

000

65-404

235001

3/209/0

REPORT MP362-66

August, 1965

EL 5/63

MICROFILMED

RAZORBACK TIN MINE CORES

THE AUSTRALIAN MINERAL DEVELOPMENT LABORATORIES

Adelaide

South Australia

THE AUSTRALIAN MINERAL DEVELOPMENT LABORATORIES

CONYNGHAM STREET · PARKSIDE · SOUTH AUSTRALIA
TELEPHONE 791662 · TELEGRAMS 'AMDEL' ADELAIDE

Please quote this reference in your reply:

MP 3/209/0

31st August, 1965

Your reference:

Mr. G.I. Wilson,
Placer Prospecting Pty. Limited,
GPO Box 4315,
SYDNEY, N.S.W.REPORT MP362-66

YOUR REFERENCE: Letters dated 3/8/65 and 5/8/65

MATERIAL: Drill Cores (13)

LOCALITY: Razorback tin Mine, Dundas, Tas.

IDENTIFICATION: As under

DATE RECEIVED: 10/8/65

WORK REQUIRED: Mineragraphy, petrography

Investigation and Report by: H.W. Fander

Officer in Charge, Mineralogy Section: H.W. Fander

H.W. Fander
P. Dixon
Acting Director.

RAZORBACK TIN MINE CORES

ZEEHAN DRILL CORES

All samples were examined by means of thin-section and polished section in order to identify opaque and non-opaque constituents.

PETROLOGY AND MINERAGRAPHY

R6-100: TS16361: PS8886, Plate 7

This is a massive serpentinite with typical network structure, and consisting of antigorite, chrysotile and opaque minerals. Slight shearing has destroyed any relict structures which might have indicated the original mineral constituents, and none of these minerals remain in unaltered form. In other words, the process of serpentinisation has been complete.

The opaque minerals consist of crystals of magnetite, often with cores of chromite.

R6-381: TS16362: PS8887, Plate 7

This is a serpentinite, consisting principally of antigorite with only minor chrysotile. Opaque minerals are rare. Irregular veins of dolomite (earlier) and of calcite (later) traverse the rock.

The opaque minerals consist of fractured grains of chromite with magnetite rims, a few minute flakes of molybdenite, and sporadic, irregular small grains of probable heazlewoodite.

R6-396: TS16363: PS8888, Plate 7

This is a sheared serpentinite containing abundant coarse-grained dolomite; in fact the dolomite constitutes the major part of the rock; the remainder being strongly contorted antigorite.

In polished section, opaque minerals are scarce and difficult to identify. Primary minerals consist of magnetite and chromiferous magnetite grading into cores of chromite. Secondary minerals consist of nickel-arsenic-sulphur compounds with minor cobalt and antimony. One of these, identified with reasonable confidence, is an intermediate member between niccolite (NiAs) and breithauptite (NiSb); others may be maucherite (Ni₁₁As₈), heazlewoodite (Ni₃S₂) or rammelsbergite (Ni,Co,Fe)As₂.

The presence of these minerals in such minor amount, as such small grains, makes precise identification difficult. Some spot analyses were made using the electron-probe microanalyser, and more detailed work of this kind can be done if requested, for more precise identification.

R6-403 $\frac{1}{2}$: TS16364: PS8889 Plate 7.

The rock predominantly of coarsely- to finely-crystalline dolomite, with small lenses of sericitic material and occasional patches of opagues.

The opaque minerals consist of magnetite crystals, some with chromite cores.

R6-421: TS16365: PS8890 Plate 7.

This is very similar to the previous rock. It consists entirely of dolomite, coarsely to fine-crystalline and showing stress-extinction, and of opagues. These are often interstitial to the dolomite crystals, occurring as films and veinlets. One vein is visible which contains antigoritic or similar material.

In polished section, only magnetite was detected.

R8-32: TS16366: PS8891 Plate 2.

This rock is an argillaceous siltstone, containing abundant carbonaceous matter and small flakes of sericite-muscovite. The opaque minerals consist of very fine-grained globular or spheroidal pyrite, possibly of organic origin (i.e. syngenetic).

R8-99: TS16367: PS8892 Plate 2.

This specimen, though very small, was thin-sectioned. The constituent minerals are opagues, sphalerite, quartz, chalcedony, and sericite. The polished section shows only pyrite; however, the pyrite is faintly anisotropic, possibly due to the presence of other elements (Ni, Co, etc). A check for this could be made if requested, using the electron probe microanalyser.

R8-112: TS16368: PS8893 Plate 2.

This core consists almost entirely of aggregates of talc, with patches of mosaic quartz. A few crystals of sphalerite occur within the talc. These measure up to 0.6 mm across.

R11-575: TS16369: PS8894 Plate 10

This sample is of considerable significance as it contains very abundant cassiterite.

The specimen consists of a granular intergrowth of well-crystallized dolomite, patches of chlorite, massive opagues, and numerous idiomorphic crystals of cassiterite. These are very pale and translucent, with an average size of 0.25 mm, (though smaller and larger individuals occur), and generally as aggregates. The opagues are of later formation and enclose cassiterite crystals. In this particular specimen, cassiterite comprises some 30 to 40% of the section.

In polished section, the main sulphide mineral is pyrrhotite, as large irregular patches. Idiomorphic arsenopyrite is also conspicuous. The pyrrhotite is being marginally replaced by chalcopyrite and galena; these two minerals also occur interstitially. Incipient alteration of pyrrhotite to marcasite is observed.

The mineral association in this sample is characteristic of the tin mineralisation in the Mt. Bischoff and Renison districts.

R12-213: TS16370: PS8895 Plate 10

This original sample was a coarsely-crystalline dolomite rock with interstitial opagues. The dolomite has been extensively replaced by aggregates of sericite.

The opaque minerals consist of magnetite, sometimes with chromite cores, and of minute grains of a nickel sulphide, most probably heazlewoodite. The opagues are usually closely associated with one another.

R12-323: TS16371: PS8896 Plate 10

This rock consists of coarsely-crystalline dolomite, zoned vein-quartz, sphalerite and opagues. All constituents are coarse-grained. The sphalerite occurs in patches with opagues, up to 0.6 mm across.

The opagues consist of coarse-grained patches of pyrrhotite (with incipient alteration to marcasite), containing inclusions of sphalerite, small inclusions of galena, and pyrite. The sphalerite itself contains minute inclusions of pyrrhotite.

R12-372: TS16372: PS8897 Plate 10

This core consists entirely of coarsely-crystalline dolomite and opagues.

The opaque minerals consist of coarse-grained pyrrhotite, partly altered to marcasite; galena, intimately intergrown with acicular boulangerite, and minor chalcopyrite replace the pyrrhotite. Sphalerite, containing exsolution blebs of chalcopyrite and tetrahedrite, occurs interstitially. The tetrahedrite, apart from occurrence in sphalerite, is also seen as isolated patches in gangue, veined with galena and chalcopyrite.

Very occasional, minute inclusions of ?pentlandite and of miccolite-breithauptite are scattered through the pyrrhotite crystals.

R12-378: TSI6373: PS8898

Plate 10

This is an extensively dolomitised conglomerate. The original components were mainly siliceous, consisting of variously shaped fragments of quartz, chert and chalcedony. Other fragments consist of altered ?tuff, altered ?rhyolite, flakes of muscovite. Evidently the dolomitisation was preceded by formation of brush-like aggregates of sericite.

Minor sphalerite was introduced into the rock prior to its dolomitisation; it appears to have been fractured. Pyrite and galena occur sporadically, as occasional small grains.

GENERAL REMARKS

Very little useful information can be given about the serpentinite. The serpentinites in R6, at 100 ft, 381 ft and 396 ft, show no vestiges of their original components. There appears to be a trend for increasing dolomitisation downwards. The specimens at 381 ft and 396 ft are significantly mineralised.

Particular attention is directed to R11 (575 ft) which is very rich in cassiterite. (Assayed 0.025% Sn).

The R12 samples show minor to major mineralisation, particularly at 372 ft.

The oxides chromite and magnetite, where present, are most probably original minerals, whereas the sulphides are secondary, probably associated with the dolomitisation phase of the history of the rocks.

PLACER PROSPECTING PTY. LIMITEDRAZORBACK TIN MINETASMANIASurface Diamond Drill Holes

<u>DDH No.</u>	<u>Site Location</u>	<u>Depth</u>
R1	B. M. R. Grid 2100N, 500W	490 feet
R2	B. M. R. Grid 2100N, 500W	382 feet
R3	B. M. R. Grid 2500N, 325W	545 feet
R4	B. M. R. Grid 1850N, 210W	1490 feet
R5	B. M. R. Grid 1850N, 210W	607 feet
R6	B. M. R. Grid 1850N, 210W	835 feet
R7	B. M. R. Grid 1800N, 600W	497 feet
R8	B. M. R. Grid 200N, 640W	182 feet
R9	1990N, 490W	670 feet
R10	1810N, 405W	1066 feet
R11	2100N, 225W	596 feet
R12	2100N, 390W	382 feet
R13	2797N, 375W	501 feet
R14		
R15		
R16	395W, 1810N	612 feet

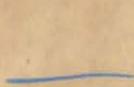
RAZORBACK

Plans and Sections

LEGEND



SERPENTINE



DOLOMITE



INTRAFORMATIONAL SHALE



GRITS



BLACK SHALE

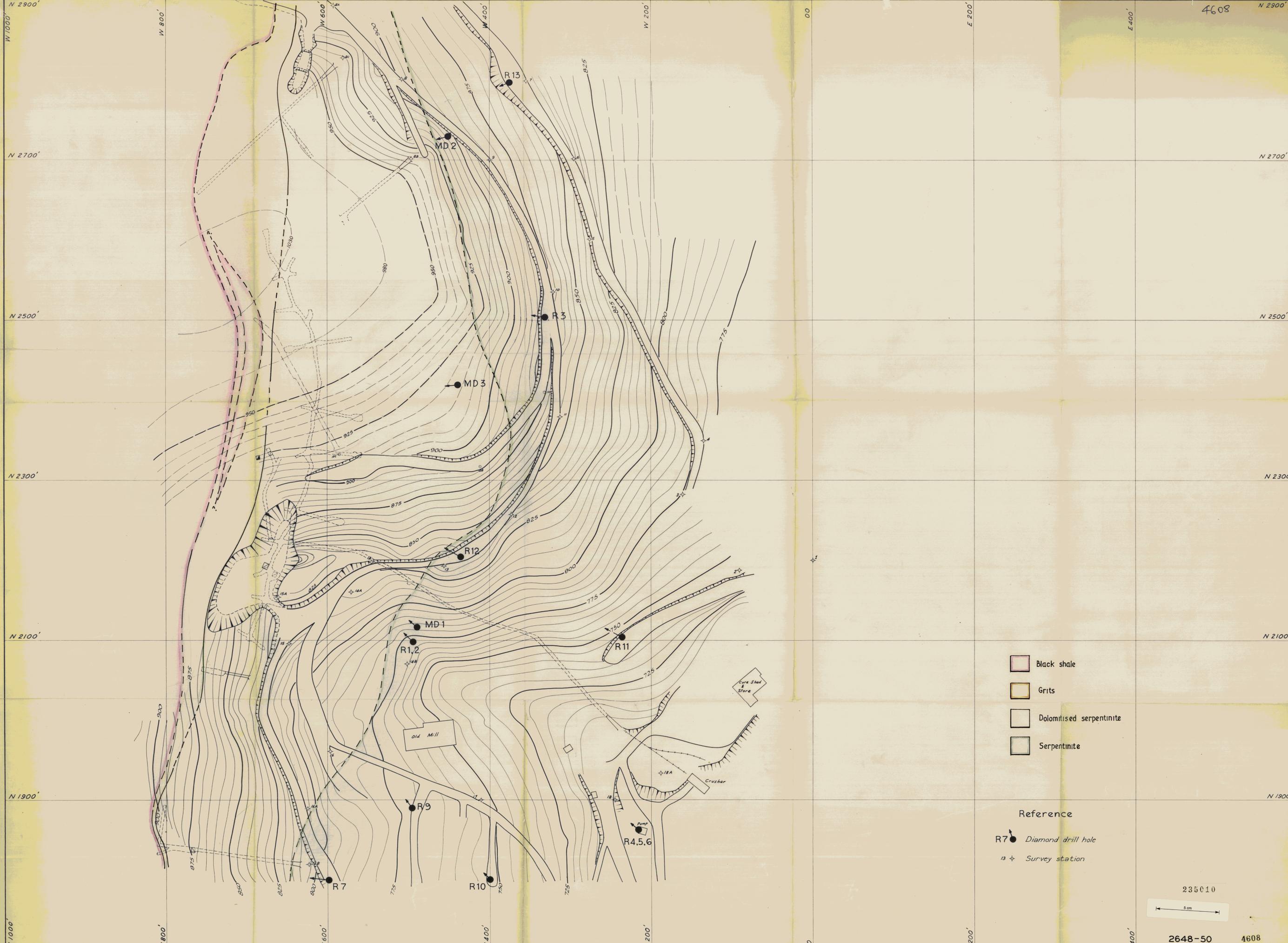
Handwritten notes in cursive script, possibly including 'Serpentine' and 'Dolomite'.

PLANS - RAZORBACK MINE, TASMANIA1. SURFACE PLANS

- ✓ 1A Surface Plan showing surface drill hole locations. 80' = 1"
- ✓ 1B General Geological Map. Razorback/Grand Prize Area. 200' = 1"

2. UNDERGROUND PLANS

- ✓ 2A Composite Level Plan 80' = 1"
- ✓ 2B 720' Level - Geological Plan 40' = 1"
- ✓ 2C 580' Level - Bulk Sample Assays 40' = 1"
- ✓ 2D 720' Level - Bulk Sample Assays 40' = 1"
- ✓ 2E 870' Level - Channel Sample Assays and Geology 40' = 1"
- ✓ 2F 930' Level - Channel Sample Assays and Geology 40' = 1"
- ✓ 2G 720' Level - Bulk Sample Assays (1 : 20 test) and chip samples 20' = 1"
- ✓ 2H 720' Level - Underground drill holes 40' = 1"
- ✓ 2I 720' Level - Percussion drilling 40' = 1"
- ✓ 2J 580' Level - Geological Plan 40' = 1"
- 7 Drill Holes R1, 2, 4, 5, 6 80' = 1"
- 000--



- Black shale
- Grits
- Dolomitised serpentinite
- Serpentinite

- Reference
- R7 Diamond drill hole
 - 13 Survey station



RAZORBACK MINE — SURFACE PLAN

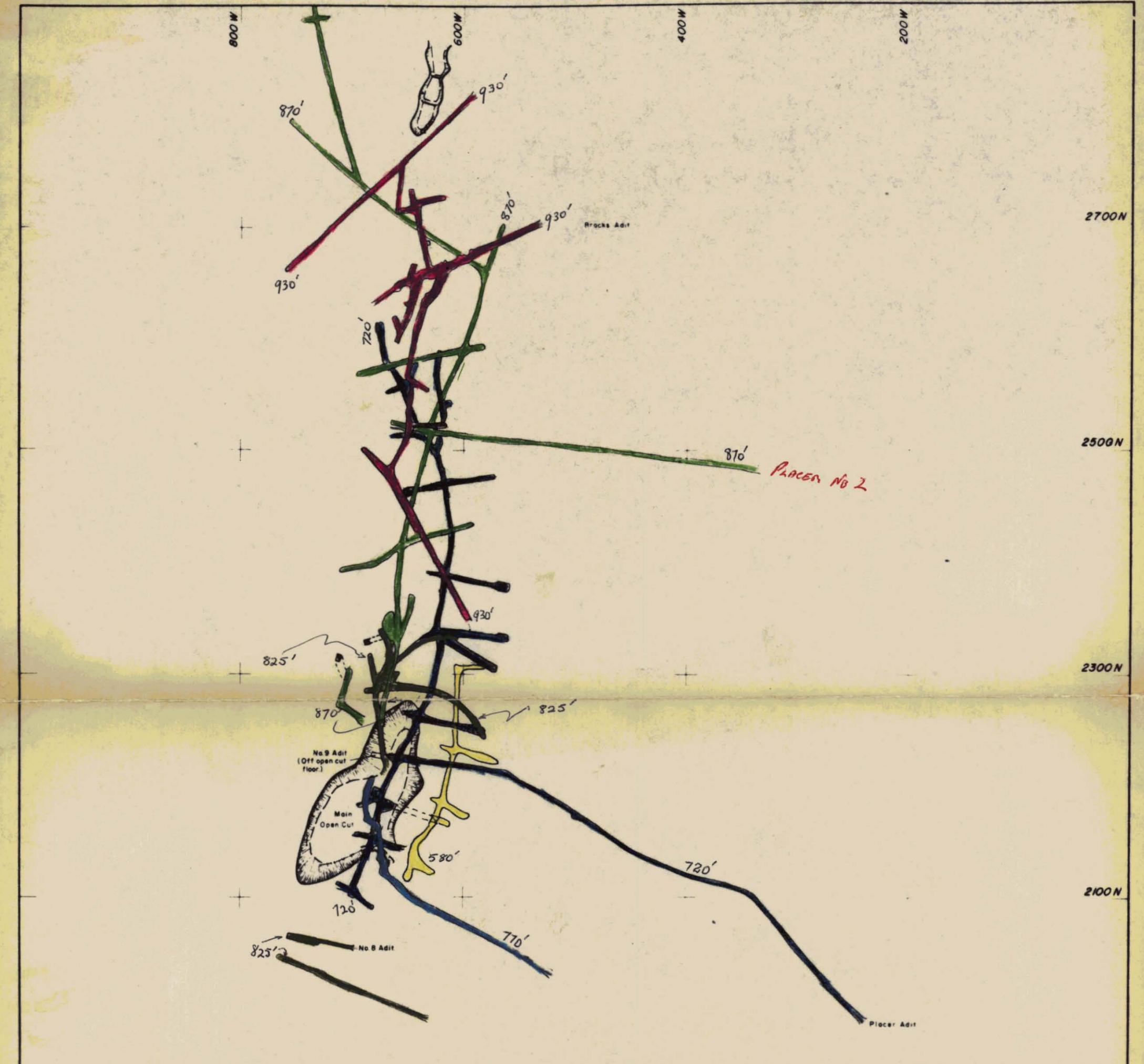
SHOWING SURFACE GEOLOGY & DIAMOND DRILL HOLE POSITIONS.

SURVEYOR: B.L.D.
 GEOLOGIST: G.I.WILSON
 DRAWN: B.L.D.
 DATE: Sept '65

PLACER PROSPECTING PTY. LTD.
 SCALE: 80' : 1" PLAN No. 1A

2648-50 4608

4608



235011

1900 N

RAZORBACK LEVELS			
—	930'	■	720
—	870	■	580
—	825		
—	770		

4609

ZA COMPOSITE LEVEL PLAN, RAZORBACK

Compiled by G WILSON	PLACER PROSPECTING PTY. LTD.
Drawn by Geodrafting Services (NSW) Pty. Ltd.	
Date: 7th October 1965	

SCALE 80' = 1" PLAN No. **2A**

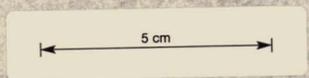
N2600

N2200

W800

W400

235012



4610

RAZORBACK MINE 720' LEVEL

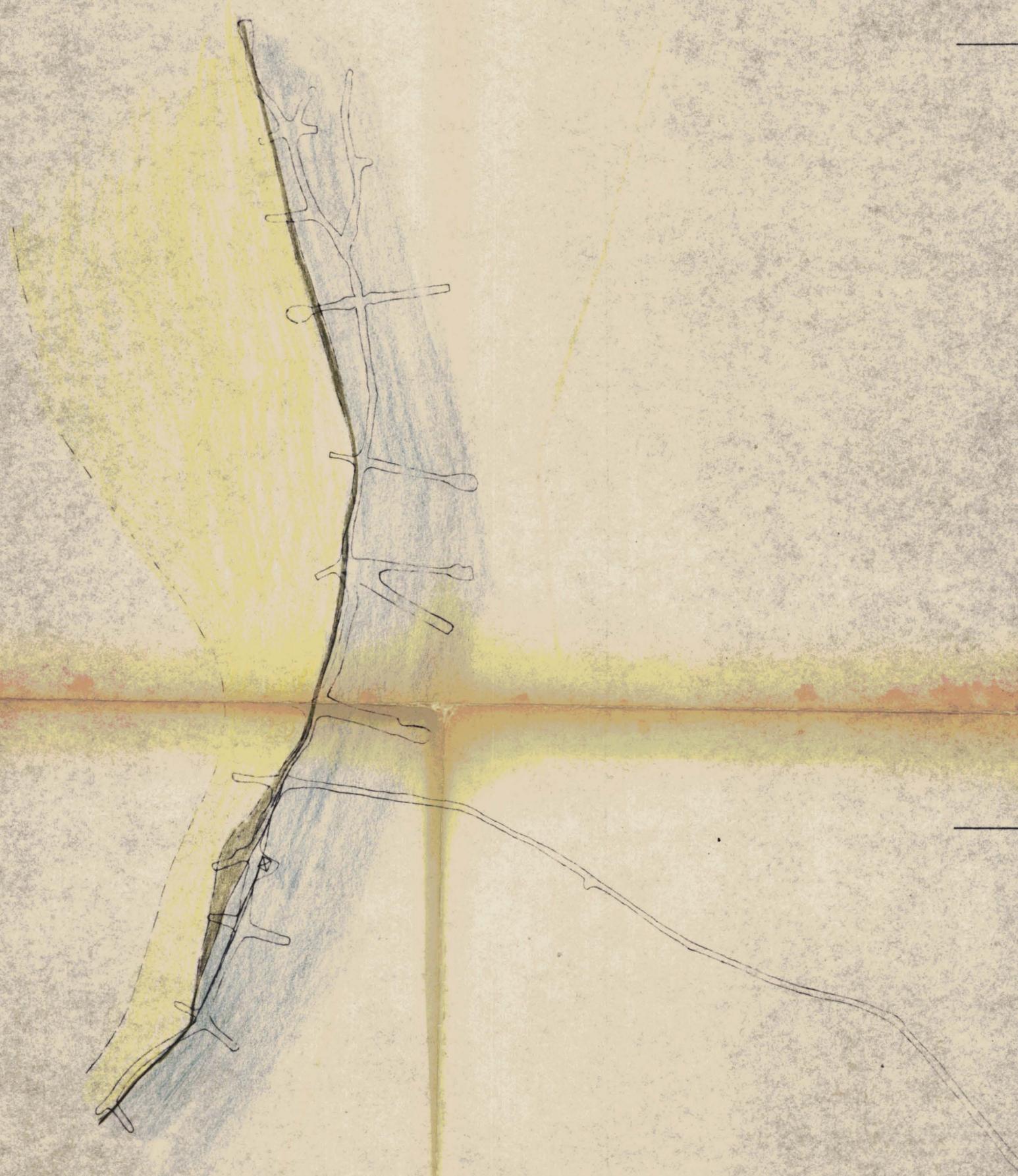
GEOLOGICAL PLAN

PLACER PROSPECTING PTY. LTD.

SCALE : 40' = 1"

Plan 2B

DATE 9/1/66
DRAWN BY RWL GW



N2200

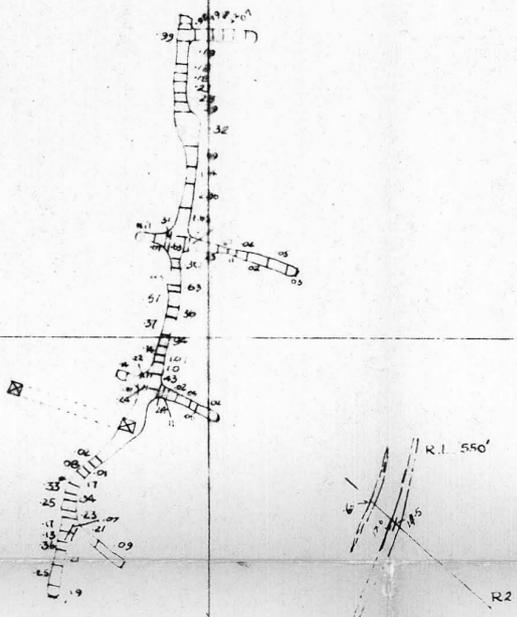
N2000

N1800

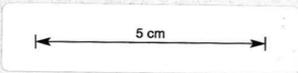
W800

W600

W400



235013



4611

RAZORBACK MINE 580' Level

Placer Prospecting Bulk Sample Assays

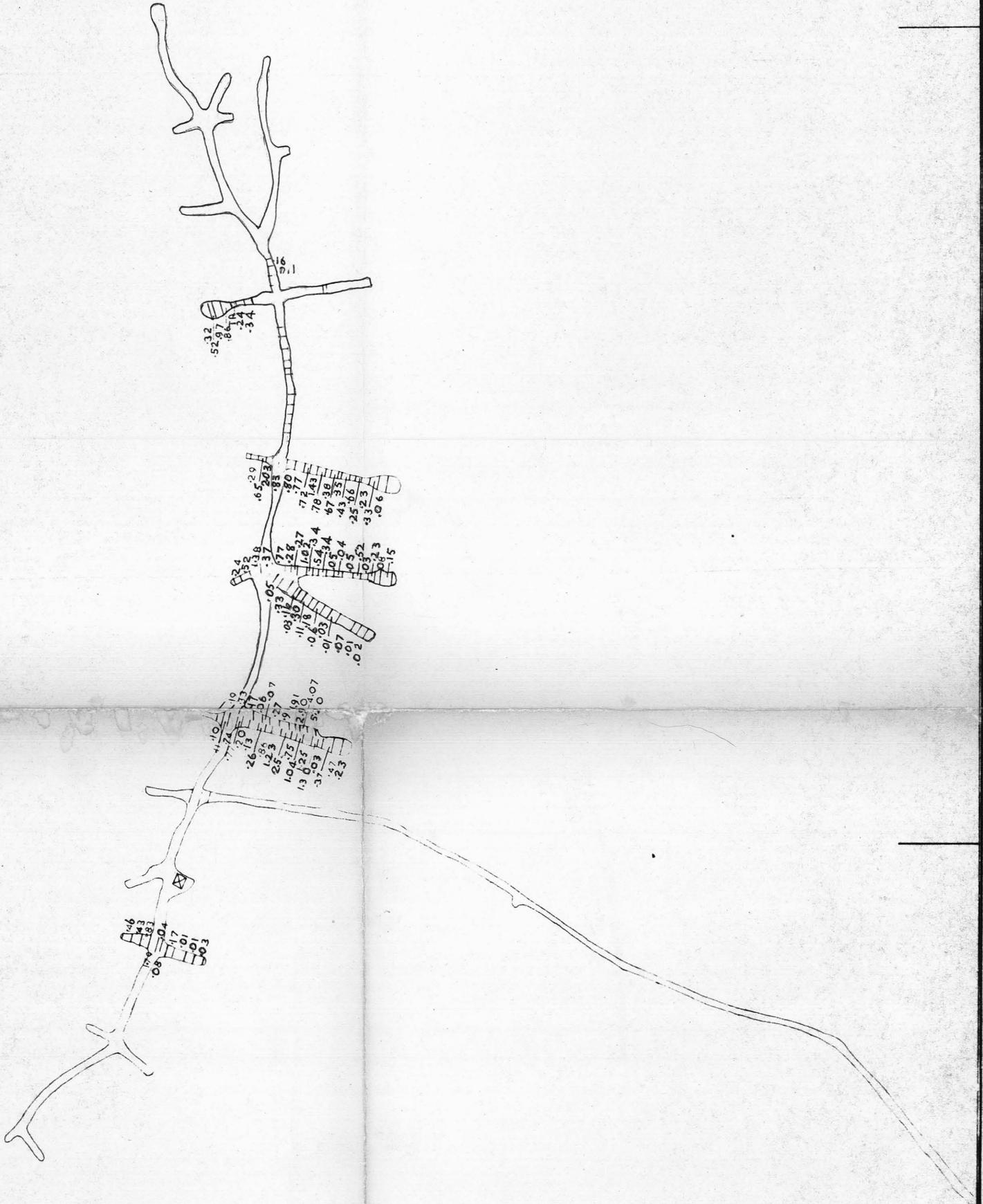
PLACER PROSPECTING PTY. LTD.

SCALE : 40' = 1"

Plan 2C

DRAWN *R. Lewis*
DATE 10.10.66

N2600

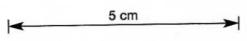


N2200

W800

W400

235014



4612

RAZORBACK MINE 720' LEVEL

ASSAY PLAN BULK SAMPLES

PLACER PROSPECTING PTY. LTD.

SCALE : 40' = 1"

Plan 2D

DRAWN: P. LEWIS
DATE: 9/11/66

N2900

N2700

N2500

N2300

N2100

W800

W600

W400

235015

5 cm

4613

PLACER PROSPECTING PTY. LTD.

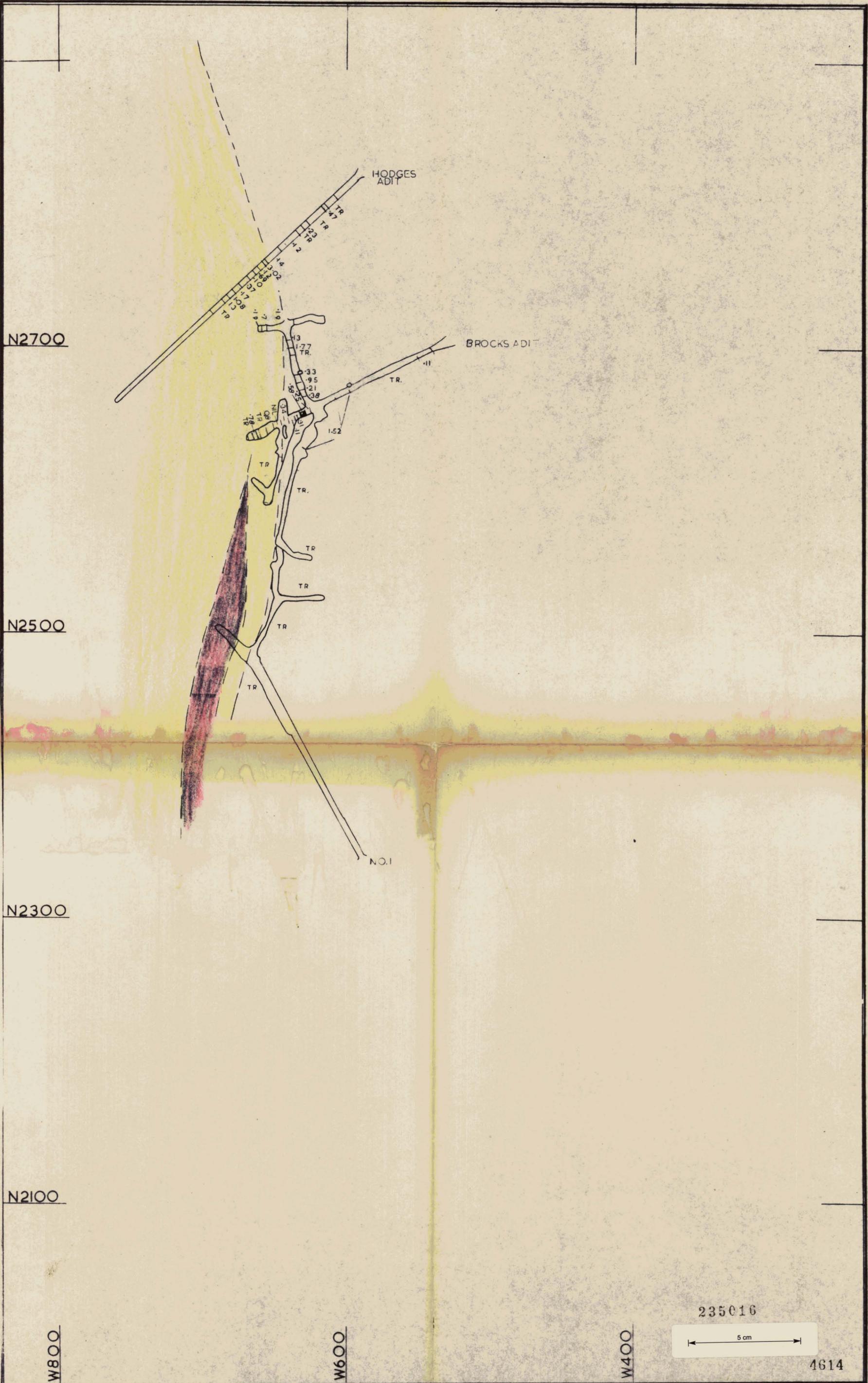
SCALE : 40' = 1"

Plan 2E

RAZORBACK MINE 870' LEVEL

DRAWN R. Lewis
DATE 9/11/66





N2700

N2500

N2300

N2100

W800

W600

W400

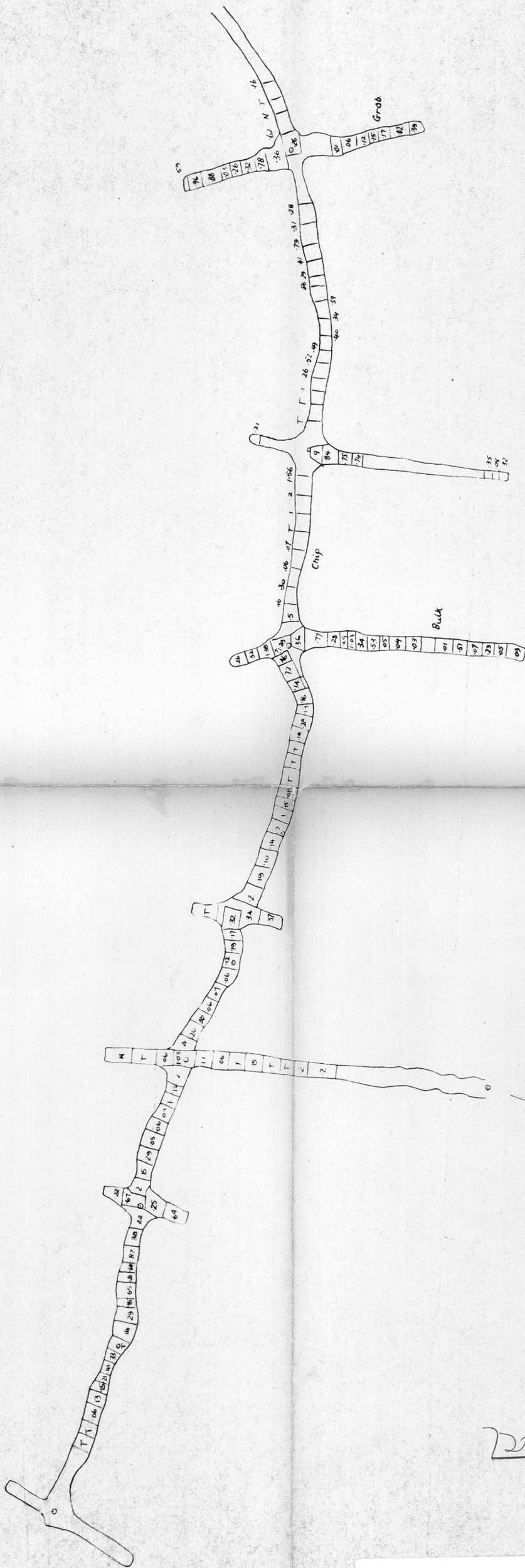
235016



4614

RAZORBACK MINE 930' LEVEL
GEOLOGY AND CHANNEL SAMPLES

PLACER PROSPECTING PTY. LTD.	
SCALE : 40' = 1"	Plan 2F
DRAWN <i>R. Lewis</i>	
DATE 9/11/66	



RAZORBACK

Assay Plan
Chip & Bulk Samples

PLACER PROSPECTING PTY. LTD.

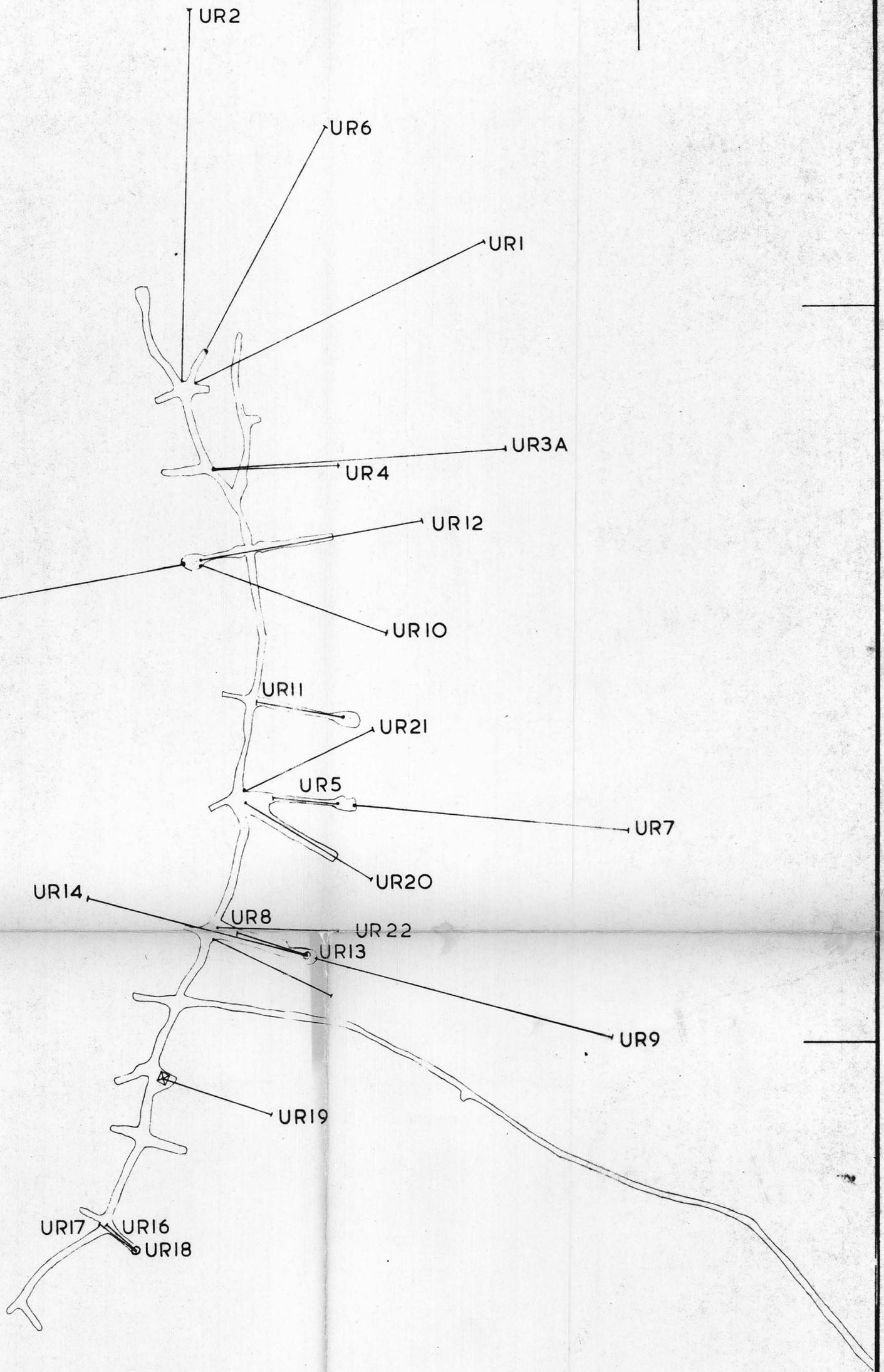
SCALE : 20' = 1"

Plan 2G

DRAWN January 1965 MOC
DATE

235017

1615

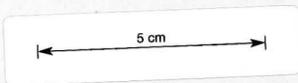


N2600

UR15

N2200

W800



W400

235018 4616

RAZORBACK MINE 720' LEVEL

UNDERGROUND DRILL HOLES

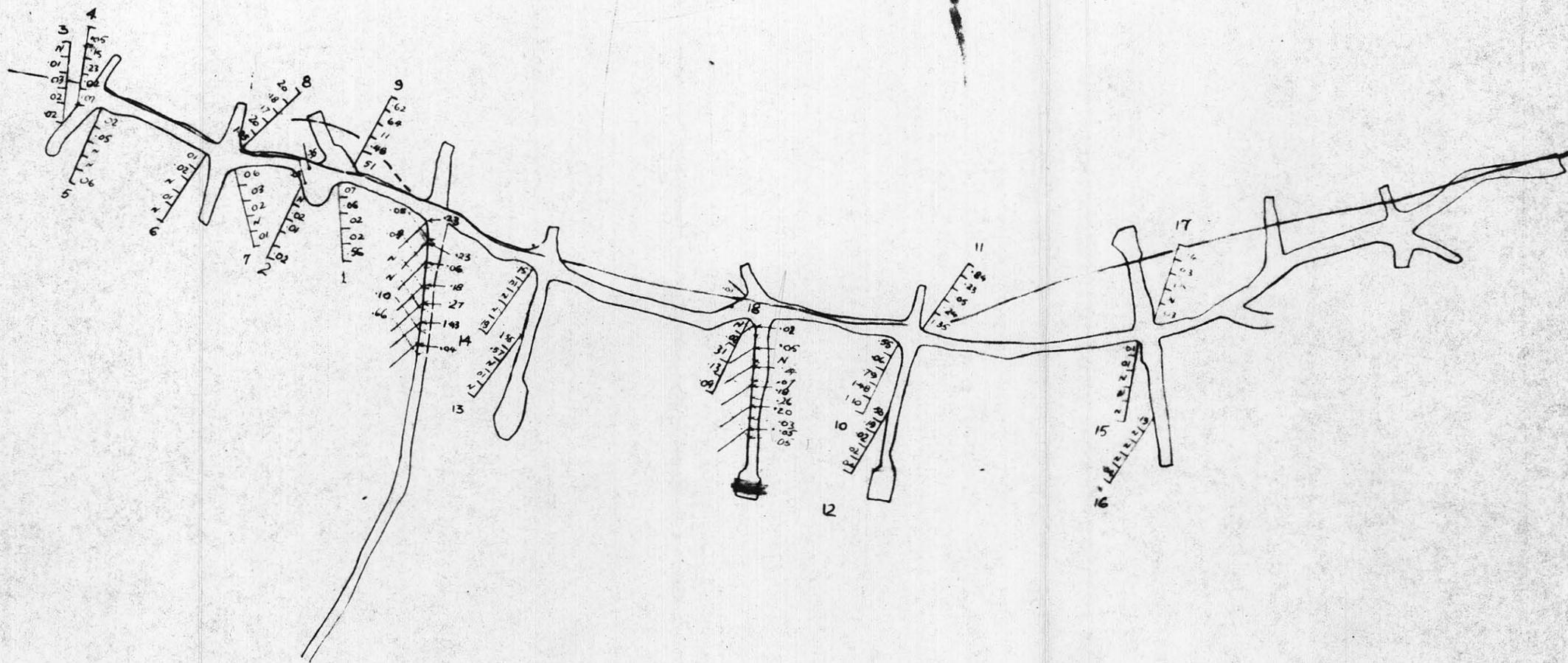
PLACER PROSPECTING PTY. LTD.

SCALE : 40' = 1"

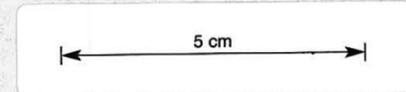
Plan 2H

DRAWN: R. LEWIS.
DATE: 9/10/66

Hole & Sample Interval	% Sn	Hole & Sample Interval	% Sn	Hole & Sample Interval	% Sn
1-1-2	07	8-1-2	105	15-1-2	01
1-3-4	06	8-3-4	20	15-3-4	01
1-5-6	02	8-5-6	17	15-5-6	N
1-7-8	02	8-7-8	18	15-7-8	N
1-9-10	56	8-9-10	20	15-9-10	N
1x	51	8x		15x	01
2-1-2	N	9-1-2	51	16-1-2	14
2-3-4	02	9-3-4	48	16-3-4	N
2-5-6	01	9-5-6	11	16-5-6	N
2-7-8		9-7-8	64	16-7-8	N
2-9-10	02	9-9-10	62	16-9-10	04
2x	03	9x	09	16x	14
3-1-2	05	10-1-2	55	17-1-2	03
3-3-4	02	10-3-4	06	17-3-4	N
3-5-6	03	10-5-6	79	17-5-6	05
3-7-8	02	10-7-8	148	17-7-8	03
3-9-10	08	10-9-10	101	17-9-10	14
3x	18	10x	106	17x	
4-1-2	07	11-1-2	135	18-1-2	N
4-3-4	02	11-3-4	24	18-3-4	02
4-5-6	23	11-5-6	05	18-5-6	3
4-7-8	15	11-7-8	23	18-7-8	13
4-9-10	05	11-9-10	84	18-9-10	04
4x	05	11x	134	18x	
5-1-2	02	12-1-2	50	19-1-2	07
5-3-4	05	12-3-4	19	19-3-4	08
5-5-6	N	12-5-6	02	19-5-6	02
5-7-8	N	12-7-8	02	19-7-8	12
5-9-10	06	12-9-10	04	19-9-10	15
5x	02	12x	06	19x	
6-1-2	01	13-1-2	155	20-1-2	
6-3-4	02	13-3-4	51	20-3-4	
6-5-6	N	13-5-6	N	20-5-6	
6-7-8	01	13-7-8	01	20-7-8	
6-9-10	N	13-9-10	N	20-9-10	
6x	04	13x	08	20x	
7-1-2	06	14-1-2	15		
7-3-4	03	14-3-4	01		
7-5-6	02	14-5-6	N		
7-7-8	N	14-7-8	N		
7-9-10	01	14-9-10	19		
7x	01	14x	07		



235019



4617

PERCUSSION DRILLING — RAZORBACK

PLACER PROSPECTING PTY. LIMITED.
SCALE 1" = 40'

N2400

N2200

N2000

W800

W600

W400

235020



4618

RAZORBACK MINE 580' Level

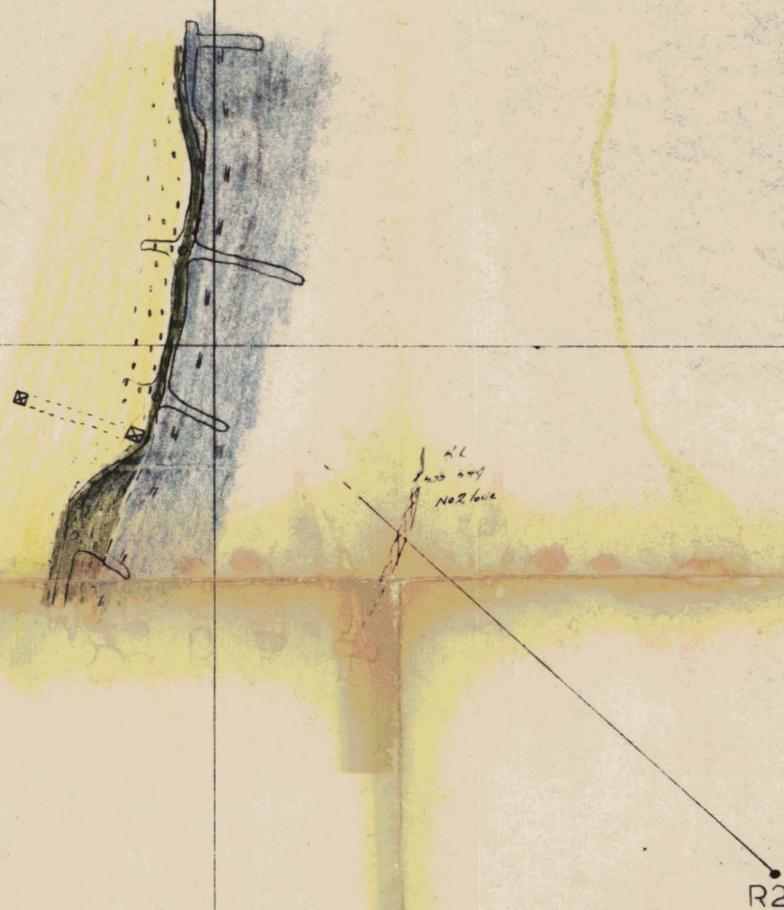
Geological Plan

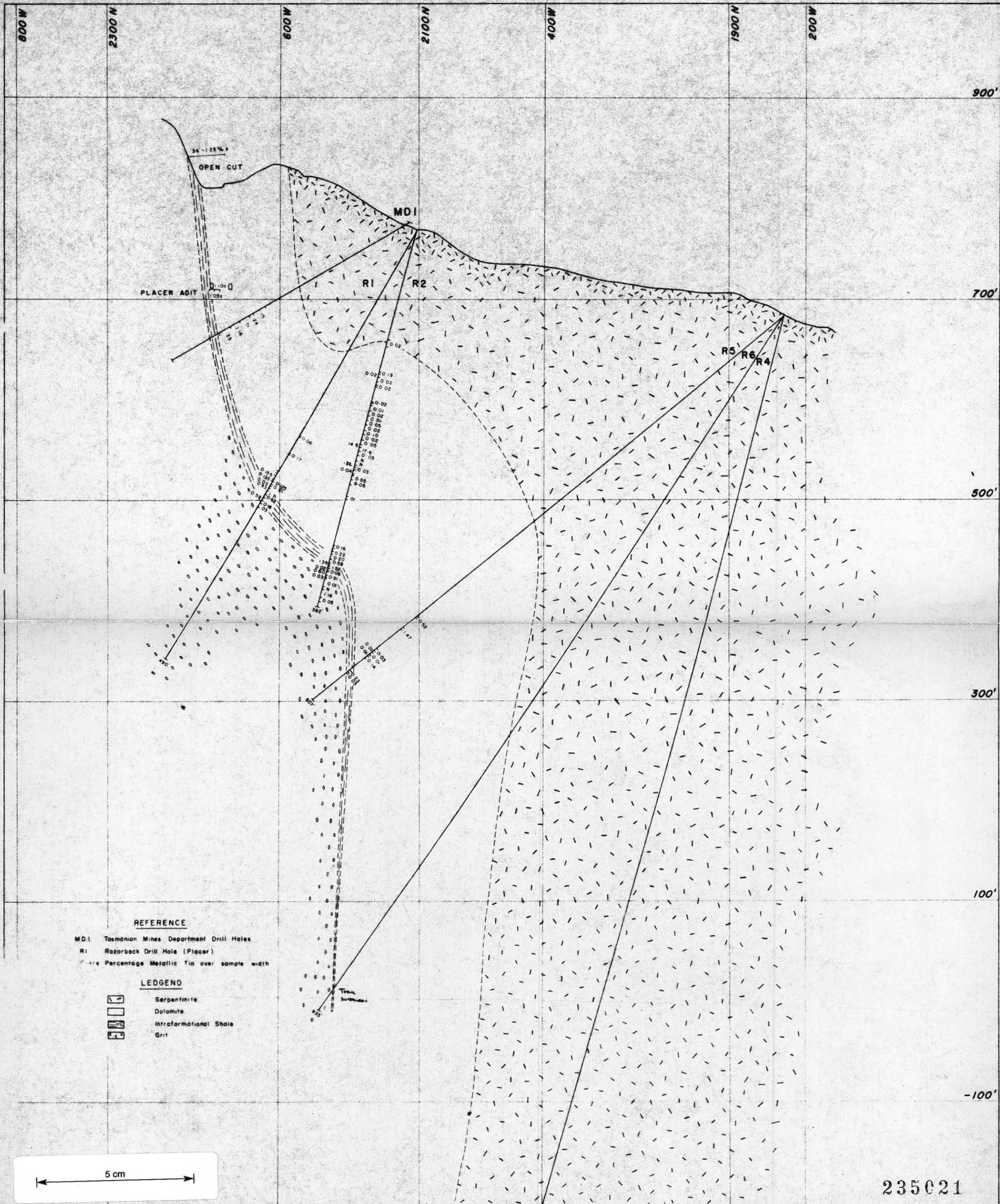
PLACER PROSPECTING PTY. LTD.

SCALE : 40' = 1"

Plan 2J

DRAWN R. Lewis
DATE 10.10.66





REFERENCE
 MD1. Tasmanian Mines Department Drill Holes
 R1. Razorback Drill Hole (Placer)
 % Percentage Metallic Tin over sample width

LEGEND

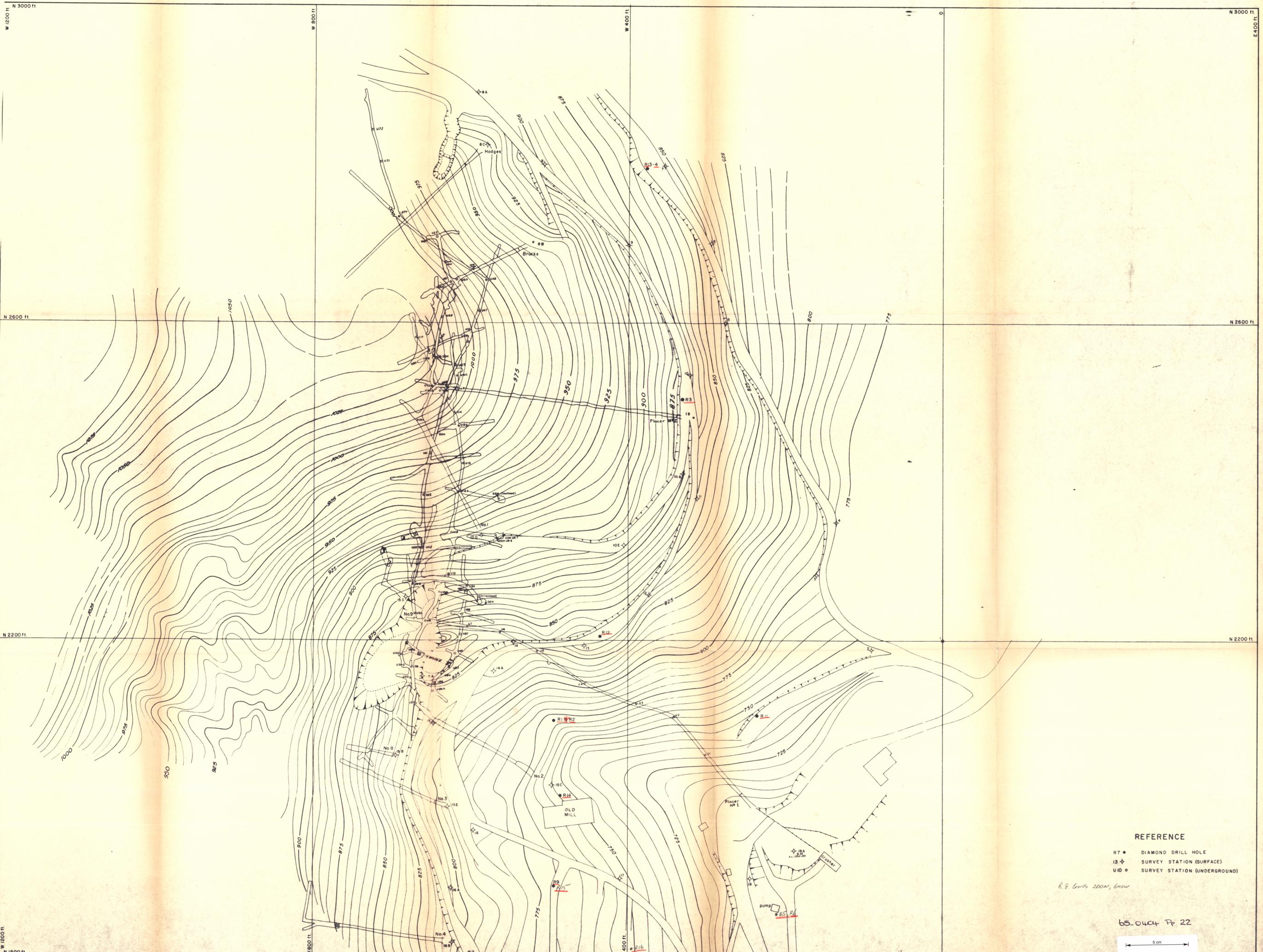
- Serpentine
- Dolomite
- Intraformational Shale
- Grit

DRILL HOLES RI,2,4,5,6. RAZORBACK

Geology by A B CLARK & G WILSON
 Drawn by Geodrafting Services (NSW) Pty Ltd
 Date 7th Oct. 1965

PLACER PROSPECTING PTY. LTD.
 SCALE 80' = 1" Plan No. 7

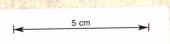
235021



- REFERENCE**
- R7 • DIAMOND DRILL HOLE
 - U10 • SURVEY STATION (SURFACE)
 - U10 • SURVEY STATION (UNDERGROUND)

R. S. Grids 200m, 60m

b5-044 Pt 22



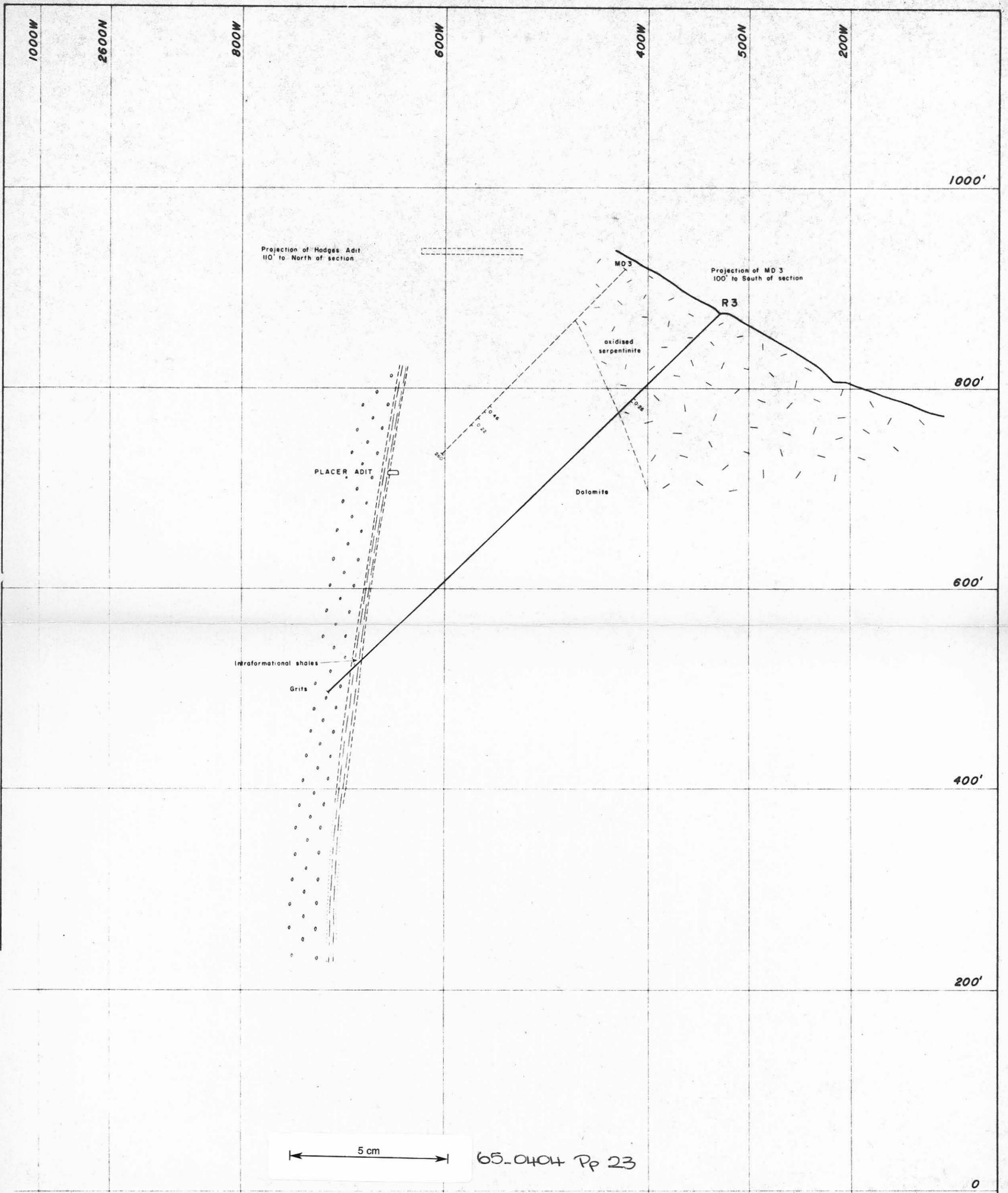
RAZORBACK MINE

SURVEYOR: B.L.D.
 GEOLOGIST:
 DRAWN BY: GEODRAFTING SERVICES B.L.D.
 DATE: JANUARY 1966. MOD 66

PLACER PROSPECTING PTY. LTD.
 SCALE: 40' - 1" PLAN No. 1/A

R.S. Grids

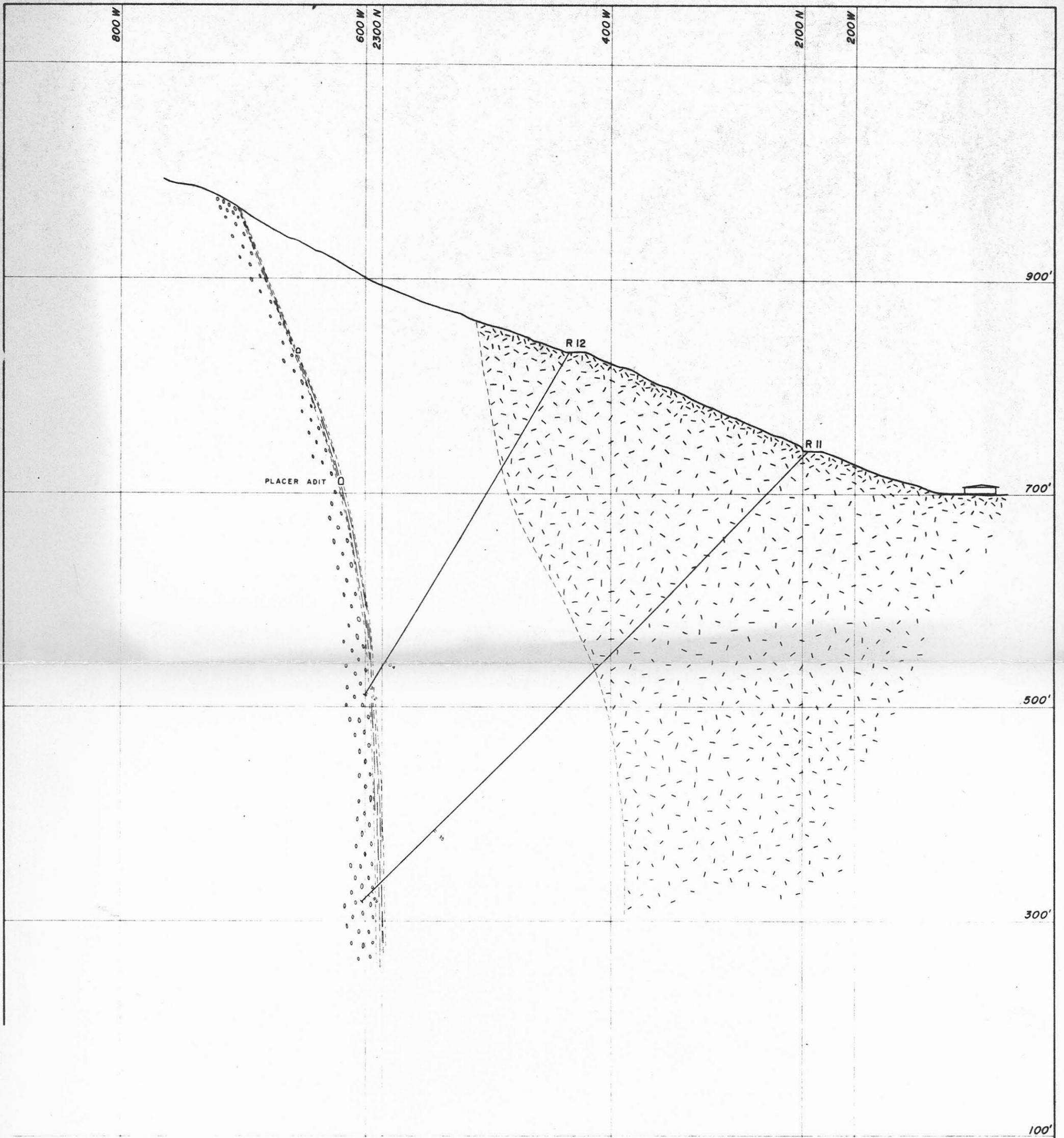
Handwritten notes in red ink



DRILL HOLE R3 RAZORBACK

Geology by A B CLARK & G WILSON
 Drawn by Geodrafting Services (N.S.W.) Pty Ltd
 Date Oct. 1965

PLACER PROSPECTING PTY. LTD.
 SCALE 80' = 1" PLAN No. 8



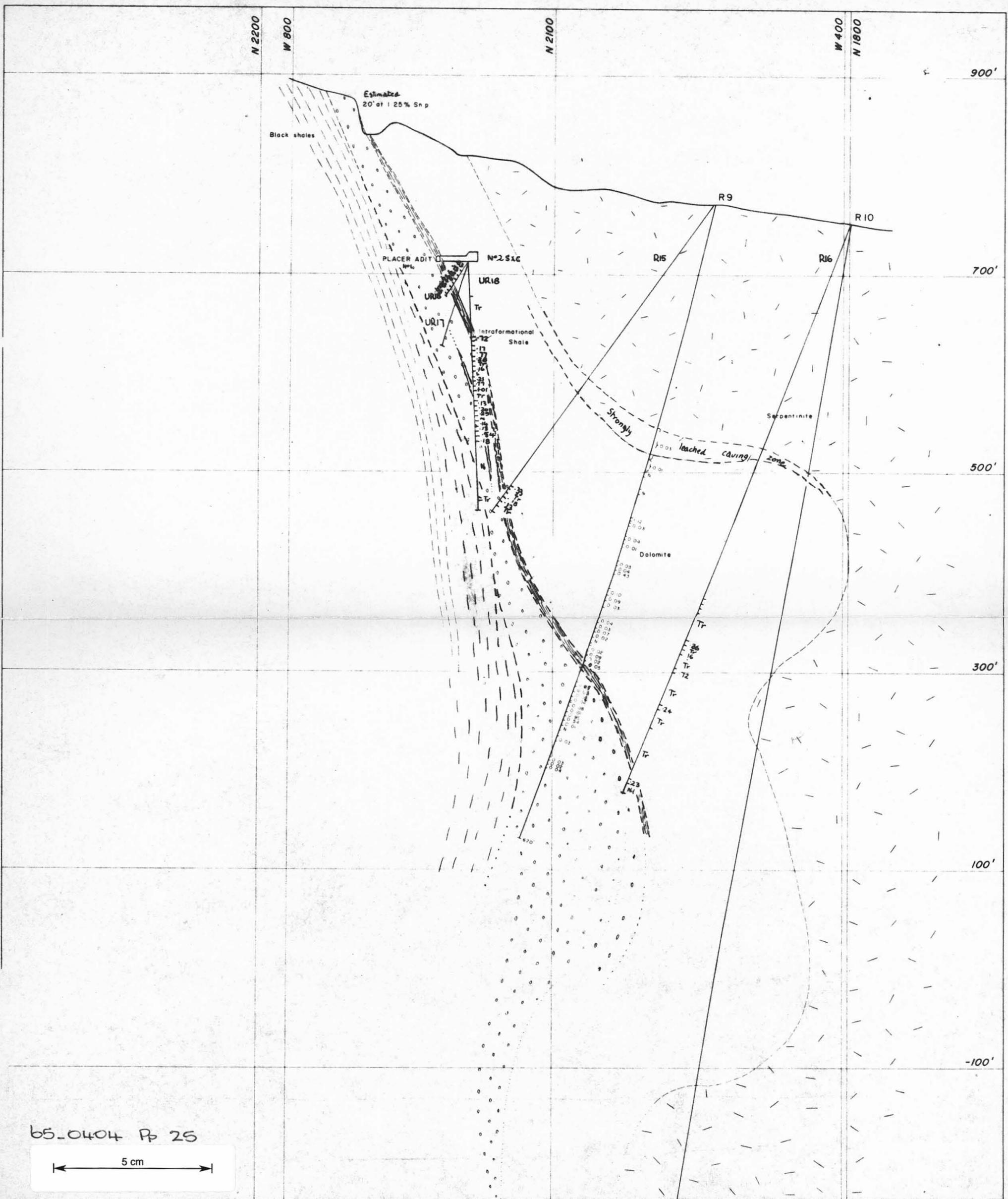
65-0404 Pp 24

5 cm

DRILL HOLES R11 R12 RAZORBACK

Geology by A.B. CLARK & G. WILSON
 Drawn by Geodrafting Services (N.S.W.) Pty Ltd.
 Date 7th Oct 1965

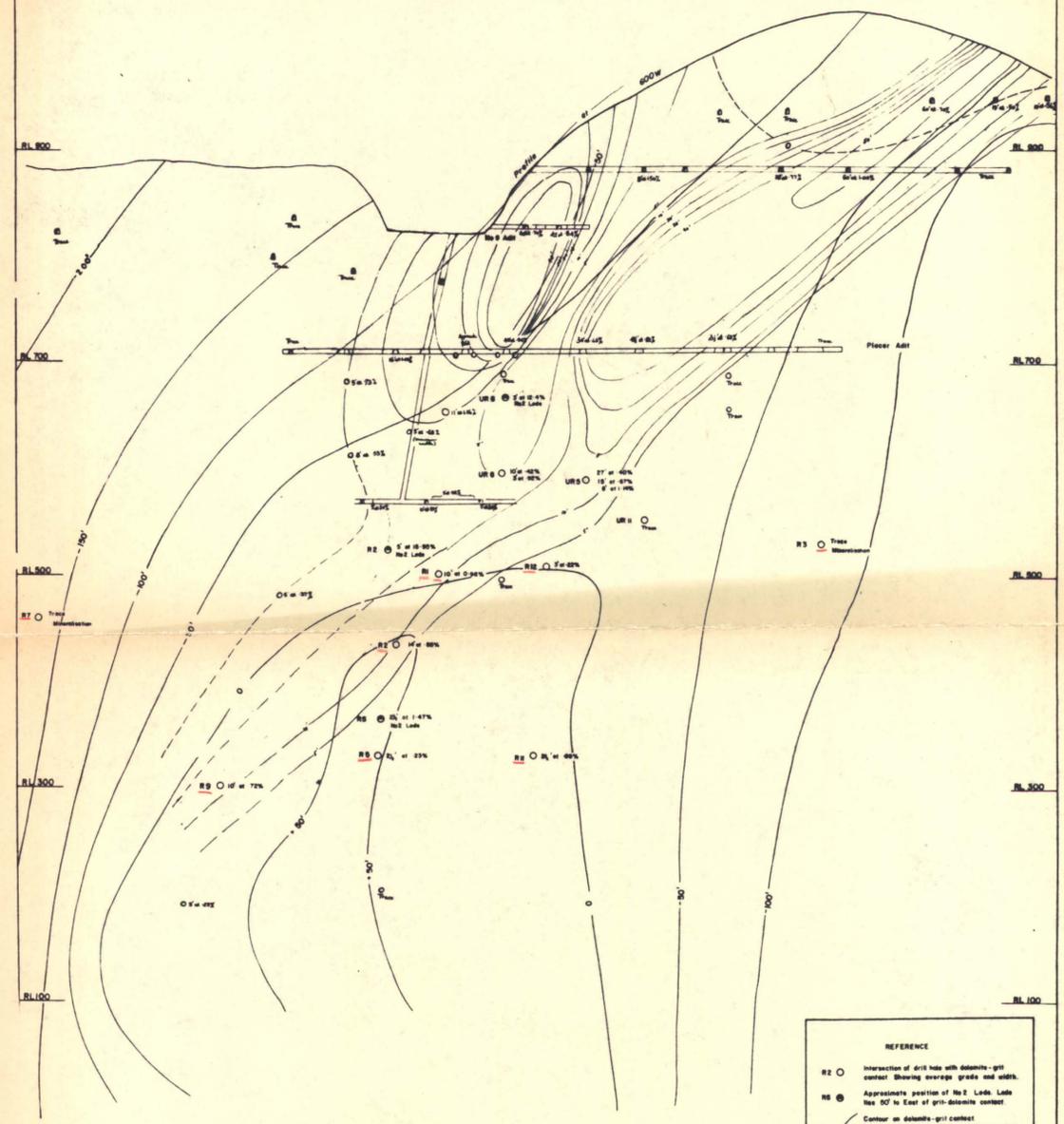
PLACER PROSPECTING PTY. LTD.
 SCALE : 80' = 1" Plan No. 10



DRILL HOLES R9 R10 RAZORBACK
R15 R16

Geology by A B CLARK B G WILSON
 Drawn by Geodroffing Services (N.S.W.) Pty Ltd
 Date Oct 1965
 Revised June 1966

PLACER PROSPECTING FTY. LTD.
 SCALE 80' = 1" PLAN No. 32



REFERENCE

R1 ○ Intersection of drill hole with dolomite-grit contact showing average grade and width.

R2 ○ Approximate position of No. 2 Lead Lode line 50' to East of grit-dolomite contact.

Contour on dolomite-grit contact
Datum plane of contours is a vertical section through 600W
Height of etc. at = 50' in. sub-level

5 cm

4, 6, 8, 10, 13, 14, 15, 16 ?

COMPOSITE LONGITUDINAL SECTION

Compiled by: G. I. WILSON	PLACER PROSPECTING PTY. LTD.
Drawn by: Geodrafting Services (M.S.W.) Pty. Ltd.	
Date: 24th Sept 1965	SCALE 80' = 1"
Revised: Sept 1966	Plan 123

65.0404 Pp 26