

PACIFIC  
WATERPROOF

FIELD BOOK

No. 301

018627

PYGF 1 →

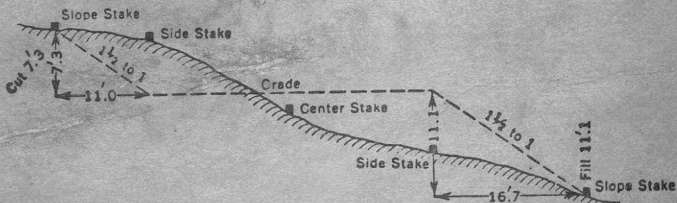
JUNE 20/76

→

PELLEY MTNS

**DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING**  
 Roadway of any Width. Side Slopes 1½ to 1.

In the figure below: opposite 7 under "Cut or Fill" and under .3 read 11.0, the distance out from the side stake at left. Also, opposite 11 under "Cut or Fill" and under .1 read 16.7, the distance out from the side stake at right.



Cut or Fill	Distance out from Side or Shoulder Stake										Cut or Fill
	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	0.0	0.2	0.3	0.5	0.6	0.8	0.9	1.1	1.2	1.4	0
1	1.5	1.7	1.8	2.0	2.1	2.3	2.4	2.6	2.7	2.9	1
2	3.0	3.2	3.3	3.5	3.6	3.8	3.9	4.1	4.2	4.4	2
3	4.5	4.7	4.8	5.0	5.1	5.3	5.4	5.6	5.7	5.9	3
4	6.0	6.2	6.3	6.5	6.6	6.8	6.9	7.1	7.2	7.4	4
5	7.5	7.7	7.8	8.0	8.1	8.3	8.4	8.6	8.7	8.9	5
6	9.0	9.2	9.3	9.5	9.6	9.8	9.9	10.1	10.2	10.4	6
7	10.5	10.7	10.8	11.0	11.1	11.3	11.4	11.6	11.7	11.9	7
8	12.0	12.2	12.3	12.5	12.6	12.8	12.9	13.1	13.2	13.4	8
9	13.5	13.7	13.8	14.0	14.1	14.3	14.4	14.6	14.7	14.9	9
10	15.0	15.2	15.3	15.5	15.6	15.8	15.9	16.1	16.2	16.4	10
11	16.5	16.7	16.8	17.0	17.1	17.3	17.4	17.6	17.7	17.9	11
12	18.0	18.2	18.3	18.5	18.6	18.8	18.9	19.1	19.2	19.4	12
13	19.5	19.7	19.8	20.0	20.1	20.3	20.4	20.6	20.7	20.9	13
14	21.0	21.2	21.3	21.5	21.6	21.8	21.9	22.1	22.2	22.4	14
15	22.5	22.7	22.8	23.0	23.1	23.3	23.4	23.6	23.7	23.9	15
16	24.0	24.2	24.3	24.5	24.6	24.8	24.9	25.1	25.2	25.4	16
17	25.5	25.7	25.8	26.0	26.1	26.3	26.4	26.6	26.7	26.9	17
18	27.0	27.2	27.3	27.5	27.6	27.8	27.9	28.1	28.2	28.4	18
19	28.5	28.7	28.8	29.0	29.1	29.3	29.4	29.6	29.7	29.9	19
20	30.0	30.2	30.3	30.5	30.6	30.8	30.9	31.1	31.2	31.4	20
21	31.5	31.7	31.8	32.0	32.1	32.3	32.4	32.6	32.7	32.9	21
22	33.0	33.2	33.3	33.5	33.6	33.8	33.9	34.1	34.2	34.4	22
23	34.5	34.7	34.8	35.0	35.1	35.3	35.4	35.6	35.7	35.9	23
24	36.0	36.2	36.3	36.5	36.6	36.8	36.9	37.1	37.2	37.4	24
25	37.5	37.7	37.8	38.0	38.1	38.3	38.4	38.6	38.7	38.9	25
26	39.0	39.2	39.3	39.5	39.6	39.8	39.9	40.1	40.2	40.4	26
27	40.5	40.7	40.8	41.0	41.1	41.3	41.4	41.6	41.7	41.9	27
28	42.0	42.2	42.3	42.5	42.6	42.8	42.9	43.1	43.2	43.4	28
29	43.5	43.7	43.8	44.0	44.1	44.3	44.4	44.6	44.7	44.9	29
30	45.0	45.2	45.3	45.5	45.6	45.8	45.9	46.1	46.2	46.4	30
31	46.5	46.7	46.8	47.0	47.1	47.3	47.4	47.6	47.7	47.9	31
32	48.0	48.2	48.3	48.5	48.6	48.8	48.9	49.1	49.2	49.4	32
33	49.5	49.7	49.8	50.0	50.1	50.3	50.4	50.6	50.7	50.9	33
34	51.0	51.2	51.3	51.5	51.6	51.8	51.9	52.1	52.2	52.4	34
35	52.5	52.7	52.8	53.0	53.1	53.3	53.4	53.6	53.7	53.9	35
36	54.0	54.2	54.3	54.5	54.6	54.8	54.9	55.1	55.2	55.4	36
37	55.5	55.7	55.8	56.0	56.1	56.3	56.4	56.6	56.7	56.9	37
38	57.0	57.2	57.3	57.5	57.6	57.8	57.9	58.1	58.2	58.4	38
39	58.5	58.7	58.8	59.0	59.1	59.3	59.4	59.6	59.7	59.9	39
40	60.0	60.2	60.3	60.5	60.6	60.8	60.9	61.1	61.2	61.4	40

June 20 Silt Sample 2105 S. of Ross.

105F-10 A.P. A12371-381

A12238-195

-197

1S gd sel  
 2S gd. sel

Δ1 ATP - upper part of Gosson.

- near flat lying well bedded  
 SAND, SLTS, + BREC SAND  
 with possible ~~ATP~~ LIMST.

- all pyrite bearing

1AR is float ATP - Pyrite Bl. SHK

2R - phyllite - overlies  
 above Δ1 Sheared DOLT LIMST

3R - hematite? from huge  
 creek boulder - very rusty

4R - quartz + calcite w pyrite  
 - probable source  
 of much of Gosson  
 - overlap Δ1

5R phyllitic limestone.

52

70  
100

Carbonate Breccia source of  
most of Knox  
Phyllite - R5

well fractured - quartz  
veins throughout  
- bedding flat lying

35 fair silt

45 " "

55 oily silt - soap.

6 gd silt

7 gd silt

8 org silt

Δ 3 - QUARTZ veined phyllite  
- minor folds - intruded  
by vertical dikes - chert  
dike.  
- well bedded  
lying shale

60  
14

9 gd silt - manchen

10 - org silt

11 gd silt

12 " "

13 rusty sp.

Δ 4 Slaty shale - in quartz  
stringers

26  
135

14 gd silt

15 small stream - set

16 gd silt - main

17 gd silt

clear

Δ 5 gd 60

18

Slaty limestone  
by or. interbed  
with limestone  
- quartz stringers  
cross bedding

18 gd DS  
 19 gd SGT - in small  
 20 gd sll  
 21 sll main  
 22 " "  
 23 " "  
 24R - rusty lining float  
 25R - rusty quartz veined  
 float  
 26 S S from dry stream

June 21/76 AF  
 Sill sample  
 105F-10  
 P.H.

39	F.S.	7.5	
40	F.S.	7.5	
41	G.S.	7.5	
42	F.S.	7.5	
43	F.S.	7.5	near slacks
44	F.S.	7.5	
45	ES	7.5	
46	ES	7.5	200 yds below
	at benches	7	probable drill sites
47	G.S.	7.5	
48	G.S.		
49	G.S.		
50	G.S.		
51	G.S.	"	
52	G.S.	"	
53	G.S.	"	main
54	ESp	"	
55	ES	"	main

56	g s	←	7.5
57	<del>g s</del> <i>coral</i>		"
58	g s		"
59	<del>g s</del>		2.5
60	MS	g s	7.5
61	g s		7.5
62	g s		"
63	FS		6.5
64	GS		7.5
65	GS		"
66	FS		"
67	GS		"
68	<del>GS</del> MS		"
69	GS		"
70	GS		"
71	GS		"
72	FS		"
73	FS		"
74	FS		"

June 22/76

Sill 105 F-10

A.F. 12249-84 1H

75	ES	7.5
76	"	"
77	"	"
78	"	"
79	OS	"
80	ES	"
81	GS	"
82	<del>FS</del>	"
83	GS	"
84	GS	"
85	GS	"
86	GS	"
87	GS	"
88	FS	"
89	FS	"
90	GS	"

Wrong!



probably a  
 ergooclinal area  
 - volcanics, schists  
 and <sup>rusty</sup> quartz-  
 carbonate veins  
 in float - vol  
 often pyritic

main stream

main

main

A.F. A 12238-197

91	FS
92	SP
93	GS
94	GS
95	GS

96 GS

97 GS

98 GS

99 GS

100 ES

101 GSP

102 SP

103 S

104 GS

105 GS

106 GSP

107 GS

A.F. A12238-197

dry creek

June 23/76

Shopper Map 105F 8, 10, 15  
AYGF 108 → 196

29 omit 138 → 143

↳ lost in creek

June 24/76

Set 105 F-9

AF A12340-95, 12340-86, 12340-264  
PH

197 ES

198 "

199 "

210 "

201 "

202 SP?

203 "

204 ES

205 ES

206 ES

207 ES

208 "

209 "

210 "

main

main

211 ES

212 "

213 "

214 "

215 "

216 "

217 "

218 "

219 "

220 "

221 "

7.5

222 "

223 "

224 "

225 "

main

226 "

227 " GS

4.0 rusty Seep

228 GS

7.5 main creek

229 GS

rusty ↗

230 GS

36 SP

37 S

38 S

39 L

40 SP

41 SP

42 GS

43 ES

44 GS

45 "

46 "

Gosson /

June 25/76

Gosson Hopping

105 F10

297 → 25~~6~~5

299 +  
1

253R + 254L in  
gullies.

0

X 253P  
254L

X 249

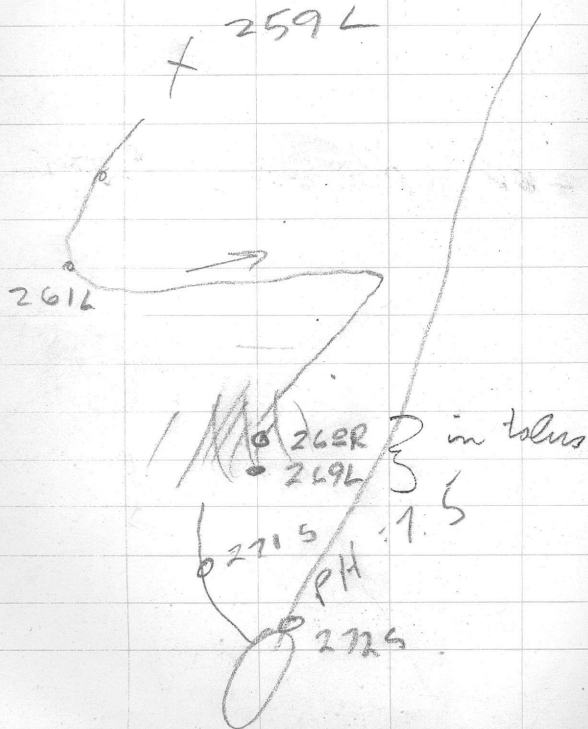
249  
X

Season 2 105 F10

256 L, 257 L 258 R

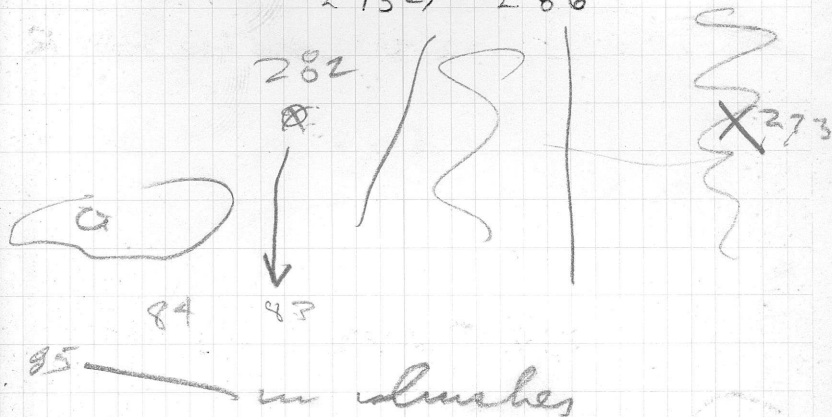
259 → 272 105 F-8

(B)



Season 4 105 F-8

273 → 286



284 SP near bottom



19	GSP.	
20	GS	Main
21	GS	
22	GS	
23	GS.	main
24	FSP	
25	GS	main
26	GS	
27	SP	
28	GS	

June 28/76

Samples PYLF 329-461  
10 & 11 creek tunnel

398 - pH = 9.0

428 - ventral pressure SP.

58/59  
59/55

Chopper hop. - 105 F & G

329 - 355	105 G-5
356 - 362	105 G-12
363 - 375	105 F-9
376 - 385	105 F-10
385 - 412	105 F-9
413 - 415	105 F-8
416 - 427	105 G-5
428 - 461	105 F-8

June 29 / 76

105-G-5

AF A12178-20x

A12173-439

462 GS  
 63 "  
 64 "  
 65 "  
 66 "  
 67 "  
 68 "

} ph 7.5

Volc. - congl. agglom.  
 with vesicles.

- grey-green - med hard  
 - red hematite lining  
 in places.

69 GS  
 70 "  
 71 "  
 72 "  
 73 GS  
 74 GS  
 75 R  
 76 GS  
 77 GS  
 78 man

Schistose volcan.

79

80

81

82

83

84

85

86

87

88

89

90

91

92

93

94

95

96

5

Sa1

SP

GS

"

S

S

R

MS

Big joint.



125

← on N E side  
 of Creek Argillaceous shale

S

S

92

93

94

95

96

5

Sa1

Rusty org - sp. pH = 7.5

small rusty creek pH 6.5-7.5

2, 3, 4 R.

June 30/76

504 GS  
505 GS

A1 gl. var. phyl. limst.  
- green & grey -

506 GS

507 GS A2 agglom. <sup>vols</sup>

508 GS

509 GS

510 rusty sp. pH 6.5-7.5

511 GS

512 GS

513 ms.

514 GS

515 rusty sp. - 7.5

516 GS

A3 phyl. LIMST - grey  
- white stringers

← 95 Shistosity  
53

June 30/76 105 GS Siltstone  
PF A12178-371

" 319

" 368

523 main

524 GS

525 } rusty below <sup>Zone</sup>  
526 }  
pH = 7.5

27 GP.

28 long stream A4 vols?

29 ~~sp~~ main.

30 base of next main.

A5 temp phyl. limst  
grey.

← 120  
55

in float nearby coral-  
instructor  
6 blocky angular?

330  
129  
15

31 Main  
32 L.  
33 SP  
34 GS

LOS. GS

July AF A12178-368  
12171-191  
552 GS 12340-459  
53 "  
54 "  
55 "  
56 " main  
Δ1 phyl. LMST  
+ more consal. LMST.

95  
←→ 95 Shist.

57  
58  
59  
60 GS main

67 GS  
Δ2 p Shaly LMST

←→ 100  
85

62



GS

66

GS

67

68

69

70

SP at pass pH = 6.5  
slight rust

71

GS

} slight rust pH 7.5

72

73

74



main

75

other main

76

77

78

79

80

81

main

2

GS

3

GS

4

GS

85

GS

86

GS

87

SP rusty

88

GS

SP GS

89

Main

90

GS

91

GS

92

GS

93

rusty S

pH 7.5

94

GS

95

SP

96

GS

97

GS

98

GS

July 2

105 F-10

1. red weath green  
volc - calcite in fractures.

2. heavy quartz veined volc.

3. macroscopic ? in quartz  
& chert in shistose form.

4. schistose volc.

5. shaly volc - soft grey green.

↘ 18 ↙ 130

6. curved volc.

7. chert-like curli-like  
25' exp on ridge

8. same

9. calcite matrix con. or ag.  
- large ang. clasts  
- chert, quartz.

10. 30' from 140  
- fine galena & chalcoph.  
in quartz - calcite breccia etc.

ft

12. minor gal. & smith. beside 148

ft 13. " ~ 146

14. minor galena & fluorite in flt.

15

↘ 110 ↙  
15 just up ridge brittle chert

16. just above Ft 114

massive volc overlain by  
same as shistose volc.

↗ 30 ↖  
18 ↘ 13 ↙

- thin calcite  
stringers  
within the volc.  
↗ Pb + Zn ↖

18

at  
shaly 118 Pb 2m in volc bx  
in place.

19

under cornice  
" in flt.

" Volc. diff

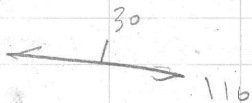
AF A12249-84 Prospect 800 Pb in coal

July 4

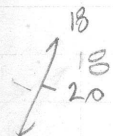
105 F-10

1 Marine LIMST - + LIMST cemented.  
LIMST PEBBLE

2 acid volc ft.


Δ3 

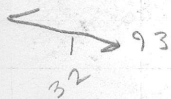
acid volc - blocky.

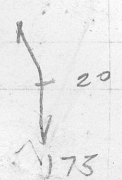
Δ4  - "bedded looking" quartzite

u. gd. extremely well steered

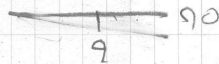
SLP 200 yds. acid volc

Δ5 Shales Physl. acid volc. calcite in 



Δ6  gd.

Δ7 Shaley LIMST grey-black  
S# 500




Δ8 S# 601 R. Quartzite - Calcite veins - to bedding - with graphite - rusty

602 S

603 S

604 S mouth of creek

605

Δ9 at S# 602  Pb in <sup>+ Zn</sup>

Δ10 Pb + Zn in flt.

11 "

12 volc  
dike

13. Gossan H # 2  
Blocky angular basic volc.  
overlying acid schistose volc.  
↳ gossan  
↳ pyrites.

July 5 / 76  
105 F-10

prospect H # 2 Gossan with  
high lead soils.

flt 1. 75' below H 179  
- rusty barite - pitted - nothing  
# visible but very heavy  
614 R. - Smithsonite ?

flt 2 Same place sheared volc.  
with PYRT - sheared  
acid volc. + chlorite  
+ pyrites.

3 Basic Vol - BLOCKY ANGULAR  
- perhaps like -

4 near 178 Barite - again rusted &  
pitted

5. Below 178 - Gossan Shear  
- source - limonite cemented &  
- barite present - probably  
gives Bx its weight  
S # 616 L

6 at 175 Barite w Smithsonite  
- again pitted. S # 617 R.

7 174 Contact of Blocky  
ang. Basic volc. & deformed  
acid volc.

8 at 173 L " " " "

- Gossan seems to originate  
at contact - S # 617 R B.  
A Baritic  
B: volc def.

618 → 6.41 salts & sils.  
#623 - pH = 7.5

9. acid volc. in saddle

68  
←

10. ~~acid~~ weathered acid pumice  
from cradle

11. Chlorite rich deformed  
volc.

12. Kerolika?

105 F-10

A.F. A12249-86

July 6/76

Prospect high lead anomaly from

Grosser #1 M

1. LMST ~~ft~~ + acid volc. flt.  
OCR ~~acid~~ volc

2. shear zone in ~~flts~~ - limonite  
cemented chunks of VCC  
↳ high PYRT + Fe Sulph.

3. ft below DIKE OCR → CALC  
w PYRT + silica  
shell-like pumice.

4. near 254 - volc. OCR  
in ft below

↳ pitted barite  
chunks of pumice

↳ probably coming out of  
pitted light shell which  
appears to be silica & limonite  
cemented OX

- stream pH = 6.5

#643 - at 251

644 } at 250  
645 }  
pH 4.6  
646

sample of barite + Galena

5. at 250

Pb bearing Barite - quartz in ft.

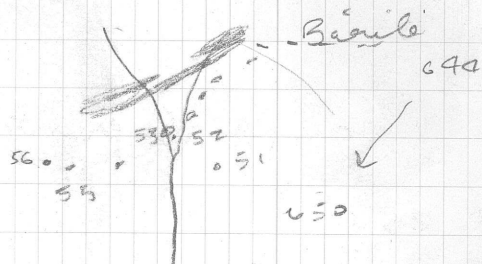
- all up stream
- stream originates at 6

⑥ limonite cemented BX  
- high in Fe Sulphate

Barite ends just about 6  
5<sup>th</sup> 647L

⑦ acid hole - blocky ang.

Sample to 649



Prospect # 13,000 zinc 105 C-5  
main creek pH = 7.5  
AF A12178-439 # 5 657

- 1 LMST
- 2 SAND
- 3 Sand.

S # 658 fault BX

S # 659 soil near fault area

70  
56

660 mainstream above fault zone,

④ 100' upstream - barite BX - in sand?  
or volc. - zones at Bar. volc face

661<sup>A</sup> chip sample across Barite BX

84  
55  
→ limestone - ~~Cred~~

661 B. Chip across fault

70  
50  
weller

662 to 665 soils along  
bank going downstream.

663 under barite

July 7/76 105 F-9 A/F 12340-321  
Map Prospect & Silt high zone

A1  
36 70  
Tan-grey silt - GW

A2 GREY SILT (or slump?) seams, consolidation  
OCR 10x4

85  
1 110 slaty cleavage  
80 125

A3 SLST (GREEN TO GREY)  
& SAND

46 155  
ex. - quartz veins in  
OCR ex 40x40  
gd. 60 135  
88 134

Δ A B GRV SHLE NO OCR

- lith of intrusive

OCR 10 X 10

Δ 5. BRN Deformed Volcanic

- structurally similar

gd.

~ 30' thick

Δ C. Gray SHLE

gd.

32  
140

7 Dike or light base rock

8 80  
5A

Tan-GRV ~~light~~ chrt

9. thinning Phyllite - minor fossils

52 120

Kelchka - basalt or thin chrt beds

10 ~~massive LMST~~ massive LMST

11. ~~volcanic~~ Thin Bed - LMST  
1 30 120

12. along ridge  
58 120  
thinning phyllite  
- grey - GRV

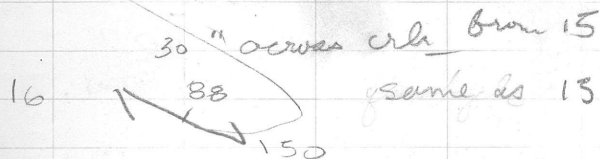
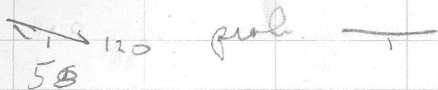
13. Mass LMST or DOLT

14. thinning Phyllite

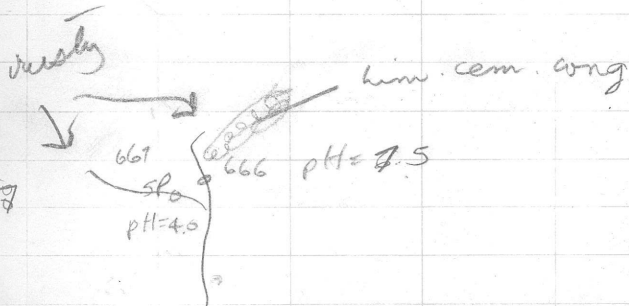
1 105  
55

15

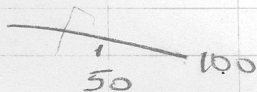
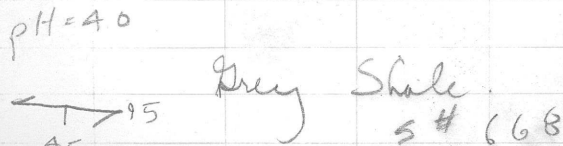
~~prop~~ wine red chert?  
" siltstone



16



18



718 MS

81 MS

anis

July 10 State &amp; BNOB.

683 5 } out of side creek.  
684 5 } near claim  $\frac{32}{30} \frac{31}{29}$   
685 5 }

July 12/76

anis % Prospect - 3100, 4400 on Seagull

686 Same as 524 A

87 main

88 above flats - Truvertine floor

89 at clear side trail on flats

1, 2 OCR near 690

3 OCR near 688

4 flt near 688

92 rusty quartz -

93 - look -

94 main

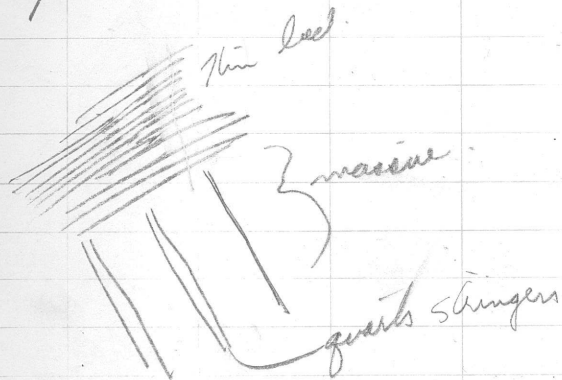
899 R flt

700 S in creek in shales.

Δ 5 Thin bedded & massive  
gray. DOLT

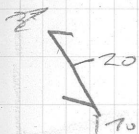
25

42-



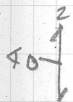
→ Zn in fractures in massive  
- only in 1 isolated spot

Δ 6 honey Phyllite

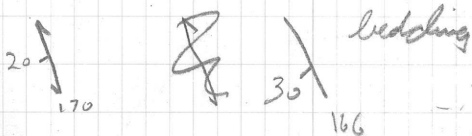


Grey

Δ 7 Shale



Δ 8 honey Phyllite

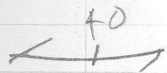


L. Ph. +  
~~acid water~~

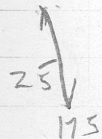
Δ 9 Rock  
26  
55

limestone & honey Phyll

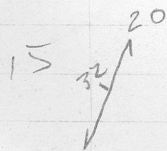
13 ? LMST + ?



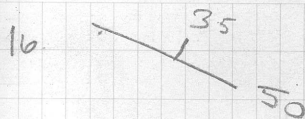
14 limy Phyl.



+ blocky LMST



in creek LMST + limy phyl.



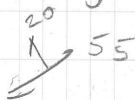
limy - Arg.

July, 3.

Prospect.

105 F-10  
Pass peak.  
See overlay.

A. 1. Grey Black shale -



A 2. Grey slightly limy PHYL ~~Arg~~

A 3. " very deformed.  
- hole or dolt. LMST  
near top.

S<sup>#</sup> 701 → ~~70~~ 713

Δ 4 Pyritic shale.  
- 5# 713

Δ 5 200' upstream,  
- pyritic limy Phyl.  
# 714 sp.

Δ 6 300yd upstream from Δ 4  
Bl. Shale.  
90  
35 5# 715

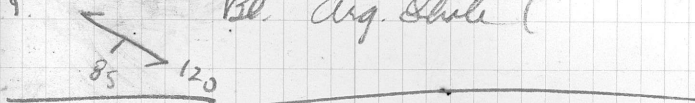
Δ 7 bottom of argos  
Δ 8 Black shale at  
head of argos

35 15

pass.  
35 155

# 5 718 lime sh. ocr

Δ 9 Bl. arg. shale (



July 14/26

Prospect Ross P (CPA) & Coonan M<sub>3</sub> 10SF-8  
AF A12249-7B

Δ 1 718 Pb, Zn in LMST  
- ocr - volc? looks like it  
arg. blocky □ - finger  
in places.

2 } LMST - finger volc.

3 }  
4 LMST - limy volc.

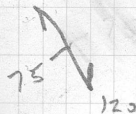
5 pulled LMST

6

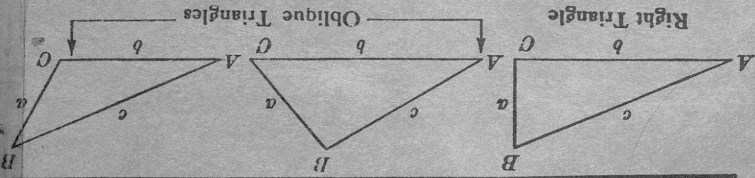
7

at # 122

(Phyl)  
Shutter volc



TRIGONOMETRIC FORMULAE



For Angle A.  $\sin = \frac{a}{c}$ ,  $\cos = \frac{b}{c}$ ,  $\tan = \frac{a}{b}$ ,  $\cot = \frac{b}{a}$ ,  $\sec = \frac{c}{b}$ ,  $\text{cosec} = \frac{c}{a}$

Given  $a, b$  Required  $\tan A = \frac{b}{a}$ ,  $\cot B, c = \sqrt{a^2 + b^2} = a\sqrt{1 + \frac{b^2}{a^2}}$

$a, c$   $\sin A = \frac{a}{c}$ ,  $\cos B, b = \sqrt{(c+a)(c-a)} = c\sqrt{1 - \frac{a^2}{c^2}}$

$A, a$   $B = 90^\circ - A, b = a \cot A, c = \frac{a}{\sin A}$

$A, b$   $B = 90^\circ - A, a = b \tan A, c = \frac{b}{\cos A}$

$B, a, b$   $B = 90^\circ - A, a = c \sin A, b = c \cos A$

Given  $a, b, c$  Required  $\sin A = \frac{a \sin B}{b}$ ,  $C = 180^\circ - (A + B), c = \frac{a \sin A}{\sin A}$

$A, a, b$   $\sin B = \frac{b \sin A}{a}$ ,  $C = 180^\circ - (A + B), c = \frac{a \sin A}{\sin A}$

$a, b, c$   $A + B = 180^\circ - C, \tan \frac{1}{2}(A - B) = \frac{a + b}{a - b} \tan \frac{1}{2}(A + B)$

$A, B, c$   $s = \frac{a + b + c}{2}$ ,  $\sin \frac{1}{2}A = \sqrt{\frac{(s-b)(s-c)}{bc}}$ ,  $\sin \frac{1}{2}B = \sqrt{\frac{(s-a)(s-c)}{ac}}$

$a, b, c$   $s = \frac{a + b + c}{2}$ ,  $\text{area} = \sqrt{s(s-a)(s-b)(s-c)}$

$A, b, c$   $\text{Area} = \frac{bc \sin A}{2}$

$A, B, C, a$   $\text{Area} = \frac{a^2 \sin B \sin C}{2 \sin A}$

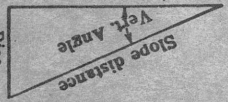
Solution of Right Triangles

Solution of Oblique Triangles

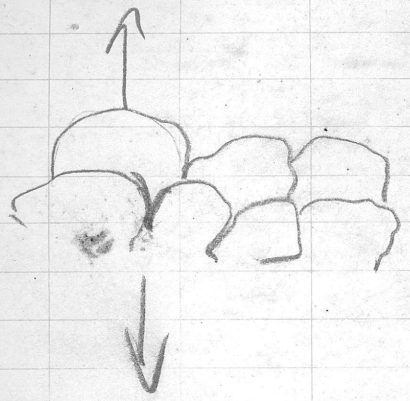
Given $a, b, c$	Required $A, B, C$
$A, a, b$	$B, a, c$
$A, b, c$	$B, a, c$
$A, a, b$	$B, a, c$
$a, b, c$	$A, B, C$
$A, B, C$	$a, b, c$
$A, B, C, a$	$A, B, C, a$
$A, B, C, a$	$A, B, C, a$
$A, B, C, a$	$A, B, C, a$
$A, B, C, a$	$A, B, C, a$

REDUCTION TO HORIZONTAL

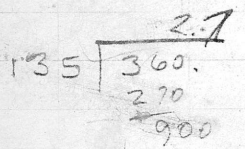
Horizontal distance = Slope distance multiplied by the cosine of the vertical angle. Thus: slope distance = 319.4 ft. Vert. angle = 5° 10'. From Table, Page IX,  $\cos 5^\circ 10' = .9959$ . Horizontal distance =  $319.4 \times .9959 = 318.09$  ft. Horizontal distance also = Slope distance minus slope distance times (1 - cosine of vertical angle). With the same figures as in the preceding example, the following result is obtained.  $\cos 5^\circ 10' = .9959$ ,  $1 - .9959 = .0041$ .  $319.4 \times .0041 = 1.31$ .  $319.4 - 1.31 = 318.09$  ft. When the rise is known, the horizontal distance is approximately the slope distance less the square of the rise divided by twice the slope distance. Thus: rise = 14 ft. Horizontal distance =  $302.6$  ft. Horizontal distance =  $302.6 - \frac{14 \times 14}{2 \times 302.6} = 302.28$  ft.



balalite



$8 \frac{1}{2} \rightarrow 1 \frac{1}{2} - 1 \frac{1}{2}$   
 $0.9 \times 9$   
 $360$   
 $8 - 1 \frac{1}{2}$      $5.5$



135 270