Steve

821054

NORTH FORK

"Rite in the Rain"®

WEATHERPROOF

LEVEL BOOK

No. 310

NEVILLE CROSBY INC.

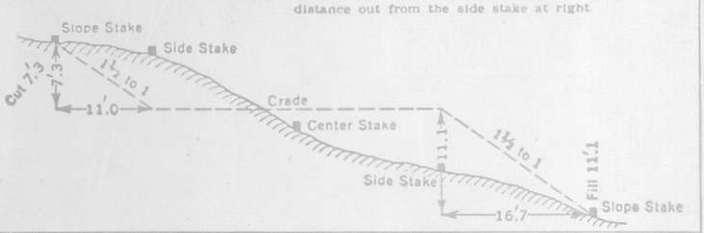
325 WEST SIXTH AVENUE • VANCOUVER, B.C. V5Y1L1

TELEPHONE 604/USE-4343 TELEX 04-507762

MINING, FORESTRY AND DRAFTING SUPPLIES

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	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	Cut or Fill
	Distance out from Side or Shoulder Stake										
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

0924/15

"Rite in the Rain"®
WEATHERPROOF

a product of

J. L. DARLING CORPORATION
TACOMA, WASHINGTON 98421 U.S.A.

Sample #	(Line) Lat	(Sta) Dep	Rock Type
NF201			Int. 2
202			Int 2
203			Int 2
204			Int Tuff 2
205			Int 2
206			Int 2
207			Int-Maf volc 2
208			Int Mafic Volc 2
209			Mafic Volc 1
210			mafic volc 1
211			int-mafic volc 2
212			int mafic 2
213			mafic 1
214			int-mafic 2
215			int-mafic 2
216			mafic 1
217			mafic 1
218			int-mafic 2 tuff
219			mafic 1
220			int-mafic 2
221			int-mafic 2
222			int-mafic 2
223			int-mafic 2
224			int-mafic 2
225			int-mafic 2

	Min	Alt	Date	Remarks
2	–	Carb, Chl, Cal	29/7/83	Tuff?
2	–	Talc, Chl	"	Tuff
2	–	Talc, Chl	"	Lap Tuff
2	–	Chl, Bi	"	–
2	–	Chl	"	Tuffaceous
2	–	Talc, Chl	"	Tuff?
lc2	–	Chl, Bi, Act	31/7/83	Tuff?
lc2	–	Chl	"	
1	–	Chl	"	
1	–	–	"	
olc2	2% Py	Chl	"	
2	–	Chl, Carb	"	
1	–	Chl, Act	1/8/83	Fissile
2	–	–	"	Tuff?
c2	trace	Chl	"	smeared
1	1%	Chl	"	
1	1-2% Py	Chl	"	
tuff	trace	Chl	"	Schistose
1	–	Chl	"	
2 ic	–	Chl	2/8/83	Lap Tuff
2	–	–	"	x1 Tuff
2 ic	–	–	"	x1 Tuff
2 ic	–	Chl, Ser	"	
2 ic	1-2% Py	Chl	"	
2 ic	–	Chl	"	Tuff

Sample #	(Line) Lat	(Sta) Dep		Rock Type
NF 226			2	int-mafic Volc
227			2	int-mafic
228			2	int mafic
229			2	int. mafic
230			7	Gn Bio Schist
231			2	Int-maf
232			1	mafic
233			2	int-mafic
234			1	mafic
235			1	mafic
NF 236			2	int-maf.
237			2	int. tuff
238			2	int tuff
239			2	int-maf tuff.
240			2	lapilli fragmental
241			1	mat. tuff
242			2	int-maf tuff
243			2	int. tuff
244				
245			2	int-maf. tuff
246			1	maf-int tuff
247			1	mafic
248			1	mafic
249			1	mafic-int.
250			1	mafic

Min	Alt	Date	Remarks
1-2% Po	chl	2/8/83	
–	chl	"	Aggl.
–	chl	"	Lap Tuff.
5% Py ± Po	–	29/7/83	Tuff
<10% Po + Py + Cp	—	31/7/83	
2-4% Py	—	"	x1 tuff
1-3% Po + Cp	Chl, Gn	1/8/83	Sheared.
1-2% Cp +3% Po	chl + Amph.	"	tuff? sed Tuff?
10%	Amph + Graph	"	tuff? Sed?
Cp 2%	Chl - Amph	"	Volc? Intr?
tr. py.	chl, biot.	04/08/83	tuff.
		04/08/83	
	chl, musc	04/08/83	
		04/08/83	gouhy
	biot.	04/08/83	
		04/08/83	
		04/08/83	
–	biot ser	04/08/83	
		04/08/83	
	chl.	04/08/83	
	chl act.	05/08/83	tuff.
	chl, amph.	8/8/83	
	chl	"	
	chl	"	Tuff?
	chl	"	

#	Line (Lat)	Sta (Dep)		Rock Type
NF251			1	Mafic-Int
252			1	Mafic
253			1	mafic
254			1	mafic
255			1	mafic
256			1	mafic volc
257			1	mafic volc
258			1	mafic volc
259			1	mafic -> int.
260			1	MAF TUFF
261			2	INT-MAF TUFF
262			2	"
263			2	INT TUFF
264			2	"
265			2	INT-MAF TUFF
266			2	INT TUFF
267			2	INT-FEL TUFF
268			2	INT FEL TUFF
269			1	MAF-INT VOL.
270			2	DAC TUFF?
271			1	MAFIC.
272			2	INT-MAF
273			2	"
274			2	"

Min	Alt	Date	Remarks.
	chl	8/8/83	
	sil	9/8/83	hornfels
	sil	"	hornfels
	chl	"	
	chl	"	tuff?
	chl	"	
	chl biot	"	
	chl	"	
	chl	"	tuffaceous.
TR Py	CHL	83/8/10	—
—	"	"	—
—	"	"	—
—	"	"	—
TR Py + Cp	—	"	—
—	CHL	"	—
—	"	"	INTRUSIVE?
TR Py	SAUGS ± SER	"	—
—	" "	"	—
TR Po	CHL + CARB	"	TUFF?
—	Si	"	TUFF?
—	—	83/8/12	POSS TUFF
1% Po	—	"	—
—	CHL	"	—
1% Po	CHL	"	—

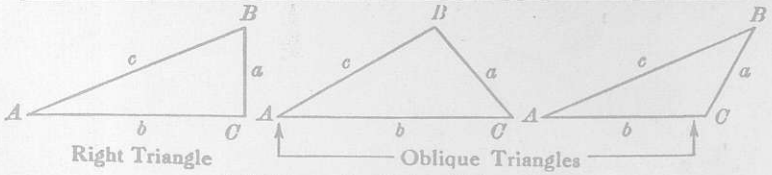
SAMPLE #	LAT	DEP	ROCK TYPE	MIN
NF-275			MAFIC 1	—
276			MAFIC 1	MINOR P_o
277			MAF. VOL 1	—
278			MAF VOL. 1	—
279			" 1	—
280			MAF. TUFF 1	—
281			MAFIC 1	—
282			" 1	-
283			" 1	—
284			MAF VOLC. 1	—
285			" " 1	—
286			INT-MAF 2	—
287			MAFIC VOLC 1	—
288			" " 1	=
289			MAFIC VOLC. 1	—
290			" " 1	—
291			INT ⇒ MAF 2	—
292			MAF-INT 1	TR P_y
293			VESICULAR AND. 2	—
294			AND. FRAGMENTAL 2	—
295			INT-MAF BX 2	—
296			INT TUFF 2	—
297			INT-MAF TUFF 2	—
298	INT-MI		INT-FRAG. BLC. 2	TR P_o

CHL.	83/8/12	—
CHL.	"	—
CHL.	83/8/14	—
"	"	—
CHL, ACTINOLITE	"	—
" "	83/8/15	POSS SED.
Bi, AMPH.	83/8/15	—
—	"	—
	83/8/15	ACTINOLITE) CHL
ACTINOLITE	83/8/16	—
—	"	POSS FRAGMENTAL
—	"	FRAGMENTAL
ACTINOLITE	"	—
CHL, ACTINOLITE	"	—
—	"	POSSIBLY FRAGMENTAL
ACTINOLITE	"	—
CHL.	"	TUFFACEOUS, SHEARED.
Bi	83/8/18	—
Bi	"	—
Bi CHL	"	—
Bi ± CARB	"	—
Bi	"	—
Bi, CHL	"	INTRUSIVE?
Bi, CHL	"	—

SAMPLE#	LAT	DEP	ROCK TYPE	MIN
NF 299			INT-MAF AMIG 2 VOLC	—
300			INT - MAF 2 [illegible]	—
501			" " 2 TUFF	—
502			MAF-INT META 1 VOLC	—
503			MAF VOLC 1	—
504			" " 1	—
505			MAF META 1 VOLC	—
506			" " 1 "	—

ALT	DATE	
CHL + Bi	83/8/19	—
" "	"	TUFF ?
—	"	—
—	83/8/20	—
—	"	CHL, ACT SCHIST, GABBRO?
—	"	" " "
—	"	—
—	"	—

Standard Samples (#)	Bag #	Date Sent.
NF 220a	3	3/8/83
256a	2	?
280b	2	?
NF 504a	1	83/8/28



Solution of Right Triangles

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

Given	Required	
a, b	A, B, c	$\tan A = \frac{a}{b} = \cot B$, $c = \sqrt{a^2 + b^2} = a\sqrt{1 + \frac{b^2}{a^2}}$
a, c	A, B, b	$\sin A = \frac{a}{c} = \cos B$, $b = \sqrt{(c+a)(c-a)} = c\sqrt{1 - \frac{a^2}{c^2}}$
A, a	B, b, c	$B = 90° - A$, $b = a \cot A$, $c = \frac{a}{\sin A}$.
A, b	B, a, c	$B = 90° - A$, $a = b \tan A$, $c = \frac{b}{\cos A}$.
A, c	B, a, b	$B = 90° - A$, $a = c \sin A$, $b = c \cos A$,

Solution of Oblique Triangles

Given	Required	
A, B, a	b, c, C	$b = \frac{a \sin B}{\sin A}$, $C = 180° - (A + B)$, $c = \frac{a \sin C}{\sin A}$
A, a, b	B, c, C	$\sin B = \frac{b \sin A}{a}$, $C = 180° - (A + B)$, $c = \frac{a \sin C}{\sin A}$
a, b, C	A, B, c	$A + B = 180° - C$, $\tan \frac{1}{2}(A - B) = \frac{(a-b)\tan \frac{1}{2}(A+B)}{a+b}$, $c = \frac{a \sin C}{\sin A}$
a, b, c	A, B, C	$s = \frac{a+b+c}{2}$, $\sin \frac{1}{2}A = \sqrt{\frac{(s-b)(s-c)}{bc}}$, $\sin \frac{1}{2}B = \sqrt{\frac{(s-a)(s-c)}{ac}}$, $C = 180° - (A + B)$
a, b, c	Area	$s = \frac{a+b+c}{2}$, area $= \sqrt{s(s-a)(s-b)(s-c)}$
A, b, c	Area	area $= \frac{bc \sin A}{2}$
A, B, C, a	Area	area $= \frac{a^2 \sin B \sin C}{2 \sin A}$

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° 10′ = .9959. Horizontal distance = 319.4 × .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. Cosine 5° 10′ = .9959. 1 — .9959 = .0041. 319.4 × .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., slope distance = 302.6 ft. Horizontal distance = $302.6 - \frac{14 \times 14}{2 \times 302.6} = 302.6 - 0.32 = 302.28$ ft.