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THE REPUBLIC OF VENEZUELA
MINISTRY OF ENVIRONMENT
AND NATURAL RESOURCES
DGSPROA - LNH

JAPAN INTERNATIONAL
COOPERATION AGENCY

**STUDY
ON
COMPREHENSIVE IMPROVEMENT
OF
THE APURE RIVER BASIN**

FINAL REPORT

**VOLUME IV
DATA BOOK I**

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NOVEMBER 1993

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TOKYO, JAPAN**

This report consist of the following five volumes.

VOLUME I : EXECUTIVE SUMMARY

VOLUME II : MAIN REPORT

VOLUME III : SUPPORTING REPORT

PART-A : TOPOGRAPHIC SURVEY

PART-B : GEOLOGICAL AND GEOMORPHOLOGICAL
STUDIES

PART-C : AGRICULTURE AND LAND USE SURVEY

PART-D : HYDROLOGICAL AND HYDRAULIC STUDIES

PART-E : STUDY ON CHANNEL STABILIZATION
FOR NAVIGATION

PART-F : STUDY ON FLOOD MANAGEMENT

PART-G : CONSTRUCTION PLAN AND COST ESTIMATE

PART-H : SOCIO-ECONOMY AND PRELIMINARY
PROJECT EVALUATION

PART-I : ENVIRONMENTAL SURVEY

VOLUME IV : DATA BOOK I

VOLUME V : DATA BOOK II

The cost estimate was made based on February 1993 price level and expresses in Bolivares according to the following exchange rate.

US\$ 1.00 = Bs. 82.00 = ¥ 119.72

(As of February 17, 1993)



PART I

TOPOGRAPHIC SURVEY RESULT

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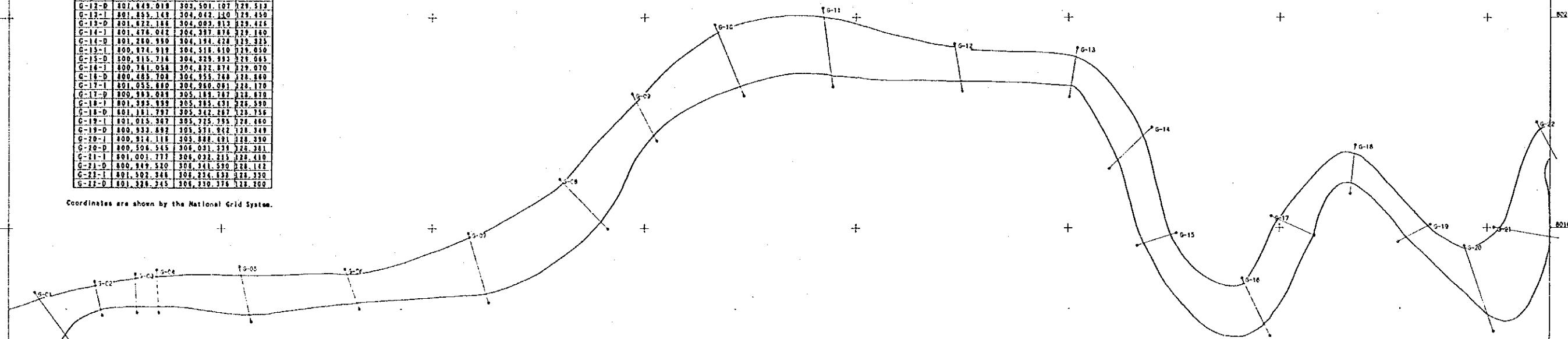
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PLATE NO.	TITLE
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122	CROSS SECTION, CAMAGUAN (6/11)
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137	CROSS SECTION, ADDITIONAL AREA (9/10)
138	CROSS SECTION, ADDITIONAL AREA (10/10)

Result of control point survey Guasdualito site (1)

Station	Northing	Easting	Elevat
G-01-I	800,486,255	299,120,881	110,580
G-01-D	800,482,381	299,291,361	110,727
G-02-I	800,748,249	299,401,343	111,840
G-02-D	800,504,047	299,441,087	110,584
G-03-I	800,784,317	299,597,883	110,650
G-03-D	800,533,098	299,603,846	110,672
G-04-I	800,802,491	299,695,839	110,580
G-04-D	800,584,337	299,705,927	110,824
G-05-I	800,818,398	299,848,224	110,500
G-05-D	800,555,724	299,149,328	110,788
G-06-I	800,807,843	299,387,718	110,270
G-06-D	800,417,037	299,451,338	110,416
G-07-I	800,974,764	299,171,003	110,250
G-07-D	800,446,377	299,287,337	110,184
G-08-I	801,232,713	299,596,822	110,180
G-08-D	800,937,498	299,874,138	110,014
G-09-I	801,637,685	299,840,308	110,910
G-09-D	801,414,159	299,857,798	110,837
G-10-I	801,965,024	299,323,458	110,920
G-10-D	801,624,150	299,481,710	110,812
G-11-I	802,044,240	299,841,175	110,840
G-11-D	801,576,542	299,830,341	110,824
G-12-I	801,872,873	299,483,855	110,480
G-12-D	801,849,019	299,501,107	110,513
G-13-I	801,855,148	299,042,140	110,450
G-13-D	801,822,188	299,009,812	110,416
G-14-I	801,876,042	299,387,816	110,180
G-14-D	801,280,980	299,191,424	110,385
G-15-I	800,874,919	299,518,610	110,050
G-15-D	800,915,716	299,829,932	110,065
G-16-I	800,781,058	299,328,874	110,070
G-16-D	800,483,708	299,553,348	110,180
G-17-I	801,055,880	299,860,081	110,170
G-17-D	800,983,049	299,189,787	110,670
G-18-I	801,392,939	299,383,431	110,580
G-18-D	801,181,797	299,342,887	110,756
G-19-I	801,015,387	299,725,293	110,480
G-19-D	800,933,882	299,371,942	110,349
G-20-I	800,914,118	299,388,431	110,330
G-20-D	800,506,545	299,031,238	110,381
G-21-I	801,001,772	299,031,238	110,410
G-21-D	800,949,520	299,341,120	110,142
G-22-I	801,502,344	299,324,132	110,330
G-22-D	801,328,245	299,310,376	110,200

Coordinates are shown by the National Grid System.



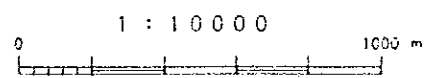
THE REPUBLIC OF VENEZUELA
 STUDY ON COMPREHENSIVE IMPROVEMENT
 OF THE APURE RIVER BASIN

LOCATION MAP
 OF CROSS SECTION

GUASDUALITO 17/19

PLAN NO.	17	SCALE	H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1992		

JICA JAPAN INTERNATIONAL COOPERATION AGENCY

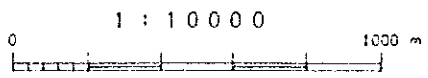
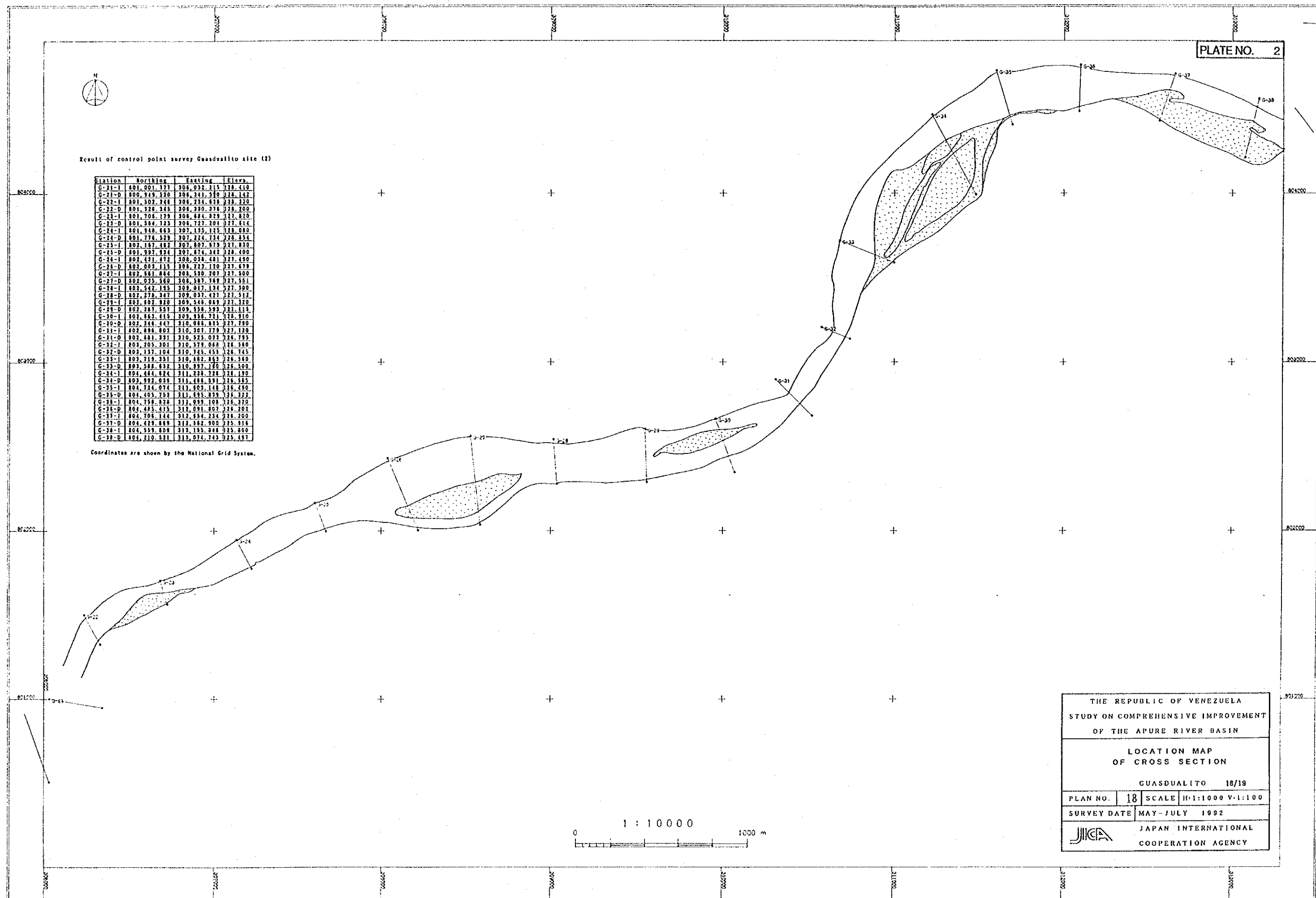




Result of control point survey Guasdualito site (2)

Station	Northing	Easting	Eleva.
G-21-I	801,001,121	304,032,215	118,410
G-21-D	800,949,320	304,341,540	118,142
G-22-I	801,507,748	304,234,618	118,120
G-22-D	801,328,345	304,230,376	118,200
G-23-I	801,706,179	304,484,879	117,810
G-23-D	801,594,123	304,727,204	117,814
G-24-I	801,948,663	307,193,145	118,080
G-24-D	801,756,529	307,224,724	118,354
G-25-I	802,187,482	307,807,513	117,830
G-25-D	801,997,924	307,874,342	118,490
G-26-I	802,431,472	308,038,481	117,450
G-26-D	802,003,115	308,227,110	117,679
G-27-I	802,661,884	308,530,207	117,500
G-27-D	802,035,569	308,587,789	117,561
G-28-I	802,542,155	309,017,134	117,300
G-28-D	802,278,347	309,037,427	117,312
G-29-I	802,802,820	309,546,069	117,320
G-29-D	802,281,557	309,558,593	117,114
G-10-I	802,562,415	309,156,711	115,210
G-10-D	802,366,447	310,088,835	117,750
G-11-I	802,886,802	310,307,779	117,120
G-11-D	802,681,331	310,325,033	116,793
G-12-I	803,205,301	310,579,048	116,560
G-12-D	802,137,104	310,765,453	116,745
G-13-I	803,719,331	310,682,863	116,360
G-13-D	803,588,832	310,887,120	115,300
G-14-I	804,464,824	311,228,128	114,120
G-14-D	803,892,033	311,488,391	115,583
G-15-I	804,724,074	311,609,148	115,450
G-15-D	804,405,751	311,695,338	116,322
G-16-I	804,758,824	312,033,108	116,320
G-16-D	804,485,415	312,091,807	116,201
G-17-I	804,706,144	312,634,234	116,200
G-17-D	804,429,869	312,582,900	115,816
G-18-I	804,559,809	313,155,948	115,800
G-18-D	804,210,331	313,074,743	115,497

Coordinates are shown by the National Grid System.



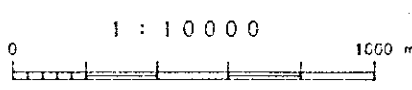
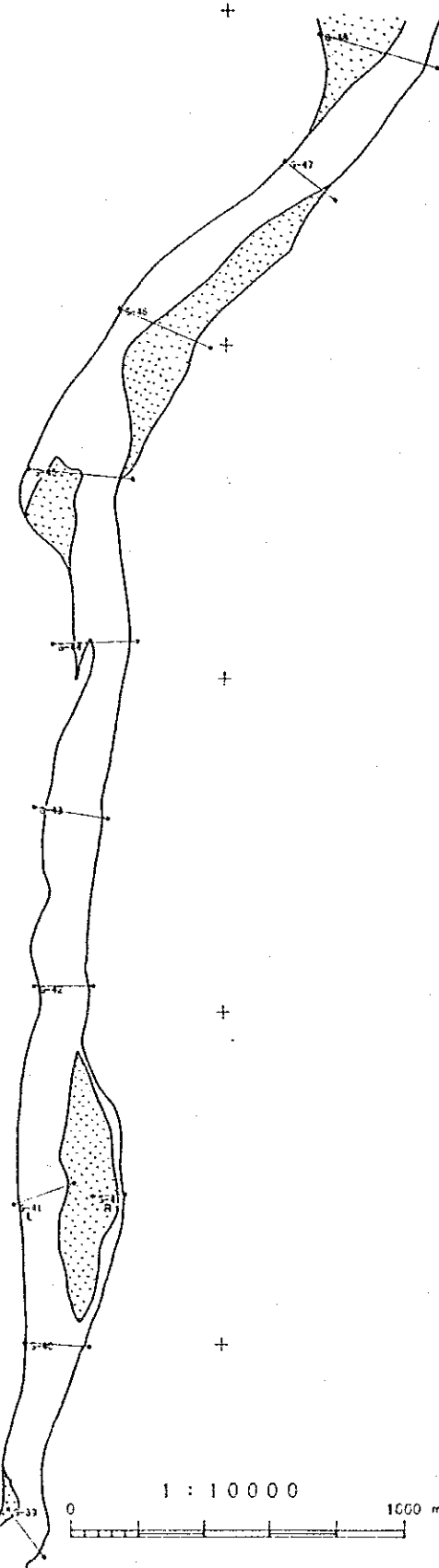
THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT			
OF THE APURE RIVER BASIN			
LOCATION MAP			
OF CROSS SECTION			
GUASDUALITO 18/19			
PLAN NO.	18	SCALE	H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1992		
		JAPAN INTERNATIONAL COOPERATION AGENCY	



Result of control point survey Guasualito site (3)

Station	Northing	Easting	Eleva.
G-34-I	804,494.824	311,228.728	218.190
G-34-D	803,995.039	311,488.591	218.343
G-35-I	804,724.074	311,407.148	226.180
G-35-D	804,405.753	311,654.828	226.322
G-36-I	804,738.826	312,059.108	226.320
G-36-D	804,483.413	312,051.801	226.202
G-37-I	804,708.144	312,651.131	226.200
G-37-D	804,429.489	312,362.800	225.818
G-38-I	804,559.009	313,155.848	225.802
G-38-D	804,210.531	313,074.742	225.497
G-39-I	804,503.394	313,364.439	225.470
G-39-D	804,238.424	313,421.643	225.483
G-40-I	805,004.344	313,410.643	225.470
G-40-D	804,382.481	313,389.703	225.461
G-41-B	805,443.594	313,407.783	225.870
G-41-A	805,451.288	313,705.001	225.457
G-41-D	805,420.600	313,378.334	225.460
G-41-C	805,483.787	313,551.284	225.725
G-42-I	806,077.063	313,424.332	225.110
G-42-D	804,077.653	313,608.123	225.546
G-43-I	806,814.714	313,431.917	225.140
G-43-D	804,528.342	313,648.414	225.396
G-44-I	807,102.763	313,483.483	224.760
G-44-D	807,111.863	313,721.890	224.159
G-45-I	807,828.923	313,410.172	224.830
G-45-D	807,587.898	313,218.092	224.324
G-46-I	808,110.019	313,075.321	224.580
G-46-D	807,891.214	313,851.387	224.107
G-47-I	808,548.707	314,124.527	224.320
G-47-D	808,433.561	314,325.214	224.421
G-48-I	808,928.893	314,215.742	224.710
G-48-D	808,827.184	314,437.384	224.575

Coordinates are shown by the National Grid System.



THE REPUBLIC OF VENEZUELA
STUDY ON COMPREHENSIVE IMPROVEMENT
OF THE APURE RIVER BASIN

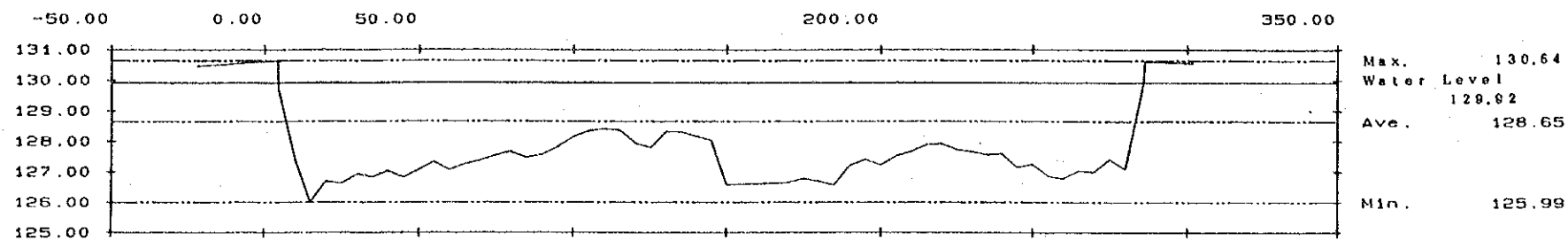
LOCATION MAP
OF CROSS SECTION

GUASUALITO 19/19

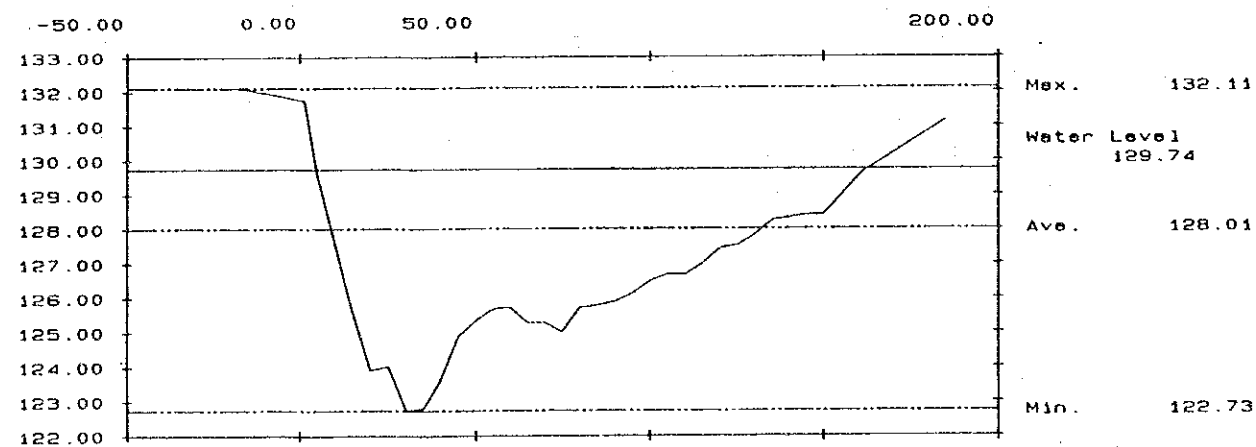
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SURVEY DATE	MAY-JULY 1992		

JICA JAPAN INTERNATIONAL COOPERATION AGENCY

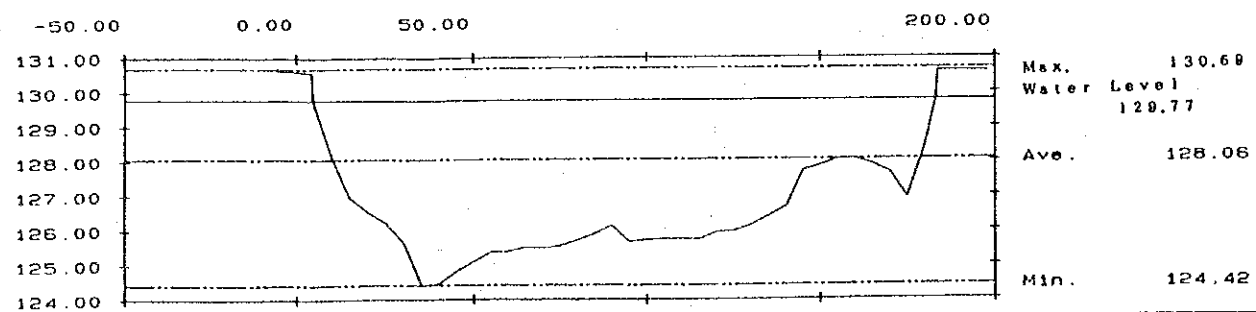
SECTION 1



SECTION 2

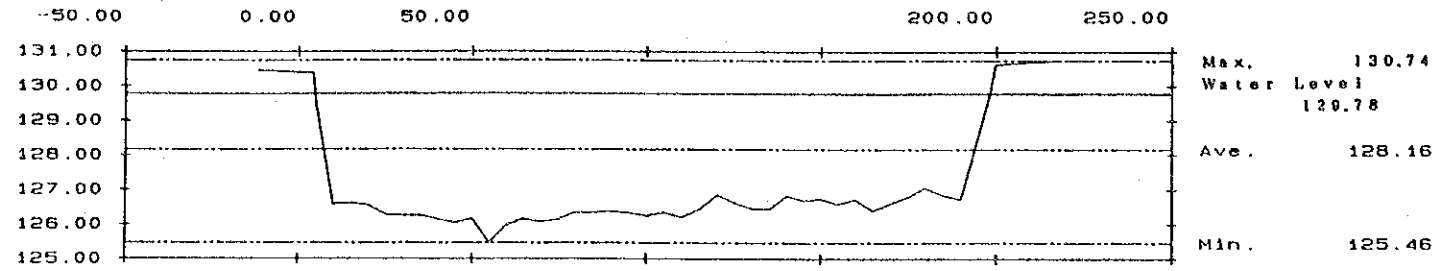


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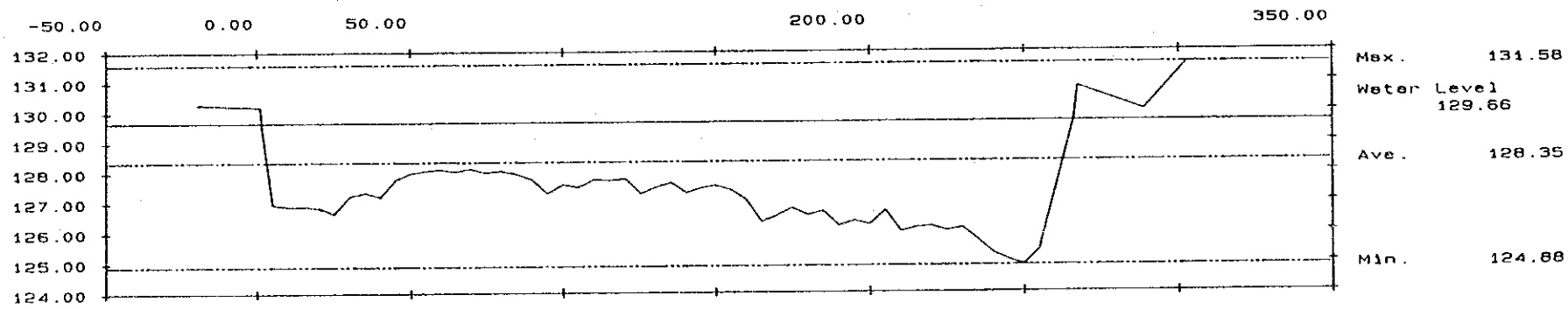


THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT			
OF THE APURE RIVER BASIN			
CROSS SECTION			
GUASDUALITO 1/19			
PLAN NO.	1	SCALE	H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1992		
JICA		JAPAN INTERNATIONAL COOPERATION AGENCY	

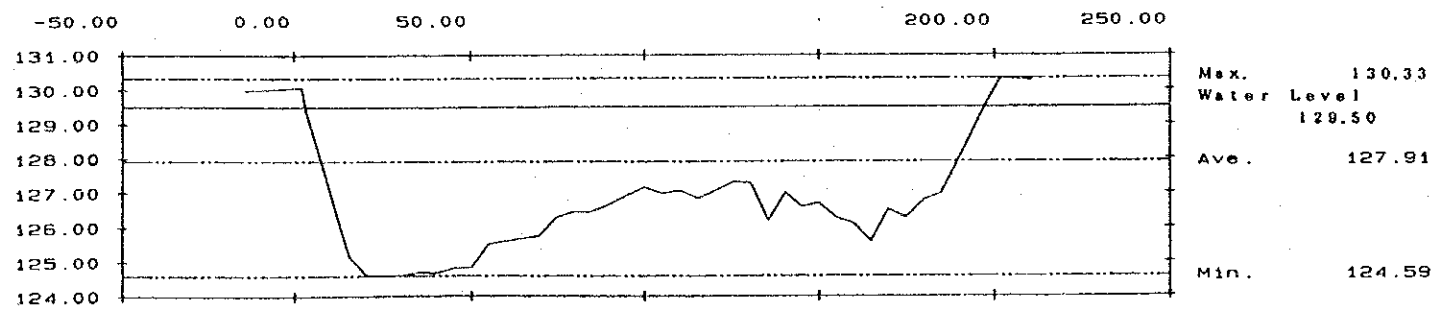
SECTION 4




SECTION 5

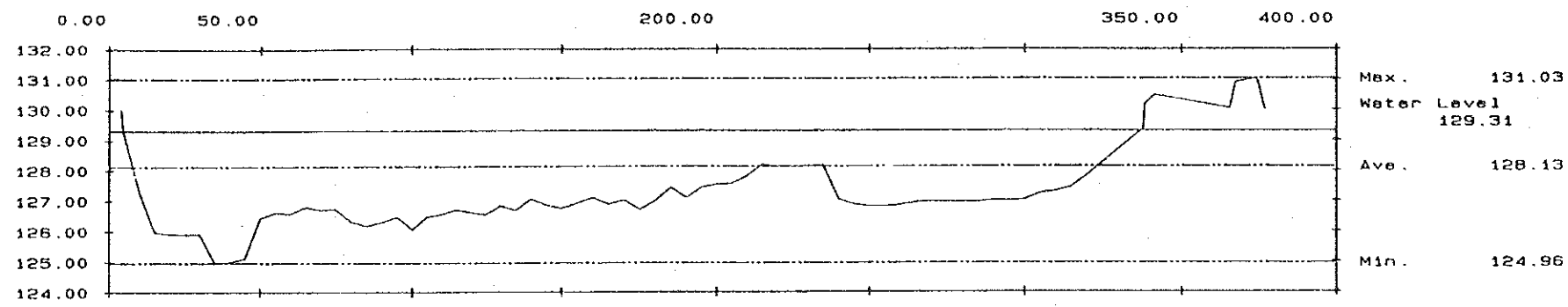


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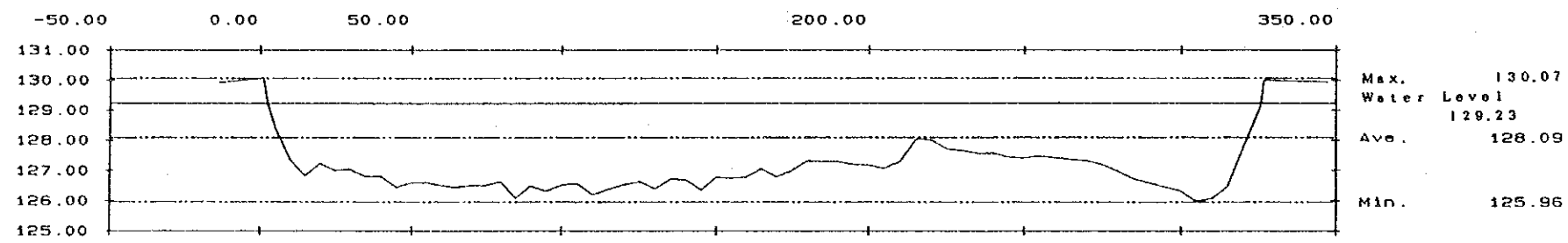


THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT			
OF THE APURE RIVER BASIN			
CROSS SECTION			
GUASDUALITO 2/19			
PLAN NO.	2	SCALE	H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1992		
		JAPAN INTERNATIONAL	
COOPERATION AGENCY			

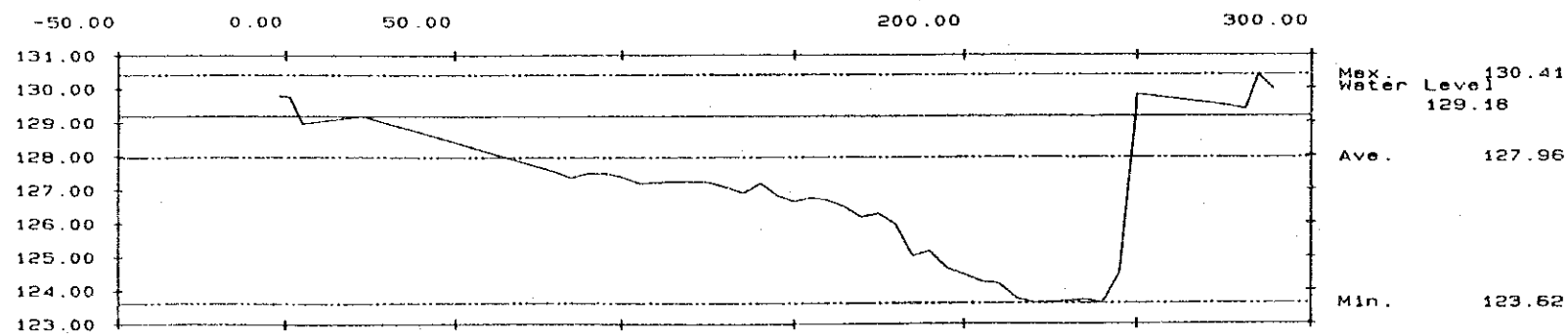
SECTION 7



SECTION 8

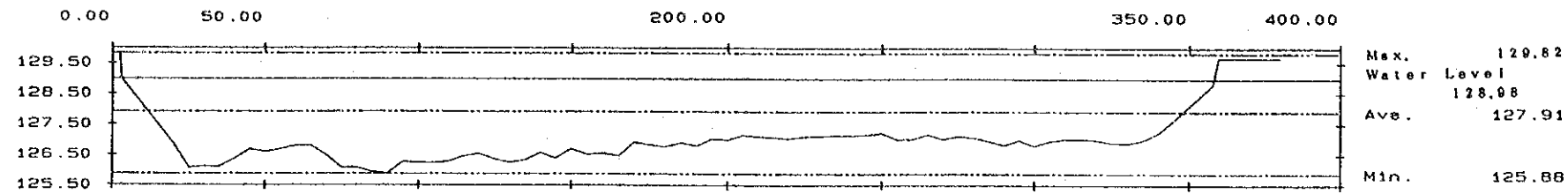


SECTION 9

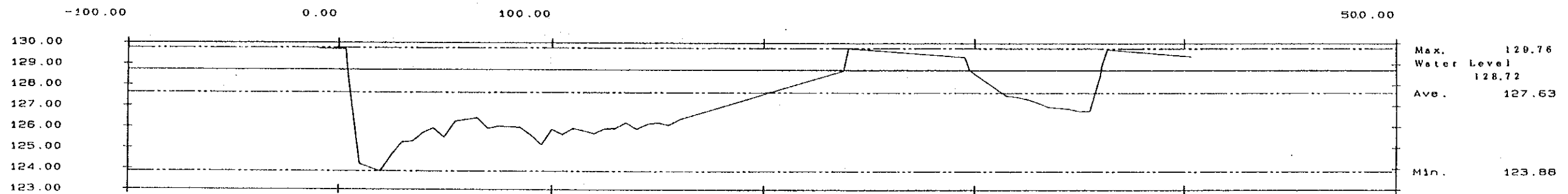


THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT			
OF THE APURE RIVER BASIN			
CROSS SECTION			
GUASDUALITO 3/18			
PLAN NO.	3	SCALE	H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1992		
JICA		JAPAN INTERNATIONAL COOPERATION AGENCY	

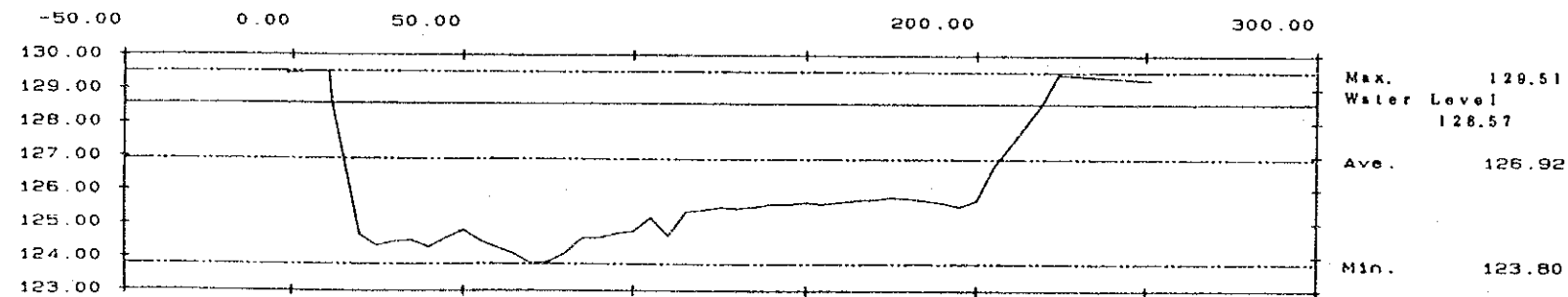
SECTION 10




SECTION 11

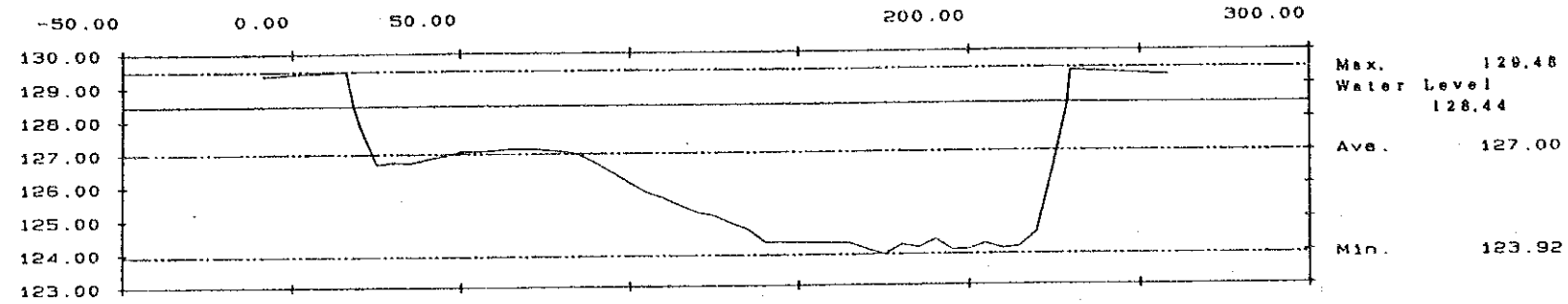


SECTION 12

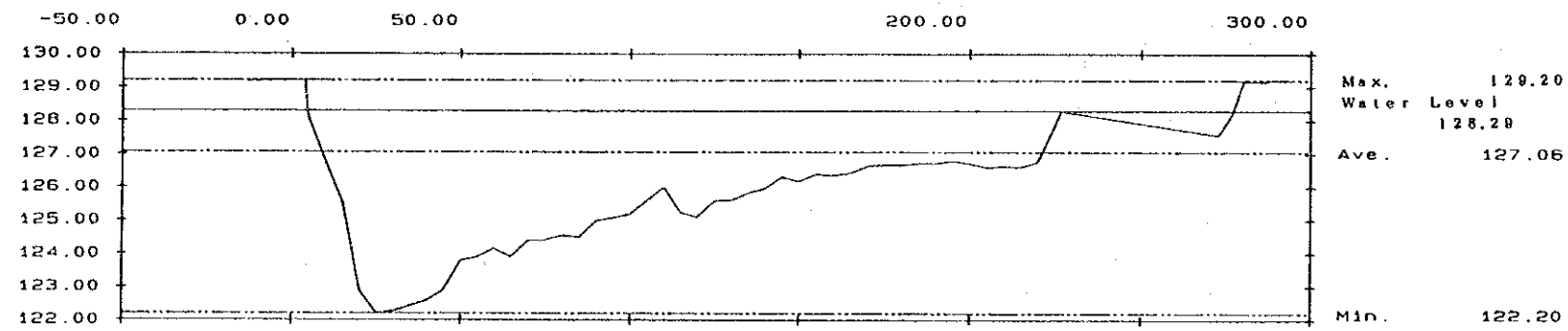


THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT			
OF THE APURE RIVER BASIN			
CROSS SECTION			
GUASDUALITO 4/18			
PLAN NO.	4	SCALE	H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1992		
		JAPAN INTERNATIONAL	
COOPERATION AGENCY			

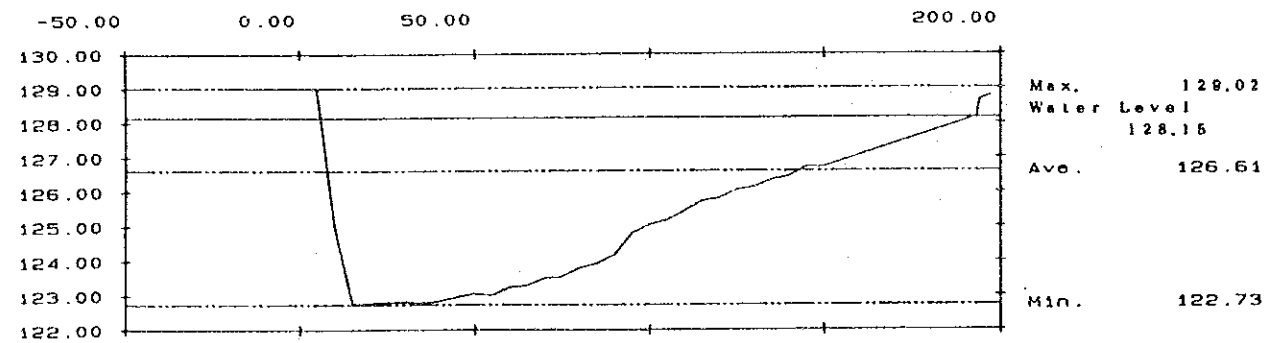
SECTION 13



SECTION 14

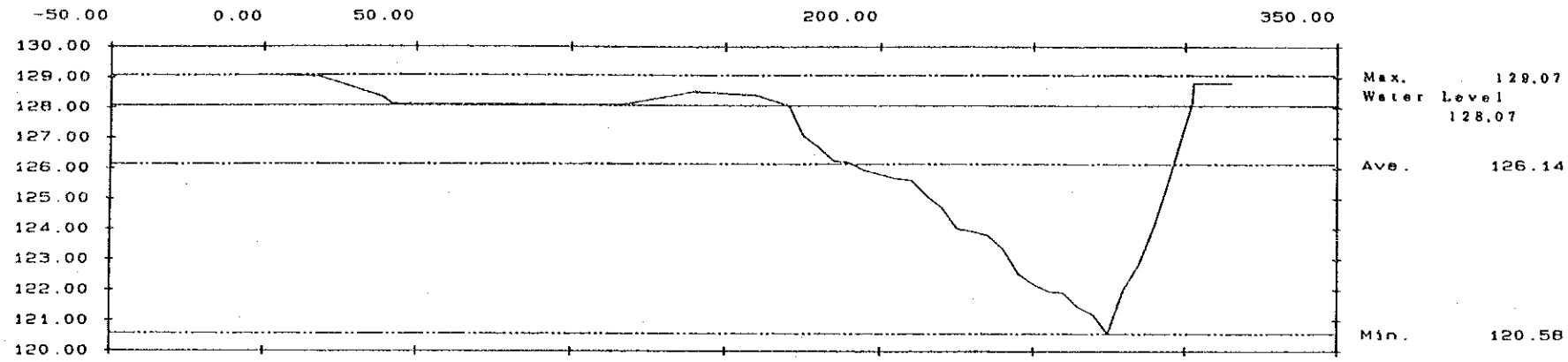


SECTION 15

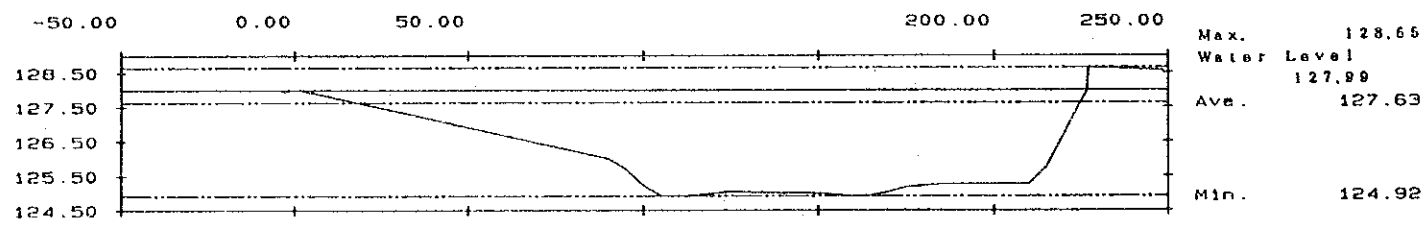


THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT			
OF THE APURE RIVER BASIN			
CROSS SECTION			
GUASDUALITO 5/19			
PLAN NO.	5	SCALE	H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1992		
JICA		JAPAN INTERNATIONAL COOPERATION AGENCY	

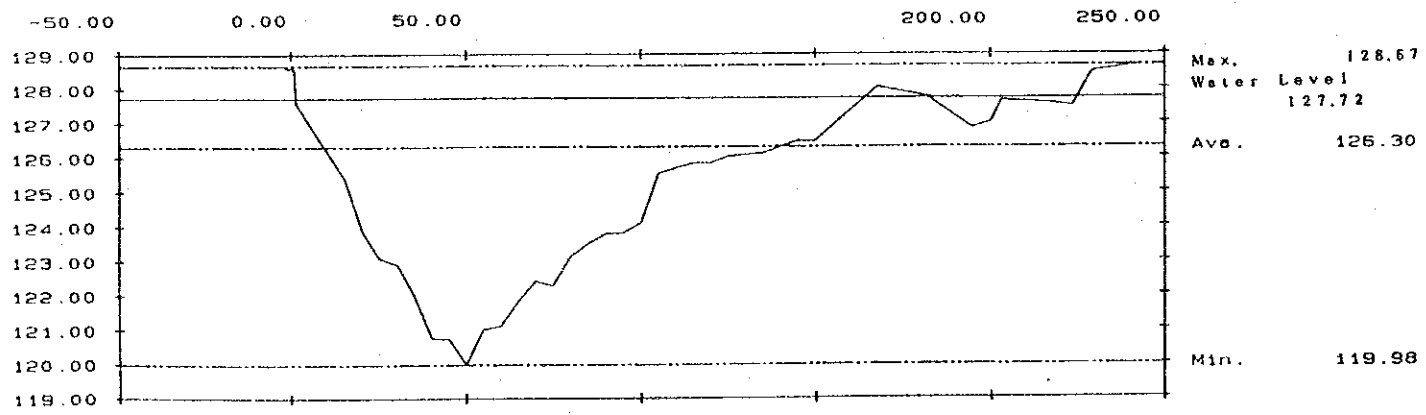
SECTION 16



SECTION 17

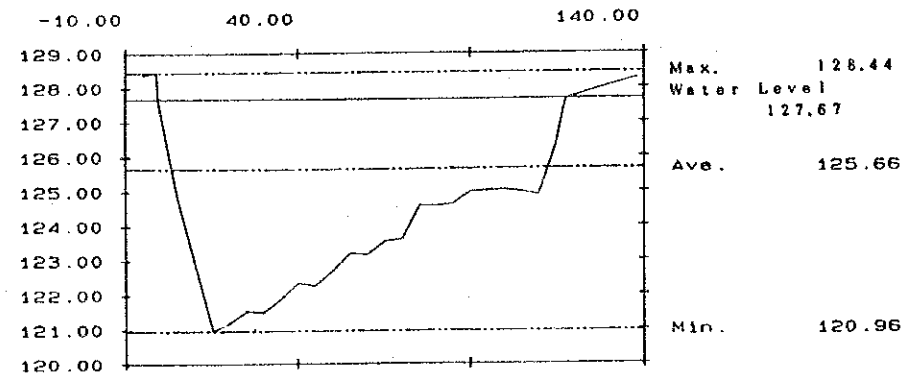


SECTION 18

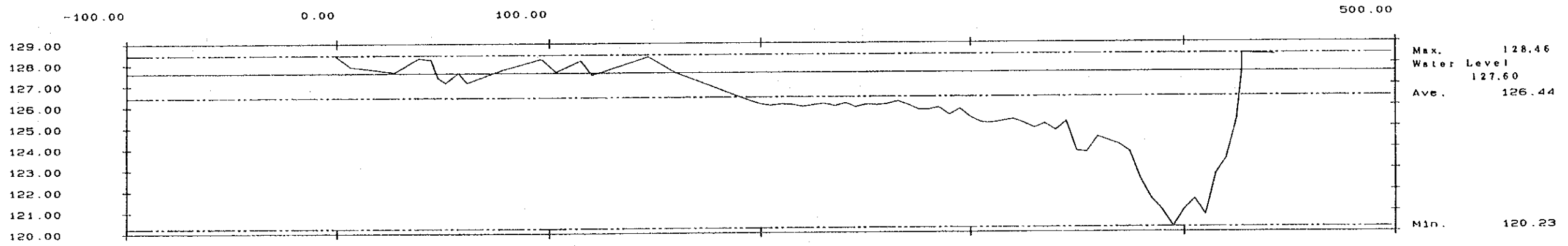


THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT			
OF THE APURE RIVER BASIN			
CROSS SECTION			
GUASDUALITO 6/18			
PLAN NO.	6	SCALE	H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1992		
JICA		JAPAN INTERNATIONAL COOPERATION AGENCY	

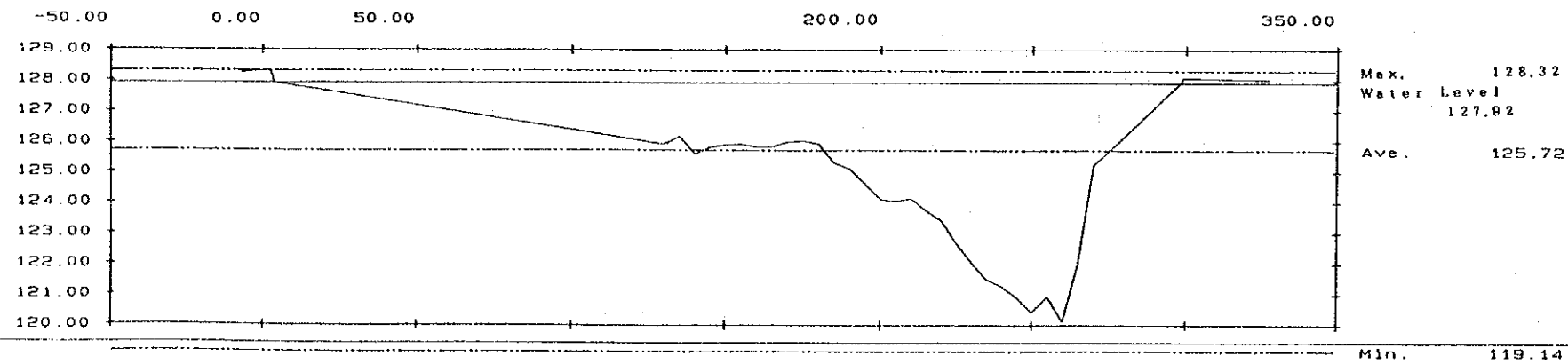
SECTION 19




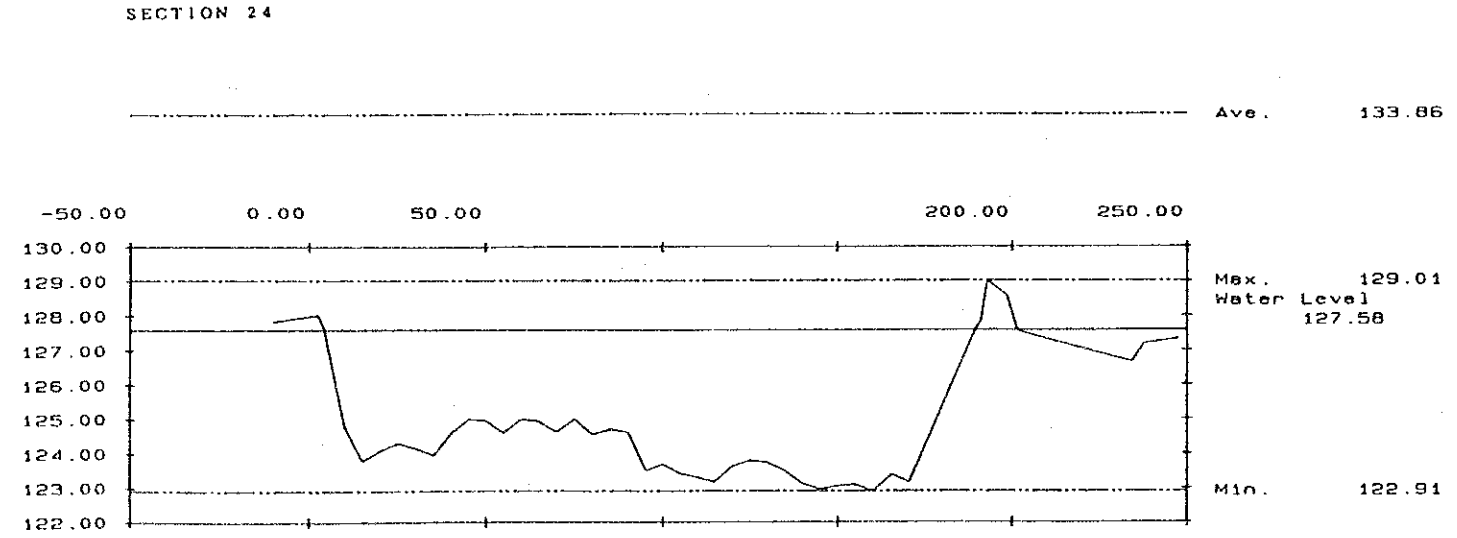
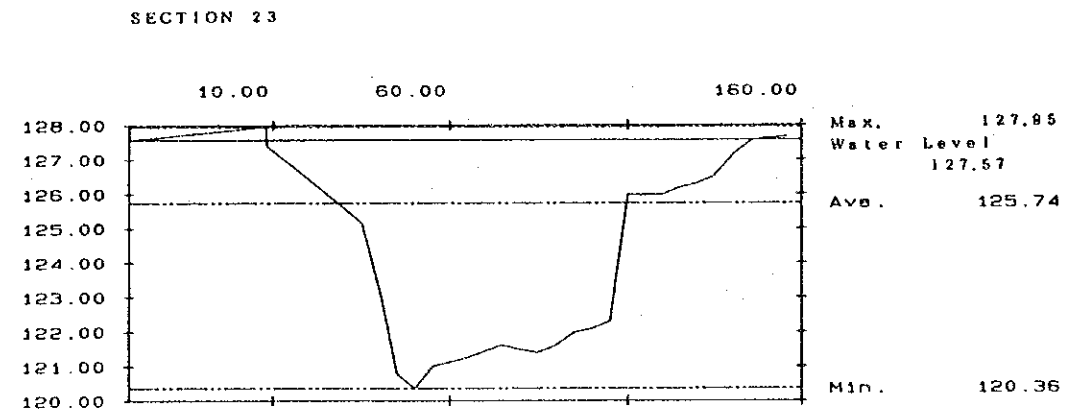
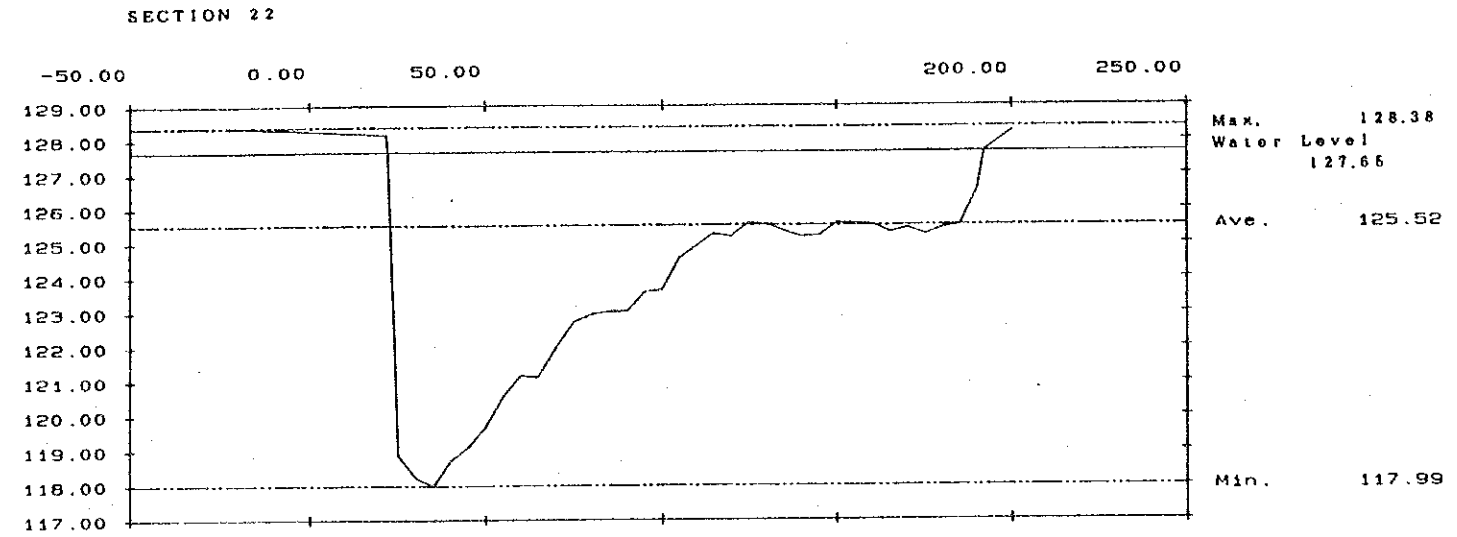
SECTION 20



SECTION 21

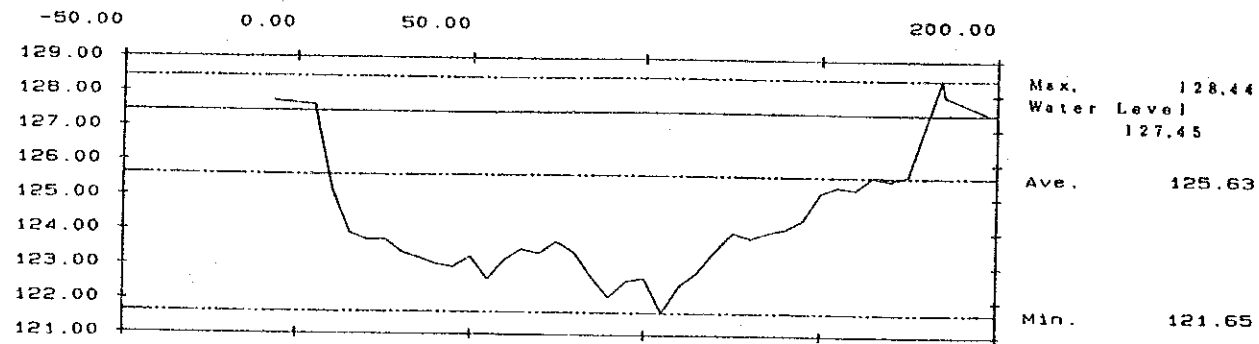


THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT			
OF THE APURE RIVER BASIN			
CROSS SECTION			
GUASDUALITO 7/18			
PLAN NO.	7	SCALE	H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1992		
		JAPAN INTERNATIONAL	
COOPERATION AGENCY			

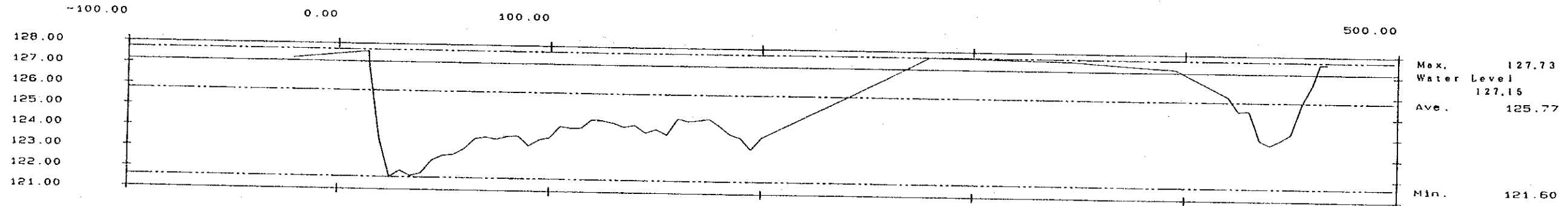


THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT			
OF THE APURE RIVER BASIN			
CROSS SECTION			
GUASDUALITO 8/19			
PLAN NO.	8	SCALE	H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1992		
		JAPAN INTERNATIONAL COOPERATION AGENCY	

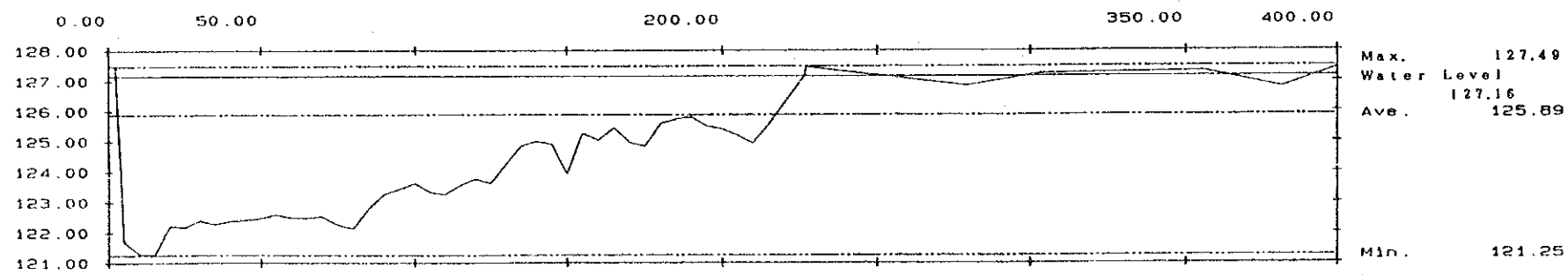
SECTION 25



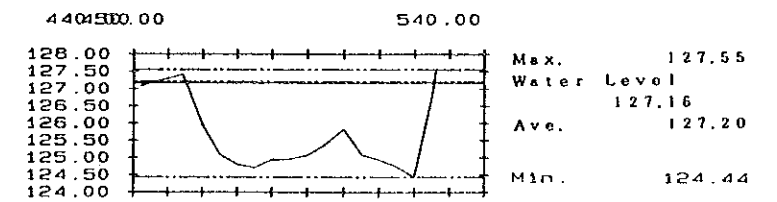
SECTION 26



SECTION 27 (LEFT)

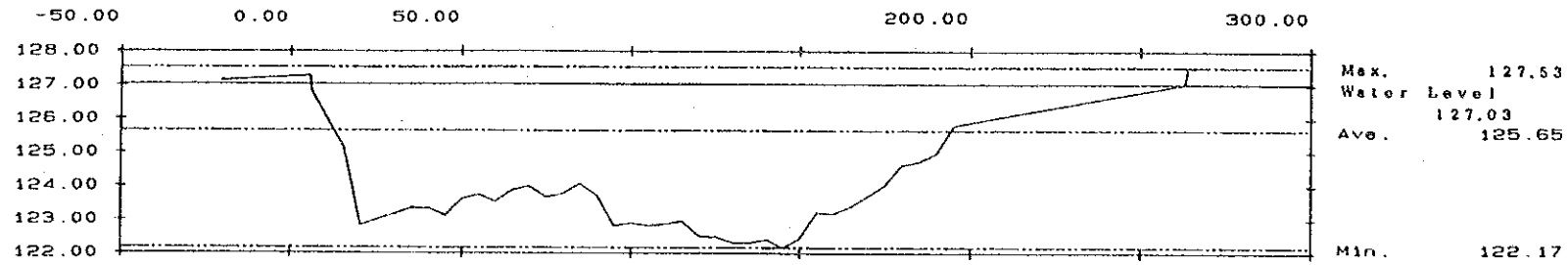


SECTION 27 (RIGHT)

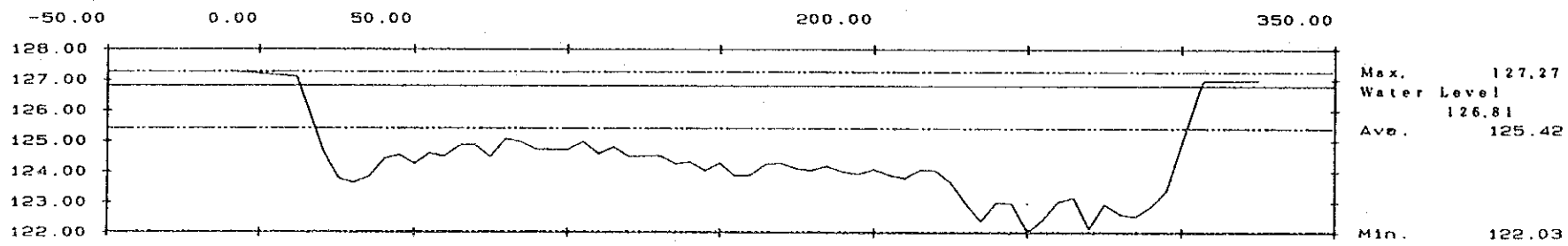


THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT OF THE APURE RIVER BASIN			
CROSS SECTION			
GUASDUALITO 9/18			
PLAN NO.	9	SCALE	H:1:1000 V:1:100
SURVEY DATE		MAY-JULY 1992	
JICA		JAPAN INTERNATIONAL COOPERATION AGENCY	

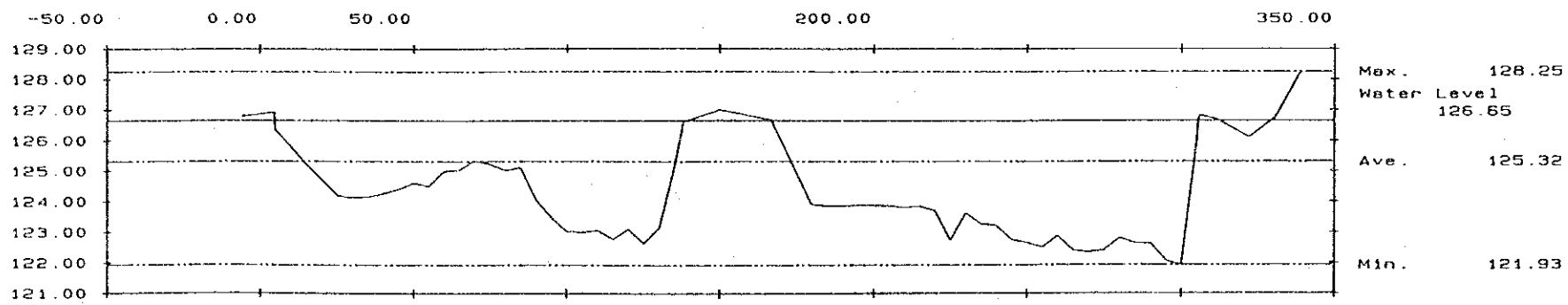
SECTION 28



SECTION 29

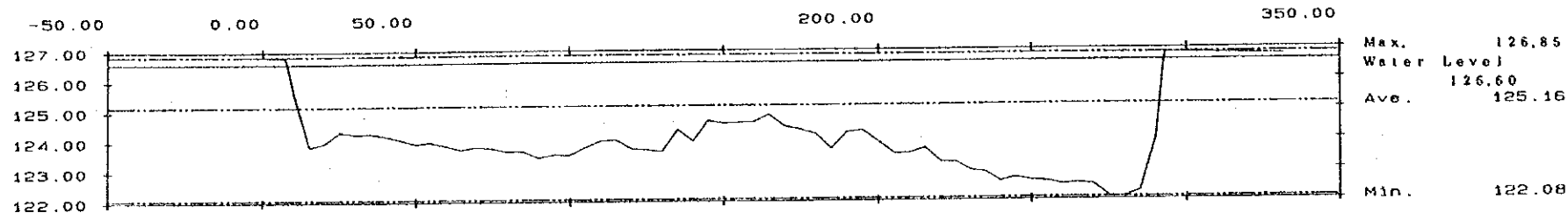


SECTION 30

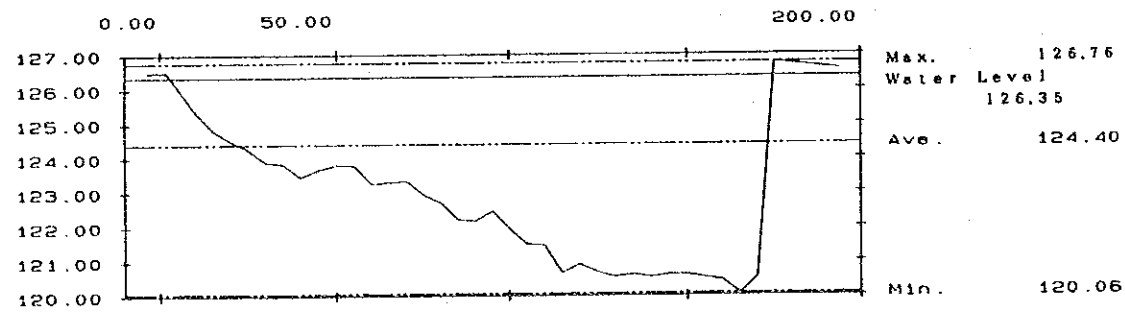


THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT			
OF THE APURE RIVER BASIN			
CROSS SECTION			
GUASDUALITO 10/19			
PLAN NO.	10	SCALE	H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1992		
JICA		JAPAN INTERNATIONAL	
COOPERATION AGENCY			

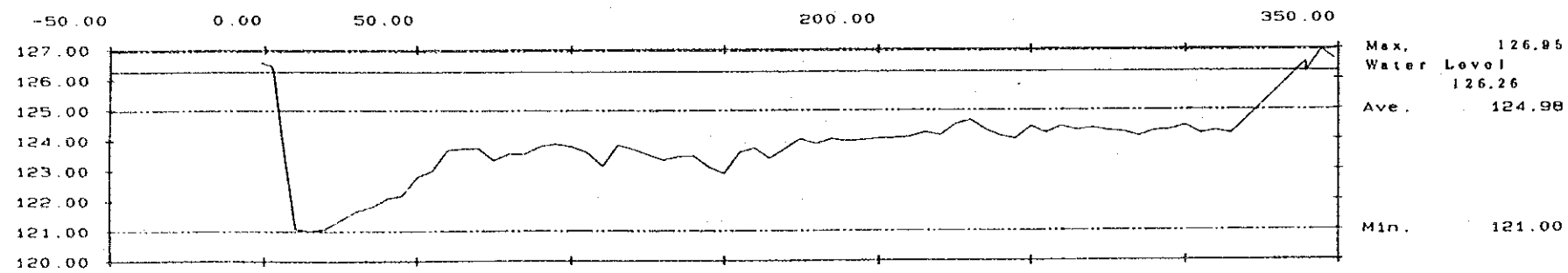
SECTION 31



SECTION 32

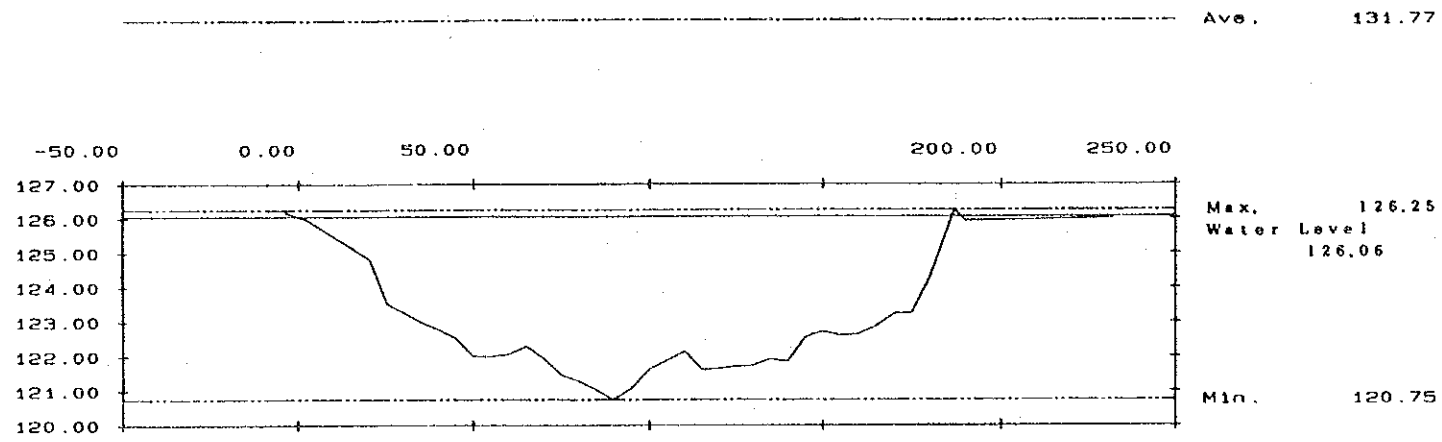


SECTION 33

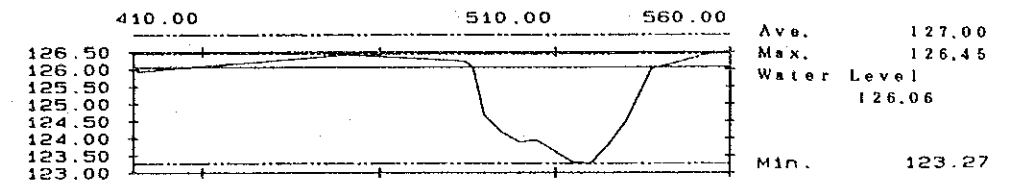


THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT			
OF THE APURE RIVER BASIN			
CROSS SECTION			
GUASDUALITO 11/18			
PLAN NO.	11	SCALE	H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1992		
JICA		JAPAN INTERNATIONAL COOPERATION AGENCY	

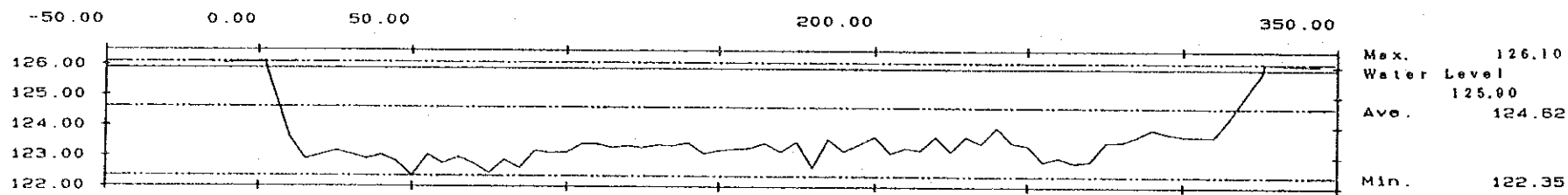
SECTION 34 (LEFT)



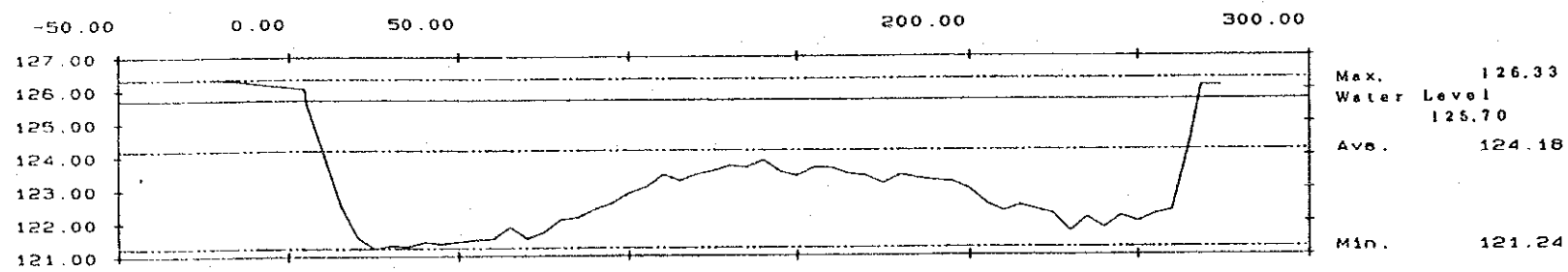
SECTION 34 (RIGHT)



SECTION 35

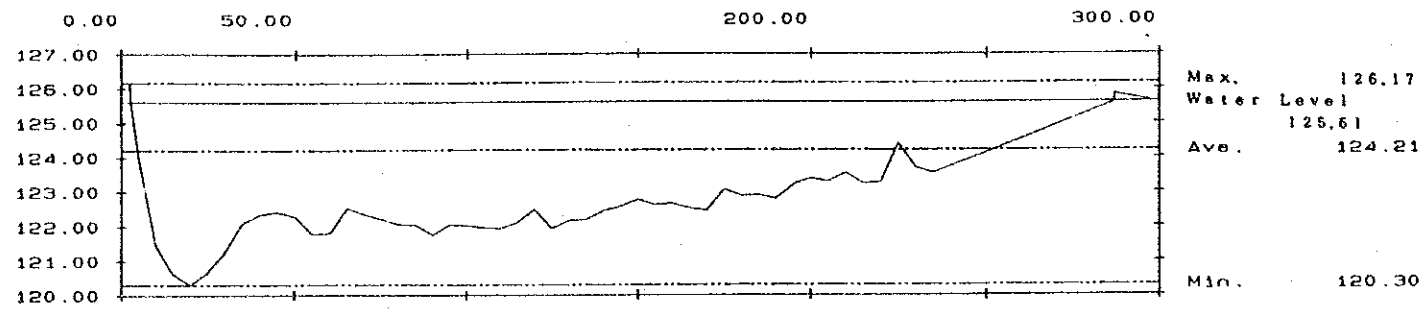


SECTION 36

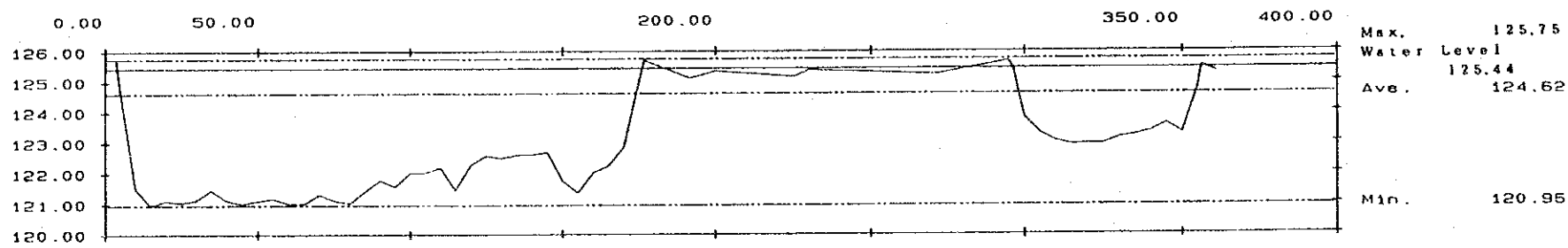


THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT			
OF THE APURE RIVER BASIN			
CROSS SECTION			
GUASDUALITO 12/18			
PLAN NO.	12	SCALE	H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1992		
JICA		JAPAN INTERNATIONAL	
COOPERATION AGENCY			

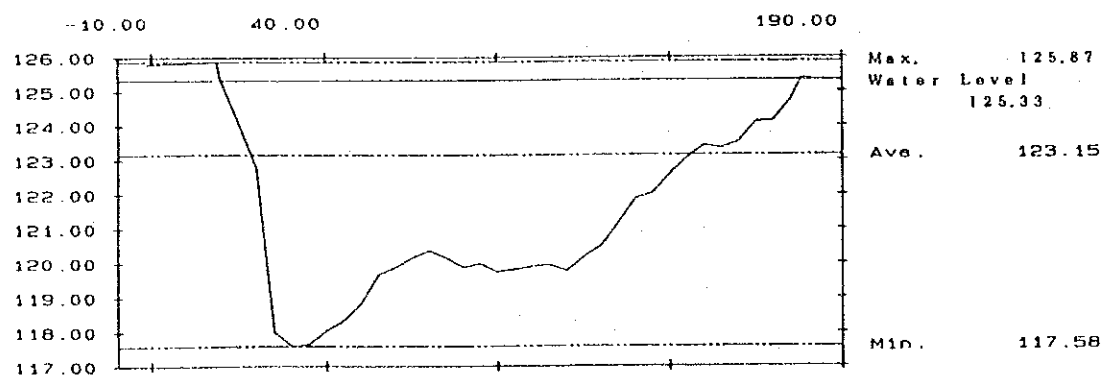
SECTION 37



SECTION 38

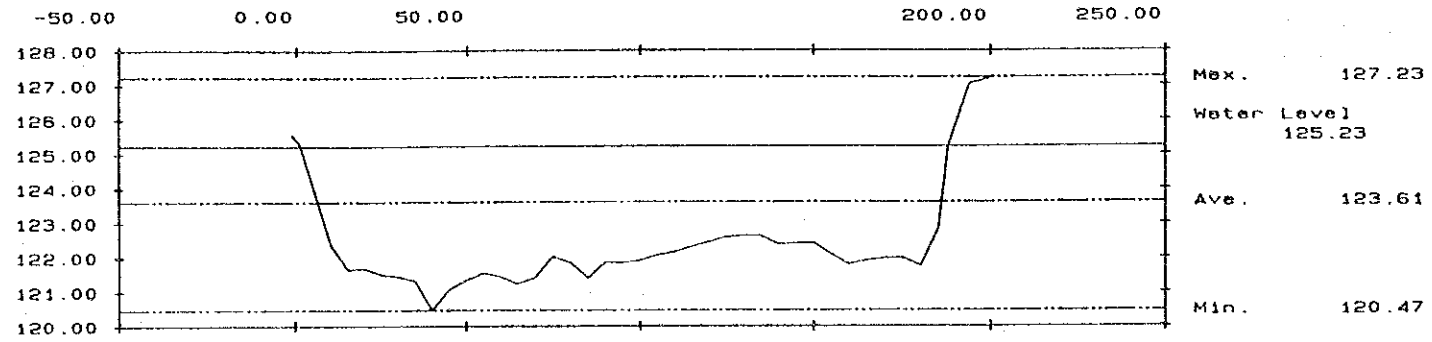


SECTION 39

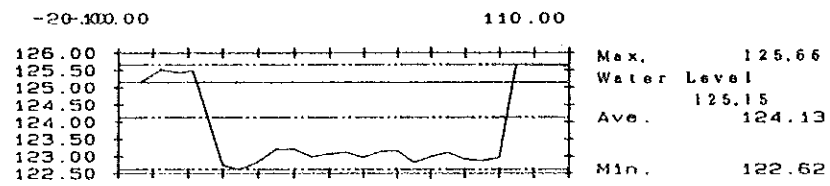


THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT			
OF THE APURE RIVER BASIN			
CROSS SECTION			
GUASDUALITO 13/19			
PLAN NO.	13	SCALE	H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1992		
JICA		JAPAN INTERNATIONAL	
COOPERATION AGENCY			

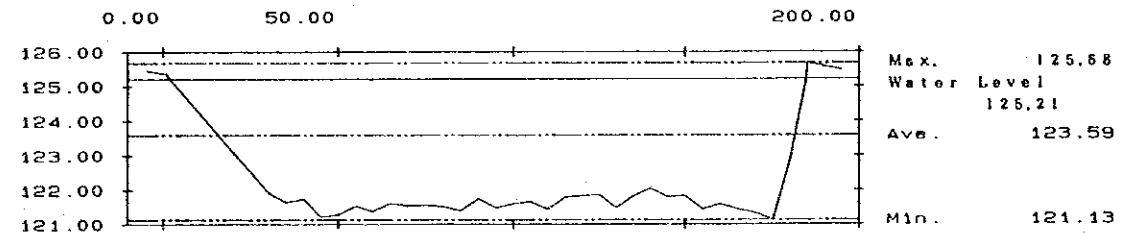
SECTION 40



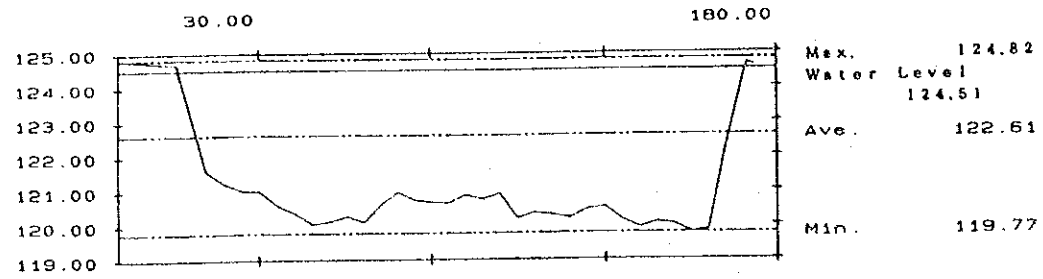
SECTION 41 (LEFT)




SECTION 41 (RIGHT)

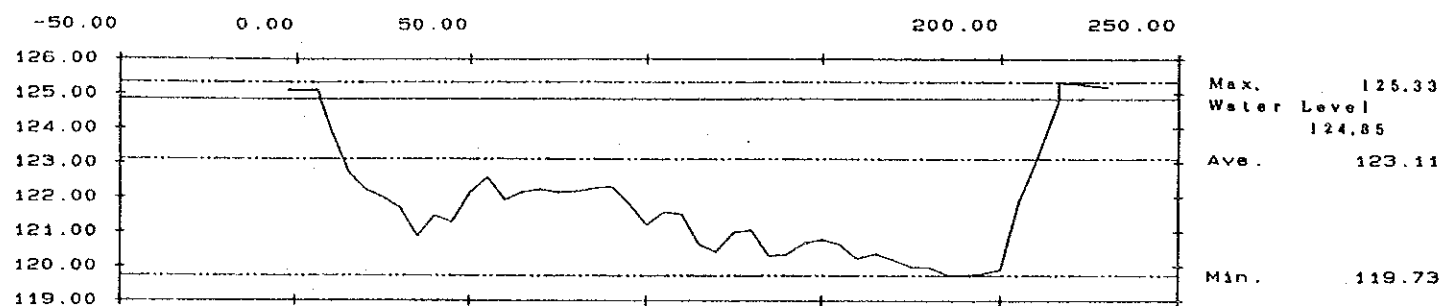


SECTION 42

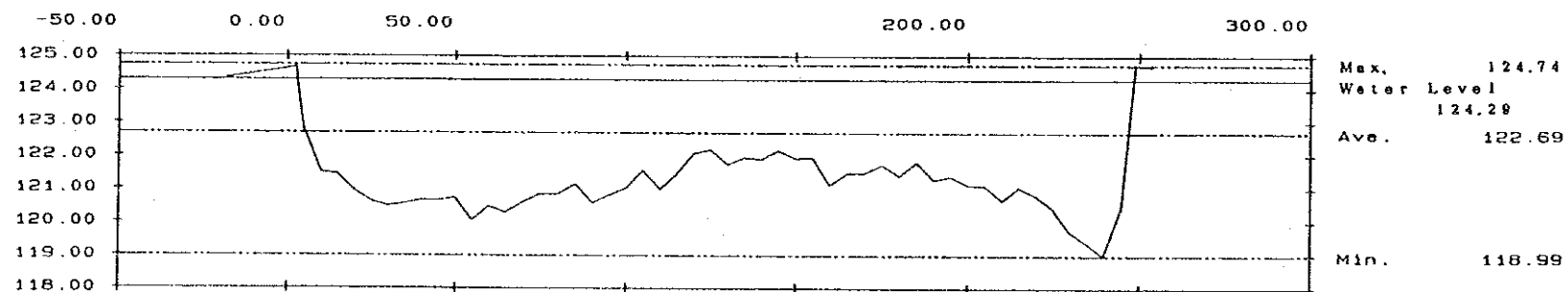


THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT OF THE APURE RIVER BASIN			
CROSS SECTION			
GUASDUALITO 14/19			
PLAN NO.	14	SCALE	H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1992		
		JAPAN INTERNATIONAL COOPERATION AGENCY	

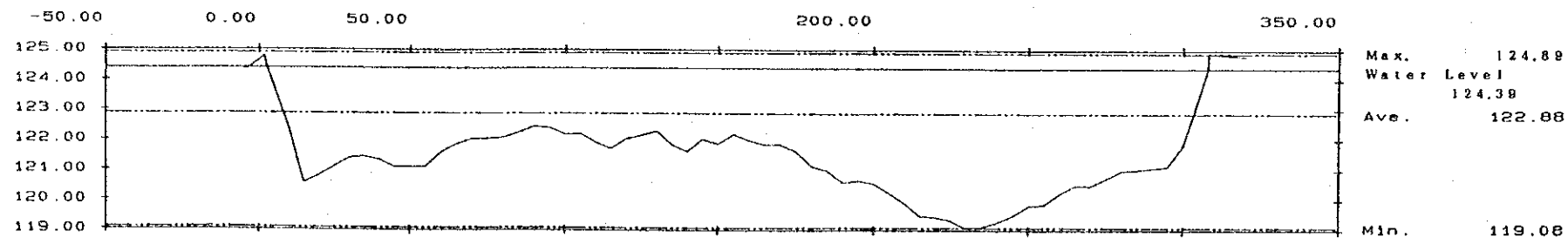
SECTION 43



SECTION 44

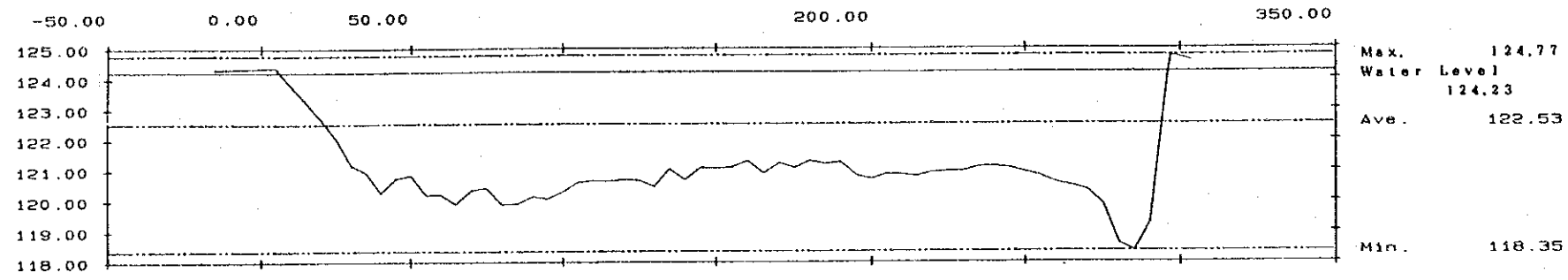


SECTION 45

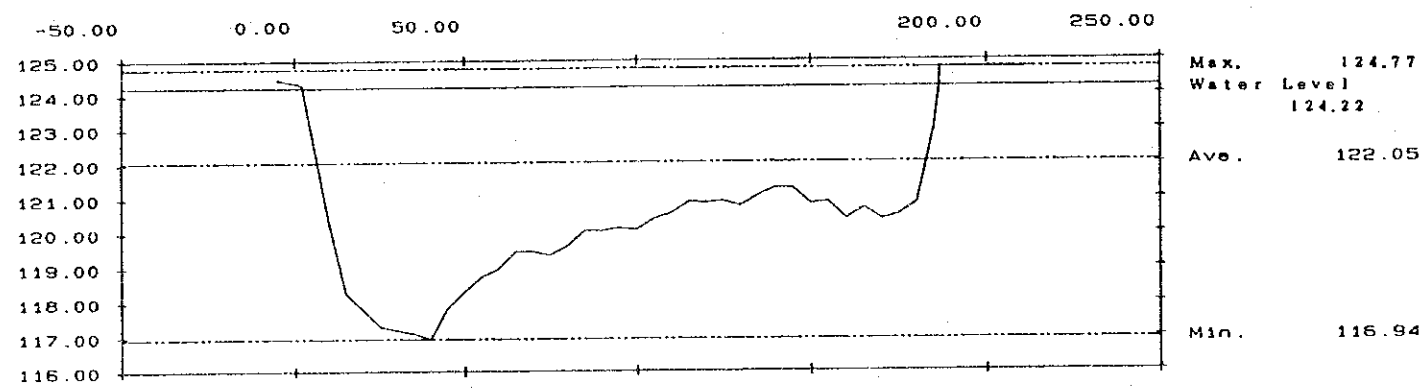


THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT			
OF THE APURE RIVER BASIN			
CROSS SECTION			
GUASDUALITO 15/19			
PLAN NO.	15	SCALE	H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1992		
JICA		JAPAN INTERNATIONAL	
		COOPERATION AGENCY	

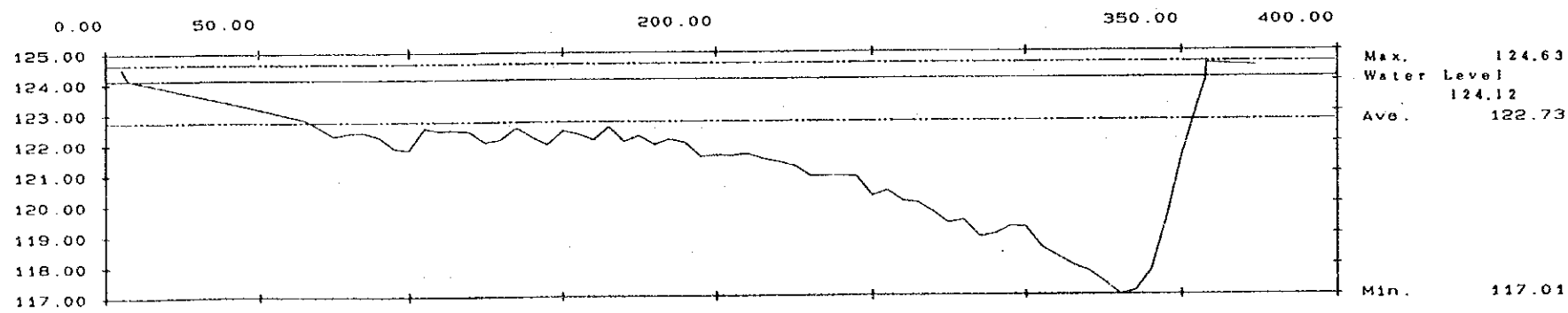
SECTION 46



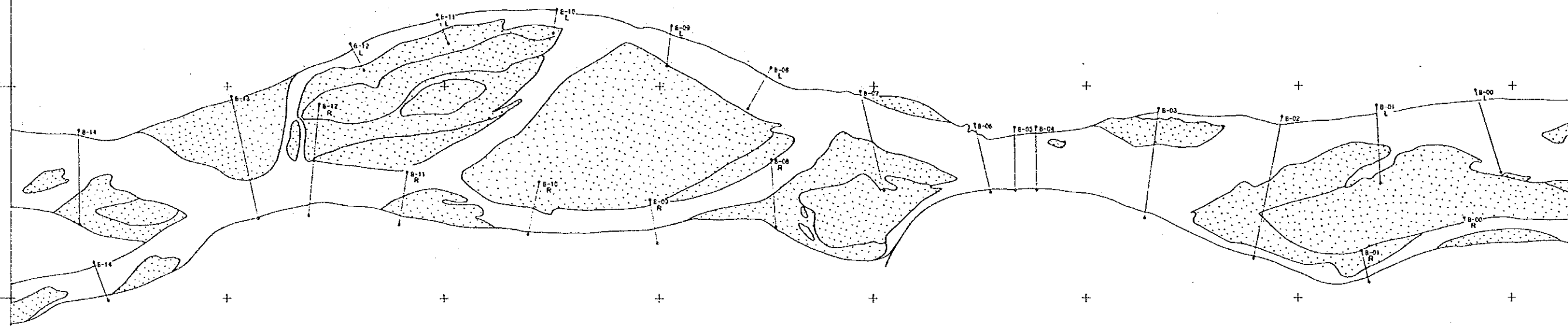
SECTION 47



SECTION 48



THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT			
OF THE APURE RIVER BASIN			
CROSS SECTION			
GUASDUALITO 18/19			
PLAN NO.	16	SCALE	H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1992		
JICA		JAPAN INTERNATIONAL	
COOPERATION AGENCY			

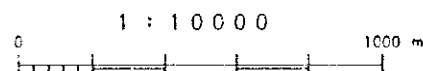


Result of control point survey Bruzual site (1)

Station	Northing	Easting	Elevat.
B-00-B	890,375,757	483,771,758	78,045
B-00-A	890,750,318	483,402,835	78,288
B-00-D	890,977,391	483,422,370	78,280
B-00-C	890,348,267	483,445,104	78,415
B-01-B	890,211,493	483,397,147	78,429
B-01-A	890,072,955	483,323,958	78,740
B-01-D	890,904,228	483,383,080	78,440
B-01-C	890,538,200	483,383,722	78,828
B-02-C	890,853,805	484,520,558	78,490
B-02-B	890,341,794	484,357,739	78,908
B-02-A	890,183,319	484,197,848	78,951
B-03-I	890,892,388	484,318,841	78,000
B-03-D	890,375,588	484,375,821	78,400
B-03-I	890,407,488	483,383,529	78,890
B-04-D	890,508,003	483,788,228	78,648
B-05-I	890,805,888	483,683,597	80,110
B-05-D	890,508,848	483,688,281	78,452
B-06-I	890,821,747	484,474,851	81,780
B-06-D	890,489,126	483,558,777	78,626
B-07-I	890,976,577	483,337,003	78,890
B-07-D	890,507,441	483,047,710	78,908
B-08-B	890,853,840	483,318,470	78,270
B-08-A	890,324,844	483,348,311	78,948
B-08-D	891,017,058	483,314,484	79,000
B-08-C	890,894,643	483,407,433	78,688

Station	Northing	Easting	Elevat.
B-09-B	890,466,811	481,355,988	78,484
B-09-A	890,260,307	481,391,521	79,000
B-09-D	891,286,307	481,051,175	79,280
B-09-C	891,036,444	481,031,218	78,072
B-10-B	890,350,341	481,427,845	79,304
B-10-A	890,303,172	481,388,415	79,420
B-10-D	891,363,133	481,518,270	79,340
B-10-C	891,251,514	481,498,881	79,206
B-11-B	890,586,922	480,476,039	78,874
B-11-A	890,347,251	480,788,108	79,150
B-11-D	891,327,800	480,363,256	79,520
B-11-C	891,201,193	480,818,468	79,352
B-12-B	890,911,491	480,415,501	78,512
B-12-A	890,188,947	480,378,809	78,580
B-12-D	891,201,588	480,583,554	79,640
B-12-C	891,078,359	480,625,414	78,640
B-13-I	890,935,024	480,818,248	78,952
B-13-D	890,977,425	480,166,762	79,600
B-14-B	890,189,891	483,387,816	78,712
B-14-A	889,988,203	483,437,578	79,300
B-14-D	890,794,767	483,319,303	78,180
B-14-C	890,947,793	483,319,411	79,390

Coordinates are shown by the National Grid System.



THE REPUBLIC OF VENEZUELA
 STUDY ON COMPREHENSIVE IMPROVEMENT
 OF THE APURE RIVER BASIN

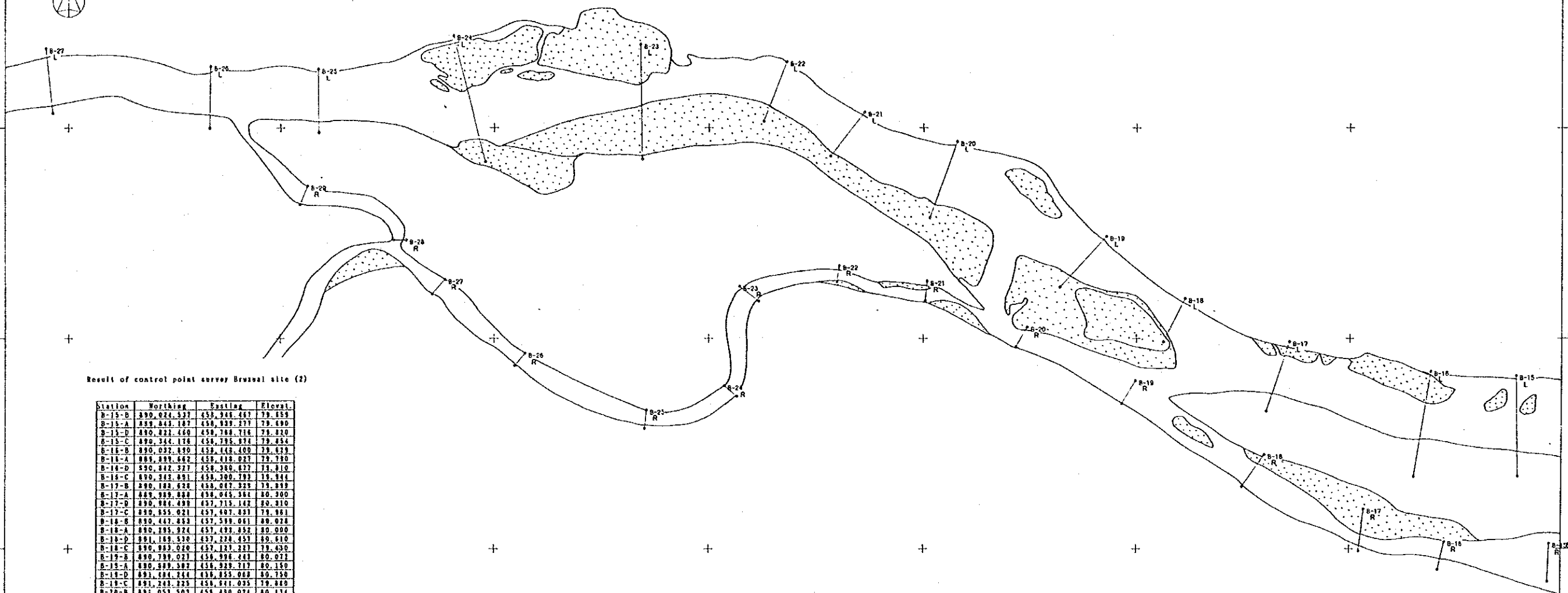
LOCATION MAP
 OF CROSS SECTION

BRUZUAL 27/29

PLAN NO. 46 SCALE H:1:1000 V:1:100

SURVEY DATE MAY-JULY 1992

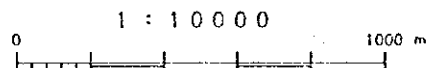
JICA JAPAN INTERNATIONAL
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Result of control point survey Bruzual site (2)

Station	Northing	Easting	Elevat.
B-15-B	890,024.527	458,948.467	79.659
B-15-A	889,843.187	458,939.277	79.690
B-15-D	890,322.460	458,769.716	79.820
B-15-C	890,344.178	458,795.970	79.854
B-16-B	890,035.830	458,148.600	79.479
B-16-A	889,899.629	458,119.925	79.780
B-16-D	890,342.527	458,380.622	79.810
B-16-C	890,342.891	458,300.782	79.744
B-17-B	890,182.624	458,047.325	79.819
B-17-A	889,989.882	458,045.384	80.300
B-17-D	890,384.498	457,715.142	80.310
B-17-C	890,555.021	457,607.831	79.981
B-18-B	890,447.853	457,599.061	80.028
B-18-A	890,295.324	457,497.552	80.000
B-18-D	891,189.538	457,224.457	80.610
B-18-C	890,959.010	457,127.327	79.420
B-19-B	890,389.027	458,292.843	80.071
B-19-A	890,549.582	458,329.717	80.150
B-19-D	891,484.244	458,555.068	80.750
B-19-C	891,243.225	458,641.035	79.880
B-20-B	891,052.503	458,480.024	80.114
B-20-A	890,958.797	458,437.628	80.270
B-20-D	891,934.878	458,159.799	80.440
B-20-C	891,523.191	458,029.718	80.220
B-21-B	891,721.844	458,015.110	80.470
B-21-A	891,114.511	458,004.515	80.120
B-21-D	892,012.882	458,225.501	80.920
B-21-C	891,885.189	458,567.674	80.312
B-22-B	891,244.899	458,608.715	80.208
B-22-A	891,284.677	458,587.692	80.000
B-22-D	892,312.946	458,362.528	80.767
B-22-C	892,030.219	458,219.483	80.611
B-23-B	891,248.149	458,143.638	80.224
B-23-A	891,176.804	458,237.799	80.304
B-23-D	892,284.740	458,641.518	79.940
B-23-C	891,930.844	458,691.327	80.588
B-24-B	890,774.368	458,575.042	80.510
B-24-A	890,744.721	458,131.742	80.552
B-24-D	892,425.165	458,408.560	81.040
B-24-C	891,628.281	458,180.344	80.684
B-25-B	890,658.108	454,712.820	81.000
B-25-A	890,591.228	454,702.912	80.116
B-25-D	892,378.877	453,175.369	81.130
B-25-C	891,971.862	453,179.063	80.990
B-26-B	890,916.274	458,145.510	80.912
B-26-A	890,916.202	458,095.910	80.400
B-26-D	892,282.588	457,154.343	81.105
B-26-C	891,988.181	457,160.225	80.800
B-27-B	891,278.245	457,789.644	80.944
B-27-A	891,209.559	457,710.189	80.530
B-27-D	892,316.114	457,892.232	81.087
B-27-C	892,069.735	457,823.228	81.020
B-28-B	891,497.888	458,580.173	80.169
B-28-A	891,497.596	458,526.104	80.470
B-29-B	891,725.112	458,128.081	80.284
B-29-A	891,538.084	458,090.916	80.180
B-29-D	892,343.015	457,110.129	80.112
B-29-C	891,184.426	457,387.939	81.150

Coordinates are shown by the National Grid System.



THE REPUBLIC OF VENEZUELA
 STUDY ON COMPREHENSIVE IMPROVEMENT
 OF THE APURE RIVER BASIN

LOCATION MAP
 OF CROSS SECTION

BRUZUAL 28/29

PLAN NO. 47 SCALE H:1:1000 V:1:100

SURVEY DATE MAY-JULY 1992

JICA JAPAN INTERNATIONAL
 COOPERATION AGENCY

THE REPUBLIC OF VENEZUELA
 STUDY ON COMPREHENSIVE IMPROVEMENT
 OF THE APURE RIVER BASIN

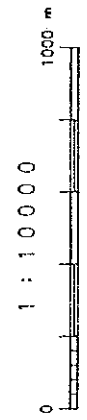
LOCATION MAP
 OF CROSS SECTION

BRUZAL 29/29

PLAN NO. 48 SCALE H=1:1000 V=1:100

SURVEY DATE MAY-JULY 1982

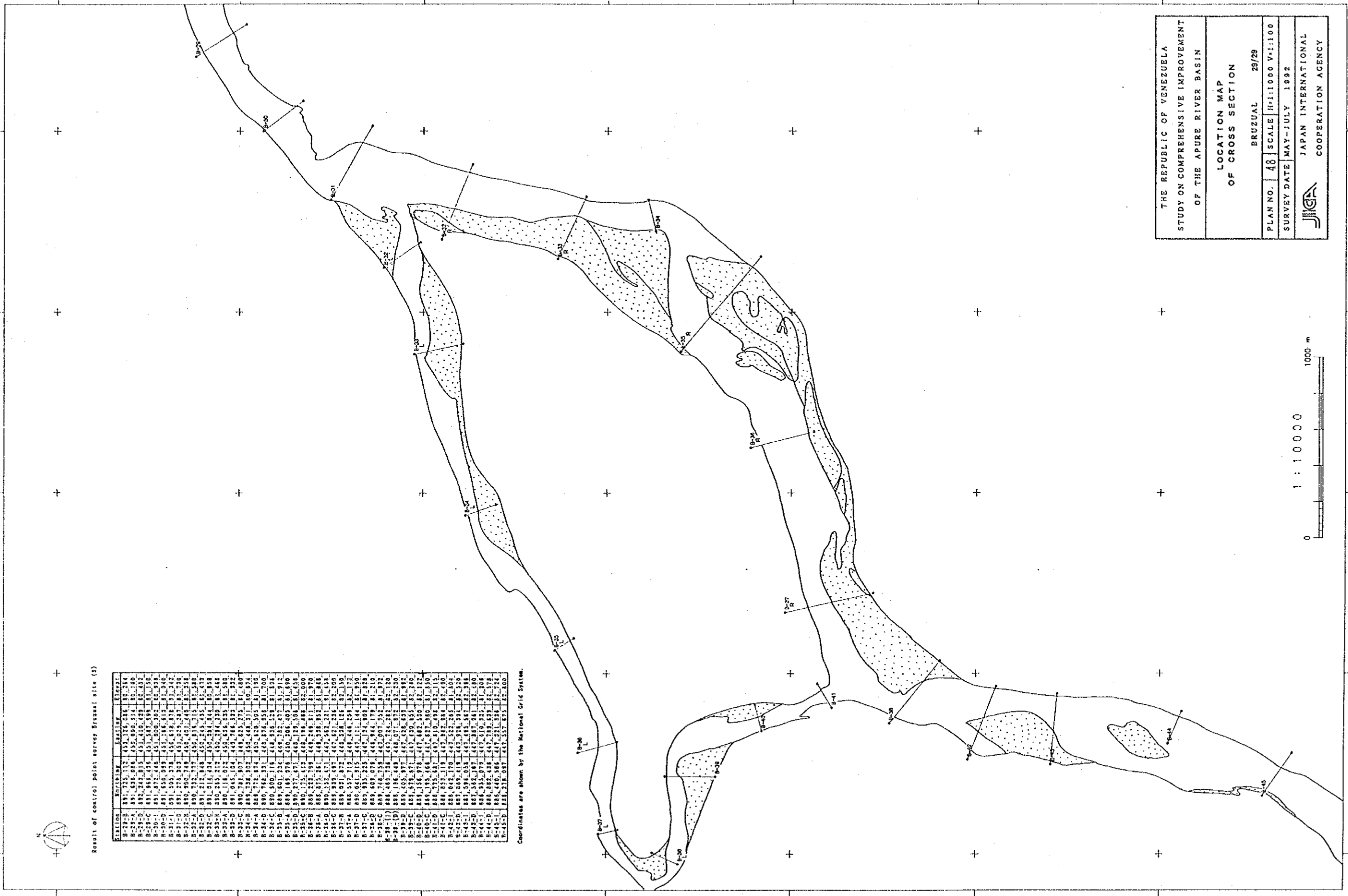
JICA
 JAPAN INTERNATIONAL
 COOPERATION AGENCY



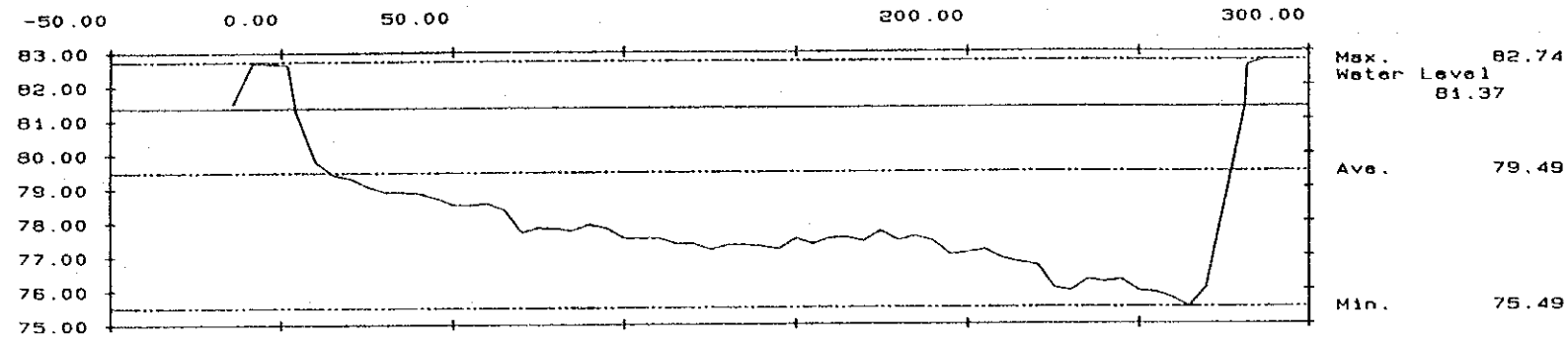
Result of control point survey Bruzual site (3)

STATION	NORTHING	EASTING	ELEVATION
B-22-B	891,725.112	453,175.016	80.214
B-23-A	891,538.086	452,899.314	80.140
B-23-D	891,743.815	451,419.428	80.432
B-23-C	891,861.058	451,587.898	81.150
B-30-A	891,272.448	451,009.392	80.938
B-30-B	891,598.928	451,116.316	81.042
B-31-A	891,598.928	451,116.316	81.042
B-31-B	891,272.448	451,009.392	80.938
B-31-C	890,700.748	450,401.441	81.558
B-32-A	890,700.748	450,401.441	81.558
B-32-B	891,212.848	450,818.711	81.540
B-32-C	891,518.394	450,834.544	81.838
B-33-A	890,255.212	450,238.239	81.448
B-33-B	890,116.012	450,828.538	81.540
B-33-C	891,044.024	449,764.378	81.222
B-34-A	889,738.807	449,828.271	81.649
B-34-B	889,738.807	449,828.271	81.649
B-34-C	889,738.807	449,828.271	81.649
B-34-D	889,738.807	449,828.271	81.649
B-35-A	889,500.118	448,318.528	81.516
B-35-B	889,500.118	448,318.528	81.516
B-35-C	889,500.118	448,318.528	81.516
B-35-D	889,500.118	448,318.528	81.516
B-36-A	889,500.118	448,318.528	81.516
B-36-B	889,500.118	448,318.528	81.516
B-36-C	889,500.118	448,318.528	81.516
B-36-D	889,500.118	448,318.528	81.516
B-37-A	889,500.118	448,318.528	81.516
B-37-B	889,500.118	448,318.528	81.516
B-37-C	889,500.118	448,318.528	81.516
B-37-D	889,500.118	448,318.528	81.516
B-38-A	889,500.118	448,318.528	81.516
B-38-B	889,500.118	448,318.528	81.516
B-38-C	889,500.118	448,318.528	81.516
B-38-D	889,500.118	448,318.528	81.516
B-39-A	889,500.118	448,318.528	81.516
B-39-B	889,500.118	448,318.528	81.516
B-39-C	889,500.118	448,318.528	81.516
B-39-D	889,500.118	448,318.528	81.516
B-40-A	889,500.118	448,318.528	81.516
B-40-B	889,500.118	448,318.528	81.516
B-40-C	889,500.118	448,318.528	81.516
B-40-D	889,500.118	448,318.528	81.516
B-41-A	889,500.118	448,318.528	81.516
B-41-B	889,500.118	448,318.528	81.516
B-41-C	889,500.118	448,318.528	81.516
B-41-D	889,500.118	448,318.528	81.516
B-42-A	889,500.118	448,318.528	81.516
B-42-B	889,500.118	448,318.528	81.516
B-42-C	889,500.118	448,318.528	81.516
B-42-D	889,500.118	448,318.528	81.516
B-43-A	889,500.118	448,318.528	81.516
B-43-B	889,500.118	448,318.528	81.516
B-43-C	889,500.118	448,318.528	81.516
B-43-D	889,500.118	448,318.528	81.516
B-44-A	889,500.118	448,318.528	81.516
B-44-B	889,500.118	448,318.528	81.516
B-44-C	889,500.118	448,318.528	81.516
B-44-D	889,500.118	448,318.528	81.516
B-45-A	889,500.118	448,318.528	81.516
B-45-B	889,500.118	448,318.528	81.516
B-45-C	889,500.118	448,318.528	81.516
B-45-D	889,500.118	448,318.528	81.516

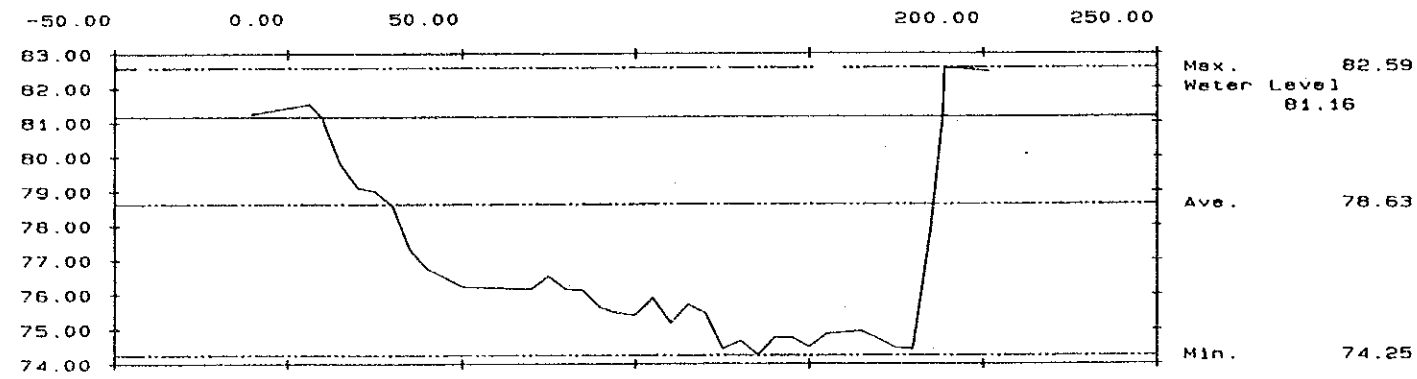
Coordinates are shown by the National Grid System.



SECTION 45

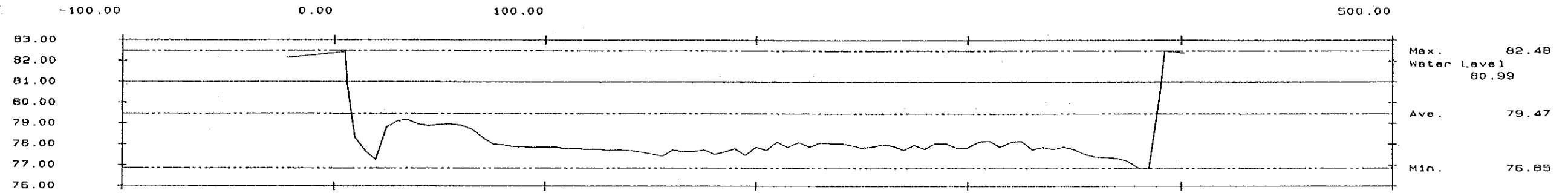


SECTION 44

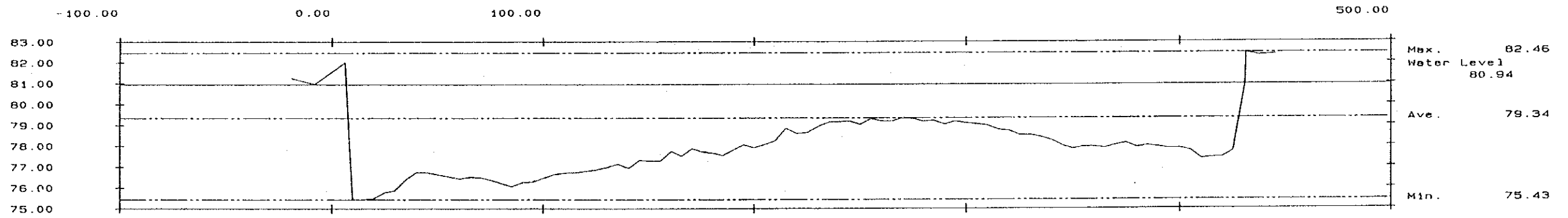


THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT			
OF THE APURE RIVER BASIN			
CROSS SECTION			
BRUZUAL 1/29			
PLAN NO.	20	SCALE	H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1982		
JICA		JAPAN INTERNATIONAL	
		COOPERATION AGENCY	

SECTION 43

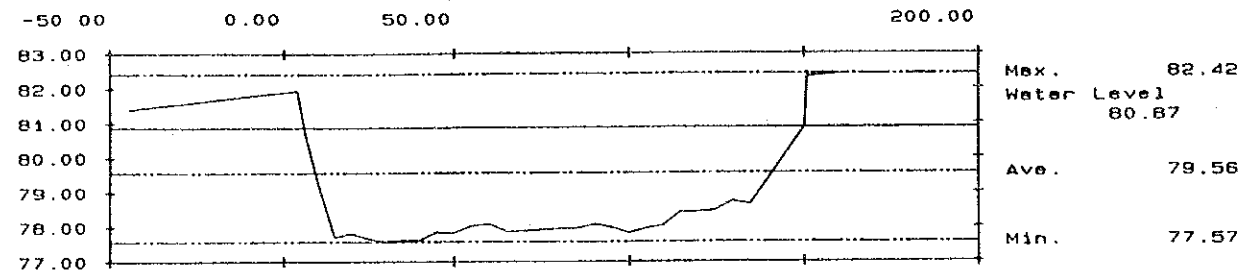


SECTION 42

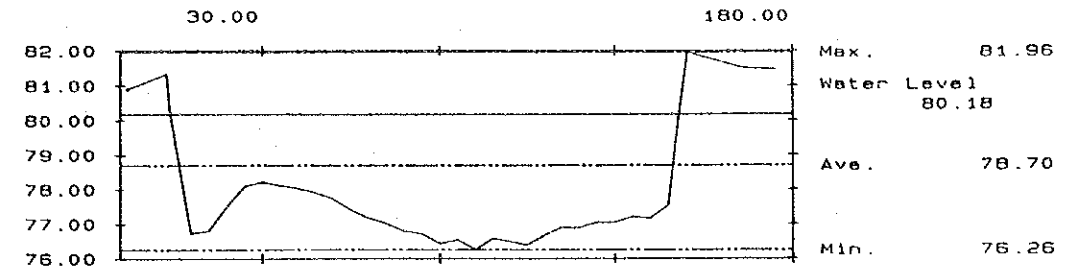


THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT			
OF THE APURE RIVER BASIN			
CROSS SECTION			
BRUZUAL 2/29			
PLAN NO.	21	SCALE	H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1992		
JICA		JAPAN INTERNATIONAL	
		COOPERATION AGENCY	

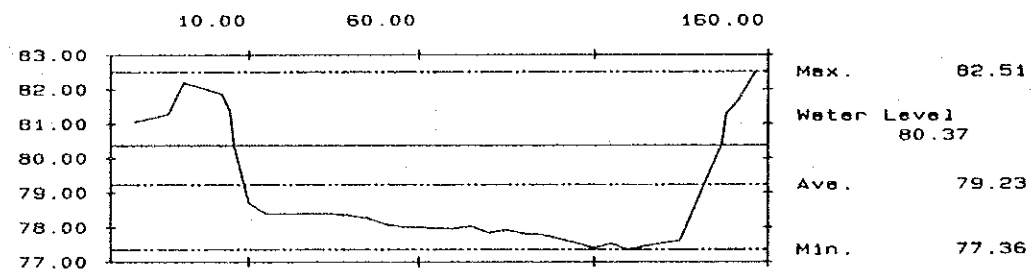
SECTION 41



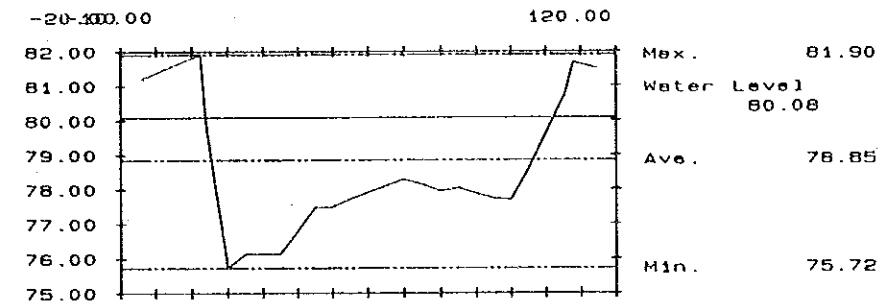
SECTION 38 (LEFT)



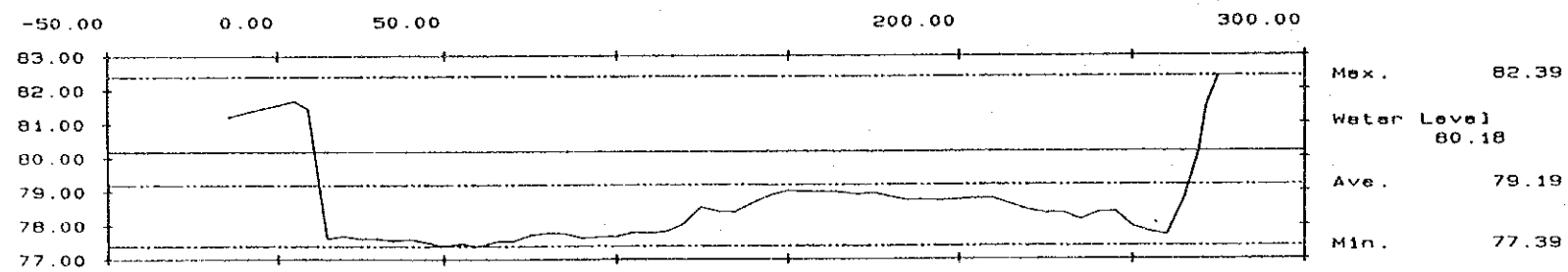
SECTION 40




SECTION 37 (LEFT)

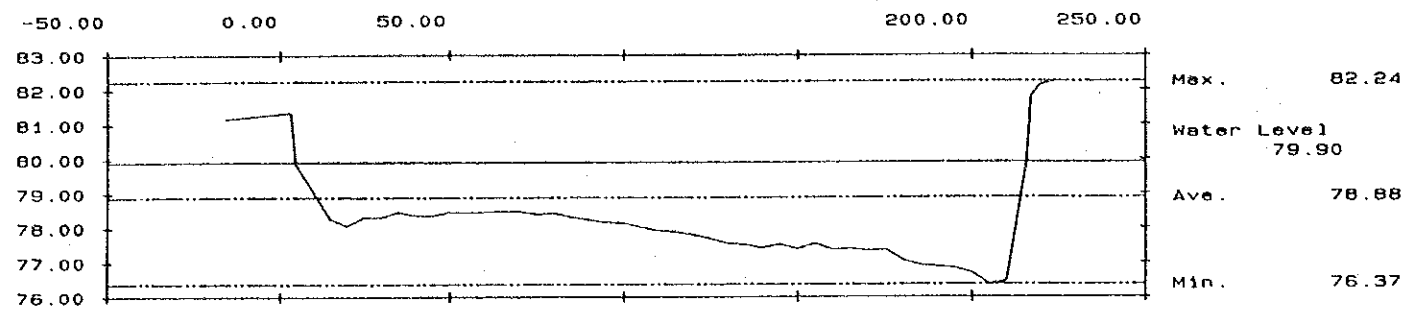


SECTION 39

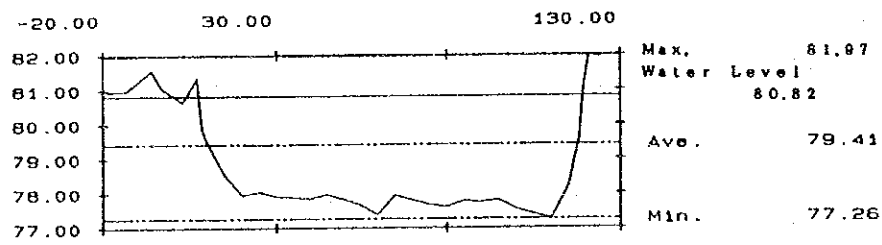


THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT			
OF THE APURE RIVER BASIN			
CROSS SECTION			
BRUZUAL 3/29			
PLAN NO.	22	SCALE	H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1982		
		JAPAN INTERNATIONAL	
COOPERATION AGENCY			

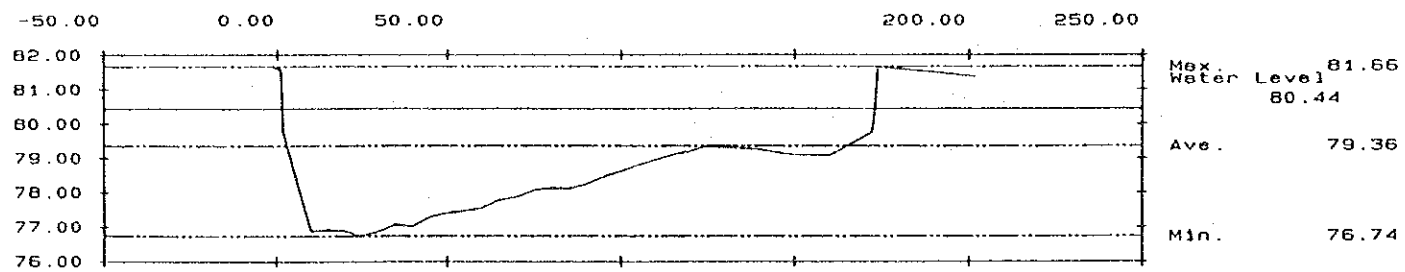
SECTION 36 (LEFT)




SECTION 35 (LEFT)

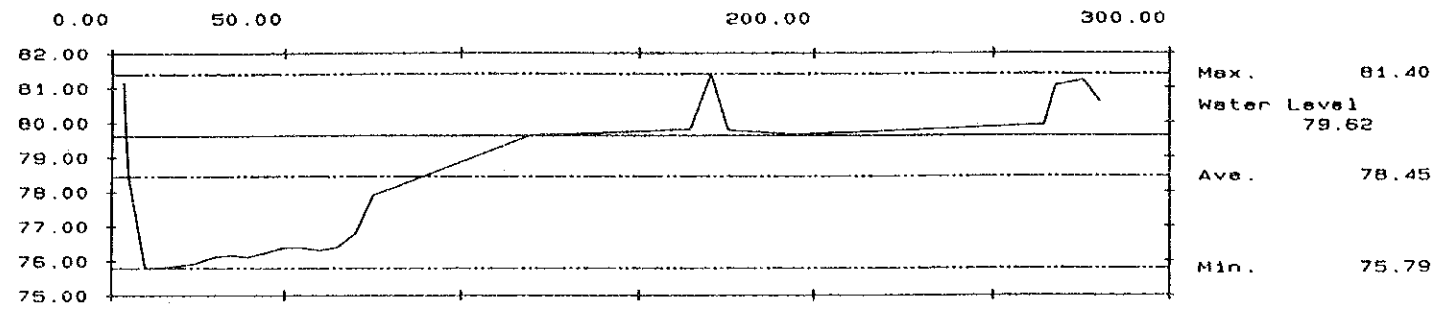


SECTION 34 (LEFT)

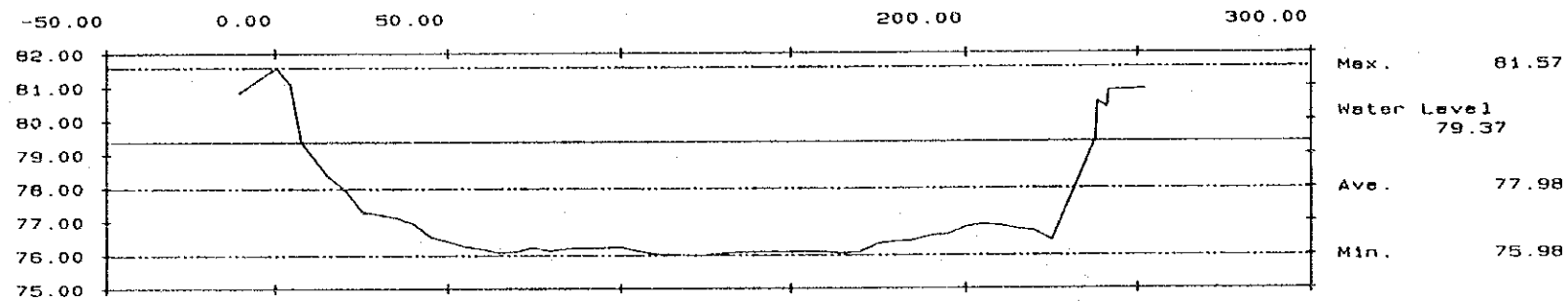


THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT			
OF THE APURE RIVER BASIN			
CROSS SECTION			
BRUZUAL 4/29			
PLAN NO.	23	SCALE	H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1992		
		JAPAN INTERNATIONAL	
COOPERATION AGENCY			

SECTION 33 (LEFT)

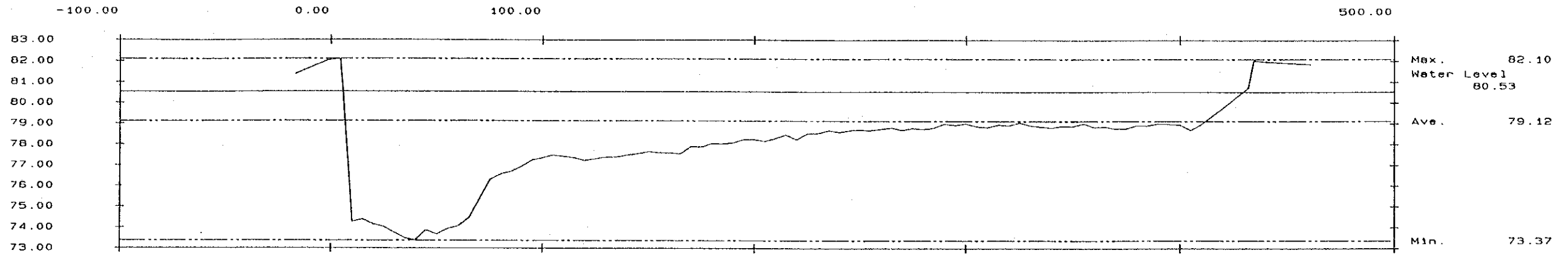


SECTION 32 (LEFT)

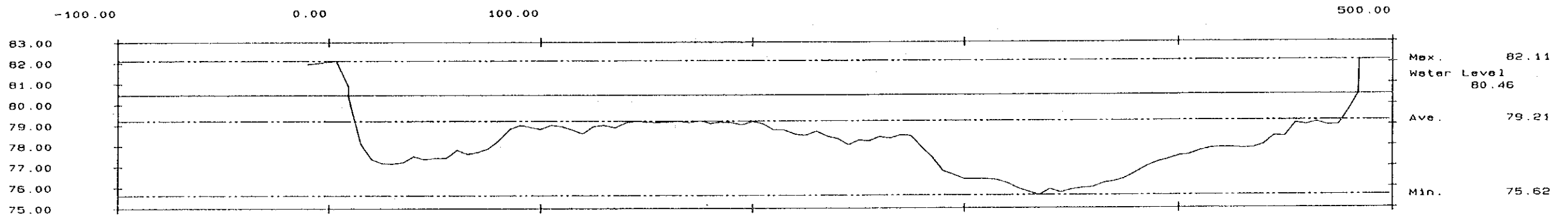


THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT			
OF THE APURE RIVER BASIN			
CROSS SECTION			
BRUZUAL 5/29			
PLAN NO.	24	SCALE	H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1992		
JICA		JAPAN INTERNATIONAL	
		COOPERATION AGENCY	

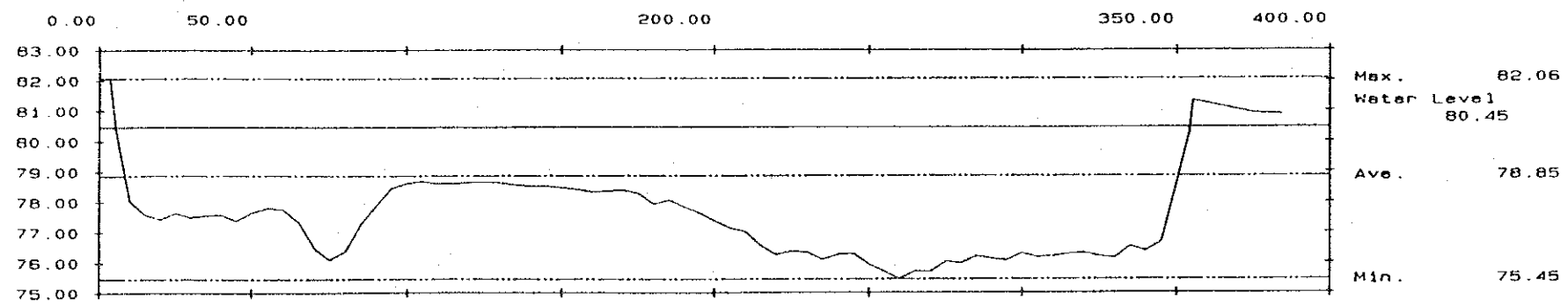
SECTION 38 (RIGHT)



SECTION 37 (RIGHT)



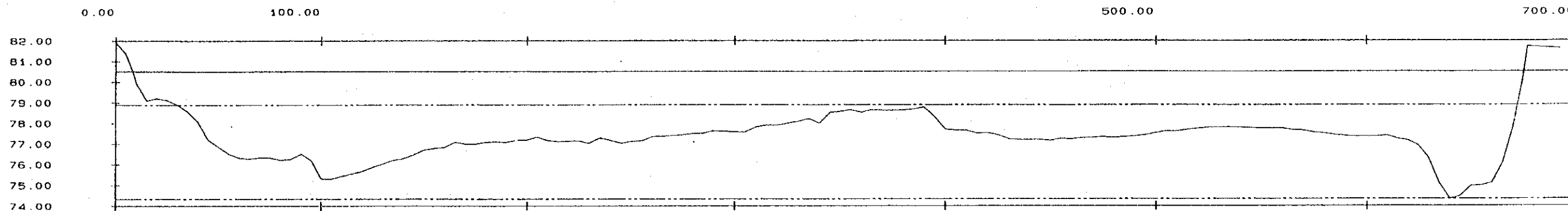
SECTION 36 (RIGHT)



THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT			
OF THE APURE RIVER BASIN			
CROSS SECTION			
BRUZUAL 6/29			
PLAN NO.	25	SCALE	H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1992		
JICA		JAPAN INTERNATIONAL	
		COOPERATION AGENCY	

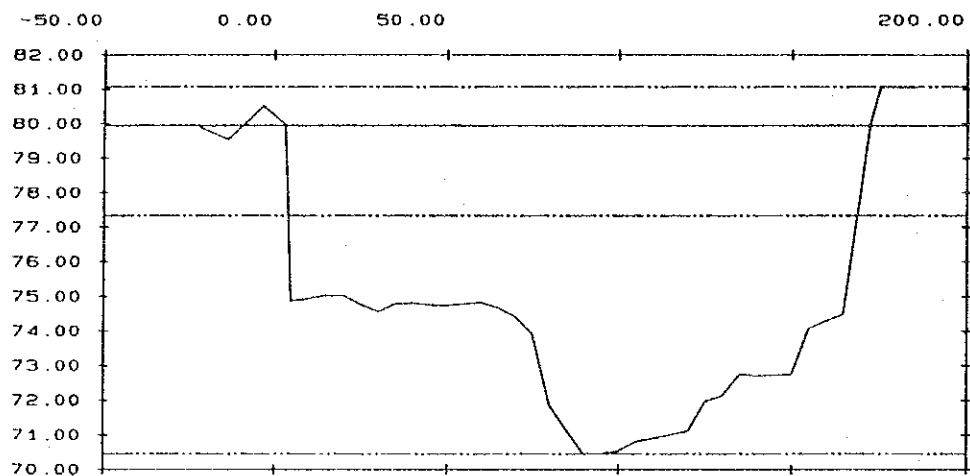
SECTION 35 (RIGHT)

Max. 82.01
 Water Level 80.51
 Ave. 78.89
 Min. 74.34



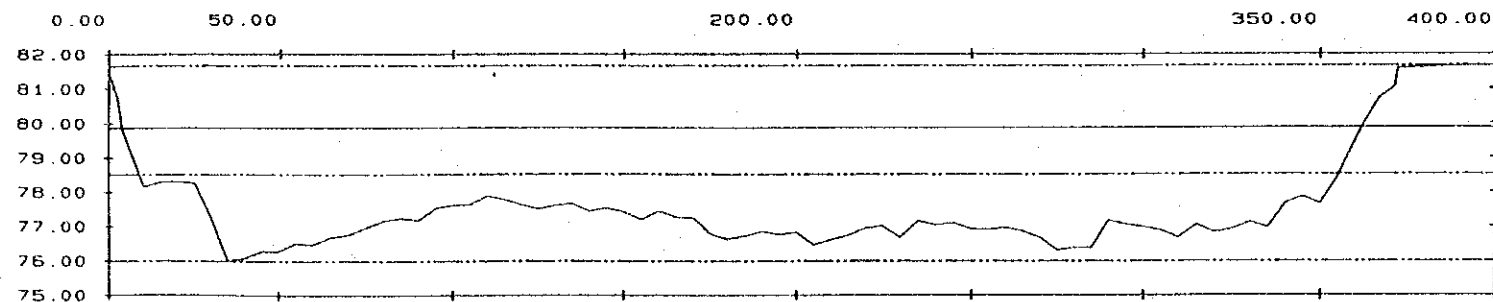
SECTION 34 (RIGHT)

Max. 81.07
 Water Level 79.95
 Ave. 77.34
 Min. 70.46



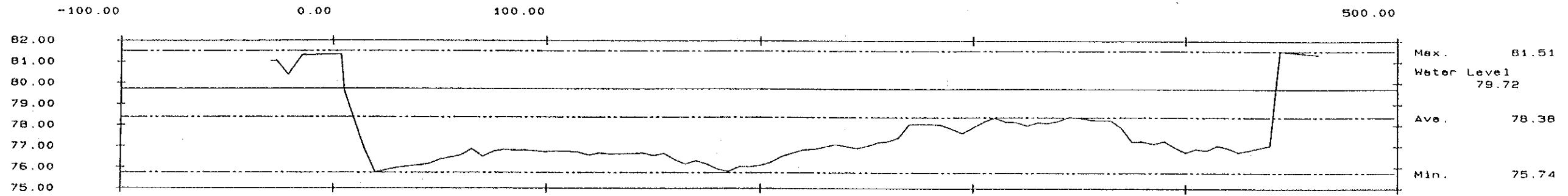
SECTION 33 (RIGHT)

Max. 81.66
 Water Level 79.87
 Ave. 78.51
 Min. 75.99

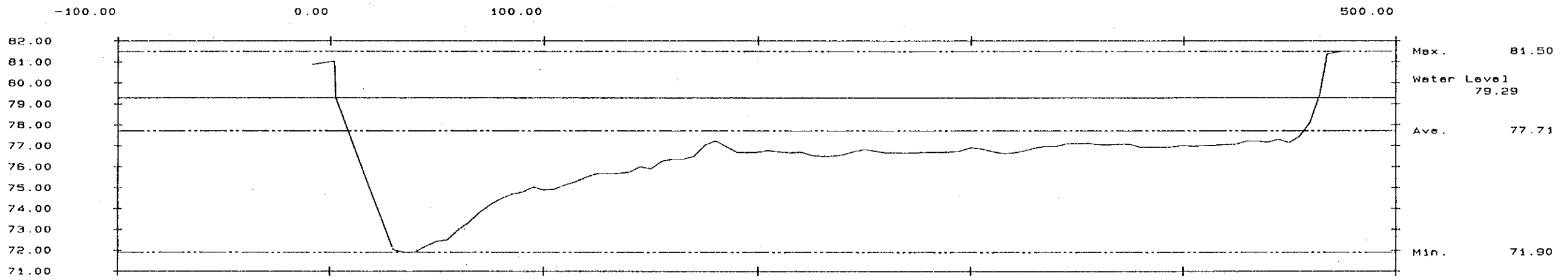


THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT			
OF THE APURE RIVER BASIN			
CROSS SECTION			
BRUZUAL 7/29			
PLAN NO.	26	SCALE	H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1992		
JICA		JAPAN INTERNATIONAL	
		COOPERATION AGENCY	

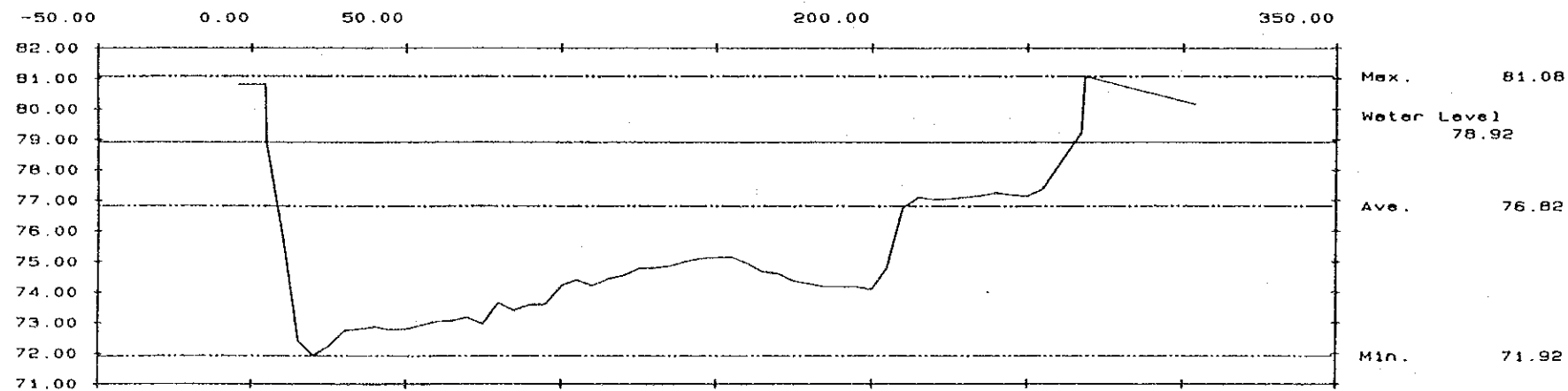
SECTION 32 (RIGHT)



SECTION 31

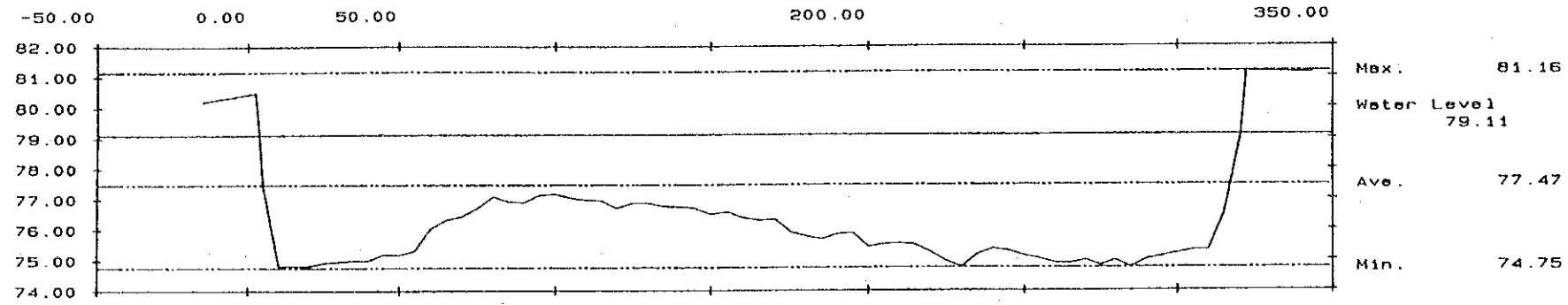


SECTION 30

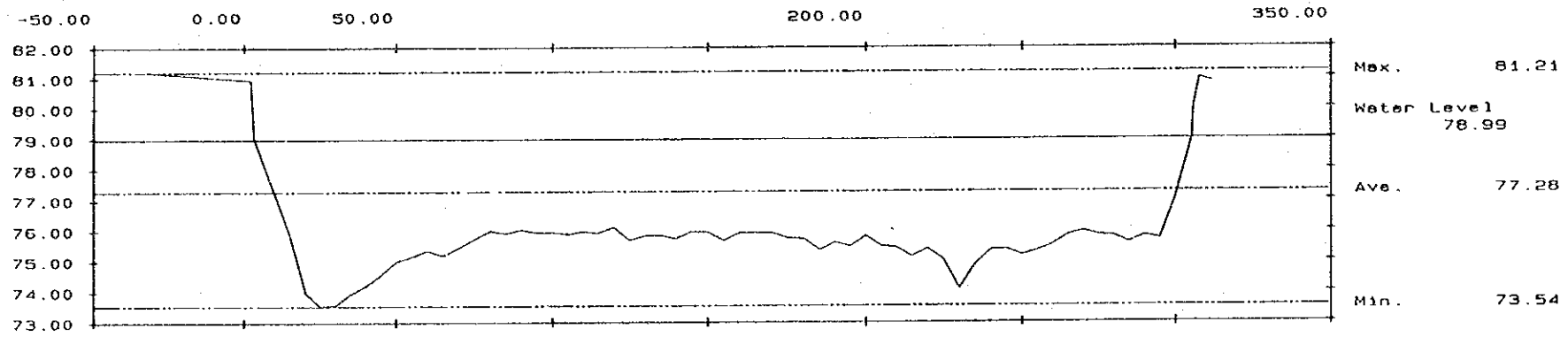


THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT			
OF THE APURE RIVER BASIN			
CROSS SECTION			
BRUZUAL 8/29			
PLAN NO.	27	SCALE	H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1992		
JICA JAPAN INTERNATIONAL COOPERATION AGENCY			

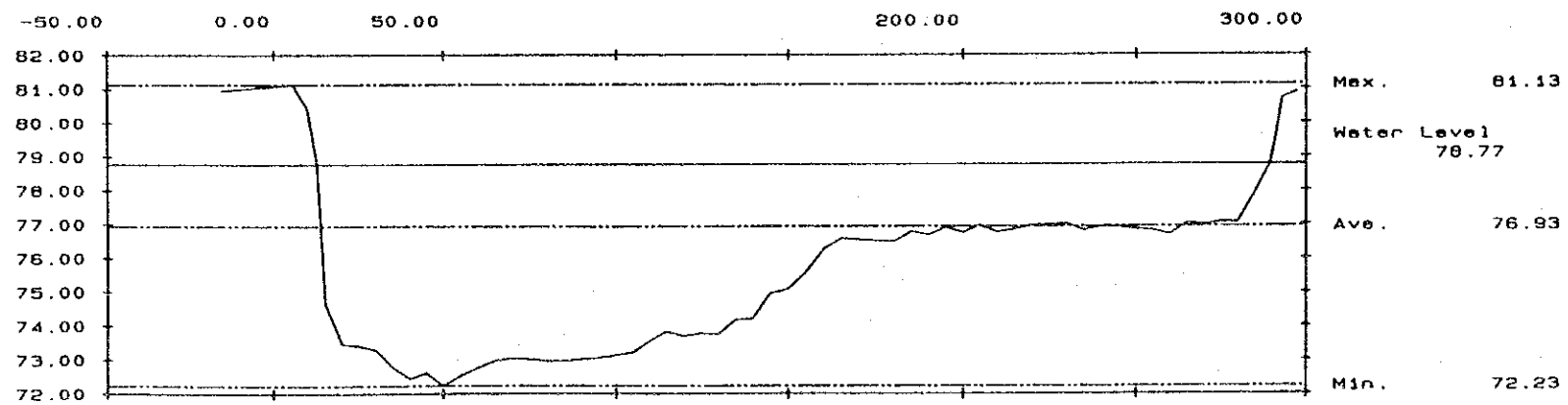
SECTION 28



SECTION 27

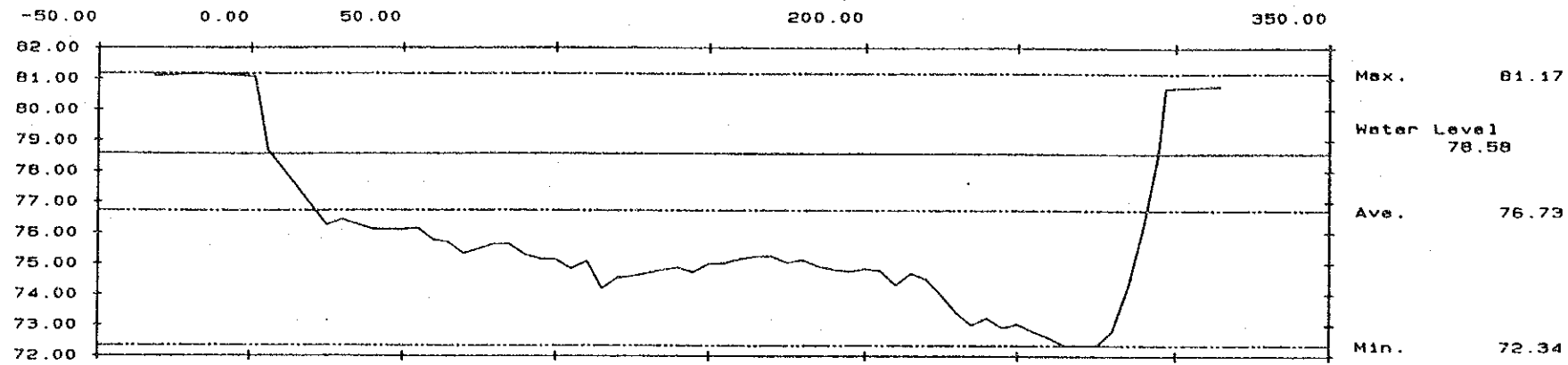


SECTION 26

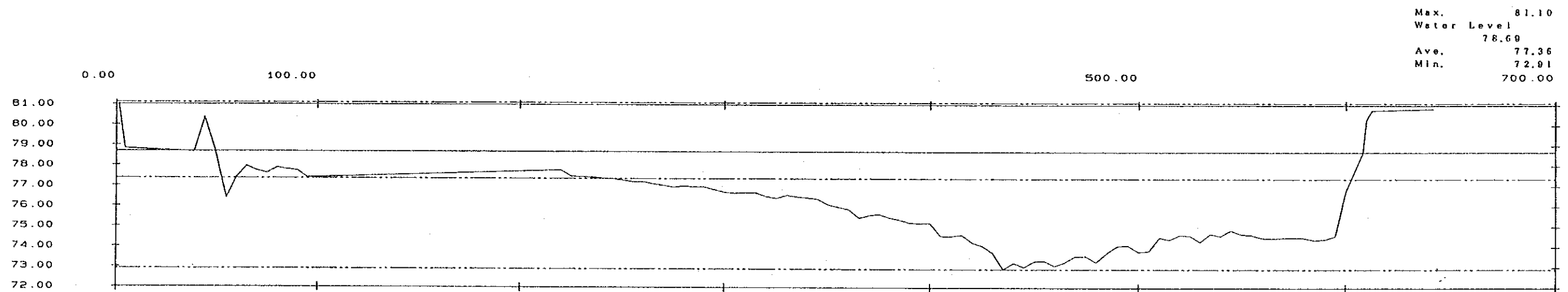


THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT			
OF THE APURE RIVER BASIN			
CROSS SECTION			
BRUZUAL 9/29			
PLAN NO.	28	SCALE	H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1992		
JICA JAPAN INTERNATIONAL COOPERATION AGENCY			

SECTION 25 (LEFT)



SECTION 24 (LEFT)



THE REPUBLIC OF VENEZUELA
 STUDY ON COMPREHENSIVE IMPROVEMENT
 OF THE APURE RIVER BASIN

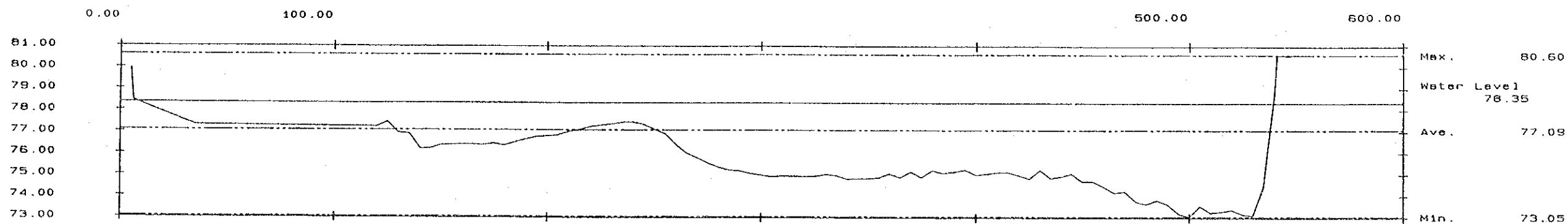
CROSS SECTION

BRUZUAL 10/29

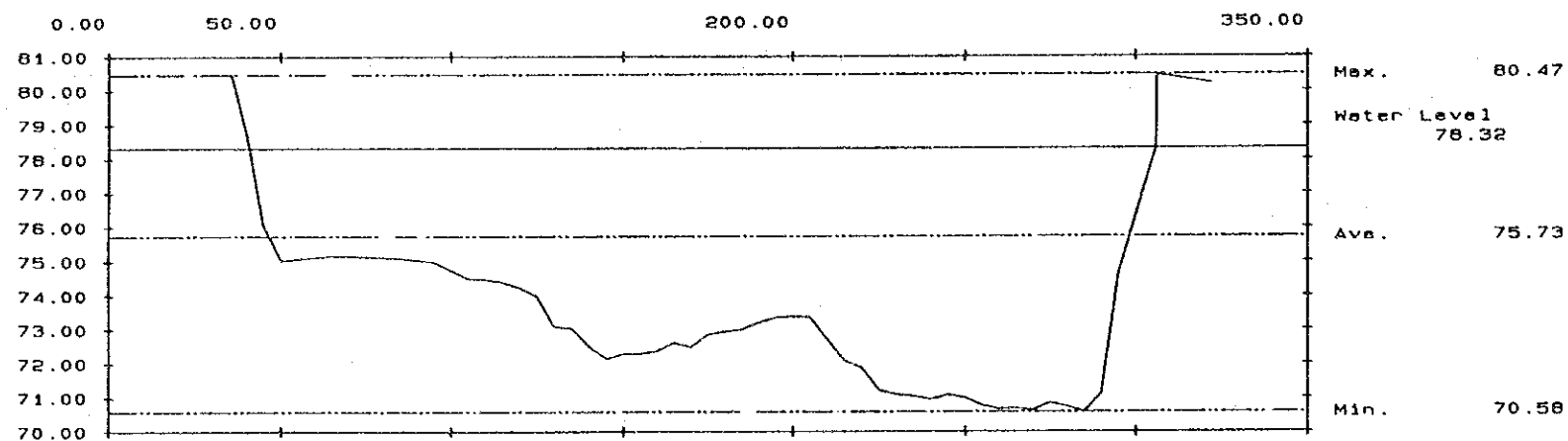
PLAN NO.	29	SCALE	H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1992		

JICA JAPAN INTERNATIONAL COOPERATION AGENCY

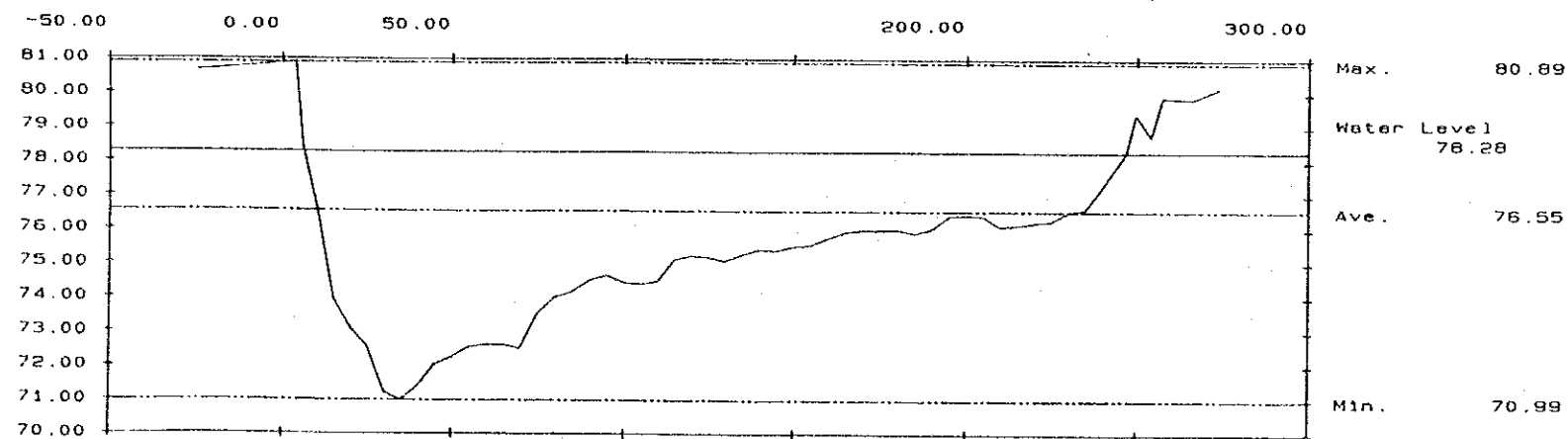
SECTION 23 (LEFT)



SECTION 22 (LEFT)

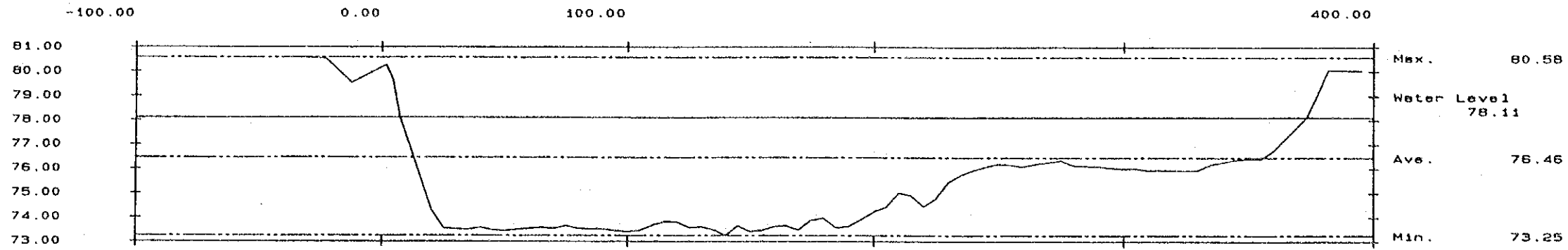


SECTION 21 (LEFT)

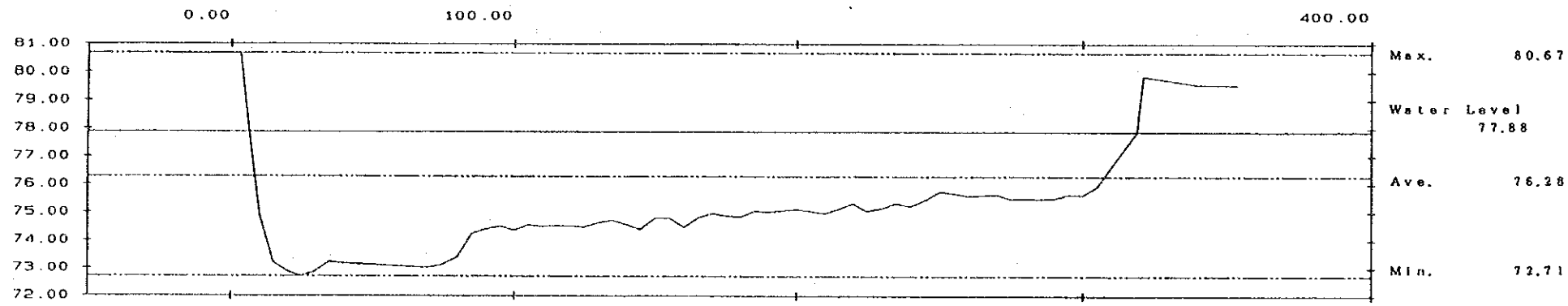


THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT			
OF THE APURE RIVER BASIN			
CROSS SECTION			
BRUZUAL 11/29			
PLAN NO.	30	SCALE	H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1992		
JICA		JAPAN INTERNATIONAL	
COOPERATION AGENCY			

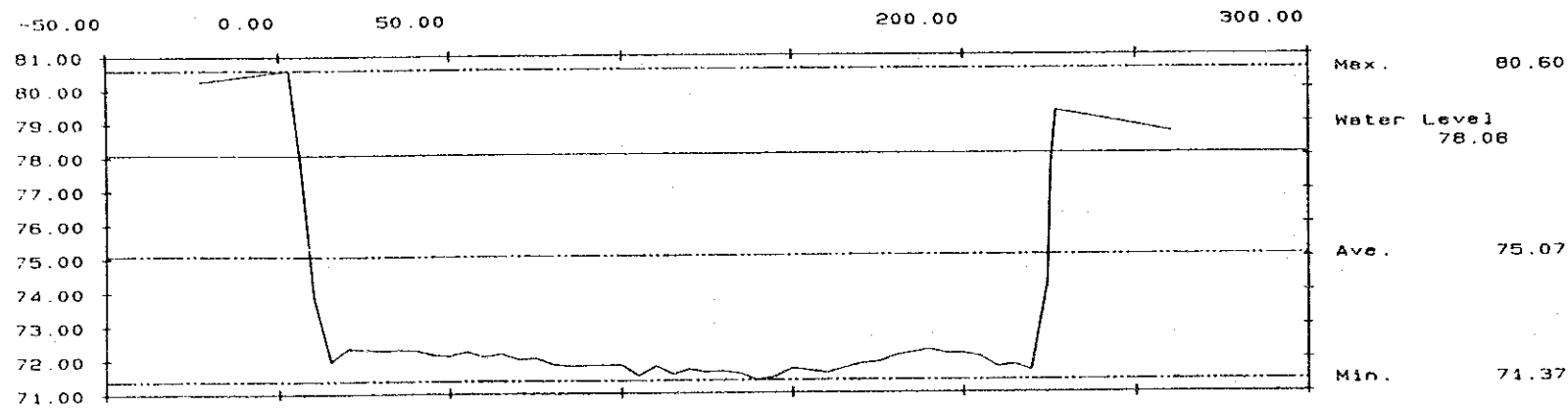
SECTION 20 (LEFT)



SECTION 19 (LEFT)

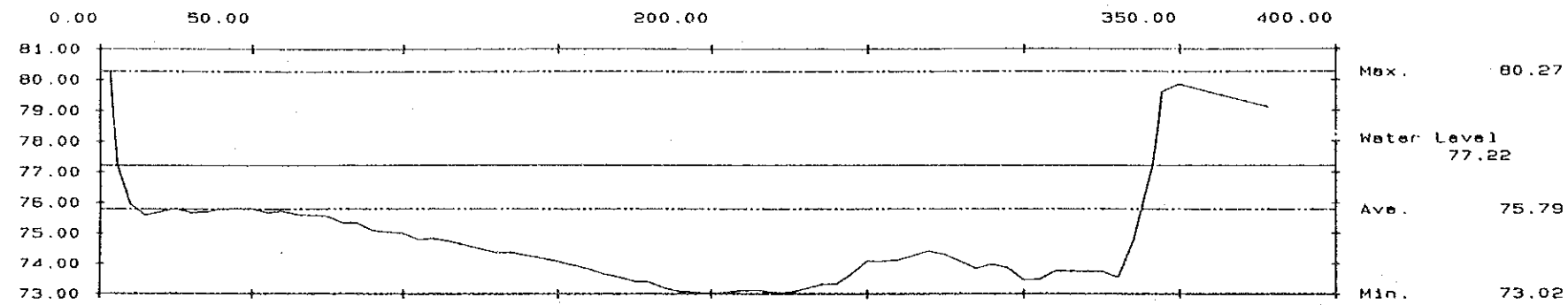


SECTION 18 (LEFT)

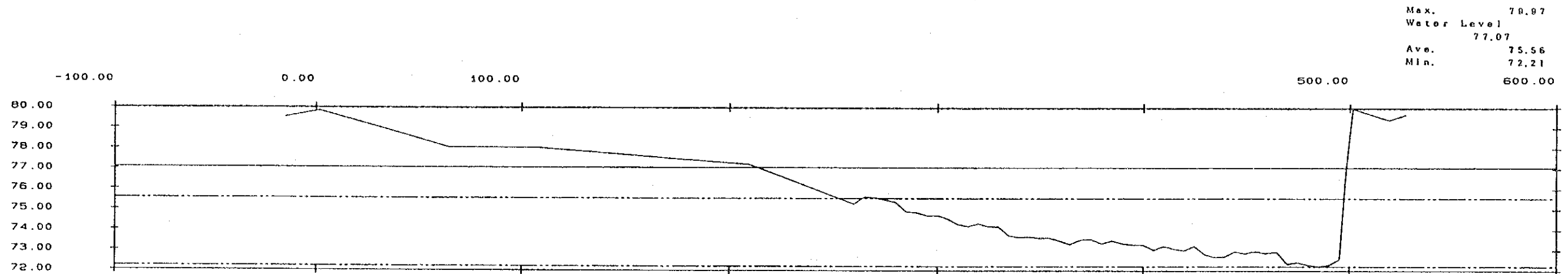


THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT			
OF THE APURE RIVER BASIN			
CROSS SECTION			
BRUZUAL 12/29			
PLAN NO.	31	SCALE	H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1992		
JICA		JAPAN INTERNATIONAL	
		COOPERATION AGENCY	

SECTION 17 (LEFT)

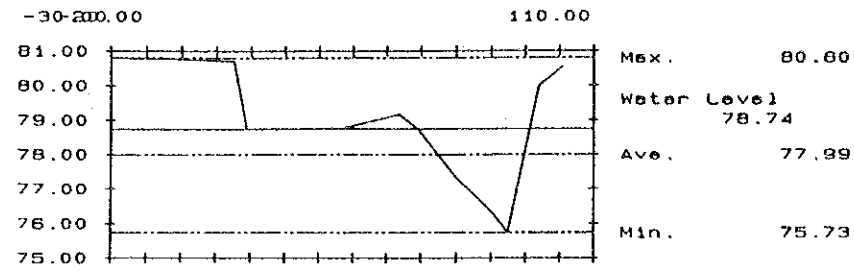


SECTION 16 (LEFT)

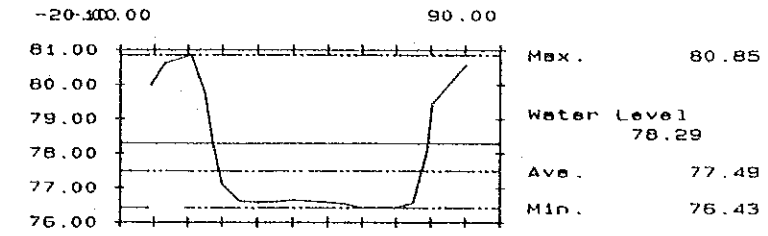


THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT			
OF THE APURE RIVER BASIN			
CROSS SECTION			
BRUZUAL 13/29			
PLAN NO.	32	SCALE	H-1:1000 V-1:100
SURVEY DATE	MAY-JULY 1992		
JICA		JAPAN INTERNATIONAL	
COOPERATION AGENCY			

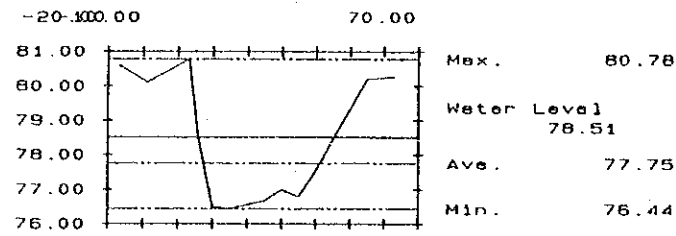
SECTION 29 (RIGHT)



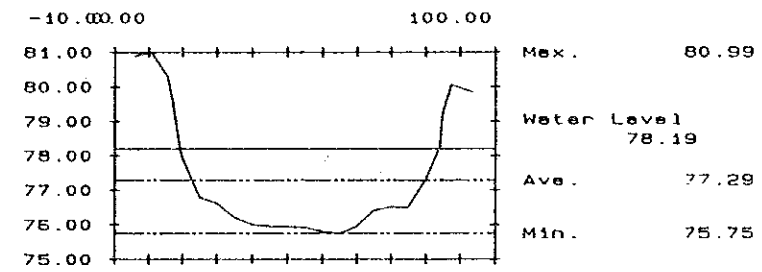
SECTION 26 (RIGHT)



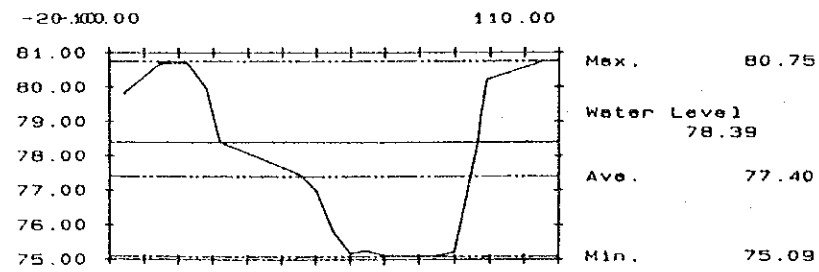
SECTION 28 (RIGHT)



SECTION 25 (RIGHT)

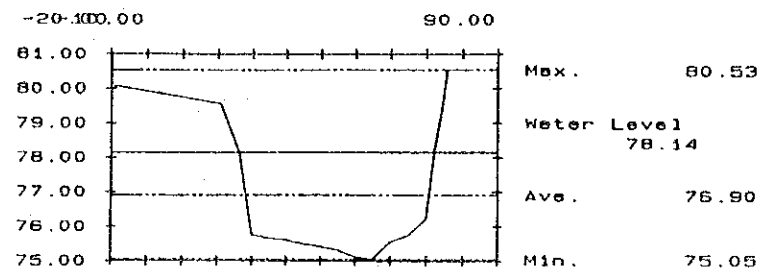


SECTION 27 (RIGHT)

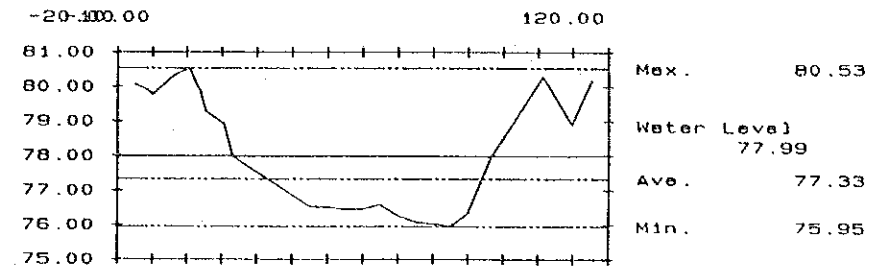


THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT			
OF THE APURE RIVER BASIN			
CROSS SECTION			
BRUZUAL 14/29			
PLAN NO.	33	SCALE	H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1992		
JICA		JAPAN INTERNATIONAL	
COOPERATION AGENCY			

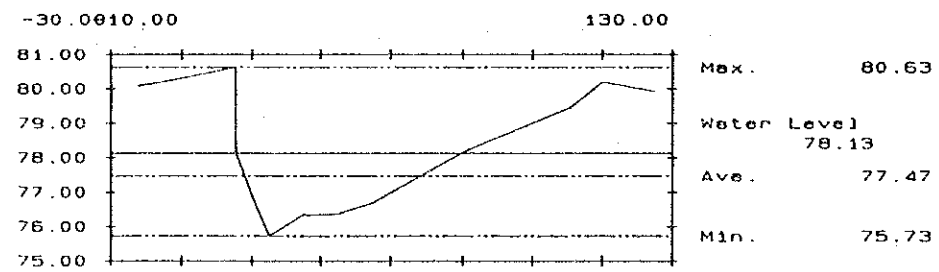
SECTION 24 (RIGHT)



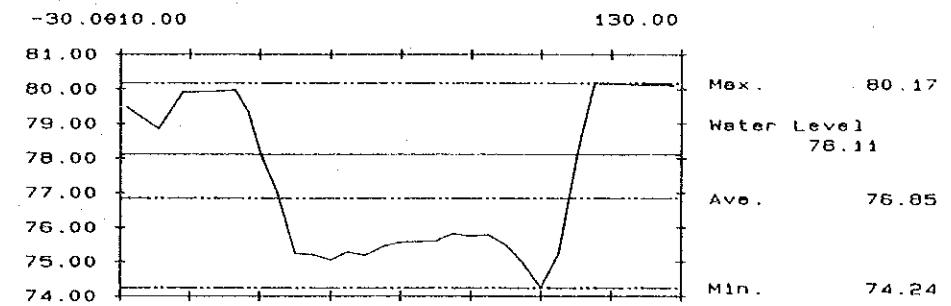
SECTION 21 (RIGHT)



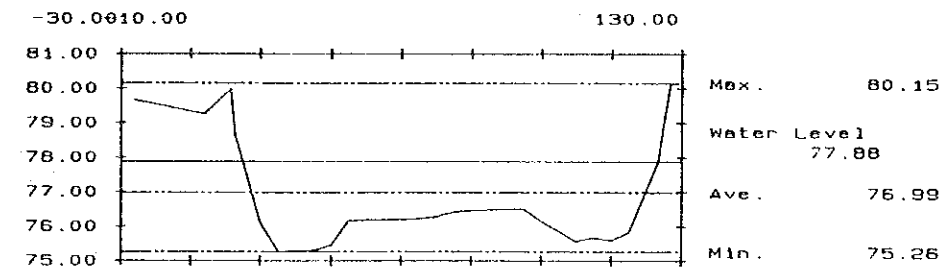
SECTION 23 (RIGHT)



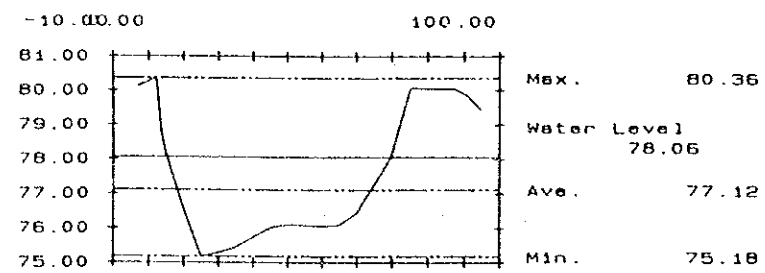
SECTION 20 (RIGHT)



SECTION 19 (RIGHT)

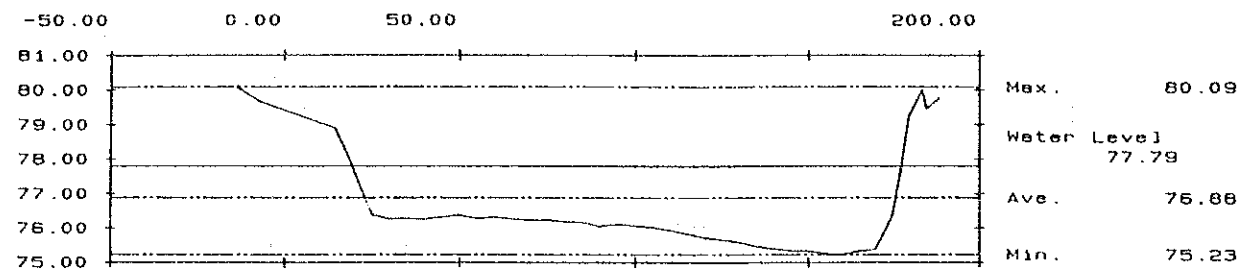


SECTION 22 (RIGHT)

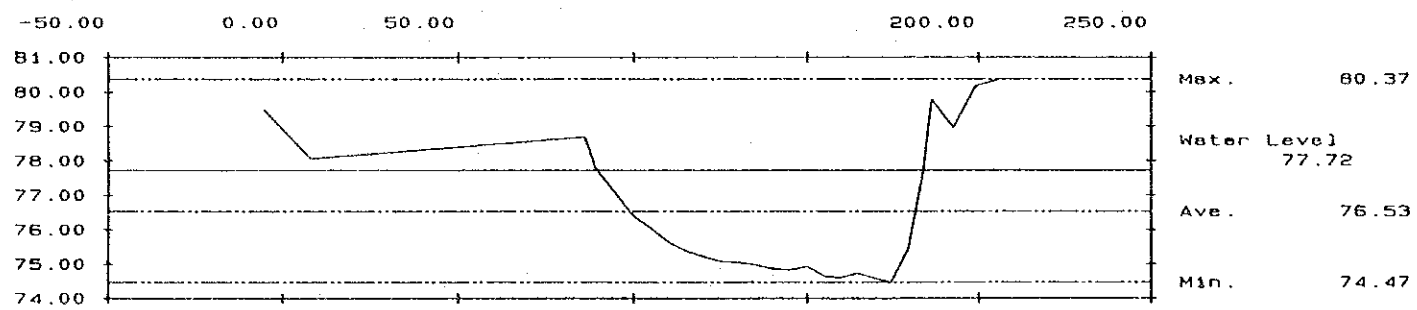


THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT			
OF THE APURE RIVER BASIN			
CROSS SECTION			
BRUZUAL 15/29			
PLAN NO.	34	SCALE	H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1992		
JICA		JAPAN INTERNATIONAL	
COOPERATION AGENCY			

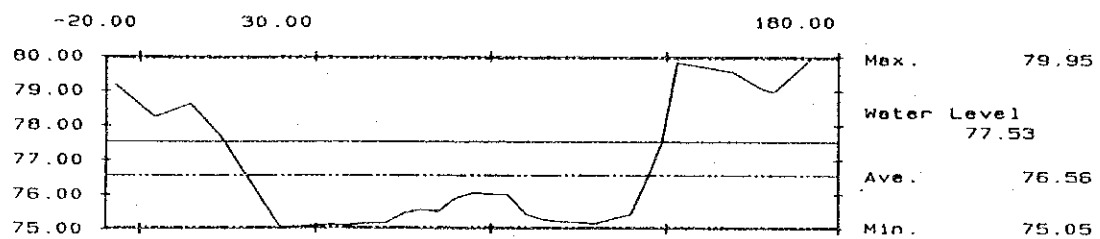
SECTION 18 (RIGHT)




SECTION 17 (RIGHT)

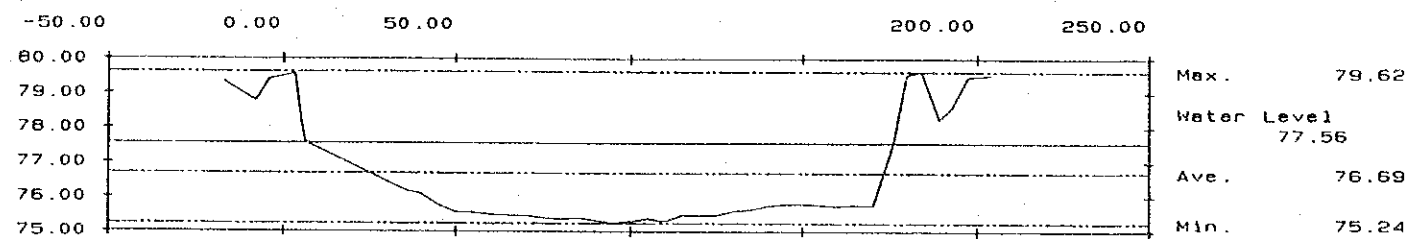


SECTION 16 (RIGHT)

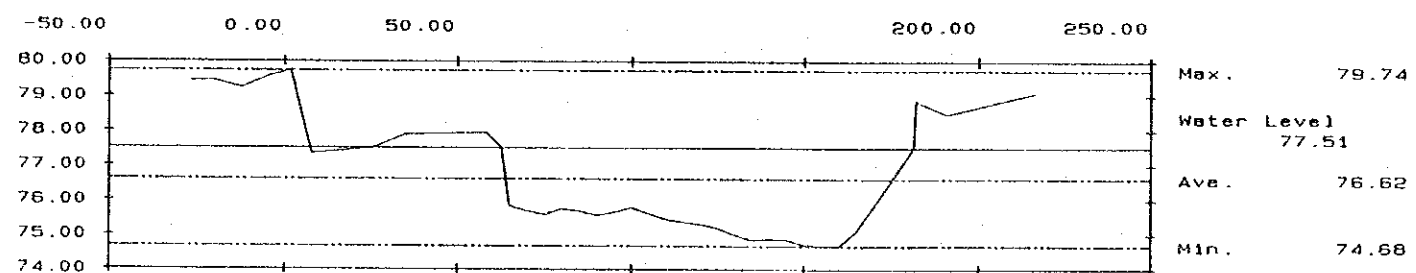


THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT			
OF THE APURE RIVER BASIN			
CROSS SECTION			
BRUZUAL 16/29			
PLAN NO.	35	SCALE	H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1992		
		JAPAN INTERNATIONAL	
COOPERATION AGENCY			

SECTION 15 (RIGHT)

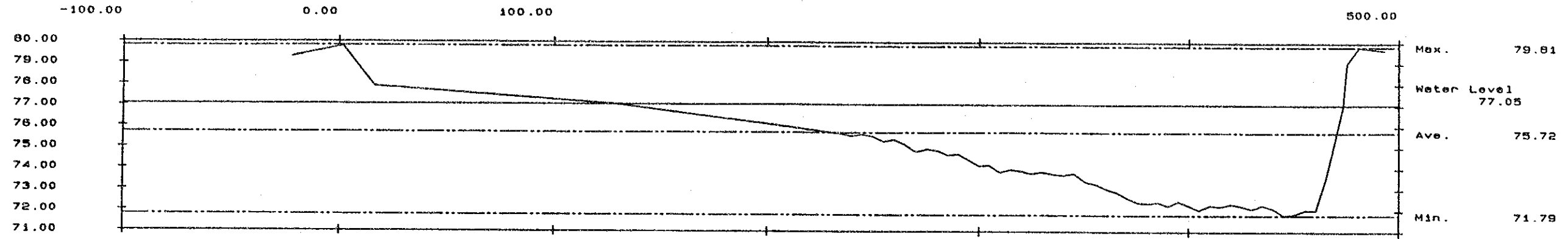


SECTION 14 (RIGHT)

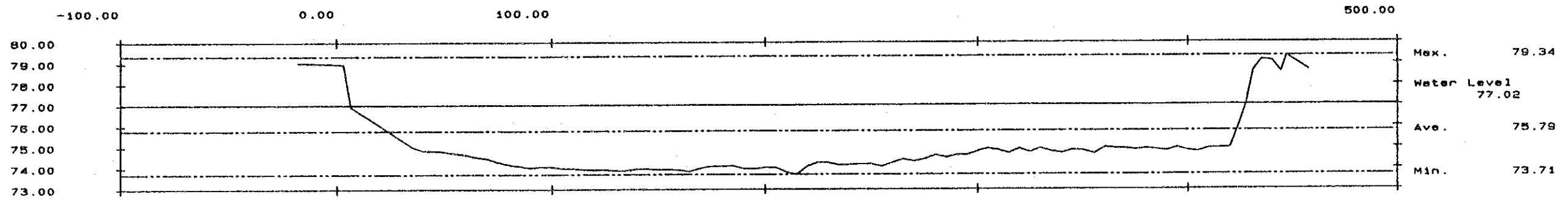


THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT			
OF THE APURE RIVER BASIN			
CROSS SECTION			
BRUZUAL 17/29			
PLAN NO.	36	SCALE	H=1:1000 V=1:100
SURVEY DATE	MAY-JULY 1992		
JICA		JAPAN INTERNATIONAL	
COOPERATION AGENCY			

SECTION 15 (LEFT)

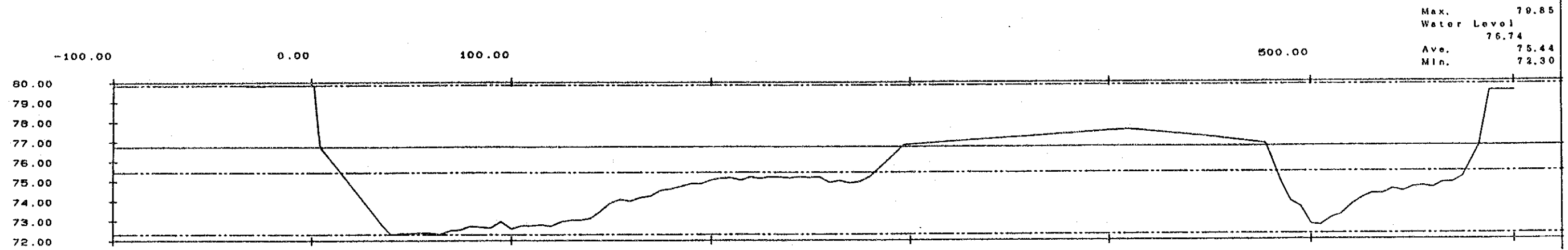


SECTION 14 (LEFT)

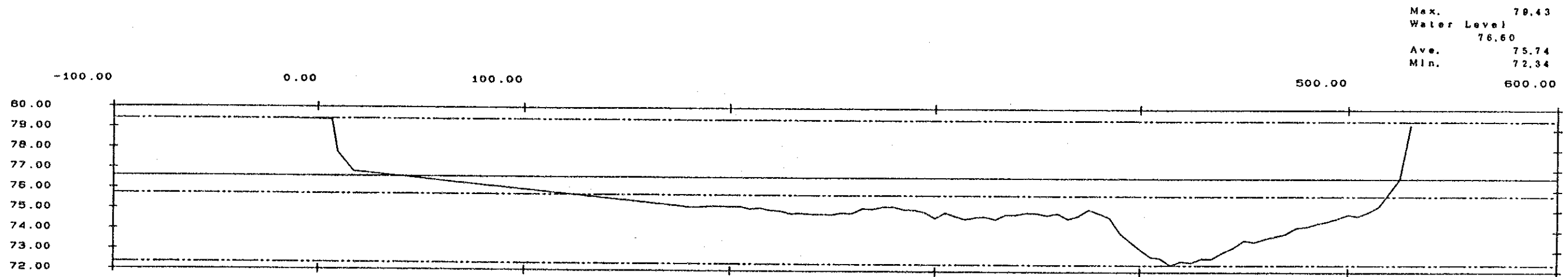


THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT			
OF THE APURE RIVER BASIN			
CROSS SECTION			
BRUZUAL 18/29			
PLAN NO.	37	SCALE	H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1992		
JICA		JAPAN INTERNATIONAL	
		COOPERATION AGENCY	

SECTION 13

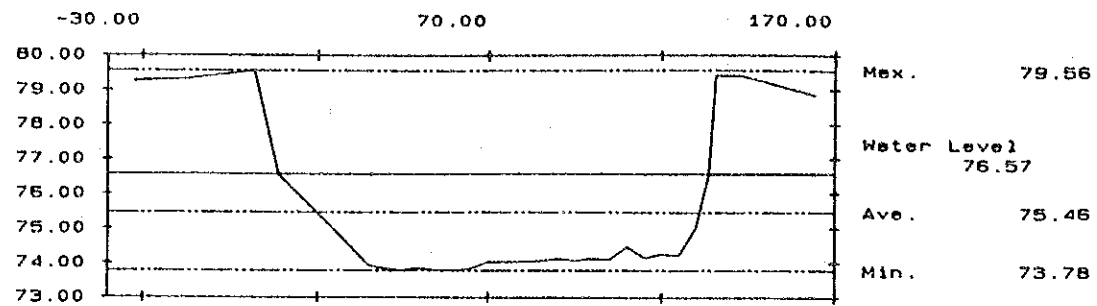


SECTION 12

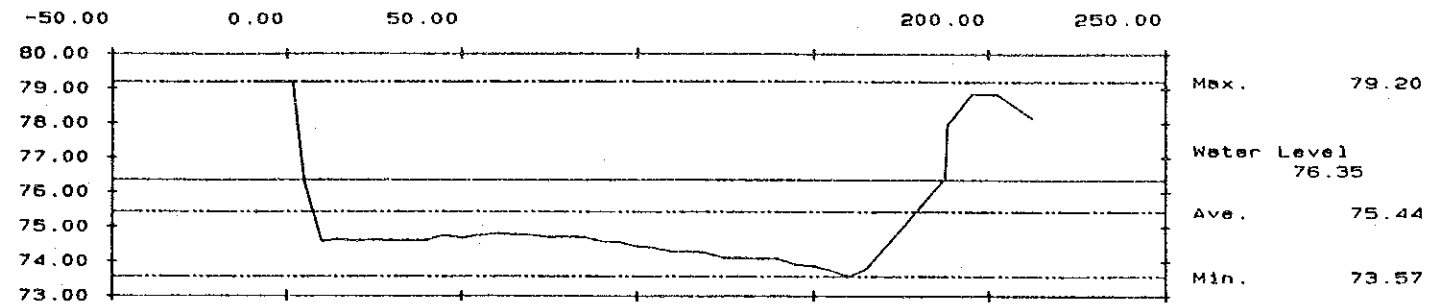


THE REPUBLIC OF VENEZUELA	
STUDY ON COMPREHENSIVE IMPROVEMENT	
OF THE APURE RIVER BASIN	
CROSS SECTION	
BRUZUAL 19/29	
PLAN NO. 38	SCALE H:1:1000 V:1:100
SURVEY DATE MAY-JULY 1992	
JICA	JAPAN INTERNATIONAL COOPERATION AGENCY

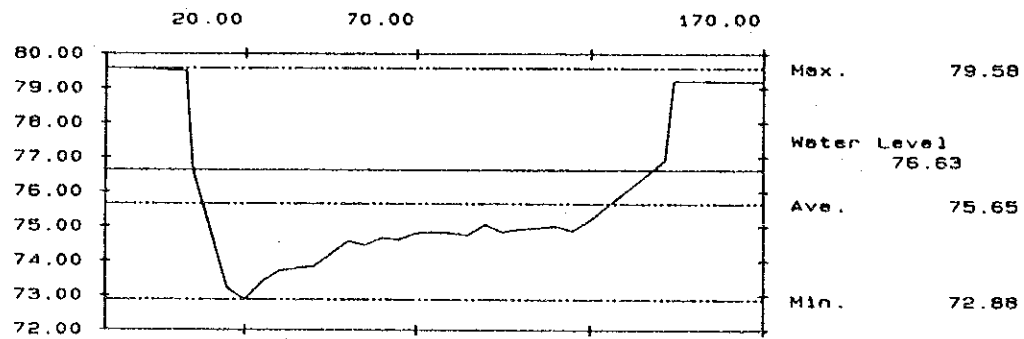
SECTION 12 (LEFT)



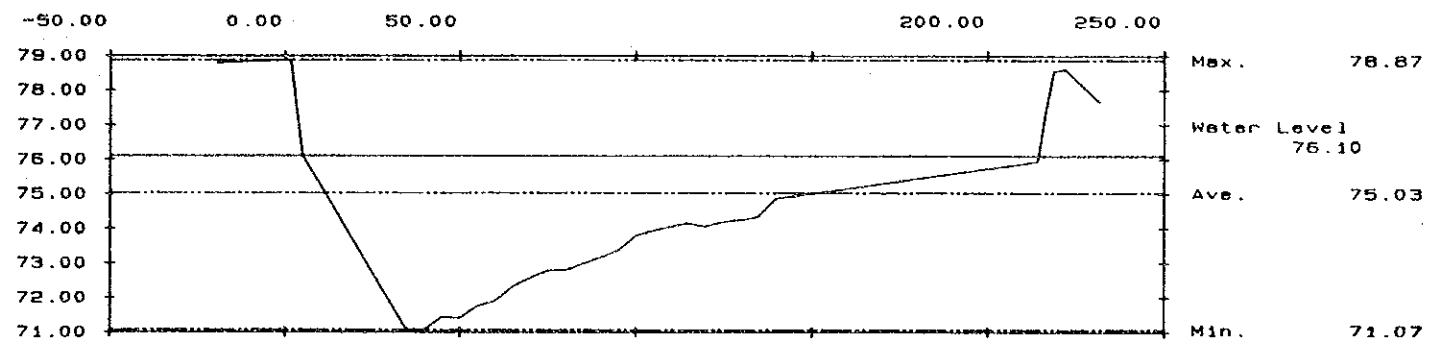
SECTION 9 (LEFT)



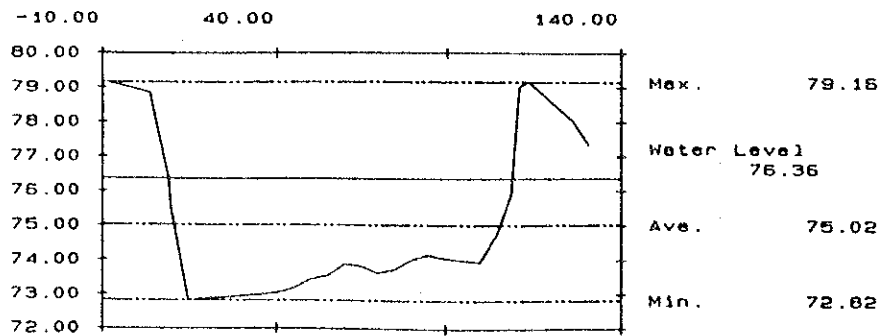
SECTION 11 (LEFT)



SECTION 8 (LEFT)

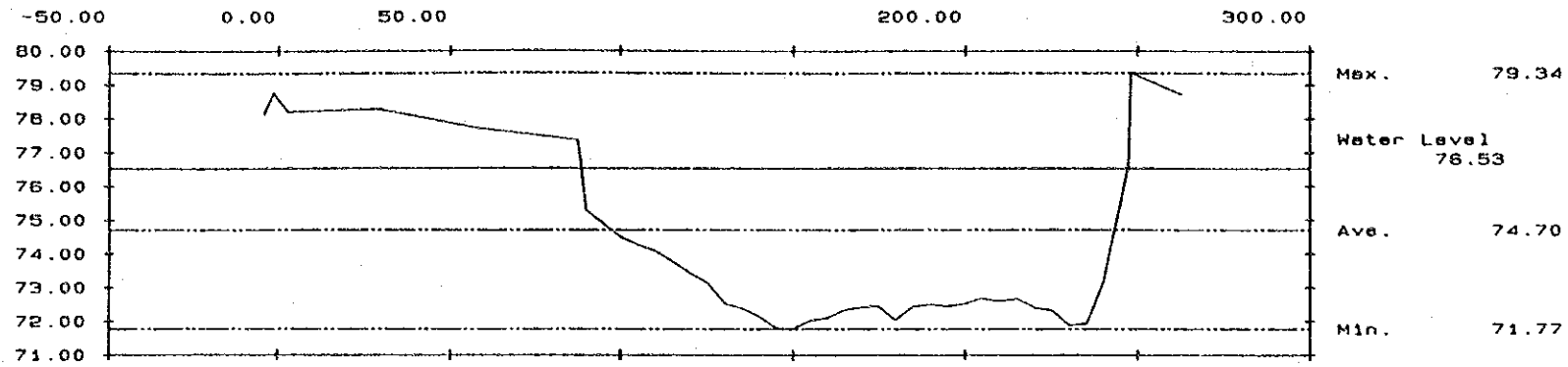


SECTION 10 (LEFT)

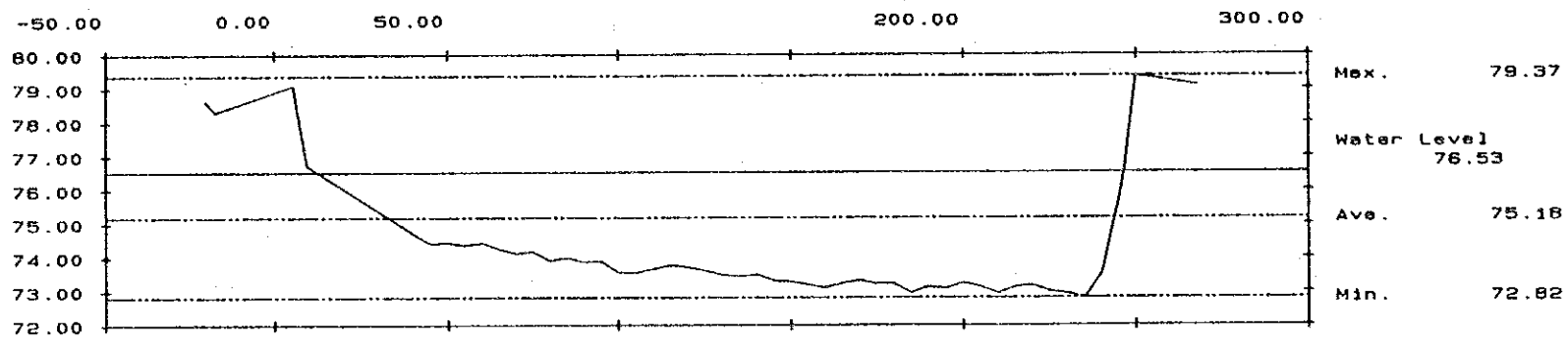


THE REPUBLIC OF VENEZUELA	
STUDY ON COMPREHENSIVE IMPROVEMENT	
OF THE APURE RIVER BASIN	
CROSS SECTION	
BRUZUAL 20/29	
PLAN NO. 39	SCALE H:1:1000 V:1:100
SURVEY DATE MAY-JULY 1992	
JICA JAPAN INTERNATIONAL COOPERATION AGENCY	

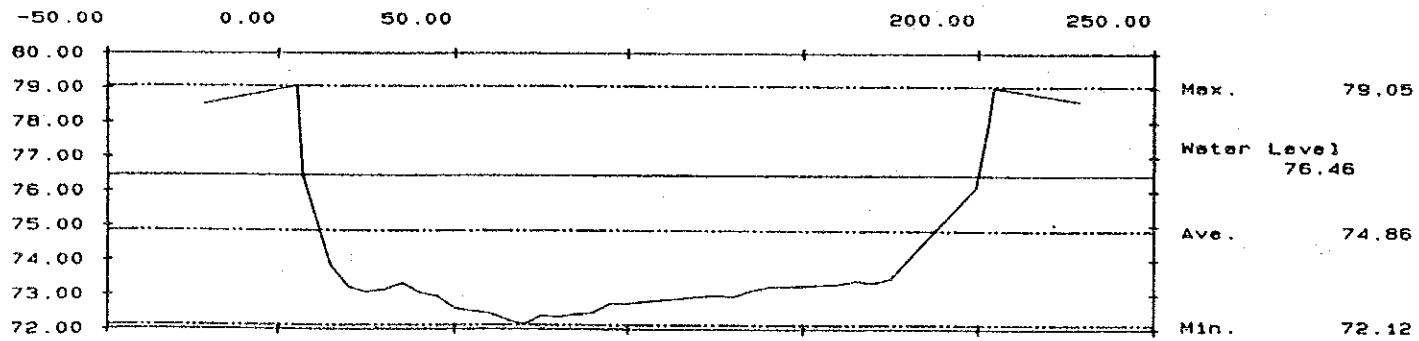
SECTION 11 (RIGHT)



SECTION 10 (RIGHT)

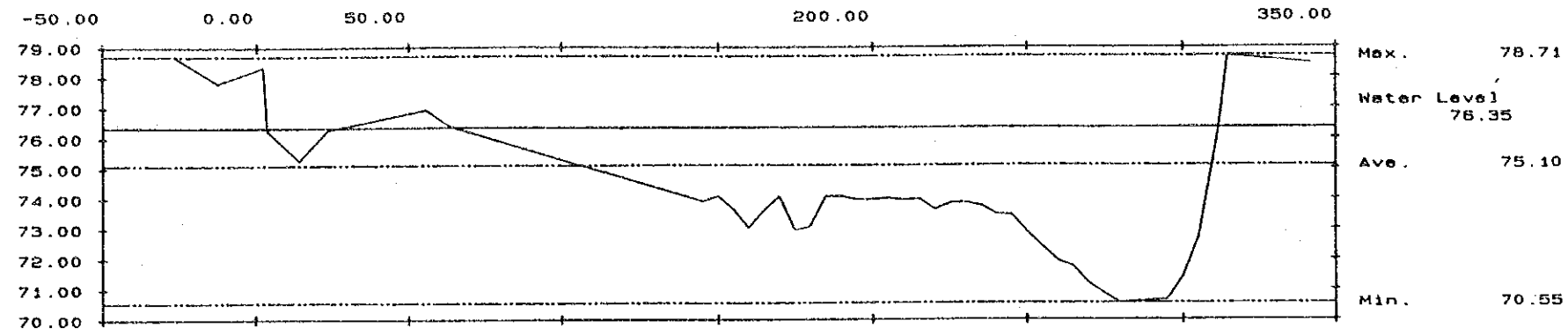


SECTION 9 (RIGHT)

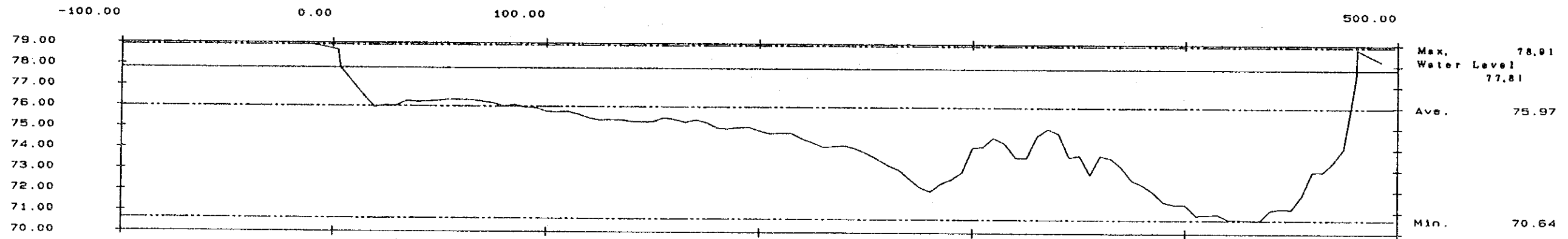


THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT			
OF THE APURE RIVER BASIN			
CROSS SECTION			
BRUZUAL 21/29			
PLAN NO.	40	SCALE	H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1982		
JICA		JAPAN INTERNATIONAL	
		COOPERATION AGENCY	

SECTION 8 (RIGHT)

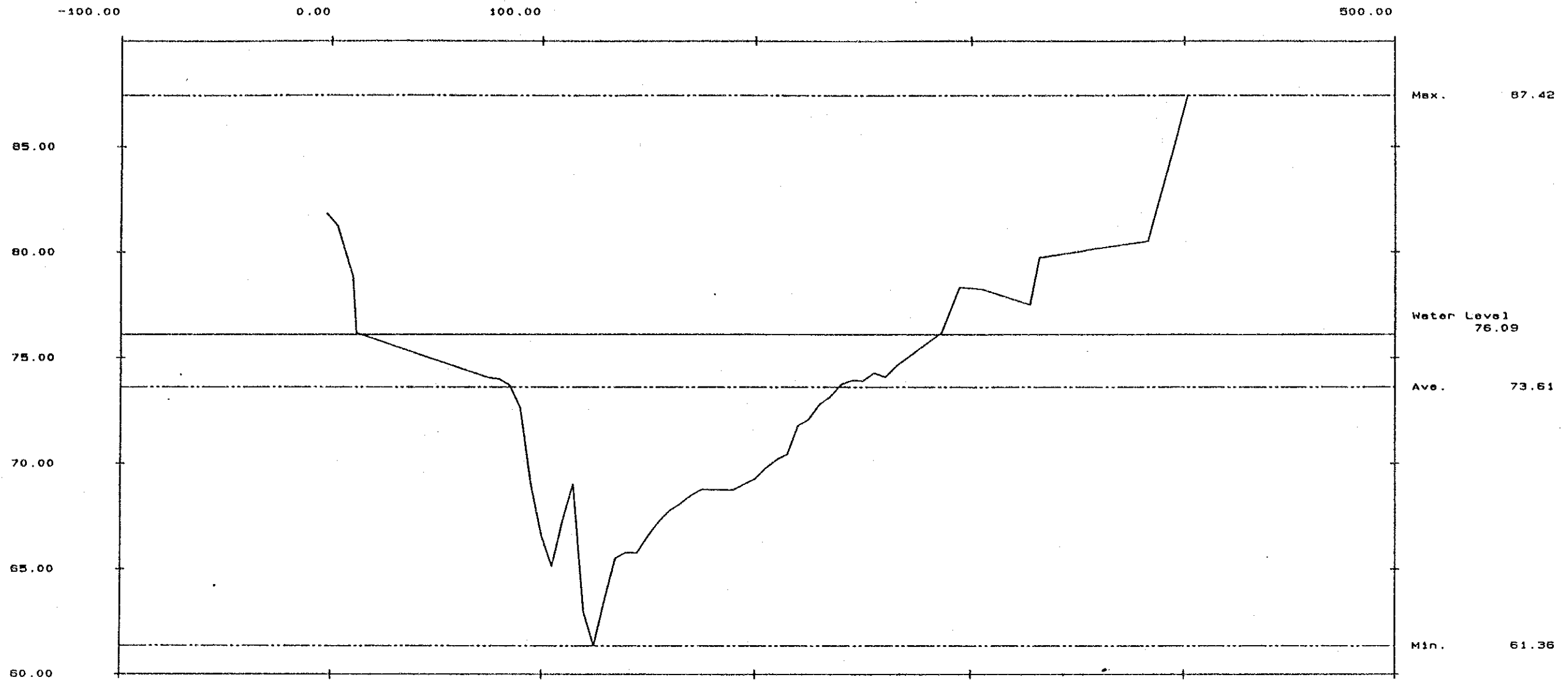


SECTION 7

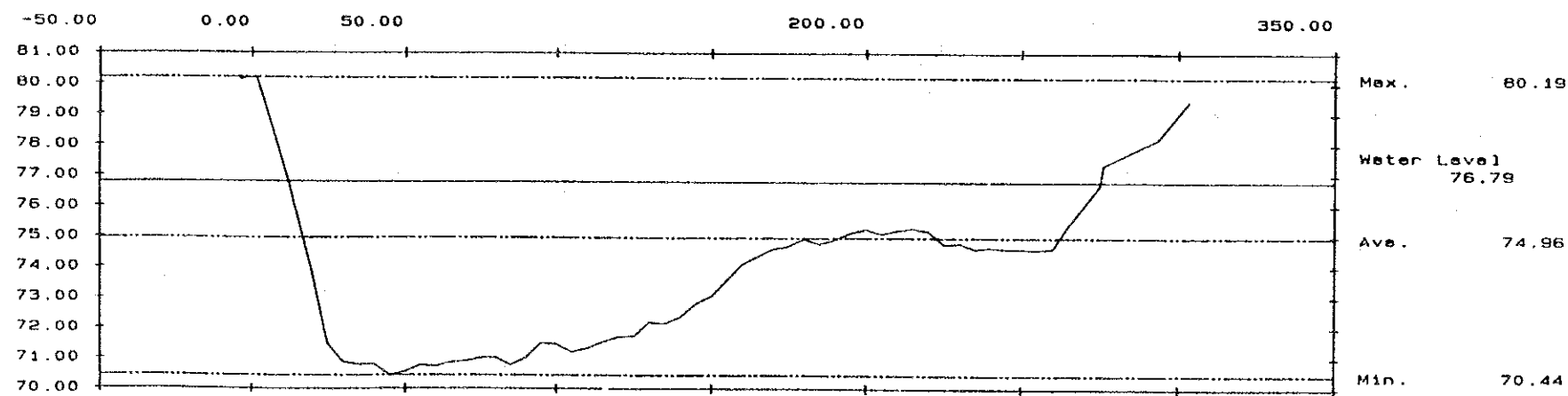


THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT			
OF THE APURE RIVER BASIN			
CROSS SECTION			
BRUZUAL 22/29			
PLAN NO.	41	SCALE	H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1992		
JICA		JAPAN INTERNATIONAL	
		COOPERATION AGENCY	

SECTION 6

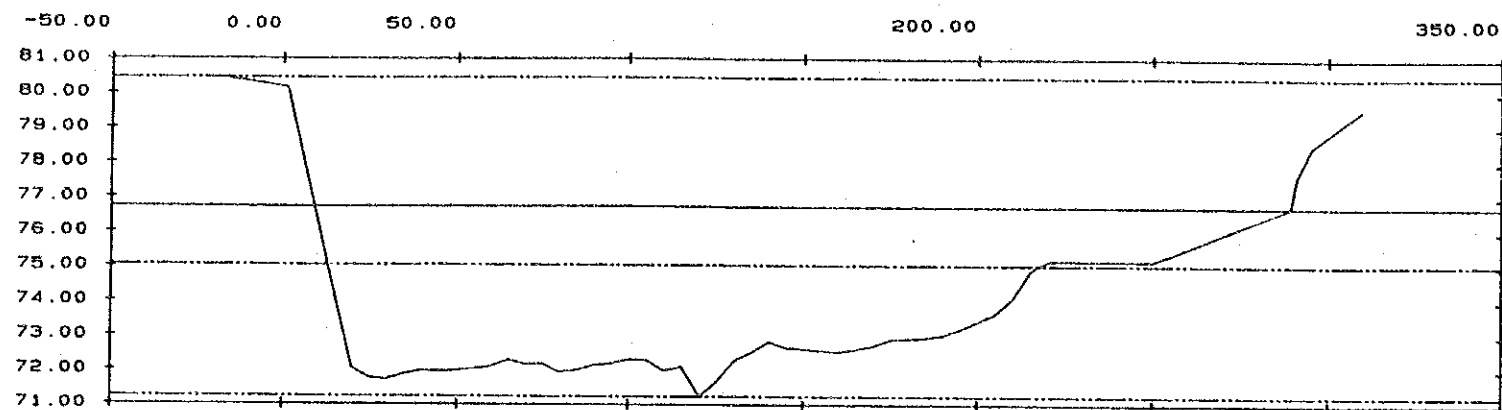


SECTION 5



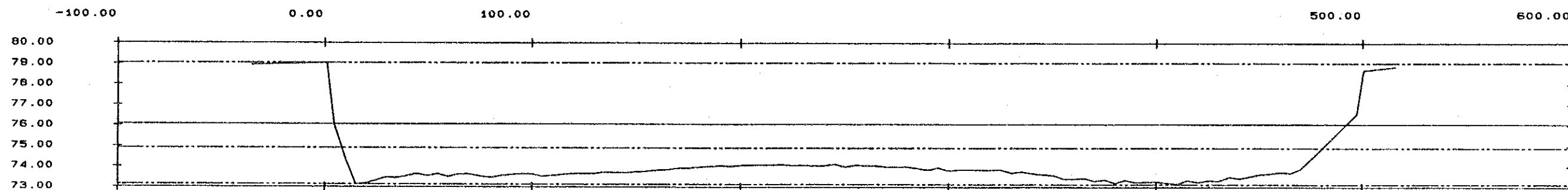
THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT			
OF THE APURE RIVER BASIN			
CROSS SECTION			
BRUZUAL 23/29			
PLAN NO.	42	SCALE	H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1992		
JICA JAPAN INTERNATIONAL COOPERATION AGENCY			

SECTION 4



Max. 80.45
 Water Level 76.73
 Ave. 75.04
 Min. 71.24

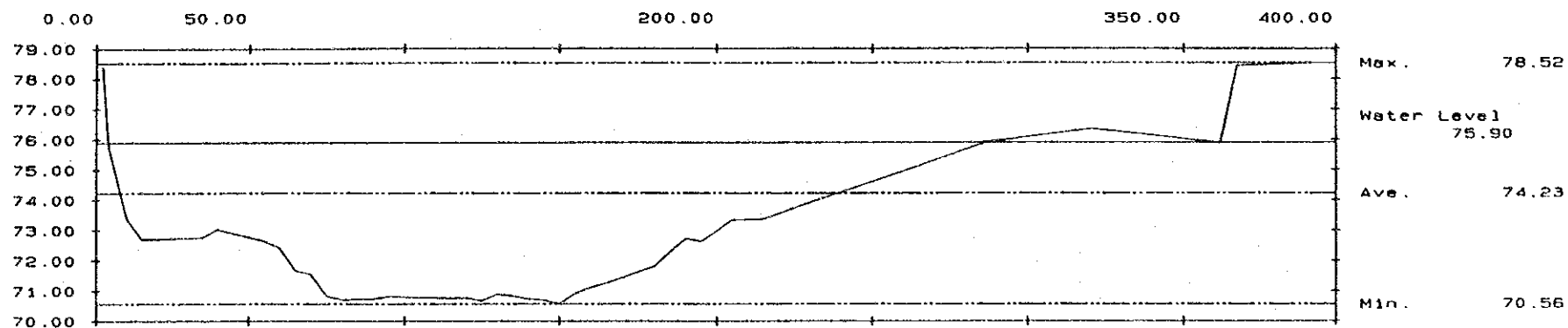
SECTION 3



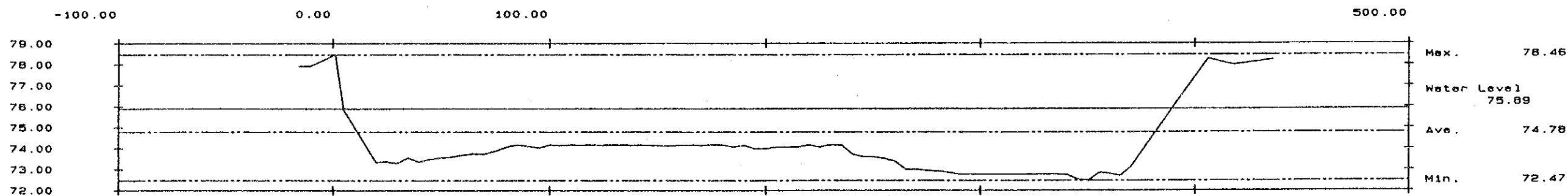
Max. 79.04
 Water Level 76.06
 Ave. 74.91
 Min. 73.14

THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT			
OF THE APURE RIVER BASIN			
CROSS SECTION			
BRUZUAL 24/28			
PLAN NO.	43	SCALE	H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1992		
JICA		JAPAN INTERNATIONAL	
		COOPERATION AGENCY	

SECTION 1 (LEFT)

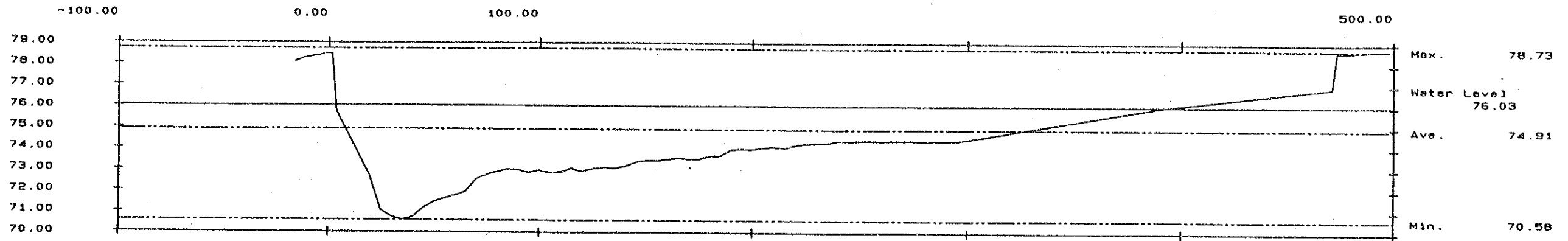


SECTION 0 (LEFT)

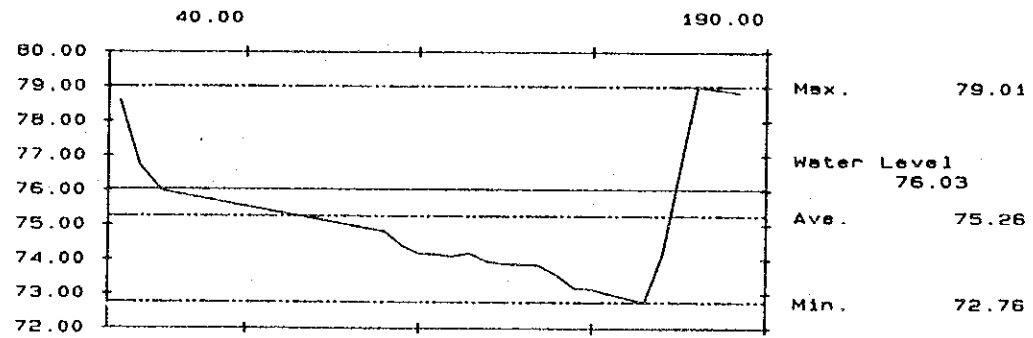


THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT			
OF THE APURE RIVER BASIN			
CROSS SECTION			
BRUZUAL 25/28			
PLAN NO.	44	SCALE	H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1982		
JICA		JAPAN INTERNATIONAL	
		COOPERATION AGENCY	

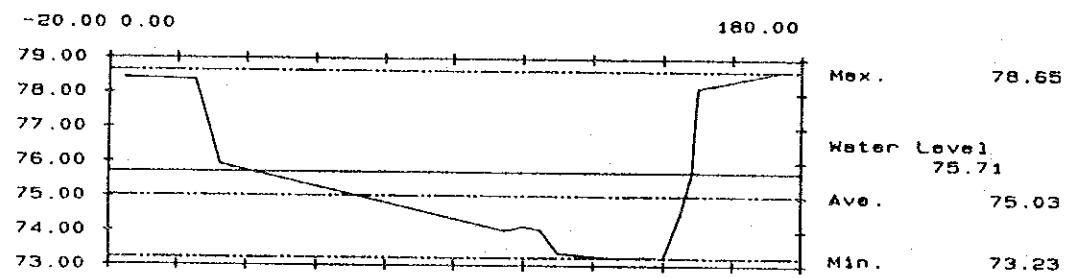
SECTION 2 (LEFT)



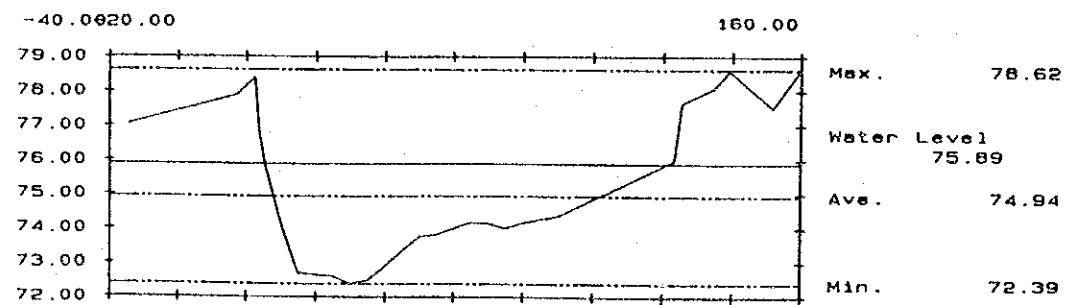
SECTION 2 (RIGHT)



SECTION 1 (RIGHT)



SECTION 0 (RIGHT)



THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT			
OF THE APURE RIVER BASIN			
CROSS SECTION			
BRUZUAL 28/29			
PLAN NO.	45	SCALE	H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1992		
JICA		JAPAN INTERNATIONAL	
COOPERATION AGENCY			

THE REPUBLIC OF VENEZUELA
STUDY ON COMPREHENSIVE IMPROVEMENT
OF THE APURE RIVER BASIN

LOCATION MAP
OF CROSS SECTION

CAMAGUAN 12/12

PLAN NO. 60 SCALE H:1:1000 V:1:100

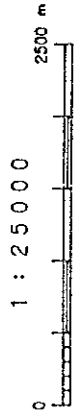
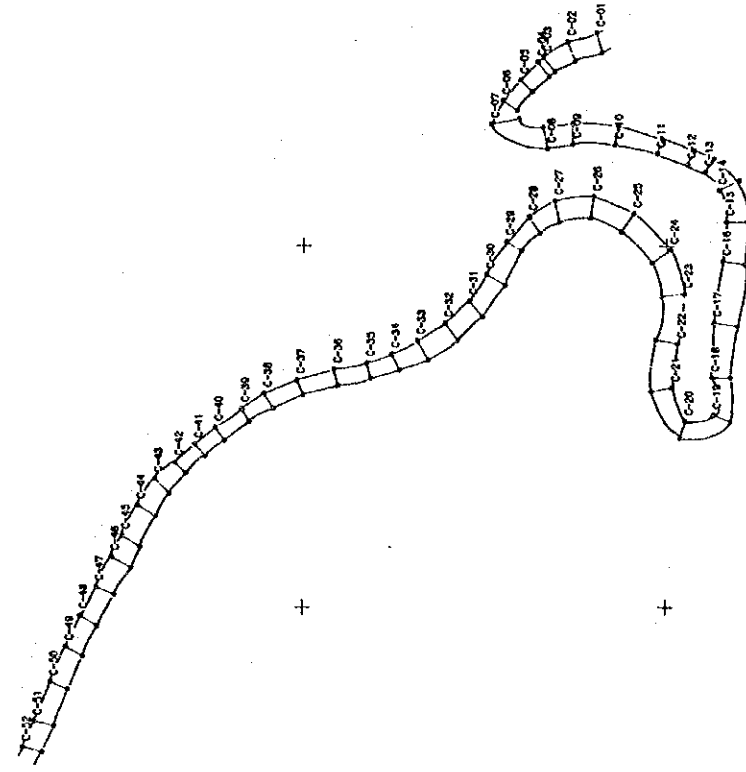
SURVEY DATE MAY-JULY 1992

JICA
JAPAN INTERNATIONAL
COOPERATION AGENCY

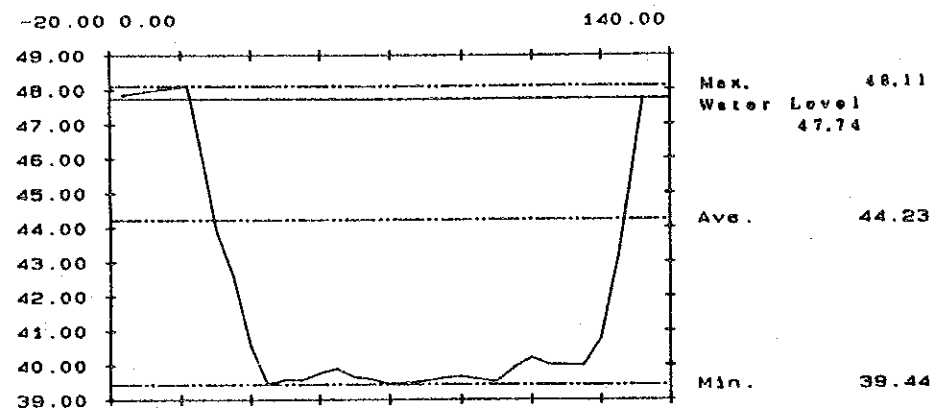
Result of control point survey Caguas site (1)

Station	Easting	Northing	Elevation
C-01-D	835,450.000	857,877.000	47,403
C-01-L	835,451.185	857,879.187	47,460
C-02-L	835,448.330	857,915.223	47,460
C-02-D	835,444.504	857,881.292	47,424
C-03-L	835,474.816	857,927.115	47,472
C-03-D	835,474.816	857,927.115	47,472
C-04-L	835,491.484	857,975.342	47,530
C-04-D	835,491.484	857,975.342	47,530
C-05-L	835,509.128	857,975.342	47,530
C-05-D	835,509.128	857,975.342	47,530
C-06-L	835,529.018	857,967.122	47,470
C-06-D	835,529.018	857,967.122	47,470
C-07-L	835,531.627	857,949.378	47,459
C-07-D	835,531.627	857,949.378	47,459
C-08-L	835,531.627	857,949.378	47,459
C-08-D	835,531.627	857,949.378	47,459
C-09-L	835,531.627	857,949.378	47,459
C-09-D	835,531.627	857,949.378	47,459
C-10-L	835,531.627	857,949.378	47,459
C-10-D	835,531.627	857,949.378	47,459
C-11-L	835,531.627	857,949.378	47,459
C-11-D	835,531.627	857,949.378	47,459
C-12-L	835,546.450	857,965.460	47,500
C-12-D	835,546.450	857,965.460	47,500
C-13-L	835,546.450	857,965.460	47,500
C-13-D	835,546.450	857,965.460	47,500
C-14-L	835,546.450	857,965.460	47,500
C-14-D	835,546.450	857,965.460	47,500
C-15-L	835,546.450	857,965.460	47,500
C-15-D	835,546.450	857,965.460	47,500
C-16-L	835,546.450	857,965.460	47,500
C-16-D	835,546.450	857,965.460	47,500
C-17-L	835,546.450	857,965.460	47,500
C-17-D	835,546.450	857,965.460	47,500
C-18-L	835,546.450	857,965.460	47,500
C-18-D	835,546.450	857,965.460	47,500
C-19-L	835,546.450	857,965.460	47,500
C-19-D	835,546.450	857,965.460	47,500
C-20-L	835,546.450	857,965.460	47,500
C-20-D	835,546.450	857,965.460	47,500
C-21-L	835,546.450	857,965.460	47,500
C-21-D	835,546.450	857,965.460	47,500
C-22-L	835,546.450	857,965.460	47,500
C-22-D	835,546.450	857,965.460	47,500
C-23-L	835,546.450	857,965.460	47,500
C-23-D	835,546.450	857,965.460	47,500
C-24-L	835,546.450	857,965.460	47,500
C-24-D	835,546.450	857,965.460	47,500
C-25-L	835,546.450	857,965.460	47,500
C-25-D	835,546.450	857,965.460	47,500
C-26-L	835,546.450	857,965.460	47,500
C-26-D	835,546.450	857,965.460	47,500
C-27-L	835,546.450	857,965.460	47,500
C-27-D	835,546.450	857,965.460	47,500
C-28-L	835,546.450	857,965.460	47,500
C-28-D	835,546.450	857,965.460	47,500

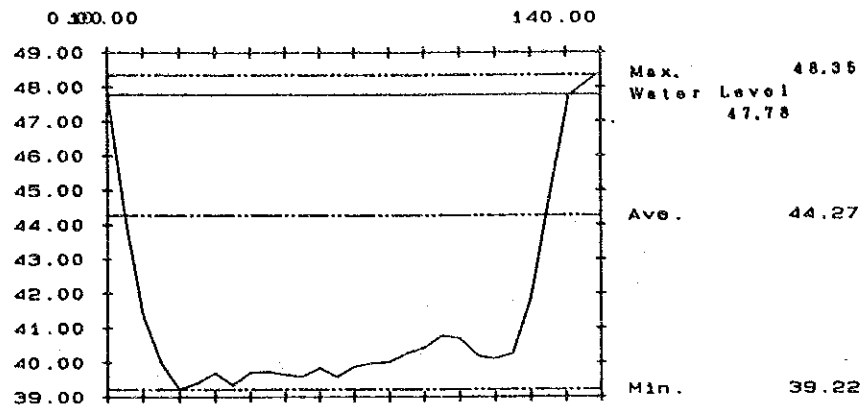
Coordinates are shown by GPS.



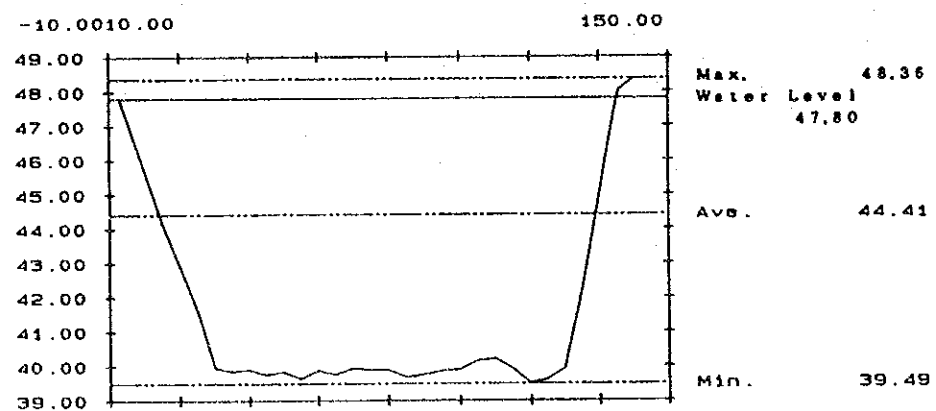
SECTION 52



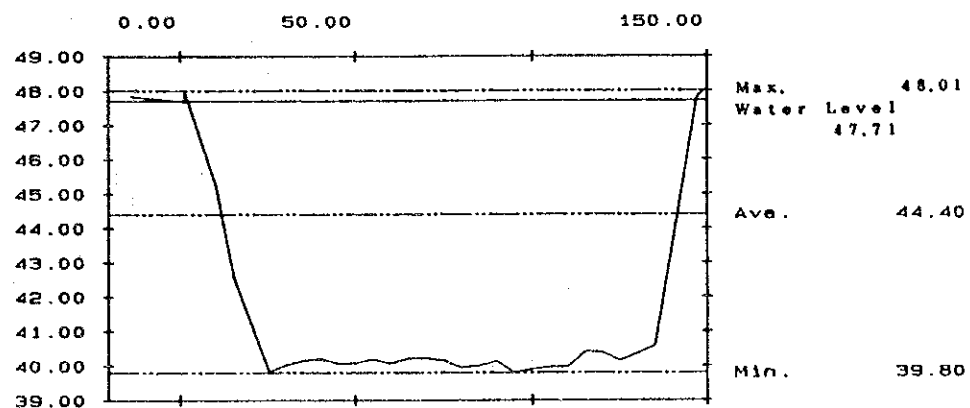
SECTION 49



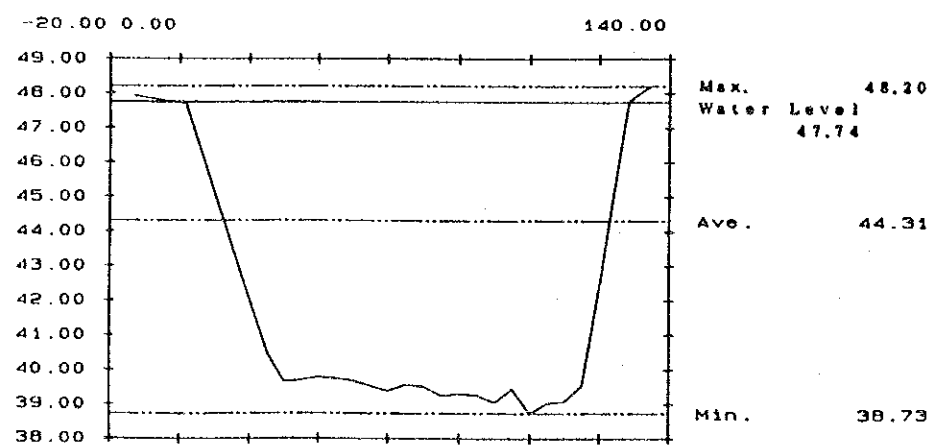
SECTION 51



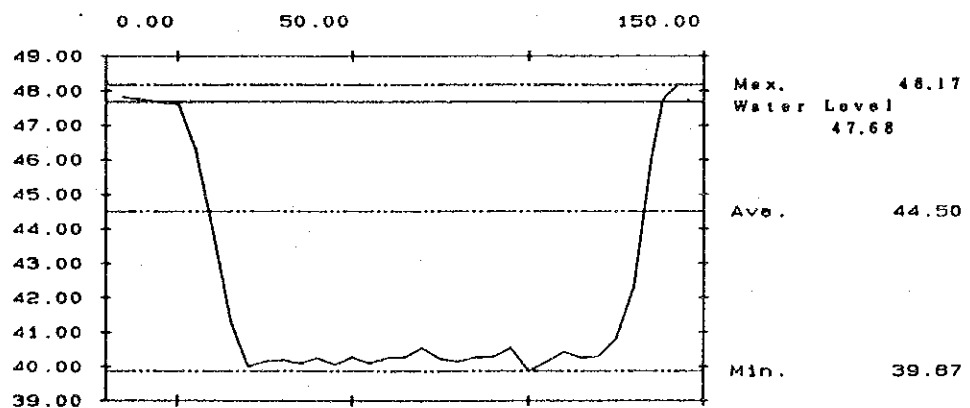
SECTION 48



SECTION 50

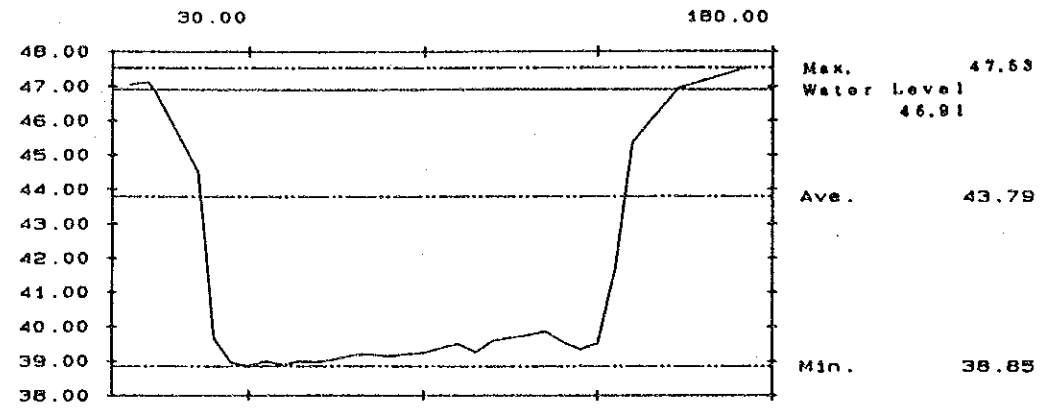


SECTION 47

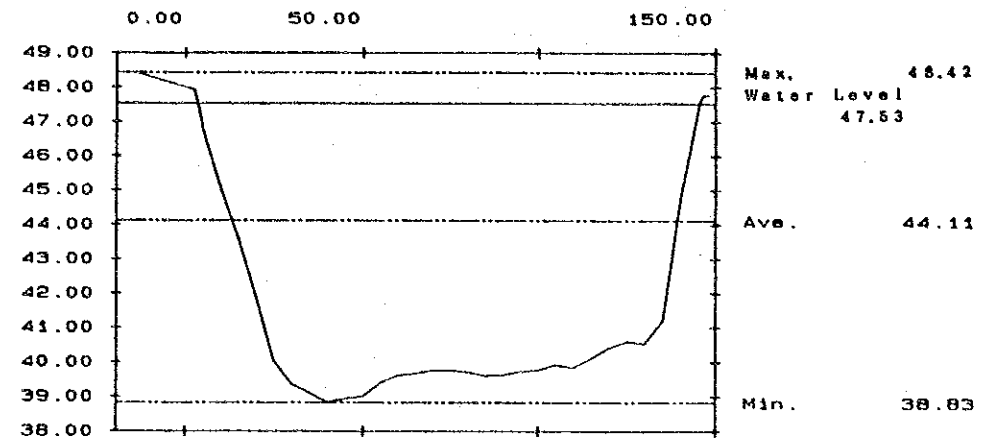


THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT OF THE APURE RIVER BASIN			
CROSS SECTION			
CAMAGUAN 1/12			
PLAN NO.	49	SCALE	H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1992		
JICA		JAPAN INTERNATIONAL COOPERATION AGENCY	

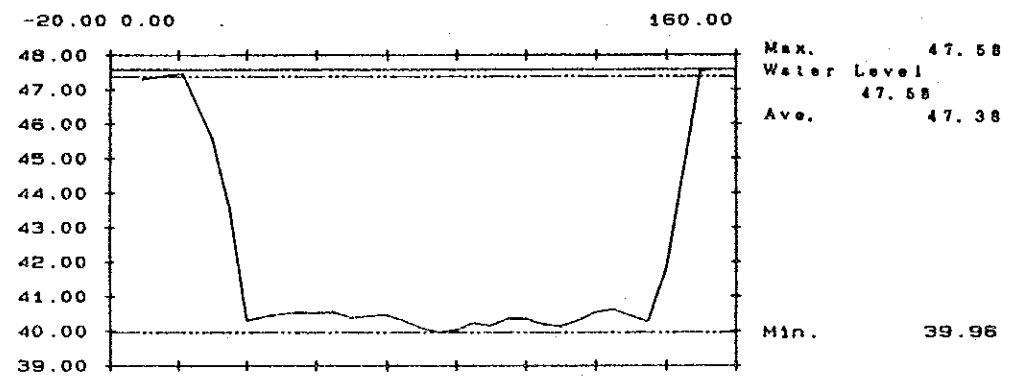
SECTION 46



SECTION 43



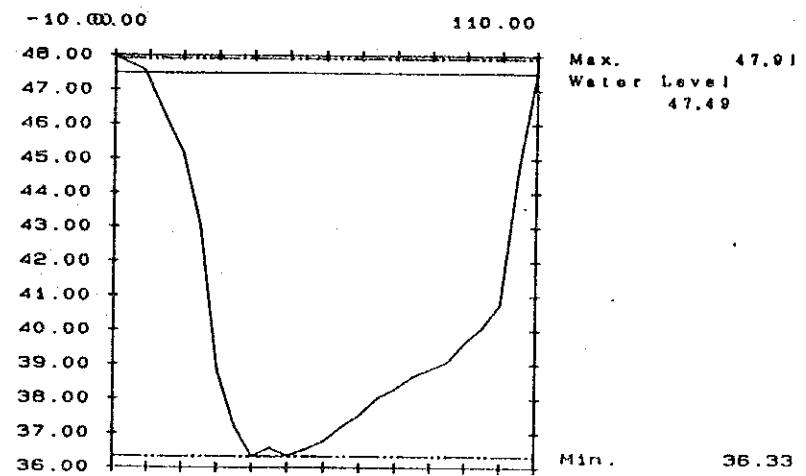
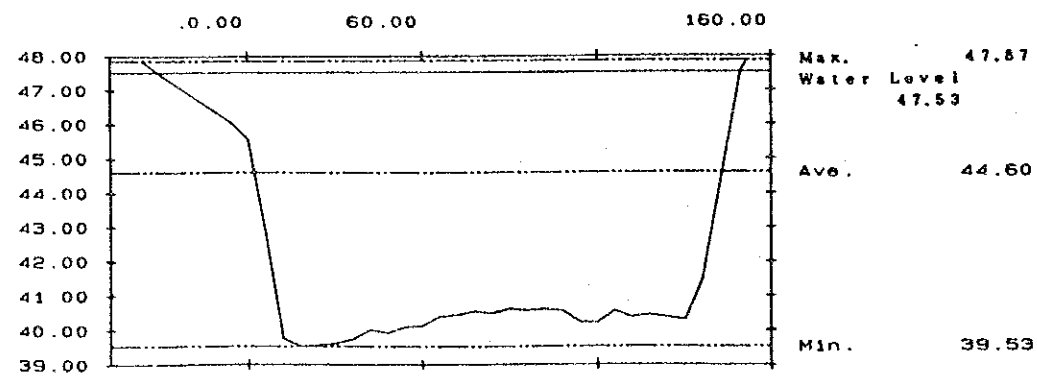
SECTION 45



SECTION 42

Ave. 55.51

SECTION 44



THE REPUBLIC OF VENEZUELA
 STUDY ON COMPREHENSIVE IMPROVEMENT
 OF THE APURE RIVER BASIN

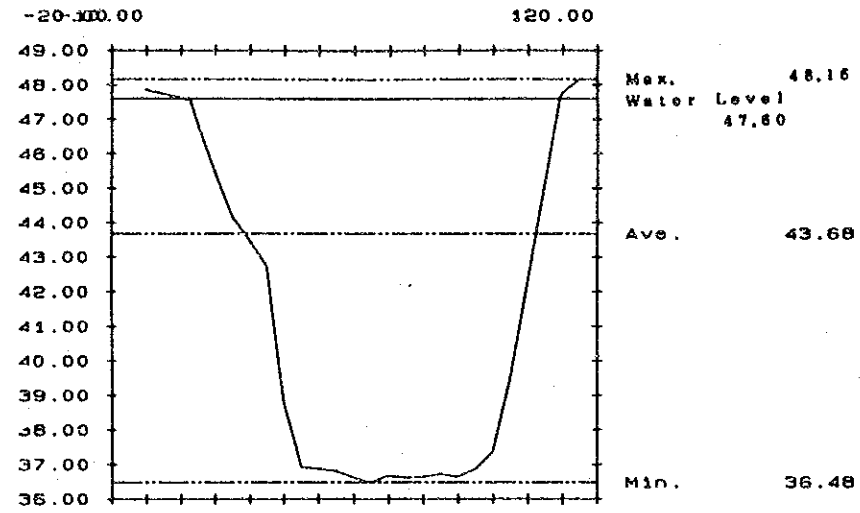
CROSS SECTION

CAMAGUAN 2/12

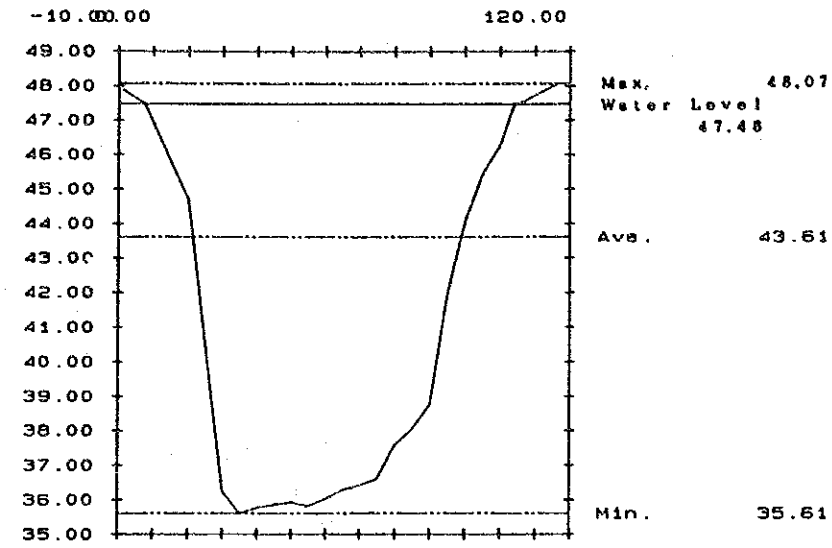
PLAN NO.	50	SCALE	H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1992		

JICA JAPAN INTERNATIONAL COOPERATION AGENCY

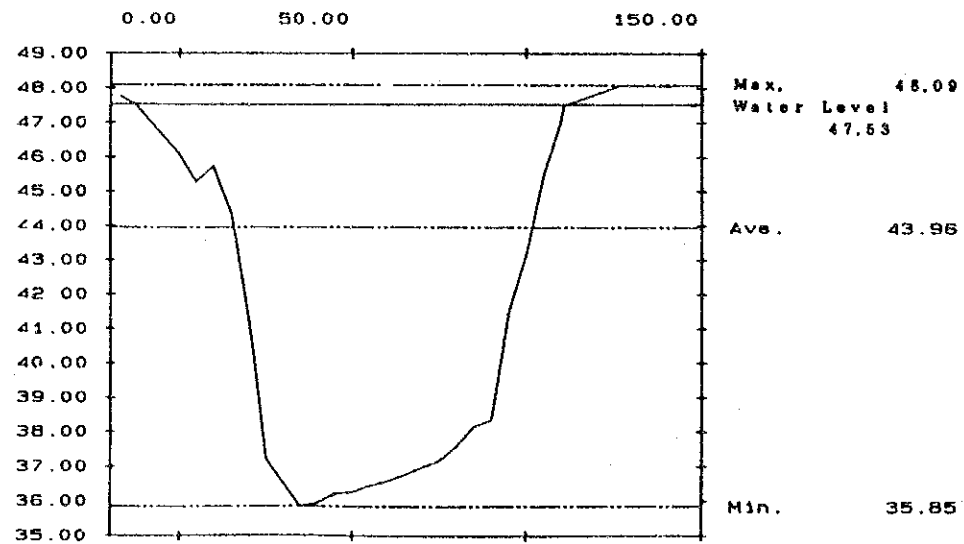
SECTION 41



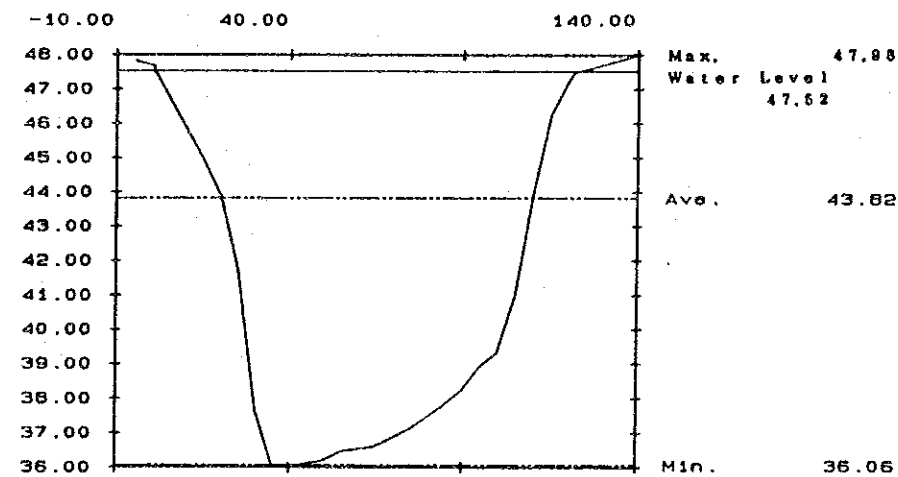
SECTION 39



SECTION 40

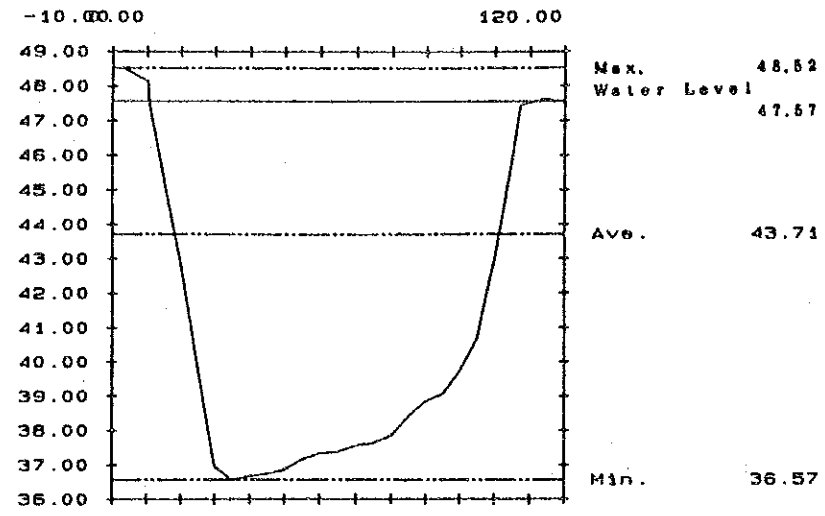


SECTION 38

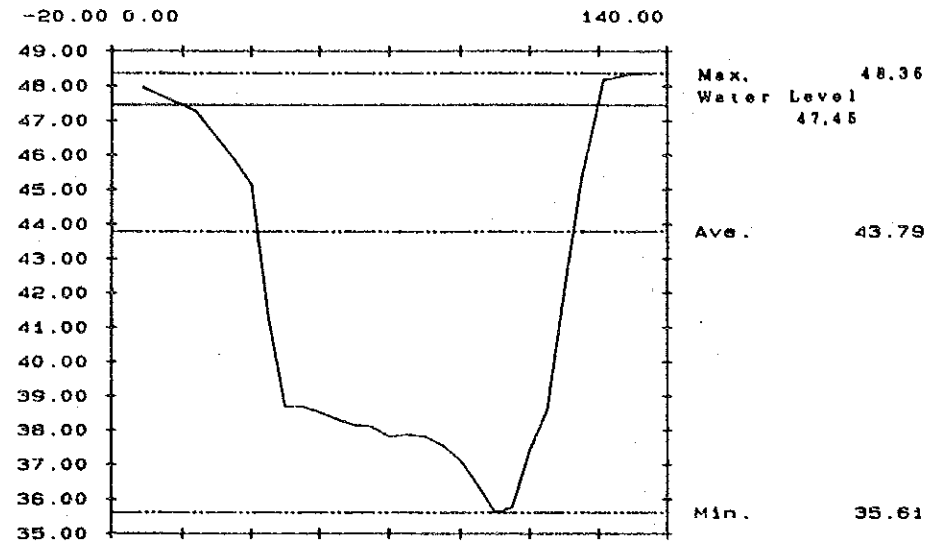


THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT			
OF THE APURE RIVER BASIN			
CROSS SECTION			
CAMAGUAN 3/12			
PLAN NO.	51	SCALE	H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1982		
JICA		JAPAN INTERNATIONAL COOPERATION AGENCY	

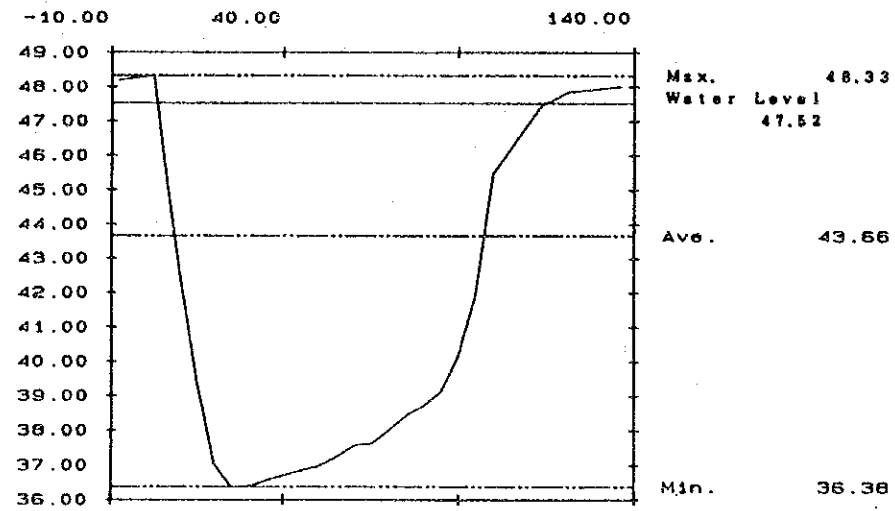
SECTION 37



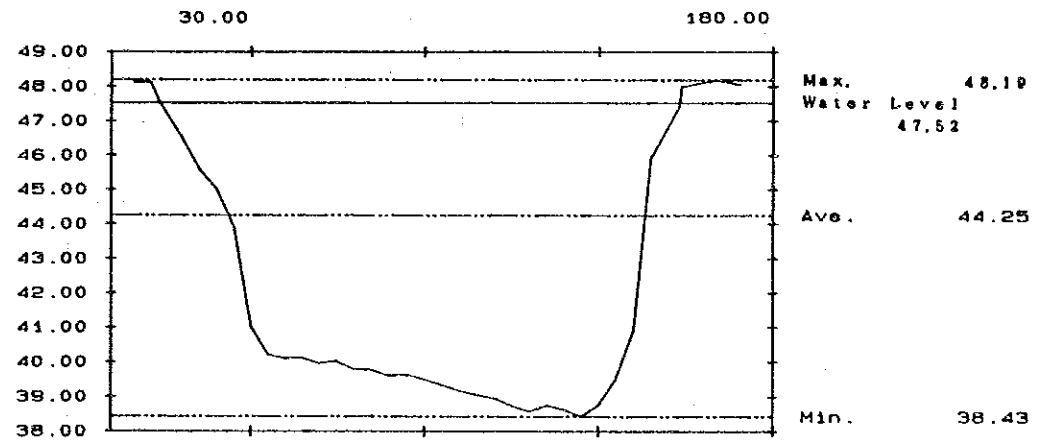
SECTION 34



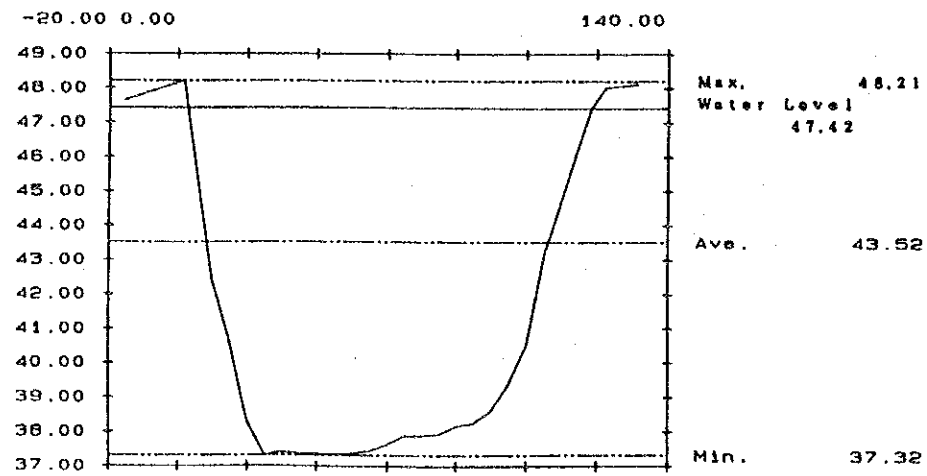
SECTION 36



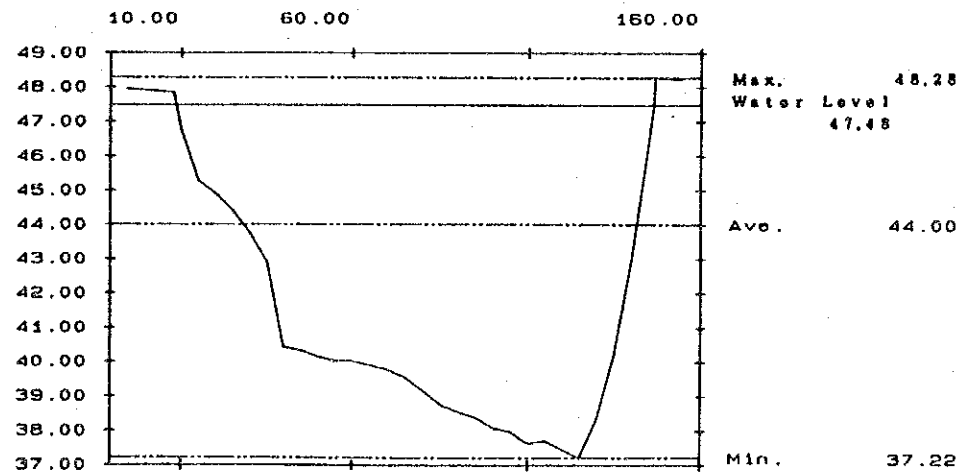
SECTION 33



SECTION 35

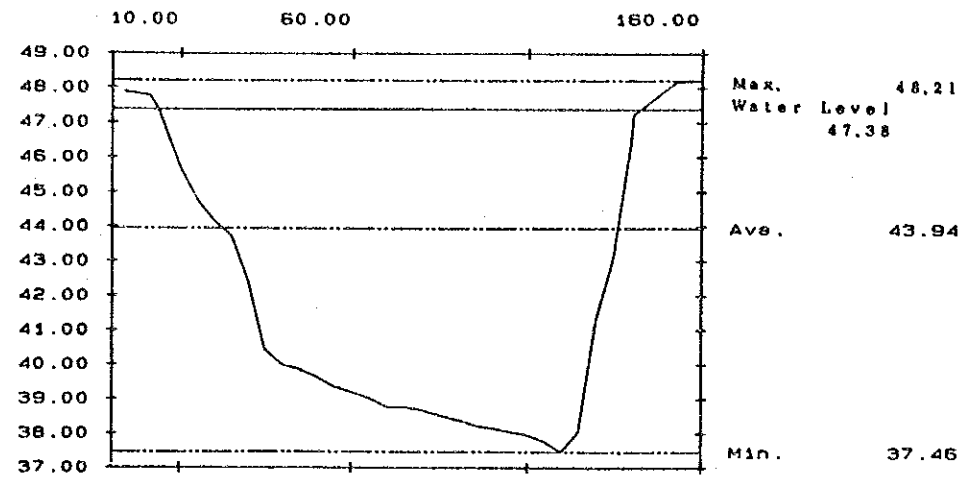


SECTION 32

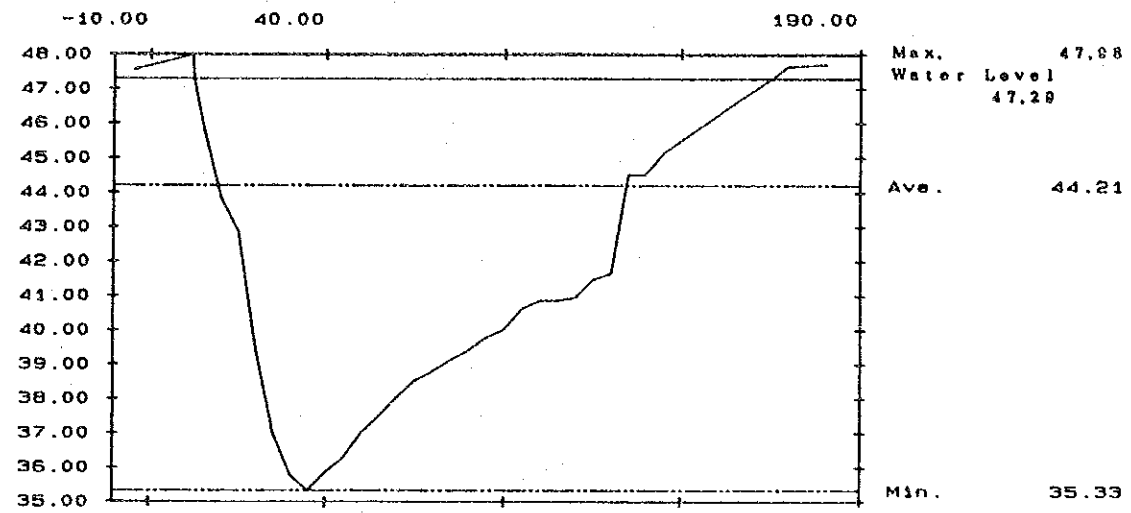


THE REPUBLIC OF VENEZUELA	
STUDY ON COMPREHENSIVE IMPROVEMENT	
OF THE APURE RIVER BASIN	
CROSS SECTION	
CAMAGUAN 4/12	
PLAN NO. 52	SCALE H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1992
JICA JAPAN INTERNATIONAL COOPERATION AGENCY	

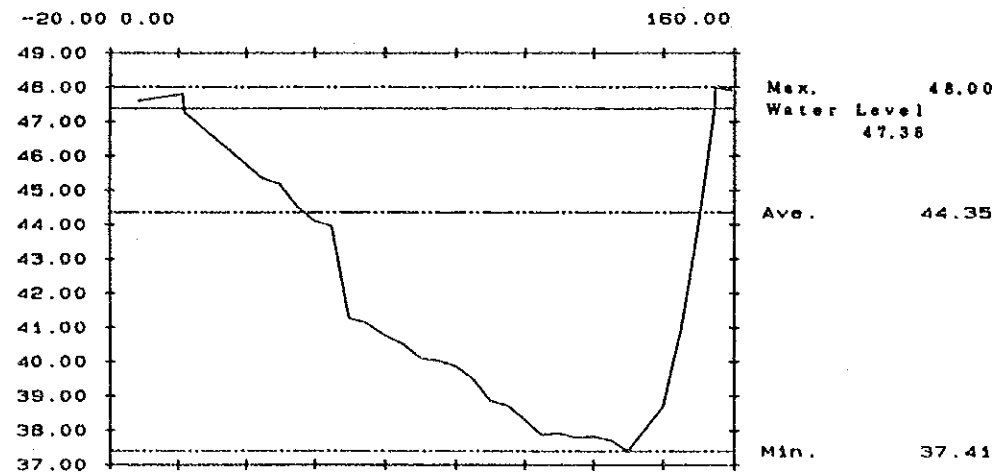
SECTION 31



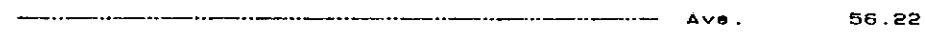
SECTION 28



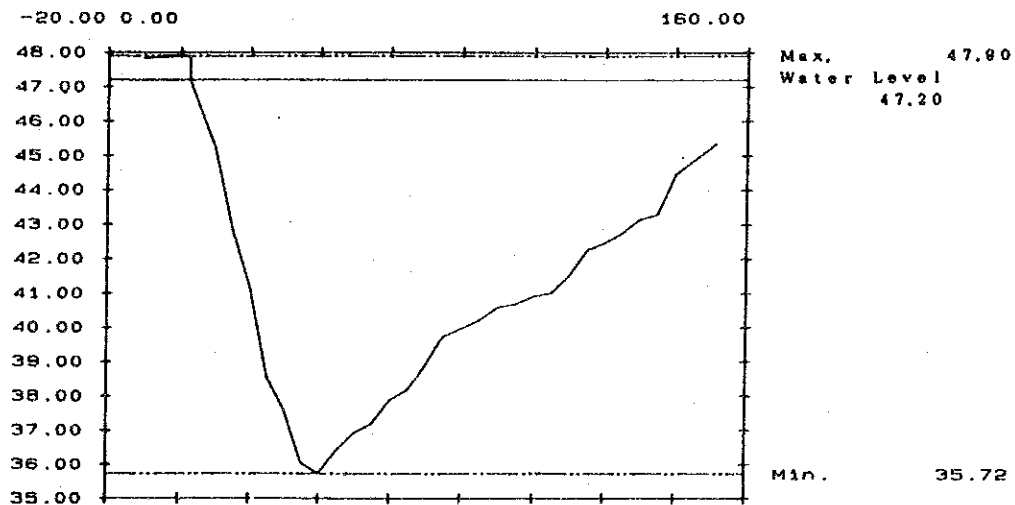
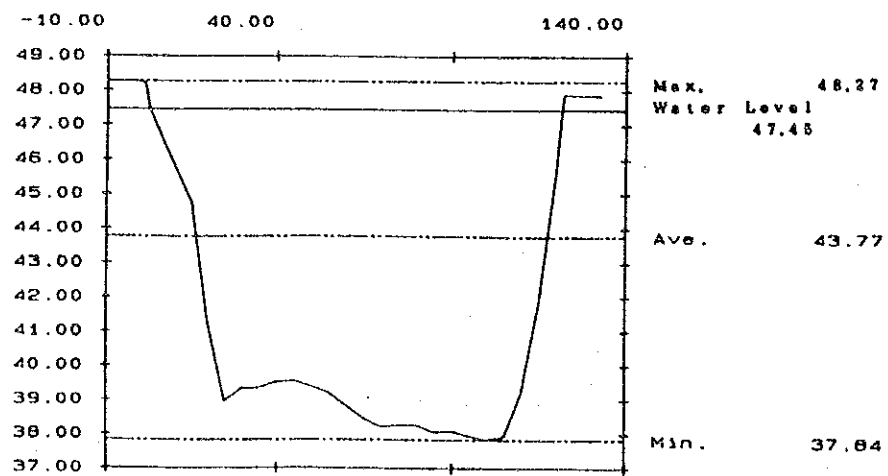
SECTION 30



SECTION 27

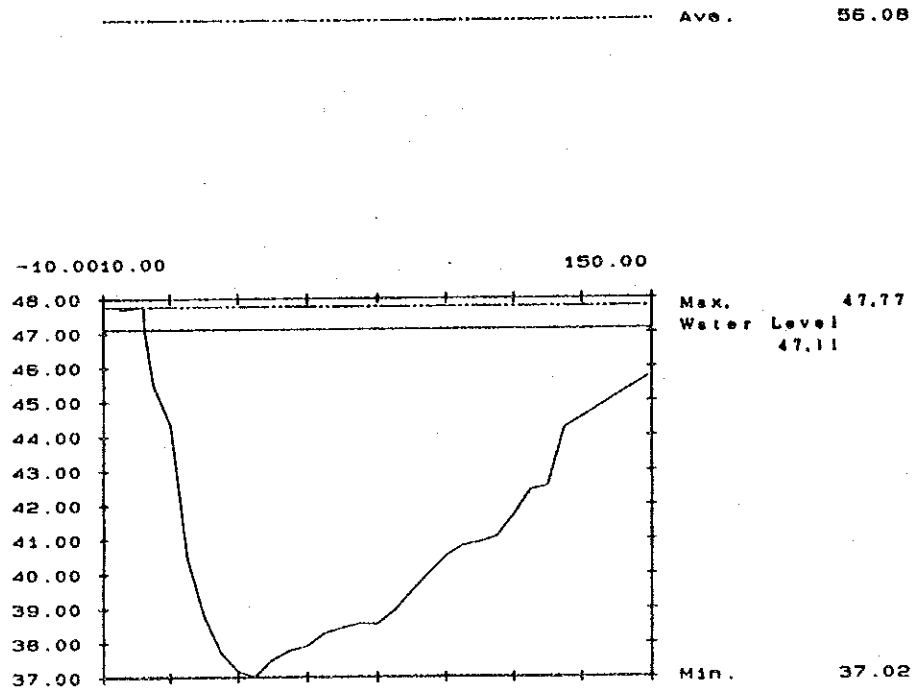


SECTION 29

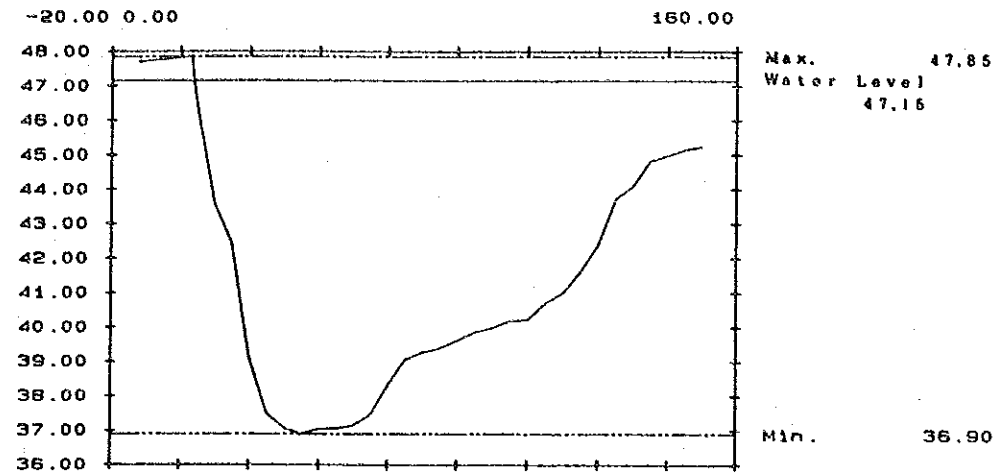


THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT			
OF THE APURE RIVER BASIN			
CROSS SECTION			
CAMAGUAN 5/12			
PLAN NO.	53	SCALE	H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1982		
JICA JAPAN INTERNATIONAL COOPERATION AGENCY			

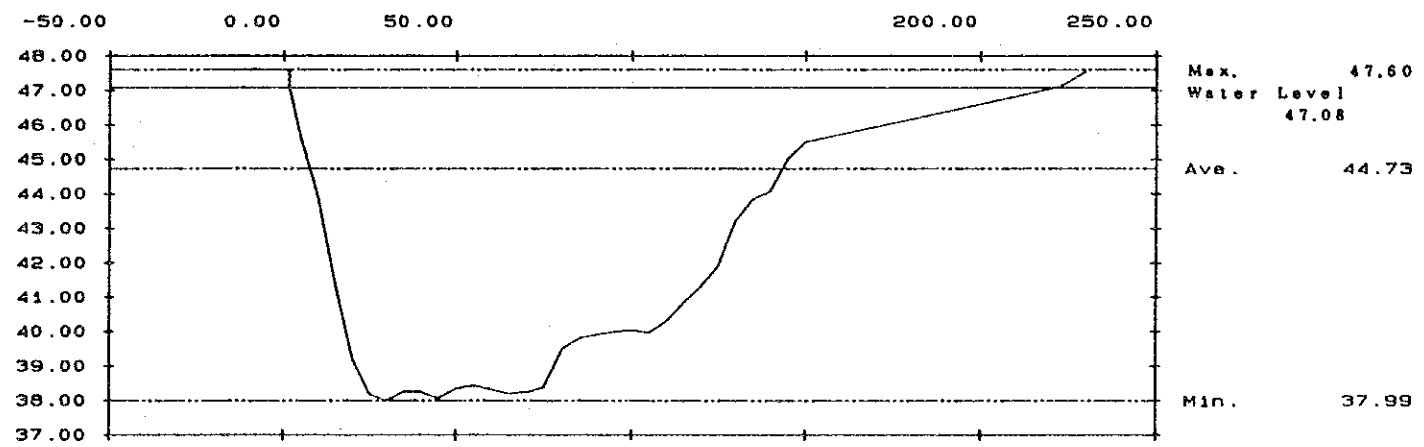
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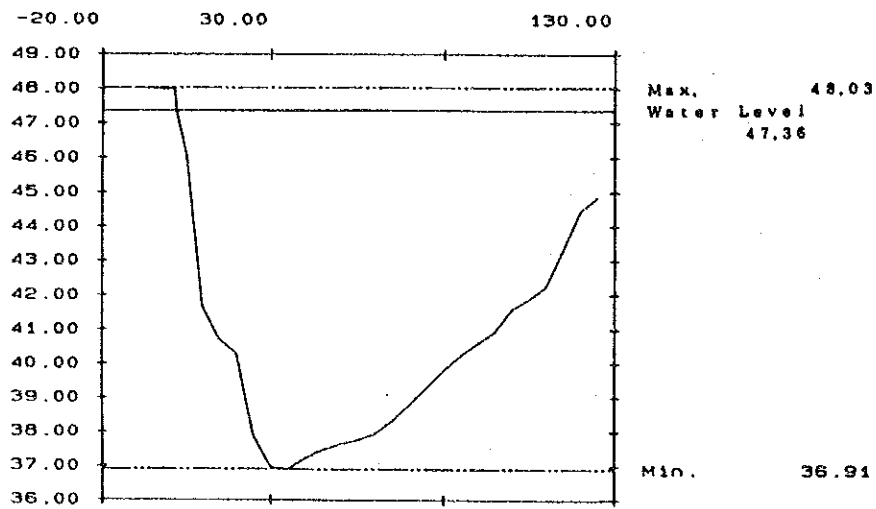
SECTION 24



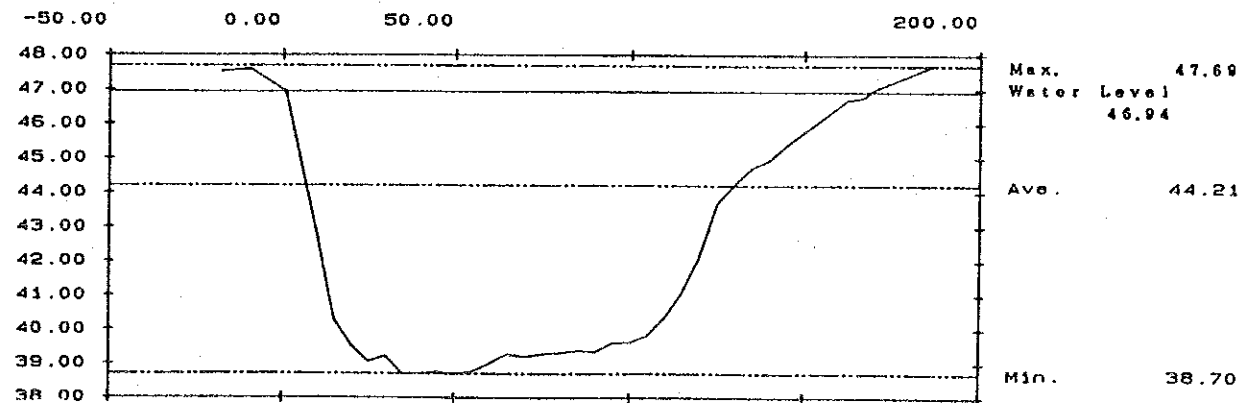
SECTION 23




SECTION 25

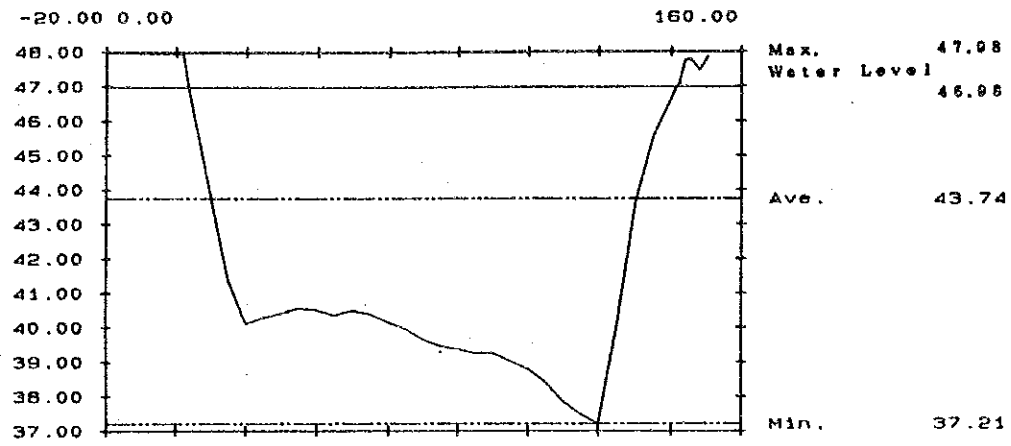


SECTION 22

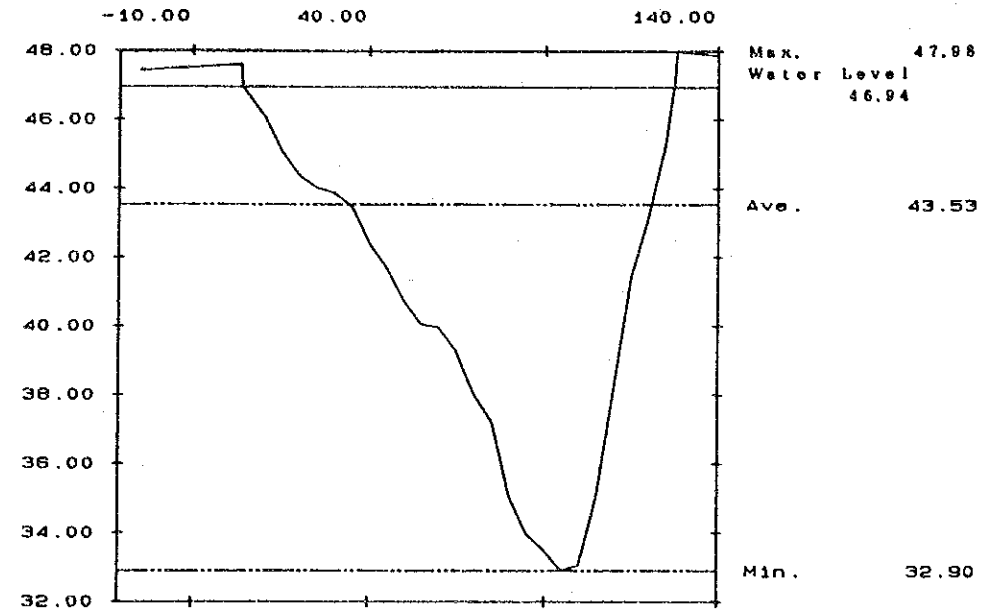


THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT OF THE APURE RIVER BASIN			
CROSS SECTION			
CAMAGUAN 8/12			
PLAN NO.	54	SCALE	H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1992		
 JAPAN INTERNATIONAL COOPERATION AGENCY			

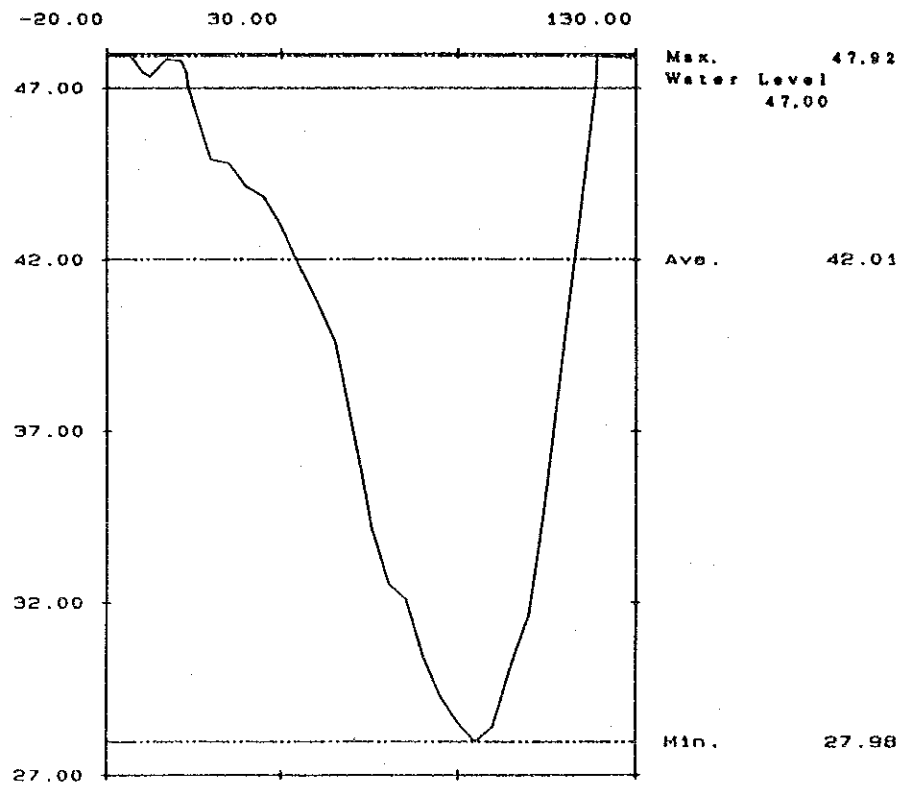
SECTION 21



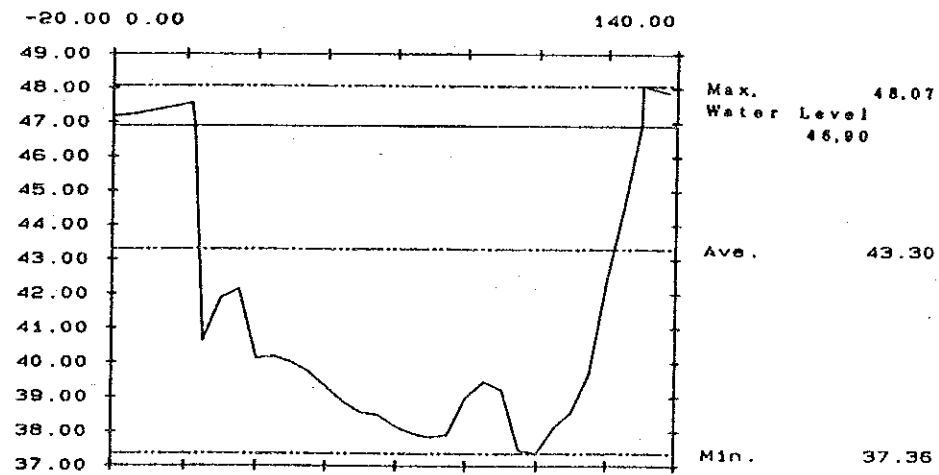
SECTION 19



SECTION 20

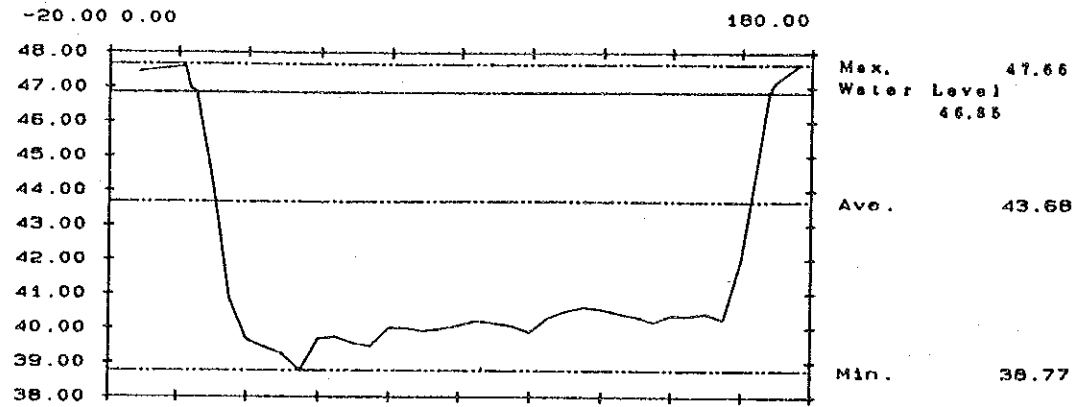


SECTION 18

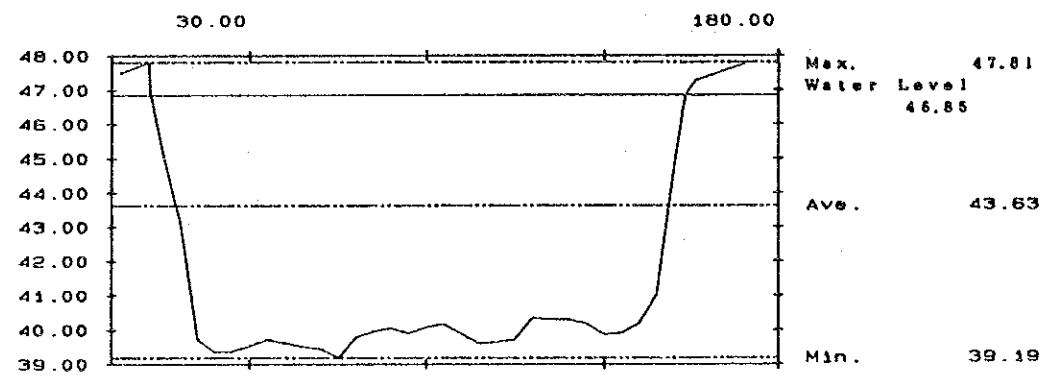


THE REPUBLIC OF VENEZUELA	
STUDY ON COMPREHENSIVE IMPROVEMENT	
OF THE APURE RIVER BASIN	
CROSS SECTION	
CAMAGUAN 7/12	
PLAN NO. 55	SCALE H:1:1000 V:1:100
SURVEY DATE MAY-JULY 1992	
JICA JAPAN INTERNATIONAL COOPERATION AGENCY	

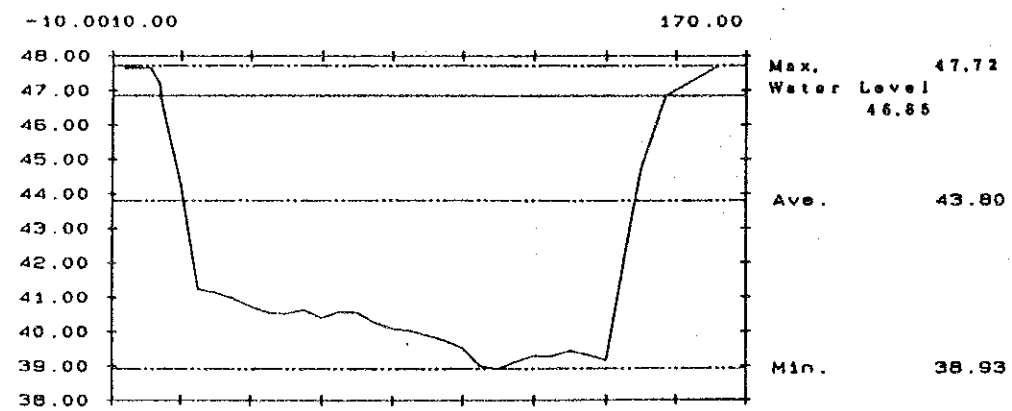
SECTION 17



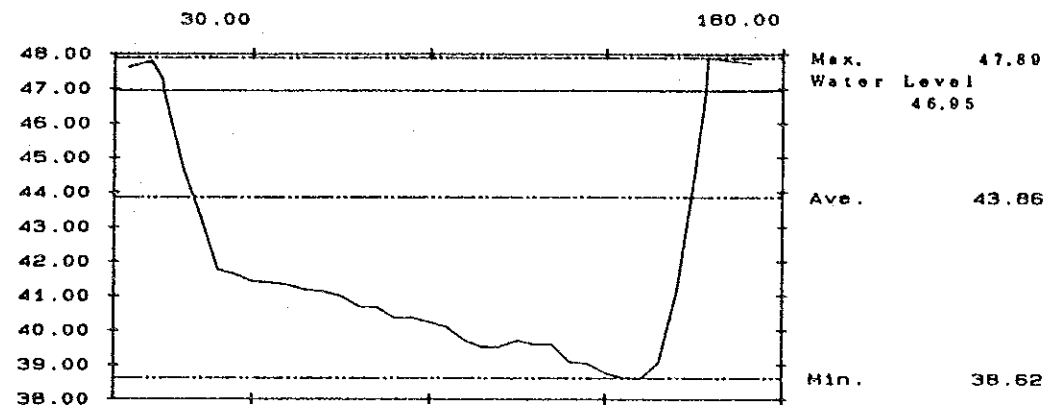
SECTION 16



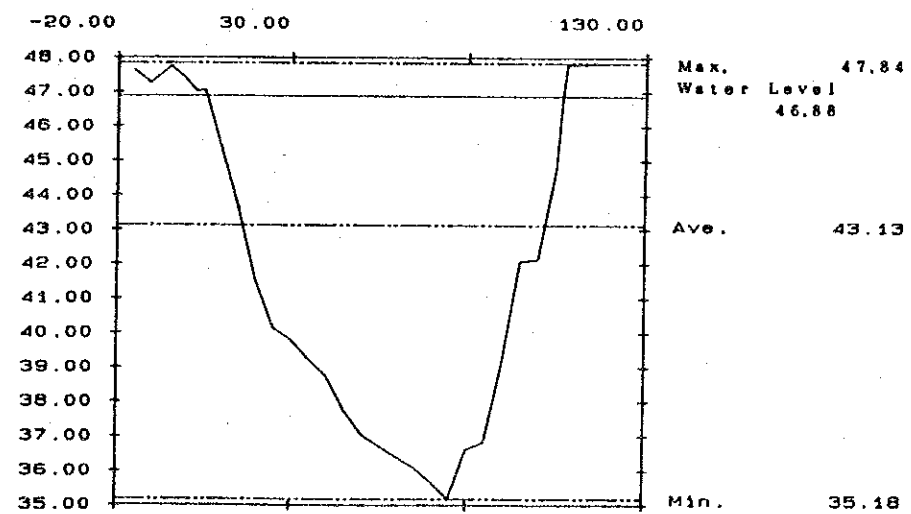
SECTION 15



SECTION 14

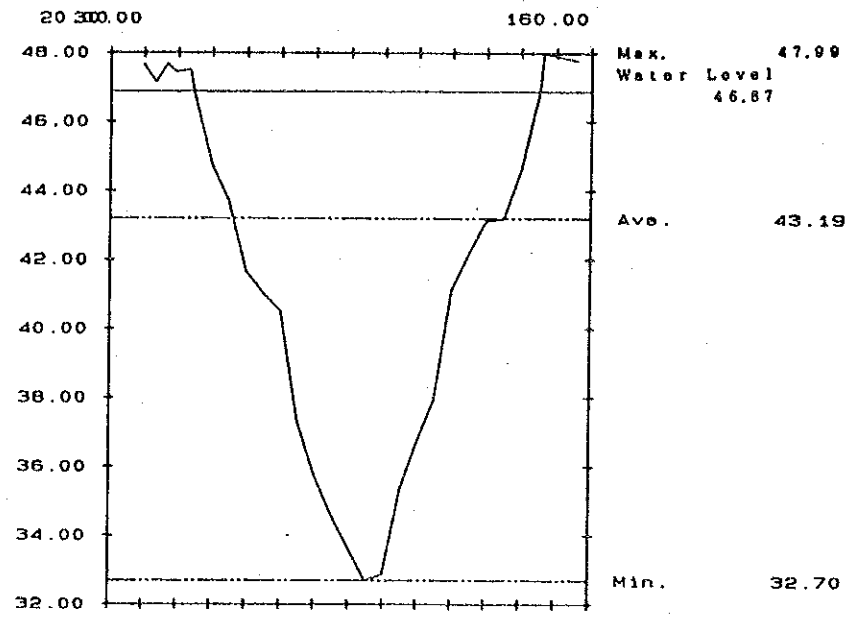


SECTION 13

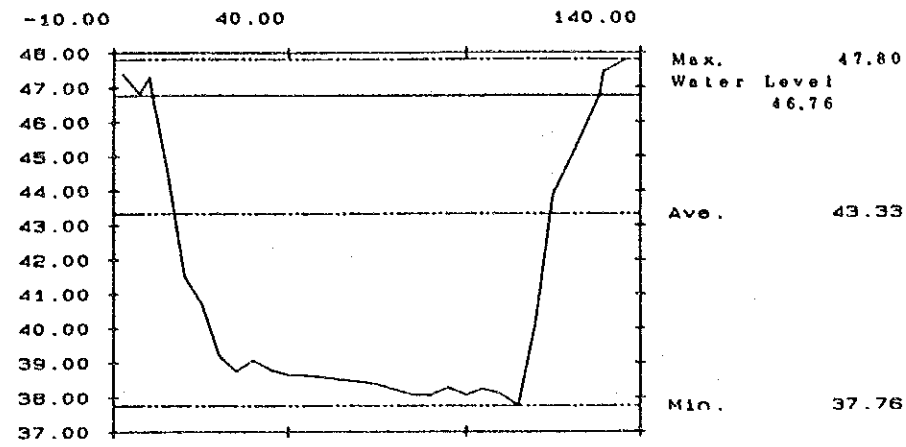


THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT			
OF THE APURE RIVER BASIN			
CROSS SECTION			
CAMAGUAN 8/12			
PLAN NO.	56	SCALE	H-1:1000 V-1:100
SURVEY DATE	MAY-JULY 1992		
JICA		JAPAN INTERNATIONAL	
COOPERATION AGENCY			

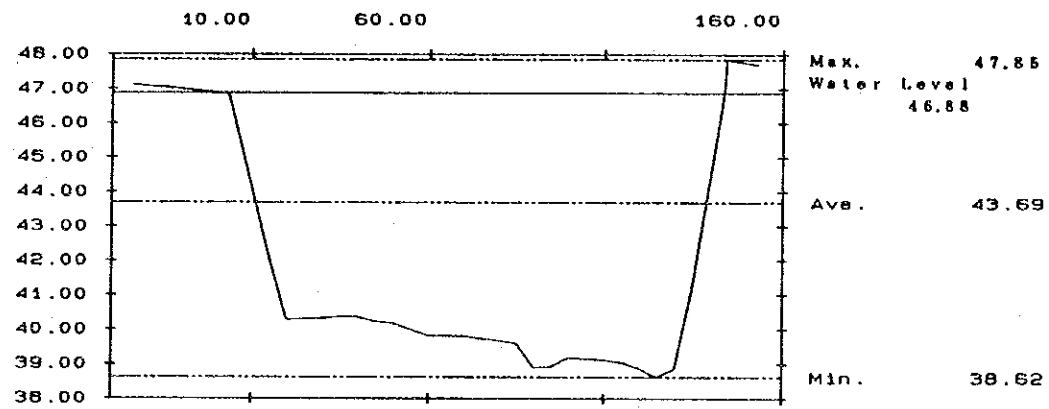
SECTION 12



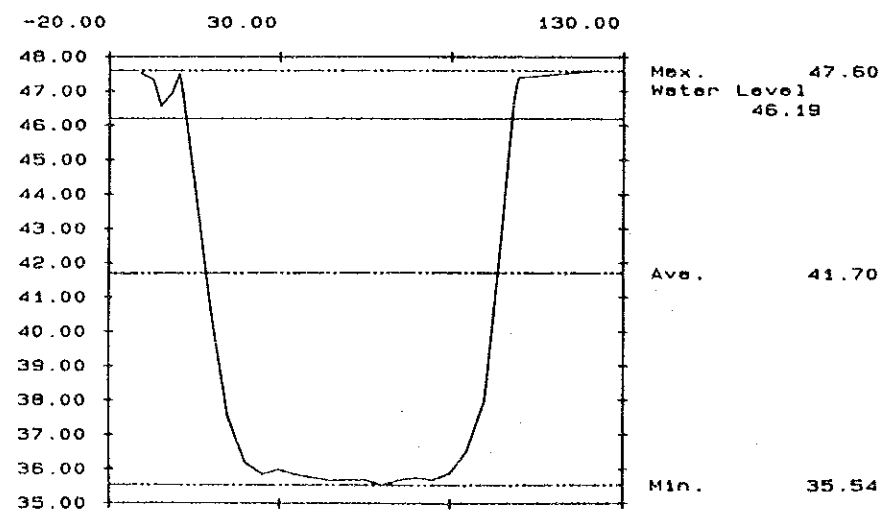
SECTION 10



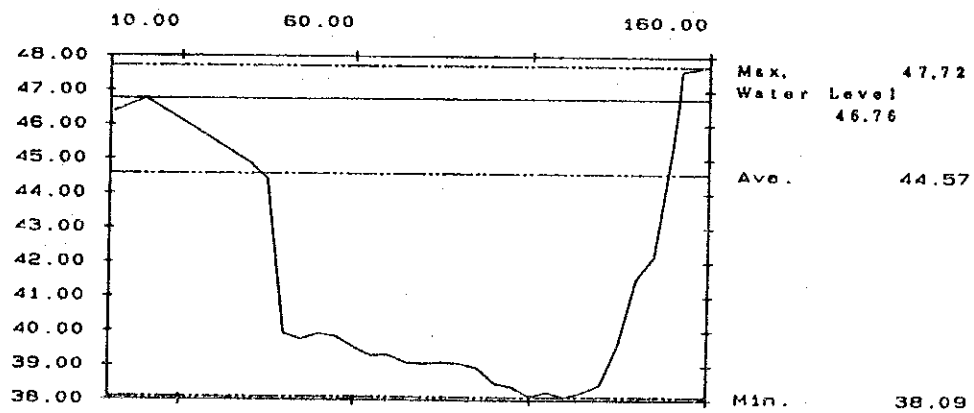
SECTION 9



SECTION 11

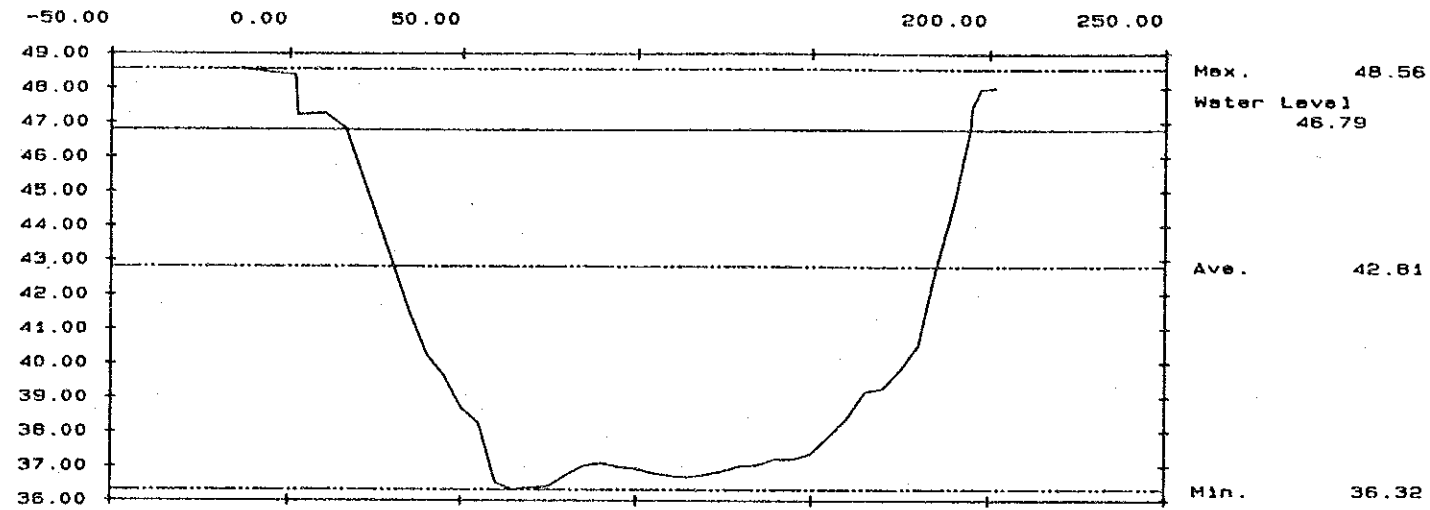


SECTION 8

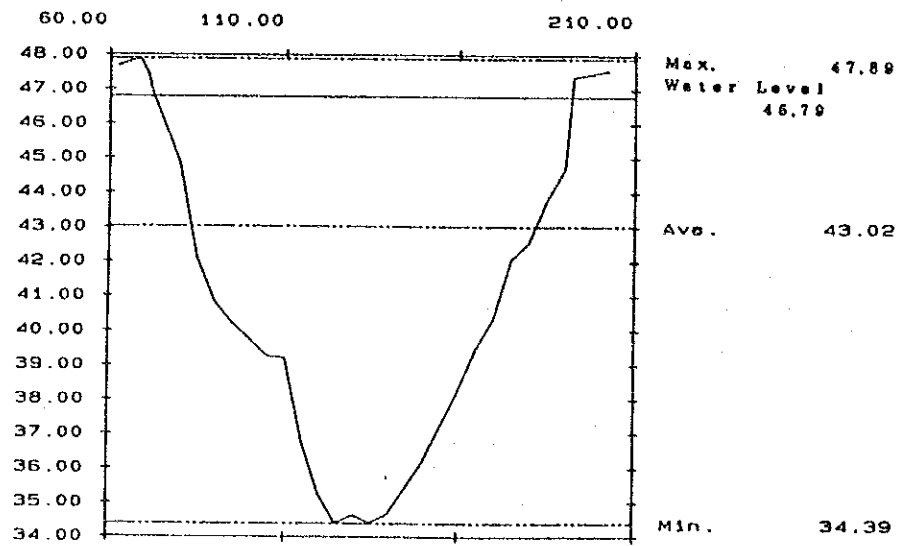


THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT OF THE APURE RIVER BASIN			
CROSS SECTION			
CAMAGUAN 8/12			
PLAN NO.	57	SCALE	H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1992		
JIICA		JAPAN INTERNATIONAL COOPERATION AGENCY	

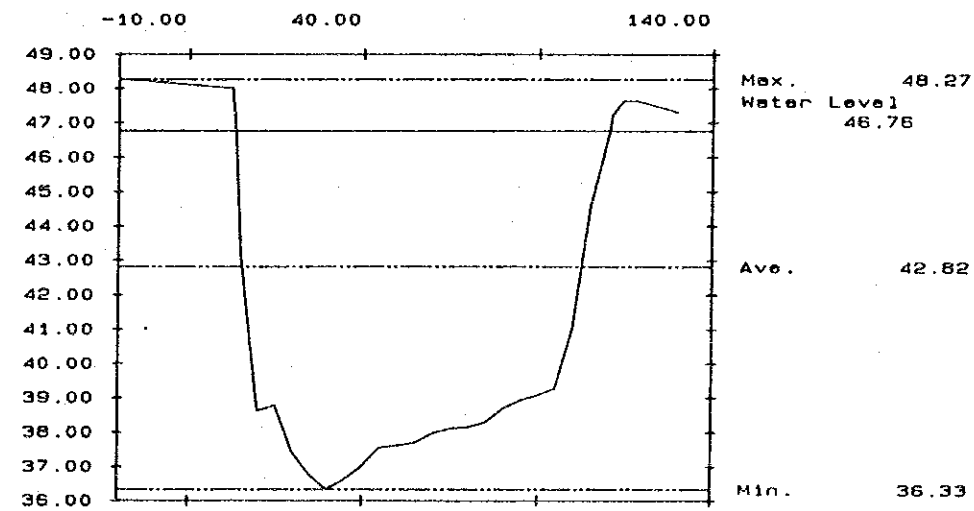
SECTION 7



SECTION 6

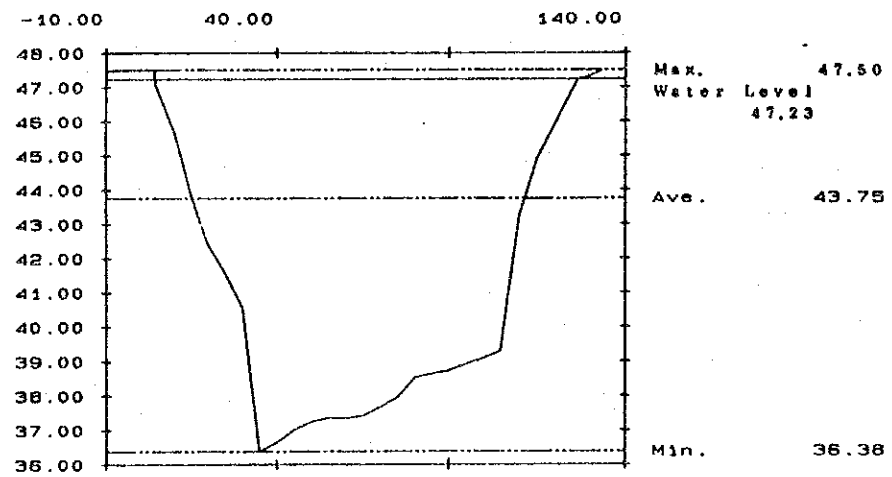


SECTION 5

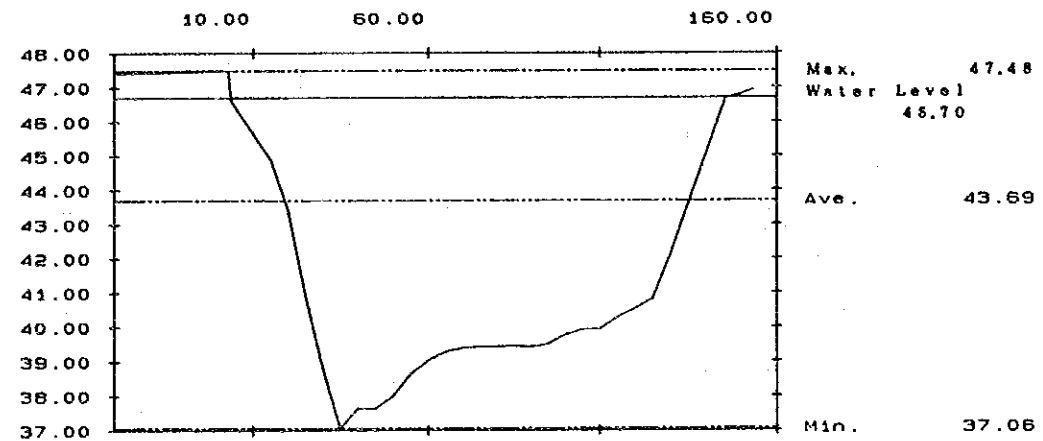


THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT			
OF THE APURE RIVER BASIN			
CROSS SECTION			
CAMAGUAN 18/12			
PLAN NO.	58	SCALE	H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1992		
JICA		JAPAN INTERNATIONAL	
		COOPERATION AGENCY	

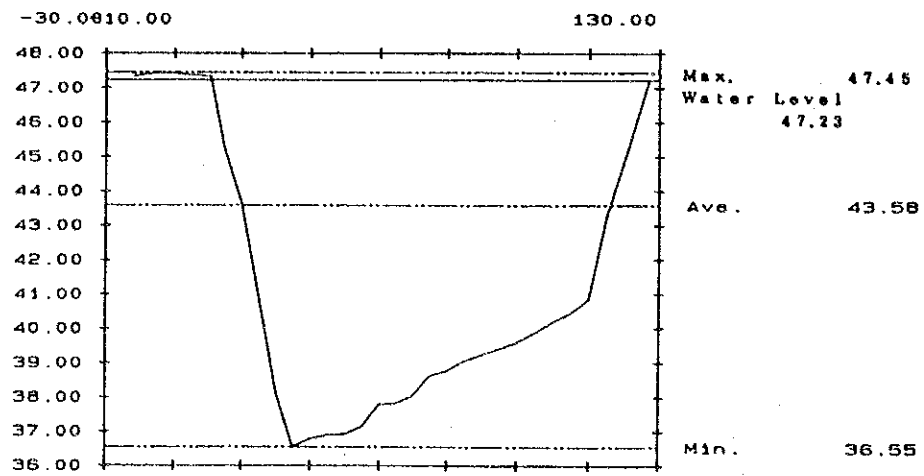
SECTION 4



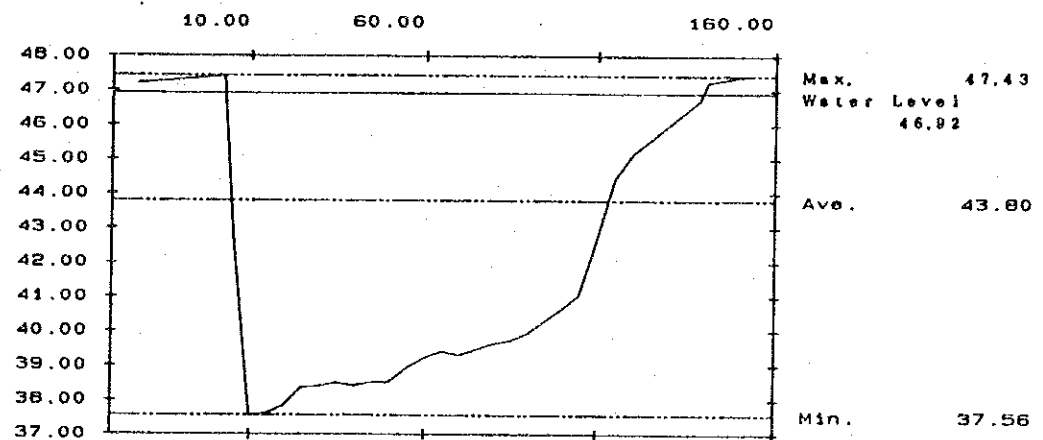
SECTION 2



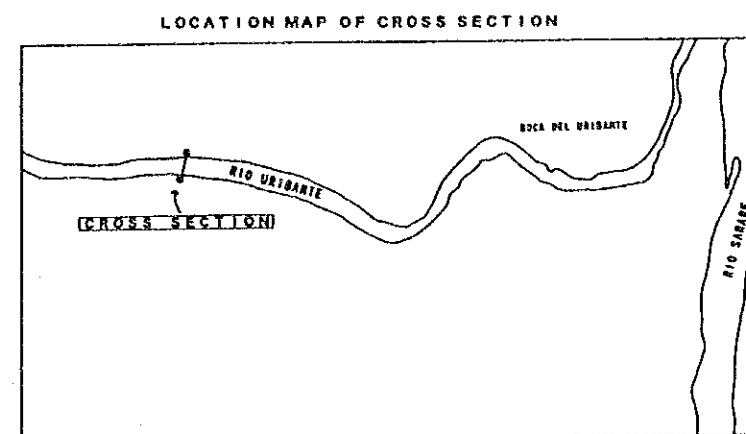
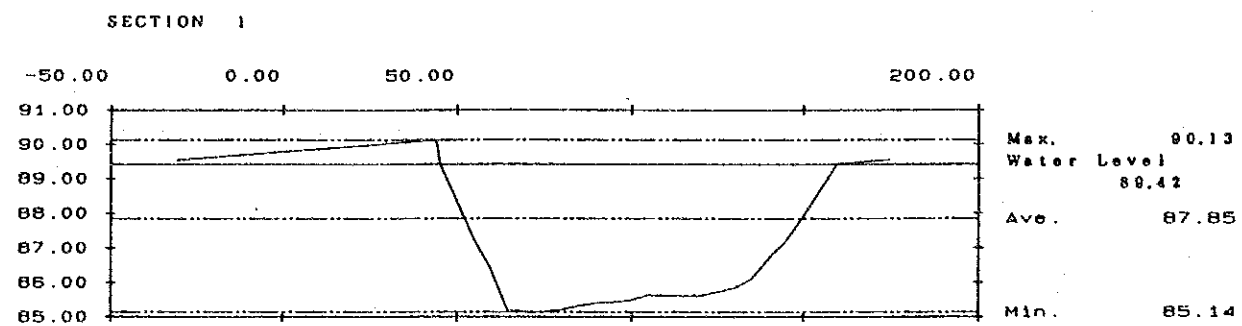
SECTION 3



SECTION 1

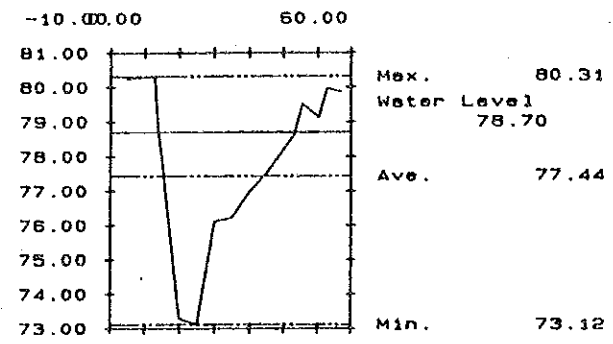


THE REPUBLIC OF VENEZUELA	
STUDY ON COMPREHENSIVE IMPROVEMENT	
OF THE APURE RIVER BASIN	
CROSS SECTION	
CAMAGUAN 11/12	
PLAN NO. 59	SCALE H:1:1000 V:1:100
SURVEY DATE MAY-JULY 1992	
JICA JAPAN INTERNATIONAL COOPERATION AGENCY	

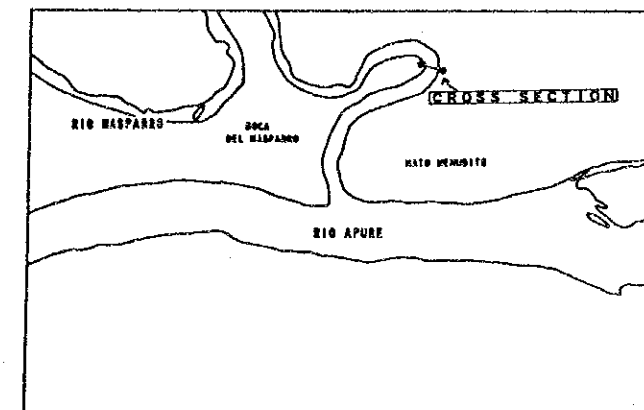


THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT			
OF THE APURE RIVER BASIN			
CROSS SECTION			
URIBANTE			
PLAN NO.	61	SCALE	H=1:1000 V=1:100
SURVEY DATE	MAY-JULY 1992		
JICA		JAPAN INTERNATIONAL	
		COOPERATION AGENCY	

SECTION 6

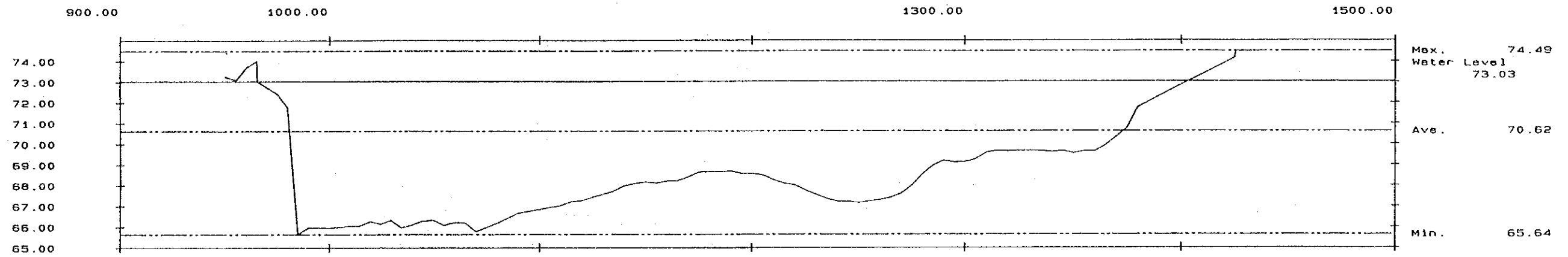


LOCATION MAP OF CROSS SECTION

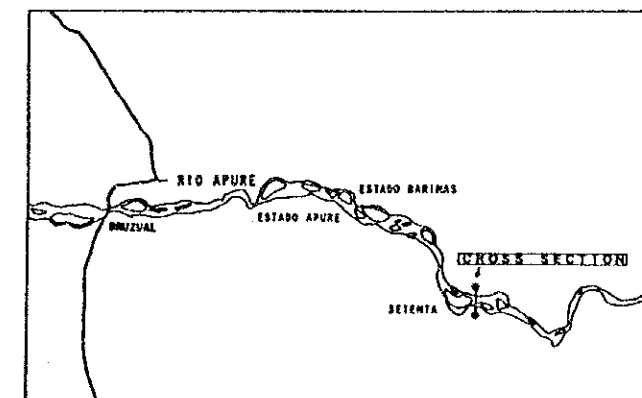



THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT			
OF THE APURE RIVER BASIN			
CROSS SECTION			
MASPARRO			
PLAN NO.	62	SCALE	H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1992		
		JAPAN INTERNATIONAL	
COOPERATION AGENCY			

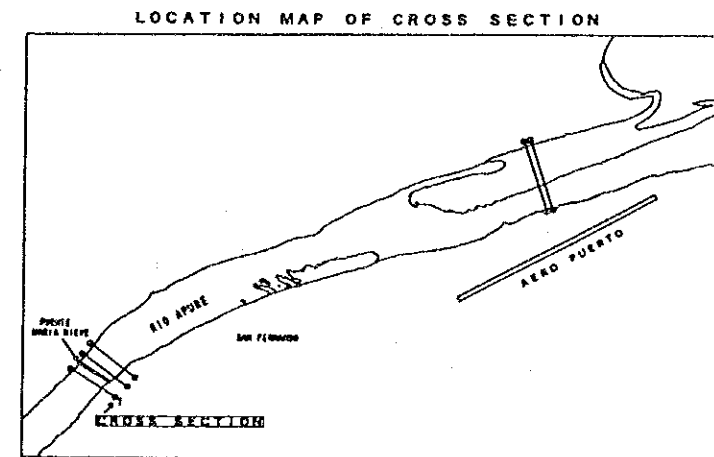
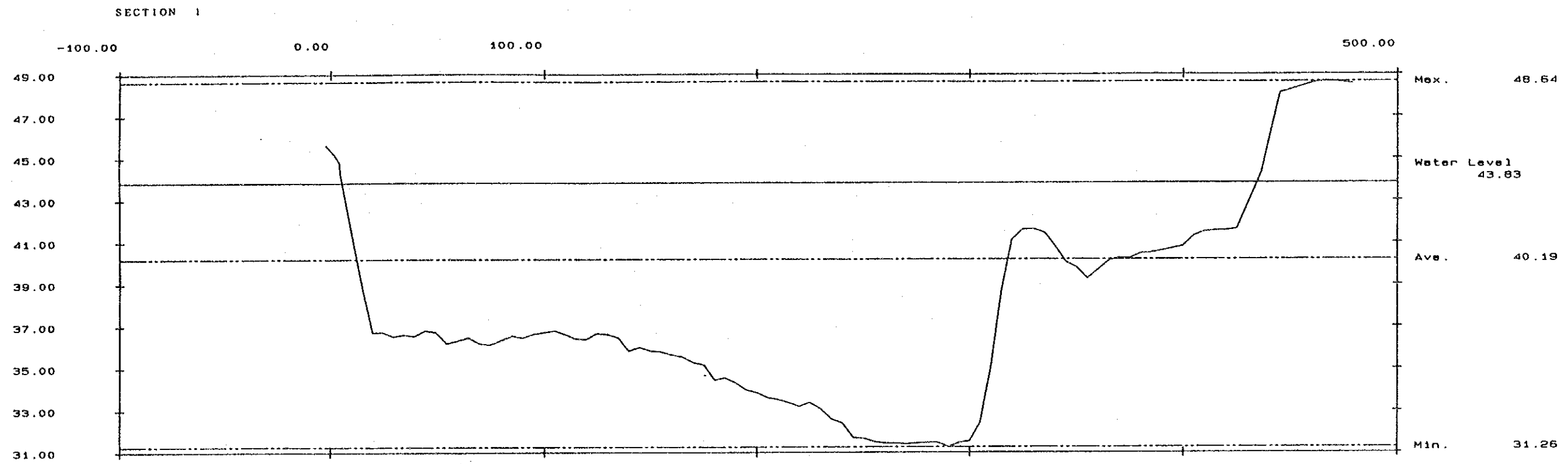
SECTION 7



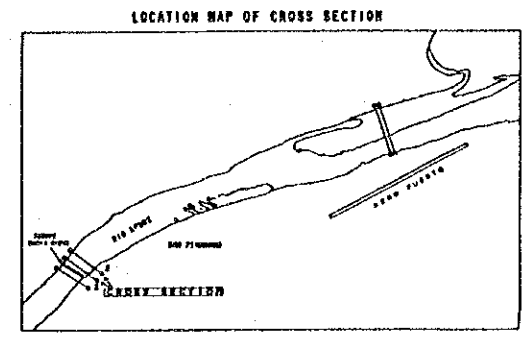
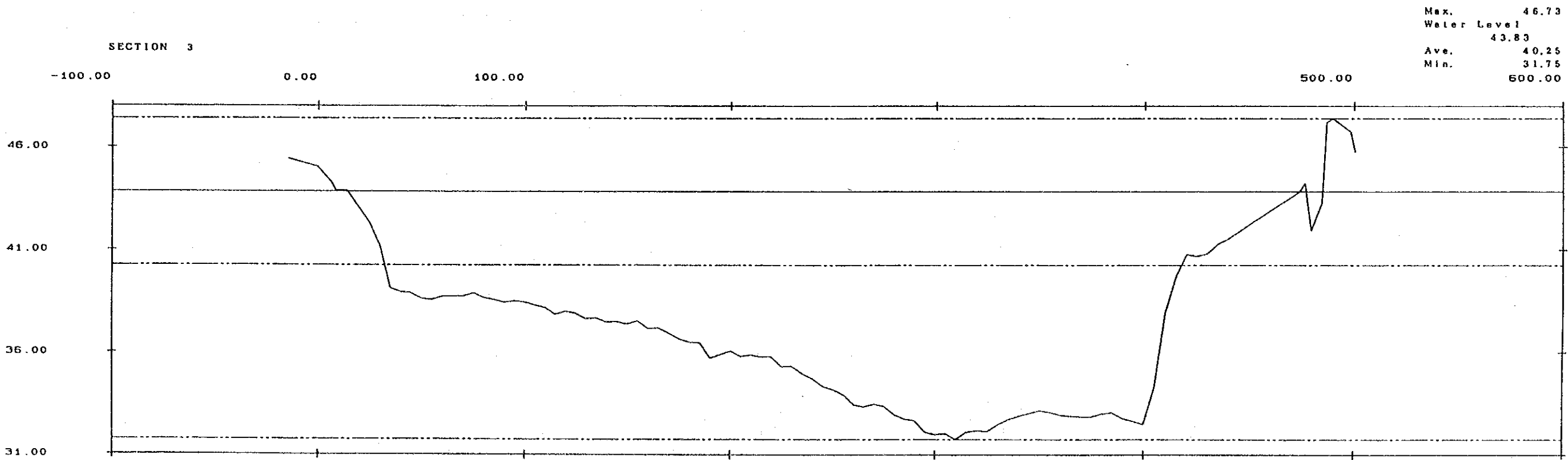
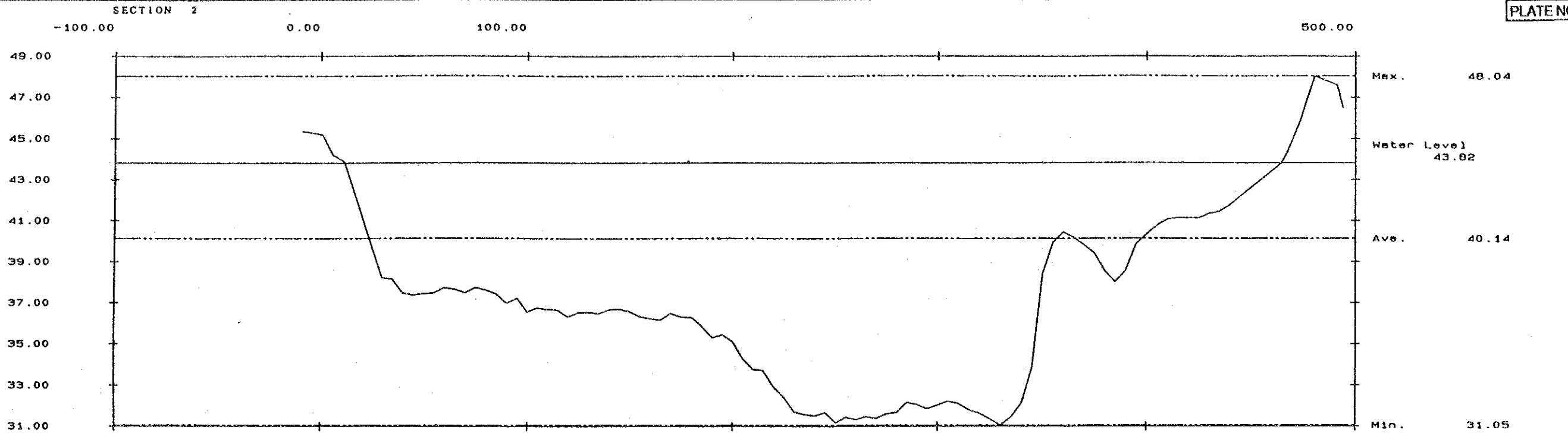
LOCATION MAP OF CROSS SECTION



THE REPUBLIC OF VENEZUELA	
STUDY ON COMPREHENSIVE IMPROVEMENT OF THE APURE RIVER BASIN	
CROSS SECTION	
SETENTA	
PLAN NO. 63	SCALE H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1992
 JAPAN INTERNATIONAL COOPERATION AGENCY	



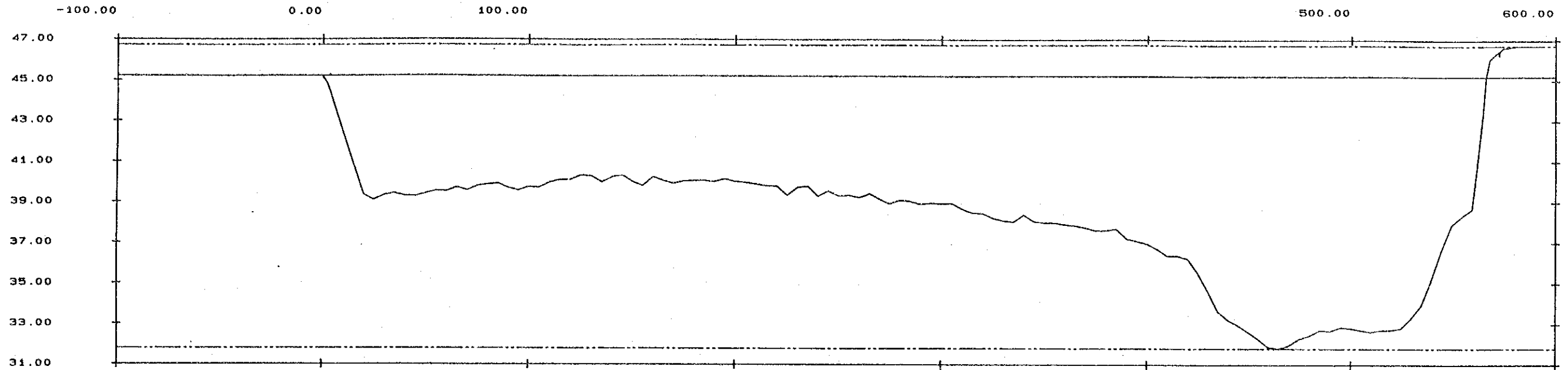
THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT			
OF THE APURE RIVER BASIN			
CROSS SECTION			
SAN FERNANDO 1/3			
PLAN NO.	64	SCALE	H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1992		
JICA		JAPAN INTERNATIONAL	
COOPERATION AGENCY			



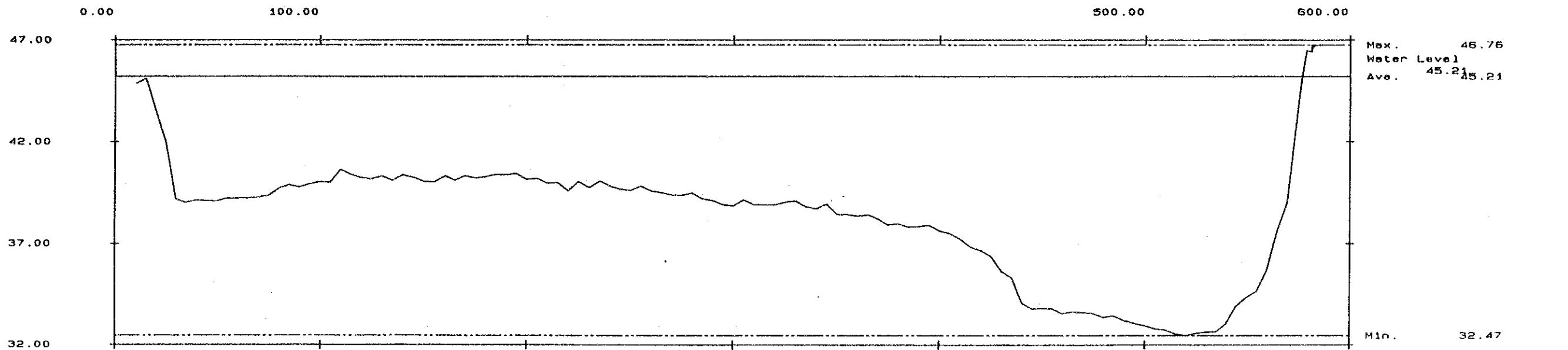
THE REPUBLIC OF VENEZUELA	
STUDY ON COMPREHENSIVE IMPROVEMENT OF THE APURE RIVER BASIN	
CROSS SECTION	
SAN FERNANDO 2/3	
PLAN NO.	65
SCALE	H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1992
JAPAN INTERNATIONAL COOPERATION AGENCY	

Max. 46.73
 Water Level
 45.21
 Ave. 45.21
 Min. 31.80

SECTION 10



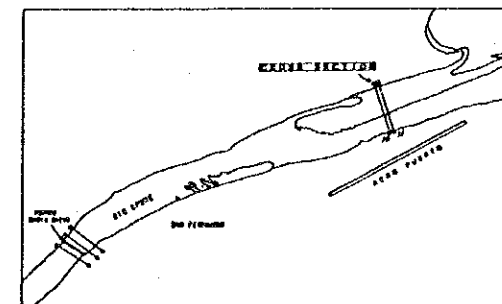
SECTION 11



Max. 46.76
 Water Level
 Ave. 45.21

Min. 32.47

LOCATION MAP OF CROSS SECTION

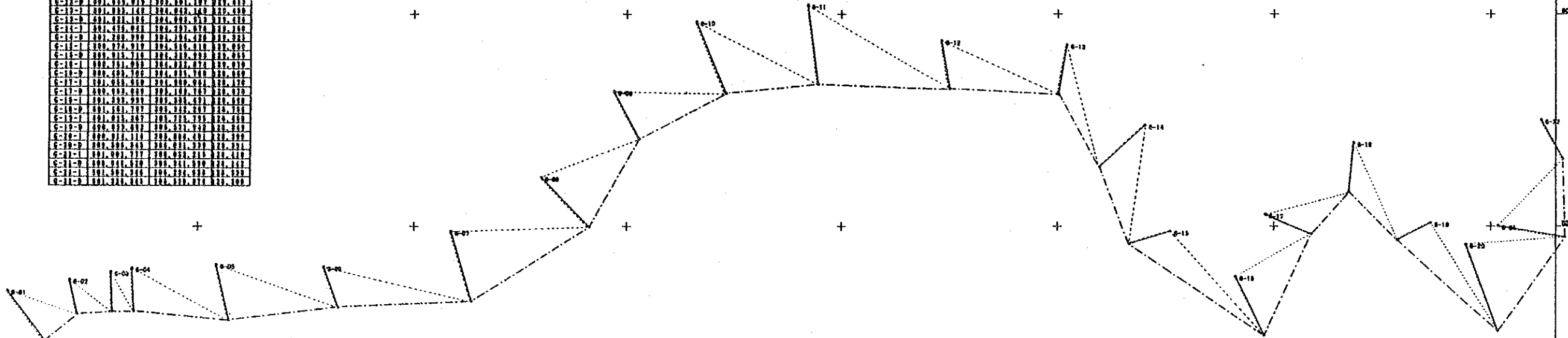


THE REPUBLIC OF VENEZUELA	
STUDY ON COMPREHENSIVE IMPROVEMENT OF THE APURE RIVER BASIN	
CROSS SECTION	
SAN FERNANDO 3/3	
PLAN NO. 66	SCALE H:1:1000 V:1:100
SURVEY DATE MAY-JULY 1992	
JICA JAPAN INTERNATIONAL COOPERATION AGENCY	



Result of control point survey Guasdualito offo (1)

Station	Position	Station	Station
C-01-1	100,450,330	100,450,330	100,450,330
C-01-2	100,450,330	100,450,330	100,450,330
C-01-3	100,450,330	100,450,330	100,450,330
C-01-4	100,450,330	100,450,330	100,450,330
C-01-5	100,450,330	100,450,330	100,450,330
C-01-6	100,450,330	100,450,330	100,450,330
C-01-7	100,450,330	100,450,330	100,450,330
C-01-8	100,450,330	100,450,330	100,450,330
C-01-9	100,450,330	100,450,330	100,450,330
C-01-10	100,450,330	100,450,330	100,450,330
C-01-11	100,450,330	100,450,330	100,450,330
C-01-12	100,450,330	100,450,330	100,450,330
C-01-13	100,450,330	100,450,330	100,450,330
C-01-14	100,450,330	100,450,330	100,450,330
C-01-15	100,450,330	100,450,330	100,450,330
C-01-16	100,450,330	100,450,330	100,450,330
C-01-17	100,450,330	100,450,330	100,450,330
C-01-18	100,450,330	100,450,330	100,450,330
C-01-19	100,450,330	100,450,330	100,450,330
C-01-20	100,450,330	100,450,330	100,450,330
C-01-21	100,450,330	100,450,330	100,450,330
C-01-22	100,450,330	100,450,330	100,450,330
C-01-23	100,450,330	100,450,330	100,450,330
C-01-24	100,450,330	100,450,330	100,450,330
C-01-25	100,450,330	100,450,330	100,450,330
C-01-26	100,450,330	100,450,330	100,450,330
C-01-27	100,450,330	100,450,330	100,450,330
C-01-28	100,450,330	100,450,330	100,450,330
C-01-29	100,450,330	100,450,330	100,450,330
C-01-30	100,450,330	100,450,330	100,450,330
C-01-31	100,450,330	100,450,330	100,450,330
C-01-32	100,450,330	100,450,330	100,450,330
C-01-33	100,450,330	100,450,330	100,450,330
C-01-34	100,450,330	100,450,330	100,450,330
C-01-35	100,450,330	100,450,330	100,450,330
C-01-36	100,450,330	100,450,330	100,450,330
C-01-37	100,450,330	100,450,330	100,450,330
C-01-38	100,450,330	100,450,330	100,450,330
C-01-39	100,450,330	100,450,330	100,450,330
C-01-40	100,450,330	100,450,330	100,450,330
C-01-41	100,450,330	100,450,330	100,450,330
C-01-42	100,450,330	100,450,330	100,450,330
C-01-43	100,450,330	100,450,330	100,450,330
C-01-44	100,450,330	100,450,330	100,450,330
C-01-45	100,450,330	100,450,330	100,450,330
C-01-46	100,450,330	100,450,330	100,450,330
C-01-47	100,450,330	100,450,330	100,450,330
C-01-48	100,450,330	100,450,330	100,450,330
C-01-49	100,450,330	100,450,330	100,450,330
C-01-50	100,450,330	100,450,330	100,450,330



LEGEND
 - - - - - TRAVERSE SURVEY NET WORK
 _____ LEVELING NET WORK

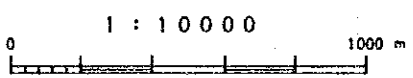
THE REPUBLIC OF VENEZUELA
 STUDY ON COMPREHENSIVE IMPROVEMENT
 OF THE APURE RIVER BASIN

CONTROL POINT NETS

GUASDUALITO 1/3

PLAN NO.	67	SCALE	H=1:1000 V=1:100
SURVEY DATE	MAY-JULY 1982		

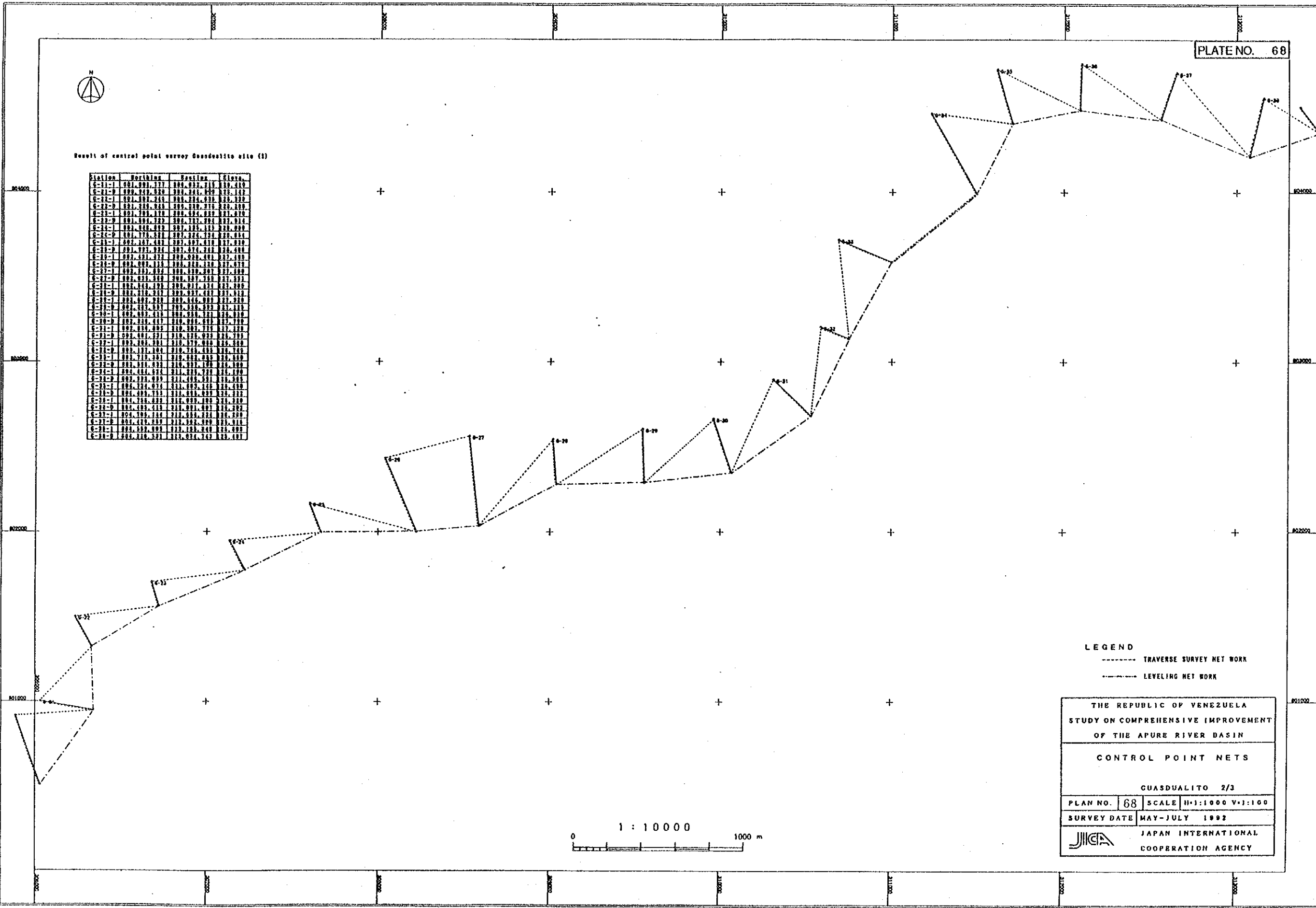
JICA JAPAN INTERNATIONAL COOPERATION AGENCY





Result of control point survey Guasualito site (3)

Station	Northing	Easting	Elevn.
C-21-1	891.991.777	889.933.211	889.480
C-21-2	891.991.582	889.941.859	889.182
C-21-3	891.989.245	889.941.831	889.182
C-21-4	891.989.245	889.939.916	889.180
C-21-5	891.989.188	889.944.887	889.218
C-21-6	891.989.282	889.933.894	889.214
C-21-7	891.989.402	889.935.181	889.200
C-21-8	891.978.381	889.926.194	889.204
C-21-9	891.987.482	889.937.418	889.230
C-21-10	891.975.926	889.914.248	889.498
C-21-11	891.971.772	889.926.481	889.572
C-21-12	891.982.113	889.928.124	889.578
C-21-13	891.987.894	889.929.207	889.580
C-21-14	891.981.184	889.937.184	889.581
C-21-15	891.981.194	889.937.431	889.580
C-21-16	891.981.351	889.937.431	889.581
C-21-17	891.987.228	889.946.909	889.582
C-21-18	891.987.181	889.946.909	889.581
C-21-19	891.987.181	889.946.909	889.581
C-21-20	891.987.181	889.946.909	889.581
C-21-21	891.987.181	889.946.909	889.581
C-21-22	891.987.181	889.946.909	889.581
C-21-23	891.987.181	889.946.909	889.581
C-21-24	891.987.181	889.946.909	889.581
C-21-25	891.987.181	889.946.909	889.581
C-21-26	891.987.181	889.946.909	889.581
C-21-27	891.987.181	889.946.909	889.581
C-21-28	891.987.181	889.946.909	889.581
C-21-29	891.987.181	889.946.909	889.581
C-21-30	891.987.181	889.946.909	889.581
C-21-31	891.987.181	889.946.909	889.581
C-21-32	891.987.181	889.946.909	889.581
C-21-33	891.987.181	889.946.909	889.581
C-21-34	891.987.181	889.946.909	889.581
C-21-35	891.987.181	889.946.909	889.581
C-21-36	891.987.181	889.946.909	889.581
C-21-37	891.987.181	889.946.909	889.581
C-21-38	891.987.181	889.946.909	889.581
C-21-39	891.987.181	889.946.909	889.581
C-21-40	891.987.181	889.946.909	889.581
C-21-41	891.987.181	889.946.909	889.581
C-21-42	891.987.181	889.946.909	889.581
C-21-43	891.987.181	889.946.909	889.581
C-21-44	891.987.181	889.946.909	889.581
C-21-45	891.987.181	889.946.909	889.581
C-21-46	891.987.181	889.946.909	889.581
C-21-47	891.987.181	889.946.909	889.581
C-21-48	891.987.181	889.946.909	889.581
C-21-49	891.987.181	889.946.909	889.581
C-21-50	891.987.181	889.946.909	889.581



LEGEND
 ----- TRAVERSE SURVEY NET WORK
 _____ LEVELING NET WORK

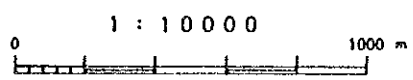
THE REPUBLIC OF VENEZUELA
 STUDY ON COMPREHENSIVE IMPROVEMENT
 OF THE APURE RIVER BASIN

CONTROL POINT NETS

GUASUALITO 2/3

PLAN NO.	68	SCALE	H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1992		

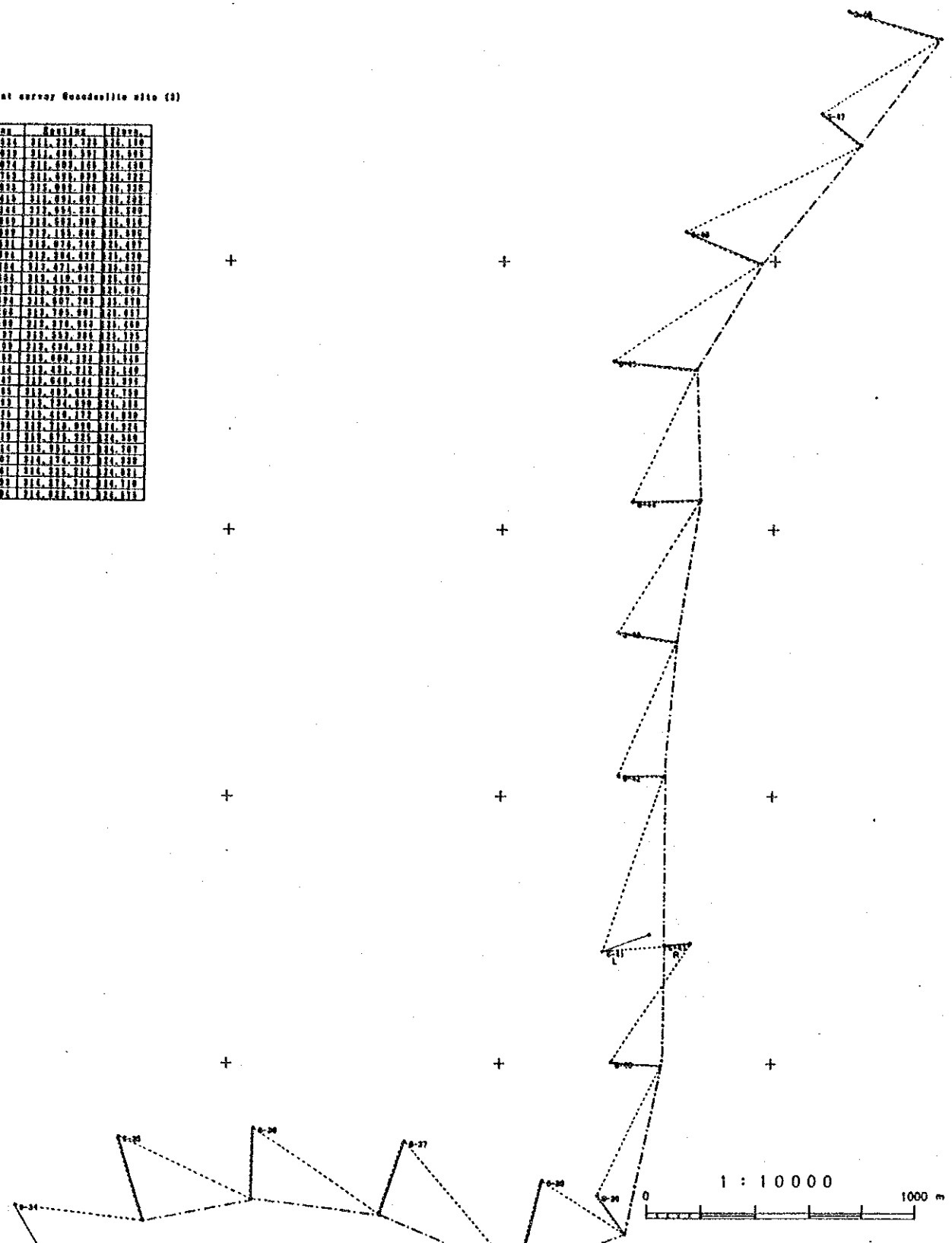
JICA JAPAN INTERNATIONAL COOPERATION AGENCY





Result of control point survey Guasdualito site (3)

Station	Position	Easting	North	Elev.
C-14-1	894,484,514	311,324,321	316,110	
C-14-2	893,391,513	311,486,391	316,543	
C-14-3	894,324,514	311,483,161	316,430	
C-14-4	894,485,513	311,483,483	316,422	
C-14-5	894,324,513	311,483,184	316,320	
C-14-6	894,324,513	311,483,487	316,323	
C-14-7	894,324,513	311,483,284	316,320	
C-14-8	894,324,513	311,483,284	316,320	
C-14-9	894,324,513	311,483,284	316,320	
C-14-10	894,324,513	311,483,284	316,320	
C-14-11	894,324,513	311,483,284	316,320	
C-14-12	894,324,513	311,483,284	316,320	
C-14-13	894,324,513	311,483,284	316,320	
C-14-14	894,324,513	311,483,284	316,320	
C-14-15	894,324,513	311,483,284	316,320	
C-14-16	894,324,513	311,483,284	316,320	
C-14-17	894,324,513	311,483,284	316,320	
C-14-18	894,324,513	311,483,284	316,320	
C-14-19	894,324,513	311,483,284	316,320	
C-14-20	894,324,513	311,483,284	316,320	
C-14-21	894,324,513	311,483,284	316,320	
C-14-22	894,324,513	311,483,284	316,320	
C-14-23	894,324,513	311,483,284	316,320	
C-14-24	894,324,513	311,483,284	316,320	
C-14-25	894,324,513	311,483,284	316,320	
C-14-26	894,324,513	311,483,284	316,320	
C-14-27	894,324,513	311,483,284	316,320	
C-14-28	894,324,513	311,483,284	316,320	
C-14-29	894,324,513	311,483,284	316,320	
C-14-30	894,324,513	311,483,284	316,320	
C-14-31	894,324,513	311,483,284	316,320	
C-14-32	894,324,513	311,483,284	316,320	
C-14-33	894,324,513	311,483,284	316,320	
C-14-34	894,324,513	311,483,284	316,320	
C-14-35	894,324,513	311,483,284	316,320	
C-14-36	894,324,513	311,483,284	316,320	
C-14-37	894,324,513	311,483,284	316,320	
C-14-38	894,324,513	311,483,284	316,320	
C-14-39	894,324,513	311,483,284	316,320	
C-14-40	894,324,513	311,483,284	316,320	
C-14-41	894,324,513	311,483,284	316,320	
C-14-42	894,324,513	311,483,284	316,320	
C-14-43	894,324,513	311,483,284	316,320	
C-14-44	894,324,513	311,483,284	316,320	
C-14-45	894,324,513	311,483,284	316,320	
C-14-46	894,324,513	311,483,284	316,320	
C-14-47	894,324,513	311,483,284	316,320	
C-14-48	894,324,513	311,483,284	316,320	
C-14-49	894,324,513	311,483,284	316,320	
C-14-50	894,324,513	311,483,284	316,320	



LEGEND
 - - - - - TRAVERSE SURVEY NET WORK
 - - - - - LEVELING NET WORK

THE REPUBLIC OF VENEZUELA
 STUDY ON COMPREHENSIVE IMPROVEMENT
 OF THE APURE RIVER BASIN

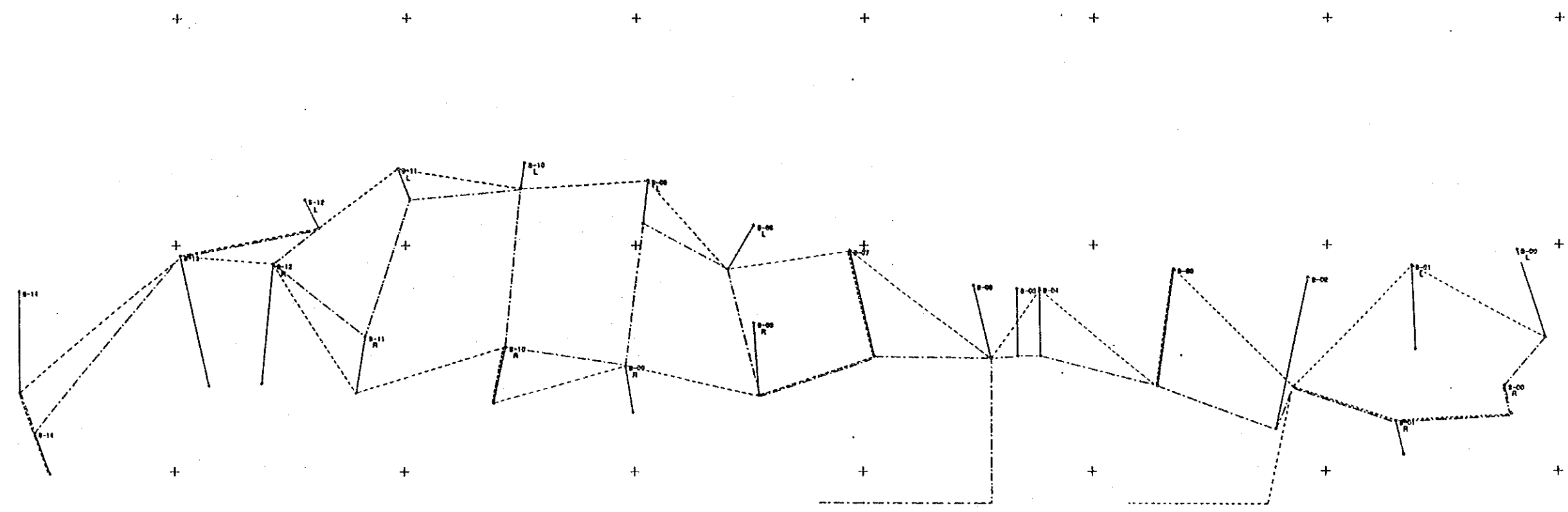
CONTROL POINT NETS

GUASDUALITO 3/3

PLAN NO. 69 SCALE H-1:1000 V-1:100

SURVEY DATE MAY-JULY 1992

JICA JAPAN INTERNATIONAL COOPERATION AGENCY



Result of control point survey Bruzual site (1)

Station	Forthing	Station	Elevation
B-01-B	890.215.191	461.711.159	76.081
B-02-A	890.216.314	461.802.811	76.196
B-03-B	890.217.381	461.822.870	76.280
B-04-C	890.218.291	461.843.184	76.428
B-05-B	890.219.488	461.821.151	76.529
B-06-A	890.220.528	461.822.828	76.592
B-07-P	890.221.229	461.819.069	76.749
B-08-C	890.222.899	461.822.122	76.810
B-09-C	890.223.891	461.822.164	76.890
B-10-B	890.224.104	461.821.732	76.980
B-11-A	890.225.187	461.821.643	76.927
B-12-T	890.226.189	461.821.931	76.999
B-13-P	890.227.144	461.821.521	76.880
B-14-L	890.228.082	461.821.329	76.799
B-15-P	890.229.082	461.821.222	76.642
B-16-L	890.230.108	461.821.422	76.719
B-17-P	890.231.039	461.821.822	76.821
B-18-L	890.232.187	461.821.631	76.790
B-19-P	890.233.121	461.821.777	76.824
B-20-T	890.234.137	461.821.989	76.900
B-21-P	890.235.144	461.821.116	76.800
B-22-A	890.236.144	461.821.116	76.800
B-23-P	890.237.144	461.821.116	76.800
B-24-A	890.238.144	461.821.116	76.800
B-25-P	890.239.144	461.821.116	76.800
B-26-C	890.240.144	461.821.116	76.800


Station	Forthing	Station	Elevation
B-01-B	890.201.822	461.821.939	76.154
B-02-A	890.202.387	461.821.521	76.200
B-03-B	890.203.907	461.821.113	76.280
B-04-C	890.204.821	461.821.220	76.327
B-05-B	890.205.333	461.821.029	76.384
B-06-A	890.206.117	461.821.413	76.459
B-07-P	890.207.137	461.821.870	76.549
B-08-C	890.208.137	461.821.881	76.709
B-09-C	890.209.822	461.821.837	76.671
B-10-A	890.210.451	461.821.189	76.130
B-11-P	890.211.899	461.821.840	76.190
B-12-C	890.212.881	461.821.699	76.162
B-13-B	890.213.431	461.821.800	76.182
B-14-A	890.214.741	461.821.829	76.200
B-15-B	890.215.181	461.821.544	76.447
B-16-C	890.216.827	461.821.414	76.467
B-17-L	890.217.821	461.821.210	76.132
B-18-P	890.218.411	461.821.347	76.190
B-19-B	890.219.497	461.821.810	76.112
B-20-A	890.220.809	461.821.810	76.112
B-21-C	890.221.747	461.821.920	76.120
B-22-C	890.222.721	461.821.811	76.228

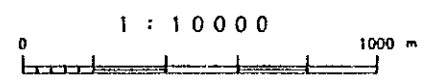
LEGEND
 - - - - - TRAVERSE SURVEY NET WORK
 _____ LEVELING NET WORK

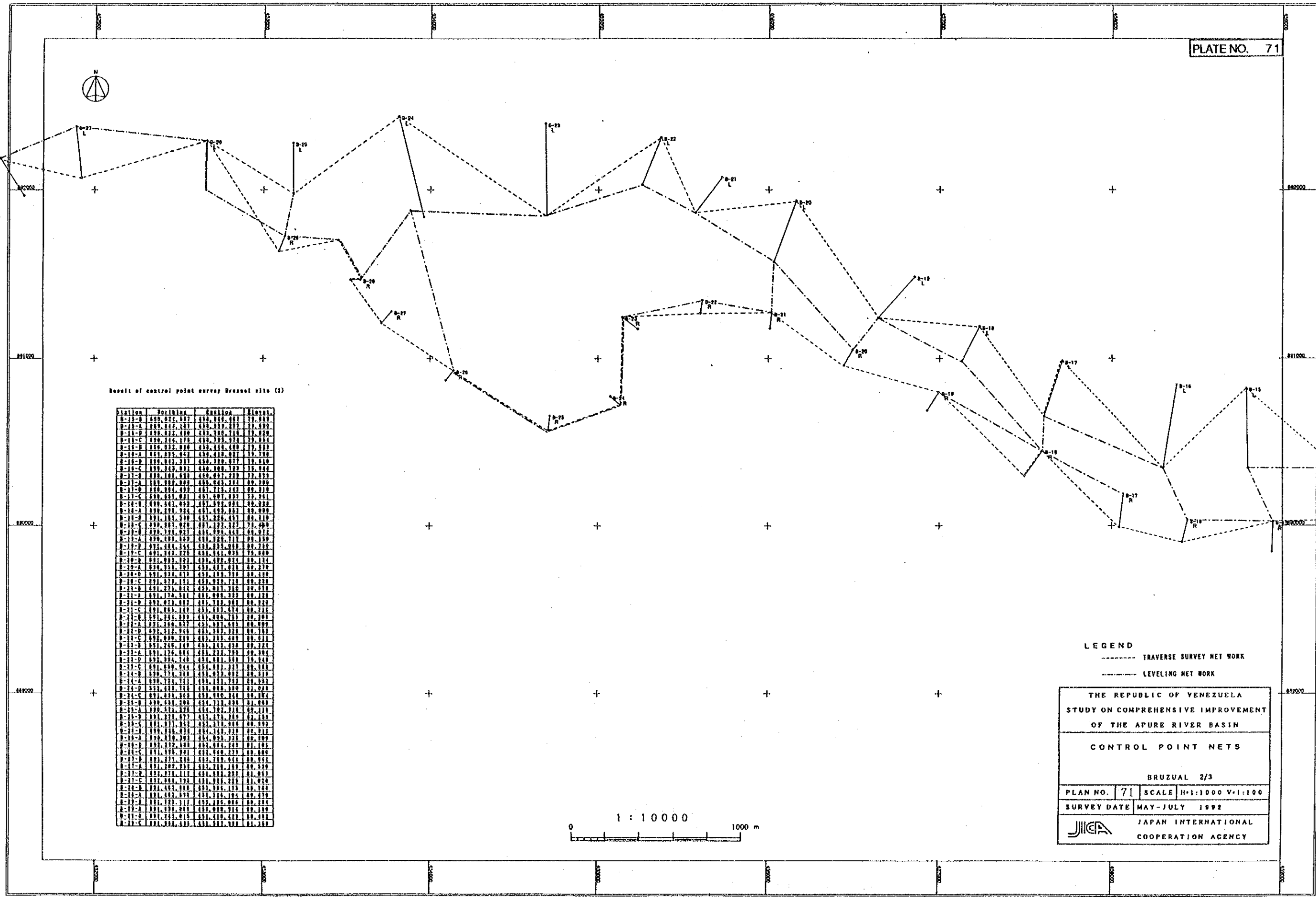
THE REPUBLIC OF VENEZUELA
 STUDY ON COMPREHENSIVE IMPROVEMENT
 OF THE APURE RIVER BASIN

CONTROL POINT NETS

BRUZUAL 1/3

PLAN NO.	70	SCALE	H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1982		
 JAPAN INTERNATIONAL COOPERATION AGENCY			





Result of control point survey Bruzual site (1)

Station	Position	Height	Remarks
B-01-A	80000.000	89000.000	
B-01-B	80000.000	89000.000	
B-01-C	80000.000	89000.000	
B-01-D	80000.000	89000.000	
B-02-A	80000.000	89000.000	
B-02-B	80000.000	89000.000	
B-02-C	80000.000	89000.000	
B-02-D	80000.000	89000.000	
B-03-A	80000.000	89000.000	
B-03-B	80000.000	89000.000	
B-03-C	80000.000	89000.000	
B-03-D	80000.000	89000.000	
B-04-A	80000.000	89000.000	
B-04-B	80000.000	89000.000	
B-04-C	80000.000	89000.000	
B-04-D	80000.000	89000.000	
B-05-A	80000.000	89000.000	
B-05-B	80000.000	89000.000	
B-05-C	80000.000	89000.000	
B-05-D	80000.000	89000.000	
B-06-A	80000.000	89000.000	
B-06-B	80000.000	89000.000	
B-06-C	80000.000	89000.000	
B-06-D	80000.000	89000.000	
B-07-A	80000.000	89000.000	
B-07-B	80000.000	89000.000	
B-07-C	80000.000	89000.000	
B-07-D	80000.000	89000.000	
B-08-A	80000.000	89000.000	
B-08-B	80000.000	89000.000	
B-08-C	80000.000	89000.000	
B-08-D	80000.000	89000.000	
B-09-A	80000.000	89000.000	
B-09-B	80000.000	89000.000	
B-09-C	80000.000	89000.000	
B-09-D	80000.000	89000.000	
B-10-A	80000.000	89000.000	
B-10-B	80000.000	89000.000	
B-10-C	80000.000	89000.000	
B-10-D	80000.000	89000.000	
B-11-A	80000.000	89000.000	
B-11-B	80000.000	89000.000	
B-11-C	80000.000	89000.000	
B-11-D	80000.000	89000.000	
B-12-A	80000.000	89000.000	
B-12-B	80000.000	89000.000	
B-12-C	80000.000	89000.000	
B-12-D	80000.000	89000.000	
B-13-A	80000.000	89000.000	
B-13-B	80000.000	89000.000	
B-13-C	80000.000	89000.000	
B-13-D	80000.000	89000.000	
B-14-A	80000.000	89000.000	
B-14-B	80000.000	89000.000	
B-14-C	80000.000	89000.000	
B-14-D	80000.000	89000.000	
B-15-A	80000.000	89000.000	
B-15-B	80000.000	89000.000	
B-15-C	80000.000	89000.000	
B-15-D	80000.000	89000.000	
B-16-A	80000.000	89000.000	
B-16-B	80000.000	89000.000	
B-16-C	80000.000	89000.000	
B-16-D	80000.000	89000.000	
B-17-A	80000.000	89000.000	
B-17-B	80000.000	89000.000	
B-17-C	80000.000	89000.000	
B-17-D	80000.000	89000.000	
B-18-A	80000.000	89000.000	
B-18-B	80000.000	89000.000	
B-18-C	80000.000	89000.000	
B-18-D	80000.000	89000.000	
B-19-A	80000.000	89000.000	
B-19-B	80000.000	89000.000	
B-19-C	80000.000	89000.000	
B-19-D	80000.000	89000.000	
B-20-A	80000.000	89000.000	
B-20-B	80000.000	89000.000	
B-20-C	80000.000	89000.000	
B-20-D	80000.000	89000.000	
B-21-A	80000.000	89000.000	
B-21-B	80000.000	89000.000	
B-21-C	80000.000	89000.000	
B-21-D	80000.000	89000.000	
B-22-A	80000.000	89000.000	
B-22-B	80000.000	89000.000	
B-22-C	80000.000	89000.000	
B-22-D	80000.000	89000.000	
B-23-A	80000.000	89000.000	
B-23-B	80000.000	89000.000	
B-23-C	80000.000	89000.000	
B-23-D	80000.000	89000.000	
B-24-A	80000.000	89000.000	
B-24-B	80000.000	89000.000	
B-24-C	80000.000	89000.000	
B-24-D	80000.000	89000.000	

LEGEND
 - - - - - TRAVERSE SURVEY NET WORK
 - - - - - LEVELING NET WORK

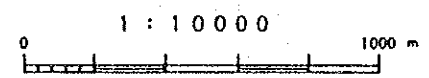
THE REPUBLIC OF VENEZUELA
 STUDY ON COMPREHENSIVE IMPROVEMENT
 OF THE APURE RIVER BASIN

CONTROL POINT NETS

BRUZUAL 2/3

PLAN NO.	71	SCALE	H:1:1000 V:1:100
SURVEY DATE	MAY-JULY 1992		

JICA JAPAN INTERNATIONAL COOPERATION AGENCY



LEGEND
 - - - - - TRAVERSE SURVEY NET WORK
 - - - - - LEVELING NET WORK

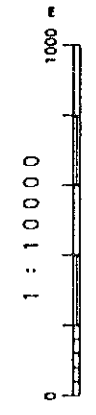
THE REPUBLIC OF VENEZUELA
 STUDY ON COMPREHENSIVE IMPROVEMENT
 OF THE APURE RIVER BASIN

CONTROL POINT NETS

BRUZUAL 3/3

PLAN NO. 72 SCALE H:1:1000 V:1:100
 SURVEY DATE MAY-JULY 1982

JICA
 JAPAN INTERNATIONAL
 COOPERATION AGENCY



Result of control point survey Bruzual site (2)

Station	Coordinates	Elevation
P-10-1	431 171 112	435 126 008
P-10-2	431 171 112	435 126 008
P-10-3	431 171 112	435 126 008
P-10-4	431 171 112	435 126 008
P-10-5	431 171 112	435 126 008
P-10-6	431 171 112	435 126 008
P-10-7	431 171 112	435 126 008
P-10-8	431 171 112	435 126 008
P-10-9	431 171 112	435 126 008
P-10-10	431 171 112	435 126 008
P-10-11	431 171 112	435 126 008
P-10-12	431 171 112	435 126 008
P-10-13	431 171 112	435 126 008
P-10-14	431 171 112	435 126 008
P-10-15	431 171 112	435 126 008
P-10-16	431 171 112	435 126 008
P-10-17	431 171 112	435 126 008
P-10-18	431 171 112	435 126 008
P-10-19	431 171 112	435 126 008
P-10-20	431 171 112	435 126 008
P-10-21	431 171 112	435 126 008
P-10-22	431 171 112	435 126 008
P-10-23	431 171 112	435 126 008
P-10-24	431 171 112	435 126 008
P-10-25	431 171 112	435 126 008
P-10-26	431 171 112	435 126 008
P-10-27	431 171 112	435 126 008
P-10-28	431 171 112	435 126 008
P-10-29	431 171 112	435 126 008
P-10-30	431 171 112	435 126 008
P-10-31	431 171 112	435 126 008
P-10-32	431 171 112	435 126 008
P-10-33	431 171 112	435 126 008
P-10-34	431 171 112	435 126 008
P-10-35	431 171 112	435 126 008
P-10-36	431 171 112	435 126 008
P-10-37	431 171 112	435 126 008
P-10-38	431 171 112	435 126 008
P-10-39	431 171 112	435 126 008
P-10-40	431 171 112	435 126 008
P-10-41	431 171 112	435 126 008
P-10-42	431 171 112	435 126 008
P-10-43	431 171 112	435 126 008
P-10-44	431 171 112	435 126 008
P-10-45	431 171 112	435 126 008
P-10-46	431 171 112	435 126 008
P-10-47	431 171 112	435 126 008
P-10-48	431 171 112	435 126 008
P-10-49	431 171 112	435 126 008
P-10-50	431 171 112	435 126 008
P-10-51	431 171 112	435 126 008
P-10-52	431 171 112	435 126 008
P-10-53	431 171 112	435 126 008
P-10-54	431 171 112	435 126 008
P-10-55	431 171 112	435 126 008
P-10-56	431 171 112	435 126 008
P-10-57	431 171 112	435 126 008
P-10-58	431 171 112	435 126 008
P-10-59	431 171 112	435 126 008
P-10-60	431 171 112	435 126 008
P-10-61	431 171 112	435 126 008
P-10-62	431 171 112	435 126 008
P-10-63	431 171 112	435 126 008
P-10-64	431 171 112	435 126 008
P-10-65	431 171 112	435 126 008
P-10-66	431 171 112	435 126 008
P-10-67	431 171 112	435 126 008
P-10-68	431 171 112	435 126 008
P-10-69	431 171 112	435 126 008
P-10-70	431 171 112	435 126 008
P-10-71	431 171 112	435 126 008
P-10-72	431 171 112	435 126 008
P-10-73	431 171 112	435 126 008
P-10-74	431 171 112	435 126 008
P-10-75	431 171 112	435 126 008
P-10-76	431 171 112	435 126 008
P-10-77	431 171 112	435 126 008
P-10-78	431 171 112	435 126 008
P-10-79	431 171 112	435 126 008
P-10-80	431 171 112	435 126 008
P-10-81	431 171 112	435 126 008
P-10-82	431 171 112	435 126 008
P-10-83	431 171 112	435 126 008
P-10-84	431 171 112	435 126 008
P-10-85	431 171 112	435 126 008
P-10-86	431 171 112	435 126 008
P-10-87	431 171 112	435 126 008
P-10-88	431 171 112	435 126 008
P-10-89	431 171 112	435 126 008
P-10-90	431 171 112	435 126 008
P-10-91	431 171 112	435 126 008
P-10-92	431 171 112	435 126 008
P-10-93	431 171 112	435 126 008
P-10-94	431 171 112	435 126 008
P-10-95	431 171 112	435 126 008
P-10-96	431 171 112	435 126 008
P-10-97	431 171 112	435 126 008
P-10-98	431 171 112	435 126 008
P-10-99	431 171 112	435 126 008
P-10-100	431 171 112	435 126 008

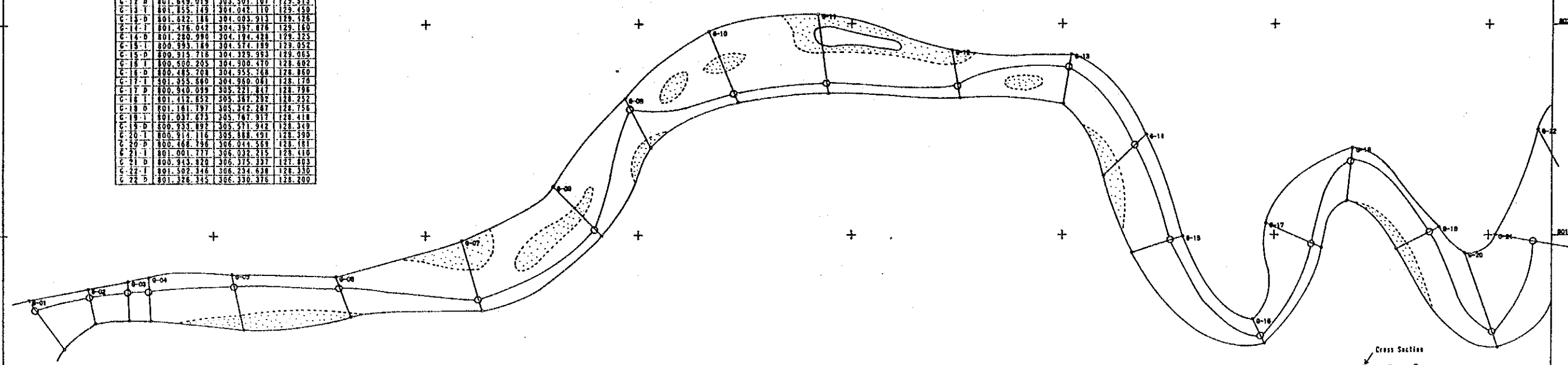


- A. See. 1:10000



Table 1 Result of control point survey Guasdualito (1)
Feb. 1993

Station	Northing	Easting	Elevat.
PT-14	792.458.147	303.798.789	
PORTUEN	793.742.105	310.339.976	
C-01-I	800.696.255	299.120.881	130.580
C-01-D	800.482.501	299.291.381	130.727
C-02-I	800.748.249	299.404.345	131.840
C-02-D	800.586.047	299.441.087	130.544
C-03-I	800.784.317	299.597.685	130.650
C-03-D	800.599.088	299.605.646	130.872
C-04-I	800.803.491	299.695.839	130.560
C-04-D	800.596.557	299.105.627	130.624
C-05-I	800.816.388	300.086.381	130.500
C-05-D	800.555.794	300.145.595	130.786
C-06-I	800.107.645	300.582.718	130.270
C-06-D	800.817.037	300.651.538	130.416
C-07-I	800.976.744	301.171.005	130.250
C-07-D	800.646.317	301.267.937	130.184
C-08-I	801.232.719	301.596.822	130.180
C-08-D	800.997.498	301.826.139	130.014
C-09-I	801.616.115	301.936.084	130.010
C-09-D	801.414.159	302.057.798	129.004
C-10-I	801.945.024	302.389.459	129.920
C-10-D	801.628.150	302.467.720	129.715
C-11-I	802.047.340	302.541.195	129.840
C-11-D	801.670.542	302.890.391	129.624
C-12-I	801.873.873	303.463.855	129.480
C-12-D	801.649.019	303.501.107	129.513
C-13-I	801.855.149	304.042.110	129.450
C-13-D	801.642.186	304.003.913	129.426
C-14-I	801.476.042	304.397.876	129.160
C-14-D	801.280.996	304.194.424	129.323
C-15-I	800.993.189	304.174.109	129.052
C-15-D	800.915.718	304.329.993	129.005
C-16-I	800.500.205	304.900.470	128.602
C-16-D	800.485.208	304.953.768	128.860
C-17-I	801.955.640	304.960.081	128.170
C-17-D	800.940.099	305.221.847	128.796
C-18-I	801.412.652	305.367.292	128.252
C-18-D	801.161.797	305.342.287	128.756
C-19-I	801.037.673	305.767.917	128.418
C-19-D	800.933.892	305.571.942	128.349
C-20-I	800.913.116	305.888.491	128.390
C-20-D	800.466.196	306.044.569	128.181
C-21-I	801.001.777	306.032.215	128.110
C-21-D	800.943.870	306.375.197	127.803
C-22-I	801.502.346	306.234.618	128.330
C-22-D	801.326.345	306.330.376	128.290



THE REPUBLIC OF VENEZUELA
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 OF THE APURE RIVER BASIN

LOCATION MAP
 OF CROSS SECTION
 GUASDUALITO 17/19

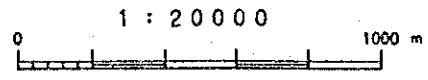
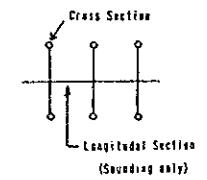
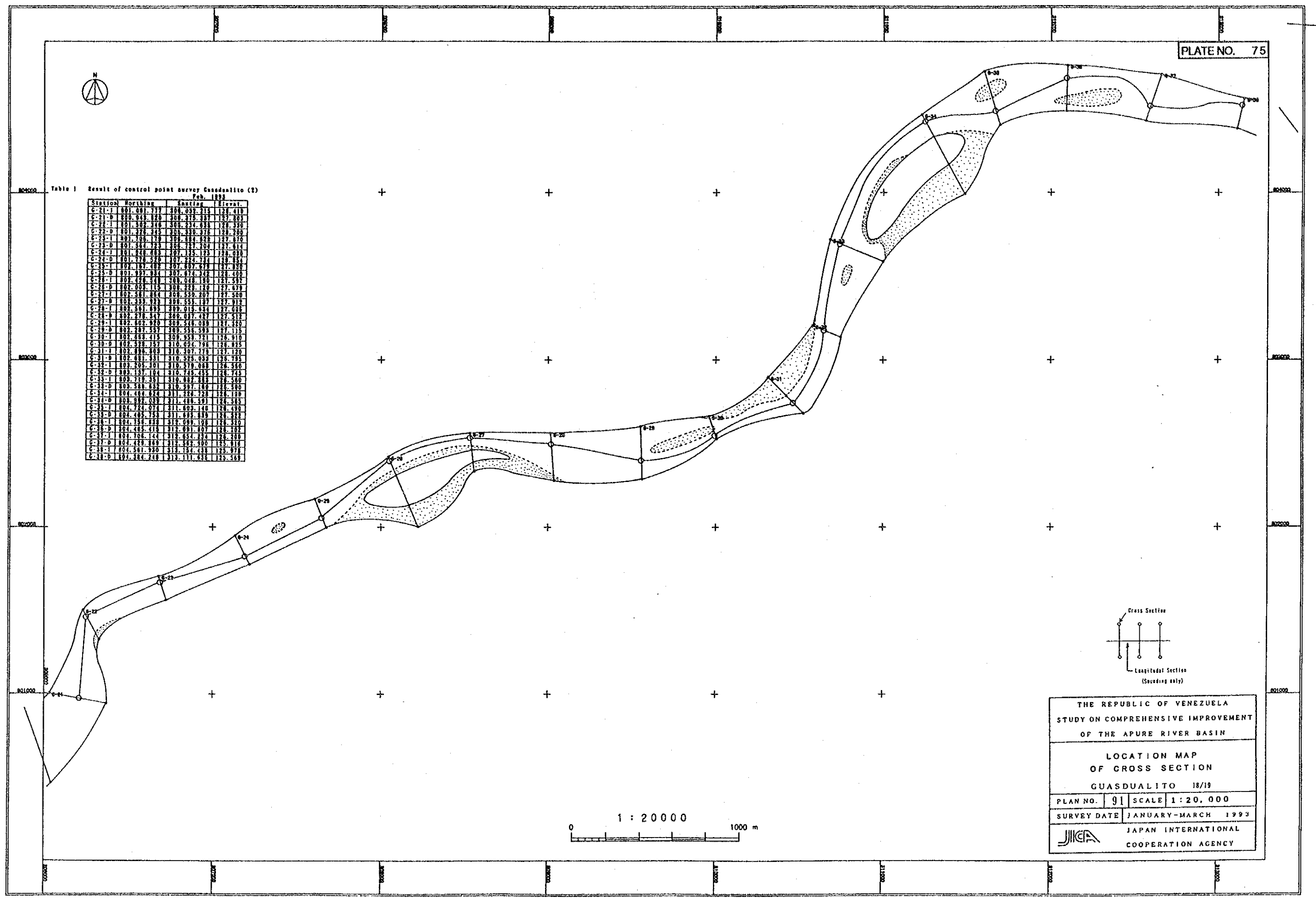
PLAN NO.	90	SCALE	1 : 20, 000
SURVEY DATE	JANUARY-MARCH 1993		

JICA
 JAPAN INTERNATIONAL
 COOPERATION AGENCY



Table 1 Result of control point survey Guasdualito (2)
Feb. 1993

Station	Northing	Easting	Elevat.
C-21-I	801.081.717	308.057.811	127.410
C-21-D	801.041.128	308.375.887	127.803
C-22-I	801.302.348	308.214.681	128.330
C-22-D	801.278.345	308.330.576	128.700
C-23-I	801.104.178	308.884.828	127.870
C-23-D	801.504.723	308.737.704	127.814
C-24-I	801.248.693	307.135.125	128.080
C-24-D	801.728.528	307.222.727	128.354
C-25-I	802.182.428	307.492.678	128.330
C-25-D	802.182.428	307.492.678	128.330
C-26-I	802.128.428	308.048.180	127.505
C-26-D	802.008.125	308.282.180	127.678
C-27-I	802.511.864	308.550.207	127.500
C-27-D	802.511.864	308.551.197	127.912
C-28-I	802.501.893	309.015.634	127.601
C-28-D	802.278.547	309.087.427	127.517
C-29-I	802.602.820	309.528.088	127.380
C-29-D	802.207.357	309.536.589	127.115
C-30-I	802.428.413	310.538.121	126.910
C-30-D	802.428.413	310.538.121	126.910
C-31-I	802.898.869	310.107.196	127.126
C-31-D	802.898.869	310.525.035	126.785
C-32-I	802.205.201	310.379.088	126.580
C-32-D	802.137.104	310.745.435	126.745
C-33-I	802.719.331	310.487.838	126.500
C-33-D	802.501.632	310.597.180	126.600
C-34-I	804.464.824	311.286.728	126.180
C-34-D	802.992.039	311.486.391	126.585
C-35-I	804.721.074	311.603.140	126.490
C-35-D	804.464.759	311.692.839	126.818
C-36-I	804.192.759	312.099.180	126.370
C-36-D	804.464.418	312.099.180	126.780
C-37-I	804.706.124	312.634.234	126.200
C-37-D	804.419.849	312.529.500	125.814
C-38-I	804.561.930	312.734.438	125.978
C-38-D	804.284.248	312.111.632	125.588



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LOCATION MAP
OF CROSS SECTION
GUASDUALITO 18/19

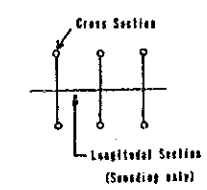
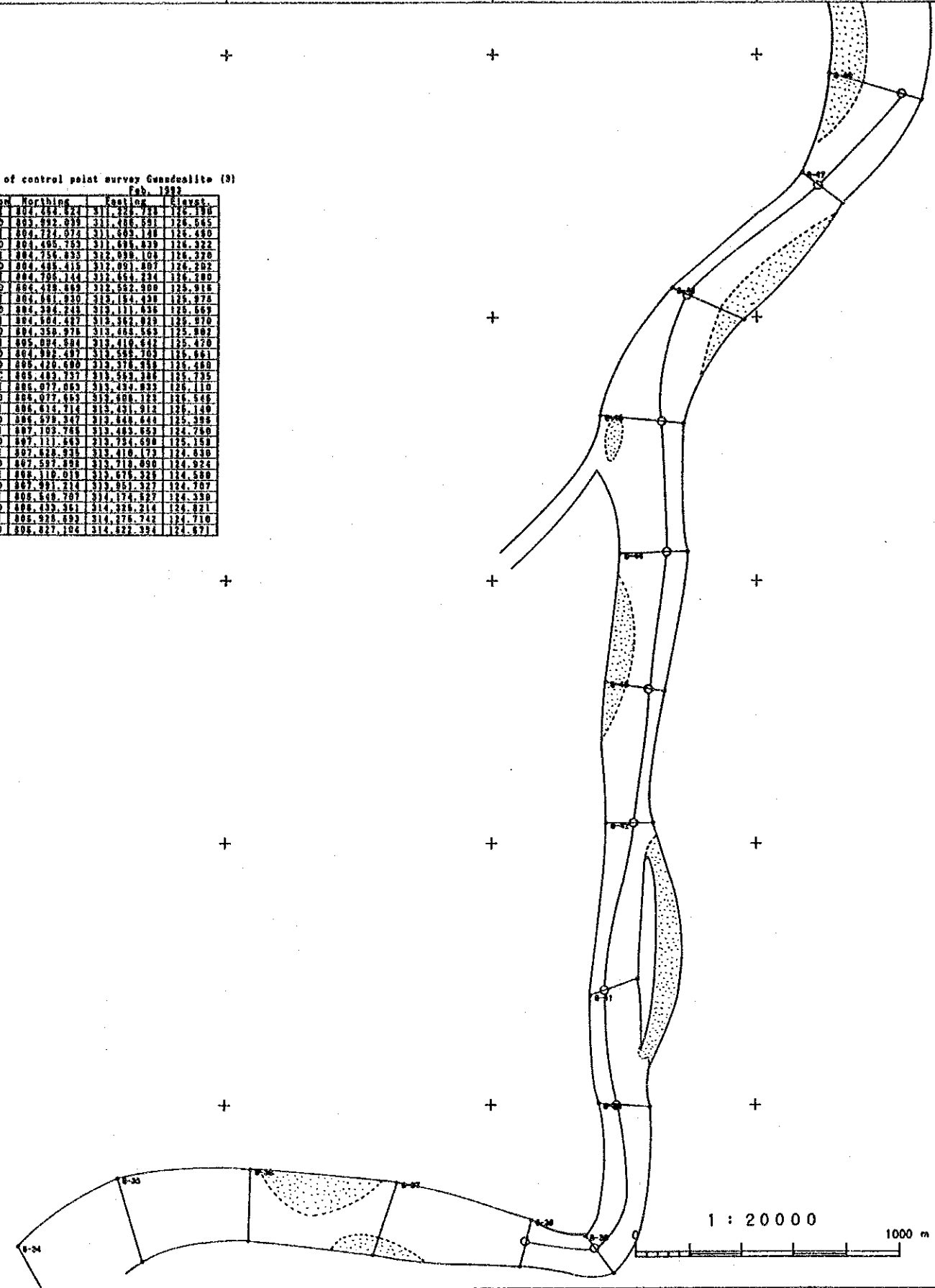
PLAN NO.	91	SCALE	1:20,000
SURVEY DATE	JANUARY-MARCH 1993		

JICA JAPAN INTERNATIONAL
COOPERATION AGENCY



Table 1 Result of control point survey Guasdualito (3)
Feb. 1993

Station	Northing	Easting	Elevat.
G-34-I	804,444.827	311,224.781	126.184
G-34-D	803,992.039	311,488.881	126.645
G-35-I	804,724.972	311,669.148	126.480
G-35-D	804,495.753	311,688.829	126.322
G-36-I	804,755.630	312,039.103	126.390
G-36-D	804,485.415	312,051.807	126.292
G-37-I	804,705.444	312,454.224	126.190
G-37-D	804,419.662	312,582.960	125.918
G-38-I	804,661.930	313,154.438	125.978
G-38-D	804,384.245	313,111.435	125.569
G-39-I	804,504.482	313,367.819	125.970
G-39-D	804,350.978	313,468.563	125.807
G-40-I	805,084.584	313,410.612	125.470
G-40-D	804,992.497	313,559.703	126.661
G-41-I	805,426.690	313,378.258	126.490
G-41-D	805,482.337	313,582.388	125.735
G-42-I	805,077.053	313,434.839	126.110
G-42-D	805,077.653	313,408.121	125.545
G-43-I	805,614.714	313,431.912	125.140
G-43-D	805,679.347	313,649.644	125.388
G-44-I	807,103.748	313,483.651	124.780
G-44-D	807,111.663	313,757.690	125.158
G-45-I	807,628.931	313,410.173	124.630
G-45-D	807,597.898	313,719.090	124.924
G-46-I	808,110.015	313,675.327	124.590
G-46-D	807,981.214	313,959.327	124.707
G-47-I	808,648.707	314,124.827	124.390
G-47-D	808,433.361	314,328.914	124.821
G-48-I	808,928.892	314,276.742	124.710
G-48-D	808,827.104	314,822.391	124.671



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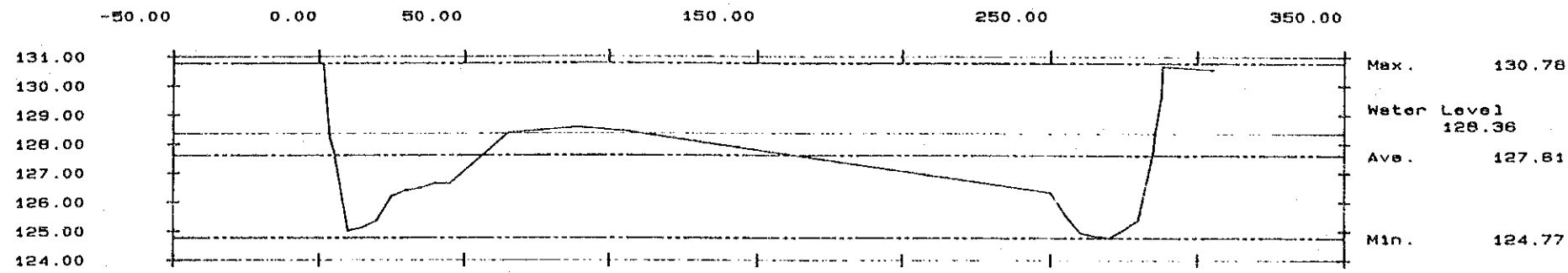
LOCATION MAP
OF CROSS SECTION
GUASDUALITO 19/19

PLAN NO.	92	SCALE	1:20,000
SURVEY DATE	JANUARY-MARCH 1993		

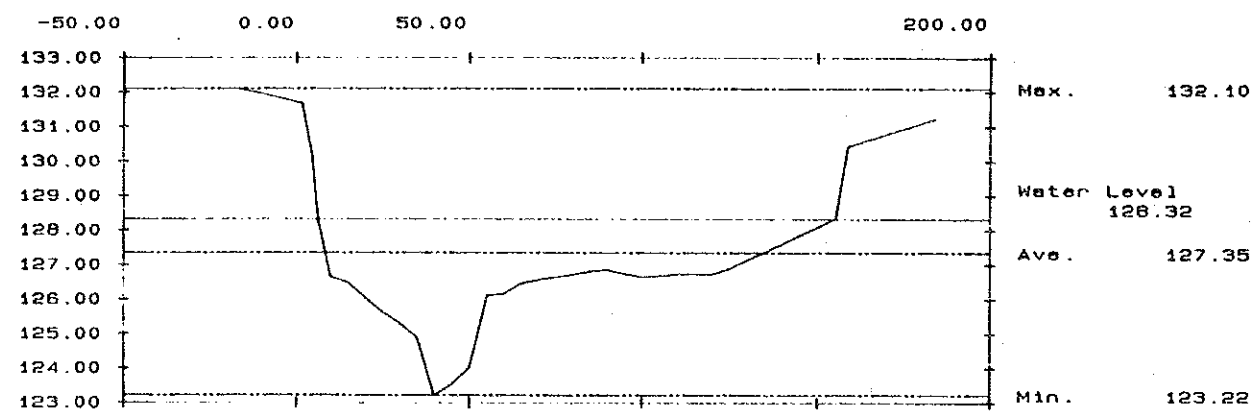
JICA JAPAN INTERNATIONAL
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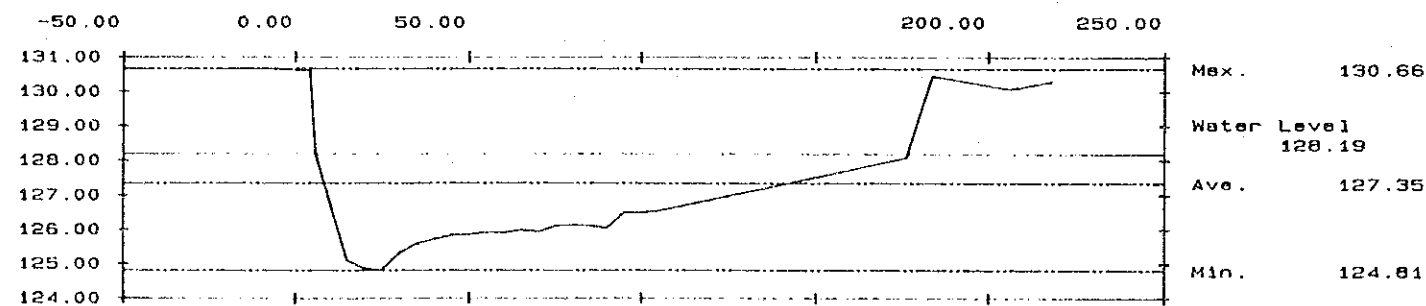
SECTION 1




SECTION 2

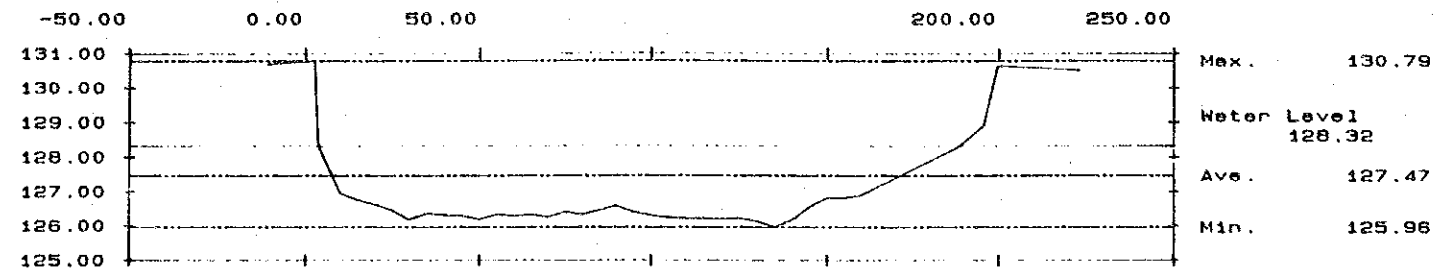


SECTION 3

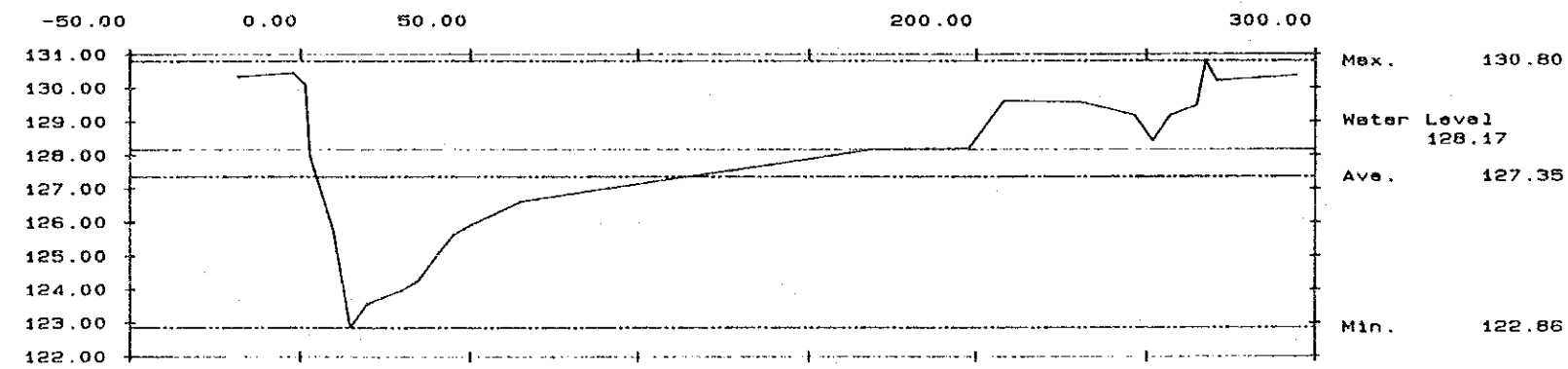


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OF THE APURE RIVER BASIN	
CROSS SECTION	
GUASDUALITO 1/19	
PLAN NO. 74	SCALE H:1:1000 V:1:100
SURVEY DATE	JANUARY-MARCH 1993
 JAPAN INTERNATIONAL COOPERATION AGENCY	

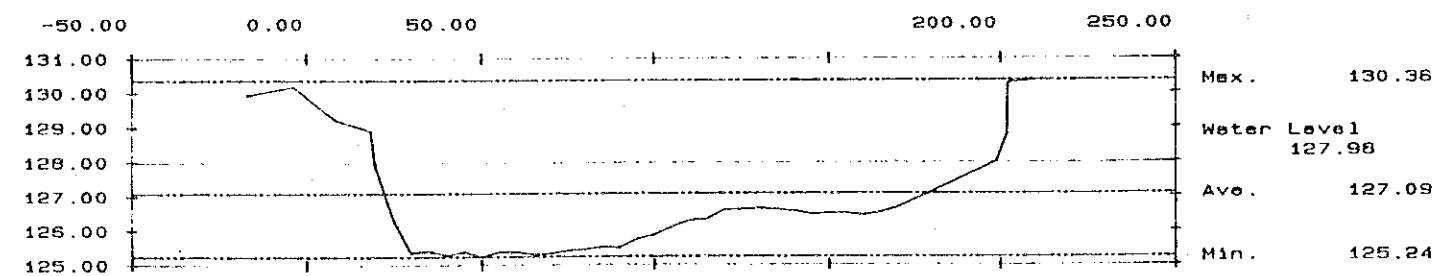
SECTION 4



SECTION 5

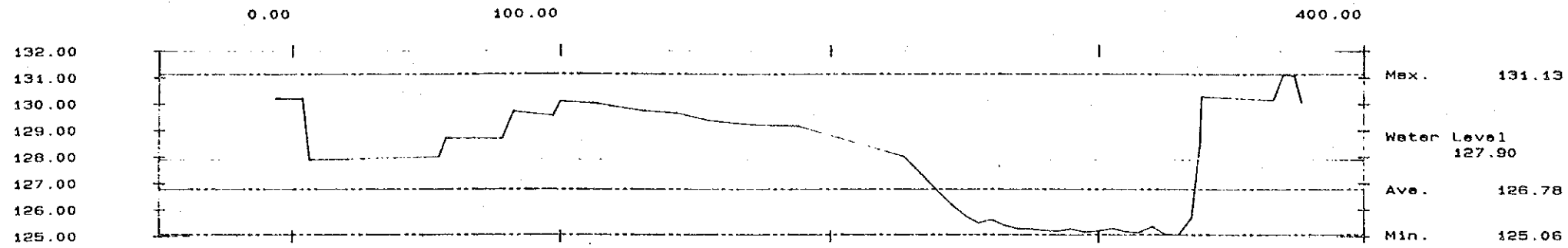


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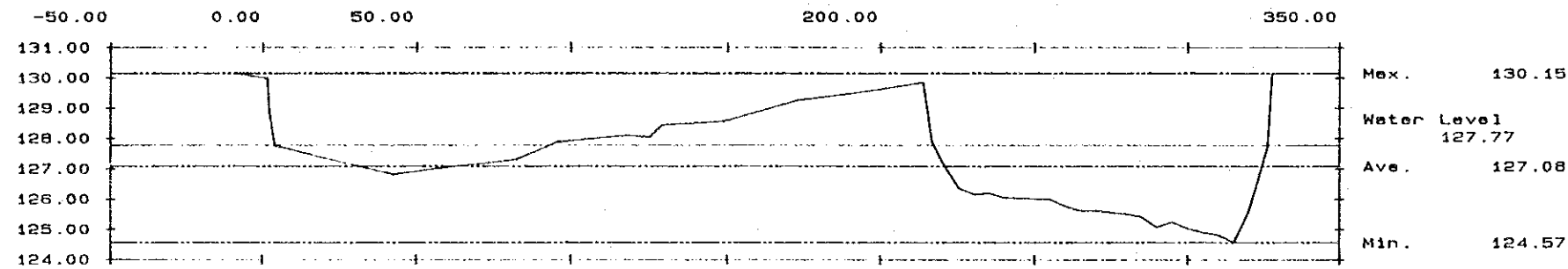


THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT			
OF THE APURE RIVER BASIN			
CROSS SECTION			
GUASDUALITO 2/19			
PLAN NO.	75	SCALE	H:1:1000 V:1:100
SURVEY DATE	JANUARY MARCH 1993		
JICA		JAPAN INTERNATIONAL	
COOPERATION AGENCY			

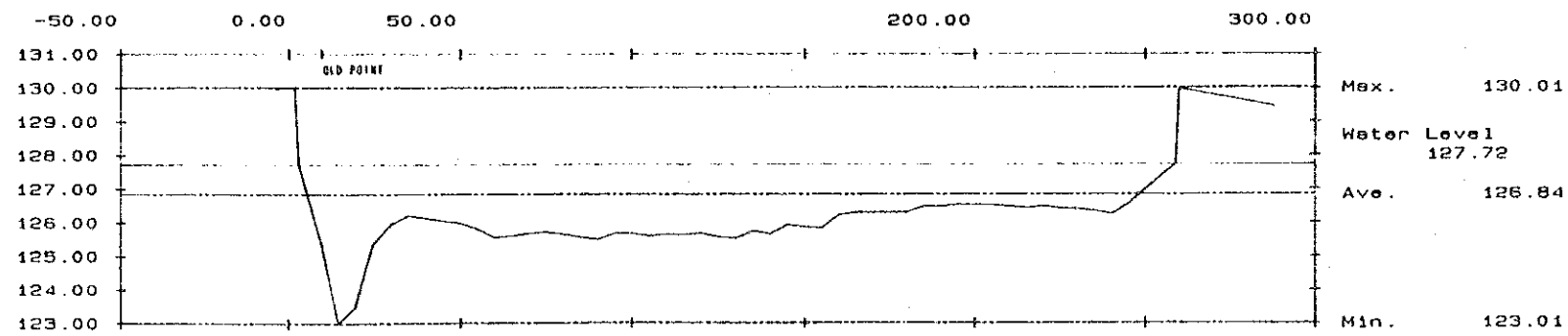
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SECTION 8

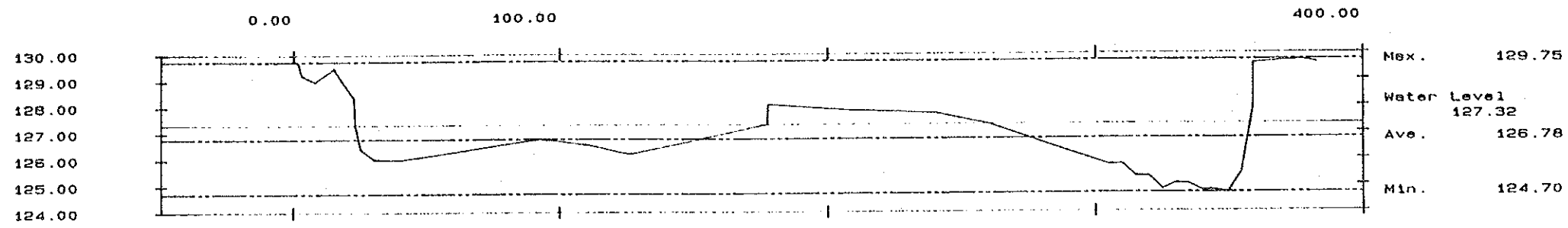


SECTION 9

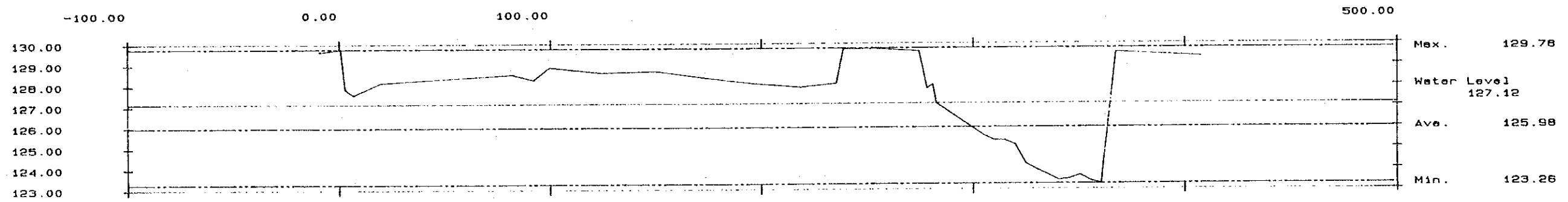


THE REPUBLIC OF VENEZUELA	
STUDY ON COMPREHENSIVE IMPROVEMENT	
OF THE APURE RIVER BASIN	
CROSS SECTION	
GUASDUALITO 3/19	
PLAN NO. 76	SCALE H:1:1000 V:1:100
SURVEY DATE	JANUARY MARCH 1993
	JAPAN INTERNATIONAL COOPERATION AGENCY

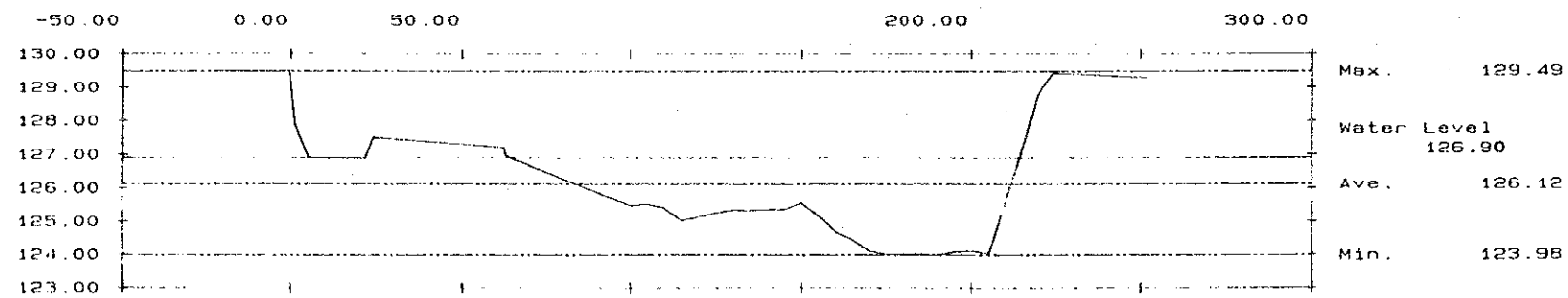
SECTION 10



SECTION 11

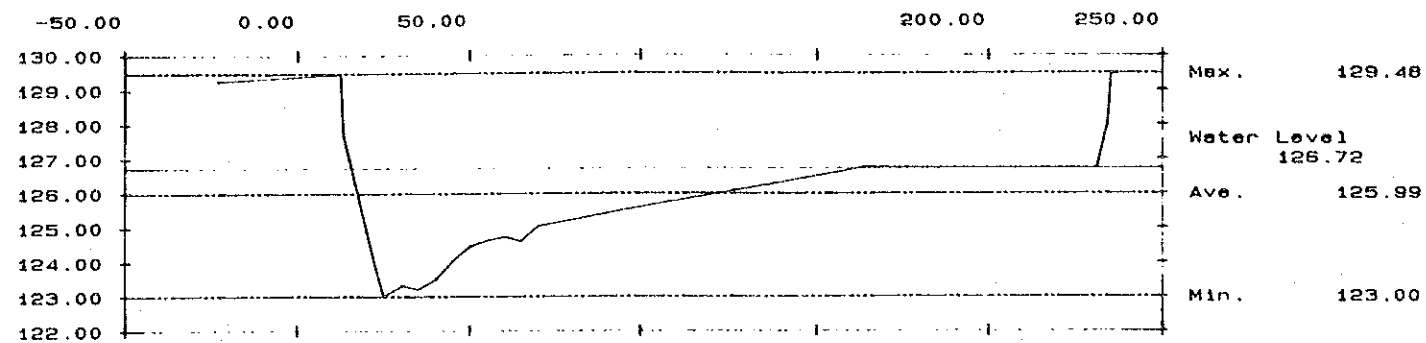


SECTION 12

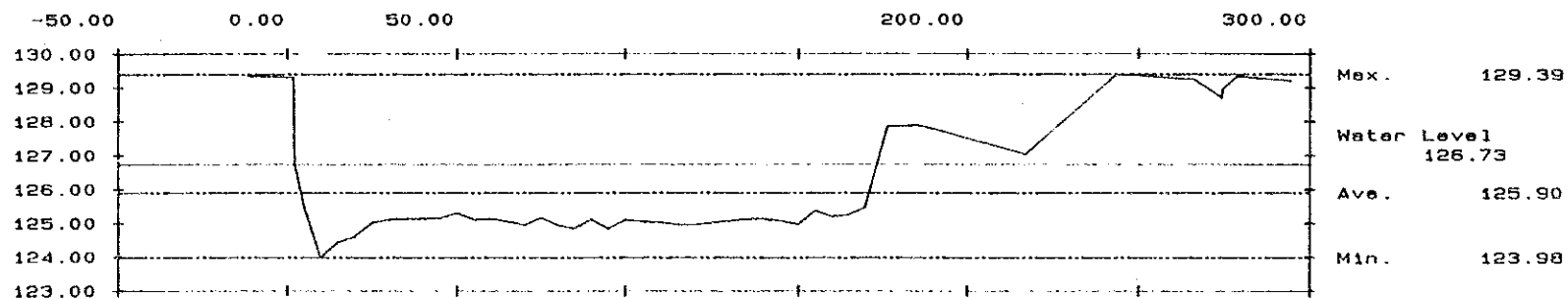


THE REPUBLIC OF VENEZUELA	
STUDY ON COMPREHENSIVE IMPROVEMENT	
OF THE APURE RIVER BASIN	
CROSS SECTION	
GUASDUALITO 4/19	
PLAN NO.	77
SCALE	H:1:1000 V:1:100
SURVEY DATE	JANUARY MARCH 1993
JICA	JAPAN INTERNATIONAL COOPERATION AGENCY

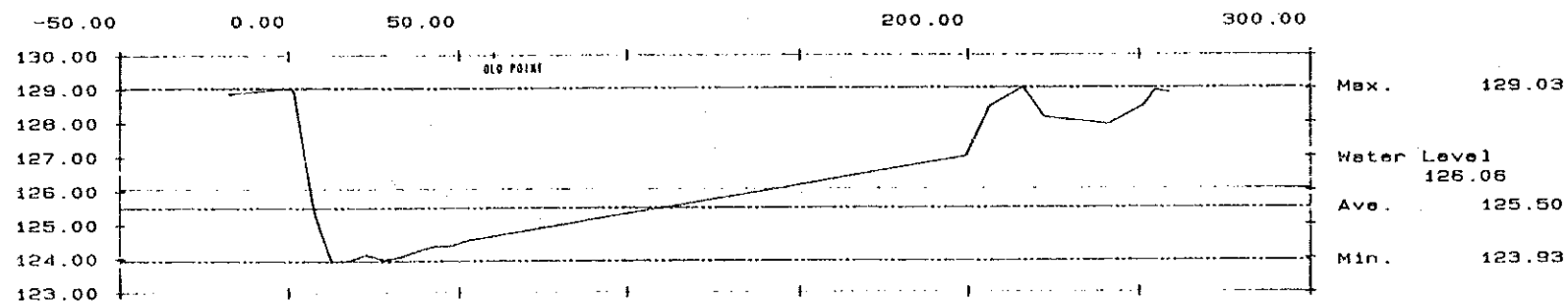
SECTION 13



SECTION 14

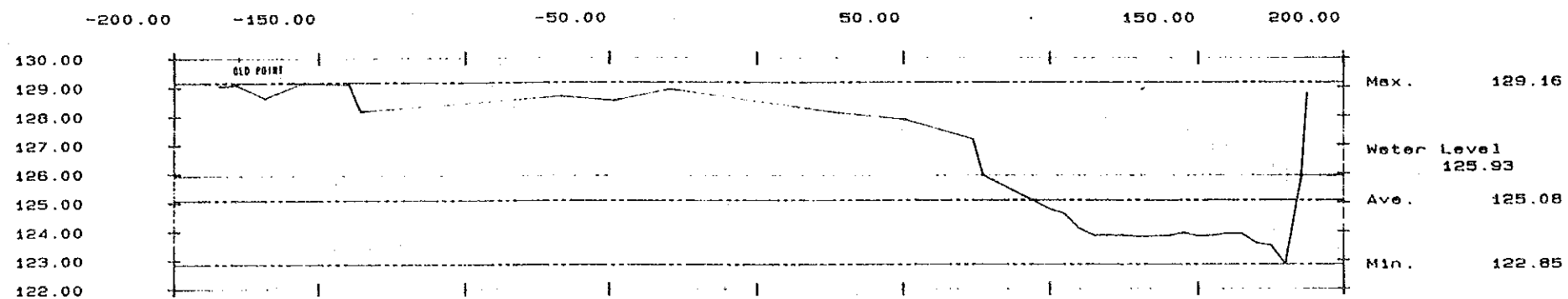


SECTION 15

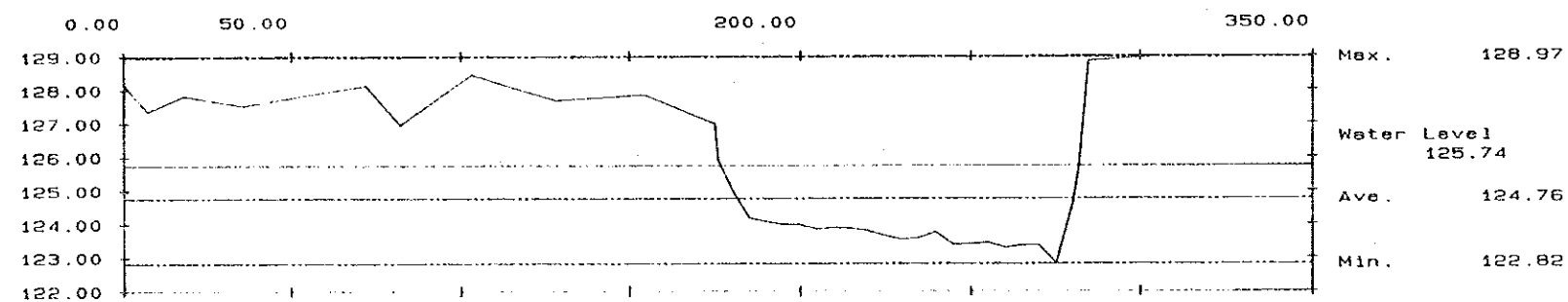


THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT			
OF THE APURE RIVER BASIN			
CROSS SECTION			
GUASDUALITO 5/13			
PLAN NO.	78	SCALE	H:1:1000 V:1:100
SURVEY DATE	JANUARY - MARCH 1993		
JICA		JAPAN INTERNATIONAL COOPERATION AGENCY	

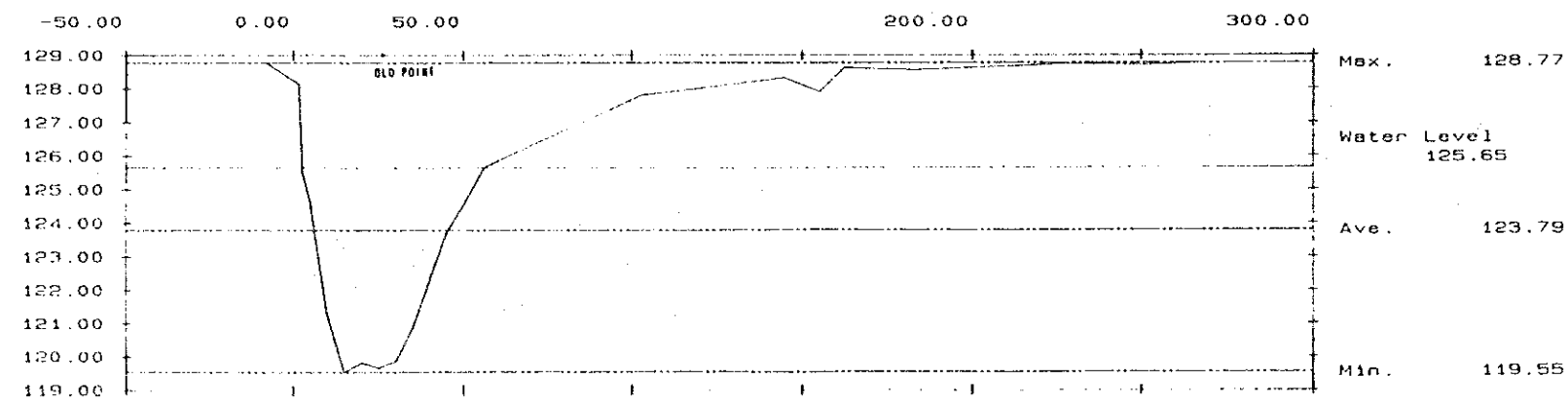
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SECTION 17

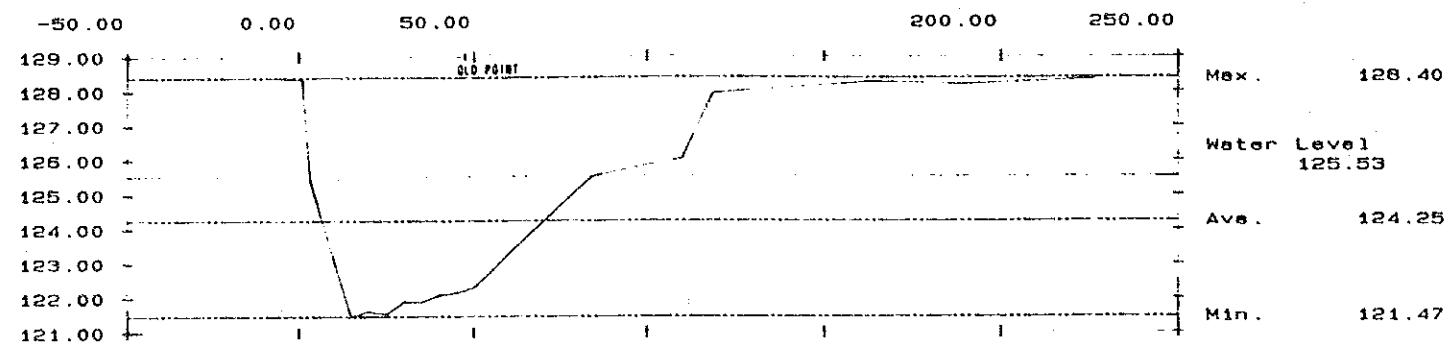


SECTION 18

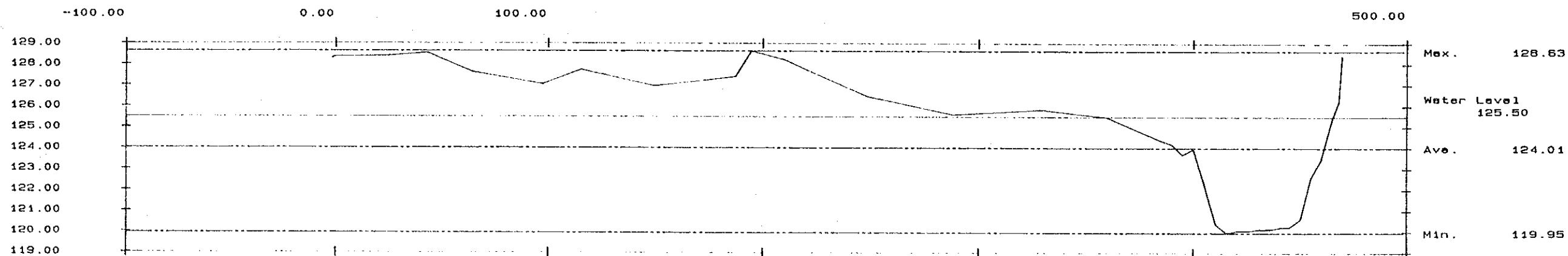


THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT			
OF THE APURE RIVER BASIN			
CROSS SECTION			
GUASDUALITO 6/19			
PLAN NO.	79	SCALE	H-1:1000 V-1:100
SURVEY DATE	JANUARY MARCH 1993		
JICA		JAPAN INTERNATIONAL	
COOPERATION AGENCY			

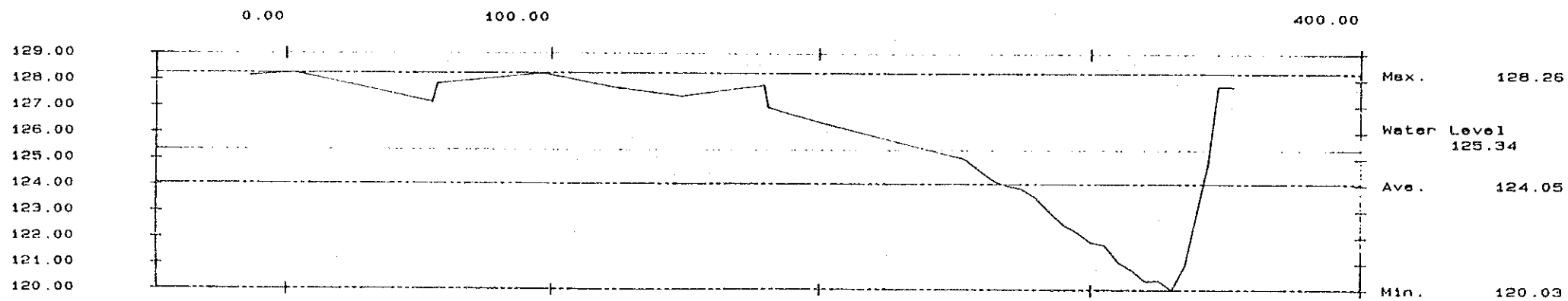
SECTION 19




SECTION 20

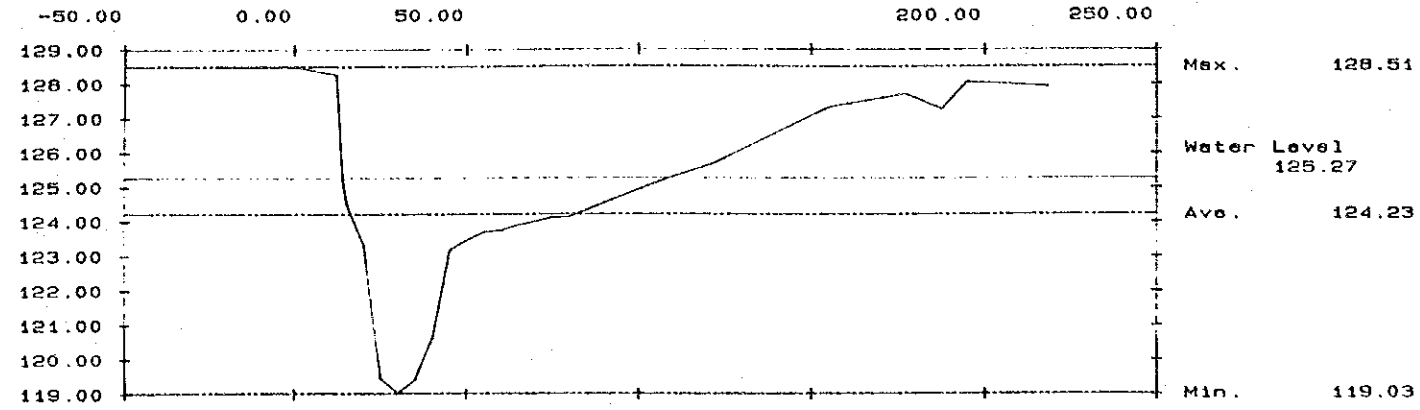


SECTION 21

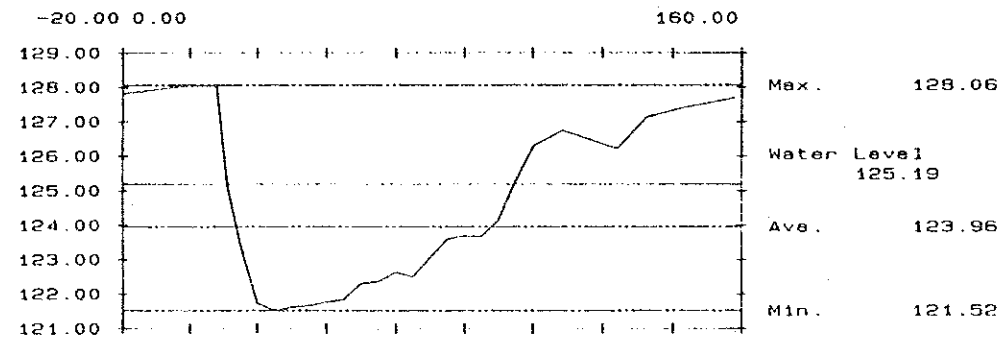


THE REPUBLIC OF VENEZUELA	
STUDY ON COMPREHENSIVE IMPROVEMENT	
OF THE APURE RIVER BASIN	
CROSS SECTION	
GUASDUALITO 7/19	
PLAN NO. 80	SCALE H:1:1000 V:1:100
SURVEY DATE	JANUARY MARCH 1993
 JAPAN INTERNATIONAL COOPERATION AGENCY	

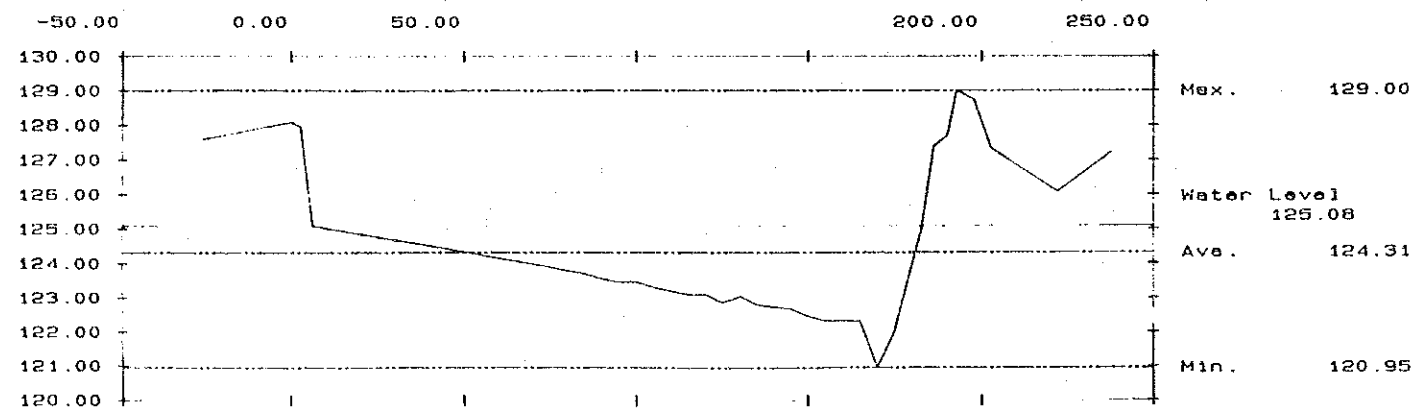
SECTION 22



SECTION 23



SECTION 24



THE REPUBLIC OF VENEZUELA			
STUDY ON COMPREHENSIVE IMPROVEMENT			
OF THE APURE RIVER BASIN			
CROSS SECTION			
GUASDUALITO 8/19			
PLAN NO.	81	SCALE	H:1:1000 V:1:100
SURVEY DATE	JANUARY MARCH 1993		
JICA		JAPAN INTERNATIONAL COOPERATION AGENCY	