

Appendix Table 8 Results of X-ray Diffraction Analysis (1)

		Silica		Silicate					Fe-Mn (hydr)-oxide							Carbonate	Phosphate	Halide	Amorphous materials	Remarks	
		Quartz	Chalcedony	Pyrophyllite	Amphibole	Hydrous	Augite	Analcime	Sillite	Manganolite	Magnetite	Imenite	Hematite	Goethite	Todorokite	Birnessite	Calcite	Aragonite			Apatite
Sediments																					
1	94SBGC02			△			※									◎			△	○	Weak magnetism
2	"			○			※									◎			△	○	
3	"			○			※									◎			△	○	Medium magnetism
4	"			○			※									◎			△	○	Medium magnetism
5	"			△			※									◎			△	○	Weak magnetism
6	"			△			※									◎			△	○	
7	"			○			※									◎			△	○	Medium magnetism
8	"			○			※									◎			△	○	Medium magnetism
9	94SBGC05			△			※									◎			△	○	Medium magnetism
10	"			△			※									◎			△	○	Medium magnetism
11	"			○			※									◎			△	○	Medium magnetism
12	"			※			◎									◎			△	○	
13	"			○			※									◎			△	○	Medium magnetism
14	"			○			※									◎			△	○	Medium magnetism
15	94SBGC06			△			※									◎			△	○	Weak magnetism
16	"			○			※									◎			△	○	Weak magnetism
17	"			◎			※									◎			△	○	Weak magnetism
18	"			○			※			?						◎			△	○	Medium magnetism
19	"			△			※			※						◎			△	○	
20	"			△			※			※						◎			△	○	
21	"			△			※									◎			△	○	
22	"			△			※									◎			△	○	
23	94SBLC08			△			※									◎			△	○	Weak magnetism
24	"	※	※	△			※			※						◎			△	○	Strong magnetism
25	94SBLC09			○			※									◎			△	○	
26	"	?		△			※									◎			△	○	Weak magnetism
27	"			○			※									◎			△	○	
28	"	?		○			※			※						◎			△	○	Medium magnetism
29	"			○			※			※						◎			△	○	Weak magnetism
30	"	?		◎			※									◎			△	○	Medium magnetism
31	94SBLC12			△			※									◎			△	○	Weak magnetism
32	"			△			※									◎			△	○	Weak magnetism
33	"			△			※									◎			△	○	Weak magnetism
34	"			△			※			※						◎			△	○	
35	"			△			※									◎			△	○	
36	94SBLC13			△			※									◎			△	○	
37	"			○			※			※						◎			△	○	Medium magnetism
38	"			△			※									◎			△	○	
39	"			※			○									◎			△	○	
40	"			△			※			※						◎			△	○	Medium magnetism
41	"	※	※	△			※									◎			△	○	
42	"			△			※									◎			△	○	
43	94SBGC15			△			※									◎			△	○	
44	"			△			※									◎			△	○	
45	"			△			※			※						◎			△	○	
46	"			○			※			※						◎			△	○	Medium magnetism
47	"			△			※			※						◎			△	○	Medium magnetism
48	"			○			※									◎			△	○	Weak magnetism
49	"			△			※			△						◎			△	○	
50	94SBGC16			△			※									◎			△	○	
51	"			○			※									◎			△	○	
52	"			○			※			※						◎			△	○	Medium magnetism
53	"			○			※									◎			△	○	Weak magnetism
54	94SBGC17			○			※									◎			△	○	
55	"	※		△			※									◎			△	○	
56	"			△			※			※	※					◎			△	○	
57	94SDLC01			○	※		△			※						◎			△	○	
58	94SDLC06			△			※			※						◎			△	○	Medium magnetism
59	94SDLC08	※		○			※									◎			△	○	
60	94SDLC08			○			※									◎			△	○	
61	94SDLC09			○			※									◎			△	○	
62	"			○			※									◎			△	○	
63	"			○			※			○						◎			△	○	
64	"			○			※			※						◎			△	○	
65	"			△			※			※						◎			△	○	
66	"			△			※			※						◎			△	○	
67	"	※		△			※			※						◎			△	○	
68	"			△			※			※						◎			△	○	
69	"	※		△			※			※						◎			△	○	
70	94SDLC12			△			※			※						◎			△	○	
71	"			△			※			※						◎			△	○	
72	"			△			※			※						◎			△	○	

◎ : abundant ○ : common △ : poor ※ : rare ? : Questioning

Appendix Table 8 Results of X-ray Diffraction Analysis (2)

		Silica		Silicate							Fe-Mn (hydr)-oxide							Carbonate		Phosphate		Halide		Amorphous materials	Remarks
		Quartz	Chert	Plagioclase	Amphibole	Hypersthene	Augite	Anorthite	Sillite	Monomerionite	Magnetite	Ilmenite	Hematite	Goethite	Trochilite	Brimstone	Calcite	Aragonite	Apatite		Halite				
73	94SDLC13			○												△					△		○		
74	"			○												△					△		○		
75	"	※		△												△					△		○		
76	"			△												△					△		○		
77	"			△												△					△		○		
78	94SDLC15			○												○					△		○		
79	"			○												△					△		○	Strong magnetism	
80	"			○												△					△		○	Medium magnetism	
81	"			○												△		?			△		○	Medium magnetism	
82	"			○												△					△		○	Strong magnetism	
83	"			○												△					△		○	Medium magnetism	
84	"			○												○					△		○		
85	94SDLC18																				△		○		
86	"																				△		○		
87	94SDCB01																				△		○		
88	94SDPG01			△												○					△		○	Weak magnetism	
89	"			○												○					△		○	Medium magnetism	
90	"			△												○					△		○		
91	"			○												○					△		○		
92	"			△												○					△		○		
93	"			○												○					△		○	Weak magnetism	
94	94SDPG02			○												○					△		○	Medium magnetism	
95	"			○												○					△		○		
96	"			○												○					△		○	Strong magnetism	
97	"			○												○					△		○	Weak magnetism	
98	"			○												△					△		○	Medium magnetism	
99	94SDPG05			△												△					△		○		
Rocks																									
100	94SDLC03																				△		○		
101	94SDLC04			△																	△		○		
102	94SDLC05			○																	△		○		
103	94SDLC06			○																	△		○	Weak magnetism	
104	94SDLC07			○																	△		○	Strong magnetism	
105	94SDCB01			○																	△		○	Medium magnetism	
106	"			○																	△		○		
107	94SDCB02			○																	△		○	Weak magnetism	
108	94SDPG02			○																	△		○	Strong magnetism	
109	94SDPG05			○																	△		○	Medium magnetism	
110	94SDPG05			○																	△		○	Weak magnetism	
111	94SDPG07			○																	△		○		
112	"			○																	△		○	Medium magnetism	
113	94SDLC19			○																	△		○	Medium magnetism	
114	94SDCB01			○																	△		○	Strong magnetism	
Fe-oxides																									
115	94SDLC01																				△		○		
116	"																				△		○		
117	94SDLC03																				△		○		
118	"																				△		○		
119	"																				△		○		
120	94SDLC04																				△		○		
121	"																				△		○		
122	94SDLC18																				△		○		
123	"																				△		○		
124	94SDCB01																				△		○		
125	"																				△		○		
126	94SDCB02																				△		○		
127	94SDPG03																				△		○		
128	"																				△		○		
Mn-oxides																									
129	94SDLC09																				△		○		
130	94SDLC10																				△		○		
131	"																				△		○		
132	94SDLC11																				△		○		
133	94SDLC12																				△		○		
134	94SDLC13																				△		○		
135	94SDCB01																				△		○		
136	94SDCB02																				△		○		
137	94SDPG01																				△		○		
138	94SDPG02																				△		○		
139	"																				△		○		
140	94SDPG03																				△		○		
141	"																				△		○		

◎ : abundant ○ : common △ : poor ※ : rare ? : Questioning

Appendix Table 9 Sea-water Sound Velocity for MBES

17° 37.6' S, 169° 40.6' E(CTD02)		18° 42.3' S, 169° 36.2' E(CTD03)		19° 03.3' S, 169° 56.0' E (GC04)	
Water depth (m)	Sound velocity (m/sec)	Water depth (m)	Sound velocity (m/sec)	Water depth (m)	Sound velocity (m/sec)
10.0	1,532.1	10.0	1,531.8	10.0	1,531.8
20.0	1,532.2	20.0	1,531.9	20.0	1,531.9
50.0	1,529.9	50.0	1,531.8	50.0	1,531.8
101.0	1,528.7	100.0	1,530.7	100.0	1,530.7
150.0	1,526.7	150.0	1,529.8	150.0	1,529.8
170.0	1,525.9	170.0	1,529.1	170.0	1,529.1
200.0	1,525.1	200.0	1,527.2	200.0	1,527.2
250.0	1,521.0	250.0	1,524.2	250.0	1,524.2
300.0	1,515.9	300.0	1,521.9	300.0	1,521.9
400.0	1,506.7	401.0	1,511.3	401.0	1,511.3
500.0	1,495.6	500.0	1,497.9	500.0	1,497.9
600.0	1,487.8	601.0	1,491.5	601.0	1,491.5
700.0	1,484.8	700.0	1,487.1	700.0	1,487.1
800.0	1,483.5	800.0	1,484.8	800.0	1,484.8
900.0	1,482.6	900.0	1,484.4	1,000.0	1,483.5
1,000.0	1,482.6	1,000.0	1,483.5	1,200.0	1,483.7
1,200.0	1,483.2	1,200.0	1,483.7	1,500.0	1,486.4
1,500.0	1,485.7	1,500.0	1,486.4	2,000.0	1,491.9
2,000.0	1,491.2	2,000.0	1,491.9	2,500.0	1,500.3
2,093.0	1,492.7	2,418.0	1,498.8	3,072.0	1,510.2

Appendix Table 10 Weather and Sea-state Data

Monthly Frequency Distribution of Wind Direction in 1994

W. D Month	C A L M	N	N N E	N E	E N E	E	E S E	S E	S S E	S	S S W	S W	W S W	W	W N W	N W	N N W	Total
August %							32 26.87	86 71.67	2 1.67									120 100
September %	2 0.32	11 1.76	14 2.24	10 1.60	35 5.60	57 9.12	127 20.32	241 38.56	103 16.48	11 1.76	10 1.60					2 0.32	2 0.32	625 100
October %	26 7.74	4 1.19	11 3.27	8 2.38	6 1.79	19 5.65	67 19.94	126 37.50	45 13.39	5 1.49	10 2.98	6 1.79	1 0.30				2 0.60	336 100

Monthly Frequency Distribution of Wind Velocity in 1994

(W. V. : m/sec)

W. V. Month	C A L M	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Total
August %							1 0.83	3 2.50	12 10.00	34 28.33	26 21.67	19 15.83	11 9.17	6 6.67	5 4.17		1 0.83	120 100
September %	2 0.32	3 0.48	26 4.16	35 5.60	43 6.88	34 5.44	48 7.68	72 11.52	87 13.92	94 15.04	89 14.24	53 8.48	29 4.64	6 0.96	4 0.64			625 100
October %	26 7.74	22 6.55	28 8.33	22 6.55	33 9.82	29 8.63	28 8.33	33 9.82	47 13.99	26 7.74	28 8.33	12 3.57	2 0.60					336 100

Monthly Frequency Distribution of Weather in 1994

Weather Month	Fine	Cloudy	Rain	Total	Light rain
%	4 30.00	1 20.00		5 100	2 40.00
%	20 74.07	7 25.93		27 100	6 22.22
%	14 100.00			14 100	

Monthly Frequency Distribution of Atmospheric Pressure (daily average) in 1994

(AP : hPa)

A. P. Month	1010.0 S 1010.9	1011.0 S 1011.9	1012.0 S 1012.9	1013.0 S 1013.9	1014.0 S 1014.9	1015.0 S 1015.9	1016.0 S 1016.9	1017.0 S 1017.9	1018.0 S 1018.9	1019.0 S 1019.9	1020.0 S 1020.9	1021.0 S 1021.9	1022.0 S 1022.9	Not Clear	Total
August %				3 2.50	18 15.00	25 20.83	39 32.50	17 14.17	13 10.83	5 4.17					120 100
September %				5 0.80	36 5.76	55 8.80	141 22.56	155 24.80	119 19.04	60 9.60	36 5.70	15 2.40	3 0.48		625 100
October %				8 2.38	23 6.85	75 22.32	84 25.00	81 24.11	40 11.90	25 7.44					336 100

Monthly Frequency Distribution of Swell Height in 1994

S. D Month	N	N N E	N E	E N E	E	E S E	S E	S S E	S	S S W	S W	W S W	W	W N W	N W	N N W	Not Clear	Total
August %						11 9.17	49 40.83										60 50.00	120 100
September %		5 0.80	9 1.44	14 2.24	6 0.96	73 11.88	80 12.80	86 13.76	30 4.80	2 0.32	2 0.32						318 50.88	625 100
October %		1 0.30	3 0.89	13 3.87	9 2.68	47 13.99	63 18.75	37 11.01									1633 48.51	336 100

Monthly Frequency Distribution of Swell Direction in 1994

(S. C : sec)

S. D Month	2	3	4	5	6	7	8	9	10	11	Not Clear	Total
August %						33 27.50	27 22.50				60 50.00	120 100
September %				34 5.44	29 4.64	106 16.96	116 18.56	11 1.76	11 1.76		318 50.88	625 100
October %				54 16.07	87 25.89	17 5.06	15 4.46				163 48.51	336 100

Monthly Frequency Distribution of Swell Cycle in 1994

S. H Month	0	1	2	3	4	5	6	7	8	Not Clear	Total
August %				44 36.67	16 13.33					60 50.00	120 100
September %	2 0.32	63 10.08	88 15.68	112 17.92	29 4.64	3 0.48				318 50.88	625 100
October %		71 21.13	66 19.64	38 10.71						163 48.51	336 100

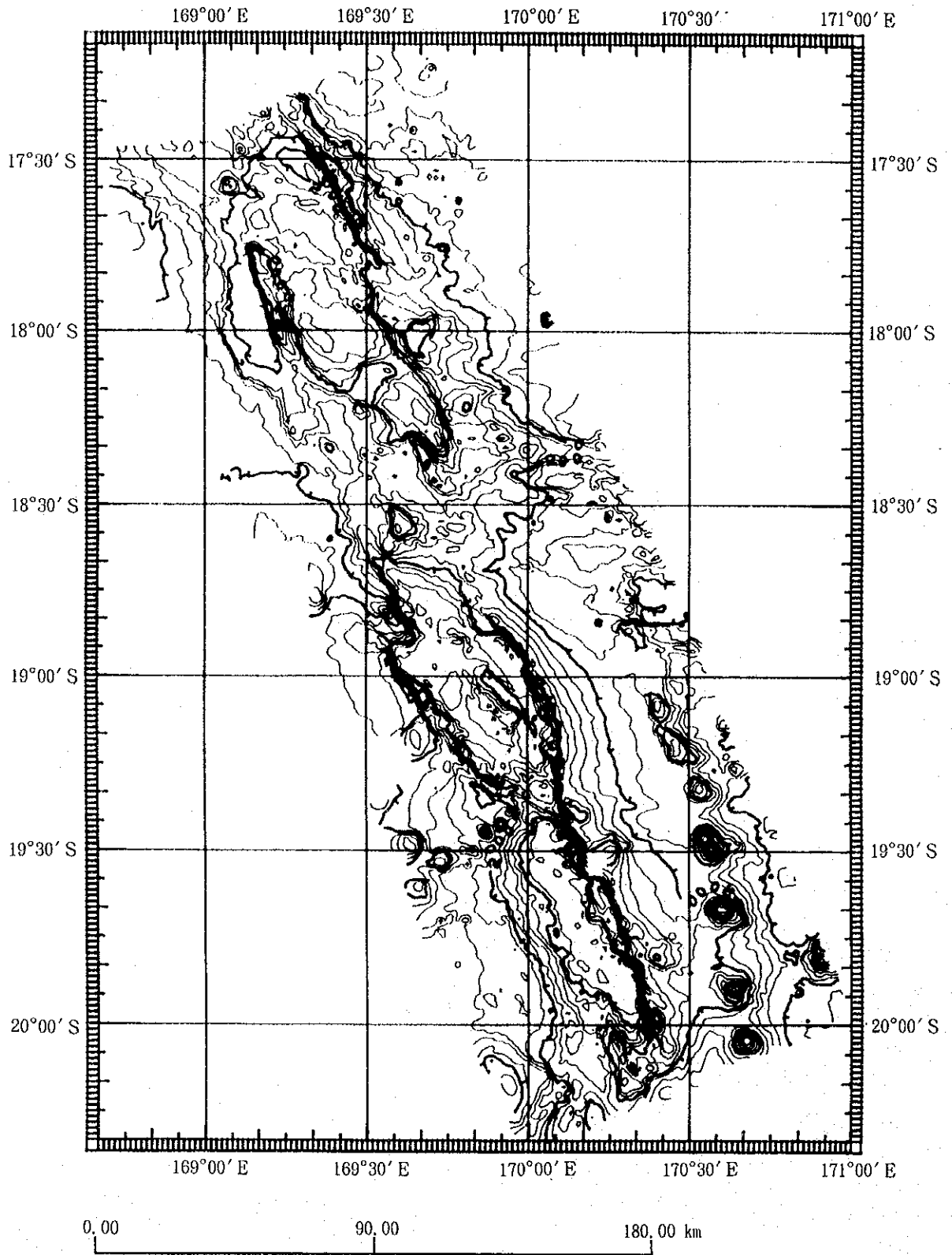
Monthly Frequency Distribution of Degree of Cloudiness in 1994

D. C Month	1	2	3	4	5	6	7	8	9	Not Clear	Total
August %		2 1.67	26 21.67	32 26.67	25 20.83	8 6.67	15 12.50	12 10.00			120 100
September %		24 3.84	133 21.28	114 18.24	154 24.64	54 8.64	81 12.96	65 10.40			625 100
October %		33 9.82	168 50.00	85 25.30	26 7.74	14 4.17	8 2.38	2 0.60			336 100

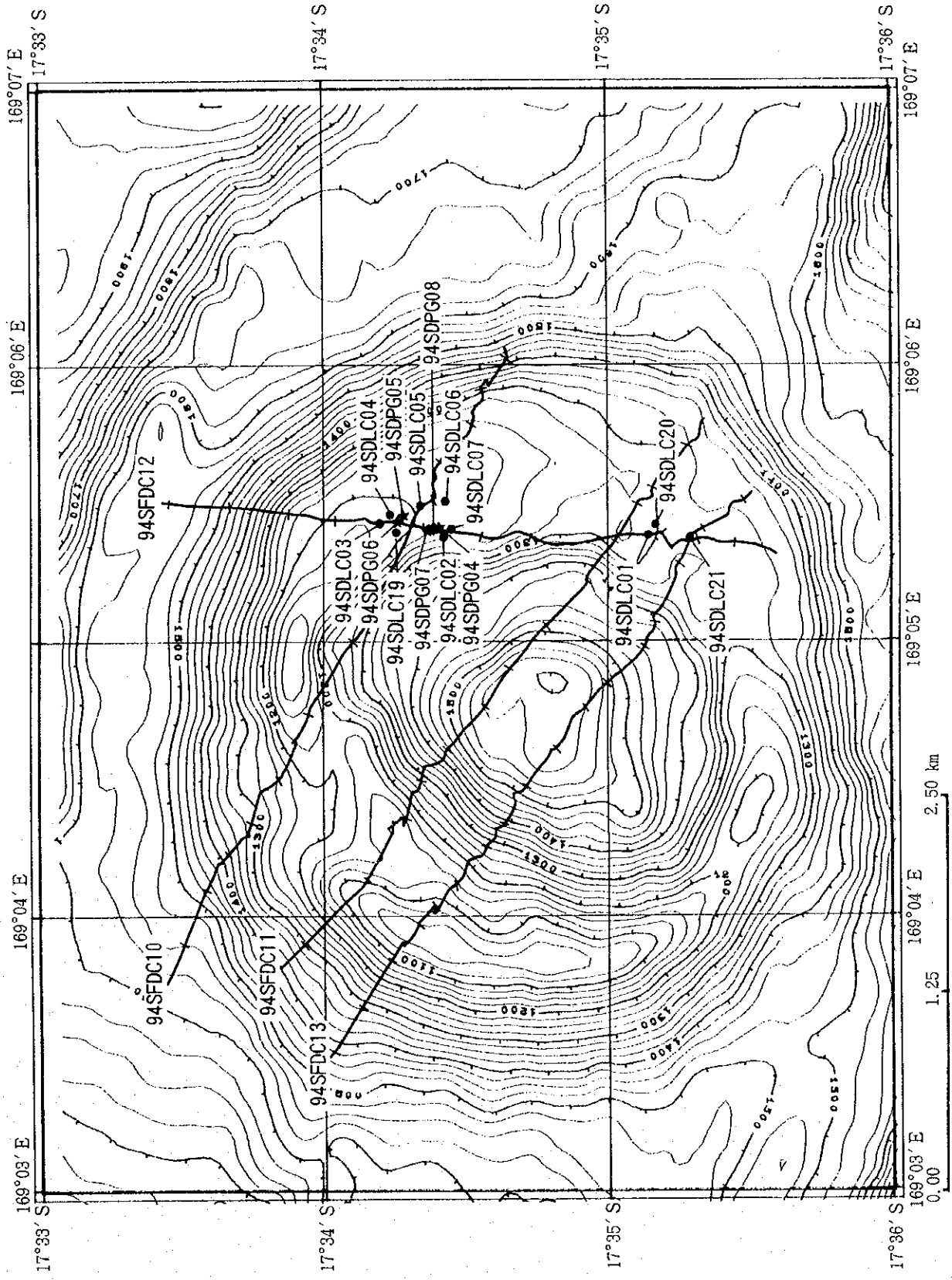


[List of Annexed Figures]

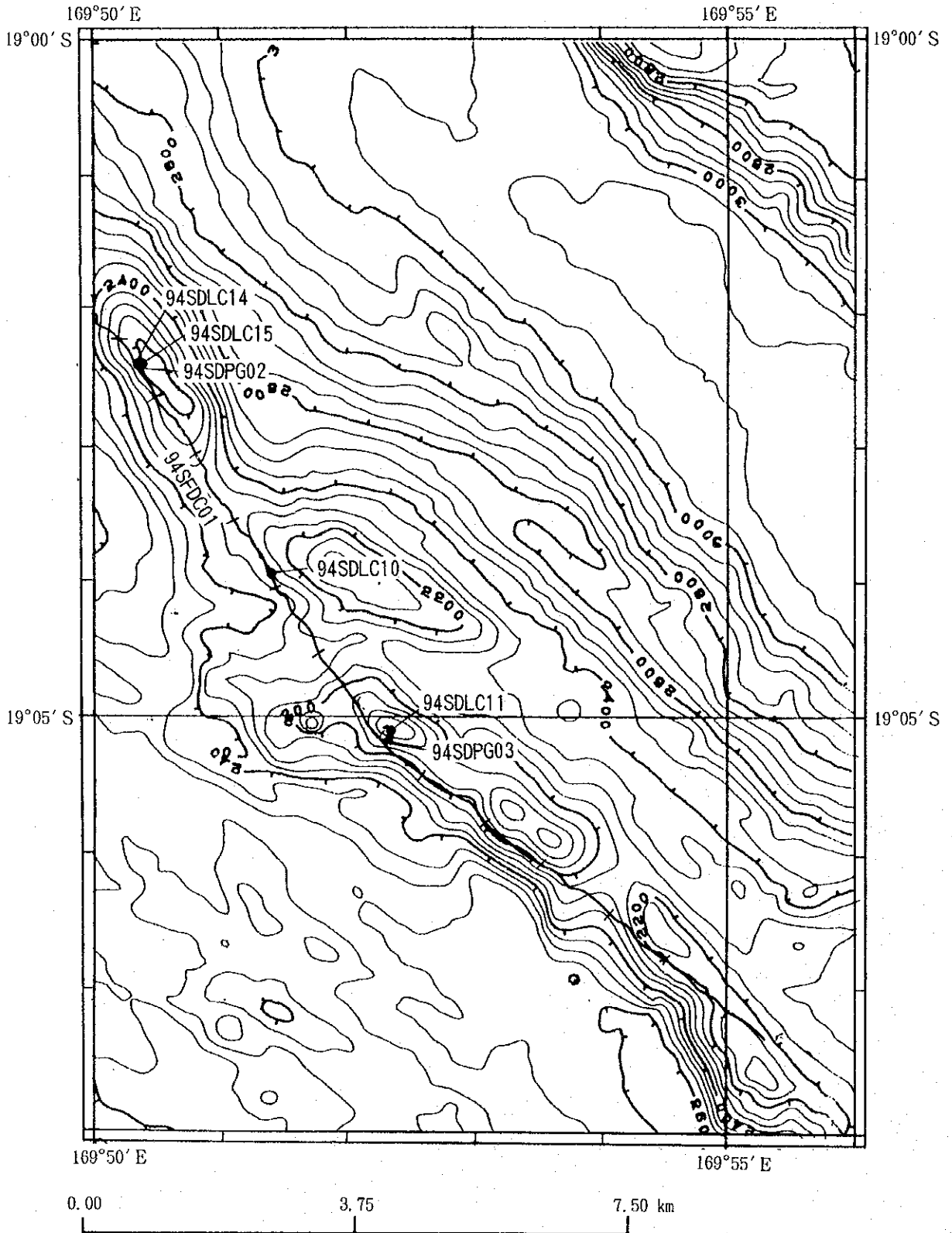
- Annexed Figure 1 Bathymetric Map
- Annexed Figure 2 Sampling Station of Ore Deposit Investigation (1) ~ (4)
- Annexed Figure 3 Schematic Drawing of Sampling Results Obtained from
Ore Deposit Investigation (1) ~ (3)
- Annexed Figure 4 FDC Route Map (1) ~ (11)
- Annexed Figure 5-1 MBES Track Line Map
- Annexed Figure 5-2 PGM Track Line Map
- Annexed Figure 5-3 SSS Vehicle Position Map (1), (2)



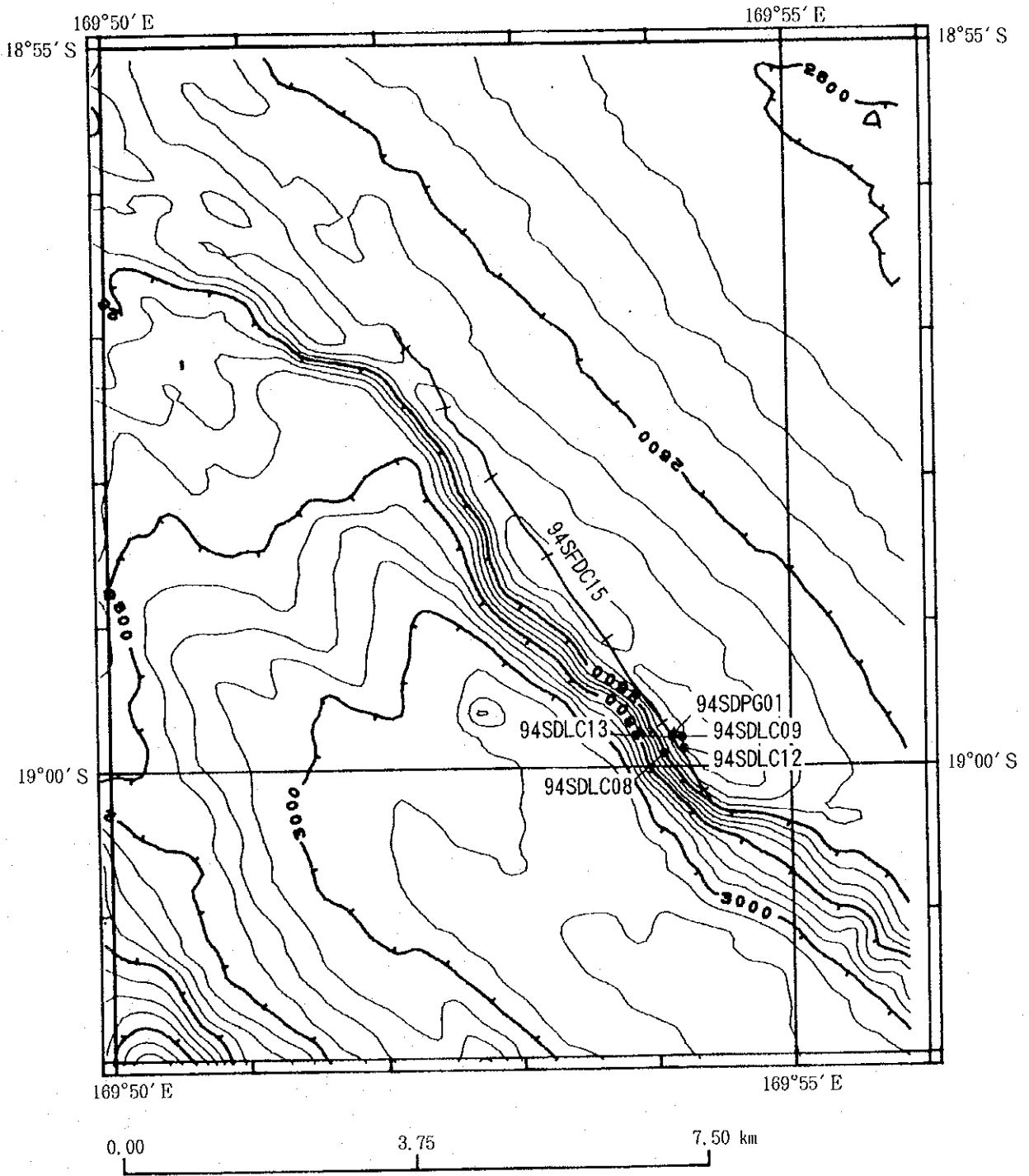
Annexed Figure 1 Bathymetric Map



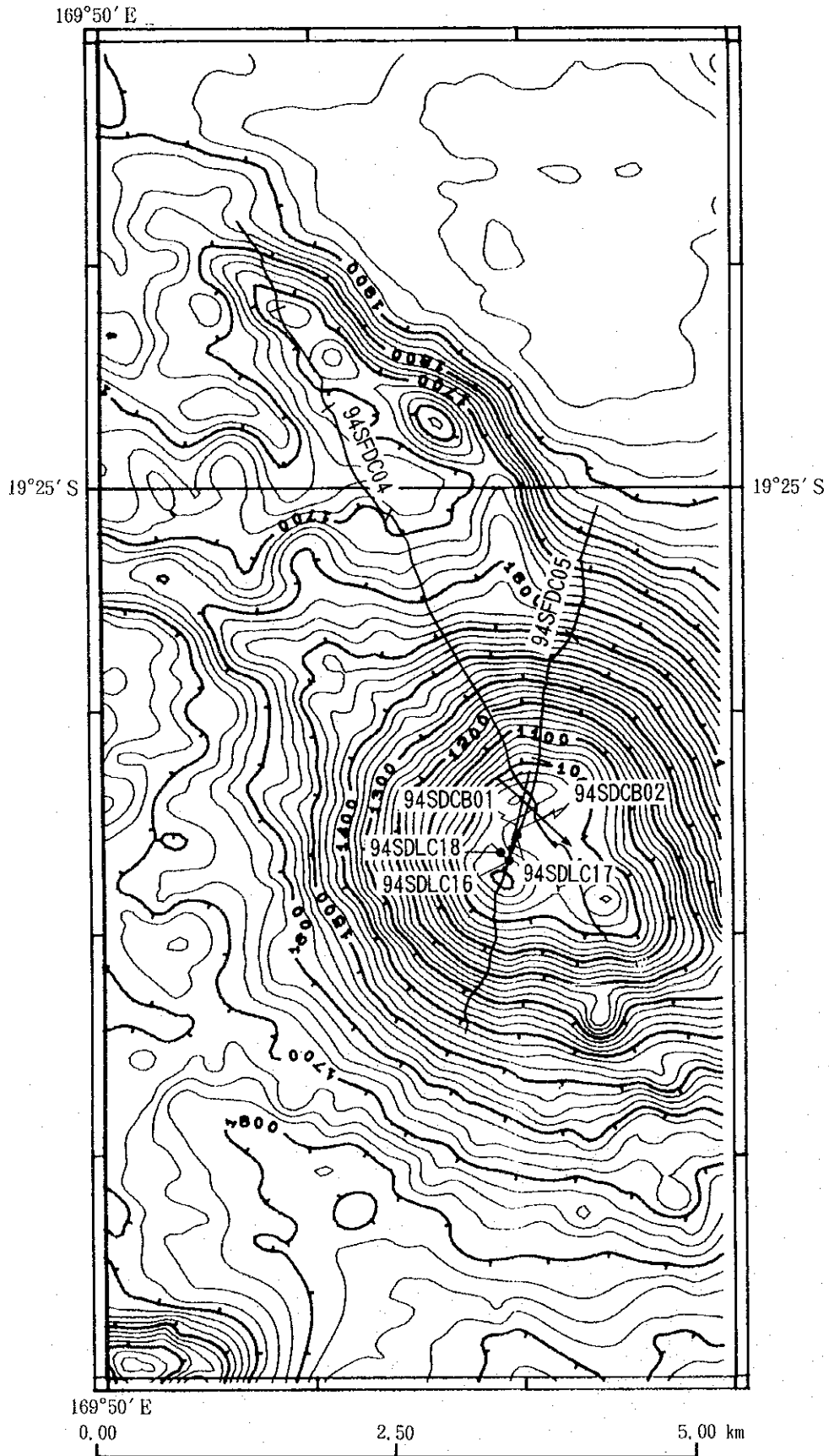
Annexed Figure 2 Sampling Station of Ore Deposit Investigation
(94S01 Seamount) (1)



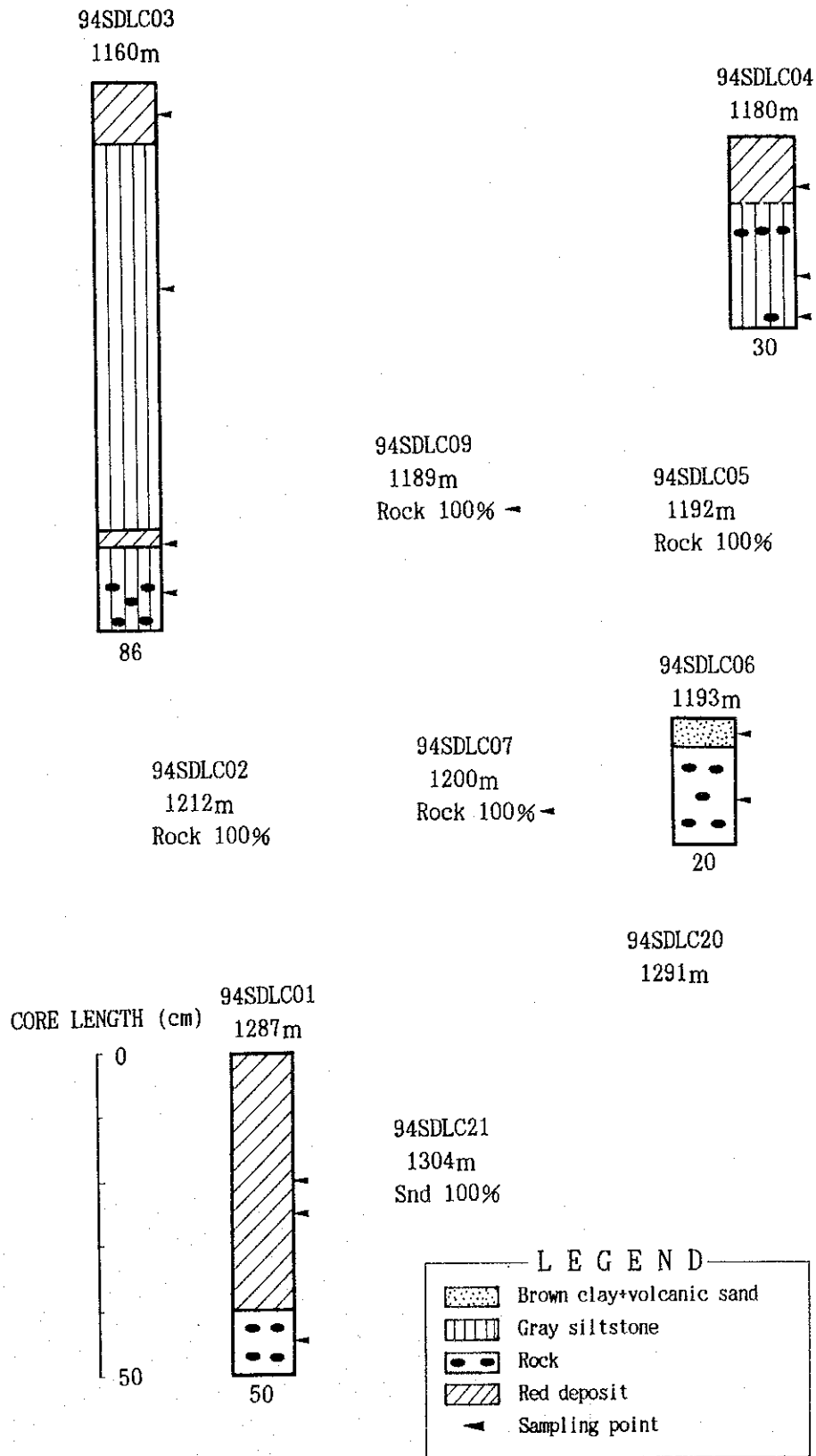
Annexed Figure 2 Sampling Station of Ore Deposit Investigation (Central Part of the Erromango Basin) (2)



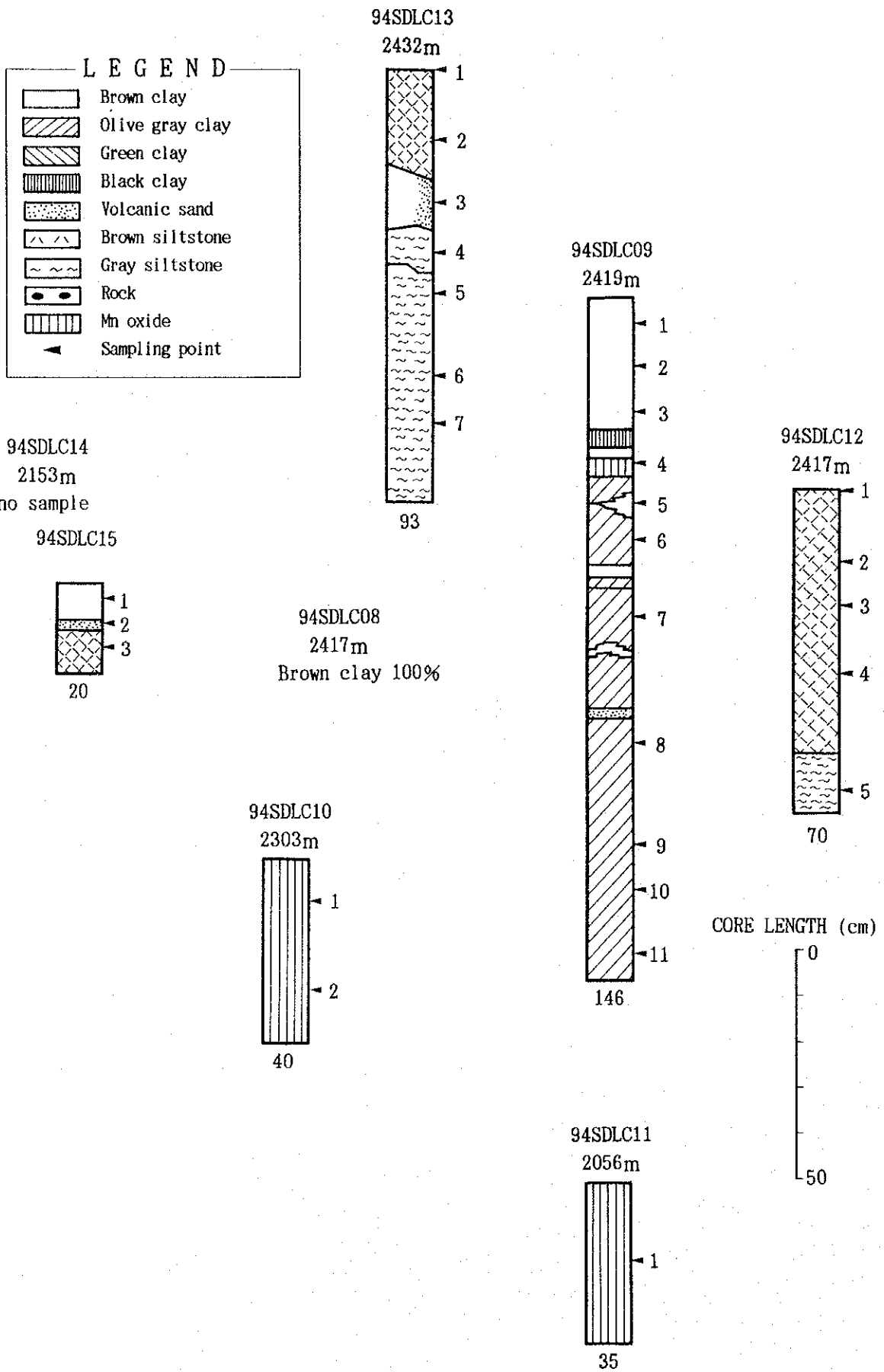
Annexed Figure 2 Sampling Station of Ore Deposit Investigation
 (Central Part of the Erromango Basin) (3)



Annexed Figure 2 Sampling Station of Ore Deposit Investigation (94S02 Seamount) (4)



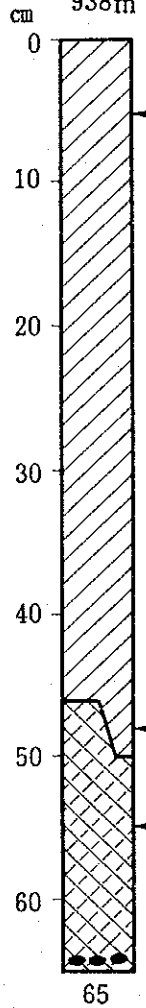
Annexed Figure 3 Schematic Drawing of Sampling Results Obtained from Ore Deposit Investigation (94S01 Seamount) (1)



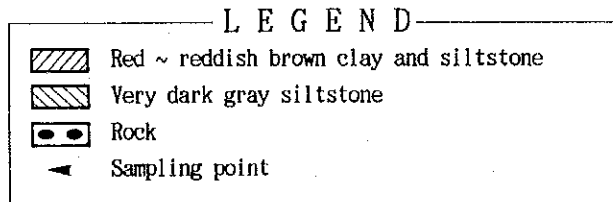
Annexed Figure 3 Schematic Drawing of Sampling Results
Obtained from Ore Deposit Investigation
(Central Part of the Erromango Basin) (2)

94SDLC17
 980m
 Dark reddish brown clay 100%

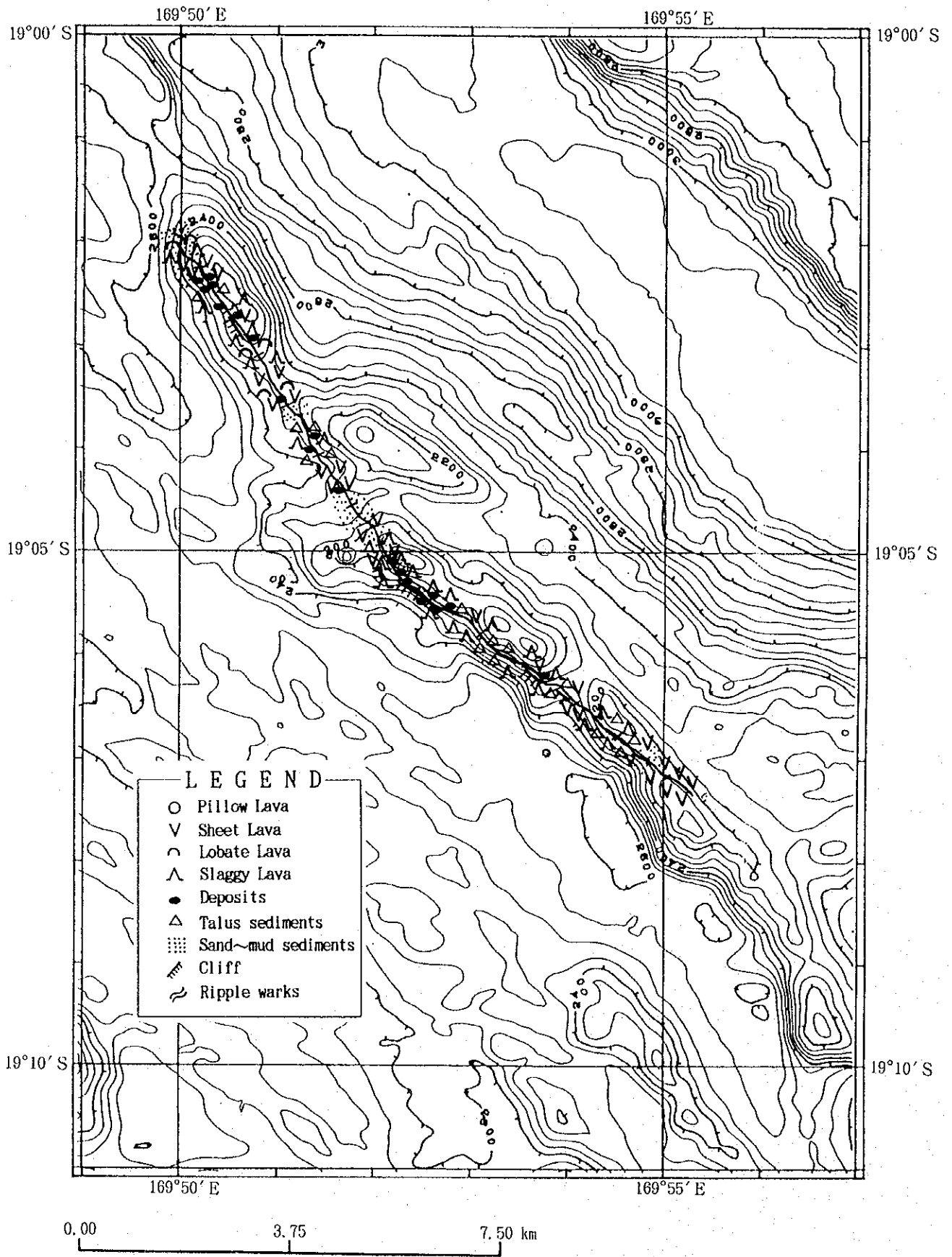
94SDLC18
 938m



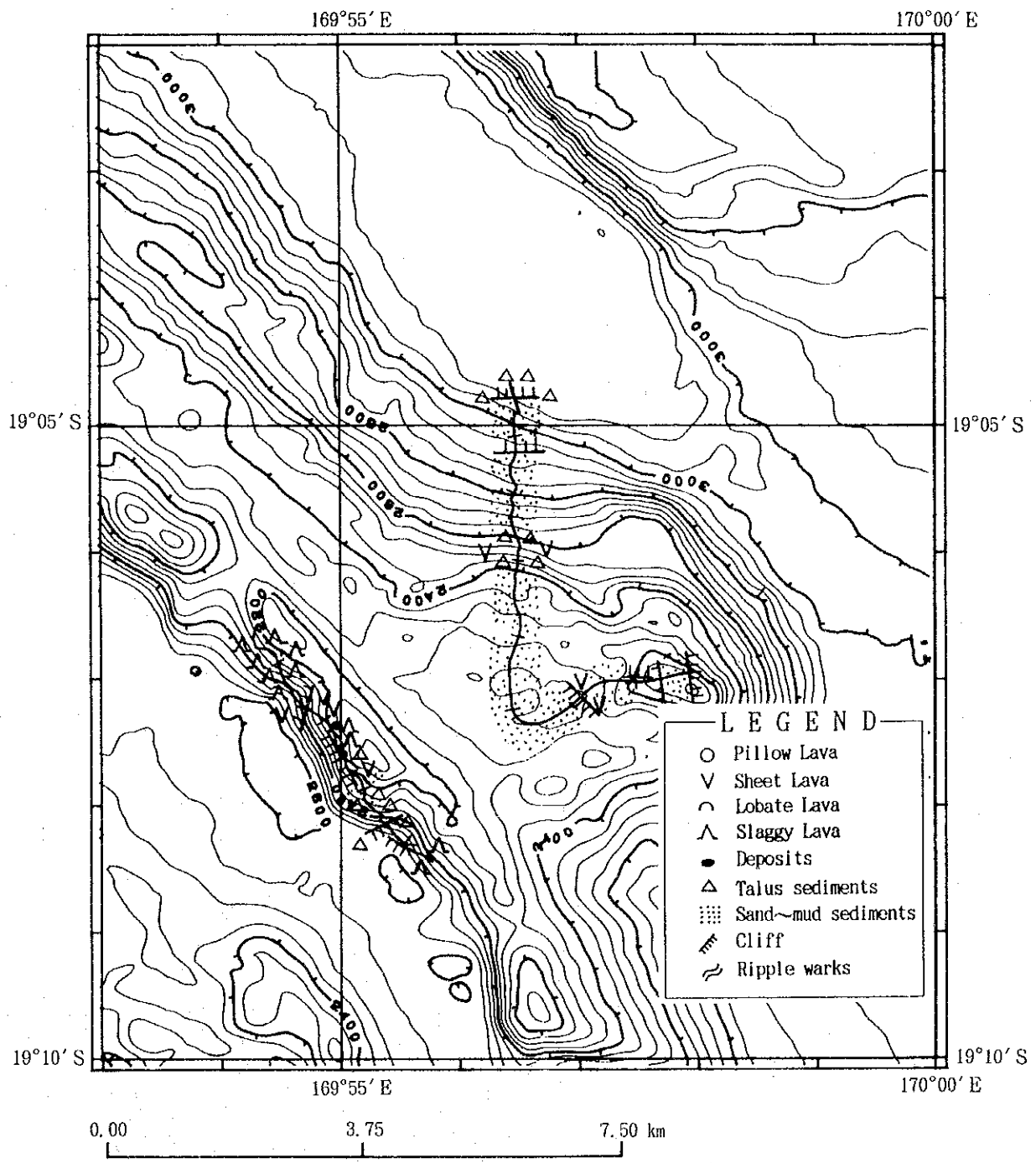
94SDLC16
 938m
 no sample



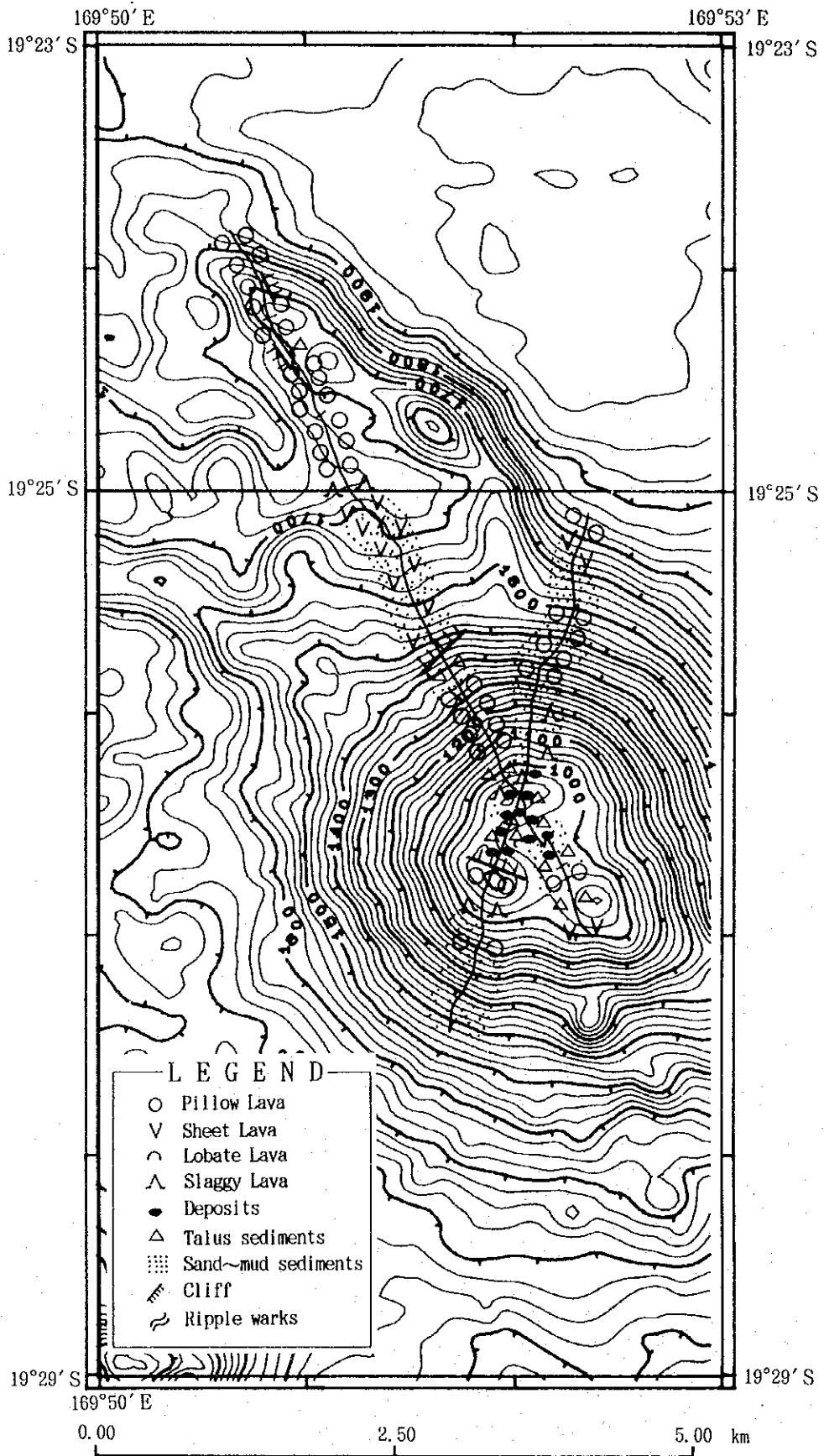
Annexed Figure 3 Schematic Drawing of Sampling Results
 Obtained from Ore Deposit Investigation
 (94S02 Seamount) (3)



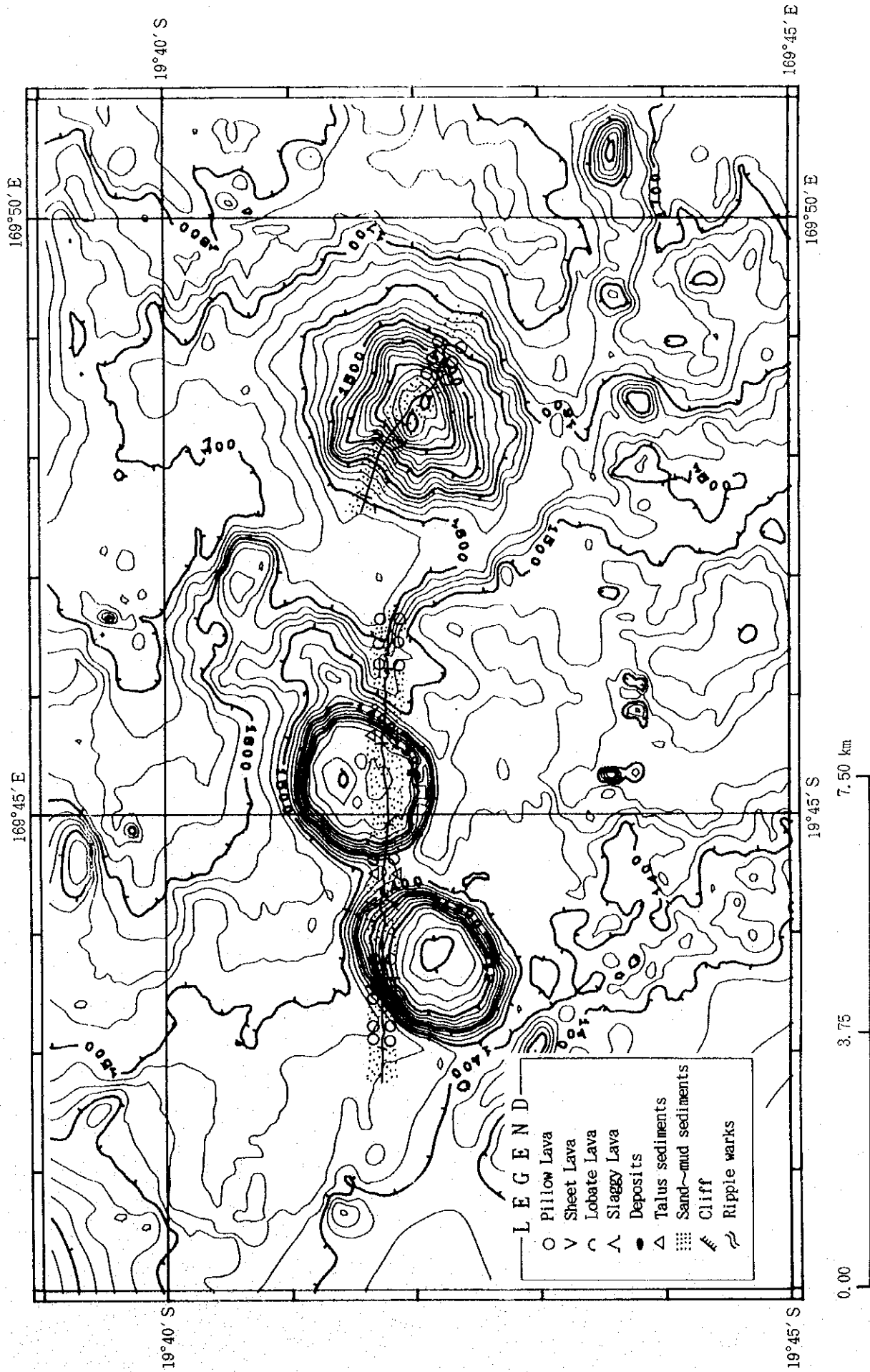
Annexed Figure 4 FDC Route Map (Line 94SFDC01) (1)
 (Central Part of the Erromango Basin)



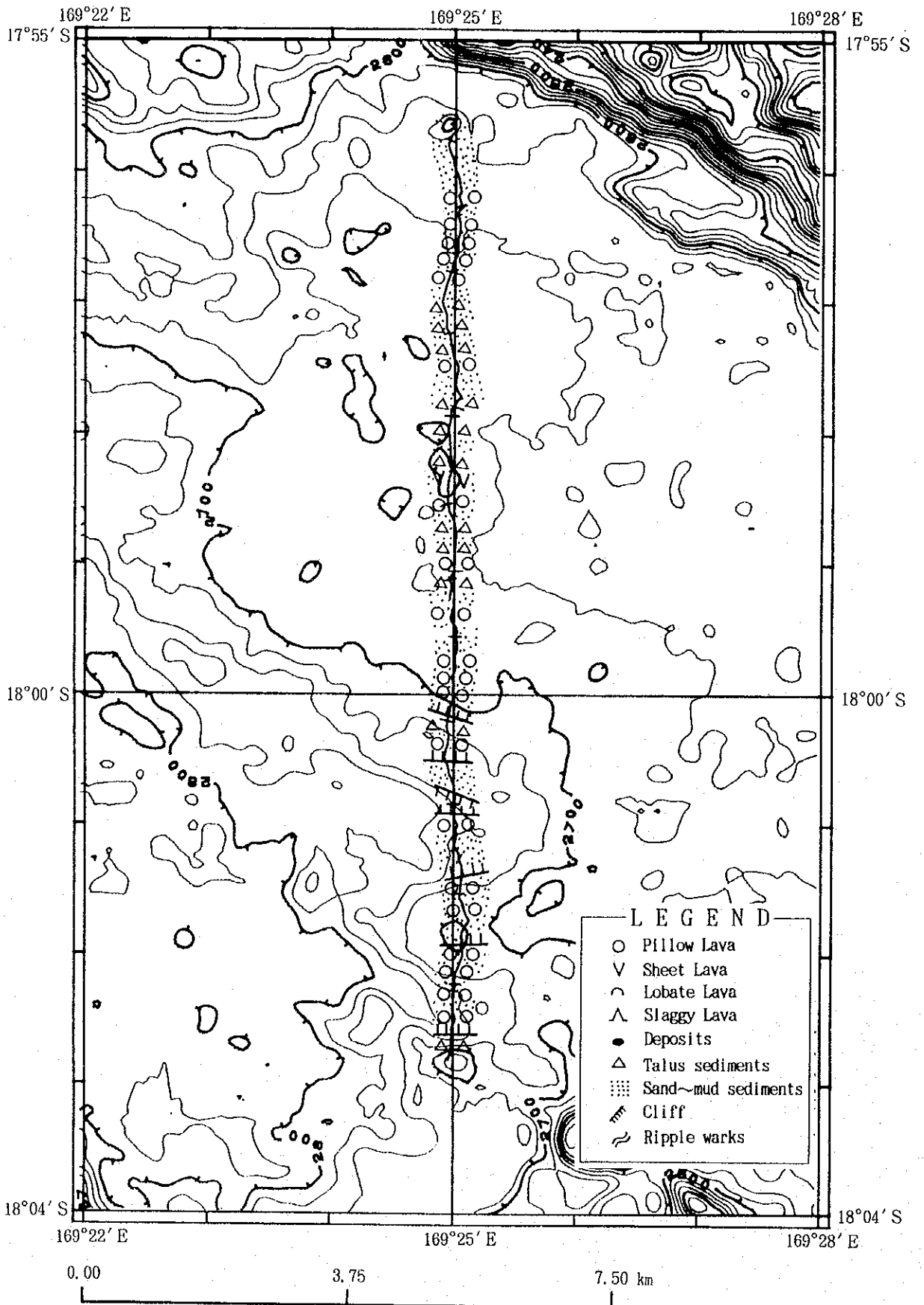
Annexed Figure 4 FDC Route Map (Line 94SFDC02 & 03) (2)
 (Central Part of the Erromango Basin)



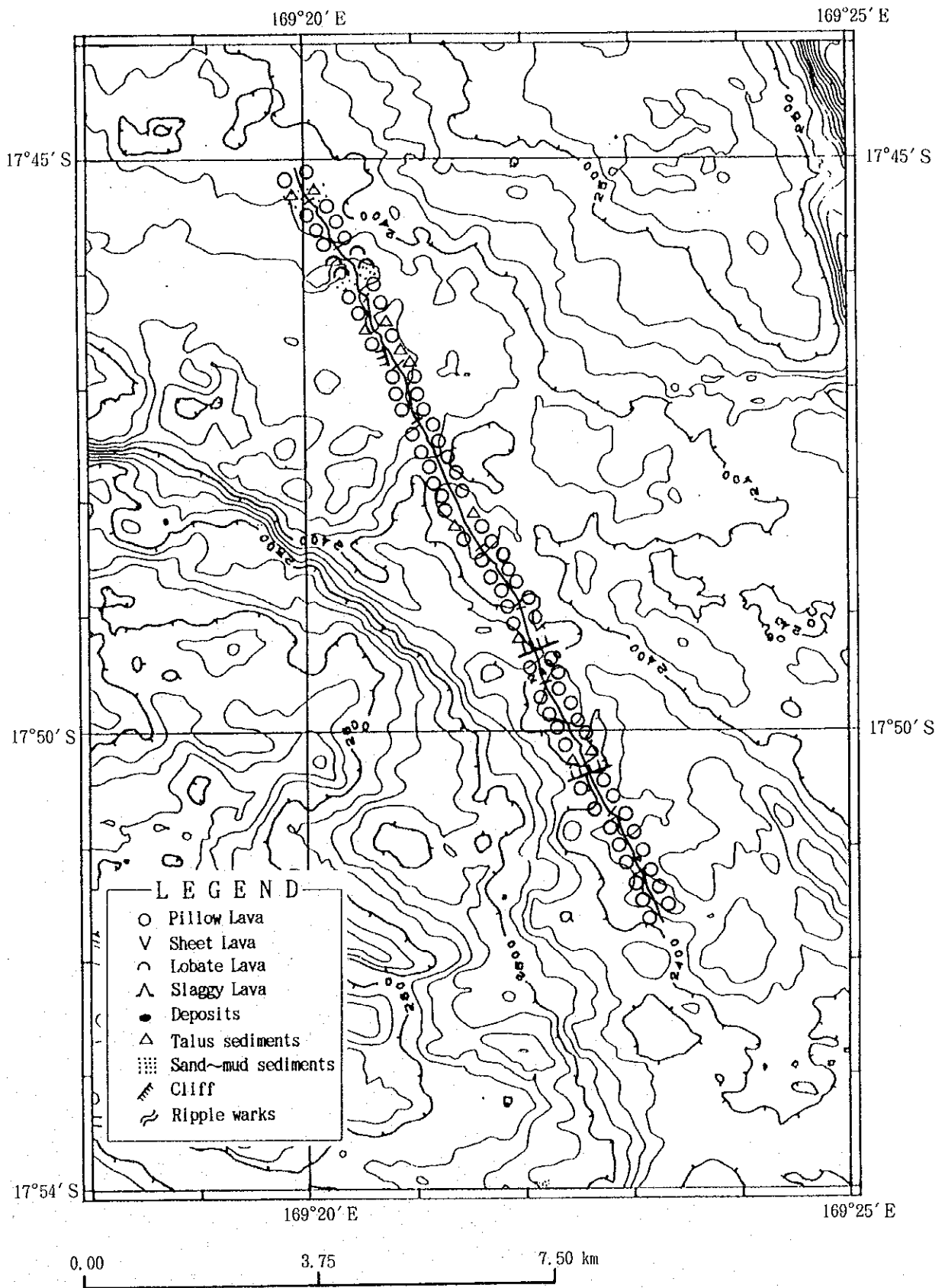
Annexed Figure 4 FDC Route Map (Line 94SFDC04 & 05) (3)
(94S02 Seamount)



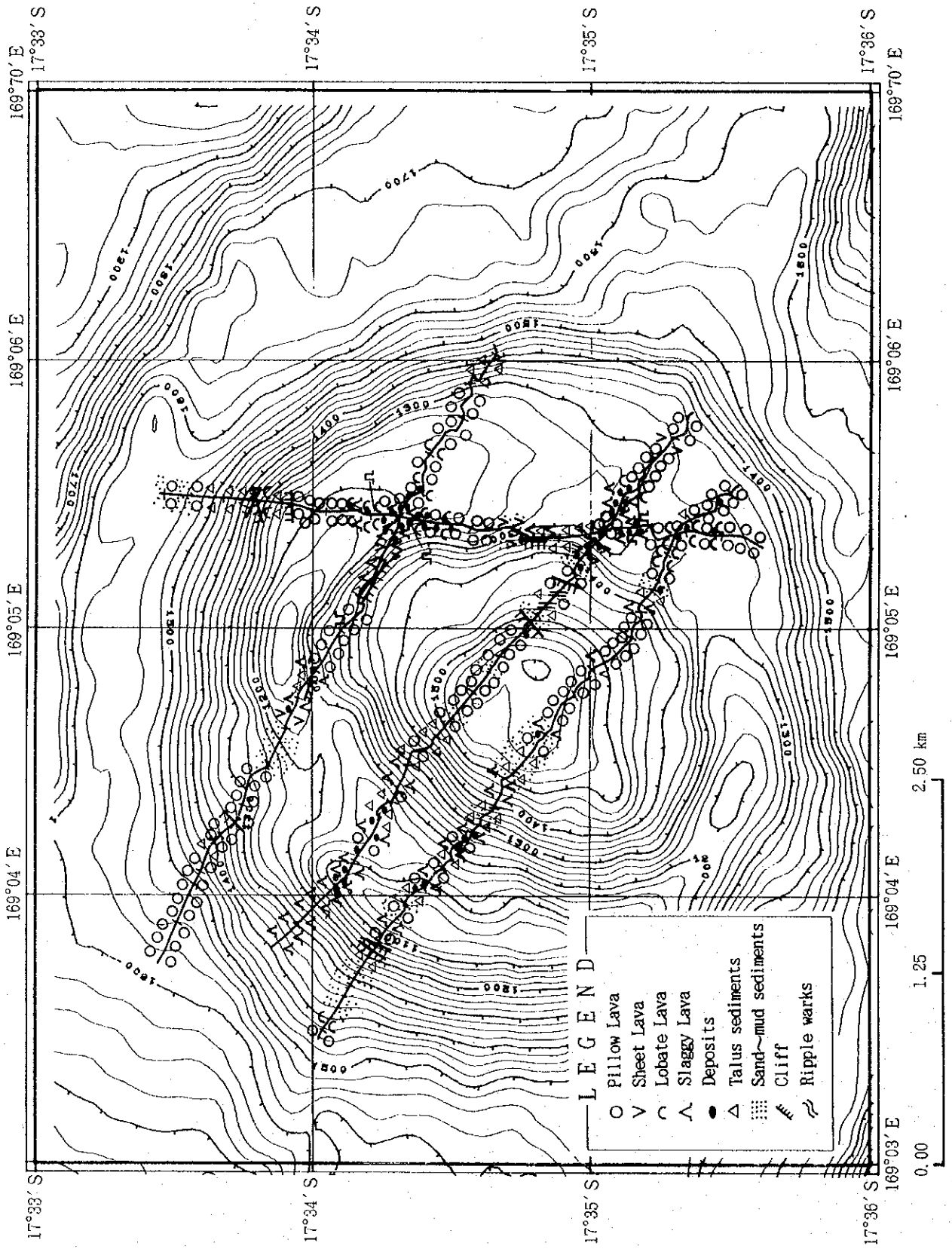
Annexed Figure 4 FDC Route Map (Line 94SFDC06 & 07) (4) (94S03 Seamount Group)



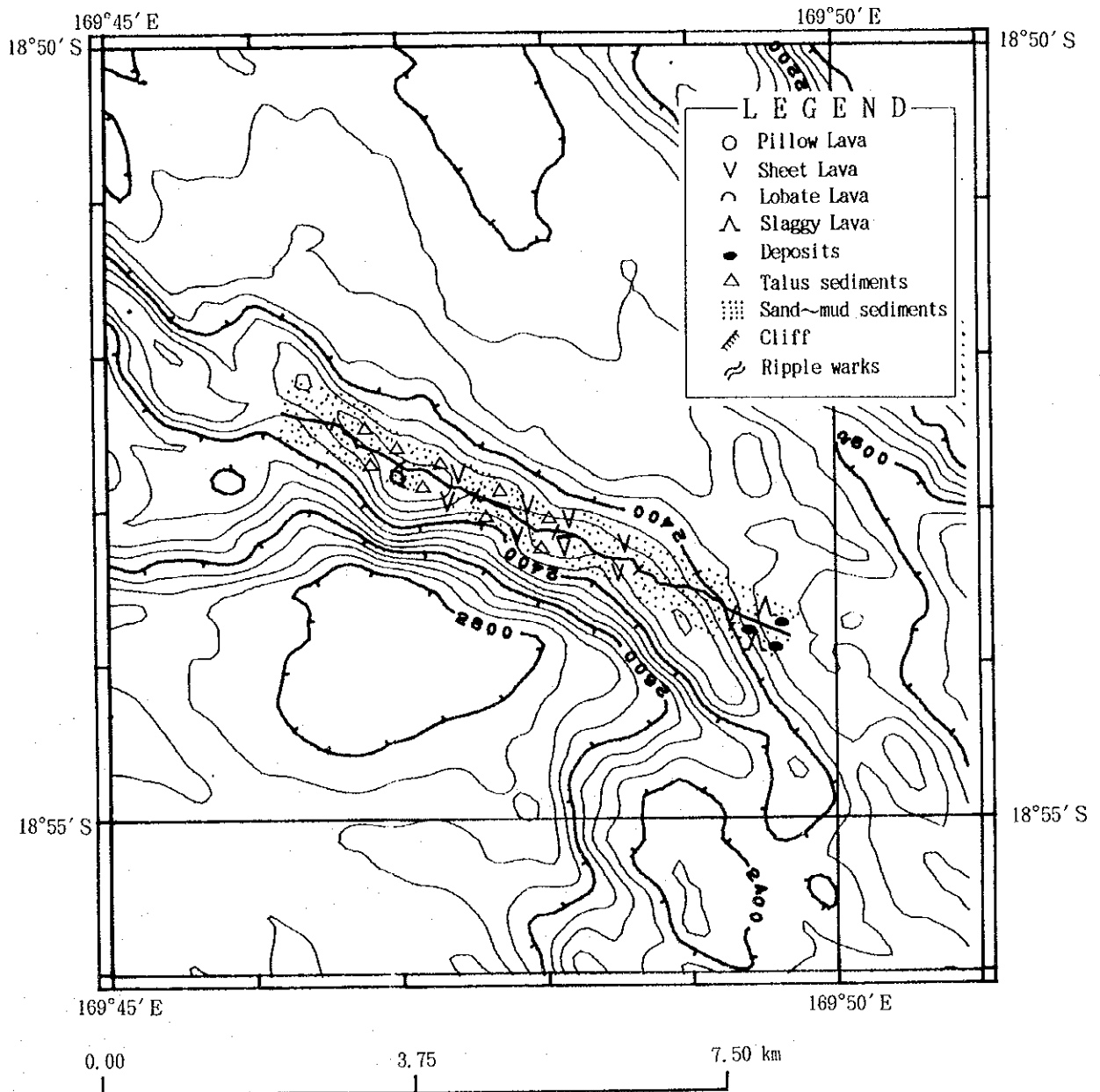
Annexed Figure 4 FDC Route Map (Line 94SFDC08) (5)
 (Central Part of the Vate Trough)



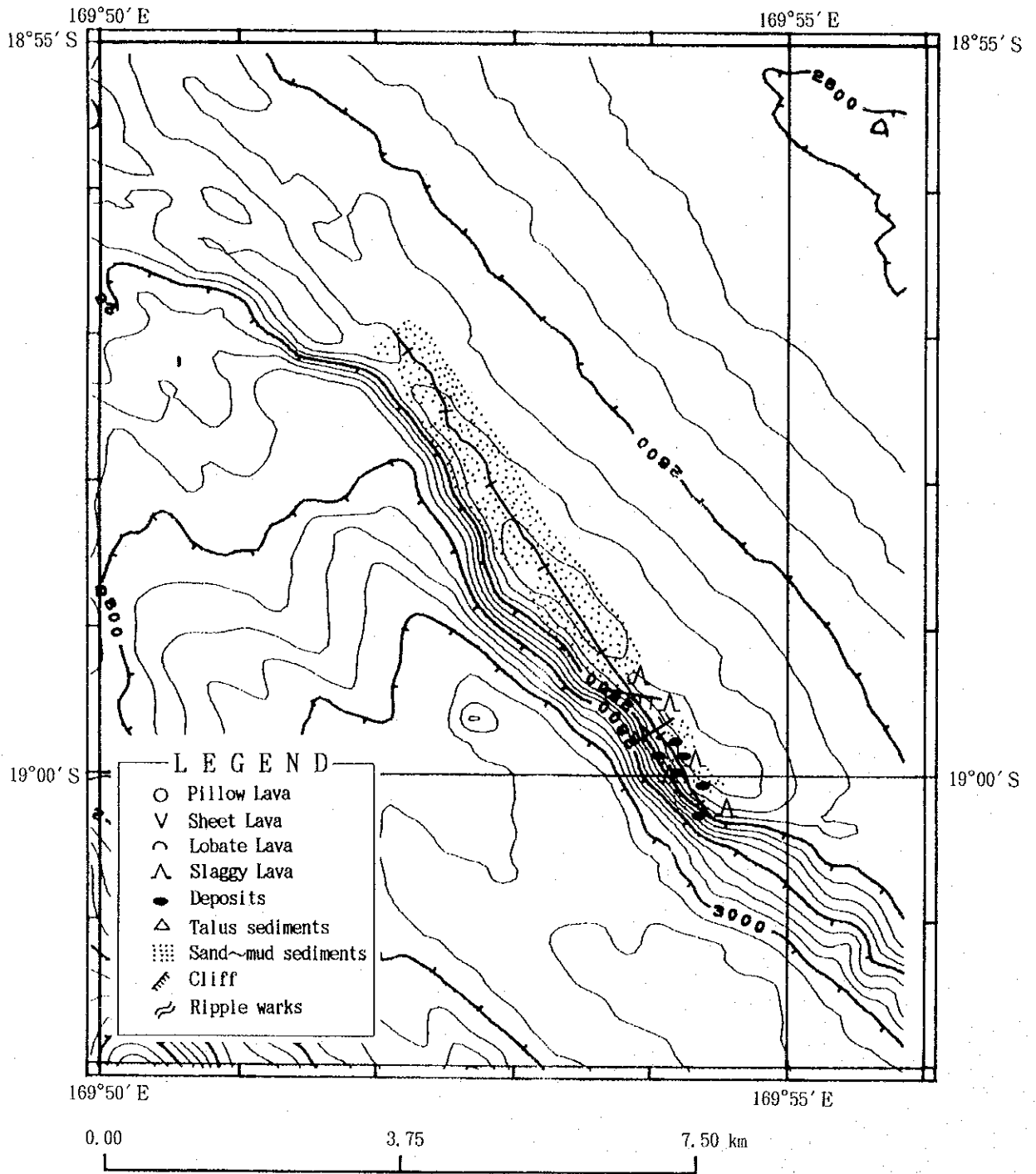
Annexed Figure 4 FDC Route Map (Line 94SFDC09) (6)
(Central Part of the Vate Trough)



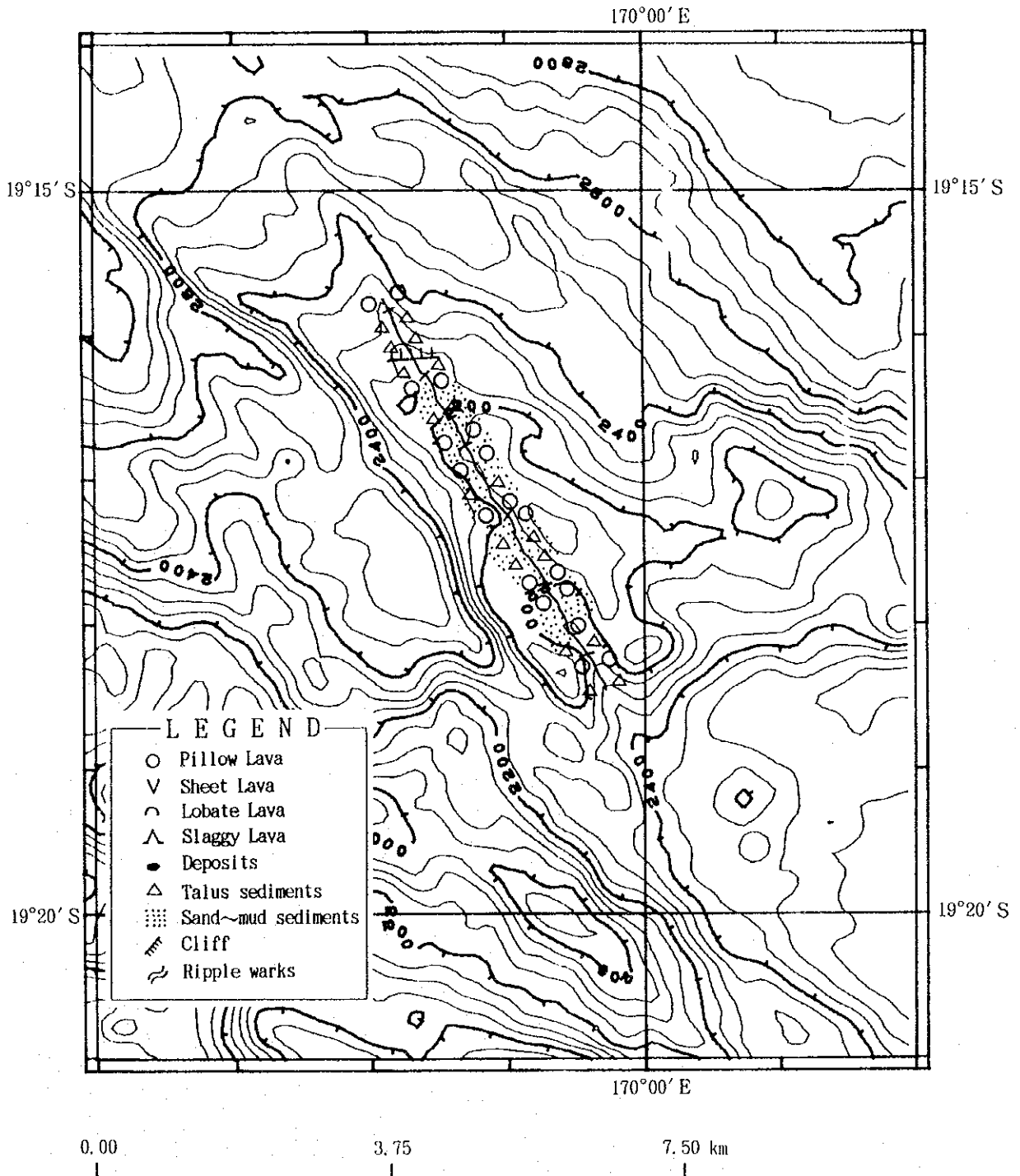
Annexed Figure 4 FDC Route Map (Line 94SFDC10~13) (7) (94S01 Seamount)



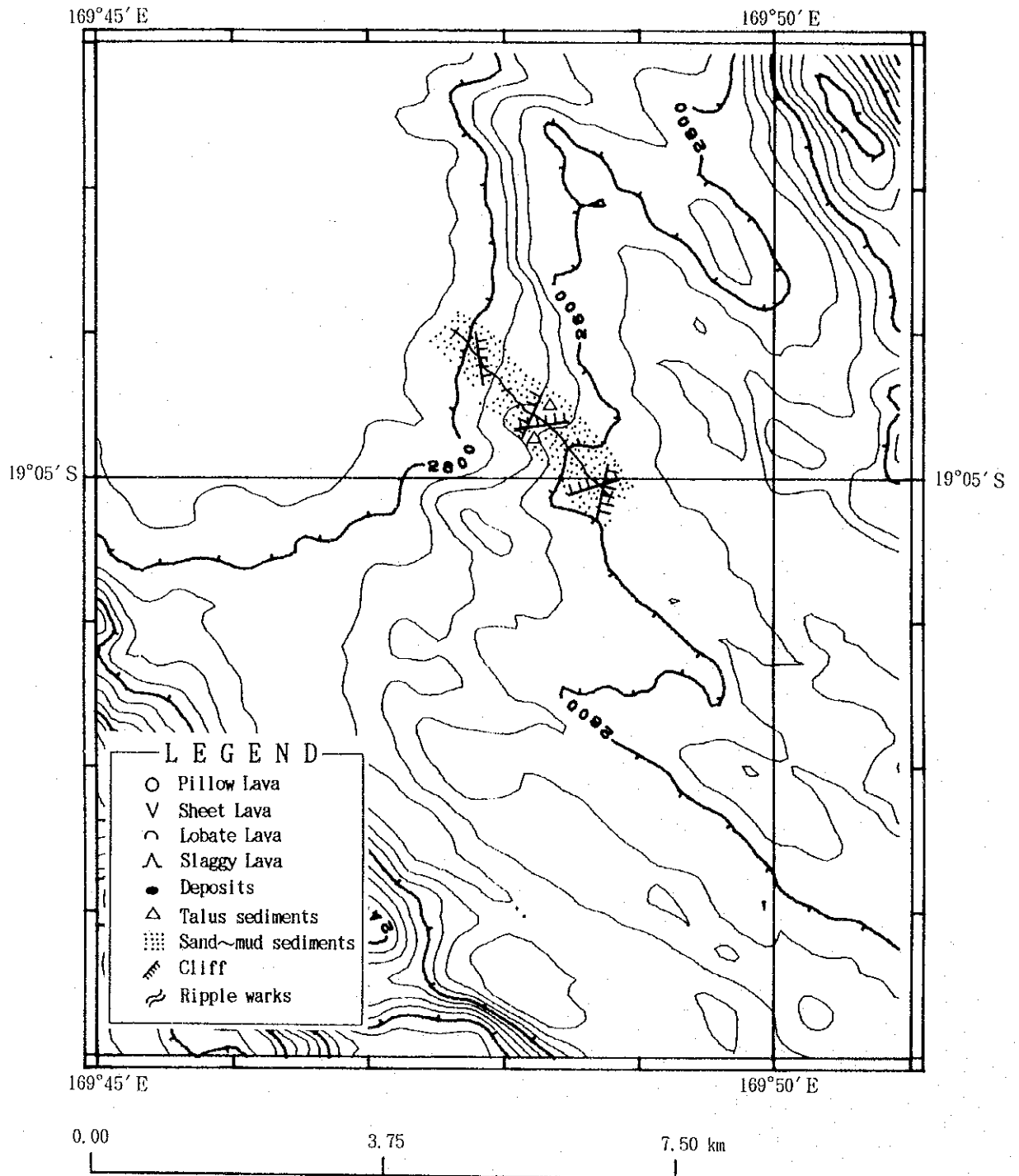
Annexed Figure 4 FDC Route Map (Line 94SFDC14) (8)
 (Central Part of the Erromango Basin)



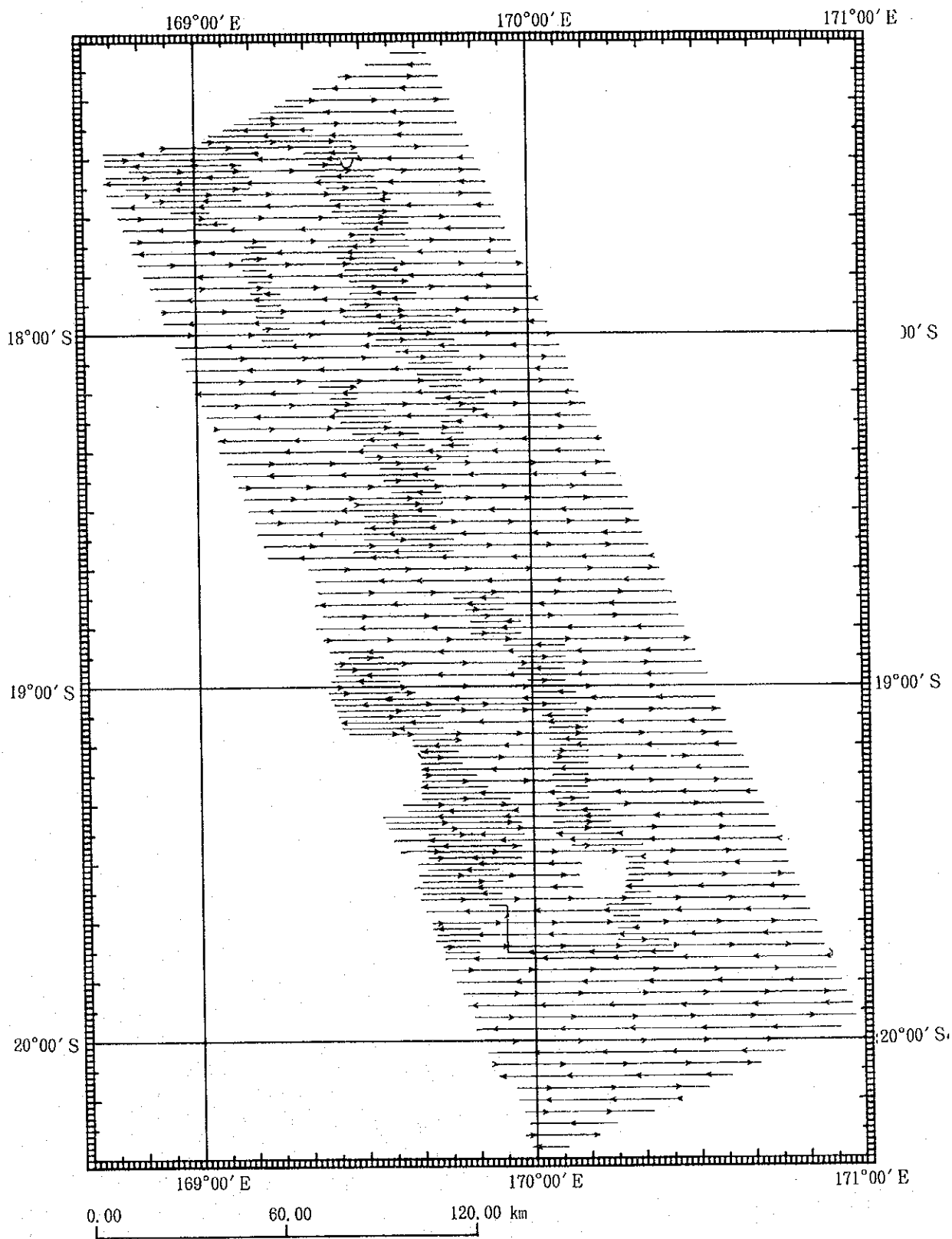
Annexed Figure 4 FDC Route Map (Line 94SFDC15) (9)
 (Central Part of the Erromango Basin)



Annexed Figure 4 FDC Route Map (Line 94SFDC16) (10)
 (Central Part of the Erromango Basin)



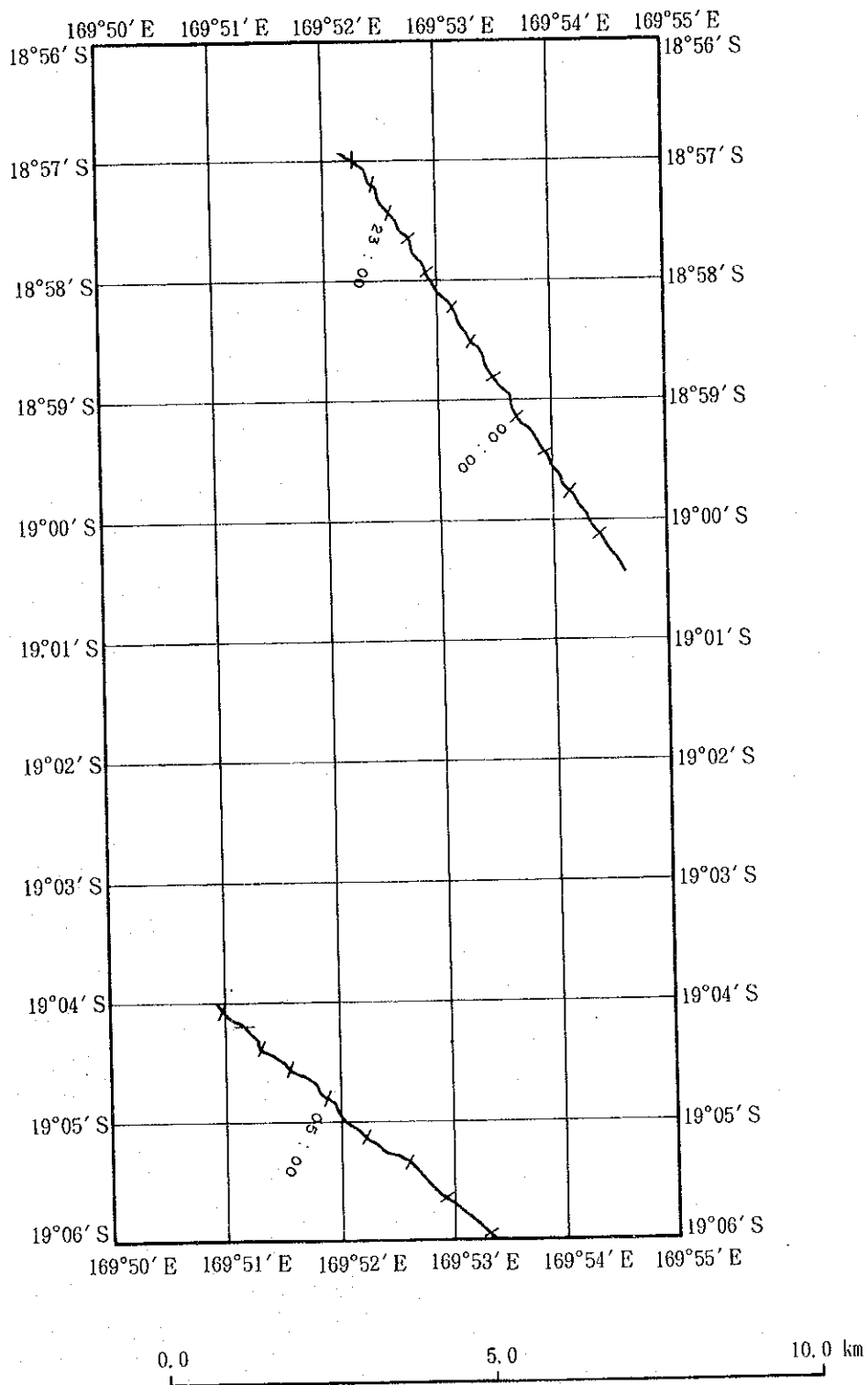
Annexed Figure 4 FDC Route Map (Line 94SFDC17) (11)
 (Central Part of the Erromango Basin)



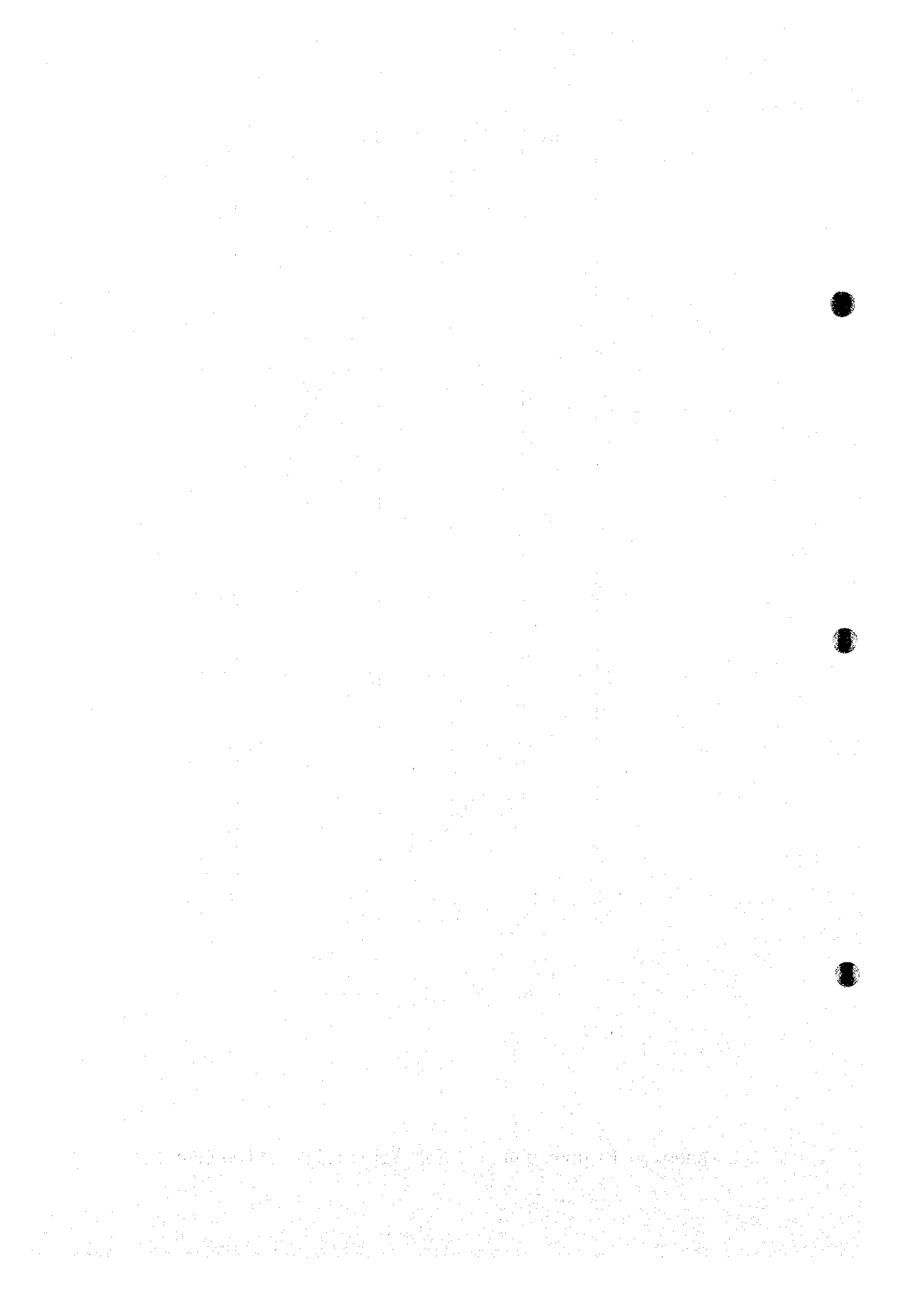
Annexed Figure 5-1 MBES Track Line Map

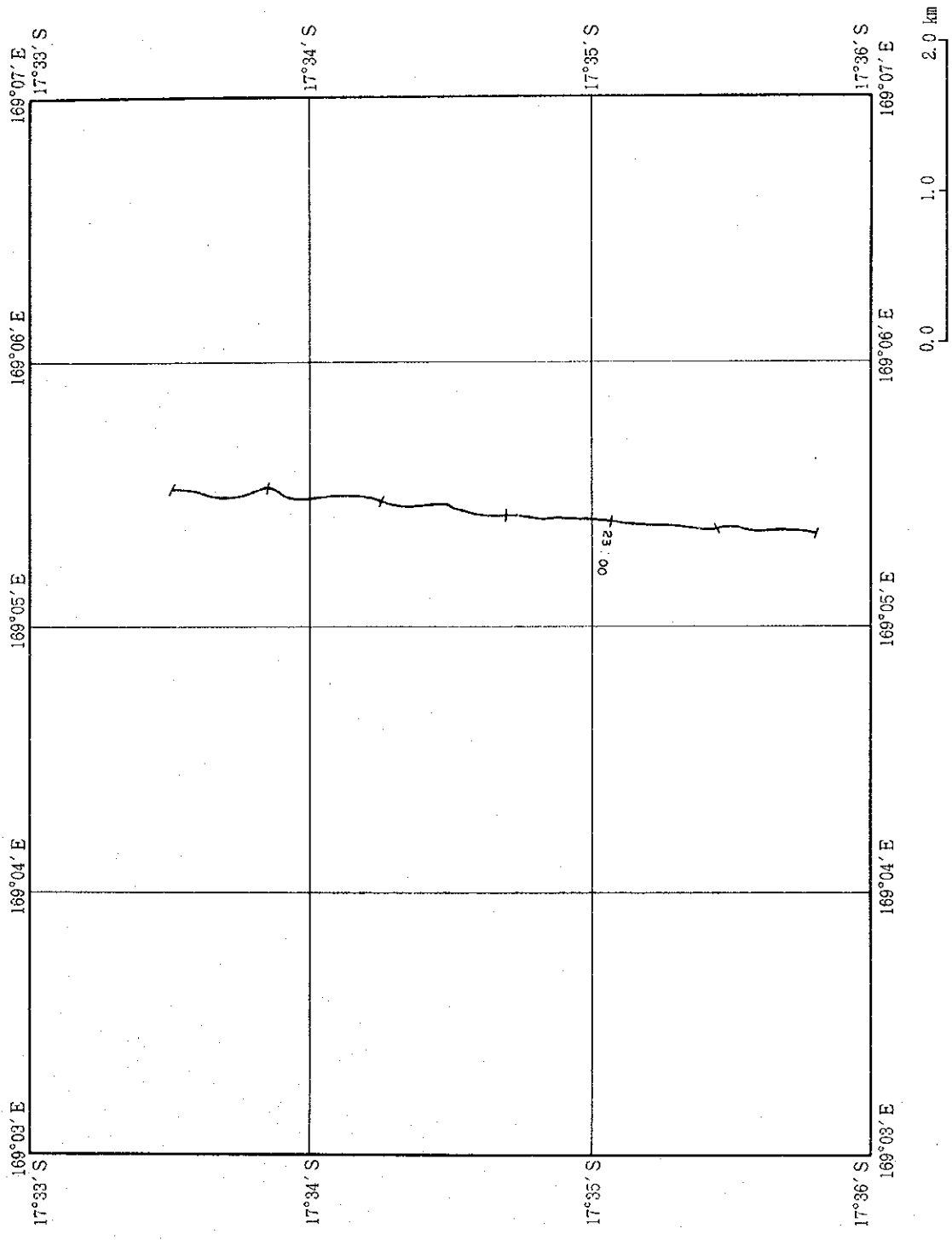


Annexed Figure 5-2 PGM Track Line Map

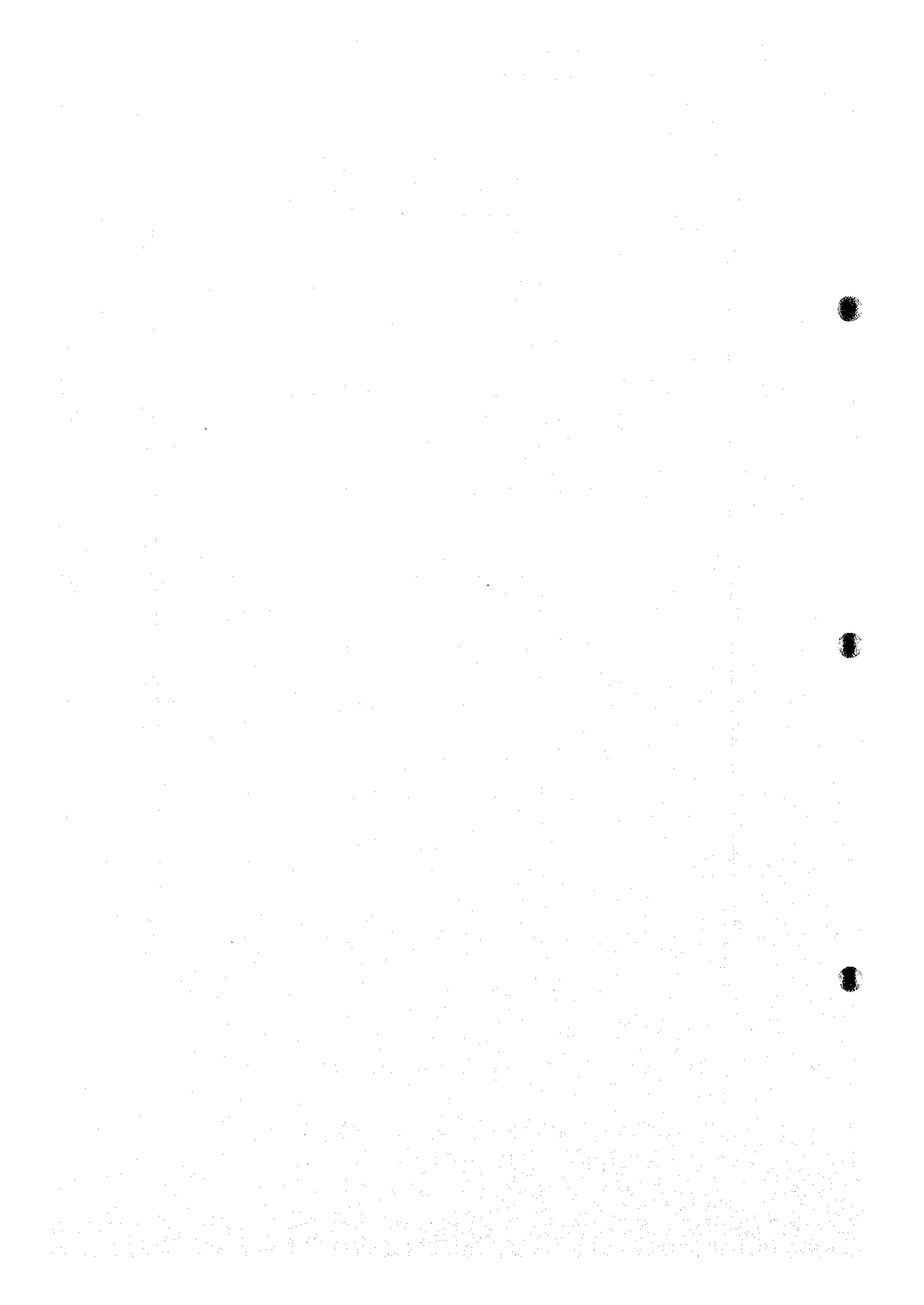


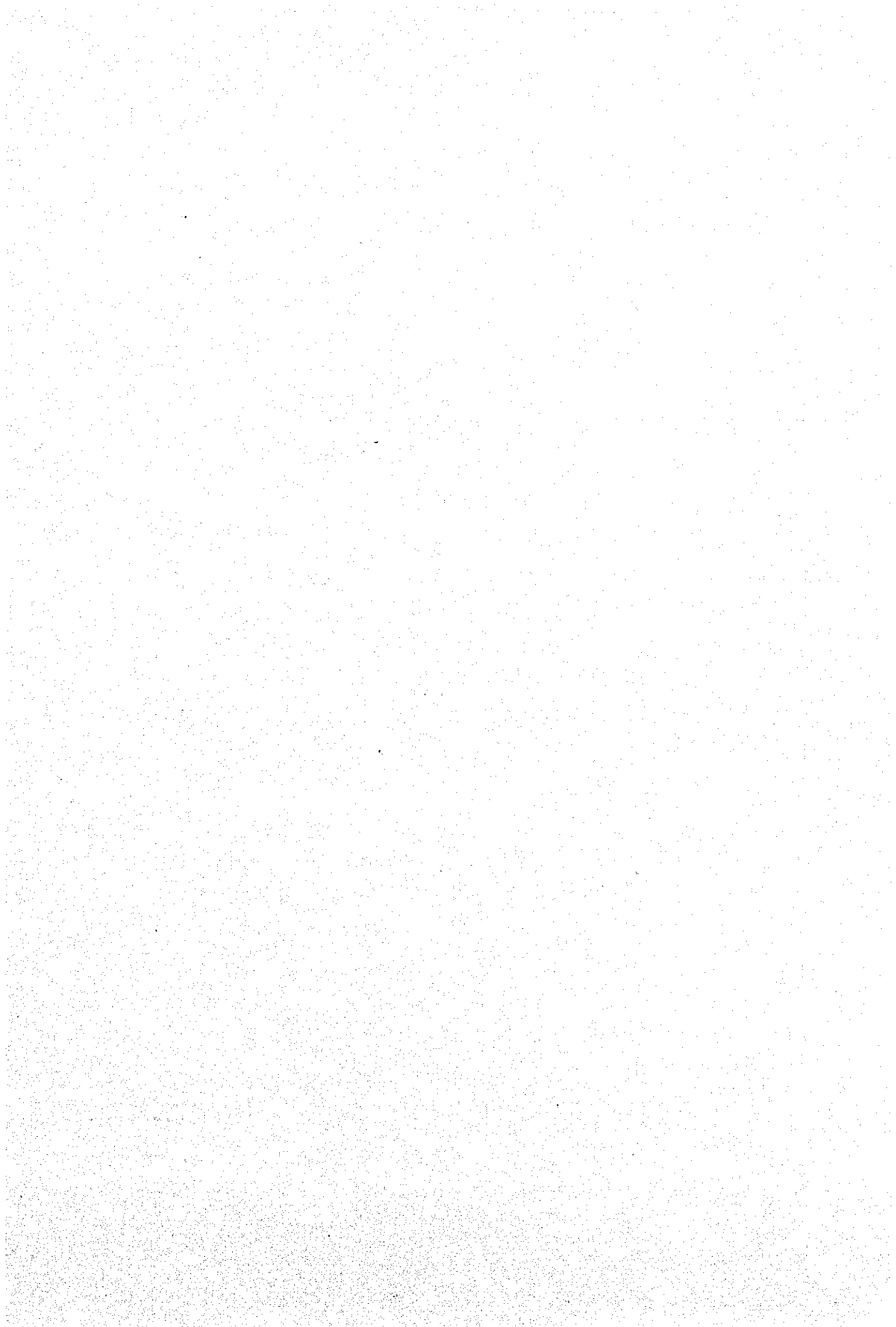
Annexed Figure 5-3 SSS Vehicle Position Map (1)





Annexed Figure 5-3 SSS Vehicle Position Map (2)





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