WATERPROOF

WF 7 FIELD

R. D. PENHALL LTD.

MADE IN CANADA

WATERPROOF

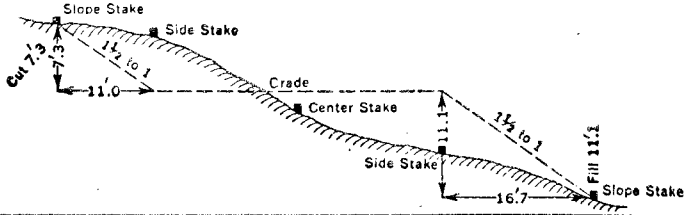
R. D. PENHALL LTD.
2685 MAPLE STREET
VANCOUVER, B.C. V6J 3T7
TELEPHONE (604) 736-7271

NATURAL SINES AND COSINES. 0° to 10°

M	0°		1°		2°		3°		4°		M
	Sin.	Cos.	Sin.	Cos.	Sin.	Cos.	Sin.	Cos.	Sin.	Cos.	
0	.00000	1.00000	.01745	.99985	.03490	.99939	.05234	.99863	.06976	.99756	0
1	.00029	1.00000	.01774	.99984	.03519	.99938	.05263	.99861	.07005	.99754	1
2	.00058	1.00000	.01803	.99984	.03548	.99937	.05292	.99860	.07034	.99752	2
3	.00087	1.00000	.01832	.99983	.03577	.99936	.05321	.99858	.07063	.99750	3
4	.00116	1.00000	.01862	.99983	.03606	.99935	.05350	.99857	.07092	.99748	4
5	.00145	1.00000	.01891	.99983	.03635	.99934	.05379	.99855	.07121	.99746	5
6	.00174	1.00000	.01920	.99982	.03664	.99933	.05408	.99854	.07150	.99744	6
7	.00203	1.00000	.01949	.99981	.03693	.99932	.05437	.99852	.07179	.99742	7
8	.00232	1.00000	.01978	.99980	.03722	.99931	.05466	.99851	.07208	.99740	8
9	.00261	1.00000	.02007	.99980	.03751	.99930	.05495	.99849	.07237	.99738	9
10	.00290	1.00000	.02036	.99979	.03780	.99929	.05524	.99847	.07266	.99736	10
11	.00320	.99999	.02065	.99979	.03810	.99927	.05553	.99846	.07295	.99734	11
12	.00349	.99999	.02094	.99978	.03839	.99926	.05582	.99844	.07324	.99731	12
13	.00378	.99999	.02123	.99977	.03868	.99925	.05611	.99842	.07353	.99729	13
14	.00407	.99999	.02152	.99977	.03897	.99924	.05640	.99841	.07382	.99727	14
15	.00436	.99999	.02181	.99976	.03926	.99923	.05669	.99839	.07411	.99725	15
16	.00465	.99999	.02211	.99976	.03955	.99922	.05698	.99838	.07440	.99723	16
17	.00495	.99999	.02240	.99975	.03984	.99921	.05727	.99836	.07469	.99721	17
18	.00524	.99999	.02269	.99974	.04013	.99919	.05756	.99884	.07498	.99719	18
19	.00553	.99998	.02298	.99974	.04042	.99918	.05785	.99833	.07527	.99716	19
20	.00582	.99998	.02327	.99973	.04071	.99917	.05814	.99831	.07556	.99714	20
21	.00611	.99998	.02356	.99972	.04100	.99916	.05844	.99829	.07585	.99712	21
22	.00640	.99998	.02385	.99972	.04129	.99915	.05873	.99827	.07614	.99710	22
23	.00669	.99998	.02414	.99971	.04159	.99914	.05902	.99826	.07643	.99708	23
24	.00698	.99998	.02443	.99970	.04188	.99912	.05931	.99824	.07672	.99705	24
25	.00727	.99997	.02472	.99969	.04217	.99911	.05960	.99822	.07701	.99703	25
26	.00756	.99997	.02501	.99969	.04246	.99910	.05989	.99821	.07730	.99701	26
27	.00785	.99997	.02530	.99968	.04275	.99909	.06018	.99819	.07759	.99699	27
28	.00814	.99997	.02560	.99967	.04304	.99907	.06047	.99817	.07788	.99696	28
29	.00844	.99996	.02589	.99966	.04333	.99906	.06076	.99815	.07817	.99694	29
30	.00873	.99996	.02618	.99966	.04362	.99905	.06105	.99813	.07846	.99692	30
31	.00902	.99996	.02647	.99965	.04391	.99904	.06134	.99812	.07875	.99689	31
32	.00931	.99996	.02676	.99964	.04420	.99902	.06163	.99810	.07904	.99687	32
33	.00960	.99995	.02705	.99963	.04449	.99901	.06192	.99808	.07933	.99685	33
34	.00989	.99995	.02734	.99963	.04478	.99900	.06221	.99806	.07962	.99683	34
35	.01018	.99995	.02763	.99962	.04507	.99898	.06250	.99805	.07991	.99680	35
36	.01047	.99995	.02792	.99961	.04536	.99897	.06279	.99803	.08020	.99678	36
37	.01076	.99994	.02821	.99960	.04565	.99896	.06308	.99801	.08049	.99676	37
38	.01105	.99994	.02850	.99959	.04594	.99894	.06337	.99799	.08078	.99673	38
39	.01134	.99994	.02879	.99959	.04623	.99893	.06366	.99797	.08107	.99671	39
40	.01164	.99993	.02908	.99958	.04653	.99892	.06395	.99795	.08136	.99668	40
41	.01193	.99993	.02938	.99957	.04682	.99890	.06424	.99793	.08165	.99666	41
42	.01222	.99993	.02967	.99956	.04711	.99889	.06453	.99792	.08194	.99664	42
43	.01251	.99992	.02996	.99955	.04740	.99888	.06482	.99790	.08223	.99661	43
44	.01280	.99992	.03025	.99954	.04769	.99886	.06511	.99788	.08252	.99659	44
45	.01309	.99991	.03054	.99953	.04798	.99885	.06540	.99786	.08281	.99657	45
46	.01338	.99991	.03083	.99952	.04827	.99883	.06569	.99784	.08310	.99654	46
47	.01367	.99991	.03112	.99952	.04856	.99882	.06598	.99782	.08339	.99652	47
48	.01396	.99990	.03141	.99951	.04885	.99881	.06627	.99780	.08368	.99649	48
49	.01425	.99990	.03170	.99950	.04914	.99879	.06656	.99778	.08397	.99647	49
50	.01454	.99989	.03199	.99949	.04943	.99878	.06685	.99776	.08426	.99644	50
51	.01483	.99989	.03228	.99948	.04972	.99876	.06714	.99774	.08455	.99642	51
52	.01513	.99989	.03257	.99947	.05001	.99875	.06743	.99772	.08484	.99639	52
53	.01542	.99988	.03286	.99946	.05030	.99873	.06773	.99770	.08513	.99637	53
54	.01571	.99988	.03316	.99945	.05059	.99872	.06802	.99768	.08542	.99635	54
55	.01600	.99987	.03345	.99944	.05088	.99870	.06831	.99766	.08571	.99632	55
56	.01629	.99987	.03374	.99943	.05117	.99869	.06860	.99764	.08600	.99630	56
57	.01658	.99986	.03403	.99942	.05146	.99867	.06889	.99762	.08629	.99627	57
58	.01687	.99986	.03432	.99941	.05176	.99866	.06918	.99760	.08658	.99625	58
59	.01716	.99985	.03461	.99940	.05205	.99864	.06947	.99758	.08687	.99622	59
60	.01745	.99985	.03490	.99939	.05234	.99863	.06976	.99756	.08716	.99619	60

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	38.8	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

NATURAL SINES AND COSINES. 0° to 10°

M	5°		6°		7°		8°		9°		M
	Sin.	Cos.	Sin.	Cos.	Sin.	Cos.	Sin.	Cos.	Sin.	Cos.	
0	.08716	.99619	.10453	.99452	.12187	.99255	.13917	.99027	.15643	.98769	0
1	.08745	.99617	.10482	.99449	.12216	.99251	.13946	.99023	.15672	.98764	1
2	.08774	.99614	.10511	.99446	.12245	.99248	.13975	.99019	.15701	.98760	2
3	.08803	.99612	.10540	.99443	.12274	.99244	.14004	.99015	.15730	.98755	3
4	.08831	.99610	.10569	.99440	.12302	.99240	.14033	.99011	.15758	.98751	4
5	.08860	.99607	.10597	.99437	.12331	.99237	.14061	.99006	.15787	.98746	5
6	.08889	.99604	.10626	.99434	.12360	.99233	.14090	.99002	.15816	.98741	6
7	.08918	.99602	.10655	.99431	.12389	.99230	.14119	.98998	.15845	.98737	7
8	.08947	.99599	.10684	.99428	.12418	.99226	.14148	.98994	.15873	.98732	8
9	.08976	.99596	.10713	.99424	.12447	.99222	.14177	.98990	.15902	.98728	9
10	.09005	.99594	.10742	.99421	.12476	.99219	.14205	.98986	.15931	.98723	10
11	.09034	.99591	.10771	.99418	.12504	.99215	.14234	.98982	.15959	.98718	11
12	.09063	.99588	.10800	.99415	.12533	.99211	.14263	.98978	.15988	.98714	12
13	.09092	.99586	.10829	.99412	.12562	.99208	.14292	.98973	.16017	.98709	12
14	.09121	.99583	.10858	.99409	.12591	.99204	.14320	.98969	.16046	.98704	14
15	.09150	.99580	.10887	.99406	.12620	.99200	.14349	.98965	.16074	.98700	15
16	.09179	.99578	.10916	.99402	.12649	.99197	.14378	.98961	.16103	.98695	16
17	.09208	.99575	.10945	.99399	.12678	.99193	.14407	.98957	.16132	.98690	17
18	.09237	.99572	.10973	.99396	.12706	.99189	.14436	.98953	.16160	.98686	18
19	.09266	.99570	.11002	.99393	.12735	.99186	.14464	.98948	.16189	.98681	19
20	.09295	.99567	.11031	.99390	.12764	.99182	.14493	.98944	.16218	.98676	20
21	.09324	.99564	.11060	.99386	.12793	.99178	.14522	.98940	.16247	.98671	21
22	.09353	.99562	.11089	.99383	.12822	.99175	.14551	.98936	.16275	.98667	22
23	.09382	.99559	.11118	.99380	.12851	.99171	.14580	.98931	.16304	.98662	23
24	.09411	.99556	.11147	.99377	.12880	.99167	.14608	.98927	.16333	.98657	24
25	.09440	.99553	.11176	.99374	.12908	.99163	.14637	.98923	.16361	.98652	25
26	.09469	.99551	.11205	.99370	.12937	.99160	.14666	.98919	.16390	.98648	26
27	.09498	.99548	.11234	.99367	.12966	.99156	.14695	.98914	.16419	.98643	27
28	.09527	.99545	.11263	.99364	.12995	.99152	.14723	.98910	.16447	.98638	28
29	.09556	.99542	.11291	.99360	.13024	.99148	.14752	.98906	.16476	.98633	29
30	.09585	.99540	.11320	.99357	.13053	.99144	.14781	.98902	.16505	.98629	30
31	.09614	.99537	.11349	.99354	.13081	.99141	.14810	.98897	.16533	.98624	31
32	.09642	.99534	.11378	.99351	.13110	.99137	.14838	.98893	.16562	.98619	32
33	.09671	.99531	.11407	.99347	.13139	.99133	.14867	.98889	.16591	.98614	33
34	.09700	.99528	.11436	.99344	.13168	.99129	.14896	.98884	.16620	.98609	34
35	.09729	.99526	.11465	.99341	.13197	.99125	.14925	.98880	.16648	.98604	35
36	.09758	.99523	.11494	.99337	.13226	.99122	.14954	.98876	.16677	.98600	36
37	.09787	.99520	.11523	.99334	.13254	.99118	.14982	.98871	.16706	.98595	37
38	.09816	.99517	.11552	.99331	.13283	.99114	.15011	.98867	.16734	.98590	38
39	.09845	.99514	.11580	.99327	.13312	.99110	.15040	.98863	.16763	.98585	39
40	.09874	.99511	.11609	.99324	.13341	.99106	.15069	.98858	.16792	.98580	40
41	.09903	.99508	.11638	.99320	.13370	.99102	.15097	.98854	.16820	.98575	41
42	.09932	.99506	.11667	.99317	.13399	.99098	.15126	.98849	.16849	.98570	42
43	.09961	.99503	.11696	.99314	.13427	.99094	.15155	.98845	.16878	.98565	43
44	.09990	.99500	.11725	.99310	.13456	.99091	.15184	.98841	.16906	.98561	44
45	.10019	.99497	.11754	.99307	.13485	.99087	.15212	.98836	.16935	.98556	45
46	.10048	.99494	.11783	.99303	.13514	.99083	.15241	.98832	.16964	.98551	46
47	.10077	.99491	.11812	.99300	.13543	.99079	.15270	.98827	.16992	.98546	47
48	.10106	.99488	.11840	.99297	.13572	.99075	.15299	.98823	.17021	.98541	48
49	.10135	.99485	.11869	.99293	.13600	.99071	.15327	.98818	.17050	.98536	49
50	.10164	.99482	.11898	.99290	.13629	.99067	.15356	.98814	.17078	.98531	50
51	.10192	.99479	.11927	.99286	.13658	.99063	.15385	.98809	.17107	.98526	51
52	.10221	.99476	.11956	.99283	.13687	.99059	.15414	.98805	.17136	.98521	52
53	.10250	.99473	.11985	.99279	.13716	.99055	.15442	.98800	.17164	.98516	53
54	.10279	.99470	.12014	.99276	.13744	.99051	.15471	.98796	.17193	.98511	54
55	.10308	.99467	.12043	.99272	.13773	.99047	.15500	.98791	.17222	.98506	55
56	.10337	.99464	.12071	.99269	.13802	.99043	.15529	.98787	.17250	.98501	56
57	.10366	.99461	.12100	.99265	.13831	.99039	.15557	.98782	.17279	.98496	57
58	.10395	.99458	.12129	.99262	.13860	.99035	.15586	.98778	.17308	.98491	58
59	.10424	.99455	.12158	.99258	.13889	.99031	.15615	.98773	.17336	.98486	59
60	.10453	.99452	.12187	.99255	.13917	.99027	.15643	.98769	.17365	.98481	60

Deg.	0′		10′		20′		30′		40′		50′		Deg.
	Sin.	Cos.	Sin.	Cos.	Sin.	Cos.	Sin.	Cos.	Sin.	Cos.	Sin.	Cos.	
0	.0000	1.0000	.0029	1.0000	.0058	1.0000	.0087	.9999	.0116	.9999	.0145	.9999	89
1	.0175	.9998	.0204	.9998	.0233	.9997	.0262	.9997	.0291	.9996	.0320	.9995	88
2	.0349	.9994	.0378	.9993	.0407	.9992	.0436	.9990	.0465	.9989	.0494	.9988	87
3	.0523	.9986	.0552	.9985	.0581	.9983	.0610	.9981	.0640	.9980	.0669	.9978	86
4	.0698	.9976	.0727	.9974	.0756	.9971	.0785	.9969	.0814	.9967	.0843	.9964	85
5	.0872	.9962	.0901	.9959	.0929	.9957	.0958	.9954	.0987	.9951	.1016	.9948	84
6	.1045	.9945	.1074	.9942	.1103	.9939	.1132	.9936	.1161	.9932	.1190	.9929	83
7	.1219	.9925	.1248	.9922	.1276	.9918	.1305	.9914	.1334	.9911	.1363	.9907	82
8	.1392	.9903	.1421	.9899	.1449	.9894	.1479	.9890	.1507	.9886	.1536	.9881	81
9	.1564	.9877	.1593	.9872	.1622	.9868	.1650	.9863	.1679	.9858	.1708	.9853	80
10	.1736	.9848	.1765	.9843	.1794	.9838	.1822	.9833	.1851	.9827	.1880	.9822	79
11	.1908	.9816	.1937	.9811	.1965	.9805	.1994	.9799	.2022	.9793	.2051	.9787	78
12	.2079	.9781	.2108	.9775	.2136	.9769	.2164	.9763	.2193	.9757	.2221	.9750	77
13	.2250	.9744	.2278	.9737	.2306	.9730	.2334	.9724	.2363	.9717	.2391	.9710	76
14	.2419	.9703	.2447	.9696	.2476	.9689	.2504	.9681	.2532	.9674	.2560	.9667	75
15	.2588	.9659	.2616	.9652	.2644	.9644	.2672	.9636	.2700	.9628	.2728	.9621	74
16	.2756	.9613	.2784	.9605	.2812	.9596	.2840	.9588	.2868	.9580	.2896	.9572	73
17	.2924	.9563	.2952	.9555	.2979	.9546	.3007	.9537	.3035	.9528	.3062	.9520	72
18	.3090	.9511	.3118	.9502	.3145	.9492	.3173	.9483	.3201	.9474	.3228	.9465	71
19	.3256	.9455	.3283	.9446	.3311	.9436	.3338	.9426	.3365	.9417	.3393	.9407	70
20	.3420	.9397	.3448	.9387	.3475	.9377	.3502	.9367	.3529	.9356	.3557	.9346	69
21	.3584	.9336	.3611	.9325	.3638	.9315	.3665	.9304	.3692	.9293	.3719	.9283	68
22	.3746	.9272	.3773	.9261	.3800	.9250	.3827	.9239	.3854	.9228	.3881	.9216	67
23	.3907	.9205	.3934	.9194	.3961	.9182	.3987	.9171	.4014	.9159	.4041	.9147	66
24	.4067	.9135	.4094	.9124	.4120	.9112	.4147	.9100	.4173	.9088	.4200	.9075	65
25	.4226	.9063	.4253	.9051	.4279	.9038	.4305	.9026	.4331	.9013	.4358	.9001	64
26	.4384	.8988	.4410	.8975	.4436	.8962	.4462	.8949	.4488	.8936	.4514	.8923	63
27	.4540	.8910	.4566	.8897	.4592	.8884	.4617	.8870	.4643	.8857	.4669	.8843	62
28	.4695	.8829	.4720	.8816	.4746	.8802	.4772	.8788	.4797	.8774	.4823	.8760	61
29	.4848	.8746	.4874	.8732	.4899	.8718	.4924	.8704	.4950	.8689	.4975	.8675	60
30	.5000	.8660	.5025	.8646	.5050	.8631	.5075	.8616	.5100	.8601	.5125	.8587	59
31	.5150	.8572	.5175	.8557	.5200	.8542	.5225	.8526	.5250	.8511	.5275	.8496	58
32	.5299	.8480	.5324	.8465	.5348	.8450	.5373	.8434	.5398	.8418	.5422	.8403	57
33	.5446	.8387	.5471	.8371	.5495	.8355	.5519	.8339	.5544	.8323	.5568	.8307	56
34	.5592	.8290	.5616	.8274	.5640	.8258	.5664	.8241	.5688	.8225	.5712	.8208	55
35	.5736	.8192	.5760	.8175	.5783	.8158	.5807	.8141	.5831	.8124	.5854	.8107	54
36	.5878	.8090	.5901	.8073	.5925	.8056	.5948	.8039	.5972	.8021	.5995	.8004	53
37	.6018	.7986	.6041	.7969	.6065	.7951	.6088	.7934	.6111	.7916	.6134	.7898	52
38	.6157	.7880	.6180	.7862	.6202	.7844	.6225	.7826	.6248	.7808	.6271	.7790	51
39	.6293	.7771	.6316	.7753	.6338	.7735	.6361	.7716	.6383	.7698	.6406	.7679	50
40	.6428	.7660	.6450	.7642	.6472	.7623	.6494	.7604	.6517	.7585	.6539	.7566	49
41	.6561	.7547	.6583	.7528	.6604	.7509	.6626	.7490	.6648	.7470	.6670	.7451	48
42	.6691	.7431	.6713	.7412	.6734	.7392	.6756	.7373	.6777	.7353	.6799	.7338	47
43	.6820	.7314	.6841	.7294	.6862	.7274	.6884	.7254	.6905	.7234	.6926	.7214	46
44	.6947	.7193	.6967	.7173	.6988	.7153	.7009	.7133	.7030	.7112	.7050	.7092	45
45	.7071	.7071	.7092	.7050	.7112	.7030	.7133	.7009	.7153	.6988	.7173	.6967	44
	Cos.	Sin.	Cos.	Sin.	Cos.	Sin.	Cos.	Sin.	Cos.	Sin.	Cos.	Sin.	
Deg.	60′		50′		40′		30′		20′		10′		Deg.

Rough Log - MTS - 5

17 May, 1984
Marc Legault

~~ft~~

0-12.2 m casing

12.2-26.6 m - mgr fgp mafic intrusive (diorite)
- 3-4% avg. feldspar phenos
up to 15-20% 1-3mm in size
- mineraliz - nil
wk hematite? slips
- alteration - carbonate ubiquitous
1-2% veinlets
- wnk epidote veinlets

26.6m-34.2 m - same as above
- weakly-sheared and fine gran- apl
at ~28.0 ft - 1ft section
- alteration - 1-2% 3-4mm wide carb veins
ubiquitous, Trace hematitic
slips - veins up to 10% in places
- weak Qtz-Ep. alt in places
- mineralization: nil

FIELD

Note: mafic intrusive (diorite)
similar to other diorites
observed previously (this comm.
D.2 + C.3)

* no gneiss at contact but
chilled - intrusive contact

Rough Log - MTS-5 (continued) MHL

34.2m - 41.4m - fgr-mgr mafic intrusive
- usually feldspar porph
- 1-5% 1-3mm subh.
white feldspars
- sometimes see fgr-mgr varieties
with (rare) prominent pyrox phenos
up to 2.0mm in size
→ ~34.5 - 0.5m wide sheared aphan section
with much ground core + qtz veins
(5% - 2cm wide) pos fault ?
→ ~41.0 m ± sheared up -
fine schistosity ~80° core axis
- stretched out fels phenos
probably still diorite
- alteration :
- carbonate ubiquitous - in veins
and through diorite matrix
avg. 1-2% of core
- up to 5-7% veins ~34 m } m long
~40 m } secs
epidote-sil - rt in spots
- Mineralization
- nil - rt hem slips.

FIELD

41.4 - 45.8 - fgr - aph - mafic intrusive (diorite)

└ generally fgr - until 45 m ↑

* when becomes aphanitic wk sheared

alteration - * carbonate ubiquitous

└ up to 5% in veins and ± qtz

dissem - in matrix of diorite

qtz-cat veins - gash veins - anastomosing

* qtz - ep - carb - 10% colomation in

chill zone

Rough log cont.

45.8 - 49.0 - felsic-interm volcanic - pos. tuff
- aphyric to wk qtz phyric 1-2%
(at 47.2 m notably)
- what feldspars → ragged - carbonate mm clots (sized)
- schistocity well developed to pulp in places
~80° to core-axis
- alteration: schist & wk ser (chl) alteration
generally wk - gives bleached appearance - well developed throughout
- carb ubiquitous - schist planes and
in (qtz) carb veinlets (~15% total)

mineralization - tr PY - dissem - finely white - throughout
- 46.5 46.6 m - 10% PY - tr 1% dissem

FIELD

Spent rest of may 17,
on field trip through
Mount Sicker property
with Dave Lefebure +
Alex Davidson.

49.0 - 57.0 MTS-5 cont

- felsic to intermediate

May 15, 1984

- logging diamond drill core

MTS-5

- 60 m in 4 hrs.

- to - 81.0 by 5:00 pm

slow going.

- talked with Tren Baisran.

D. PENF... LTD., MA... VANCO... R, CAN... KSBA... ERPRO...

FIELD

- for next week
  - start mapping Western unmapped section

- objects of mapping:
  - map
  - trey at PF
  - extension of Zinc-zone (assume WNW strike
  - can map QP?
  - map QTZ-diorite boundary

- Janet + Ian sampling
Tom + Peter - shovel + bean NE Cu

Samedi

le 19 mai, 1984

Logging notes - 5

water - come.

- Leak Pump:
  need to sort it out
  call Dean Strachan - Chevron in
  Cowichan Bay 746 4212

- Info CFC 6445 65th street
  Delta, B.C.
  V4K 4E2
  = attention Irene King
  @ 946-5451
  Canadian Imperial Bank of Commerce
  Ladner, Delta, B.C.

- Toyota Land Cruiser 748 3221
  Don Spencer - Budget Rent a
  monthly rental - Brown 4wd
  $950/mth, $2500 deductible
  20¢/km in excess of 2000 km

FIELD

CFC - Adams Lake

Box 739 672 5898

Barriere, B.C.

V0E 1E0

3215 Hykaway Drive

RR#6, (P.O 58)

Duncan, B.C.

V9L 4E6 746-4569

May 20, 1984

- day out in Tower 3

May 21, 1984

- drove D. Lefebure to Sidney Airport
- took 8:40 Brentwood - Mill Bay ferry

- Tom + Pete - sampling
Ian w Collin - splitting core - in AM
- surveying in PM
- Janet - sick
- Finished logging [illegible]
154.5 eoh
diorite at collar → 46.4 m
felsic ash tuff w mafic tuffs in 100 m
felsic ash tuff rest of hole
with feldspathic xtal tuff

- called Budget - no go.

The Duplicators
486 Trans Can. Duncan
746-4383

May 22, 1984
- Rain - heavy - steady.

By June 22, 1984
- notify Budget as to status of Brown Ford.

Mr. Gosselin
Coop. Lock Pump
& Key Lock.
- completed credit application → sent in today's mail.
- could be 1-1½ weeks.

- Am - photocopied & mailed maps 4-5 groceries ā Ian.
- Tom - caught up on sample locations
- Picked up Brown Toyota
- 8000 kms
- minor scuffs on left door panels. otherwise OK.

- Pm - shuttled off NE Canyon ā Peter Pshuk, Ian Kaucke and Tom.

May 23, 1984

- 1st day mapping ~ Mt. Sicker NW
  L 5+00 W - BL → 800 N
  └ not a lot of o/c

- Tom + Ian + Peter } Sampling
  Mt. Sicker NE
  (bent fucking aerial.

May 24, 1984

- mapping L 6+00 W
- met John McAlbrey - line cutter

FIELD

Friday May 25, 1984

L20W 680m W of Road

L5+00W, 8+90N 2m wide creek

10m N L5N, 8+30N

L20W 16+07N

BL26N-20W

18+50N

Lines to NW of MT. Sicker are not tied in to each other or any landmark.

May 26 1983

- chaining NW Mt. Sicker via Serem BL56 N

Chainage	location
0+00 W	L 1+00 E/8+50N
0+42	L 0+00 8+50N
1+67 W	L 1+00W 8+58N
2+95 W	L 2+00W 8+50N
3+96 W	L 3+00 W 8+50 N
5+06 W	L4+00 W 8+40 N
6+44 W	L5+00W 8+25N
7+10 N	L6+00W 8+53N
7+50 W	chemainus River
0+00	L 6+00 W 6+50N
0+57 W	NE Road L24W/13+90N
1+16 W	L7+00W 6+42 N
0+00	L 7+00W 6+00 N
0+50 W	Road.
1+12 W	L8+00W 5+80N

May 27, 1984

- mapping L 7+00W - 0+00N
5+75N

- Tom + Ian sampling

May 28, 1984

- mapping L 8+00W

June 1

Mapping 6+00W

June 2

Mapping L 2E - 3E - 4E

June 3

day off Sunday Rest

June 4

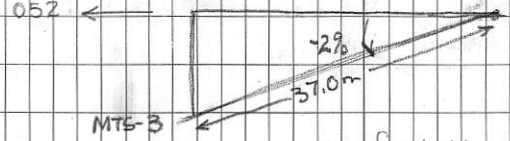
- mapping L 3E - 4E

June 5, 1984

from Ducanex hole to MTS - 3

Sight 052° - 2% grade

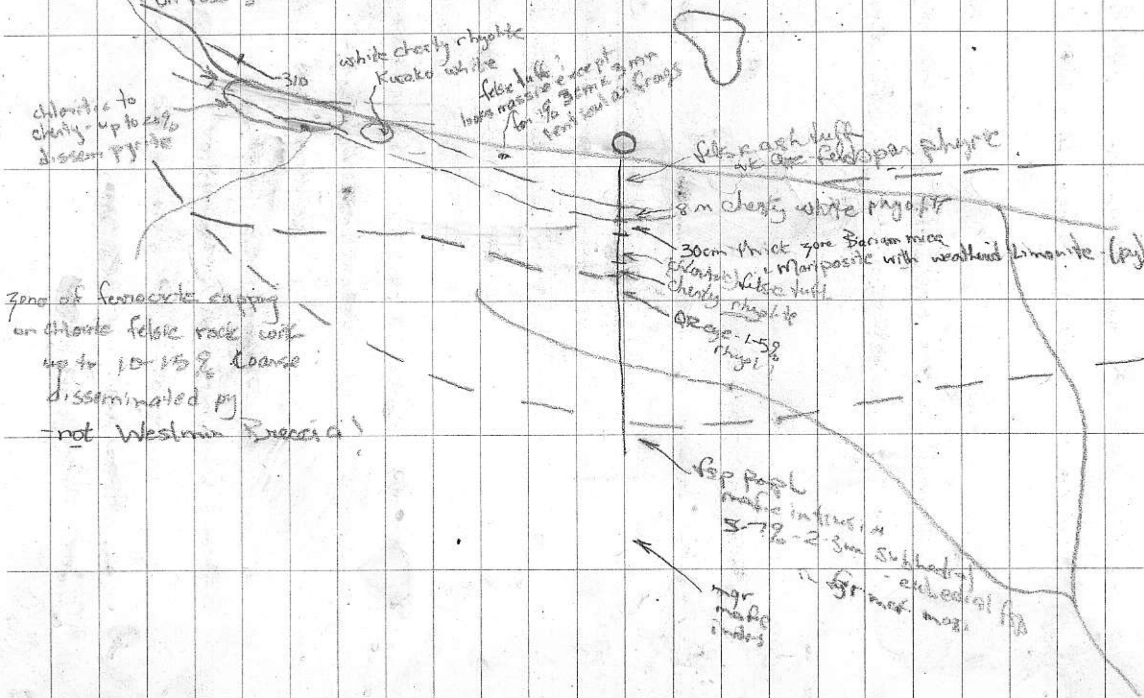
distance 37.0m - hypotenuse



finished by 9:30 am

FIELD

Stop #1 - exposures of cherty white rhyolite which are cut by irregular pyritic stringers (sometimes cpy) with chloritic haloes
on road get chloritic rock weakly pyritic



chloritic to cherty - up to 20% dissem pyrite
310
white cherty rhyolite
Kucako white
felsic tuff? looks massive except for 1% 3cm x 3mm felsic ash tuff frags
felsic ash tuff wk Qtz feldspar phyric
8 m cherty white rhyolite
30cm thick zone Barium mica + Mariposite with weathered limonite (py)
chloritic felsic tuff
cherty rhyolite
QR eye - 5% rhyol
zone of ferricrete capping on chlorite felsic rock with up to 10-15% coarse disseminated py
- not Westmin Breccia!
fsp porph mafic intrusion 5-7% 2-3mm subhedral - euhedral fsp
in gr mafic mat.
Tgr mafic intrus

things to note

- degree of schistocity seen elsewhere in felsic tuffs is absent in the cherty rhyolite - reasonably competent

- cherty horizons have weak suggestion of bedding
- amount of pyrite and chalcopyrite not unusual however the stringer type is not seen

In Bulldozer Trench - 000°

bottom - felsic ash tuff
- wk qz - fsp phyric - to quartz
- 2 up to 10% coarse - fine dissem py
- chloritic alteration - stringers
- can see chloritic spots on weath
- lapilli - coarse ash?

~8m horizontal - cherty white rhyolite - contact - schisto - son with wk pyrite chl stringers
shallow angle dips to north

- suggestion of mod north dips

- 30cm zone green Ba mica? - Mariposite?
wk pyrite wk chl? felsic rock

- 3m felsic rock - w/ cherty zones
- 2m - cherty - rhyolite

FIELD

- Qtz eye rhyolite - tuff

TR- 5% 2-3mm Qtz eyes

in wk chloritic felsic (light matrix) - 1% Py in spots

Frank Holman

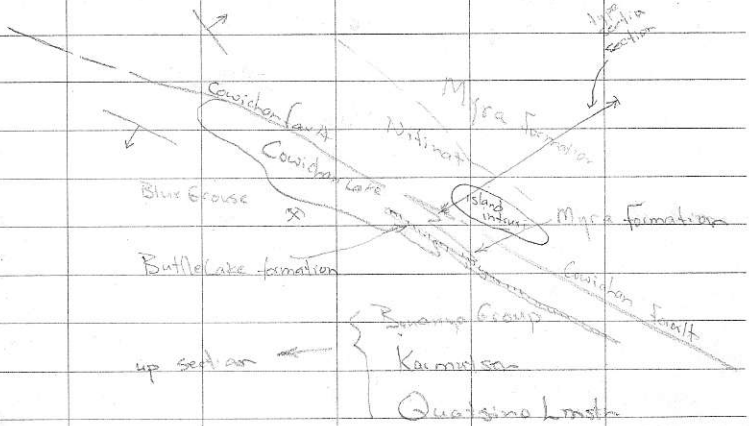
Aug 6, 1986

L19+00E	5+75	560 mf
(18+97E)	5+65	PF2672 — felsic tuff
	5+50	570 mf
	5+25	580

FIELD

Aug 8, 1981

- Type Section - Cowichan Lake
  - Paul Wilson
- Reference
  Mules - Nitinat Sheet



Type Section - Sicker Group

Buttle Lake - shale & greywacke

in Cowichan Lake area (Not limestones @ Muller)

Aside

Blue Grouse in Karmutsen

in Sutton Formation Limestone south of Lake Cowichan

(although probably Quatsino

- Cu-skarn - [illegible] diorite - not large diorites

Reference Peter Eastwood

Metasomatic Magnetite of West Coast

Don Sangster

Contact Metasomatic deposits of British Columbia

3 basic { Karmutsen

Quatsino Limestone

Island Intrusion

- Along Section

- good example of Columnar jointed

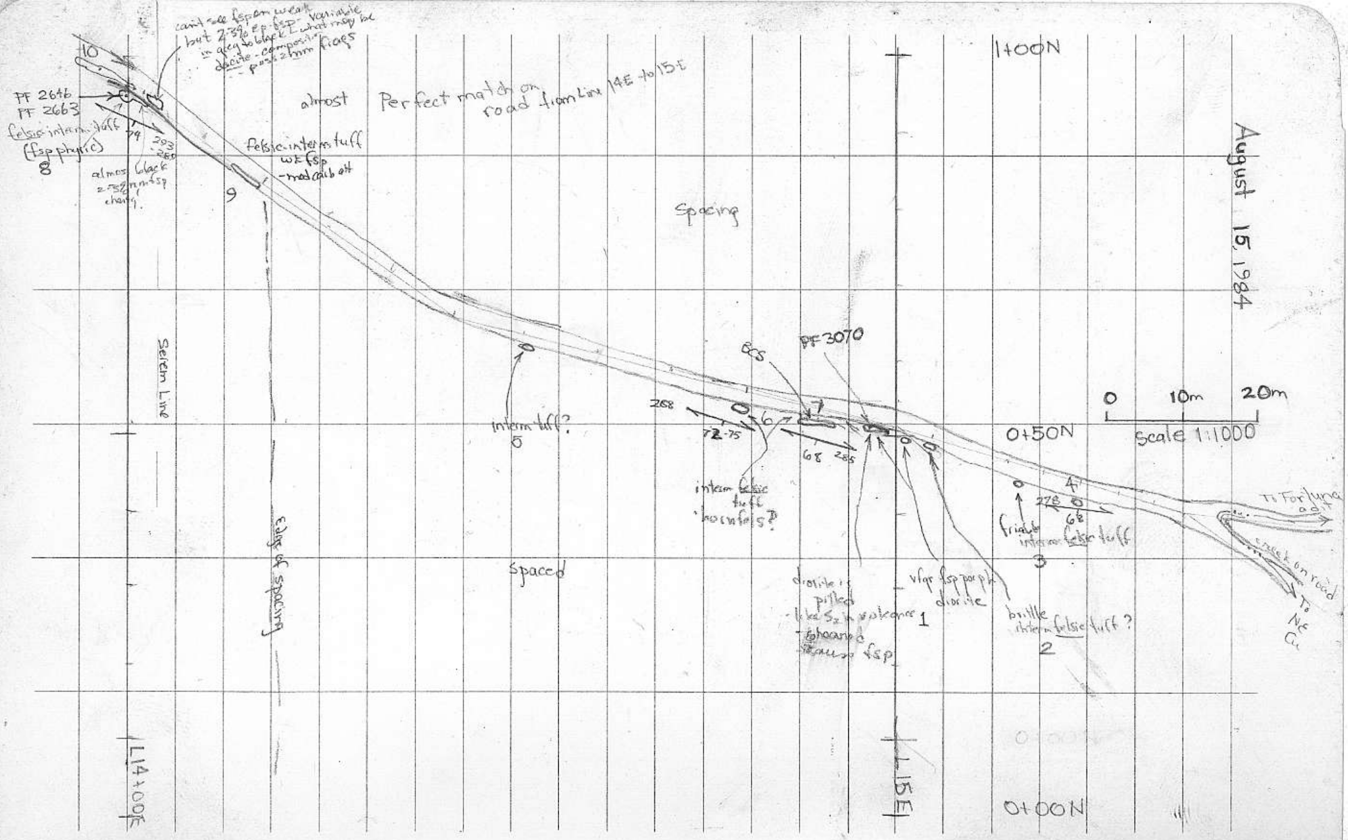
amygdaloidal pyroxene porphyritic [illegible]

- Bedded - turbiditic Tuffs'

- Myra Formation

- Not deformed - possible [illegible]

FIELD



can't see fsp on weak but 2-3% ep-fsp - variable in grey to black & what may be dacite - composite - poss 2 mm frags
10
PF 2646
PF 2663
felsic-interm. tuff (fsp phyric)
8
74
293
almost black 2-3% mm fsp
9
almost
Perfect match on road from Line 14E to 15E
Felsic-interm tuff w/ fsp - mod carb alt
1+00N
August 15, 1984
Spacing
Serem Line
PF 3070
ECS
interm tuff?
5
288
72-75
6
7
68
285
0+50N
0
10m
20m
Scale 1:1000
interm felsic tuff hornfels?
friable interm felsic tuff
278
68
4
3
To Fortuna adit
creek on road
To NE Cu
Edge of spacing
Spaced
diorite is pitted
vfgr fsp porph diorite
1
brittle interm felsic tuff?
2
L14+00E
15E
0+00N

August 15 1984 Mt Sicker E, M Legault

Notes

1 - fsp porph mafic intrusive 10-15% 1mm subhedral fsp in vfgr matrix
 - weathers red-orange no carbonate though

2 - grey interm - felsic tuff - quite brittle possible hornfels effect - wk bleached
 - v poor exposure, aphyric,

3 - similar to above - ie felsic look - poor exposure
 - good schistosity - platy friable - no carbonate

4 - grey interm - felsic tuff - as above ie look felsic - siliceous appearance
 - friable - poor outcrop

5 - poor exposure - friable weather - interm felsic tuff - on colour - green grey
 - weakly chloritic - carbonate? orange specks

6 interm - felsic - tuff? - warm grey to dark green - aphyric.
 - mod chloritic along schist looks hornfels (don't know)

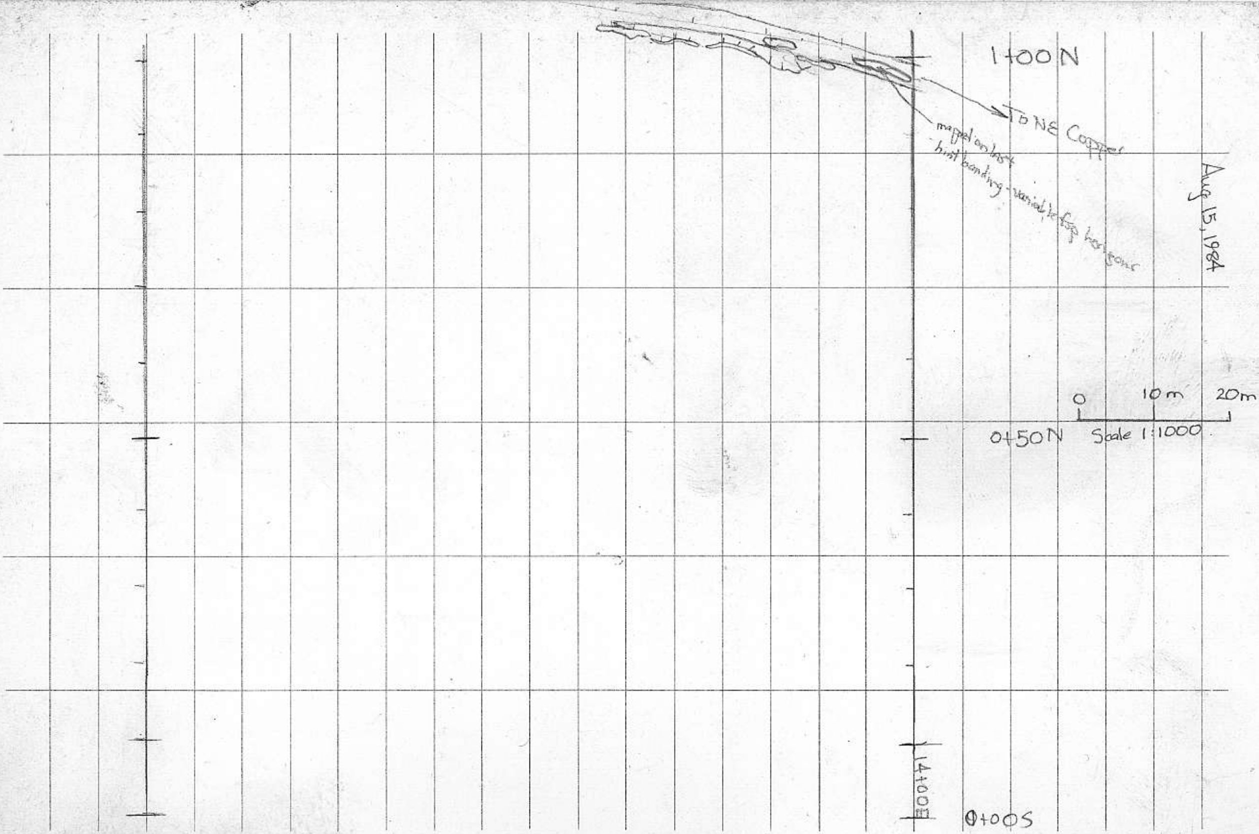
7 - interm - felsic tuff - slaty cleavage - grey rock with fine chloritic laminae - streaks
 on schist surface - tough to figure out - TR fsp?

8 - (fsp porph) felsic interm tuff -
 ^ 3-5% 1mm sauss - epidot fsp, borderline fsp porph -
 - often see epidote specks (prob alt fsp) + chl haloes? mm
 probable alt fsp - green - white streaky matrix - chl mm
 streaks are possibly ash frags.

9 - o/c in road - dirty - felsic - interm rock - grey with orange spots + flecks
 - 1-2% mm alt fsp - matrix - cherty grey - 1-5% carbonate

10 - in road felsic interm - banding ie dark zones with 3-5% visible fsp
 against grey white horizon - 1-2% epidot fsp
 1% QTZ veins

FIELD


1+00N
To NE Copper
mapped on back
Aug 15, 1984
0
10 m
20m
0+50N
Scale 1:1000
14+00E
0+00S

L16+00E | L12+00

altimeter m elevation

5+00N	420		
4+75	430	495	
4+50	440 m	505	
4+25	453	515	
4+00N	460	515	
3+75		515	
3+50	470	520	
3+25		520	
3+00N	480 m	525	
2+75N		525	282N mdc volca
2+50	490	530	
2+25		535	
2+00N	500	540	
1+75N		560	
1+50	510	555	
1+25N		560	
1+00	525	565	
0+75N	530	570	
0+50	540	570	
0+25N		575	
0+00N		585	
0+25S		600	
0+50S		610	
1+00S		615	
1+25S		620	
1+50		625	

FIELD