

ASSESSMENT REPORT

GEOLOGICAL REPORT

on the

PEERLESS CLAIMS,
CARCROSS AREA, YUKON TERRITORY

Claim Sheet 105-D-2

Latitude ⁶20° 07'

Longitude 135° 37'

By

J.L. Tindale, B.Sc.,
Geologist.

May, 1966 - November, 1966.

M.D. Kreians

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APPENDIX 'A'

Summary and breakdown of expenses applicable to assessment credits.

Maps - (in separate binder Part II)

1. Location Map.
2. Plan of adit boundary and generalized geology of adit (1" = 100').
3. Plan of west central adit area (1" = 20').
4. Plan of south boundary and east adit area (1" = 20').
5. Plan of east central adit area (1" = 20')
6. Plan of west adit area (1" = 20')
7. Plan of east adit area & Arctic workings (1" = 20')
8. Sample plan (1" = 20')

GEOLOGICAL REPORT ON THE PEERLESS CLAIMS

CARCROSS AREA, YUKON TERRITORY

INTRODUCTION:

Early in 1966 it was decided to examine in detail the underground workings present on the Peerless claims registered in the name of J.B. Aird in trust. This decision was prompted by interesting results obtained on the neighbouring holdings of Arctic Mining and Exploration Ltd. during 1965-1966. All work done on the Peerless claims was carried out by International Mine Services Ltd. for the owners and under my supervision.

CLAIMS, LOCATION AND ACCESS:

The Peerless Claims, seven in number, were staked in June, 1962, and have been retained in good standing since that time.

| | |
|------------------------|-------------------|
| Peerless No. 1 | 77828 |
| Peerless No. 3 | 77829 |
| Peerless No. 5-9 incl. | 77830-77834 incl. |

The property is located on the north flank of Montana Mountain at an elevation of about 5,500 feet above sea level. Carcross, the nearest settlement is eight miles by truck road northeast of the claims. Yukon claim sheet 105-D-2 may be used to locate property.

Access to the property is via a truck road which winds up Montana Mountain from Carcross. The White Pass and Yukon Railway passes through Carcross from the deep water port of Skagway, Alaska, 110 miles to the southwest. Whitehorse, the main population centre in the Yukon, is 50 road miles to the north of Carcross.

HISTORY:

The ground covered by the Peerless claims and that of the adjoining Arctic crown grants (Pride of the Yukon and Caribou), have had a long and interesting history. The writer believes a documentation of events leading up to present developments will aid the reader in understanding the particular situations now existing.

The "Big Thing Property" as it was first known, was contained on a 6 crown grant claims namely Caribou, Pride of the Yukon, Nipper Fraction, Eureka, Eureka No. 2, Pride of the Yukon No. 2 and Vanguard, Total area was 284.1 acres. The Caribou and Pride of the Yukon grants still remain and contain the shaft and workings currently being re-opened and explored by Arctic Mining & Exploration. The lapsed grants are covered in the main by the Peerless claims.

Work was first done on the property in 1905 and 1906 by one of the Colonel Conrad interests and worked intermittently until the year 1912. A major fault was struck in 1911 on the fourth level of the mine

which appeared to cut off the main "Big Thing Vein". An adit was driven at a lower elevation, (the Adit present on Peerless #5 claim) in an attempt to locate the extension of the "Big Thing Vein" at depth. Two veins were crossed both carrying values, but no clear cut extension was found.

A raise was subsequently driven near the end of the adit breaking through to the fourth level of the Big Thing Mine. Some stoping was done above the fault in the mine and ore was dumped down the raise to the lower adit and hand cobbled for shipping. Lack of funds to pursue the faulted portion of the vein and failure of the adit to locate high grade ore ultimately caused abandonment of the property in late 1912.

In June of 1916, Colonel W. L. Stevens re-opened the property on behalf of the Alaska Corporation. Some 245 tons were mined and shipped to the Ladysmith Smelter. No development work was done, and in 1917 the Alaska Corporation was liquidated. Since then no work has been expended on the property until recent times.

Total tonnage shipped prior to closing in 1912 amounted to approximately 2600 tons of hand selected ore which averaged \$34 per ton at the old price of gold (\$20.66) which is equivalent to approximately \$49.00 per ton at current prices. In 1916 to 1917, 245 tons were shipped to Ladysmith which averaged \$26.65/T. or \$41.65/T. at present prices.

Over the years most of the crown grant claims of the old property reverted to the crown except for the above mentioned two. In 1962, L. K. Lytle, in the employ of International Mine Services, staked the subject Peerless Group of claims and rehabilitated the lower adit portal. Lytle found the adit choked with ice approximately sixty feet inside the adit, and further work was left in abeyance.

Arctic Mining & Exploration acquired the Caribou and Pride of the Yukon claims with the contained underground mine workings and surface dumps in early 1965. Surface trenching and the driving of a new adit accompanied by drifting on a new vein and the location of the faulted portion of the main Big Thing Vein followed. Current work by Arctic appears to be proving up a substantial quantity of ore grade material.

GEOLOGY:

The area between Bennett Lake on the northwest and Windy Arm on the southeast is underlain by rocks ranging in age from Pennsylvanian to the Cretaceous. Alluvium and glacial deposits form the surface cover in the central northern section.

Metamorphosed volcanics of the Pennsylvanian and Permian Taku Group fringe most of Windy Arm. Triassic limestones and breccias of the Lewes River Group border Bennett Lake. Sediments of the Laberge Group of Lower Jurassic age form an intermediate belt composed of greywackes, arkose, siltstones and quartzite.

A small Cretaceous peridotite plug is located approximately one-half mile southeast of the Peerless #7 claim.

Volcanics, mainly basalts and andesites of the Hutshi Group of Cretaceous age occupy the south central portion of the area.

The sediments and volcanics have been intruded during the Cretaceous Coast Range orogeny by a hornblende-biotite-oligoclase granodiorite. This granodiorite underlies the Peerless claims.

ECONOMIC GEOLOGY:

The adit portal occurring on Peerless claim #5 was rehabilitated in 1966 and entry was made to the underground workings. The adit was blocked with ice between 80 and 200 feet from the entrance. This ice was removed by a mining crew in approximately four days. The adit was subsequently mapped and veins were sampled.

The adit was found to be in excellent shape. It averages 6 x 7 feet width and height and is a line drive at a true azimuth of 139° for 2298 feet from portal to face. The tunnel crosses into Pride of the Yukon claim at a distance of 1,705 feet from the portal.

The adit is entirely in massive, medium grained, homogeneous, biotitic, white and brown granite. As could be expected, weathering effects decrease markedly from the portal. Near the veins there is a softening, alteration and oxidization of the granite. In the mapping this was partially obscured by iron oxide on the walls and back of the drive. As one approaches a vein, there is considerable dissemination of pyrite and arsenopyrite (up to 5% combined) in the granite.

The main #1 vein is located 1,270 feet from the portal. This vein strikes 67° and dips to the northwest at about 30° and was opened up by 170 feet of drifting by the old miners. The vein varies in width from 6 inches to 2 feet and is composed of white quartz mineralized with pyrite and arsenopyrite.

Channel samples at approximately ten foot intervals by the author in July and a resampling program by M.D. Kierans, P. Eng. in October, indicates the vein to be carrying erratic values in the range of 0.02 to 0.08 oz/T gold and trace to 11.5 oz/T silver. The vein continues strong in both faces.

The No. 2 vein is located 1,705 feet from the portal, strikes at 40° and dips northwest at approximately 40°. The vein is badly broken up and difficult to follow due to fractures in this area. Mineralization consists of pyrite and arsenopyrite from 10-50% in a 12-18" white quartz vein. A channel sample taken by the author from the vein where it crosses the adit ran 1.20 oz/T gold and 3.3 oz/T silver across 4.0'. A five foot sample in the same locality by Kierans, however, ran only trace gold and 5.2 silver. The vein has been drifted on for 100 feet to the south west and a crosscut branches off the vein in a southerly direction for a further 100 feet. The northeasterly section of the vein has not been followed.

Numerous tensional veins with apparently little continuity branch off the two main veins, or are exposed in the adit in close proximity to the main veins. These vary in width from one-half inch to twelve inches and are erratically mineralized with pyrite and arsenopyrite.

It is apparent from the above that the veins exposed in the adit and drifts are economically unimportant. In the following structural discussion, it will become apparent, however, that this can be explained when one considers the location of the adit in relation to the Arctic ore occurrences.

STRUCTURAL GEOLOGY:

The granite mass can be considered a homogeneous mass of uniform strength with no interface effect due to stresses on rocks of unequal competence. There is a contact between the granite mass and the volcanic wall to the east, but this contact is an unknown distance (±5,000') away from the area of the adit and the Arctic workings.

The granite is barren of well defined joints and fractures until the first signs of mineralization are seen, approximately 900' from the adit portal. A well defined set of S.E. striking joints parallel to the drift and with a steep (70°) east dip persists the length of the adit. A second set of joints at right angles to the above is less clearly developed. As one approaches the #1 vein, the S.E. joints disappear and are replaced by a strong closely spaced set of E.W. joints dipping north. This set is almost always mineralized with pyrite and quartz. There is no evidence of movement on these fractures, which is not surprising as they are probably tensional openings caused by responses to what is assumed to be a thrust on the flat No. 1 vein; which has a very well developed movement plane with gouge. Slickensides on the #2 vein showed there to be a horizontal component to that thrust; and it is, therefore, assumed the same is true for the #1.

It is important to note that the main flat faults and associated veins must always be followed; and not the tensional openings; as was done in some of the old Arctic workings and the No. 2 west drift. The intersectional area of the two main flat faults and veins should be badly shattered and highly receptive to mineralizing solutions. Projecting the two veins to the east, the intersection area would occur approximately 750 feet N.E. of the north face of the #1 vein drift.

If one projects the intersectional trace of the #1 and 2 vein junction up dip, one arrives in the area of the old Arctic workings. This, in a way, verifies the theory; because it means the rake of the deduced intersectional ore zone is as stoped and developed by Arctic. This is, of course, not proof that the theory will lead to ore at the Peerless adit level, still, it is an interesting result. Also Arctic is known to have opened up a 150 foot high grade ore shoot, which occurs just about up dip from the "target" intersectional area.

COMMENTS ON THE ADJOINING PROPERTY:

Arctic have been engaged since the summer of 1965 in an

exploration and development program designed to outline sufficient gold silver ore to warrant the construction of a milling plant in the area. A recent published report on the company quotes Dr. D.D. Campbell, Consulting Geologist, as stating a reserve of 173,450 tons of proven, probable and indicated ore. Proven and probable tonnage is placed at 132,000 tons grading 0.67 oz/T gold and 19.8 oz/T silver.

This tonnage is derived from development drifting and tracing the veins up and down dip by diamond drilling. Arctic have two main vein systems, both of which dip to the north into the Peerless claims.

The main Arctic vein, formerly called "the Big Thing Veins" in the old reports of the G.S.C., varies in width from 6 inches to 20 inches, exceptionally to 3 feet, and dips at an average of about 20° to the north. The highest grade section of the vein contains practically massive arsenopyrite with pyrite, galena, sphalerite and chalcopyrite as accessories. At the time of my visit to the workings, a 150 foot section of the vein had been opened up in the footwall of a major north south fault. The section was reported to average across a width of 4 feet, 1.72 oz/T gold and 57.12 oz/T silver. This ore is located 240 feet laterally south of the Peerless No. 3 boundary. Projecting the vein down dip, it will enter the Peerless claim approximately 250 feet above adit and about 600 feet to the north-east.

CONCLUSION AND RECOMMENDATIONS:

The Peerless Property contains at least two reasonably strong veins which may carry ore grade values in the area of their intersection. Erratic values in gold and silver are present in the veins; and types and quantity of accessory minerals are promising and similar to the Arctic structures.

The down dip extension of the Arctic veins appear encouraging. That the projection of the mineralized sections of these veins passes through the area of intersection of the Peerless is interesting and raises the possibility of the area some 700 feet east of the face of #1 vein, being an important ore centre.

It is recommended, therefore, that a program of underground exploration be embarked on during the spring and summer months of 1967 to explore the area of the projected intersection of the #1 and #2 veins by drifting and cross-cutting northeasterly from the face of the #1 vein. This drive will be approximately 750 feet long. Short hole diamond drilling of the walls to test for parallel veins should be carried out from time to time as the drive progresses. On completion of the drive, drilling to the north and south to locate the down dip extension of the Arctic veins may be carried out.

Estimated cost of the above program:

| | |
|---|-------------------|
| 1. Retimbering and rehabilitating adit portal | \$10,000. |
| 2. Drifting - 750' @ 100/Ft | 75,000. |
| 3. Diamond drilling - 5000' @ \$5.00/Ft. | 25,000. |
| 4. Supervision, transportation, etc. | 10,000. |
| 5. Contingencies @ 20% | 20,000. |
| | <u>\$140,000.</u> |

Respectfully submitted,

Toronto, Ont.,

J.L. Tindale, B.Sc.,
Geologist.

BIBLIOGRAPHY

1. J. W. Bryant Private Report on the Big Thing Group of Mines, November 8, 1911.
2. B. O. Brynelson Private Report on Big Thing Mine and Broken Hill Group, September 5, 1936.
3. D. D. Cairnes G.S.C. Memoir 284, page 451, 1957.
4. D. D. Cairnes G.S.C. Report; Conrad and Whitehorse Mining Districts, Yukon, 1908.
5. D. D. Campbell Private Report on Peerless Claims, Montana Mountain, April 1, 1966.
6. M. K. Kierans Peerless Adit Proposal - Private Report Nov. 28, 1966.
7. W. R. Newman Private Report on Peerless and Pooly Claims, Yukon Territory, June 12, 1964.
8. J. O. Wheeler G.S.C. Memoir 312, Whitehorse Map Area, 105D, 1961.

APPENDIX 'A'

Summary of Costs:

| | |
|--|-------------|
| Wages | \$ 3,925.00 |
| Supplies | 505.88 |
| Travel & Expenses | 1,168.00 |
| Transportation | 435.62 |
| Road Construction | 1,007.03 |
| Telephone and Telegrams | 76.35 |
| Assaying | 276.00 |
| | <hr/> |
| | \$ 7,393.88 |
| | <hr/> <hr/> |
| Expenses on a per claim basis (7 claims) | \$ 1,056.27 |

Breakdown of Expenses:

Wages:

| | | |
|---|---------------------|-------------|
| J. Tindale, Toronto, Ont., Consulting Geol., | Sept. 1 - Oct. 31 | \$ 425.00 |
| M. Kierans, Bathurst, N.B., " " | , Sept. 1 - Nov. 30 | 1,000.00 |
| J. Mather, Toronto, Ont., Geological Tech., | May 20 - Aug. 30 | 750.00 |
| G. Shartner, Haileybury, Ont., Mine Consultant, | July 5 - Aug. 5 | 250.00 |
| E. Fleury, Cobalt, Ont., Shift Boss, | July 5 - Aug. 10 | 400.00 |
| E. Hartzke, Cobalt, Ont. Miner, | " " | 200.00 |
| R. McLean, Haileybury, Ont., Miner, | " " | 200.00 |
| R. St. Crox, Bathurst, N.B., Geological, | Sept. 1 - Oct. 30 | 500.00 |
| | | <hr/> |
| | | \$3,925.00 |
| | | <hr/> <hr/> |

Supplies:

| | |
|---------------------|-------------|
| Nelsons Ltd. | \$ 86.00 |
| Builders Supplyland | 330.78 |
| Hougens Ltd. | 89.10 |
| | <hr/> |
| | \$ 505.88 |
| | <hr/> <hr/> |

Travel & Expenses:

| | |
|---------------------------------|-------------|
| Haileybury, Ont. - Whitehorse | \$ 800.00 |
| J. Mather, Toronto - Whitehorse | 368.00 |
| | <hr/> |
| | \$ 1,168.00 |
| | <hr/> <hr/> |

Transportation

| | |
|--------------------|-------------|
| Vehicle Rental | 400.00 |
| White Pass & Yukon | 35.62 |
| | <hr/> |
| | \$ 435.62 |
| | <hr/> <hr/> |

Road Construction:

Bill Grant \$ 1,007.03

Telephone and Telegram:

C.N. Telegram 76.35

Assaying:

Atlas Testing Lab. 179.00

X-Ray Lab. 97.00

\$ 276.00

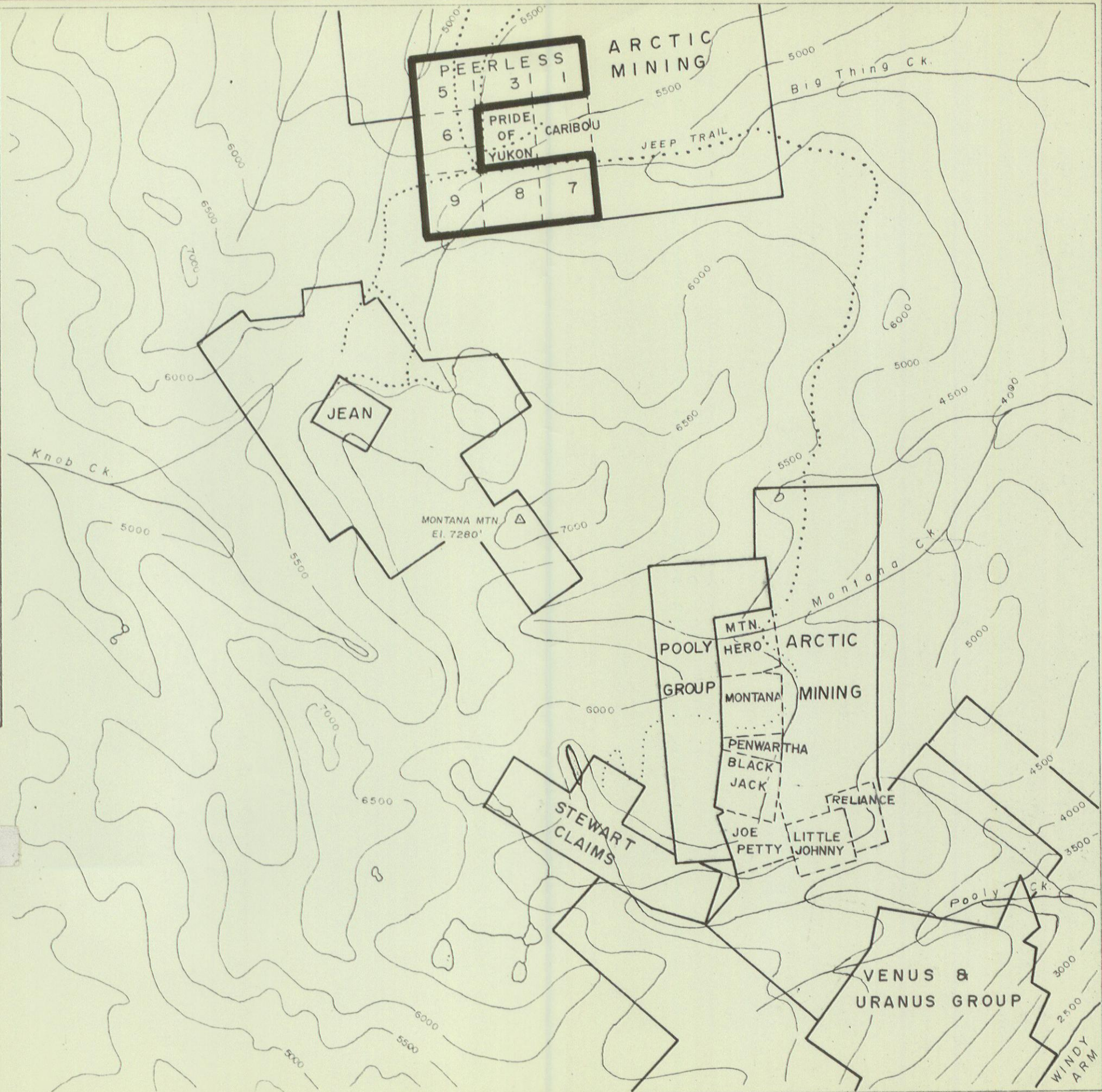
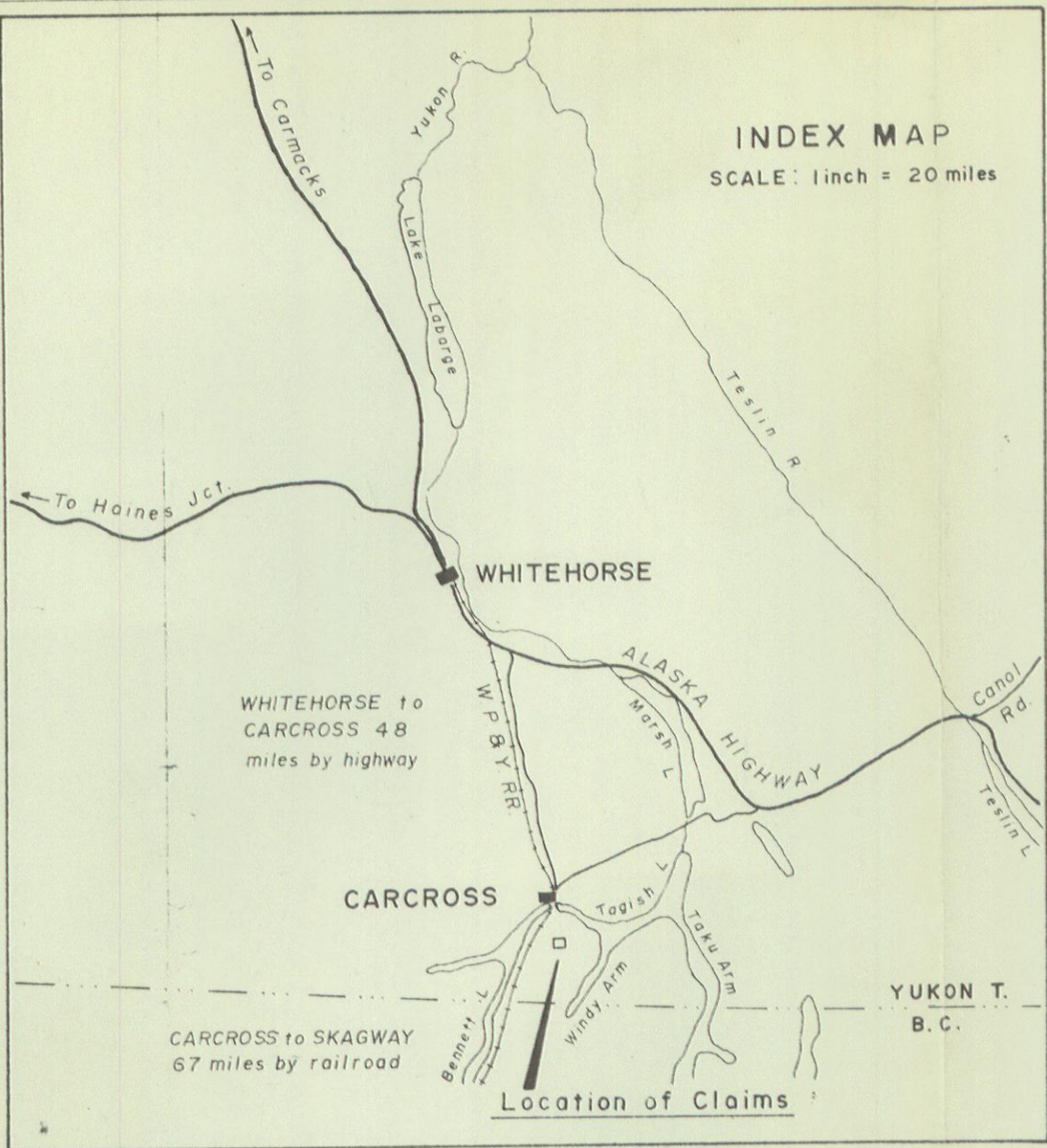
CERTIFICATE

I, John Laverne Tindale, of the City of Toronto,
do hereby certify:

1. That I graduated from MacMaster University in 1956 with the degree of Bachelor of Science in Honours Geology, and that I have been a practising geologist for the past ten years.
2. That I am a Fellow of the Geological Association of Canada.
3. That I am the registered owner of 5,000 shares of the vendor allotment granted to Lion Nickel Mines of Canada Ltd. Lion Nickel is currently concluding negotiations to acquire the Peerless claims. Shares owned by me are 90% escrowed and 10% free.
4. That the report is based on visits to the property in 1965 and 1966 and included examination and samples of the underground workings. I have also examined the underground and surface showings present on the neighbouring Arctic Mining and Exploration property.
5. That I have reviewed all literature available in publication and private reports concerning the areas as listed in the attached bibliographics.

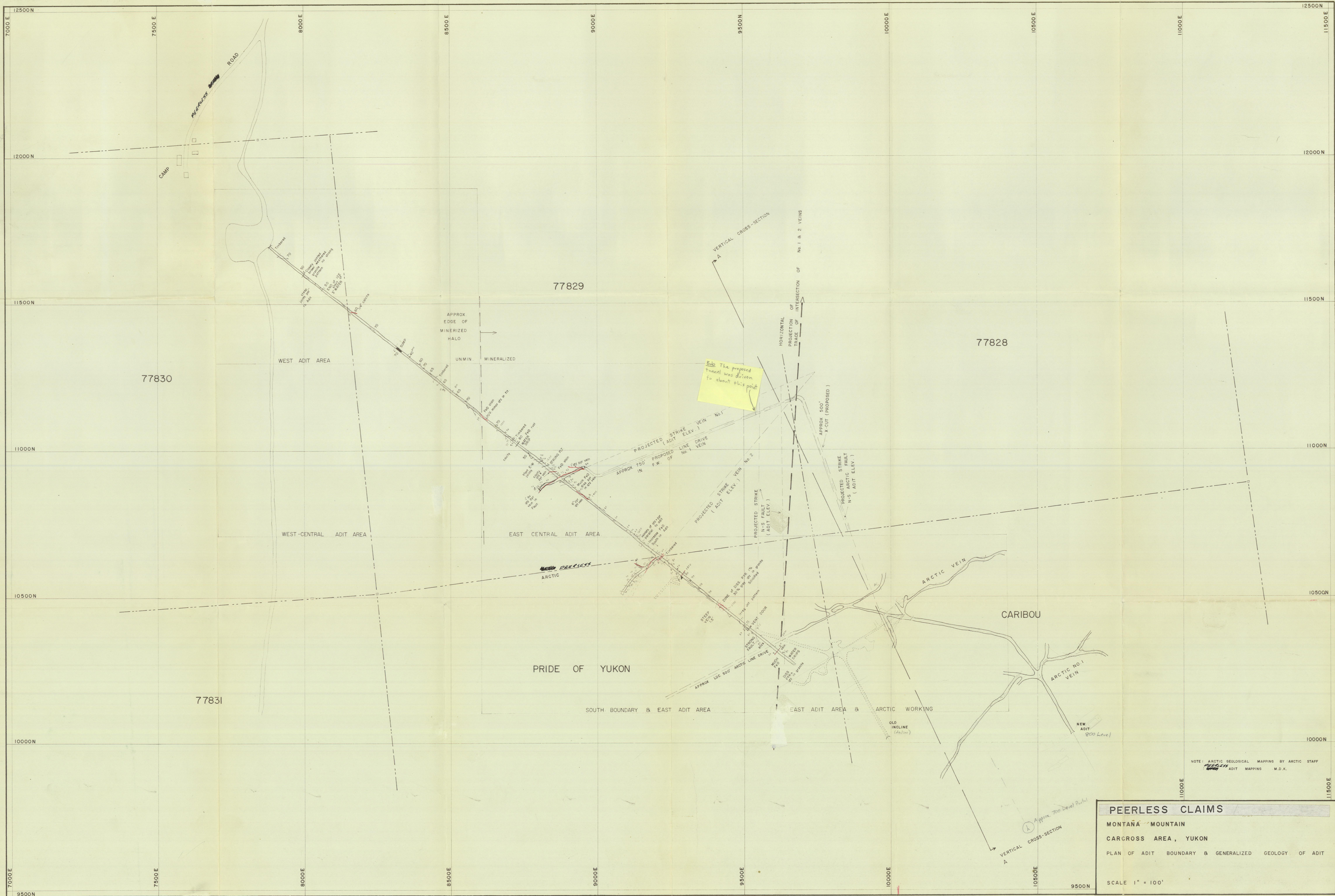
April 20, 1967,
Toronto, Ontario.

J.L. Tindale, B.Sc.,
Geologist.



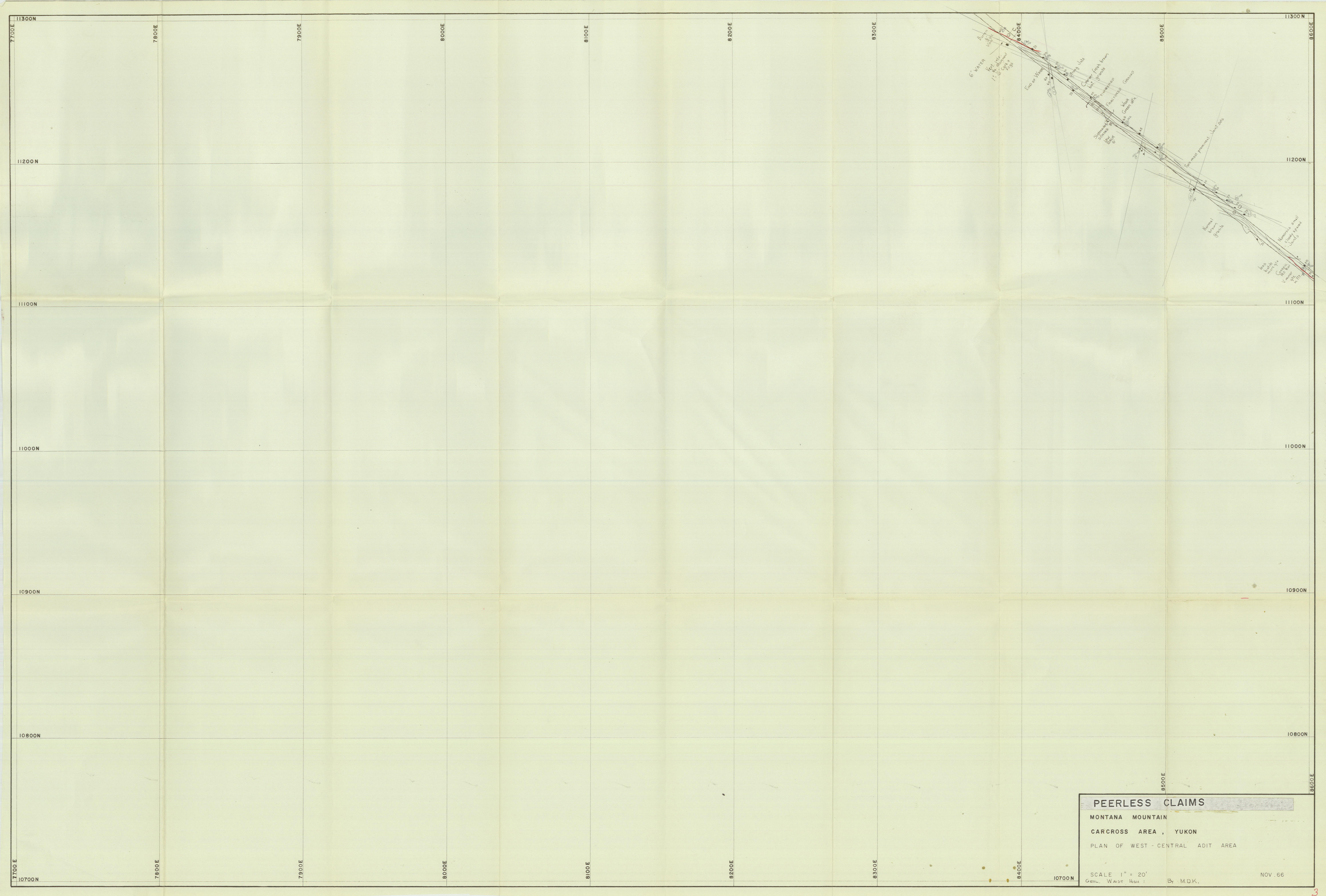
LOCATION PLAN
PEERLESS CLAIMS

WINDY ARM-CARCROSS AREA,
YUKON TERRITORY
SCALE: 1 inch = 1/2 mile



PEERLESS CLAIMS
 MONTANA MOUNTAIN
 CARCROSS AREA, YUKON
 PLAN OF ADIT BOUNDARY & GENERALIZED GEOLOGY OF ADIT
 SCALE 1" = 100'

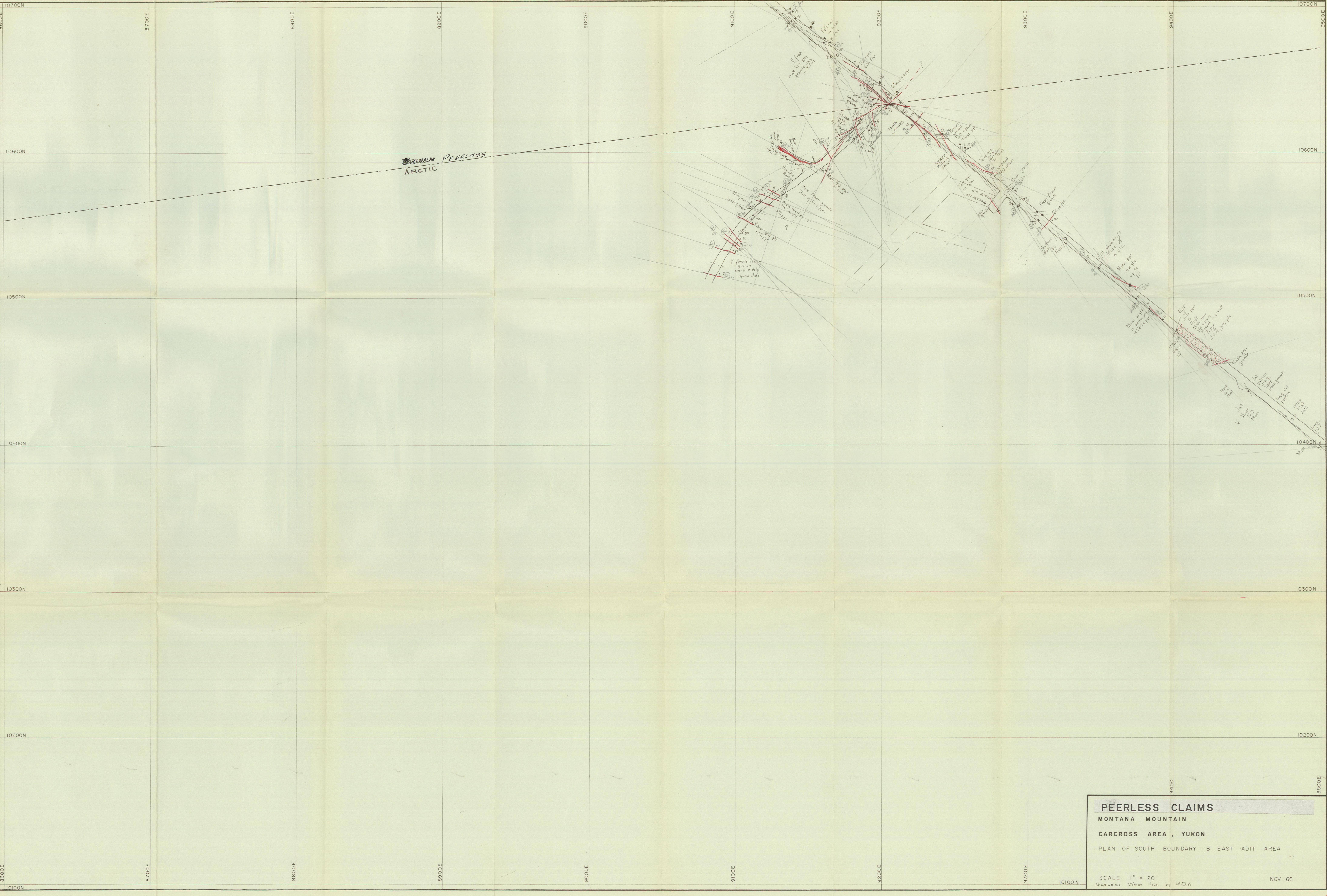
FIGURE 1



PEERLESS CLAIMS

MONTANA MOUNTAIN
 CARCROSS AREA, YUKON
 PLAN OF WEST-CENTRAL ADIT AREA

SCALE 1" = 20'
 Genl. W. & H. High. By M.D.K. NOV. 66



PEERLESS
ARCTIC

PEERLESS CLAIMS

MONTANA MOUNTAIN
CARCROSS AREA, YUKON

PLAN OF SOUTH BOUNDARY & EAST ADIT AREA

SCALE 1" = 20'
GEOLOG WASH HILL by M.D.K.

NOV 66



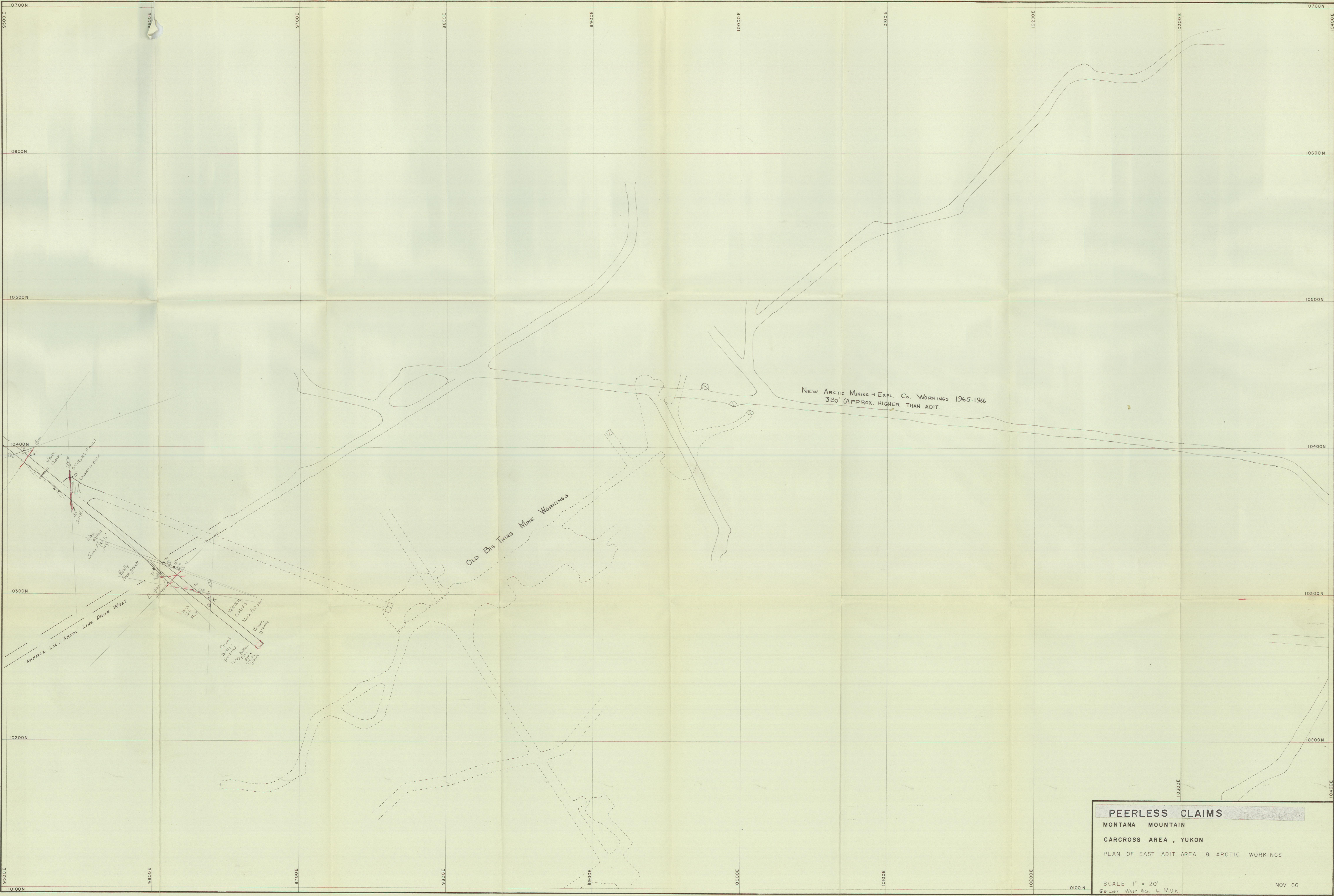
PEERLESS NO. 5
77830

PEERLESS NO. 3
77829

PEERLESS CLAIMS
 MONTANA MOUNTAIN
 CARCROSS AREA, YUKON
 PLAN OF WEST ADIT AREA

SCALE 1" = 20'
 GEOL. WEST AREA BY M.D.K.

NOV. 66



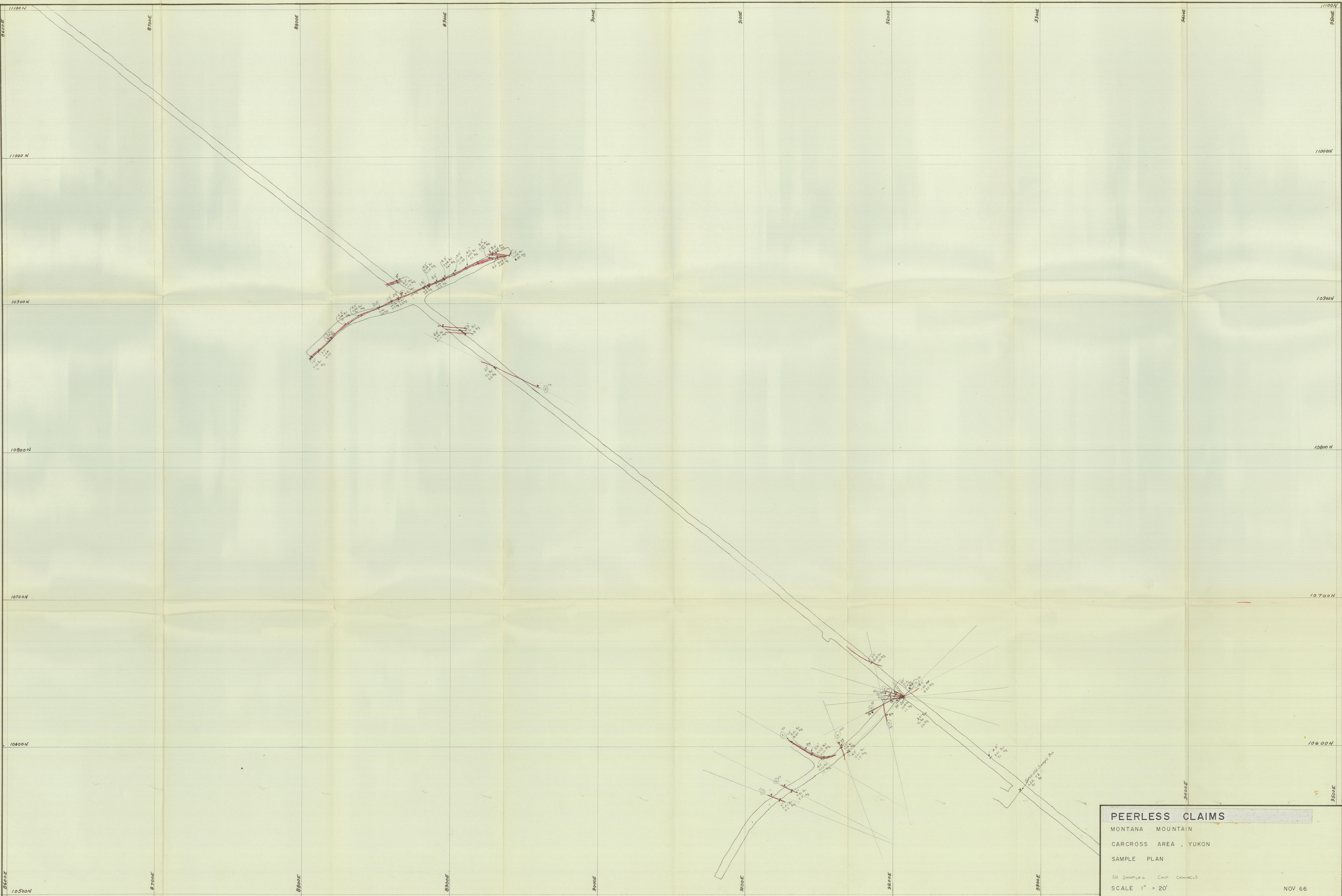
NEW ARCTIC MINING & EXPL. CO. WORKINGS 1965-1966
 320' (APPROX. HIGHER THAN ADIT.)

Old Big Thing Mine Workings

APPROX. LOC. ARCTIC LINE DRIVE WEST

Molly Park Grant
 TERRACE FAULT
 Moly
 Some Fe₂O₃
 Waxes
 Drips
 Moly Fe₂O₃
 Brown
 Granite
 Ground
 Boulders
 Iron
 Magnetite
 Pyrite
 Sphalerite
 Galena
 Lead
 Zinc
 Copper
 Silver
 Gold
 Platinum
 Palladium
 Rhodium
 Iridium
 Osmium
 Ruthenium
 Cobalt
 Nickel
 Manganese
 Magnesium
 Calcium
 Sodium
 Potassium
 Barium
 Strontium
 Yttrium
 Zirconium
 Niobium
 Molybdenum
 Technetium
 Rhenium
 Hafnium
 Tantalum
 Vanadium
 Chromium
 Manganese
 Iron
 Cobalt
 Nickel
 Copper
 Zinc
 Gallium
 Germanium
 Arsenic
 Selenium
 Tellurium
 Lead
 Bismuth
 Polonium
 Astatine
 Francium
 Radium
 Actinium
 Thorium
 Protactinium
 Uranium
 Neptunium
 Plutonium
 Americium
 Curium
 Berkelium
 Californium
 Einsteinium
 Fermium
 Mendelevium
 Nobelium
 Lawrencium
 Rutherfordium
 Dubnium
 Seaborgium
 Bohrium
 Hassium
 Meitnerium
 Darmstadtium
 Roentgenium
 Copernicium
 Nihonium
 Flerovium
 Tennessine
 Oganesson

PEERLESS CLAIMS
 MONTANA MOUNTAIN
 CARCROSS AREA, YUKON
 PLAN OF EAST ADIT AREA & ARCTIC WORKINGS
 SCALE 1" = 20'
 GEOLOGY WEST HIGH BY M.D.K.
 NOV 66



PEERLESS CLAIMS
MONTANA MOUNTAIN
CARCROSS AREA, YUKON
SAMPLE PLAN
BH SAMPLES CHIP CHANNELS
SCALE 1" = 20'
NOV 66