

REPORT

ON

Q. M. I.

WEDEENE IRON DEPOSIT

1962

SKEENA

MINING DIVISION

H. S. LAZENBY

GEOLOGIST

QUEBEC METALLURGICAL INDUSTRIES LTD.

REPORT

ON

WILDEME IRON PROSPECT

1962

Vancouver, B. C.
March 20, 1963

H. S. Lazenby
Geologist

C O N T E N T S

Frontispiece - Fig. 1 Location Map	
Introduction	Page 1
Summary & Conclusions	1
Location & Accessibility	2
Weather & Climate	2
Property	3
Camp Buildings & Equipment	3
Geology	4
Surveying	6
Magnetometer Survey	7
Grade & Tonnage	7
Mining	8
Shipping Facilities	8
Recommendations	9
Conclusions	9

Sections (30)

Appendix: Drill Footages
Blocked Out Potential Ore

In Pockets: Fig. 2 - Topog. plan - Kitimat & Iron Mountain
Fig. 3 - Claim Map
Fig. 4 - Magnetometer Plan
Fig. 5 - Geological Plan - Terrace Area
Fig. 6 - Topographic-geological plan - Wedge Iron

Magnetometer Survey Report by D. J. Salt

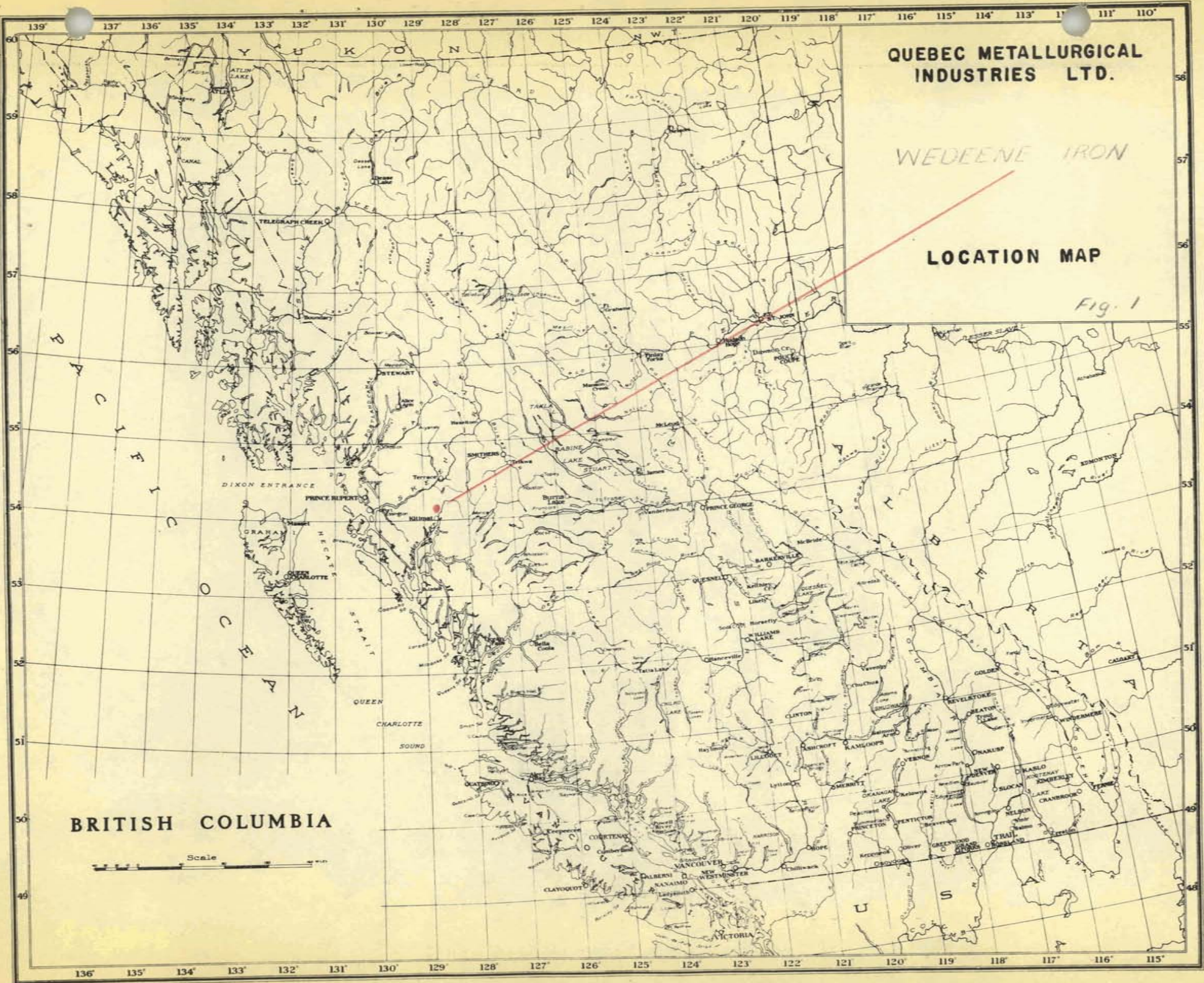
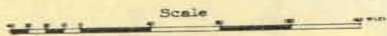
**QUEBEC METALLURGICAL
INDUSTRIES LTD.**

WEDDENE IRON

LOCATION MAP

Fig. 1

BRITISH COLUMBIA



QUEBEC METALLURGICAL INDUSTRIES LTD.

REPORT ON

WEDEENE IRON

1962

INTRODUCTION

Magnetite occurs at Iron Mountain, 7.8 miles by rail from the station of Kitimat or approximately 11 miles by rail from tidewater. Following a report by Dr. A. Smith dated 14 January, 1959, a detailed investigation was carried out for the purpose of evaluating the deposit with respect to open-pit mining. The investigation took place over the field seasons of 1959, 1960, 1961 and 1962. It included diamond drilling, magnetometer and transit surveying and geological mapping.

SUMMARY & CONCLUSIONS

1. The magnetite-bearing zone of interest varies in width from 500 feet at the bottom of the hill to 350 feet at the top and extends approximately 4500 feet in length. In elevation it extends from the bottom of the hill (250 feet) to the top (1750 feet). It appears to be related to a strong shear which runs approximately N30°E through the property.
2. The zone is predominantly an epidote-garnet-magnetite-silica skarn. The magnetite concentrations appear to be in the form of pods or lenses throughout the zone and range in content from negligible to 70% acid soluble iron.
3. These pods or lenses are elongated in a N-S direction roughly parallel to the main shear zone. Their extent of depth is not known.
4. Approximately 5-1/2 million tons of 22% acid soluble iron

has been blocked out:- at the foot of the hill, or 'A' Zone, 2,500,000 tons over a length of 600 feet, and at the top of the hill, or Summit Zone, 3,000,000 tons over a length of 1200 feet. No detailed drilling has been done on the 1400 feet separating these two zones, most of which is the 'B' zone.

5. It might be possible to block out 10,000,000 tons of 20% acid soluble iron which could be mined by open-pit methods. It is doubtful whether that figure could be exceeded without drilling to considerable depth and taking in the possibility of underground mining.

LOCATION & ACCESSIBILITY

Iron Mountain is located approximately 8 miles north of the town of Kitimat, on the west coast of central British Columbia (Fig. 1). Kitimat is easily accessible via the highway to Terrace (servicing the Terrace airport), and by coastal and deep sea shipping, as well as the C.N.R.

The property lies on the southern slope of the eastern portion of Iron Mountain, including a large gulley, which can be seen from the south for many miles on a clear day (Fig. 2).

The main camp is located at the Wedge River bridge, mile 30.7 on the Terrace-Kitimat spur of the C.N.R. This line is serviced at least four days per week.

From the bottom camp to the 'A' zone (Fig. 3) is about a twenty minute walk over a well worn trail. To arrive at the Summit Zone requires a more strenuous climb of about 1-1/2 hours.

WEATHER & CLIMATE

The climate of the area is typically temperate rain forest.

Annual precipitation amounts to approximately 100 inches, of which up to 20% falls as snow. One could expect from three to four months each ^{year} when the mean temperature would be below 32°F., but, because of proximity to sea water, it would not be expected to dip much below 0°F for any lengthy periods. The temperatures during July and August rise to the low 90's F. for short periods. Winter lasts five months, from mid-November till mid-April.

PROPERTY

The property consists of 13 claims (Fig. 3), four of which (Mineral Hill 1 - 3, Summit) are Crown-granted to Quebec Metallurgical Industries Ltd. Q.M.I. holds nine more adjacent claims, six of which (Wedcene 1 - 6) were staked prior to 1960 and three (Tom 1 - 3) staked in that year to insure access by the C.N.R. For the purpose of recording assessment work these claims are at present grouped together. Wedcene 1 - 6 are in good standing until 17 September, 1985 and Tom 1 - 3 until 8 June, 2000.

The group is divided into four zones as follows:

- 1) Camp Area: includes Tom 1 - 3 and Wedcene 1 - 2 M.C.
- 2) 'A' Zone: includes Wedcene 3 and Mineral Hill 1 M.C.
- 3) 'B' Zone: includes Wedcene 4 and Mineral Hill 2 M.C.
- 4) Summit Zone: includes Wedcene 5 - 6, Mineral Hill 3 and Summit M.C.

CAMP BUILDINGS & EQUIPMENT

During 1960 four buildings were moved to the bottom camp-site by flatcar. A semi-permanent camp was then set up beside the Wedcene River bridge and about 50 feet away from the railroad tracks. Two of

these buildings (one 12' x 24' and one 10' x 24') were joined together in an L shape to make a kitchen-dining room capable of easily accommodating twelve people at one sitting. The others served as a six-man bunkhouse (16' x 24') and office (10' x 14'). These buildings are in good condition and should last a number of years. The kitchen roof sagged due to the weight of snow during the 1961-62 winter but it has been supported by three posts and should last as long as the others.

During 1961 and 1962, five 14' x 16' tent frames and a water-tight shed were constructed at the top camp on the Summit Zone. The shed will last as long as the bottom camp, but the tent frames will not survive more than two or three winters.

A large heliport has been prepared in the Summit Zone by clearing an area approximately 500' x 900'. There are two landing pads: one in the center of the area, and one on the side about 125 feet higher in elevation.

GEOLOGY

The property lies within Middle Jurassic volcanics near to their contact with Cretaceous granitic rocks of the Coast Range to the west (Fig. 5).

The volcanics are andesitic in composition, appearing in gradations from a fine-grained light grey andesite to a dark green greenstone. On occasion, by examination of diamond drill core, it has been possible to trace the transition from greenstone to andesite. It is thought that the greenstone is an altered andesite in which enough chlorite and/or epidote has been developed in alteration to give it a greenish colour.

The outcrops, which constitute less than 5% of the surface, are such that no bedding is discernible. On a fresh fracture, one invariably sees a uniform, fine grained surface, occasionally with stringers of light green epidotized material transecting it. By peeling back the moss and observing the effects of differential erosion on the surface rocks, it is sometimes possible to see what might be interpreted as bedding. A study of air photos suggests that on the southern slope, the strike is northwesterly with the dip southerly.

The magnetite appears to occur as lenses or pods within a garnet-epidote-silica-magnetite skarn. The skarn, for no apparent reason, varies as to mineral dominance over short distances. As a rule, but not invariably, magnetite concentration is accompanied by resin-coloured garnet, which grades, as does the magnetite, from almost negligible concentrations to about 90%. In a few instances concentrated magnetite (up to 70% acid soluble iron) is present without garnet and vice versa. Minor disseminated pyrite is present throughout.

Dykes are abundant throughout the property. They range in composition from felsic to mafic.

The felsic dykes are thought to be post-ore. In places where there has been no obvious movement, there are both sharp and gradational contacts with surrounding rocks. Some of the dykes are milk white, and appear to be almost pure quartz, while others, containing feldspar, have a pinkish colour.

The mafic dykes are of two or more ages. The younger type is predominantly biotitic. Wherever encountered with magnetite, it appears to dissect the magnetite and would therefore be post-ore. In many instances the biotite has been altered to chlorite. It is suspected

that there are more dykes of this type present than actually shown on the sections, as in many instances missing core has been interpreted as evidence of faulting, whereas it may represent the presence of dyke material. The older dykes are not so easily recognized and for that reason are not shown on the sections in all instances. In some cases they have been completely altered so that they are distinguishable from the host greenstones and andesites by texture alone. Often it is debatable as to whether they are dykes or thick tuff bands. Lamprophyres are also fairly abundant. These, too, are difficult to distinguish in the diamond drill core but show up better on surface outcrops where the hornblende crystals or pseudomorphs are fairly discernible.

The dykes show no obvious preference for location, although more of the younger mafic type were observed in the 'A' zone than in the Summit zone. They appear to be scattered at random throughout the whole property and generally have a N-S orientation.

It has not been established that any of these dykes exercise any form of structural control.

The most prominent fault on the property (N30°E) is roughly parallel to one of the major tectonic features of the area: a broad valley extending from Kitimat to beyond the Nass River, a distance of more than 100 miles. A series of less prominent N-S faults believed to be offshoots of the main fault, have disrupted the magnetite, and would therefore appear to be post-ore.

SURVEYING

An area approximately 1500 feet wide and 4500 feet long has been surveyed by transit and chain using a number of short (2500 ft.)

closed traverses. This area encompasses those magnetite deposits which are of interest for mining purposes. The initial elevation and bearing was that of the Wedeens River bridge, obtained from the Vancouver engineering office of the C.N.R.

A contour interval of 25 feet has been used in preparing the surface plan. As this plan has been prepared from the results of a series of parallel traverses 250 feet apart horizontally, a good portion has been drawn by conjecture: i.e., it is close but not absolute. Those areas in the Summit and 'A' zones where drilling has been done have been surveyed in considerable detail and therefore are more accurate.

In order to eliminate negative values in any open pitting, all elevations are shown to be 1000 feet higher than they actually are.

MAGNETOMETER SURVEY

A series of traverses 62-1/2 feet apart were run covering the area of interest. Readings were made every 25 feet horizontally. For details refer to accompanying plans (Fig. 4). A separate interpretation by D. J. Salt, geophysicist, is enclosed with this report.

GRADE & TONNAGE

Total diamond drilling on the property amounts to 28,811 feet, of which 64 packsack drill holes make up 4,910 feet and 65 BBS1 holes make up 23,901 feet. All core is 7/8" diameter (EX). A breakdown of bit footage is enclosed in the appendix.

Diamond drilling and surface observation has blocked out the following (short tons):

'A' Zone 2,419,318 tons of 22.62% acid soluble iron

Summit Zone 3,484,142 tons of 21.73% acid soluble iron
Total 5,903,460 tons of 22.09% acid soluble iron

For details refer to accompanying sections.

MINING

The practical way of extracting the Wedeene magnetite would be by open pit methods.

In every proven and observed occurrence of what might be a feasible pit there is little overburden: only a few trees growing in less than 5 feet of topsoil. The irregular topography is such that this material would not have to be transported more than 100 yards (±) for disposal.

In the 'A' and Summit Zones, close to 50% of the proven ore is in a position where it could be extracted by drilling horizontally into the side of the hill. It would not become necessary to sink below surface in the conventional manner until this material had been removed.

The ore:waste ratio is approximately 1:1. It must be remembered, however, that considerable low grade (10-15% acid soluble iron) has been included in computing the grade and tonnage figures and that the final grade itself is not very high (22% acid soluble iron). By exercising strict control, higher grade material could be extracted at the expense of a drastic reduction in tonnage and the ore:waste ratio.

SHIPPING FACILITIES

Kitimat harbour at present handles the deep-sea bauxite carriers which supply the Alcan smelter.

When approached concerning the matter of another dock being

built, Alcan officials expressed considerable interest. It would therefore appear that some arrangement could be made with Alcan to buy or lease suitable area to construct a dock capable of serving deep-sea ore carriers.

RECOMMENDATIONS

In order to complete the open-pit evaluation of the property, the following should be done:

1) DDH W65 should be completed (another 250 feet \pm) and another hole collared approximately 100 feet west along section dipping at -30° in the same direction. Following this, further surface drilling should be done on 100 foot sections extending south another 700 feet from W65. This would cover everything observed on surface in this area.

2) The packsack drill should be used in the area around PS 23. From surface observations plus the assay results of PS 23, it is reasonable to expect a minimum of 1/2 million tons of 22% acid soluble iron in that area.

3) The packsack drill should be used to define the dimensions of the more likely looking outcrops observed on the west side of the main creek in the 'B' and Summit Zones.

CONCLUSIONS

A fairly accurate appraisal of the Wedecane Iron prospect with regard to grade and tonnage has been obtained. It seems unlikely to the writer that 10 million tons of 22% acid soluble iron recoverable by open pit will be exceeded.

It is possible that more magnetite concentrations of roughly the same grade exist in the skarn at greater depths or that downward

extensions of some of the zones may be found. Should it be economically feasible to mine the proven 6 million tons, shallow drilling from the pit bottoms might disclose one or more of these concentrations or extensions.

Vancouver, B. C.
March 20, 1963



H. S. Lasenby
Geologist

QUEBEC METALLURGICAL INDUSTRIES LTD.

MEDEANE IRON PROSPECT

DIAMOND DRILLING

Packsack Drill - 1960 - 1962 inclusive

3680 feet drilled

142 bits used = 25.92 ft./bit

7 shells " = 525.71 ft./shell

BES1 Drill - 1960 - 1962 inclusive

22,332 feet drilled

731 bits used = 30.55 ft./bit

30 shells " = 744.40 ft./shell

WEDEME IRON PROSPECT

BLOCKED OUT POTENTIAL ORE

A ZONE

V 2 = nothing
V 10 = nothing

PS 19 = nothing) 20.49%/20,950 ft² x 62' laterally = 1,298,900 ft³
W 11 = 13,950 ft² x 20.97%) @ 10.2 ft³/ton
W 12 = 7,000 ft² x 19.55%) = 127,343 tons 20.49% acid soluble iron

PS 40 = 3,825 ft² x 26.58%)
PS 39 = 8,325 ft² x 12.66%)
PS 18 = 7,400 ft² x 27.80%) 22.46%/56,500 ft² x 50' laterally = 2,825,000 ft³
W 8 = 15,000 ft² x 21.22%)
W 9 = 18,575 ft² x 24.03%) @ 10.07 ft³/ton
PS 21 = 3,375 ft² x 27.08%)
PS 32 = nothing) = 280,536 tons 22.46% acid soluble iron
PS 30 = nothing)

PS 41 = nothing)
PS 42 = 2,775 ft² x 29.81%) 30.44%/28,825 ft² x 53' laterally = 1,527,725 ft³
PS 43 = 4,200 ft² x 24.24%)
PS 44 = 5,325 ft² x 22.59%) @ 9.45 ft³/ton
W 13 = 9,050 ft² x 38.31%)
W 14 = 7,475 ft² x 30.20%) = 161,664 tons 30.44% acid soluble iron
PS 33 = nothing)

PS 45 = nothing
W 7 = nothing - 21.29/30.5 - neglected
W 6 = nothing
PS 34 = nothing

PS 47 = 1,875 ft² x 39.0%) 23.16%/29,975 ft² x 65' laterally = 1,945,125 ft³
PS 16 = 2,250 ft² x 39.94%)
PS 46 = nothing) @ 10.01 ft³/ton
W 15 = 9,875 ft² x 20.18%)
W 16 = 15,975 ft² x 20.78%) = 194,318 tons 23.16% acid soluble iron
PS 35 = nothing)

PS 25 = 5,975 ft² x 30.6%)
PS 4 = 15,250 ft² x 19.55%)
PS 29 = 14,250 ft² x 12.17%) 20.33%/113,300 ft² x 55' laterally = 6,231,500 ft³
PS 27 = 5,025 ft² x 9.7%)
W 1 = 40,175 ft² x 23.31%) @ 10.23 ft³/ton
W 3 = 32,625 ft² x 20.36%)
PS 26 = omitted) = 609,139 tons 20.33% acid soluble iron
W 4 = omitted)
PS 36 = omitted)
W 5 = nothing)

PS 28 = omitted

A ZONE (Cont.)

PS 3	= 3,150 ft ² x 42.1%) 26.24%/41,875 ft ² x 57' laterally = 2,386,875 ft ³	
PS 1	= 2,500 ft ² x 17.0%		
W 17	= 36,225 ft ² x 25.50%		
		= 244,056 tons	26.24% acid soluble iron
PS 50	= 2,600 ft ² x 20.96%) 22.99%/78,950 ft ² x 62' laterally = 4,894,900 ft ³	
PS 49	= 5,450 ft ² x 8.08%		
PS 48	= 3,150 ft ² x 34.05%		
W 18	= 45,075 ft ² x 23.35%	@ 10.03 ft ³ /ton	
W 19	= 20,925 ft ² x 24.85%	= 488,025 tons	22.99% acid soluble iron
PS 37	= 1,750 ft ² x 21.09%		
PS 52	= 4,500 ft ² x 15.70%) 19.82%/62,575 ft ² x 42' laterally = 2,628,150 ft ³	
PS 54	= 4,025 ft ² x 8.19%		
PS 2	= 1,825 ft ² x 19.0%		
W 21	= 29,500 ft ² x 20.52%	@ 10.29 ft ³ /ton	
W 20	= 20,525 ft ² x 22.22%		
PS 38	= 2,200 ft ² x 18.54%	= 255,408 tons	19.82% acid soluble iron
PS 53	= omitted		
PS 51	= included with W 21		
W 23	= 8,675 ft ² x 20.85%) 22.58%/15,175 ft ² x 39' laterally = 591,825 ft ³	
W 22	= 6,500 ft ² x 24.88%		
W 24	= nothing		
W 25	= nothing	@ 10.06 ft ³ /ton	
W 26	= nothing	= 58,829 tons	22.58% acid soluble iron

TOTAL 'A' Zone

2,419,318 tons (short) of 22.62% Acid Soluble Iron

SUBMIT ZONE

W 27	= 550 ft ² x 53.86%) 38.46%/8,050 ft ² x 73' laterally = 587,650 ft ³	
W 28	= 275 ft ² x 58.67%		
W 29	= 2,675 ft ² x 58.24%		
W 31	= 3,800 ft ² x 20.44%	@ 8.83 ft ³ /ton	
W 30	= 750 ft ² x 49.56%	= 66,551 tons	38.46% acid soluble iron
W 34	= 13,875 ft ² x 22.85%) 22.22%/55,225 ft ² x 94' laterally = 5,191,150 ft ³	
W 35	= 20,750 ft ² x 20.07%		
W 36	= 11,000 ft ² x 28.04%		
W 33	= 7,650 ft ² x 19.77%	@ 10.12 ft ³ /ton	
W 32	= 1,950 ft ² x 17.27%	= 512,959 tons	22.22% acid soluble iron
PS 5	= 2,700 ft ² x 16.13%) 23.89%/59,875 ft ² x 98' laterally = 5,867,750 ft ³	
PS 8	= 1,900 ft ² x 54.67%		
W 37	= 23,275 ft ² x 27.04%		
W 38	= 19,600 ft ² x 20.38%	@ 9.95 ft ³ /ton	
W 39	= nothing	= 589,723 tons	23.89% acid soluble iron
W 51	= 12,400 ft ² x 20.50%		

SUMMIT ZONE (Cont.)

W 40 = 23,725 ft² x 15.70%) 21.01%/69,750 ft² x 97' laterally = 6,765,750 ft³
 W 41 = 31,000 ft² x 24.32%) @ 10.15 ft³/ton
 W 42 = 15,025 ft² x 22.55%) = 666,576 tons 21.01% acid soluble iron
 W 52 = nothing)

PS 10 = 2,925 ft² x 26.83% x 63' laterally = 184,275 ft³
 @ 9.72 ft³/ton
 = 18,958 tons 26.83% acid soluble iron

PS 9 = omitted) 33.89%/4,125 ft² x 75' laterally = 309,375 ft³
 W 43 = 2,325 ft² x 38.24%) @ 9.20 ft³/ton
 W 44 = 1,800 ft² x 28.27%) = 33,627 tons 33.89% acid soluble iron

W 53 = 3,724 ft² x 23.24% x 50' laterally = 186,200 ft²
 @ 10.01/ton
 = 18,620 tons 23.24% acid soluble iron

W 45 = nothing
 PS 56 = nothing
 PS 55 = nothing
 W 46 = nothing

W 47 = 2,907 ft² x 20.06% x 50' laterally = 145,350 ft³
 @ 10.25 ft³/ton
 = 14,180 tons 20.06% acid soluble iron

W 48 = 5,880 ft² x 18.87% x 101' laterally = 593,880 ft³
 @ 10.35 ft³/ton
 = 57,380 tons 18.87% acid soluble iron

W 49 = 10,780 ft² x 17.97%) 18.58%/17,640 ft² x 100' laterally = 1,764,000 ft³
 W 50 = 6,860 ft² x 19.54%) @ 10.38 ft³/ton
 = 169,942 tons 18.58% acid soluble iron

PS 57 = 2,744 ft² x 24.90%)
 PS 58 = 4,737 ft² x 21.78%) 20.33%/43,088 ft² x 100' laterally = 4,308,800 ft³
 PS 59 = 3,953 ft² x 21.04%)
 W 54 = 12,054 ft² x 16.06%) @ 10.23 ft³/ton
 W 55 = 19,600 ft² x 21.83%)
 W 56 = nothing) = 421,192 tons 20.33% acid soluble iron

PS 61 = 2,091 ft² x 25.83%) 20.12%/78,988 ft² x 100' laterally = 7,898,800 ft³
 PS 60 = 2,287 ft² x 24.26%)
 W 57 = 7,513 ft² x 22.27%) @ 10.25 ft³/ton
 W 58 = 63,700 ft² x 19.51%)
 W 59 = 3,397 ft² x 20.56%) = 770,614 tons 20.12% acid soluble iron

W 60 = 10,780 ft² x 17.46%) 20.79%/19,502 ft² x 75' laterally = 1,462,650 ft³
 W 61 = nothing) @ 10.17 ft³/ton
 W 62 = 8,722 ft² x 24.91%) = 143,820 tons 20.79% acid soluble iron

W 63 = nothing
 W 64 = nothing
 W 65 = not completed

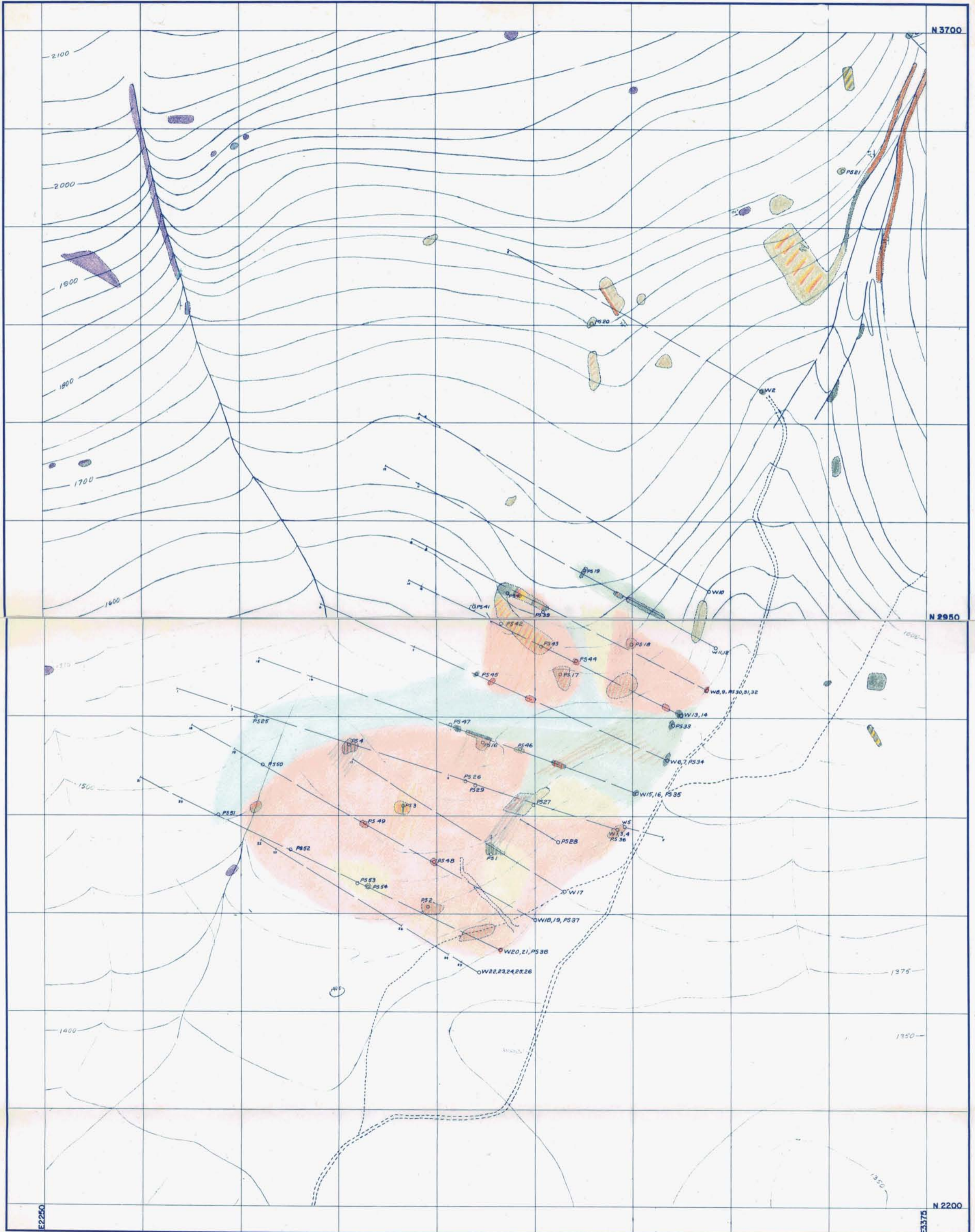
SUMMIT ZONE (Cont.)

Total SUMMIT ZONE

3,484,142 tons (short) of 21.73% acid soluble iron

TOTAL: Wedzene

5,903,460 short tons of 22.09% Acid Soluble Iron



SCALE 1 INCH TO 100 FT.

COMPANY Q.M.I. LTD.
 PROPERTY WEDEENE
 LOCATION KITIMAT, B.C.

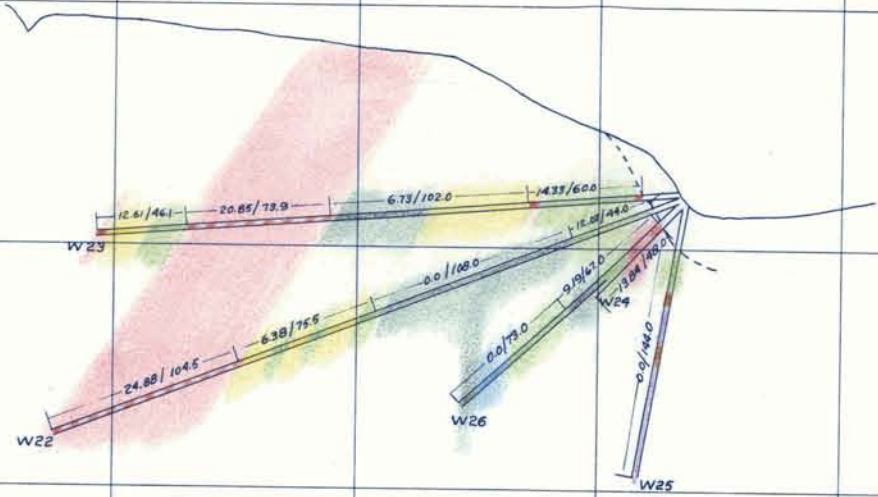
WORKING PLACE "A" ZONE
 TYPE OF MAP PLAN

DATE 16/10/61
 DRAWN BY H.S.L.
 MAP No. _____

1600

1350

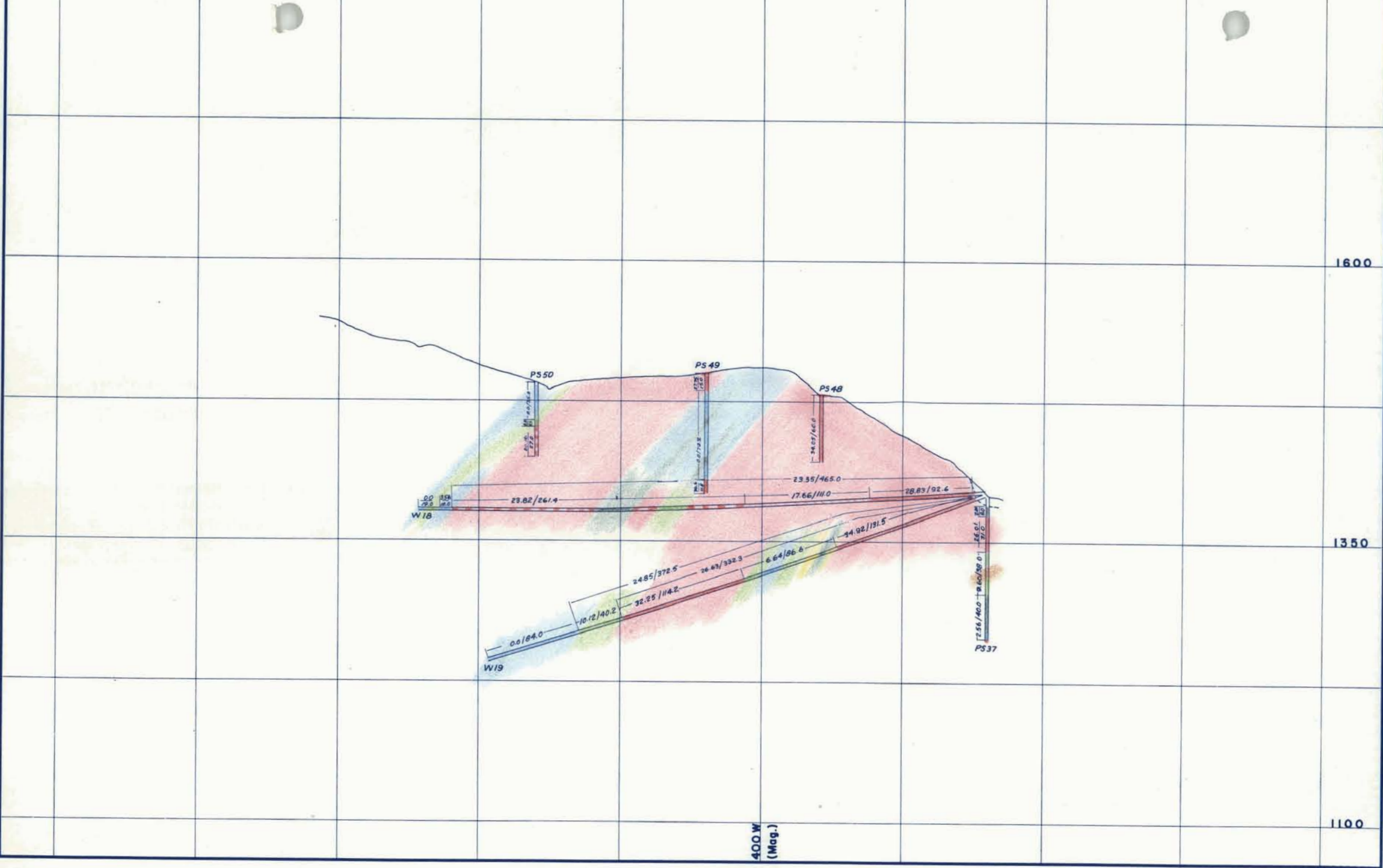
1100



COMPANY Q.M.I. LTD.
 PROPERTY WEDEENE
 LOCATION KITIMAT, B.C.

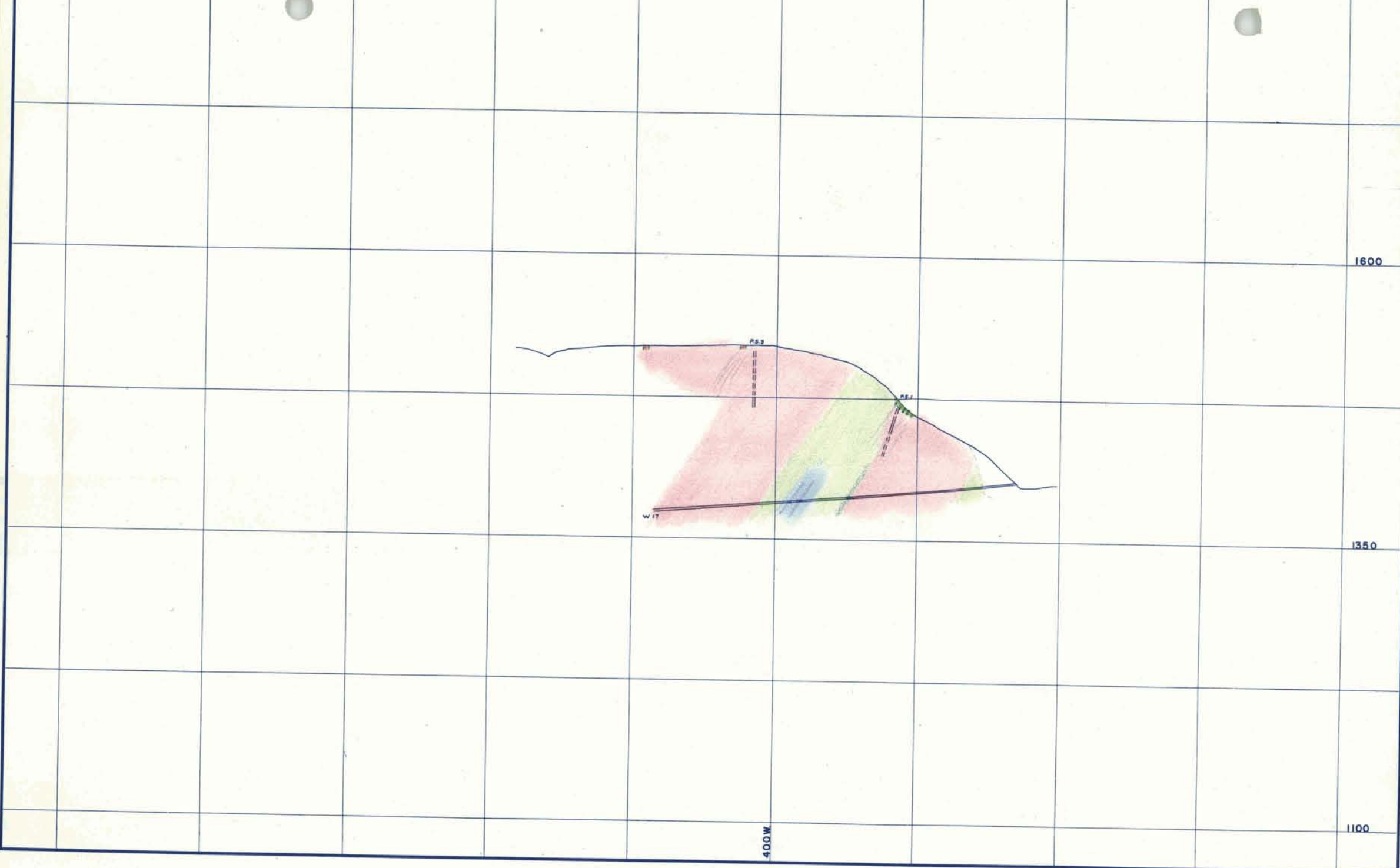
WORKING PLACE "A" ZONE
D.D.H. W22,23,24,25,26
 TYPE OF MAP SECTION

DATE 18/10/61
 DRAWN BY H.S.L.
 MAP NO. _____



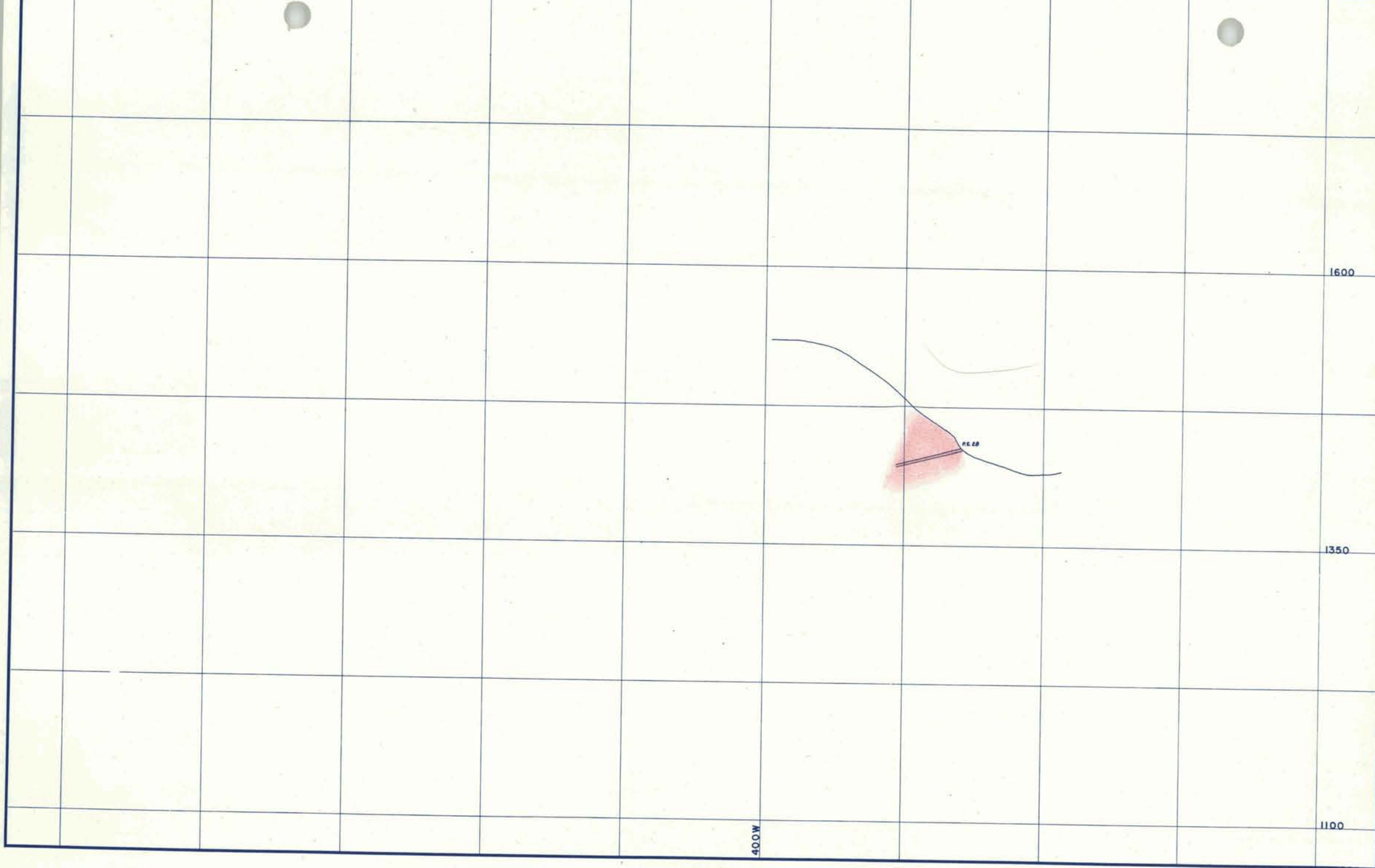
SCALE 1 INCH TO 100 FT.

COMPANY	Q.M.I. LTD.	WORKING PLACE	"A" ZONE	DATE	21/10/61
PROPERTY	WEDEENE	D.D.H. W 18,19	PS. 37,48,49,50	DRAWN BY	H.S.L.
LOCATION	KITIMAT, B.C.	TYPE OF MAP	SECTION	MAP NO.	



SCALE 1 INCH TO 100 FT.

COMPANY	Q. M. I. LTD.	WORKING PLACE	'A' ZONE	DATE	20/12/60
PROPERTY	WEDEENE		D. D. H. 17, P. S. 1, 3	DRAWN BY	H. S. L.
LOCATION	KITIMAT, B. C.	TYPE OF MAP	SECTION	MAP NO.	

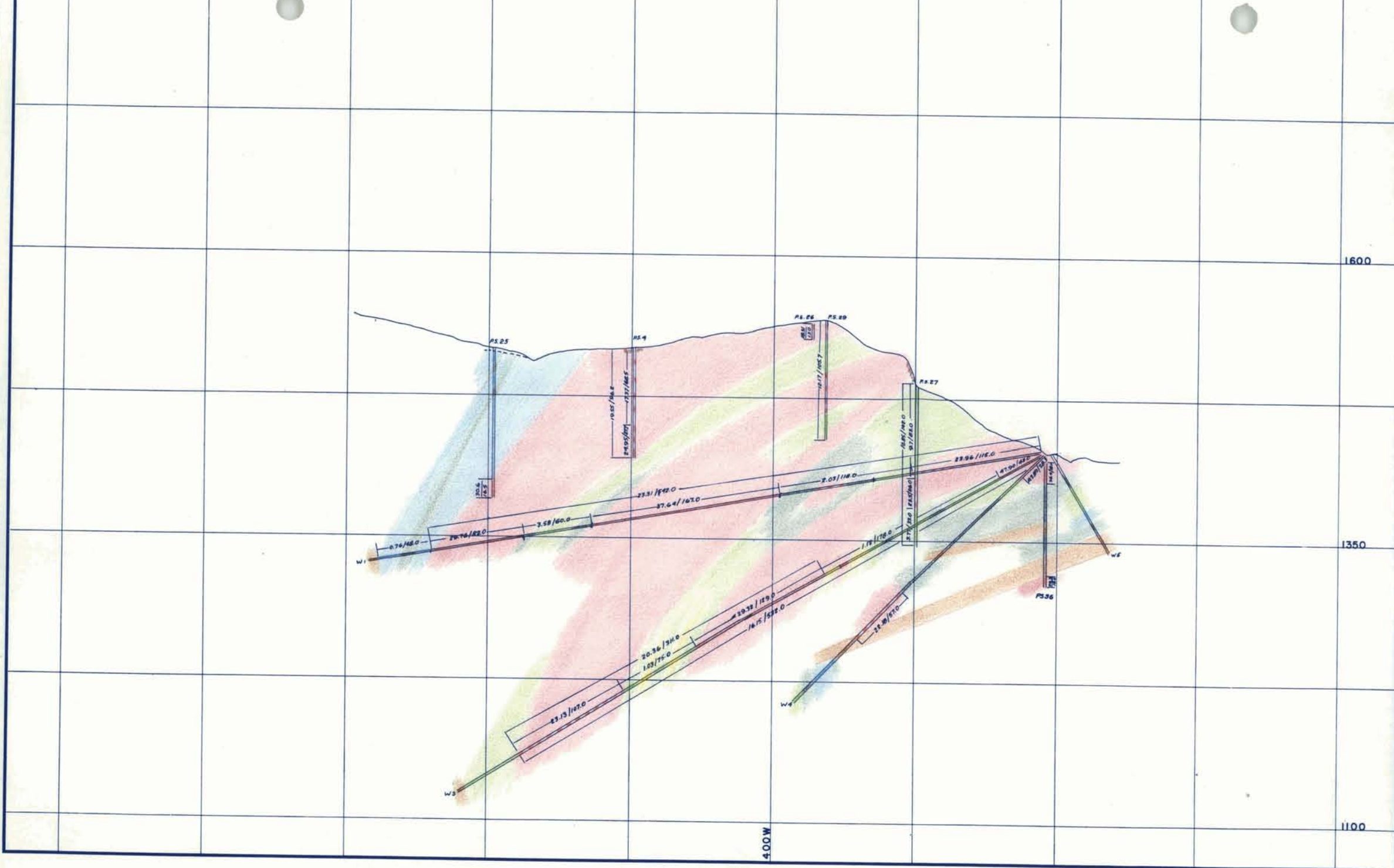


SCALE 1 INCH TO 100 FT.

COMPANY Q.M.I. LTD.
PROPERTY WEDEENE
LOCATION KITIMAT, B.C.

WORKING PLACE 'A' ZONE
D.D.H. P.S. 28
TYPE OF MAP SECTION

DATE 17/2/61
DRAWN BY H.S.L.
MAP No. _____

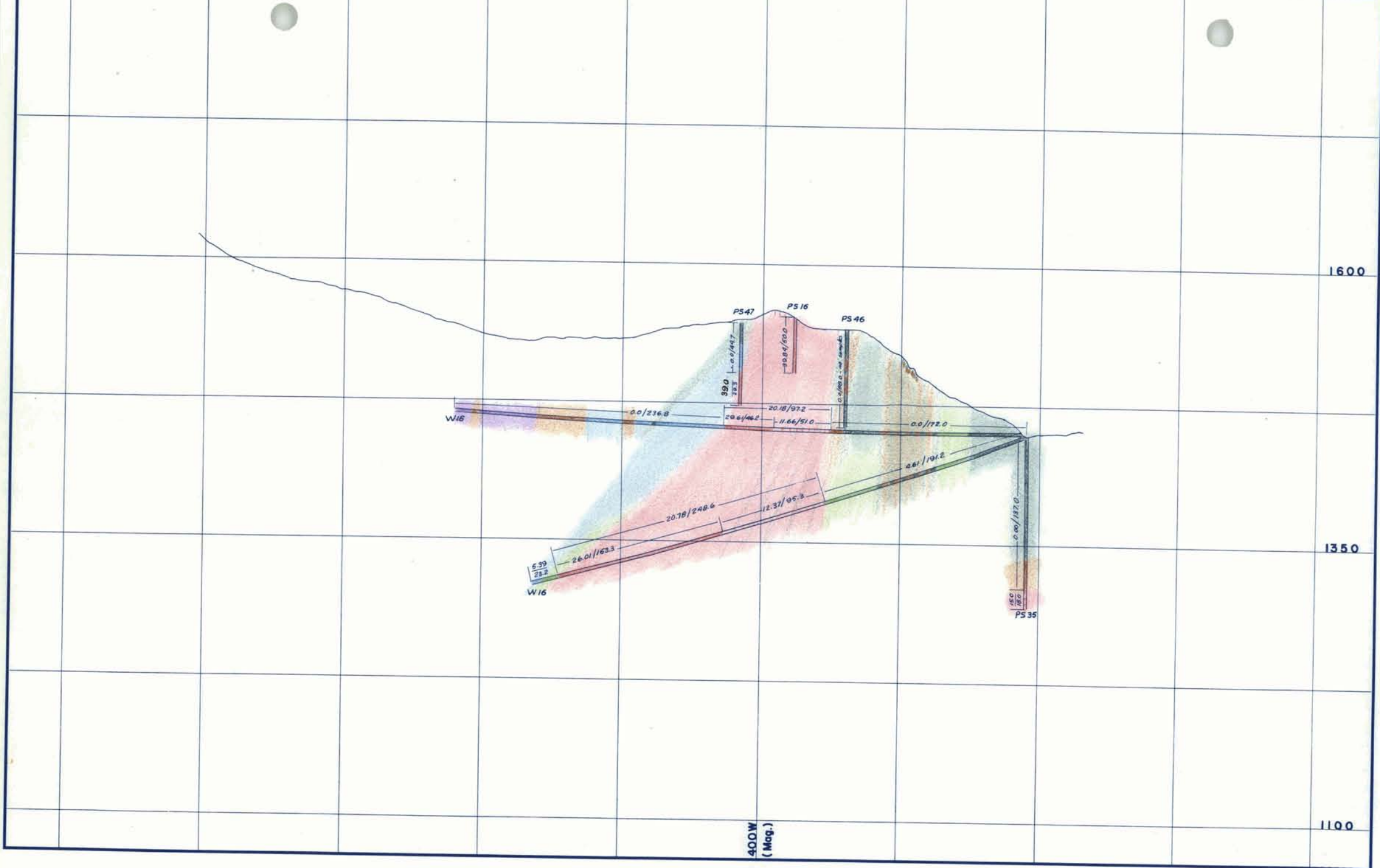


SCALE 1 INCH TO 100 FT.

COMPANY Q.M.I. LTD.
 PROPERTY WEDEENE
 LOCATION KITIMAT, B.C.

WORKING PLACE 'A' ZONE
 D.D.H. 1,3,4,5, P.S. 4,25,26,27,29
 TYPE OF MAP SECTION

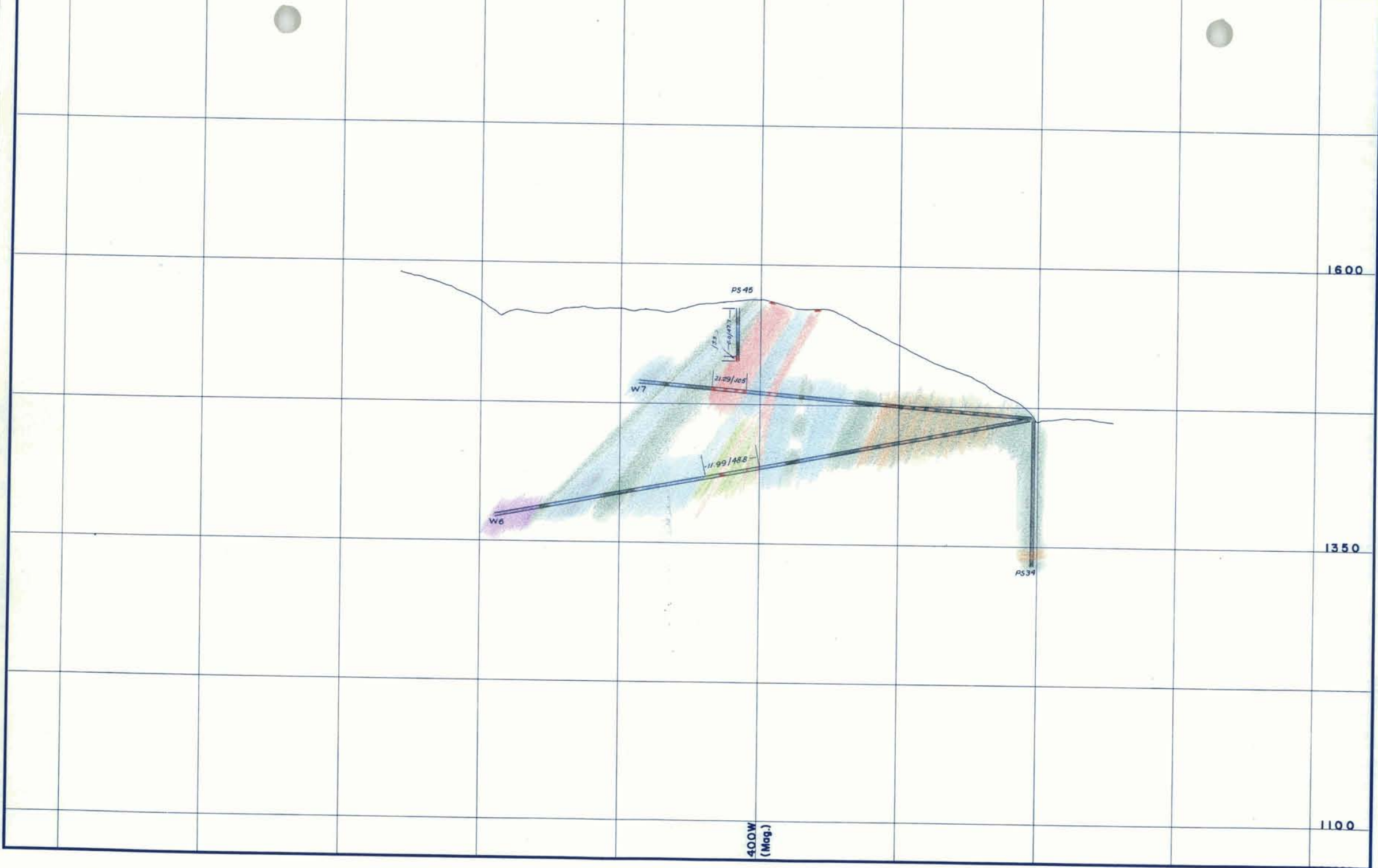
DATE 15/2/61
 DRAWN BY H.S.L.
 MAP NO.



COMPANY Q.M.I. LTD.
 PROPERTY WEDEENE
 LOCATION KITIMAT, B.C.

WORKING PLACE "A" ZONE
D.D.H. W 15,16 PS. 16,35,46,47
 TYPE OF MAP SECTION

DATE 18/10/61
 DRAWN BY T.E.K.
 MAP NO. _____

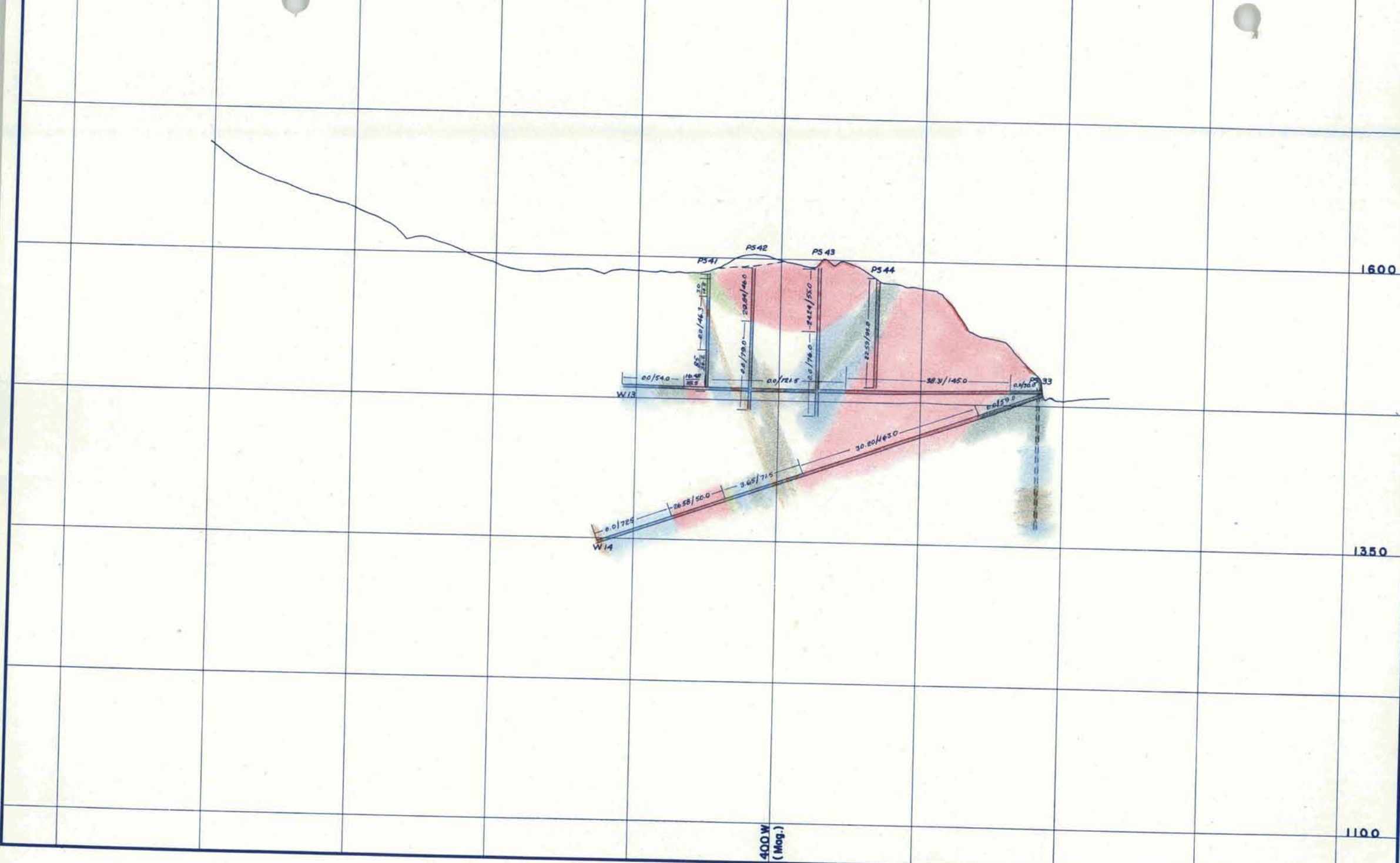


SCALE 1 INCH TO .100 FT.

COMPANY Q.M.I. LTD.
 PROPERTY WEDEENE
 LOCATION KITIMAT, B.C.

WORKING PLACE "A" ZONE
 D.D.H. W 6,7 PS. 34,45
 TYPE OF MAP SECTION

DATE 18/10/61
 DRAWN BY H.S.L.
 MAP No. _____

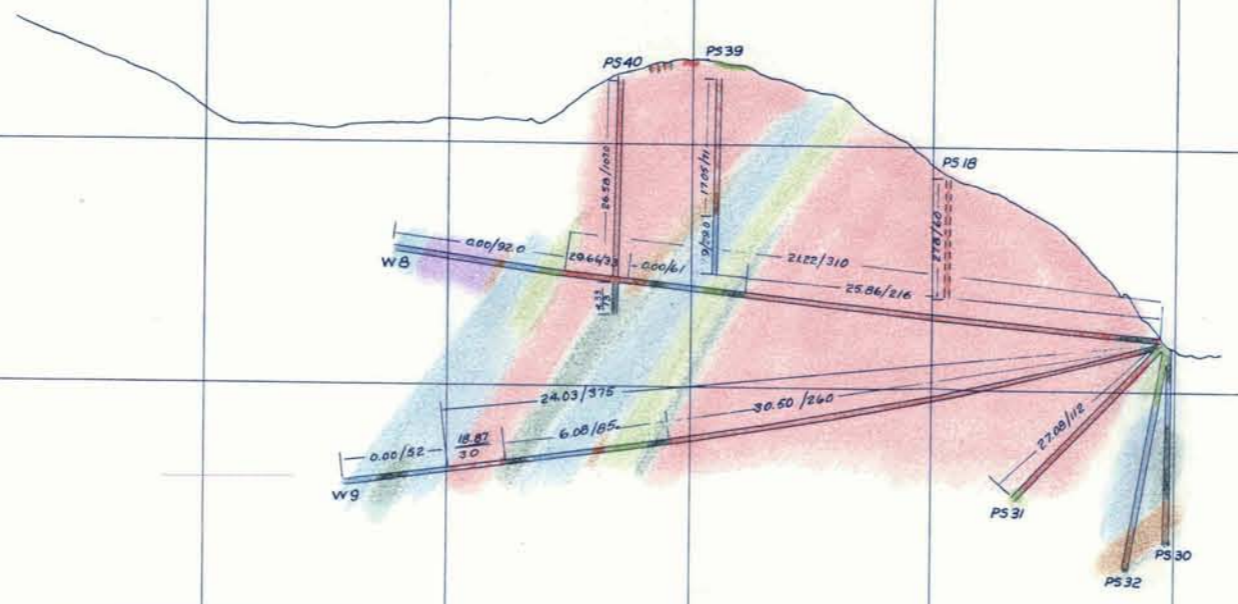


COMPANY: Q.M.I. LTD.
 PROPERTY: WEDEENE
 LOCATION: KITIMAT, B.C.

WORKING PLACE: "A" ZONE
D.D.H. W 13, 14 PS. 33, 41, 42, 43, 44
 TYPE OF MAP: SECTION

DATE: 18/10/61
 DRAWN BY: H.S.L.
 MAP NO.: _____

SCALE 1 INCH TO 100 FT.



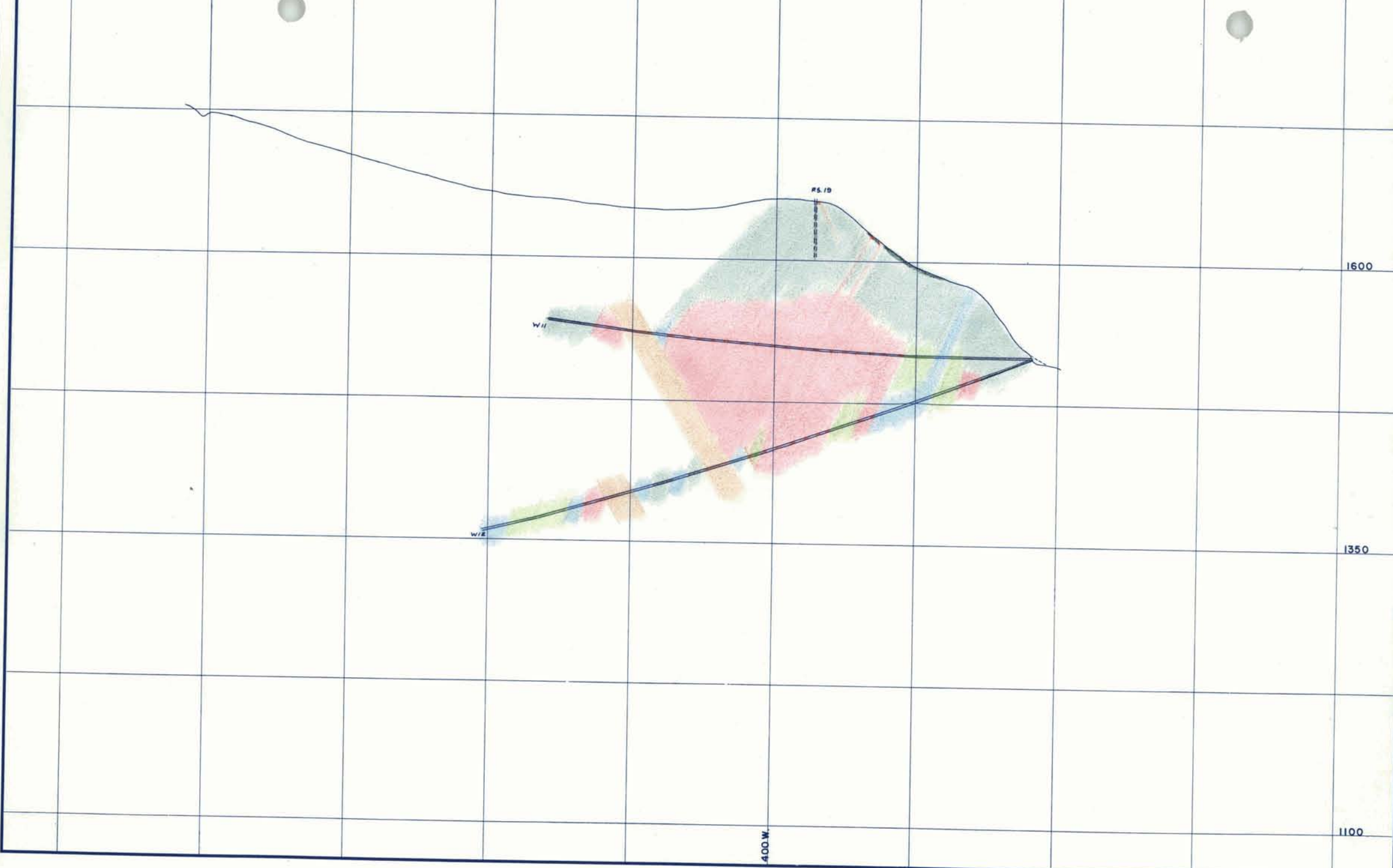
SCALE 1 INCH TO 100 FT.

COMPANY Q.M.I. LTD.
 PROPERTY WEDEENE
 LOCATION KITIMAT, B.C.

WORKING PLACE "A" ZONE
 D.D.H. W 8,9 PS. 18,30,31,32,39,40
 TYPE OF MAP SECTION

DATE 18/10/61
 DRAWN BY H.S.L.
 MAP NO. _____

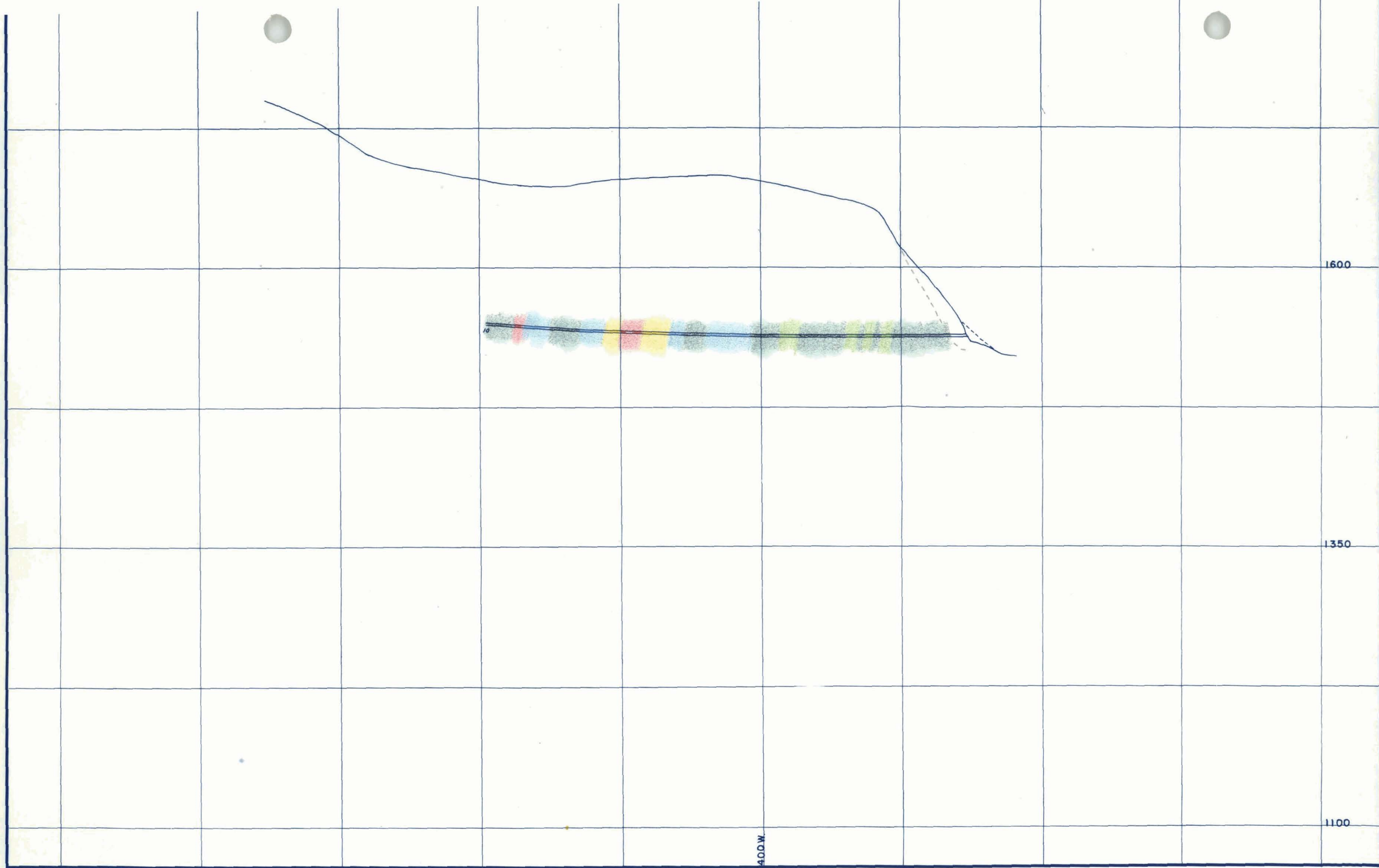
400W
(Mag.)



COMPANY Q.M.I. LTD.
 PROPERTY WEDEENE
 LOCATION KITIMAT, B.C.

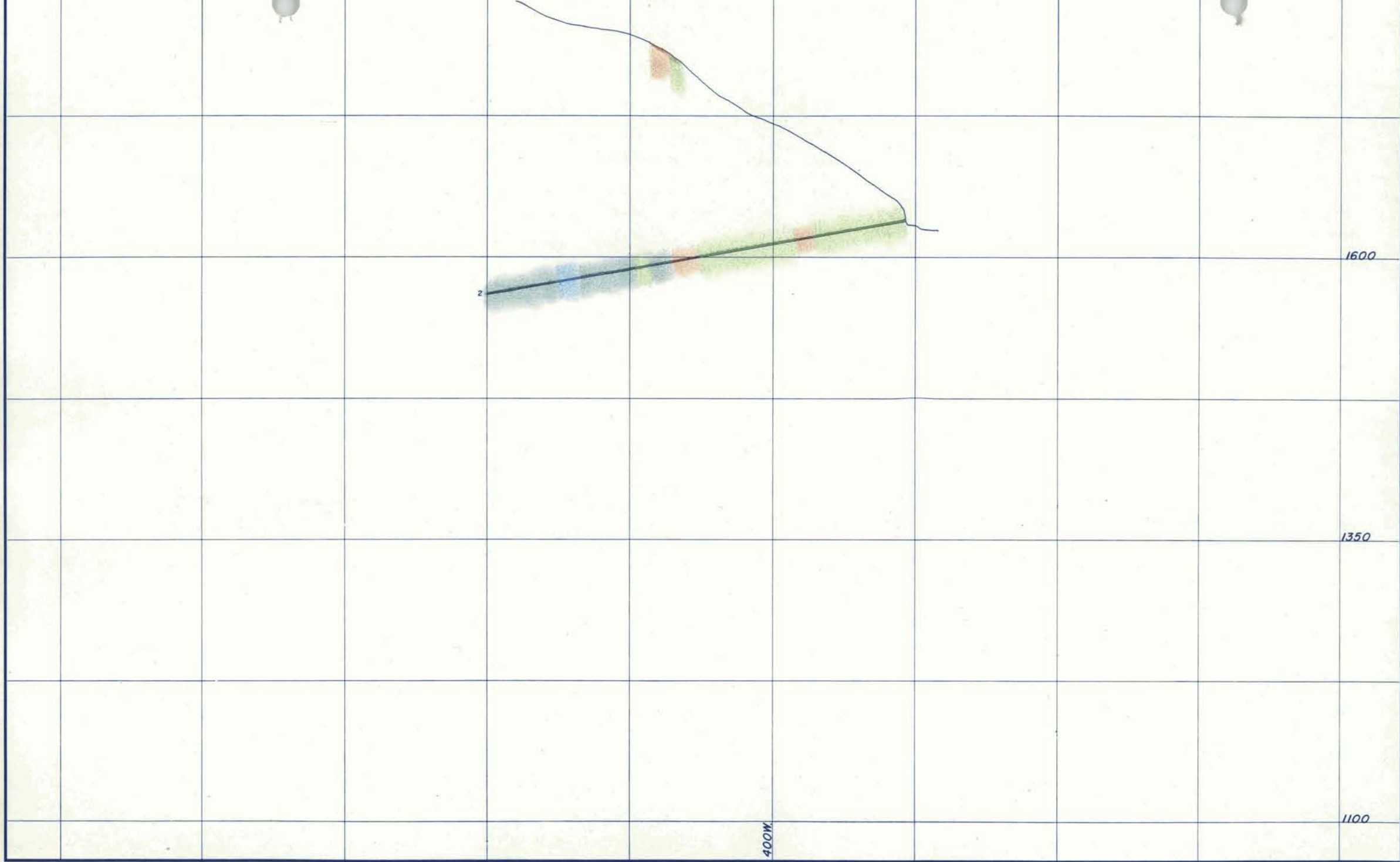
WORKING PLACE 'A' ZONE
DDH 11, 12, PS. 19
 TYPE OF MAP SECTION

DATE 20/12/60
 DRAWN BY H.S.L.
 MAP No. _____



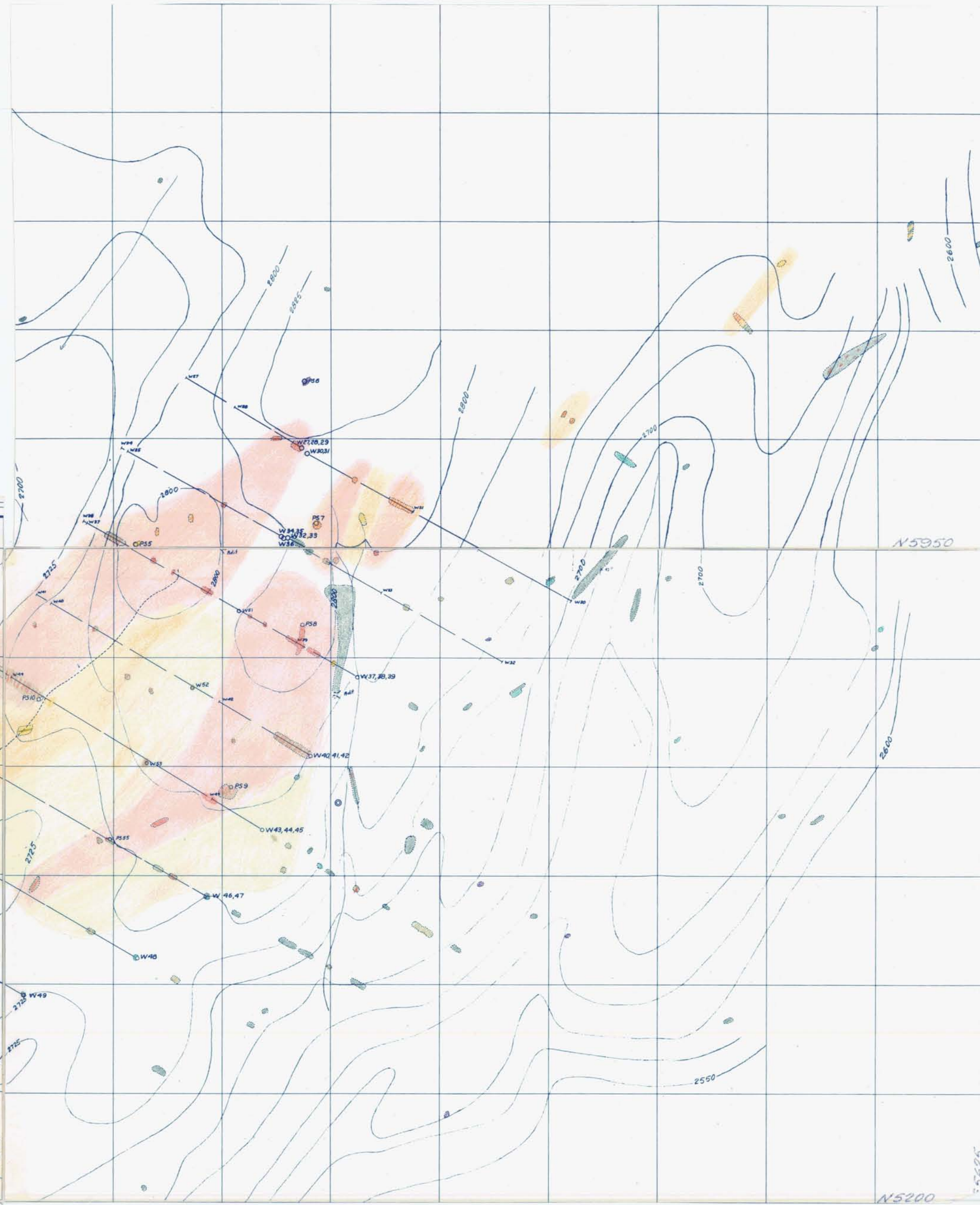
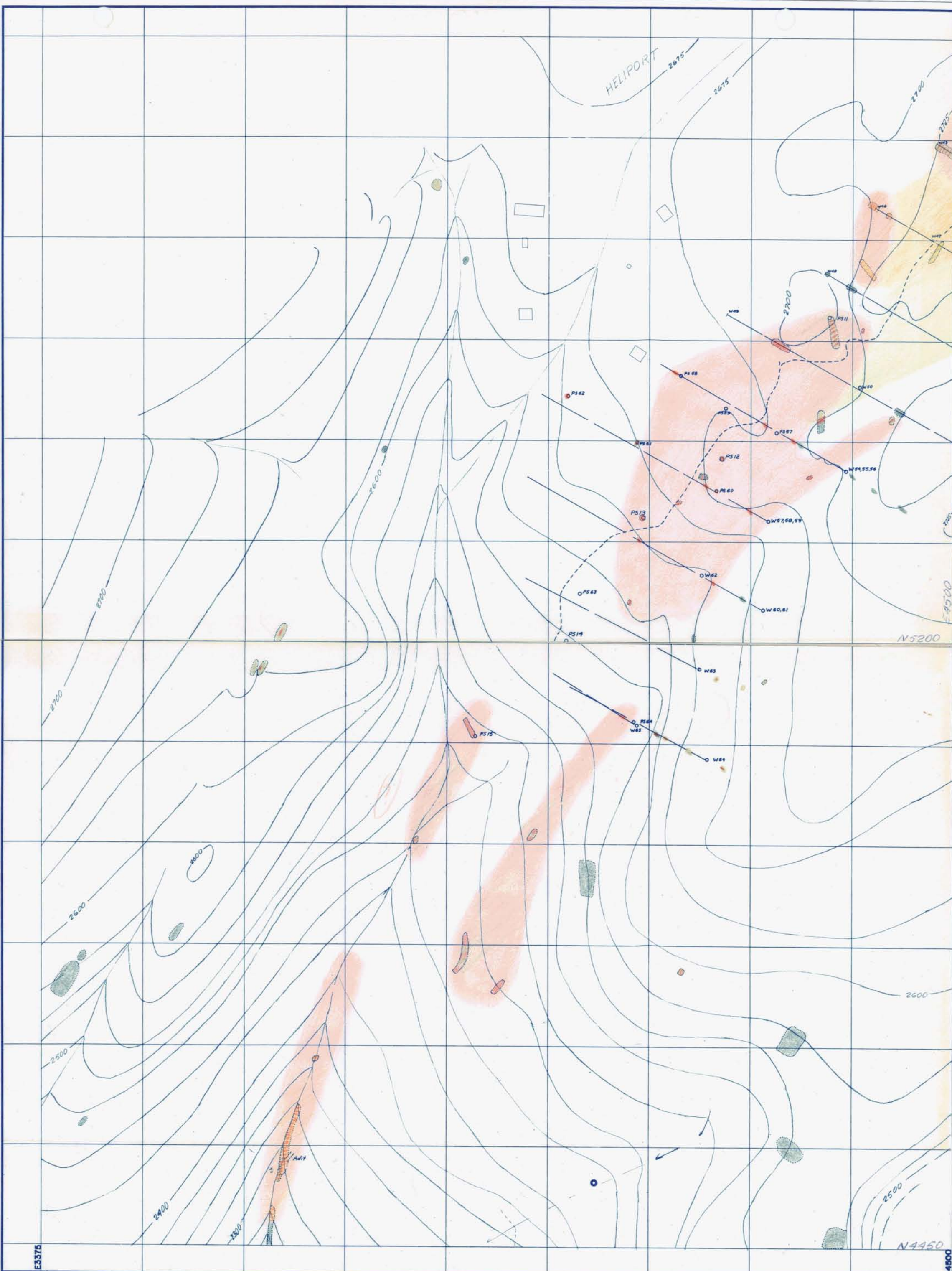
SCALE 1 INCH TO 100 FT.

COMPANY	<u>Q. M. I. LTD.</u>	WORKING PLACE	<u>'A' ZONE</u>	DATE	<u>20/12/60</u>
PROPERTY	<u>WEDEENE</u>	D.D.H.	<u>10</u>	DRAWN BY	<u>H.S.L.</u>
LOCATION	<u>KITIMAT, B.C.</u>	TYPE OF MAP	<u>SECTION</u>	MAP NO.	<u></u>



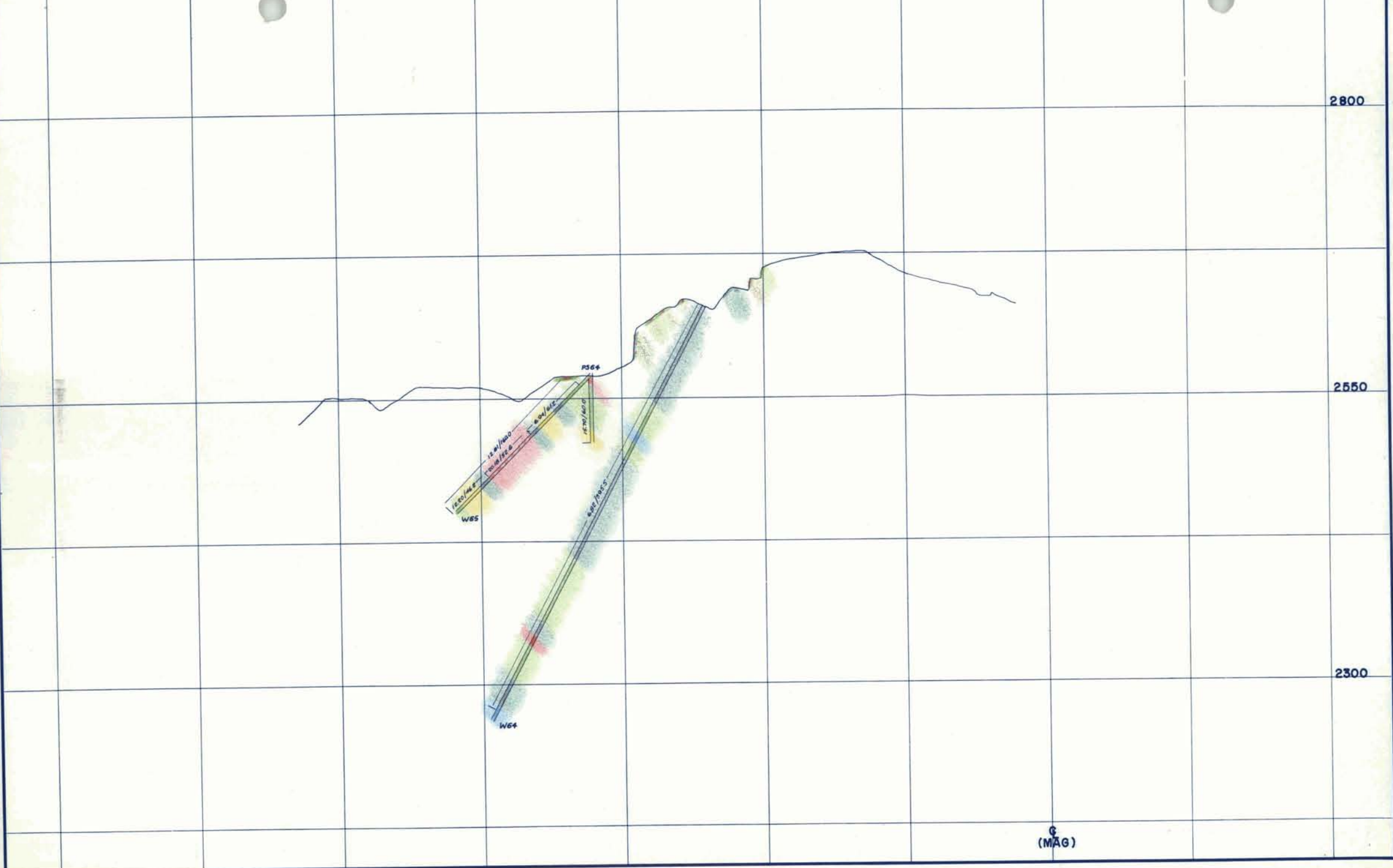
SCALE 1 INCH TO 100 FT.

COMPANY	Q.M.I.LTD.	WORKING PLACE	'A' ZONE	DATE	20/12/60
PROPERTY	WEDEENE		D.D.H. 2	DRAWN BY	H.L.
LOCATION	KITIMAT, B.C.		TYPE OF MAP	SECTION	MAP NO.



SCALE 1 INCH TO 100 FT.

COMPANY: O.M.I. LTD. WORKING PLACE: "B" & SUMMIT ZONES DATE: 17/10/81
 PROPERTY: WEDEENE DRAWN BY: H.S.L.
 LOCATION: KITIMAT, B.C. TYPE OF MAP: PLAN MAP NO:

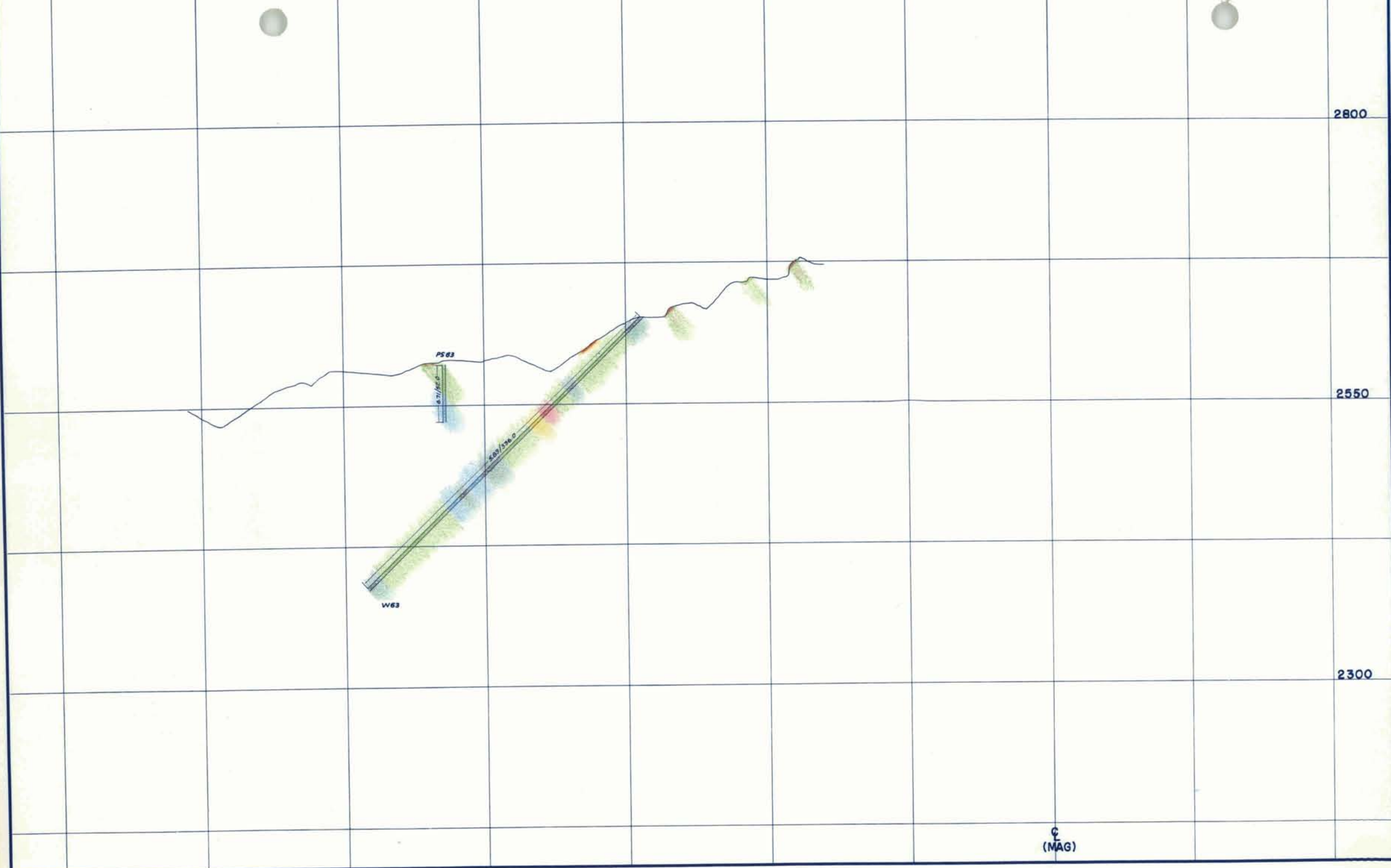


SCALE 1 INCH TO 100 FT.

COMPANY Q.M.I. LTD.
 PROPERTY WEDEENE
 LOCATION KITIMAT, B.C.

WORKING PLACE SUMMIT ZONE
DDH W64, 65, PS 64
 TYPE OF MAP SECTION

DATE 7/11/62
 DRAWN BY H.S.L.
 MAP NO. _____

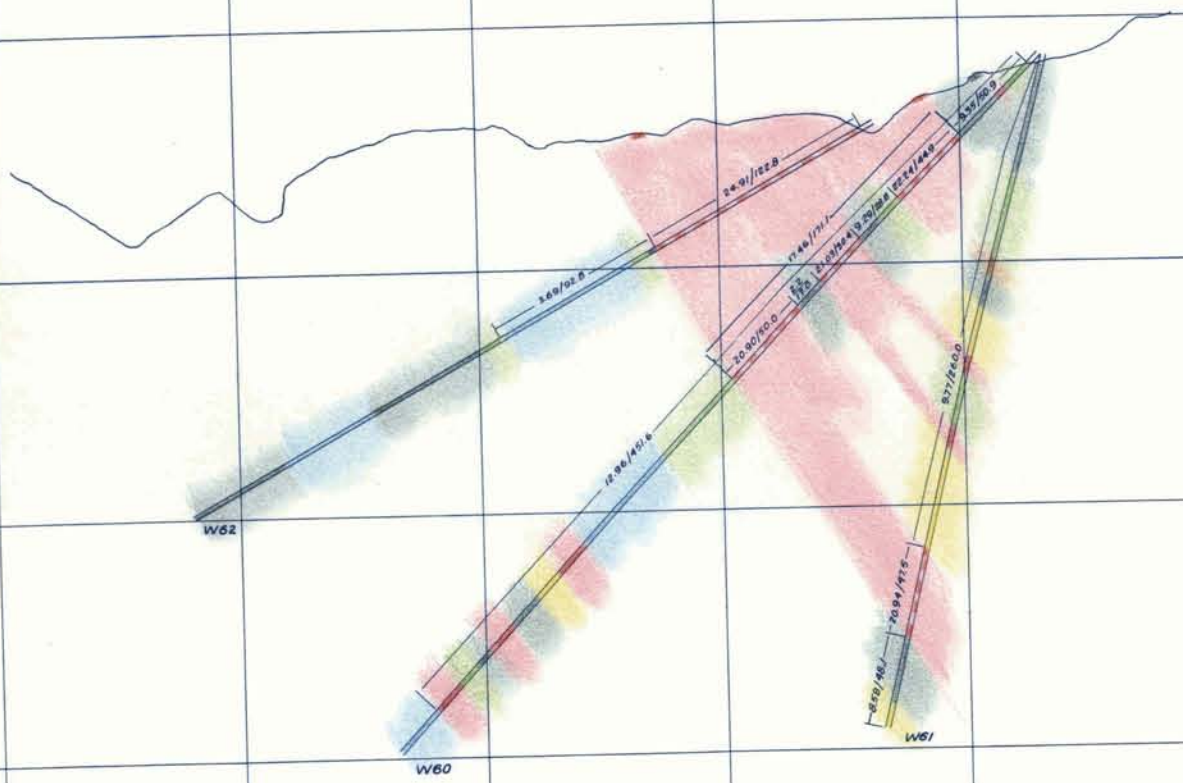


COMPANY	Q.M.I. LTD.	WORKING PLACE	SUMMIT ZONE	DATE	7/11/62
PROPERTY	WEDEENE	DDH	W 63, PS 63	DRAWN BY	H.S.L.
LOCATION	KITIMAT, B.C.	TYPE OF MAP	SECTION	MAP NO.	

2800

2550

2300



9
(MAG)



COMPANY Q.M.I. LTD.

PROPERTY WEDEENE

LOCATION KITIMAT, B.C.

WORKING PLACE SUMMIT ZONE

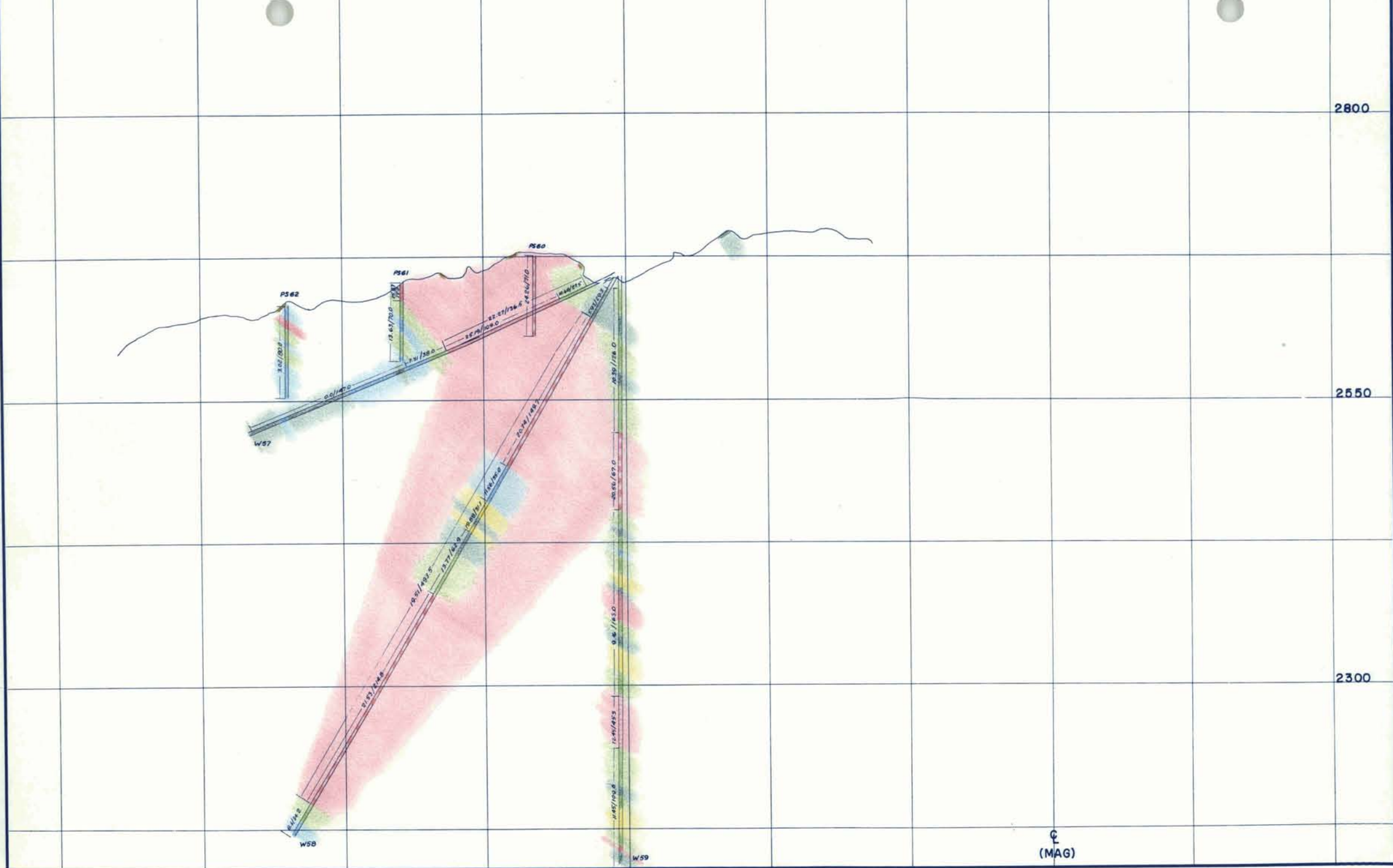
DDH W 60, 61, 62

TYPE OF MAP SECTION

DATE 7/11/62

DRAWN BY H.S.L.

MAP NO. _____

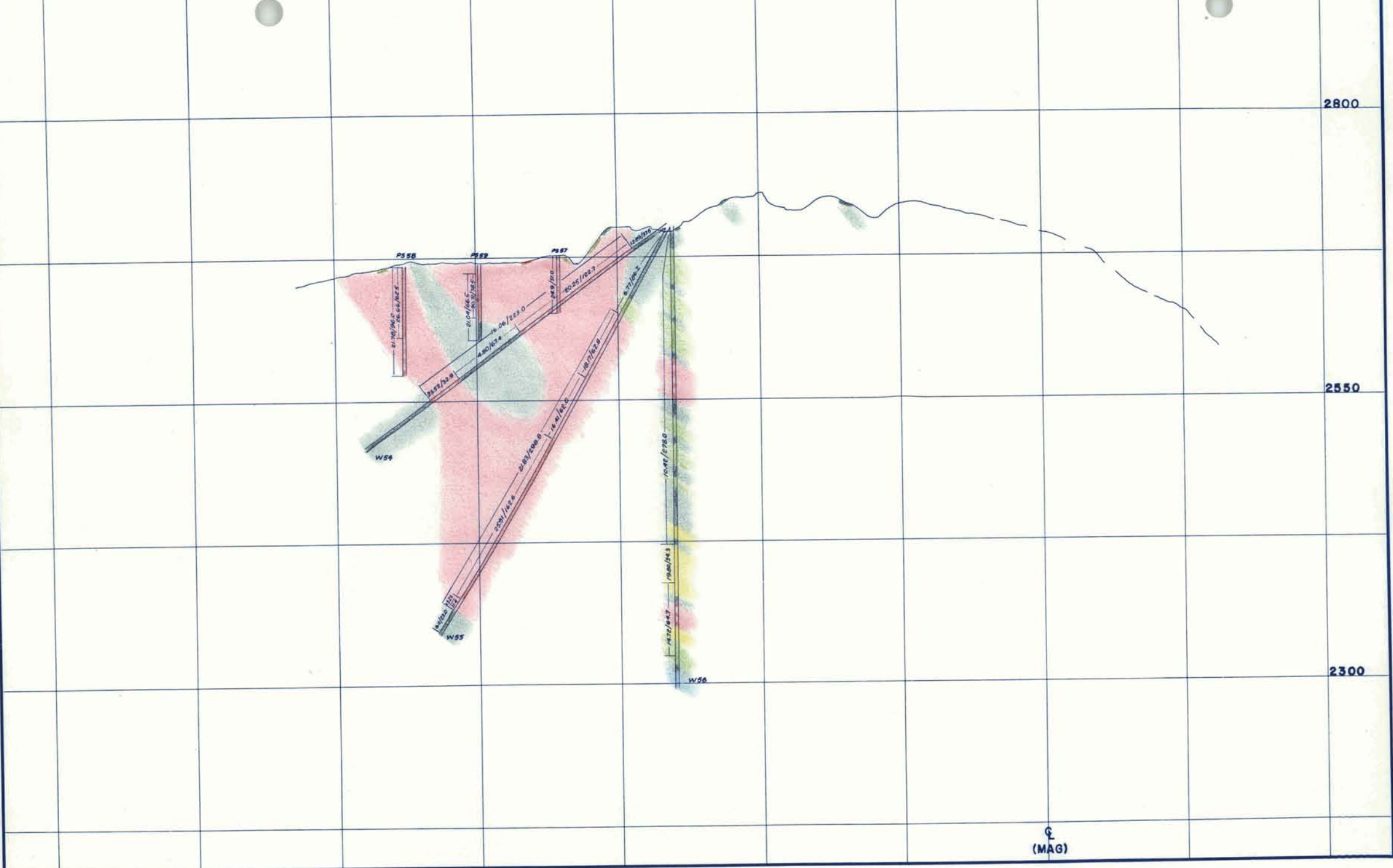


SCALE 1 INCH TO 100 FT.

COMPANY Q.M.I. LTD.
 PROPERTY WEDEENE
 LOCATION KITIMAT, B.C.

WORKING PLACE SUMMIT ZONE
 DDH W57,58,59, PS60,61,62
 TYPE OF MAP SECTION

DATE 6/11/62
 DRAWN BY H.S.L.
 MAP NO. _____

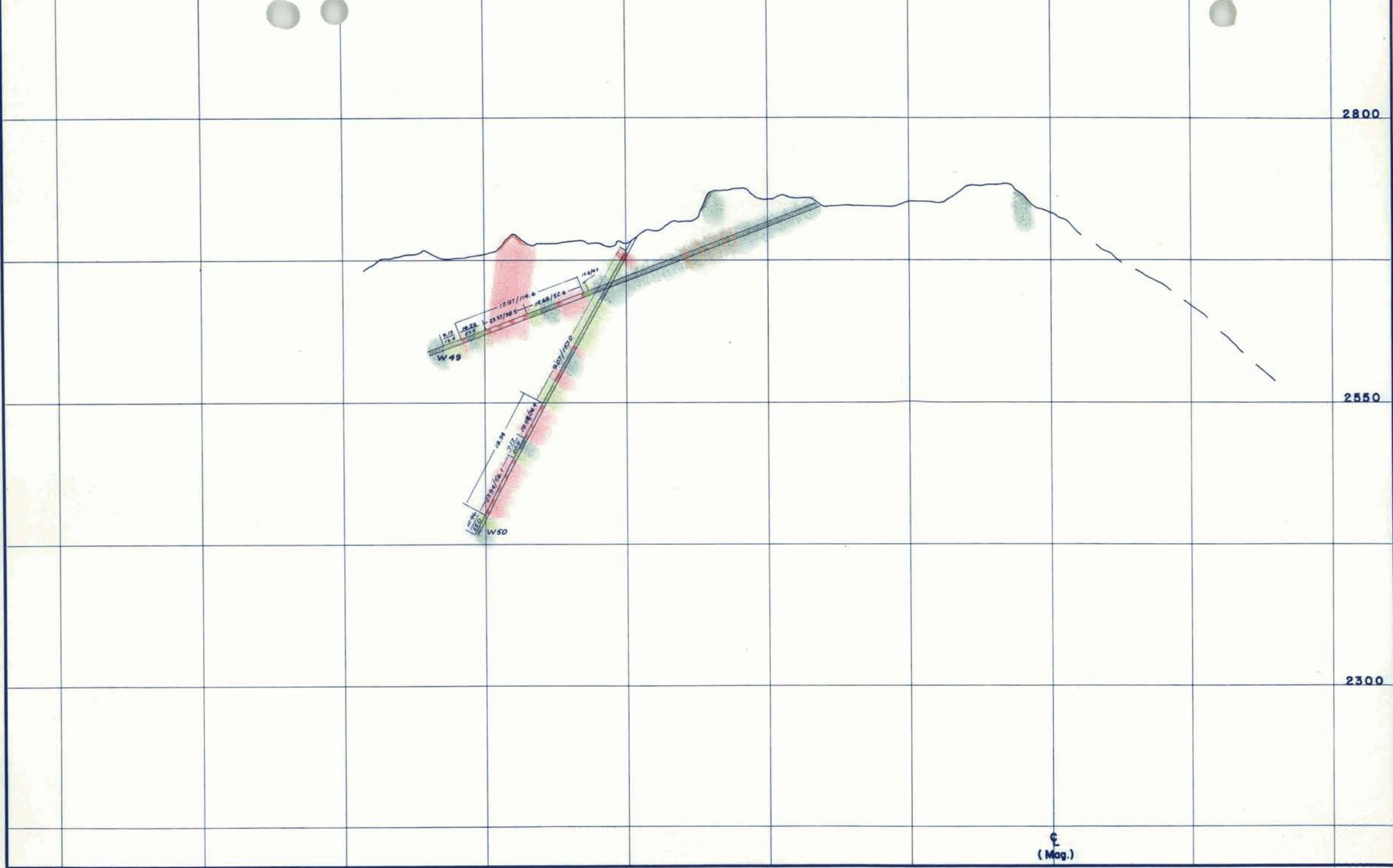


SCALE 1 INCH TO 100 FT.

COMPANY Q.M.I. LTD.
 PROPERTY WEDEENE
 LOCATION KITIMAT, B.C.

WORKING PLACE SUMMIT ZONE
DDH W54,55,56, PS57,58,59
 TYPE OF MAP SECTION

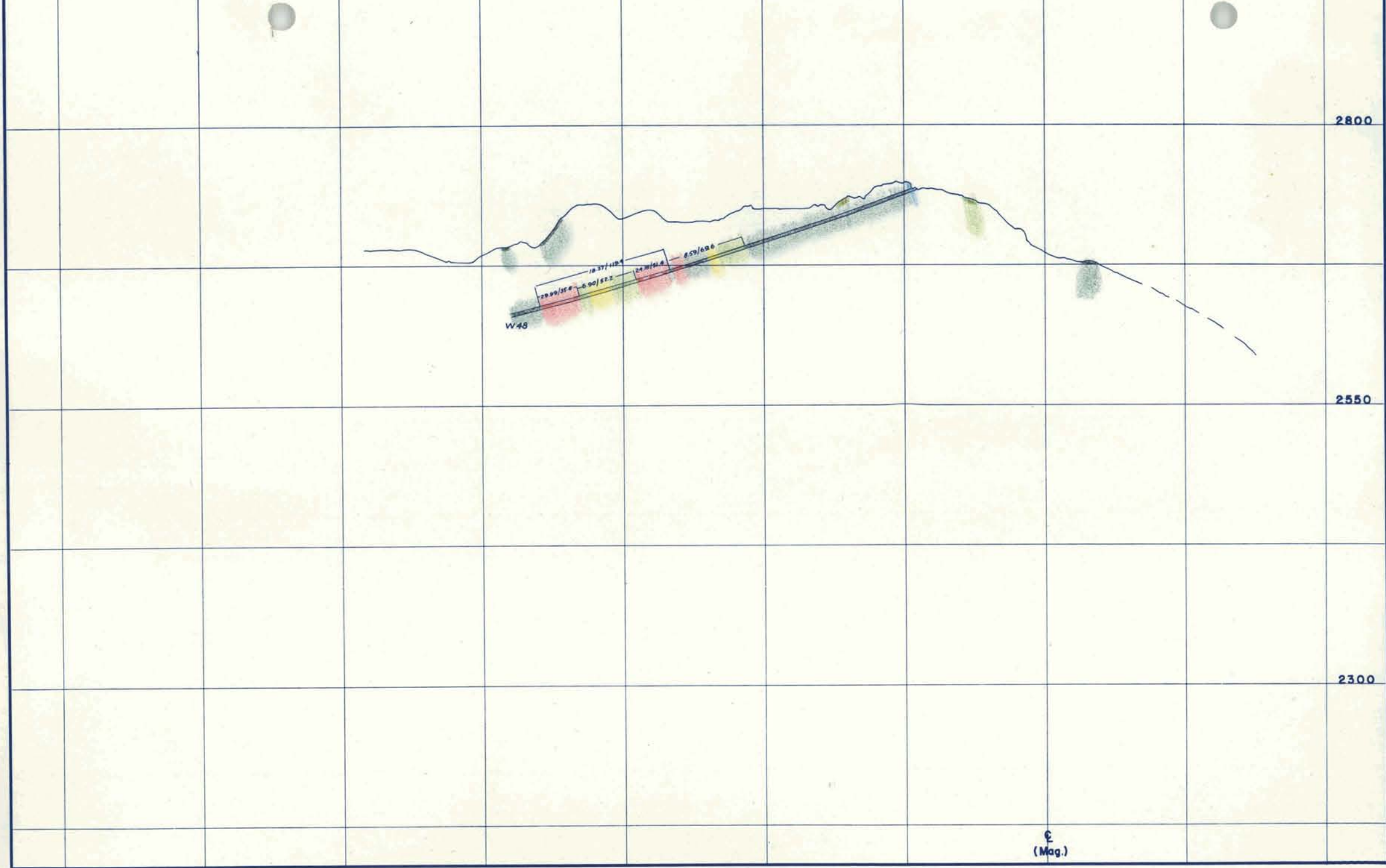
DATE 6/11/62
 DRAWN BY H.S.L.
 MAP No. _____



⊕
(Mag.)



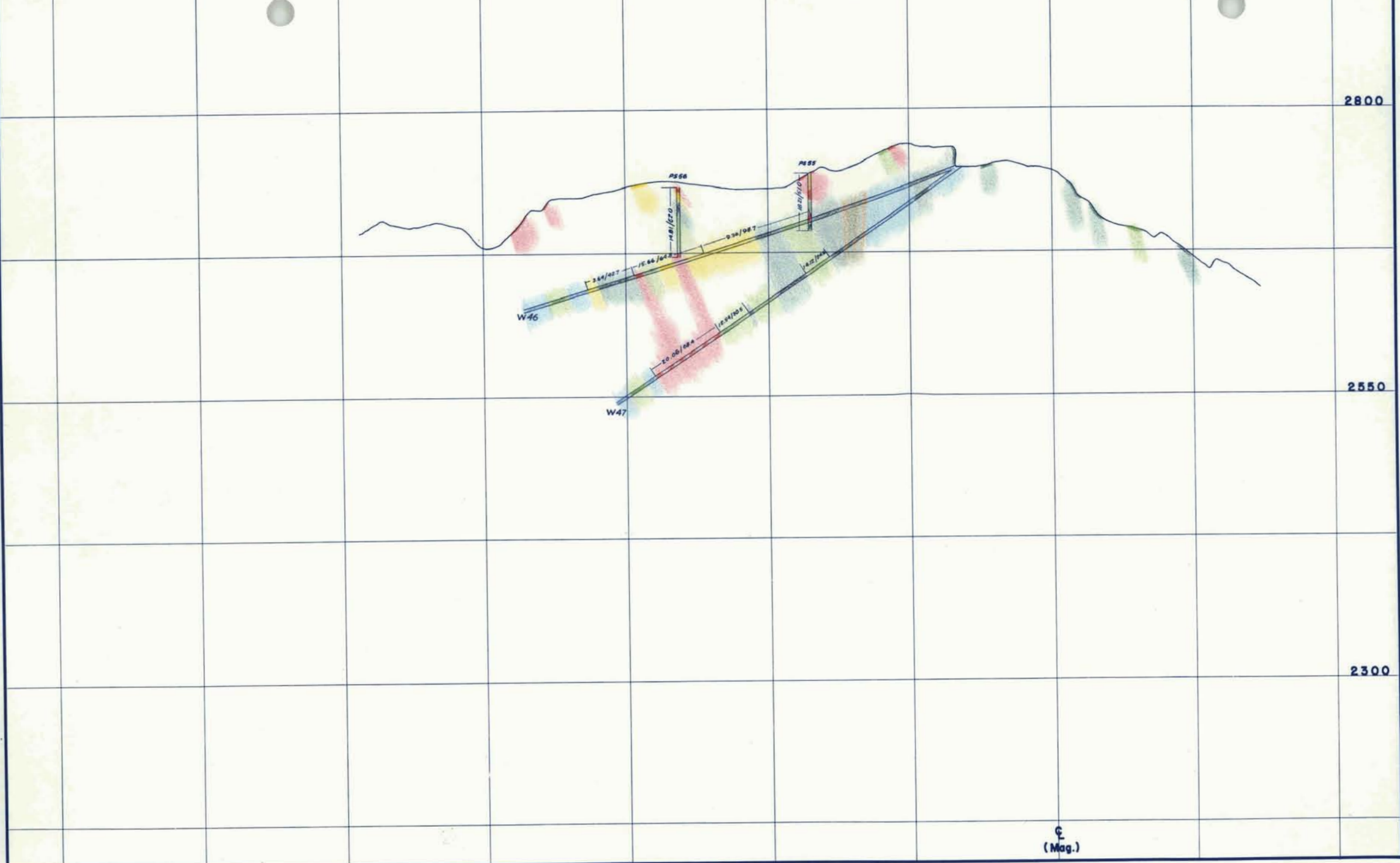
COMPANY	Q.M.I. LTD.	WORKING PLACE	SUMMIT ZONE	DATE	21/10/61, 5/11/62
PROPERTY	WEDEENE	D.D.H.	W 49,50	DRAWN BY	T.E.K.
LOCATION	KITIMAT, B.C.	TYPE OF MAP	SECTION	MAP NO.	



€
(Mag.)

SCALE 1 INCH TO 100 FT.

COMPANY	Q.M.I. LTD.	WORKING PLACE	SUMMIT ZONE	DATE	21/10/61
PROPERTY	WEDEENE		D.D.H. W 48	DRAWN BY	H.S.L.
LOCATION	KITIMAT, B.C.	TYPE OF MAP	SECTION	MAP NO.	



⊕
(Mag.)

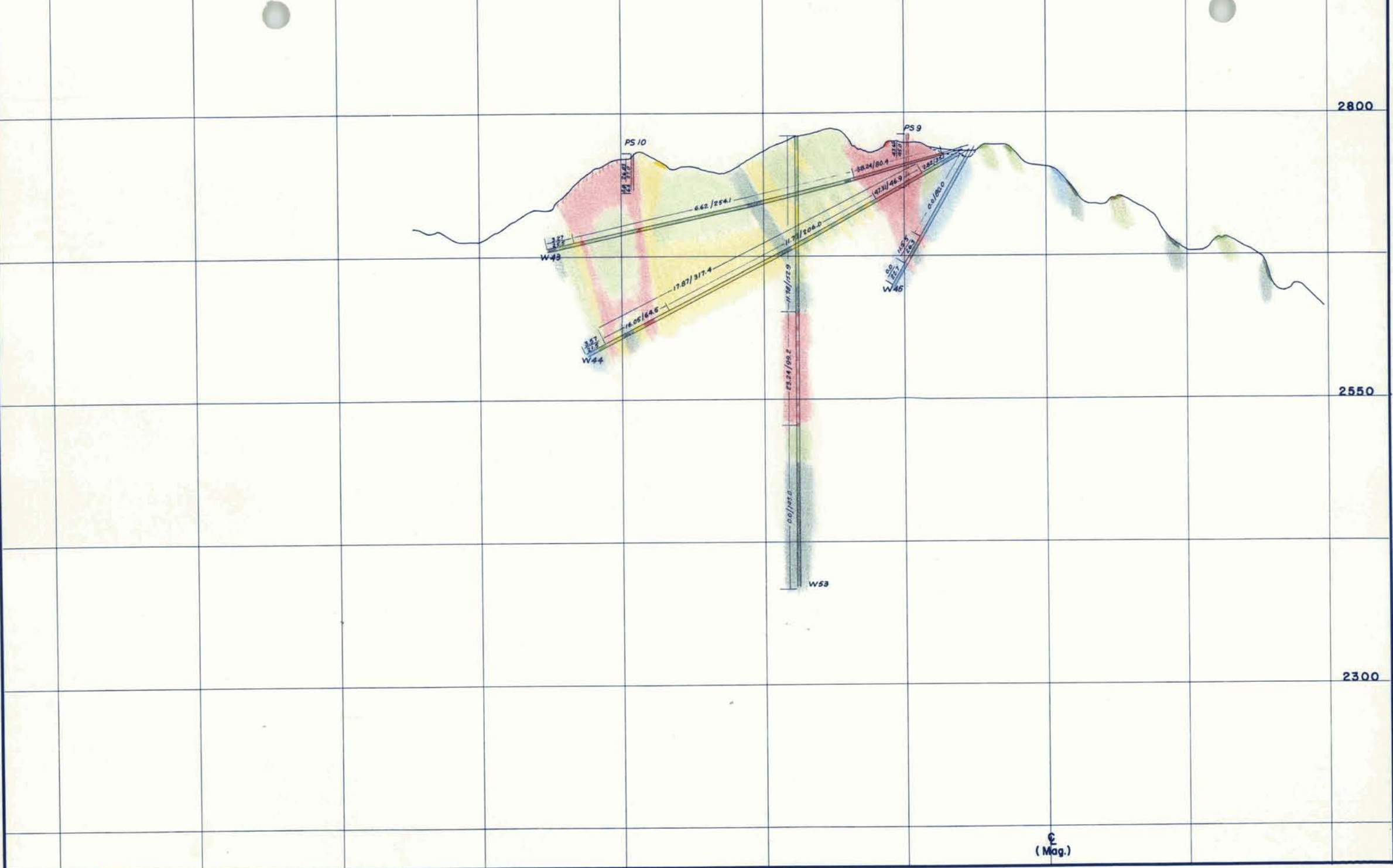


SCALE 1 INCH TO 100 FT.

COMPANY Q.M.I. LTD.
 PROPERTY WEDEENE
 LOCATION KITIMAT, B.C.

WORKING PLACE SUMMIT ZONE
 D.D.H. W 46, 47 PS 55, 56
 TYPE OF MAP SECTION

DATE 21/10/61, 5/11/62
 DRAWN BY H.S.L.
 MAP NO. _____

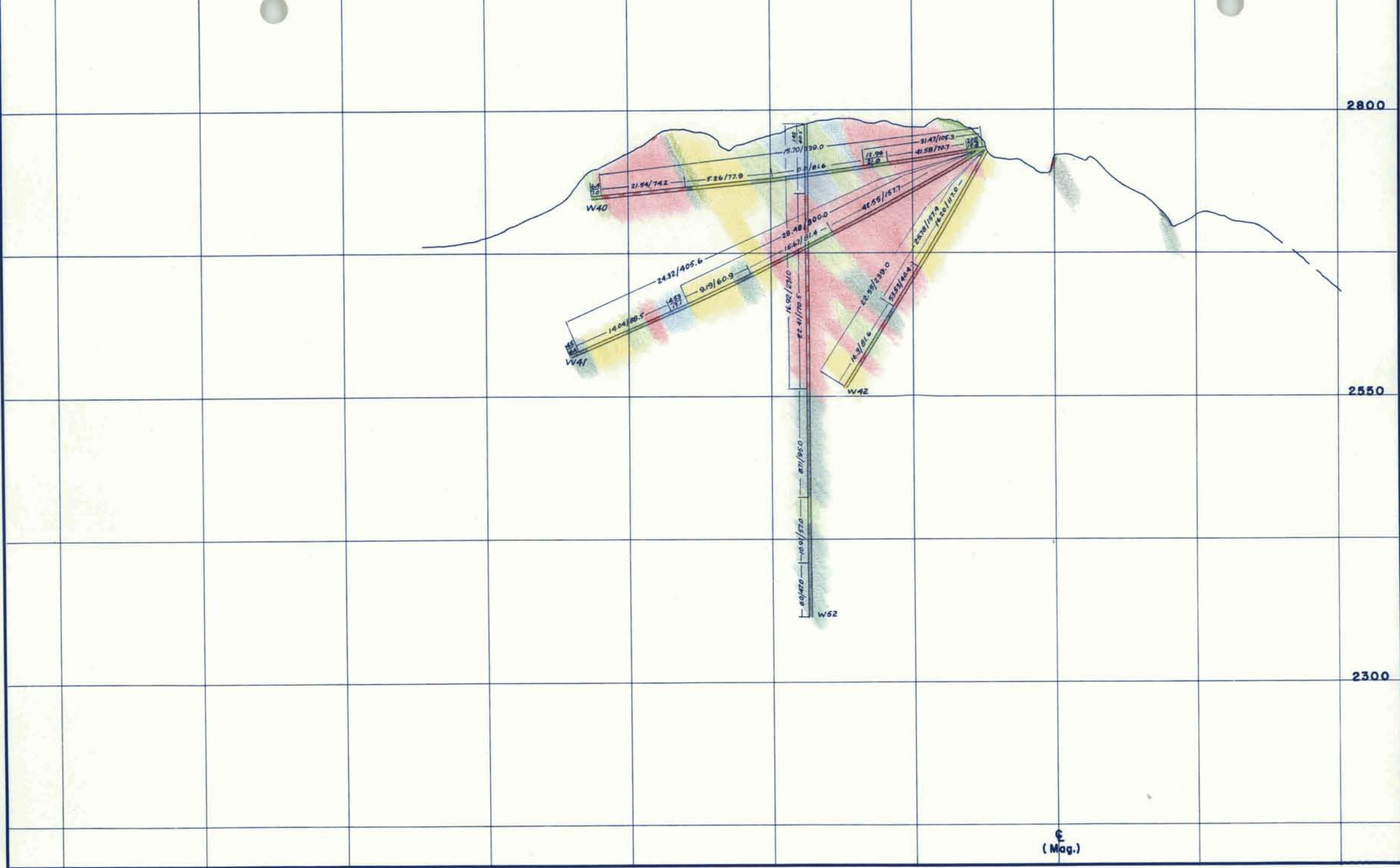


SCALE 1 INCH TO 100 FT.

COMPANY Q.M.I. LTD.
 PROPERTY WEDEENE
 LOCATION KITIMAT, B.C.

WORKING PLACE SUMMIT ZONE
 DDH W 43, 44, 45, 53 P.S. 9, 10
 TYPE OF MAP SECTION

DATE 18/10/61, 5/11/62
 DRAWN BY H.S.L.
 MAP No. _____



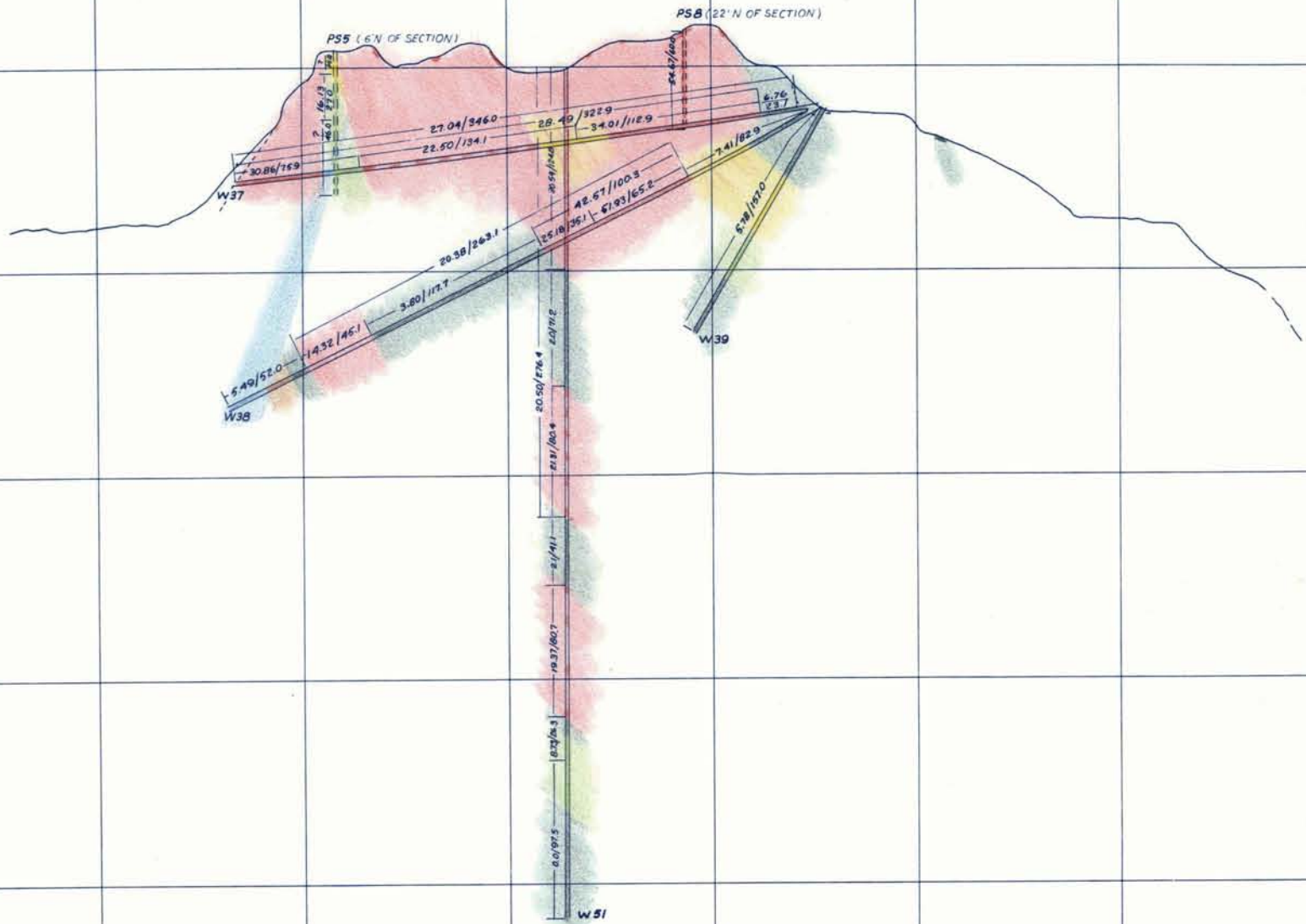
SCALE 1 INCH TO 100 FT.

COMPANY Q.M.I. LTD.
 PROPERTY WEDEENE
 LOCATION KITIMAT, B.C.

WORKING PLACE SUMMIT ZONE
 D.D.H. W 40, 41, 42, 52
 TYPE OF MAP SECTION

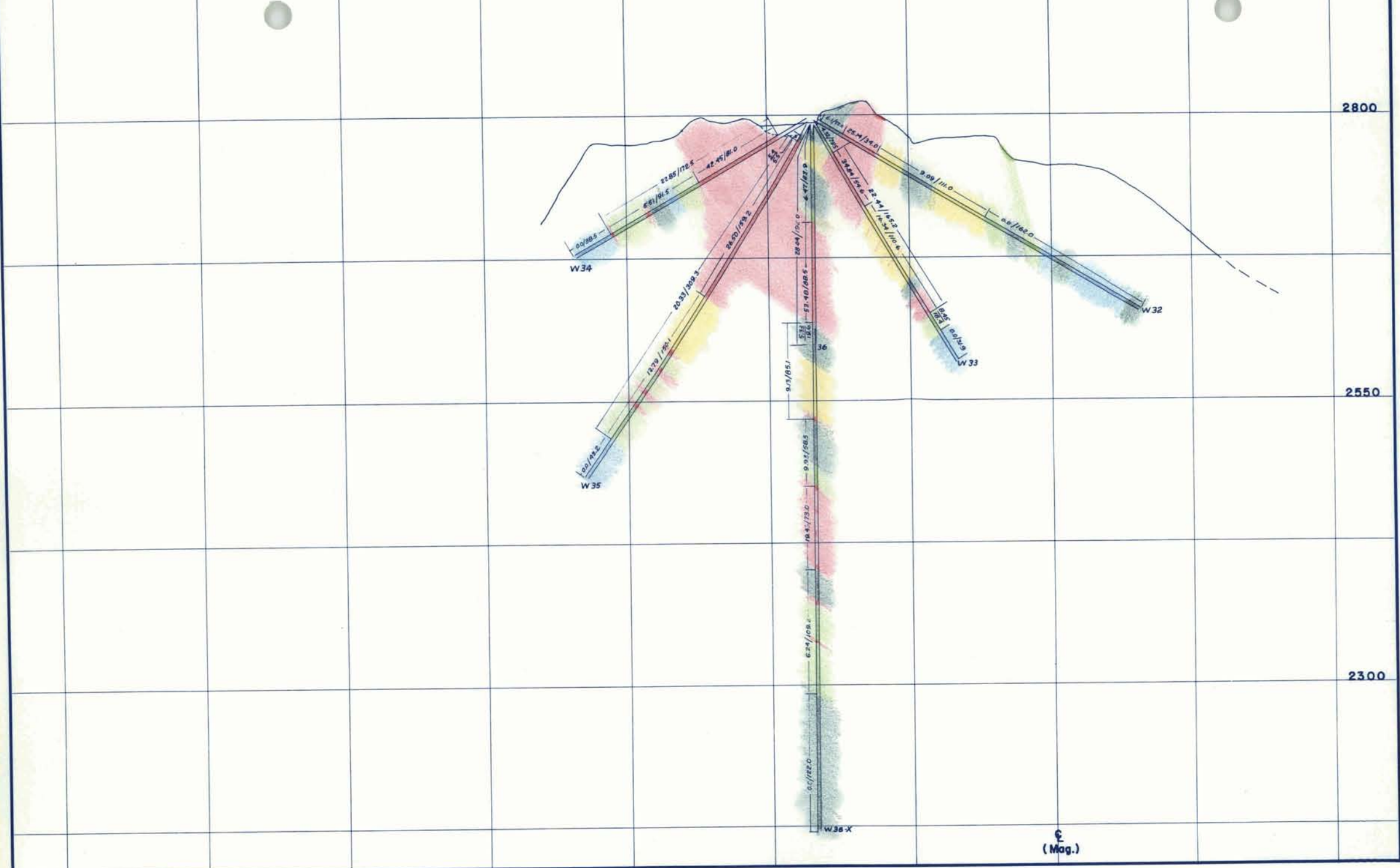
DATE 18/10/61, 5/11/62
 DRAWN BY T.E.K.
 MAP No. _____

€
(Mag.)



SCALE 1 INCH TO 100 FT.

COMPANY Q.M.I. LTD. WORKING PLACE SUMMIT ZONE DATE 18/10/61, 5/11/62
 PROPERTY WEDEENE D.D.H. W 37,38,39 RS. 5,8 W51 DRAWN BY H.S.L.
 LOCATION KITIMAT, B.C. TYPE OF MAP SECTION MAP NO. _____

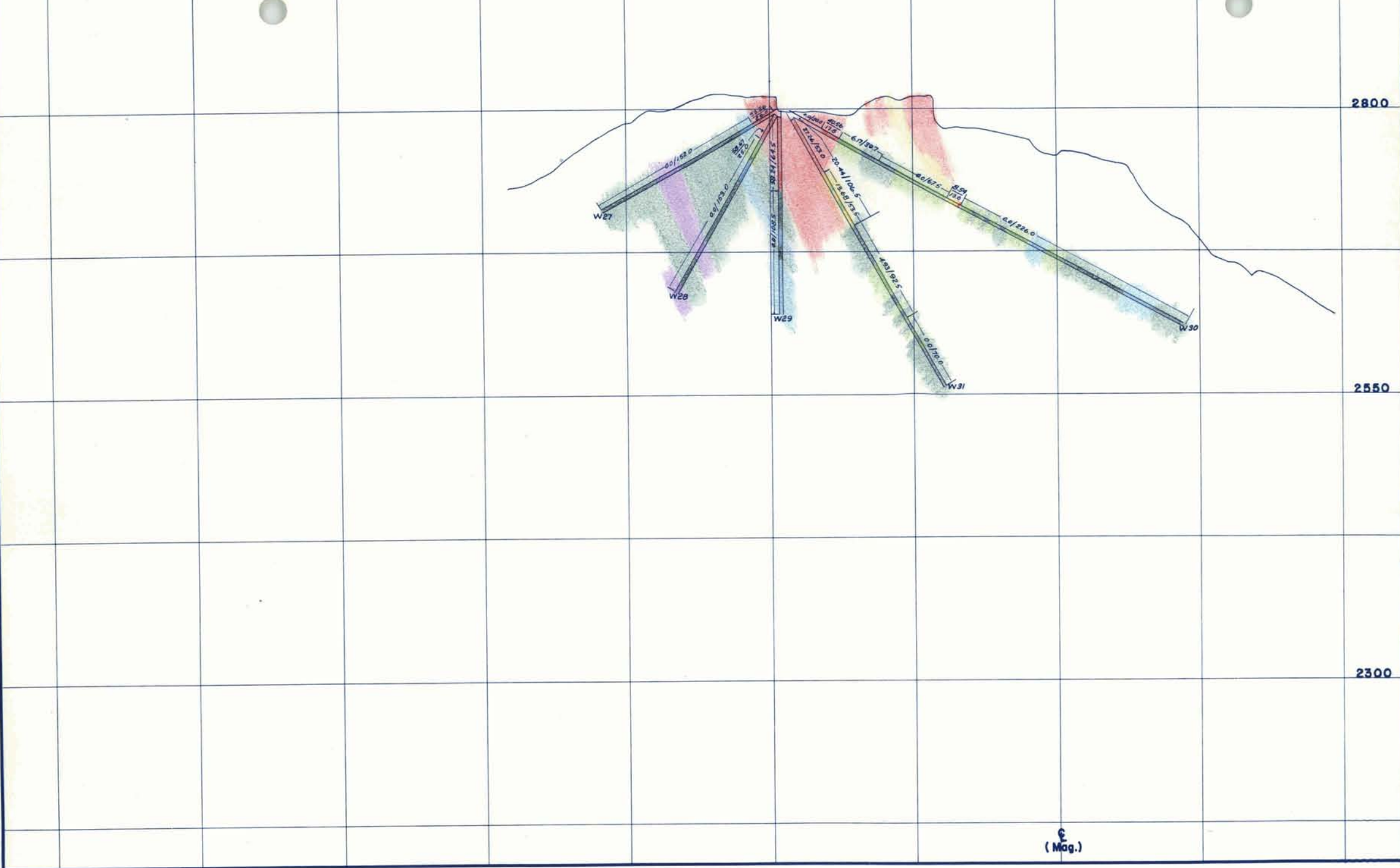


SCALE 1 INCH TO 100 FT.

COMPANY Q.M.I. LTD.
 PROPERTY WEDEENE
 LOCATION KITIMAT, B.C.

WORKING PLACE SUMMIT ZONE
 D.D.H. W 32,33,34,35,36
 TYPE OF MAP SECTION

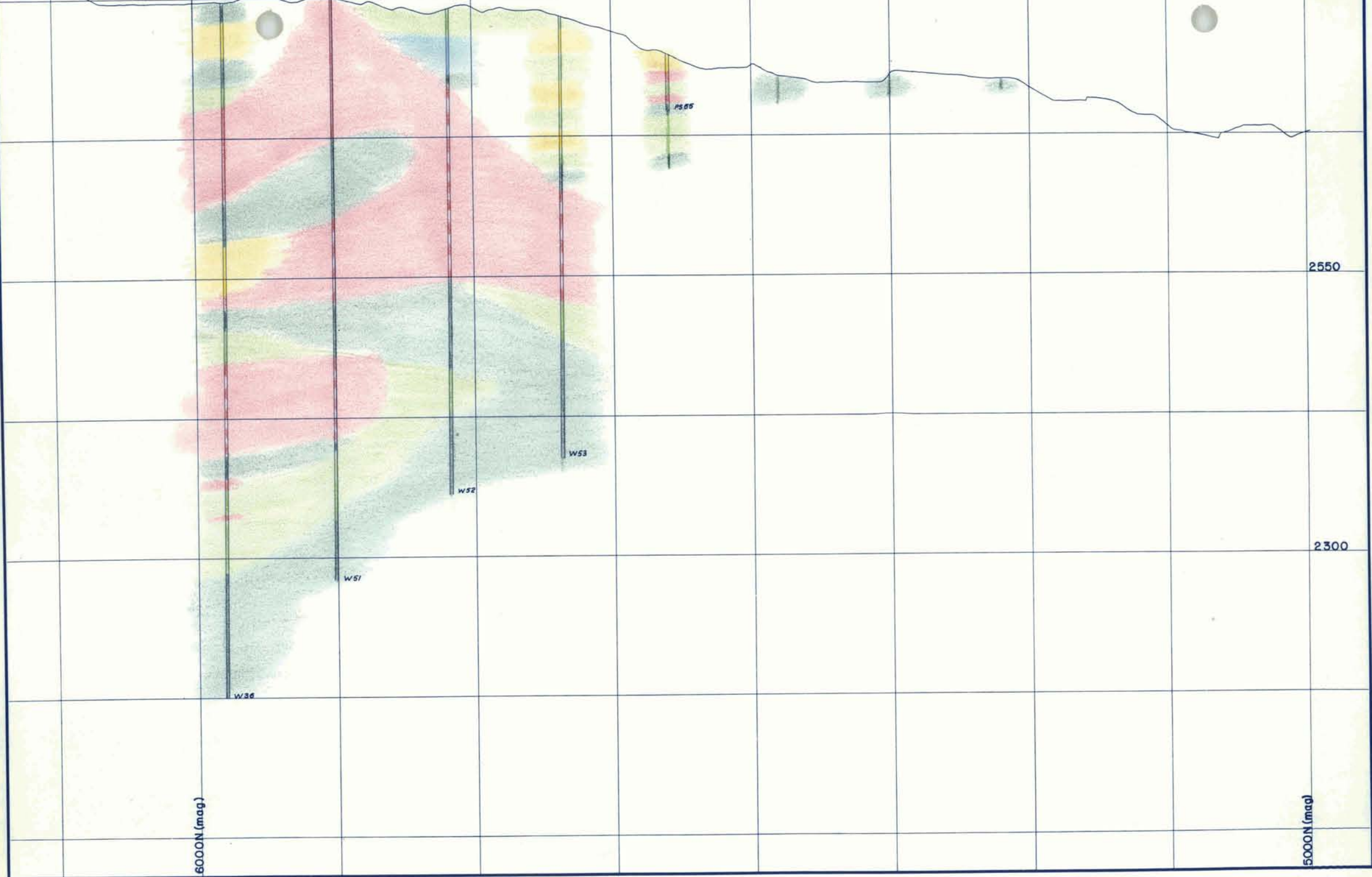
DATE 18/10/61 & 5/1/62
 DRAWN BY H.S.L.
 MAP No. _____



Σ
(Mag.)

SCALE 1 INCH TO 100 FT.

COMPANY	Q.M.I. LTD.	WORKING PLACE	SUMMIT ZONE	DATE	18/10/61
PROPERTY	WEDEENE	D.D.H. W	27, 28, 29, 30, 31	DRAWN BY	T.E.K.
LOCATION	KITIMAT, B.C.	TYPE OF MAP	SECTION	MAP NO.	



COMPANY Q.M.I. LTD.

WORKING PLACE SUMMIT ZONE

DATE 7/11/62

PROPERTY WEDEENE

DDH W36,51,52,53 PS55

DRAWN BY H.S.L.

KITIMAT B.C.

TYPE OF MAP SECTION - LONGITUDINAL

MAP NO.

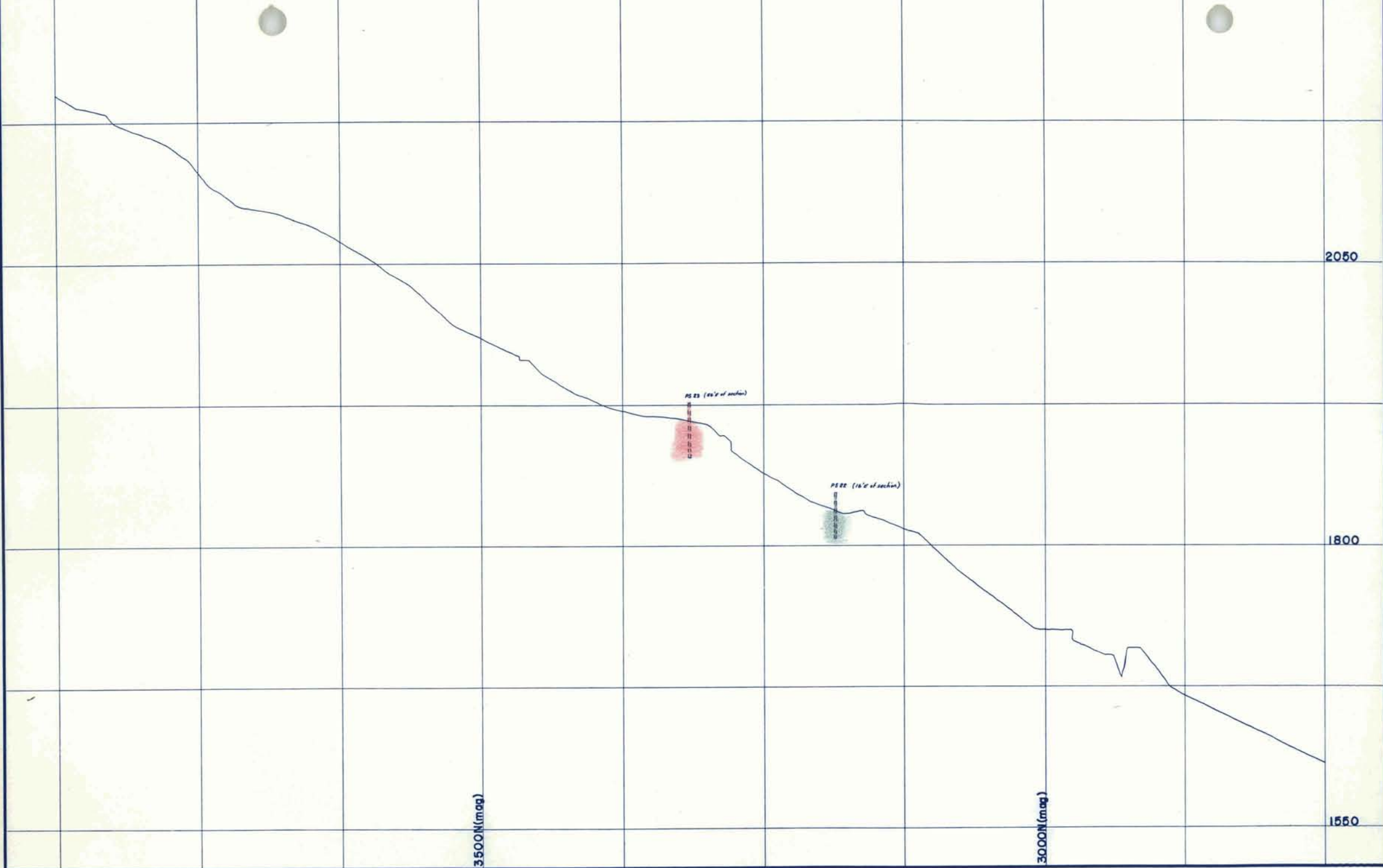


SCALE 1 INCH TO 100FT.

COMPANY Q.M.I. LTD.
PROPERTY WEDEENE
LOCATION KITIMAT, B.C.

WORKING PLACE SUMMIT & 'B' ZONES
TYPE OF MAP SECTION—LONGITUDINAL

DATE 7/11/62
DRAWN BY H.S.L.
MAP NO. _____

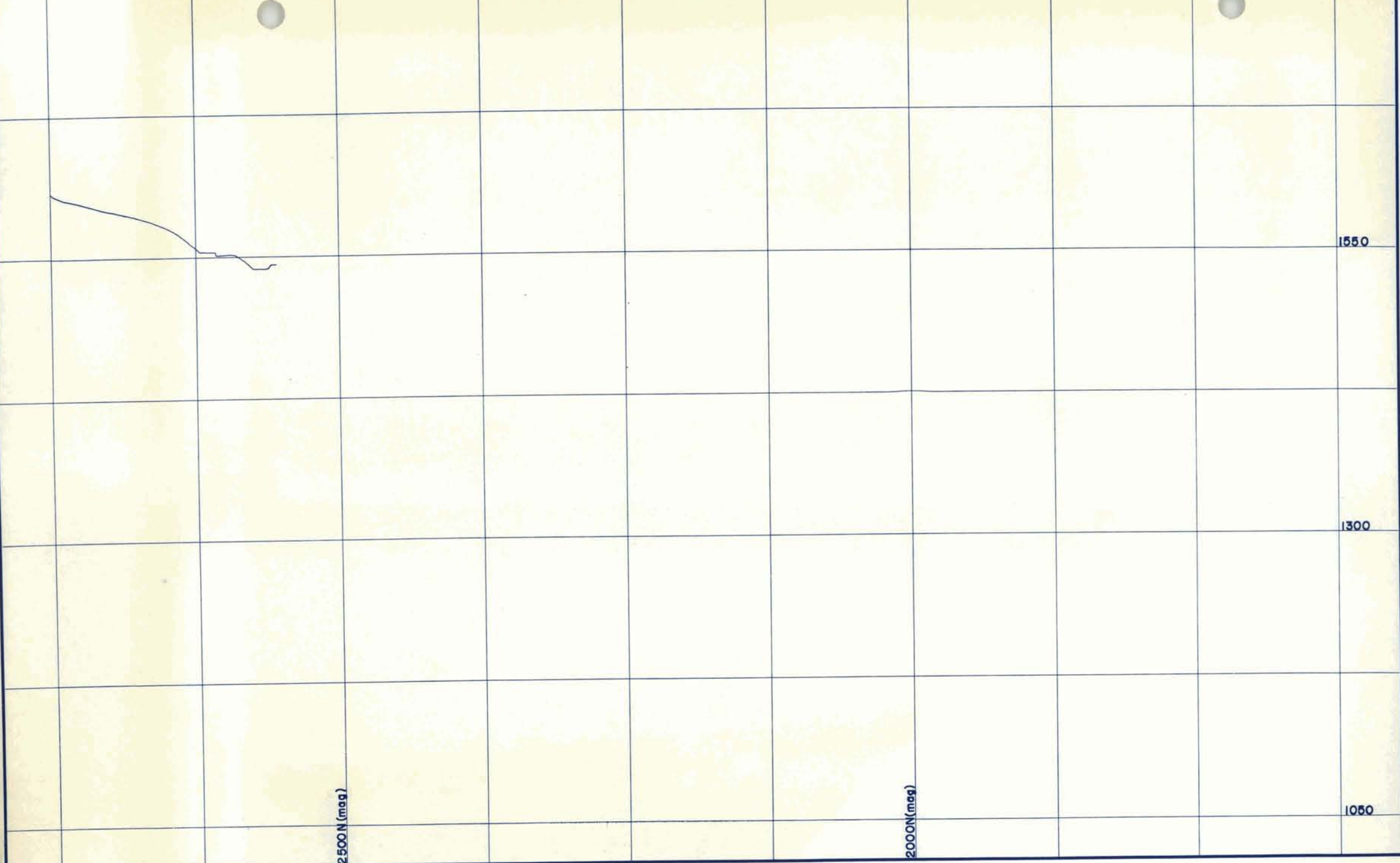


SCALE 1 INCH TO 100 FT.

COMPANY Q.M.I. LTD.
 PROPERTY WEDEENE
 LOCATION KITIMAT, B.C.

WORKING PLACE 'B' & 'A' ZONES
 TYPE OF MAP SECTION—LONGITUDINAL

DATE 7/11/62
 DRAWN BY H.S.L.
 MAP NO. _____



SCALE 1 INCH TO 100 FT.

COMPANY	<u>Q.M.I. LTD.</u>	WORKING PLACE	<u>'A' ZONE</u>	DATE	<u>7/11/82</u>
PROPERTY	<u>WEDEENE</u>			DRAWN BY	<u>H.S.L.</u>
LOCATION	<u>KITIMAT, B.C.</u>	TYPE OF MAP	<u>SECTION—LONGITUDINAL</u>	MAP NO.	_____

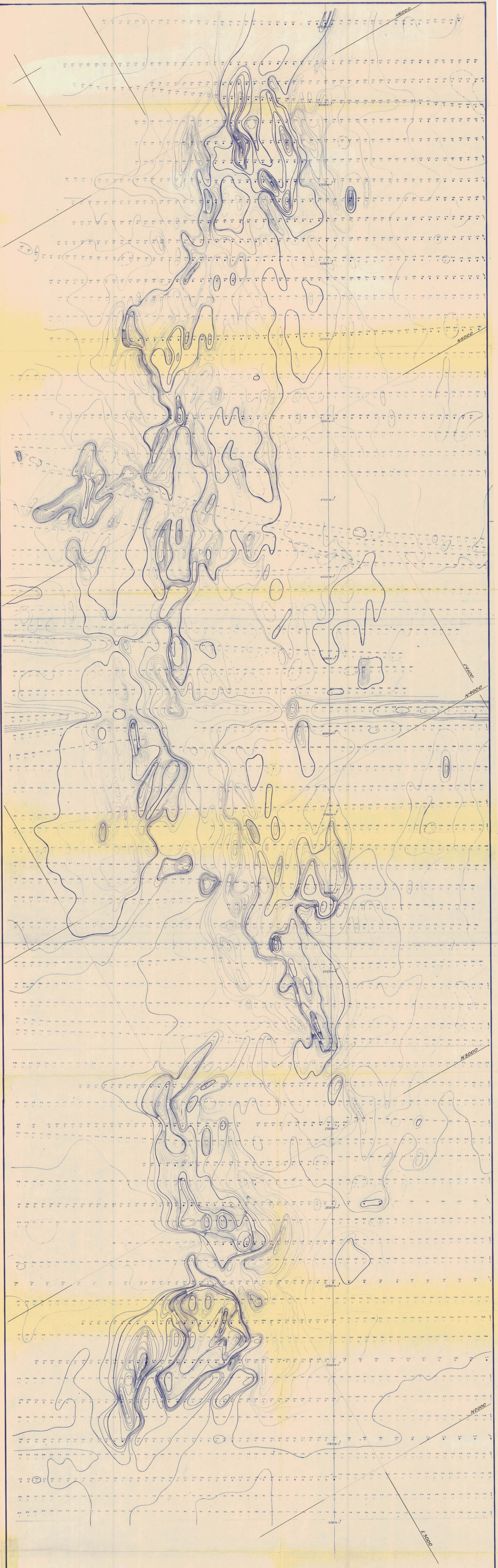
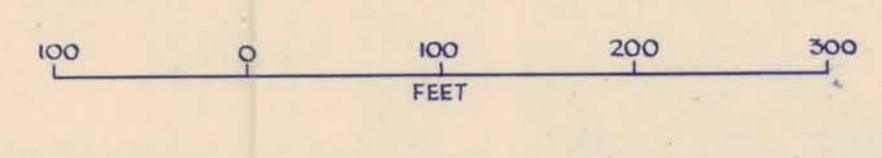


FIG. 9

QUEBEC METALLURGICAL INDUSTRIES LTD.
WEDEENE IRON
 MAGNETOMETER SURVEY

LEGEND

- | 572 Vertical Field in units of 100gammas
- Magnetic Contour Interval 1000 gammas
- - - Magnetic Depression Contour



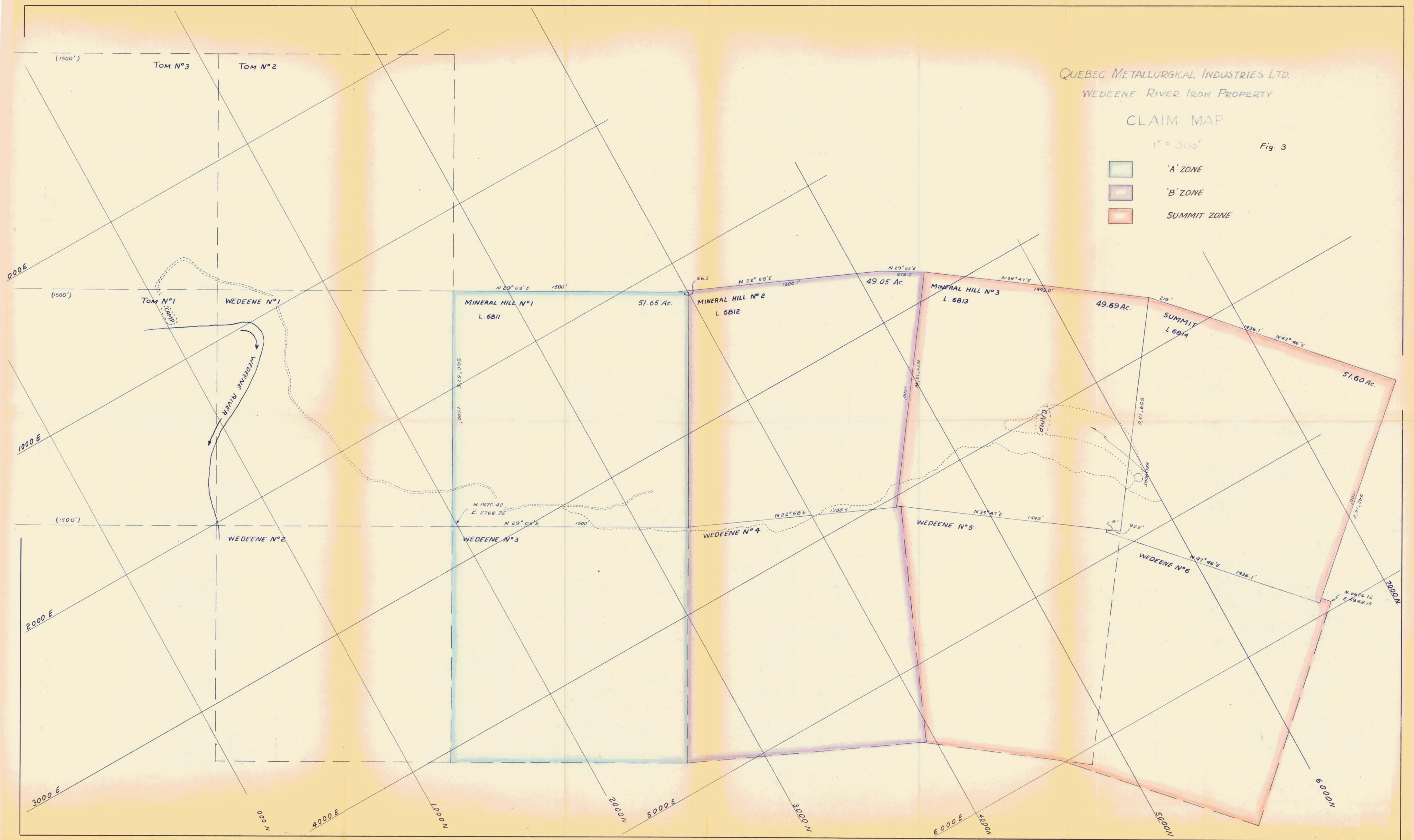
QUEBEC METALLURGICAL INDUSTRIES LTD.
WEDEENE RIVER IRON PROPERTY

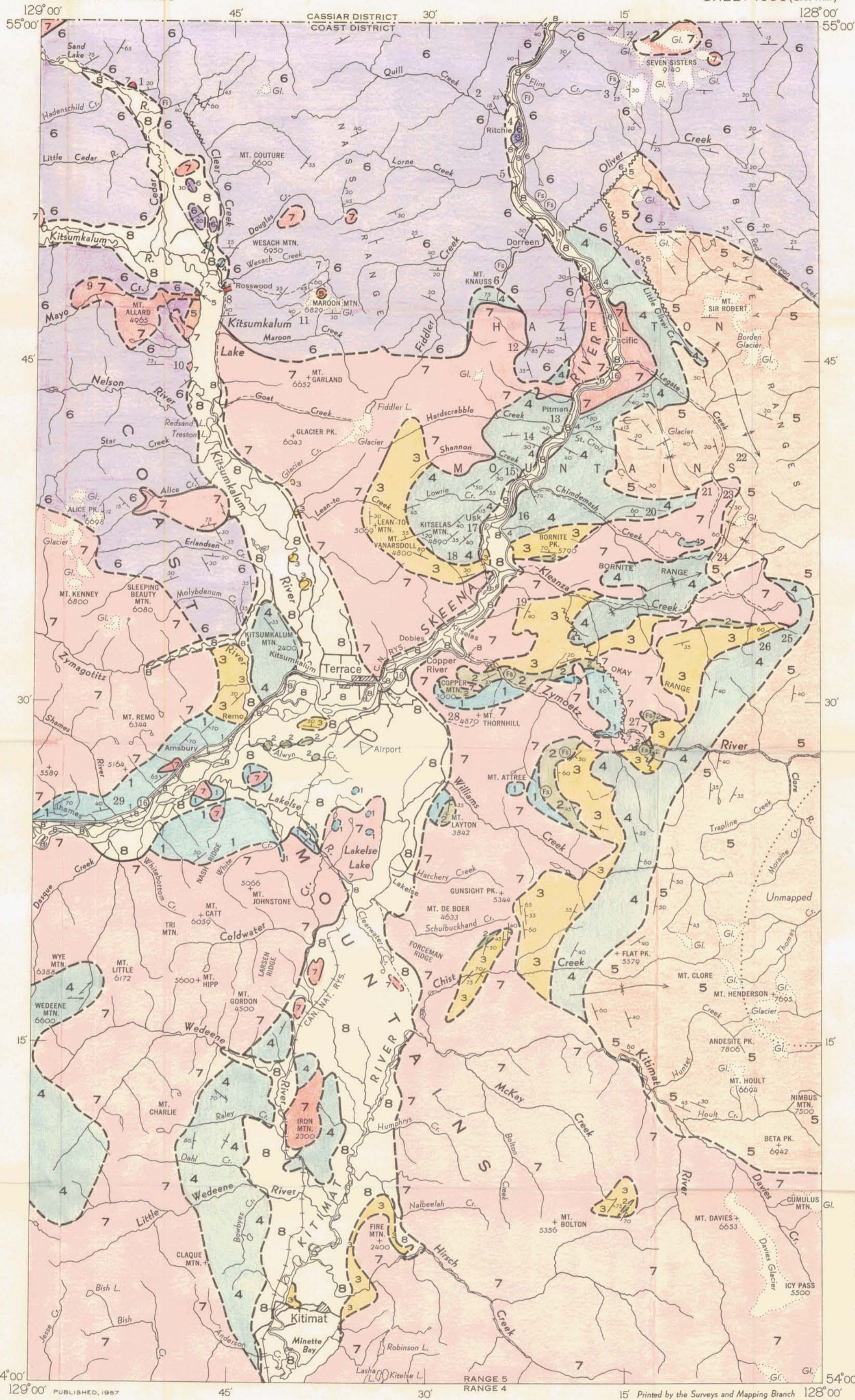
CLAIM MAP

1" = 300'

Fig. 3

- 'A' ZONE
- 'B' ZONE
- SUMMIT ZONE





DESCRIPTIVE NOTES

The map-area is occupied by ranges of Coast and Hazelton Mountains. Relief averages 5,000 to 6,000 feet but reaches 8,600 feet in the Seven Sisters range. Dense coastal vegetation clothes the valley bottoms and lower mountain slopes but thins out near timber-line at about 5,000 feet elevation.

The sedimentary and volcanic rocks in the east and northeast comprise 15,000 to 20,000 feet of strata ranging in age from late Palaeozoic possibly into early Cretaceous. The granitic and dioritic rocks in the west and southwest intrude the bedded rocks.

Palaeozoic rocks, approximately 2,000 feet thick, occur as small pendants in the granitic rocks or as narrow lenses along the flanks of eastward extending tongues of Coast Intrusions. A lower series (1) is overlain by a crystalline limestone (2) containing fossils of Permian age.

At least 1,000 feet of limestone boulder conglomerate, greywacke, and chert (3), believed to be of Triassic age, rests unconformably above 2 without marked angular discordance.

Volcanic and minor sedimentary rocks, referable to Middle Jurassic strata of the Hazelton group, follow 3 in conformable succession. These comprise a lower division (4), about 3,000 feet thick, of coarse andesitic breccia, green andesite, and intercalated greywacke and argillite that, along Skeena River north of Usk, contains schistose and hornfelsic facies and an upper division (5) that includes 4,000 feet of red, green, and purple porphyritic and amygdaloidal andesitic flows with minor basalt, rhyolite, and dacite. The upper division is lithologically similar to the volcanic rocks lying conformably above the Middle Jurassic (Bajocian) sedimentary strata in Whitesail Lake map-area (Geol. Surv., Canada, Paper 52-21).

Lying above these volcanic rocks (4 and 5) with marked angular discordance is a series of marine and continental sedimentary rocks (6) of Upper Jurassic age that may include some Lower Cretaceous strata. The lower beds of the sequence are marine argillites and water lain tuffs that contain ammonites, pelecypods, brachiopods, and belemnites belonging to the Oxfordian stage of the Upper Jurassic epoch. These beds grade upward through greywacke and argillite into conglomerate. Poorly preserved plant remains, some of which may be of Lower Cretaceous age, occur in the finer beds. A 3,000-foot section of part of these rocks near Oliver Creek, has eight separate conglomerate beds containing boulders, cobbles, and pebbles of the earlier red and green flows, some granitic rocks, greywacke, and argillite. On Maroon Mountain one of the conglomerate beds is 250 feet thick, but most such beds are much thinner. Development of the conglomerate-greywacke facies apparently conformable with the underlying marine beds indicates some minor movement during this period. Total thickness of unit 6 is probably 6,000 feet.

Granitic and dioritic rocks of the Coast Intrusions (7) cut all the above volcanic and sedimentary rocks. The main contact trends northwest in an extremely irregular manner, with apophyses extending eastward and north-eastward from 5 to 15 miles. Each of these apophyses forms the core of a breached anticline with the oldest sedimentary and volcanic rocks appearing along the flanks of the intrusion. Metamorphism of the older rocks is confined to a narrow zone adjacent to the contact. Alteration is most intense against the main body of the intrusions where quartz-biotite schist and hornblende-quartz-plagioclase gneiss have been developed.

The batholithic rocks range in composition from gabbro to granite, diorite and granodiorite being most abundant.

Pyroxene-quartz diorite occurs in one of the eastward extending apophyses that is concentrically zoned with respect to its contacts. A border phase of pyroxene-quartz diorite grades inward through granodiorite and quartz monzonite to a central granophytic phase. Locally the central phase forms intrusive and replacement dykes that cut the outer phases and extend into the country rock.

The central parts of the main batholithic mass consist of biotite granodiorite-quartz monzonite, which may not all be of the same age. The main contact trends there is a zone of complex mixed rocks in which hornblende is the dominant mafic mineral. Biotite granodiorite of the central part of the batholith is gradational with hornblende granodiorite and, nearer the contact, hornblende pseudo-diorite is gradational with country rock. Intermediate between these two phases is a zone of migmatite. Transition between the different phases is commonly gradational but locally pseudo-diorite and migmatite are in sharp intrusive contact with relatively unmetamorphosed wall-rock.

Dykes are abundant in the area and cut both bedded and plutonic rocks. Dykes ranging in composition from granite to diorite occur in swarms around the larger intrusive bodies. Lamprophyre dykes occur in aureoles and are predominantly hornblende and biotite-hornblende lamprophyre. Aplite dykes occur with the lamprophyre swarms or near the margins of the main batholith. They are predominantly granite aplite or albite granite aplite. Basalt dykes also occur with the lamprophyre swarms and are augite basalt and hornblende basalt. Commonly dykes have exercised structural control on the localization of mineral deposits.

Mineral deposits of the area consist mainly of gold, silver, copper, lead, zinc, tungsten, and minor molybdenum in quartz veins in the bedded rocks or nearby granitic rocks. The veins have been emplaced in fissures, shear zones, and along the walls of dykes. Some are important for one mineral only but others contain significant amounts of several minerals.

Gold is the main metal at the Omineca Gold Quartz, Columario, and Globe properties. At the Bell-Grotto, gold and silver occur as tellurides associated with copper. Other veins on the property contain mainly galena and sphalerite. On Kitselas Mountain and in the vicinity of Usk gold is associated with chalcocite and bornite. Veins and small replacements of bornite, chalcocite, and chalcopyrite occur on Bornite Range. Galena and sphalerite are the main minerals on the Silver Plate and Windfall claims and on several properties at the head of Legate and Chindemash Creeks. The Bear vein on Maroon Mountain contains gold associated with galena, sphalerite, and pyrrhotite. Deposits of massive pyrrhotite with minor chalcopyrite and sphalerite occur on the Seven Sisters. Scheelite is present in quartz veins in the granitic mass extending from Mount Knauss to Shannon Creek and in the veins on the Omineca Gold Quartz property. Molybdenite is present in some of the veins on the property of Nicholson Creek Mining Corporation near Usk and in a pegmatitic phase of the granitic rocks on Mount Thornhill.

Douglas, Lorne, Fiddler, Chindemash, and Kleanza Creeks have yielded placer gold in the past, the first two being the most important.

Some of the Palaeozoic limestone beds are sufficiently pure for utilization and A. E. Barr of Prince Rupert has opened a quarry on one such deposit near Shames. Production of 50 tons per day is shipped to the Columbia Cellulose plant at Prince Rupert.

Pleistocene and Recent outwash and stream deposits, 500 feet thick, cover the Kitimat-Kitsumkalum Valley. A series of terraces have been cut in these deposits by the Skeena River at Terrace. South of Terrace the broad, flat surface of these deposits is used for the airport, and at Kitimat they underlie the area of the townsite. A thin layer of soil at the top of these deposits is used to some extent for cultivation. Below this soil layer excellent deposits of sand and gravel are available for railroad ballast, road metal, and construction purposes. At Kitimat a hill of well sorted and stratified stream sands and gravels, has proved an excellent source for road and construction fill and material for concrete. Some of the clay beds in these deposits may be suitable for brick manufacture.

A deposit of marl containing 95 per cent calcium carbonate occurs near Ritchie flag station north of Pacific.

- LEGEND
- CENOZOIC
QUATERNARY
PLEISTOCENE AND RECENT
8 Sand, gravel, clay, alluvium
- CRETACEOUS (?) OR LATER
UPPER CRETACEOUS (?) OR LATER
COAST INTRUSIONS
7 Granodiorite, quartz diorite, diorite, quartz monzonite, granite, gabbro
- JURASSIC AND (?) CRETACEOUS
UPPER JURASSIC AND (?) LOWER CRETACEOUS
6 Greywacke, conglomerate, argillite, tuff
- JURASSIC
MIDDLE JURASSIC
5 Andesite, basalt, rhyolite, dacite
- 4 Andesite, breccia, tuff, greywacke, argillite
- TRIASSIC (?)
3 Limestone boulder conglomerate, greywacke, banded volcanic sandstone, chert
- CARBONIFEROUS (?) AND PERMIAN
2 White crystalline limestone
- 1 Greenstone, shale, argillaceous limestone, limestone

- Geological boundary (defined, approximate)
- Bedding (inclined, vertical)
- Schistosity (inclined, dip unknown)
- Fault (defined, approximate)
- Anticlinal axis (defined, approximate)
- Synclinal axis (defined, approximate)
- Glacial striae
- Fossil locality (leaves, shells)
- Mineral property

INDEX TO MINING PROPERTIES AND MINERAL OCCURRENCES

- Silver Cup and Silver Plate group... Silver, lead, zinc, copper
- Windfall group... Silver, lead, zinc
- Seven Sisters group... Silver, lead, zinc
- Buccaneer of the North claim... Marl (CaCO₃)
- Dry Hill Placer group... Gold
- Dorreen Gold Mine... Gold, silver, lead, zinc
- Bear claim... Gold, silver, lead, zinc
- Belway and Rex claims... Silver, gold
- Martin group... Gold, silver, arsenic
- Portland claims... Gold, silver
- Motherlode claim... Gold, silver, copper, zinc
- Gold Dome group... Tungsten, lead, zinc
- Bell-Grotto group... Gold, silver, copper, lead
- A-B group... Gold, silver, lead
- Nicholson Creek Mining Corp... Copper, gold, silver
- Emma group... Copper, silver
- Lucky Luke Mine... Copper, silver, gold
- Nugget group... Copper, gold, silver
- Columario Mine... Gold, silver
- Galena group... Copper, gold, silver
- Zona May group... Gold, silver, lead, zinc, copper
- Frisco group... Silver, copper
- M and M claims... Silver, lead, copper
- Silver Crown group... Silver, copper, gold
- Wells group... Copper
- Peerless group... Copper
- Omineca Gold Quartz Mine... Gold
- Globe Claim... Gold, silver, copper
- A. E. Barr property... Limestone

Note: Many properties in the area have been inactive for at least 20 years. Trails are overgrown and workings caved. The above is a partial list. For a full description of the properties of the area see G. S. C. Memoirs 205 and 212.

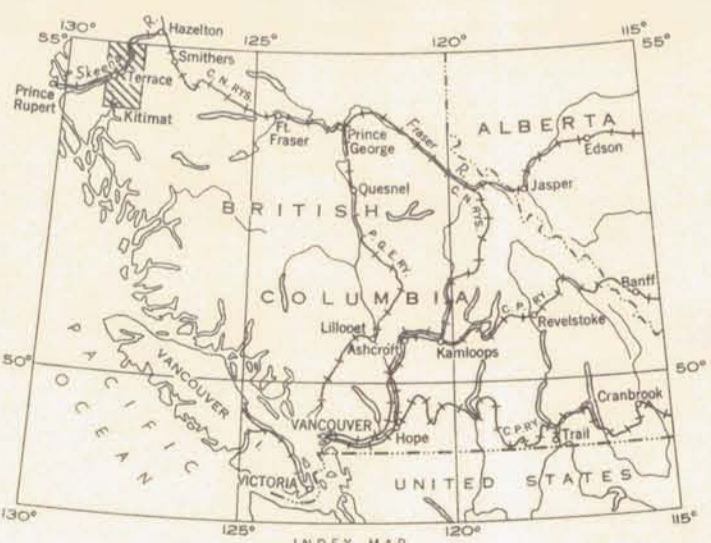
Geology by S. Duffell, 1953-1955, and J. G. Souther, 1953, 1954

- Main highway
- Other roads
- Trail
- District boundary
- Height in feet above mean sea-level

Approximate magnetic declination, 27° 51' East

Cartography by the Geological Cartography Unit, 1957

Air photographs covering this map-area may be obtained through the National Air Photographic Library Topographical Survey, Ottawa, Ontario



MAP 11-1956

TERRACE

COAST DISTRICT

BRITISH COLUMBIA

Scale: One Inch to Four Miles = 1/253,440 Miles

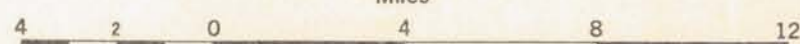
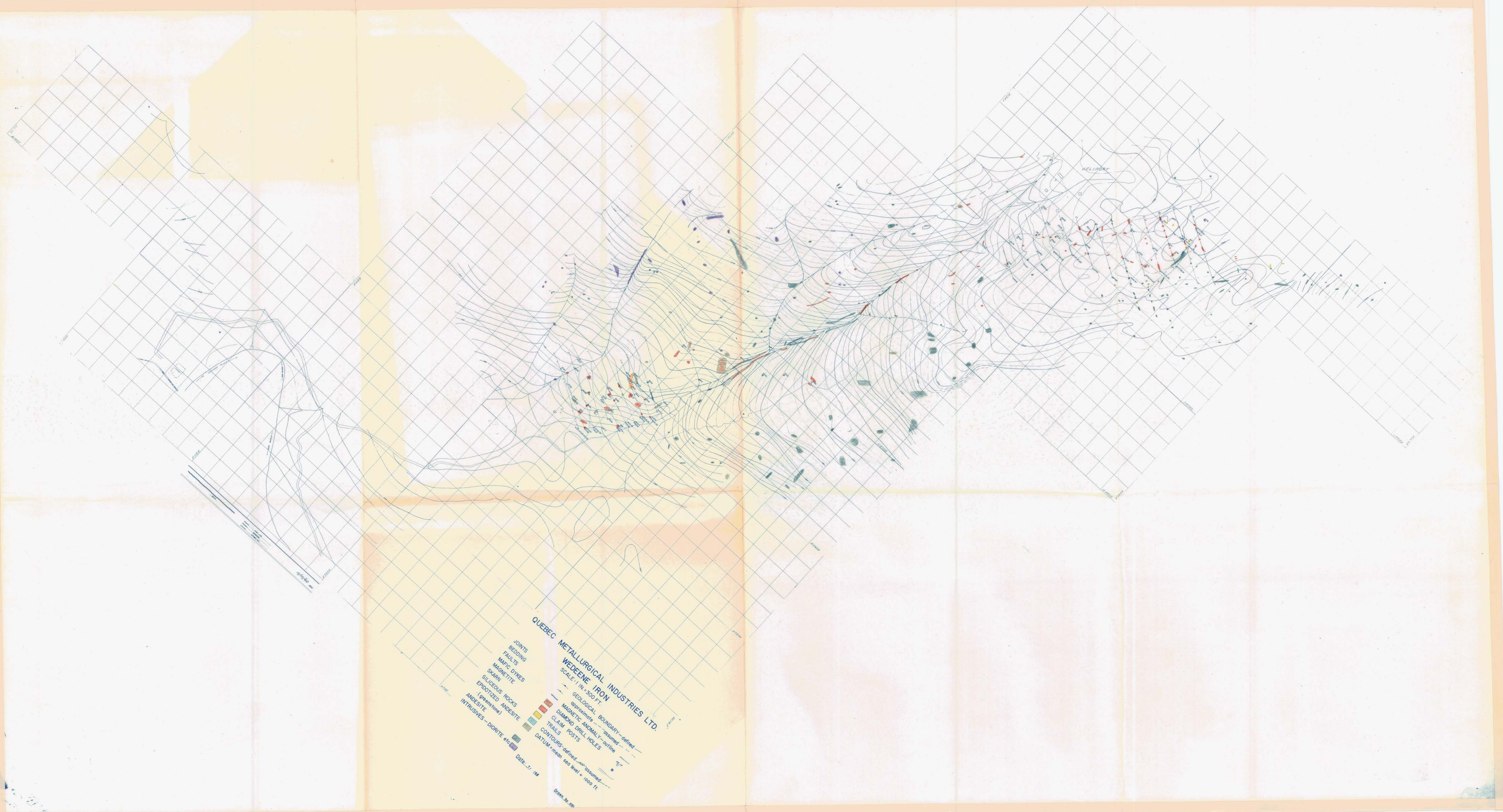


Fig. 5

MAP 11-1956
TERRACE
BRITISH COLUMBIA
SHEET 103 I (East Half)

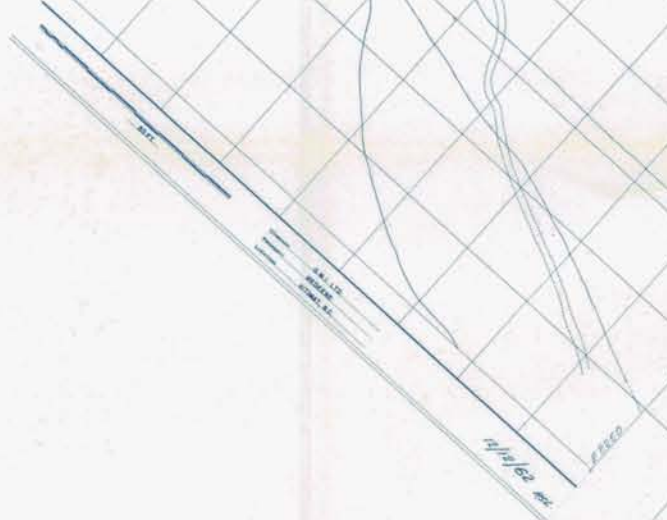


QUEBEC METALLURGICAL INDUSTRIES LTD.
WEEDENE IRON

- JOINTS
- BEDDING
- FAULTS
- MAFIC DYKES
- MAGNETITE
- SKARN
- SILICEOUS ROCKS
- EPIDOTIZED ANDESITE (greenstone)
- ANDESITE
- INTRUSIVES-DIORITE, etc.

- GEOLOGICAL BOUNDARY—defined
- approximate—assumed
- MAGNETIC ANOMALY—outline
- DIAMOND DRILL HOLES
- CLAIM POSTS
- TRAILS
- CONTOURS—defined
- DATUM—mean sea level + 1000 ft.

SCALE 1 IN = 300 FT.



HELIDORE