

GEOLOGICAL REPORT ON THE ECLIPSE / IMPERIAL CLAIMS

CLAIMS - ECLIPSE - 1640
IMPERIAL - 1639

NELSON MINING DIVISION

N.T.S. - 82 F/6

Latitude - 49 degrees 22 minutes North
Longitude - 117 degrees 17 minutes 30 seconds West

Owner of claims - Goldrich Resources Inc.

Operator of claims - Lightning Minerals Inc.

Author - Peter Hannigan

Date - December 12, 1987

GEOLOGICAL BRANCH
ASSESSMENT REPORT

16,728

Part 8 of 9

FILMED



Province of
British Columbia

Ministry of
Energy, Mines and
Petroleum Resources

ASSESSMENT REPORT
TITLE PAGE AND SUMMARY

| | |
|---|---------------------------------|
| TYPE OF REPORT/SURVEY(S) GEOLOGICAL | TOTAL COST \$ 1550.60 |
|---|---------------------------------|

AUTHOR(S) **P. HANNIGAN** SIGNATURE(S) *Peter Hannigan*

DATE STATEMENT OF EXPLORATION AND DEVELOPMENT FILED **Dec. 29 / 87** YEAR OF WORK **1987**

PROPERTY NAME(S) **ECLIPSE / IMPERIAL**

COMMODITIES PRESENT **GOLD**

B.C. MINERAL INVENTORY NUMBER(S), IF KNOWN

MINING DIVISION **NELSON** NTS **82 F/6**

LATITUDE **49° 22' N** LONGITUDE **117° 17' 30" W**

NAMES and NUMBERS of all mineral tenures in good standing (when work was done) that form the property [Examples: TAX 1-4, FIRE 2 (12 units); PHOENIX (Lot 1706); Mineral Lease M 123; Mining or Certified Mining Lease ML 12 (claims involved)]:

ECLIPSE 1640
IMPERIAL 1639

OWNER(S)

(1) **GOLDRICH RESOURCES INC.** (2)

MAILING ADDRESS

1730, 401 W. GEORGIA ST.
VANCOUVER, B.C., V6B 5A1

OPERATOR(S) (that is, Company paying for the work)

(1) **LIGHTNING MINERALS INC.** (2) **TERRA MINES LTD.**

MAILING ADDRESS

202, 7608 - 103 ST. ← **SAME**
EDMONTON, AB.
T6E 4Z8

SUMMARY GEOLOGY (lithology, age, structure, alteration, mineralization, size, and attitude):

NELSON PLUTON GRANITE - L. CRETACEOUS
CONTACT, QUARTZ / CALCITE VEINS < 3 M
GOLD

REFERENCES TO PREVIOUS WORK

LITTLE, H.W., 1960 NELSON W/2, G.S.C. MEMOIR 308

| TYPE OF WORK IN THIS REPORT | EXTENT OF WORK (IN METRIC UNITS) | ON WHICH CLAIMS | COST APPORTIONED |
|---|----------------------------------|--------------------|------------------|
| GEOLOGICAL (scale, area) | 30 hectares, 1:5000 | ECLIPSE / IMPERIAL | 1550.60 |
| Ground | | | |
| Photo | | | |
| GEOPHYSICAL (line-kilometres) | | | |
| Ground | | | |
| Magnetic | | | |
| Electromagnetic | | | |
| Induced Polarization | | | |
| Radiometric | | | |
| Seismic | | | |
| Other | | | |
| Airborne | | | |
| GEOCHEMICAL (number of samples analysed for) | | | |
| Soil | | | |
| Silt | | | |
| Rock | | | |
| Other | | | |
| DRILLING (total metres; number of holes, size) | | | |
| Core | | | |
| Non-core | | | |
| RELATED TECHNICAL | | | |
| Sampling/assaying | | | |
| Petrographic | | | |
| Mineralogic | | | |
| Metallurgic | | | |
| PROSPECTING (scale, area) | | | |
| PREPARATORY/PHYSICAL | | | |
| Legal surveys (scale, area) | | | |
| Topographic (scale, area) | | | |
| Photogrammetric (scale, area) | | | |
| Line/grid (kilometres) | | | |
| Road, local access (kilometres) | | | |
| Trench (metres) | | | |
| Underground (metres) | | | |
| TOTAL COST | | | 1550.60 |

| FOR MINISTRY USE ONLY | NAME OF PAC ACCOUNT | DEBIT | CREDIT | REMARKS: |
|--------------------------------|---------------------|-------|--------|-------------------------|
| Value work done (from report) | | | | |
| Value of work approved | | | | |
| Value claimed (from statement) | | | | |
| Value credited to PAC account | | | | |
| Value debited to PAC account | | | | |
| Accepted Date | Rept. No. | | | Information Class |

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GEOLOGICAL REPORT OF THE ECLIPSE / IMPERIAL CLAIMS

I Introduction

The Eclipse / Imperial claim group consists of two reverted crown grants in the Keno Creek watershed about 1.5 kilometers south of Hall Creek. The claims are located about 13 kilometers south of Nelson. Access to the property is in the following manner: turn west on the Perto Rico road to Perto Rico on Highway 6. The road follows the Barrett Creek valley. About 3.0 kilometers west of the highway, follow the rough road heading to the north up Lost Creek valley. At the top of the ridge, the vehicle must be parked and the access can be achieved by walking north towards the claim. If one stays high in elevation as they walk in, they can avoid thick stands of alder in the valley.

The Ymir gold camp, in which these claims can be included, was discovered in 1885 when the initial gold occurrences were found. The camp did not receive much attention until 1896 when the railway was built. Most of the occurrences had been staked by this time and mine production started soon after. Most production occurred in the early years of the century as well as in the 1930's. War broke out in the 1940's and mining operations ceased. After the war, fragmentation of ownership, and low gold and silver prices prevented major production plans. Recently, Goldrich Resources Inc. managed to acquire a substantial amount of ground in the Ymir camp, and then an agreement was signed in 1987 whereby Lightning Minerals Inc. would perform the work required in the area.

No information has been found concerning the history of these two claims. Presumably they were included at one time with the other gold producing claims in the area such as the Bear or Fern.

In 1887, a geological mapping program was initiated by Lightning Minerals Inc. on the Eclipse / Imperial claims. The mapping scale was 1:5000 and a total area of 30 hectares was surveyed.

The claims included in this report are as follows:

Eclipse - Reverted Crown Grant - Record Number - 1640
Imperial - Reverted Crown Grant - Record Number - 1639

The personnel employed for the purpose of field work were P. Lounsbury, B. Hitchins and Peter Hannigan, all of Lightning Minerals Inc.. Field work was performed on October 22 and 24, 1987.

II Detailed Technical Data and Interpretation

a. Regional

A large synclinorium with a north-south axis trending from Salmo to Nelson seems to be the major structure in the Ymir gold camp area. This synclinal structure is probably a roof pendant of supracrustal rocks enclosed by the Nelson plutonic complex. The core of the structure is occupied by the younger Mid to (?) Upper Jurassic Hall Formation consisting of argillites, sandstones and conglomerates (see Table 1, Table of Formations). Adjacent to the Hall rocks on both flanks, a band of Lower Jurassic Rosslund Formation consisting of greenstones are exposed. Lower or pre-Jurassic Ymir Group material consisting of argillite, slate and paragneiss are the oldest rocks on the structure. Abundant Nelson plutonic bodies intrude this belt of rocks. Strongly deformed and metamorphosed supracrustal rocks are present adjacent to these intrusions.

According to Little (1960), the Rosslund Formation consists of basic flows and flow breccias, probably andesitic to basaltic in composition. Thin sections reveal saussuritized plagioclase feldspars, augite, and chloritized hornblende. These rocks have been metamorphosed to the greenschist facies as evidenced by the presence of secondary calcite, albite, epidote, zoisite and chlorite. Another common rock type noted in the Rosslund Formation was an intrusive augite porphyry. Dark green fine-grained volcanic rocks have numerous small phenocrysts of augite within them. These rocks are sometimes weathered to light green in colour. These rocks are similar in composition to the flows above.

Little's map shows that the most abundant phase of the Nelson plutonic complex is a porphyritic granite. The grey rocks contain a coarse-grained quartzo-feldspathic groundmass with abundant phenocrysts of feldspar. The phenocrysts range in size from barely larger than groundmass to 14 cm in length, with the average length being about 5 centimeters. Hornblende content is generally greater than biotite in the mafic minerals.

ii Property Geology

The property is intersected by the volcanic/intrusive contact. To the west, the massive light grey porphyritic granite to granodiorite intrusive complex is present. Numerous leucocratic aplite dikes were noted in this complex. To the east of the contact (see Figure 2), augite porphyry flows and/or intrusive material is present. Abundant light grey granite and aplite dikes crosscut this vol-

canic material. Occasional quartz stringers and veins are noted.

Two major joint or fracture sets were mapped. Dikes tend to follow these fractures. The dike swarms tend to follow the north-south joint set while the smaller dikelets and quartz stringers generally follow the east-west joint set. Epidote was noted on fracture planes as well.

Pillowed basalt was noted on one outcrop. The pillows were so deformed that tops could not be determined.

Two pits containing large white quartz veins in the granitic rocks were located near the western boundary of the claim group. The veins were somewhat crumbly and contained ankerite (?) and calcite in parts. The three veins varied in width from 1 to 3 meters.

b. Discussion of Results and Interpretation

The purpose of this geological survey was to locate any possible gold mineralization by paying particular attention to structures. Quartz veins were prospected and sampled, and old pits and trenches were found and mapped.

All rock samples were sent to Rossbacher Laboratories in Burnaby, B.C. for geochemical analysis. Unfortunately, gold values were very low, all in the 5 ppb range (see Appendix 1 for rock geochemical results).

It was thus determined, that very little economic mineralization is present on these claims. The close proximity to known showings may have been the justification for the original staking of the claims. The presence of pillows in the volcanic sequence suggests a marine origin for the flows.

III Recommendations

Due to very poor gold geochemical results, and the apparent lack of many quartz structures and oxidized material, it is the opinion of the author that no further work is required on these claims.

Respectfully submitted,

Peter Hannigan

Peter Hannigan
Geologist
Lightning Minerals Inc.

TABLE 1

TABLE OF FORMATIONS

(from Little, 1960)

PERIOD

FORMATION

LITHOLOGY

L. Cretaceous (?)

Nelson Plutonic Rocks

Porphyritic granite, non-porphyritic granite to granodiorite, quartz diorite, syenite, monzonite, pseudodiorite, pyroxene-hornblende-biotite rock, mylonite, diorite.

L. Cretaceous (?)

Ultrabasic rocks, serpentinite.

M. & U. Jurassic

Hall Formation

Argillite, sandstone and conglomerate.

L. Jurassic

Rosslund Formation

Andesite, latite, basalt, flow breccia, augite porphyry, agglomerate, tuff, minor shale, metamorphosed greenstone.

Sinemurian Beds

Argillite, argillaceous quartzite, slate, minor flows and pyroclastic rocks.

Permian (?), Triassic (?) and L. Jurassic (?)

Ymir Group

Argillite, slate, argillaceous quartzite, minor limestone, paragneiss.

References

Little, H. W.

1960: Nelson Map Area, West Half, British Columbia (82FW1/2); Geological Survey of Canada, Memoir 308

Wells, R.A.

1985: Exploration and Development Proposal, Nelson Mining Division, British Columbia for Arizako Mines Ltd. (unpublished report).

STATEMENT OF QUALIFICATIONS

I, Peter Hannigan, do hereby certify that:

1. I am a geologist employed by Lightning Minerals Inc., 202 , 7608 - 103 Street, Edmonton, Alberta, T6E 4Z8.
2. I am a graduate of the University of Calgary with a BSc Degree in Geology (1975).
3. I have practised my profession since graduation and was engaged in exploration prior to 1975 as well. My previous employers include; Geophoto Ltd., Sherritt Gordon Mines Ltd., Scope Exploration Services, Procan, Welcome North and Cyprus Anvil Ltd..
4. This report is based on researching government reports and exploration on the Eclipse / Imperial claims in the fall of 1987.
5. I have no interest, directly or indirectly in the property described in the report.

Respectfully submitted

Peter Hannigan

Peter Hannigan
December 12, 1987

APPENDIX 1

List of Rock Geochemical Results

| <u>Sample Number</u> | <u>Au ppb</u> |
|----------------------|---------------|
| C-47649 | 5 |
| C-47650 | 5 |
| C-47651 | 5 |
| C-47652 | 5 |

APPENDIX 2

ITEMIZED COST STATEMENT

Wages For Field Work:

| | | | |
|----------------------------|--------|--------------------------------------|-------------------------|
| Peter Hannigan (geologist) | 2 days | \$150/day | \$ 300.00 |
| Brice Hitchens (assistant) | 1 day | \$100/day | \$ 100.00 |
| Phil Lounsbury (assistant) | 1 day | \$ 65/day | \$ 65.00 |
| | | Add 4% holiday pay | \$ 18.60 |
| | | Add 20% burden (office, benefits) | \$ 93.00 |
| | | TOTAL WAGES FOR FIELD WORK | <u>\$ 576.60</u> |

Wages For Report Preparation:

| | | | |
|----------------------------|--------|--------------------------------------|-------------------------|
| Peter Hannigan (geologist) | 3 days | \$150/day | \$ 450.00 |
| | | Add 4% holiday pay | \$ 18.00 |
| | | Add 20% burden (office, benefits) | \$ 90.00 |
| | | TOTAL WAGES FOR OFFICE WORK | <u>\$ 558.00</u> |
| | | TOTAL WAGES | <u>\$1134.60</u> |

Food and Accomodation:

| | | | |
|--------------------|--|--|-----------|
| 6 days at \$40/day | | | \$ 240.00 |
|--------------------|--|--|-----------|

Transportation:

| | | | |
|--|--|--|-----------|
| Rental of 4x4 truck, mileage, gas, oil, repairs 2 days at \$75.00/day | | | \$ 150.00 |
|--|--|--|-----------|

Assay Costs:

| | | | |
|--|--|------------------|-------------------------|
| 4 rock geochemical analyses - Au at \$4/sample | | | \$ 16.00 |
| Shipping costs to assay lab by Greyhound | | | \$ 10.00 |
| | | SUB-TOTAL | <u>\$ 416.00</u> |

| | | | |
|--|--|---------------------------|-------------------------|
| | | TOTAL EXPENDITURES | <u>\$1550.60</u> |
|--|--|---------------------------|-------------------------|

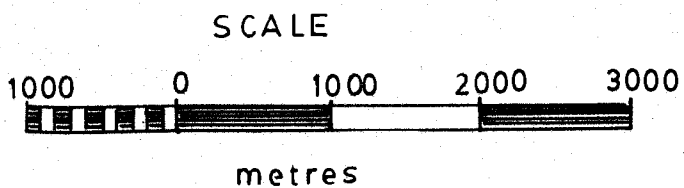
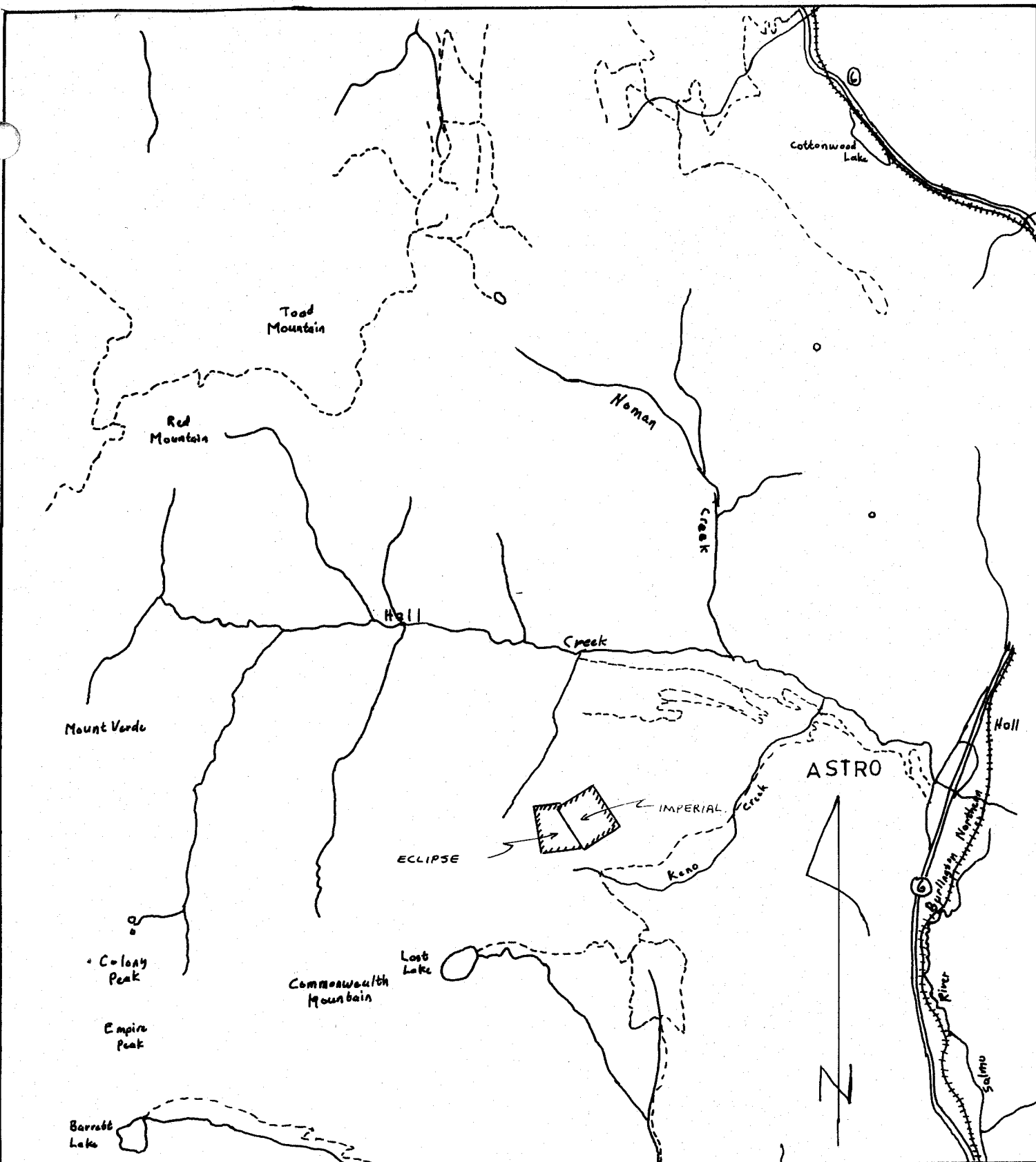


FIGURE 1 : INDEX MAP

SCALE: 1: 50,000

N.T.S.: 82F/6



LEGEND

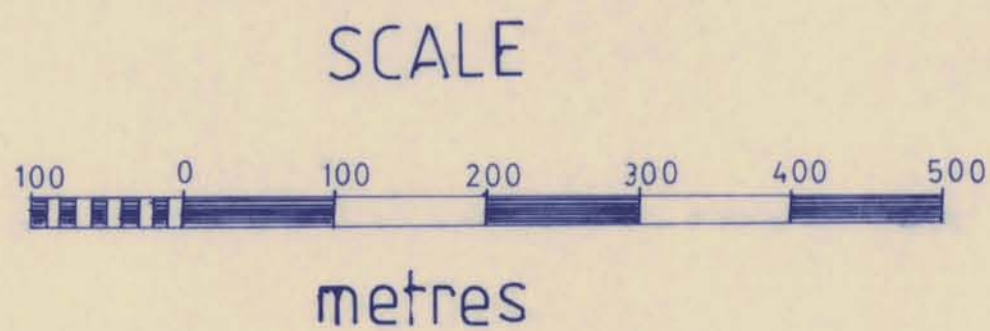
- ASTRO
- 2 Porphyritic granodiorite intrusive
- 1 Basic volcanic flows - augite porphyrite
- Outcrop boundary
- - - Geological contact
- / - Fracture; inclined, vertical
- \ - Adits; accessible, caved in
- Dump
- Shaft
- PH-87-157 Geological mapping station
- C-47649 Sample number (rock chip)
- / - Quartz vein orientation
- - - Road
- · - Trail
- ┌ Claim group

Claim boundaries established by topographic map

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

16,728

Part 8 of 9



| | |
|----------------------------|----------------|
| LIGHTNING MINERALS LTD. | |
| GEOLOGY MAP | |
| ECLIPSE-IMPERIAL-YMIR AREA | |
| GEOLOGY BY: P. HANNIGAN | SCALE: 1: 5000 |
| DRAWN BY: P. HANNIGAN | DATE: |
| DRAWING NO: FIGURE 2 | |