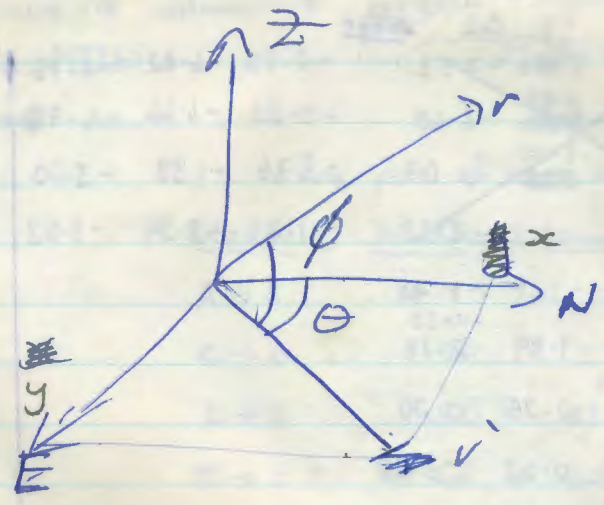


(both has turned over so as to read nicely)



$28.4 - 28.2 - 28.4$

$P2-P1 = 28.11 - 28.11 = 0$
 $P1-P1 = 28.05 - 28.05 = 0$
 $Sf-P1 = 28.21 - 28.21 = 0$
 $24-P1 = 28.41 - 28.41 = 0$
 $21-P1 = 28.21 - 28.21 = 0$
 $28-P1 = 28.41 - 28.41 = 0$
 $22-P1 = 28.21 - 28.21 = 0$
 $F4-P1 = 28.21 - 28.21 = 0$

$FP-PF = 28.21 - 28.21 = 0$

$P2-P1 = 28.11 - 28.11 = \Delta z = r \sin \phi$

$22-P1 = 28.21 - 28.21 = r' \cos \phi$

$P4-P1 (A) = 28.41 - 28.41 = r' \sin \theta$

$P4-P1 (B) = 28.41 - 28.41 = r' \cos \theta$

x = north
y = east

$1F-P1 = 28.11 - 28.11 = 0$

$02-P1 = 28.05 - 28.05 = 0$

$05-P1 = 28.05 - 28.05 = 0$

$21-P1 = 28.21 - 28.21 = 0$

$22-P1 = 28.21 - 28.21 = 0$

$23-P1 = 28.21 - 28.21 = 0$

$24-P1 = 28.41 - 28.41 = 0$

$25-P1 = 28.41 - 28.41 = 0$

$26-P1 = 28.41 - 28.41 = 0$

$27-P1 = 28.41 - 28.41 = 0$

$28-P1 = 28.41 - 28.41 = 0$

$29-P1 = 28.41 - 28.41 = 0$

$30-P1 = 28.41 - 28.41 = 0$

$31-P1 = 28.41 - 28.41 = 0$

$32-P1 = 28.41 - 28.41 = 0$

$33-P1 = 28.41 - 28.41 = 0$

$34-P1 = 28.41 - 28.41 = 0$

$35-P1 = 28.41 - 28.41 = 0$

$36-P1 = 28.41 - 28.41 = 0$

$37-P1 = 28.41 - 28.41 = 0$

Remark on Suunto instruments used. (20/8/81)

Compass 949865 reads more or less consistently 2.5° less than the other ones (varying between 2° and 3°).

Climo 213779 reads up to 0.6° too low (i.e. -0.6° where the others show 0°) and is too unreliable to be used any longer.

These are the two tied together with a rough string.

The compass 949865 ^{has sometimes been} ~~is being~~ used for surface surveying the bearings I'm actually going to write down will have been corrected by adding 2.5° everywhere so as to make them consistent with bearings obtained by the other compasses.

elgerhard

worse; it changes its mind sometimes from one day to the next by a degree or two. And forward/backward bearings tend to disagree by up to two degrees!! - Have used my own compass & cp. 331731 to get the bearings a bit straighter & used 949865 only to measure ^{horizontal} angles between bearings.

What we really need for triangulation is a theodolite though.

	Δx	Δy	$r = \text{distance}$ Δz	ΔExt	$\phi = \text{inclination}$	$\Theta = \text{bearing}$	$\Delta z \cdot r \sin \phi$ ΔExt	$\Delta x = r \cos \phi \cos \Theta$ Δx	$\Delta y = r \sin \phi \sin \Theta$ Δy	
0-1	-7.85	3.86	-7.53		-7.85	-6.82	-4.85	-7.85	-6.82	-4.85
1-2	0.82	0.82	-6.60		-0.82	-4.66	-4.74	-8.67	-11.48	-9.59
2-3	5.15	3.48	-1.67		-5.16	-1.38	-3.60	-13.83	-12.86	-13.19
3-4			-3.53		-11.83	-3.39	-3.53	-25.66	-16.25	-16.72
4-5	-3.47	10.43	-1.71					-29.13	-16.68	-18.43
5-6			-10.53					-29.13	-16.68	-28.96
6-7	1.53	1.89	2.11					-27.60	-14.79	-26.85
7-8	3.10	2.25	0.20					-24.5	-12.54	-26.65
8-9	0.88	0.03	-3.82					-23.62	-12.51	-30.47
9-10			-9.50					-23.62	-12.51	-39.97
10-11	0.37	-0.06	0.18					-23.25	-12.57	-39.79
11-12	2.03	3.12	0.26					-21.22	-9.45	-39.53
12-13	1.85	1.29	-0.96					-19.37	-8.16	-40.49
13-14	0.56	0.70	-1.00					-18.81	-7.46	-41.49
14-15			-33.32					-18.81	-7.46	-74.71
15-16	1.71	4.45	0.41					-17.1	-3.01	-74.30
16-17	-0.73	-1.22	-3.90					-17.83	-4.23	-78.20
17-18	0.87	-0.25	-1.93					-16.96	-4.48	-80.13
18-19	0.62	0.56	-2.93					-16.34	-3.92	-83.06
19-20	-2.61	0.83	-2.70					-18.95	-3.09	-85.76
20-21			-3.61					-18.95	-3.09	-89.37
21-22	+1.56	+1.61	+1.57	2.24				-17.39	-1.48	-87.80
22-23	+1.61	-4.96	-0.73	5.21				-15.78	-6.44	-88.53
23-24	+1.18	+0.23	-0.21	1.21				-14.60	-6.21	-88.74
24-25	0	+3.61	+1.23	3.61				-14.60	-2.60	-87.51
25-26	+1.91	+2.36	+1.29	3.04				-12.69	-0.24	-86.22
26-27	+1.17	+1.13	-1.58	1.63				-11.52	+0.89	-87.80
27-28	0	0	-22.39	0				-11.52	+0.89	-110.19
28-29	+1.44	+1.73	+1.68	3.11				-10.08	2.63	-108.51

Local Foods, Northwich, Cheshire :- Fruit, nut & off bars
 Sugar & Syrup.
 Take a look

Possible Sponsors for next year

SURVEY NOTES

(B23)

7 sheets Permatrace *

25/7/85 Sue

(1st 6 stations Phil D. few days previously)

1/6 Ridge Cave to start of Nuck's Canal

Extra part of cave near entrance

Stations	(corrected) Distance	Compass	Clino
0 → 1	11.48	221	-25
1 → 2	6.70	260	-45
2 → 3	6.44	195	-34
3 → 4	12.81	196	-16
4 → 5	3.89	187	-26
5 → 6	10.53	-	-90
6 → 7	3.23	051	+41
7 → 8	3.84	036	+3
9 → 8	4.10	233	+69
10 → 9	9.50	-	+90
11 → 10*	0.42	170	-25
12 → 11	3.74	237	-4
12 → 13	2.45	035	-23
13 → 14	1.35	051	-48
14 → 15	33.32	-	-90
16 → 15*	4.78	249	-5
17 → 16*	4.15	059	+70
17 → 18	2.13	344	-65
19 → 18*	3.05	222	+74
20 → 19	4.20	195	+40
20 → 21	3.61	-	-90
22 → 21*	2.74	226	-35
23 → 22*	5.26	108	+8
24 → 23*	1.23	191	+10
24 → 25	3.85	090	+20
25 → 26	3.30	051	+23
26 → 27	2.27	044	-44
27 → 28	22.39	-	-90
29 → 28*	4.07	214	-40

Stations	Distance	Compass	Clino
A → B	14.85	-	-90
C → D	5.50	-	-90
D → E	7.70	084	+13.5
B → E	7.52	101	+26
E → F	3.45	280	-33
F → O	4.67	121.5	+17

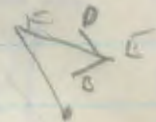
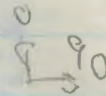
This gives X = North Y = East Z = UP

$$\Delta Ext = r \cos \phi$$

$$\Delta x = \Delta Ext \cos \theta$$

$$\Delta y = \Delta Ext \sin \theta$$

$$\Delta z = r \sin \phi$$



Station 22 marked "S" for possible continuation

Must be 22 → 23
~~Must be 22 → 23~~

Station 29 marked "S" for continuation

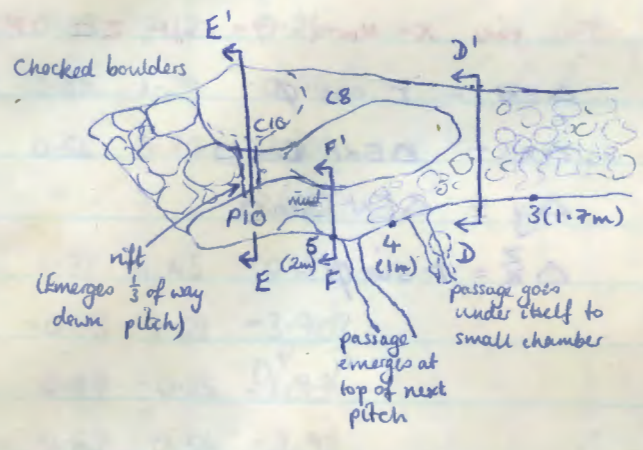
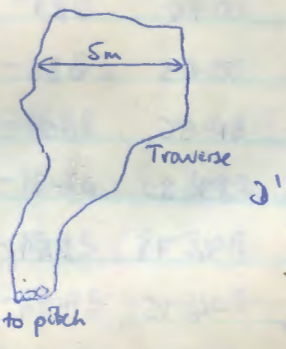
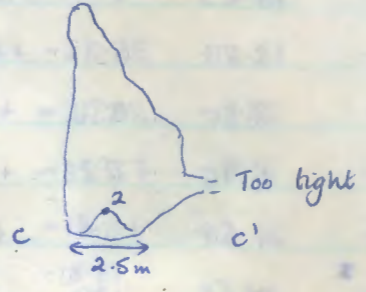
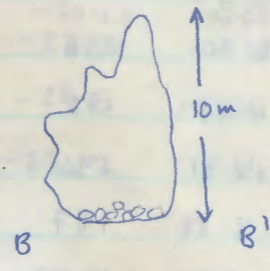
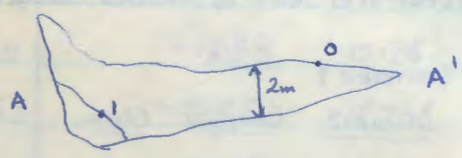
No plastic bags!

* 3 unfortunately blown away after accurate copying. Nos. 1, 5, 6. Rest at present in medical kit

P24 Plans

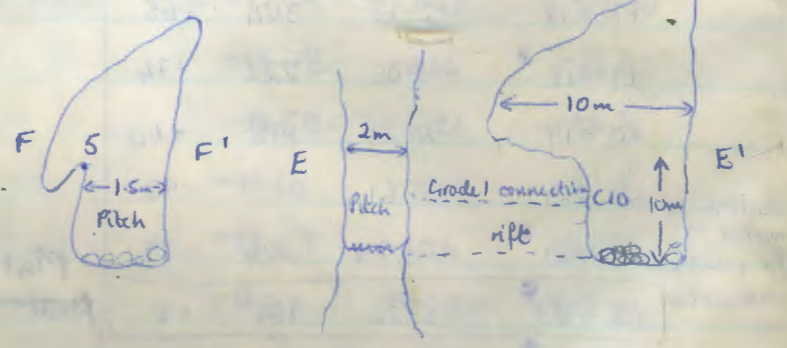


Sections

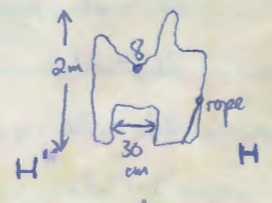
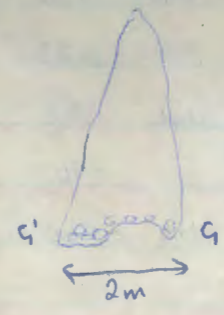
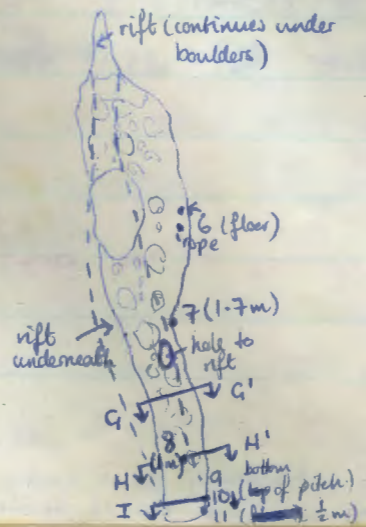


First pitch = The Five Year Plan

Daylights?



Bottom of 1st pitch

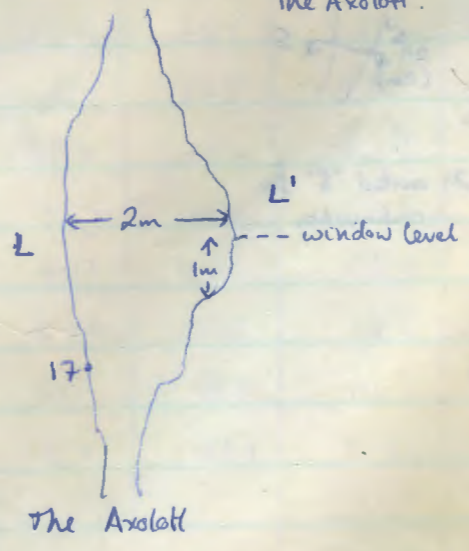
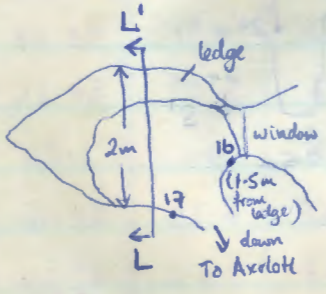
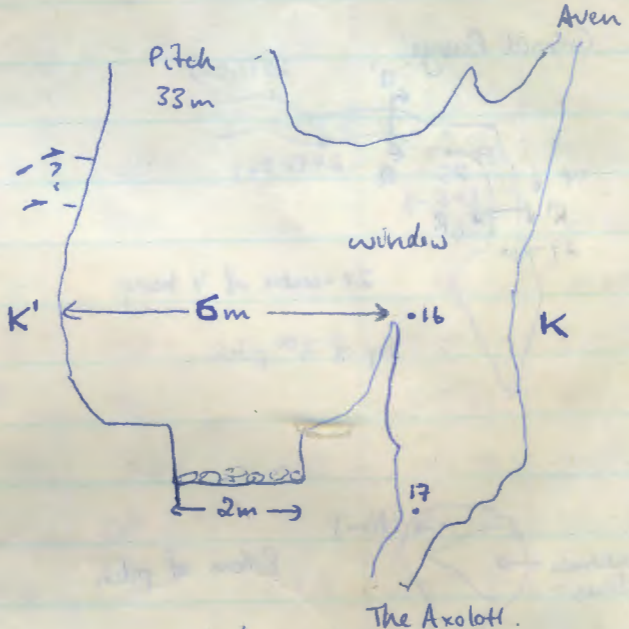
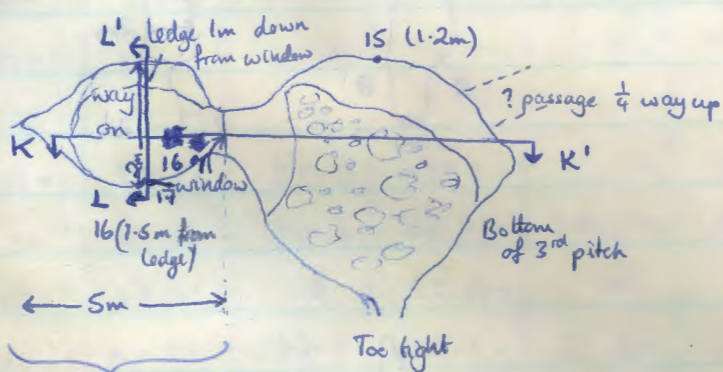
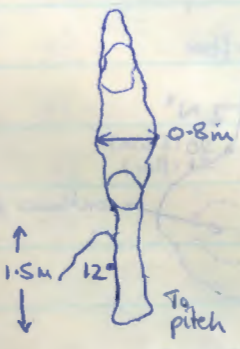
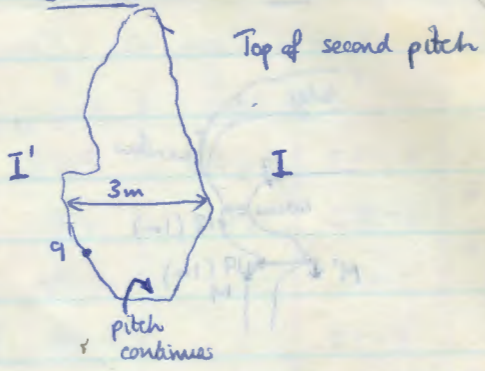


Just before pitch head

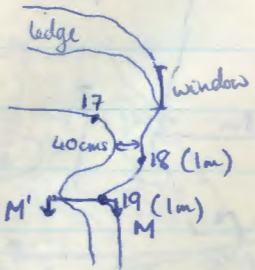
9 = top of pitch
10 = bottom

Plans

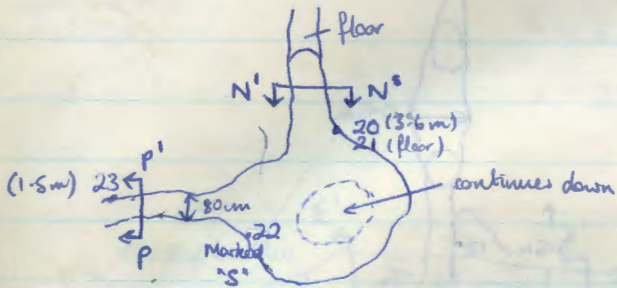
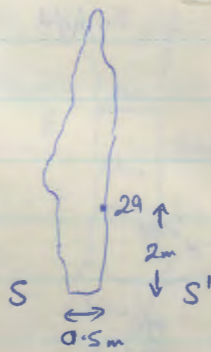
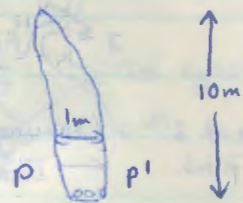
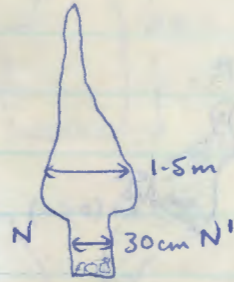
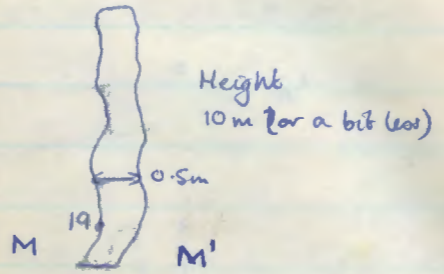
Sections



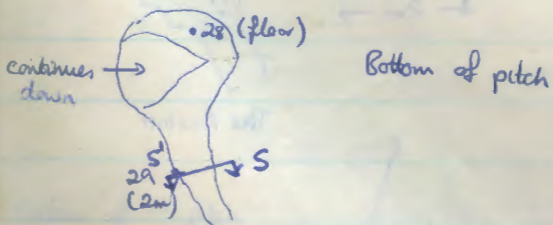
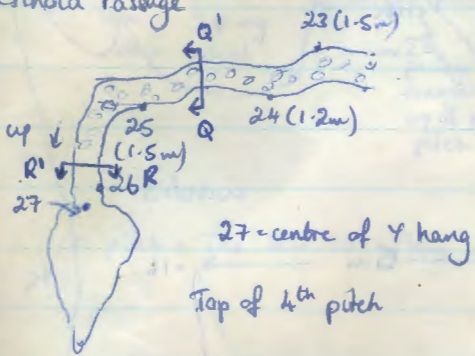
Plans



Sections



Crinoid Passage



29 marked 'S' for continuation

25 July '85 Ridge Cove Nuck's Canal → Barney Rubble

William Notes; Steve R Compass 'clino; Martin May Tape.

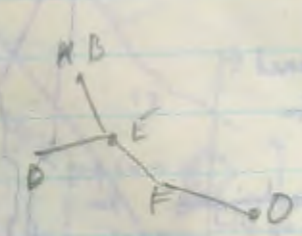
Stations	Dist [†]	Bear [⊙]	Inc [⊕]	ΔX	ΔY	ΔZ	ΔExt	-10.08	2.63
1→2	6.72	003	+33	+5.63	+0.30	+3.66	5.64	-4.45	2.93
3→2*	3.37	158	+5	+3.12	+1.25	-0.29	3.35	-1.33	1.68
4→3*	3.86	-	+90	0	0	-3.86	0	-1.33	1.68
[3→x	6.97	-	-90	[[[[[[
5→4*	1.31	255	-23	0.31	1.16	+0.51	1.20	-1.02	2.84
5→6	2.10	011	+25	1.87	0.36	+0.89	1.90	0.85	3.20
7→6*	5.41	243	-13	+2.40	+4.70	+1.22	5.27	3.25	7.90
7→8	3.09	070	-38	+0.83	+2.28	-1.90	2.43	4.08	10.18
8→9	25.11	-	-90	0	0	-25.11	0	4.08	10.18
10→9*	1.17	097	-2	+0.14	-1.16	+0.95	1.17	4.22	9.02
11→10*	9.93	147	+37	+6.65	-4.32	-5.98	7.93 5.28	10.87	4.70
11→12	7.16	248	-18½	-2.54	-6.29	-2.27	6.79	8.33	-1.59
13→12*	8.07	0	+90	0	0	-8.07	0	8.33	-1.59
14→13*	4.67	131	0	3.06	-3.52	0	4.67	11.93	-5.11
14→15	8.48	273	-13	0.43	-8.25	-1.91	8.26	12.36	-13.36
16→15*	3.11	-	+90	0	0	-3.11	0	12.36	-13.36
17→16*	3.14	105	+29	+0.71	-2.65	-1.52	2.75	13.07	-16.01
17→18	11.79	285	-54	1.79	-6.89	-9.54	6.93	14.86	-22.70
18→19	16.27	-	-90	0	0	-16.27	0	14.86	-22.70
19→20	4.14	316	-28	+2.63	-2.54	-1.94	3.66	17.49	-25.24
20→21	9.72	-	-90	0	0	-9.72	0	17.49	-25.24
21→22	9.33	273	-6	0.49	-9.27	-0.98	9.28	17.98	-34.51
23→22*	8.35	125	+54	+2.82	-4.02	-6.76	4.91	20.80	-38.53
23→24	3.19	267	-14	-0.16	-3.09	-0.77	3.09	20.64	-41.62
25→24*	5.14	-	+90	0	0	-5.14	0	20.64	-41.62
25→26	7.35	284	-30	1.54	-6.17	-3.68	6.36	22.18	-47.79
27→26*	1.88	105	+57	0.26	-0.98	-1.57	1.02	22.44	-48.77
27→28	3.61	229	-27	-2.11	-2.43	-1.64	3.22	20.33 20.33 19.95	-51.29 -48.13
29→28*	3.60	277	-31	-0.38 -3.10	+3.07	+1.85	3.09	20.33 16.85	-48.90
29→30	3.19	194	+2	-3.10 -3.10	-0.77	+0.11	3.19	16.85	-48.90

X = North Y = East Z = UP (store Gate) Please keep clear

Δx = r cos θ sin φ; Δy = r sin θ cos φ; Δz = r sin φ; Δext = r cos φ

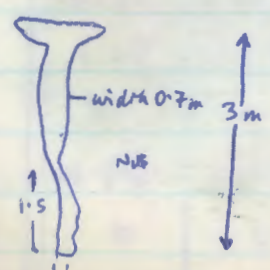
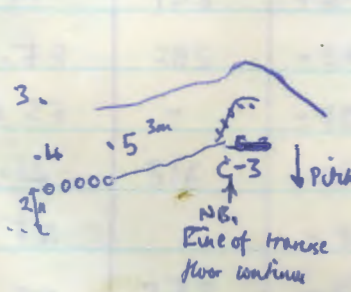
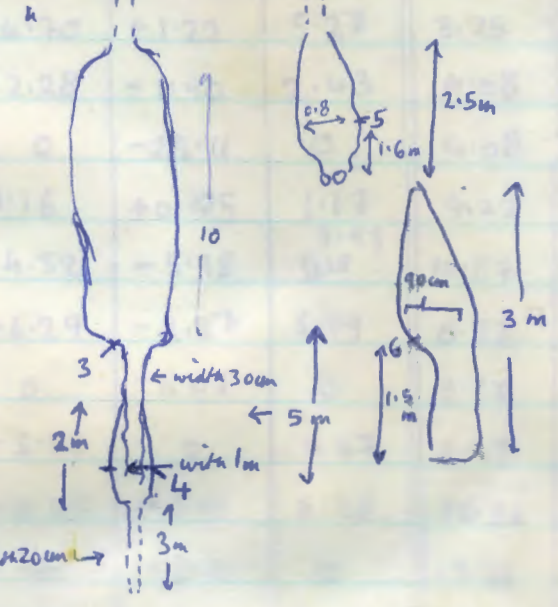
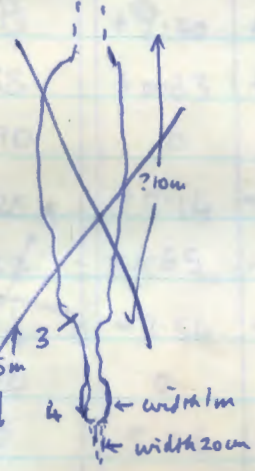
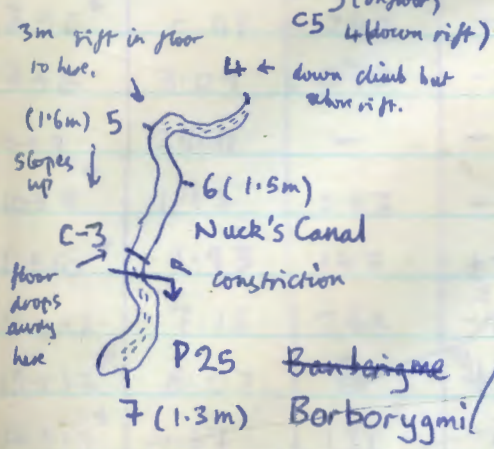
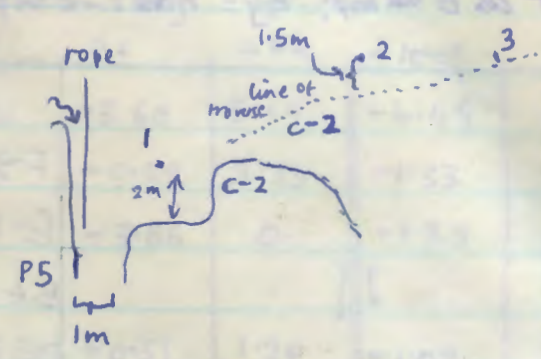
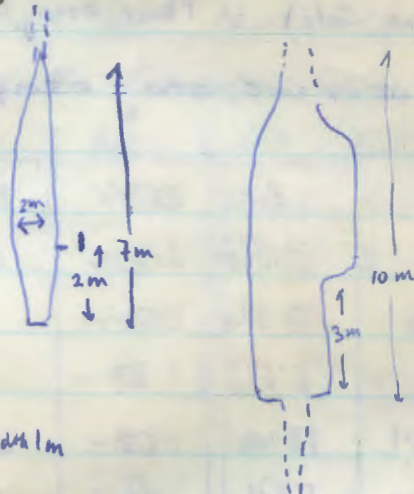
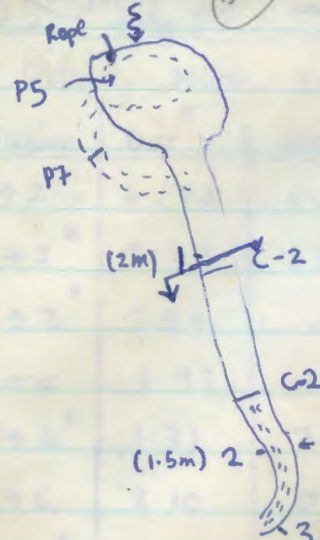
- 108.51
-104.85
-105.14
-109.00
-108.49
-107.60
-106.38
-108.28
-133.39
-133.34
-139.32
-141.59
-149.66
-149.66
-151.57
-154.68
-156.20
-165.74
-182.01
-183.95
-193.67
-194.65
-201.41
-202.18
-207.32
-211.00
-212.57
-214.21
-212.36
-212.25

Table with columns ΔX, ΔY, ΔZ and rows F, EF, BE, DE, CD.



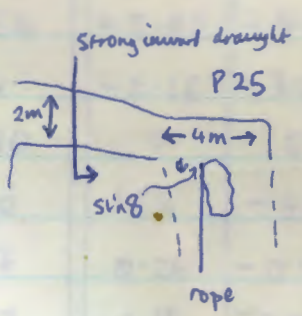
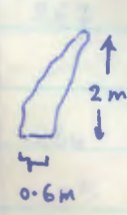
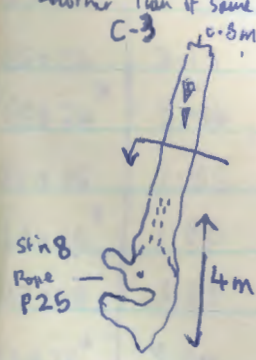
B29

roof out of sight



NB. climb over top. Bottom is tight.

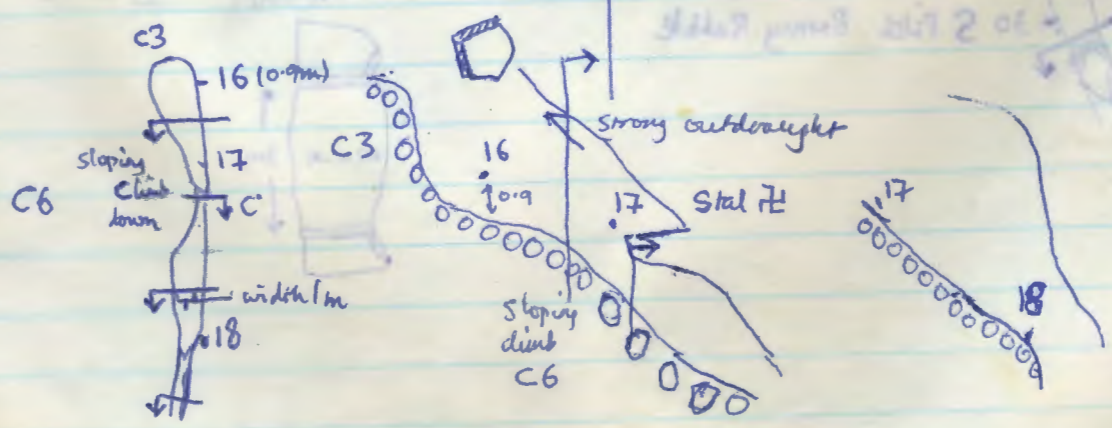
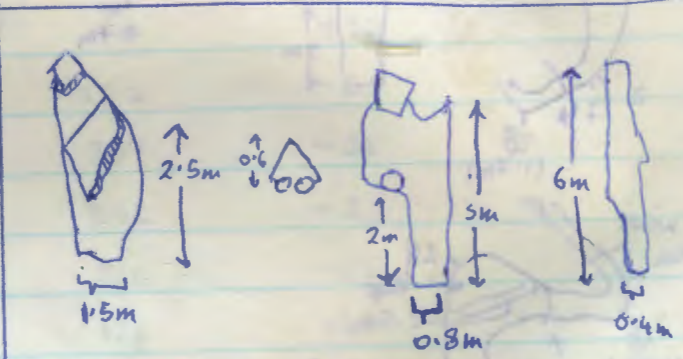
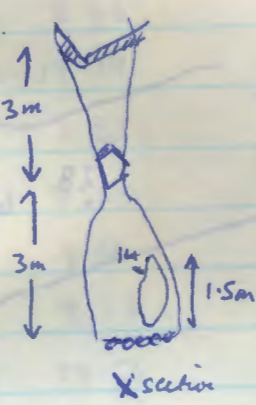
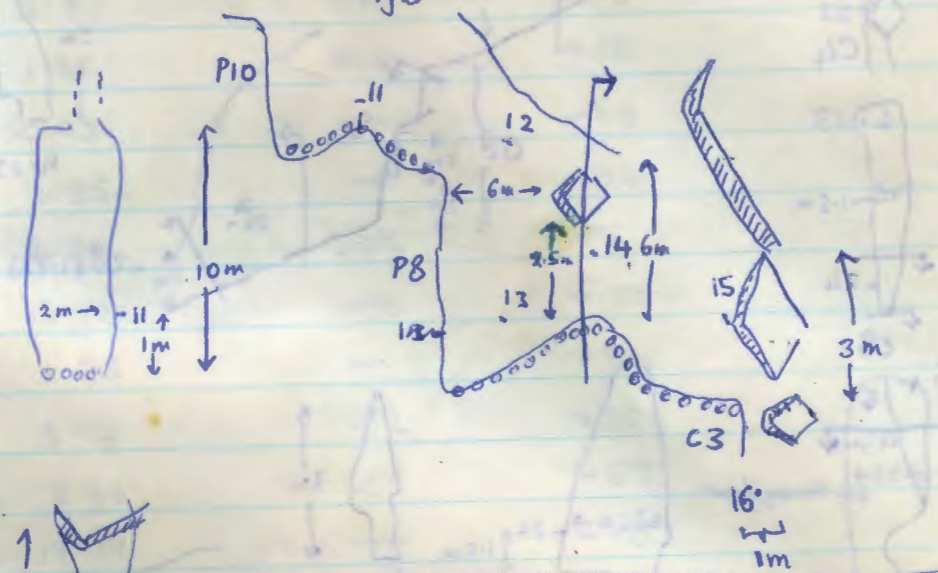
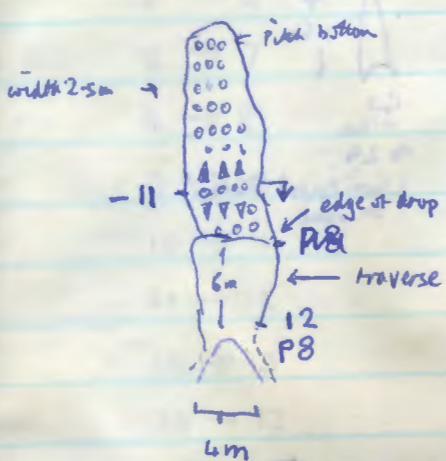
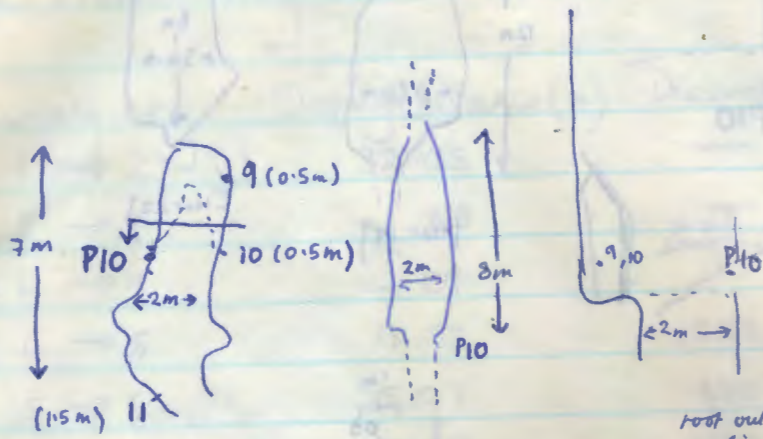
Another Plan of same section (more reliable)



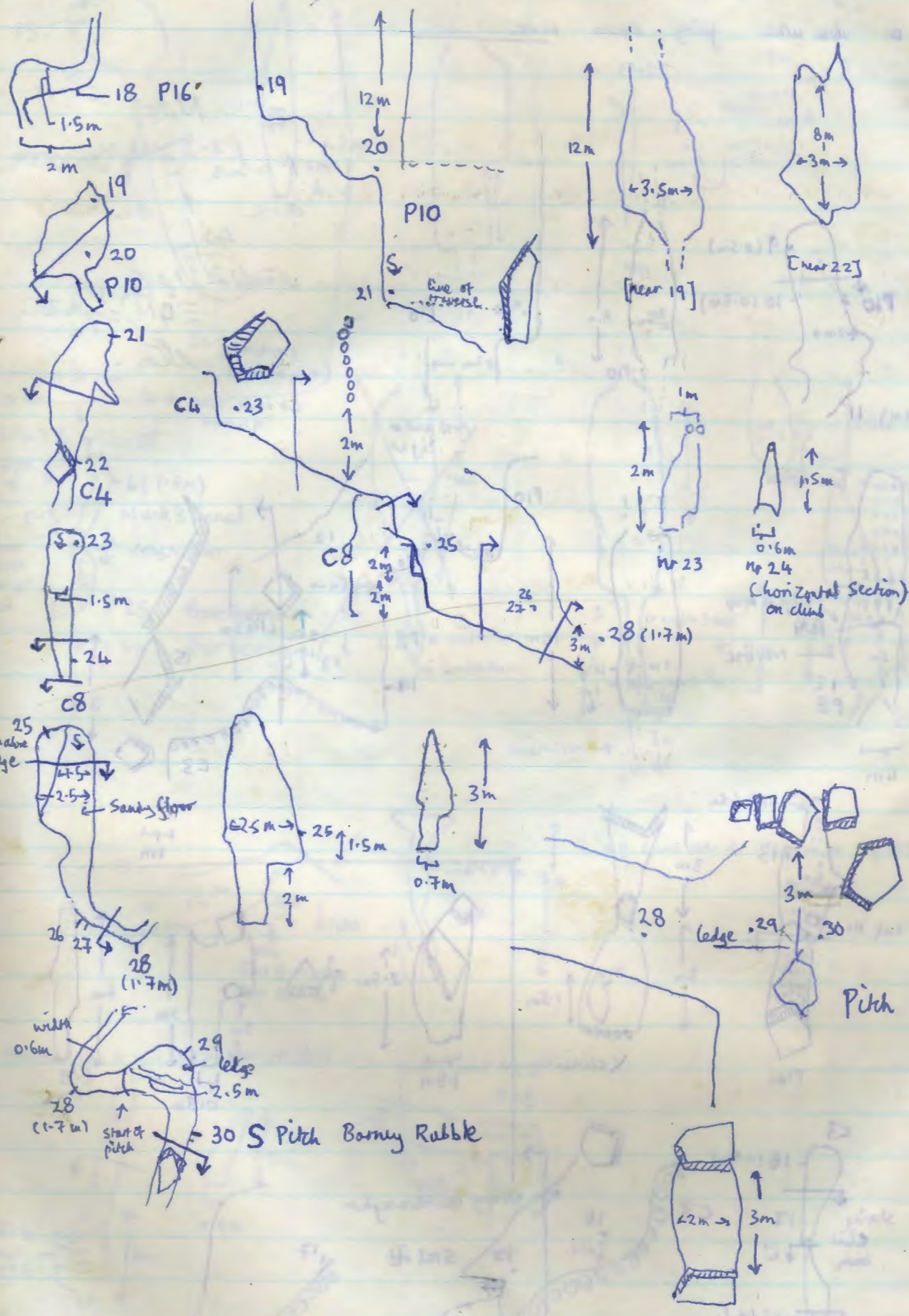
Mc

Heights of Survey Stations in brackets next to each station. Negative climb means going up or down when going down cave.

Notes
 Muses & Computer are 1 out
 - (12) here
 = BIL computer etc.



B31



Friday 26 July, 1985 Survey of F30 Barney Rubble → Dinosaur Beach. (B32)

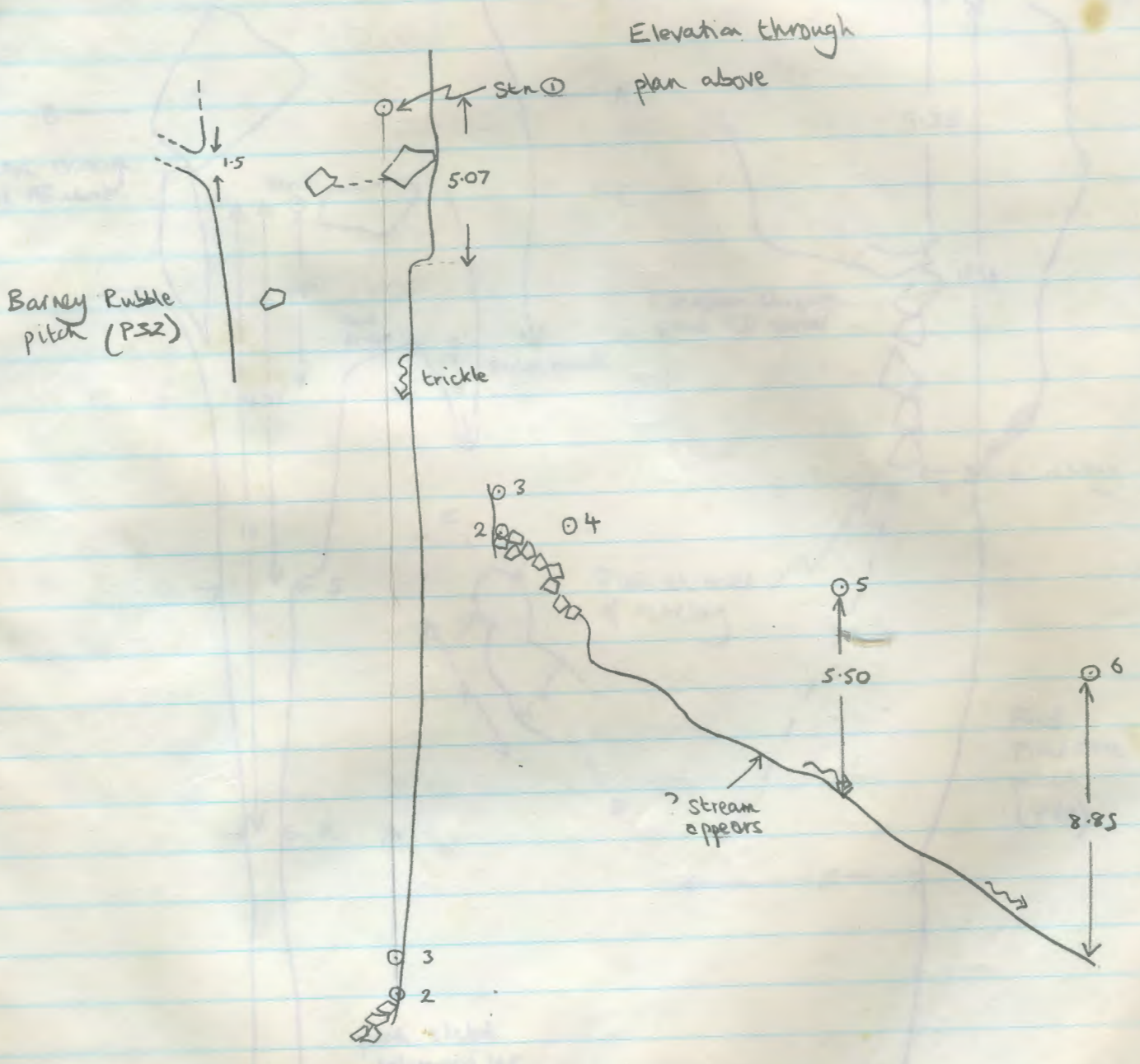
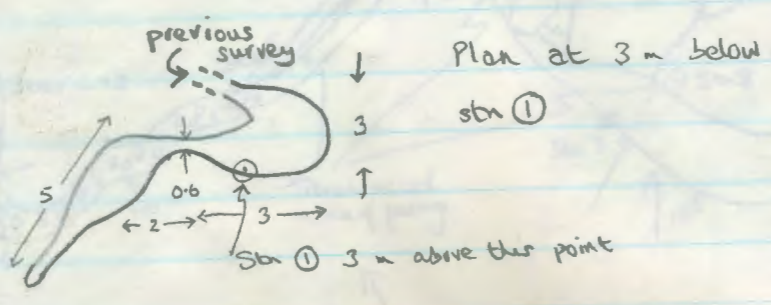
Instruments and sketching: Stephen Gale
Tape: Martin May

Survey leg	Sloping Distance (m)	Declination	Inclination
1 → 2	32.05	—	-90
2 → 3	1.85	—	+90
4 → 3	2.09	113	+25
4 → 5	7.93	222	-20
5 → 6	5.07	210	+24
7 → 6	5.47	095	-35
8 → 7	1.86	016	+32
8 → 9	50.03	—	-90
9 → 10	1.85	—	+90
10 → 11	2.39	302	+2
11 → 12	18.92	—	-90
12 → 13	1.85	—	+90
14 → 13	6.54	152	+25
14 → 15	3.46	265	-57
15 → 16	19.79	—	-90
16 → 17	1.85	—	+90
18 → 17	8.50	170	-25
18 → 19 (DB1)	4.66	307	-36
18 → 20 (DB2)	8.75	082	+25
21 → 18 (DB3)	19.56	216	-25
21 → 22 (DB4)	35.50	124	+45

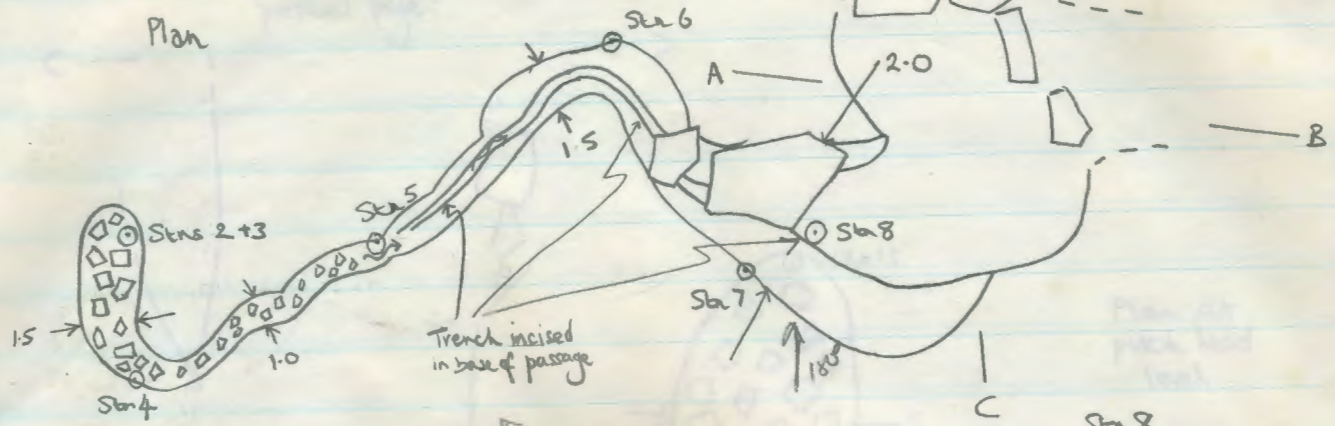
633

Survey station notes

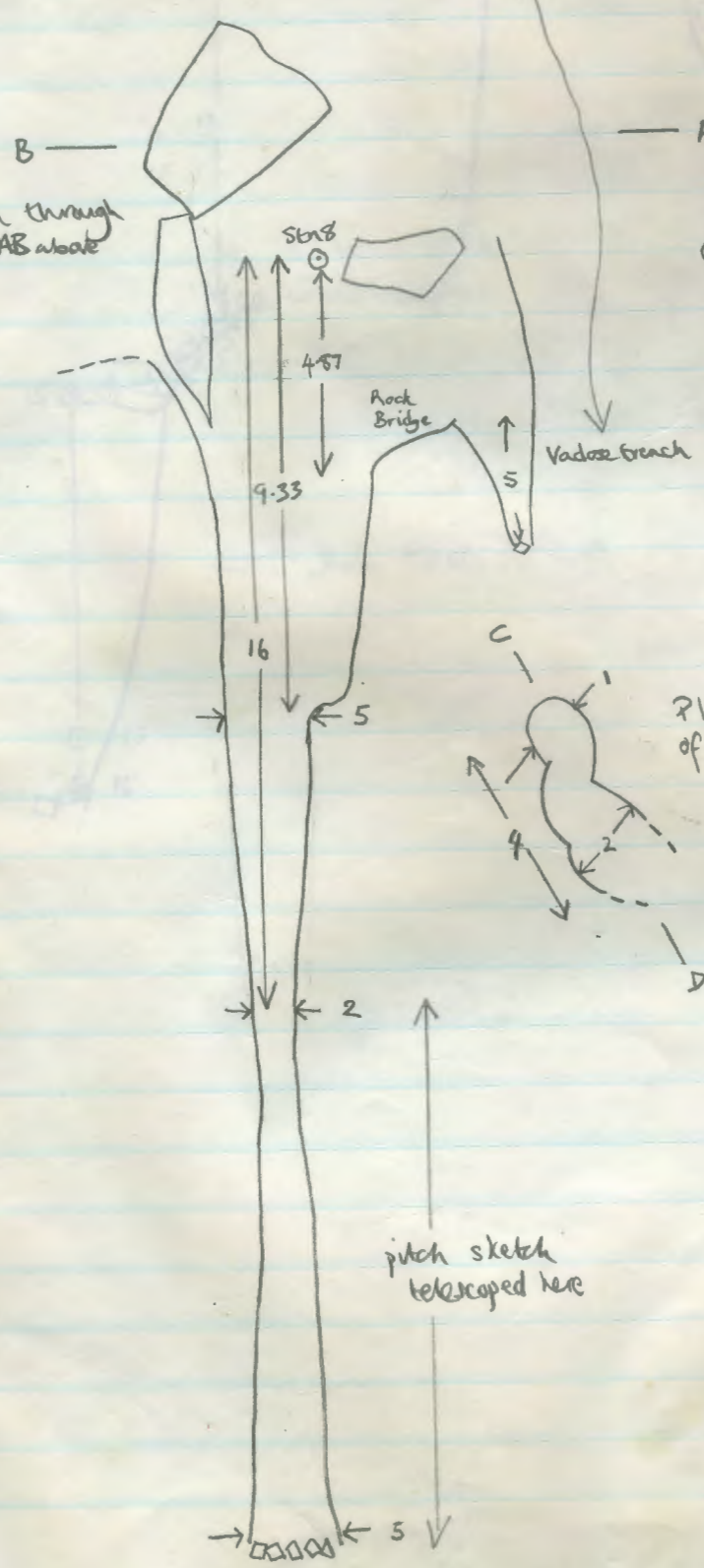
Station	Notes
1	Station 30 of previous survey
2	Floor of Barney Rubble pitch
4	On wall, 1.65 m above floor
5	On wall in vadose rift 5.50 m above stream
6	" " " " " 8.85 m " "
8	At knot of Y-hang at head of Fred Flintstone pitch
9	Floor of ledge $\frac{3}{4}$ way down Fred Flintstone rebelay
12	Floor of Fred Flintstone pitch
14	On wall, 1.61 m above floor
15	Bolt at head of Dino pitch
16	Floor of Dino pitch - marked by \odot in smoke
18	On wall, 1.70 m above floor
19	Head of climb down out of Dinosaur Beach - marked S
20	On wall, 1.60 m above floor
21	" " " 1.80 m " "
22	" " " 1.85 m " " and 100 m below ceiling



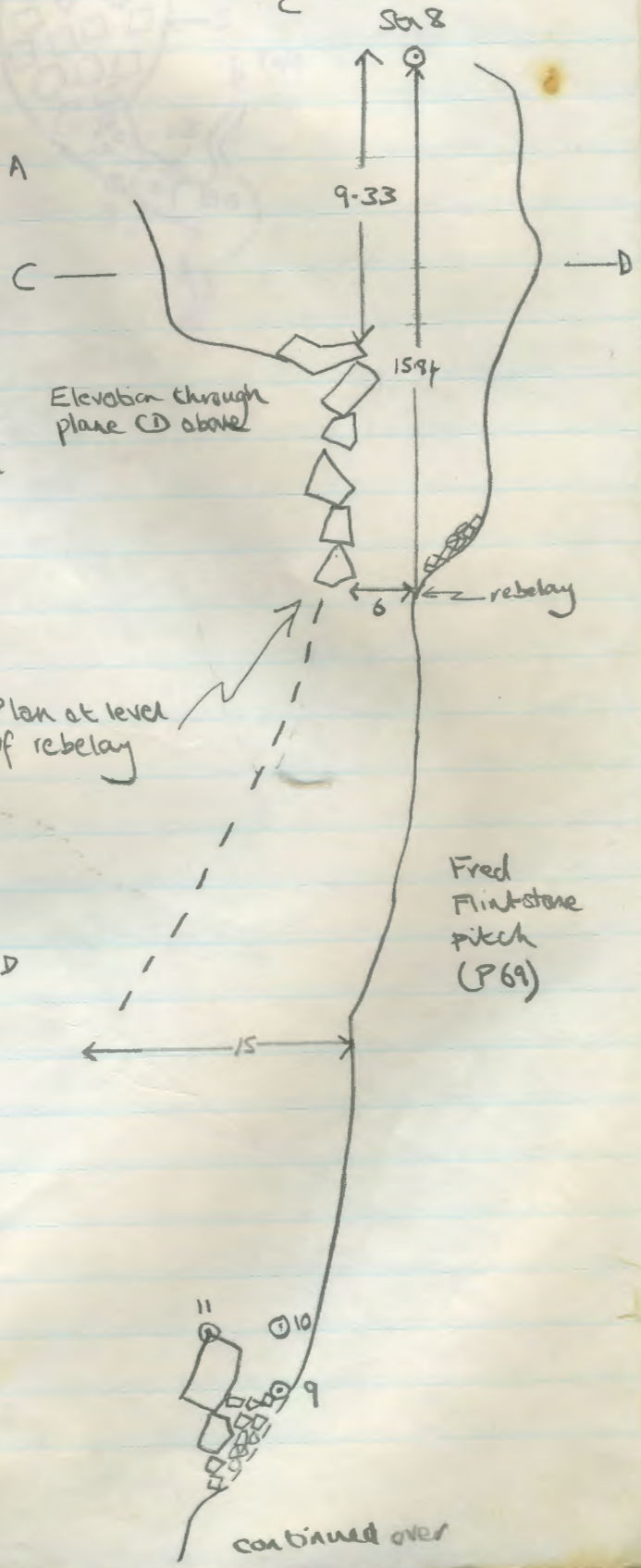
Plan



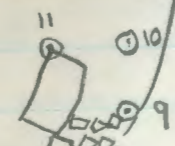
Elevation through plane AB above



Elevation through plane CD above

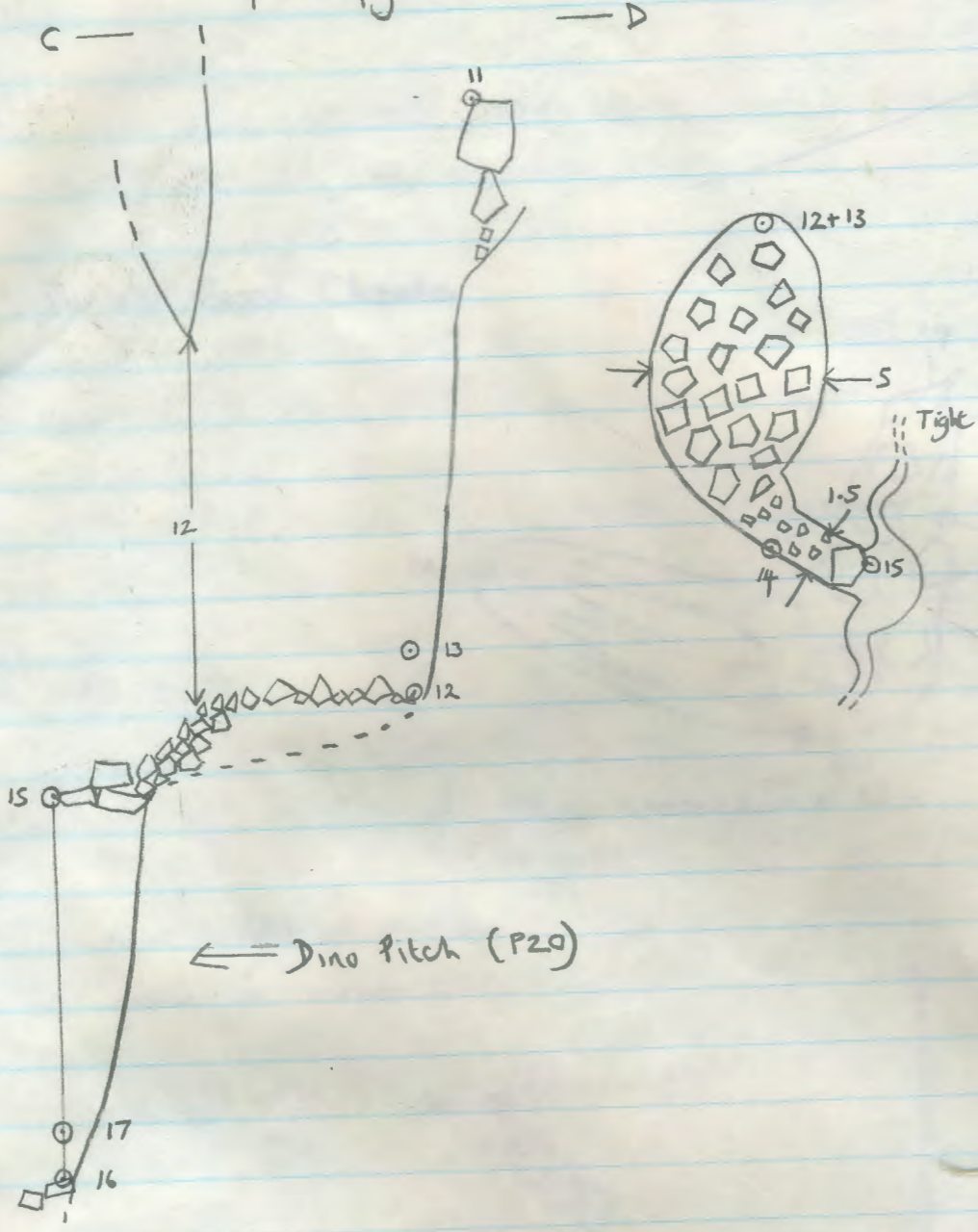


pitch sketch telescoped here



continued over

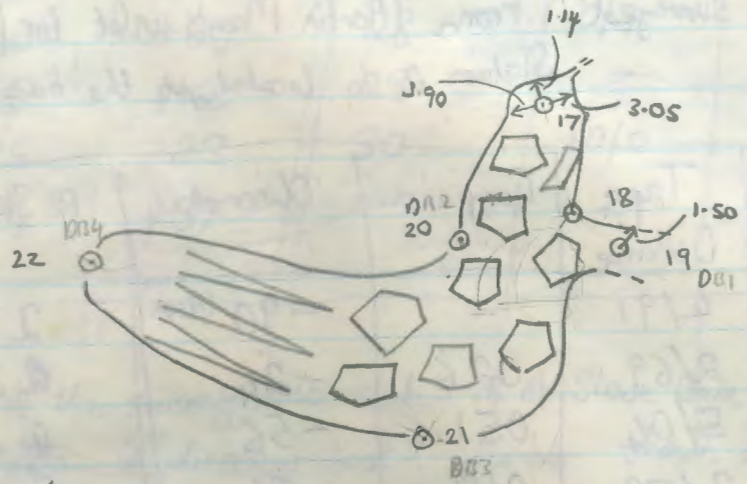
continued from previous page



Plan at pitch head level

← Dino Pitch (P20)

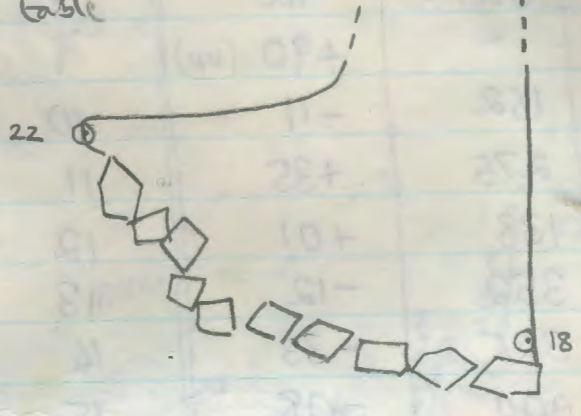
Dinosaur Beach Chamber



Scale approx 2cm @ 10 m

note heights of stations given in earlier table

Elevation through above plan



(E38)

Surveying Trip

F30 (Ridge Cave)

28/7/85

Notes: Ian Houghton
Compass + Clin: Nicola Dollimore
Tape: Paul Brennan

Route surveyed: From Martin May's inlet to Dinosaur Beach
Station 2 is located at the base of the first overhanging cliff

Stations From - To	Tape Distance	Compass	Climometer	At Station	Width at Stn	Height of Stn above floor
1-2	4/91	-	-90 (down)	2	1/00	1/45
2-3	2/69	026	-24	3	1/50	-
3-4	5/04	051	-56	4	1/80	1/55
4-5	2/79	010	-34	5	0/8	3/9
5-6	3/54	062	-78	6	0/6	3/95
6-7	7/34	016	-41	7	1/8	1/25
7-8	4/29	327	-12	8	0/94	1/12
8-9	7/05	-	+90 (up)	9	1/2	-
10-9	3/60	162	-11	10	1/1	2/8
10-11	2/44	275	+35	11	0/8	2/6
12-11	7/26	138	+01	12	1/2	2/65
12-13	5/02	352	-12	13	0/5	2/5
13-14	2/56	326	-33	14	0/4	1/1
14-15	3/90	000	-08	15	0/15	3/20
15-16	2/21	330	+13	16	0/30	1/10
16-17	3/08	270	+08	17	0/45	1/50
18-17	3/13	174	-12	18	0/55	2/20
18-19	3/29	266	+13	19	0/40	5/0
19-20	3/45	279	-01	20	0/35	5/5
20-21	0/61	000	-12	21	0/35	5/5
21-22	3/53	290	-13	22	0/35	1/35
22-23	2/15	252	-04	23	0/7	3/4

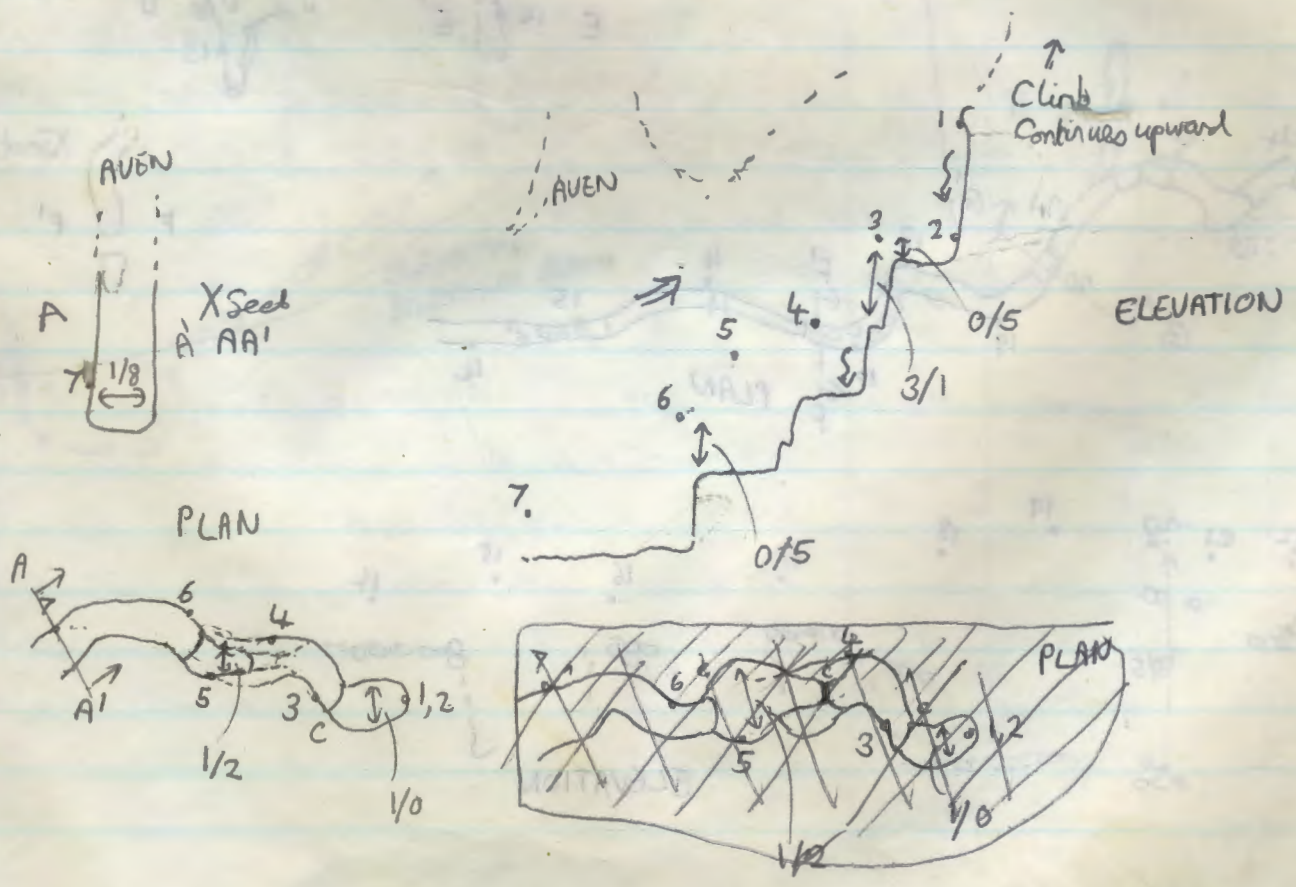
Stn
From
23-
24-
25-
27-
27-
29-
29-
(18)-

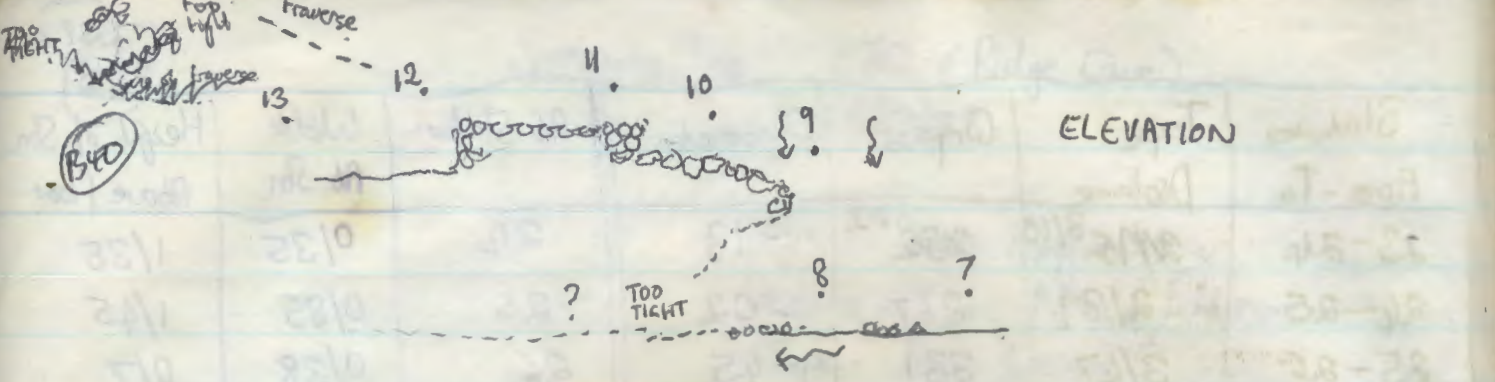
Stn
s
p
T
lf
A
7
A
A

Station From - To	Tape Distance	Compass	Clinometer	Ab Station	Width Ab Stn.	Height of Stn. Above floor
23-24	2/15 ^{3/10}	252 ³¹²	-18	24	0/35	1/35
24-25	2/89	267	-02	25	0/85	1/45
25-26	3/47	331	-45	26	0/38	0/7
27-26	1/91	149	+14	27	0/45	2/8
27-28	2/17	040	+22	28	0/8	0/3
29-28	2/87	166	+12	29	-	1/3
29-30	3/92	295	-23	30	10/0	0/0
(18)-30	31/94	064	+37	-	-	-

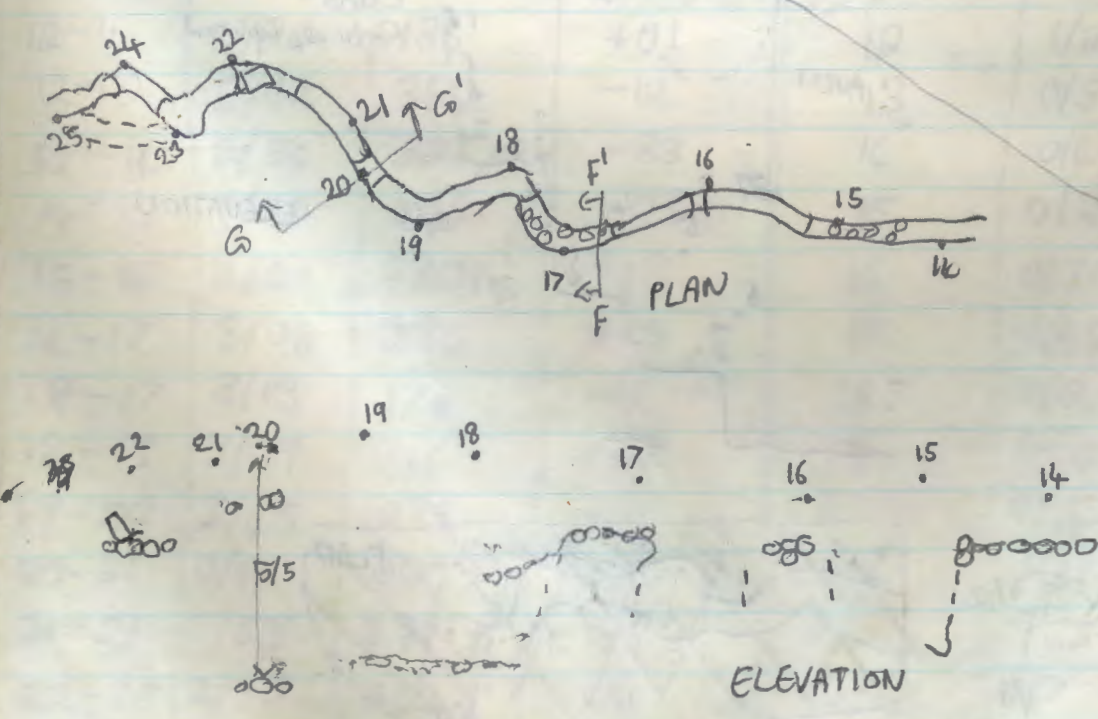
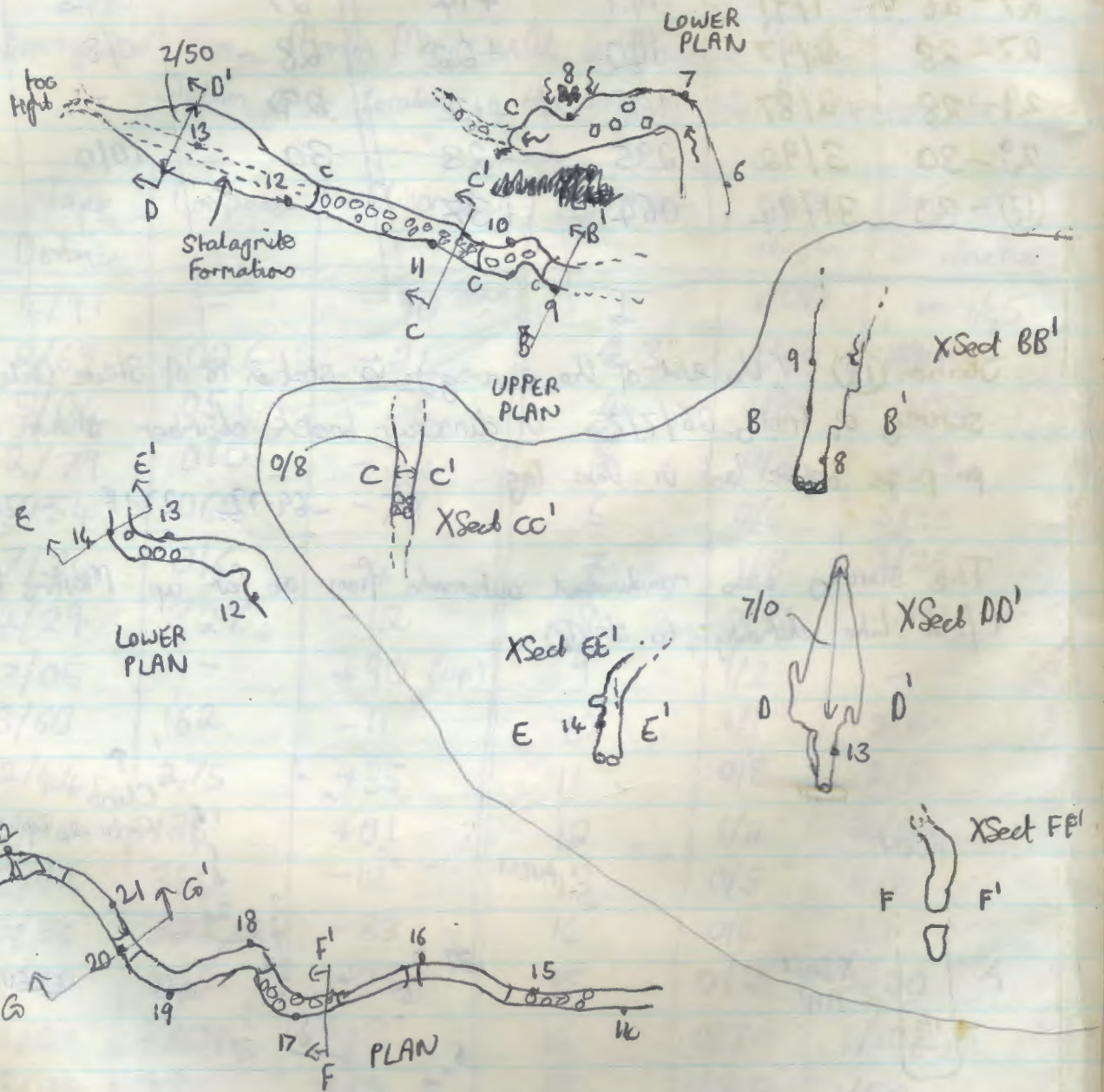
Station (18) (the end of the survey) is station 18 of Steve Gale/Martin May survey of Friday 26/7/85 in dinosaur beach chamber shown on the page before last in this log at -69.72 27.18 -326.09

The survey was conducted outwards from as far up Martins Inlet as I felt like climbing, to stn (18).

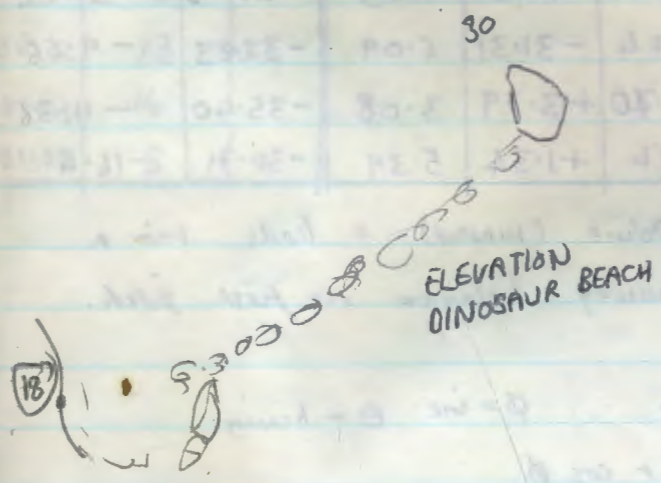
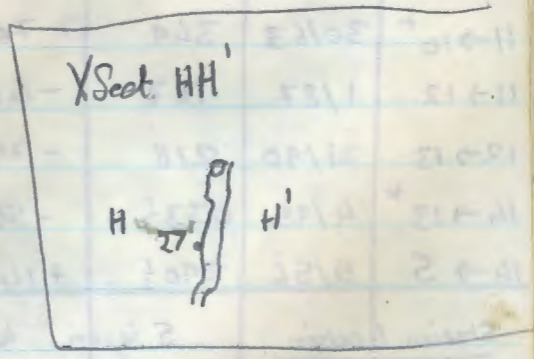
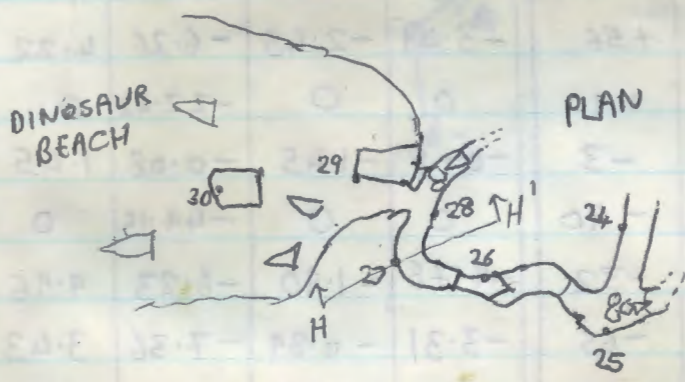
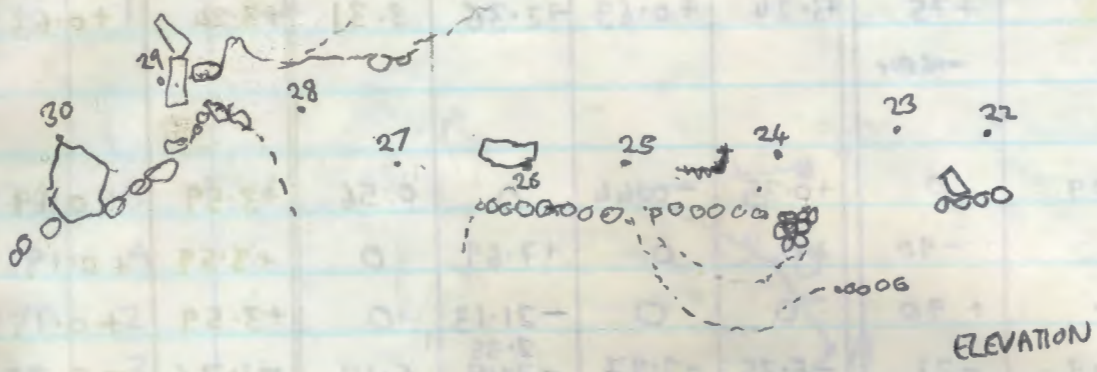
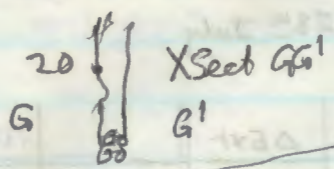




ELEVATION



ELEVATION



F20 Survey from Surface Within notes; Testyn Compass & clin; Sker D. Tape

Compass Summit 949868; clin 113779, 28th July

Station	dist	bear	inc	Δx	Δy	Δz	ΔExt	X	Y
1 → S*	12/80	191	+75	+3.24	+0.63	-12.36	3.31	+3.24	+0.63
10 → B	7/62	-	-90						
A → B*									
1 → B	0.56	309	0	+0.35	-0.44	0	0.56	+3.59	+0.19
A → B*	7/69	-	-90	+0	0	+7.69	0	+3.59	+0.19
2 → A*	21/13	-	+90	0	0	-21.13	0	+3.59	+0.19
2 → 3	6/56	209	-21	-5.35	-2.97	-2.35	6.12	-1.76	-2.78
4 → 3*	7/55	036	+56	-3.41	-2.48	-6.26	4.22	-5.17	-5.26
5 → 4*	22/62	-	+90	0	0	-22.62	0	-5.17	-5.26
5 → 6	1/45	267	-3	-0.08	-1.45	-0.08	1.45	-5.25	-6.71
6 → 7	49/15	-	-90	0	0	-49.15	0	-5.25	-6.71
8 → 7*	11/75	011	+32	-9.78	-1.90	-6.23	9.96	-15.03	-8.61
8 → 9	8/12	195	-65	-3.31	-0.89	-7.36	3.43	-18.34	-9.50
10 → 9*	4/65	299	+63	-1.02	+1.85	-4.14	2.11	-19.36	-7.65
11 → 10*	30/63	349	+76	-7.27	+1.41	-29.72	7.41	-26.63	-6.24
11 → 12	1/87	167	-40	-1.34	+0.32	-1.20	1.43	-28.03	-5.92
12 → 13	31/90	218	-79	-4.80	-3.74	-31.31	6.09	-32.83	-9.66
14 → 13*	4/95	033½	-50	-2.57	-1.70	+3.79	3.08	-35.40	-11.36
14 → S	5/56	290½	+14	+4.69	-5.04	+1.34	5.39	-30.71	-16.4

Station location S is on highest part of Doline (marked) & leads via a tortuous route to A, the primary belay on the first pitch.

Take X = North

Y = East

Z = UP

ϕ = inc θ = bearing

$$\Delta Ext = r \cos \phi$$

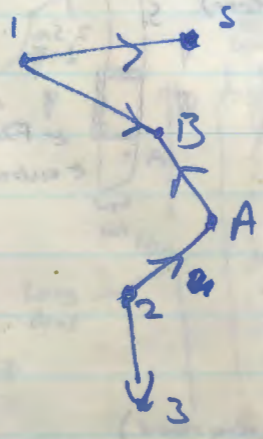
$$\Delta X = r \cos \phi \sin \theta \cos \theta$$

$$\Delta Y = r \cos \phi \sin \theta$$

$$\Delta Z = r \sin \phi$$

* = back bearing

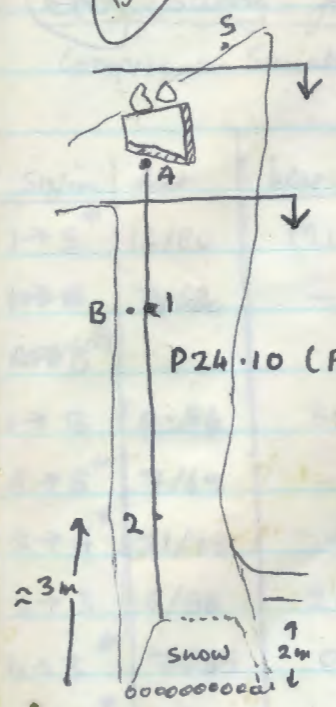
Z	Stn
-12.36	1
-12.36	B
-4.67	A
-25.80	2
-28.15	3
-34.41	4
-57.03	5
-57.11	6
-106.26	7
-112.49	8
-119.85	9
-123.99	10
-153.71	11
-154.91	12
-186.22	13
-182.43	14
-181.09	S



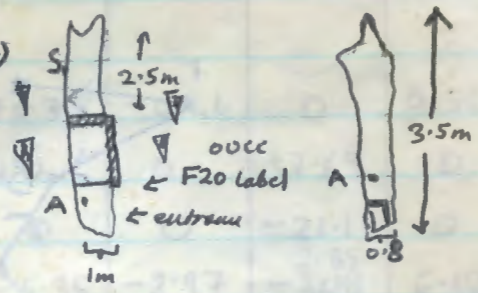
B44

- S highest part of doline
- A primary bolt
- 1 on wall in shaft
- B on rope opposite 1
- 2 on rope \approx 3m from floor of pitch

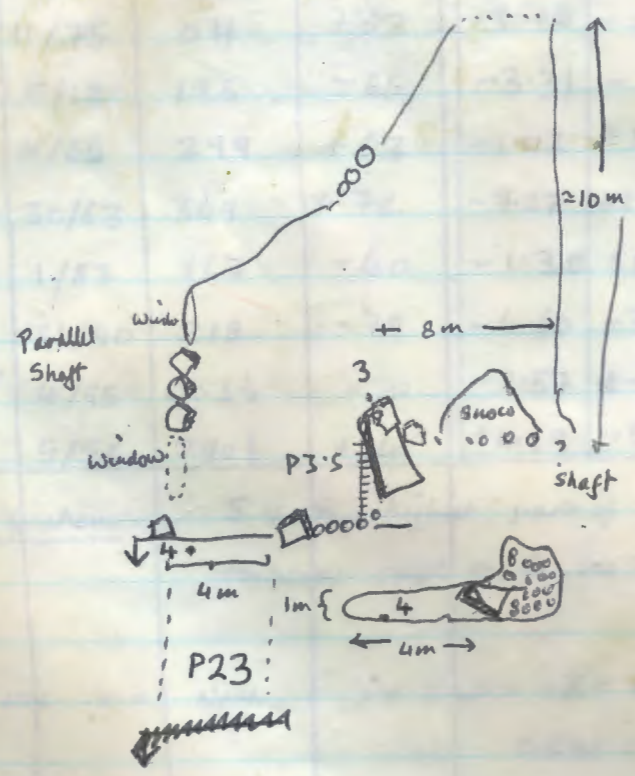
NB More sketches under
Second Survey trip



See next elevation



Elevation of bottom of shaft (other way round)

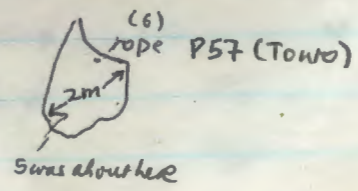
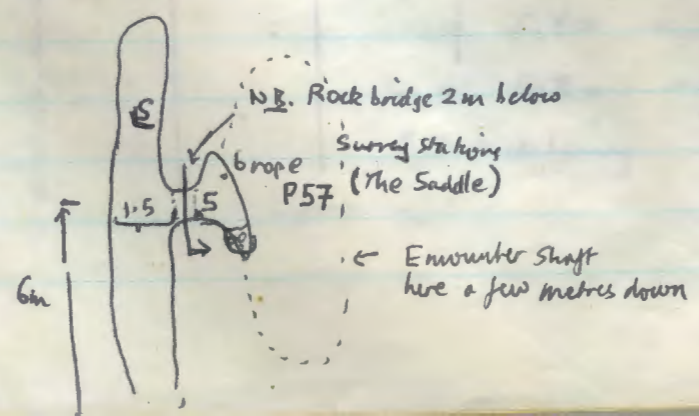


Station 3 on ledge

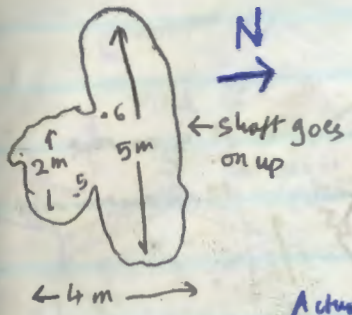
Station 4 1m below head of shaft by rope

Plan at foot of 2nd pitch.

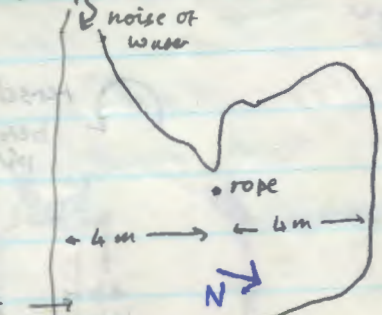
Plan of head of 3rd pitch



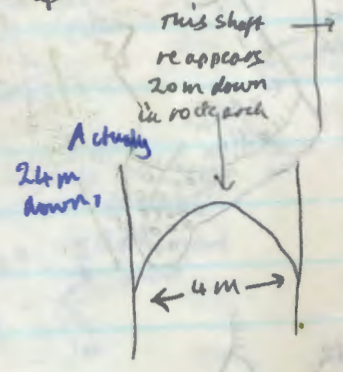
Plan
3rd Pitch ≈ 5m below bolt



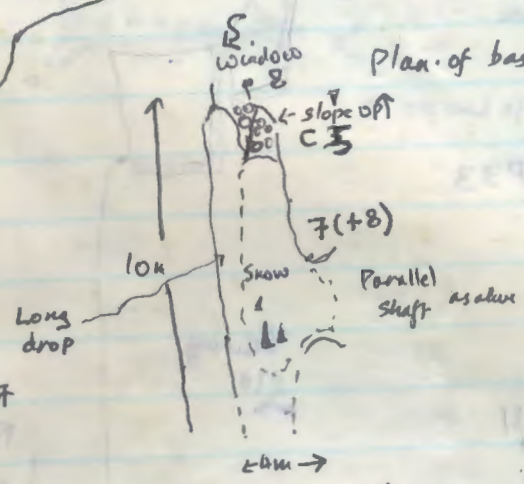
Plan
3rd Pitch ≈ 20m below bolt to base of pitch.



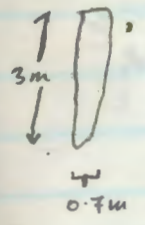
Station 7 on rope 8 m up from floor of shaft



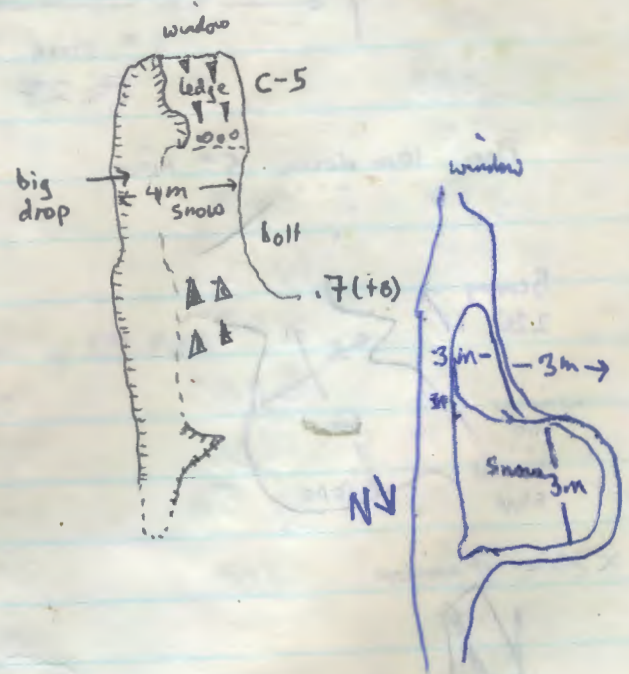
Plan of base of 3rd Pitch



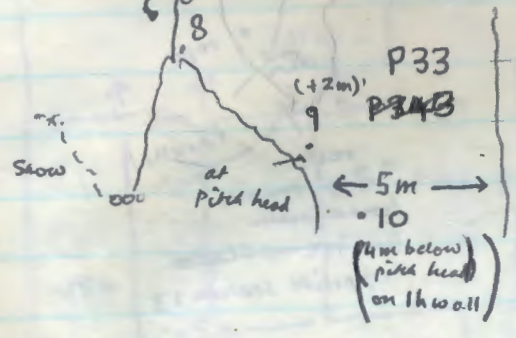
X Section of window



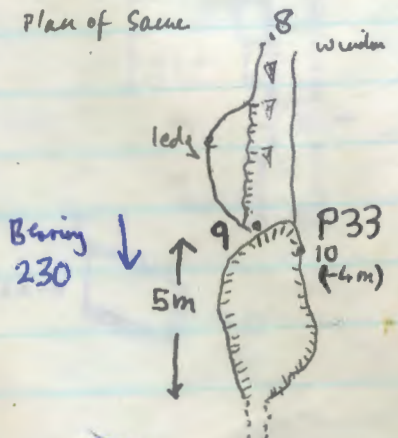
Another attempt at same.



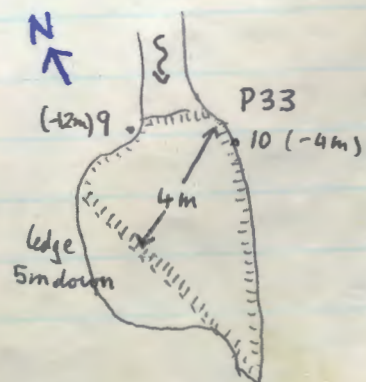
Elevation of bit between 3rd & 4th pitches
7.



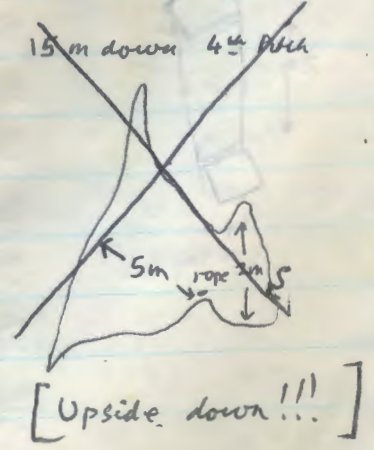
Plan of same



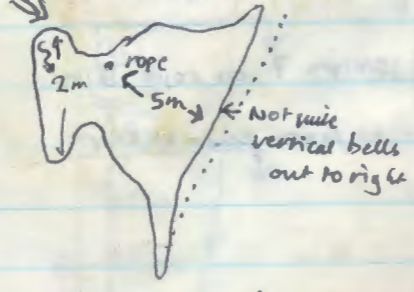
Another Head of 4th pitch



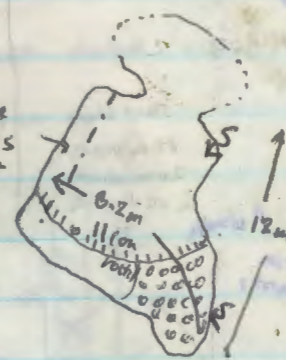
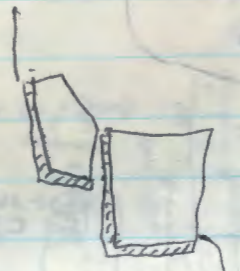
15 m down 4th pitch



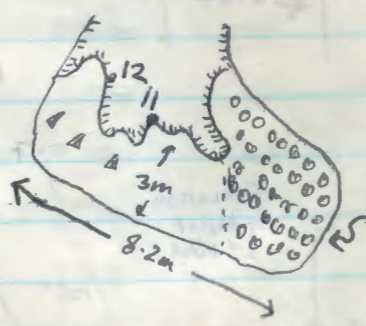
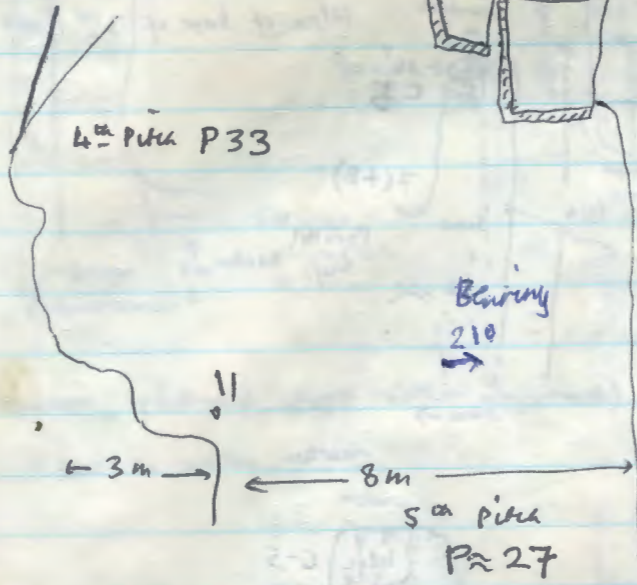
15 m down 4th pitea
 Not vertical but terrain slopes down to right



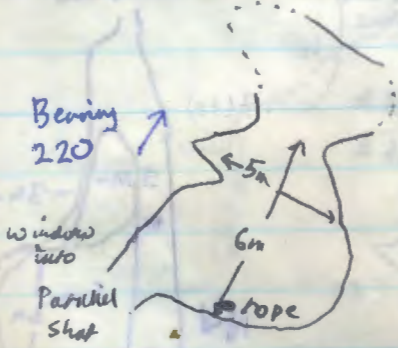
turned 180°
 between piteas



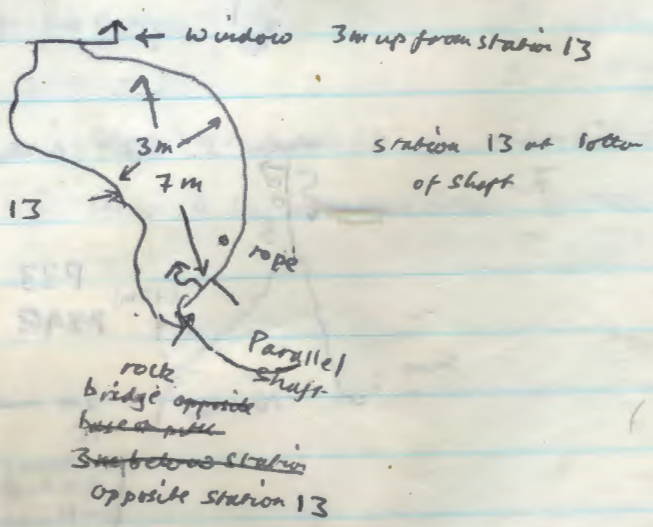
Head of 5th pitea



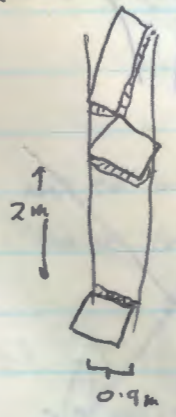
Plan 10m down 5th pitea

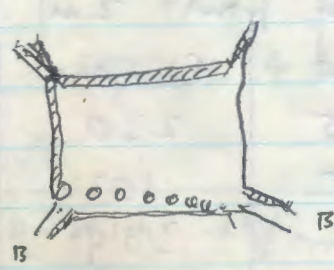
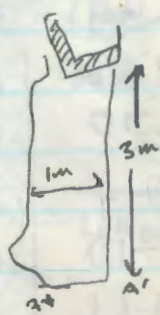
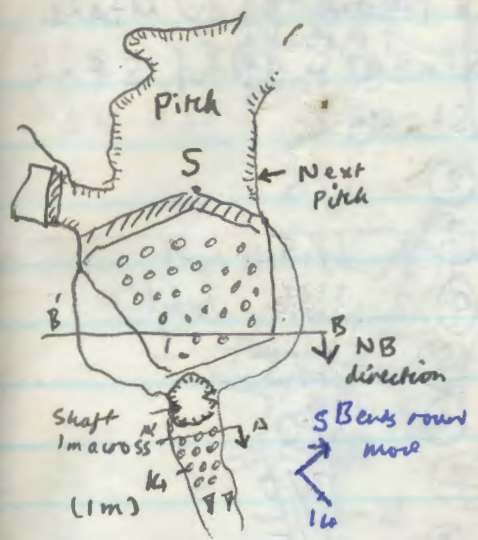


Plan at foot of 5th pitea

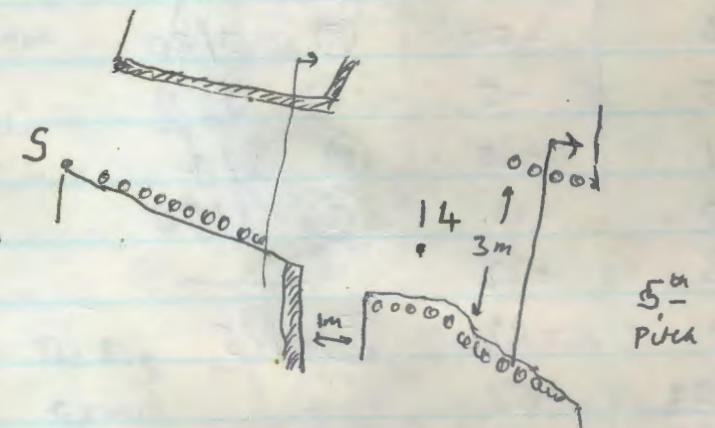


X section of window



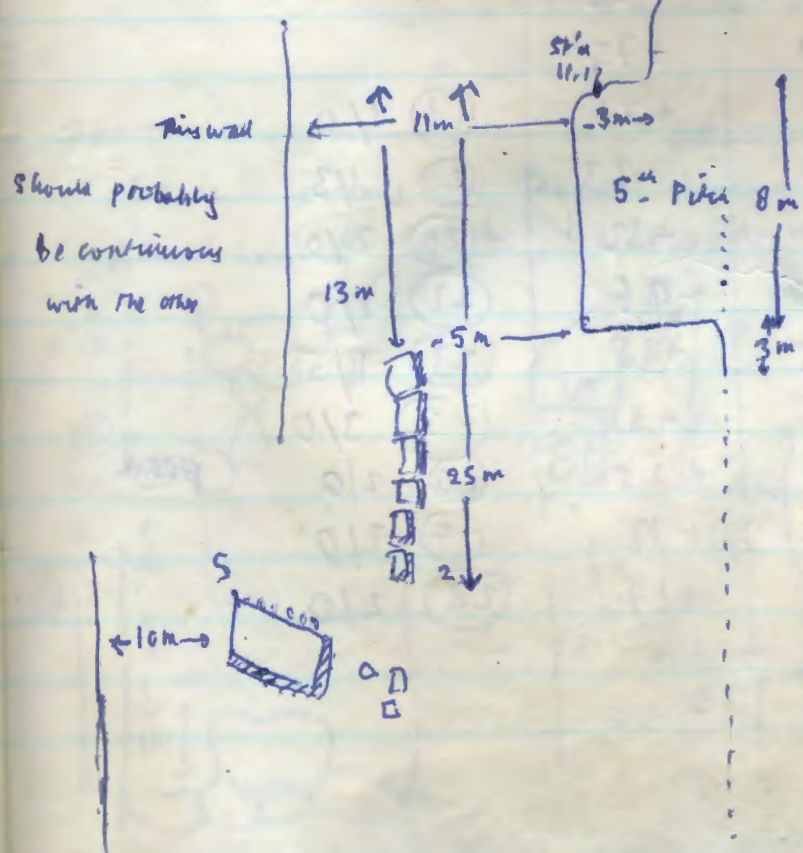


S on end of boulder



Bearing
← 220

Elevation of 5th Pitch



848

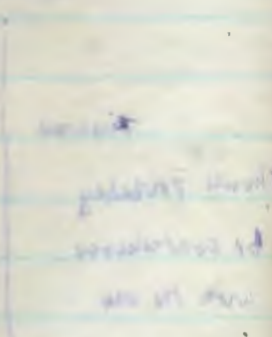
0

30/7/85

Sunway In Ridge Cove from Dinassau
Beach to tackle dup just before down stream
boulder choke (Hilton Park) P Rose Walters.

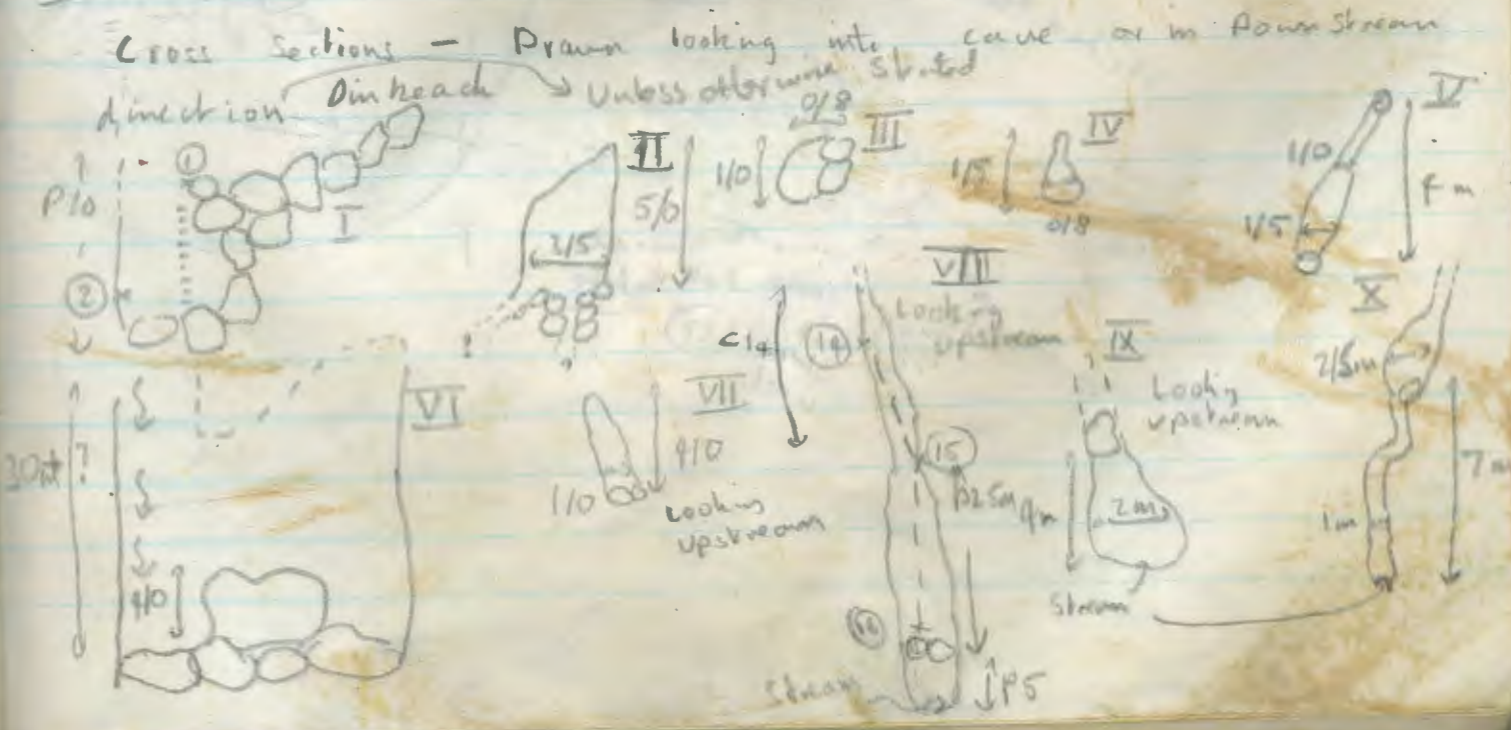
(Tape was read from 2m mark) Sta ^(notes) ① = ⑬ of S stake

Sta	Tape	Compass	Climo	Sta Ht.
1 → 2	78/35	230	-70	② 1/5
3 → 2	16/65	103	+4	③ 1/5
3 → 4	5/39	309	-10	④ 1/6
5 → 4	7/34	061	+61	⑤ 5/5
6 → 5	2/37	083	+31	⑥ 1/0
6 → 7	9/67	275	-22	⑦ 3/0
8 → 7	1/22	059	+23	⑧ 1/5
8 → 9	8/15	296	+50	⑨ 0/80
10 → 9	24/60	085	-5	⑩ 0
10 → 11	17/61	271	-34	⑪ 1/4
12 → 11	25/47	160	+10	⑫ 1/00
12 → 10	36/03	133	+22	
08 13 → 13	5/55	100	-48	⑬ 1/5
14 → 13	8/75	309	+51	
14 → 15	10/23	118	-73	
16 → 15	21/85	2311	+86	⑭ 1/8
16 → 17	4/45	118	-52	
18 → 17	6/26	080	+75	
18 → 19	3/54	150	+21	⑮ 1/0
20 → 19	6/60	291	-23	⑯ 1/3
20 → 21	5/82	111	+32	⑰ 2/0
22 → 21	7/35	253	-46	⑱ 1/0
22 → 23	8/55 2/94	065	+38	⑳ 1/5
025 18 → 25	8/55 8/35	290	-3	㉑ 3/0
26 → 25	5/16 5/55	098	+25	㉒ 2/0
26 → 27	5/16 5/16	267	-12	㉓ 2/0
28 → 26	1/34 1/34	008	+17	㉔ 2/0
28 → 29	1/26 1/26	135	+4	
30 → 29	1/51 1/51	039	+36	



BRAND

30 → 31	4/52	292	-1	(31) 3/3	BH9
30 → 31	1/61	003	(21) +34	(33) 4/11	
32 → 33	3/79	291	+6		
34 → 33	4/68	149	+58		
34 → 35	2/05	314	(24) +4	(35) 1/2	



(P50)

Extended Elevation

From Din Beach + down
the 2 ladder Ditches

Dinosaur Beach



The Big Crunch

Zionchim Postbeam Rift

Roof not seen

Mud stone cascade at 45°

Connection toward Din Beach

Bouldery wall chiseled by flood

Estimated positions projected on to elevation line

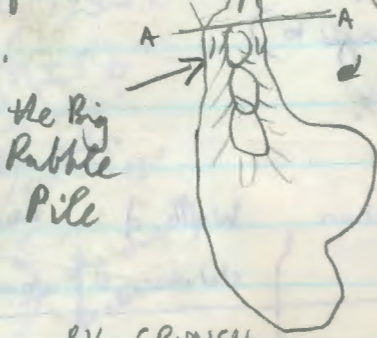
Filled in from memory

Hilton Park

Small Pitch
squeeze just before cascade at stream level

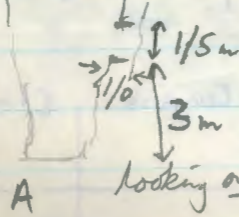
(33)

Noticed something which does not appear in surveys to date, a window up to the left as you go into the Big Crunch (going down the cave).



Big CRUNCH
(BCRA 1a)

cross section at entrance 'col'

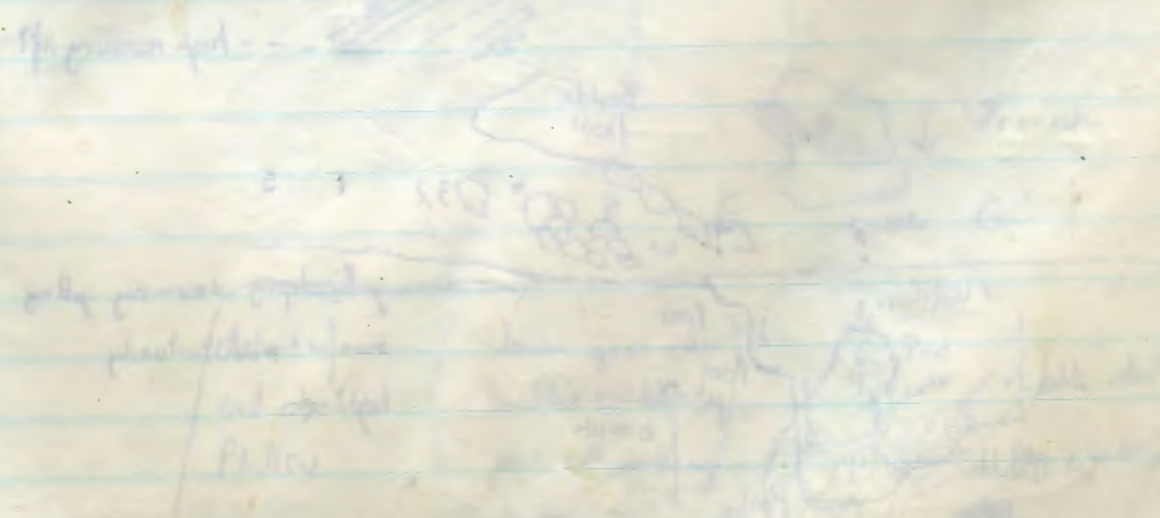


looking out of the Big Crunch.

can see wall through the window, about 1m in. Looks as if it might be an old route for the drip ?? Or partial collapse connected with the rubble ?

PVS 14/8/85

29
cascades



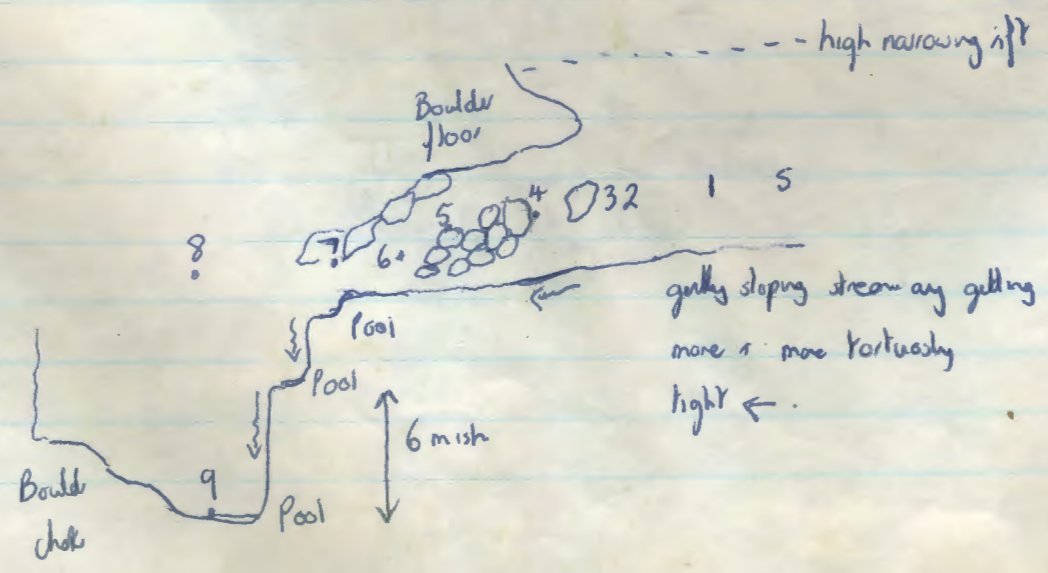
B52
 Swoony in Ridge Cave 3/8/84. Log: Nicola D. E
 Tape: Margot M
 Compass / UTM: Gerhard
 Wrecking m. Fred.

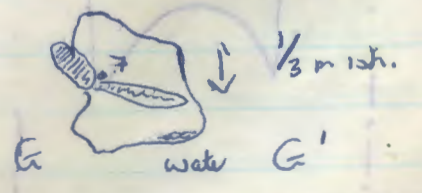
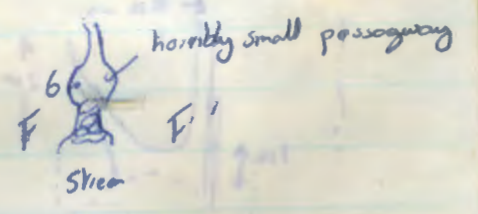
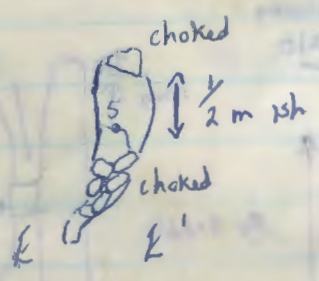
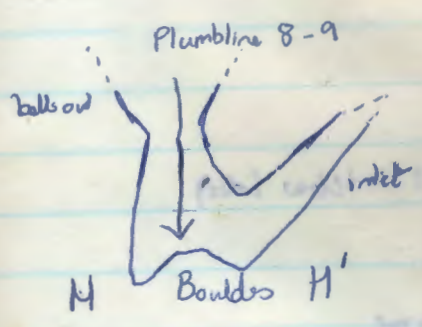
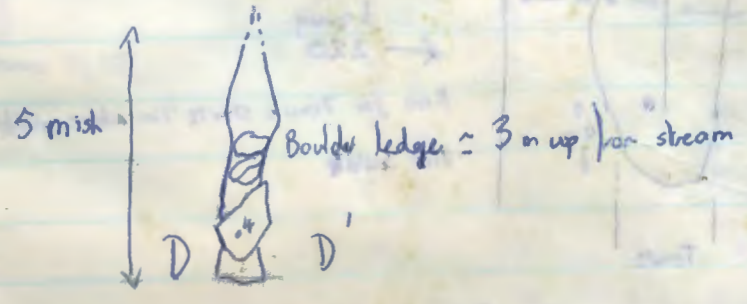
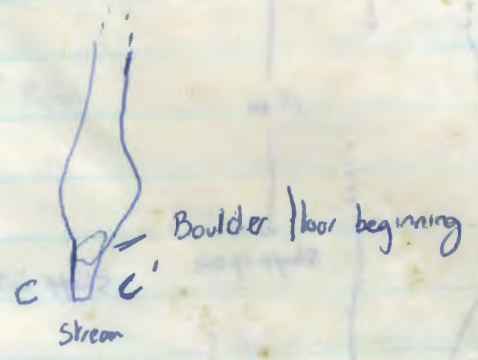
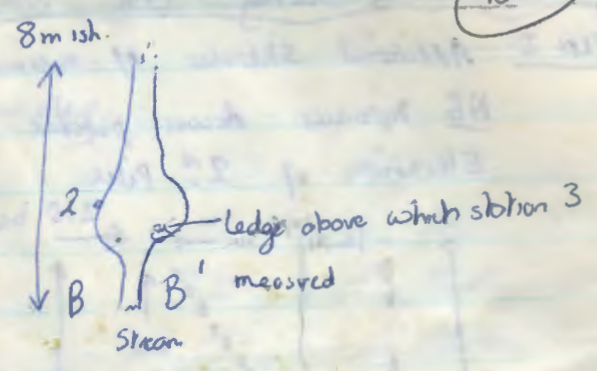
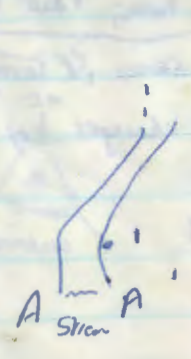
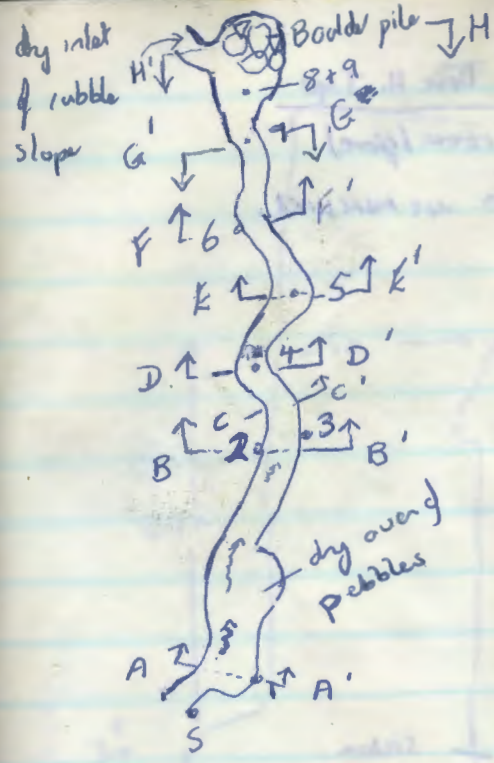
From: Hilton Park (where Lester, P. Ross surveyed to)
 to end of streamway + boulder choke

Station From-To	Tape Distance	Compass	Clin.	AK Station	Width of station.	Height of station above flow
1 → S	2/35	186	+09	1	0/60	2/0
1 → 2	5/75	293	+11	2	1/20	2/95
3 → 2	1/45	220	+09	3	1/30	1/1 above ledge
3 → 4	3/90	104	+31	4	0/25	0/67 *
5 → 4	2/59	133	+19	5	1/0	1/2
5 → 6	3/20	297	-13	6	0/5	0/9
6 → 7	3/83	310	-07	7	0/5	1/35
8 → 7	4/0	109	+14	8	1/7	13/7
8 → 9	13/9	vertical drop down	-90	9		0/0

← COPS.

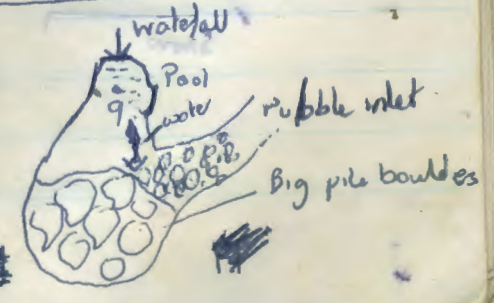
SAR photos in
 4 → 3 and has
 added on this





detail of end chamber
PLAN

(stream goes under boulders but bloody pers not working to draw it)



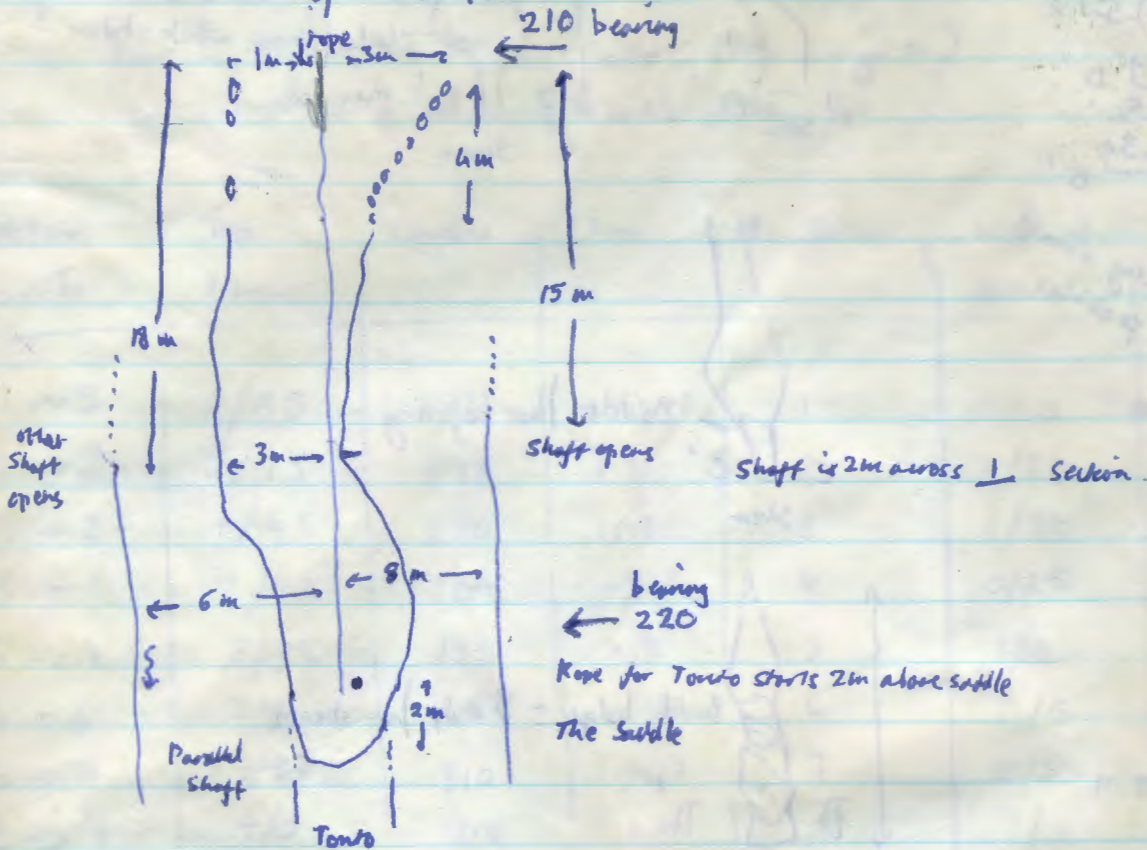
BGP

F20 Second Survey Trip William notes; Paul C+C; Dave H. Tap

Part I Additional sketches of entrance series, (Sorry - no room before)

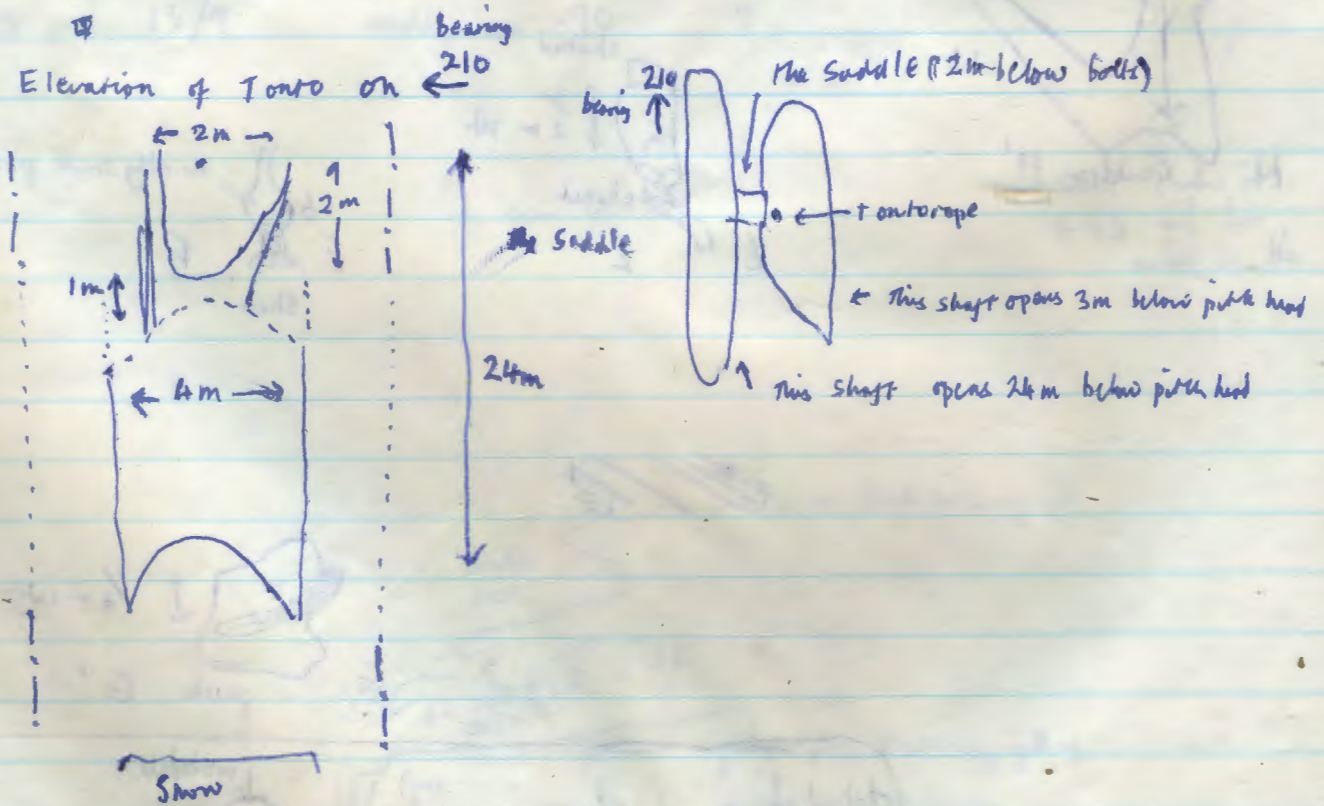
NB Distances down pitches to changes of section are measured.

Elevation of 2nd Pitch



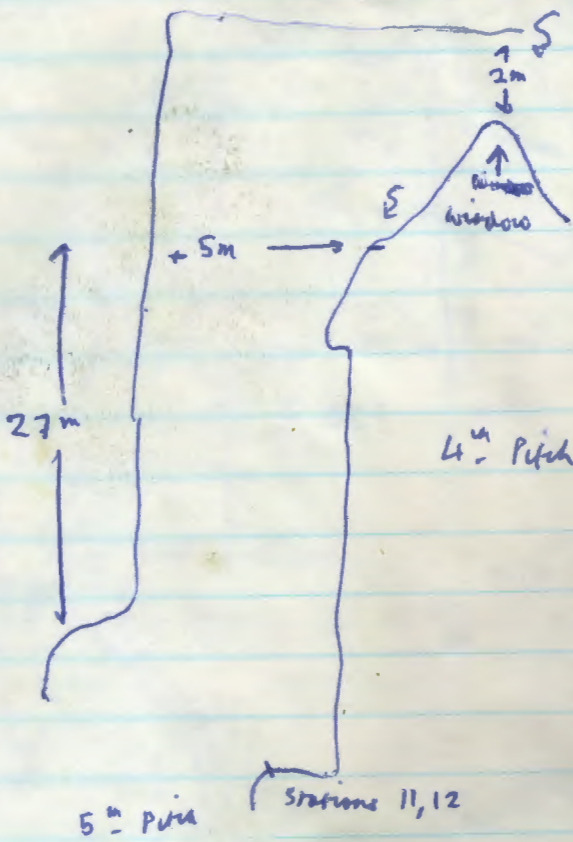
II

Elevation of Tonto on



← Bearing 210

Snow ply



Station	Dist	Bearing	Angle	Dist	Bearing	Angle	Dist	Bearing	Angle	Dist	Bearing	Angle
1	2.0	210	90	2.0	210	90	2.0	210	90	2.0	210	90
2	2.0	210	90	2.0	210	90	2.0	210	90	2.0	210	90
3	2.0	210	90	2.0	210	90	2.0	210	90	2.0	210	90
4	2.0	210	90	2.0	210	90	2.0	210	90	2.0	210	90
5	2.0	210	90	2.0	210	90	2.0	210	90	2.0	210	90
6	2.0	210	90	2.0	210	90	2.0	210	90	2.0	210	90
7	2.0	210	90	2.0	210	90	2.0	210	90	2.0	210	90
8	2.0	210	90	2.0	210	90	2.0	210	90	2.0	210	90
9	2.0	210	90	2.0	210	90	2.0	210	90	2.0	210	90
10	2.0	210	90	2.0	210	90	2.0	210	90	2.0	210	90
11	2.0	210	90	2.0	210	90	2.0	210	90	2.0	210	90
12	2.0	210	90	2.0	210	90	2.0	210	90	2.0	210	90

B56

Part F20 Second Surveying Trip (Cont'd)

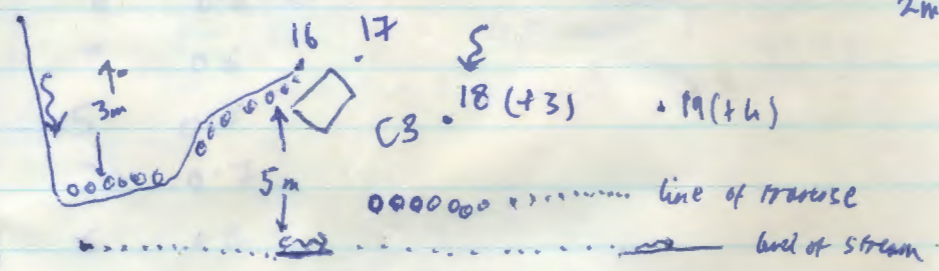
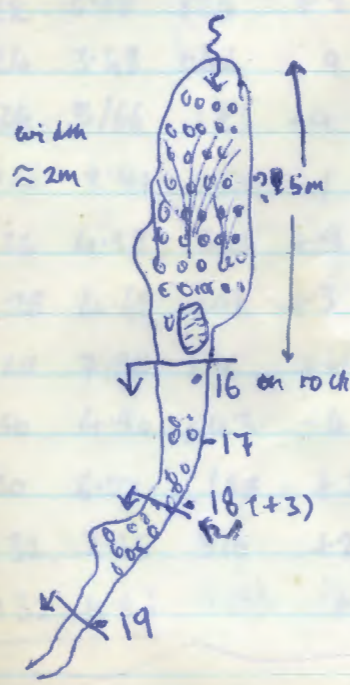
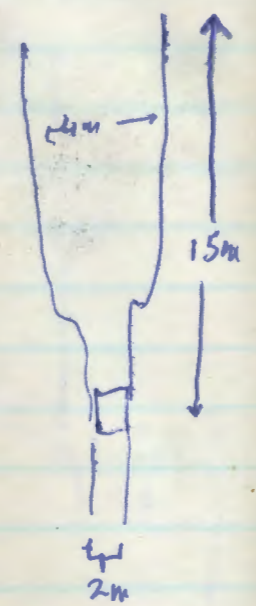
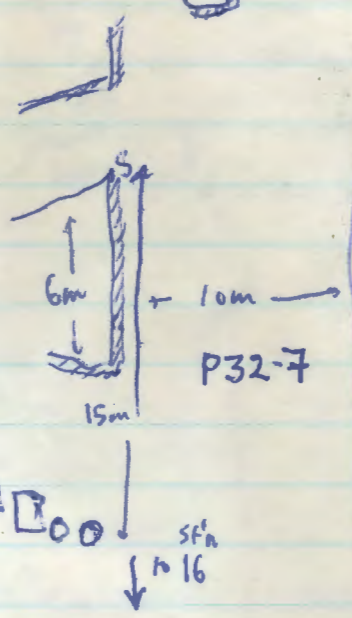
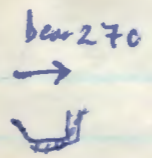
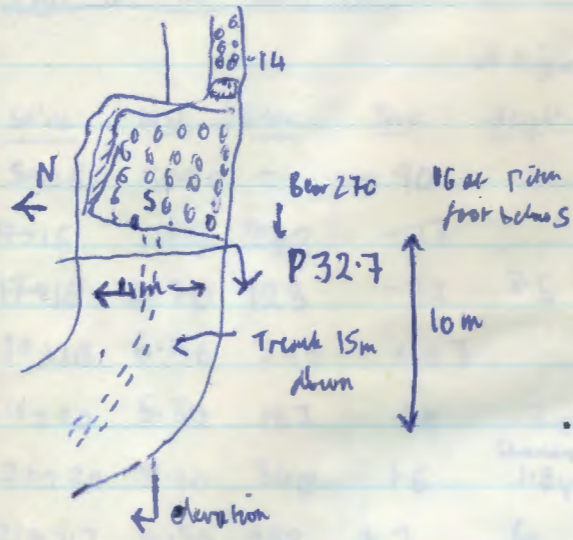
Part II the New Bit

at highest no st'n

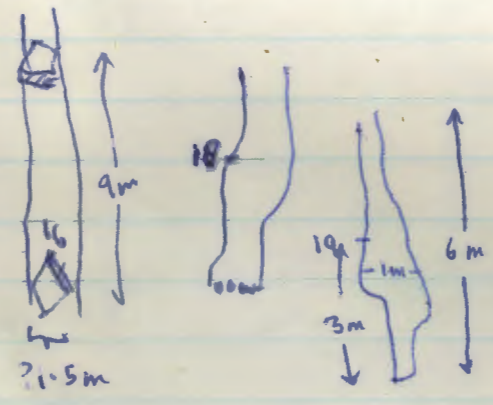
St'n	Dist	Bear	Inc	Height	width
5→16	32.70	-	-90		7.5
17→16	1.55	272	-27		
17→18	4.70	123	-22	3.5	1.5
19→18	6.46	342	+27		
19→20	5.30	187	+11	3	1
21→20	3.10	348	+6	(should be) 1.8 (ft)	1
21→22	10.59	088	+2	4	0.6
23→22	6.18	324	+9	4	1
23→24	3.48	032	+9	?	0.6
25→24	5/66	173	+4	6	0.8
25→26	9.41	038	-1	?	0.6
27→26	4.98	321	+9	5	0.8
27→28	4.68	007	+3	?	0.7
29→28	7.88	196	+4	6	0.8
29→30	4.90	043	-4	?	0.6
31→30	6.22	188	+3	?	0.8
31→32	2.85	310	+26		1
33→32	4.67	215 1/2	+1		1



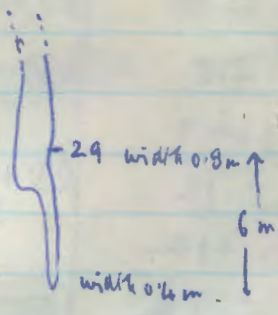
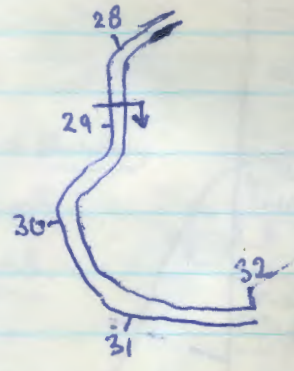
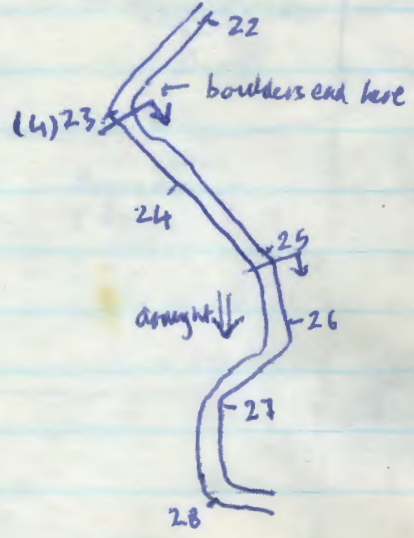
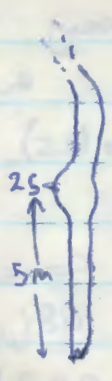
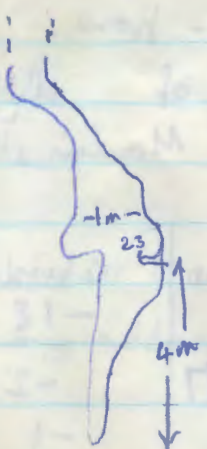
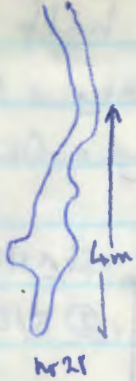
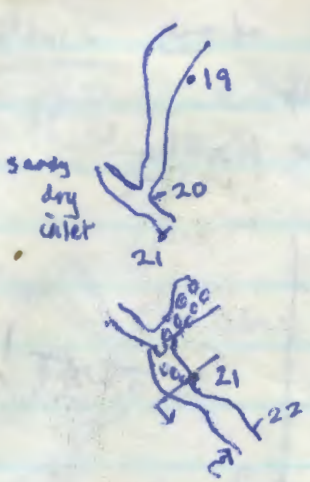
B57



NB. Case reverse direction (14 to 15 is approx upstream)
 Top bit of plan 16 is directly below 15 - top bit of plan is
 or left not on main line.



(2)



(354) F20 Survey - from half along along
 1st pit to end of Blasplang Rift
 P Rose (Notes) Martin May Dave Horsley

(B)

Stns	Tape	Compass	Climo	Stn Ht
1-2	2/41	081	-18	(2) 5/0
3-2	4/55	097/197	-2	
3-4	4/25	100	-1	
5-4	3/46	196	-7	
5-6	1/72	134	+18	
7-6	5/88	318	0	
7-8	2/11	094	0	
9-8	8/87	188	+6	
9-10	4/00	037	-8	
10-11	1/42	016	-52	
11-12	9/49	063	-47	(12) 1m above boulders
13-12	10/06	246	-16	(13) 1m above boulders floor (in pit)
13-14	2/24	011	-42	
14-15	6/16	209	-81	
15-16	19/98	-	-90	(16) 8/5
17-16	5/86	225	+18	(17) 10/00
17-18	1/64	304	+9	
19-18	12/7	232	-12	(19) 9/8 above stream
19-20	2/64	312	+17	
20-21	26/75	051	+24	
22-21	5/57	268	+3	
22-23	11/85	050	-83	
Surveyed from end of Blasplang Rift to High land Area Stns A-F				
remained	28 →	24		
28 → 28	1/08	235	+10	
27 → 26	6/20	086	-58	26 → 27! TT
26 → 25	9/46	182	+72	
29 → 25	2/90	344	-26	
24 → 23	2/14	285	-20	

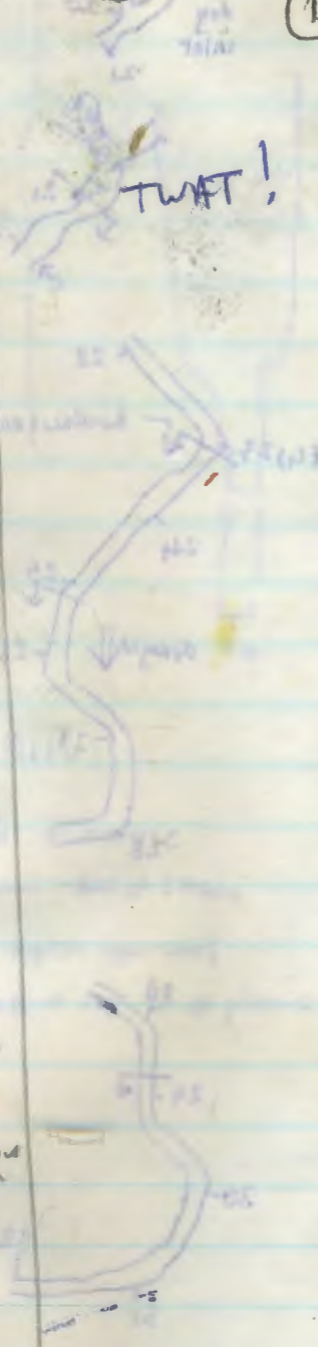
TWAT!

(12) 1m above boulders
 (13) 1m above boulders floor (in pit)

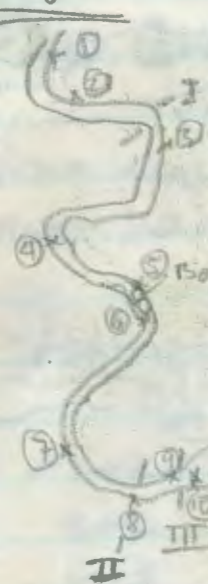
(16) 8/5

(17) 10/00

(19) 9/8 above stream



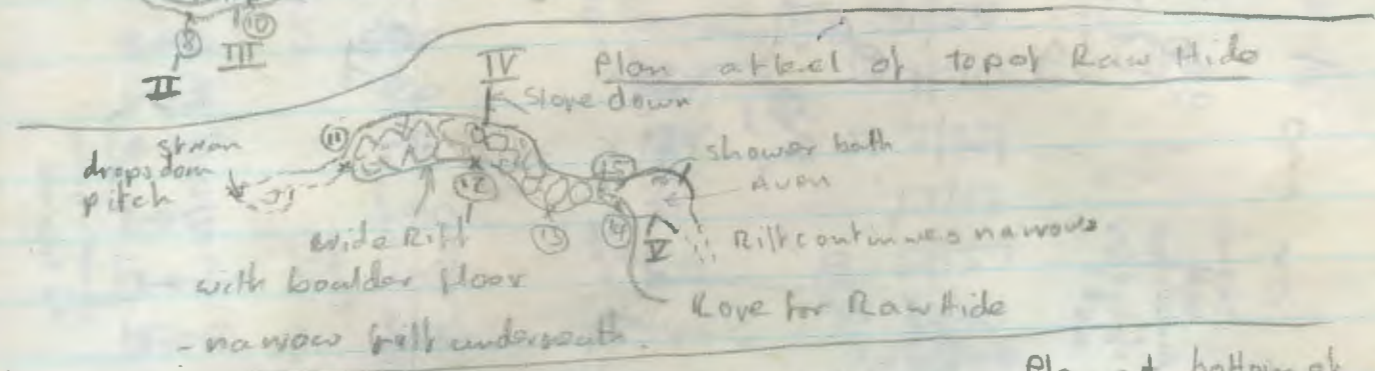
Plan



Rift widens differently at different levels.

Stream in bottom of canyon throughout.

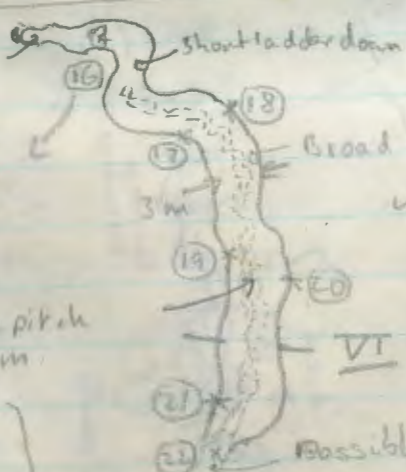
Plan above 1st streamway ladder pitch



Plan at level of top of Raw Hide

Plan at bottom of Raw Hide

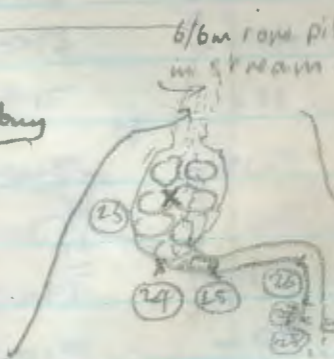
Stream descends 10m cascade
Diverges by hollow



Plan of Blasplung

Rift + levels immediately above

Broad traverse levels with narrow windy Blasplung Rift below - lead to bottom of 6/6m rope pitch



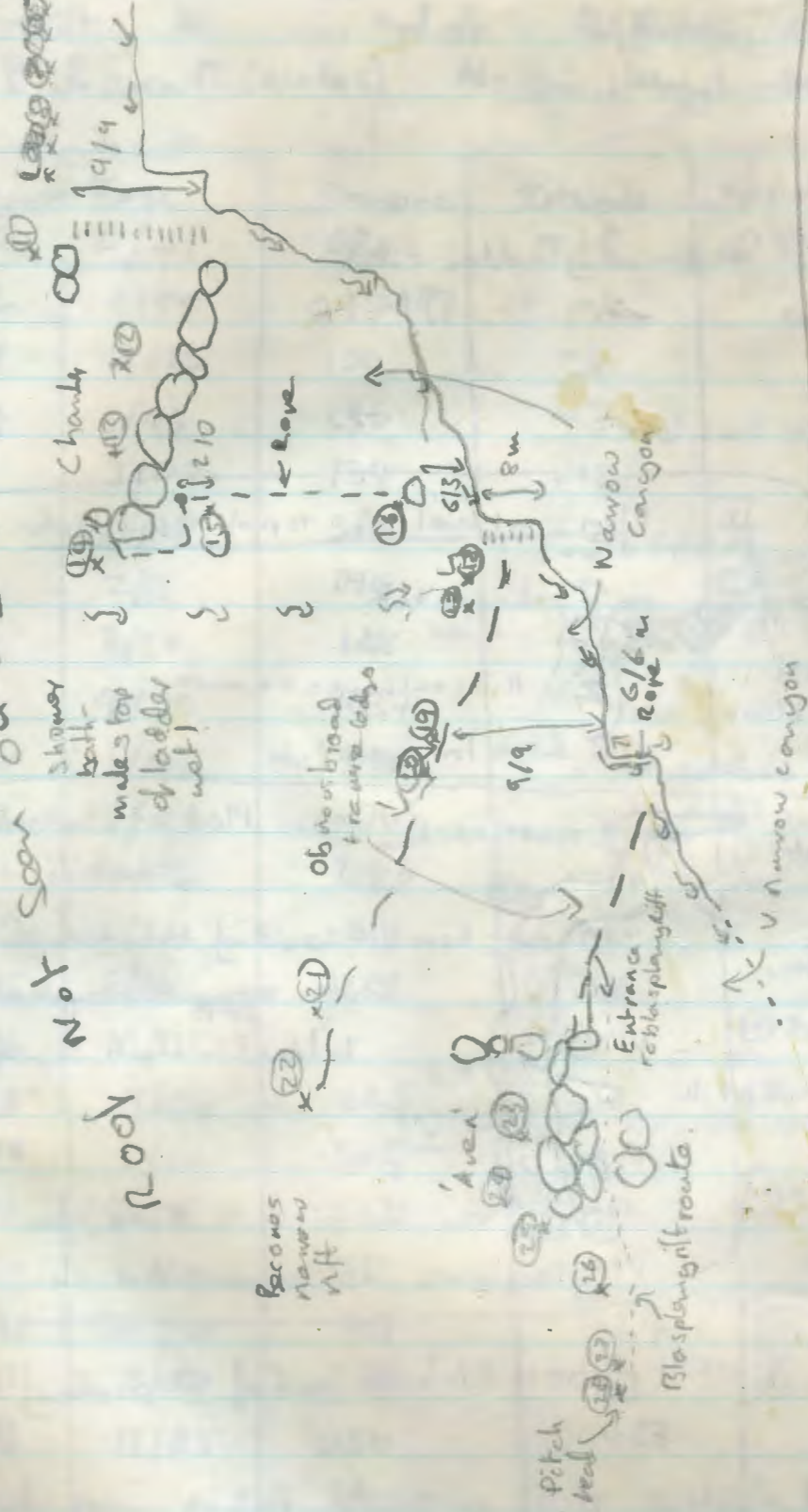
Bolt at top of pitch at end of Blasplung Rift

Extended Elevation

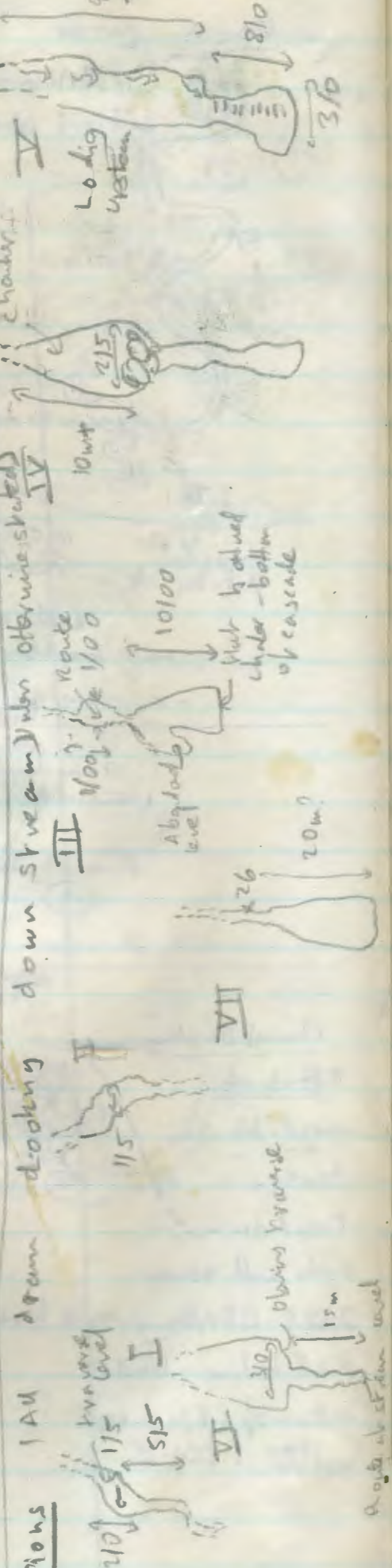
(1961)

On end of survey

Rock Not seen



Sections



Right of stream level

F20 Survey

10/8/85

Fred Notes Martin M Instruments + Tape

From end of Blasphemy Rift to the beginning of the next hand rift.

Station	Climo	Compass	Tape
# 1→2	-36	086	3/88
3→2	+90	-	21/58
4→3	-30	238	7/70
4→5	-11	131	5/59
6→5	+90	-	17/17
7→6	-19	308	8/37
7→8	+13	048	5/80
9→8	-24	264	5/78
9→10	-09	077	3/61
10→11	-24	061	11/48
12→11	-01	190	6/38
12→13	+01	107	4/99
14→13	+11	175	4/09
14→15	-11	094	5/88
16→15	+04	193	5/90
16→17	-05	091	5/41
18→17	-17	331	4/50
18→19	-04	107	3/86
20→19	-25	001	2/21
20→21	-04	163	7/00
22→21	00	289	8/05
22→23	-07	168	5/28
24→23	-05	233	5/26
24→25	+33	115	1/77
26→25	+04	214	5/58
26→27	-32	015	2/53,

1963

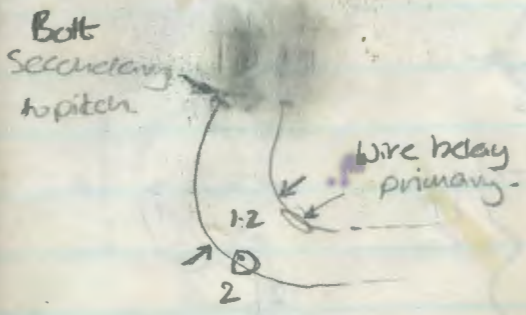
Station	Climo	Compass	Tape
27→28	-90	-	4/53
28→29	-05	38	3/28
30→29	+33	291	4/68
30→31	+27	100	1/49
32→31	-15	213	6/10
32→33	+72	129	3/28
34→33	+12	284	2/43
34→35	-38	026	12/64
36→35	-06	257	2/92
36→37	-21	064	2/72
37→38	-90	-	15/25
39→38	-34	193	4/49

Station 1 is at the end of Blasphemous rift 30cm above and 30cm upstream of the secondary bolt in the pitch below Blasphemous rift, and on the ~~left~~^{right} hand wall. (The bolt is on the ~~right~~^{left} hand wall.)

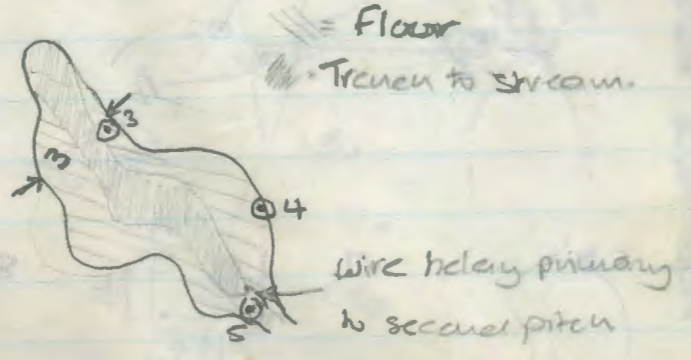
Station 39 is on ~~the~~ a spike ~3m above the stream, and ~1.5m above the floor on the left hand wall of the chamber at the bottom of the last pitch before the hand rift ~4m from the pitch.

Plan (Cross sections looking down stream)

1. At level of top of Blasphemous rift.



2. At base of first pitch



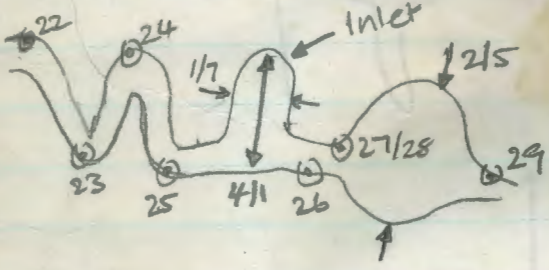
3. At base of second pitch



4. At level of chamber below 2nd pitch



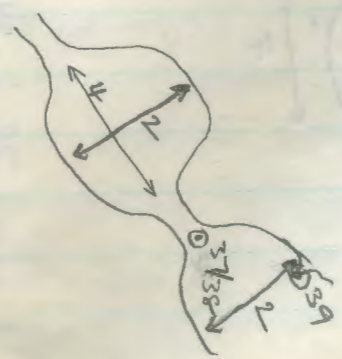
5. At the same level



6. At the level of the above chamber

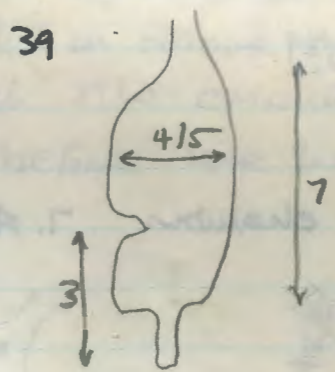
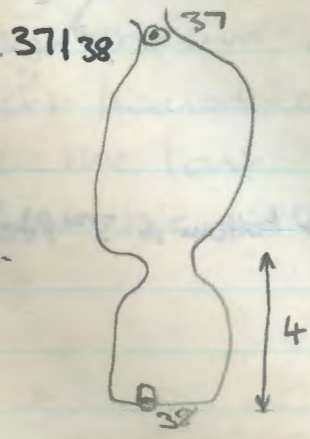
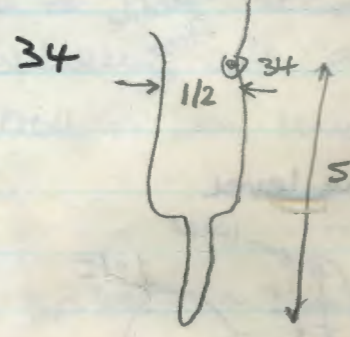
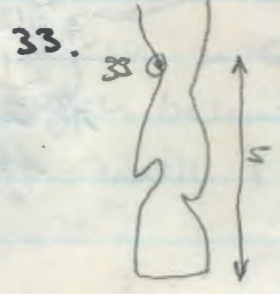
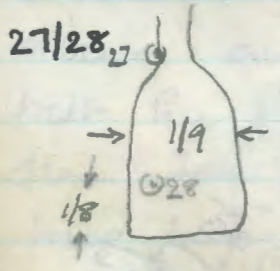
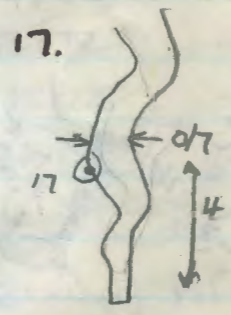
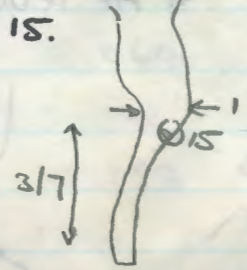
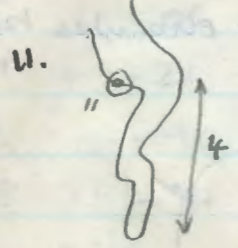
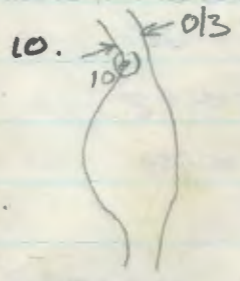
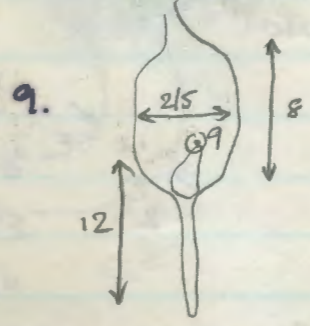
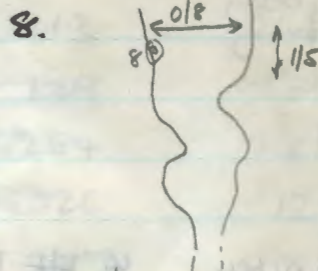
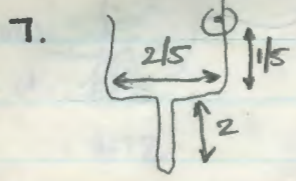
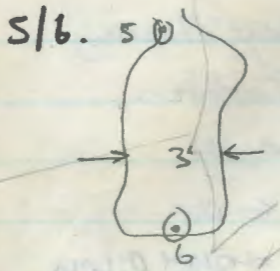
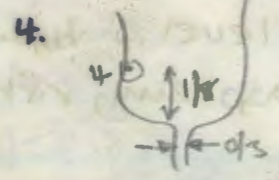
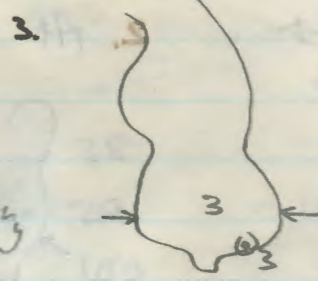
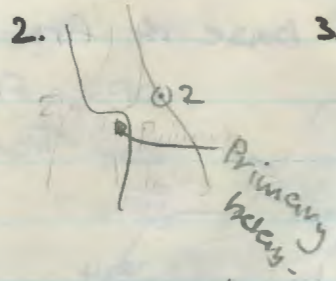
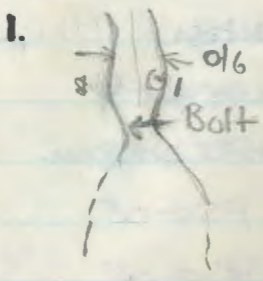


7. At level of bottom of 3rd pitch



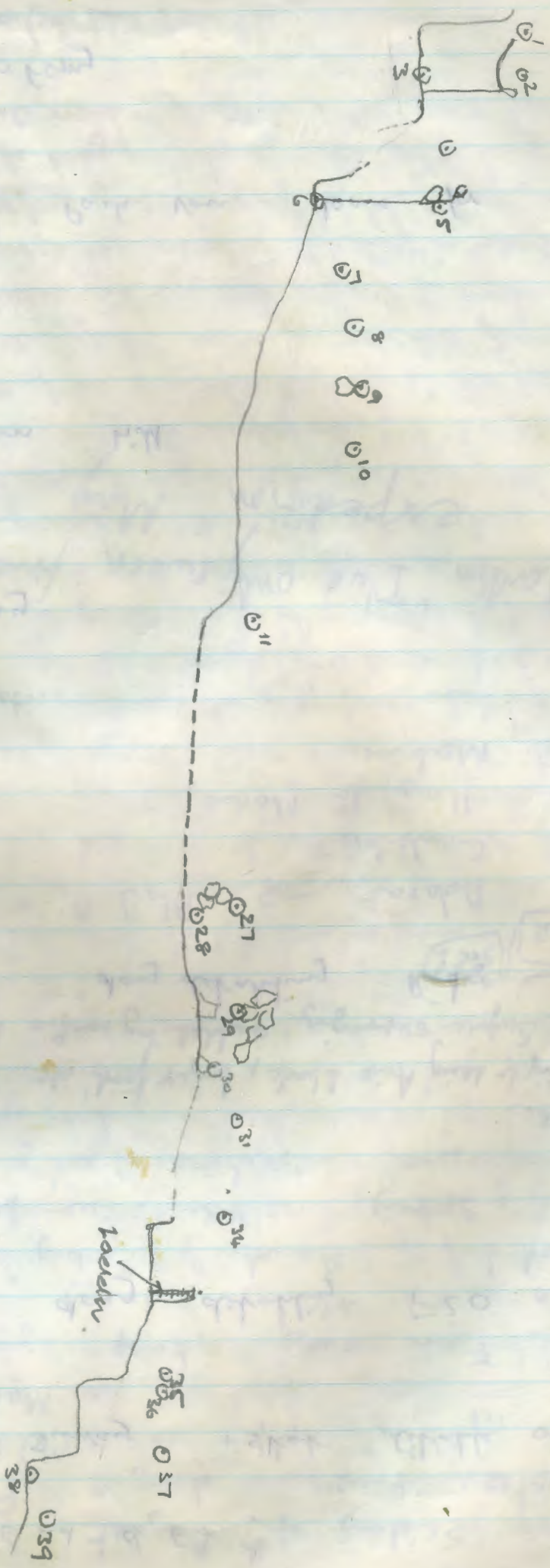
B65

Cross Sections. (All viewed looking down stream)



Extended Elevation

(Roof was never visible)



Station 1 = previous station 12

at

-131.67

55.8

-351.29

(F)

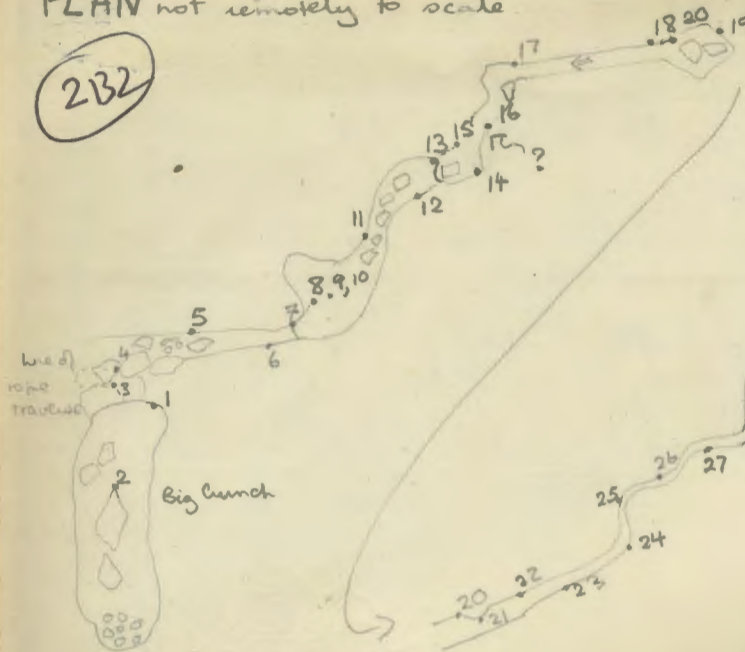
(2B1)

Ridge Cave Survey 10-11.8.85 Ukey notes; Phil R. Instruments & tape
From the Big Cunch to head of Hammerhead Pitch.

St.	Compass	Clino	Tape	At	Height from floor	Width of passage
1-2	151	+22	28/55	2	= 4	= 12
3-2	118	-32	32/3	3	0	
3-4	187	+70	11/9	4	.5	
5-4	120	-11	11/2	5	1.5	= 3
5-6	351	-10	3/82	6	1	1.8
7-6 X	288	-21	2/12			6 → 7.
7-8	301	+77	13/05			
8-9	-	-90	38/61			
9-10	-	+90	1/28	10	= 11	
11-10	067	+4	9/47	11	2.7	= 5
11-12	015	-24	10/25	12		1
13-12	152	+39	5/78	13	.5	
13-14	072	-52	18/60			
15-14	110	+22	2/70			
15-16	008	-24	6/47			
17-16	050	-5	3/41	17	1.5	1.5
17-18	344	-13	11/71	18	1	.4
19-18	153	+57	8/95	19	1.6	5
19-20	190	-8	4/59			
21-20	220	+81	4/87	21	3.7	
21-22	329	-68	4/87			
23-22	200	+1	2/96			
23-24	290	-4	2/58			
25-24	069	+18	5/24			
25-26	301	+19	5/23			
27-26	175	-42	10/07	27	4.5	
27-28	321	-57	6/0	28	2	.8
29-28	038	+13	6/14	29	1.7	

PLAN not remotely to scale

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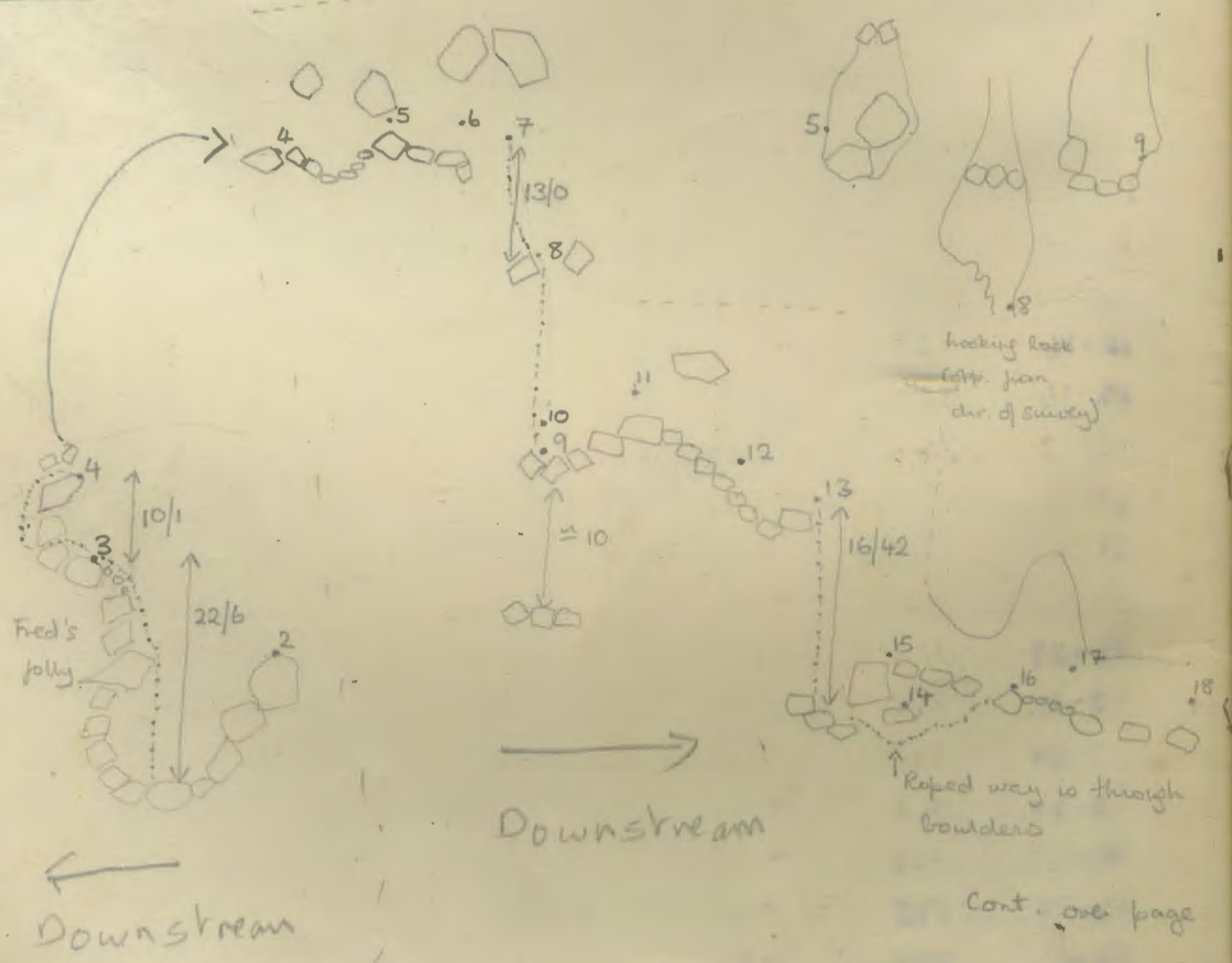


PTC	08-78
STO	05-78
FRS	22-78
...	02-78
...	02-78
...	02-78

CROSS-SECTIONS



ELEVATIONS

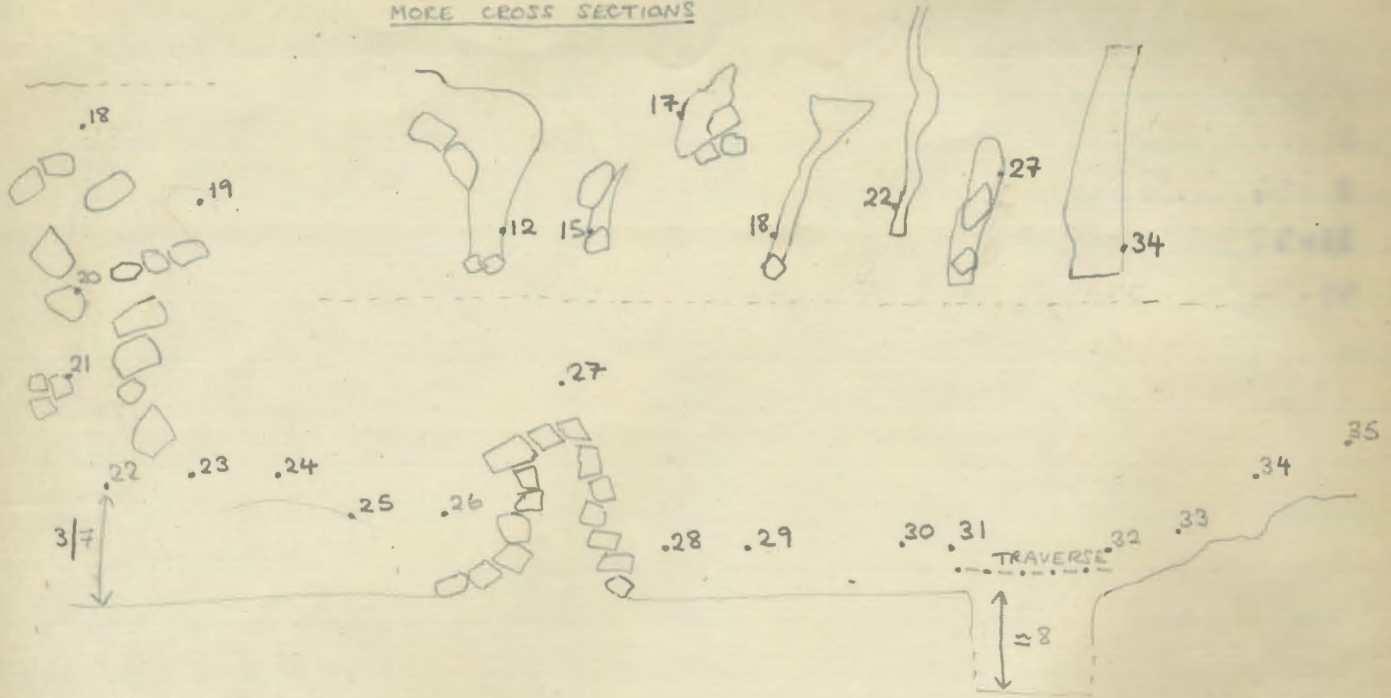


29-30	279	-10	8/5	30	1.2	1.4
31-30	073	-3	2/06			
31-32	289	-13	3/99			
33-32	007	+8	1/12			
33-34	277	+12	4/75	34	1.2	
35-34	034	+13	4/36			

ELEVATION CONT

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MORE CROSS SECTIONS



F20 SURVEY

11/8/85

PHIL DUNCAN - BOOK

DAVE HORSLEY - INSTRUMENTS

DUNCAN GILCHRIST - TAPE

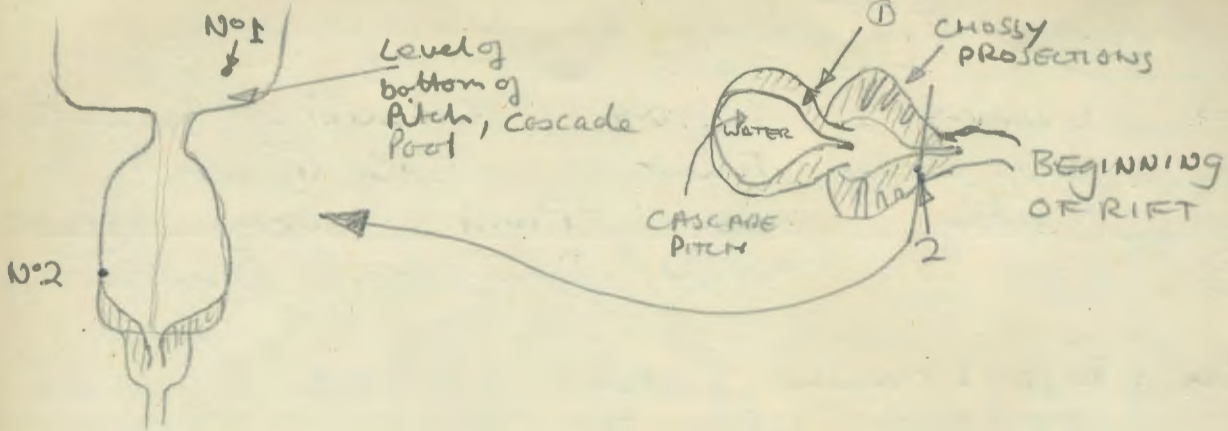
FROM Beginning of Hard Ryt (Earnest Ryt?) To ~~inlet~~ inlet in rft.

#	STATION	CLINO	COMPASS	TAPE	ACTUAL READ SUBTRACT 1m FOR TRUE LENGTH
	1 → 2	-43	076	48/57	
	3 → 2	+23	190	34/55	
	3 → 4	-1	087	23/1	
	4 → 5	+8	352	12/27	
	6 → 5	-32	208	34/05	
	6 → 7	-55	152	48/27	
	8 → 7	+32	228	12/31	
	8 → 9	+21	136	23/3	
	10 → 9	+1	197	23/38	
	11 → 10	+19	115	23/47	
	11 → 12	+1	056	23/32	
	13 → 12	-43	240	23/44	
	13 → 14	-30	331	12/89	
	15 → 14	+49	247	23/05	
	15 → 16	+6	019	12/32	
	17 → 16	-4	237	12/6	
	17 → 18	+18	353	12/2	
	19 → 18	-8	240	12/53	
	19 → 20	+12	036	23	
	21 → 20	-44	334	34/34	
	21 → 22	+46	117	12/7	
	23 → 22	-43	267	12/75	
	24 → 23	-21	044	12/71	
	24 → 25	+24	136	34/65	
	26 → 25	-54	259	23/88	

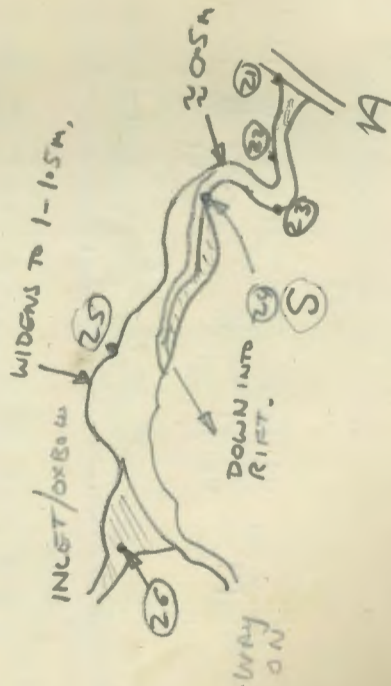
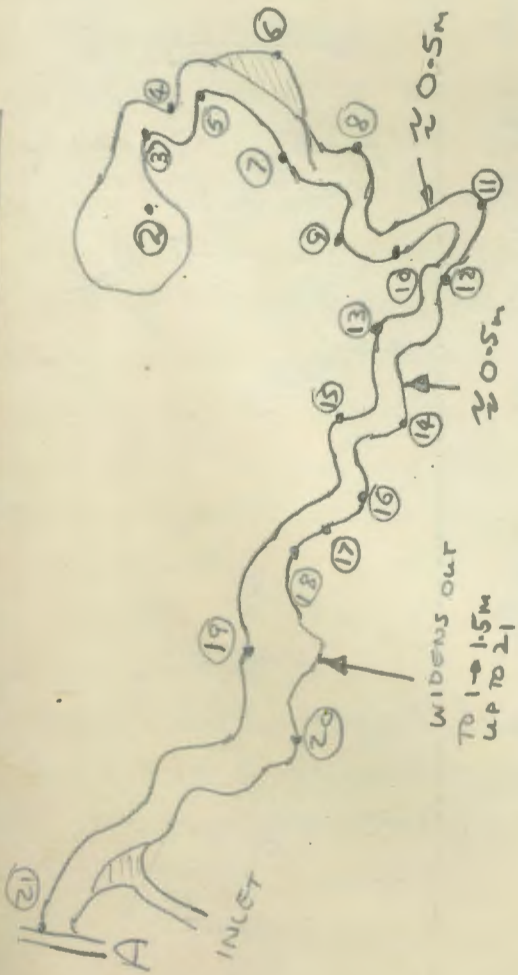
SECTION, 1-2

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PLAN 1-2



Rough SKETCH PLAN OF RIFT



'E'

P Rose - Book + U Collic survey in F20

from upstream from Calanity Jane to
 half way along Euest Stn ① = ① of
 Fred Martin and Paul survey ①② =
 ②④ of Phil D Done Had Duncan E.

STn	Tape	Compass	climo	st H+
1-2	1/75	320 328	0	
3-2	2-3	1/84	066	-34
	4-3	1/78	044	-58
	4-5	8/91	196	+24
	5-6	5/08	314	+56
	6-7	4/17	212	+36
	7-8	2/01	132 132	+25
	8-9	1/89	175	+42
	9-10	2/23	291	-17
	10-11	2/10	182	+8
	11-12	3/01	108	+21
	12-13	1/83	157	+17
	13-14	2/95	252	+6
	14-15	1/36	335	-9
	15-16	1/23	193	+2
	16-17	2/36	162	0? ←
	17+18	2/32	272	+16
	19-18	2/95	151	+11

⑥ 4/10

Floor + Roof
 Not

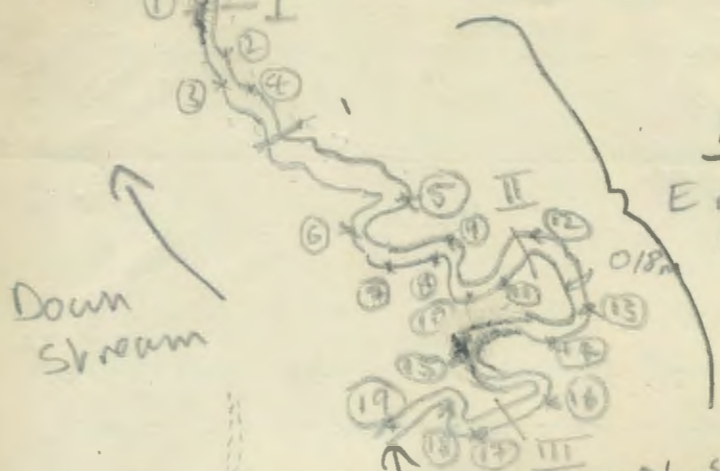
visible
 in narrow

rift

This reading has been avoided from normal trace - anomaly suggests there was no vertical component.

Stunt of PD's survey

vertical oxbow goes over top of pitch



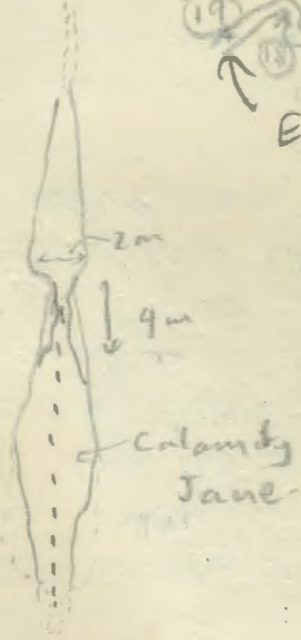
Plan

Enest Rift

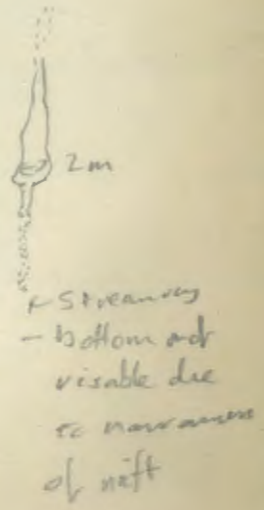
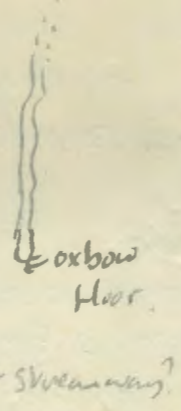
Enest rift is very runky narrow and the vertical oxbows make it a 3D maze.

Down Stream

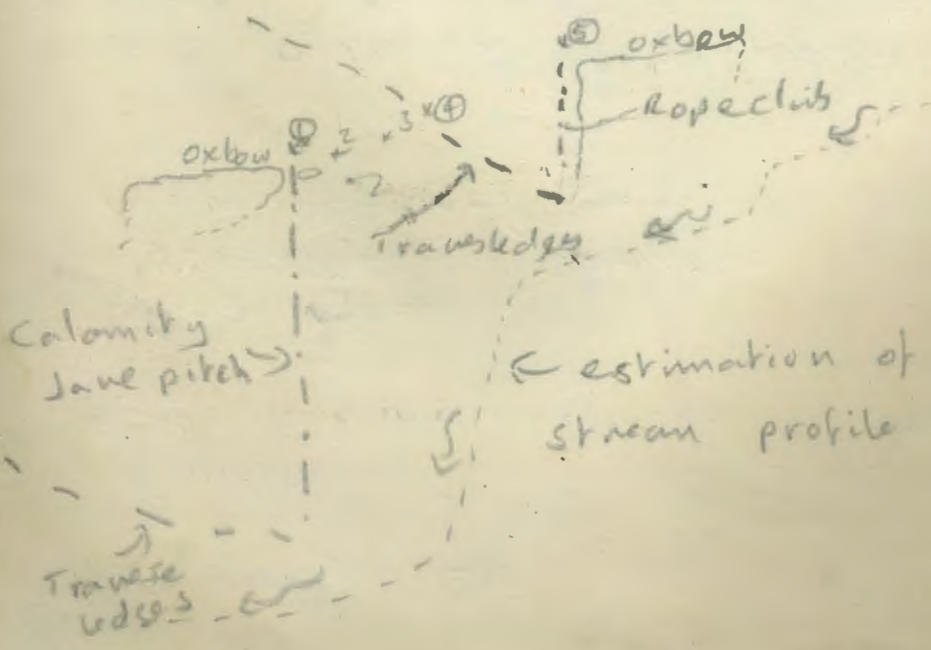
I



Enest PD's survey II



Sections



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F20 Survey. 12/8

Downstream from Calamity Jane to the bottom of the next pitch. (Limit of 1985 exploration)

Field Notes.

Martin May Instruments.

Paul Brennan Tape.

First survey station is Phil's first survey station from the last survey.

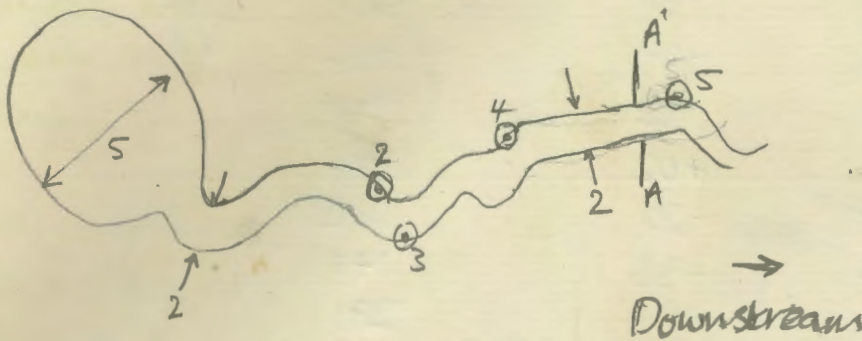
The last survey station is ~3m from the waterfall at the bottom of the pitch after Calamity Jane on the left hand wall facing down stream 1.5m above the floor. It is marked with an "S" below it, and on the floor beneath it are three fish fins.

Because the last station has disappeared.

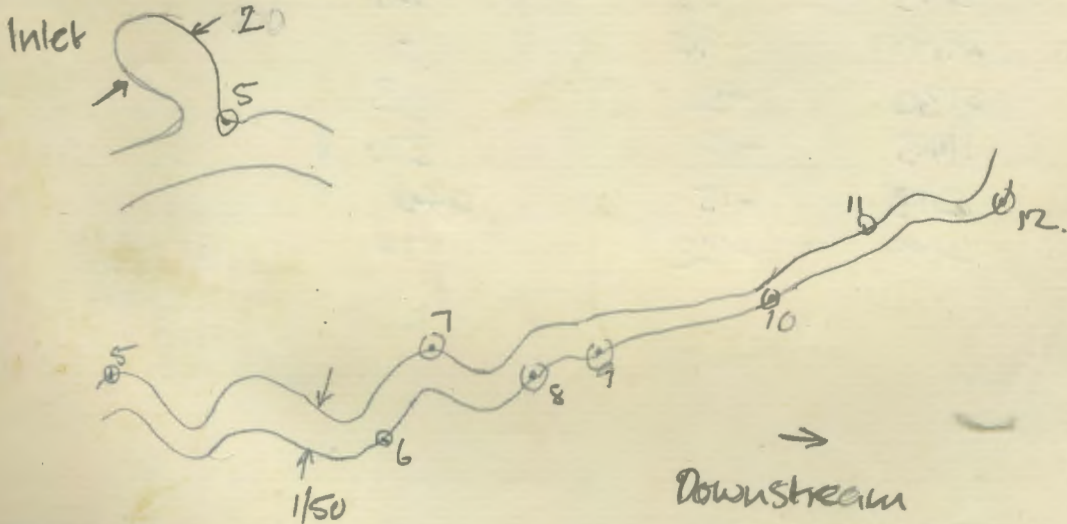
The ~~third~~ last survey station is on the left hand wall but from the stream just underneath a shelf on a sort of spike 1.5m above the floor that you walk on. It is marked with a big black spot, and a fruit can on the ledge above it.

PTO for stations.

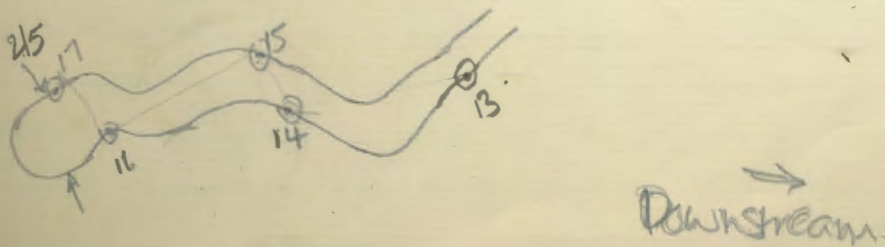
Plan At the level of station 2



At the level of station 5



At the level of the bottom of the last pitch.



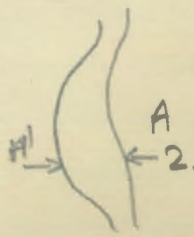
(2811)

'F'

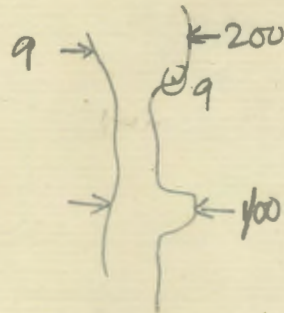
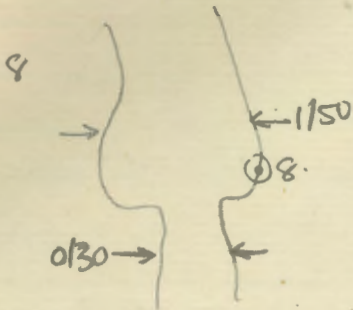
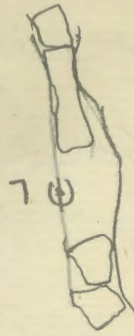
Station	Tape	Climo	Compass
1→2	17/24	-90	-
3→2	2/21	-67	310
3→4	3/72	-09	004
5→4	9/00	-62	219
5→6	4/65	+02	091
7→6	3/38	-50	243
7→8	5/13	+36	141
9→8	3/60	-41	291
9→10	13/37	+14	150
11→10	4/29	-12	317
11→12	3/73	-33	141
12→13	29/98	-90	-
14→13	5/30	+32	113
15→14	1/43	+10	270
15→16	2/13	-15	040
17→16	4/88	+32	179

← please check
climo reading for this
it should be +67?
I think

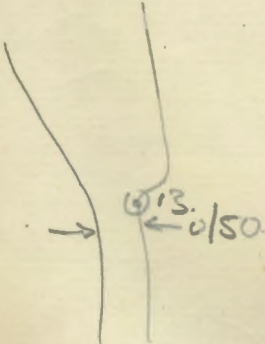
Cross Sections. Looking downstream.



7



13.



2B13 end

Elevation (Rod never visible)

Stream hardly ever visible.

