

DAMOS CRUISE REPORT
AUGUST-SEPTEMBER 1983

Contribution #29

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Submitted to:

Richard C. Semonian
New England Division
U.S. Army Corps of Engineers
424 Trapelo Road
Waltham, MA 02154

Submitted by:

Gary D. Paquette
Robert W. Morton
Science Applications, Inc.
Ocean Science & Technology Division
379 Thames Street
Newport, RI 02840
(401) 847-4210



1.0 INTRODUCTION

During the period from 22 August through 8 September 1983, Science Applications, Inc. (SAI) conducted a comprehensive monitoring cruise sponsored by the New England Division, U.S. Army Corps of Engineers under the ongoing DAMOS program. What follows is a summary of work done during this cruise and a brief presentation of the data available thus far.

1.1 Overview of Work Performed

Surveying operations were conducted primarily at the Central Long Island Sound (CLIS) disposal area. Specifically, monitoring operations were performed at the FVP, STNH-N, STNH-S, MQRDS, CS-1, CS-2, and Norwalk disposal sites. In addition, 2 one day cruises were conducted at the Western Long Island Sound Disposal Site consisting of a bathymetric survey, sediment sampling, remote television observations, and a benthic profiling survey using the REMOTS imaging/analysis system. Operations during these cruises were carried out as specified in work order #14 of contract #DACW33-83-D-0004. Also, a separate cruise was initiated for the purpose of deploying a taut wire moored lighted disposal buoy at the Cornfield Shoals Disposal Site located approximately four miles south southwest of the mouth of the Connecticut River. A day to day summary of the work performed is presented in Table 1.1-1.

1.2 Methods

All monitoring operations were conducted off of the research vessel UCONN under charter from the University of Connecticut. All sediment samples were taken using a Smith MacIntyre spring loaded grab sampling 0.1m^3 . Any sample which

TABLE 1.1-1

DAY TO DAY WORK SUMMARY

8/22/83	Sediment Sampling at Norwalk, STNH-S and CLIS Reference Sites
8/23/83	Bathymetric Surveys at CS-2 and CS-1 Sediment Sampling at STNH-N and SP Sites
8/24/83	R/V UCONN Transits to WLIS Bathymetric Survey at WLIS III Sediment Sampling at WLIS III
8/25/83	REMOTS Photos at WLIS III Complete Sediment Sampling at WLIS III R/V UCONN Transits to CLIS
8/26/83	Bathymetric Survey at FVP Site
8/29/83	REMOTS Photos at FVP, CS-2, CS-1 and CLIS Reference Sites
8/30/83	REMOTS Photos at CS-2, CS-1 and MQRDS Deploy Cornfield Shoals Disposal Buoy (separate field team)
8/31/83	Deploy "DAISY" Array at FVP 400 East Complete REMOTS Photos at STNH-N and STNH-S
9/1/83	Sediment Sampling for EPA Personnel at FVP Site
9/2/83	Water Sampling at FVP Site for EPA Personnel
9/6/83	Worm Residue Sediment and Mussel Sampling at FVP for EPA Personnel
9/7/83	R/V UCONN Transits to WLIS Complete REMOTS Photos at WLIS III R/V UCONN Transits to CLIS
9/8/83	Side Scan Sonar Survey of CLIS
9/9/83	R/V UCONN Transits to Noank

was obviously disturbed was discarded and subsamples were taken for future physical and chemical analyses. Triplicate grabs were taken at each station and all samples were stored on ice and shipped to NED.

All bathymetric surveys were conducted using the SAI computerized navigation and data acquisition system, which has been previously described.

The side scan sonar survey was performed using a Klein Model 421 side scan sonar operating at 100KHz.

2.0 SITE SPECIFIC DISCUSSION

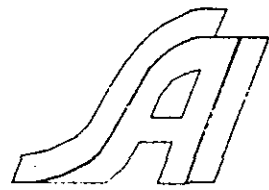
2.1 Field Verification Program (FVP) Disposal Site

Work completed at the FVP site included a precision bathymetric survey, sediment sampling, REMOTS profiling and diver observations. In addition, various sampling projects were conducted in support of EPA personnel. Although laboratory results are not yet available for the sediment samples taken at the FVP site, visual observations of the samples indicated that the characteristics of the disposal mound had not changed appreciably since the last sampling cruise on 13 July. The bathymetric survey of this area tends to corroborate this evidence as there appears to be no significant lateral spreading of the pile. Figures 2.1-1 and 2.1-2 depict the bathymetry charts of the FVP site on 19 July and 26 August respectively. There appears to have been no major changes in the shape or elevation of the mound during this period. Figures 2.1-3 and 2.1-4 show a comparison of the depth profiles taken over the center of the disposal mound in July (dashed line) and August

FVP

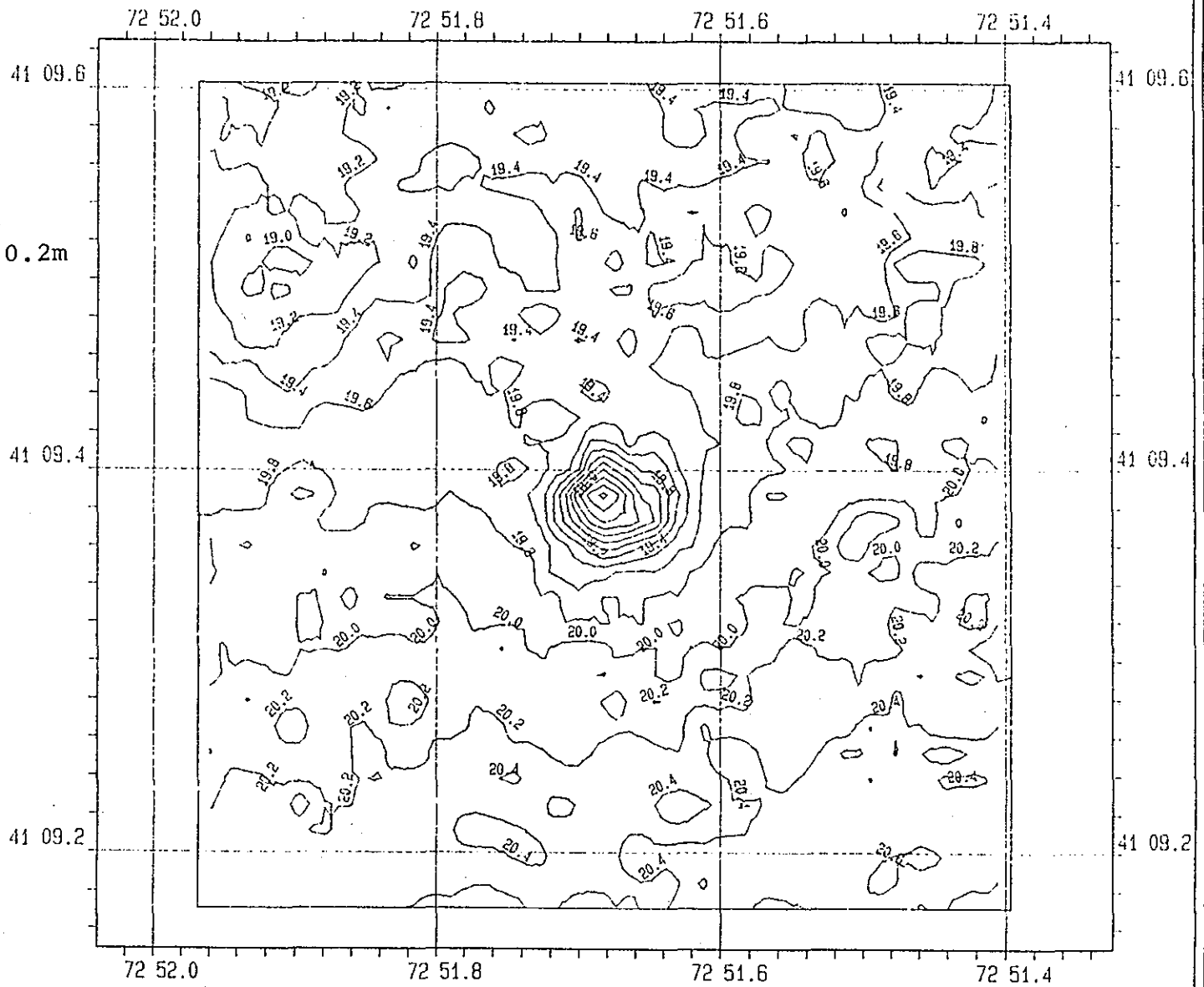
19 July 1983
Chart Scale 1/4000
Contour Interval 0.2m
Datum MLW

Figure 2.1-1.
Preliminary



0 80 160

SCALE (m)

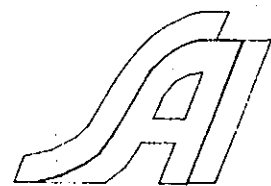


FVP

26 August 1983
Chart Scale: 1/4000
Contour Interval: 0.2
Datum: MLW

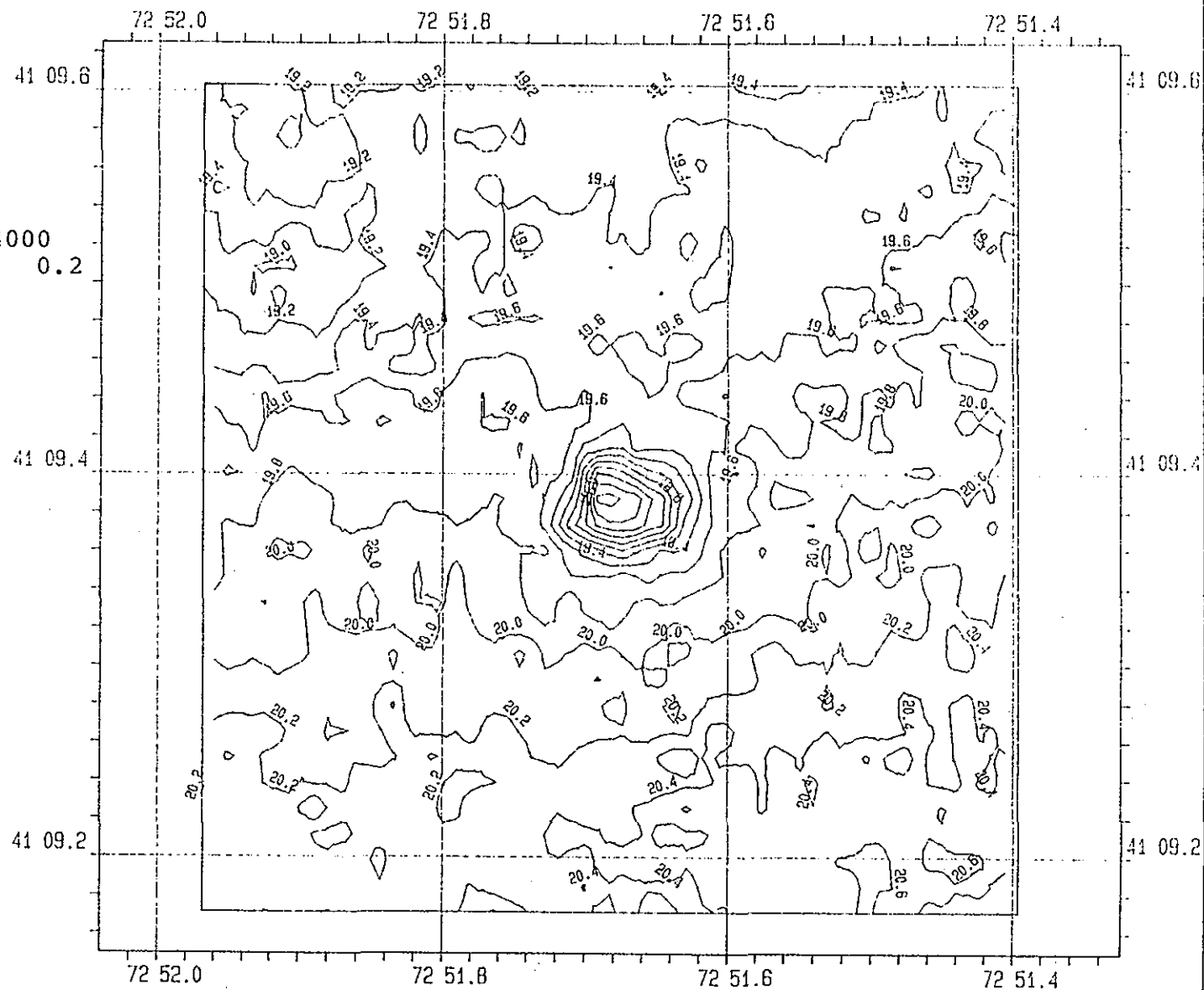
Figure 2.1-2.

Preliminary



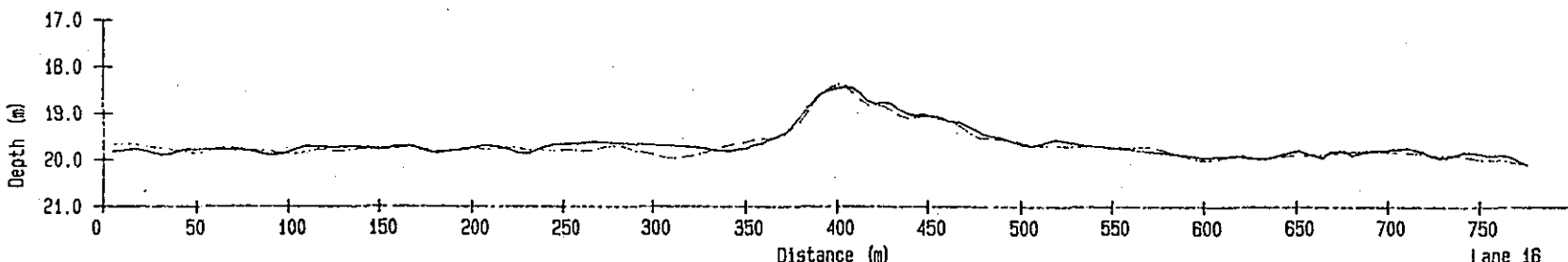
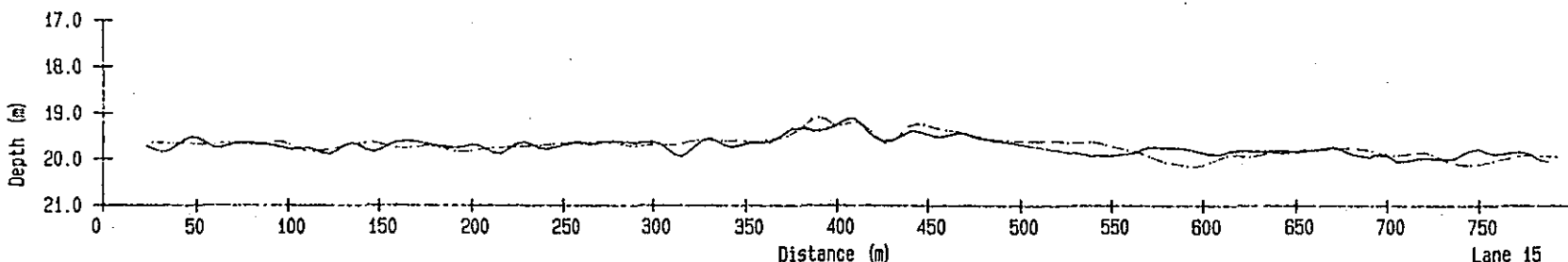
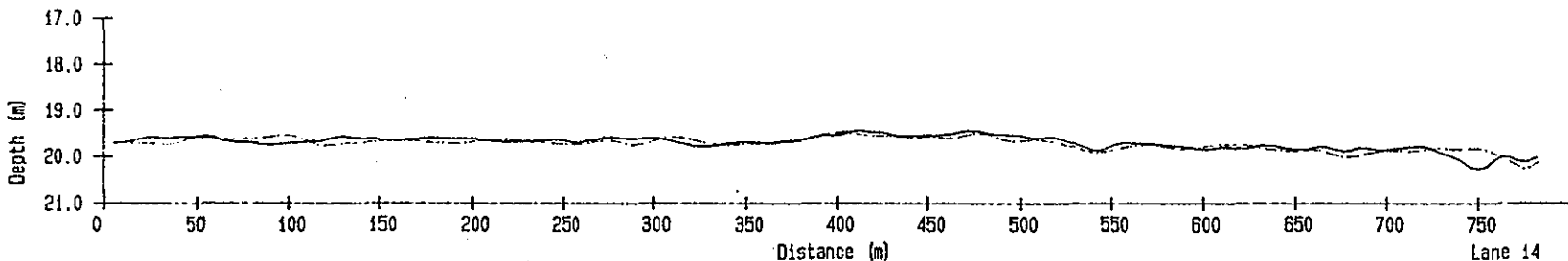
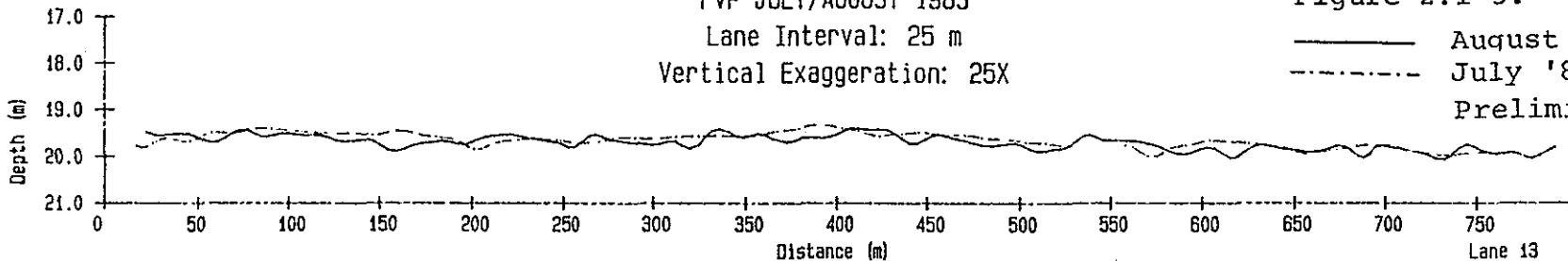
0 80 160

SCALE (m)



FVP JULY/AUGUST 1983
Lane Interval: 25 m
Vertical Exaggeration: 25X

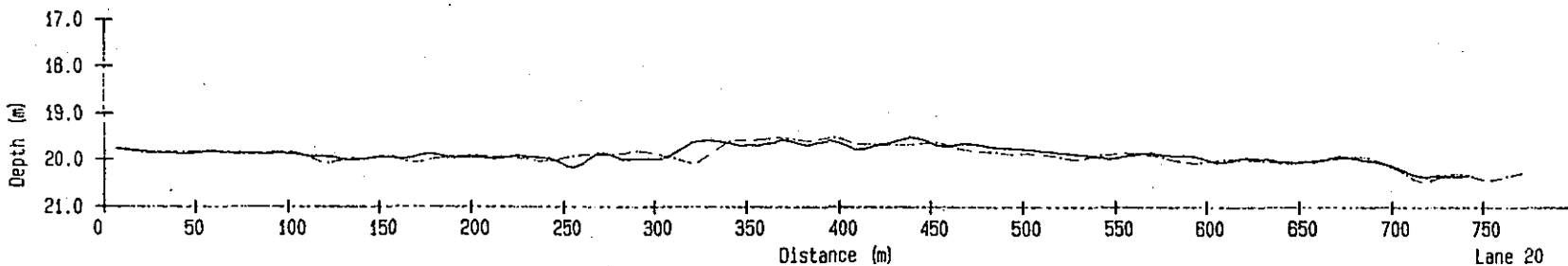
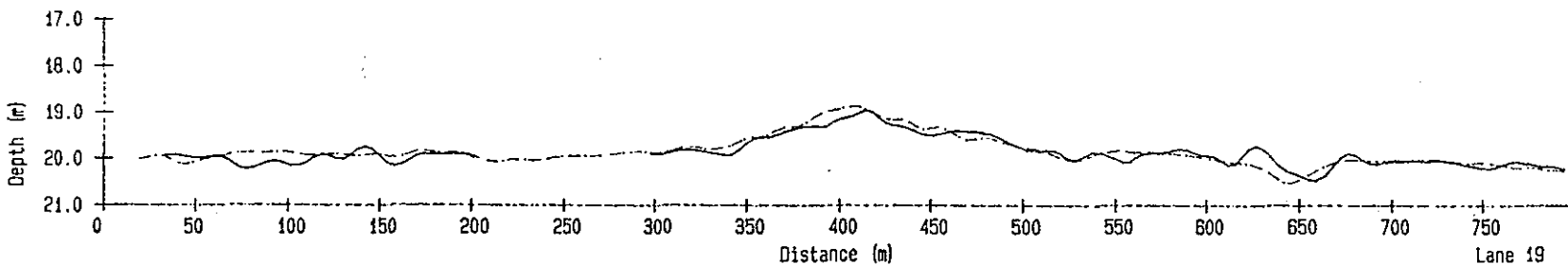
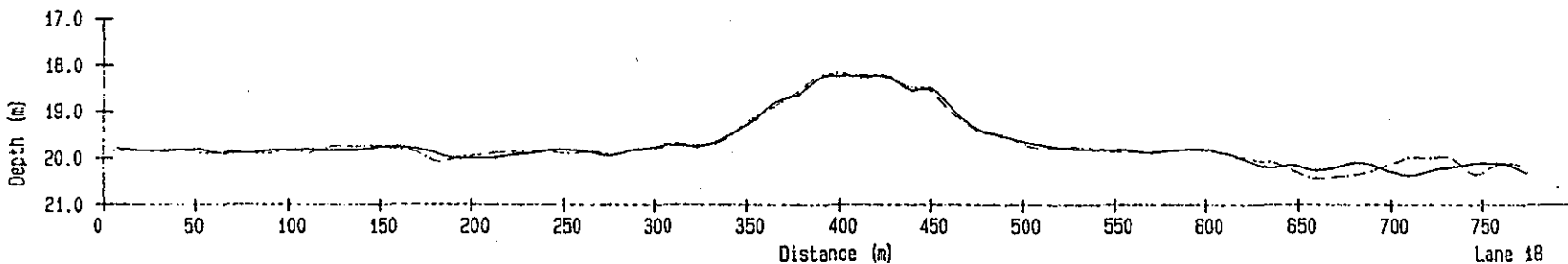
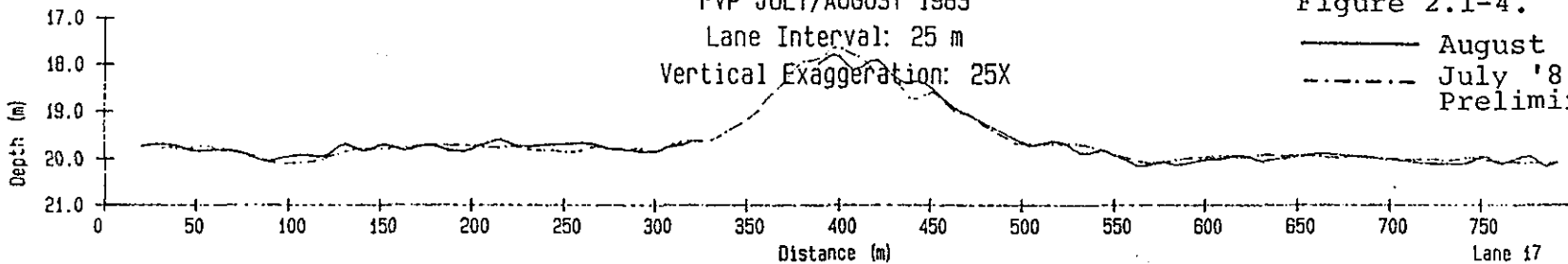
Figure 2.1-3.
— August '83
- - - July '83
Preliminary



FVP JULY/AUGUST 1983
Lane Interval: 25 m
Vertical Exaggeration: 25X

Figure 2.1-4.

— August '83
- - - July '83 Preliminary



(continuous line). These show no evidence of significant surface erosion, and diver observations do not suggest any erosive activity. Table 2.1-1 and Figure 2.1-5 represent the results of a volume difference calculation at this site between August and July 1983 and a graphics plot of these data respectively. They show a net loss of material of less than 1000 cubic meters over the entire 800 meter square survey area. This figure falls well below the noise level usually attributed to this process, and cannot therefore be considered significant.

Figure 2.1-6 and Table 2.1-2 show a plot of the sediment sampling stations and a list of the samples taken at the FVP disposal site.

2.2 Cap Site #1 and Cap Site #2

The procedures performed at the two cap sites consisted of a bathymetric survey, REMOTS photographs and diver observations. As of this time, the only data available for presentation at these sites are the results of the bathymetric surveys. Figures 2.2-1 and 2.2-2 depict the bathymetry charts of Cap Site #1 (CS-1) for the surveys conducted in June and August 1983 respectively. It is evident that there has been little or no change in the distribution of dredged material at this site. The depth over the center of the mound remains at 16.2 meters and there appears to be no change in the lateral boundaries of the disposal mound. Table 2.2-1 and Figure 2.2-3 show the numeric and graphic results of a volume calculation between these two surveys. As in the discussion of the FVP site, the total net loss of material falls below the noise level and cannot be considered valid.

FVP AUG83.MTX - FVP JULY83.MTX Table 2.1-1.

Least Squares Coefficients:

A0 = -.575654513
 A1 = -.27495137
 A2 = .912621557
 A3 = .13274191

Standard Deviation = 2.04029217

Lane #	Lane Volume (meters ³)	Cumulative Volume (meters ³)	Lane Correction (centimeters)
1	758	758	0
2	137	895	0
3	-86	809	0
4	-644	165	0
5	249	414	0
6	397	811	0
7	-218	593	0
8	244	837	0
9	118	954	0
10	616	1571	0
11	-961	610	0
12	-146	464	0
13	-1181	-717	0
14	467	-250	0
15	14	-237	-1
16	1033	796	-1
17	396	1192	-1
18	305	1497	-1
19	-396	1101	-1
20	368	1469	-1
21	156	1626	-1
22	-219	1406	-1
23	-430	977	-1
24	-107	870	-1
25	-698	172	0
26	-836	-484	0
27	-413	-897	0
28	-45	-942	0
29	-505	-1447	0
30	85	-1362	0
31	-111	-1473	0
32	177	-1296	0
33	675	-620	0

Volume Difference
FVP AUG83 - FVP JULY83
Preliminary

Figure 2.1-5.

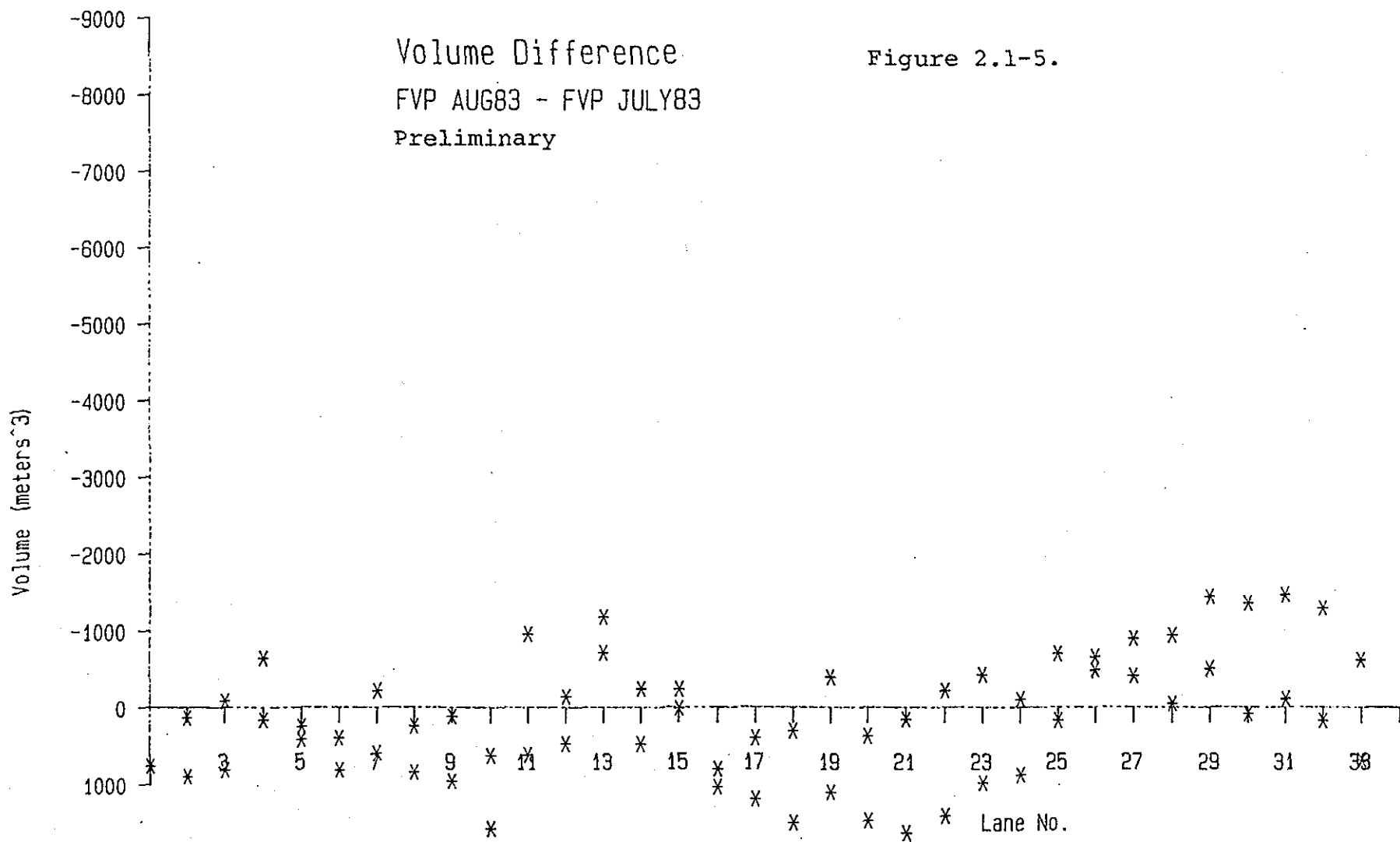
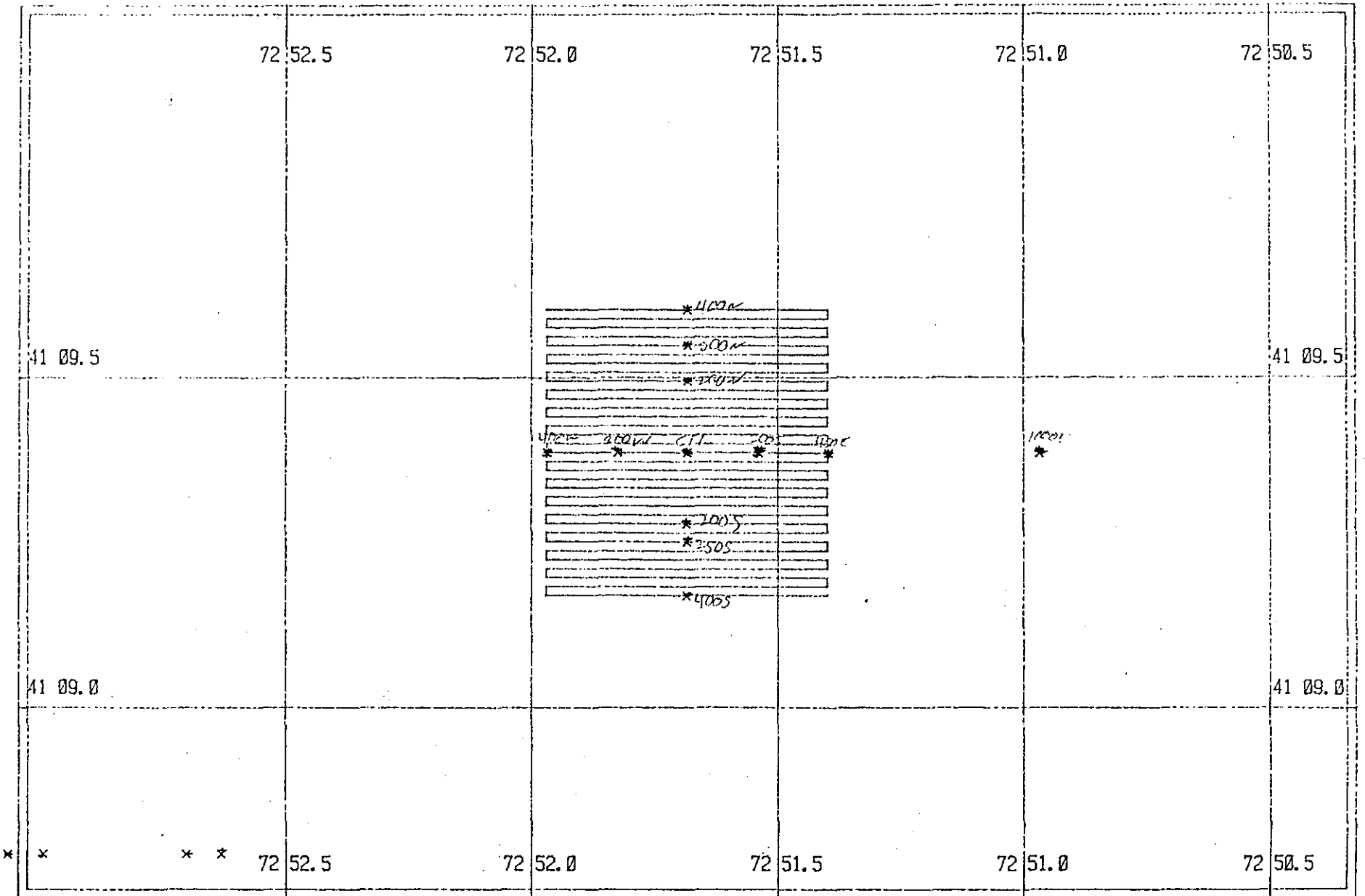


Figure 2.1-6. Sediment Sample Stations.

FVP BASE DEC82

CHART SCALE: 1/10000



SEDIMENT SAMPLES AUG83

SAMPLE#	DISPOSAL SITE	LOCATION	TYPE	DATE
3363	FVP	FVP-1000E-A	GS	09-01-83
3364	FVP	FVP-1000E-A	HM	09-01-83
3365	FVP	FVP-1000E-B	HM	09-01-83
3366	FVP	FVP-1000E-C	HM	09-01-83
3367	FVP	FVP-400E-A	GS	09-01-83
3368	FVP	FVP-400E-A	HM	09-01-83
3369	FVP	FVP-400E-B	HM	09-01-83
3370	FVP	FVP-400E-C	HM	09-01-83
3371	FVP	FVP-400W-A	GS	09-01-83
3372	FVP	FVP-400W-A	HM	09-01-83
3373	FVP	FVP-400W-B	HM	09-01-83
3374	FVP	FVP-400W-C	HM	09-01-83
3375	FVP	FVP-200E-A	GS	09-01-83
3376	FVP	FVP-200E-A	HM	09-01-83
3377	FVP	FVP-200E-B	HM	09-01-83
3378	FVP	FVP-200E-C	HM	09-01-83
3379	FVP	FVP-200W-A	GS	09-01-83
3380	FVP	FVP-200W-A	HM	09-01-83
3381	FVP	FVP-200W-B	HM	09-01-83
3382	FVP	FVP-200W-C	HM	09-01-83
3383	FVP	FVP-200S-A	GS	09-01-83
3384	FVP	FVP-200S-A	HM	09-01-83
3385	FVP	FVP-200S-B	HM	09-01-83
3386	FVP	FVP-200S-C	HM	09-01-83
3387	FVP	FVP-CTR-A	GS	09-01-83
3388	FVP	FVP-CTR-A	HM	09-01-83
3389	FVP	FVP-CTR-B	HM	09-01-83
3390	FVP	FVP-CTR-C	HM	09-01-83
3391	FVP	FVP-200W-A	GS	09-01-83
3392	FVP	FVP-200W-A	HM	09-01-83
3393	FVP	FVP-200W-B	HM	09-01-83
3394	FVP	FVP-200W-C	HM	09-01-83
3395	FVP	FVP-250S-A	GS	09-01-83
3396	FVP	FVP-250S-A	HM	09-01-83
3397	FVP	FVP-250S-B	HM	09-01-83
3398	FVP	FVP-250S-C	HM	09-01-83
3399	FVP	FVP-300N-A	GS	09-01-83
3400	FVP	FVP-300N-A	HM	09-01-83
3401	FVP	FVP-300N-B	HM	09-01-83
3402	FVP	FVP-300N-C	HM	09-01-83

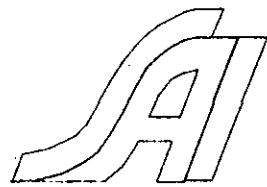
Table 2.1-2.

CAP SITE #1 POST-CAPPING

JUNE 1983

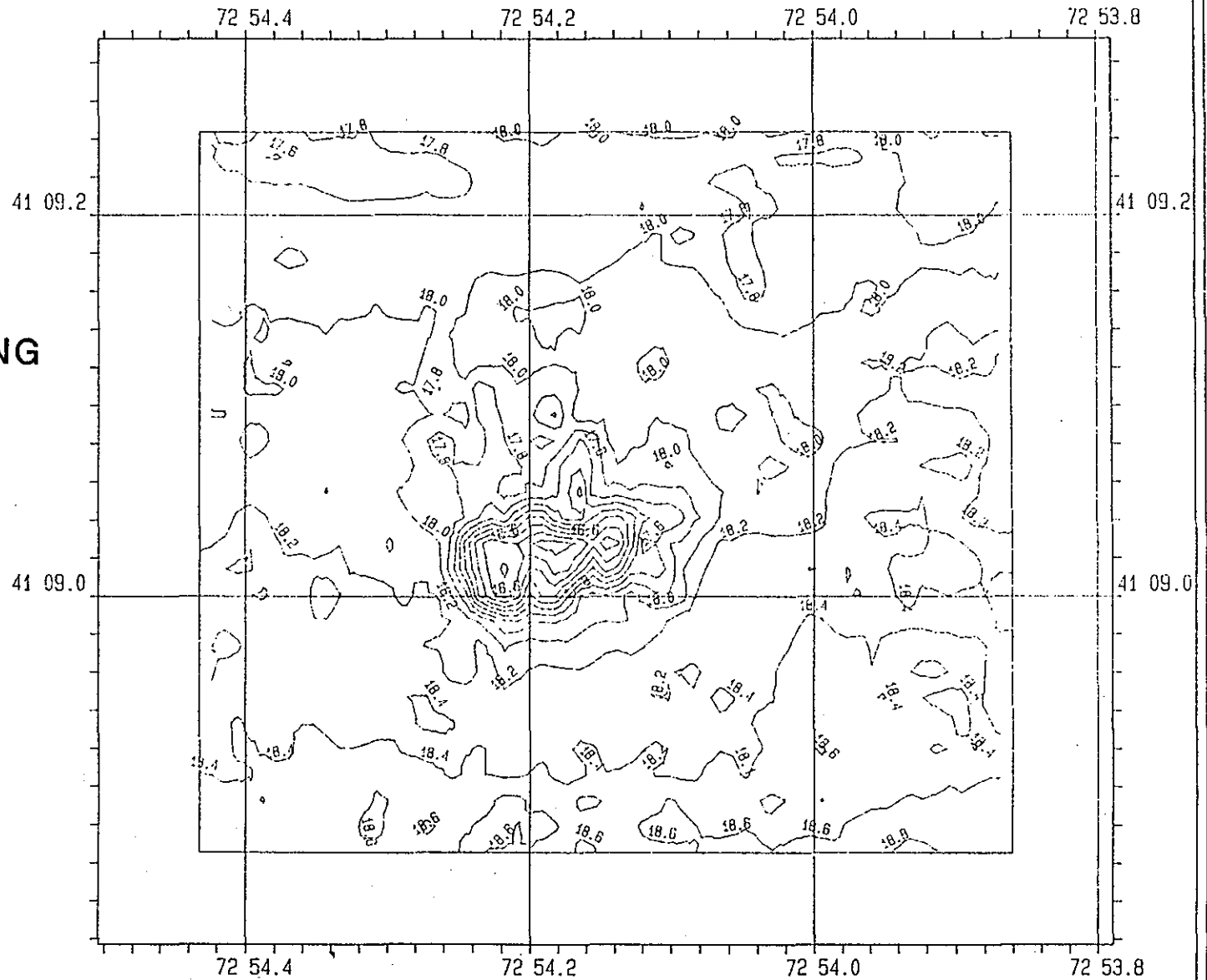
Figure 2.2-1.

Preliminary



0 80 160

SCALE (m)

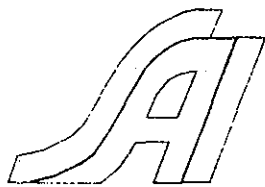


CS-1

23 August 1983
Chart Scale: 1/4000
Contour Interval: 0.2
Datum: MLW

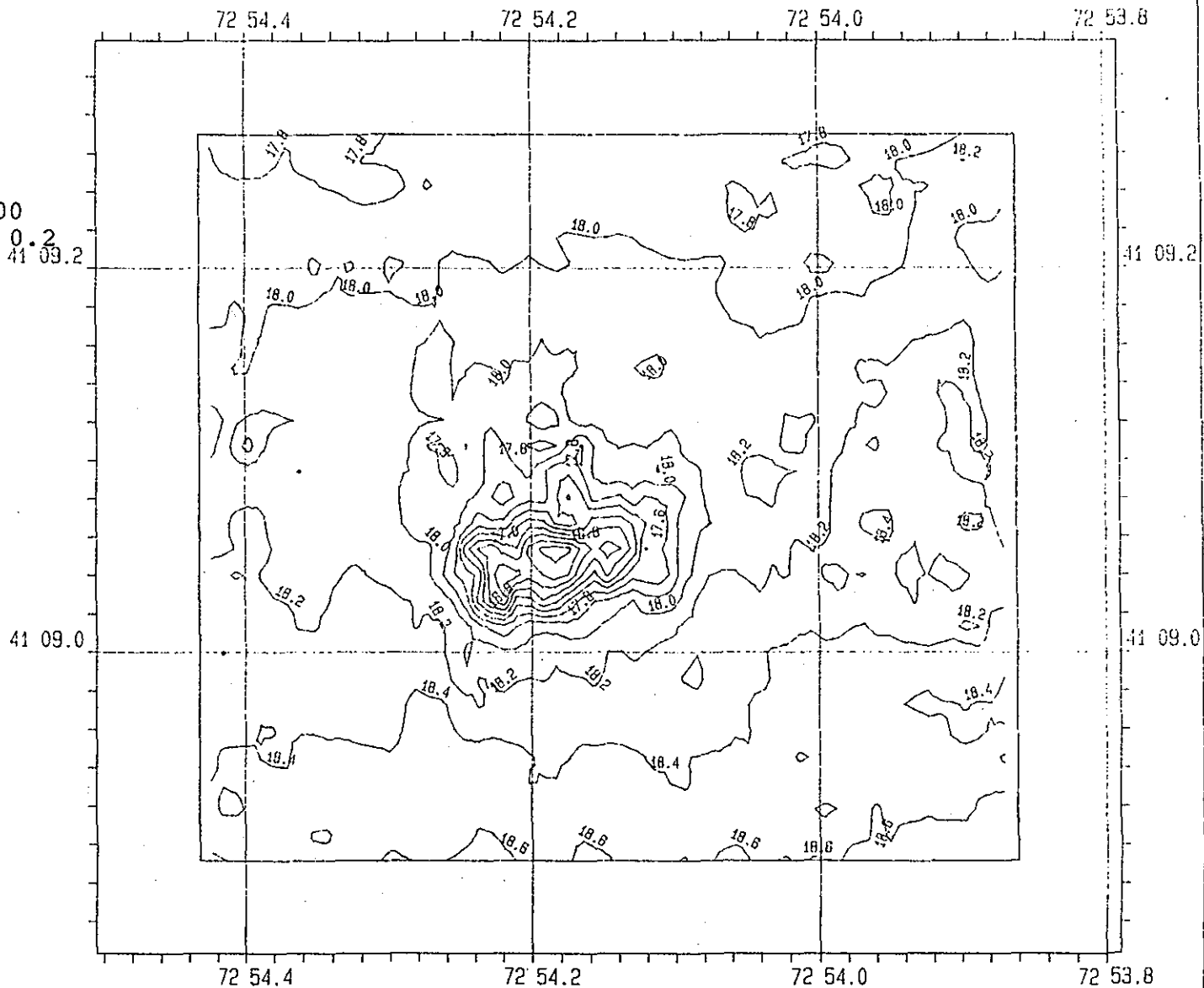
Figure 2.2-2.

Preliminary



0 80 160

SCALE (m)

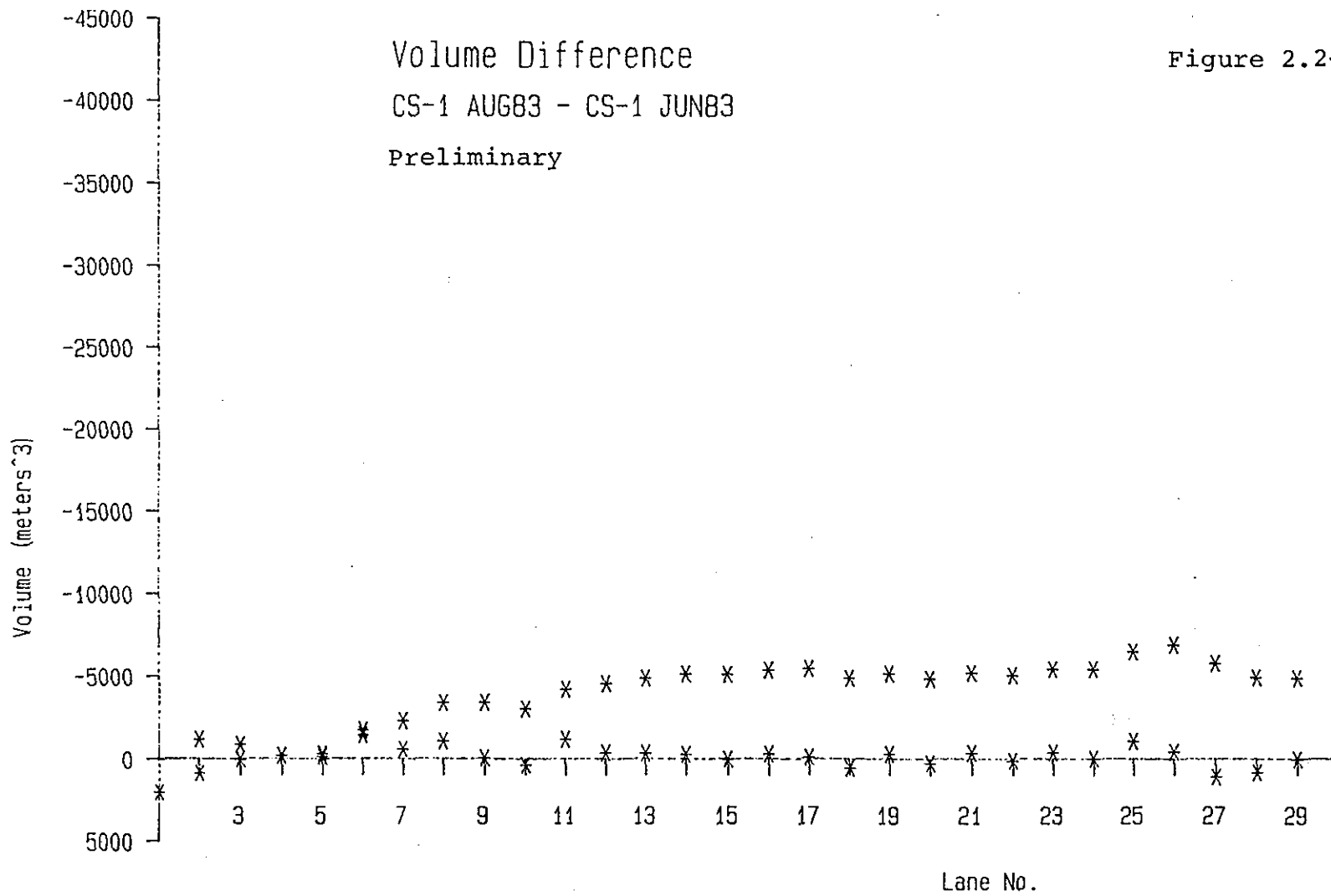


Least Squares Coefficients:

A0 = .0998755858
 A1 = 1.10097469
 A2 = -.233462396
 A3 = -1.28393305

Standard Deviation = 4.89760037

Lane #	Lane Volume (meters ³)	Cumulative Volume (meters ³)	Lane Correction (centimeters)
1	2066	2066	0
2	-1168	901	0
3	-373	28	0
4	-194	-166	0
5	-150	-276	0
6	-1416	-1712	0
7	-361	-2293	0
8	-1032	-3344	0
9	-46	-3389	0
10	386	-3003	0
11	-1168	-4171	0
12	-397	-4530	0
13	-319	-4830	0
14	-264	-5114	0
15	32	-5062	0
16	-286	-5347	0
17	-76	-5423	0
18	587	-4836	0
19	-279	-5115	0
20	293	-4821	0
21	-333	-5133	0
22	127	-5028	0
23	-337	-5385	0
24	-10	-5395	0
25	-1059	-6454	0
26	-413	-6867	0
27	1123	-5744	0
28	853	-4891	0
29	41	-4850	0



Figures 2.2-4 and 2.2-5 show the graphic contour plot generated from the bathymetric surveys at Cap Site #2 (CS-2) conducted in June and August 1983. As can be expected from the data obtained at the two previously discussed disposal sites, there has been little or no change in the distribution of material at CS-2 over the intervening period. Although the depth over the center of the mound is 20 cm greater in August, this is equal to the ± 20 cm accuracy expected from the Raytheon DE-719 fathometer system. Table 2.2-2 and Figure 2.2-6 show the results of a volume difference calculation between these two surveys. While still below the noise level of this process, these data are significantly different from those at CS-1.

An attempt was made to deploy divers on the transect lines previously set on these sites but all surface buoys marking these lines and those of the center compaction stakes had been lost. This made locating these transect lines virtually impossible. An effort will be made in the near future to relocate these devices and marking them in a more permanent manner so that this unfortunate event will not be repeated.

2.3 STNH-N, STNH-S, Norwalk, MQRDS, and SP Disposal Sites

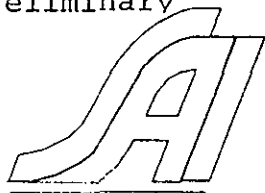
Operations performed at these disposal sites consisted of REMOTS photographs and sediment sampling. REMOTS photos were taken at all sites except for Norwalk and SP. Sediment samples were taken at all sites except for MQRDS. All sediment samples were retained for physical and chemical analyses except for those at the SP site, which were taken merely to establish the lateral boundaries of the disposal mound. Sediment samples taken at the STNH-N, STNH-S and Norwalk disposal sites appear visually quite

**CAP SITE #2
POST-CAPPING**

JUNE 1983

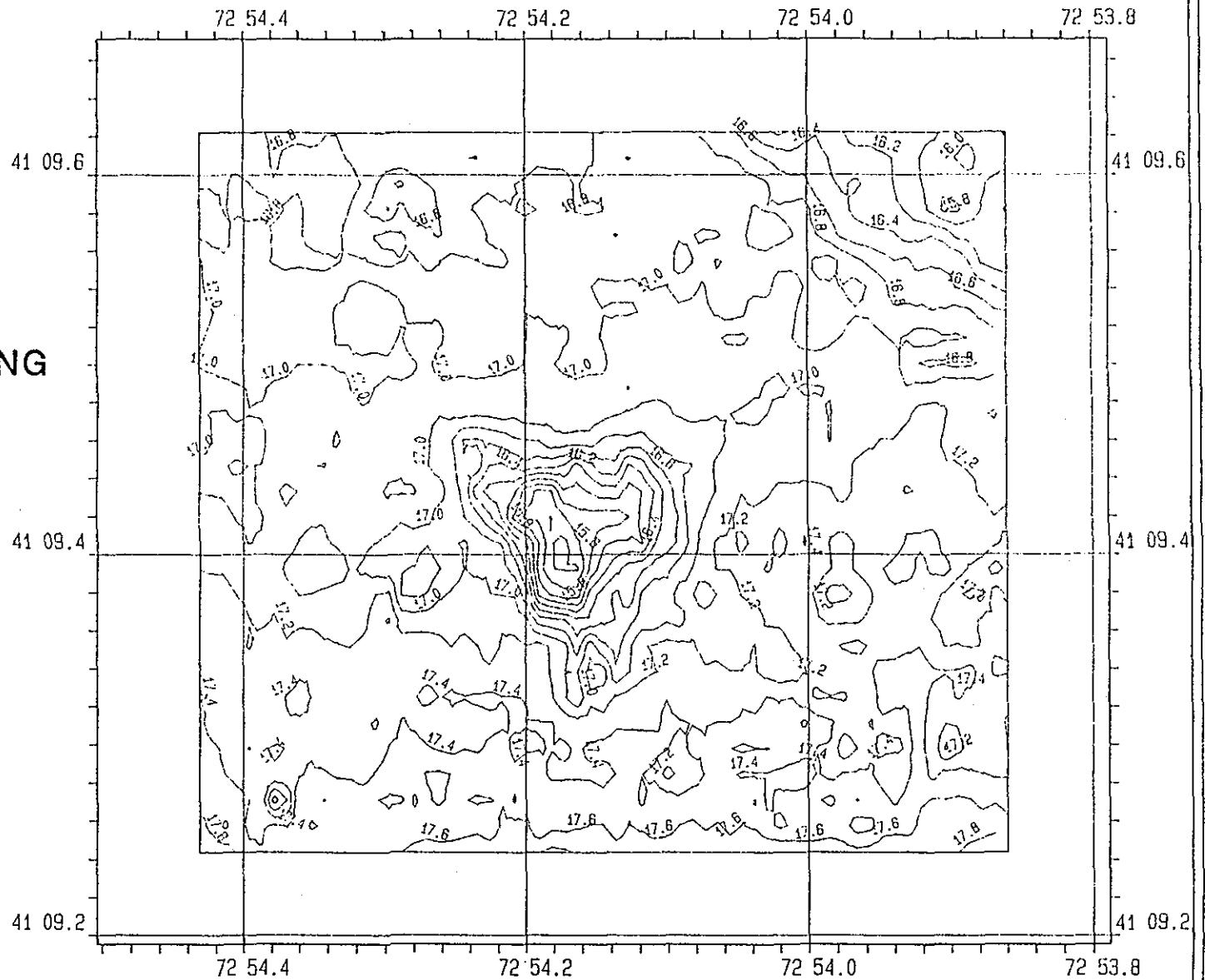
Figure 2.2-4.

Preliminary



0 80 160

SCALE (m)

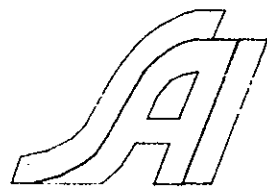
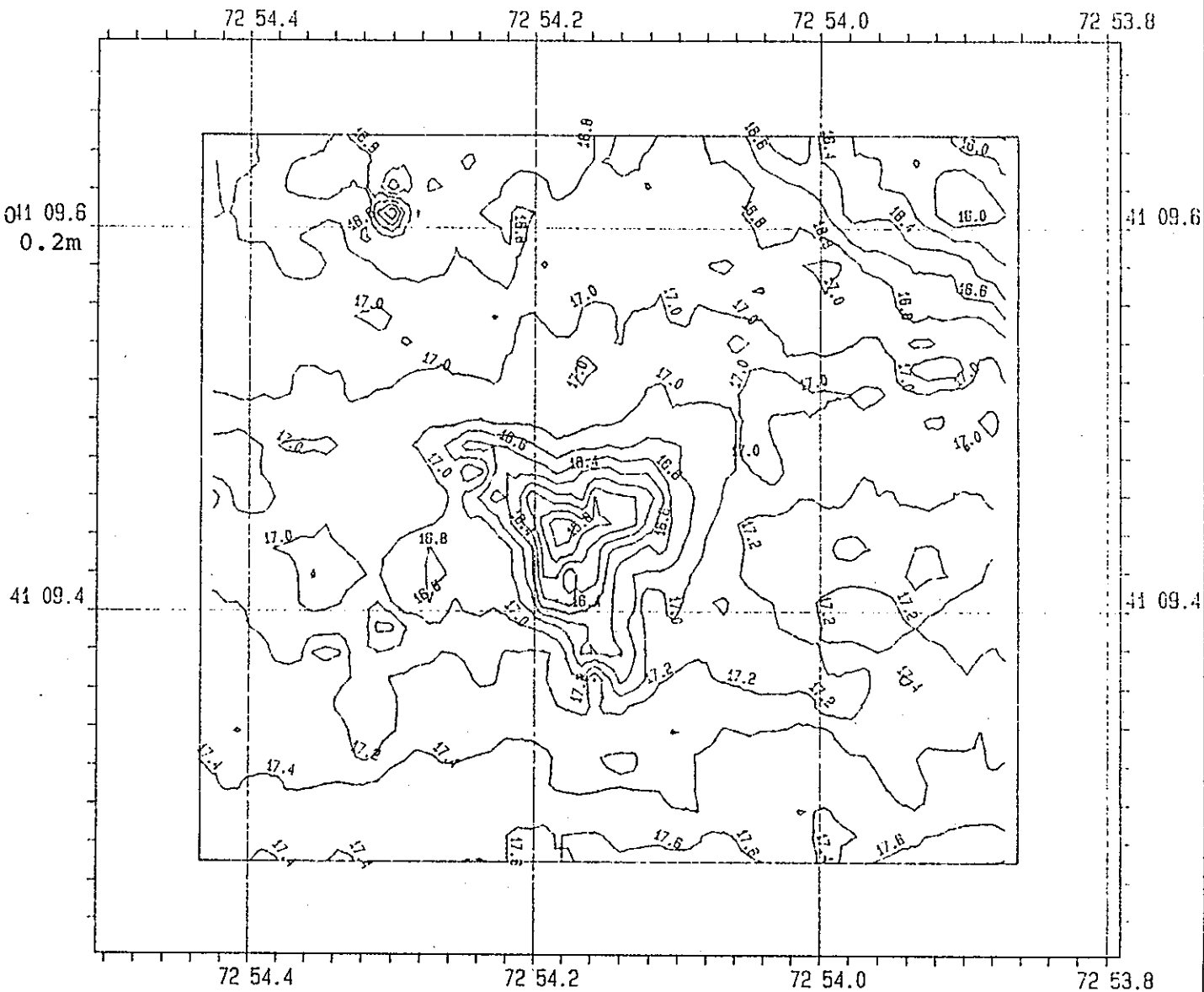


CS-2

23 August 1983
Chart Scale: 1/4000
Datum: MLW

Figure 2.2-5.

Preliminary



0 80 160

SCALE (m)

Least Squares Coefficients:

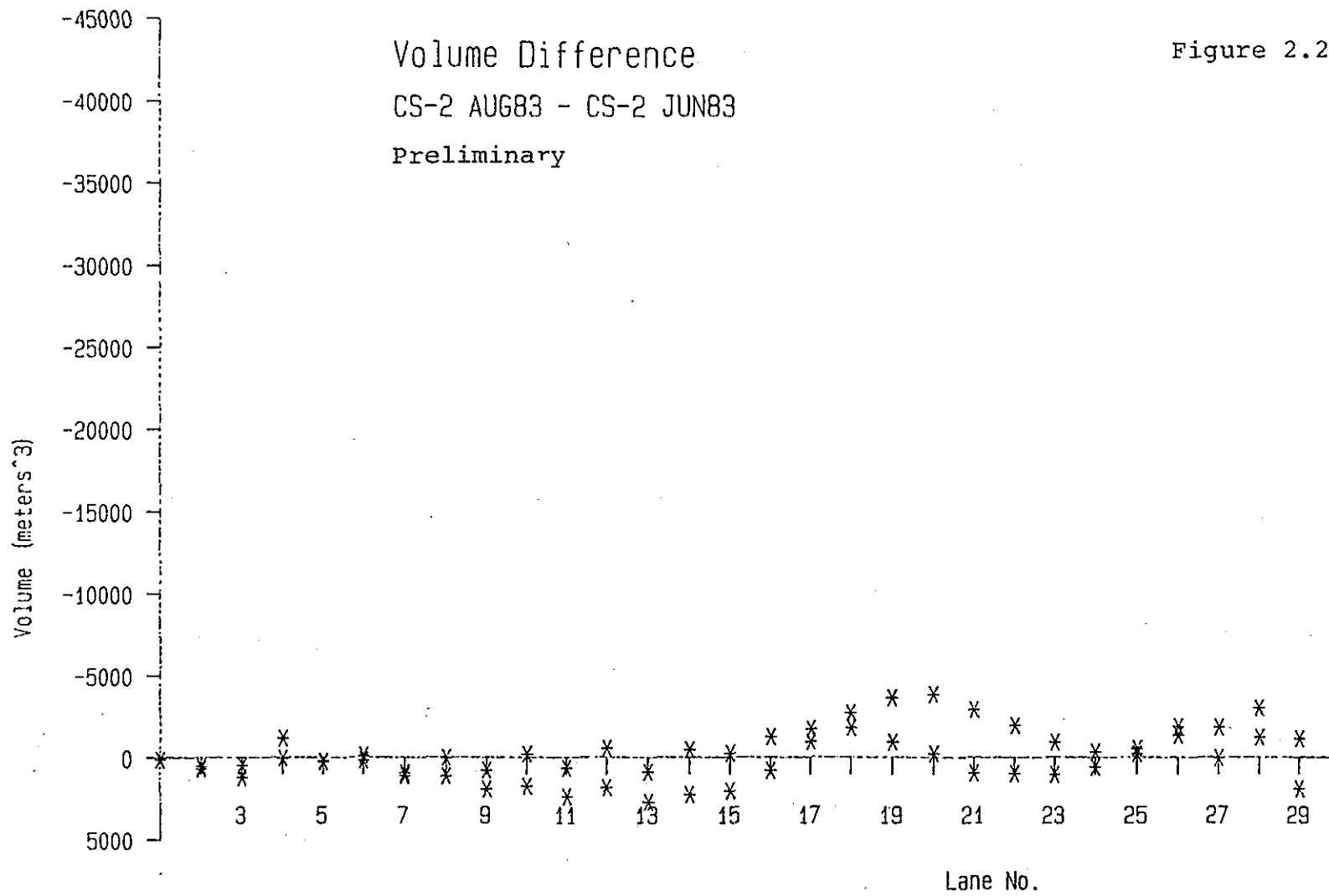
A0 = 1.50584623
 A1 = .256196736
 A2 = 7.8203589E-03
 A3 = 1.2673694

Standard Deviation = 6.05624076

Lane #	Lane Volume (meters ³)	Cumulative Volume (meters ³)	Lane Correction (centimeters)
1	145	145	0
2	564	709	0
3	497	1206	0
4	-1142	64	1
5	218	282	1
6	-106	176	1
7	919	1095	1
8	39	1134	1
9	776	1909	1
10	-190	1719	1
11	641	2361	1
12	-546	1815	1
13	883	2698	1
14	-448	2249	1
15	-232	2018	2
16	-1232	786	2
17	-1711	-925	2
18	-1786	-2712	2
19	-928	-3639	2
20	-216	-3856	2
21	951	-2905	2
22	965	-1940	2
23	1033	-907	2
24	580	-327	2
25	-211	-537	2
26	-1325	-1863	2
27	54	-1809	3
28	-1203	-3012	3
29	1874	-1119	3

Volume Difference
CS-2 AUG83 - CS-2 JUN83
Preliminary

Figure 2.2-6.



similar to those obtained during the last sampling cruise in December 1982. Any relevant further discussion of these sites will have to await physical and chemical analysis of the samples taken. Figures 2.3-1 through 2.3-3 represent the sediment sampling stations visited at the STNH-N, STNH-S, and Norwalk disposal sites, respectively. Table 2.3-1 is a listing of the samples obtained at these sites. From visual observations of the sediment samples obtained in the vicinity of the SP buoy, the boundaries of the disposal mound appear to be approximately 300 meters west, north and east of the buoy and 200 to 250 meters to the south. Presence of material from the New Haven 1974 disposal site made the boundary determination difficult or ambiguous in the westerly and northerly direction.

As previously stated, photographs were taken using the REMOTS imaging/analysis system at the STNH-N, STNH-S, CS-1, CS-2, MQRDS and FVP disposal sites. Figures 2.3-4 through 2.3-9 show graphically the stations visited at these sites.

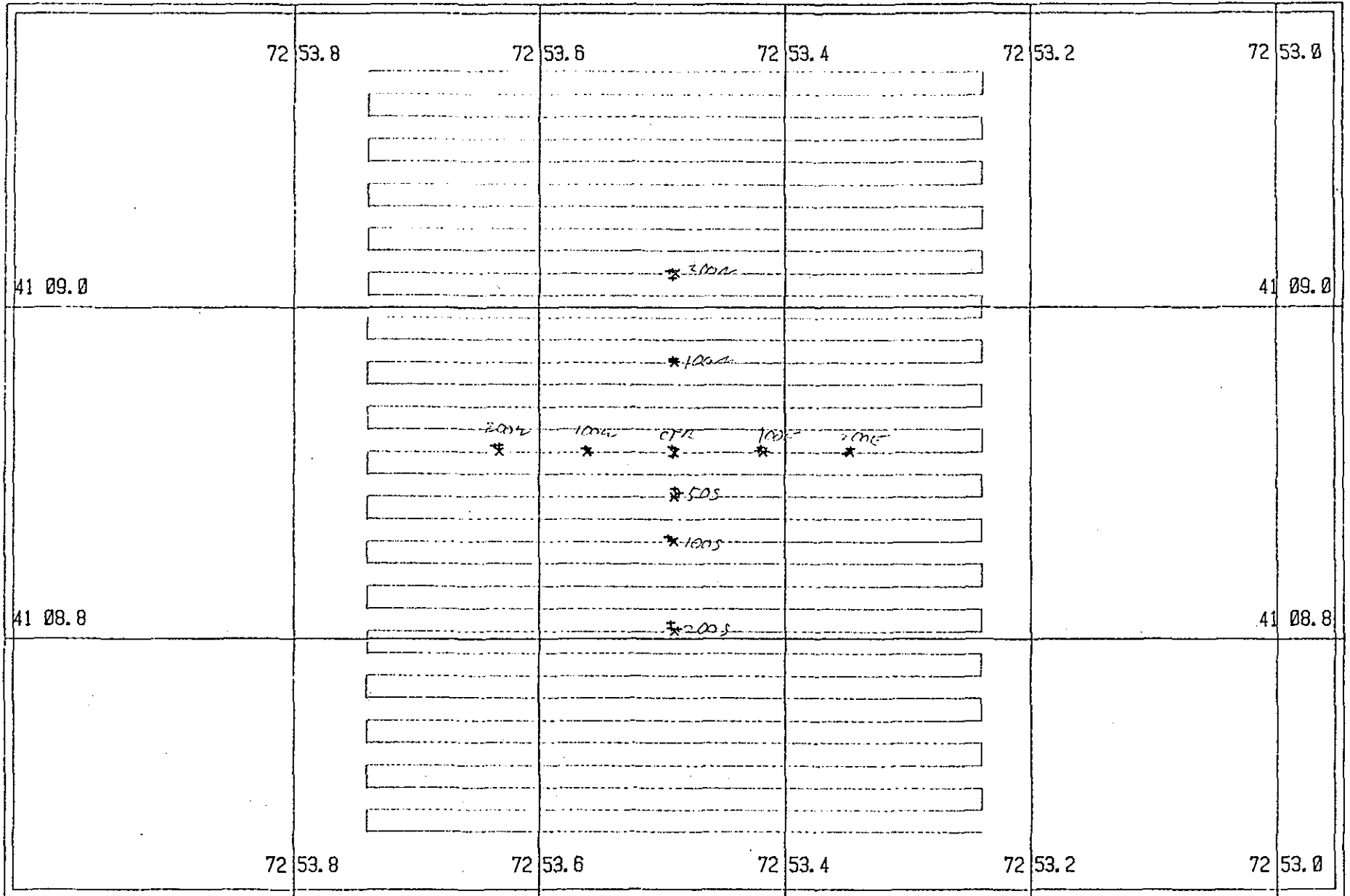
2.4 CLIS Sidescan Sonar Survey

A sidescan sonar survey at the CLIS disposal area was performed on 8 September using a Klein Model 421 side scan sonar operating at a frequency of 100 KHz. The survey consisted of 23 lanes 4500 meters long and spaced 100 meters apart. The recorder was set to a 75 meter sweep interval, thus giving a 25 meter overlap of each lane. In order to save time, the survey was broken into two parts, one covering the bulk of the disposal area and another smaller survey encompassing the FVP disposal site in the northeast corner of the area. As in the precision bathymetric survey of the CLIS disposal area conducted in early

Figure 2.3-3. Sediment Sample Stations.

NORWALK JAN82

CHART SCALE: 1/4000



SEDIMENT SAMPLES AUG83

SAMPLE#	DISPCBAL SITE	LOCATION	TYPE	DATE
3203	NORWALK	NOR-2004-A	GS	08-22-83
3204	NORWALK	NOR-2004-A	HM	08-22-83
3205	NORWALK	NOR-2004-B	HM	08-22-83
3206	NORWALK	NOR-2004-C	HM	08-22-83
3207	NORWALK	NOR-1004-A	GS	08-22-83
3208	NORWALK	NOR-1004-A	HM	08-22-83
3209	NORWALK	NOR-1004-B	HM	08-22-83
3210	NORWALK	NOR-1004-C	HM	08-22-83
3211	NORWALK	NOR-CTR-A	GS	08-22-83
3212	NORWALK	NOR-CTR-A	HM	08-22-83
3213	NORWALK	NOR-CTR-B	HM	08-22-83
3214	NORWALK	NOR-CTR-C	HM	08-22-83
3215	NORWALK	NOR-1002-A	GS	08-22-83
3216	NORWALK	NOR-1002-A	HM	08-22-83
3217	NORWALK	NOR-1002-B	HM	08-22-83
3218	NORWALK	NOR-1002-C	HM	08-22-83
3219	NORWALK	NOR-2002-A	GS	08-22-83
3220	NORWALK	NOR-2002-A	HM	08-22-83
3221	NORWALK	NOR-2002-B	HM	08-22-83
3222	NORWALK	NOR-2002-C	HM	08-22-83
3223	NORWALK	NOR-200N-A	GS	08-22-83
3224	NORWALK	NOR-200N-A	HM	08-22-83
3225	NORWALK	NOR-200N-B	HM	08-22-83
3226	NORWALK	NOR-200N-C	HM	08-22-83
3227	NORWALK	NOR-100N-A	GS	08-22-83
3228	NORWALK	NOR-100N-A	HM	08-22-83
3229	NORWALK	NOR-100N-B	HM	08-22-83
3230	NORWALK	NOR-100N-C	HM	08-22-83
3231	NORWALK	NOR-1002-A	GS	08-22-83
3232	NORWALK	NOR-1002-A	HM	08-22-83
3233	NORWALK	NOR-1002-B	HM	08-22-83
3234	NORWALK	NOR-1002-C	HM	08-22-83
3235	NORWALK	NOR-2002-A	GS	08-22-83
3236	NORWALK	NOR-2002-A	HM	08-22-83
3237	NORWALK	NOR-2002-B	HM	08-22-83
3238	NORWALK	NOR-2002-C	HM	08-22-83
3239	NORWALK	NOR-2002-A	GS	08-22-83
3240	NORWALK	NOR-2002-A	HM	08-22-83
3241	NORWALK	NOR-2002-B	HM	08-22-83
3242	NORWALK	NOR-2002-C	HM	08-22-83
3243	STNH-SOUTH	STNH-S-200N-A	GS	08-22-83
3244	STNH-SOUTH	STNH-S-200N-A	HM	08-22-83
3245	STNH-SOUTH	STNH-S-200N-B	HM	08-22-83
3246	STNH-SOUTH	STNH-S-200N-C	HM	08-22-83
3247	STNH-SOUTH	STNH-S-100N-A	GS	08-22-83
3248	STNH-SOUTH	STNH-S-100N-A	HM	08-22-83

Table 2.3-1.

SEDIMENT SAMPLES ALBES

SAMPLE#	DISPOSAL SITE	LOCATION	TYPE	DATE
3296	STNH-NORTH	STNH-N-CTR-A	HM	08-23-83
3297	STNH-NORTH	STNH-N-CTR-B	HM	08-23-83
3298	STNH-NORTH	STNH-N-CTR-C	HM	08-23-83
3299	STNH-NORTH	STNH-N-200E-A	GS	08-23-83
3300	STNH-NORTH	STNH-N-200E-A	HM	08-23-83
3301	STNH-NORTH	STNH-N-200E-B	HM	08-23-83
3302	STNH-NORTH	STNH-N-200E-C	HM	08-23-83
3303	STNH-NORTH	STNH-N-400E-A	GS	08-23-83
3304	STNH-NORTH	STNH-N-400E-A	HM	08-23-83
3305	STNH-NORTH	STNH-N-400E-B	HM	08-23-83
3306	STNH-NORTH	STNH-N-400E-C	HM	08-23-83
3307	STNH-NORTH	STNH-N-250E-A	GS	08-23-83
3308	STNH-NORTH	STNH-N-250E-A	HM	08-23-83
3309	STNH-NORTH	STNH-N-250E-B	HM	08-23-83
3310	STNH-NORTH	STNH-N-250E-C	HM	08-23-83
3311	STNH-NORTH	STNH-N-100E-A	GS	08-23-83
3312	STNH-NORTH	STNH-N-100E-A	HM	08-23-83
3313	STNH-NORTH	STNH-N-100E-B	HM	08-23-83
3314	STNH-NORTH	STNH-N-100E-C	HM	08-23-83
3315	STNH-NORTH	STNH-N-100N-A	GS	08-23-83
3316	STNH-NORTH	STNH-N-100N-A	HM	08-23-83
3317	STNH-NORTH	STNH-N-100N-B	HM	08-23-83
3318	STNH-NORTH	STNH-N-100N-C	HM	08-23-83
3319	STNH-NORTH	STNH-N-200N-A	GS	08-23-83
3320	STNH-NORTH	STNH-N-200N-A	HM	08-23-83
3321	STNH-NORTH	STNH-N-200N-B	HM	08-23-83
3322	STNH-NORTH	STNH-N-200N-C	HM	08-23-83

Table 2.3-1.
(cont)

SEDIMENT SAMPLES AUG83

SAMPLE#	DISPOSAL SITE	LOCATION	TYPE	DATE
3249	STNH-SOUTH	STNH-S-100N-B	HM	08-22-83
3250	STNH-SOUTH	STNH-S-100N-C	HM	08-22-83
3251	STNH-SOUTH	STNH-S-CTR-A	GS	08-22-83
3252	STNH-SOUTH	STNH-S-CTR-A	HM	08-22-83
3253	STNH-SOUTH	STNH-S-CTR-B	HM	08-22-83
3254	STNH-SOUTH	STNH-S-CTR-C	HM	08-22-83
3255	STNH-SOUTH	STNH-S-100S-A	GS	08-22-83
3256	STNH-SOUTH	STNH-S-100S-A	HM	08-22-83
3257	STNH-SOUTH	STNH-S-100S-B	HM	08-22-83
3258	STNH-SOUTH	STNH-S-100S-C	HM	08-22-83
3259	STNH-SOUTH	STNH-S-250S-A	GS	08-22-83
3260	STNH-SOUTH	STNH-S-250S-A	HM	08-22-83
3261	STNH-SOUTH	STNH-S-250S-B	HM	08-22-83
3262	STNH-SOUTH	STNH-S-250S-C	HM	08-22-83
3263	STNH-SOUTH	STNH-S-400N-A	GS	08-22-83
3264	STNH-SOUTH	STNH-S-400N-A	HM	08-22-83
3265	STNH-SOUTH	STNH-S-400N-B	HM	08-22-83
3266	STNH-SOUTH	STNH-S-400N-C	HM	08-22-83
3267	STNH-SOUTH	STNH-S-250N-A	GS	08-22-83
3268	STNH-SOUTH	STNH-S-250N-A	HM	08-22-83
3269	STNH-SOUTH	STNH-S-250N-B	HM	08-22-83
3270	STNH-SOUTH	STNH-S-250N-C	HM	08-22-83
3271	STNH-SOUTH	STNH-S-150N-A	GS	08-22-83
3272	STNH-SOUTH	STNH-S-150N-B	HM	08-22-83
3273	STNH-SOUTH	STNH-S-150N-B	HM	08-22-83
3274	STNH-SOUTH	STNH-S-150N-C	HM	08-22-83
3275	STNH-SOUTH	STNH-S-100E-A	GS	08-22-83
3276	STNH-SOUTH	STNH-S-100E-A	HM	08-22-83
3277	STNH-SOUTH	STNH-S-100E-B	HM	08-22-83
3278	STNH-SOUTH	STNH-S-100E-C	HM	08-22-83
3279	STNH-SOUTH	STNH-S-400E-A	GS	08-22-83
3280	STNH-SOUTH	STNH-S-400E-A	HM	08-22-83
3281	STNH-SOUTH	STNH-S-400E-B	HM	08-22-83
3282	STNH-SOUTH	STNH-S-400E-C	HM	08-22-83
3283	CL 15-REFERENCE	CL 15-REF-A	GS	08-22-83
3284	CL 15-REFERENCE	CL 15-REF-A	HM	08-22-83
3285	CL 15-REFERENCE	CL 15-REF-B	HM	08-22-83
3286	CL 15-REFERENCE	CL 15-REF-C	HM	08-22-83
3287	STNH-NORTH	STNH-N-500N-A	GS	08-22-83
3288	STNH-NORTH	STNH-N-500N-A	HM	08-22-83
3289	STNH-NORTH	STNH-N-500N-B	HM	08-22-83
3290	STNH-NORTH	STNH-N-500N-C	HM	08-22-83
3291	STNH-NORTH	STNH-N-150N-A	GS	08-22-83
3292	STNH-NORTH	STNH-N-150N-A	HM	08-22-83
3293	STNH-NORTH	STNH-N-150N-B	HM	08-22-83
3294	STNH-NORTH	STNH-N-150N-C	HM	08-22-83
3295	STNH-NORTH	STNH-N-CTR-A	GS	08-22-83

Table 2.3-1.
(cont)

Figure 2.3-4. REMOTS Stations.

STNH-N JAN82

CHART SCALE: 1/3000

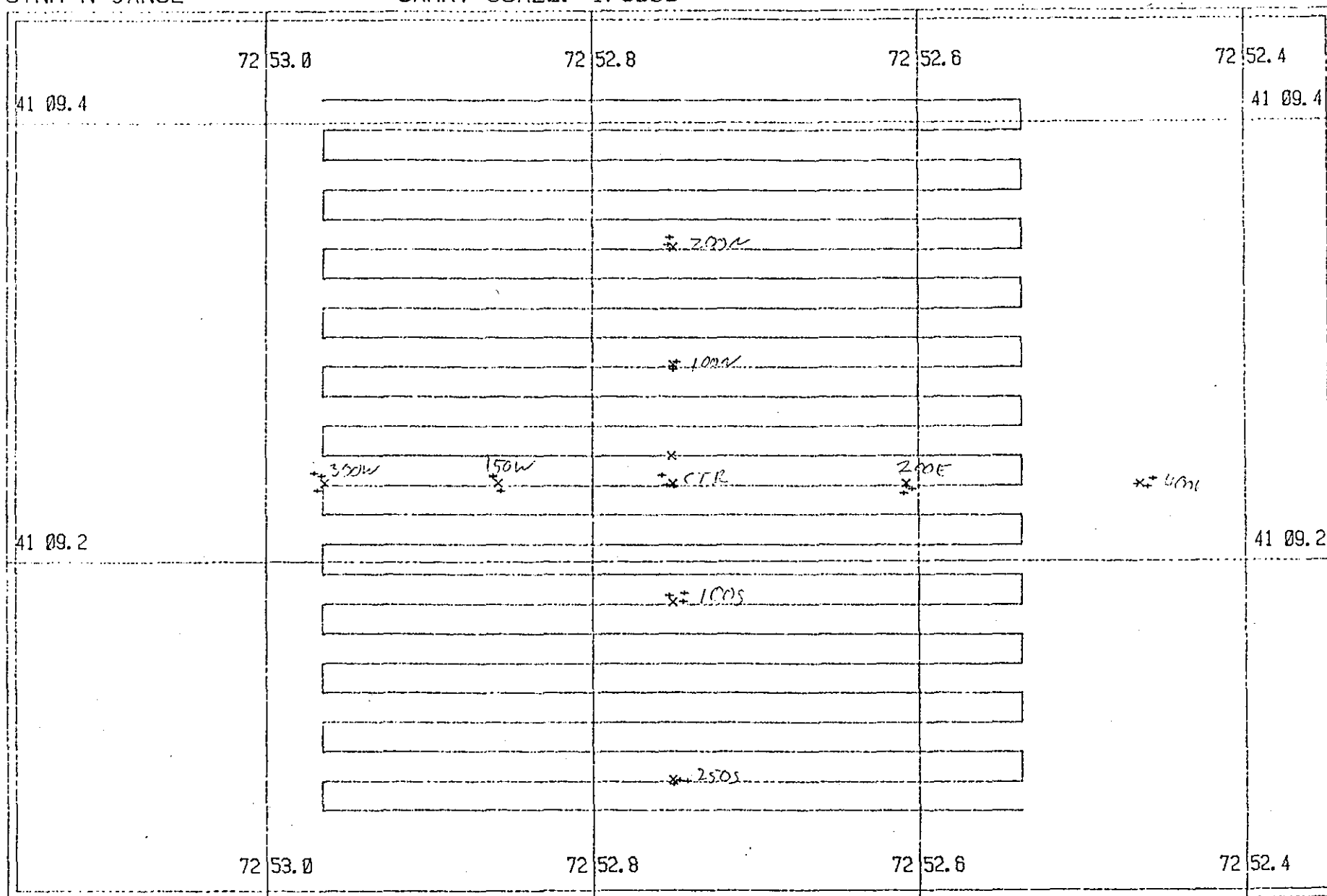


Figure 2.3-5. REMOTS Stations.

STNH-S JAN82

CHART SCALE: 1/40000

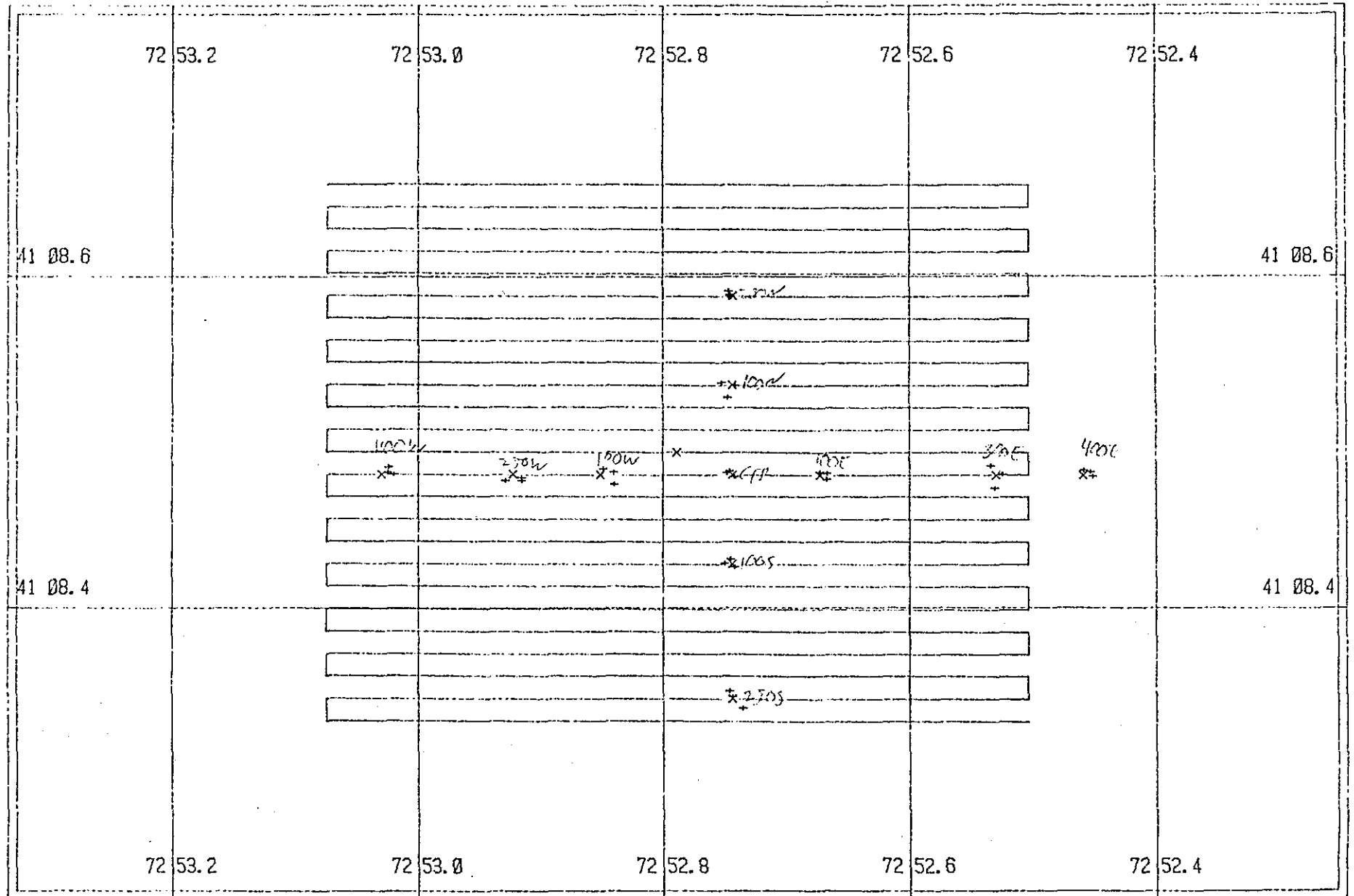


Figure 2.3-6. REMOTS Stations.

CS-1 APR83

CHART SCALE: 1/6000

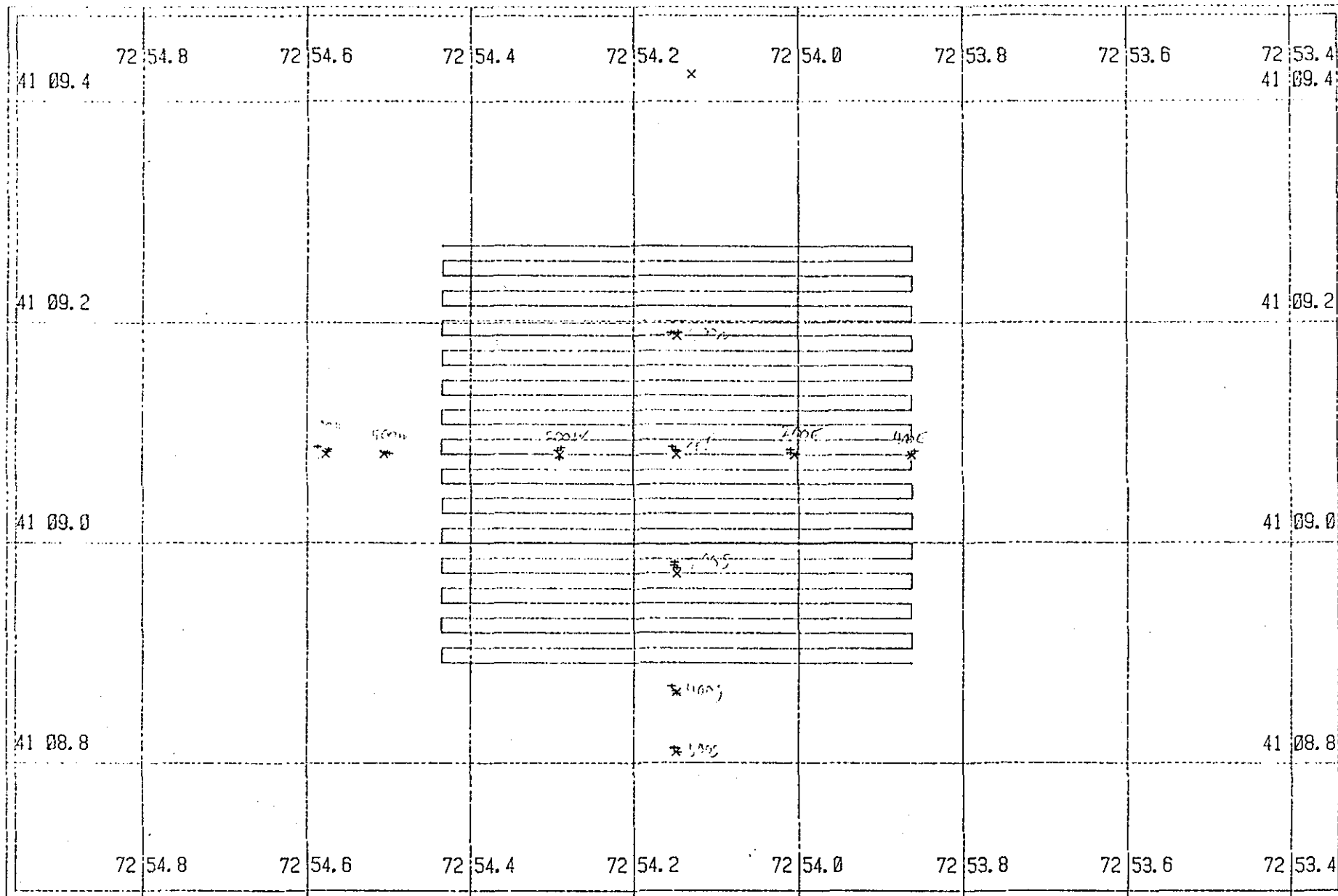


Figure 2.3-7. REMOTS Stations.

CS-2 APR83

CHART SCALE: 1/6000

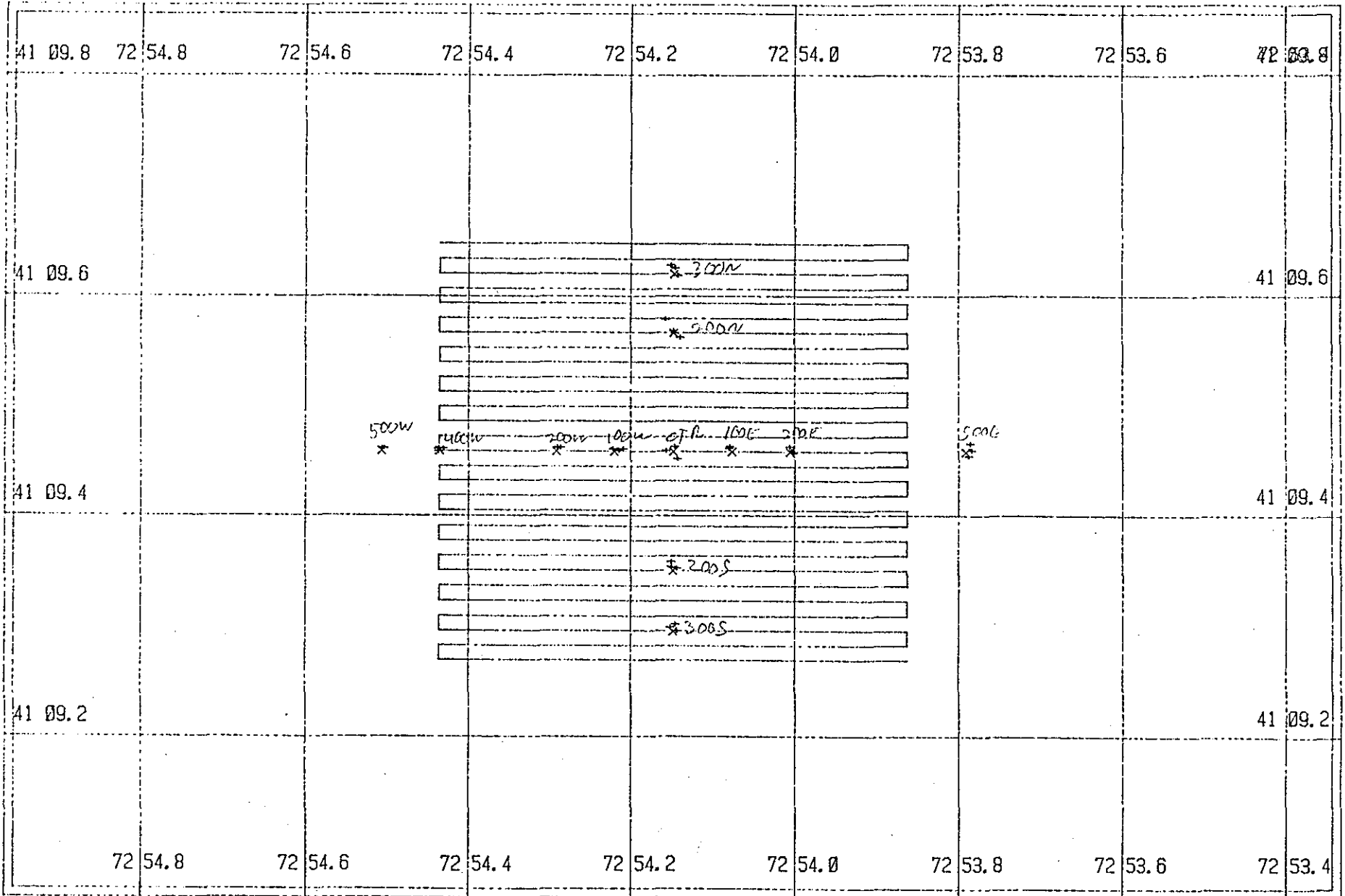
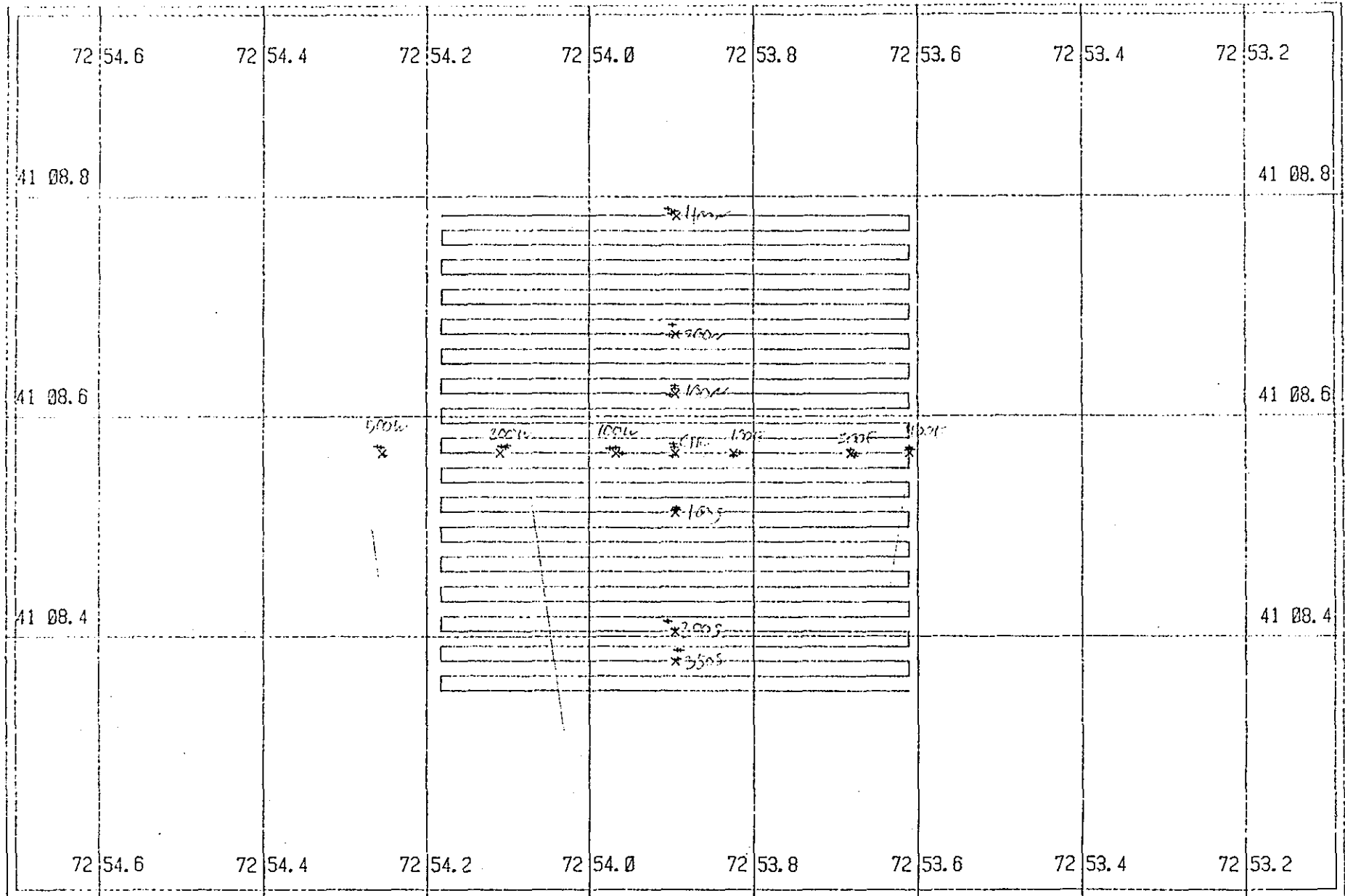


Figure 2.3-8. REMOTS Stations.

MORDS MAR82

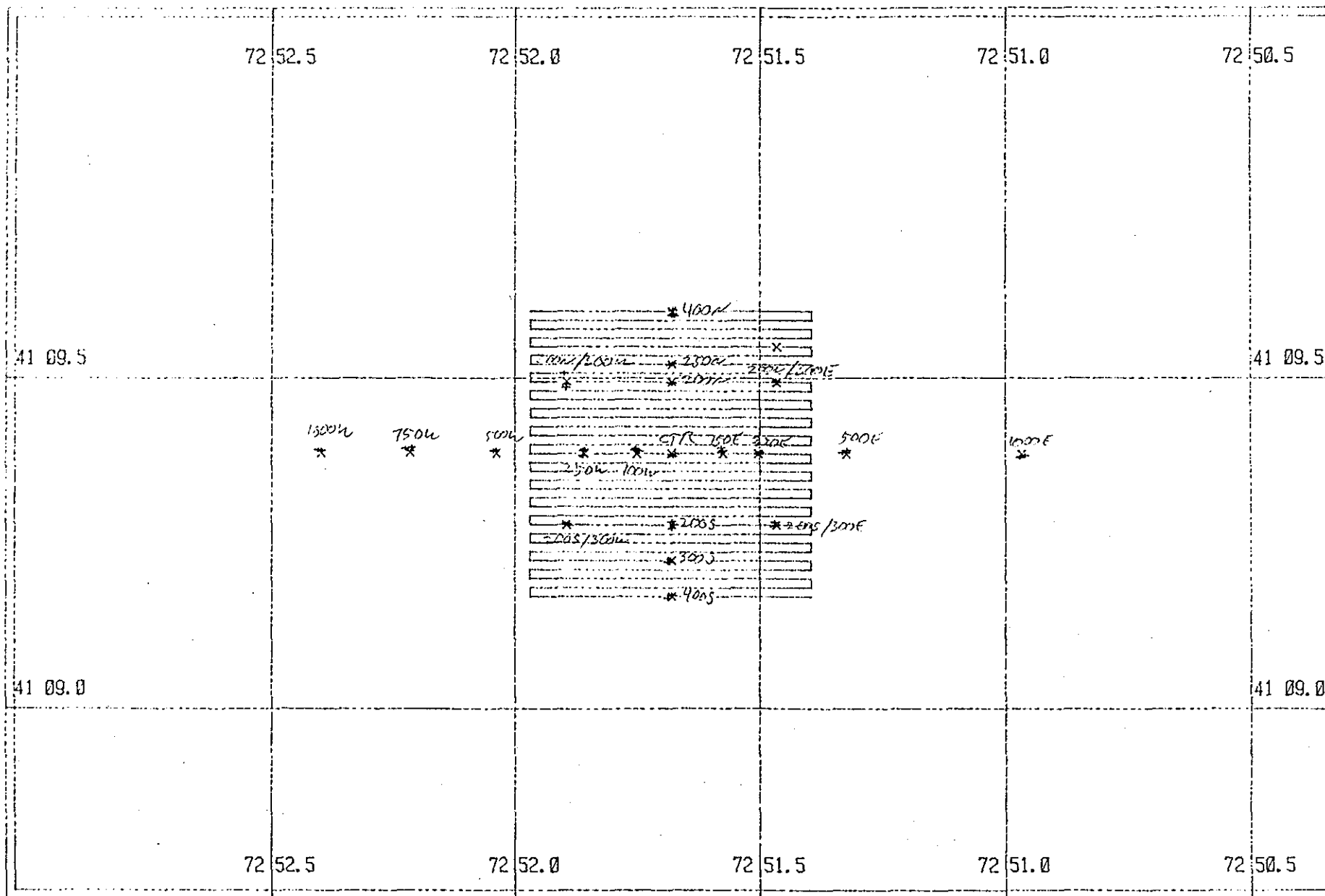
CHART SCALE: 1/60000



REMOTS Stations
FVP BASE DEC82

CHART SCALE: 1/10000

Figure 2.3-9



August, the southeast quadrant of the area was omitted. Figure 2.4-1 depicts a composite of these two surveys. Side scan sonar records obtained from this survey were quite good and a complete discussion will be forthcoming as soon as these records are completely analyzed.

2.5 Western Long island Sound (WLIS)

Work completed at the WLIS III disposal area consisted of a precision bathymetric survey, REMOTS photography, diver/TV observations and sediment sampling. Figures 2.5-1 and 2.5-2 represent the depth contour charts generated from the surveys of January and August 1983 respectively. It is quite evident that there has been a substantial deposition of material at this disposal site during the intervening 8 months. The disposal mound is obviously larger in all directions. This is further substantiated in Figures 2.5-3 and 2.5-4, which depict the depth profiles of the eight survey lanes which cover the mound. A volume difference calculation produced the results illustrated in Table 2.5-1 and Figure 2.5-5. These data show a deposition of new material in excess of 41,000 cubic meters between January and August 1983. Figure 2.5-6 represents a contour difference plot of the volume difference data. This shows a deposition of an additional 2 meters of new material since January of 1983.

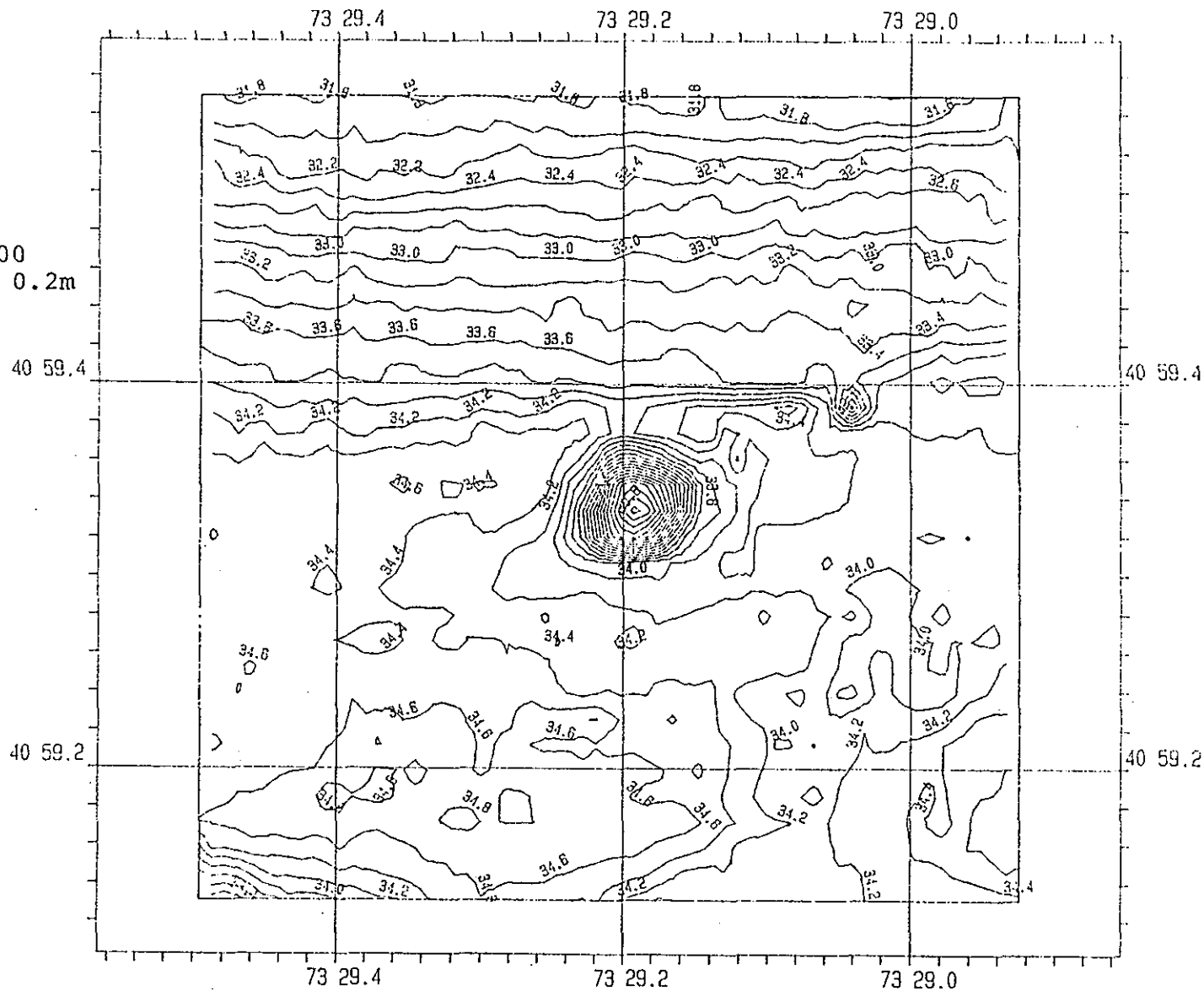
Sediment samples at this site were characterized by the presence of a coarse sand mixed with gray, possibly oxidized silt on the surface of each grab extending down 2-3cm. The sediment under this layer was dark gray to black and exhibited a strong sulphide odor. All samples showed signs of colonization with large numbers of juvenile Cancer, Pegasus and amphipod tubes.

WLIS III

19 January 1983
Chart Scale: 1/4000
Contour Interval: 0.2m
Datum: MLW

Figure 2.5-1.

Preliminary



WLIS III

24 August 1983

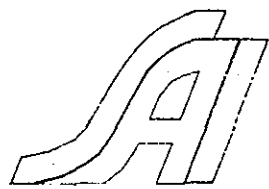
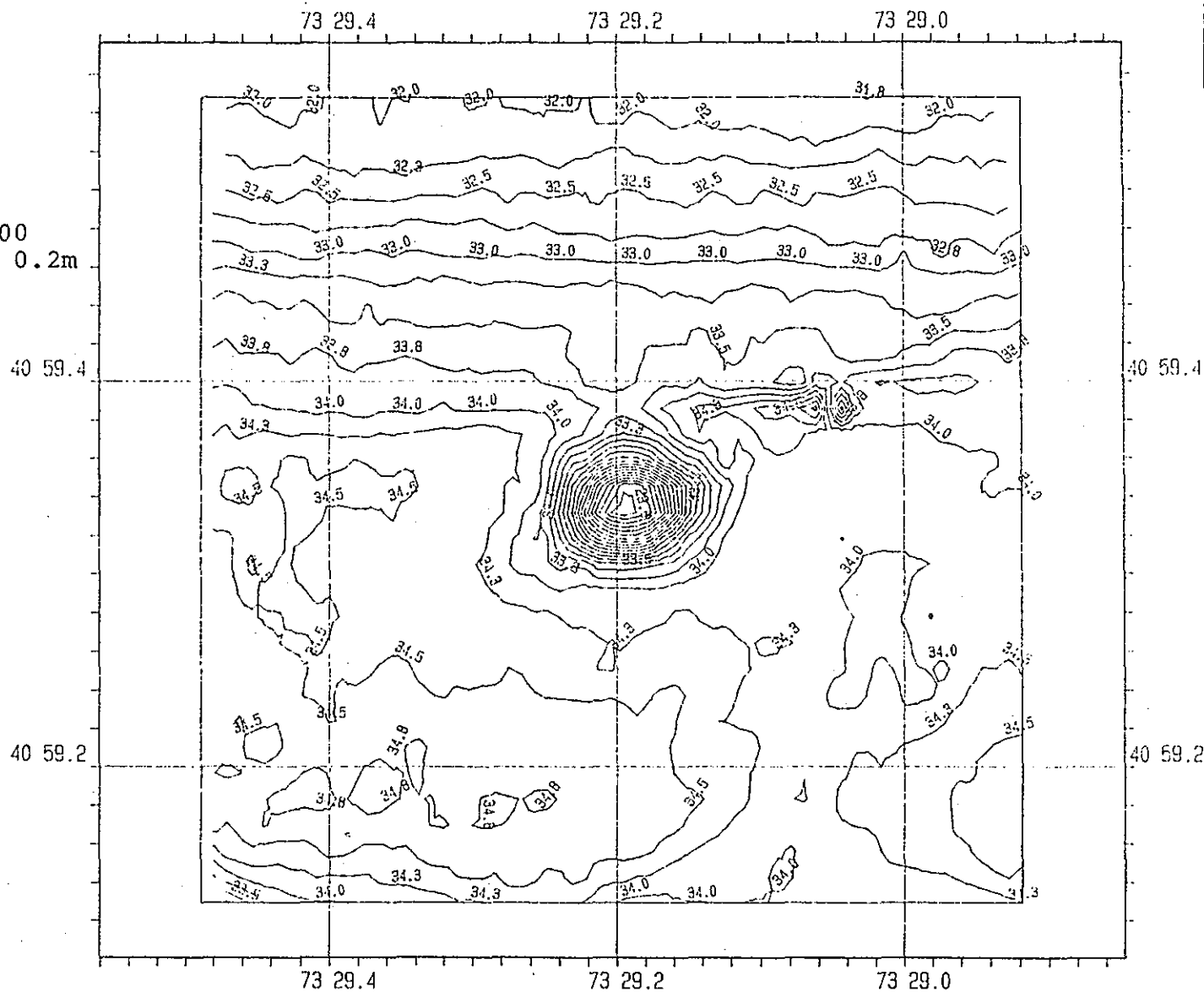
Chart Scale: 1/4000

Contour Interval: 0.2m

Datum: MLW

Figure 2.5-2.

Preliminary



SCALE (m)

Figure 2.5-3.

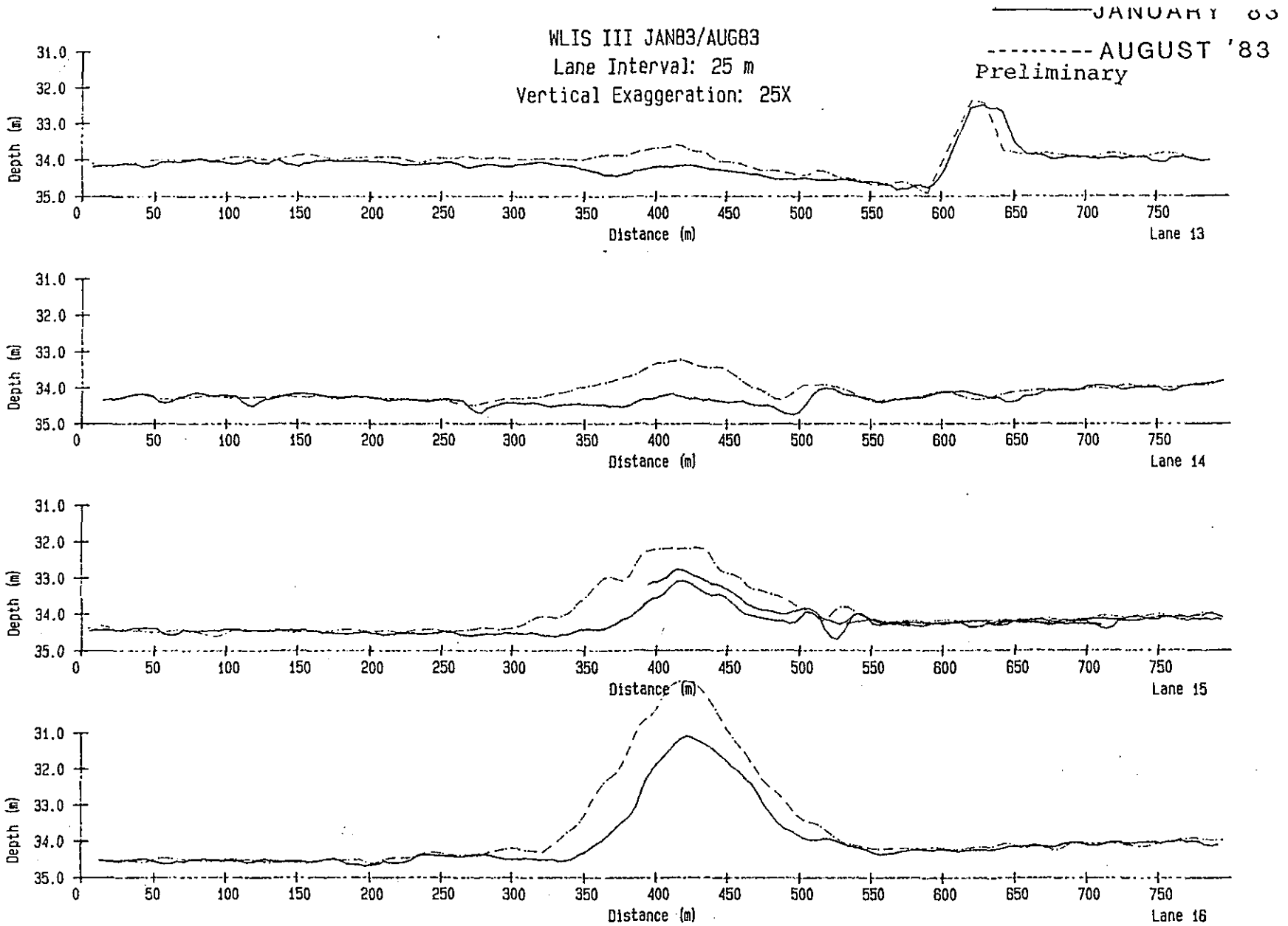
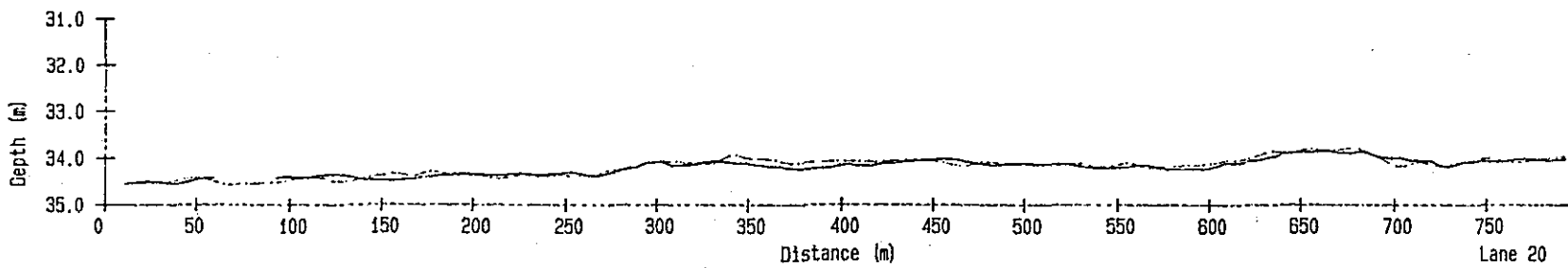
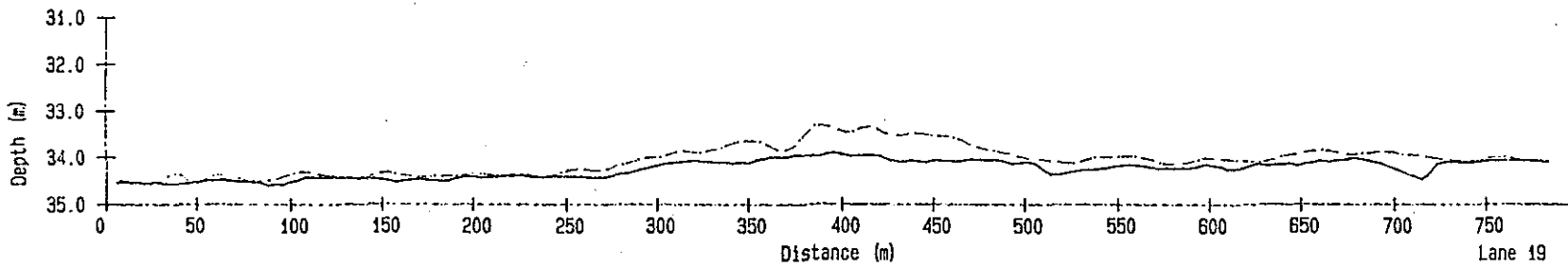
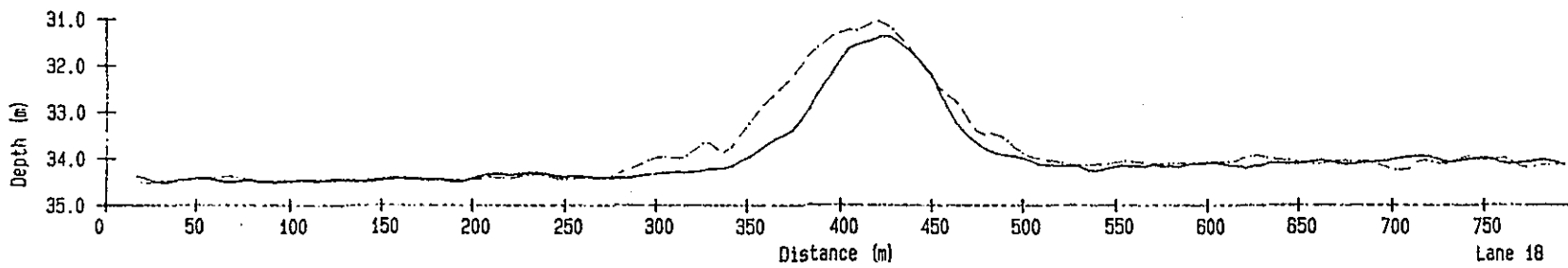
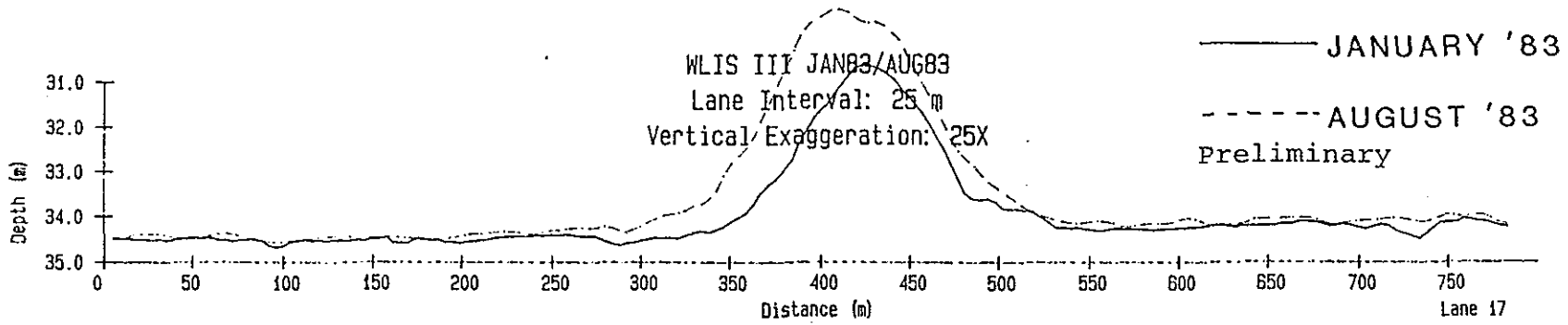


Figure 2.5-4.



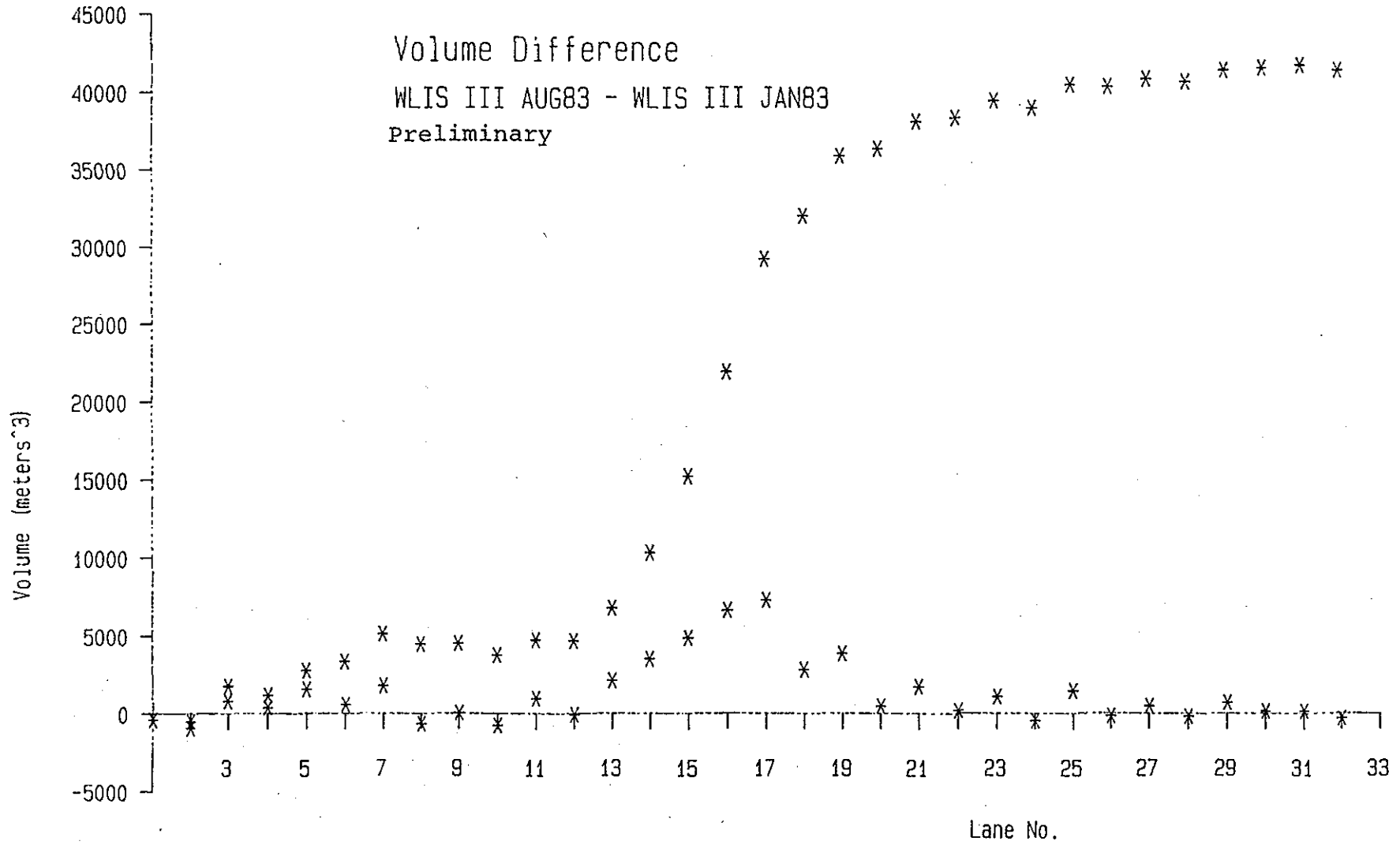
Least Squares Coefficients:

A0 = -3.38120571
 A1 = -8.16536088
 A2 = 2.590643
 A3 = 21.7938101

Standard Deviation = 5.42381959

Lane #	Lane Volume (meters ³)	Cumulative Volume (meters ³)	Lane Correction (centimeters)
1	-410	-410	-15
2	-561	-970	-11
3	1777	806	-9
4	383	1190	-7
5	1539	2749	-3
6	603	3352	-4
7	1807	5159	-2
8	-664	4494	-2
9	45	4540	-1
10	-769	3771	-1
11	990	4761	-1
12	-75	4685	-1
13	2125	6811	-2
14	3518	10329	-2
15	4902	15227	-3
16	6646	21873	-3
17	7306	29180	-4
18	2819	31999	-4
19	3852	35851	-5
20	487	36337	-5
21	1762	38099	-5
22	190	38289	-5
23	1103	39392	-5
24	-455	38937	-4
25	1495	40433	-4
26	-167	40265	-2
27	997	40762	-1
28	-179	40583	1
29	717	41301	3
30	134	41435	6
31	138	41613	9
32	-326	41287	13

Figure 2.5-5.

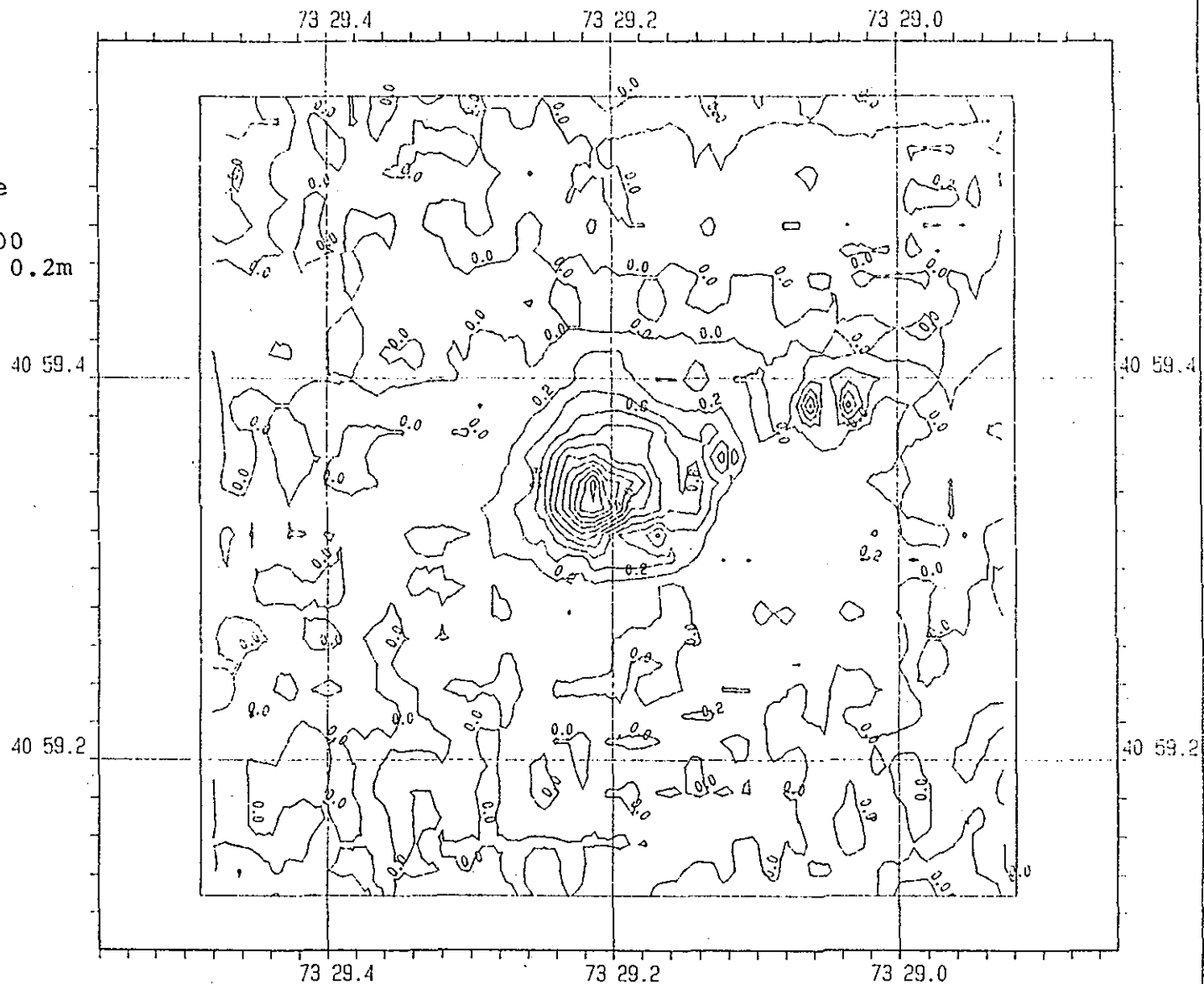
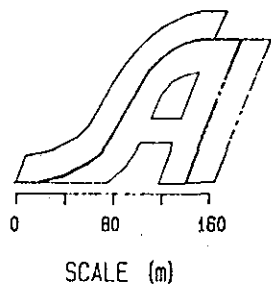


WLIS III

Contour Difference
Aug 83 - Jan 83
Chart Scale: 1/4000
Contour Interval: 0.2m
Datum: MLW

Figure 2.5-6.

Preliminary



Also present in most samples were large amounts of broken shell material. These characteristics gradually thinned out until the sediment appeared essentially natural at a distance of 200 meters from the center in any direction. An attempt was made to utilize the underwater TV system at this site, but bottom visibility limitations made this system ineffective.

Figure 2.5-7 is a graphic representation of the stations visited both for purposes of sediment sampling and REMOTS photographs. Table 2.5-2 is a listing of those sediment samples obtained at WLIS III.

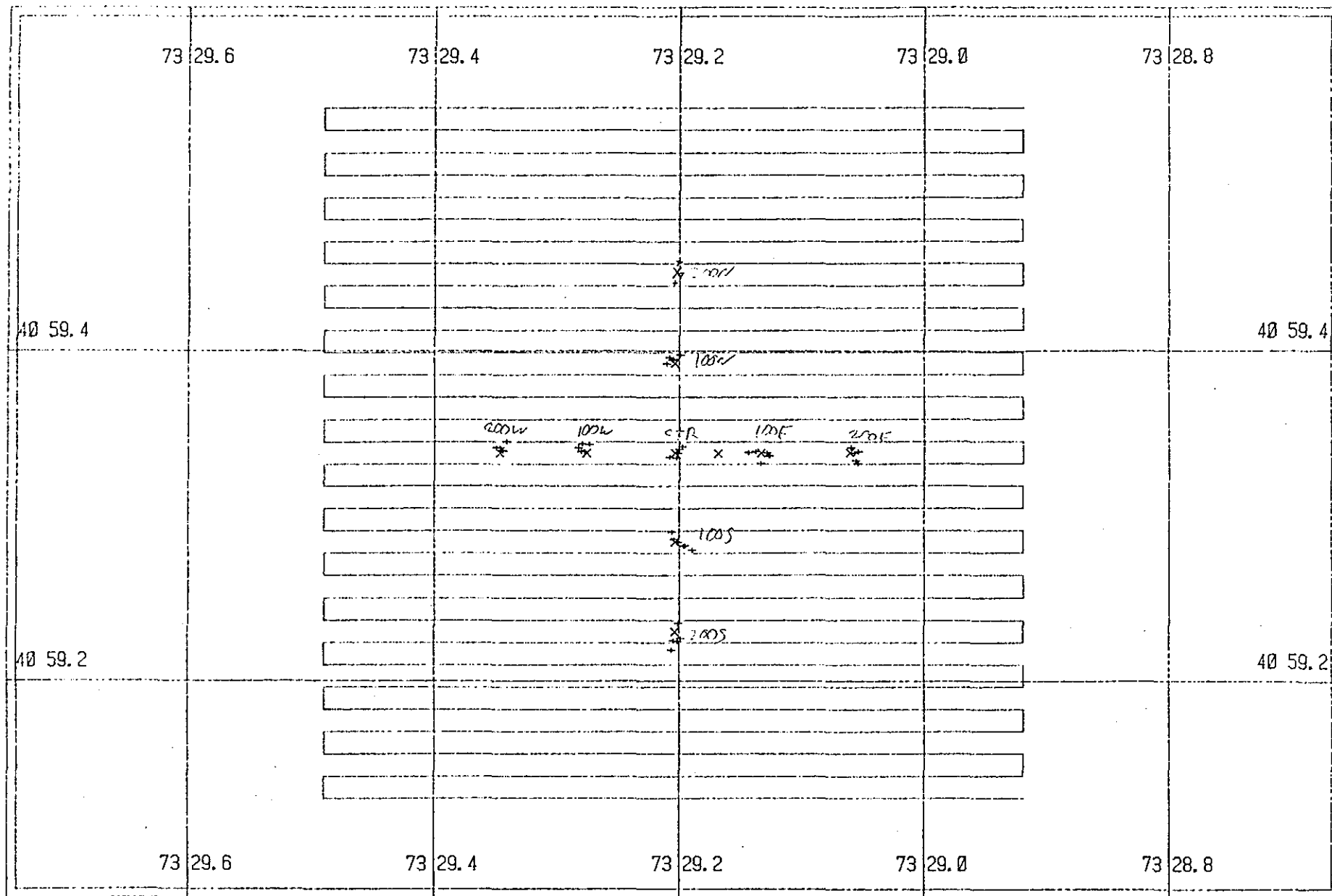
2.6 Cornfield Shoals Disposal Buoy Deployment

On 30 August, a separate SAI field team deployed an SAI designed taut wire moored disposal buoy at the Cornfield Shoals disposal site. The buoy is similar to those previously deployed at other Long Island Sound disposal sites and consists of a 6 foot in diameter steel disc supporting a 7 foot radar reflector equipped superstructure. The entire assembly is painted yellow and shows a flashing yellow light with a period of four seconds as required by Coast Guard and I.A.L.A. regulations. The buoy was successfully deployed in 182 feet of water at $41^{\circ}12.4'N$ by $72^{\circ}21.05'W$. The corresponding 9960 Loran-C coordinates for this position are 26277.2 by 43974.7.

Figure 2.5-7. REMOTS and Sediment Stations.

WLIS III JAN82

CHART SCALE: 1/4000



SEDIMENT SAMPLES AUG83

SAMPLE#	DISPOSAL SITE	LOCATION	TYPE	DATE
3323	WLIS-III	WLIS-III-ZOON-A	GS	08-24-83
3324	WLIS-III	WLIS-III-ZOON-A	HM	08-24-83
3325	WLIS-III	WLIS-III-ZOON-B	HM	08-24-83
3326	WLIS-III	WLIS-III-ZOON-C	HM	08-24-83
3327	WLIS-III	WLIS-III-100N-A	GS	08-24-83
3328	WLIS-III	WLIS-III-100N-A	HM	08-24-83
3329	WLIS-III	WLIS-III-100N-B	HM	08-24-83
3330	WLIS-III	WLIS-III-100N-C	HM	08-24-83
3331	WLIS-III	WLIS-III-CTR-A	GS	08-24-83
3332	WLIS-III	WLIS-III-CTR-A	HM	08-24-83
3333	WLIS-III	WLIS-III-CTR-B	HM	08-24-83
3334	WLIS-III	WLIS-III-CTR-C	HM	08-24-83
3335	WLIS-III	WLIS-III-100E-A	GS	08-24-83
3336	WLIS-III	WLIS-III-100E-A	HM	08-24-83
3337	WLIS-III	WLIS-III-100E-B	HM	08-24-83
3338	WLIS-III	WLIS-III-100E-C	HM	08-24-83
3339	WLIS-III	WLIS-III-200E-A	GS	08-24-83
3340	WLIS-III	WLIS-III-200E-A	HM	08-24-83
3341	WLIS-III	WLIS-III-200E-B	HM	08-24-83
3342	WLIS-III	WLIS-III-200E-C	HM	08-24-83
3343	WLIS-III	WLIS-III-ZOON-A	GS	08-25-83
3344	WLIS-III	WLIS-III-ZOON-A	HM	08-25-83
3345	WLIS-III	WLIS-III-ZOON-B	HM	08-25-83
3346	WLIS-III	WLIS-III-ZOON-C	HM	08-25-83
3347	WLIS-III	WLIS-III-100N-A	GS	08-25-83
3348	WLIS-III	WLIS-III-100N-A	HM	08-25-83
3349	WLIS-III	WLIS-III-100N-B	HM	08-25-83
3350	WLIS-III	WLIS-III-100N-C	HM	08-25-83
3351	WLIS-III	WLIS-III-100S-A	GS	08-25-83
3352	WLIS-III	WLIS-III-100S-A	HM	08-25-83
3353	WLIS-III	WLIS-III-100S-B	HM	08-25-83
3354	WLIS-III	WLIS-III-100S-C	HM	08-25-83
3355	WLIS-III	WLIS-III-200S-A	GS	08-25-83
3356	WLIS-III	WLIS-III-200S-A	HM	08-25-83
3357	WLIS-III	WLIS-III-200S-B	HM	08-25-83
3358	WLIS-III	WLIS-III-200S-C	HM	08-25-83
3359	WLIS-REFERENCE	WLIS-REF-A	GS	08-25-83
3360	WLIS-REFERENCE	WLIS-REF-A	HM	08-25-83
3361	WLIS-REFERENCE	WLIS-REF-B	HM	08-25-83
3362	WLIS-REFERENCE	WLIS-REF-C	HM	08-25-83

Table 2.5-2.