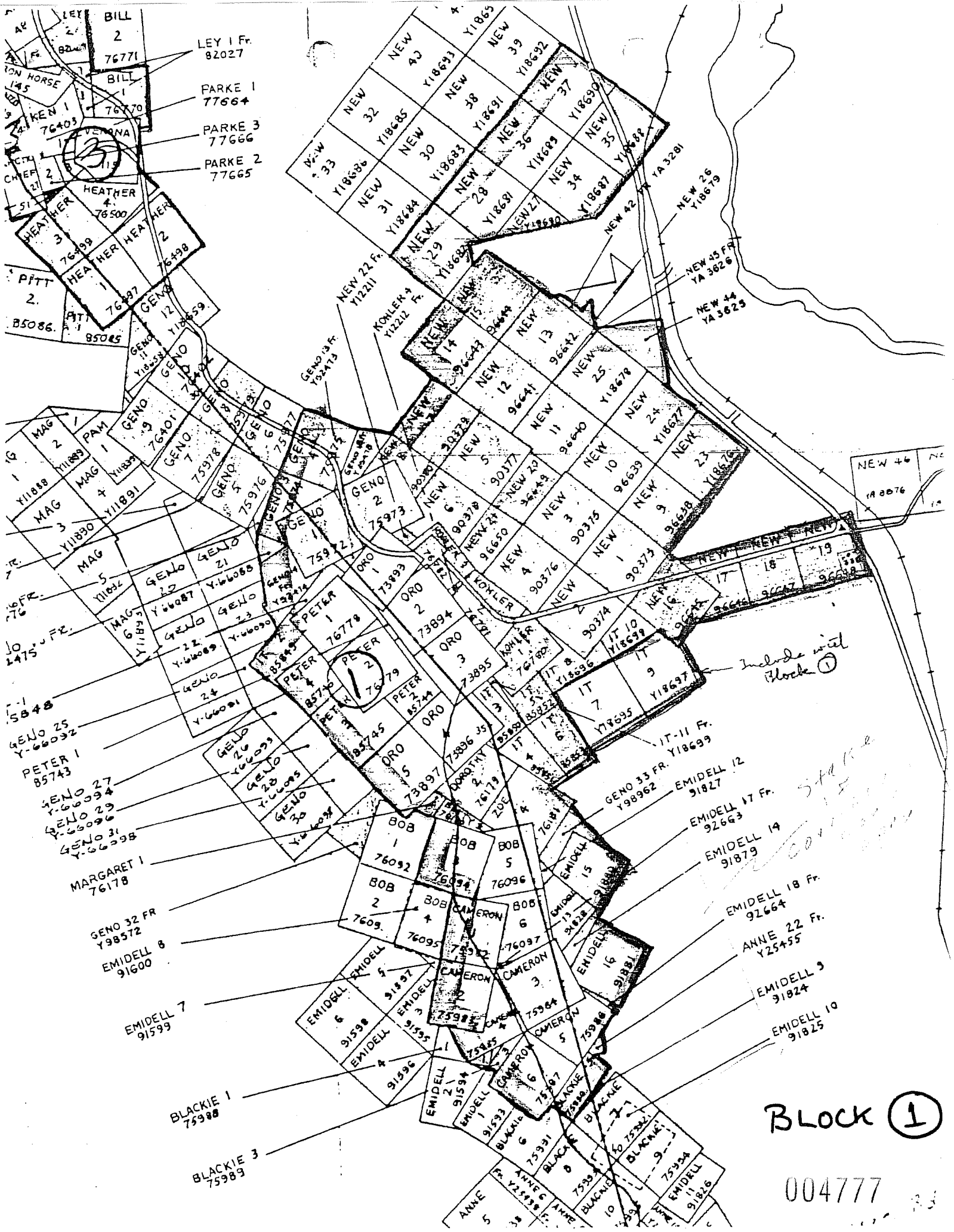
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NEW 44 YA 3625
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BLACKIE 3 75989
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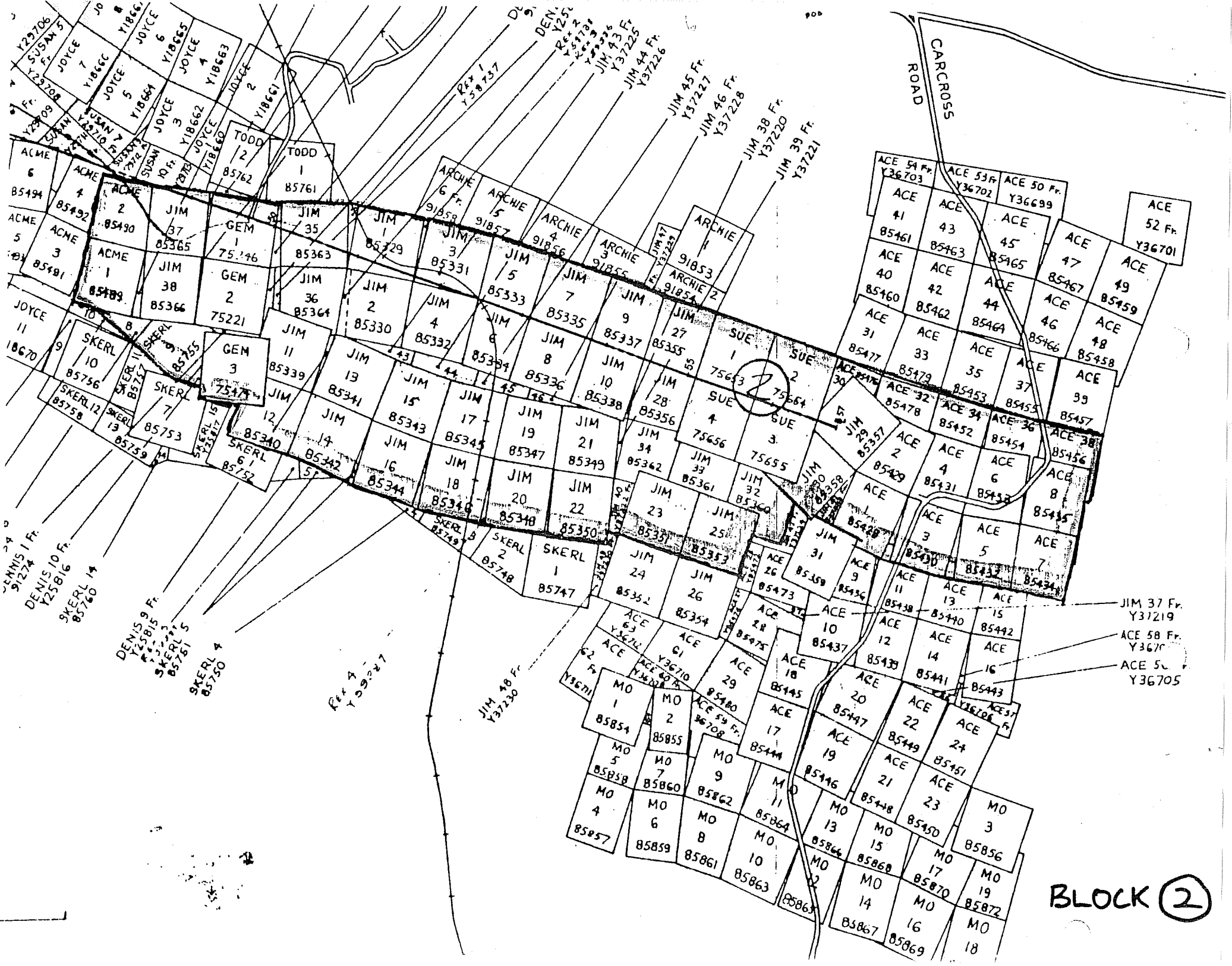
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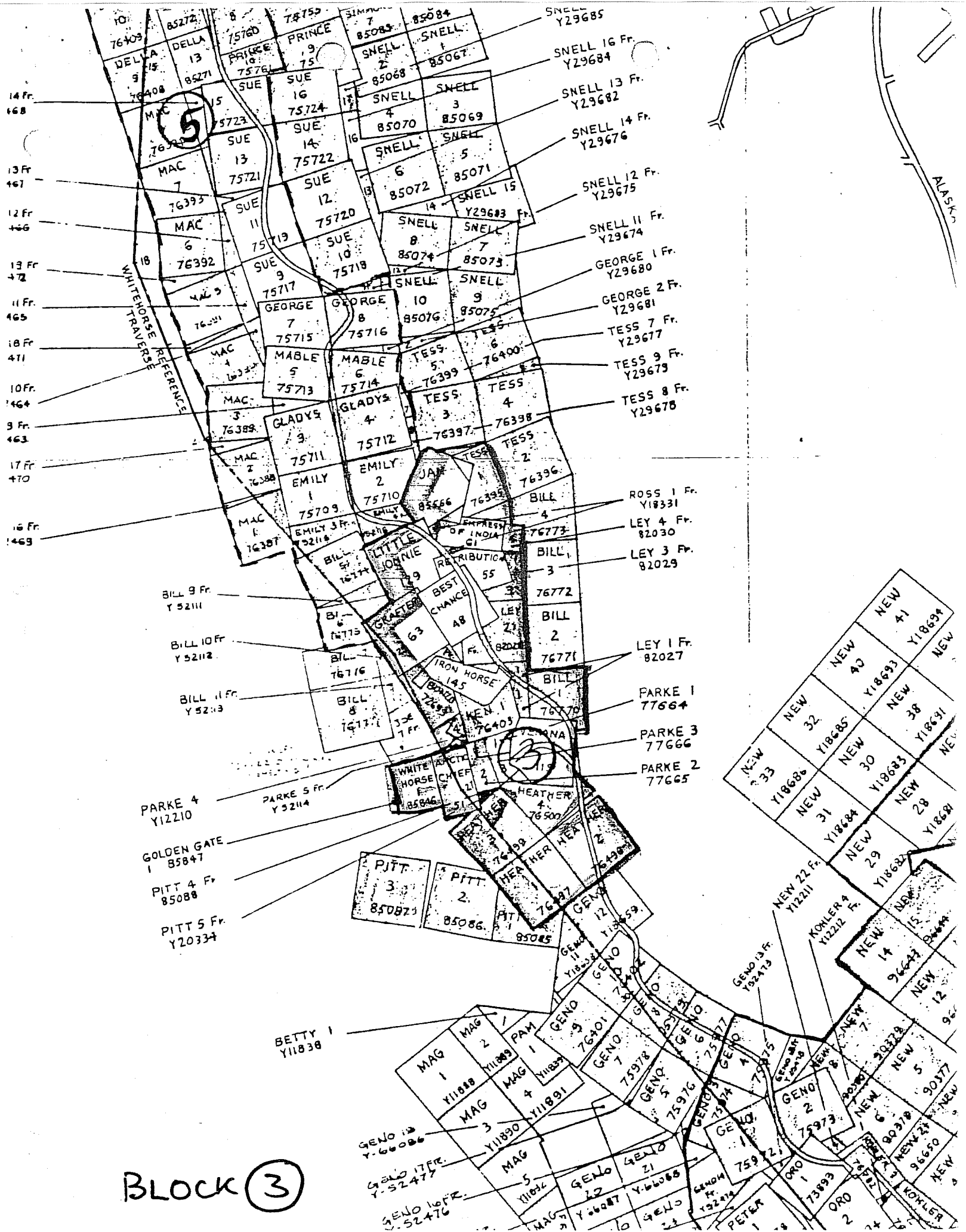
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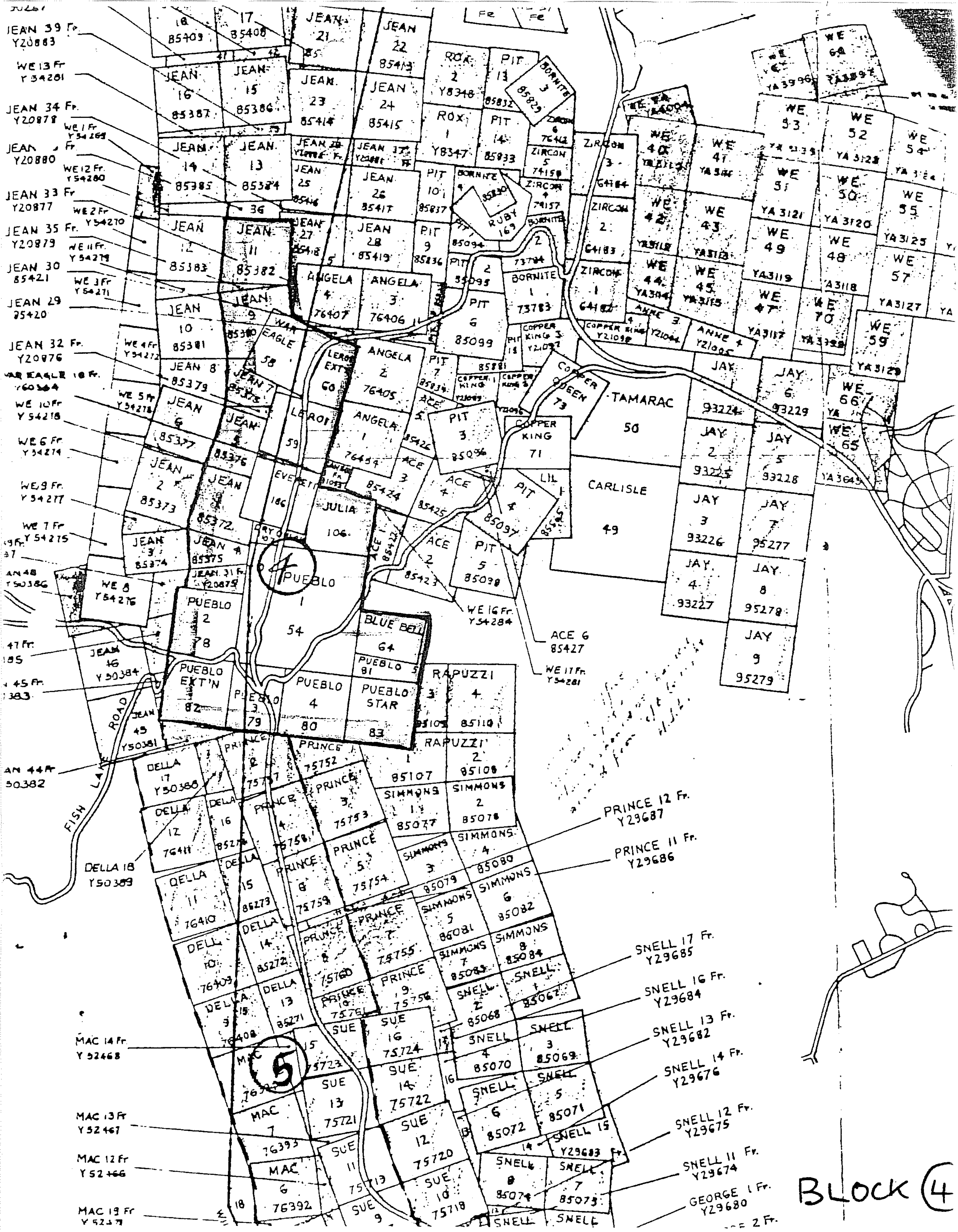
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WE 8 Y54276
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JEAN 3 85374
JEAN 4 85375
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JEAN 22 85413
JEAN 23 85414
JEAN 24 85415
JEAN 25 85416
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ROX 1 Y8347
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PIT 7
PIT 3 85096
PIT 4 85097
PIT 5 85098
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BORNITE 1 73783
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ZIRCON 2 64183
ZIRCON 1
RUBY 169
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LEROI EXT'N 60
LEROI 59
EVERETT 186
JULIA 106
PUEBLO 1 54
PUEBLO 2 78
PUEBLO EXT'N 82
PUEBLO 3 79
PUEBLO 4 80
PUEBLO STAR 83
PUEBLO 81
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COPPER QUEEN 73
TAMARAC 50
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YA 3120
YA 3125
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YA 3127
YA 3117
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ANNE 4
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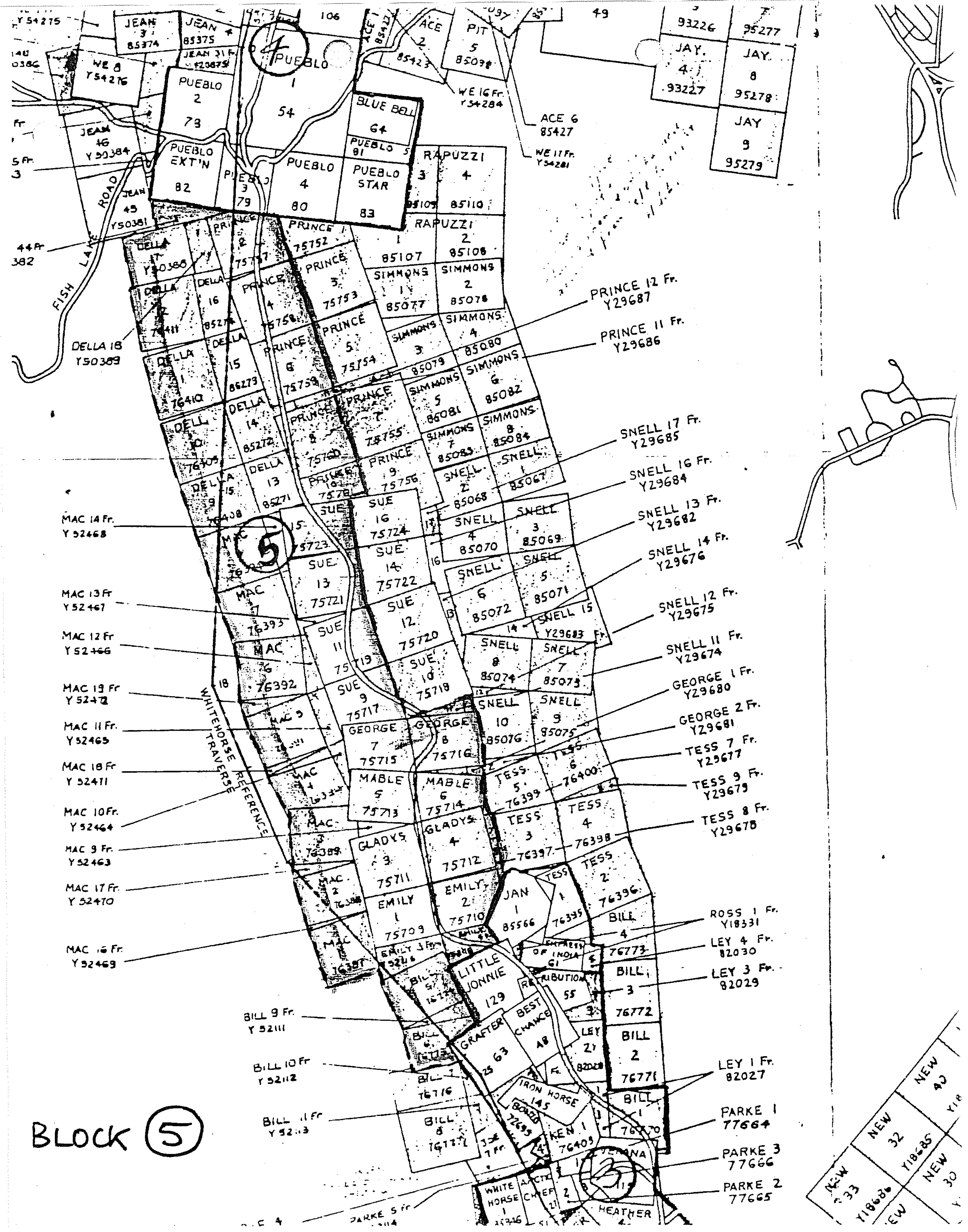

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PUEBLO 81
PUEBLO EXT'N 82
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PUEBLO 4 80
PUEBLO STAR 83
JEAN 46 Y50384
JEAN 45 Y50381
FISH LAKE ROAD
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WE 16 Fr. Y54284
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LEY 1 Fr. 82027
LEY 2
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LITTLE JONNIE 129
RETRIBUTION 55
BEST CHANCE 48
GRAFTER 63
IRON HORSE 145
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PARKE 1 77664
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PARKE 2 77665
PARKE 5 Fr.
WHITE HORSE 1
ARCTIC CHIEF
HEATHER
NEW 33 Y18686
NEW 32 Y18685
NEW 30
NEW 40

FUTURE EXPLORATION - WHITEHORSE COPPER BELT

All future work, and all record keeping should be handled by the HBED office in Whitehorse.

Exploration remaining is given in attached May 1982 programme proposal by A. Hureau. The main projects we should complete are:

1. North Star - follow-up high grade in hole NS 15 to south west.

2. Deepen Arctic Chief hole AC 58 to quartzite contact or consider starting new hole for a deep test in this area.

3. Reevaluate the deeper ore intersections obtained at Grafter by HBED and follow-up with diamond drilling.

4. Evaluate airborne mag/EM survey when results are available. The area between Best Chance and Pueblo should be studied carefully for clues to the location of the diorite contact.

Att: Summary of Remaining Exploration Targets
A. Hureau May 1982

EXPLORATION - ACTION REQUIRED

1) The economics of all low-grade deposits (Cowley Park, Keewenaw etc.) on the Copper Belt should be monitored.

2) A proposal for possible outside participation on the Copper Belt should be prepared.

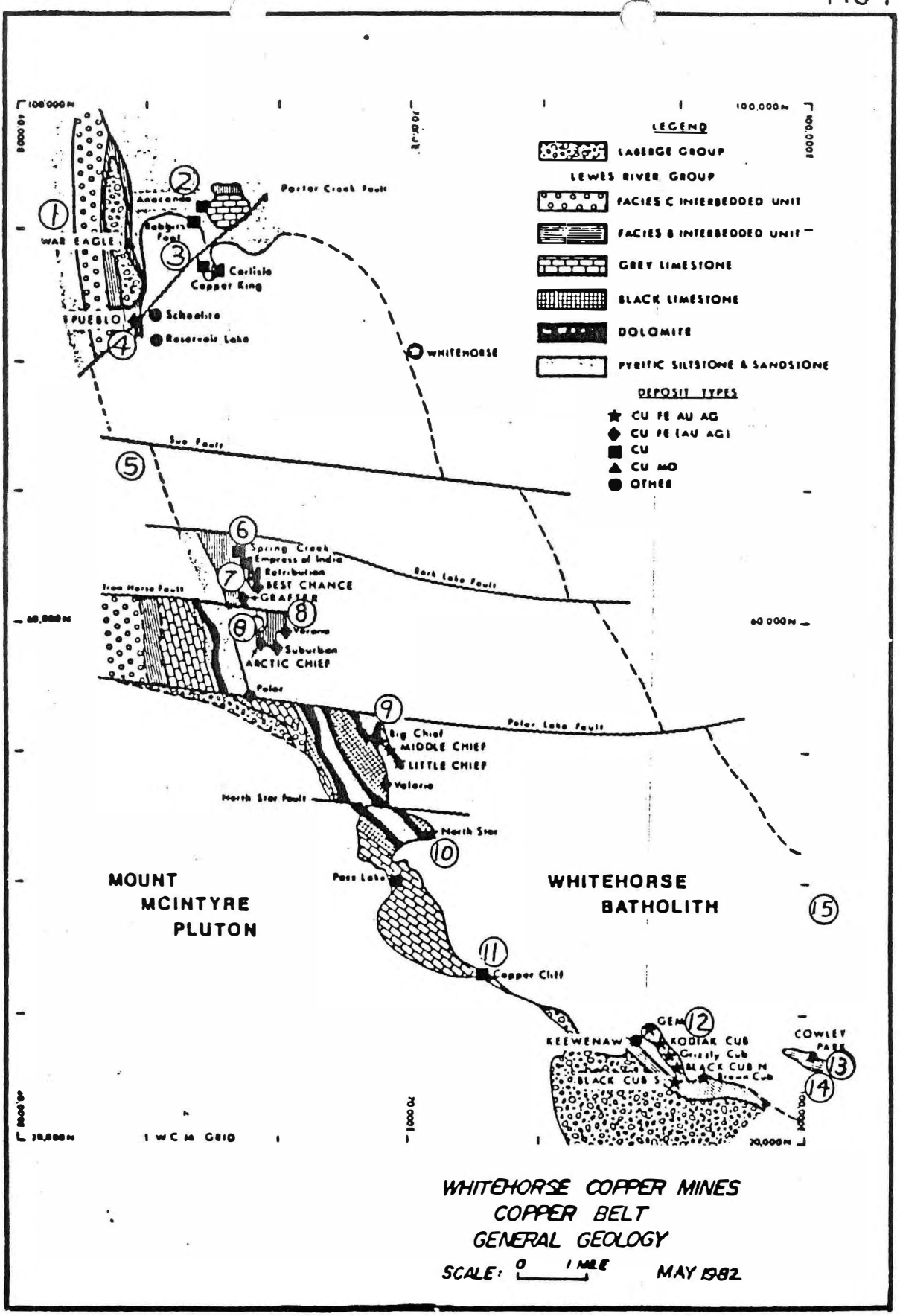
WHITEHORSE COPPER MINES

SUMMARY OF

REMAINING EXPLORATION TARGET AREAS

A. Hureau
May 1982

FIG 1



WHITEHORSE COPPER MINES
COPPER BELT
GENERAL GEOLOGY
SCALE: 0 1 MILE MAY 1982

Introduction

The following areas on the Copper Belt should be considered, if economic conditions improve and the development of small to medium sized copper deposits becomes attractive.

Target areas are listed from north to south and not in order of preference; North Star, Arctic Chief, and Cowley Park are considered to offer the best potential. Some areas, e.g. north of War Eagle, would only be considered if high prices allowed for the mining of much lower grade than is currently economic. Zones which have good grade, low tonnage potential, e.g. north of Arctic Chief west and Cowley Park south may be considered if production from these zones could supplement production from larger mines.

Results of the airborne Mag-E.M. survey '81 have not yet been studied in detail. No anomalies were plotted on preliminary sheets over the North Star and Arctic Chief pendants. An anomaly was detected near the east end of the Cowley Park main zone. Data from the survey should be reviewed when available, in conjunction with geological and ground geophysical information.

Areas of the Belt should be re-evaluated when any geophysical breakthrough or refinement of existing methods make heavily overburden covered areas or areas which may contain deeply buried blind deposits more amenable to exploration. Refinement of seismic methods may make these techniques applicable to help define stratigraphic contacts at depth.

The further development of stratigraphic models and recognition of different carbonate facies in areas where they have been recrystallized, near the intrusive, may help to more accurately predict targets at depth. The existence of limestone, skarn and mineralization under diorite and dioritized quartzite at North Star, Grafter, and the south end of Little Chief should caution against rash projections of intrusive contacts from surface which make zones appear too small to be attractive.

Geological controls for ore deposition are summarized by G. Morrison in the 1980 budget proposal. The paper is attached as appendix 1.

1. War Eagle Area
   Ref. Exploration Budget Proposal 1980

   a) Two holes proposed for under the War Eagle pit in 1980 were not drilled. Funds were diverted to areas considered to be more attractive. In addition mineralization on the east side of the zone (53 E, sect 77 N elev 2600') has not been followed down dip and to the south.

   b) North of Pit

      Low grade mineralization on sect 103 N (386' @ 0.31% Cu) could be tested up and down dip.

2. Rabbits Foot Canyon, Anaconda, Rabbits Foot, Ruby
   Ref. 1981 Budget & Summary & Proposal G. Morrison & A. Hureau Sept.'80.

   The area should be reassessed. A detailed mag survey around

granodiorite plugs west of the highway, 1000-1500' north of the turnoff to the dump road, should help delineate the contact with limestone outcropping on the east side of the highway. Drilling should be considered to check the limestone-quartzite intrusive contact, near the highway, 1200' north of the Fish Lake turnoff. Hole RF2 drilled by HBED in 1973 was stopped only a few feet past skarn in diorite.

No anomalous IP or mag results were obtained over the sediments-intrusive contact east of the highway and north of McIntyre Creek. Drilling would appear to be the only way to test this contact at depth.

3. Copper King - Carlisle

This large pendant contained several small lenses of high grade ore. Only two deep holes have been drilled to test the zones under the workings. A third hole between the Copper King & Carlisle workings should be considered. Any new holes drilled in this area should be checked for tungsten.

IP using north-south lines (strike of zone is east) done in 1964 used only a 200' separation, check lines using wider spreads should be done on N-S lines.

4. Pueblo-Gulch
Ref 1981 Budget

A narrow (15.6') good grade (2.81% Cu) intersection in PB 16, in 1981, north of the Pueblo mine has not been followed up.

The sediments-intrusive contact west and north of the Pueblo pendant has not been tested. The area is heavily overburden covered and should be considered if a workable geophysical method for detection of deeply buried, poorly conductive, deposits evolves.

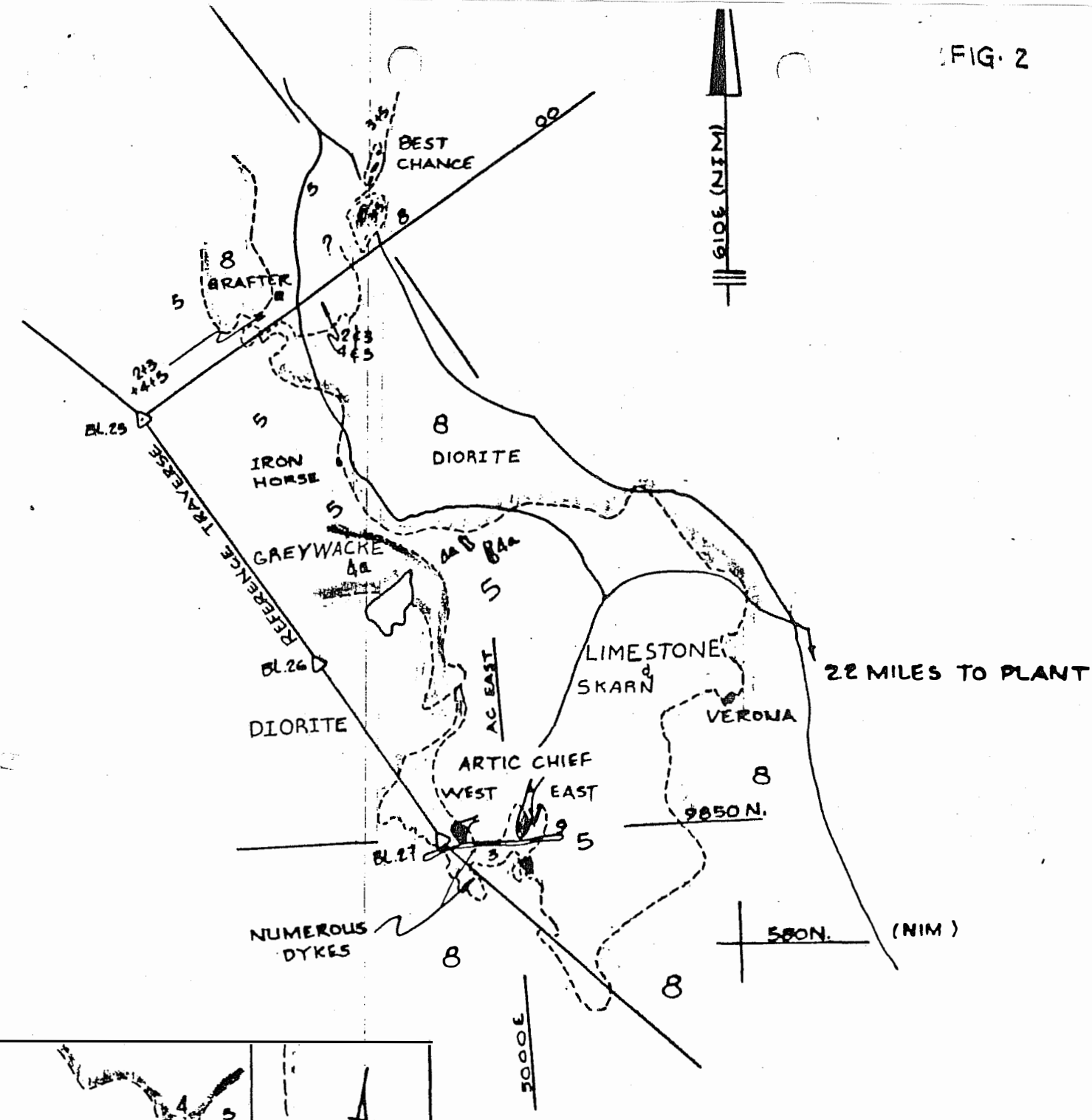
5. Pueblo to Bork Lake
Ref. 1980 Budget # 3&4
1981 Budget # 6a & 6b
1982 Budget # 10

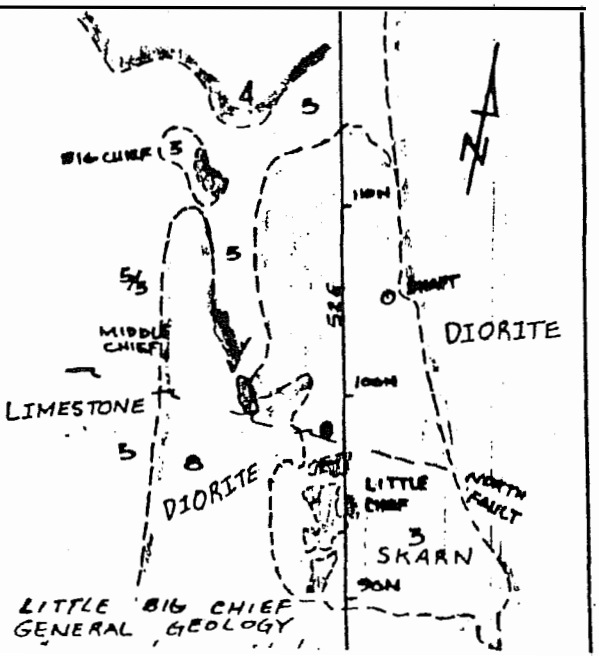
Results of the airborne survey, prospecting and extending the ground mag coverage to the west may help establish the intrusive-sediments contact. IP or possibly EM may detect mineralized zones near the contact.

6. Spring Creek

Hole B.C. 46 drilled under the Spring Creek workings intersected traces of copper at the limestone skarn contact. An 800' hole should be considered to test the contact deeper in the pendant. (see Spring Creek off section 577 E - NIM).

FIG. 2



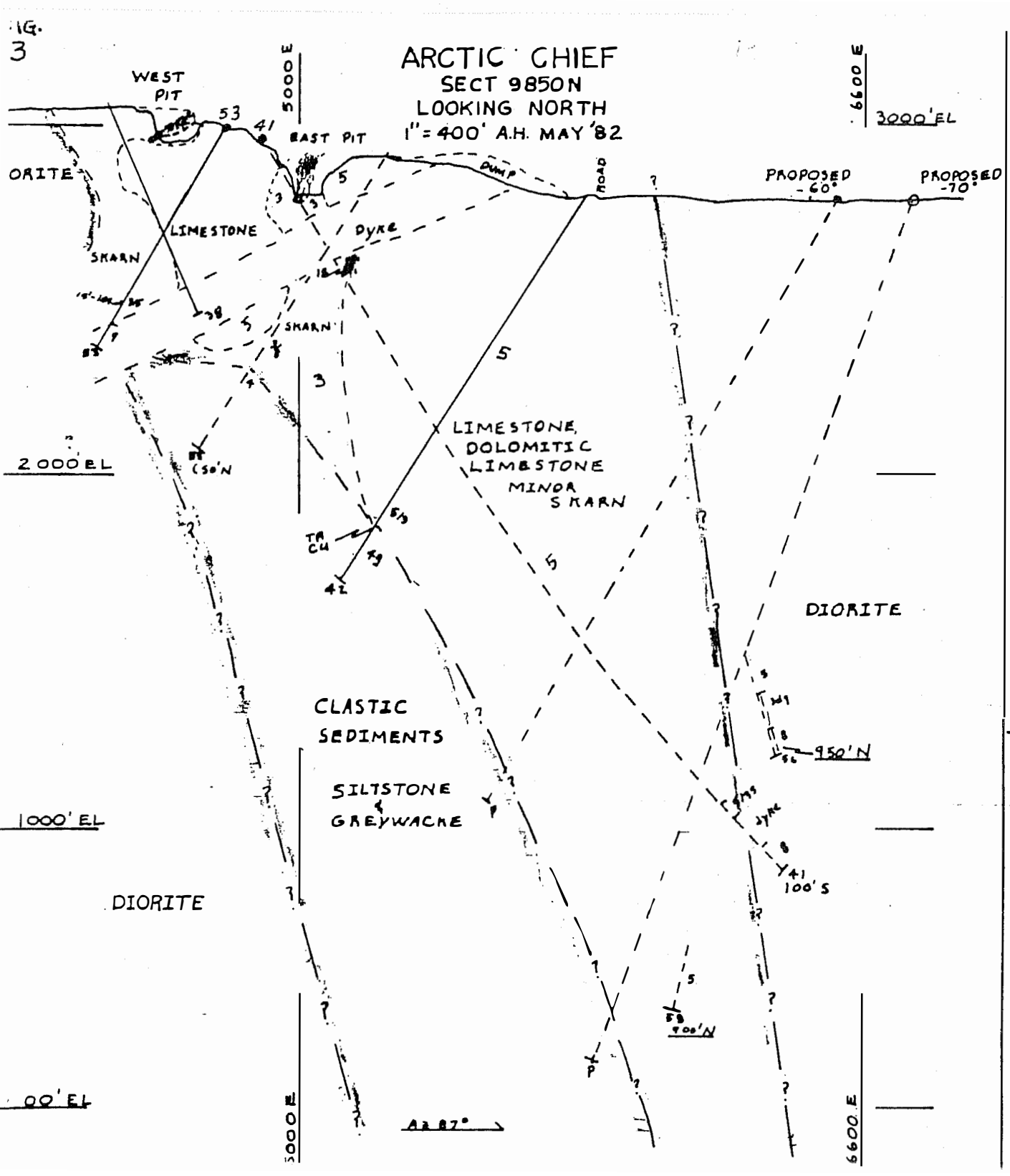


WHITEHORSE COPPER MINES
ARCTIC CHIEF – BEST CHANCE
GENERAL GEOLOGY

1"= 1000' A.H. MAY '82

SCALE: 0 500 1000'

IG.
3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SECT 9850N
LOOKING NORTH
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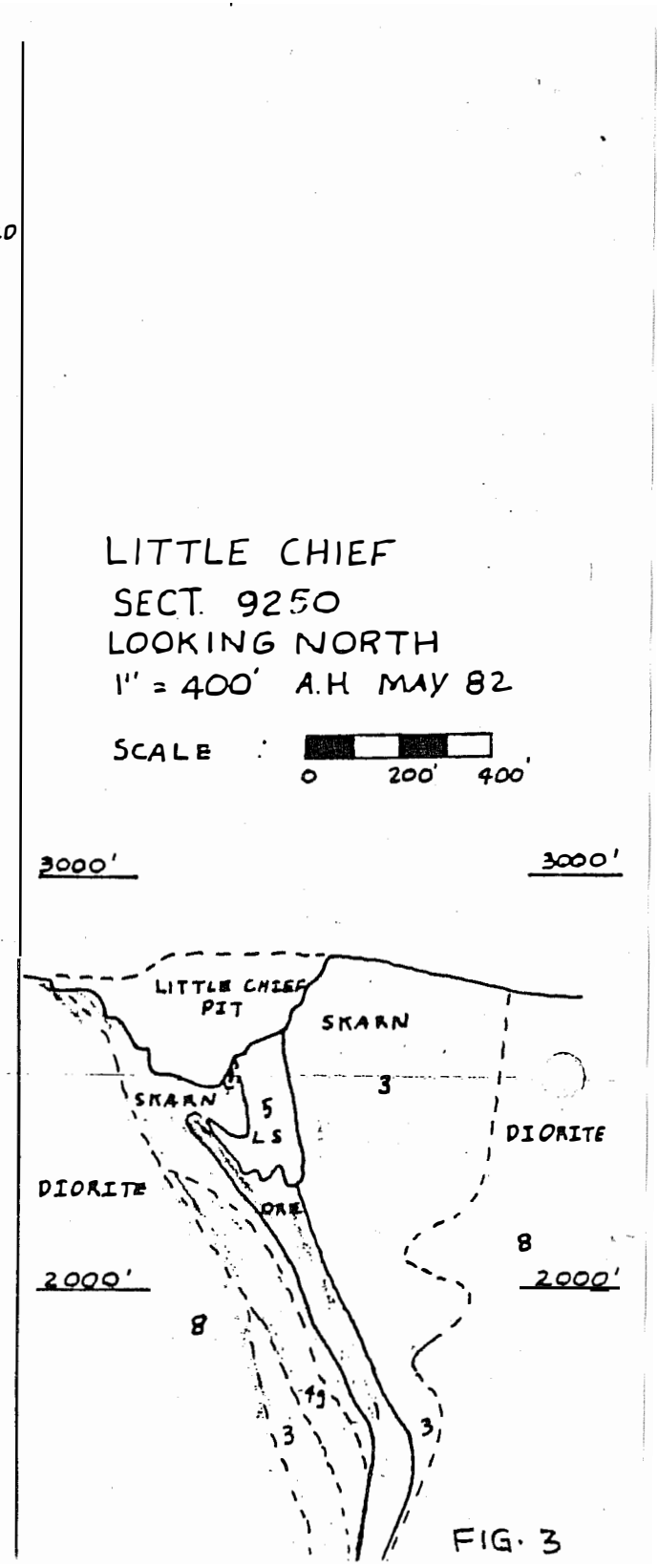
5000 E
6600 E
3000'EL
WEST PIT
EAST PIT
ORITE
LIMESTONE
SKARN
Dyke
PUMP
ROAD
PROPOSED -60°
PROPOSED -70°
2000 EL
LIMESTONE, DOLOMITIC LIMESTONE MINOR SKARN
DIORITE
CLASTIC SEDIMENTS
SILTSTONE & GREYWACKE
950'N
1000' EL
DIORITE
00' EL
Az 87°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SECT 9250
LOOKING NORTH
1" = 400' A.H MAY 82
SCALE
0 200' 400'
3000'
3000'
LITTLE CHIEF PIT
SKARN
SKARN
LS
DIORITE
DIORITE
ORE
2000'
2000'

FIG. 3

7. Grafter-Best Chance

Short good grade intersections obtained by HBED in 1972 viz: 6W, 20' @ 1.48% Cu 900' below surface. 9W, 20' @ 3.95% Cu 520' below surface & 19.5' @ 2.32% Cu 540' below surface, should be followed up. Much of the diorite and dioritized clastic sediments outcropping or suboutcropping is underlain by limestone and skarn. Drilling results at Grafter may suggest drilling deep holes under Best Chance.

8. Arctic Chief-Verona

The Arctic Chief pendant has approximately twice the dimensions of the Little Chief pendant (Fig. 2). Work to date has been concentrated on mining of and exploring the small good grade zones near the west contact of the pendant. Some potential still exists for establishing small tonnage reserves north and south of the pits. Hole AC 49 on sect. 102N could possibly be deepened by reducing to AQ core, to determine whether mineralized magnetite skarn continues below the intersections in AC 47 & AC 48. Drilling to the south was hampered by the existence of numerous irregular dykes which strike perpendicular to the sections and were intersected in critical areas at very low angles to the core. Any drilling program in the area should include provision for directional wedging if dykes are intersected in critical areas.

Four holes have been drilled to test the east contact of the pendant. Results indicate that: (1) the intrusive contact is steep and may be dipping to the east; (2) the footwall quartzite steepens and may parallel the intrusive contact; (3) dolomitic limestone and skarn extend to depths in excess of 2300' below surface.

A comparison with Little Chief geology (Fig. 3) suggests that the depth at which the limestone quartzite contact is sufficiently near the intrusive to be skarnified may, unfortunately, be in the order of 2000'. However, the available strike and dip distances of the contact, the nature of the Arctic Chief mineralization (similar to Little Chief & with good gold content) and the location, two miles from the plant could still make exploration of this contact attractive.

Drilling to establish at depth the dip of the F.W. quartzite on sect. 9850 N or 108 N is recommended as the first step in evaluating the east side of the pendant. One of the two holes suggested on sect. 9850 N should establish both the dip of the quartzite limestone contact and that of the diorite to the east. Hole AC 58 sect. 108 N, is open to 2040' and could probably be deepended by: (1) reaming the hole to 900' past bad ground and water courses from 750' to 850', (2) putting down N casing to 900', (3) putting in a bypass wedge at 2040' and continuing to drill NQ. The hole could be reduced to BQ if further difficulty is encountered. Wedging the hole to flatten it should be considered if the quartzite is not reached after several hundred feet.

8. Arctic Chief-Verona (continued)

Hole AC 58 passed through 50' of dioritized clastic sediments from bedrock before entering limestone. Much of the dioritized clastic sediments mapped in the Verona area may be underlain by limestone and skarn. A magnetic anomaly 250' long and 100' wide exists around the Verona trenches. The mag survey was done on lines near parallel to the zone. The survey should be redone using north-south lines. Banding in quartzite 400' SW of Verona strikes NE & dips 70° SE. A hole drilled to the north from approximatley 105 N,6575 E,is suggested to check the Verona mineralization which may extend to the southwest, under the clastic sediments. Drilling in this area may be helpful in establishing the dip of the intrusive contact on sect. 108 N.

9. North of Middle Chief

Consideration should be given to checking more thoroughly the Middle Chief contact north of the underground workings. Unfortunately, part of this contact is under the mill complex but some room does exist north and south of it.

A 1000' hole drilled at -55°W from 5615 E on section 110 N or 10950 N is recommended.

10. North Star-Valerie

(see Summary Report & Recommendations A.H. May '82).

11. Copper Cliff

Ref. 1981 budget proposal.

The Copper Cliff pendant has not been tested by drilling. A detailed mag survey and mapping, possibly to be followed by an IP survey and drilling, should be considered.

12. Gem-Brown Cub-Cowley

There appears to be little chance of improving reserves of known zones in this area. If Gem should become economic the smaller zones (Black Cub North-Kodiak Cub) should be reassessed.

The limestone-quartzite intrusive contact east of Black Cub south in the Brown Cub area is weakly mineralized. No geophysical targets are known along this buried contact which extends for two miles east to Cowley Creek. IP has delineated the limestone (graphitic) - intrusive contact and small weakly mineralized skarn zones have been drilled 4000' south of the Cowley Park main zone. Copper bearing skarn zones whose IP response has been masked by that of graphitic limestone could exist along this contact. If a geophysical method evolves which could distinguish these deposits, its application should be considered in this area.

13. Cowley Park Main Zone

Additional drilling on this zone would be for pit definition if the zone became economic with possible small increases in reserves.

14. Cowley Park South
Ref. 1982 Budget Proposal

Reserves on this zone could probably be improved by drilling along strike to the east and west. Orientation EM surveys should be done and if correlation with known zones is present, the surveys should be extended to the east to help delimit the mineralization.

15. North of Carcross Cutoff
Ref. 1981 Budget Proposal

The mineralization intersected by Canex Placer on Lewes River Mines ground should be considered for follow up work, if prices improve and ground adjacent to the four claims currently held is released from the pipeline staking freeze.