _____
 - Camping ground _____
 - Picnic area _____
 - Public toilet _____
 - Rubbish disposal area _____
 - Boat ramp _____
 - Post office _____
 - Fire station _____
 - Police station _____
 - Trigonometric station with beacon _____

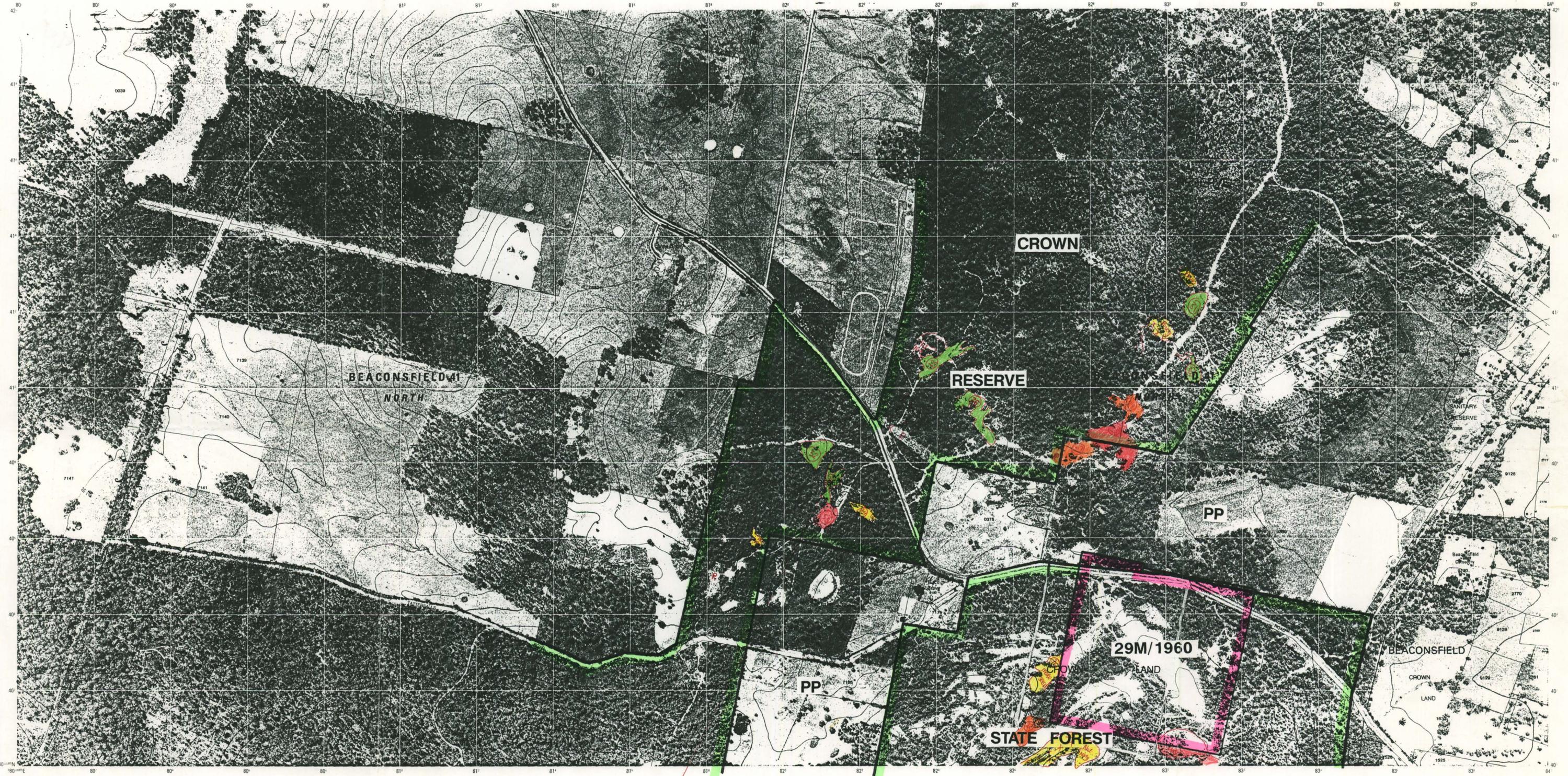
Key
 R = Rubbish
 D = Discarded motor vehicle
 XX = Natural vegetation
 SHELLS = Sculpin shells

UNIVERSAL GRID REFERENCE

GRID ZONE DESIGNATION	55Q
100 000 METRE SQUARE IDENTIFICATION	00
To give a standard reference to the nearest 10 metres	
1 State name and number of this map.	
2 Locate first VERTICAL grid line to the left of point and read large figures only in either the top or bottom margin e.g.	74
Estimate twentieths from grid line to point: e.g.	13
3 Locate first HORIZONTAL grid line below the point and read large figures only in either the left or right margin e.g.	46
Estimate twentieths from grid line to point: e.g.	2
To give full grid reference, prefix with Grid Zone Designation and 100 000 metre Square Identification letters: e.g. 55QD753462	

INDEX TO ADJOINING MAPS

PORT SORELL 55	BELL BAY 51	BELL BAY 52
HARFORD 15	BEACONSFIELD 11	BEACONSFIELD 12
HARFORD 25	BEACONSFIELD 21	BEACONSFIELD 22



PRODUCTION: Mapping Division, Dept. of Lands, Parks and Wildlife, Hobart, 1988
 PHOTOGRAPHY: Wide angle flown 0220 hours UT, 17th December, 1987
 PROJECTION: Universal Transverse Mercator (UTM)
 HORIZONTAL DATUM: Australian Geoidic Datum 1986
 VERTICAL DATUM: Australian Height Datum (Tasmania) excepting offshore islands whose datum is mean sea level
 GRID: 200 metre intervals of the Universal Transverse Mercator Grid, Zone 55 (Australian Map Grid) Australian National Spheroid. Grid values are shown in full at the south-west corner of the map.
 CONTOUR INTERVAL: 5 metre with 25 metre index contours
 ACCURACY: To meet National Mapping Council standards. Horizontally 90% of detail is within 2.5 metres of true position and vertically 90% of elevations are within 2.5 metres, except in areas of dense vegetation. Orthophoto was produced on Wild PLSB URM equipment.
 NOMENCLATURE: Has been produced mainly from the records of the Nomenclature Board of Tasmania, but not all have necessarily been approved.

GRID CONVERGENCE 01
 GRID MAGNETIC ANGLE 130
 MAGNETIC VARIATION: True Grid and Magnetic North are shown diagrammatically for the centre of this map. Magnetic North is correct for 1988 and moves easterly about 0.1 every three years.

UNIVERSAL GRID REFERENCE

GRID ZONE DESIGNATION	55G
100 000 METRE SQUARE IDENTIFICATION	00
To give standard reference to the nearest 10 metres:	
1 State name and number of this map	
2 Locate first VERTICAL grid line to left of point and read figures in either the top or bottom margin e.g.	484
Estimate tenths from grid line to point, e.g.	1.3
3 Locate first HORIZONTAL grid line below the point and read figures in either left or right margin e.g.	544
Estimate tenths from grid line to point, e.g.	2
4 Add figures as indicated	4853 5442
To give full grid reference, prefix with Grid Zone Designation and 100 000 metre Square Identification letters e.g.	
	55G0048535442

SCALE 1:5000
 1 millimetre represents 5 metres

5 cm

PORTLAND 58
 RAILTON

Municipality name
 Municipality number
 Municipality boundary
 Ward name
 Ward boundary
 Proclaimed town boundary
 Undefined boundary
 Land parcel boundary and number
 Spot elevation - Trigonometric station with beacon

Caravan park
 Camping ground
 Picnic area
 Public toilet
 Rubbish disposal area
 Boat ramp
 Post office
 Fire station
 Police station

GN
 TN
 MN

BOUNDARIES of land parcels are not authoritative. Compilation is from surveys as of June 1988. Some roads implied by name and/or boundary are not part of the public road network and access may be restricted or impossible. Some implied roads have been licensed or leased (e.g. for grazing) and entry over them may constitute trespass. Most roads and tracks appearing on the Orthophoto imagery without names or boundaries are private. Full particulars concerning boundaries or roads are available from the Law Department or Department of Lands, Parks and Wildlife.
 UNIQUE PARCEL IDENTIFIER: To give a land parcel reference, prefix the parcel number with the municipality number.
 AMENDMENTS 5 to boundaries and names are carried out at regular intervals. Date of latest amendment to this copy was July, 1988.
 CORRECTIONS: To assist in correcting future editions of this map, users noting errors or omissions are invited to write to Tasmap, G.P.O. Box 44A, Hobart, Tasmania, 7001.



INDEX TO ADJOINING MAPS

PORT SORELL 45	BELL BAY 41	BELL BAY 42
PORT SORELL 55	BELL BAY 51	BELL BAY 52
HARFORD 15	BEACONSFIELD 11	BEACONSFIELD 12

Key
 R = Rubbish
 XX = Natural vegetation

PRIORITY COLOURS
 5 4 3 2 1
 5. BEING HIGHEST PRIORITY
 1. BEING LOWEST PRIORITY.

Area 3a	Please note my designation of this Area 3a between access road into Area 3 and main fire access road (50m before junction).						
	Description of Tasks	Equipment required	App. Hours	Hourly Rate	Estimated Cost (not incl GST)	Input from Others	Notes
1	Plant Hygiene					Permission Req'd from DPIWE to treat as one area not requiring plant washdown between	Areas 1, 1a, 3, 3a to be treated as one
2	Weed Management						N/A
3	Rubbish Removal						Trailer load of rubbish to remove immediately adjacent to main fire access road
4	Vehicle Removal						N/A
5	Earthworks and Drainage Req'd					N/A	Spread building rubble i.e. concrete etc.
6	Silt Trap Req'd	Excavator with blade	2	\$85.00	\$170.00	N/A	Create bund at bottom of slope adjacent to access road to Area3 from topsoil winrow on opposite side of road
7	Spread Topsoil from Adjacent Area	Excavator with blade	4	\$85.00	\$340.00	N/A	Spread minimal topsoil from surrounding area. Only lightly rip on contours to prepare growth medium. Leave scallop shell dumps
8	Import Topsoil				\$0.00	N/A	N/A
9	Seeding and Fertilising				\$0.00		By Others
10	Close Access		0.5	\$85.00	\$42.50	Permission Req'd from Forestry	Excavate cut off drain and spoil winrow to debar access as all works complete in Areas 1a, 3, and 3a
11	Monitoring						N/A
					\$552.50	Total Direct Costs This Area	

Area 3							
	Description of Tasks	Equipment required	App. Hours	Hourly Rate	Estimated Cost (not incl GST)	Input from Others	Notes
1	Plant Hygiene					Permission Req'd from DPIWE to treat as one area not requiring plant washdown between	Areas 1 1a, 3, 3a to be treated as one
2	Weed Management						
3	Rubbish Removal						Yes, Trailer load of rubbish to remove immediately on entry to Area3 collected by ACV
4	Vehicle Removal						Yes 2 of requiring removal
5	Earthworks and Drainage Req'd	Excavator with blade	10	\$85.00	\$850.00		Earthworks to include the establishment of 3 contour drains to reduce runoff grades. Minor silt traps to be formed at the end of each drain. Bund at rear of area to be reestablished. Generally contour ground to stop rainfall runoff concentration.
6	Silt Trap Req'd					N/A	See above
7	Spread Topsoil from Adjacent Area	Small Dozer	6	\$110.00	\$660.00	N/A	Spread topsoil from surrounding stockpiles. Only lightly rip on contours to prepare growth medium. Leave scallop shell dumps
8	Import Topsoil	Excavator with blade	6	\$85.00	\$510.00	N/A	N/A
9	Seeding and Fertilising						By Others
10	Close Access					Permission Req'd from Forestry	Excavate cut off drain and spoil winrow to debar access at access to Area 1a
11	Monitoring						N/A
					\$2,020.00	Total Direct Costs This Area	

Area 1a		Includes access road from Area 3					
	Description of Tasks	Equipment required	App. Hours	Hourly Rate	Estimated Cost (not incl GST)	Input from Others	Notes
1	Plant Hygiene					Permission Req'd from DPIWE to treat as one area not requiring plant washdown between	Areas 1, 1a, 3, 3a to be treated as one
2	Weed Management						N/A
3	Rubbish Removal						N/A
4	Vehicle Removal						N/A
5	Earthworks and Drainage Req'd	Excavator with blade		\$85.00	\$0.00		N/A
6	Silt Trap Req'd					N/A	N/A
7	Spread Topsoil from Adjacent Area	Excavator with blade	4	\$85.00	\$340.00	N/A	Spread topsoil from surrounding stockpiles. Area for treatment includes access track to Area3 at rear of disturbed area. Some soil opposite access to Area1a if required. Only lightly rip on contours to prepare growth medium.
8	Import Topsoil					N/A	N/A
9	Seeding and Fertilising						By Others
10	Close Access	Excavator with blade	0.5	\$85.00	\$42.50	Permission Req'd from Forestry	Excavate cut off drain and spoil winrow to debar access at access to Area 1a
11	Monitoring						N/A
					\$382.50	Total Direct Costs This Area	

Area 1							
	Description of Tasks	Equipment required	App. Hours	Hourly Rate	Estimated Cost (not incl GST)	Input from Others	Notes
1	Plant Hygiene					Permission Req'd from DPIWE to treat as one area not requiring plant washdown between	Areas 1, 1a, 3, 3a to be treated as one
2	Weed Management						N/A
3	Rubbish Removal						N/A
4	Vehicle Removal						N/A
5	Earthworks and Drainage Req'd	Excavator with blade	8	\$85.00	\$680.00		Earthworks to include; generally contour ground to stop rainfall runoff concentration, establishment of at least 3 siltraps to correct 1.5m deep scour, a contour drain adjacent to the lower access road around the lake, and a further 2 contour drains above this to manage runoff until vegetation established.
		Small dozer	6	\$110.00	\$660.00		
6	Silt Trap Req'd					N/A	See above
7	Spread Topsoil from Adjacent Area	Small Dozer	8	\$110.00	\$880.00	N/A	Spread topsoil from surrounding stockpiles. Only lightly rip on contours to prepare growth medium.
		Excavator with blade	8	\$85.00	\$680.00		
8	Import Topsoil					N/A	N/A
9	Seeding and Fertilising						By Others
10	Close Access						N/A
11	Monitoring						N/A
					\$2,900.00	Total Direct Costs This Area	

Area 6	Eroded slopes treatment cost prohibitive.						
	Description of Tasks	Equipment required	App. Hours	Hourly Rate	Estimated Cost (not incl GST)	Input from Others	Notes
1	Plant Hygiene						Applicable and Extremely Important
2	Weed Management						N/A
3	Rubbish Removal						Yes 1/2 trailer load tyres adjacent to vehicle on access road
4	Vehicle Removal						Yes 1 off on access road from Council F... Removal can be left till after earth works.
5	Earthworks and Drainage Req'd	Excavator with blade Small dozer	4 4	\$85.00 \$110.00	\$340.00 \$440.00		Earthworks to include; generally contour ground to stop rainfall runoff concentration, establishment of at least 2 contour drains (max .25% grade) including minor silt traps to manage runoff until vegetation established. No treatment designated for eroded slopes.
6	Silt Trap Req'd	Excavator with blade	2	\$85.00	\$170.00	N/A	Create silt trap 6m by 6m by .5m deep at outlet from disturbed area into Forest Reserve.
7	Spread Topsoil from Adjacent Area	Small Dozer Excavator with blade	4 4	\$110.00 \$85.00	\$440.00 \$340.00	N/A	Spread topsoil from surrounding stockpiles. Only lightly rip on contours to prepare growth medium.
8	Import Topsoil					N/A	N/A
9	Seeding and Fertilising						By Others
10	Close Access						N/A
11	Monitoring						N/A
					\$1,730.00	Total Direct Costs This Area	

Area 7, 7a, & 8							
No earthworks treatment due to request from Forestry Tasmania and Threatened Species Unit. These areas within Forest Reserve adjacent to Threatened Species Habitat.							
	Description of Tasks	Equipment required	App. Hours	Hourly Rate	Estimated Cost (not incl GST)	Input from Others	Notes
1	Plant Hygiene						Applicable and Extremely Important
2	Weed Management						N/A
3	Rubbish Removal						Yes 2 trailer loads in Area7, and emu parade on either side of access road through this area
4	Vehicle Removal						Yes 3 off a) on access road to area 1 off, in Area 7 1 off, and in Area 8 1 off
5	Earthworks and Drainage Req'd	Excavator with blade	4	\$85.00	\$340.00	Permission req'd for this work from Forestry and Threatened Species Unit. This minor drainage work should not impact adversely on the conservation values of the area.	Minor Drain required in Area 8 on eastern side of fire access to stop runoff from concentrating and creating more degradation of steep slopes below in Area 6.
6	Silt Trap Req'd					N/A	N/A
7	Spread Topsoil from Adjacent Area					N/A	N/A
8	Import Topsoil					N/A	N/A
9	Seeding and Fertilising						N/A
10	Close Access						N/A
11	Monitoring						N/A
					\$340.00	Total Direct Costs This Area	

Area 27		Connected to works in Area 28 and Area 29					
	Description of Tasks	Equipment required	App. Hours	Hourly Rate	Estimated Cost (not incl GST)	Input from Others	Notes
1	Plant Hygiene					Permission Req'd from DPIWE to treat as one area not requiring plant washdown between	Areas 27, 28, & 29 to be treated as one
2	Weed Management						
3	Rubbish Removal						Yes, side track has approx 3 trailer loads of rubbish to be removed. If ACV not in attendance by treatment time recover with excavator and create stockpile at minor access junction for later pick up.
4	Vehicle Removal						N/A
5	Earthworks and Drainage Req'd	Excavator with blade	4	\$85.00	\$340.00		Earthworks to include; generally contour ground to stop rainfall runoff concentration, establishment of at least one cut off drain above major scour to redirect rainfall runoff away from steep slope,
		Small dozer	8	\$110.00	\$880.00		Side drain to the access road is to be reestablished on the eastern side, incorporating up to 3 minor siltraps to slow runoff velocity, turn drain into face to spill. This drain is to feed into reestablished road side drain of Area 28
		Excavator with blade	4	\$85.00	\$340.00		Other non specific drainage works to redirect flows to new watercourses.
6	Silt Trap Req'd					N/A	See above
7	Spread Topsoil from Adjacent Area	Small Dozer	6	\$110.00	\$660.00	N/A	Spread topsoil from surrounding stockpiles. Only lightly rip on contours to prepare growth medium. Access roads to east to be treated similarly.
		Excavator with blade	6	\$85.00	\$510.00		
8	Import Topsoil					N/A	N/A
9	Seeding and Fertilising						By Others
10	Close Access		0.5	\$85.00	\$42.50	Permission Req'd from Forestry	Excavate cut off drain and spoil winrow to debar access to Area 27
11	Monitoring						N/A
					\$2,772.50	Total Direct Costs This Area	

Area 28		Connected to works in Area 29 and Area 27					
	Description of Tasks	Equipment required	App. Hours	Hourly Rate	Estimated Cost (not incl GST)	Input from Others	Notes
1	Plant Hygiene					Permission Req'd from DPIWE to treat as one area not requiring plant washdown between	Areas 27, 28, & 29 to be treated as one
2	Weed Management						N/A
3	Rubbish Removal						N/A
4	Vehicle Removal						N/A
5	Earthworks and Drainage Req'd	Excavator with blade	8	\$85.00	\$680.00		Earthworks to include using mounded material on eastern bank to create major silt trap. Material to be track rolled into place. 3 minor siltraps to be created above and below this to reduce spill erosion.
		Excavator with blade	6	\$85.00	\$510.00		Side drain to the access road is to be reestablished on the eastern side, incorporating up to 3 minor siltraps to slow runoff velocity, turn drain into face to spill. This drain is to feed into lowest siltrap mentioned above
6	Silt Trap Req'd	Excavator with blade	3	\$85.00	\$255.00	N/A	Create silt trap 10m by 10m by .5 deep at lowest point on western side
7	Spread Topsoil from Adjacent Area	Small Dozer	12	\$110.00	\$1,320.00	N/A	Spread topsoil from surrounding stockpiles. Only lightly rip on contours to prepare growth medium.
		Excavator with blade	4	\$85.00	\$340.00		
8	Import Topsoil					N/A	N/A
9	Seeding and Fertilising						By Others
10	Close Access						N/A
11	Monitoring						N/A
					\$3,105.00	Total Direct Costs This Area	

Area 29	Connected to works in Area 28 and Area 27						
	Description of Tasks	Equipment required	App. Hours	Hourly Rate	Estimated Cost (not incl GST)	Input from Others	Notes
1	Plant Hygiene					Permission Req'd from DPIWE to treat as one area not requiring plant washdown between	Areas 27, 28, & 29 to be treated as one
2	Weed Management						N/A
3	Rubbish Removal						N/A
4	Vehicle Removal						N/A
5	Earthworks and Drainage Req'd	Excavator with blade	2	\$85.00	\$170.00		Earthworks includes establishment of drain and minor silttraps on access track between this area and Area 29. Dedicate existing access to drain and silt traps to slow runoff from Area 29.
6	Silt Trap Req'd	Excavator with blade	3	\$85.00	\$255.00	N/A	Create silt trap 10m by 10m by .5 deep (min. dims.) at lowest point this area (East side) before runoff enters vegetated fringe.
7	Spread Topsoil from Adjacent Area	Excavator with blade	3	\$85.00	\$255.00		Spread topsoil from surrounding stockpiles. Only lightly rip on contours to prepare growth medium. Access track winrows have excess of topsoil. Topsoil areas up to drains, around minor and major silt traps and western side of main access. Lightly rip only western side of road and around major silttrap with excavator bucket teeth.
8	Import Topsoil					N/A	N/A
9	Seeding and Fertilising						By Others
10	Close Access						N/A
11	Monitoring						N/A
					\$680.00	Total Direct Costs This Area	

Area 33		Propose road access to be blocked off if not required by Forestry as fire access					
	Description of Tasks	Equipment required	App. Hours	Hourly Rate	Estimated Cost (not incl GST)	Input from Others	Notes
1	Plant Hygiene						Applicable
2	Weed Management						N/A
3	Rubbish Removal						Yes, emu parade through length of access road required. Possibly 2 trailer loads rubbish.
4	Vehicle Removal						N/A
5	Earthworks and Drainage Req'd	Excavator with blade	4	\$85.00	\$340.00		Dangerous access road batter. Redirect access road around this area if access is to be maintained long term. Area already partially cleared. Complete clearing, strip vegetative layer, form road and side drains from exposed gravel. On completion of deviation deny access to dangerous section.
		Excavator with blade	4	\$85.00	\$340.00		Earthworks to include generally contour ground to stop rainfall runoff concentration until vegetation established.
6	Silt Trap Req'd						N/A. Area 33 is generally lower than surrounding land and appears to collect adjacent runoff and slowly drain through ground water movement. Ensure that topsoil winrow to west stays as is so that runoff does not leave by this route. This area to be tagged with pink surveyors tape.
7	Spread Topsoil from Adjacent Area	Excavator with blade	8	\$85.00	\$680.00		Topsoiled area to include area 30 meters down gully as well as immediate disturbed area. Directions from NB on request. Generally concentrate topsoil to higher areas and minimise topsoil to floor of old pit.
8	Import Topsoil					N/A	N/A
9	Seeding and Fertilising						By Others
10	Close Access	Excavator with blade	1.5	\$85.00	\$127.50	Permission Req'd from Forestry	Excavate cut off drain and spoil winrow to debar access to Area 33 both ends. If agreed by Forestry can rehab approx. 600m of access road as well. This will make part of item 5 redundant, and increase the overall cost of this area
	Extra cost of road rehab	Excavator with blade	18	\$85.00	\$1,530.00		Rehab total access road from York Road to Tattersalls Road. Use winrowed organic mat'l from adjacent to road. Lightly rip.
11	Monitoring						N/A
					\$3,017.50	Total Direct Costs This Area	

Area 52	The quantity of rubbish dumped in this area is next to impossible to estimate (app 300m3 to 1000m3) as it is covered in various weeds. The action that needs to be undertaken to get a true appreciation of magnitude and extent of this old rubbish dump is the initiation of a weed management program.						
	Description of Tasks	Equipment required	App. Hours	Hourly Rate	Estimated Cost (not incl GST)	Input from Others	Notes
1	Plant Hygiene					Permission Req'd from DPIWE to treat as one area not requiring plant washdown between	Areas 14,15,16,17 and 52 to be treated as one
2	Weed Management				\$1,000.00		Yes. Quote on weed spraying best option at present. Will assist true appreciation of how much rubbish has been dumped at this site. Input \$1000 is estimate only, not quote.
3	Rubbish Removal						Yes. Approx 2 trailer loads at accesses to Lake and Area 52.
4	Vehicle Removal						N/A
5	Earthworks and Drainage Req'd						N/A
6	Silt Trap Req'd					N/A	
7	Spread Topsoil from Adjacent Area					N/A	
8	Import Topsoil					N/A	N/A
9	Seeding and Fertilising						By Others
10	Close Access						N/A
11	Monitoring						N/A
					\$1,000.00	Total Direct Costs This Area	

Area 14	Connected to works in Area 15, 16, and Area 17						
	Description of Tasks	Equipment required	App. Hours	Hourly Rate	Estimated Cost (not incl GST)	Input from Others	Notes
1	Plant Hygiene					Permission Req'd from DPIWE to treat as one area not requiring plant washdown between	Areas 14,15,16,17 and 52 to be treated as one
2	Weed Management						N/A
3	Rubbish Removal						N/A
4	Vehicle Removal						N/A
5	Earthworks and Drainage Req'd						N/A
6	Silt Trap Req'd					N/A	N/A
7	Spread Topsoil from Adjacent Area	Excavator with blade	12	\$85.00	\$1,020.00	N/A	Spread topsoil from surrounding stockpiles. Using closest winrows of topsoil cover as much area as possible with topsoil. Only lightly rip on contours where applicable (ie not on bedrock) to prepare growth medium.
8	Import Topsoil					N/A	N/A
9	Seeding and Fertilising						By Others
10	Close Access	Excavator with blade	0.5	\$85.00	\$42.50	Permission Req'd from Forestry	Excavate cut off drain and spoil winrow to debar access from Area 52 to Area 14
11	Monitoring						N/A
					\$1,062.50	Total Direct Costs This Area	

Connected to works in Area 14, 16, and Area 17							
Area 15	Description of Tasks	Equipment required	App. Hours	Hourly Rate	Estimated Cost (not incl GST)	Input from Others	Notes
1	Plant Hygiene					Permission Req'd from DPIWE to treat as one area not requiring plant washdown between	Areas 14,15,16,17 and 52 to be treated as one
2	Weed Management						N/A
3	Rubbish Removal						N/A
4	Vehicle Removal						N/A
5	Earthworks and Drainage Req'd						N/A
6	Silt Trap Req'd					N/A	N/A
7	Spread Topsoil from Adjacent Area	Excavator with blade	2	\$85.00	\$170.00	N/A	Spread topsoil from surrounding stockpiles. Using remaining winrow of topsoil between Area 14 and 15, spread over access track to edge of major watercourse. Only lightly rip on contours where applicable (ie not on bedrock) to prepare growth medium.
	Spread Topsoil from Adjacent Area	Excavator with blade	4	\$85.00	\$340.00		Throw remaining topsoil from winrow between areas 17 and 15 down over major batter to collect in depressions at later date, and to give topsoil cover to higher parts of Area 15.
8	Import Topsoil					N/A	N/A
9	Seeding and Fertilising						By Others
10	Close Access	Excavator with blade	0.5	\$85.00	\$42.50	Permission Req'd from Forestry	Excavate cut off drain and spoil winrow to debar access from Area 52 and Area 14 to this area
	Access		3	\$85.00	\$255.00		Access issues with owner of blue gate on Holwell Road. Get agreement from Fishing Club to remove gate and rehab access from Holwell Rd.
11	Monitoring						N/A
					\$807.50	Total Direct Costs This Area	

Area 16	Connected to works in Area 14, 15, and Area 17						
	Description of Tasks	Equipment required	App. Hours	Hourly Rate	Estimated Cost (not incl GST)	Input from Others	Notes
1	Plant Hygiene					Permission Req'd from DPIWE to treat as one area not requiring plant washdown between	Areas 14,15,16,17 and 52 to be treated as one
2	Weed Management						N/A
3	Rubbish Removal						N/A
4	Vehicle Removal						Yes 1 off
5	Earthworks and Drainage Req'd	Excavator with blade	2	\$85.00	\$170.00		Earthworks to include; generally contour ground to stop rainfall runoff concentration until vegetation established.
6	Silt Trap Req'd					N/A	N/A
7	Spread Topsoil from Adjacent Area	Excavator with blade	2	\$85.00	\$170.00	N/A	Spread topsoil from surrounding stockpiles. Lightly rip on contours where applicable.
8	Spread Topsoil from Adjacent Area	Small dozer	6	\$110.00	\$660.00	N/A	Spread topsoil from surrounding stockpiles. Lightly rip on contours where applicable.
9	Import Topsoil					N/A	N/A
9	Seeding and Fertilising						By Others
10	Close Access						N/A
11	Monitoring						N/A
					\$1,000.00	Total Direct Costs This Area	

Area 17	Connected to works in Area 14, 15, and Area 16						
	Description of Tasks	Equipment required	App. Hours	Hourly Rate	Estimated Cost (not incl GST)	Input from Others	Notes
1	Plant Hygiene					Permission Req'd from DPIWE to treat as one area not requiring plant washdown between	Areas 14,15,16,17 and 52 to be treated as one
2	Weed Management						N/A
3	Rubbish Removal						N/A
4	Vehicle Removal						Yes 1 off. Access problem as spillway from dam has washed out vehicular access. Rehab works need to coincide with removal for success.
5	Earthworks and Drainage Req'd	Excavator with blade	6	\$85.00	\$510.00		Earthworks to include; generally contour ground to stop rainfall runoff concentration, establishment of at least 2 contour drains (max .25% grade) including minor silt traps to manage runoff until vegetation established through scoured area. Lead drains to major watercourse(spillway to dam)
	Earthworks and Drainage Req'd	Small Dozer	6	\$110.00	\$660.00		
6	Silt Trap Req'd					N/A	See above
7	Spread Topsoil from Adjacent Area	Excavator with blade	8	\$85.00	\$680.00	N/A	Spread topsoil from surrounding stockpiles. Lightly rip on contours where applicable.
	Spread Topsoil from Adjacent Area	Small dozer	8	\$110.00	\$880.00	N/A	Spread topsoil from surrounding stockpiles. Lightly rip on contours where applicable.
8	Import Topsoil					N/A	N/A
9	Seeding and Fertilising						By Others
10	Close Access						N/A
11	Monitoring						N/A
					\$2,730.00	Total Direct Costs This Area	