



Main Line
km H-131

ECOLOGICAL SURVEY

OF THE

GRAND CANAL

Part 3: Baseline vegetation maps in 1km Sections. 1991

**Prepared for:
The Wildlife and Waterways Section,
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The Kilbeggan Branch	

MANAGEMENT OBJECTIVES

- 1.1 To give nature conservation equal priority with other criteria in the maintenance and development of the canal network.
- 1.2 To maintain the habitat diversity of the canal system, and to increase it where possible.
- 1.3 To maximise diversity by varying management practices along the canal system.
- 1.4 To allow flexibility in management to take into account the variability of nature.

GENERAL GUIDELINES FOR CONSERVATION MANAGEMENT

2.1 MAINTENANCE

2.1.1 General

. Because of the conservation value of the canals a full-time ecologist should be employed by the Waterways Section.

2.1.2 Dredging

General

. The channel should only be dredged in short sections (of not more than 5km) to allow recolonisation from adjacent lengths.

. Hydraulic machinery should be used where possible as it is more selective and flexible than drag-line dredgers.

. Where possible the spoil should be pulled into the side, and not removed from the channel.

. Dredging should be minimised during the months March to July to avoid the main growing season and to reduce disturbance to nesting birds.

. Natural revegetation of dredging spoil should be monitored annually to decide the best form of management.

Protection of reed fringe

. Dredging should be carried out from one bank only leaving a wide band of marginal vegetation on the offside.

. In sections where the only surviving reedbeds are on the towpath side of the canal the floating dredger should be used to avoid damaging the marginal vegetation.

. Where no reed fringe exists submerged berms should be

created along the bank to facilitate the growth of shallow-water marginal vegetation outside the navigation area.

. Create artificial islands in a number of the canal harbours as nest sites for mute swans and other breeding waterfowl. (The island in Maynooth Harbour on the Royal Canal provides a successful model).

Spoil deposition

. Spoil should not be dumped on wetlands such as fens and raised bogs or on unimproved grasslands along the canal bank as these are the richest sites botanically.

. Spoil may be dumped in a trench dug between the towpath and the boundary. This should then be recovered with topsoil and allowed to revegetate naturally.

. Alternatively spoil may be dumped between the towpath and the boundary and topsoil spread thinly over this.

. If there are no other suitable places close to the canal bank spoil could be spread thinly in scrub.

Control of plant growth on spoil heaps

. In areas destined to become grassland the early colonising plants should be mowed at least twice in the first year and the cuttings removed. In subsequent years a single late summer mowing should be sufficient.

. In areas where scrub is desirable no management is necessary.

2.1.3 Repair work

Bank protection

. Natural materials or vegetation should be used in bank protection wherever possible instead of sheet piling.

. Where clay is used to build up the banks it should be covered with topsoil or peat from the same site and allowed to revegetate naturally.

2.1.4 Towpath revegetation

. Towpaths should not be reseeded after clearance and should be allowed to revegetate naturally.

2.1.5 Bankside trees

Trimming

. Tree-cutting should be avoided during the months of March to July to reduce disturbance to nesting birds and damage to plants during the main growing season.

. Removal of overhanging branches should be confined to those which overhang the canal and catch floating debris or obstruct navigation.

. Pollarding is a suitable management method for Willows. Young growth is trimmed off each year at a height of 2m from the ground producing a solid stem and a crown of young growth.

. Coppicing is suitable for management of shrubs or young Hazel, Willow or Alder trees where access for machinery is necessary. Trunks are cut close to the ground using a slanting cut which sheds rainwater. Branches regenerate from the base or stool.

Selective removal of trees

. Removal of trees should be confined to the winter months to minimise disruption of plant communities and disturbance to nesting birds.

. Priority should be given to removal of exotic or introduced species such as conifers or Sycamore. Native species such as Alder, Willow, Ash etc. should be retained where possible.

. Cut stumps may need to be spot-treated with herbicide to prevent re-growth where trees or shrubs are to be removed from the system altogether.

2.1.6 Scrub

. Scrub clearance should not be carried out as a matter of course, but only when necessary for maintenance purposes.

. Clearance of scrub should be avoided during the months of March to July to reduce disturbance to nesting birds.

. Scrub should not be cleared from both banks at the same time. Instead the vegetation on the first bank should be allowed to stabilise before any work is carried out on the second bank.

2.1.7 Hedgerows

Management methods

. Hedgerows should be trimmed in short lengths on a two to three year rotation.

. Trimming should be carried out in the months October to February to avoid damage to growing shrubs and disturbance of nesting birds.

. Hedgerow trees should be protected from damage during trimming and some young saplings should be allowed to grow to maturity.

Replanting

. Preference should be given in replanting programmes to the use of native tree and shrub species such as those which grow naturally in the surrounding countryside.

. Planting of shrub and tree species should be done in autumn or spring, but not during severe frosts.

2.1.8 Grassland

Grazing

. Grazing of individual sites either by sheep or cattle should be consistent from year to year.

. Boundary fencing should be repaired where necessary to control stock.

. Stocking rates should be lower than the average on agricultural land to avoid damage to canal banks and poaching of towpath soils.

. Fencing should be erected along the water's edge where banks are gently sloping to prevent poaching of bank structure.

Mowing

. Mowing can also be used to maintain grassland on the towpath and verges. Species-rich grasslands should be mown once per year in late July or August when the main flowering season is over.

. A footpath 1m wide can be cut through the grassland twice a year (May/June and August/September) if necessary, to provide pedestrian access.

. All hay or other cut vegetation should be removed from the towpath to maintain the low nutrient status of the grassland.

. Plant species colonising bare ground after disturbance of the towpath may need to be controlled by more frequent mowing during the first 2 to 3 years.

Herbicides

. In general, herbicides should not be used as these may damage non-target grassland species. Spot treatment of woody plants may be used as necessary.

2.1.9 Wetlands

. Grazing in such areas should be limited to light stocking to allow full flowering of the wetland species and to avoid poaching.

. Where grazing is not feasible and scrub development is undesirable, these wetland areas will have to be cut once a year

(August), possibly by hand.

2.1.10 Aquatic vegetation

Environmental control

- . Water depth should be managed to limit the growth of aquatic vegetation in the navigation channel.
- . Boat traffic during the summer months can be used to keep the navigation channel clear of plant growth.
- . Reducing to the minimum the input of plant nutrients by controlling all possible sources of pollution will help to control the spread of invasive plant species.

Mechanical cutting

- . Cutting should be carried out twice per year (once in early summer and once in late summer) using a boat-mounted cutter.
- . Cutting should be limited to the central navigation channel leaving marginal vegetation fringes as intact as possible.
- . Cuttings should be disposed of away from the canal or should be composted and used elsewhere.

Herbicides

- . Herbicides should only be used where all other methods of controlling plant growth have been tried and have failed.
- . Herbicides must be used early in the growing season, as the decomposition of a large amount of vegetation in the channel could result in serious deoxygenation of the water.
- . Herbicides must not be used on stretches of the canal that support protected plant or animal species, or in those areas which have been identified as containing a high diversity of aquatic plants.

Biological control

- . The introduction of herbivorous fish such as grass carp (Ctenopharyngodon idella) should not be considered because of potential impacts on aquatic ecosystem.
- . If the barley straw experiment at Abbeyshrule on the Royal Canal proves successful, the same method should be used to control algae at other sites on the canal system.

2.1.11 Masonry

- . The vegetation growing on stone-walls and similar structures adds to the diversity of the system, and should not be removed as a matter of course but only when necessary for maintenance purposes.

. Use only mechanical methods to clean and maintain stonework. Herbicides should not be used as they may enter the water and have damaging effects on aquatic plants.

2.1.12 Water quality

. All direct discharges other than feeder streams should be eliminated and the water quality of the streams themselves should be monitored to ensure early detection of pollution sources.

2.2 RECREATIONAL MANAGEMENT

2.2.1 Boat traffic

. Speed limitations should be strictly enforced for all boat traffic to prevent damage to canal banks from wash.

. Boat design also affects the force of the wash - high-powered boats designed for cruising on rivers and lakes should be discouraged from using still-water canals.

. Regulations regarding permits and mooring must be strictly enforced to prevent ecological damage at sites where large numbers of boats are found in a small area.

. Disposal of effluent from boats into the canal should be prohibited to ensure continued high water quality.

2.2.2 Angling

. Re-stocking should be limited to the species of fish already found in the canal to avoid any imbalance in the predator-prey relationships which might affect invertebrate populations.

. Areas of the canal known to be important for breeding and overwintering wildfowl (especially swans) should not be developed for coarse angling due to the risk of contamination with discarded lead weights. Alternatively the use of lead weights along the canal should be banned.

. Herbicide spraying as a fisheries management method should be discontinued.

. Limits should be placed on the interference with bank vegetation to facilitate anglers.

. Angling may need to be restricted in certain ecologically sensitive areas or at certain times of year to avoid disturbance to birds.

METHODS AND DEFINITIONS

The canal was surveyed in 1 km stretches according to the method devised by the BWB (Tandy, 1989) based on techniques developed by the Nature Conservancy Council (NCC, 1985). 1:2500 base maps were used, and expanded laterally to allow the canal corridor to be mapped in greater detail. The definition and symbols used in the maps are given below.

Canal Corridor	The zones within the boundary structures. i.e. channel verges towpath cuttings embankments boundaries
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(The term 'canal corridor' is used in BWB literature to mean the canal property plus a zone 50 metres wide on either side of it. Although the adjacent land-use was noted it was not possible, given the limitations of the survey, to do a detailed study of the corridor as defined by the BWB and the more restricted definition was used).

Bank verge (bkv)	The strip of land between the tow-path and the channel.
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Boundary verge (bdv)	The strip of land between the tow-path and the boundary.
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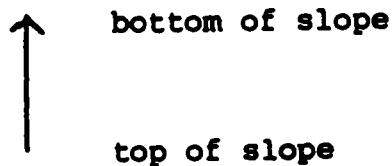
Nearside (ns)	The bank of the canal which carries the tow-path,
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Offside (ofs)	The bank opposite the towpath side.
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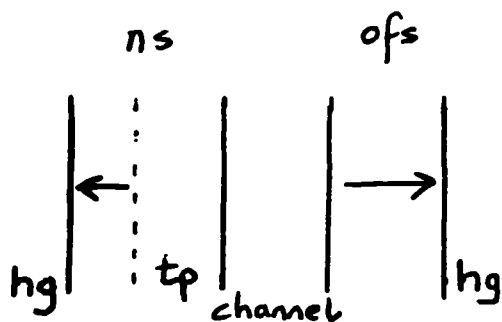
Boundary (bd)	Hedgerow (hg) Fence (fc) Wall Ditch Stream/drain
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SLOPE

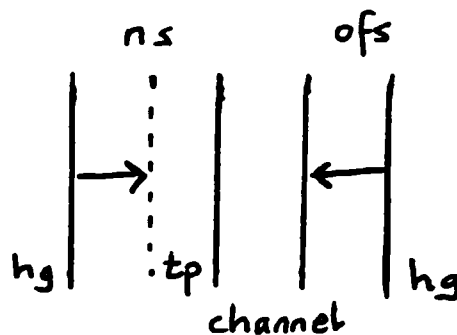
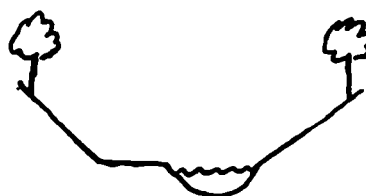
The direction of a slope is indicated by an open-headed arrow



Embankment:



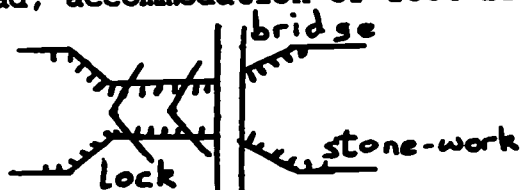
Cutting:



CHANNEL FEATURES

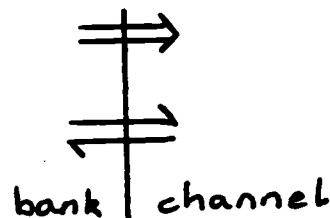
Bridge: Road, accommodation or foot-bridge

Locks:



Inflow:

Poaching/
Trampled margins:



VEGETATION

Channel Vegetation

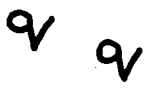
	Emergents in channel
	Floating-leaved vegetation
	Emergent marginal fringe
	Fringe transitional between channel and bank

	<u>Glyceria maxima</u>	Gly
	<u>Phalaris arundinacea</u>	Phal
	<u>Phragmites australis</u>	Phrag
	<u>Carex rostrata</u>	C. ros
	<u>Scirpus lacustris</u>	Sc
	<u>Typha latifolia</u>	Ty
	<u>Spartanium erectum</u>	Sp. er
	<u>Alisma plantago-aquatica</u>	Alisma
	<u>Ranunculus lingua</u>	lingua
	<u>Nasturtium officinale</u>	nast
	<u>Mentha trifoliata</u>	meny

	<u>Nuphar lutea</u>	N
	<u>Potamogeton natans</u>	P. nat
	<u>Polygonum amphibium</u>	Poly
	<u>Spartanium emersum</u>	Sp. em

Submerged:	<u>Myriophyllum spp.</u>	Myr
	<u>Hippuris vulgaris</u>	Hip

Terrestrial Vegetation:

	Dense open cover Flora dominated by herbs and grasses
	Sparse open cover 25% of the area is unvegetated - usually indicates recent levelling or dredging.
	Dense scrub
	Sparse scrub - offers little resistance to penetration, or small patches of dense scrub.
	Reeds, sedges
	Woodland

Trees and Shrubs:

tr	tree	< 5m tall
TR	tree	> 5m tall
(TR)	tree with well-developed canopy	
al/AL	Alder	
as/AS	Ash	
be/BE	Beech	
bi/BI	Birch	
br	Bramble	
el/EL	Elder	
hw/HW	Hawthorn	
hz/HZ	Hazel	
hc/HC	Horse Chestnut	
ok/OK	Oak	
pn/PN	Pine	
po/PO	Poplar	
ro/RO	Rowan	
sy/SY	Sycamore	
wl/WL	Willow	

Shading:



Heavy shade



Light shade

(Length of arrow indicates area influenced by shading)

LIST OF MAPS

	MAP NO.
The Grand Canal: Circular Line	H - 6
The Grand Canal: Mainline	6 - 131
Locks 1 and 2	6
Lock 3	7
Locks 4 and 5	8
New Bridge	8
Locks 6 and 7	9
Ballyfermot Bridge	9
Lock 8	10
New Bridge (M50)	10
Clondalkin Bridge	12
Locks 9 and 10	12
Lock 11	13
Lucan Bridge and Lock 12	16
Gollierstown	17
Hazelhatch	20
Aylmer's Bridge	22
Lock 13	23
Henry Bridge	24
Ponsonby Bridge	27
Devonshire Bridge and Lock 14	29
Lock 15	30
Sallins	33
Leinster Aqueduct	35
Digby Bridge and Lock 16	37
Landestown Bridge and Lock 17	38
Lock 18	39
Cock/Burgh Bridge	41
Bonynghe/Healy Bridge	42
Binn's Bridge (Robertstown)	45
Lock 19 (Lowtown)	46
Bond Bridge	48
Shree/Scow Bridge	49
Hamilton Bridge	53
Hartley Bridge (Ticknevin)	56
Lock 20	57
Blundell Aqueduct	62
Colgan and George's Bridges	64
Rathmore Bridge	65
Cartland Bridge	67
Trimblestown Bridge	69
Rhode Bridge	73
Toberdaly Bridge	74
Killeen Bridge	79
Molesworth Bridge (Daingean)	81
Chevenix Bridge (Ballycommon)	87
Lock 21	87
Locks 22 and 23	89
Lock 24	92
Cappincur/Digby Bridge and Lock 25	93
Lock 26	94
Tullamore Harbour	95

MAP NO.

Kilbeggan Bridge	95
Cox's Bridge and Locks 27 and 28	96
Shra Bridge	98
Lock 29 and Ballycowan Bridge	100
Corcoran's Bridge	104
Becan's Bridge	105
Henesy's Bridge	106
Lock 30	107
Lock 31	108
Plunkett Bridge	111
Derry Bridge	116
Macartney Aqueduct	118
Gallen/Armstrong Bridge	121
Noggus Bridge	122
Lock 32 and Glyn Bridge	123
Lock 33 and Belmont Bridge	125
L'Estrange Bridge	128
Lock 34 and Clononey Bridge	129
Griffith Bridge	130
Locks 35 and 36 and Shannon Harbour	131

Barrow Line:

Locks 20 and 21	B4
Lock 22 and Glenaree Bridge	B9
Rathangan Bridge	B13
Lock 23 and Spencer Bridge	B14
Wilson Bridge	B16
Umeras Bridge	B18
Lock 24 and Macartney Bridge	B21
Monasterevan and Lock 25	B24/25
Clogheen Bridge	B25
Fisherstown Bridge	B30
Courtwood Bridge	B31
Vicarstown	B35
Camac Aqueduct and Ballymanus Bridge	B37
Milltown Bridge	B41
Lock 26, Cardington and Lennon's Bridges	B45
Locks 27 and 28 and Augustus Bridge	B46

Naas Branch:

Locks 1 and 2	N1
Lock 3	N2
Tandy's Bridge and locks 4 and 5	N3
Naas Harbour and Ploopluck Bridge	N4
Jigginstown Bridge	N5
Limerick Bridge	N6
Connaught Bridge	N7
Hoare's Bridge	N10
Mooney's Bridge	N11
Corbally Harbour	N12

Milltown Feeder:

Littleton Bridge
Huband Bridge
Pim Bridge
Pluckerstown Bridge
Milltown Bridge
Fen

MAP NO.

M2
M3
M5
M7
M11
M13

Edenderry Branch:

Downshire Bridge
Edenderry Harbour

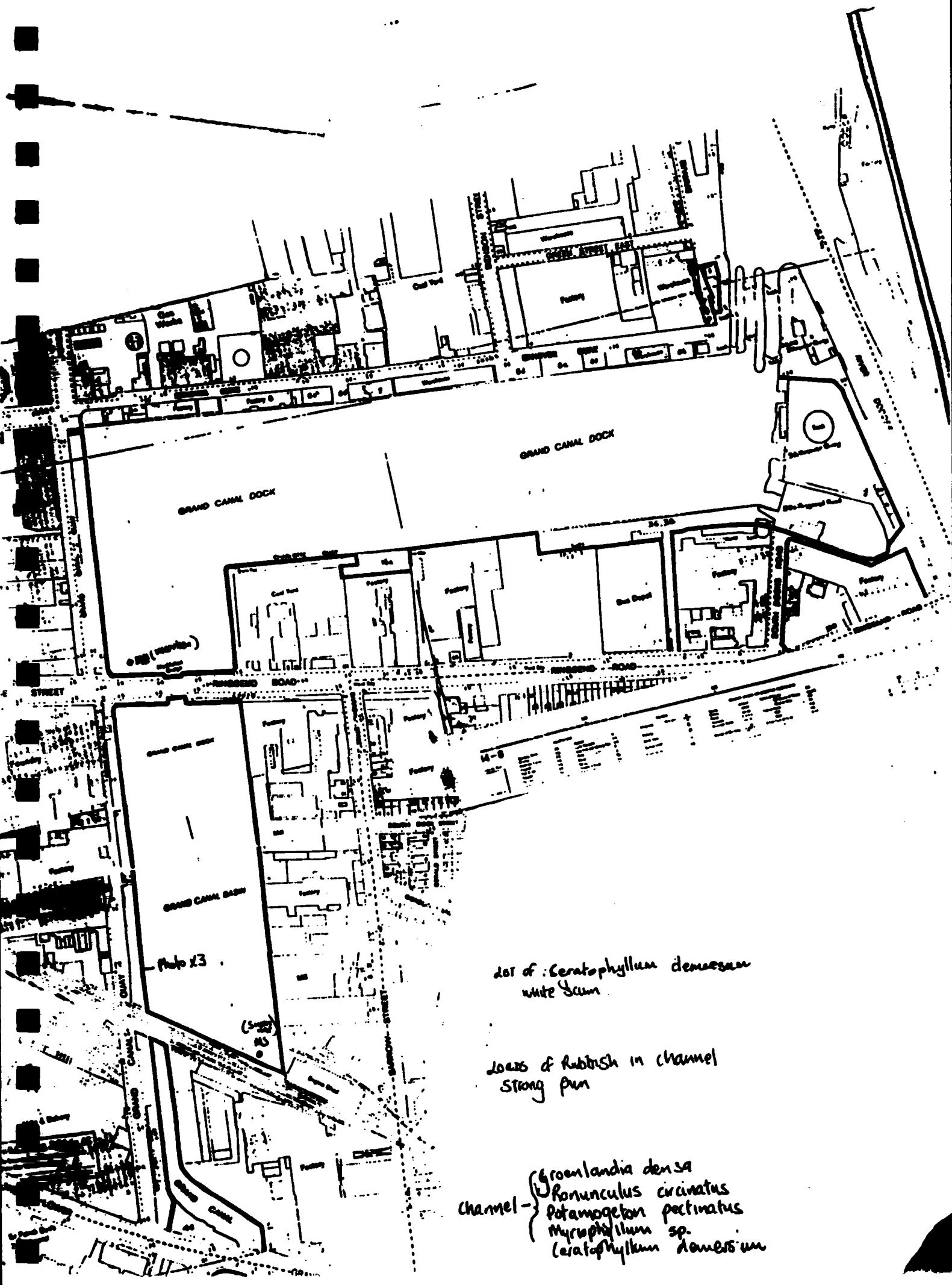
E1
E2

Kilbeggan Branch:

Campbell and Brook's Bridges
Odlum's Bridge
Tong's and Wood of O Bridges
Whelan's and Murphy's Bridges
Lowertown Bridge
Grange Bridge
Skeahanagh Bridge
Kilbeggan Harbour

K1
K3
K4
K7
K9
K11
K13
K14

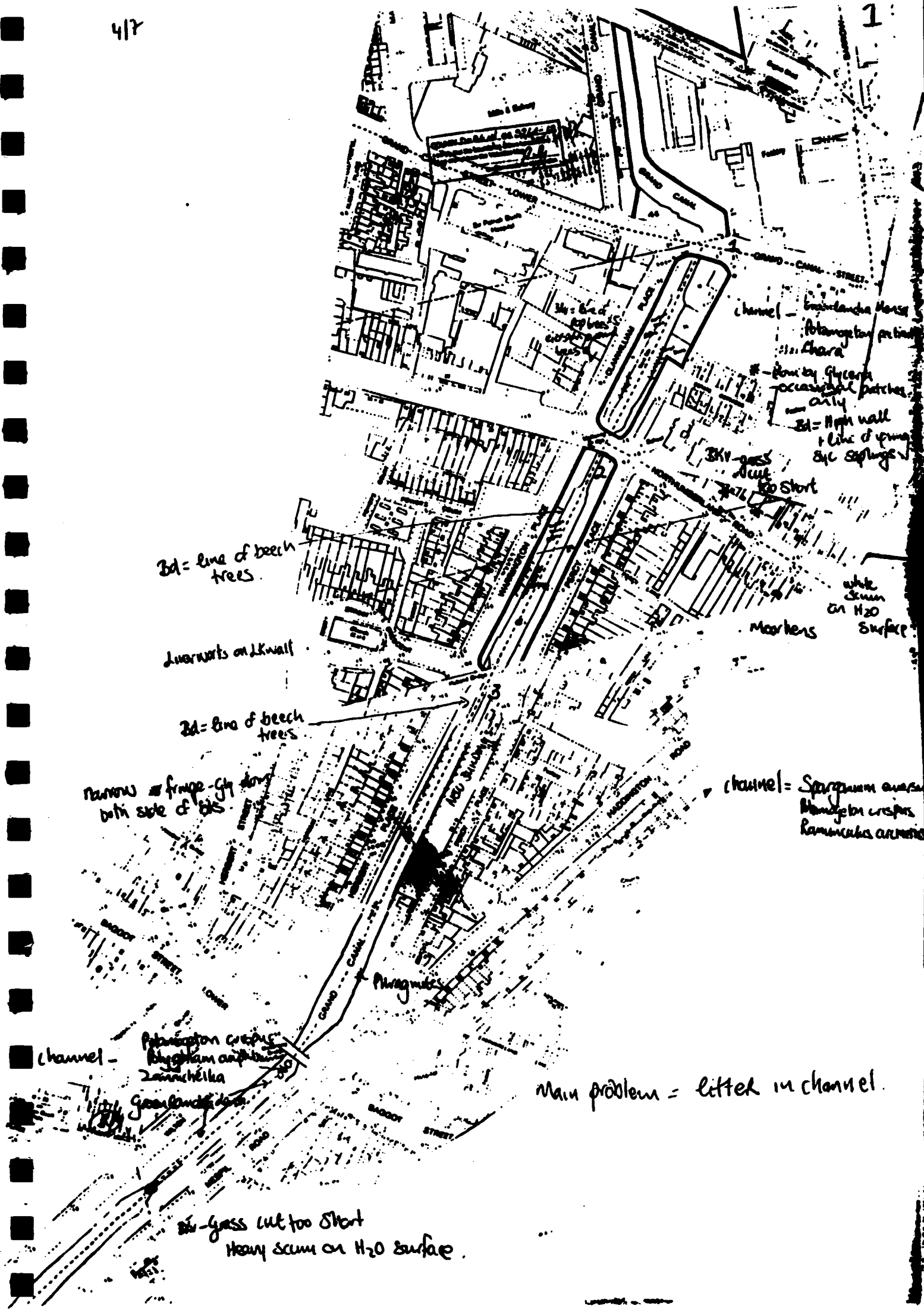
**km SECTIONS OF THE GRAND CANAL;
MAINLINE AND CIRCULAR LINE, kms 1-131.**

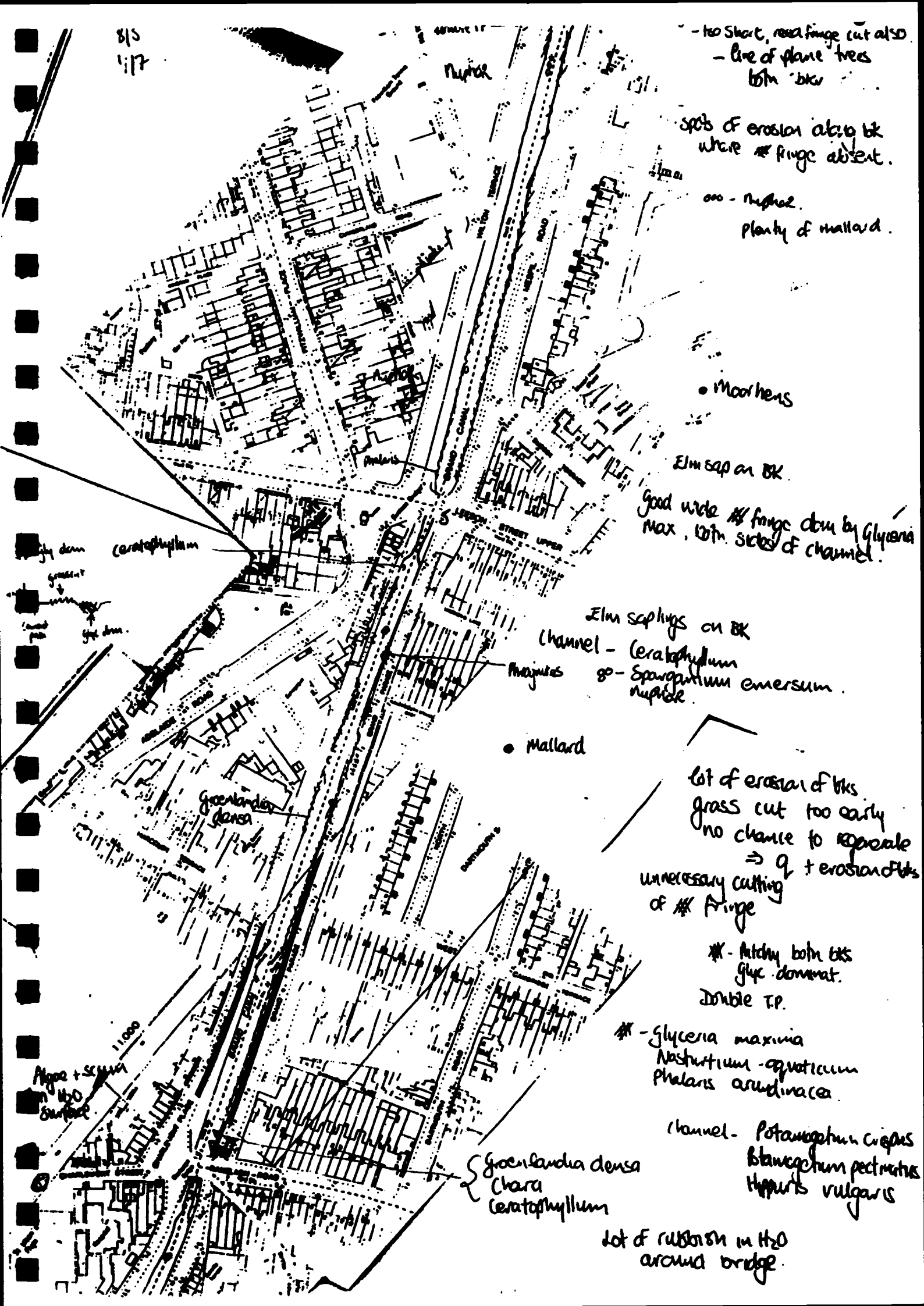


dot of *Ceratophyllum demersum*
white Scum

Loose of Rubbish in channel
Strong Fern

channel - { *Groenlandia densa*
Potamogeton pectinatus
Myriophyllum sp.
Ceratophyllum demersum





Bd = low retaining wall no
- Chara all along by wall

grass cut on BKV

* - *Phalaris
glycena maxima*

Row of very nice sals
along BK

Eupatorium perfoliatum
(Pewee)
on bridge

OVER cutting of grass
on BKV - g in patches
no chance for regeneration

fence removed.

* narrow glyc fringe

H₂O murky

* - *Phragmites*
Glyceria maxima
Sparganium emersum
Erosion of opposite BK verge

Channel -
Ranunculus circinatus
Sparganium emersum
Myriophyllum
Ceratophyllum

* - narrow fringe down by glyceria
Phragmites

Grass cut along BKV

H₂O shallow, lot of rubbish + algae
along pigsty odour
H₂O level over TP under bridge.

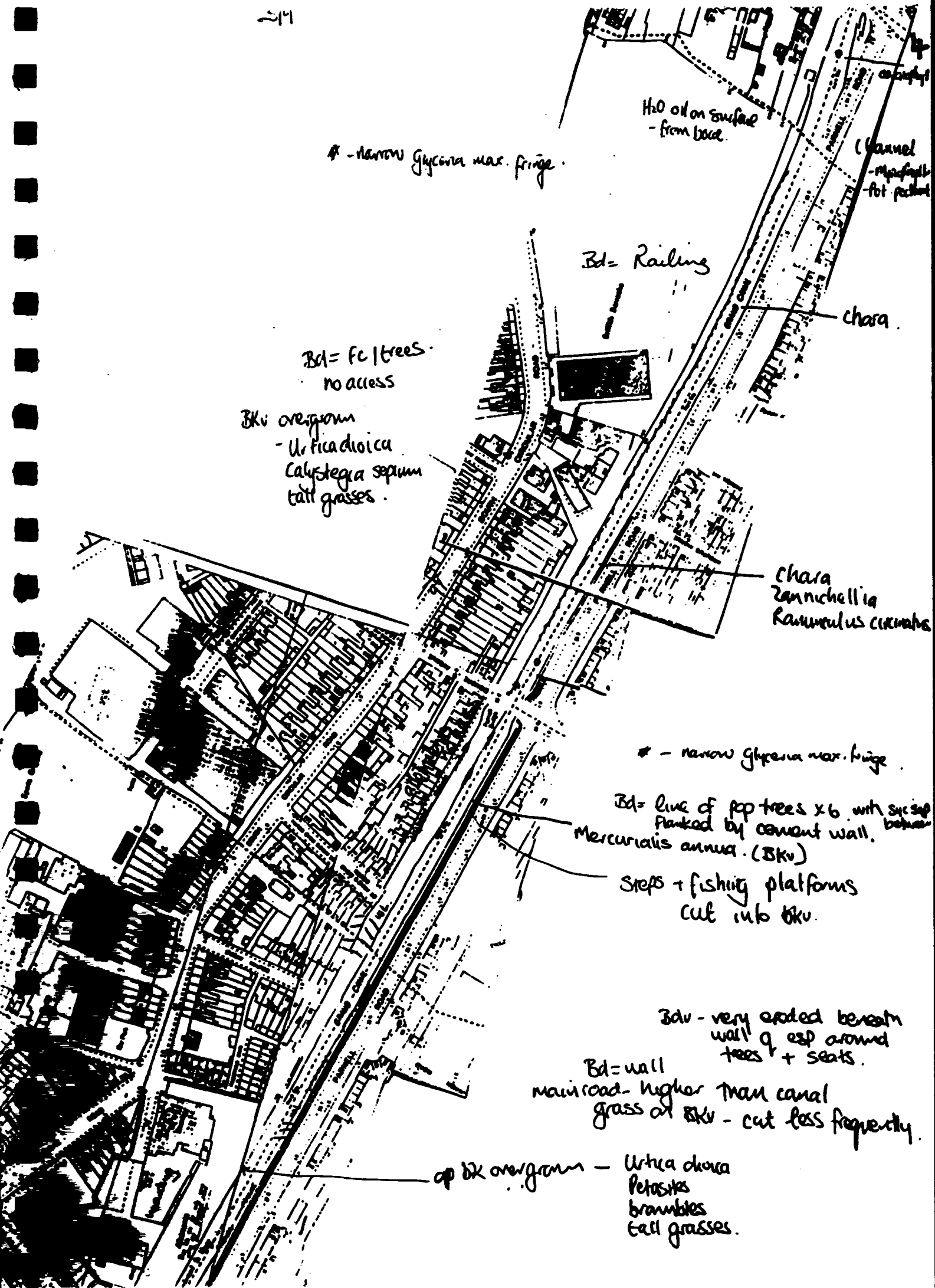
Algae in
channel

Abundant rubbish
in channel by BK

Photo from bridge
due ↑

Ceratophyllum
no fringe here

channel:
- *Ceratophyllum*
Myriophyllum



* - narrow Glycyrrhiza max. fringe.

H₂O oil on surface
- from boat.

(Channel
- map of
- for pocket

Bd = Railing

chara.

Bd = fc / trees
no access

Bkv overgrown
- Urtica dioica
Calystegia sepium
tall grasses.

chara
Zannichellia
Ranunculus circinatus

* - narrow Glycyrrhiza max. fringe.

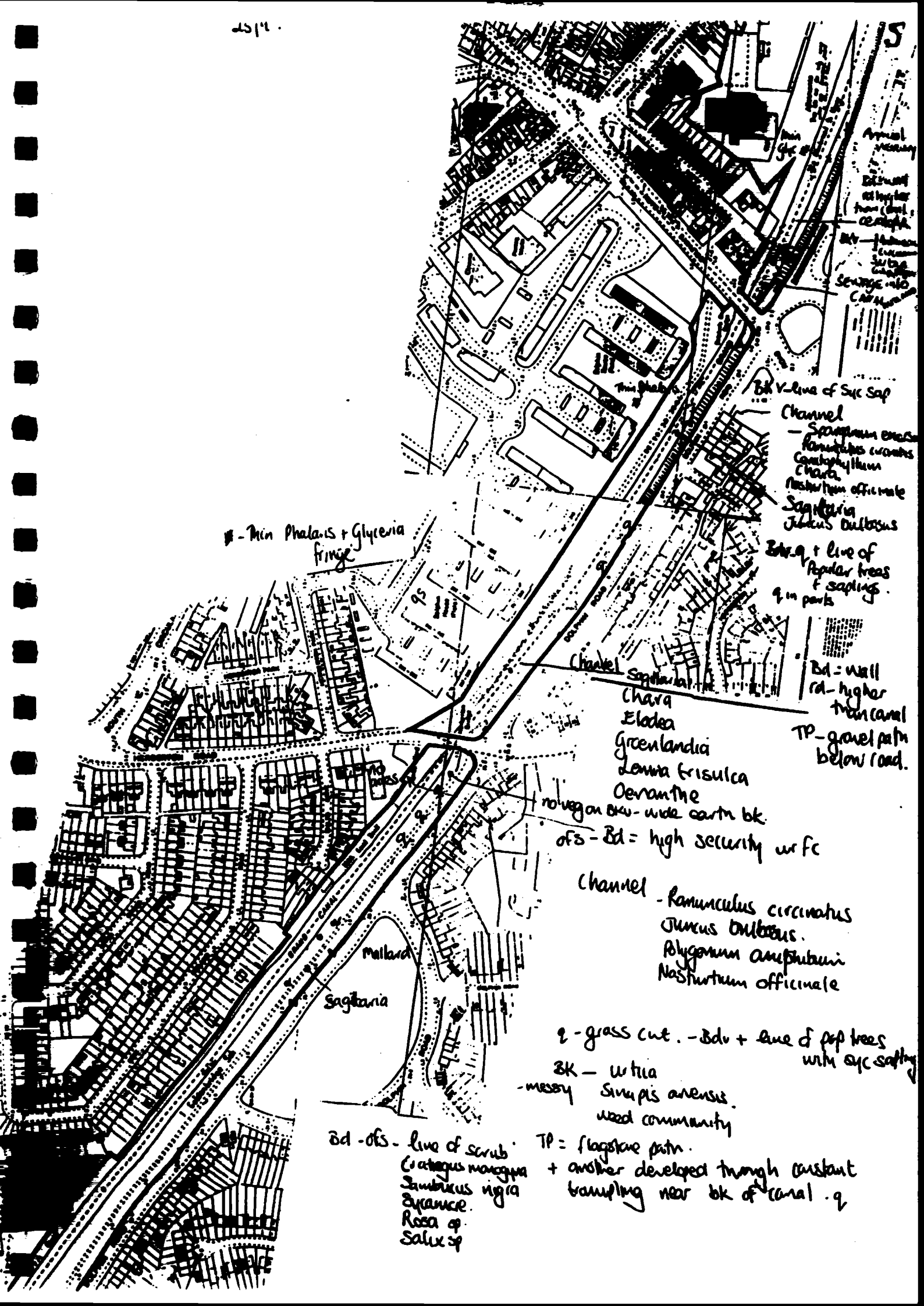
Bd = line of pop trees x 6 with sycamore
flanked by cement wall.
Mercurialis annua. (Bkv)

Steps + fishing platforms
cut into Bkv.

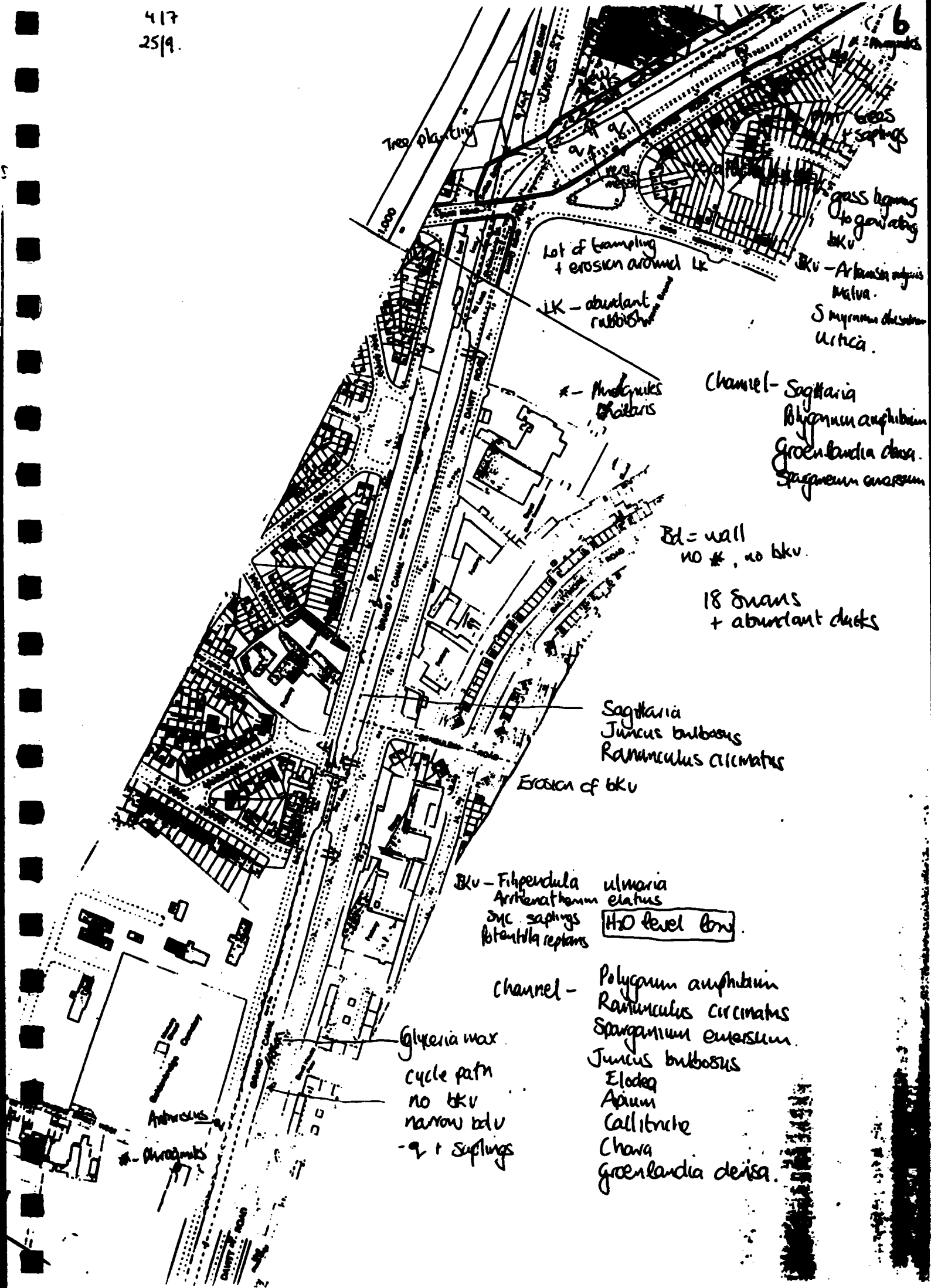
Bdv - very eroded beneath
wall q esp around
trees + seats.

Bd = wall
main road - higher than canal
grass on Bkv - cut less frequently.

op Bkv overgrown - Urtica dioica
Petasites
brambles
tall grasses.



6



411
25/9.

bkv - 9 cut

channel
- Elodea
- Gracilaria
TP = tamar p/p
Btk = 9 1 sprigs
no bkv.

H2O very clear.

on Nuphar.

* - down by Glyceria some Nuphar
- not continuous
broken in parts
=> eroded along bkv

Zannichellia
Ranunculus ciceratus
Elodea
Hippuris vulgaris (small clumps
- very shrunk)

Chara growing
all along by wall.

very noisy

Callitriche

Channel -
Hippuris vulgaris
Myricophyllum
Apium
Oenanthe crocata
Alisma
vegetation yellow-dying? why?

* - Phalaris arundinacea
Glyceria maxima.

• Mallard

Erosion of bkv
+ rubbish dumping
white gunge on H2O surface

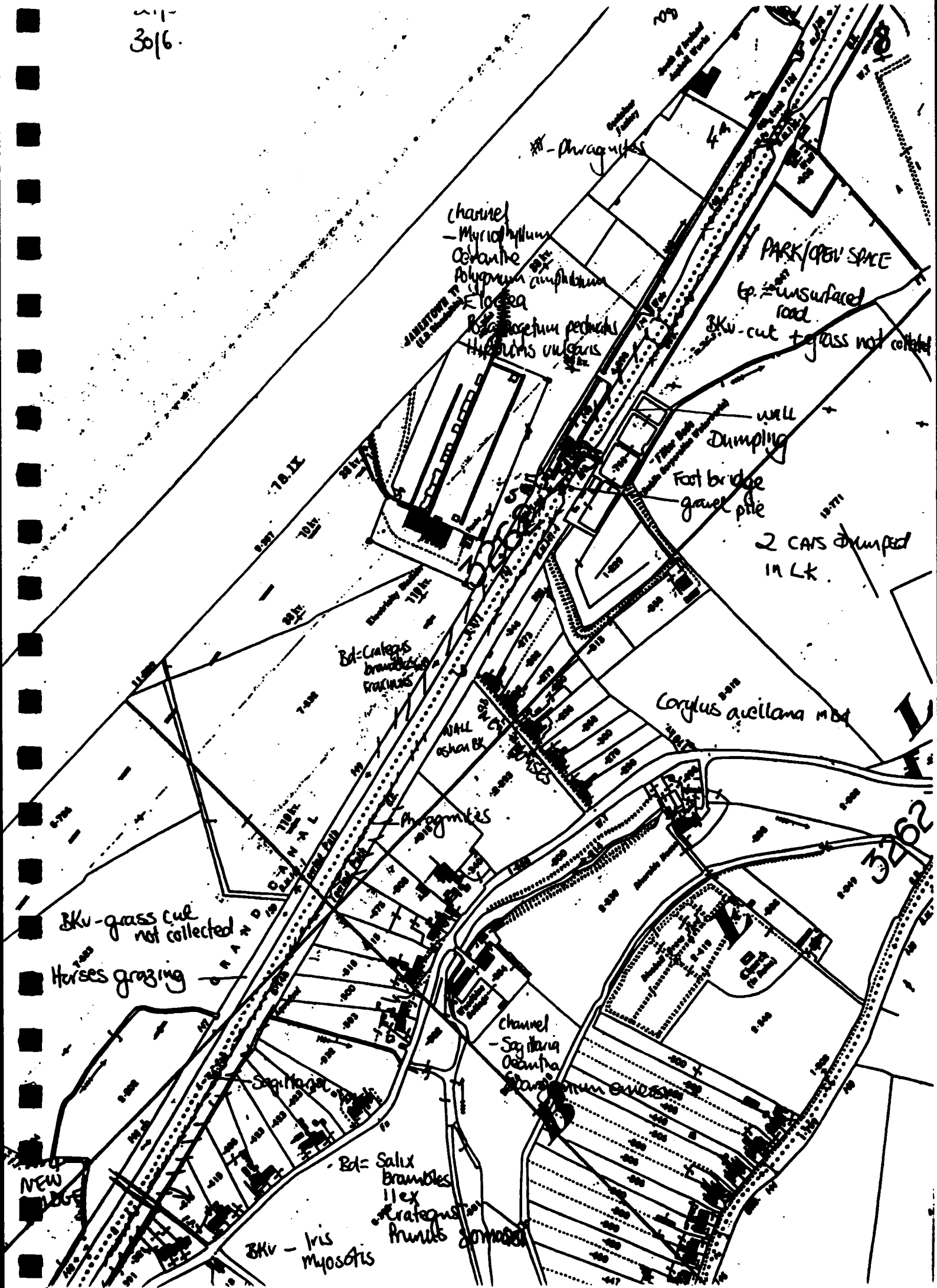
9 cut.

Phragm. both sides
gaps in Phragm bed at 10km intervals
fishing?

Bkv - cut.

Sagittaria

30/6.



3016

3262-18

INDUSTRY

NEW BUILDING

THE BOUNDARIES ON THIS PLAN REFERRED TO 1942

ABUTTING ADJACENT

Najas
Sagittaria

channel - narrow
Sagittaria
Glyceria maximiliana
Phalaris arundinacea

sparse
catagras
Society

Cardamine
Alisma

Aster
Myosotis

Phragmites
both sides
- good fringe

Myosotis
Iris

3262

TP - unsurfaced track

piles of cuttings left on bk

Phragmites

TP - wide drivable

Bd - *Urtica dioica* - messy

Bd = wall

Urtica
Phragmites

Burnt out car

cut + collected

Hope deceased

Willow

Urtica

Phragmites australis
Salix sp
Phalaris arundinacea

pile of
grass cuttings

from BK
metaph brym sides

Phragmites

Willow

Urtica
Adiantum
Lamium
Urtica

10/10/10

3/6

Ep = foot path
through grass

bkr =
r. bkr
channel

Phragmites

bkr Fldg
vis
ghar
Malars

Elodea
Sagittaria
Myrica

Equisetum fl.
Menyanthes

Housing 5

Phragmites
den

Scirpus

3261-25

Sparganium
erectum

Tridax

Phragmites
along bkr bks

rice
Jaceq

Phalaris

Bt = scrub

Sambucus

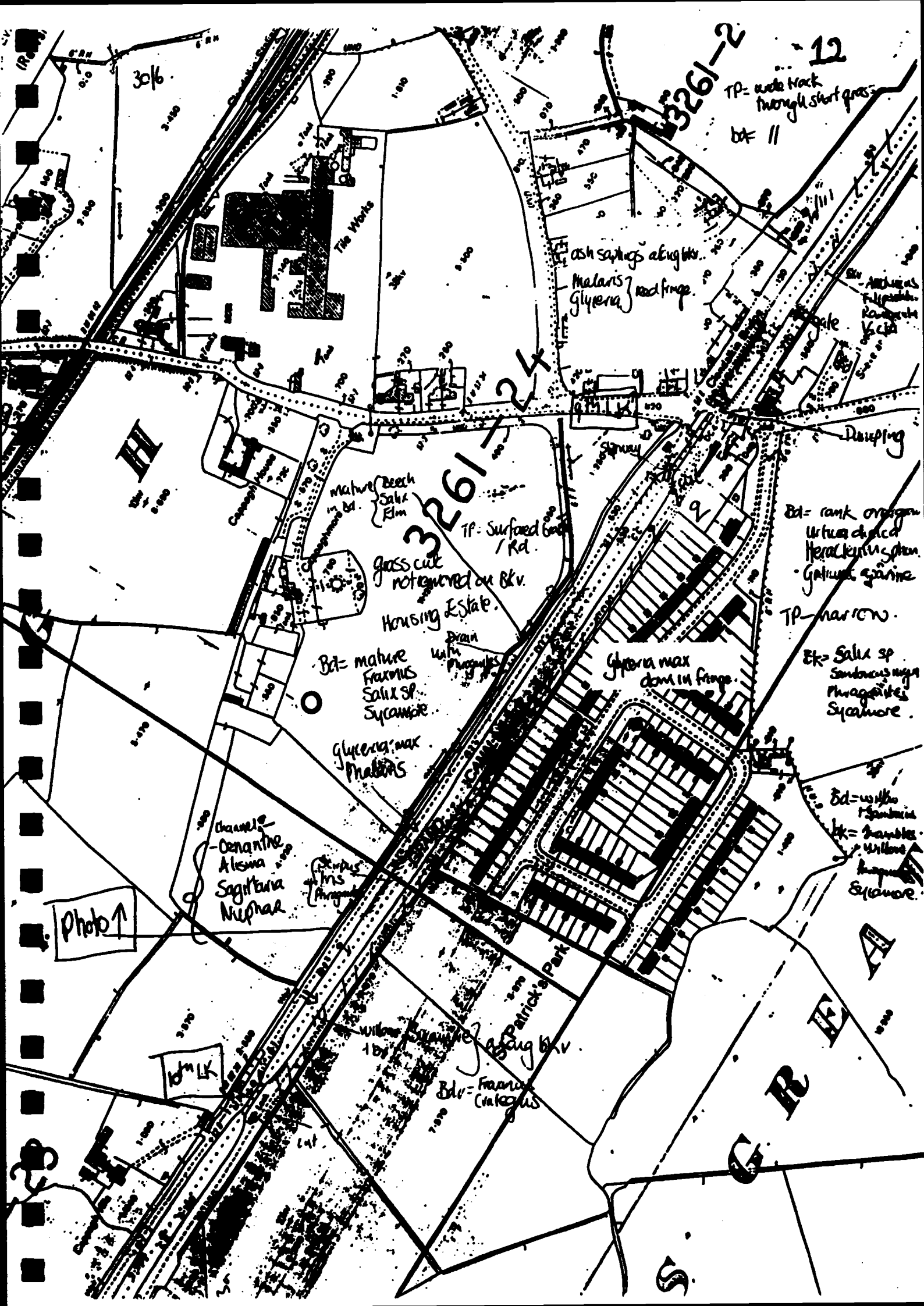
Fragaria

nyta
excelsior

Acer pseudoplatanus.

Bt = Fraxinus
Acer pseudoplatanus
Crataegus
Sambucus

Phar
abundant



306

3261-2
12
TP= wide track through short grass
Bk II

ash savings at night
Malaris glypera red fringe

3261-24
TP= Surfaced road / Rd.

grass cut not removed on Bk.
Housing Estate

Bd= mature Fraxinus Salix sp. Sycamore

glycera max Malaris

channel - Ononis Alnus Sagittaria Nuphar

Photo 1

10m LK

Bd= Fraxinus Crataegus

Bd= rank origin Urtica dioica Heracleum sp. Galium sp.

TP= narrow

Ek= Salix sp. Sambucus nigra Phragmites Sycamore

Bd= willow Fraxinus Ek= Fraxinus Willow Phragmites Sycamore

G R E

261/23
Phala
Phrag
BKV-enc

Photo
from LK11 ↑
in dir. of LK10

Photo due!

Genante
Akshita
Nupur
Saptharshi

Thalassidroma

BKv-endlich

Reisen in LK

გაგაჩაიძე

~~Phalans
Whica dioica
Phragmites~~

phagnites

Photo 1

Durand

$\gamma_P = \gamma_{\text{old}}$

PHOTO ↑

Leach
TV
Right

photo

ash. { yonk
brambles
catalans
fruits spin.

ok impress

TP - very narrow

Phalaris Phragmites } on the

Solix 20 2600

Supas. 2
Malans. 1

Large
Park
Area

24/7

A



BUTLER

and read
U Finger
-Scribbles.

large areas
of poaching
by cattle.

30/6
26/9

COLL 14
Bk = boulders
Phosites

Scopus
Glyceria

Good road fringe
both banks.

no bees
Glyceria

Wet fen
area

Urtica dioica
Alnus opaca

Phragmites

Phragmites
Bk

Phragmites
Scopus

hy - br overhanging
canal

NEXT ESTATE
ROUGH FIELD.

Phragmites

Spartanum
Iris
Glyceria

Alisma
Oenanthe
Sagittaria
Nuphar

Phragmites
along Bk

more
possible
here

bd = wt. fc

Wet area

Phalaris
Valerian
Epilobium hirs.
Filipendula
Iris
Glyceria
dense

ulmaria

Bd v =
Sambucus nigra
Fraxinus
Crataegus
Prunus
Rosa canina

Alisma
Phalaris

Oregon
Fen area

Nuphar
Sagittaria
Oenanthe
Alisma
+ algae along
edge

26/1

TP v narrow
encroaching margins

15

Bd = trees
Fraxinus
Salix
Crataegus

Bd = trees
not cut
Fraxinus
Salix
Crataegus
ash

Urtica dioica down bd
Potatis
Soil bank + rubbish
messy area
dumping

Glyceria max
down

Bd = Crataegus
Sambucus
Fraxinus
Hedera

Post steel
fence
TP = Road

recent gowelling on Bkv
q + loads of rubbish
gowel dumping
+ eroding

Scirpus

Bd = machine cut
ng Scirpus

dumping of
grass cuttings
in sp. rich
meadow

Bd = Hedera helix
Lonicera
Rosa sp.
Rumex sp.
Ligustrum

Phalaris
+ Iris

H2O very clear

Typha

large refuge dumping site
Ceratophyllum
Nuphar

TP turnac Rd
grass on Bkv cut
- not collected

good road fringe
Phalaris
Phragmites
both sides
of Rd

Bd = small clusters
of dense scrub
Glyceria max

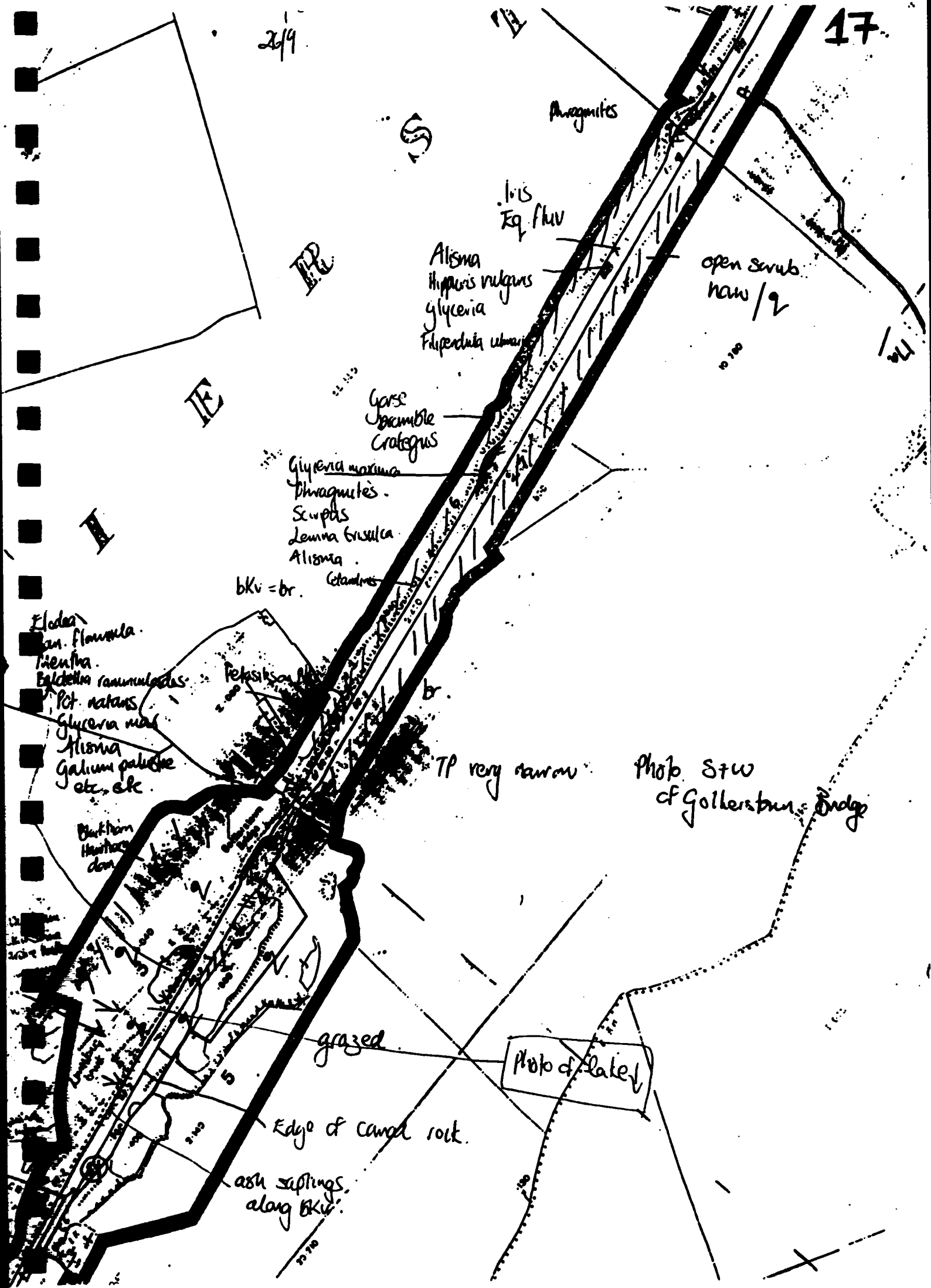
Photo X2
link direction
2m off drain

TP-drivable Rd
grass cut q + not
collected on Bkv side
perhaps some spang
Glyceria max
Sparganium angustifolium
Abundant algae in
canal

canal:-
Ceratophyllum
Najas
Elodea
Glyceria max
Sagittaria
Alisma
Phalaris
river in front
drain of
Phalaris
Phragmites
Iris
foetida on Bkv

2/9

17



18

Sagittaria
Pinguicula
Caulophila
Iris
Glyceria max
Juncus fluv
Filip ulm

Super
Glyceria
Depress

ash scyphs
along Rkv.

High embankment above TP
straight sided steep banks
- both sides no Rkv

Alisma
Depress
Scirpus

no reed fringe

no
trees
here.

narrow tp
overhanging
scrub/hg

Spindle

Arundo
pyramidalis

Scirpus
glyceria

Najas
Alisma
Depress

Herb
die Ets

gorse

gorse

She
Ligustrum
Scirpus
fragilis
brunneus
backland
gorse

TP narrow
gorse

change
Arundo
pyramidalis
on Rkv

mile
stone

Flower
cabin

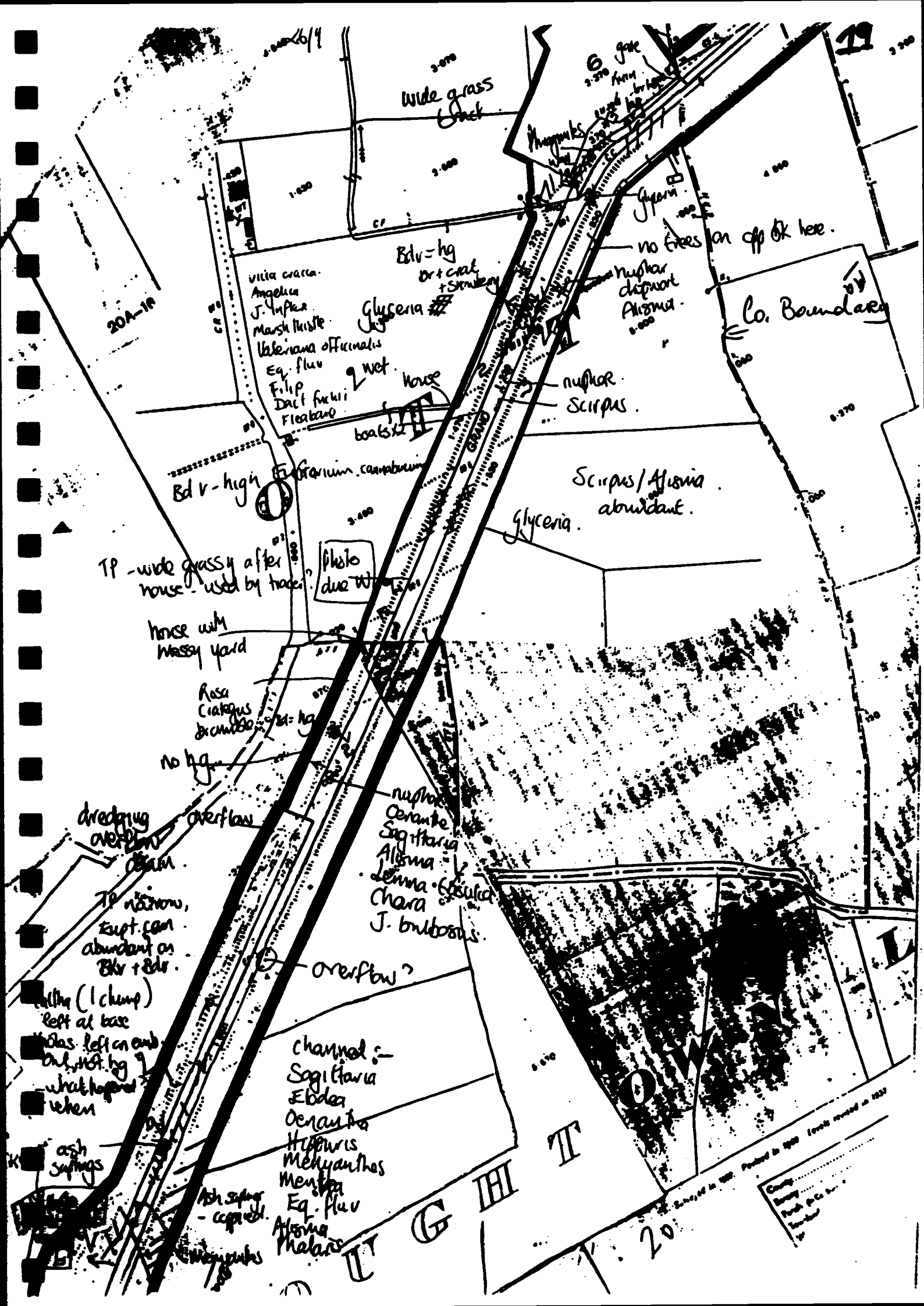
Glyceria
Scirpus

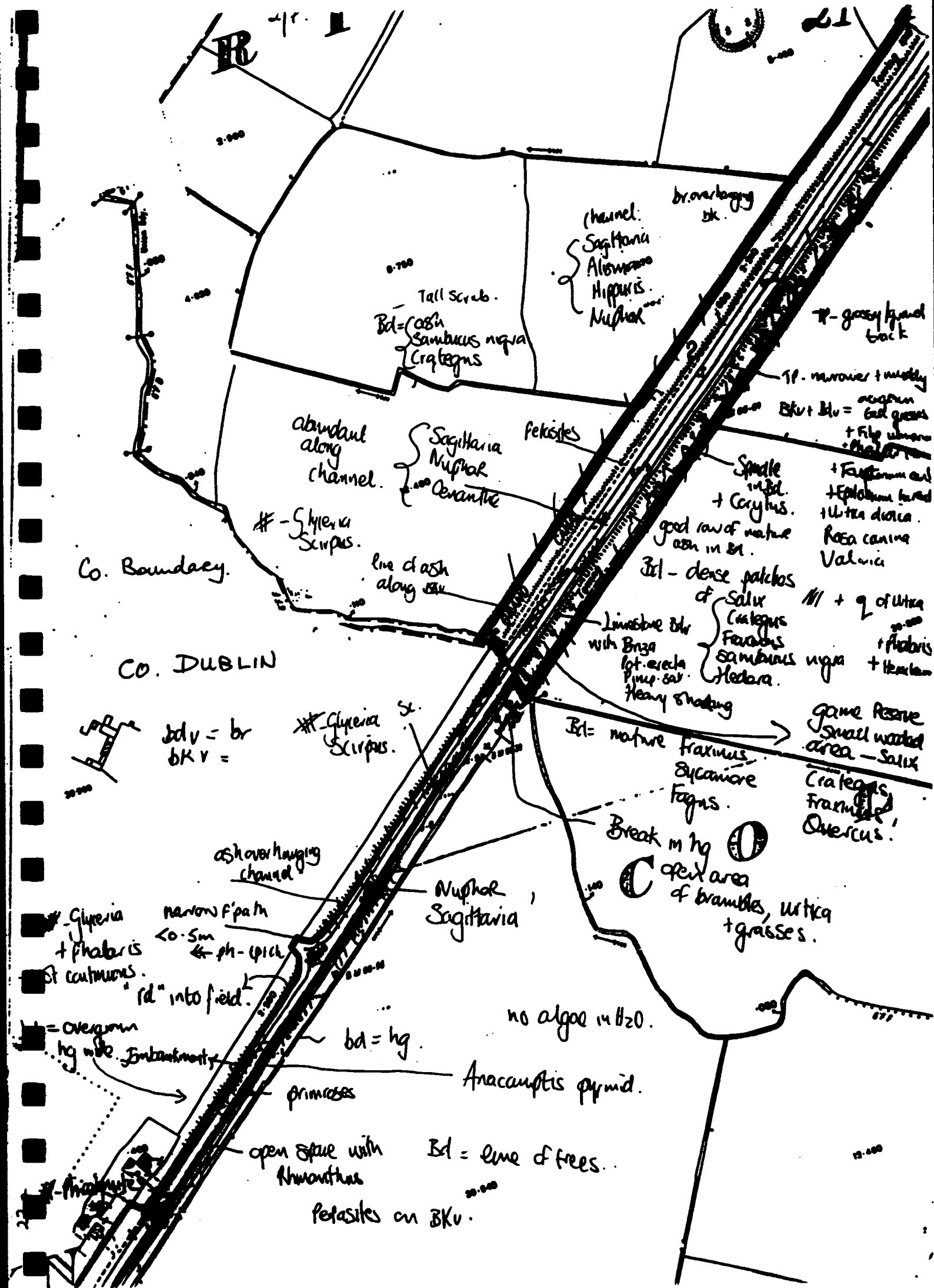
Glyceria
Depress
Najas
Sagittaria
Scirpus

veg cut
along Rkv
in places
+ remaining
on Rkv

Co. Boundary

FLANN ST





KEARNEYSTOWN LOWER

Ulmus
rash saplings
along BkV
overhanging channel

* - Phragmites

young
tree
m.Bd

thump of
orchids
{ Dec. fish
Ancient fr.

ash saplings
along BkV

Bd = row of trees.
- Trainers
Crabapples
Spartan
Gorse
Fraxinosa
bramble

BkV - brambles
HC - coppice
on BkV

Elm saplings
- BkV

haw
holly
Syc

Glyceria dom
bd = hg.

low slips - BkV

embanked
old road to farm.
UCD Road.

* - Glyceria dom.

COUNTY KILDARE
I certify that the above
has been plotted from the

channel { Callitriche
Hippuris
Najas
Ceratophyllum

2x photo in direction of Hazelhatch

Phall
from Br.

brambles
overhanging
channel.

Phallus
Dumped car.
or 2 cars dumped.

BkV - small elm
Sagittaria

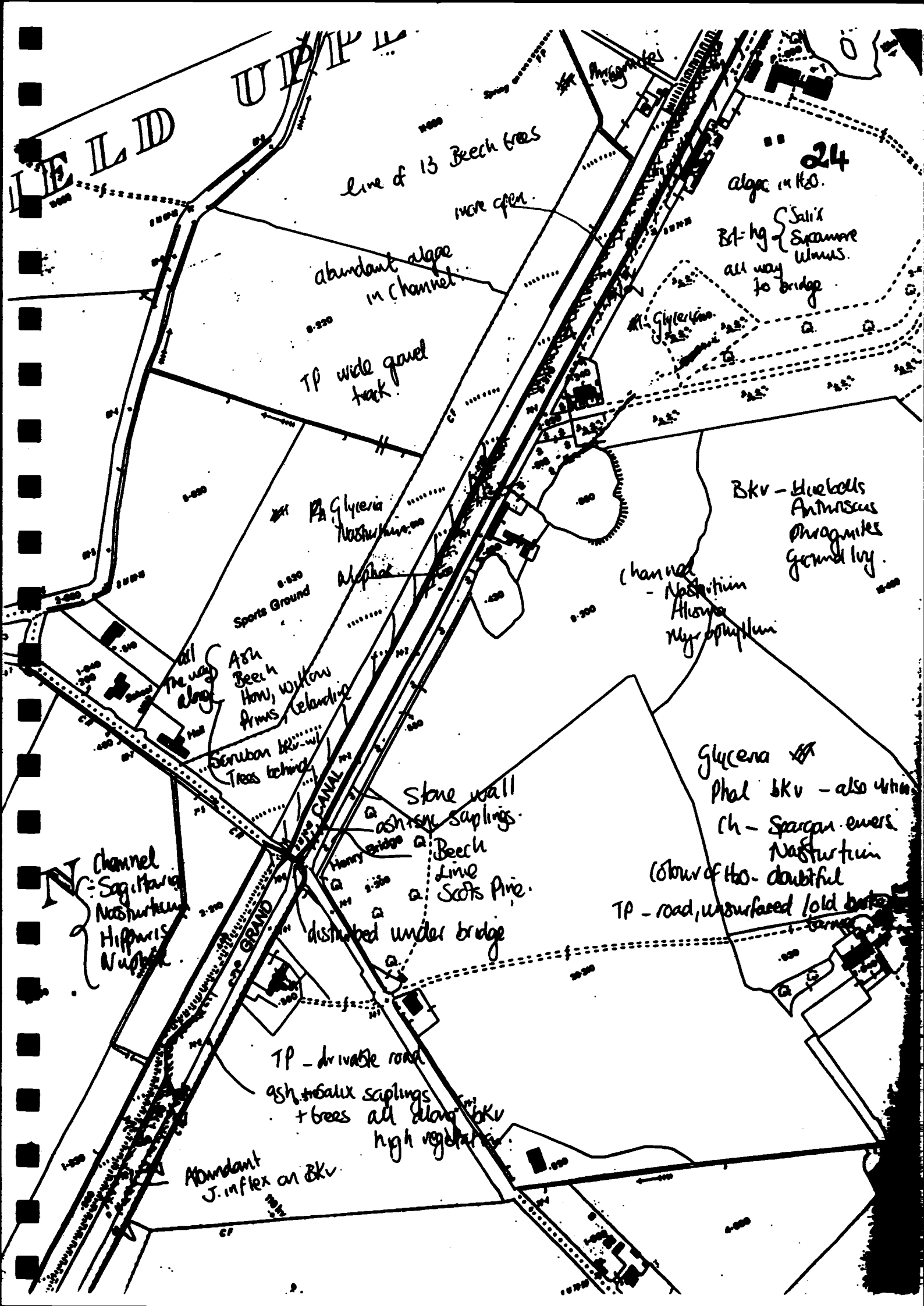
Oak mtd
some elm
in BkV
abundance
of Medusa.

Bd both BkV
- line of (BkV)
ash + oyc

TP - gravel Rd
BkV - Tall veg
- Kerackum.
Urtica dioica
Rupt. can
+ ash + oyc saplings.

ash saplings
along BkV.

44-38861-1000



2/2

25



Turbulence - 2 boats
nothing in water
13070
* - Glycera - dom, some Phragmites.

channel
Auphar.

ash saplings
+ brambles overhanging
off bkv.

occasional
Fraxinus on bkv

wall
brambles
+ Urtica

Phalaris
Glyceria
Spart. canb.

Crataegus on bkv

bkv - calc
Galium verum

IR

Trees cut
+ dumped
in channel.

Nughat
Auphar
Phalaris
Iris
Mushroom

Trees along
bkv.

Saxifrage
Ulmus
Prunus spinosa
Salix sp

Nue east bk.

Bk erosion.

Phragmites.

bk erosion.

wide bkv
q cut

wide reed fringe.

Phalaris
Glyceria
Phragmites
Iris

Sagittaria
Hippuris

12



2/7.

26

TP = Road

Algae in H₂O.
water murky.

Sagittaria still
present but
in small amounts.

white scum
on H₂O surface.

Phalaris. no trees
bki
wide bdy.

not good Glycine near fringe

BK₂ - Tall grasses
Epilob. hirs
Filipendulum
Vicia cracca
dact. glom
Urtica dioica
J. infer
Phalaris

Dump

disused
Glycine

Nuphar.

Erosion of bki.

Phragmites

Dump

Glycine

Iris on Bk.

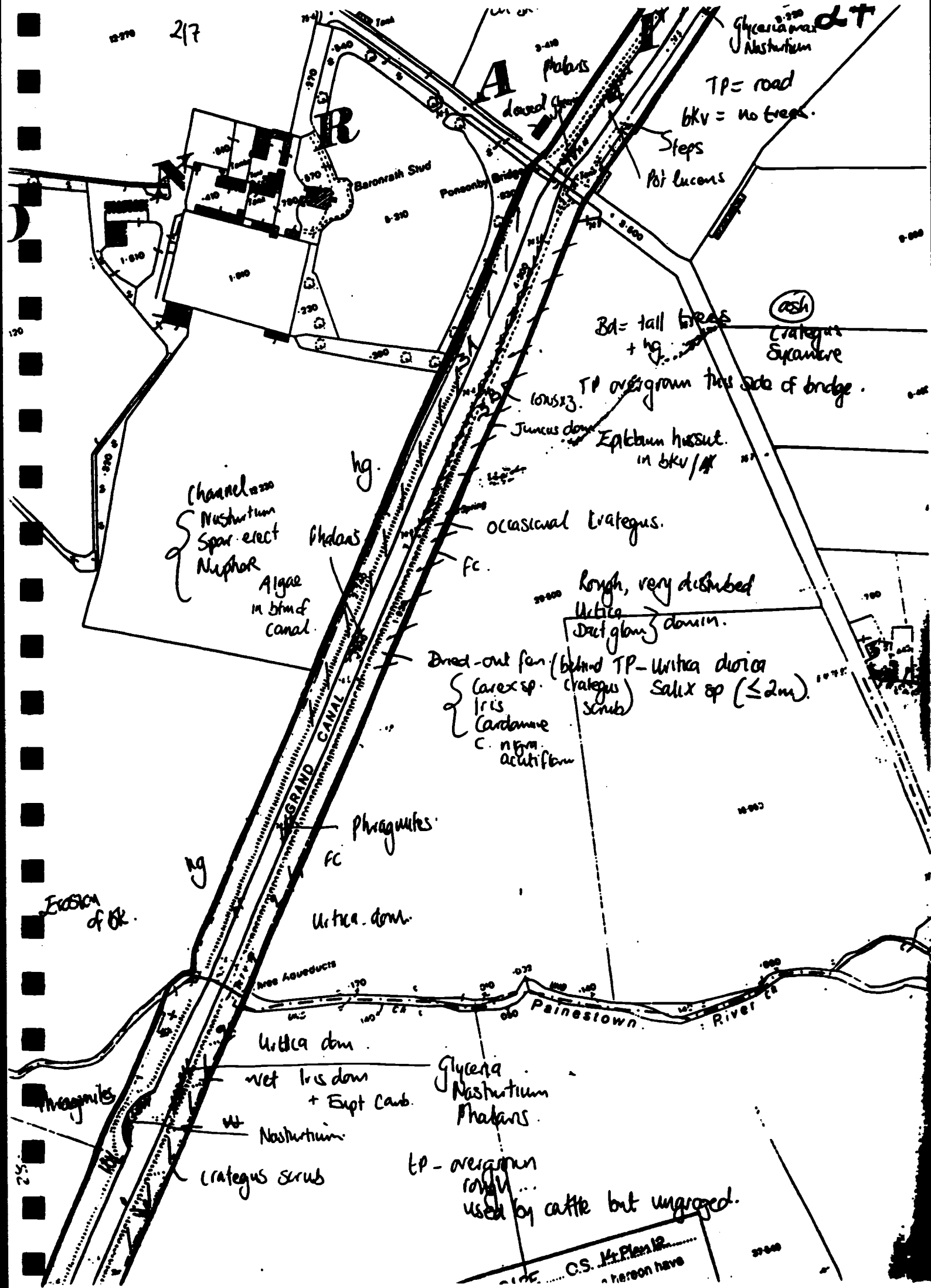
Sparganium angustifolium

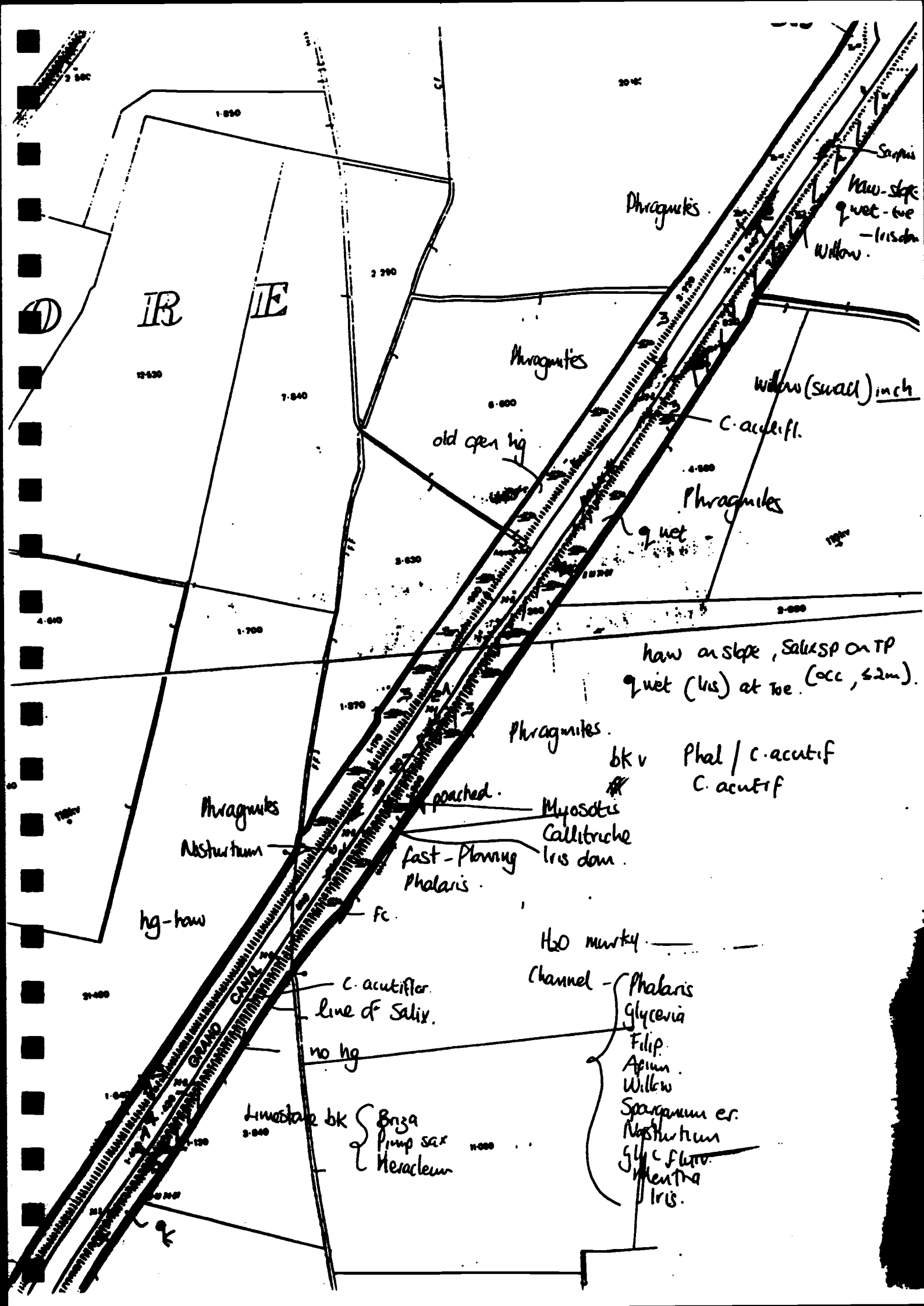
Phalaris

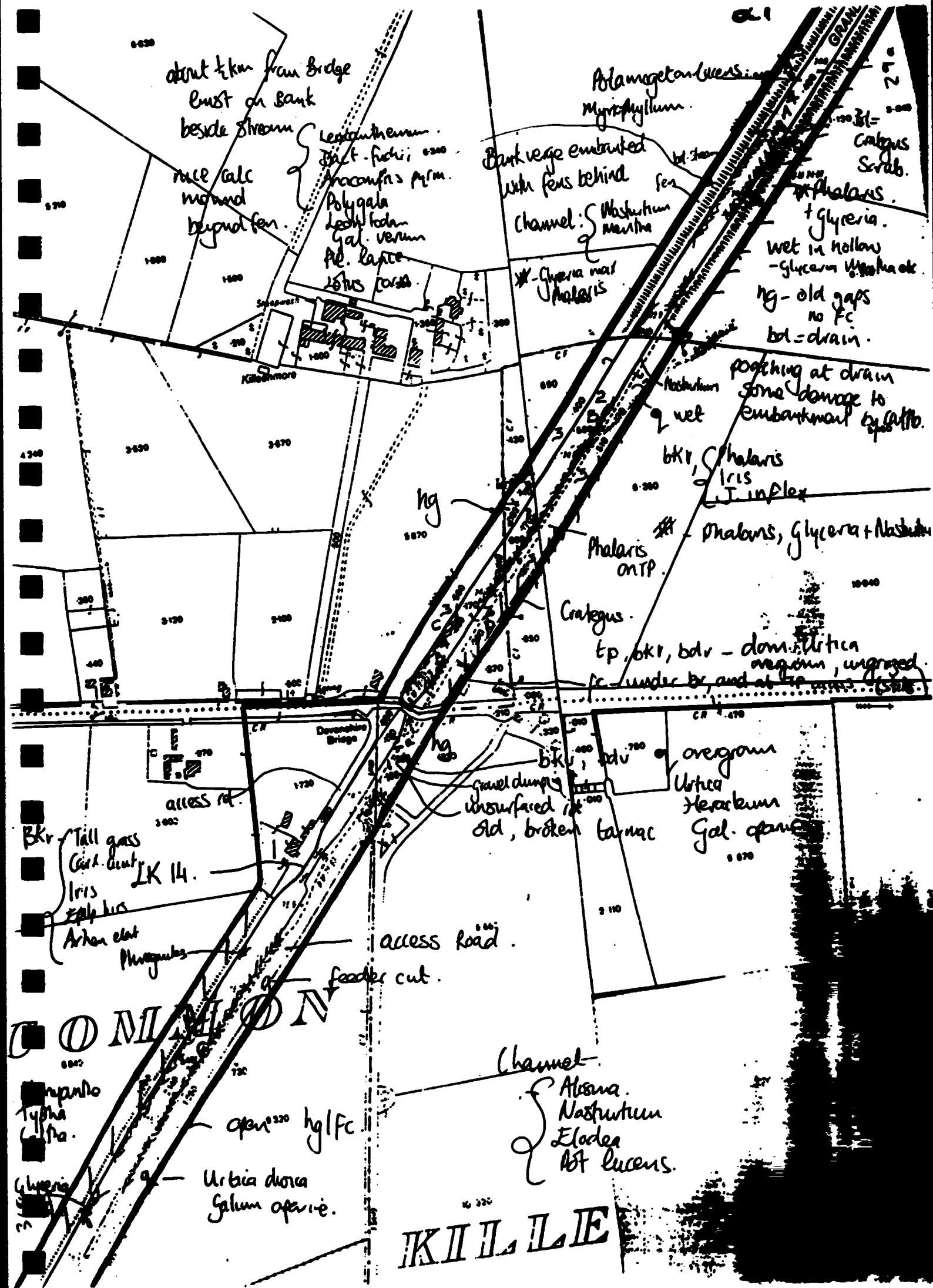
R. Glycine
abundant Nuphar.

H

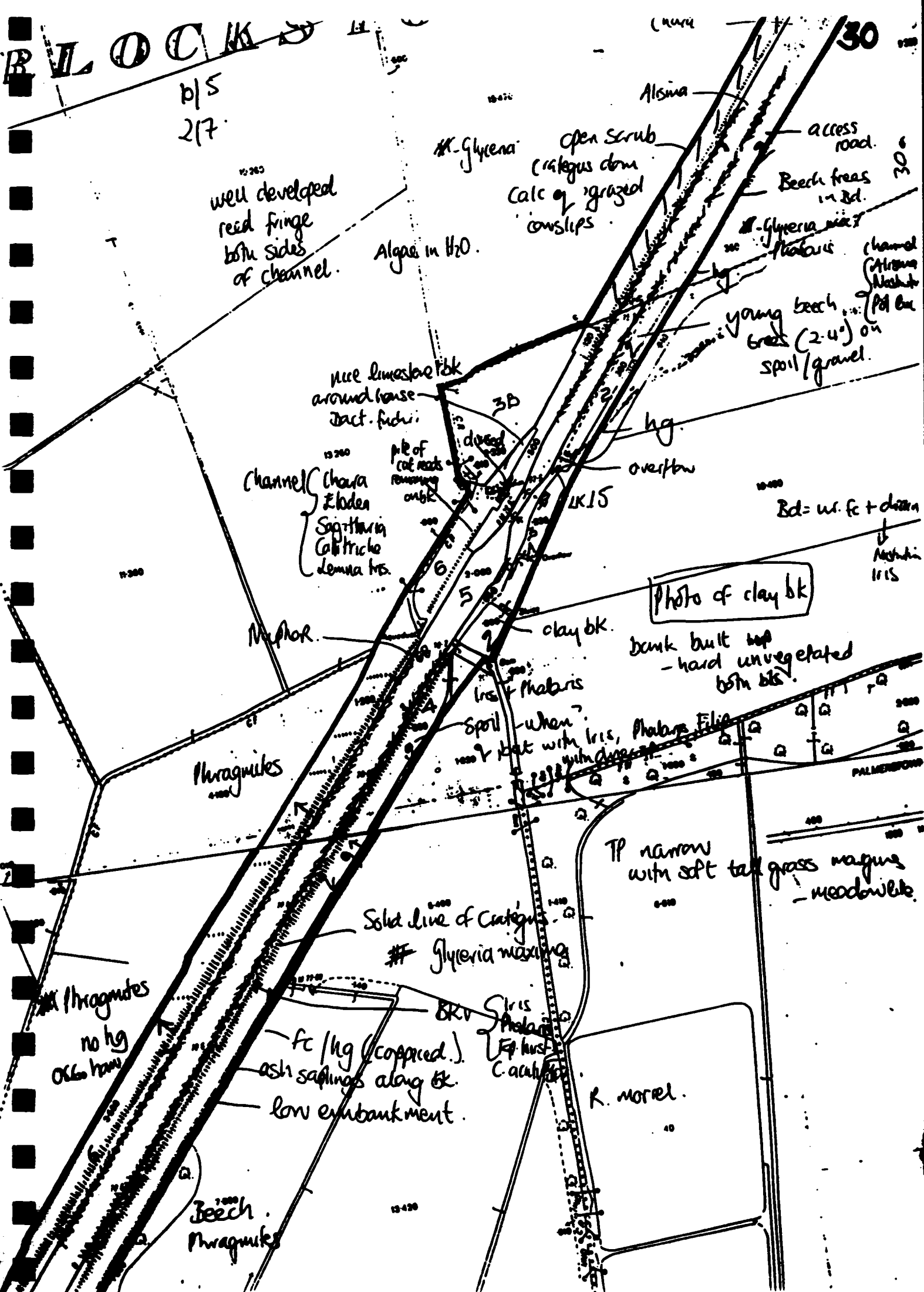
KLELO

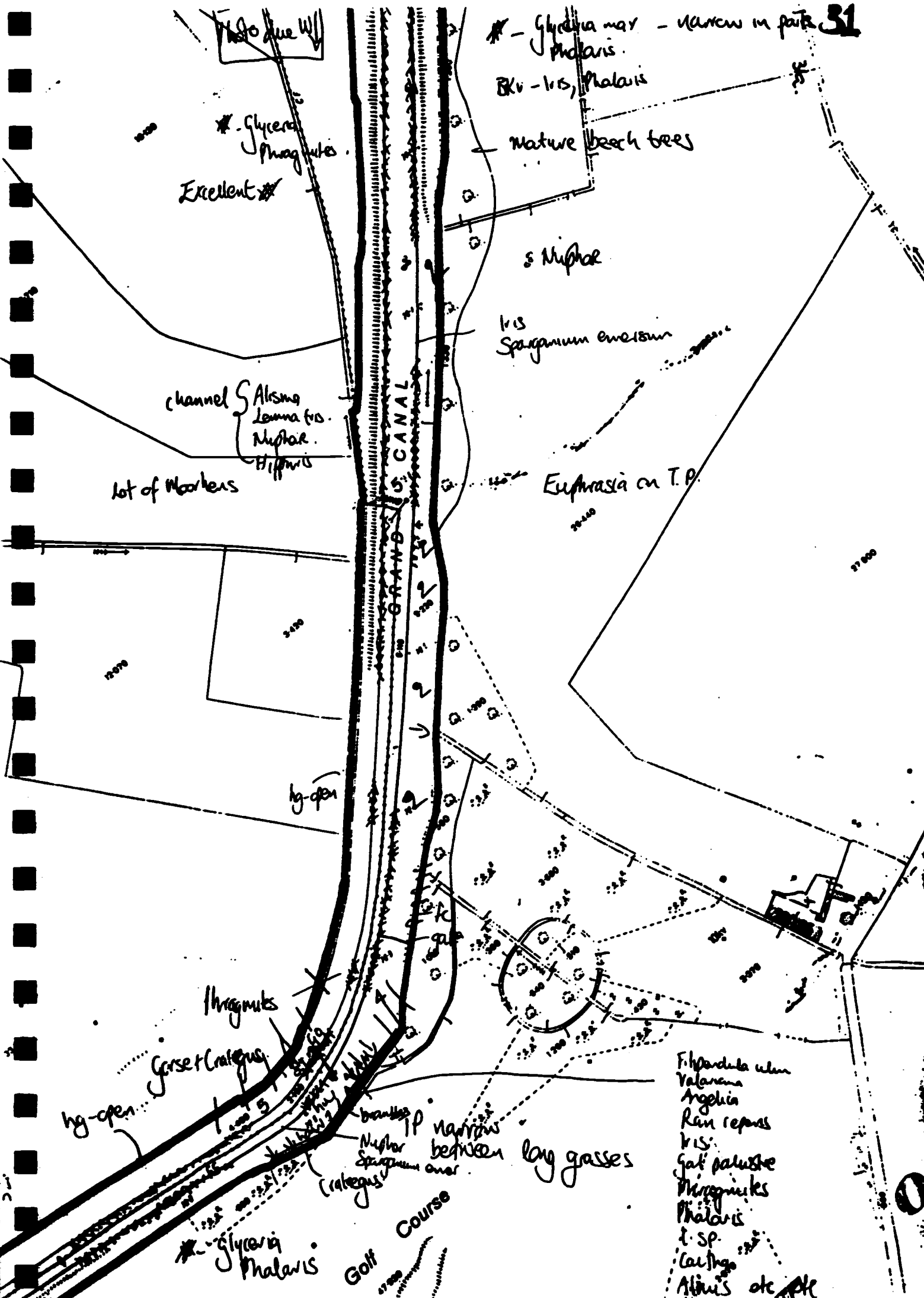






BLOCK 3
b/s
217





* - *Glyceria max* - narrow in parts
Phalaris

BK - 1/15, *Phalaris*

Mature beech trees

S. *Niphol*

1/15
Sparganium emersum

* *Glyceria*
Phragmites
Excellent

channel { *Alisma*
Lemna frs.
Niphol
Hippuris

lot of Markers

Euphrasia on T.P.

hg-open

Phragmites

Carex

hg-open

Niphol
Sparganium
Carex

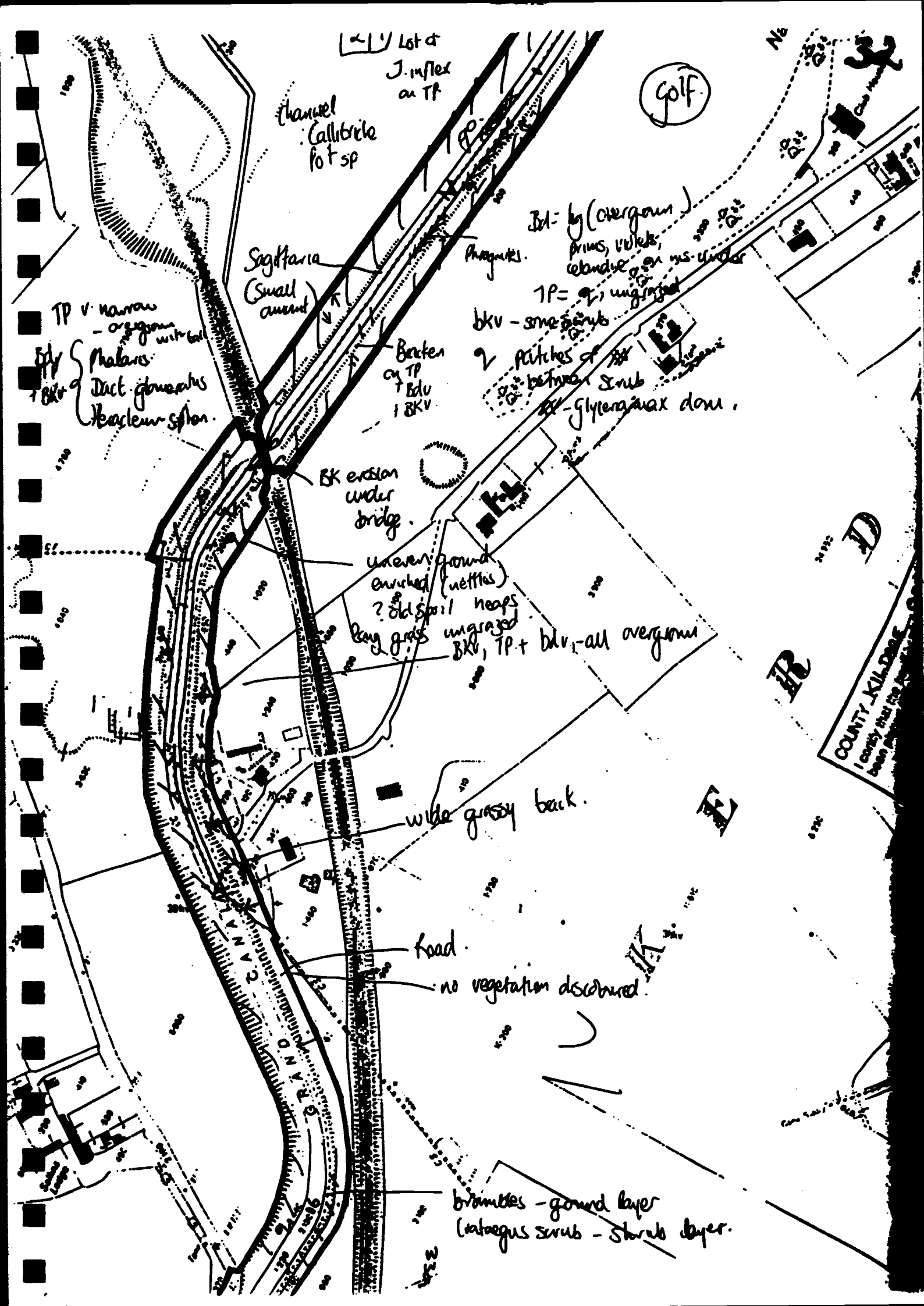
narrow
between

long grasses

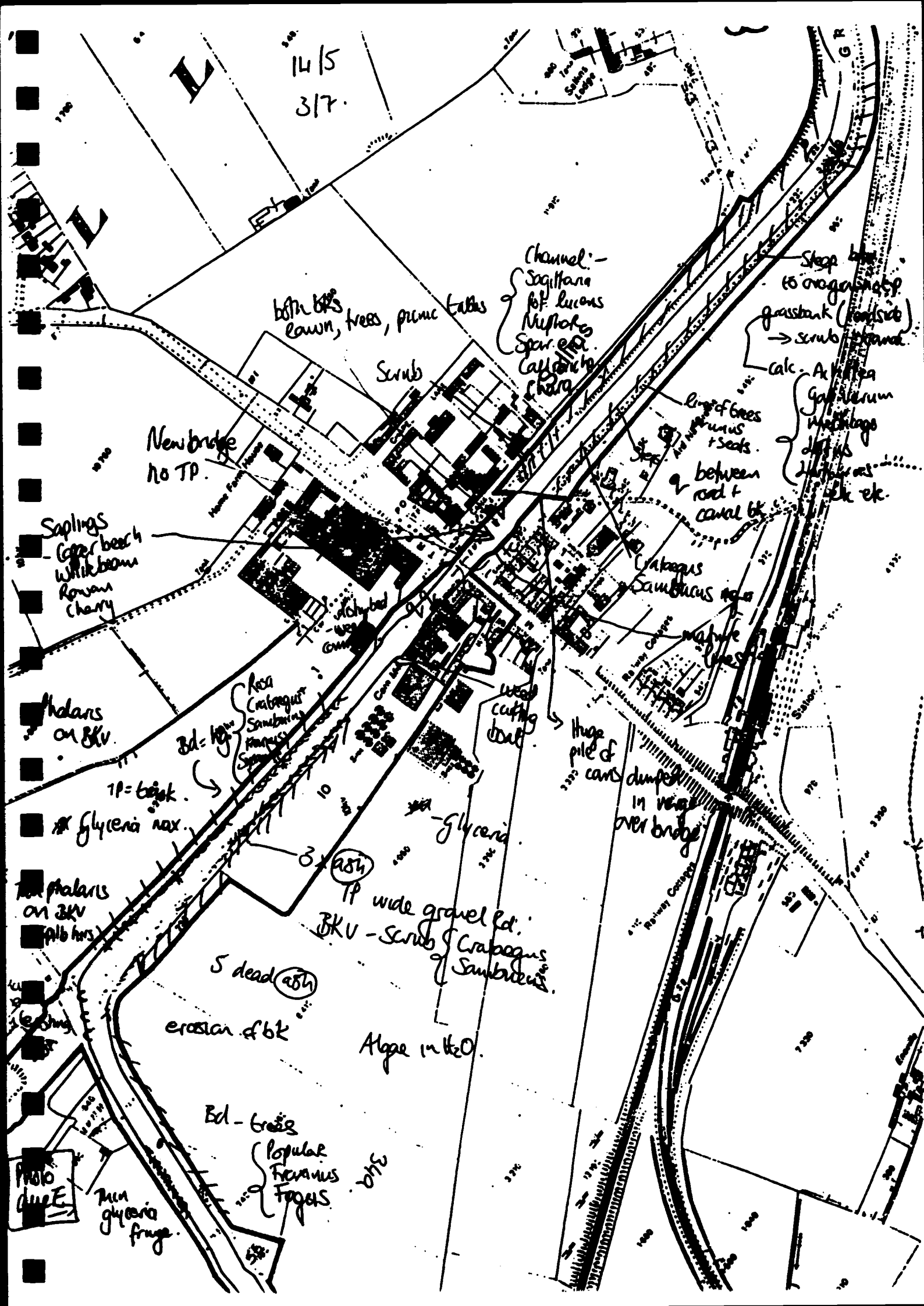
* *Glyceria*
Phalaris

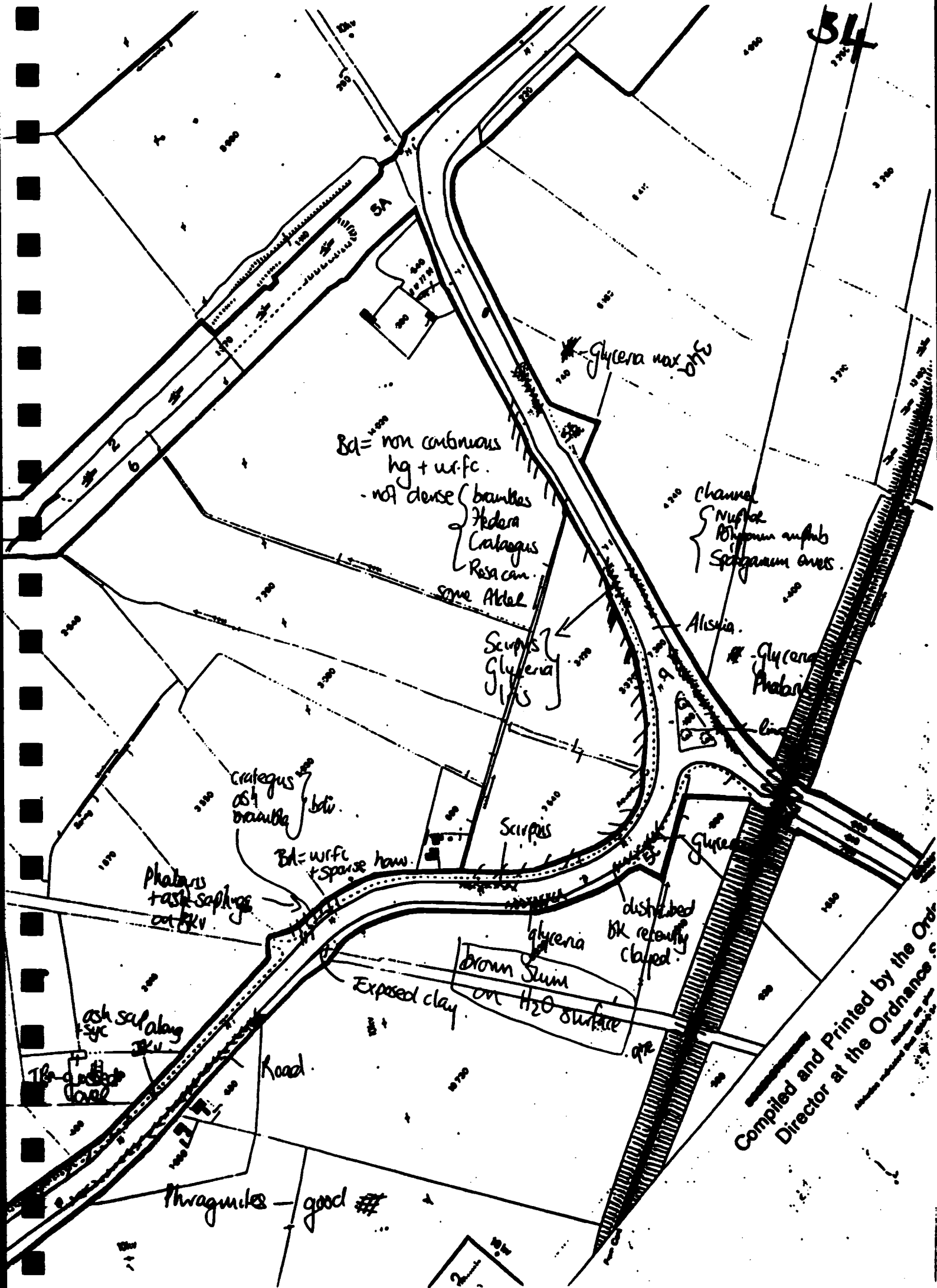
Golf Course

Filipendula ulmaria
Valeriana
Angelica
Ranunculus
1/15
Gai *palustris*
Phragmites
Phalaris
1. SP.
Carex
Alnus etc

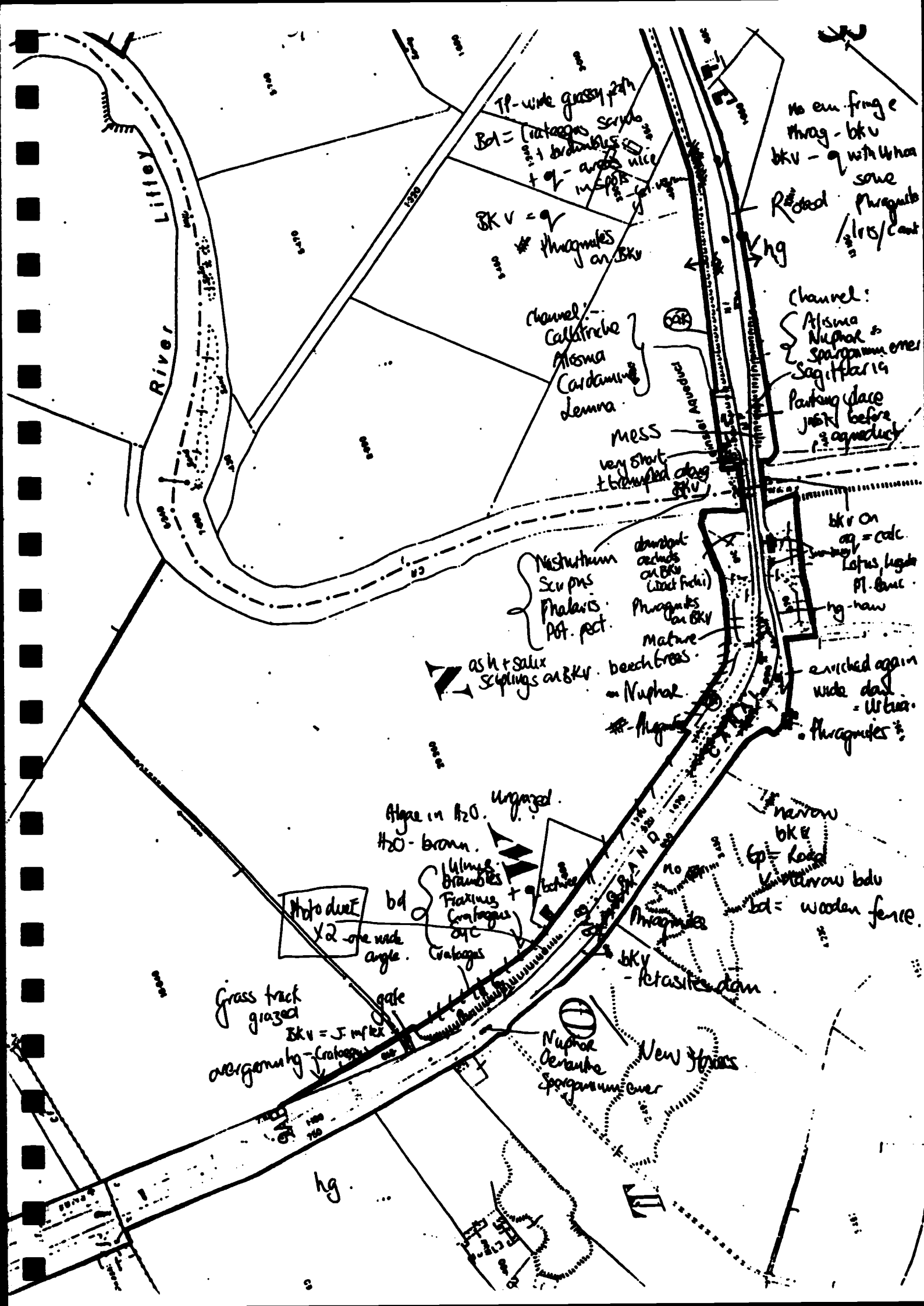


14/5
3/7.





Compiled and Printed by the Ordnance
Director at the Ordnance



3/7



row of trees
with br... in front
Bet = aspen
Crataegus
Sambucus
brambles

H₂O brown
channel:
Sagittaria
Alisma
Najas
Ceratophyllum
Aponogeton

ash saplings
along br.



Najas
Alisma

channel:
bkr - Iris
Phalaris
Filipendula
C. acutif.
Phragmites
↓ gas
Elodea
Hippuris
Alisma
Najas
Lemna tris
for sp.

* - Phragmites
not continuous

Najas
Alisma
Sagittaria

Phragmites

to Road

* Phragmites
+ Phalaris

Crataegus
Swab

Phalaris

monn.

Najas
Alisma

bk gas

R

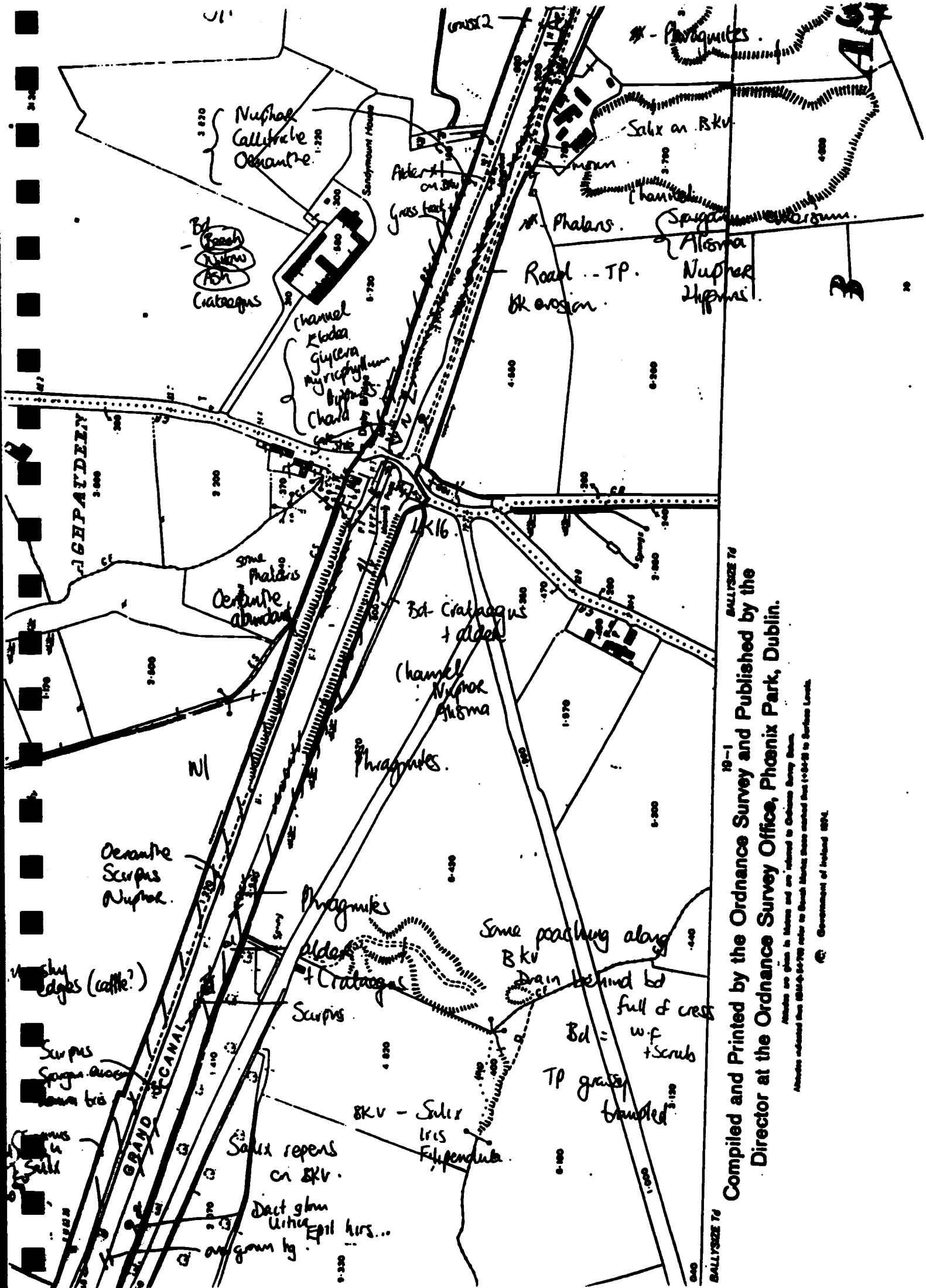
* Phragmites

Phalaris

Phragmites

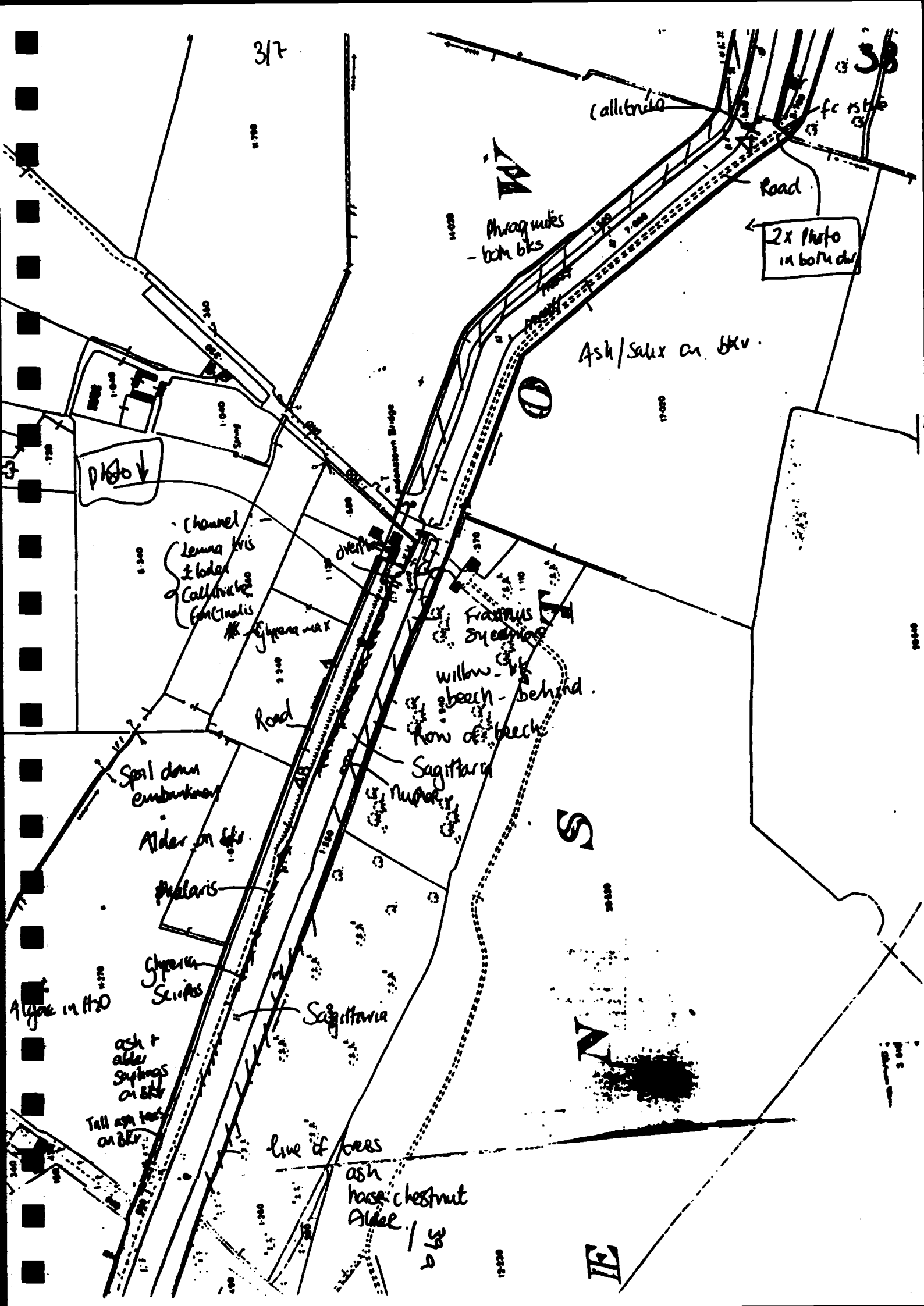
channel
Lemna tris.
Sparg. over
Chama.

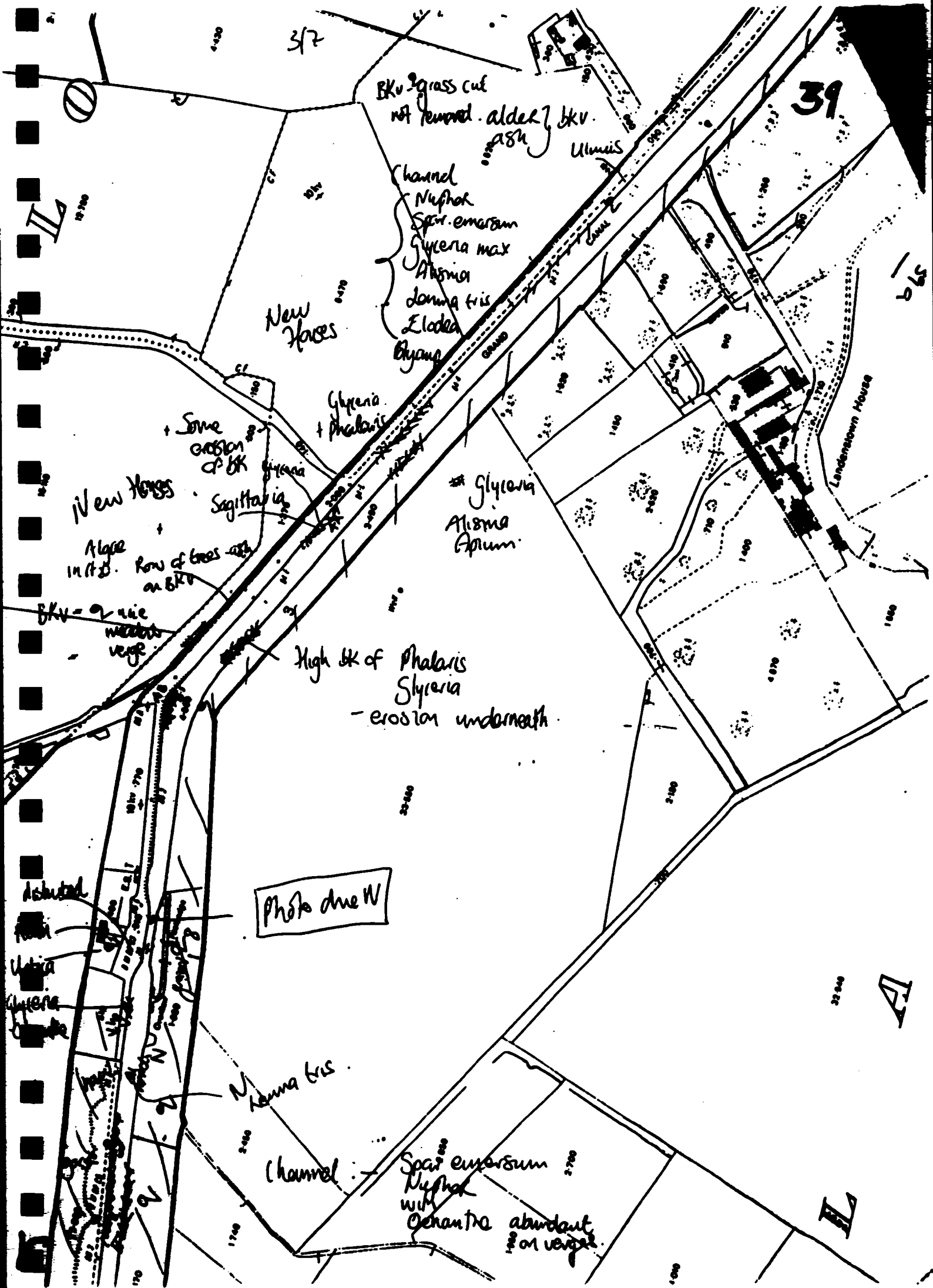
with unrooted

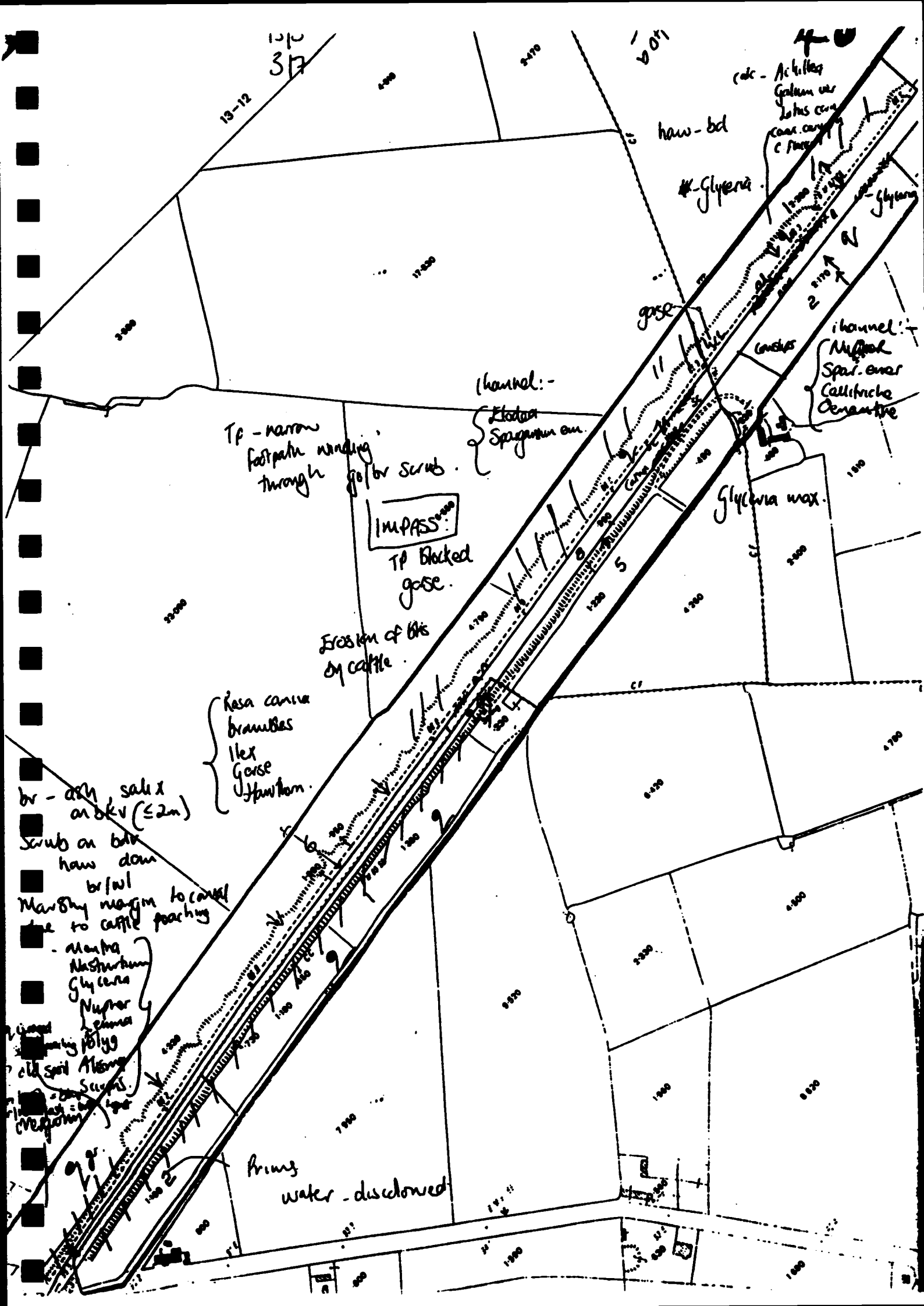


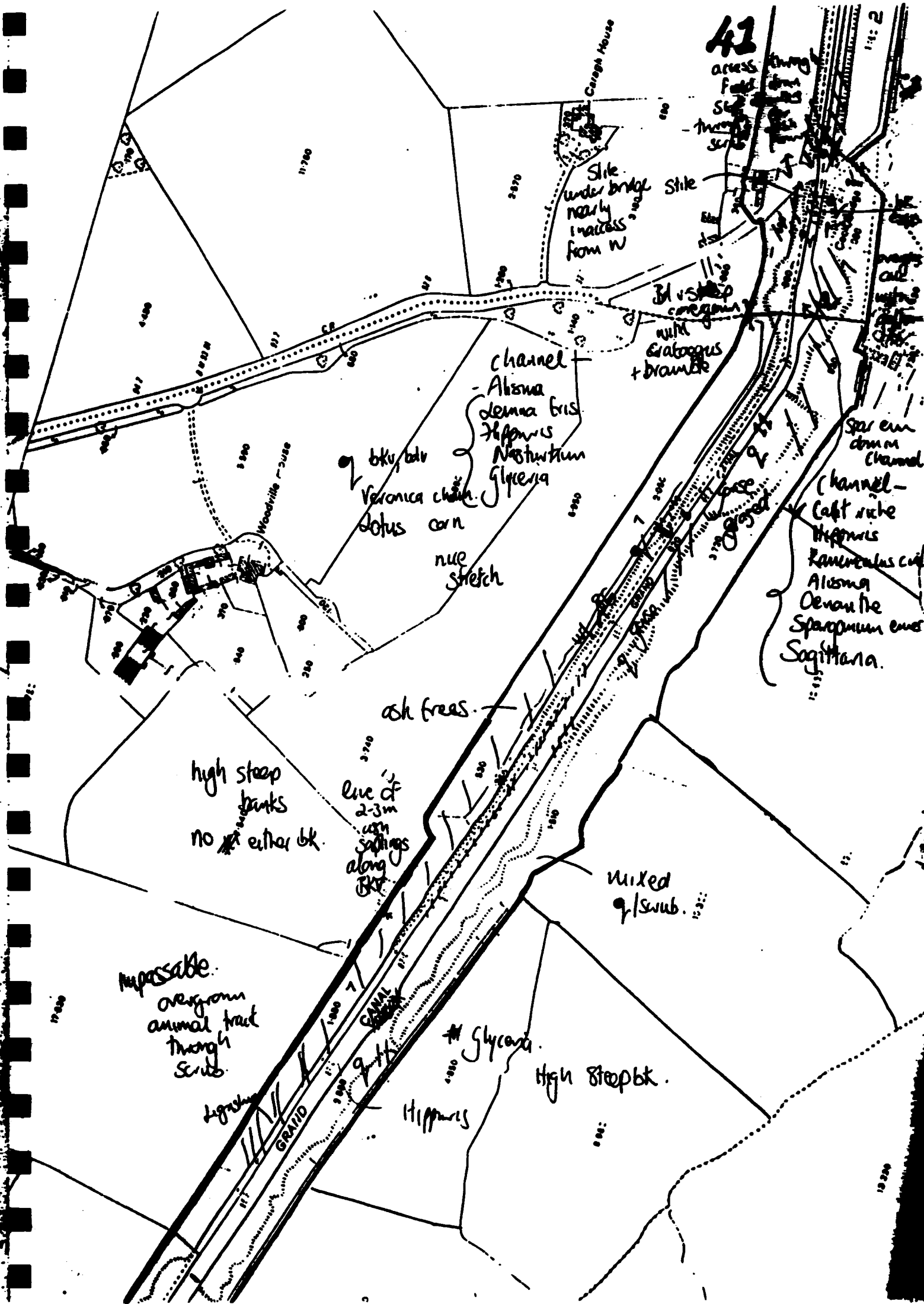
19-1
BALLYSIZE 76
Compiled and Printed by the Ordnance Survey and Published by the
Director at the Ordnance Survey Office, Phoenix Park, Dublin.

Altitudes are given in Metres and are referred to Ordnance Survey Mean
Sea Level. Altitudes indicated thus (MSL) refer to British Mean Sea Level (1828) to Surface Levels.
© Government of Ireland 1974.









41

access
Foot
Stile
through
scrub

Stile
under bridge
nearly
inaccess
from W

Bluish
corymb
with
Eratocarpus
+ brambles

channel
- *Alisma*
- *demna* *tris*
- *Hippuris*
- *Nasturtium*
- *Glyceria*

q bky, bkr
Veronica chain
Lotus corn
nue
stretch

Sparg
corn
channel
(channel -
Capt. rube
Hippuris
Ranunculus cat
Alisma
Oenanthe
Sparganium em
Sagittaria

ash freas.

high steep
banks
no either bk.

line of
2-3m
corn
seedlings
along
Bk

mixed
g/scrub.

impassable
overgrown
animal track
through
scrub

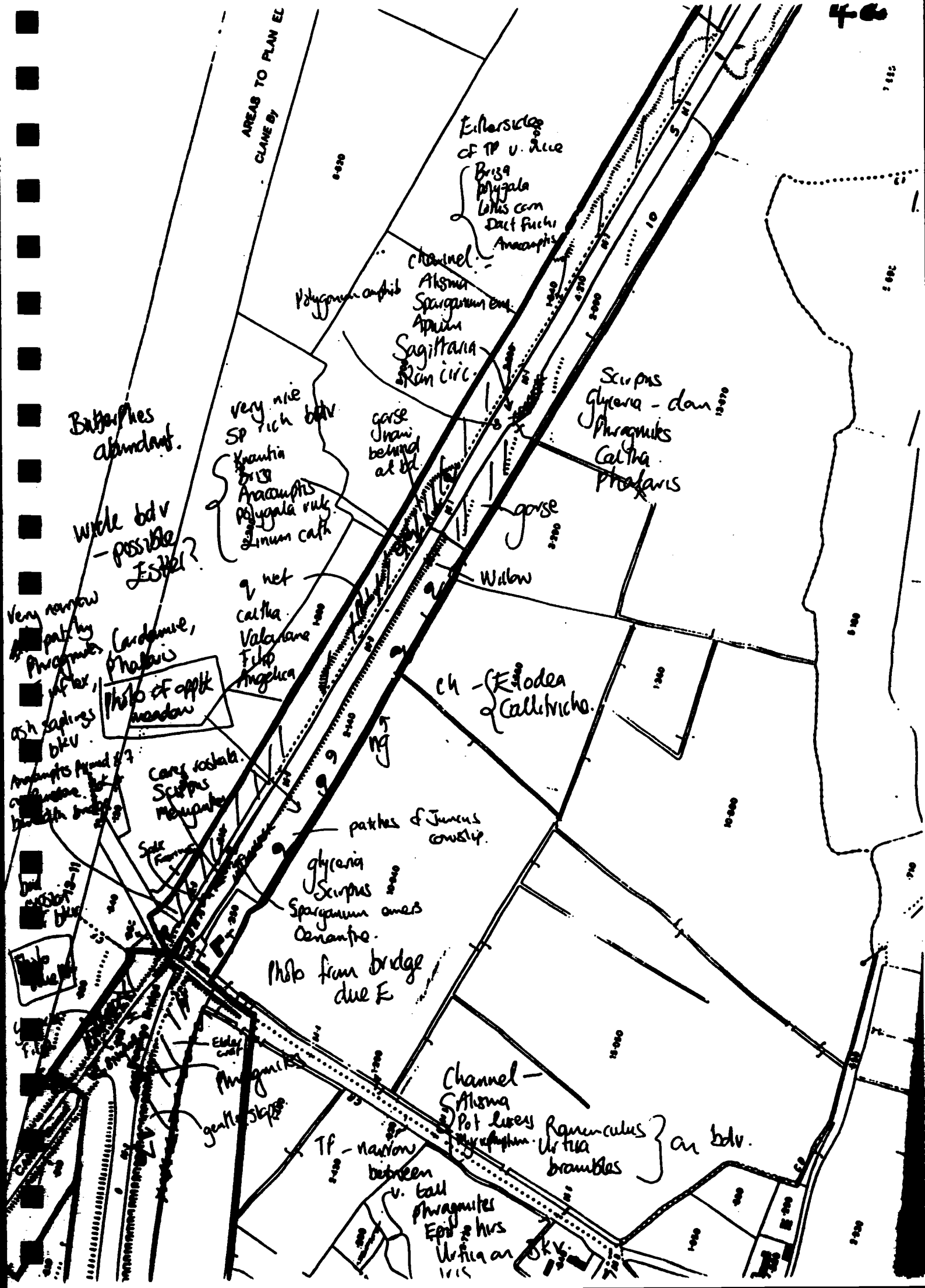
* *Glycine*

High steep bk.

Hippuris

Longish

GRAND



13/8.

43

Phragmites

C. latifolia
Scirpus
J. inflex

Channel:
Spartanum americanum
Phy. amphib.

Glyceria
Glyceria
rigida
dist.
rostrata
Filipendula
Caulanthus
Ran. Flammula
Glyceria pal.

Plot ↑
due
with
under
1 down
1 more

Calla
Mentha
Angelica

Meadowweet
+ Purple
down fields.

Phragmites

Phragmites

very
nice
meadow
fields

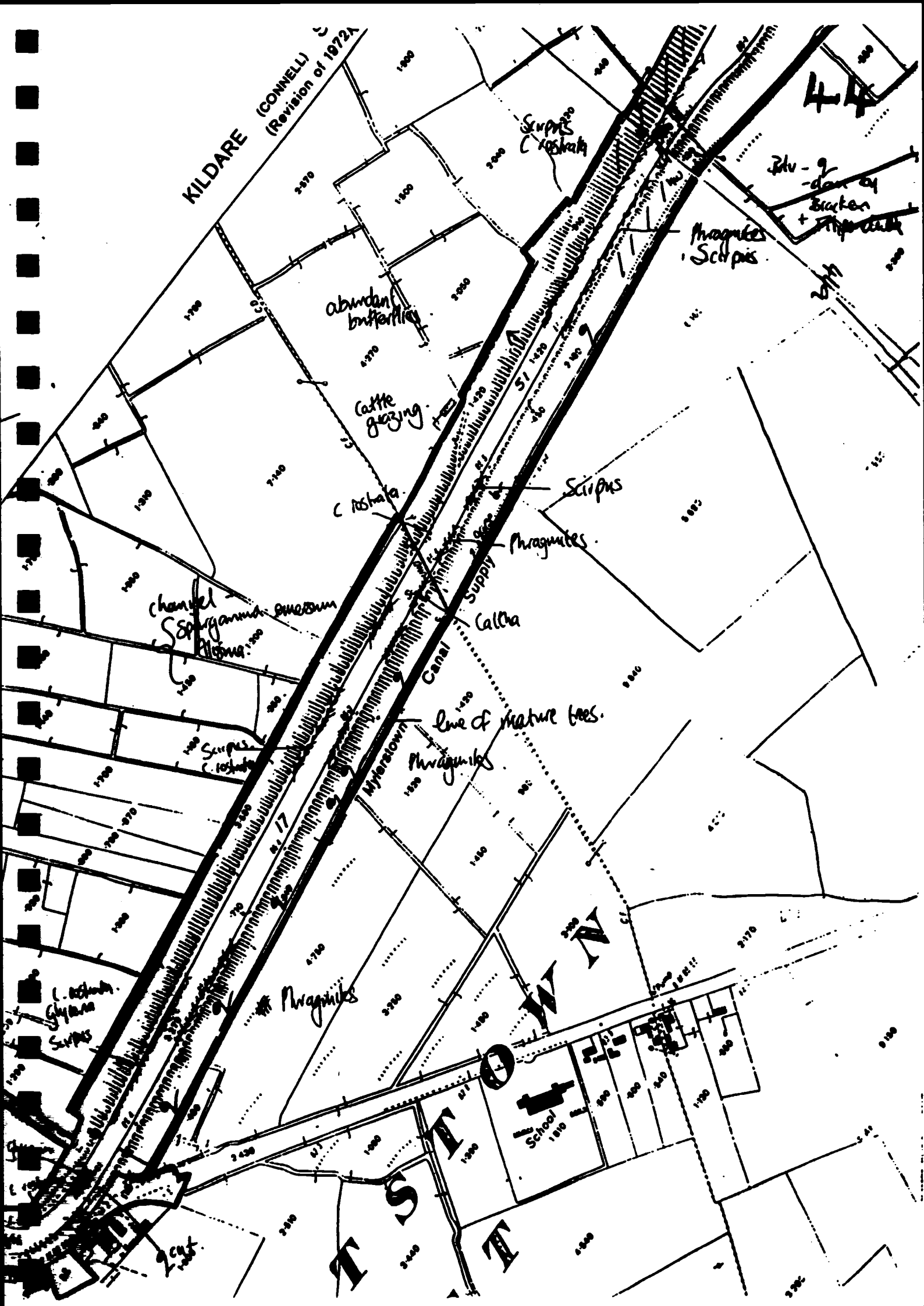
C. latifolia
Scirpus
Phragmites
Glyceria.

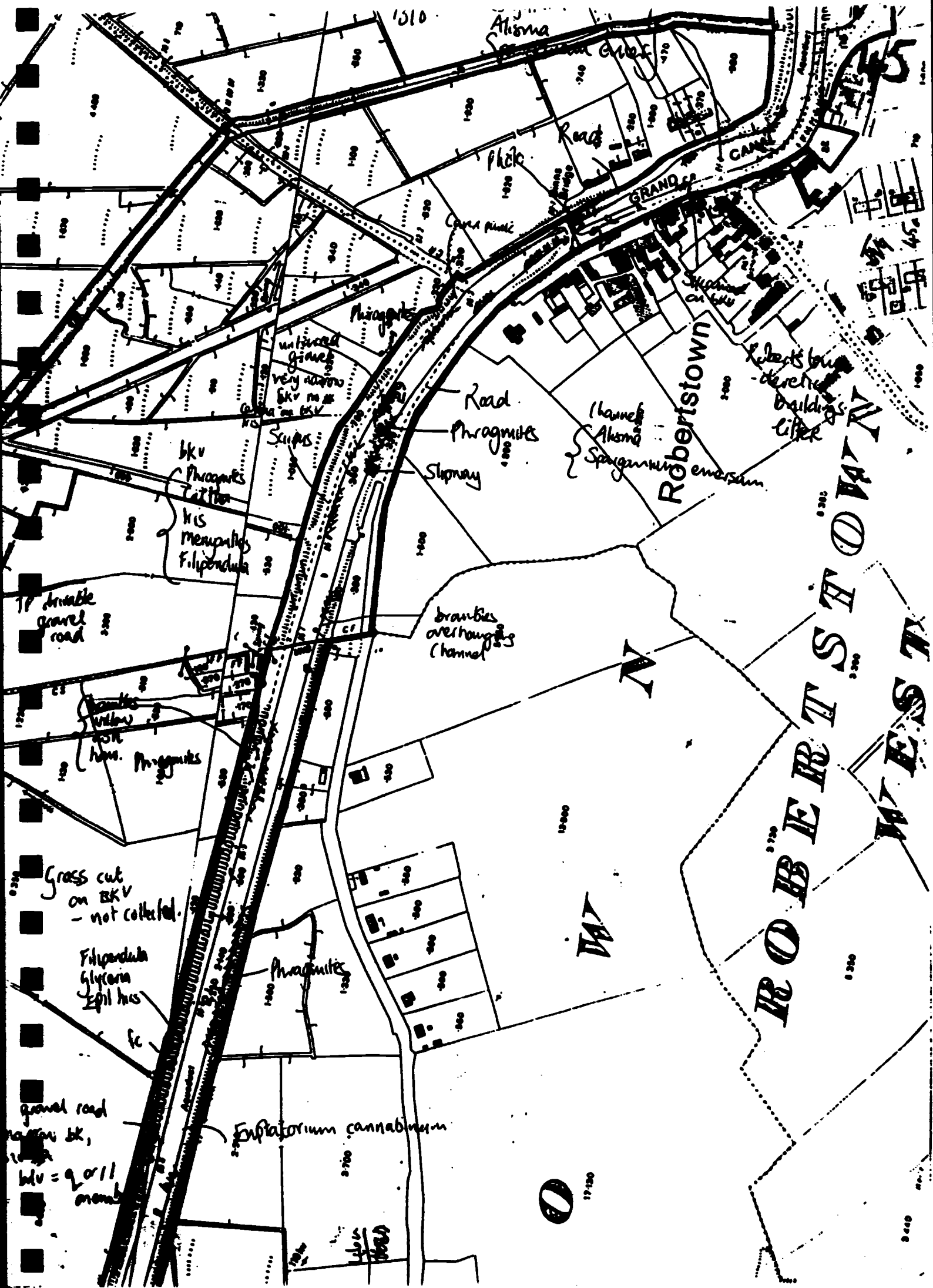
Angelica
Filipendula
Juncus

meadow
field

GRAND

light





B/8

down - Glycine
Aragul
Lamun
Vol

Gavel Road
bki - narrow &
bdr - q

gorse

haw
banks

Phragmites

puig

channel
SC - down
(sub)

Like
mfg

grass cut
bdr bdr

on-line moving
canal blocked
with boats

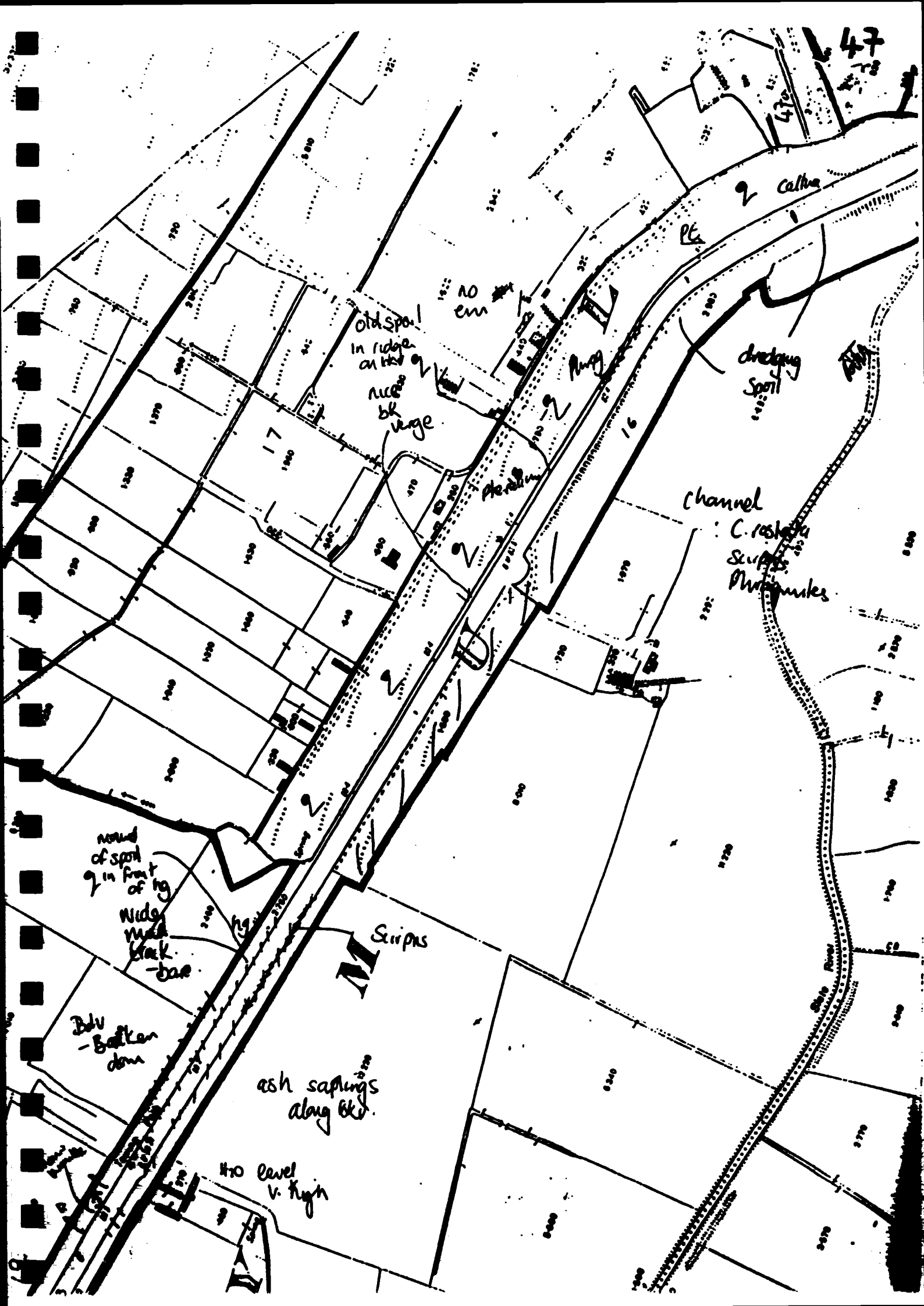
oil in H₂O
v. severe

Sparganium
angustatum

1250C KILDARE SHEET 13-9

Scale 1:12,500
Horizontal Scale 1 inch = 100 feet
Vertical Scale 1 inch = 10 feet

Sheet 13-9
1250C KILDARE SHEET 13-9



47

2 Calhua

16

ditching spot

channel

C. rostrata
Scirpus
Phragmites

old spot!
in ridge
on the 9
nice bl
verge

NO
em

Phragmites

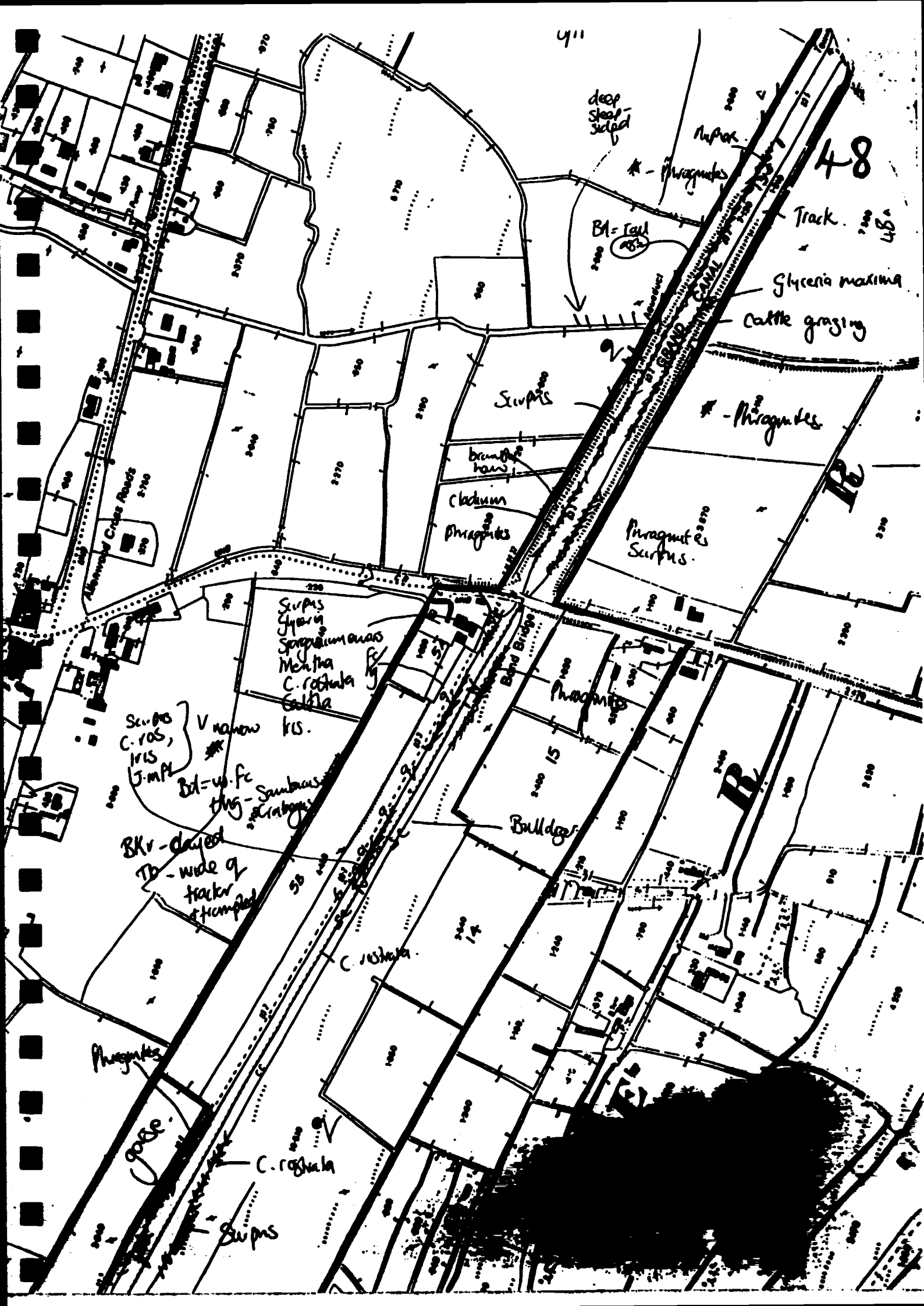
Scirpus

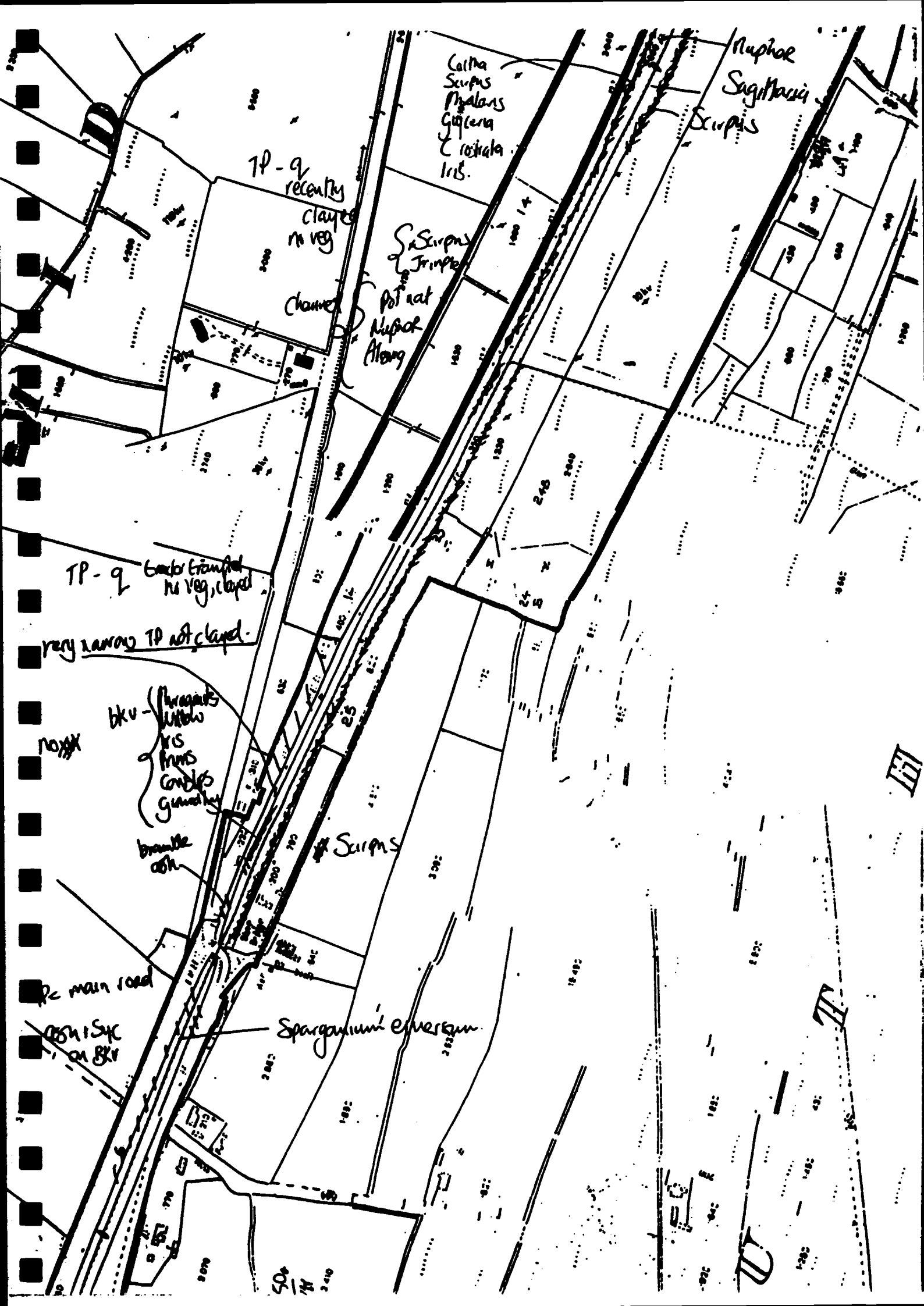
round
of spot
9 in front
of hg
wide
mud
black
-bar

Belt
- Balken
down

ash saplings
along bk.

410 level
v. high





AREAS TO

1418

50

ALLEN

Road

GRAND CANAL

hg
ep: grass
road

calc
ungrazed

char
all along

hg
brambles

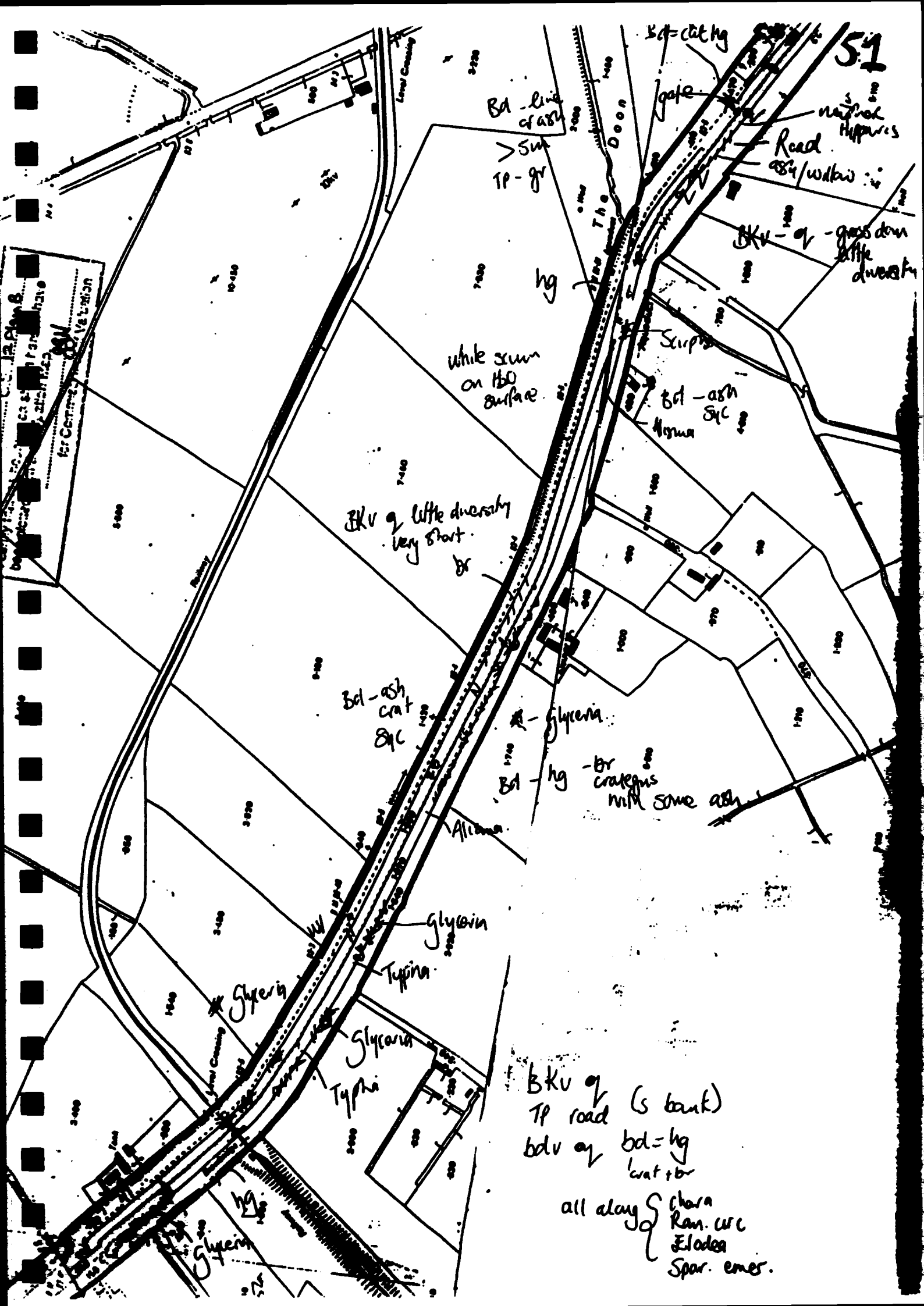
Glyceria down

bku = ∇
bdv = ∇
ep = road

BKV - ∇ grass
- looking

Glyceria TP cutthroat
road
sh along
bku
br on
bku
planted
fles
on bku
small

COUNTY KILLDARE O.S. 12. Plan 12.
I certify that the boundary shown hereon have
been plotted from the Valuation Map
for County Killdare 1971 V.L. 2000



51

Bd - cat hg

Bd - line of ash

TP - gr

hg

white scum on H₂O surface

BKV of little diversity very short

Bd - ash cat

glyceria

Bd - hg - br craters with some ash

Alisma

glyceria

Typha

Glyceria

Typha

Glyceria

Glyceria

BKV of TP road (S bank)

bdv of bd - hg water

all along S bank
chara
Ran. ure
Elodea
Spar. emer.

1418

C. Retab.

Channel
Elav
Elav
Lamunclay

ash
Sun. Cufaguo
Sycamore

Glyceria

B1 = tall trees
Sycamore
Ash
Oak
thg. stony
branches

cathe

Glyceria

fragments

cut

Napier
Spr. an

blv = a
hg

CANAL

road:
Patches
of Glyceria

GRAND

1615
14/8.

channel
Aster
Nuphar
Spartanum
Pot. pet
Nuphar
Myrica

no

Scirpus

Road

hg

photo. (clay pile
both sides
of bridge
② (with 2 yellow
piles)

clay

road

ash

Glyceria

Glyceria
hg

access
road

24 mile skp

Bdv
down by
Epil

channel
Spartanum
Pot. pet
Nuphar
R. circ
Pot. amph
C. triche

Bdv
nice

Galium
Lotus
Corn
Conium
L. carn.

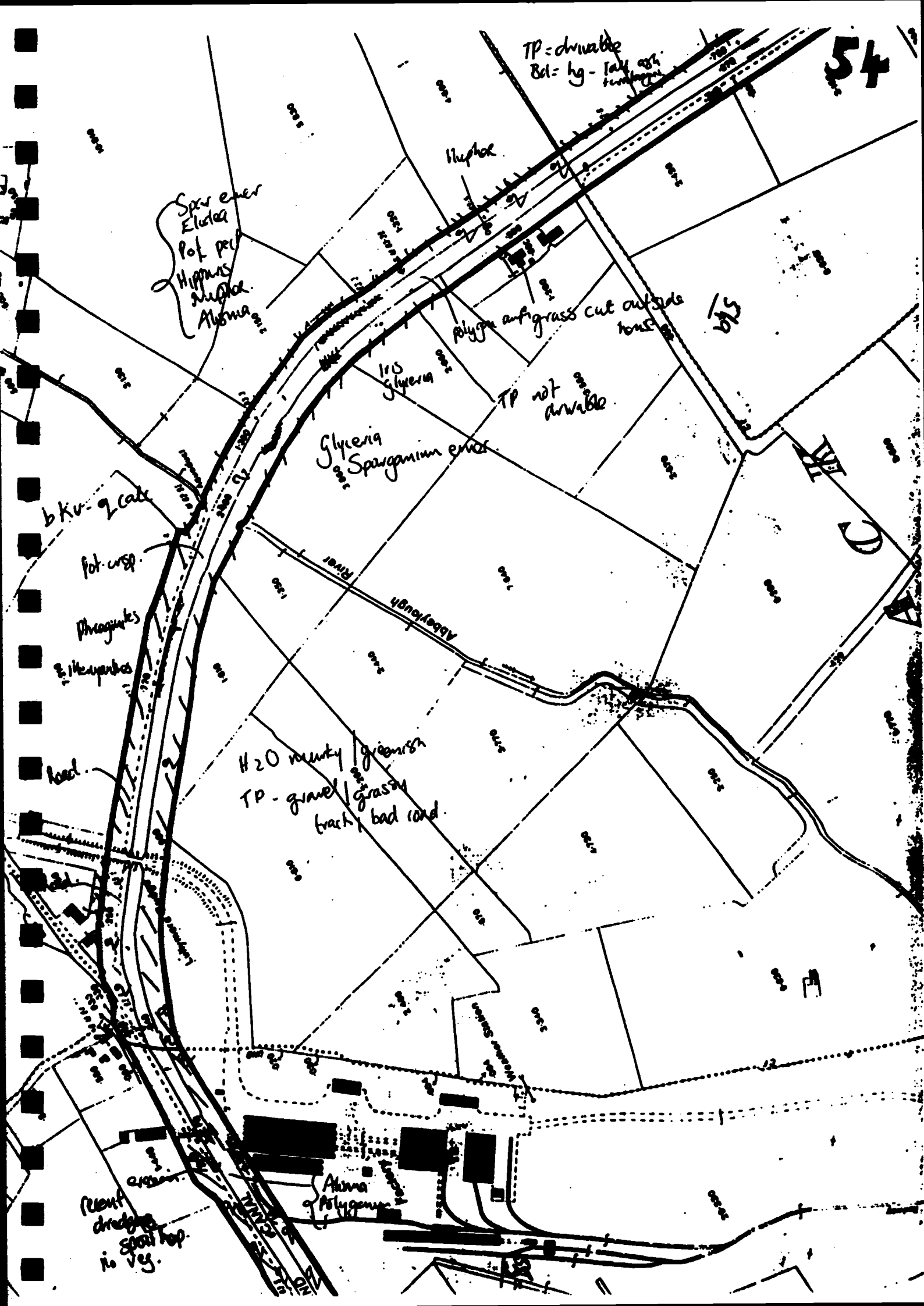
no

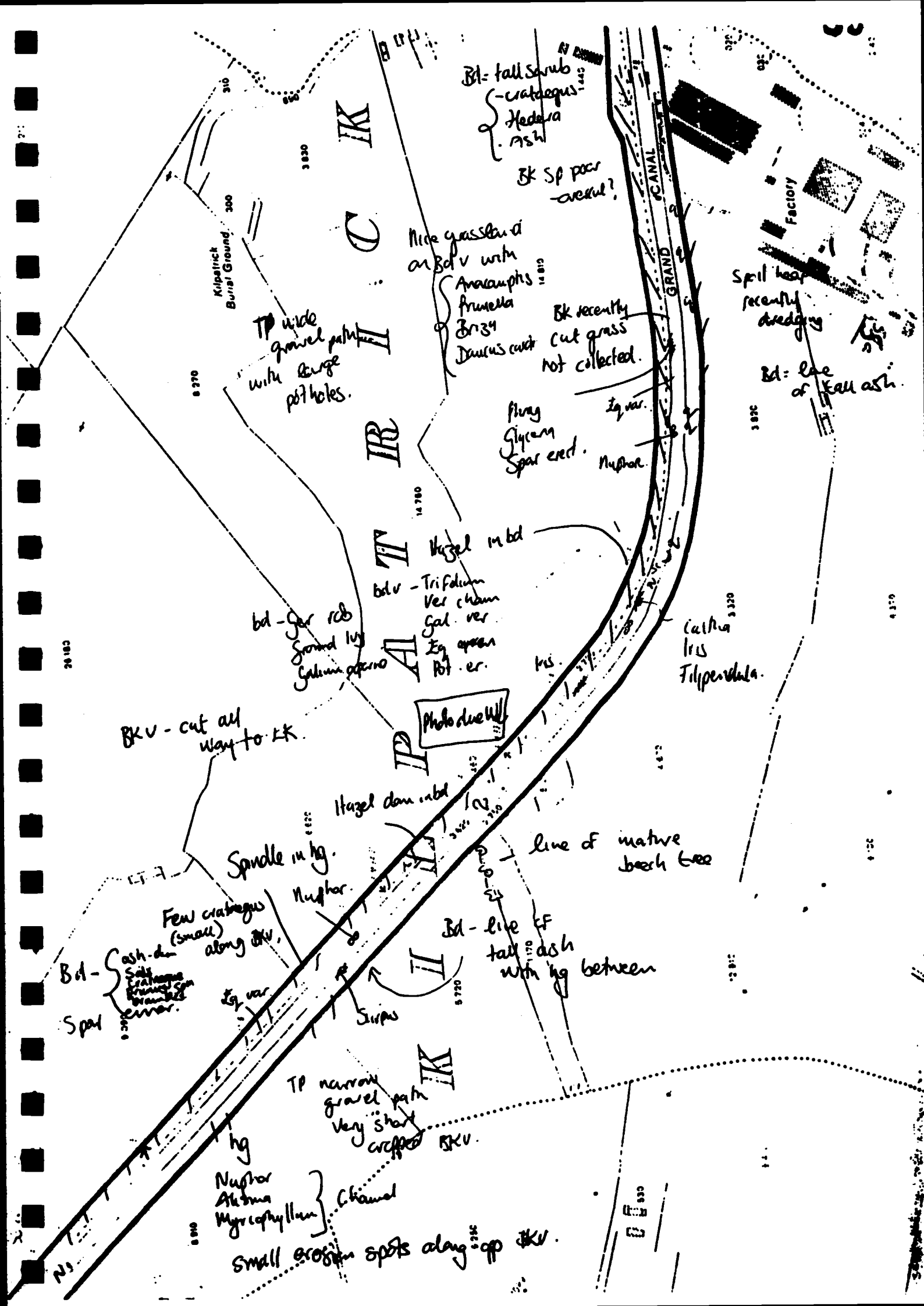
TR road

TP = road
A. jugu. skp
Eq. skp

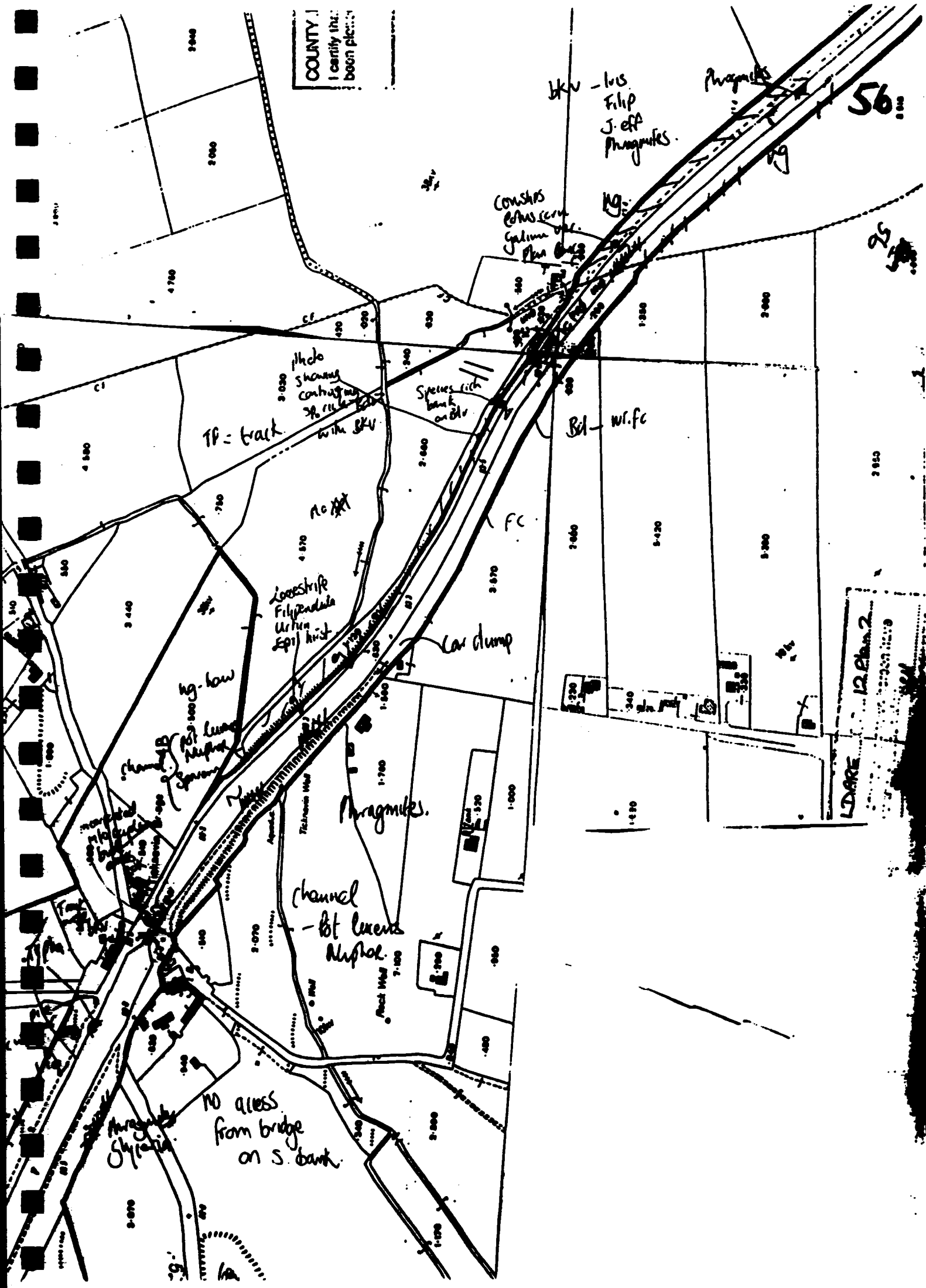
hg
untarnac
rd.

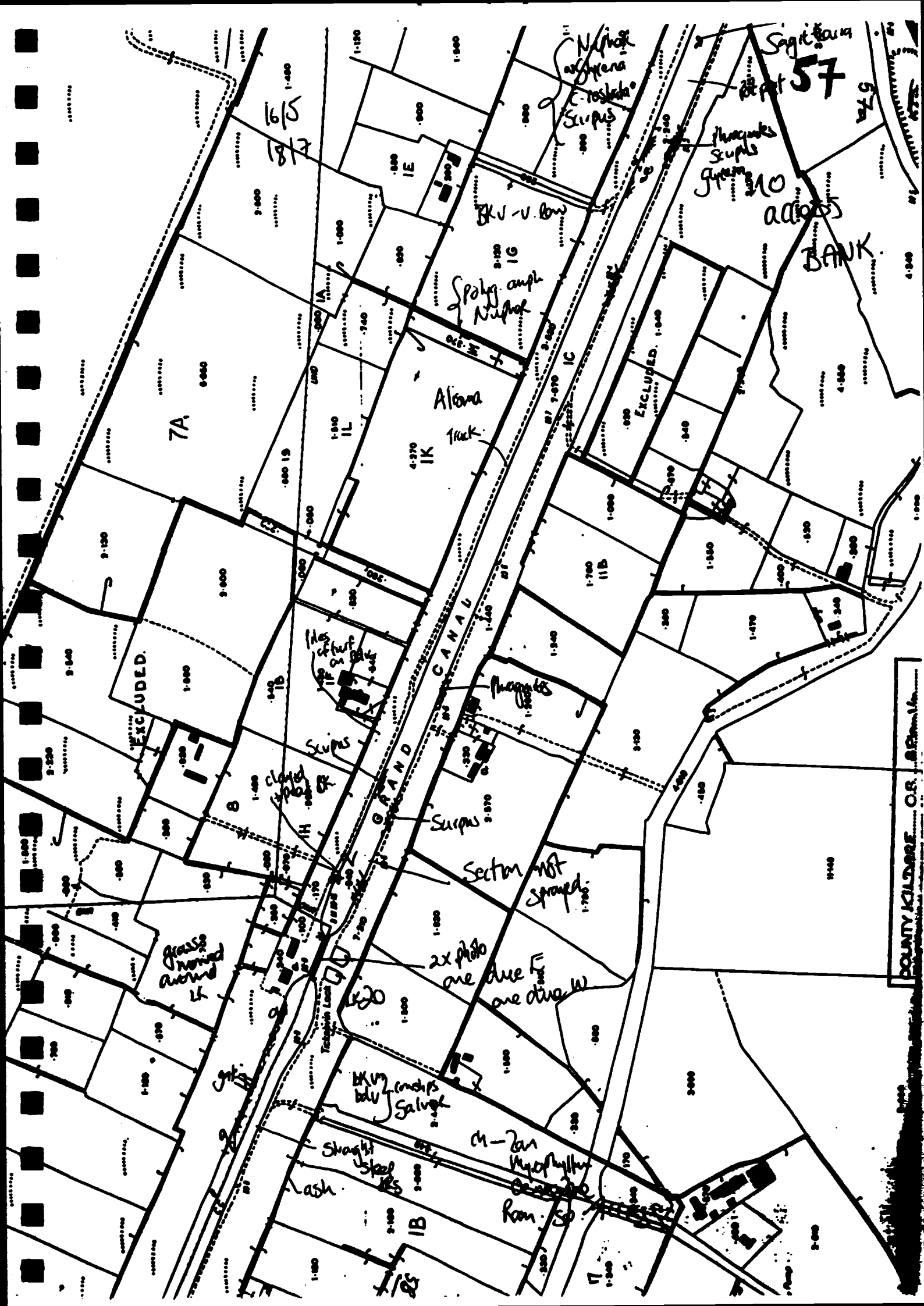
New Hayes

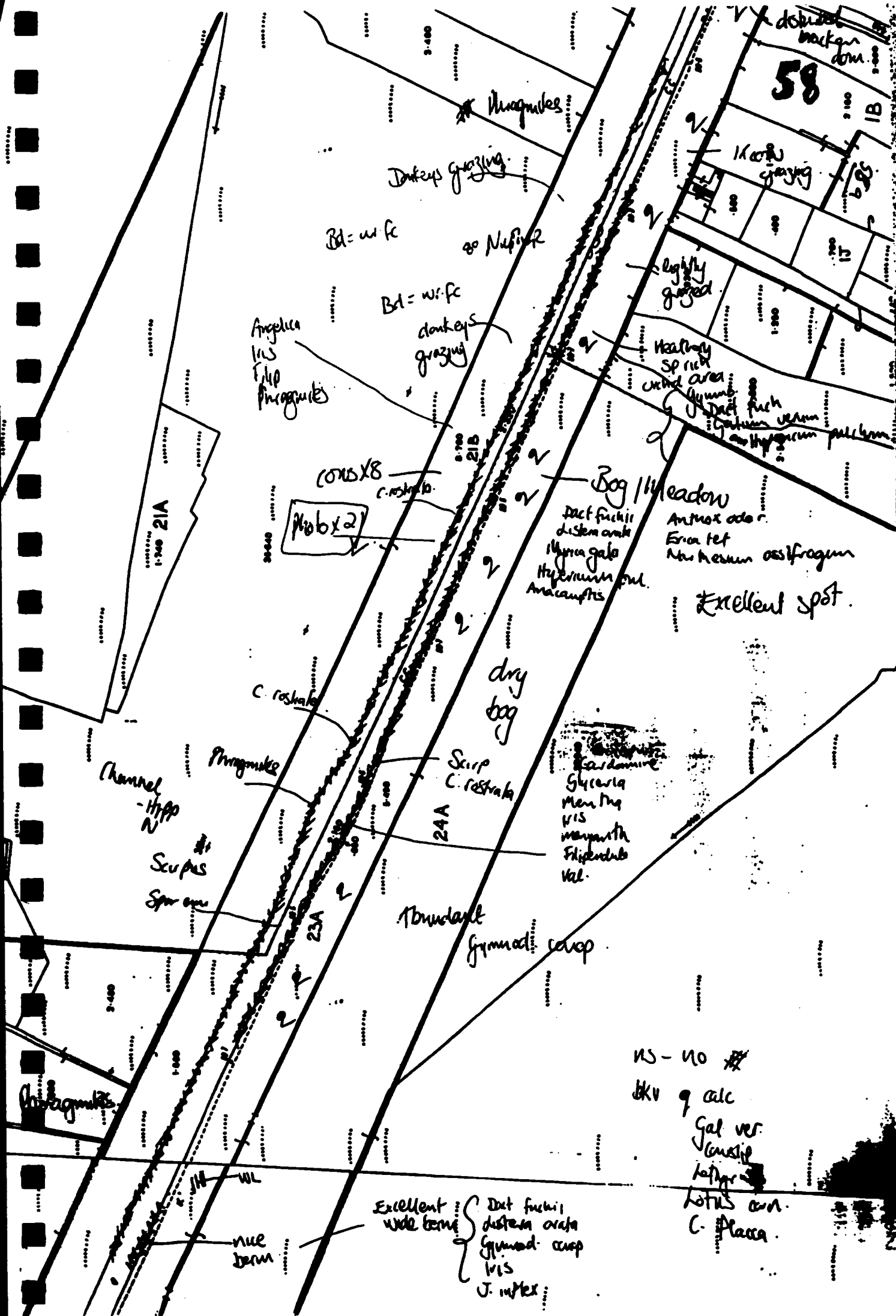


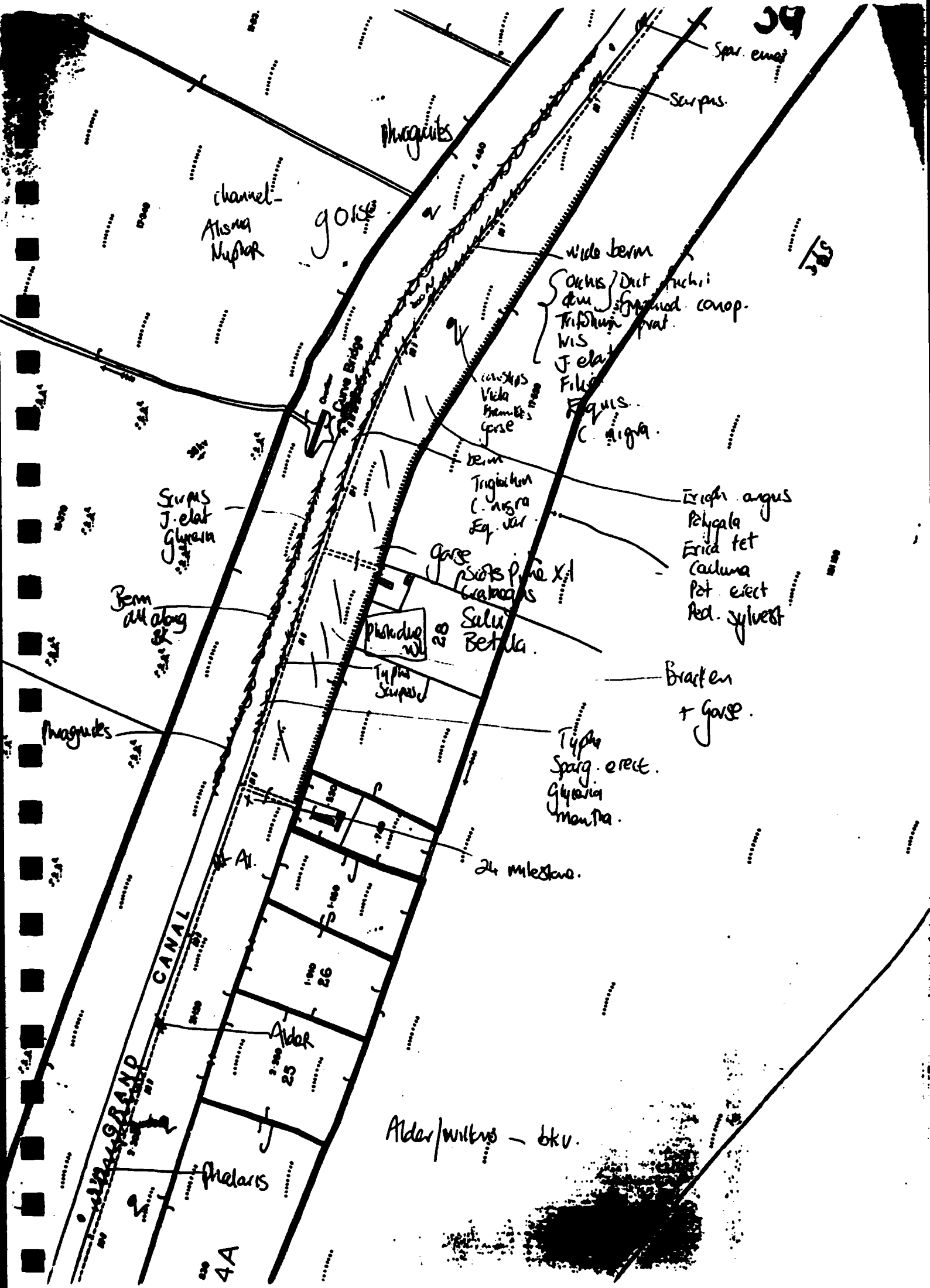


COUNTY: I
I certify this
been pic...









Spar. ena

Scirpus

Phragmites

channel Along Nuphar

gorse

wide berm
Oxalis Dact. Fuchii
dem. Sparg. conop.
Trifolium prat.
WIS
J. elat
F. lili
F. lili
C. alga.

cowslips
Vicia
Hemlock
Gorse

berm
Triglochin
C. nigra
Eq. var.

Gorse
Spiraea
C. alga

Phragmites

Salix
Betula

Typha
Scirpus

Trifolium argus
Polygala
Erica tet
Caulonia
Pot. erect
Red. sylvest

Bracken
+ Gorse.

Typha
Sparg. erect.
Glyceria
montra.

24 m. l. s. k. v.

CANAL

Alder
25

26

Phalaris

Alder/wilkes - bkv.

4A

60

Bk clayed
Rquist area
24' down

23A

Channel
phy amphib
Nuphar
Myrica
Scirpus
Glyceria

nice meadow
with bog in
front.

photo due E
of clayed
banks

meadow
behind.

Bk gravelled
over

Bk
still sp
rich
but
fewer
o:ids

Scirpus
C. rostrata
Glyceria

Banks built up
clay covered
with peat
soil on bkv side
- see photo

clay/bog

TP = clay back
bkv = narrow

photo of bk
due W.

no ~~sk~~
drain. *Calluna*
Cardamine
demissa frs
Carex acutif
Myrica sp.

Peat bk
Phragmites
Festuca rubra
Trifolium
Agrostis aru
Draba BBS
Potent. erecta
Cirsium

COUNTY. ALBANY. O.S. 8. 1913
I certify that the above is a true and correct copy of the original as filed in the County of Albany, New York.

grass
flourishing
on Bkv

Myrica
dam
field

Nuphar

Bkv - sparse
Paspalum



OL

6/2

goose on bk

2 - Hyacin
Aster
Vib
Meridun
Hyp
Gahmverm

clayed
bk

Some nice meadow areas

BK - cut grass cut -
+ remaining species poor

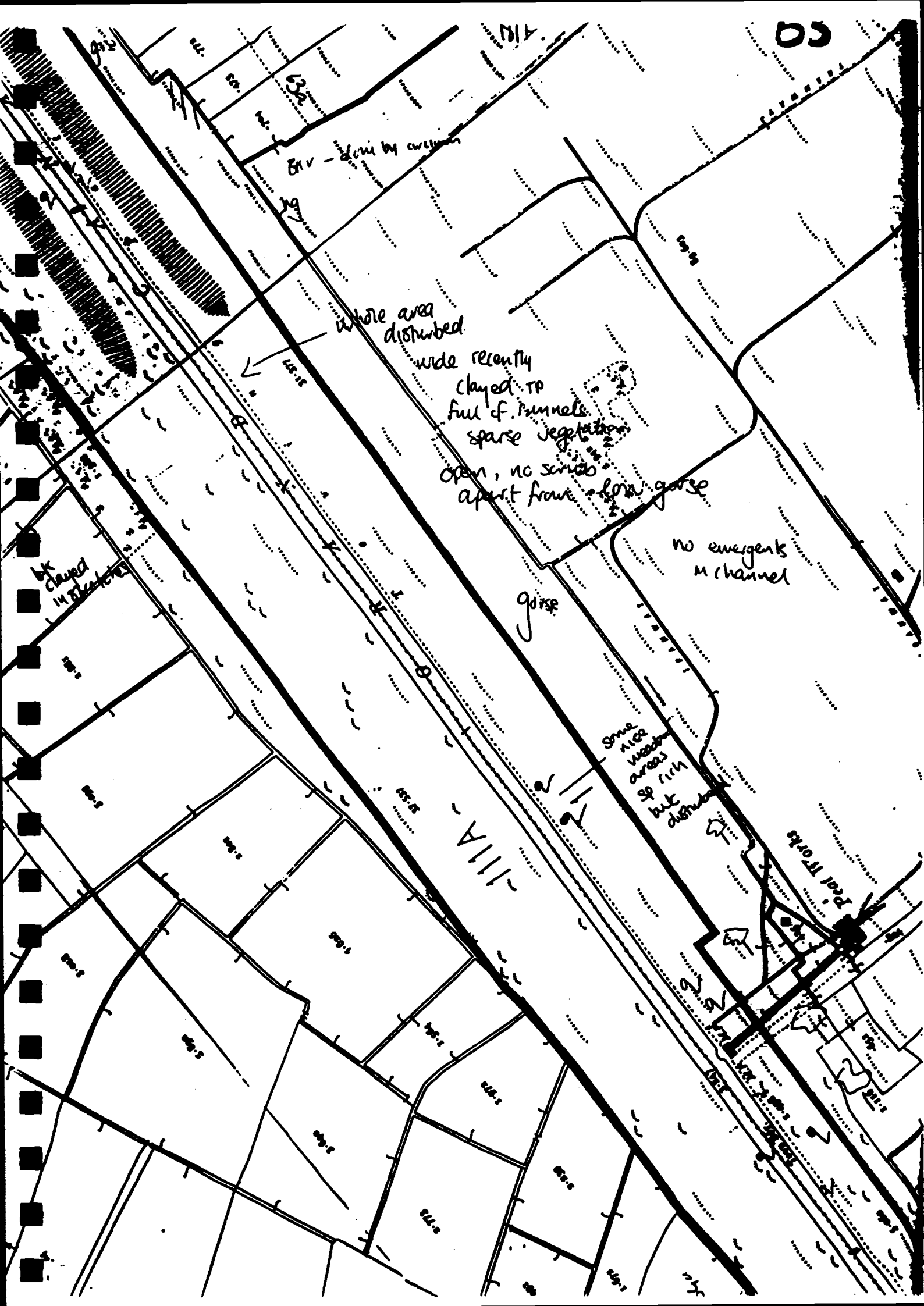
Magnolia

Some nice
Denn
with ground cover
Helipendula

BK
Hypocistis
Paku

6/2





Brv - down by creek

whole area disturbed

wide recently
clayed to
full of hummocks
sparse vegetation
open, no scrub
apart from for gorse

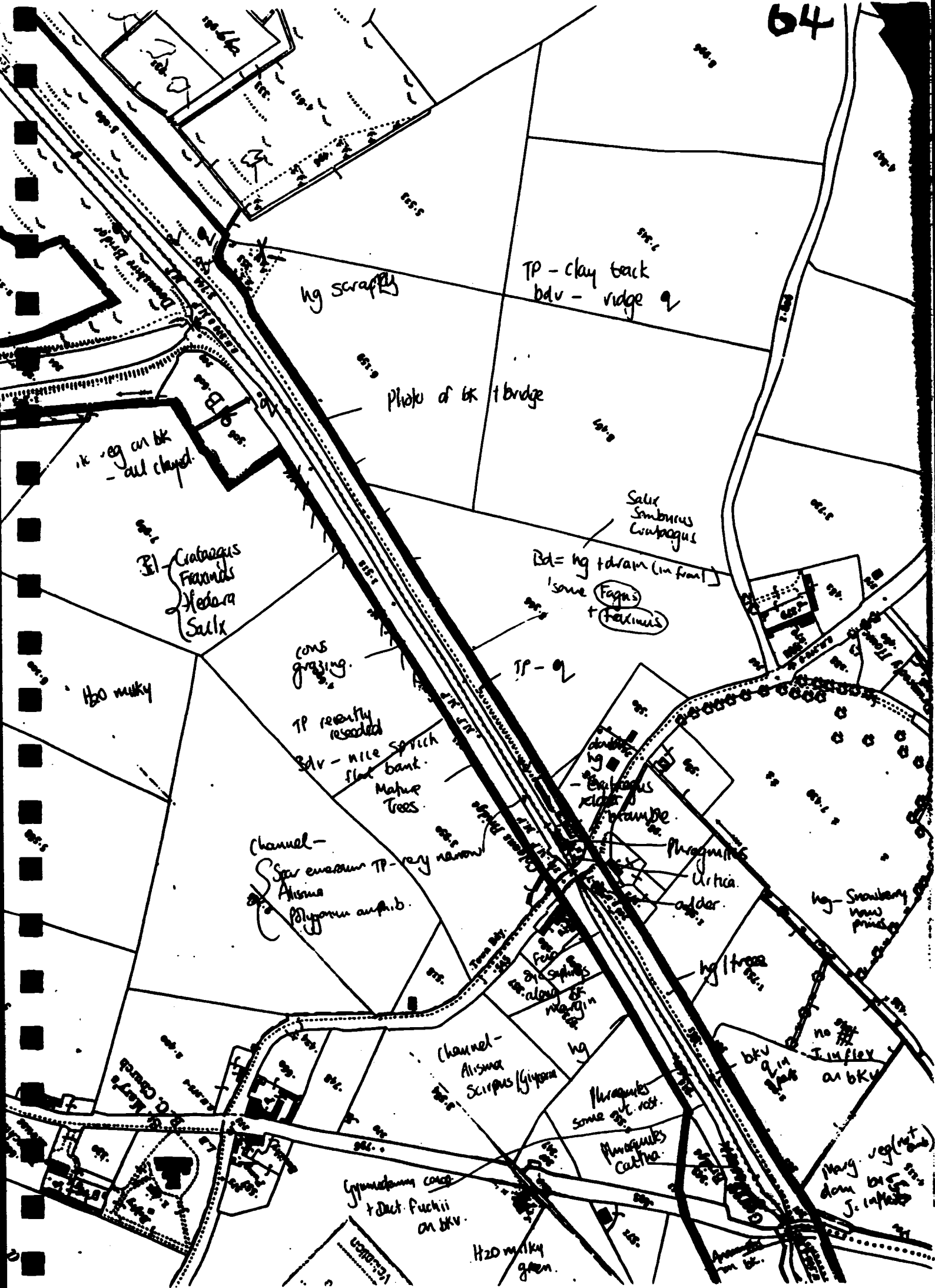
no emergents
in channel

gorse

some
nice
wetland
areas
sp rich
but
disturbed

Post Office

bk dunes
14 structures



Bd = wr. f.
1 ng behind

TF-guessing, q in parts with exposed clay patches

~~gravel~~
nap

(channel
Pot. pect
Pot. crispus

~~st - V thin~~
~~fragments~~

Few nice blue
spots with
L. maculata
D. maculata
large
Gymnoph. 4 large.

~~Scripts~~

9 done by Leuc. vul

BIV - down by sit type. radiat. 2
The current ~~is~~

~~inner margins
of RV - a
saddle
(str. anarum.)~~

H₂O milky green.

Inner margin
of BK 2
-9

TP - wide jersey plm
Bdu not cut

no ~~Ad~~

$$Bd = \frac{h_0}{Sk_u + TP - q - \text{cut} + \text{not round.}}$$

Bdv = Filopodia
Heter. Ban
Duct. f. f. f.
Dance car

Sande

669

10. ~~XX~~ ^{craterique}
 Ed = ^{ash} ~~TP~~
 TP - wide
 recently
 peated.

3/4 clayed
both sides
flat on
surface
etc.

Amagmiks
at BK
+ fLV

Nuphar

• Ek 9
in inner
margin

put
steps
here!

Bkv grass
cut + mulching
very bare
9 in. pins

Surplus

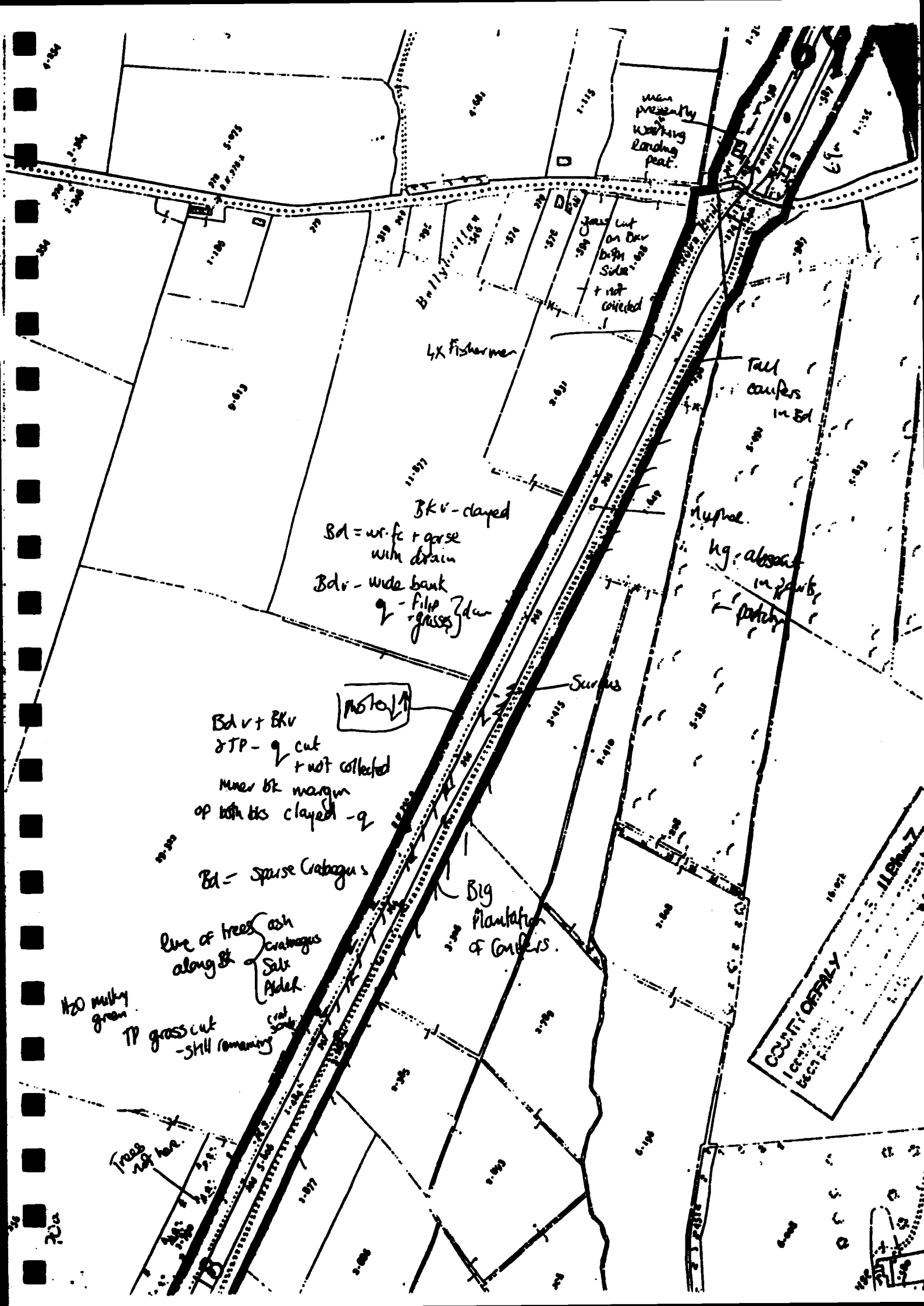
to down
by father.

Post on 10.

Spindle

BdV -
{ bundles
of Fib
+ Valves

.. ~~0~~



main presently
working
landing
peat.

grass cut
on our
bigh
side
+ not
collected

4x Fishermen

Tall
conifers
in Bd

BKv - clayed
Bd = ur. fc + grse
with drain
Bdr - wide bank
q - fillo
grasses } dur

Hupae
hg. about
in parts
+ patchy

Bd v + BKv
JTP - q cut
+ not collected
Minor bk margin
of both bks clayed - q

NOTA

Bd = sparse Crataegus

Line of trees
along Bk
ash
Crataegus
Salix
Alder.

Big
Plantation
of Conifers.

H2O milky
green

TP grass cut
- still remaining

Trees
not here

COUNT OFFICER
10000
10000

70

Phragmites

Bd - ur. fc
+ drain

TP - q-cut
+ not collected

SE on Bd

line of trees
along BK
Alder
Ash

BK margin
with veg

Invasive
grass
on BK

nice
Phragmites

Alder along
BK

Bd = ur. fc
+ drain
(ghana)
val

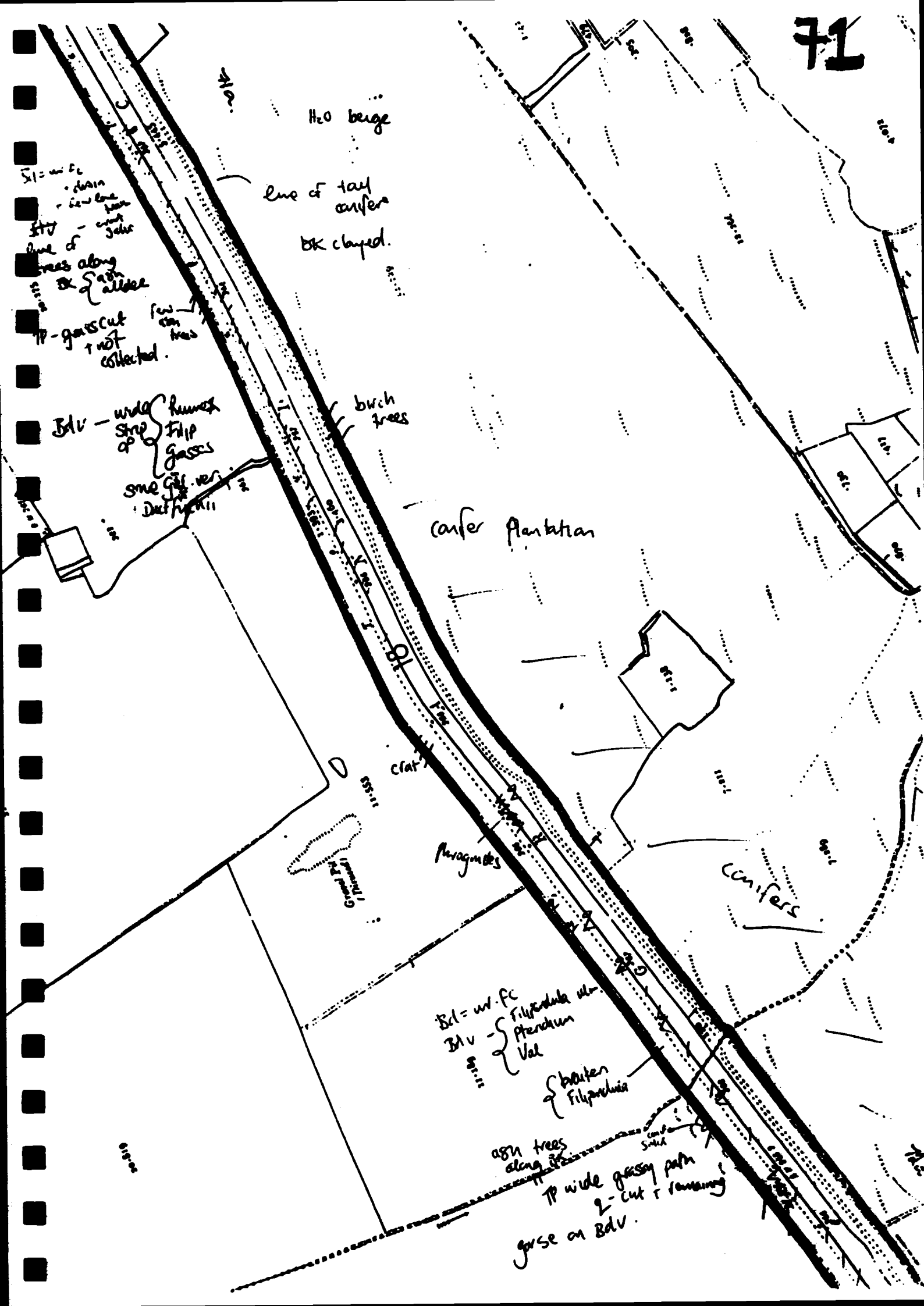
Phragmites
- Muphe

Phragmites
requiring
to clear (crifol
stay
margin
line of
emfars

TP - q-cut
+ not
collected

Bd = ur. fc
with few trees
scattered along

410



H2O beige

line of tall conifers
bk clayed.

birch trees

conifer plantation

crat.

Puragmites

conifers

Bd = w. fc
BdV - { Filipendula ul.
Pteridium
Val

Shrub
Filipendula

ash trees
along it

TP wide grassy path
2-cut & remaining
gorse on BdV.

Si = w. fc
daisy
few low trees
few tall trees
line of trees along
bk of ridge
TP - gorse cut
& not collected.

BdV - wide strip
of humus
Filip
Gorses
one gorse tree
Dutchman

72

Published by the Director General of the Ordnance
15400
The numbers are given indicated thus (a. 15400) under the Year of Service Notes on

11-09-01

OFFICE

→ conifers

small cut.
g. 1.32 in
Riv.

Vegetation on Br from here

Conifers
- Pine
+ Crabapple
Some Crabapple
taken along
BK

Phragmites
on clay.

Enattogue

~~Salamore~~
~~F. Crabtree~~

Asi dam
in Bel
also Sax
+ Crater

B

SP cut
not removed
Exposed clay

ash
Alder
brush

photo
due E

Salix
Glaucus
Grise

Glyceria
Val
Filip
J. et al

clay
pile
red clay
dam

grassy
not cut
Bk & red
dam by
tall grasses

Alder

patches of
Thymus

Bk clayed
ash tree

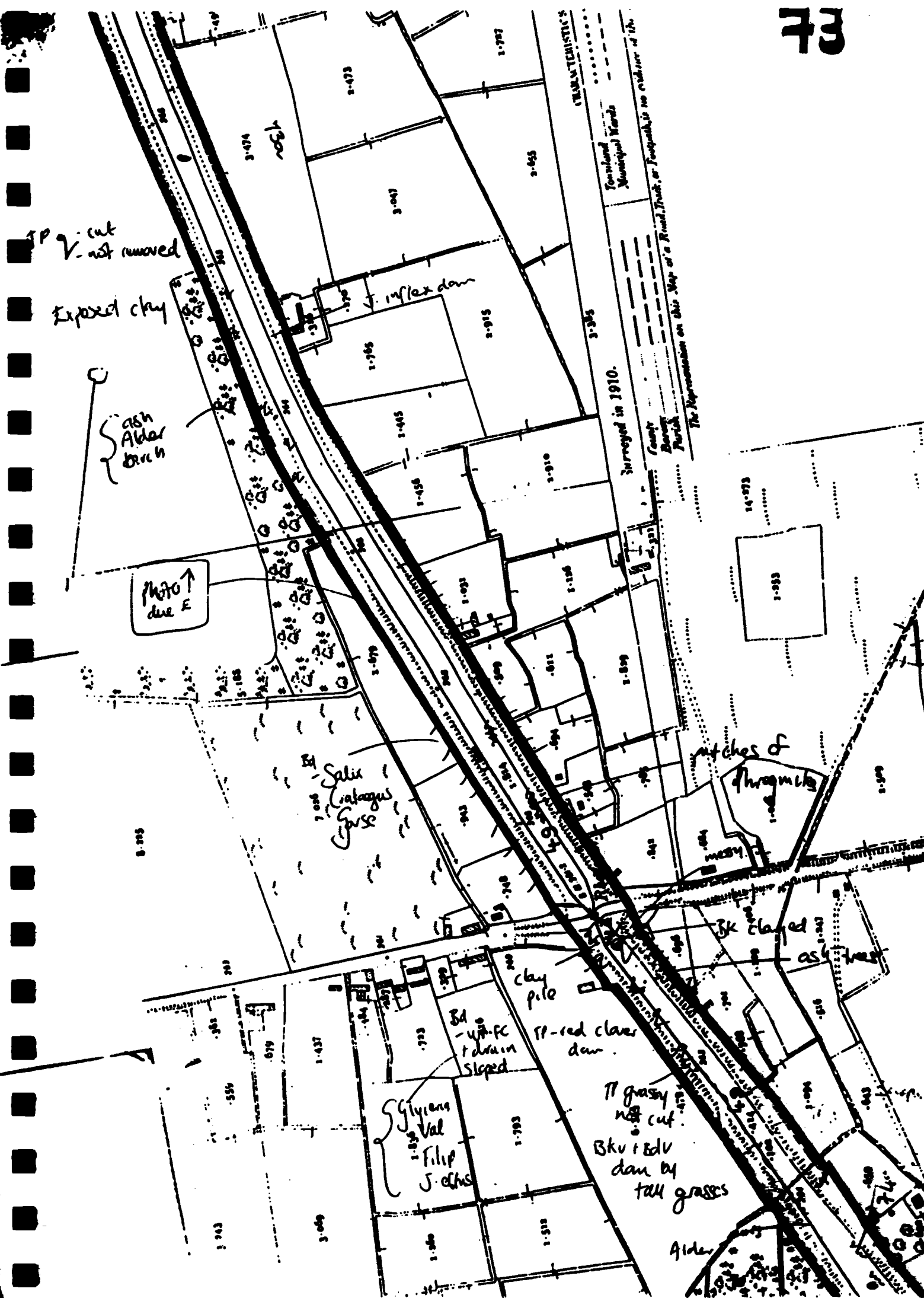
Surveyed in 1910.

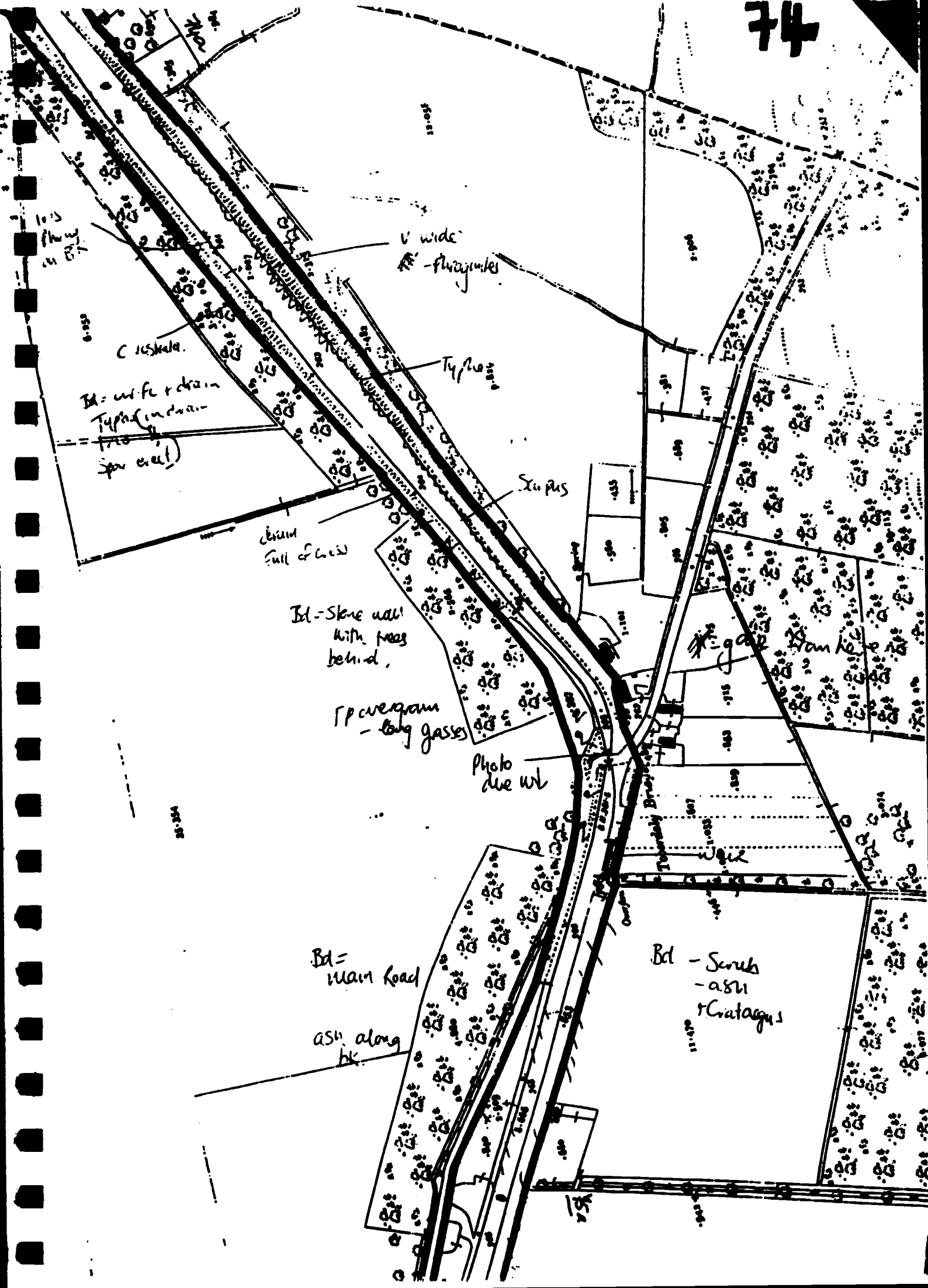
County
Barren
Parish

The Representation on this Map of a Road, Track or Footpath is no evidence of the

Townland
Municipal Ward

PLANNING
TECHNICALS





TS

Swelling
1 small
mass
(2m)

thick
ASH
Silt

inner margin
glaciers 9 in parts

H2O beige

near #
Phragmites
on bk.
Bracken on both
bk

Sepal
embankment

TP gas
p/m

higher
than
bk

grass cut
m² silted

retain

Bl =
+ trees
+ hg

BK
sp. m.

Phragmites
on bk.

Riv
(Pulp
mill
this
area
trees
hg)

Alder on bk

Better
intact
big
this
side

Drier
Bg

SHEET X 12

15A

By

Solids
 $f = 9$ - cut
 remains down
 - 2

Bd-Salix
Blw trunk
g.c.

✓ *resinata*.
✓ *resinata* track

Ash Fur
Phragmites
on Bk.

Bd = Tall trees
S Beech
Sycamore
Alder
Soft pine

~~caple x2.~~

3du } Cynobryus
 } heterocyst
 } Plecton
 } Stenobry

Bel - routers
+ ASes

COUNTY OFFICER 08:10 PM 12-12-12
I body that the beneficiary should person have
been paid for his VETERAN'S BENEFITS. 0111155
for Consideration 0111155

Scum bag
with ~~hairs~~
+ glue.

Bel = cur. fc
+ chain.

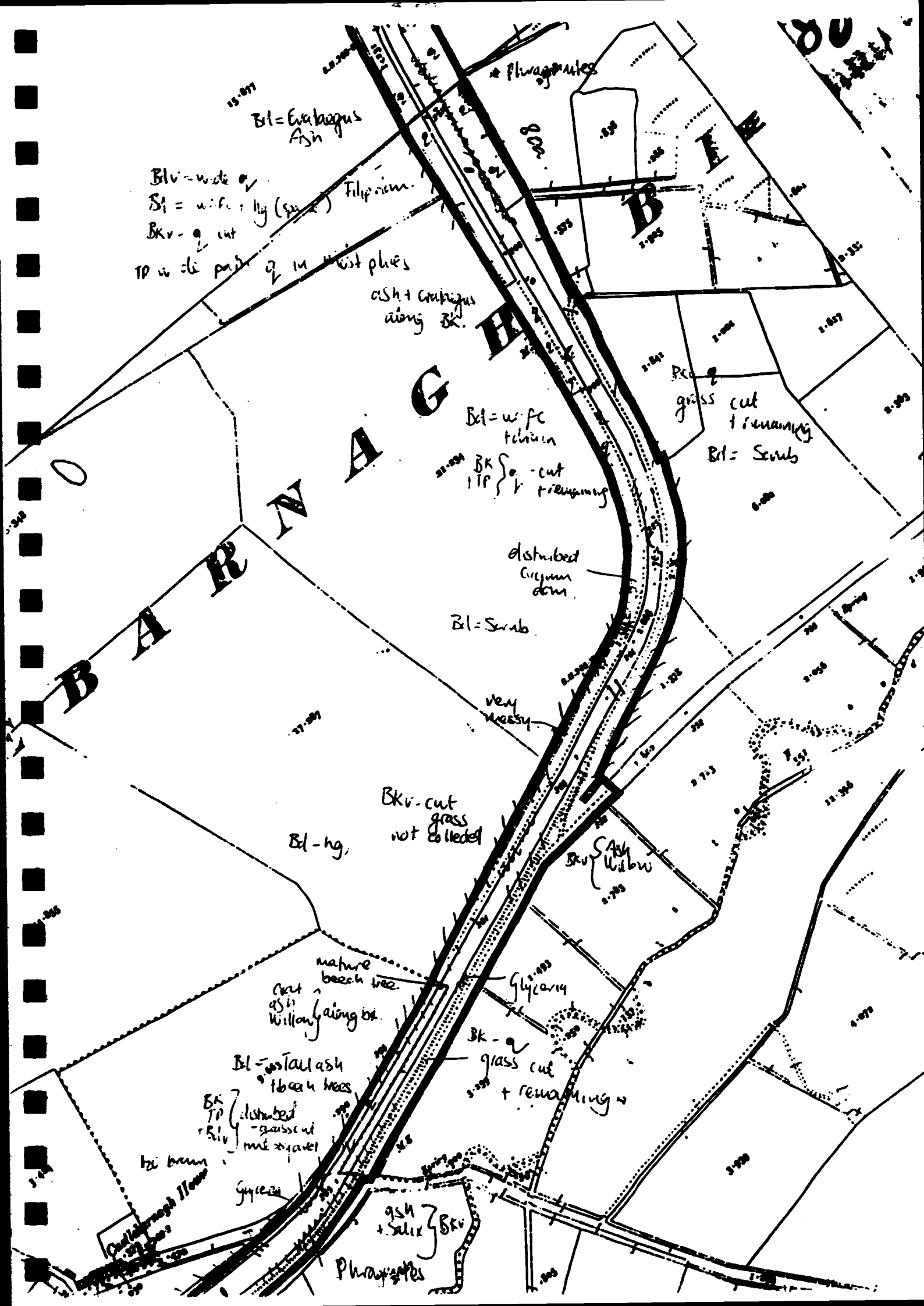
~~J. Finner
Finner
Vander
100~~

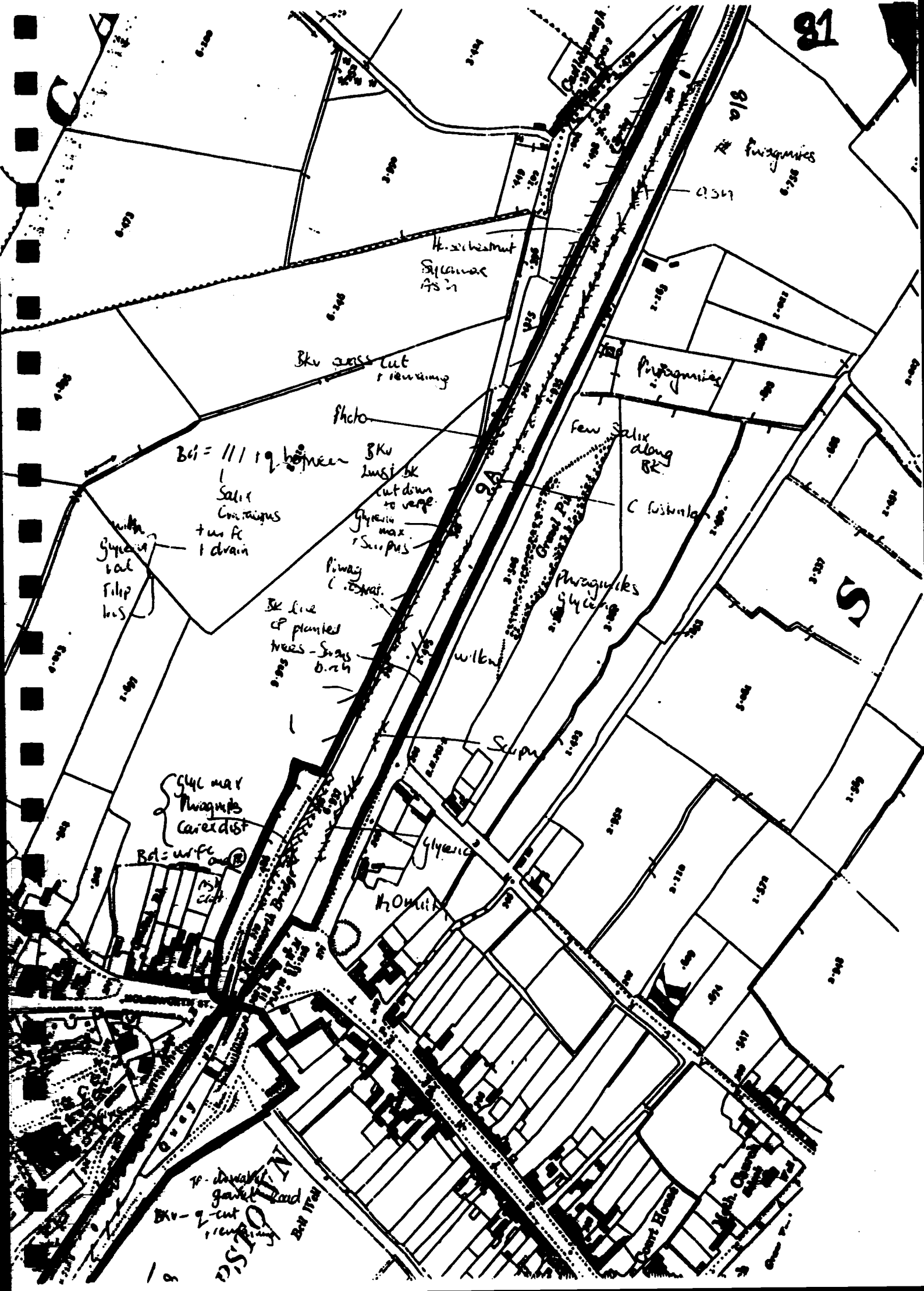
Bd: as ~~in~~!

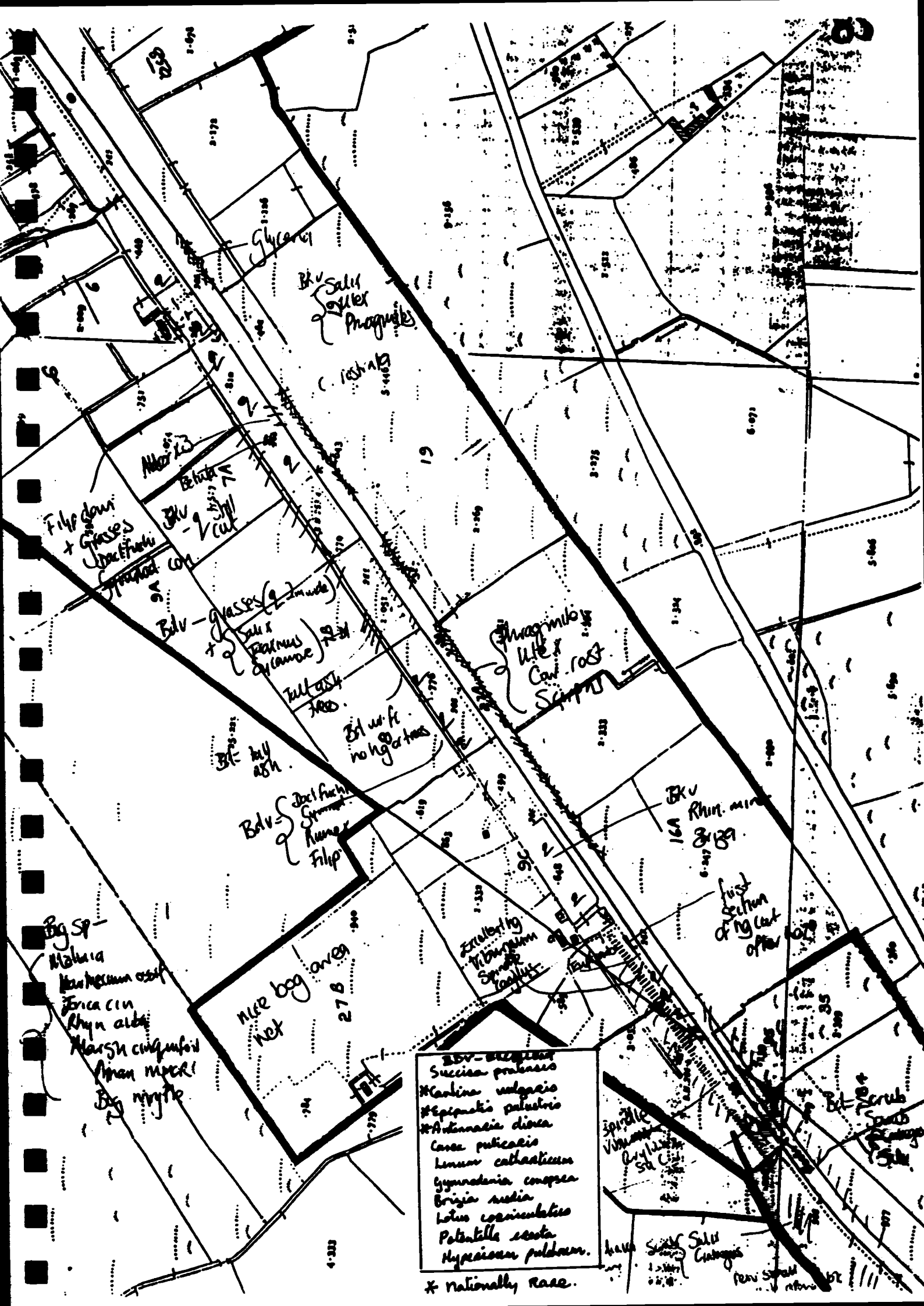
some but
it's broken
r gorse

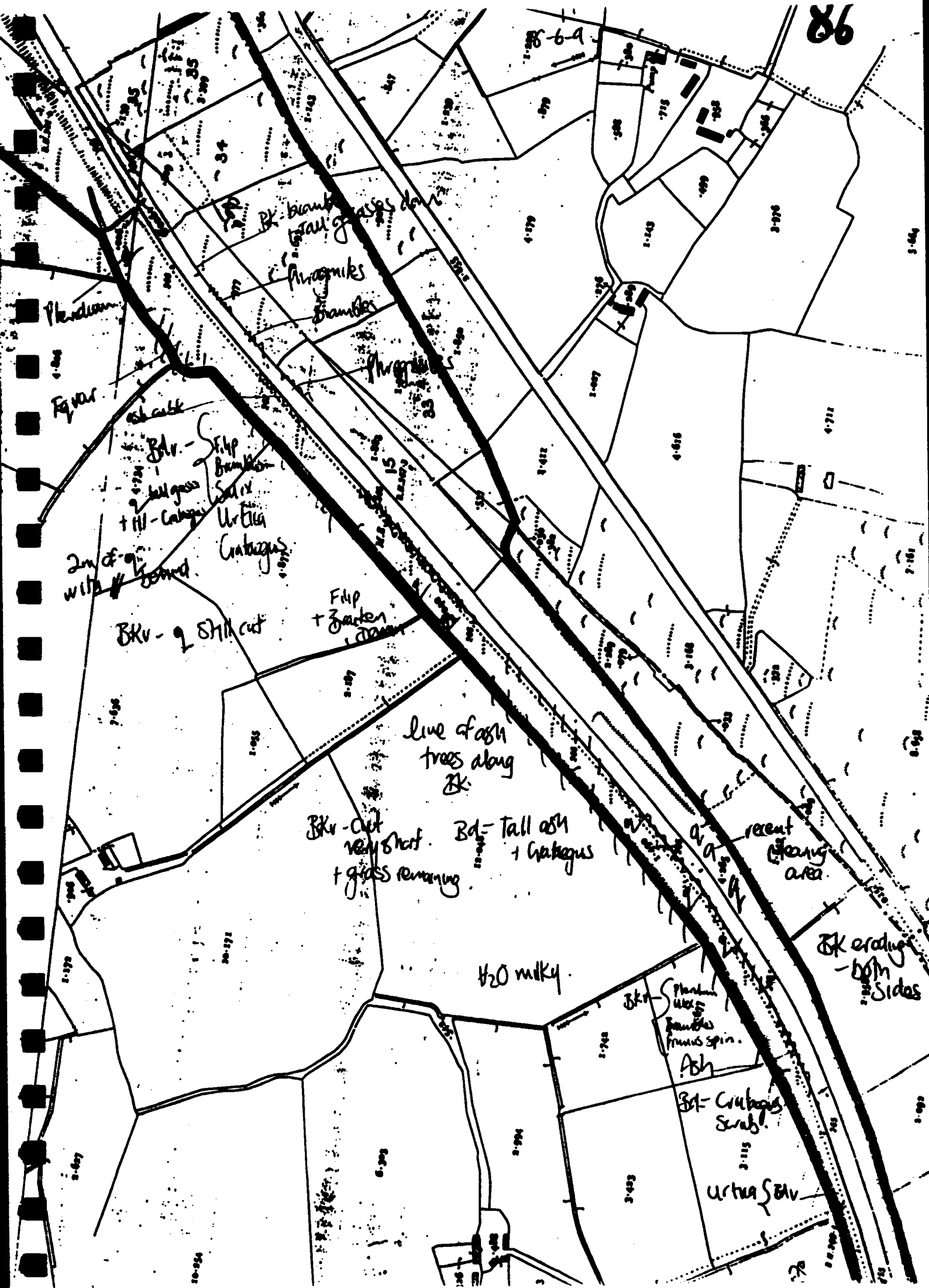
TA $\approx$ cut of 1
 containing
 BK

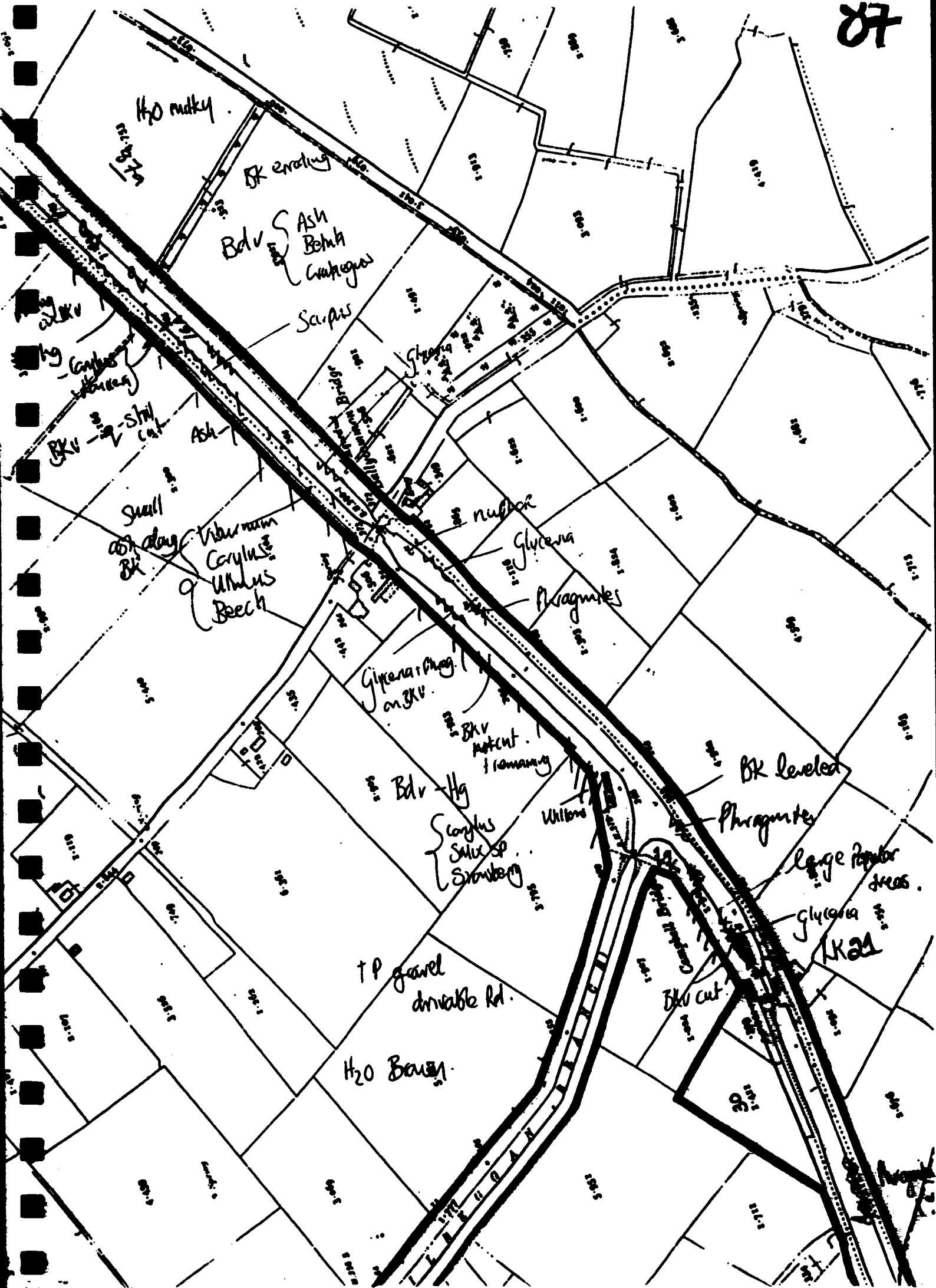
[illegible]

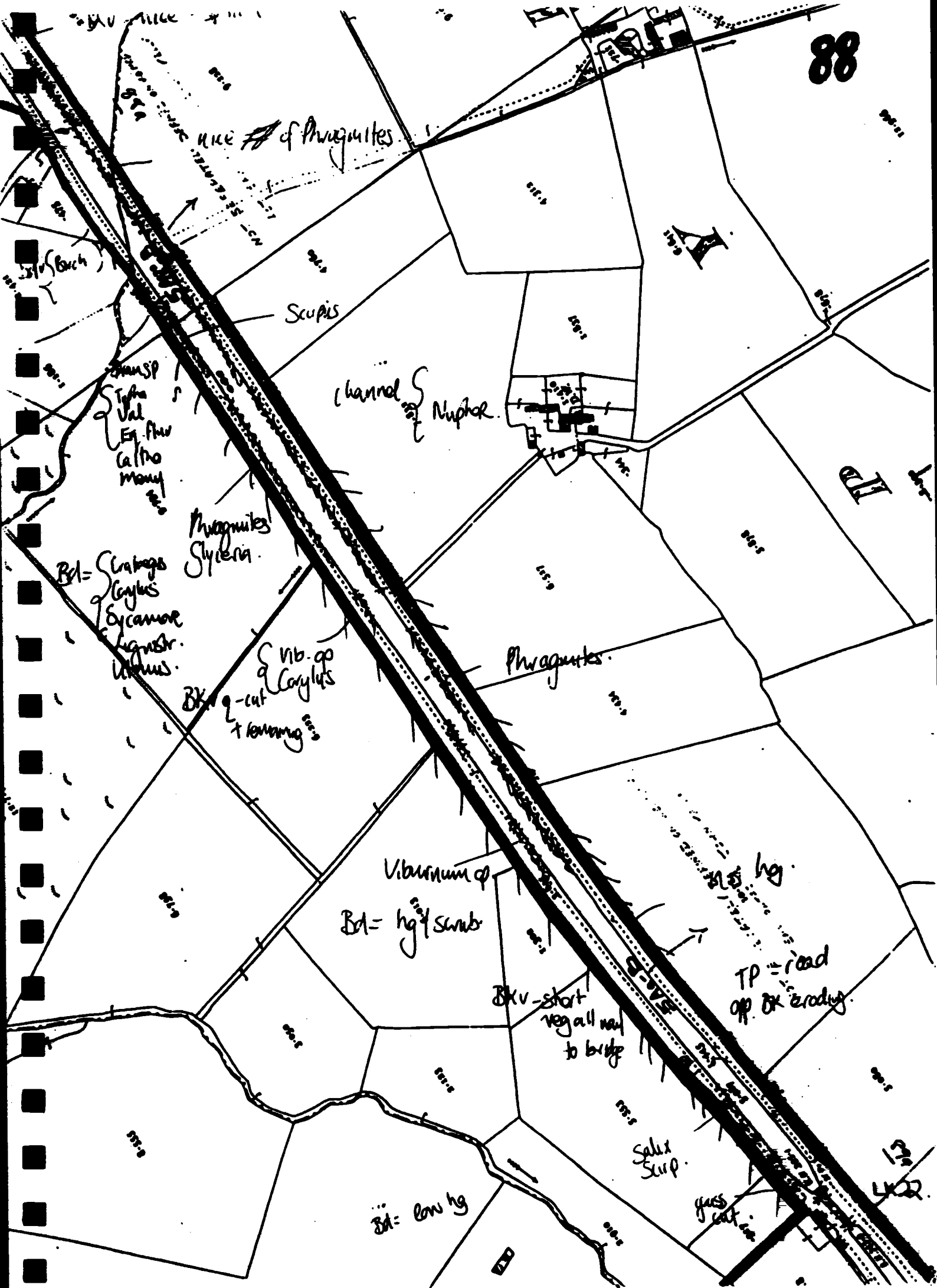


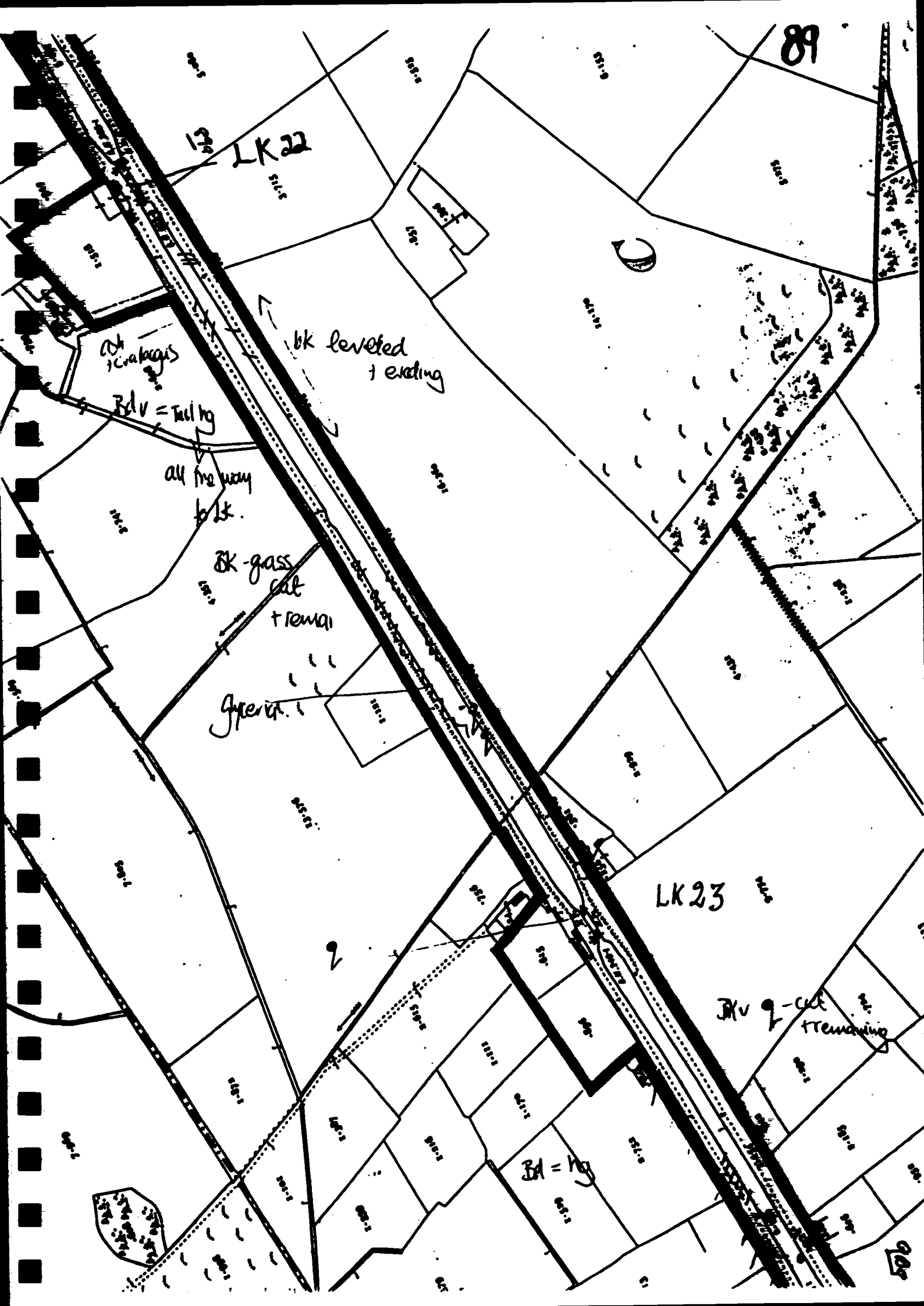


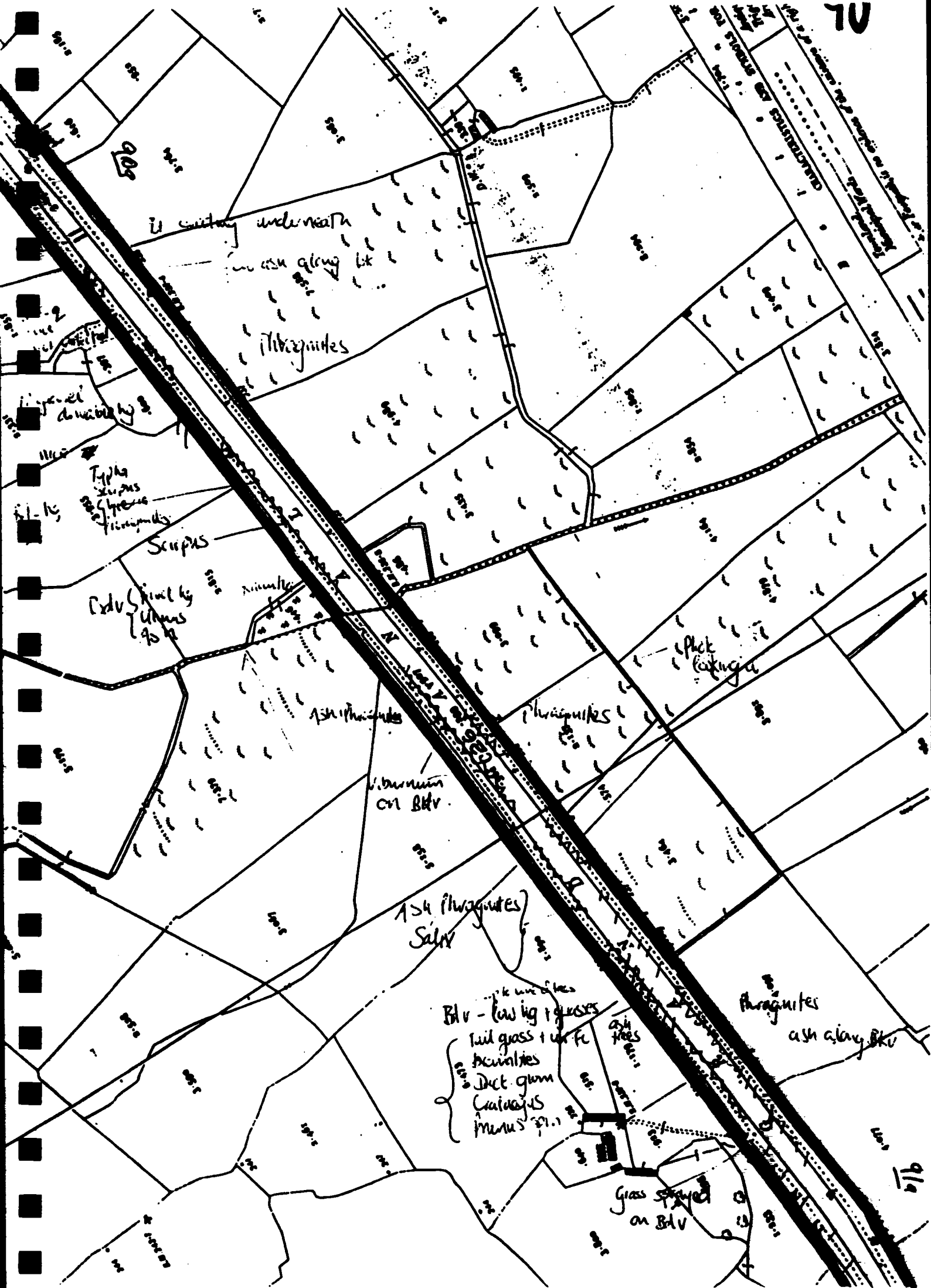


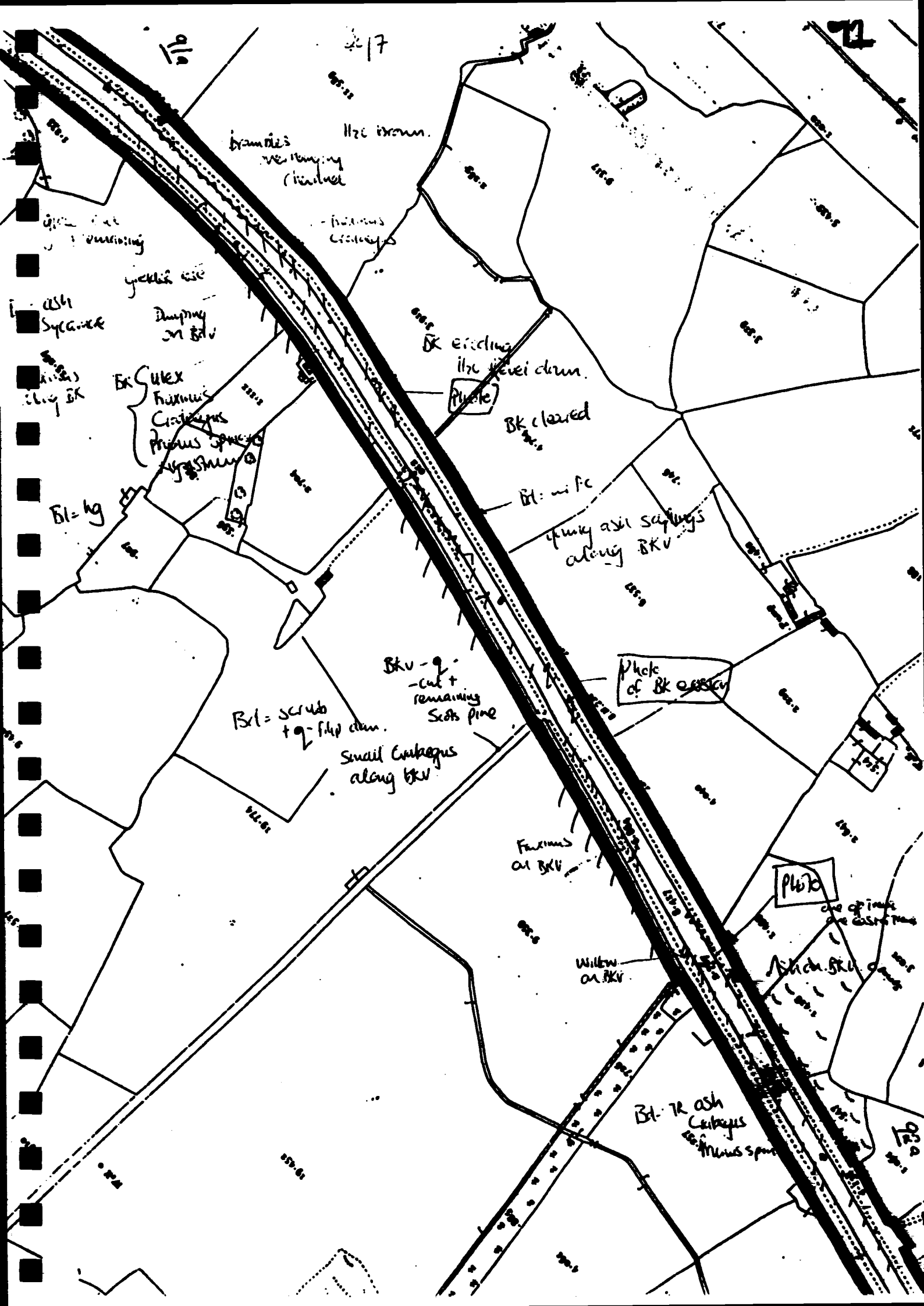


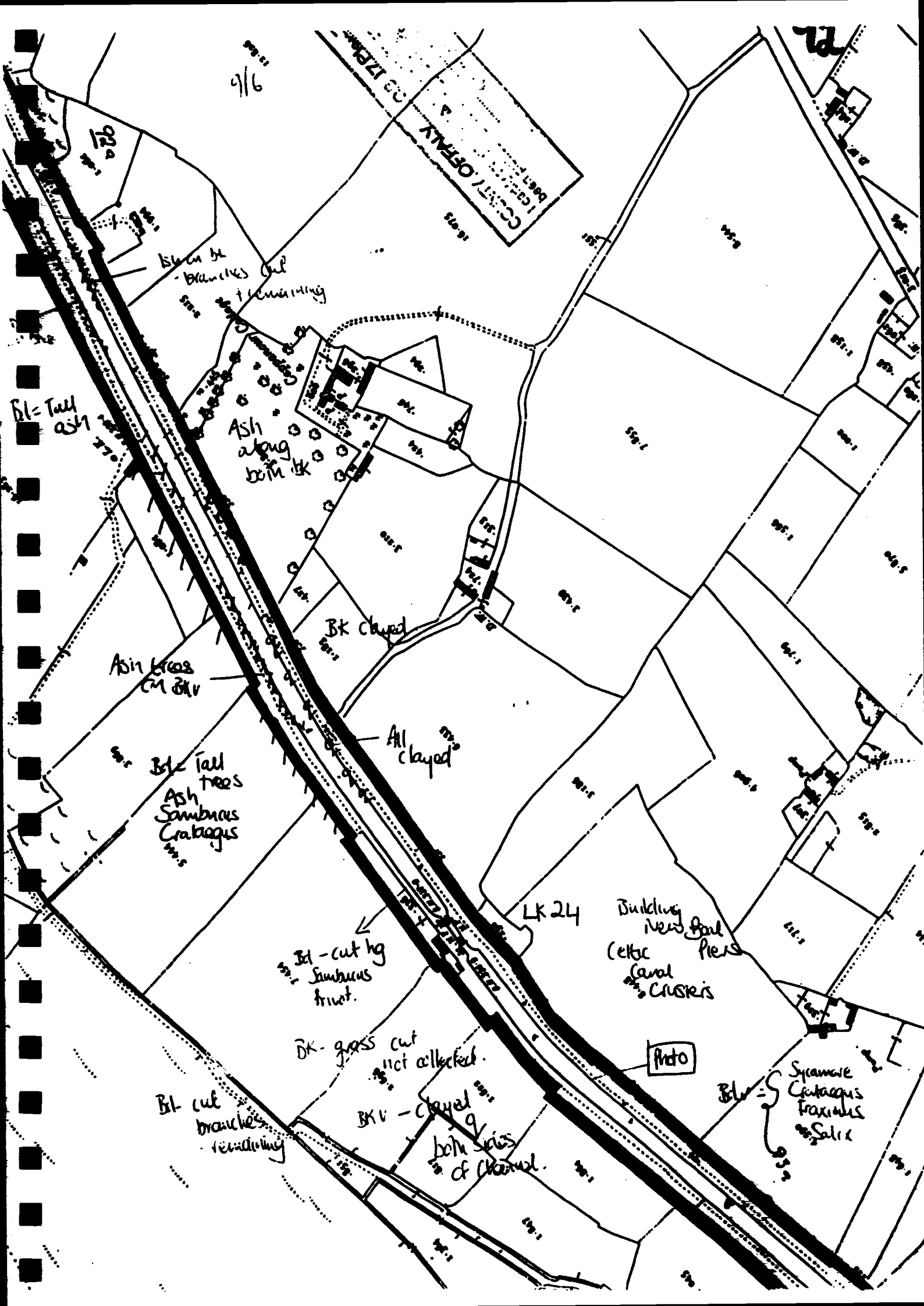












9/6

COUNTY OF LOS ANGELES
BERRY
1000
1000
1000

Black br
branches cut
+ remaining

Bl = Tall
ash

Ash along
both bk

BK clayed

Ash trees
on bk

All clayed

Bl = Tall
trees
Ash
Sambucus
Crataegus

LK 24

Building
New Bond
Piers
Cable
Canal
Crests

Bl - cut by
Sambucus
fruit.

BK - grass cut
not collected.

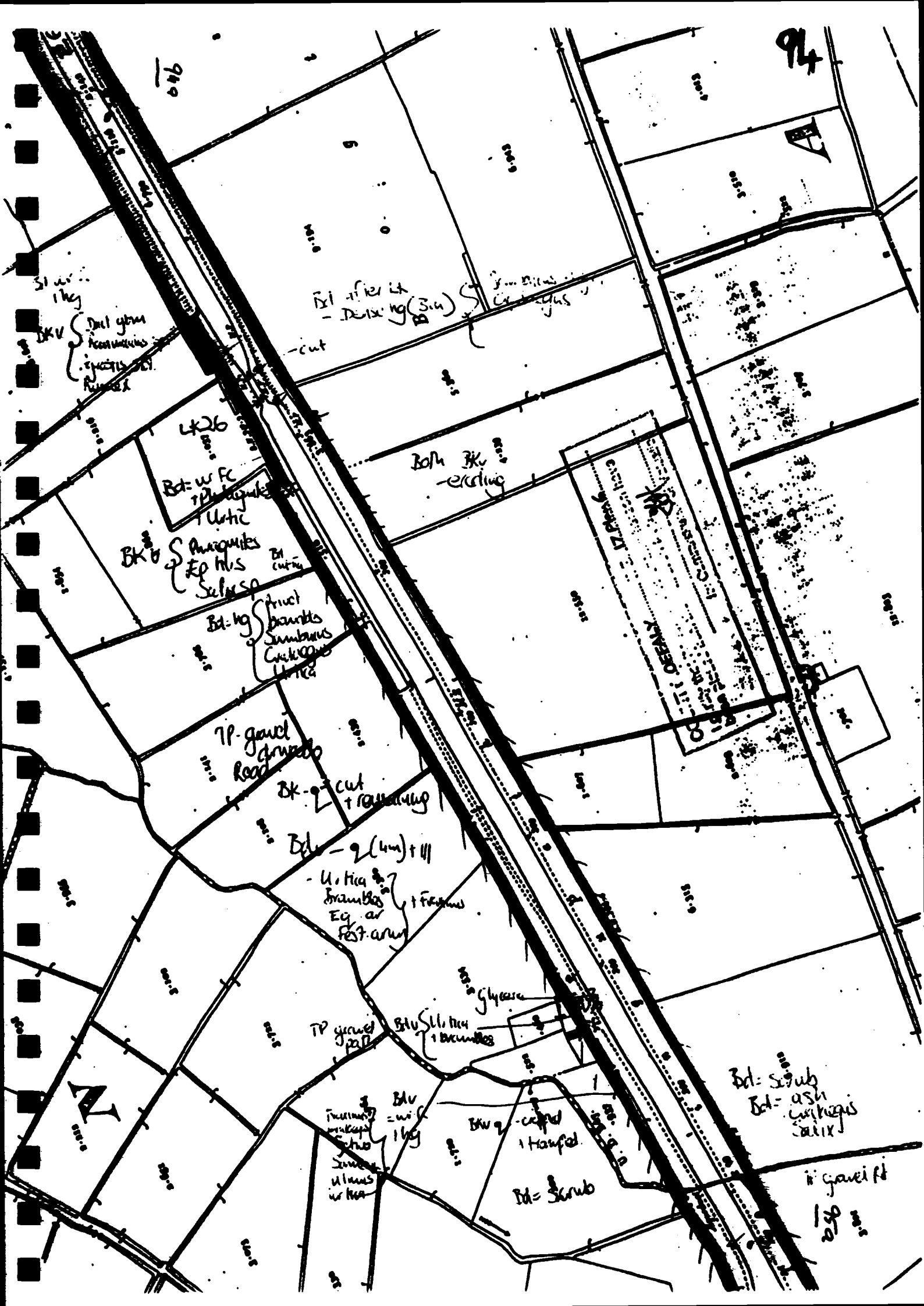
Bl cut
branches
remaining

BK - clayed
both sides
of channel.

Photo

Bl =
Sycamore
Crataegus
Fraxinus
Salix

046



1st after Lk
- DENING (3m)

- cut

Bd: BK
- ending

Lk 26

Bd: w FC
P. hirsuta

BK
P. hirsuta
Ep hirs
Sel. sp

Bd: kg
P. hirsuta
Brambles
C. hirsuta
U. hirsuta

TP gravel
road

BK
cut + training

Bd: - 2 (km) + 11

U. hirsuta
Brambles
Eg. ar
Fest. arum

TP gravel
path

Bd: U. hirsuta
Brambles

Bd: - with
1 kg

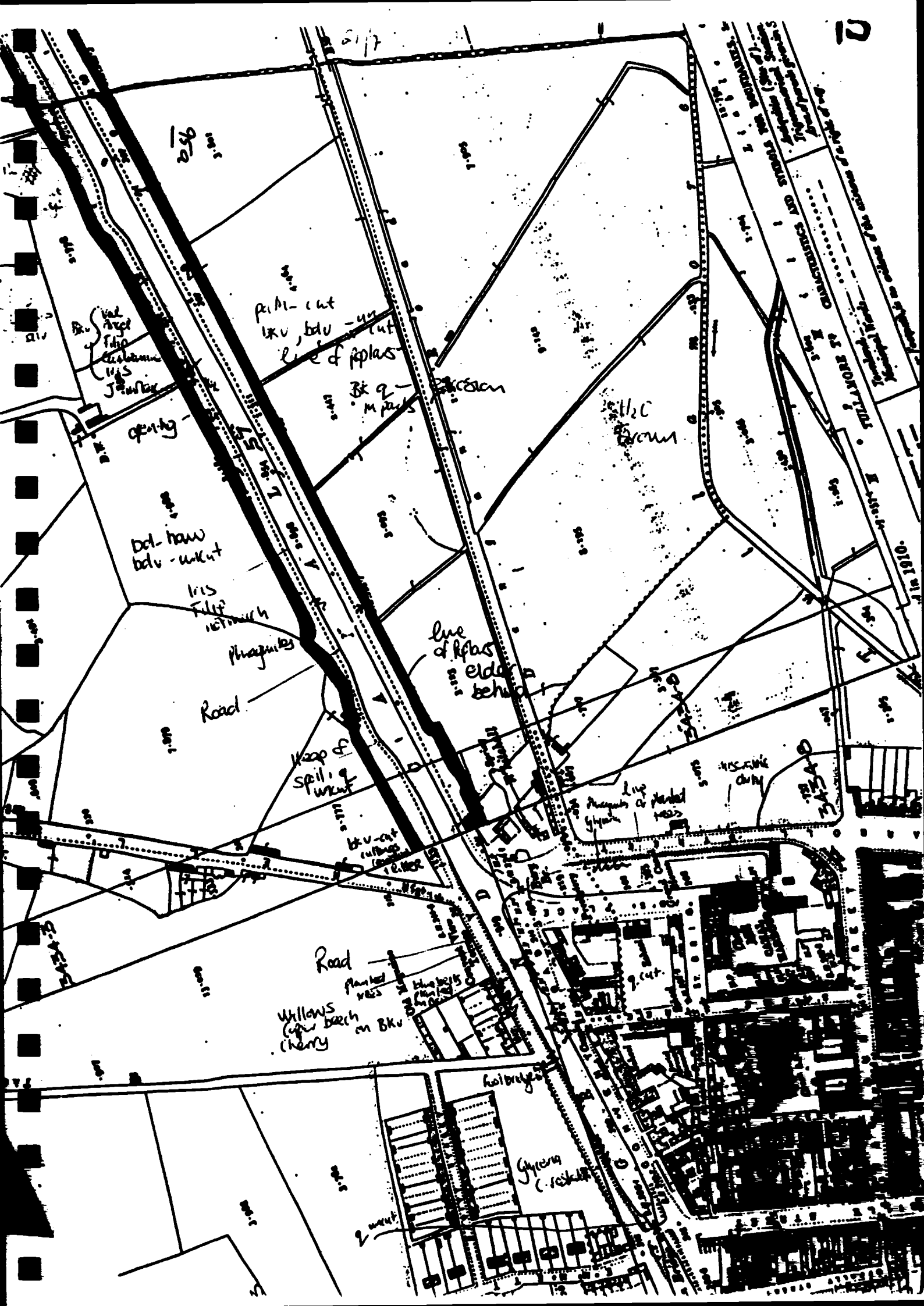
Glycerol

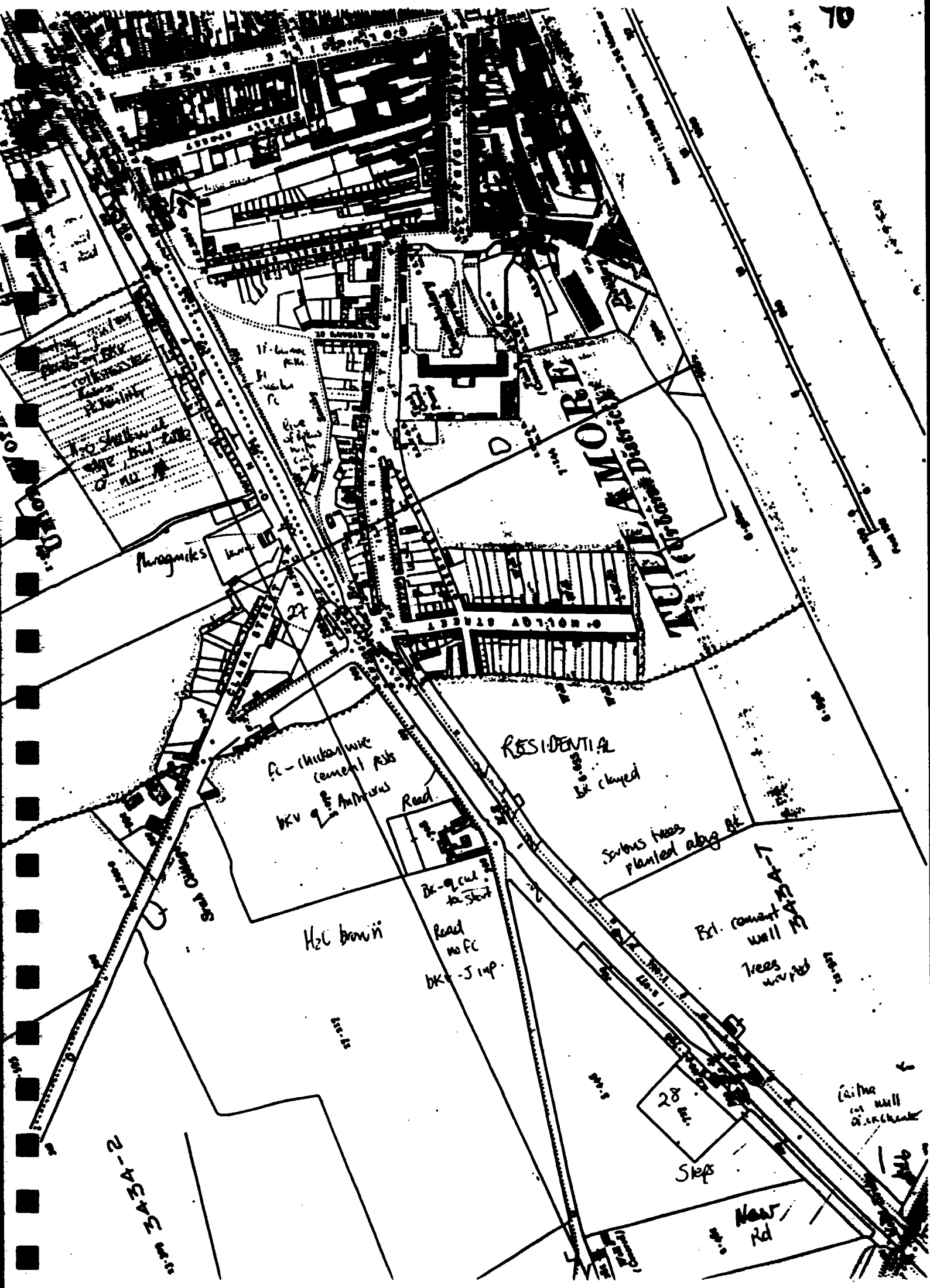
Bd: 2 - capped
1 Humped

Bd: Scrub

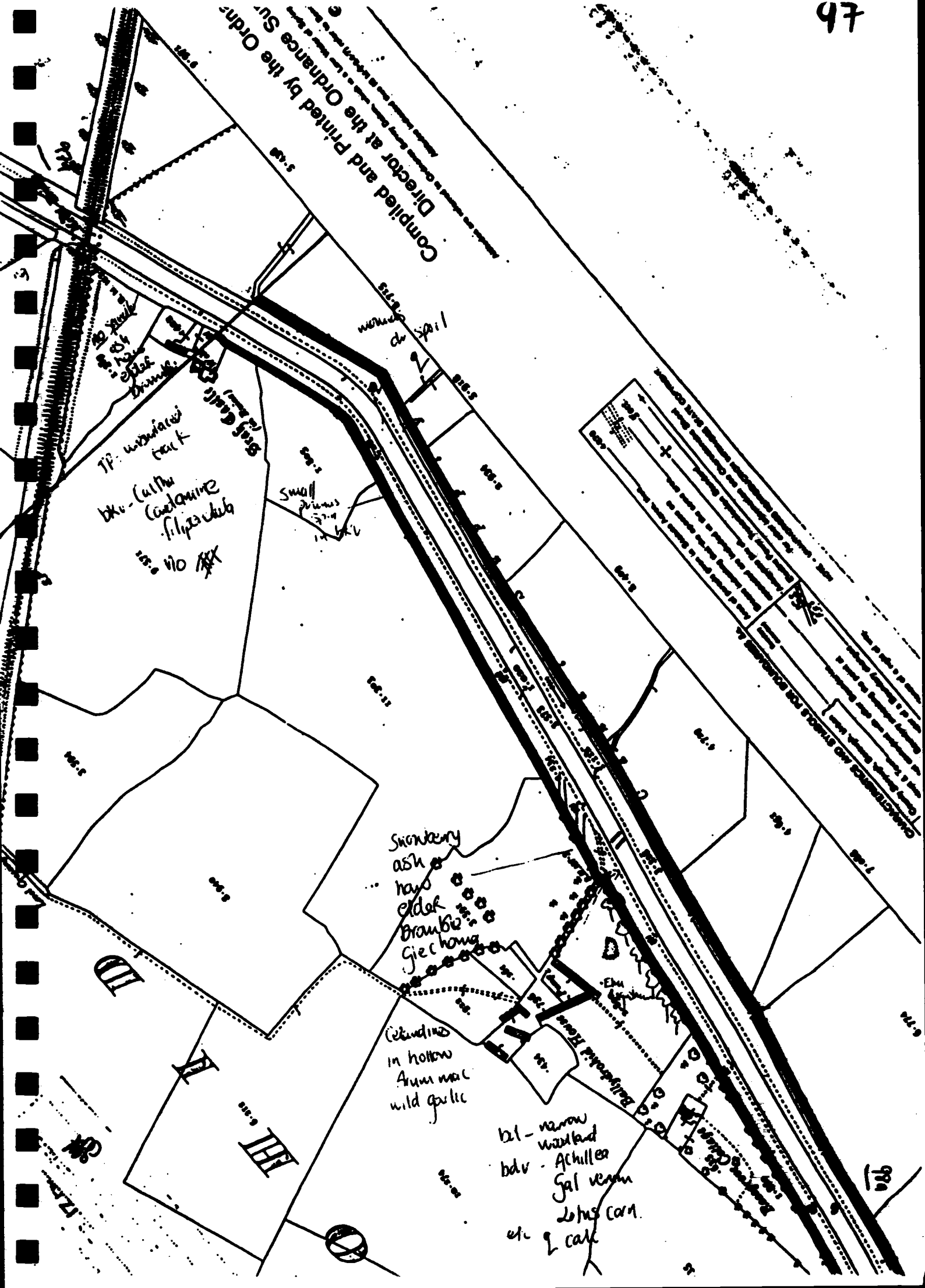
Bd: Scrub
Bd: ash
C. hirsuta
Sel. sp

TP gravel
1 kg
2 kg

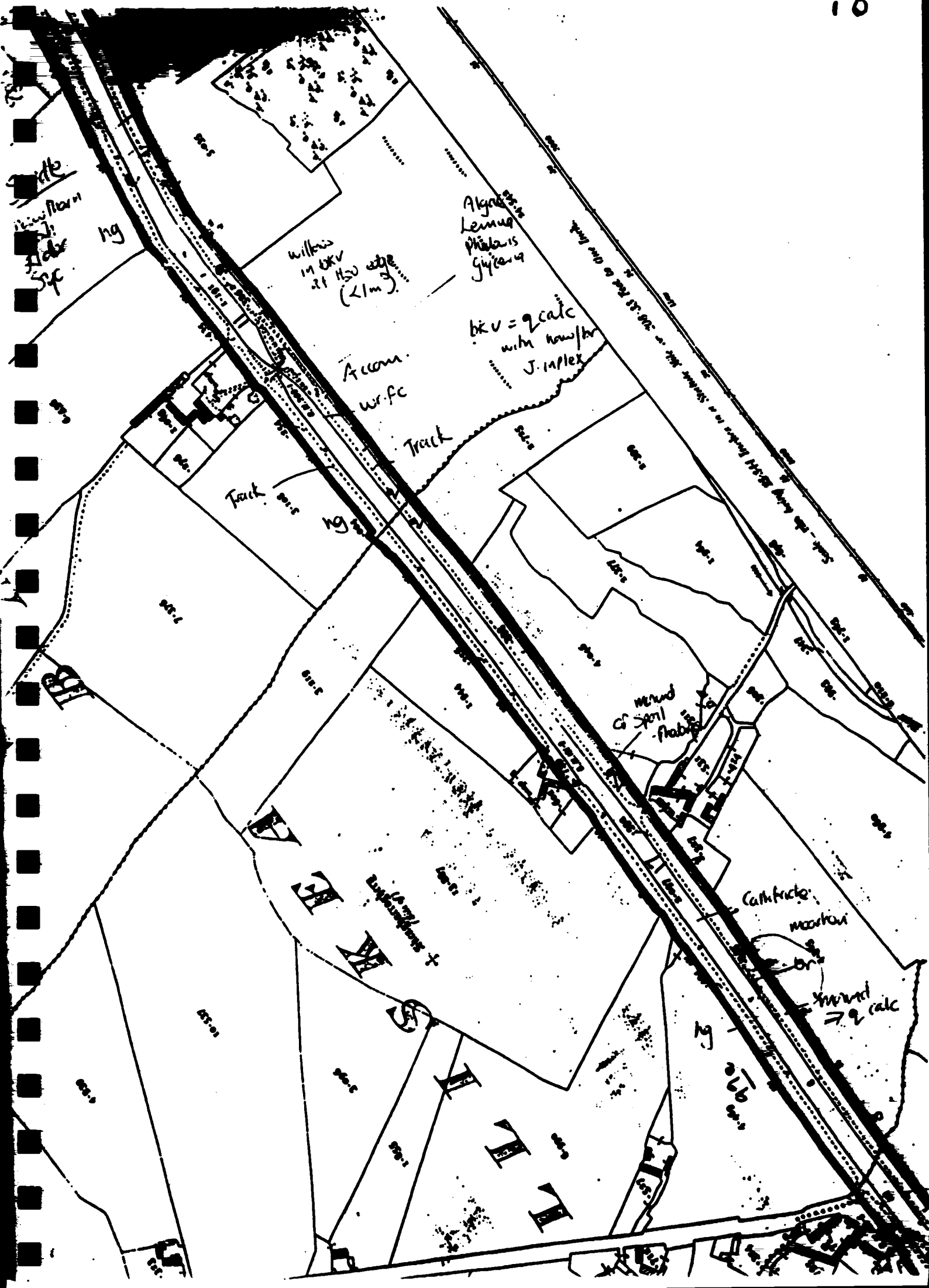




Compiled and Printed by the Ordnance Survey
 Director at the Ordnance Survey



Area	Plant Species	Notes
1	...	...
2	...	...
3	...	...
4	...	...
5	...	...
6	...	...
7	...	...
8	...	...
9	...	...
10	...	...
11	...	...
12	...	...
13	...	...
14	...	...
15	...	...
16	...	...
17	...	...
18	...	...
19	...	...
20	...	...
21	...	...
22	...	...
23	...	...
24	...	...
25	...	...
26	...	...
27	...	...
28	...	...
29	...	...
30	...	...
31	...	...
32	...	...
33	...	...
34	...	...
35	...	...
36	...	...
37	...	...
38	...	...
39	...	...
40	...	...
41	...	...
42	...	...
43	...	...
44	...	...
45	...	...
46	...	...
47	...	...
48	...	...
49	...	...
50	...	...



Published by the Director General at the Ottawa
 Ottawa National Park (as per) note to Board of Spring
 in type & reference material
 1972
 1972

CONFIDENTIAL

Kind

CONFIDENTIAL

BALTYC

wide track
narrow bkv
no ~~xxx~~
narrower bkv

3 mixed
Pinegrove

29 - repairing / replacing AK

consists of bkv
new *Tribolium palens*
Lotus corniculatus
Ver. ch
PC name

BKV / S
Phalans
→ 2 cut

Cattha

Gyria
na

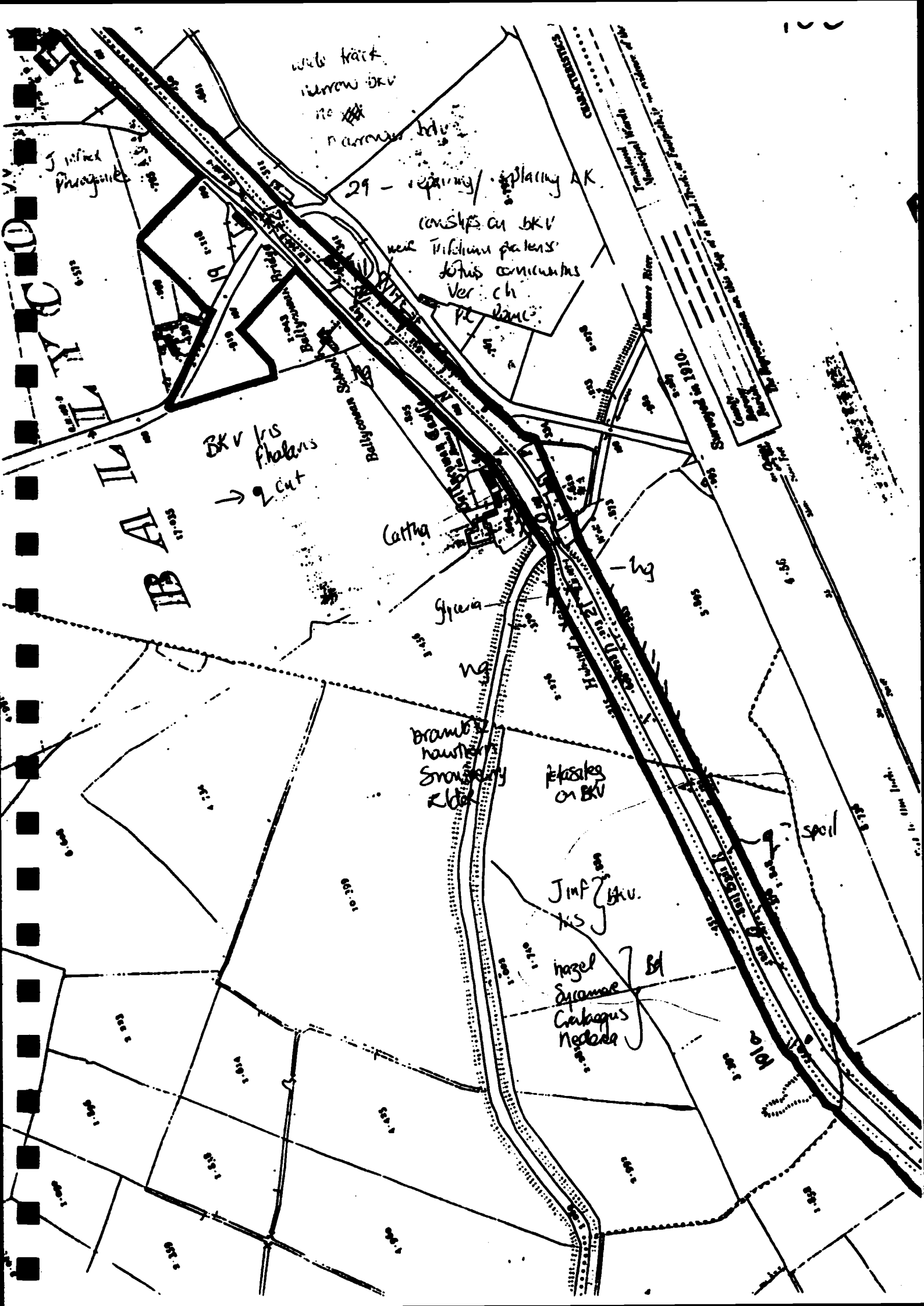
brambles
hawthorn
Syringae
Rd

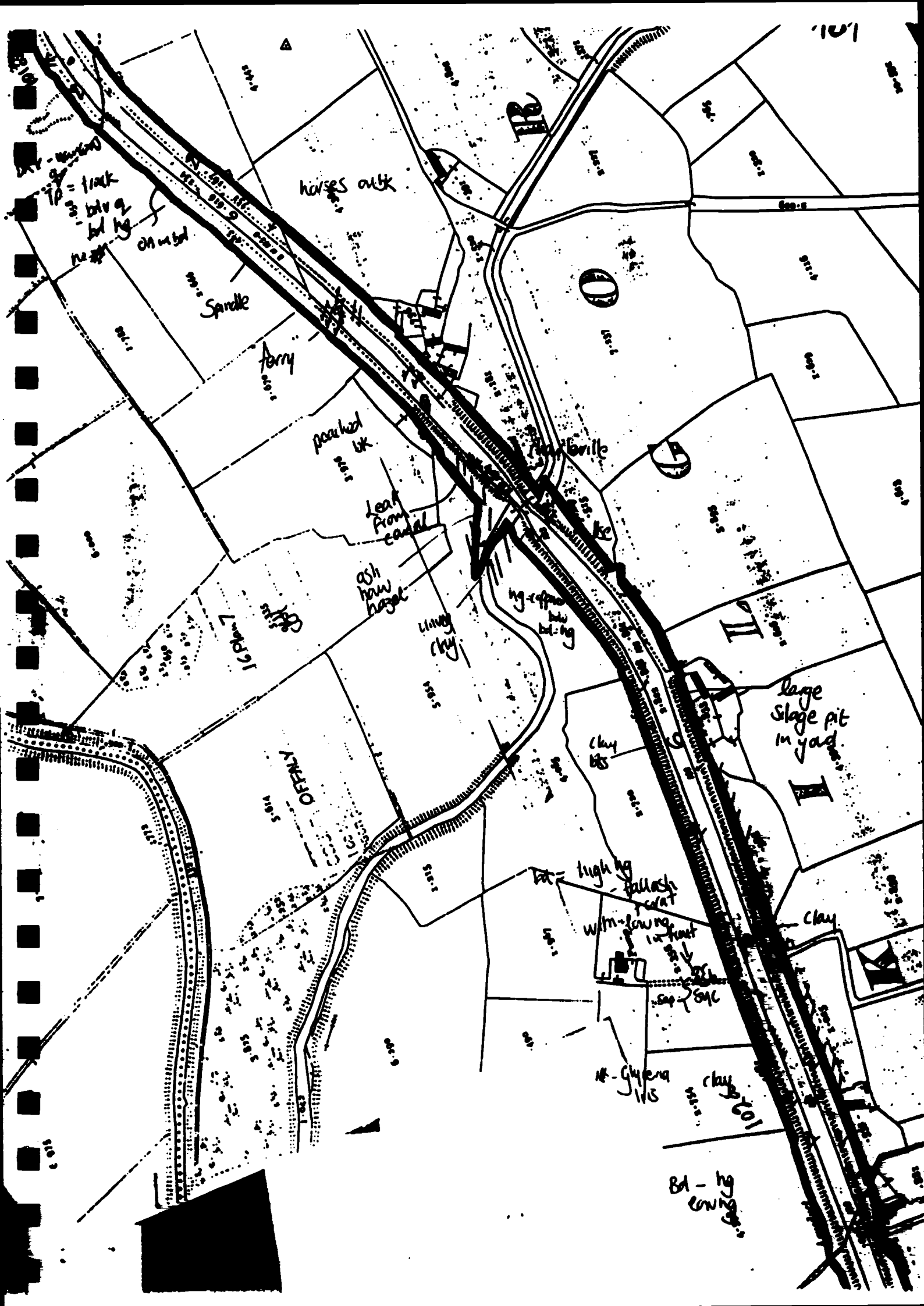
leaves
on bkv

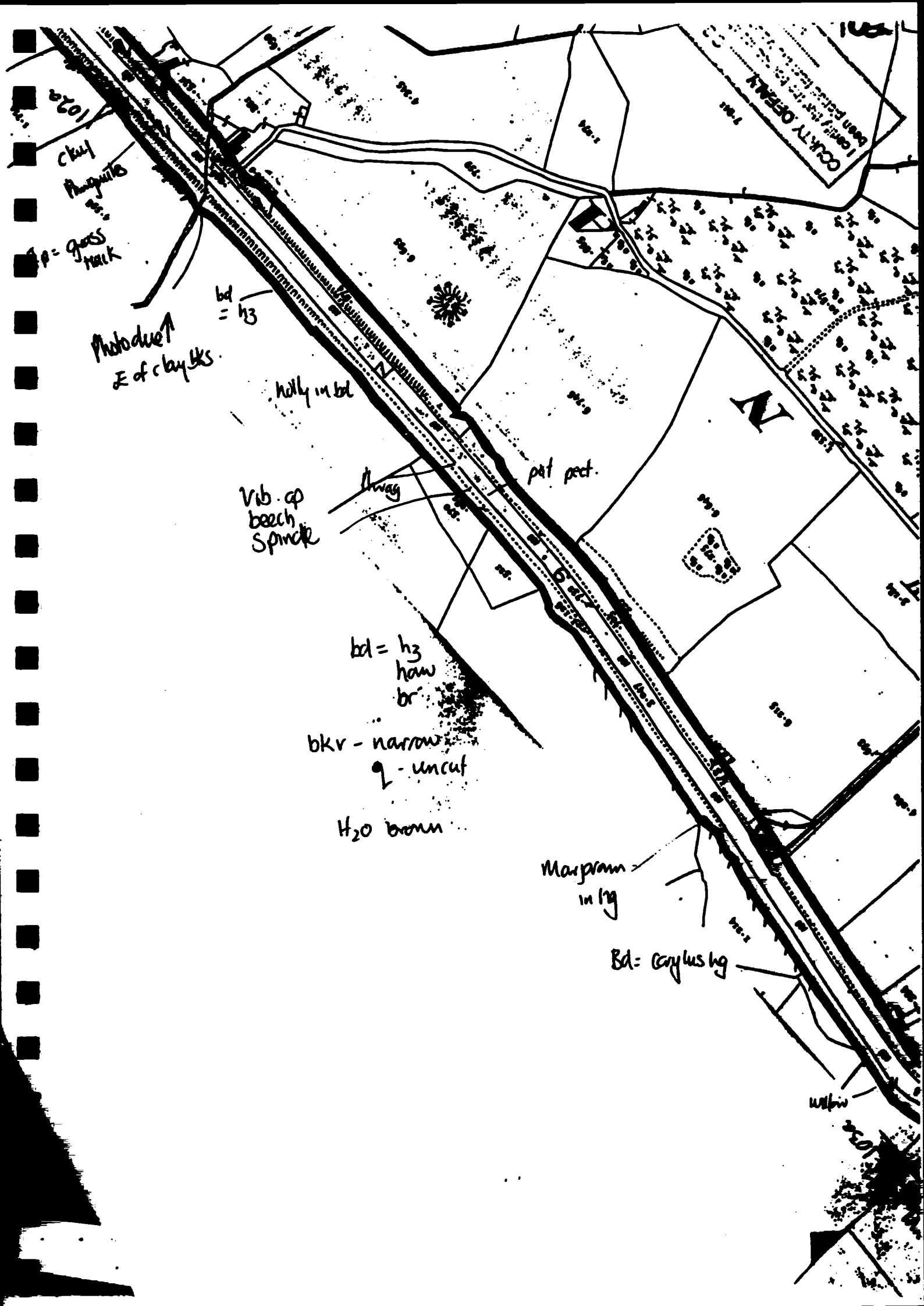
Int J. bkv.
K.S

hazel
Syringae
Crataegus
Nedra

spoil







601
clay
Piquets
goss
mark

Photo due ↑
E of clay bks.

bd = h3

holly in bd

Vib. cp
beech
spindle

bd = h3
haw
br

bkr - narrow
q - uncut

H2O brown

pet pet.

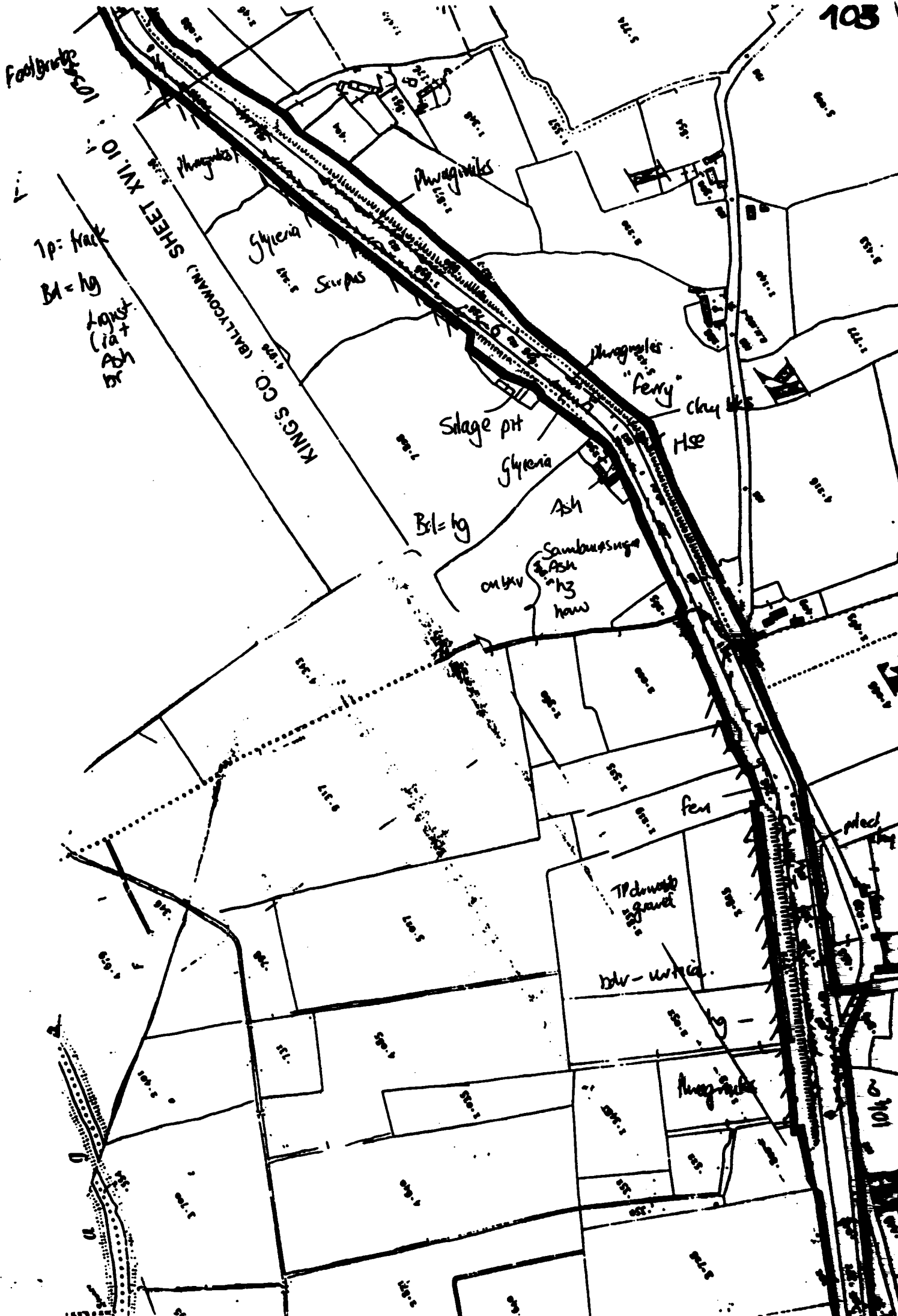
Margram
in lg

Bd: corylus lg

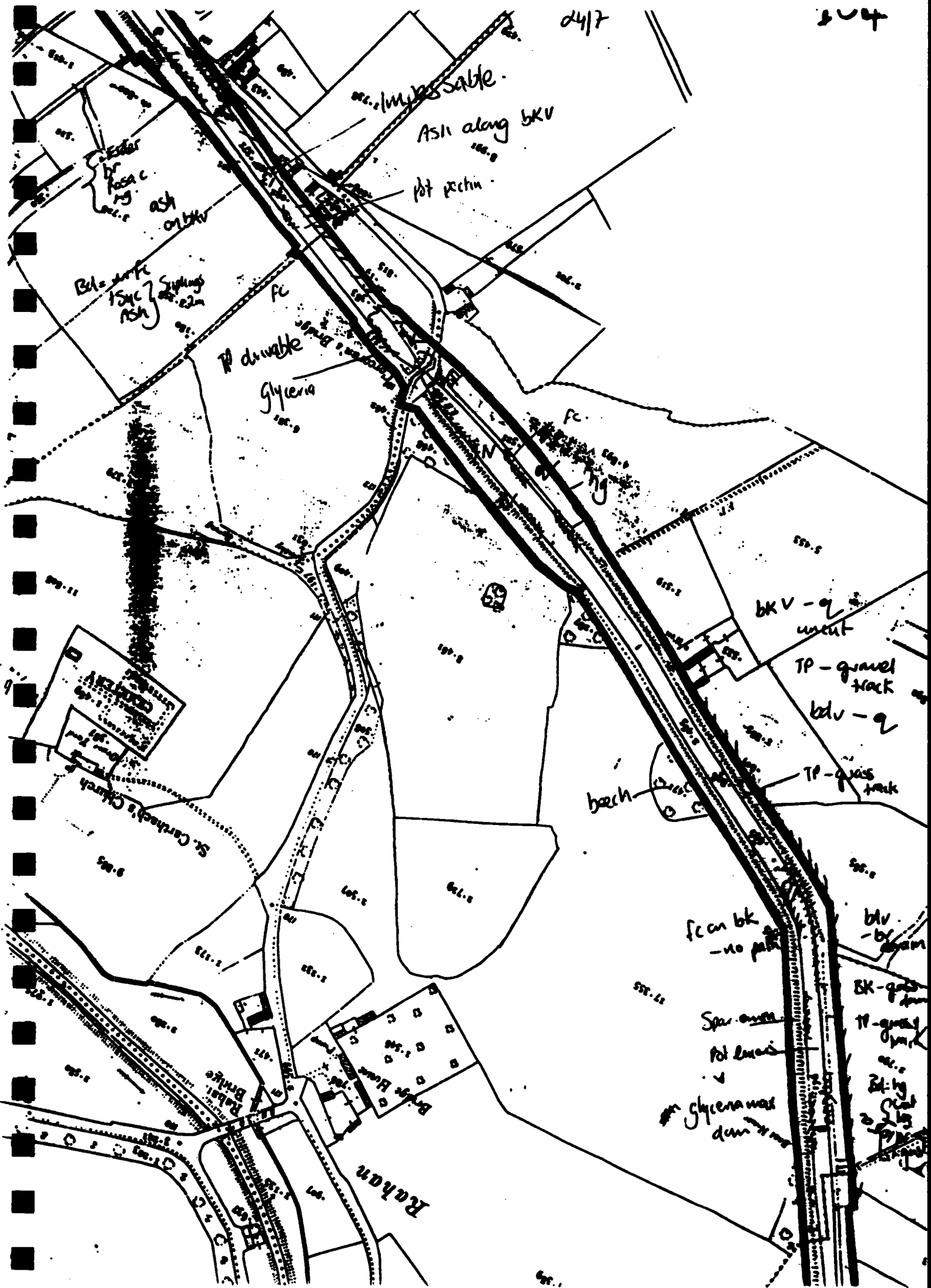
willow

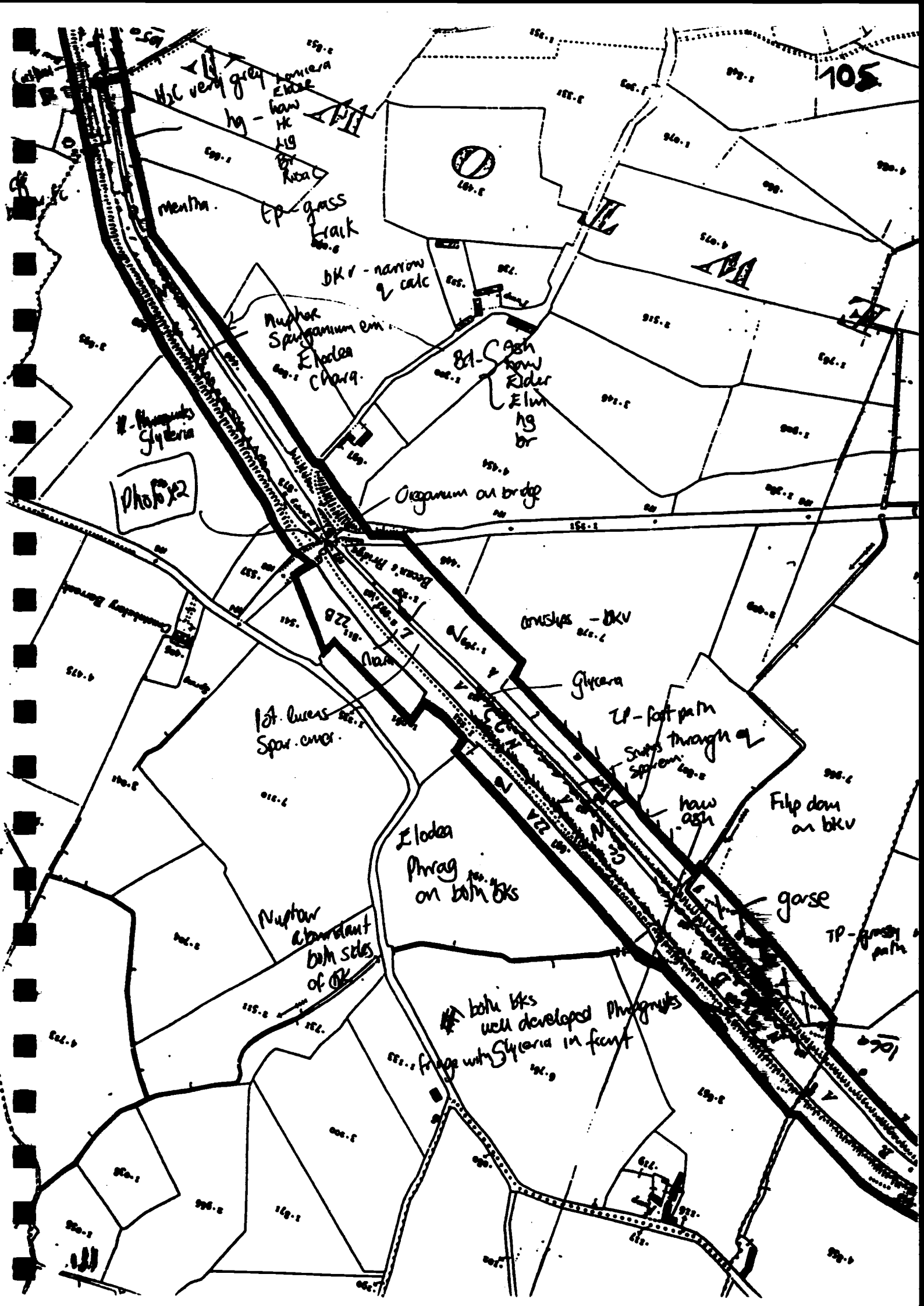


LOCALITY ORIGIN
10000 ft. 10000 ft. 10000 ft.



١٥٤





off wind
Heard

Glyceria

J. inflex - bkv

Circum
 600: TP
 Phryganes 200:

~~H₂O clear
but brownish~~

Glycerol plates

MB - midorch
5. wide ~~the~~
push back
.. to edge

Phragmites Road

Road.

hg 2 Crat
Ash
Subst. Sample

~~Glyceria pot pectin~~

Spaw enels

Read

New Houses

bkv 2/2/2020

channel
- Elodea
Nuphar
Sc (sub)

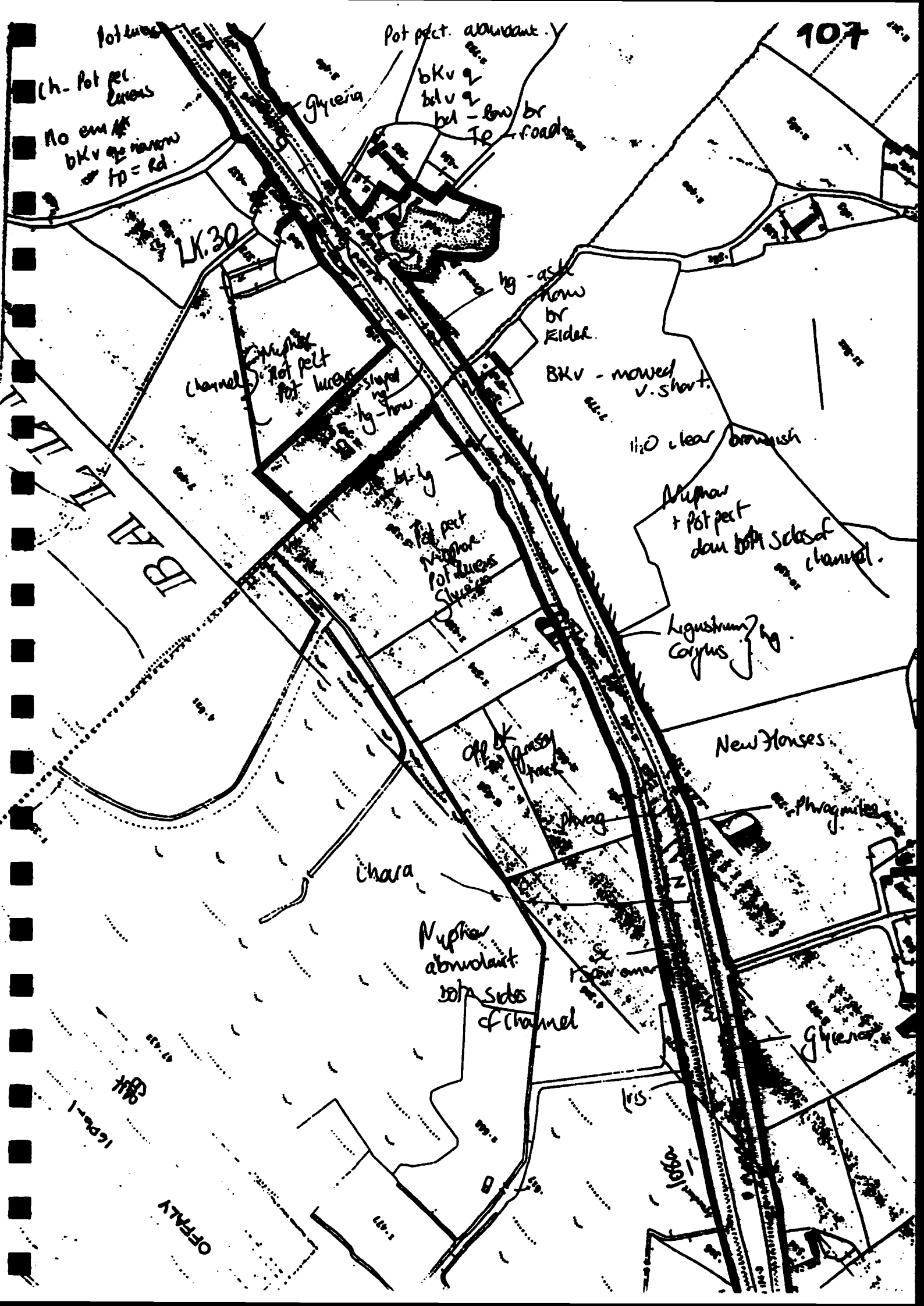
no ~~off~~ either bk
(occ clumps gfy g
on off Side N)

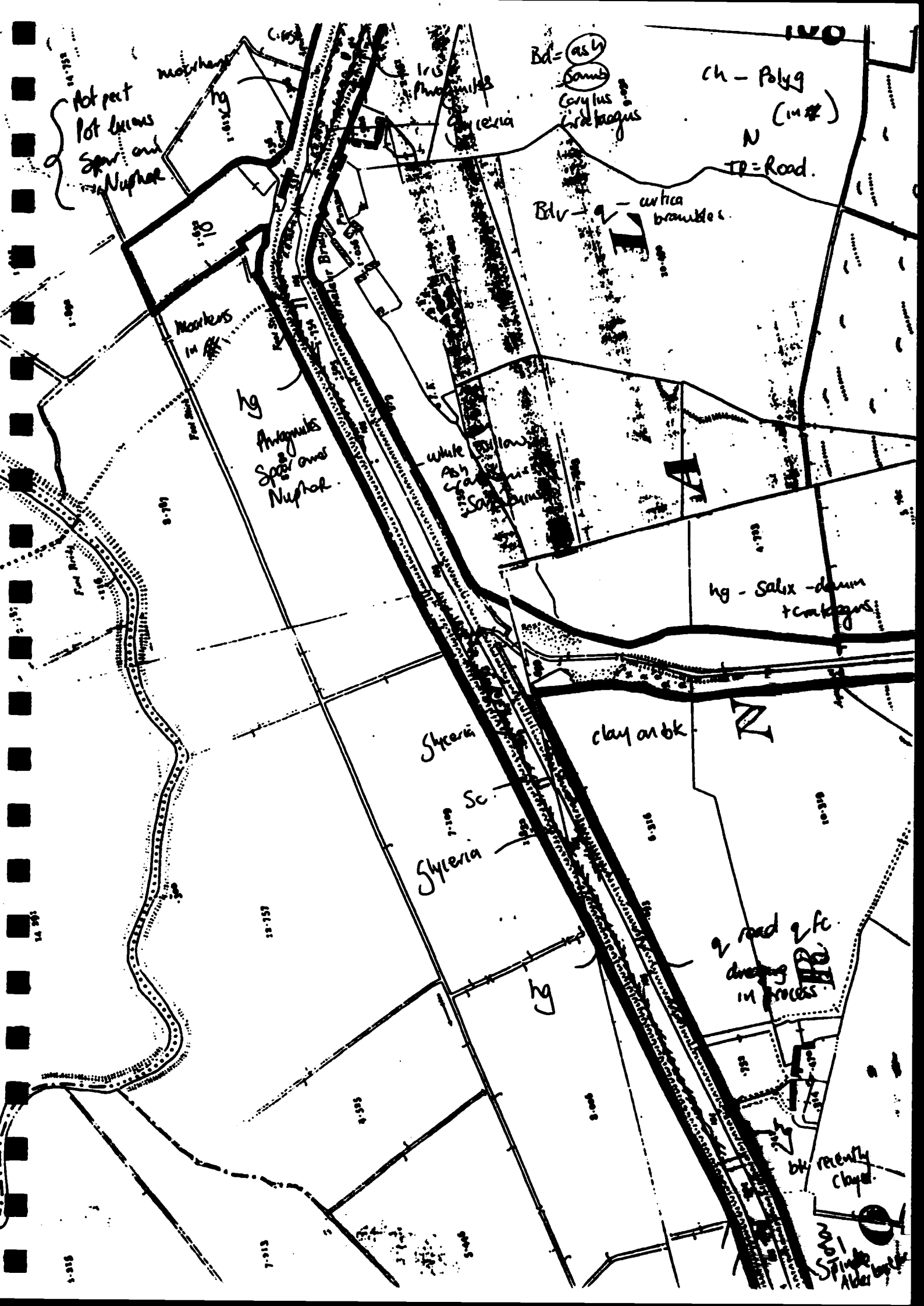
Glyceria

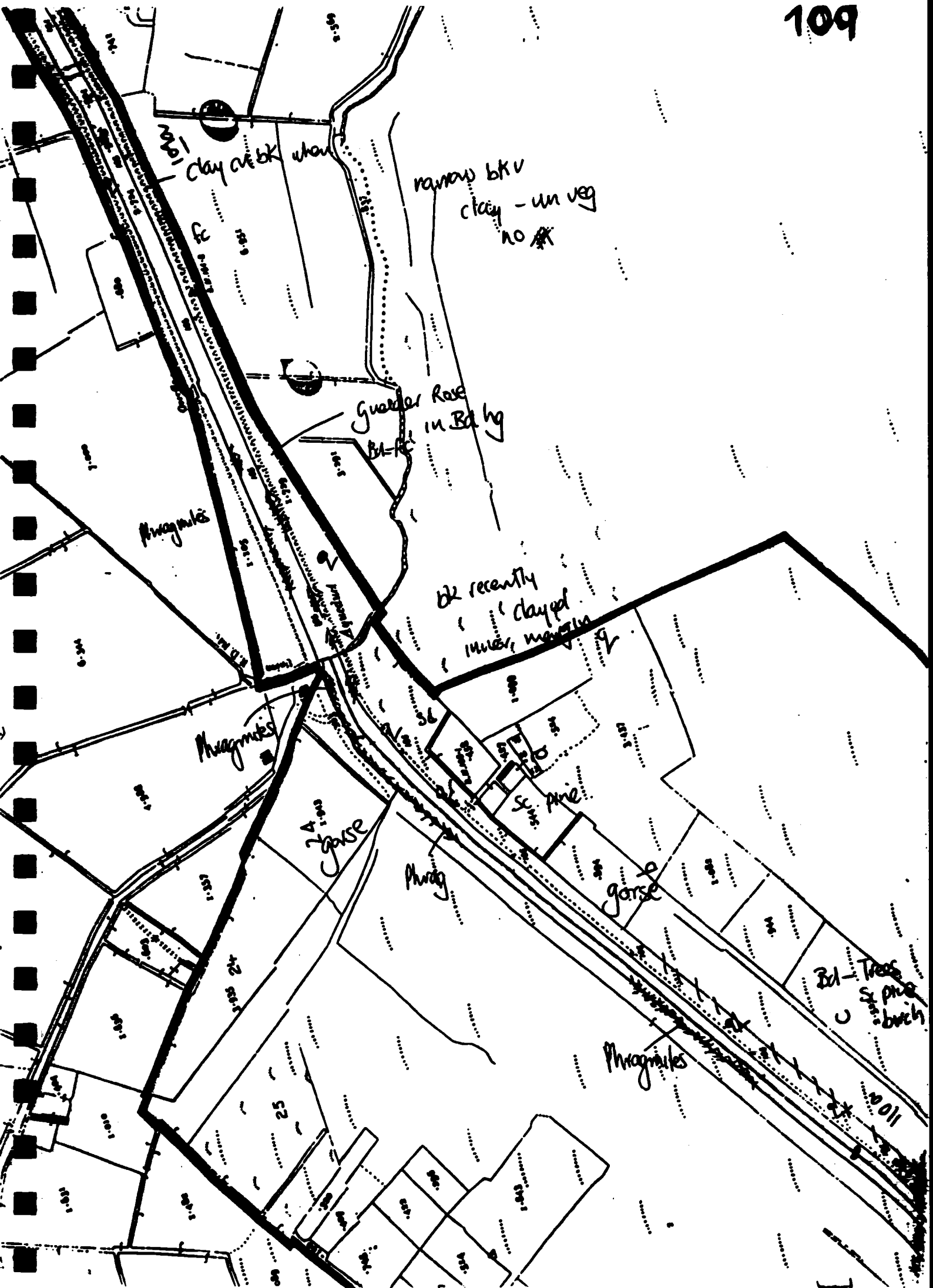
Ch- Nuphol
Pot. peit
Pot. lucens.
Spaw. emer.

ba - ng. h
 bolv - q
 bolv - q
 Cardan
 Gal.
 Trif. pit
 Pl. G.
 cons.
 glech.

Ash Oak







110

III

55

A

7

Only

gase

photo Nbk

W/gense
anbau

Heridium en bkv

H₂O clear

309

why cleaning

digging clearing wide TP
Building up

Pfordium

mature seeds Ave
1/2 Bush

Spar. ens

Scots pine

6K v - на 1000 2000

Consigns :
 P1. 10000
 10000
 10000

- Small

TP-named
Ground
Bdr side

Tall gas - den
Phil
Brecken

photo
blue

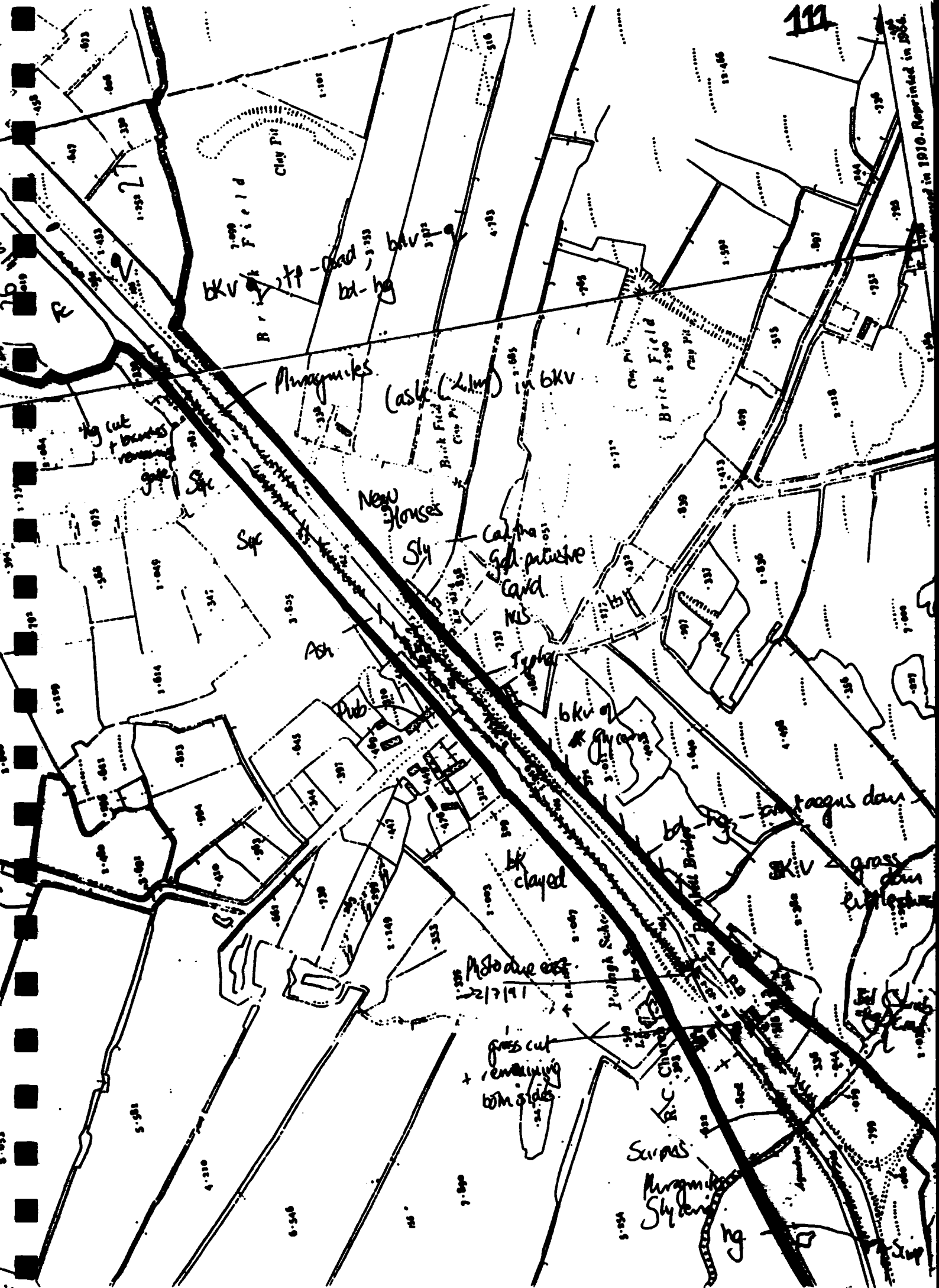
clearing
COP 9

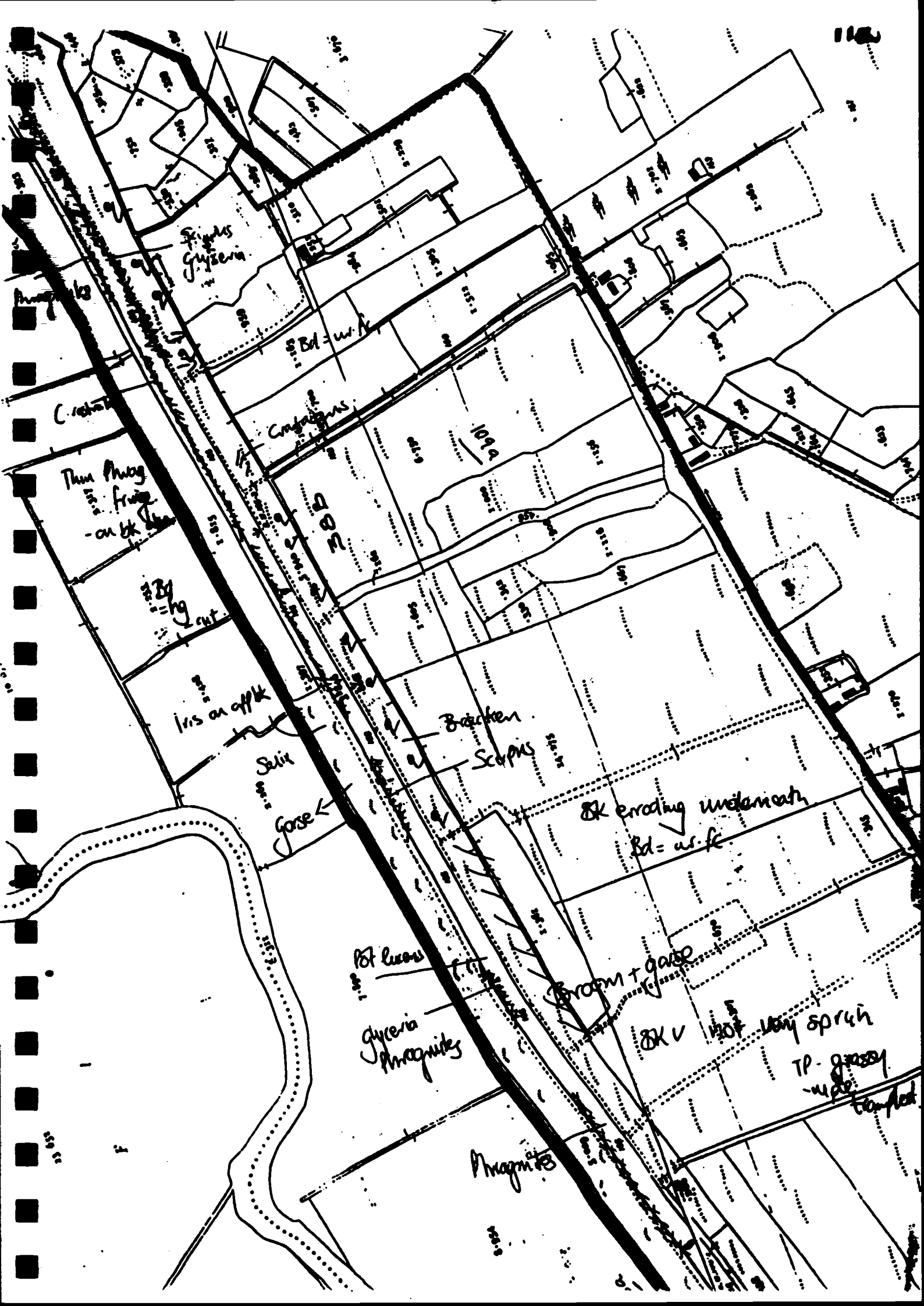
~~SECRET~~

~~Bd - W. F. Gorse~~

261197

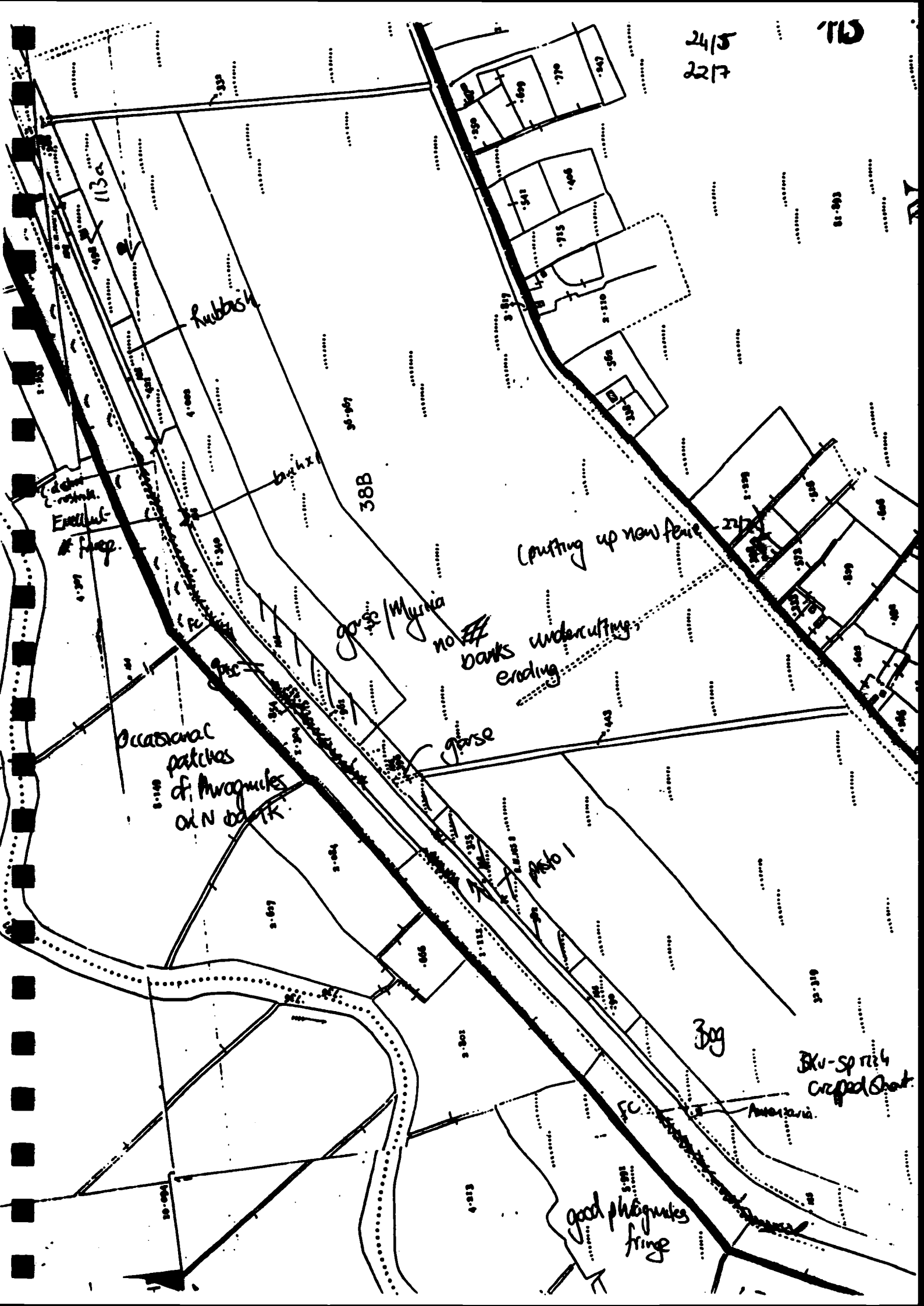
261197





24/5
2217

113



14.

- Road
but - & w
...
hd =
buck
gave

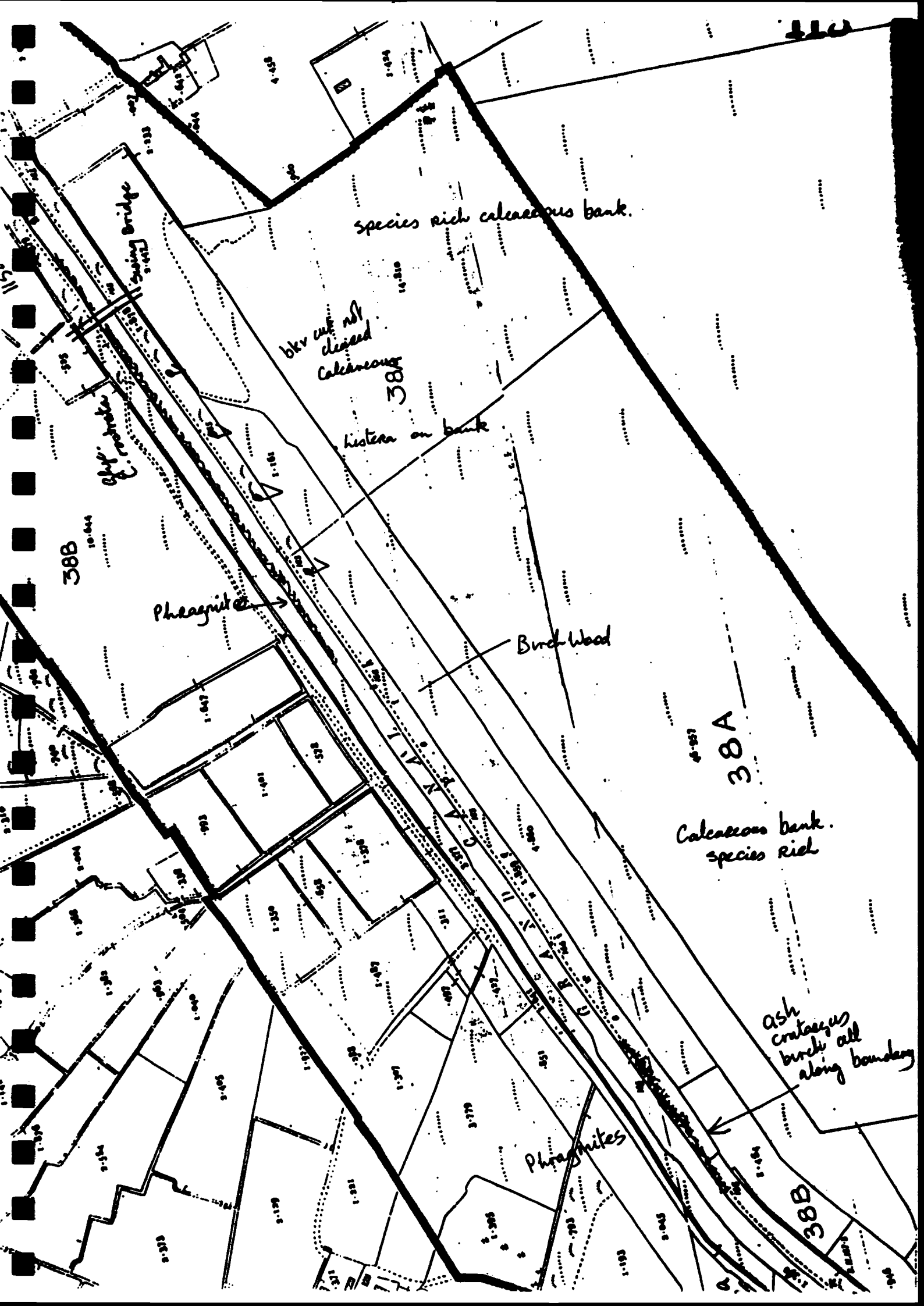
Hand-drawn map of a wetland area, likely a marsh or coastal plain, showing a network of channels and surrounding land. The map includes several handwritten annotations and elevation points.

Annotations:

- Top Left:** "Magnolias", "end of fence", "22/7", "194".
- Top Center:** "no S. bank", "bkv - sp rich, short cropped".
- Center:** "bank erosion undercutting", "Bcl = gorse", "Burch", "Salix".
- Bottom Center:** "channel - Aksua Nuphar", "Typha", "Phragmites", "Glycerias".
- Bottom Right:** "bkv - calc", "to - grass track", "bcl - gorse", "Tupho", "no scrub", "have", "all", "Road", "m. & w.", "bkv", "gore".

Elevation Points:

- 7.400
- 7.300
- 7.200
- 7.100
- 7.000
- 6.900
- 6.800
- 6.700
- 6.600
- 6.500
- 6.400
- 6.300
- 6.200
- 6.100
- 6.000
- 5.900
- 5.800
- 5.700
- 5.600
- 5.500
- 5.400
- 5.300
- 5.200
- 5.100
- 5.000
- 4.900
- 4.800
- 4.700
- 4.600
- 4.500
- 4.400
- 4.300
- 4.200
- 4.100
- 4.000
- 3.900
- 3.800
- 3.700
- 3.600
- 3.500
- 3.400
- 3.300
- 3.200
- 3.100
- 3.000
- 2.900
- 2.800
- 2.700
- 2.600
- 2.500
- 2.400
- 2.300
- 2.200
- 2.100
- 2.000
- 1.900
- 1.800
- 1.700
- 1.600
- 1.500
- 1.400
- 1.300
- 1.200
- 1.100
- 1.000
- 900
- 800
- 700
- 600
- 500
- 400
- 300
- 200
- 100
- 0



species rich calcareous bank.

blv cut not
cleared
Calcareous
38A

hystera on bank

Pheasants

Birch Wood

Calcareous bank.
species rich

ash
crataegus
brch all
along boundary

Phragmites

BOG

BK V
-nuc,
spring

Gymn. and
disten arab
Dist. fuchii
Zizya
Molinia
Vic. gracila
Lobelia

Wataegus
~~Salix~~

~~Ground conc.
Lustera ovale.~~

 ~~Be^2+ S_n H_2O trees~~

~~BdV - Circ. concen
"Utica die"~~

OK - cut - off. house
r not collected

TP ~~divulge~~
(gong)
JK-Suarez
Santos
Carter

channel
- Pol. lucas
Alga
Ranunculus un.
Polyg. arifol.

TP gravel Road
Bd-hq.

Derry Bridge

Bd = (ash) (syc)

Infra

~~Scopus~~
~~Superior~~

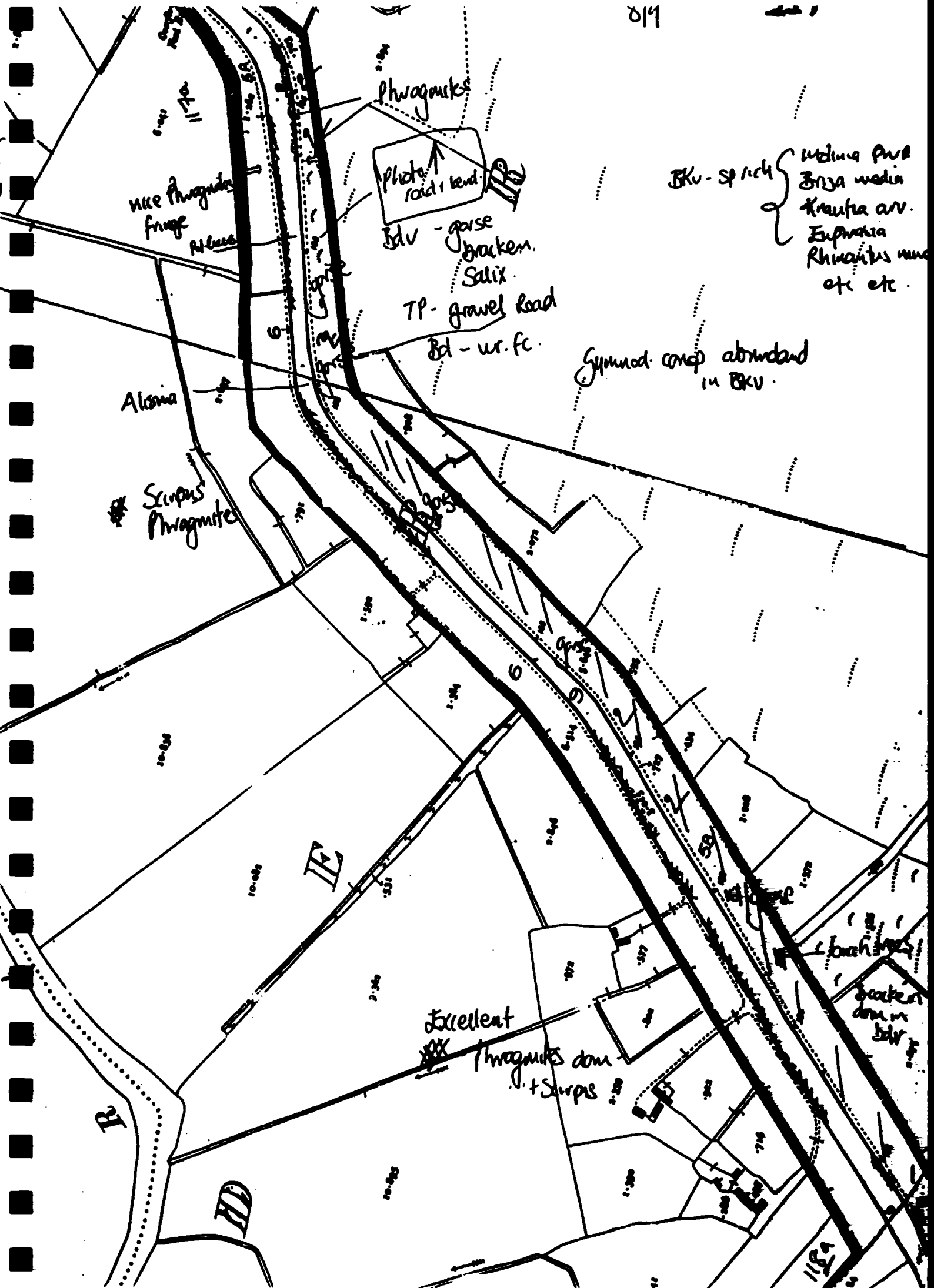
Bcl-Scrub
v. flame phrag

Georgia
S. O. P. S.

Bye

38B

116a



8/19

BB

118

BKV - down by Eq. area
 Bdv - br + c arc + barker
 TP - grassy road

2 + 9 in parts with pebbles
 clayed 1 yr ago?

channel sprayed here?

Bd moved in - w/f

Glycena
 Sculpis

Hymn/hay
 Sculpis

Phragmites
 2 Sculpis

people swimming
 around it

Sculpis
 glycena
 BKV - clayed

BKV - after gate
 2-10 J. inf
 Bd moved
 gate

Photo dia
 nests
 clayed

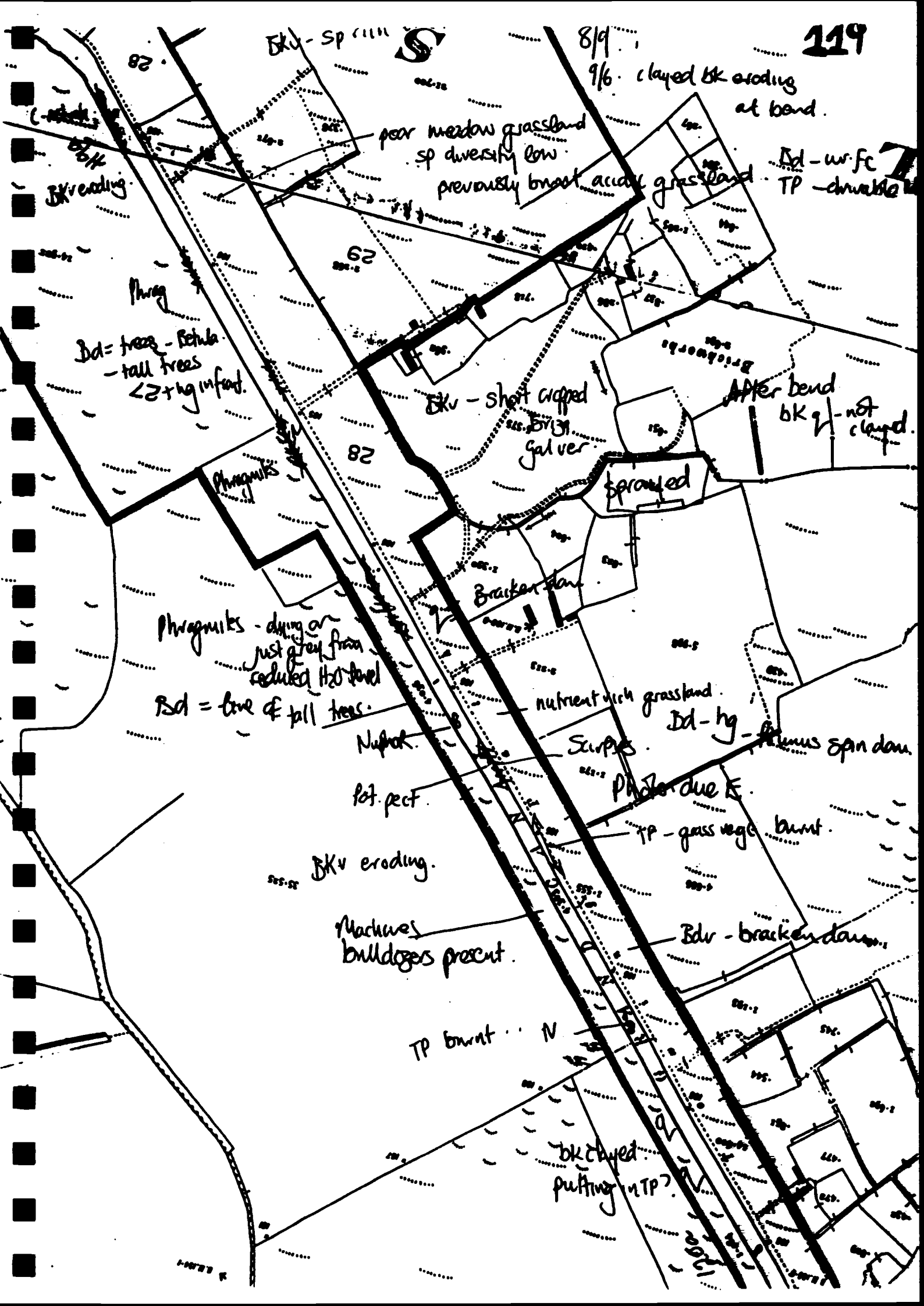
H2O murky

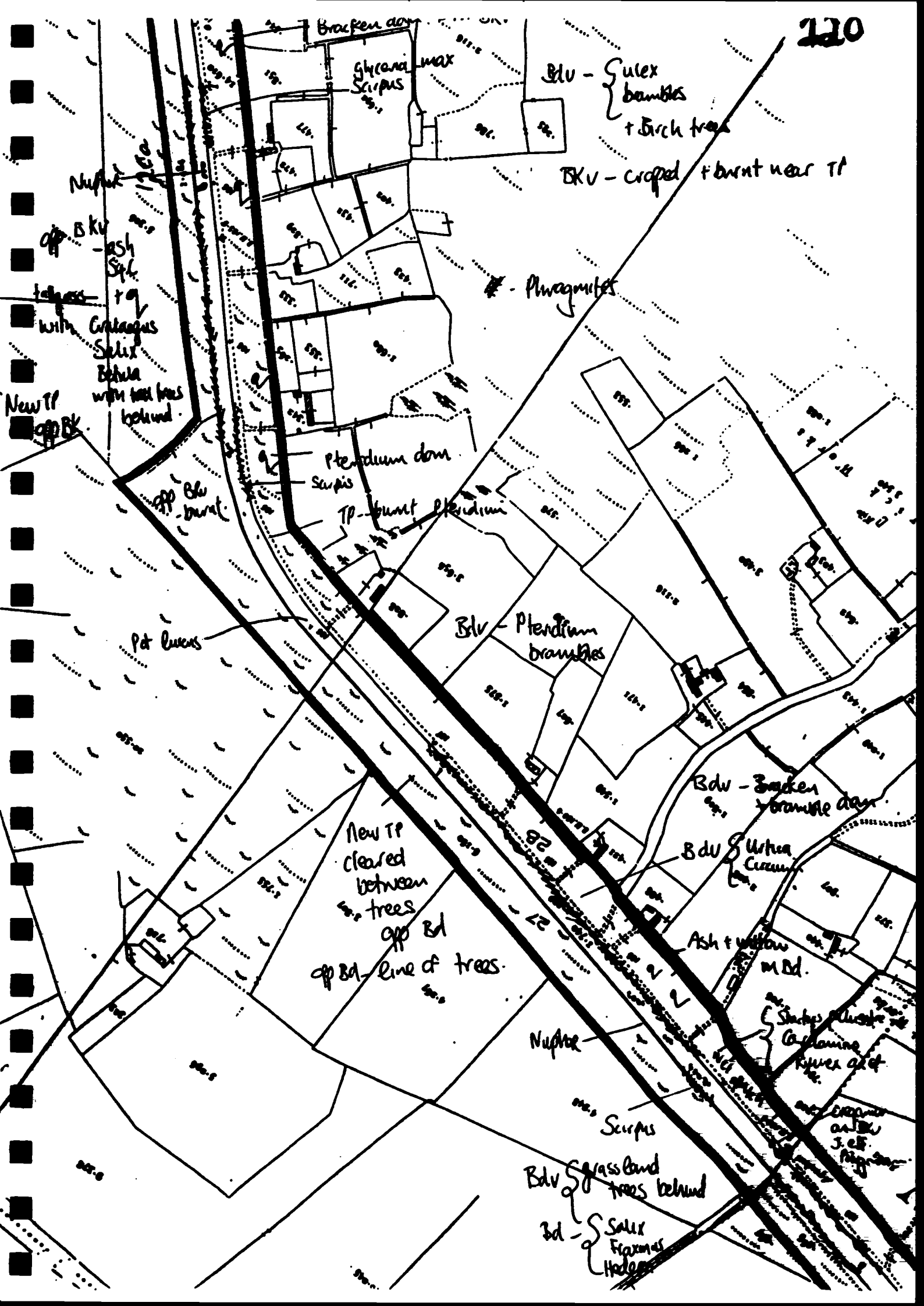
BKV - q - clayed
 from approach to bend

opt. dia - 100
 Glycena
 Phragmites

Phragmites
 lower vegetation

TP - down
 118





Bracken dam

Glyceria max
Scirpus

Bdv - Gulex
bamboo
+ Birch trees

Bdv - cropped + burnt near TP

Nupter

op Bdv

ash
Sph.

with Callagrus
Salix
Betula
with tall trees
behind.

New TP

op BK

Phragmites

Pteridium dam

Scirpus

TP - burnt Pteridium

op Bdv
burnt

Pt Ruens

Bdv - Pteridium
bamboo

New TP
cleared
between
trees

op Bd

op Bd - line of trees

Bdv - Bracken
bamboo dam

Bdv Gulex
bamboo

Ash + willow
M.Bd.

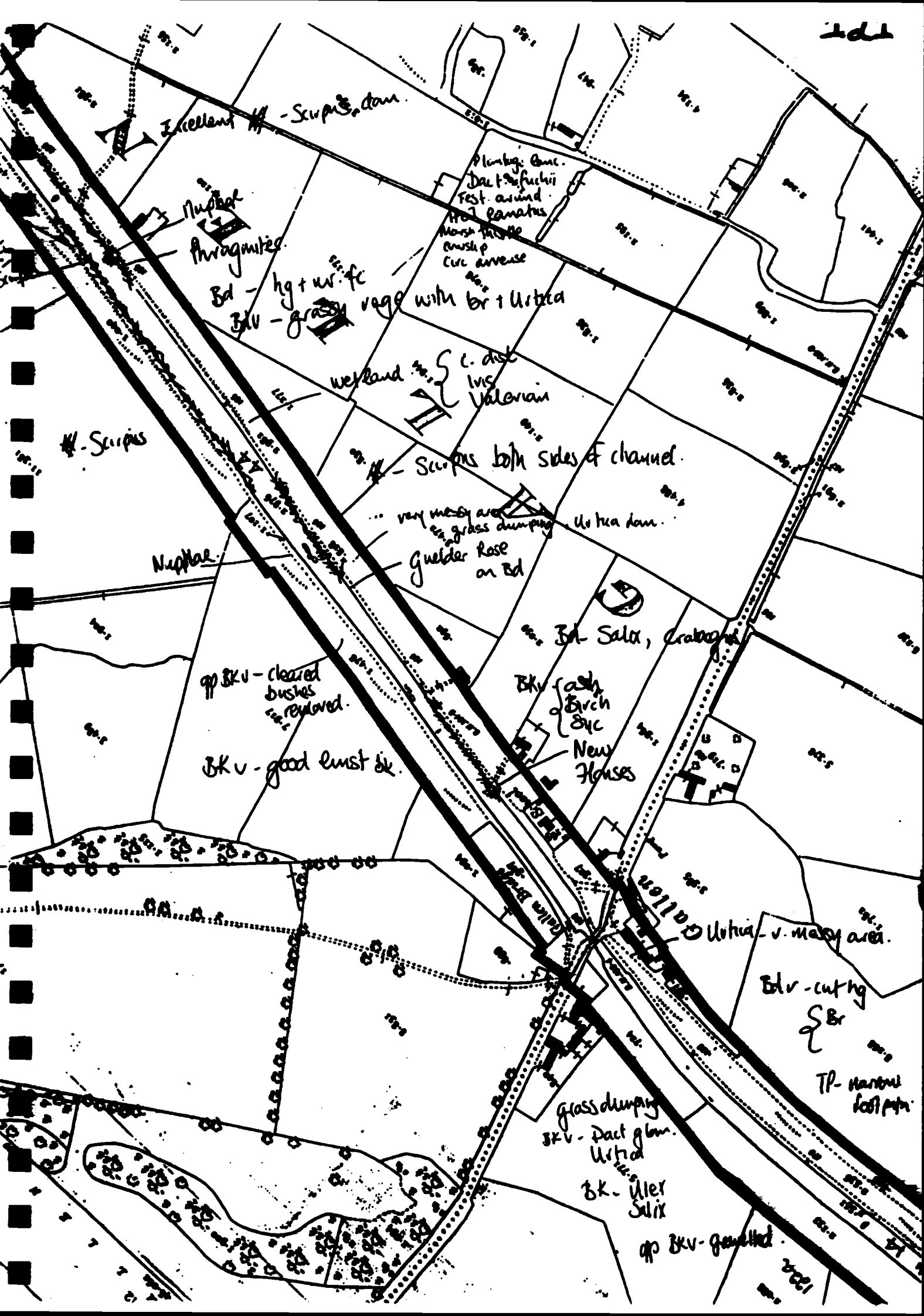
Gulex
bamboo
+ Salix
+ Populus

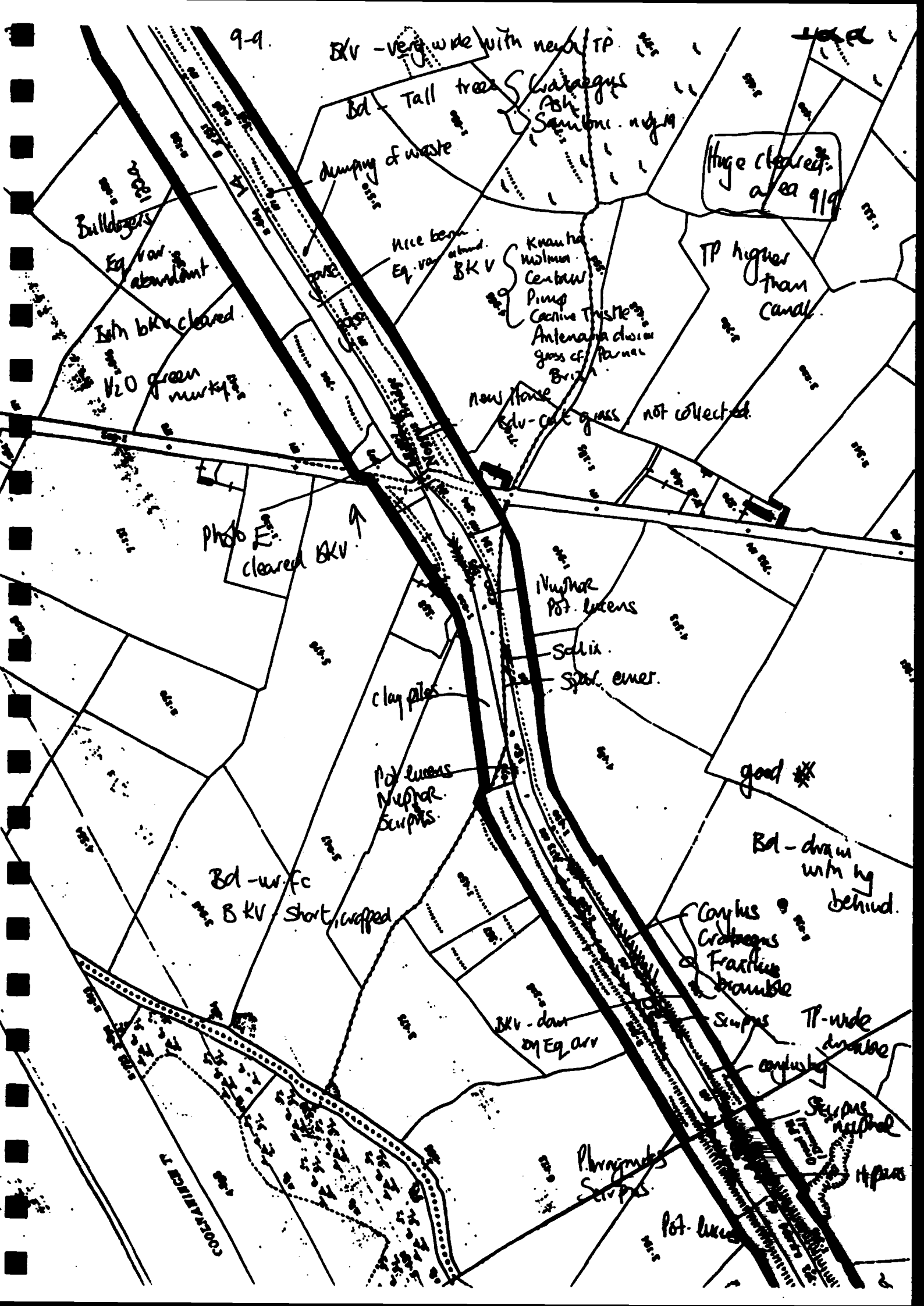
Nupter

Scirpus

Bdv grassland
trees behind

Bd - Salix
Fraxinus
Hedera





9-9.

BKV - very wide with near TP.

Bd - Tall trees

dumping of waste

Nice berm
Eq. var. abund.
BKV

Kuanha
Cestrum
Pimp
Cactus Thistle
Antennaria dioica
grass of Parnet
BKV

Huge cleared area 9/9

TP higher than canal

new house
BKV - oak grass

not collected.

photo
E. cleared BKV

Nuphar
Pot. lucens

Scirpus
Stal. emer.

clay piles

Pot. lucens
Nuphar
Scirpus

good

Bd - drawn with by behind.

Bd - w. f.c
BKV - short, capped

Corylus
Crataegus
Fraxinus
brounle

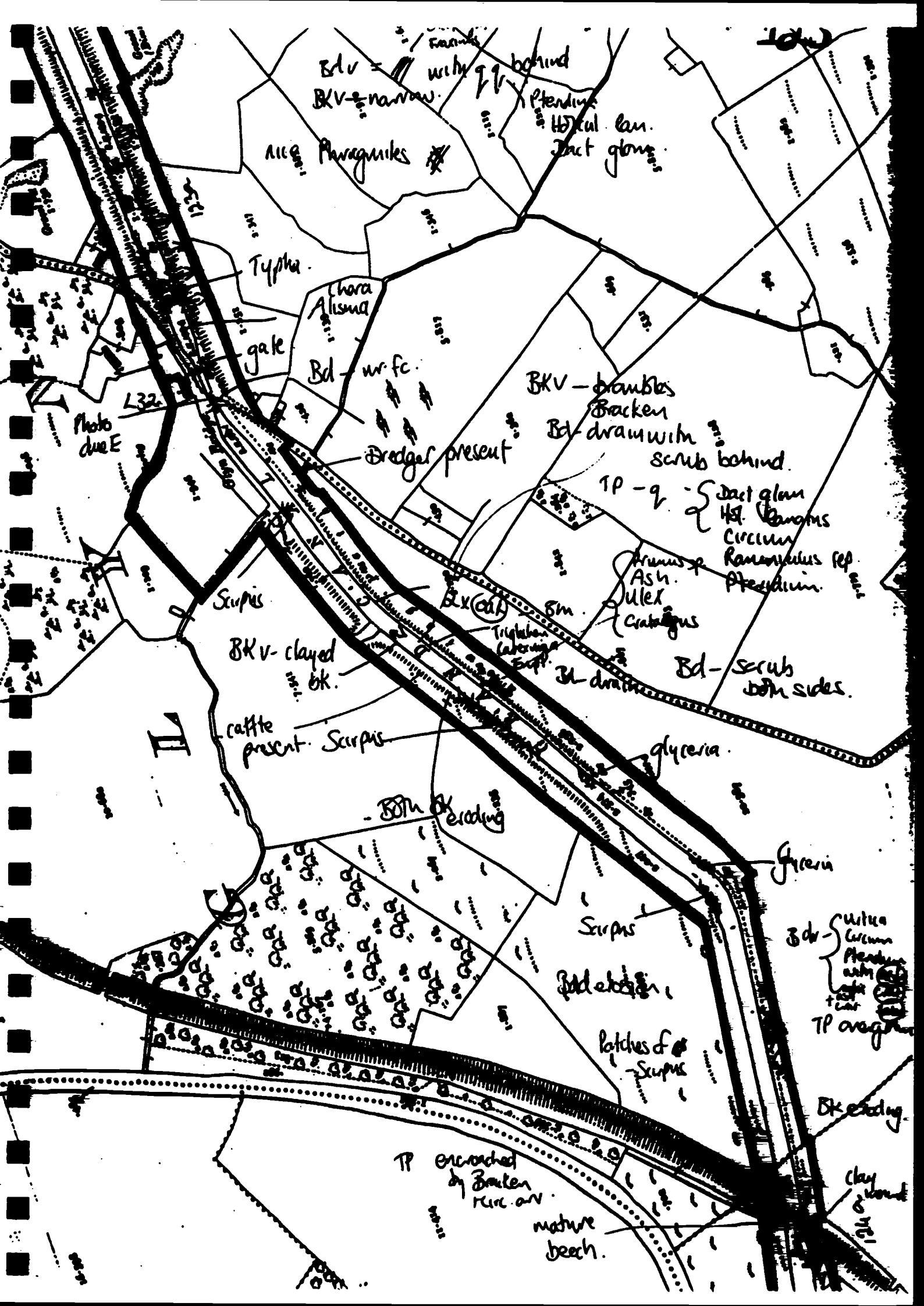
BKV - dam on Eq. arr

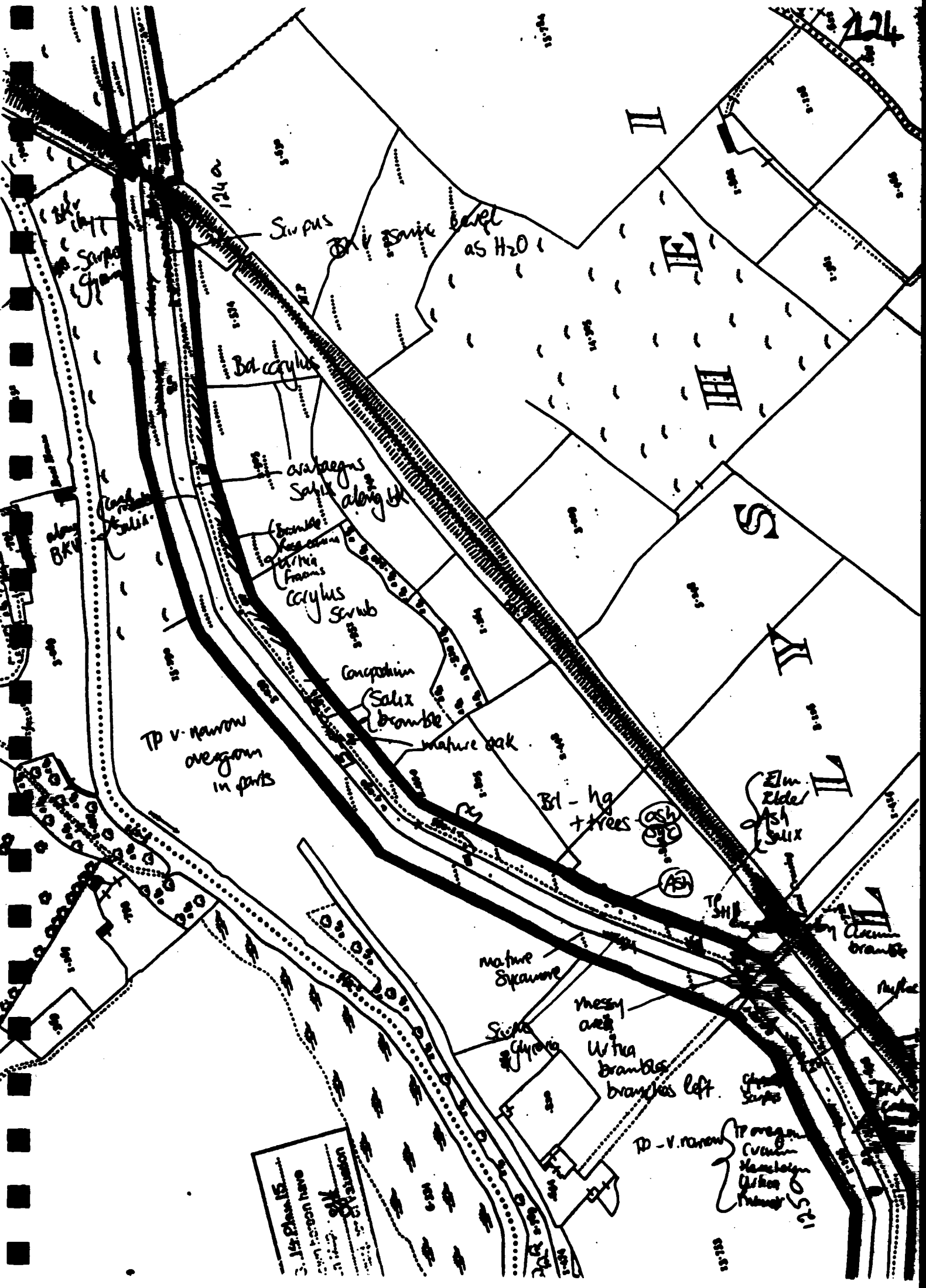
Scirpus
TP - wide drainage

Phragmites
Scirpus

Scirpus
Nuphar
H. pax

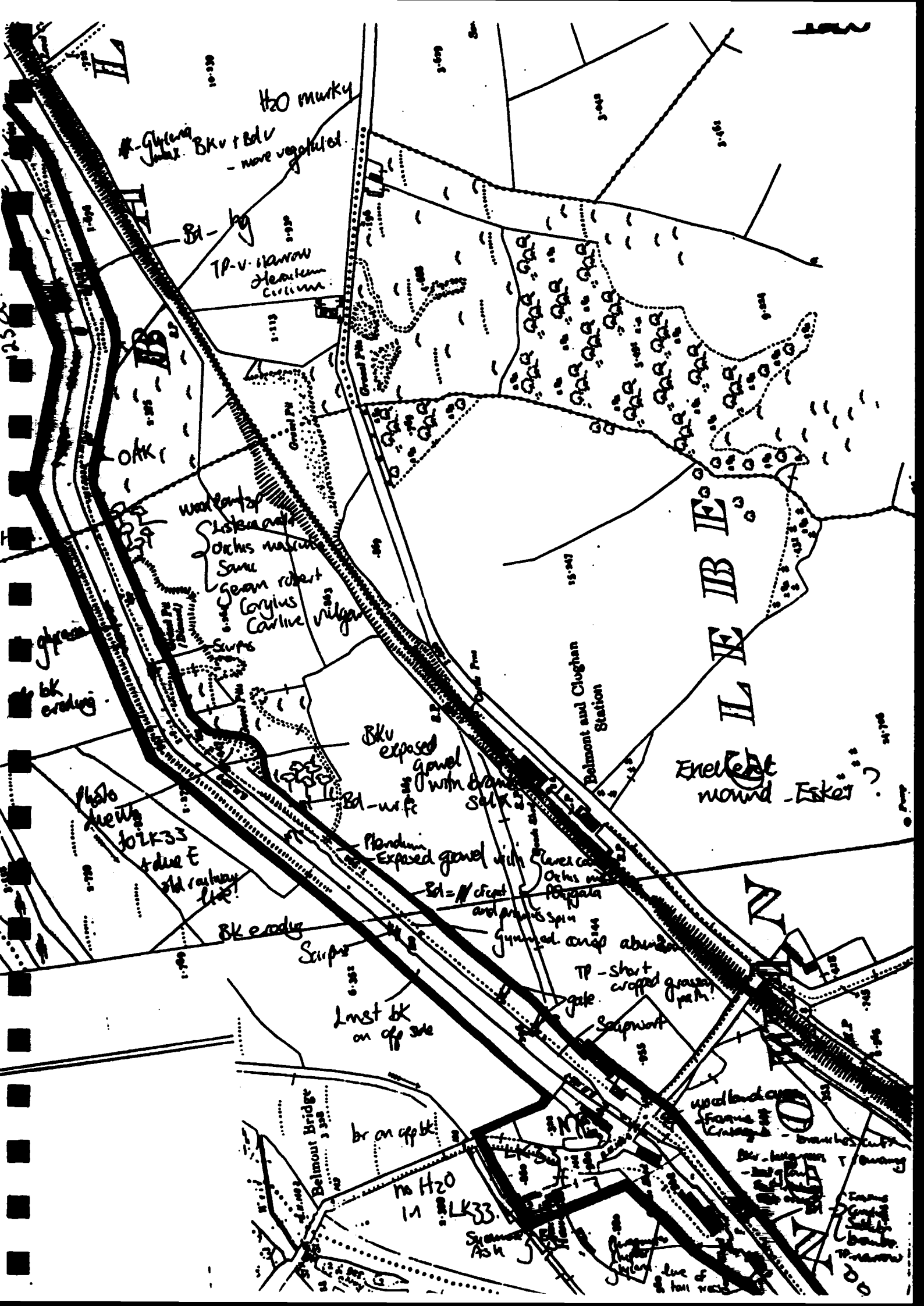
Pot. lucens





124
Syrupus
Bd corylus
asabegus Salix along
Corylus scrub
TP v. narrow
mature oak
Brl - hg + trees
mature Spruce
Sick Gly
messy area with brambles branches left
TP - v. narrow

TP Oregon
Crown
Hawthorn
Willow
Rushe



H2O murky

#-Gyneria
Juncus. Bku + Bd v
- more vegetated.

Bd - lg

TP - v. narrow
Heathum
Cottum

OAK

woodland
Sloven oak
Orchis mascula
Same
gean robust
Corylus
Carline vilga

Surps

Bku exposed
gavel
w/ with drams
Bd - w/te

Flanckin
Exposed gavel with

Bd = 11' deep
and p... spin

Clare...
Orchis...
P...gala

gymed. crop abund

TP - short
cropped grassy
path

gate

Scapmont

Linst bk
on off site

Bk erodig

Surps

br on off bk

no H2O
in LK33

Sydney
Ash

Enfield mound - Esker?

woodland
Frame
Contag

branches cut
Stk - long grass
- 2nd g...
- 3rd g...
- 4th g...

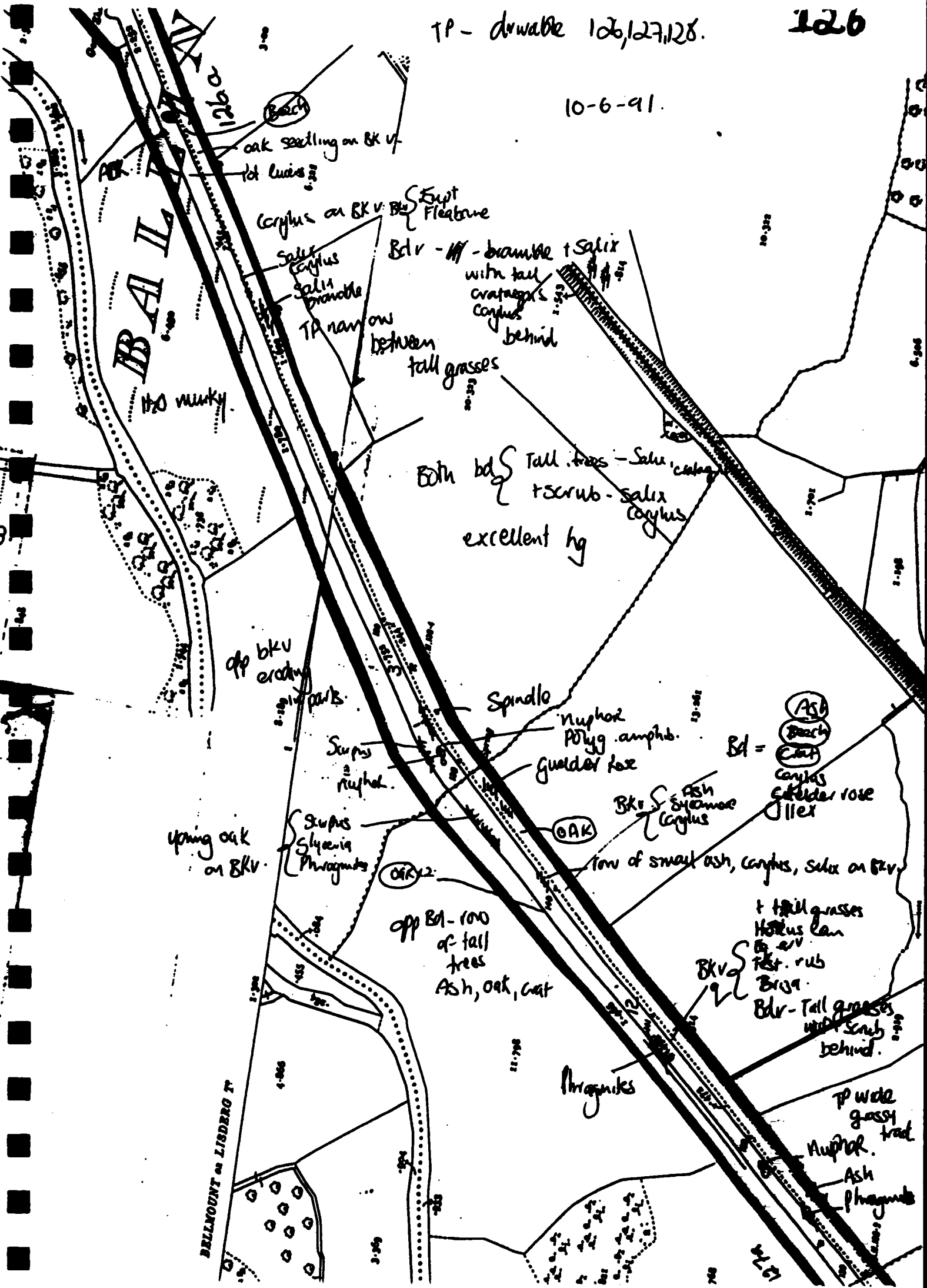
Frame
P...
bomber
TP - narrow

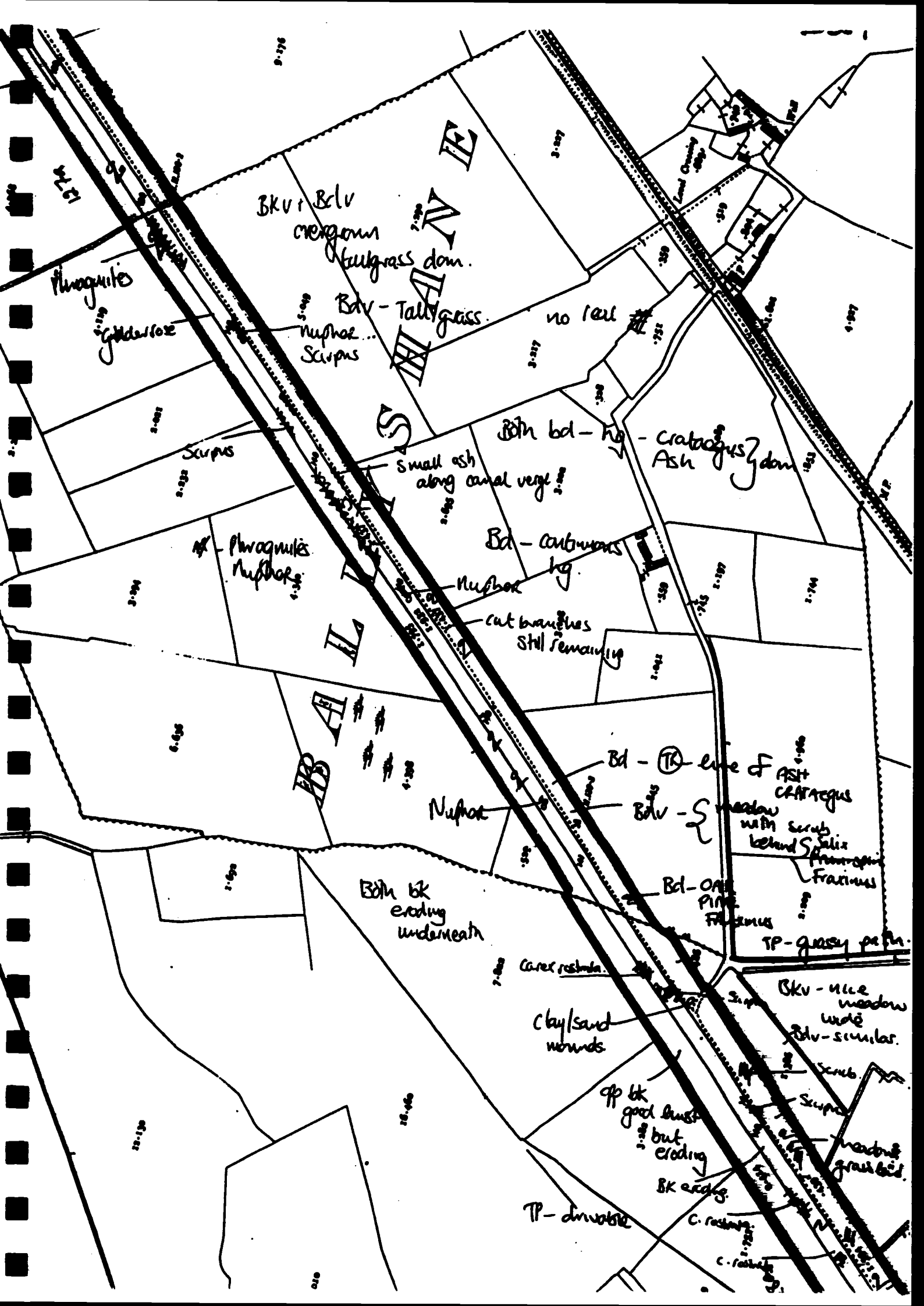
gymed
Juncus
Stk

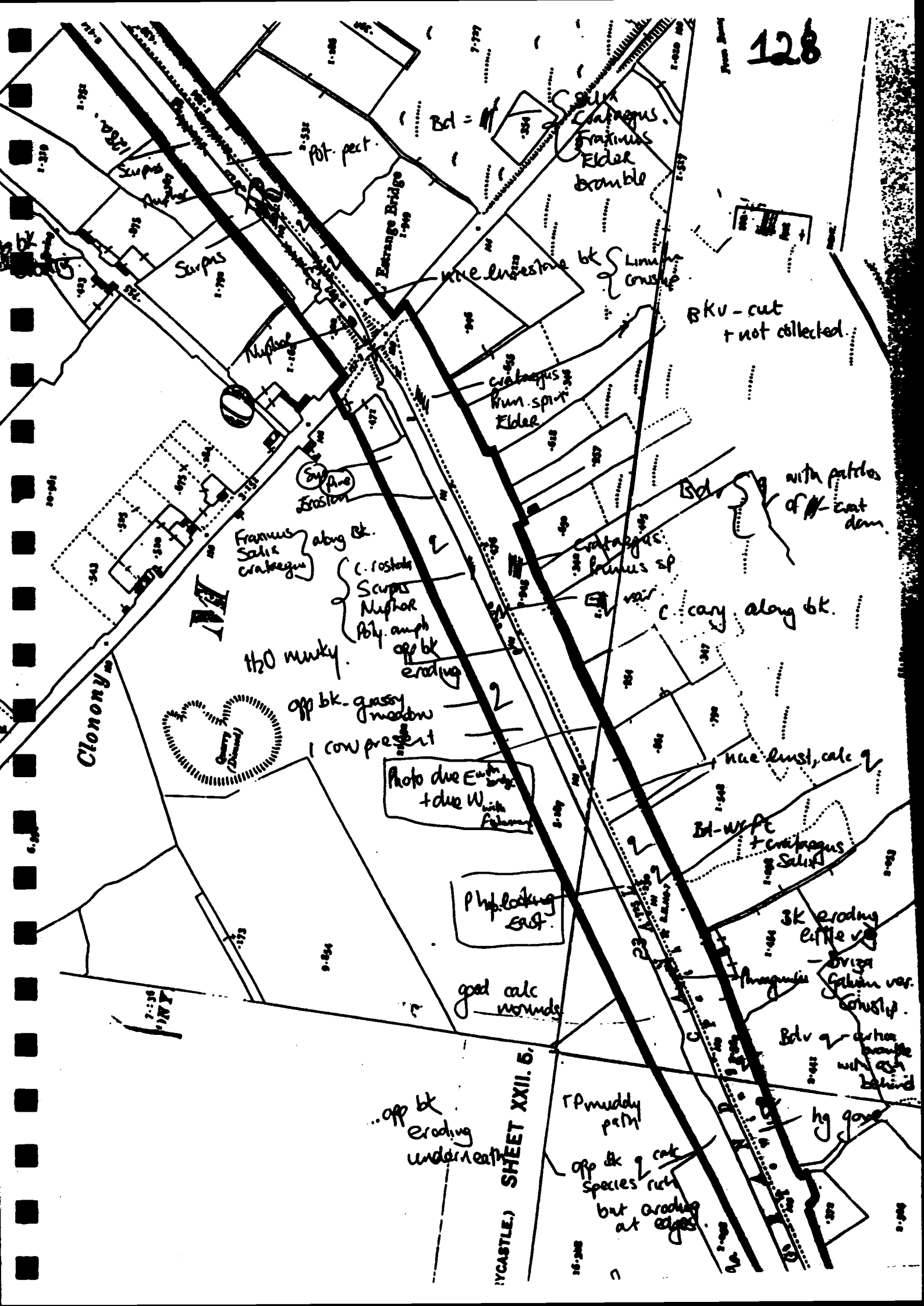
due of
tail road

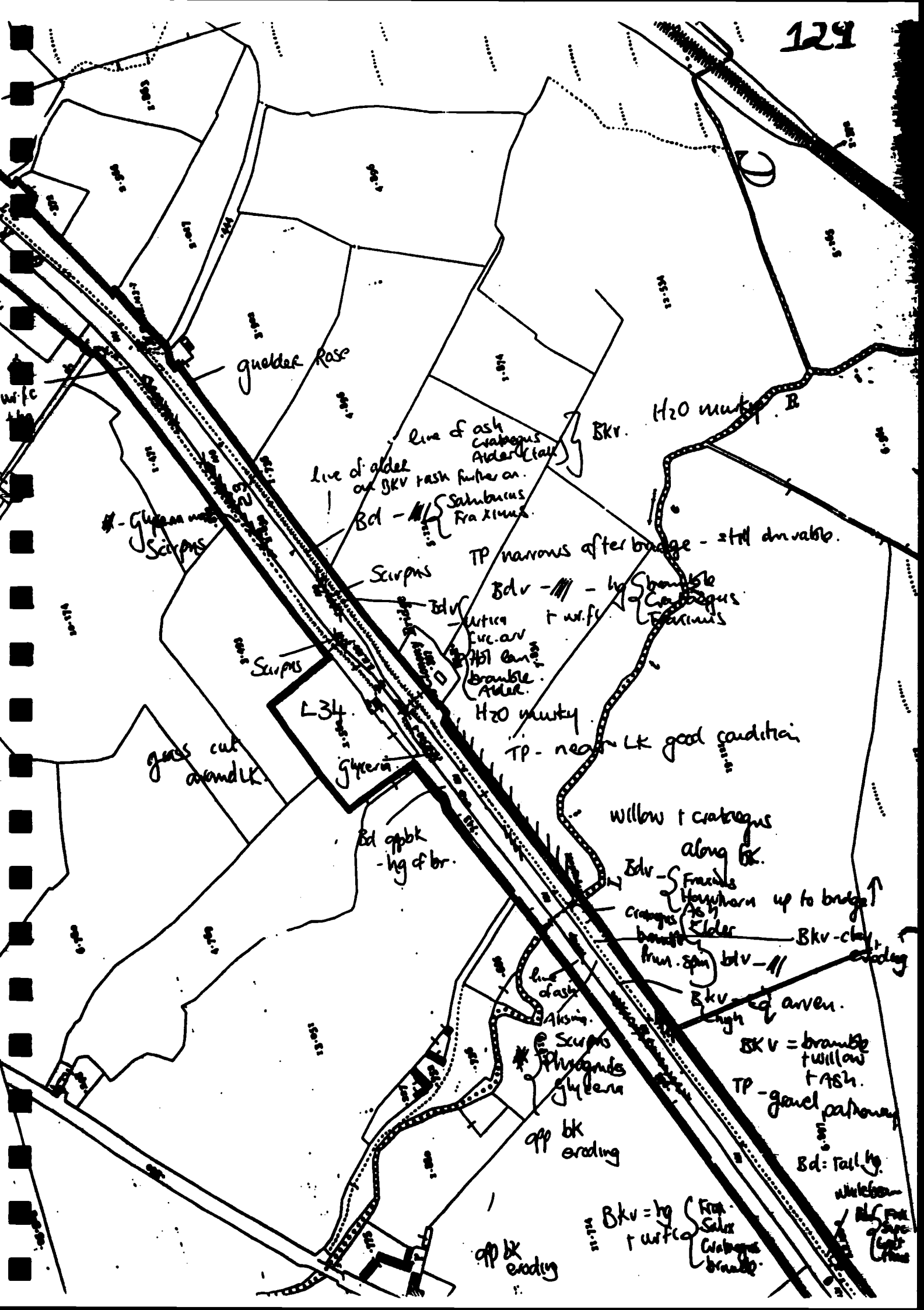
126

10-6-91.









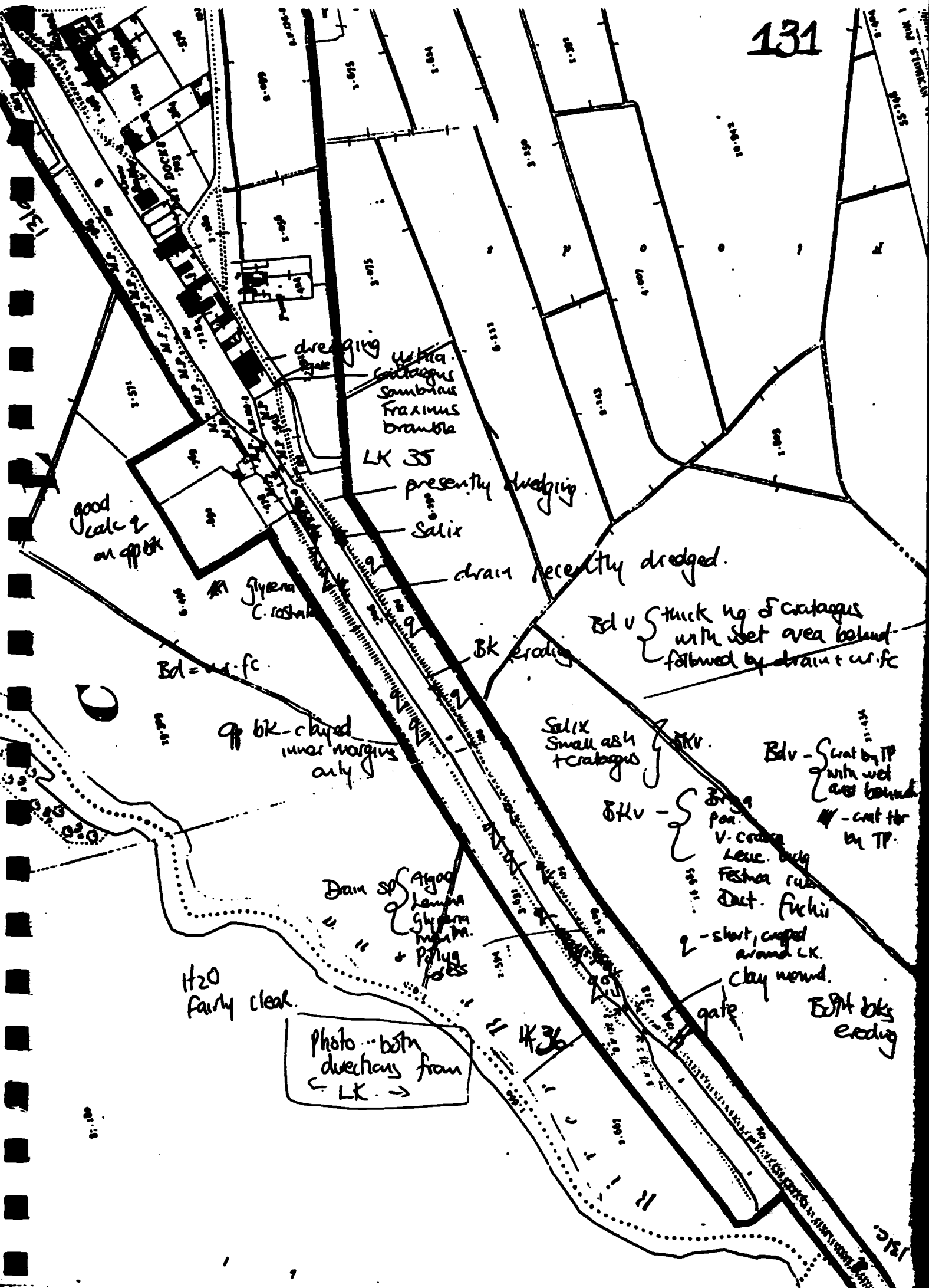


Figure 1 Areas of Scientific Interest along the Grand Canal, Mainline.

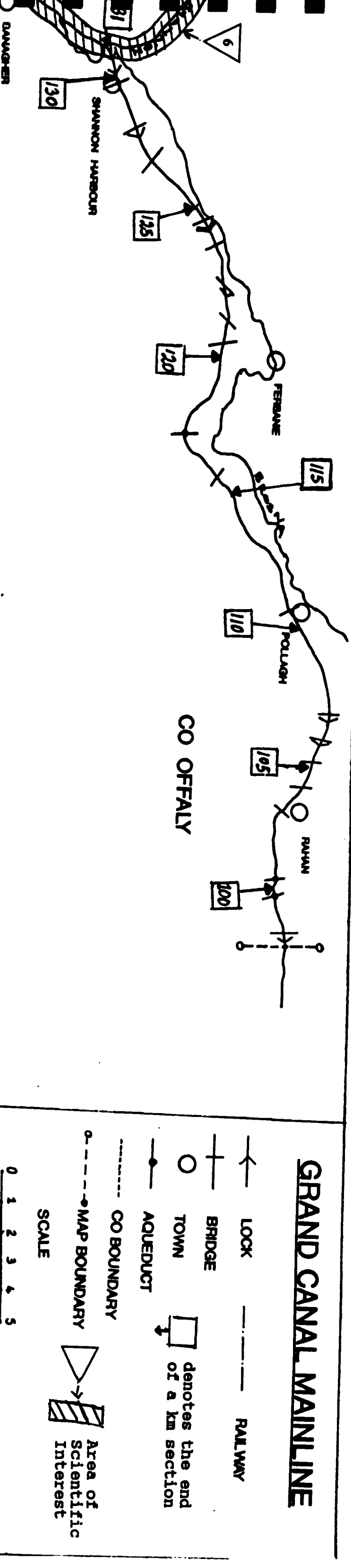
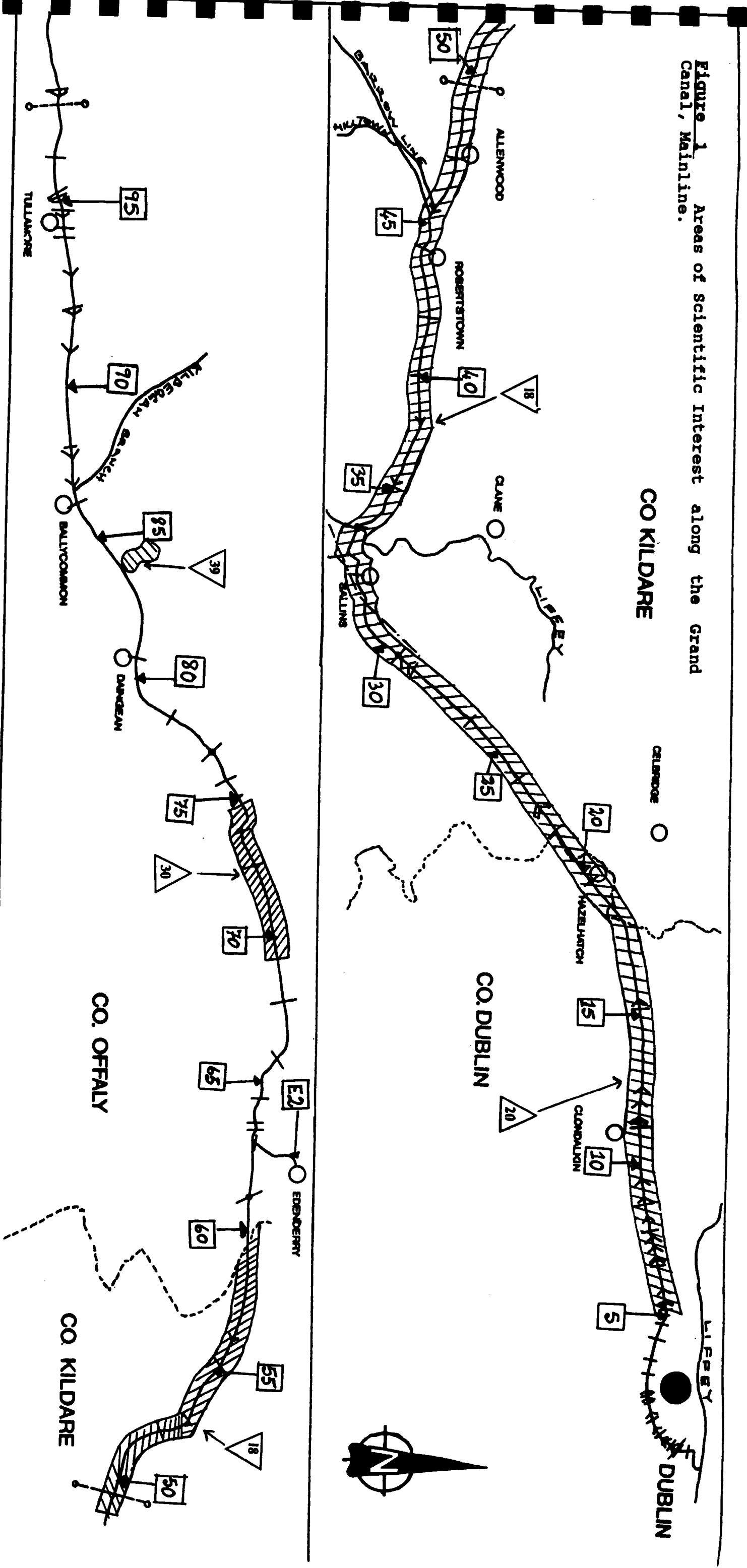


Figure 2 Areas of Scientific Interest along the Grand Canal, Branch Lines.

