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TWELVE MILE CREEK SEDIMENT TRANSPORT MODEL/ DATA COLLECTION REPORT

SANGAMO WESTON, INC.
OPERABLE UNIT 2
PICKENS COUNTY, SOUTH CAROLINA

December 1999

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10115902

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Section 1
Background

The purpose of this report is to document data collected for use by the United States Environmental Protection Agency (USEPA), Region IV and the United States Corps of Engineers (COE) Waterways Experiment Station (WES) to conduct HEC-6 modeling of sediment transport in Twelve Mile Creek (12MC). The modeling effort is one component of the USEPA's Five-Year Review of the Sangamo Weston, Inc./Twelve Mile Creek/Lake Hartwell PCB Contamination Superfund Site - Operable Unit Two ("Sangamo PCB OU-2 Site") in Pickens County, South Carolina. The data collection was conducted as outlined in a USEPA-approved workplan titled *Twelve Mile Creek Sediment Transport Model/ Data Collection Workplan* dated August 1999.

Among several other components, USEPA's Record of Decision (ROD) for the Sangamo PCB OU-2 Site includes passage of sediment from the Woodside I and II impoundments located on 12MC between SC Route 137 and Lay Bridge Road near Cateechee, South Carolina. These impoundments are owned and operated by Consolidated Hydro Southeast, Inc. of Greenville, South Carolina, for the generation of hydroelectric power. Cleaner sediment from the Upper 12MC watershed must be transported through the Woodside I and II impoundments to facilitate burial of impacted sediments in the 12MC arm of Lake Hartwell.

Sediment that would normally be transported down 12MC has been at times trapped in the respective headpools of Woodside I and II. After evaluating several feasible sediment management alternatives, annual hydraulic dredging was initiated in October 1998 at the two impoundments to remove accumulated sediment. Clean sediment trapped behind the two impoundments has been dredged and pumped over the dams into 12MC during two periods, October through January 1999 and April through August 1999. The sediment was allowed to move downstream with the current. The HEC-6 model will estimate the time required to move the sediment from the impoundments to the 12MC arm of Lake Hartwell and will also compare current deposition trends to earlier model results that were conducted to support remedy selection.

Section 2
Scope of Work

The scope of work consisted of collecting samples to determine the size and distribution of the sediment in the streambed as of August/September 1999. Suspended sediment samples were also collected at two locations - Liberty Bridge and a point downstream from Lay Bridge at Transect T-18. Information on the volume of water flowing through the creek during this year's drought conditions were recorded. The United States Geological Survey (USGS) monitoring station located on the Liberty Bridge will be the source for historical data and current stream conditions to supplement the data collected in the field.

The streambed samples were collected from each of fourteen pre-selected locations (BS1-BS14). The COE also collected bed samples from nine locations (H81-H89). The samples were collected in August and shipped to the COE for grain size analysis. Twenty-three transects (Appendix A) were surveyed and measured along the creek from Liberty Bridge down stream to the Highway 123 Bridge in Clemson, South Carolina. Eleven of the transects were established in 1995 and were reestablished for comparison to current conditions. Streambed profiles were developed for each of the transect locations.

2.1 Upstream Suspended Sediment Sampling Station Description

The upstream sediment supply sample collection point was at the Liberty Highway Bridge crossing, where the USGS gaging station is located. The goal of suspended sediment sampling at the supply reach is to determine the concentration of sediment in the river flow for varying discharge events. The sampling completed in September was collected at very low flows. The flow in the creek has not varied during the sample period due to the low rainfall during 1999. One sample event in October has yielded suspended sediment samples which may contain useful amounts of sediment. Additional data will be collected when appropriate water levels are met. This data will be used to construct the sediment supply rating curve for the HEC-6 model. Samples collected to date have been obtained using a Federal Interagency Sedimentation Project (FISP) USDH-48 suspended sediment sampler. The samples were shipped directly to COE for particle size distribution analysis. Stream flow was determined using a MMI model 2000 flow-mate, electromagnetic, portable water flow meter.

The suspended sediment samples taken to date have not contained sufficient amounts of sediment to warrant analysis. RMT will continue to monitor 12MC, taking samples when the stream flow and stage indicate that sediment may be moving.

Figure 1
Water Surface Survey Upstream from Liberty Bridge

DISTANCE UPSTREAM FROM LIBERTY BRIDGE (feet)	WATER SURFACE ELEVATION
1,000	824.62
800	824.62
600	824.23
400	824.17
200	824.26
0	823.86

The upper reach was surveyed from Liberty Bridge upstream for 1000 feet. The surface of the water was surveyed every 200 feet beginning at the foot of Liberty Bridge (0 feet) and ending 400 feet above Transect LB1 (1000 feet). The data collected is represented in Figure 1. This indicates that 12MC falls less than 1 foot in 1,000 feet in this section. This data is required to determine the sediment supply for the HEC-6 Model.

2.2 Downstream Suspended Sediment Sampling Station Description

The downstream suspended sediment sample collection point is located 500 feet downstream from Lay Bridge and will only be sampled when wading is possible. No samples were collected from the bridge. A section of the creek was selected downstream from the bridge, which was determined to be suitable for the collection point. An accessible point was selected where the cross-section width was symmetrical and sediment was present across the entire cross section.

Suspended sediment at the downstream sampling station was collected during the dredging operations by using a water trap sampler. The water trap sampler consisted of a short section of pipe with spring-loaded end caps, which were triggered by sliding a weight down the rope used to suspend the sampler in the water. The end caps closed over the ends of the pipe, trapping the water and any suspended sediment inside. The samples were shipped directly to COE for particle size distribution analysis. Stream flow was determined using a MMI model 2000 flow-mate, electromagnetic, portable water flow meter.

Stream flow characteristics as recorded at time of sample collection:

	DATE	STREAM VELOCITY (f/s)		
		LEFT	CENTER	RIGHT
Liberty Bridge	09/07/99	0.49	0.59	0 49
Lay Bridge	08/03/99	1.15	1.85	1.89

	DATE	STREAM DEPTH (feet)		
		LEFT	CENTER	RIGHT
Liberty Bridge	09/07/99	1.00	1.00	0.95
Lay Bridge	08/03/99	0.60	0.80	2.40

2.3 Creek Bed Sediment Samples

Creek bed sediment samples were taken at fourteen locations (BS1 through BS14) by RMT and nine locations (H81-H89) by COE as well as at the discharge point of the dredging operation. Each bed sample location was divided into three sections; left, middle, and right (as seen looking upstream) The three samples taken at each bed sample location were placed in one-liter amber jars for shipment and subsequent composition analysis at the laboratory. All the bed samples were collected using a two inch polyvinyl chloride (PVC) core sampler cut to length and driven into the creek bed twenty-four inches or until refusal. A cap was placed on the end of the PVC pipe to create a vacuum to hold the sediment in place while the PVC pipe was withdrawn from the creek bed. Upon removal, the cap was removed and the sediment was allowed to flow into a stainless steel bowl and then placed into the one-liter amber jars. If a thin layer of fines was present on the top layer of the bed sediments, they were excluded by washing the sample in the pan prior to placing the sample in a collection jar. The coarse fraction of the sample was delivered to COE to be sieved for determination of particle size distribution (Appendix B).

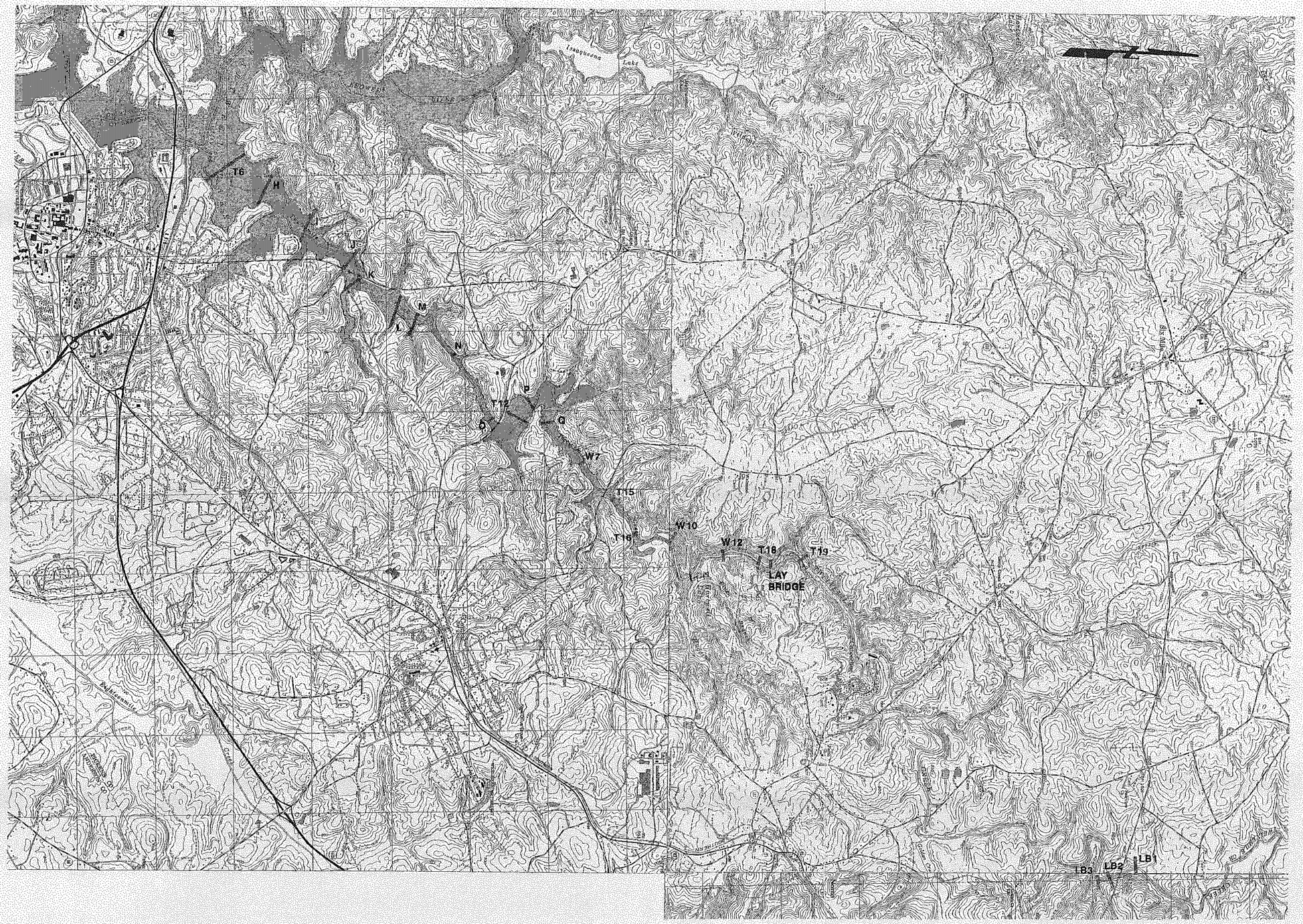
2.4 Transects

Twenty-three transect locations were chosen to represent the segment of 12MC that is a part of the transport model. The first eleven transects, as noted on the attached map, are being repeated from the original data collection event in 1995. Twelve additional transects were added at the request of the COE and USEPA as a result of a site visit in July 1999. The transect and bed sample points are identified on the enclosed map. The transect locations on the map are identified as follows:

- Transect locations were reestablished:
  - T-6, H, I, J are located between Highway 123 Bridge and the Highway 133 Bridge
  - K, L, M, N, O are located between Highway 133 Bridge and Madden Road Bridge
  - P and Q were located between Madden Bridge Road and Maw Road Bridge
- Twelve additional transects were established:
  - T-12 and W-7 arelocated between Madden Road Bridge and Maw Road Bridge
  - T-15, T-16, W-10, T-17, W-12, T-18 are located between Maw Road Bridge and Lay Bridge Road Bridge
  - T-19 is located between Lay Bridge Road Bridge and Woodside 2
  - LB1 transect is located upstream of Liberty Bridge approximately 500 feet
  - LB2 transect is located downstream from Liberty Bridge approximately 500 feet
  - LB3 transect is located downstream from Liberty Bridge approximately 1,000 feet

The transects beginning at the Highway 123 Bridge and ending with P were performed using a pontoon boat and differential GPS location (Tremble 4700 Survey Grade GPS). Bottom elevations were determined using a Marinetek SeaMAX 50/200 depth finder (accurate to within 0.1 foot) with a data collector interlocked with the GPS For locations near the bank of the creek where the depth finder was not able to collect data, manual readings were taken using a graduated rod read from the surface of the water. From Transect Q to the transect upstream of Liberty Bridge, the transect points were located using a combination of GPS and traditional survey methods from known benchmarks. Bottom elevations were determined using a sight level and graduated rod.

The results of the transect data collection can be seen in the enclosed creek profiles (Appendix C). Each set of transect data points (Appendix D) were plotted and printed to produce the figures representing the creek profile at each location. Profiles that were generated in the original data collection are included for comparison (Appendix E). The electronic files are also enclosed for use in the HEC-6 model.



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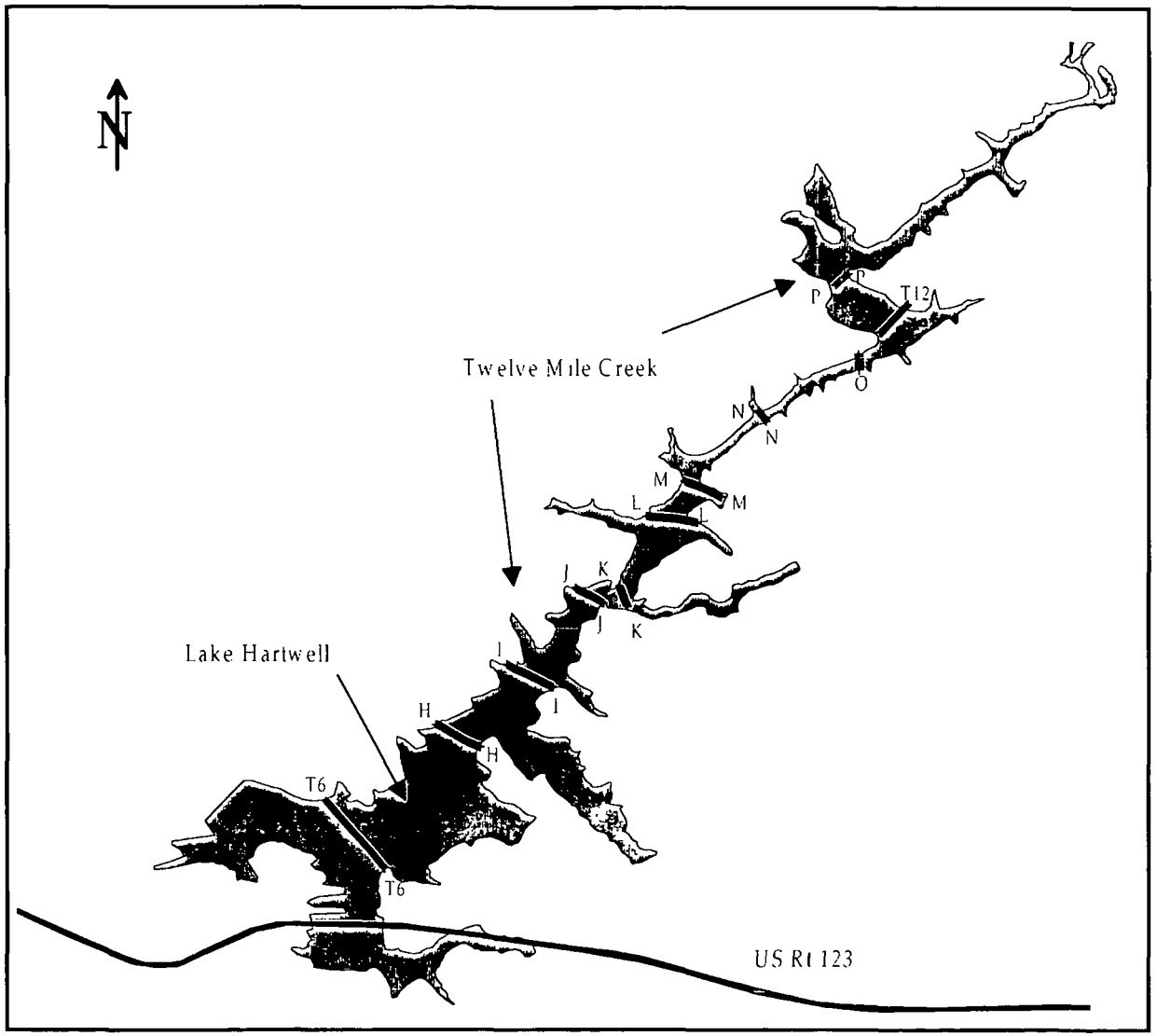
12 MILE CREEK
SEDIMENT TRANSPORT
DATA COLLECTION PROJECT

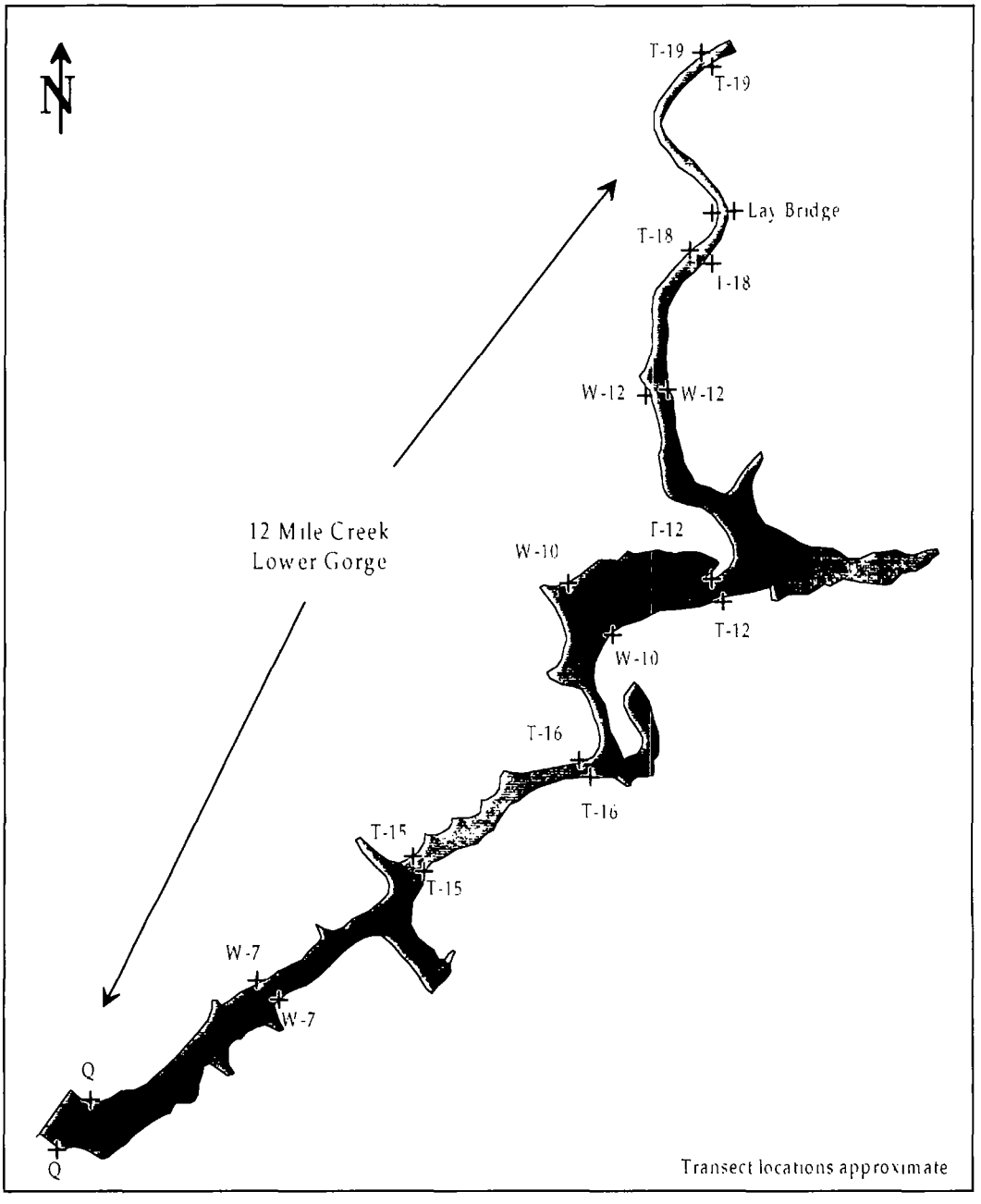
SCALE	SHEET	PLATE NO.
1"=2000'		

Appendix A
Transect Location Drawing

Sangamo Operable Unit Two
Lake Hartwell - 12 Mile Creek



Sangamo Operable Unit Two
12 Mile Creek



Appendix B
Grain Size Distribution Test Results

BED SAMPLE DESIGNATION:

The bed samples designated as BS are the bed samples collected by RMT. The sampling locations are found on the map included in the data collection workplan. The samples designated as BSA are left channel samples, BSB are right channel samples, and BS are the center channel samples. The bed samples designated as BH are the bed samples collected by WES on the site investigation trip to Lake Hartwell. A description of the BH samples is attached.

LIST OF BED SAMPLES FOR LAKE HARTWELL STUDY

BED SAMPLES

HB1 - Maw bridge bar sample (bar on left bank, just upstream of the bridge) 1" - 8" depth

HB2 - Maw bridge bar sample (bar on left bank, just upstream of the bridge) 8" - 1' depth silt layer

HB3 - Maw bridge bar sample (bar on left bank, just upstream of the bridge) 2.0 ' depth

HB4 - 100 yd above Maw bridge in channel

HB5 - 10 yd below lay bridge from bar off left bank

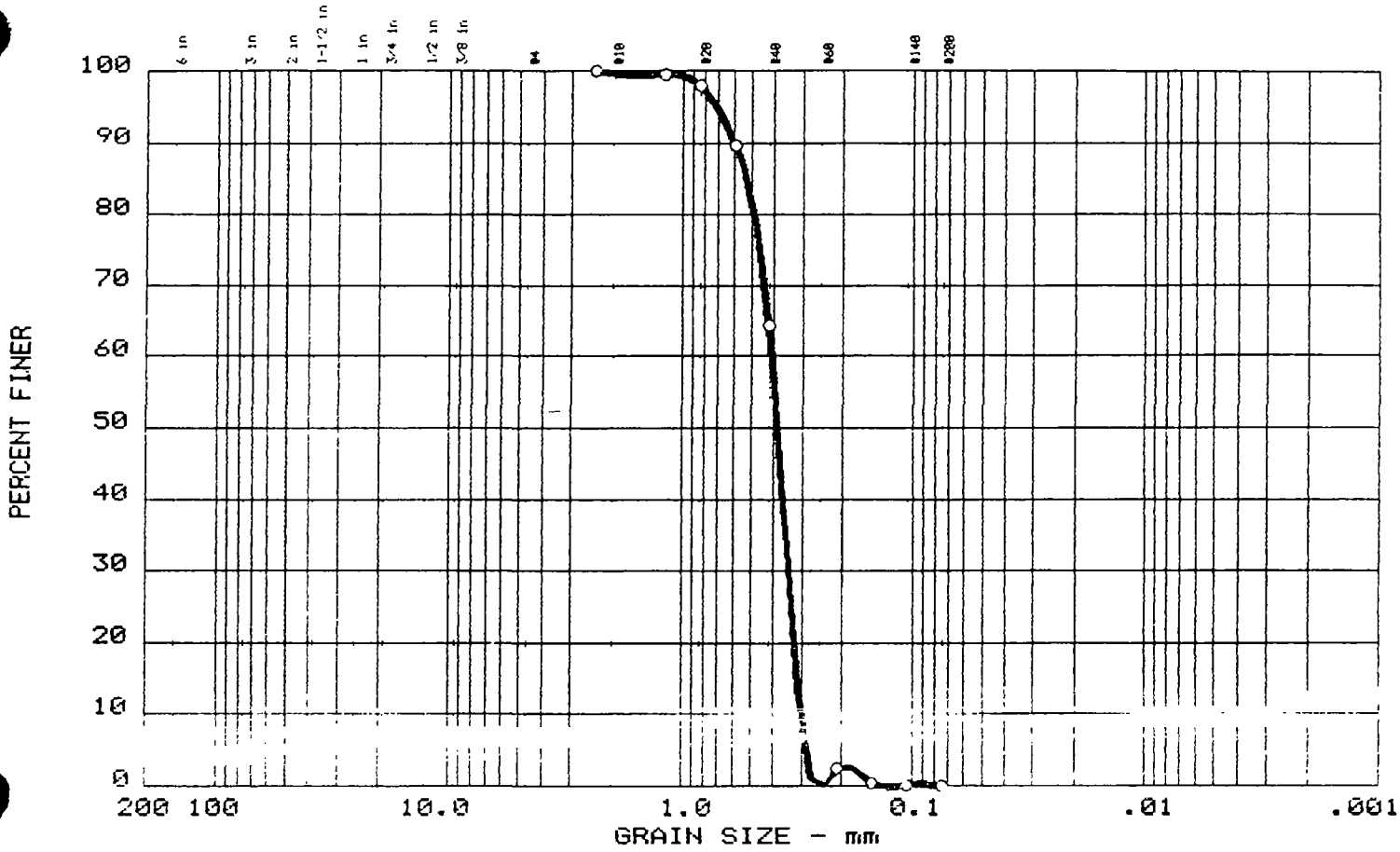
HB6 - bar just below pipeline discharge 40 yards above lay bridge

HB7 - 8/3/99 - Northbank T18 (Lay Bridge, 0 - 2 ", below dredging)

HB8 - 8/3/99 - Center T18 (Lay Bridge, 0 - 2 ", below dredging)

HB9 - 8/3/99 - Southbank T18 (Lay Bridge, 0 - 2 ", below dredging)

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% FINES
○	0.0	0.0	100.0	0.0

	LL	PL	NWC	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				0.52	0.41	0.39	0.346	0.3166	0.3051	0.96	1.3

MATERIAL DESCRIPTION	USCS	Sam #	Depth
○ F-M SAND SP	SP	1	

Project: LAKE HARTWELL STUDY
○ Boring No.: HB-1

Date: 09-21-99

Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT
CORPS OF ENGINEERS - VICKSBURG DISTRICT

Plate No. ____

SCREEN ANALYSIS

Soils Laboratory, U. S. Army Engineer District, Vicksburg

Date _____

Damsite Lake Hartwell Sty. | Station MAW Bridge Bar

Location HB-1 | Depth 1"-8"

Dish No. 11-6 | Total Weight of Sample 157.9 Grams

Tyler Sieve No.	U.S. Std. Sieve No.	Opening in Inches	Opening in mm.	Weight Retained	Percent Retained	Percent Finer
1-1/2"		1.5	38.1			
3/4"		0.75	19.05			
3/8"		0.375	9.525			
# 4	# 4	0.185	4.699			
# 8	# 8	0.093	2.362	0		100
#14	#16	0.046	1.168	.8		99.5
#20	#20	0.0328	0.833	3.2		98
#28	#30	0.0232	0.589	16.3		89.7
#35	#40	0.0164	0.417	56.3		64.3
#48	#50	0.0116	0.295	147.0		6.8
#65	#70	0.0082	0.208	154.0		2.4
#100	#100	0.0058	0.147	157.1		.4
#150	#140	0.0041	0.104	157.2		.1
#200	#200	0.0029	0.074	157.7		0
Pan				157.8		

Remarks: _____

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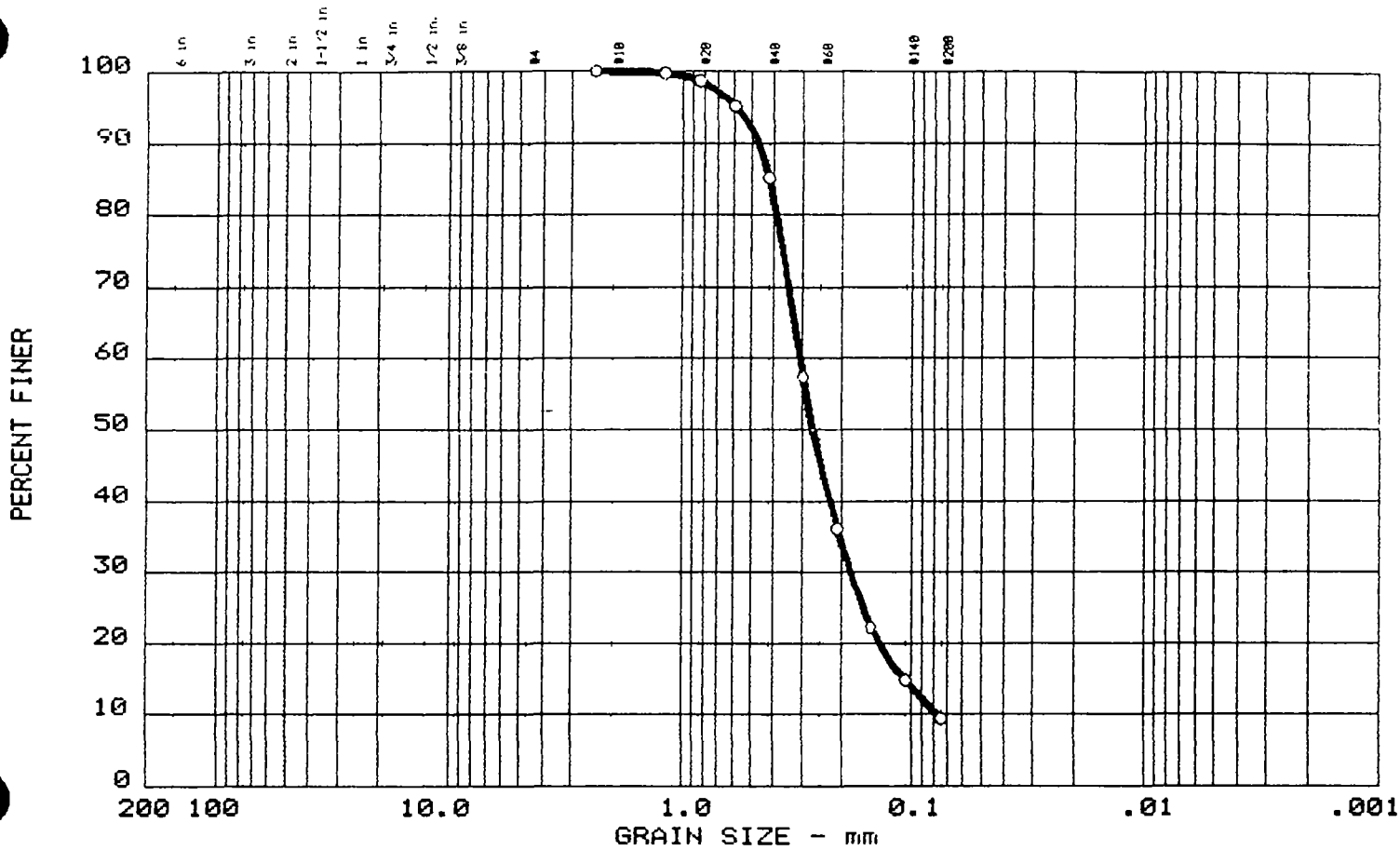
JUL 62

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% FINES
○	0.0	0.0	90.5	9.5

	LL	PL	NWC	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				0.42	0.31	0.27	0.183	0.1054	0.0764	1.44	4.0

MATERIAL DESCRIPTION	USCS	Sam #	Depth
○ SP-SM	SP-SM	1	

Project: LAKE HARTWELL STUDY

○ Boring No.: HB-2

Date: 09-21-99

Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

CORPS OF ENGINEERS - VICKSBURG DISTRICT

Plate No. _____

SCREEN ANALYSIS

Soils Laboratory, U. S. Army Engineer District, Vicksburg

Date _____

Damsite Lake Hartwell Sty. | Station

Location HB-2 | Depth 8"-1.0'

Dish No. V-5 | Total Weight of Sample Grams

Tyler Sieve No.	U.S. Std. Sieve No.	Opening in Inches	Opening in mm.	Weight Retained	Percent Retained	Percent Finer
1-1/2"		1.5	38.1			
3/4"		0.75	19.05			
3/8"		0.375	9.525			
# 4	# 4	0.185	4.699			
# 8	# 8	0.093	2.362	0		100
#14	#16	0.046	1.168	.4		99.7
#20	#20	0.0328	0.833	1.7		98.6
#28	#30	0.0232	0.589	6.0		95.2
#35	#40	0.0164	0.417	18.7		85.1
#48	#50	0.0116	0.295	53.5		57.5
#65	#70	0.0082	0.208	80.3		36.2
#100	#100	0.0058	0.147	97.9		22.2
#150	#140	0.0041	0.104	107.2		14.8
#200	#200	0.0029	0.074	113.9		9.5
Pan				125.8		

Remarks: SP-SM

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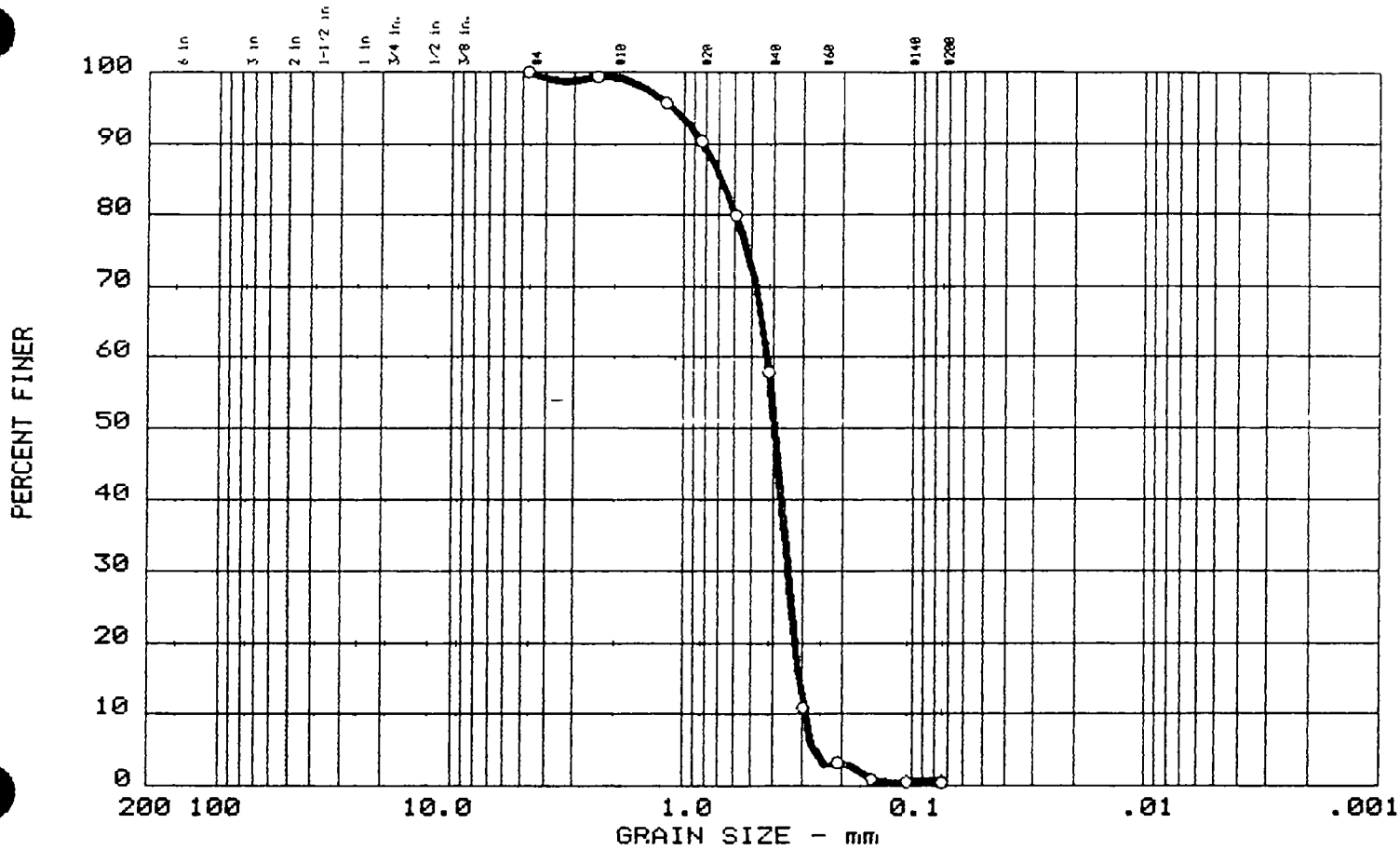
GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% FINES
○	0.0	0.0	99.5	0.5

	LL	PL	NWC	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				0.68	0.43	0.39	0.346	0.3090	0.2938	0.95	1.5

MATERIAL DESCRIPTION	USCS	Sam #	Depth
○ F-M SAND SP	SP	1	

Project: LAKE HARTWELL STUDY
○ Boring No.: HB-3

Date: 09-21-99

GRAIN SIZE DISTRIBUTION TEST REPORT
CORPS OF ENGINEERS - VICKSBURG DISTRICT

Remarks:

Plate No. ____

SCREEN ANALYSIS

Soils Laboratory, U. S. Army Engineer District, Vicksburg

Date _____

Damsite Lake Hartwell Sty. | Station MAW Bridge Bar · 1ft BK - u/s Bridge

Location HB-3 | Depth 2.0'

Dish No. V-4 | Total Weight of Sample _____ Grams

Tyler Sieve No.	U.S. Std. Sieve No.	Opening in Inches	Opening in mm.	Weight Retained	Percent Retained	Percent Finer
1-1/2"		1.5	38.1			
3/4"		0.75	19.05			
3/8"		0.375	9.525			
# 4	# 4	0.185	4.699	0		100
# 8	# 8	0.093	2.362	.9		99.4
#14	#16	0.046	1.168	6.3		95.7
#20	#20	0.0328	0.833	14.1		90.4
#28	#30	0.0232	0.589	29.5		80.0
#35	#40	0.0164	0.417	61.9		58.0
#48	#50	0.0116	0.295	131.2		10.7
#65	#70	0.0082	0.208	142.5		3.3
#100	#100	0.0058	0.147	145.9		1.0
#150	#140	0.0041	0.104	146.4		.6
#200	#200	0.0029	0.074	146.6		.5
Pan				147.3		

Remarks: _____

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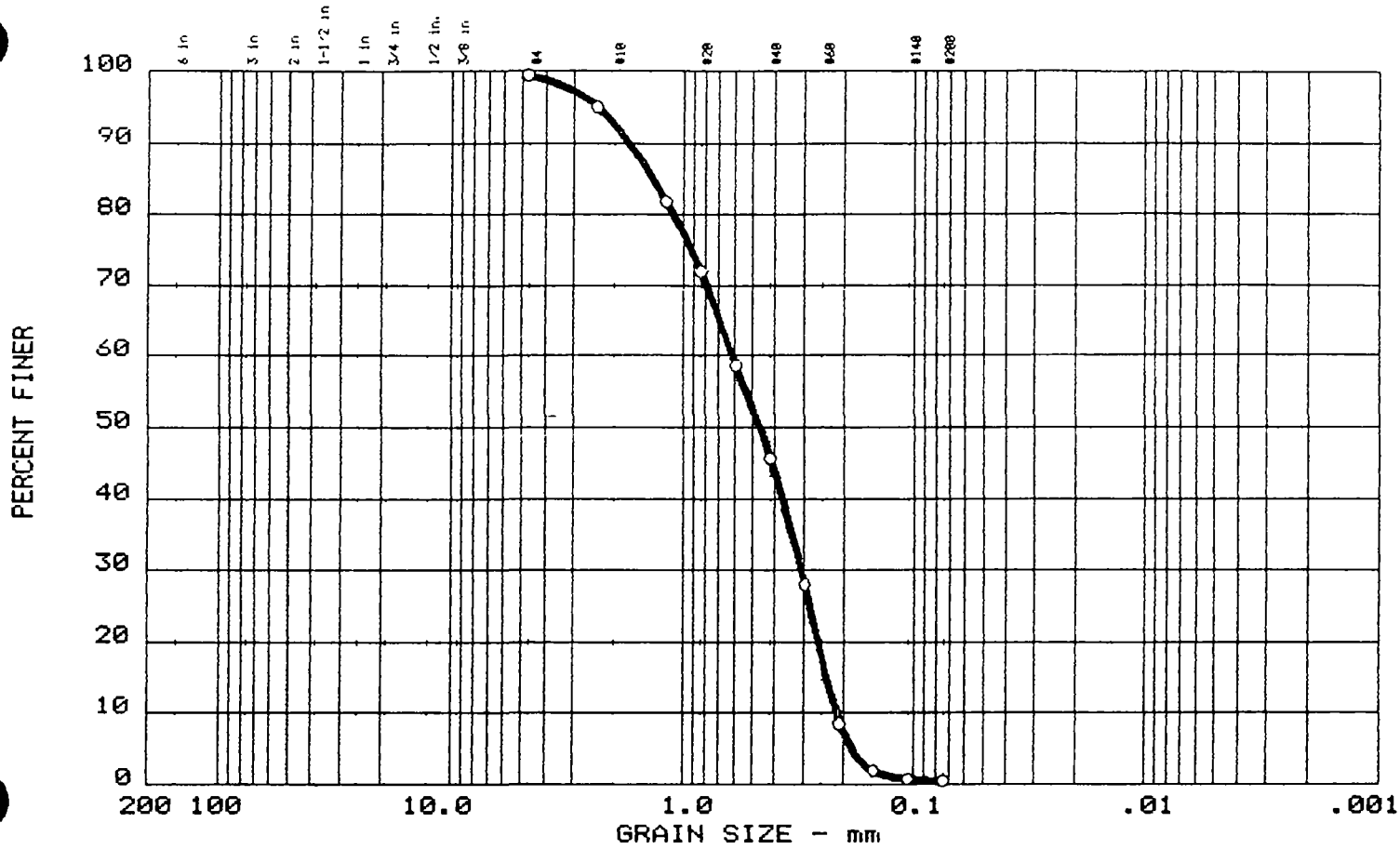

	% +3"	% GRAVEL	% SAND	% FINES
O	0.0	0.6	99.0	0.5

	LL	PL	NWC	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
O				1.35	0.61	0.47	0.307	0.2396	0.2173	0.71	2.8

MATERIAL DESCRIPTION	USCS	Sam #	Depth
O F-M SAND SP	SP	1	

Project: LAKE HARTWELL STUDY

O Boring No.: HB-4

Date: 09-21-99

Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

CORPS OF ENGINEERS - VICKSBURG DISTRICT

Plate No. ____

SCREEN ANALYSIS

Soils Laboratory, U. S. Army Engineer District, Vicksburg

Date _____

Damsite Lake Hartwell Sty | Station 100 yd above Main Body.

Location HB-4 | Depth

Dish No. V-9 | Total Weight of Sample Grams

Tyler Sieve No.	U.S. Std. Sieve No.	Opening in Inches	Opening in mm.	Weight Retained	Percent Retained	Percent Finer
1-1/2"		1.5	38.1			
3/4"		0.75	19.05			
3/8"		0.375	9.525	0		100
# 4	# 4	0.185	4.699	.8		99.4
# 8	# 8	0.093	2.362	7.2		95.0
#14	#16	0.046	1.168	26.3		81.9
#20	#20	0.0328	0.833	40.8		71.9
#28	#30	0.0232	0.589	60.0		58.7
#35	#40	0.0164	0.417	78.9		45.7
#48	#50	0.0116	0.295	104.6		28.0
#65	#70	0.0082	0.208	132.8		8.5
#100	#100	0.0058	0.147	142.4		1.9
#150	#140	0.0041	0.104	144.1		.8
#200	#200	0.0029	0.074	144.5		.5
Pan				145.2		

Remarks: _____

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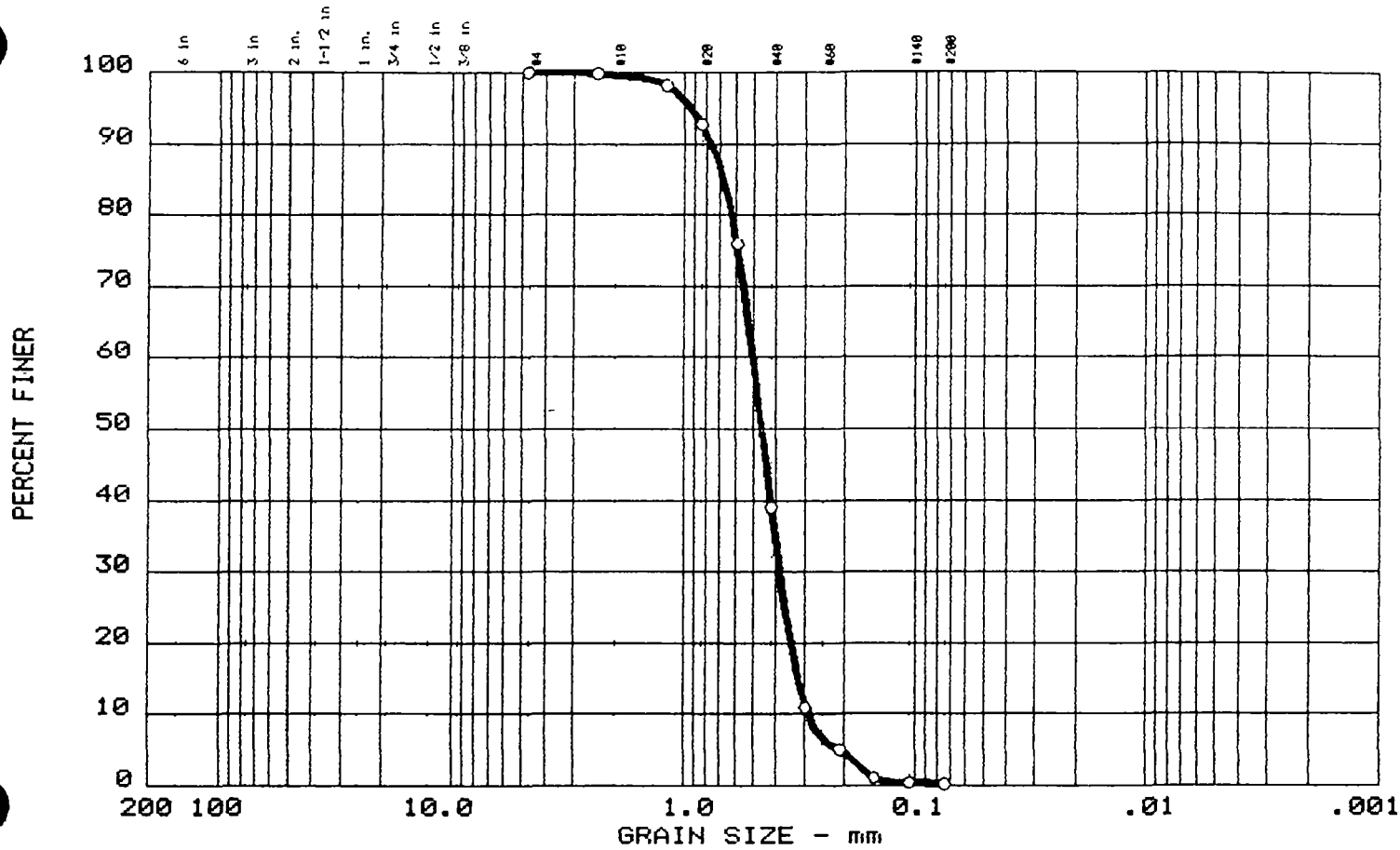
GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% FINES
○	0.0	0.0	99.8	0.2

	LL	PL	NWC	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				0.68	0.50	0.46	0.385	0.3203	0.2904	1.01	1.7

MATERIAL DESCRIPTION	USCS	Sam #	Depth
○ F-M SAND SP	SP	1	

Project: LAKE HARTWELL STUDY
○ Boring No.: HB-5

Date: 09-21-99

Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT
CORPS OF ENGINEERS - VICKSBURG DISTRICT

Plate No. _____

SCREEN ANALYSIS

Soils Laboratory, U. S. Army Engineer District, Vicksburg

Date _____

Damsite Lake Harwell Sty. | Station 10 yd Below Lay Bridge

Location HB-5 | Depth

Dish No. V-7 | Total Weight of Sample Gram

Tyler Sieve No.	U.S. Std. Sieve No.	Opening in Inches	Opening in mm.	Weight Retained	Percent Retained	Percent Finer
1-1/2"		1.5	38.1			
3/4"		0.75	19.05			
3/8"		0.375	9.525			
# 4	# 4	0.185	4.699	.0		100
# 8	# 8	0.093	2.362	.2		99.9
#14	#16	0.046	1.168	2.9		98.2
#20	#20	0.0328	0.833	11.9		92.7
#28	#30	0.0232	0.589	39.3		75.9
#35	#40	0.0164	0.417	99.6		39.0
#48	#50	0.0116	0.295	145.5		10.9
#65	#70	0.0082	0.208	155.1		5.0
#100	#100	0.0058	0.147	161.5		1.1
#150	#140	0.0041	0.104	162.6		.4
#200	#200	0.0029	0.074	163.1		.2
Pan				163.3		

Remarks: _____

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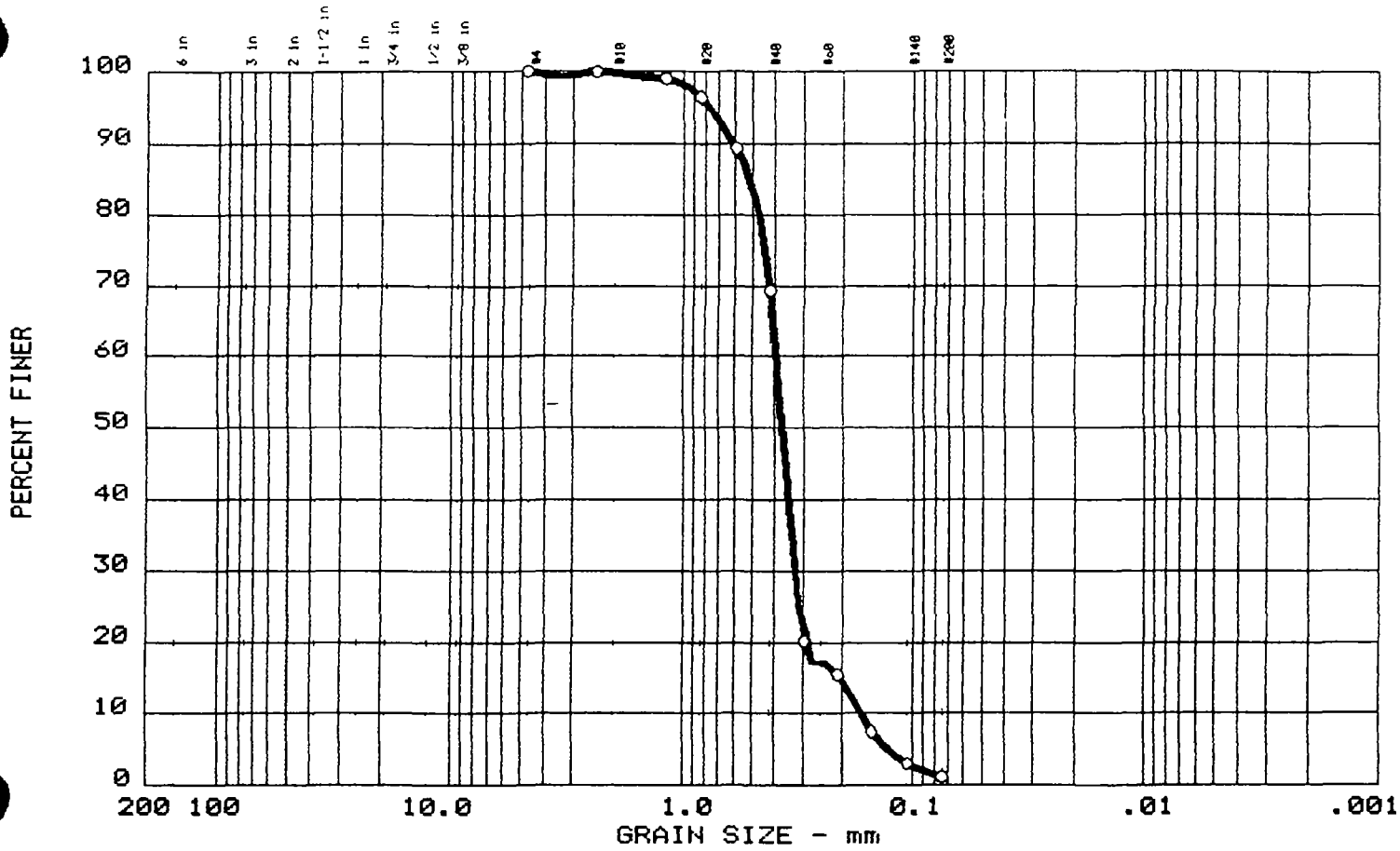
GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% FINES	
○	0.0	0.0	98.9	13.4	-12.3

	LL	PL	NWC	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				0.51	0.39	0.37	0.326	0.2035	0.1654	1.63	2.4

MATERIAL DESCRIPTION	USCS	Sam #	Depth
○ F-M SAND SP	SP	1	

Project: LAKE HARTWELL STUDY
○ Boring No.: HB-6

Date: 09-21-99

Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

CORPS OF ENGINEERS - VICKSBURG DISTRICT

Plate No. ____

SCREEN ANALYSIS

Soils Laboratory, U. S. Army Engineer District, Vicksburg

Date _____

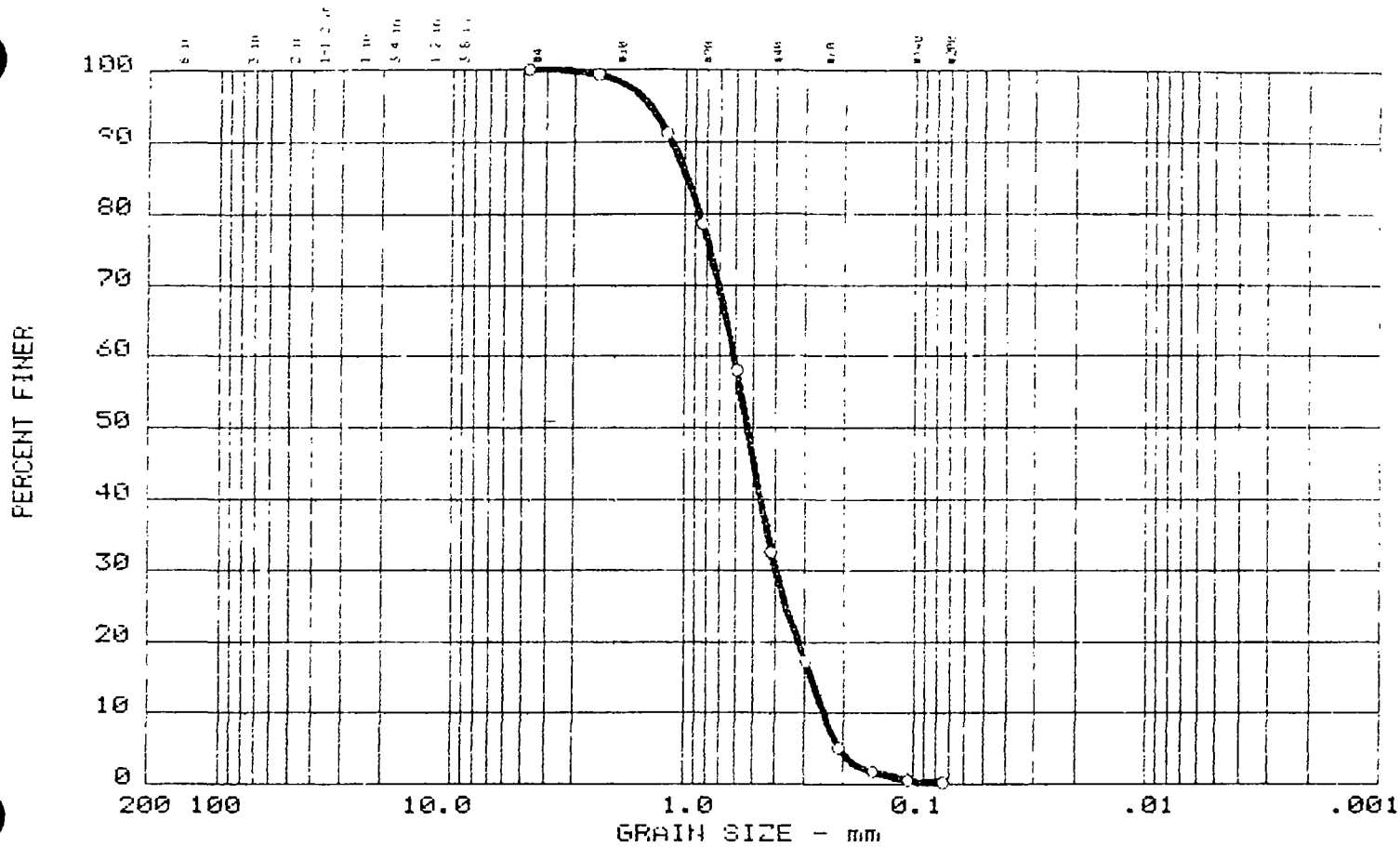
Damsite Lake Hartwell Sty.	Station 40 yds. above Lay Bridge
Location HB-6	Depth 40
Dish No. V-8	Total Weight of Sample Grams

Tyler Sieve No.	U.S. Std. Sieve No.	Opening in Inches	Opening in mm.	Weight Retained	Percent Retained	Percent Finer
1-1/2"		1.5	38.1			
3/4"		0.75	19.05			
3/8"		0.375	9.525			
# 4	# 4	0.185	4.699	0		100
# 8	# 8	0.093	2.362	.1		99.9
#14	#16	0.046	1.168	1.7		99.0
#20	#20	0.0328	0.833	6.1		96.4
#28	#30	0.0232	0.589	18.3		89.3
#35	#40	0.0164	0.417	52.3		69.3
#48	#50	0.0116	0.295	136.2		20.2
#65	#70	0.0082	0.208	144.1		15.5
#100	#100	0.0058	0.147	157.8		7.5
#150	#140	0.0041	0.104	165.4		3.0
#200	#200	0.0029	0.074	168.7		1.1
Pan				170.6		

Remarks:

LMK Form 129
JUL 62

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% FINES
○	0.0	0.0	99.8	0.2

	LL	PL	NWC	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				0.98	0.61	0.53	0.402	0.2796	0.2460	1.08	2.5

MATERIAL DESCRIPTION	USCS	Sam #	Depth
○ F-M SAND SP	SP	1	

Project: LAKE HARTWELL STUDY
○ Boring No.: HB-7 T-18 N. BANK

Date: 09-20-99

Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT
CORPS OF ENGINEERS - VICKSBURG DISTRICT

Plate No. _____

SCREEN ANALYSIS

Soils Laboratory, U. S. Army Engineer District, Vicksburg

Date _____

Damsite Lake Hartwell Study HB-7 | Station

Location T18 North Bank | Depth 0'-2'

Dish No. 1-3 | Total Weight of Sample Grams

Tyler Sieve No.	U.S. Std. Sieve No.	Opening in Inches	Opening in mm.	Weight Retained	Percent Retained	Percent Finer
1-1/2"		1.5	38.1			
3/4"		0.75	19.05			
3/8"		0.375	9.525			
# 4	# 4	0.185	4.699	0		100
# 8	# 8	0.093	2.362	1.4		99.3
#14	#16	0.046	1.168	18.4		91.2
#20	#20	0.0328	0.833	44.6		78.6
#28	#30	0.0232	0.589	87.3		58.1
#35	#40	0.0164	0.417	140.6		32.6
#48	#50	0.0116	0.295	172.4		17.3
#65	#70	0.0082	0.208	197.9		5.1
#100	#100	0.0058	0.147	204.9		1.7
#150	#140	0.0041	0.104	207.4		.5
#200	#200	0.0029	0.074	208.1		.2
Pan				208.5		

Remarks: _____

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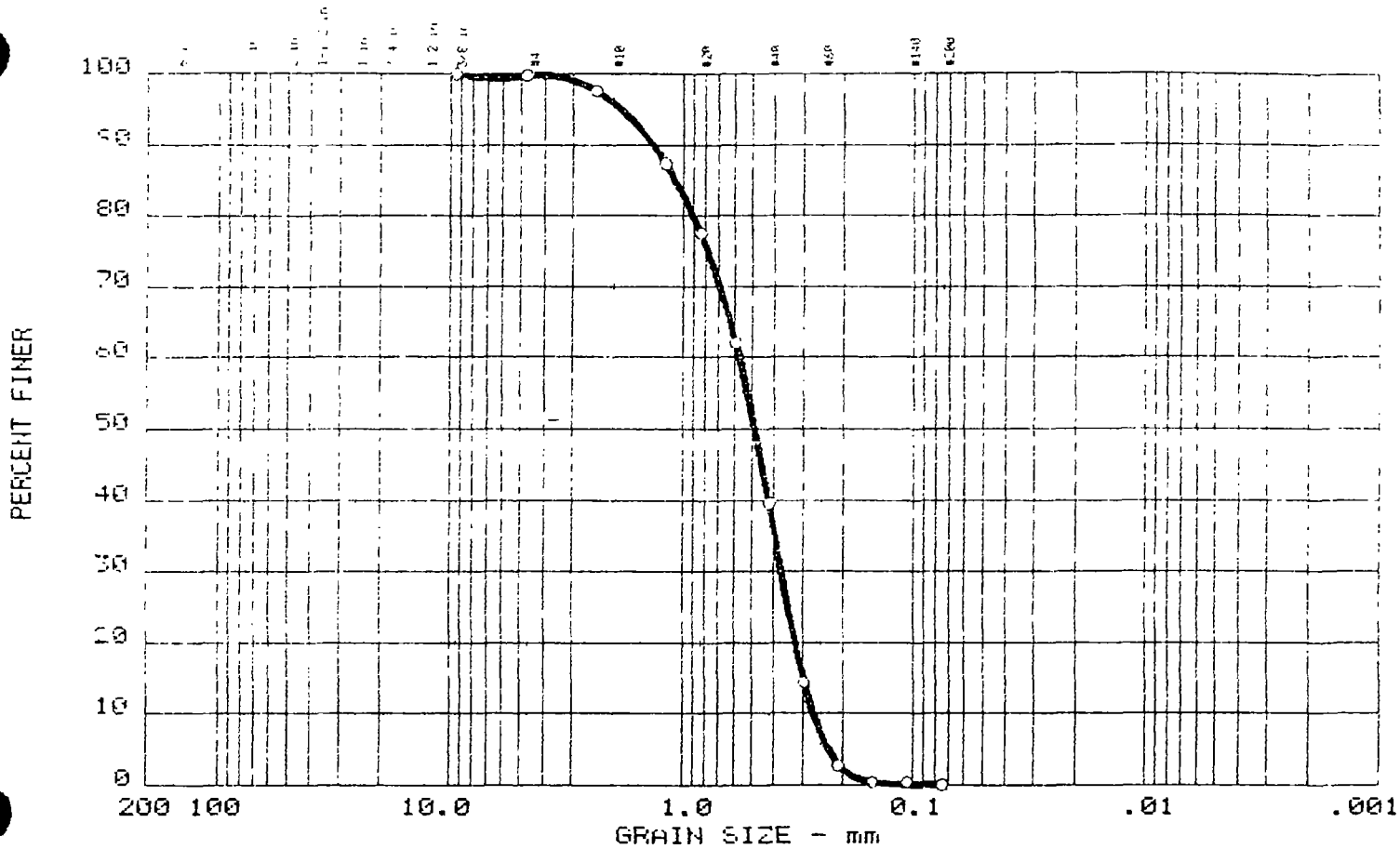
LMK Form 129
JUL 62

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% FINES
○	0.0	0.3	99.6	0.1

LL	PL	NWC	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
			1.07	0.57	0.48	0.371	0.2999	0.2720	0.89	2.1

MATERIAL DESCRIPTION	USCS	Sam #	Depth
○ F-M SAND SP	SP	1	

Project: LAKE HARTWELL STUDY
○ Boring No.: HB-8 T18 CENTER BD

Date: 09-21-99

Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT
CORPS OF ENGINEERS - VICKSBURG DISTRICT

Plate No. ____

SCREEN ANALYSIS

Soils Laboratory, U. S. Army Engineer District, Vicksburg

Date _____

Damsite Lake Hartwell Study | Station

Location HB-8 T18 Center Bed | Depth 0'-2'

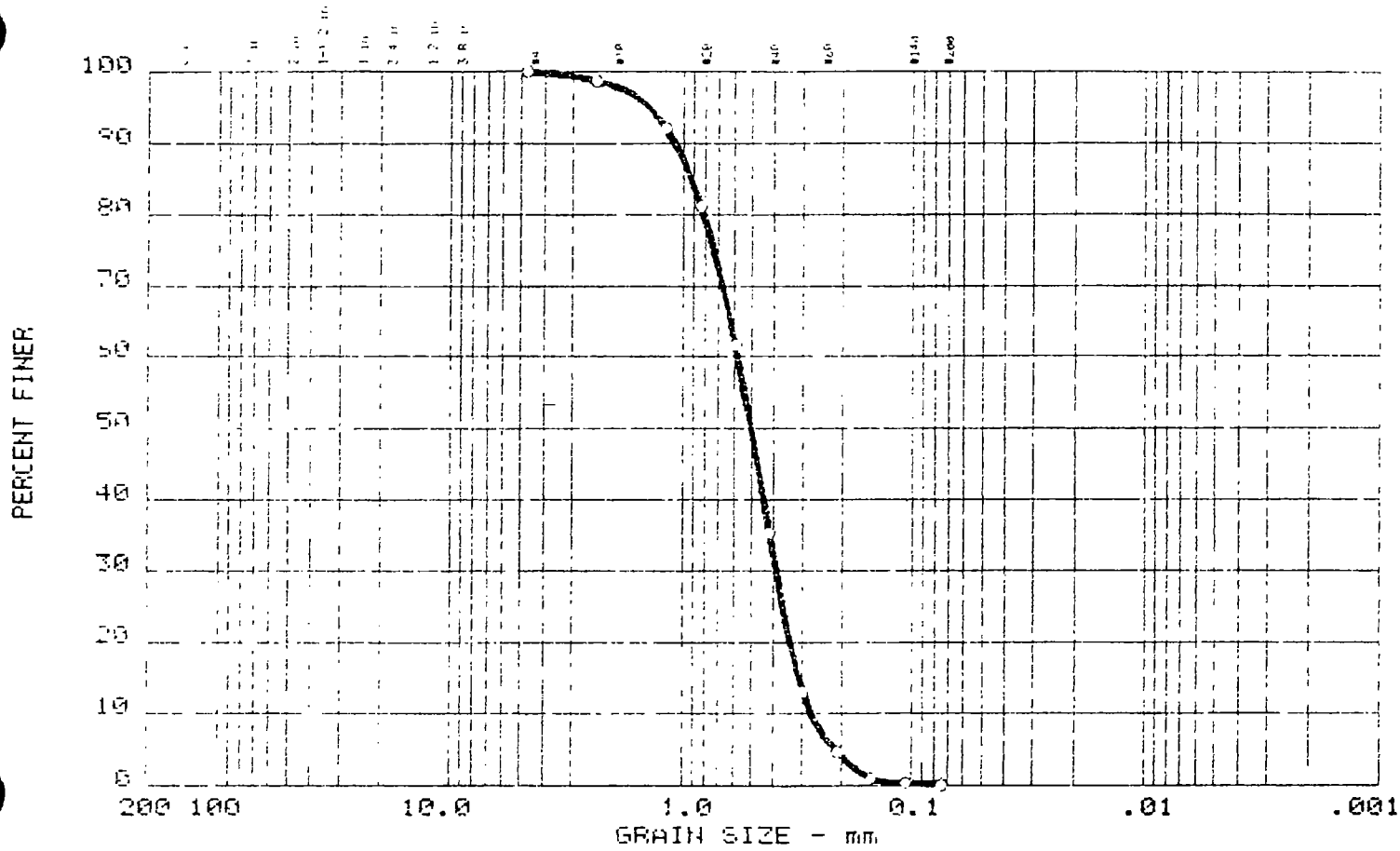
Dish No. V-2 | Total Weight of Sample 221.1 Grams

Tyler Sieve No.	U.S. Std. Sieve No.	Opening in Inches	Opening in mm.	Weight Retained	Percent Retained	Percent Finer
1-1/2"		1.5	38.1			
3/4"		0.75	19.05			
3/8"		0.375	9.525	0		100
# 4	# 4	0.185	4.699	.6		99.7
# 8	# 8	0.093	2.362	5.1		97.9
#14	#16	0.046	1.168	27.9		87.4
#20	#20	0.0328	0.833	49.8		77.5
#28	#30	0.0232	0.589	83.9		62.0
#35	#40	0.0164	0.417	133.5		39.6
#48	#50	0.0116	0.295	189.2		14.4
#65	#70	0.0082	0.208	214.9		2.8
#100	#100	0.0058	0.147	220.0		.5
#150	#140	0.0041	0.104	220.7		.5
#200	#200	0.0029	0.074	220.8		.1
Pan				221.0		

Remarks: _____

LMK Form 129
JUL 62

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% FINES
○	0.0	0.0	99.9	0.1

	LL	PL	NWC	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				0.92	0.58	0.50	0.392	0.3094	0.2726	0.98	2.1

MATERIAL DESCRIPTION	USCS	Sam #	Depth
○ F-M SAND SP	SP	1	

Project: LAKE HARTWELL STUDY

○ Boring No.: HB-9 S.B. T-18

Date: 09-21-99

Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

CORPS OF ENGINEERS - VICKSBURG DISTRICT

Plate No. _____

SCREEN ANALYSIS

Soils Laboratory, U. S. Army Engineer District, Vicksburg

Date _____

Damsite Lake Hartwell Study | Station Lay Bridge (0'-1'), below Dredging

Location HB9- SouthBank T-18 | Depth

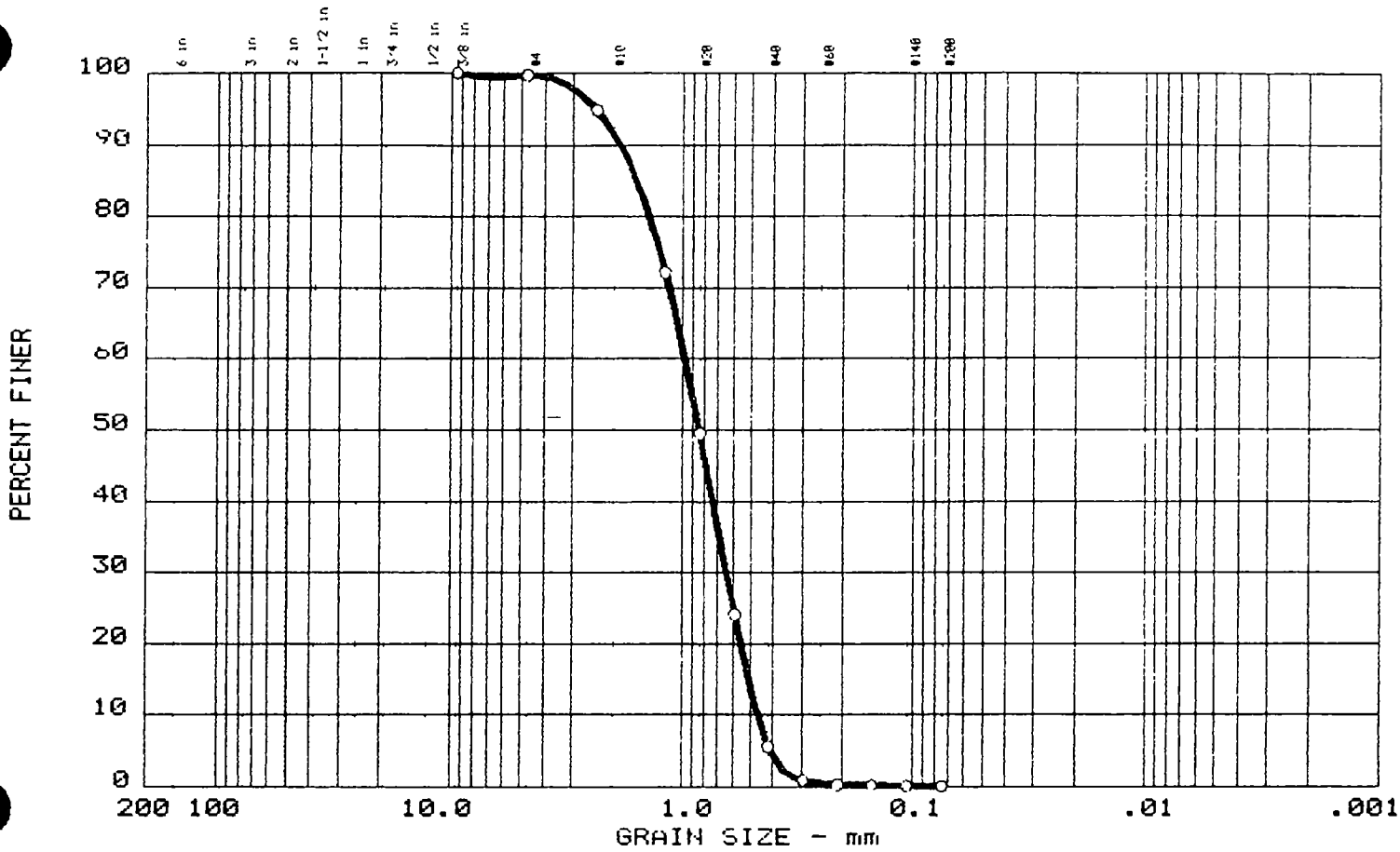
Dish No. V-1 | Total Weight of Sample 154.1 Grams

Tyler Sieve No.	U.S. Std. Sieve No.	Opening in Inches	Opening in mm.	Weight Retained	Percent Retained	Percent Finer
1-1/2"		1.5	38.1			
3/4"		0.75	19.05			
3/8"		0.375	9.525			
# 4	# 4	0.185	4.699	0		100
# 8	# 8	0.093	2.362	1.9		98.8
#14	#16	0.046	1.168	12.1		92.1
#20	#20	0.0328	0.833	29.0		81.2
#28	#30	0.0232	0.589	58.9		61.8
#35	#40	0.0164	0.417	99.6		35.3
#48	#50	0.0116	0.295	133.9		13.1
#65	#70	0.0082	0.208	146.8		4.7
#100	#100	0.0058	0.147	152.4		1.0
#150	#140	0.0041	0.104	153.4		.4
#200	#200	0.0029	0.074	153.8		.1
Pan				154.0		

Remarks: _____

LMK Form 129
JUL 62

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% FINES
○	0.0	0.3	99.6	0.1

	LL	PL	NWC	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				1.58	0.98	0.85	0.641	0.5117	0.4661	0.90	2.1

MATERIAL DESCRIPTION	USCS	Sam #	Depth
○ F-M SAND SP	SP	1	

Project: LAKE HARTWELL STUDY
○ Boring No.: BS-1

Date: 09-21-99

Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT
CORPS OF ENGINEERS - VICKSBURG DISTRICT

Plate No. _____

SCREEN ANALYSIS

Soils Laboratory, U. S. Army Engineer District, Vicksburg

Date _____

Damsite L. Hartwell Sty. | Station

Location BS-1 Center | Depth

Dish No. V-29 | Total Weight of Sample 165.3 Grams

Tyler Sieve No.	U.S. Std. Sieve No.	Opening in Inches	Opening in mm.	Weight Retained	Percent Retained	Percent Finer
1-1/2"		1.5	38.1			
3/4"		0.75	19.05			
3/8"		0.375	9.525	0		100
# 4	# 4	0.185	4.699	.5		99.7
# 8	# 8	0.093	2.362	8.5		94.9
#14	#16	0.046	1.168	46.0		72.2
#20	#20	0.0328	0.833	83.4		49.5
#28	#30	0.0232	0.589	125.4		24.1
#35	#40	0.0164	0.417	155.8		5.7
#48	#50	0.0116	0.295	163.6		1.0
#65	#70	0.0082	0.208	164.7		.3
#100	#100	0.0058	0.147	164.8		.2
#150	#140	0.0041	0.104	165.0		.1
#200	#200	0.0029	0.074	165.1		.1
Pan				165.2		

Remarks: _____

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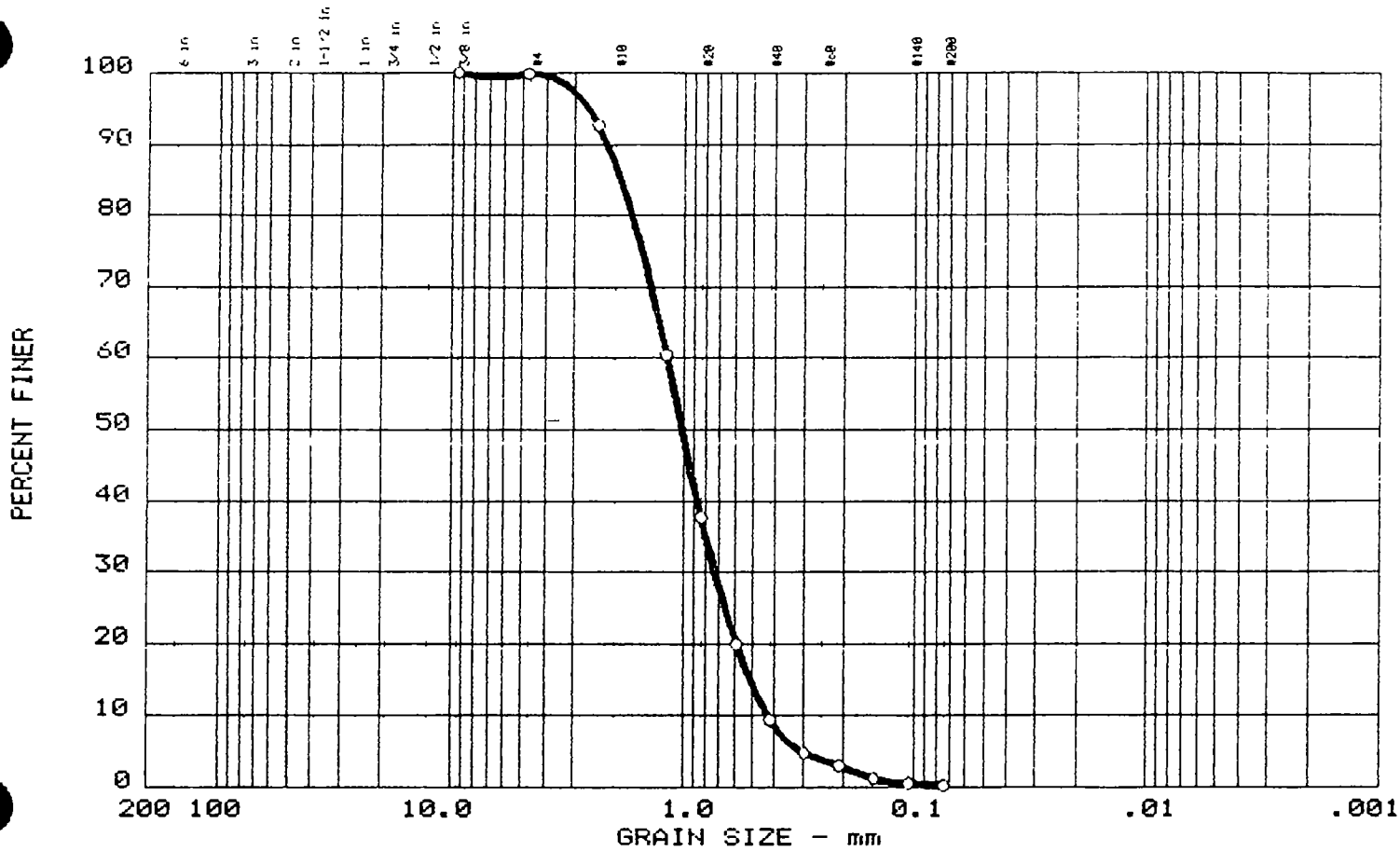
JUL 62

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% FINES
○	0.0	0.2	99.6	0.2

	LL	PL	NWC	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				1.89	1.18	1.02	0.733	0.5129	0.4266	1.07	2.8

MATERIAL DESCRIPTION	USCS	Sam #	Depth
○ F-M SAND SP	SP	1	

Project: LAKE HARTWELL STUDY
○ Boring No.: BS-1-A

Date: 09-21-99

Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT
CORPS OF ENGINEERS - VICKSBURG DISTRICT

Plate No. _____

SCREEN ANALYSIS

Soils Laboratory, U. S. Army Engineer District, Vicksburg

Date _____

Damsite L. HARTWELL Sty. | Station

Location BS-1-A | Depth

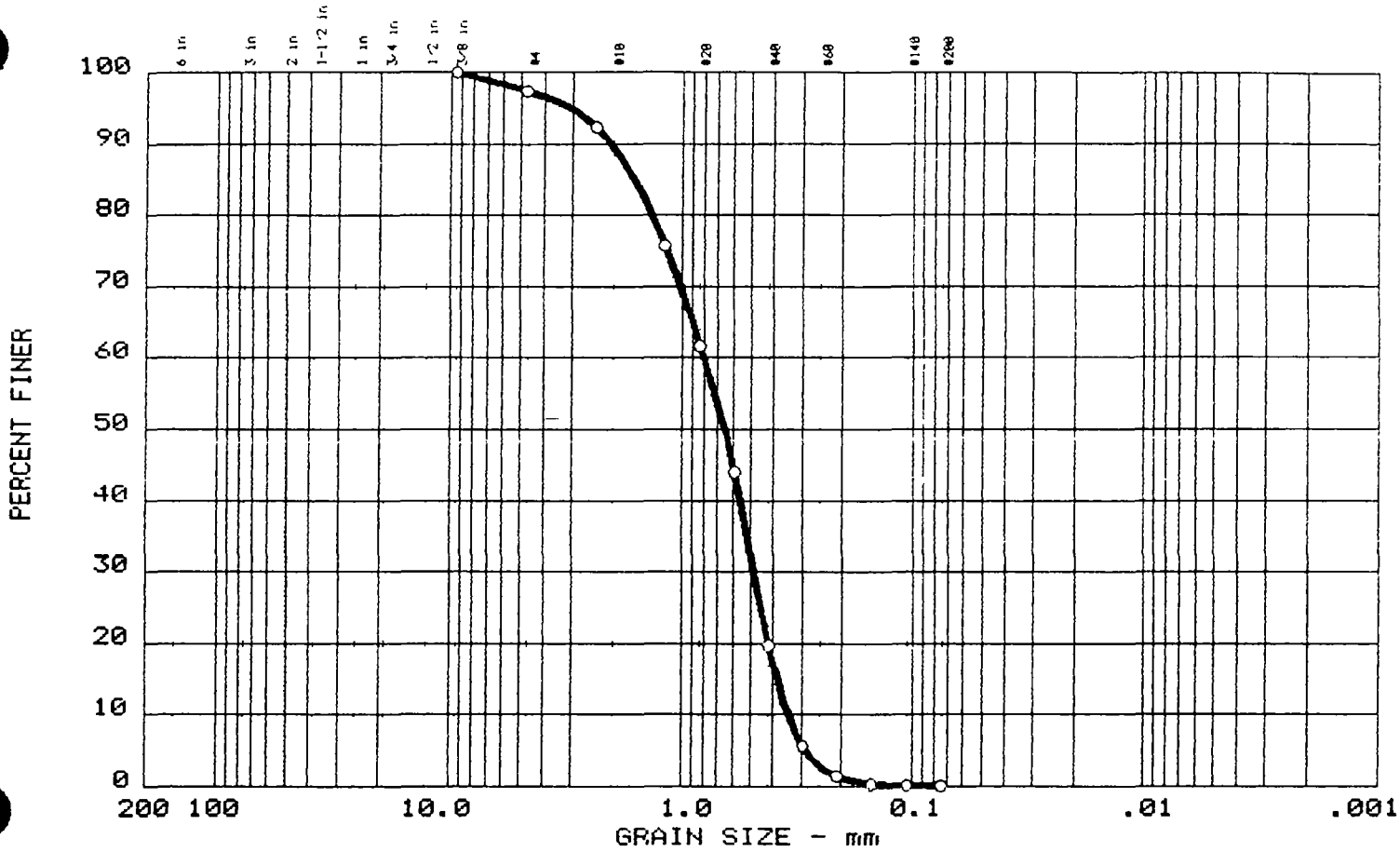
Dish No. V-30 | Total Weight of Sample Grams

Tyler Sieve No.	U.S. Std. Sieve No.	Opening in Inches	Opening in mm.	Weight Retained	Percent Retained	Percent Finer
1-1/2"		1.5	38.1			
3/4"		0.75	19.05			
3/8"		0.375	9.525	0		100
# 4	# 4	0.185	4.699	.2		99.8
# 8	# 8	0.093	2.362	9.5		92.6
#14	#16	0.046	1.168	50.9		60.5
#20	#20	0.0328	0.833	80.3		37.7
#28	#30	0.0232	0.589	103.2		19.9
#35	#40	0.0164	0.417	116.7		9.5
#48	#50	0.0116	0.295	122.7		4.8
#65	#70	0.0082	0.208	125.0		3.6
#100	#100	0.0058	0.147	127.3		1.2
#150	#140	0.0041	0.104	128.2		.5
#200	#200	0.0029	0.074	128.6		.2
Pan				128.9		

Remarks: _____

LMK Form 129
JUL 62

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% FINES
○	0.0	2.7	97.2	0.1

	LL	PL	NWC	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				1.62	0.81	0.65	0.486	0.3859	0.3440	0.85	2.3

MATERIAL DESCRIPTION	USCS	Sam #	Depth
○ F-M SAND SP W/TR-G	SP	1	

Project: LAKE HARTWELL STUDY
○ Boring No.: BS-2

Date: 09-22-99

Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT
CORPS OF ENGINEERS - VICKSBURG DISTRICT

Plate No. _____

SCREEN ANALYSIS

Soils Laboratory, U. S. Army Engineer District, Vicksburg

Date _____

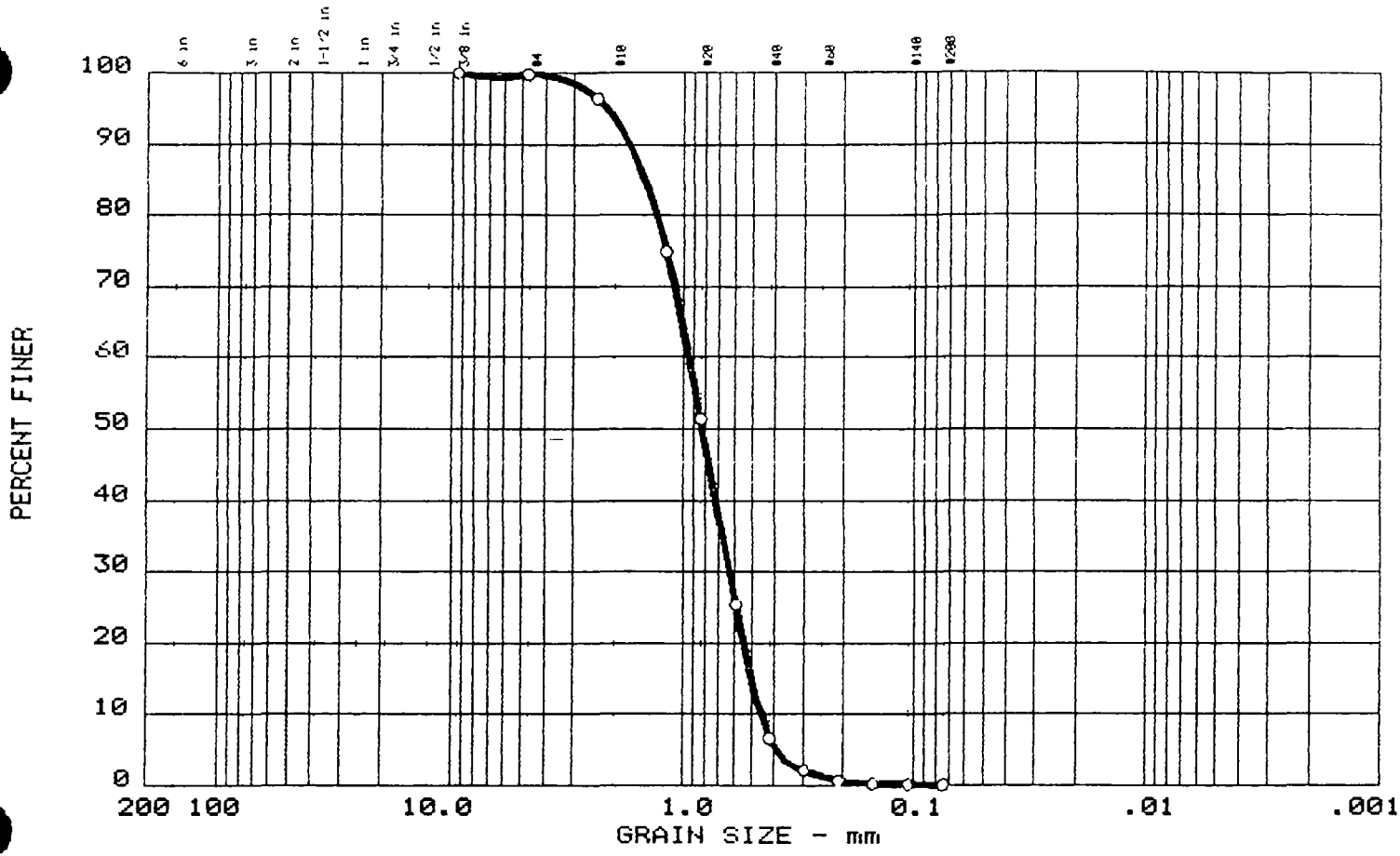
Damsite L. HARTWELL Sty	Station
Location BS-2 Center	Depth
Dish No. V-34	Total Weight of Sample Grams

Tyler Sieve No.	U.S. Std. Sieve No.	Opening in Inches	Opening in mm.	Weight Retained	Percent Retained	Percent Finer
1-1/2"		1.5	38.1			
3/4"		0.75	19.05			
3/8"		0.375	9.525	0		100
# 4	# 4	0.185	4.699	5.4		97.3
# 8	# 8	0.093	2.362	15.7		92.2
#14	#16	0.046	1.168	49.2		75.7
#20	#20	0.0328	0.833	77.6		61.7
#28	#30	0.0232	0.589	113.3		44.0
#35	#40	0.0164	0.417	162.6		19.7
#48	#50	0.0116	0.295	191.1		5.6
#65	#70	0.0082	0.208	199.5		1.5
#100	#100	0.0058	0.147	201.9		.3
#150	#140	0.0041	0.104	202.2		.1
#200	#200	0.0029	0.074	202.3		.1
Pan				202.5		

Remarks: _____

LMK Form 129
JUL 62

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% FINES
○	0.0	0.2	99.7	0.1

	LL	PL	NWC	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				1.48	0.95	0.82	0.630	0.5023	0.4571	0.92	2.1

MATERIAL DESCRIPTION	USCS	Sam #	Depth
○ M-F SAND SP	SP	1	

Project: LAKE HARTWELL STUDY

○ Boring No.: BS-2A

Date: 09-22-99

Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

CORPS OF ENGINEERS - VICKSBURG DISTRICT

Plate No. _____

SCREEN ANALYSIS

Soils Laboratory, U. S. Army Engineer District, Vicksburg

Date _____

Damsite L. Harewell Study | Station

Location BS-2A | Depth

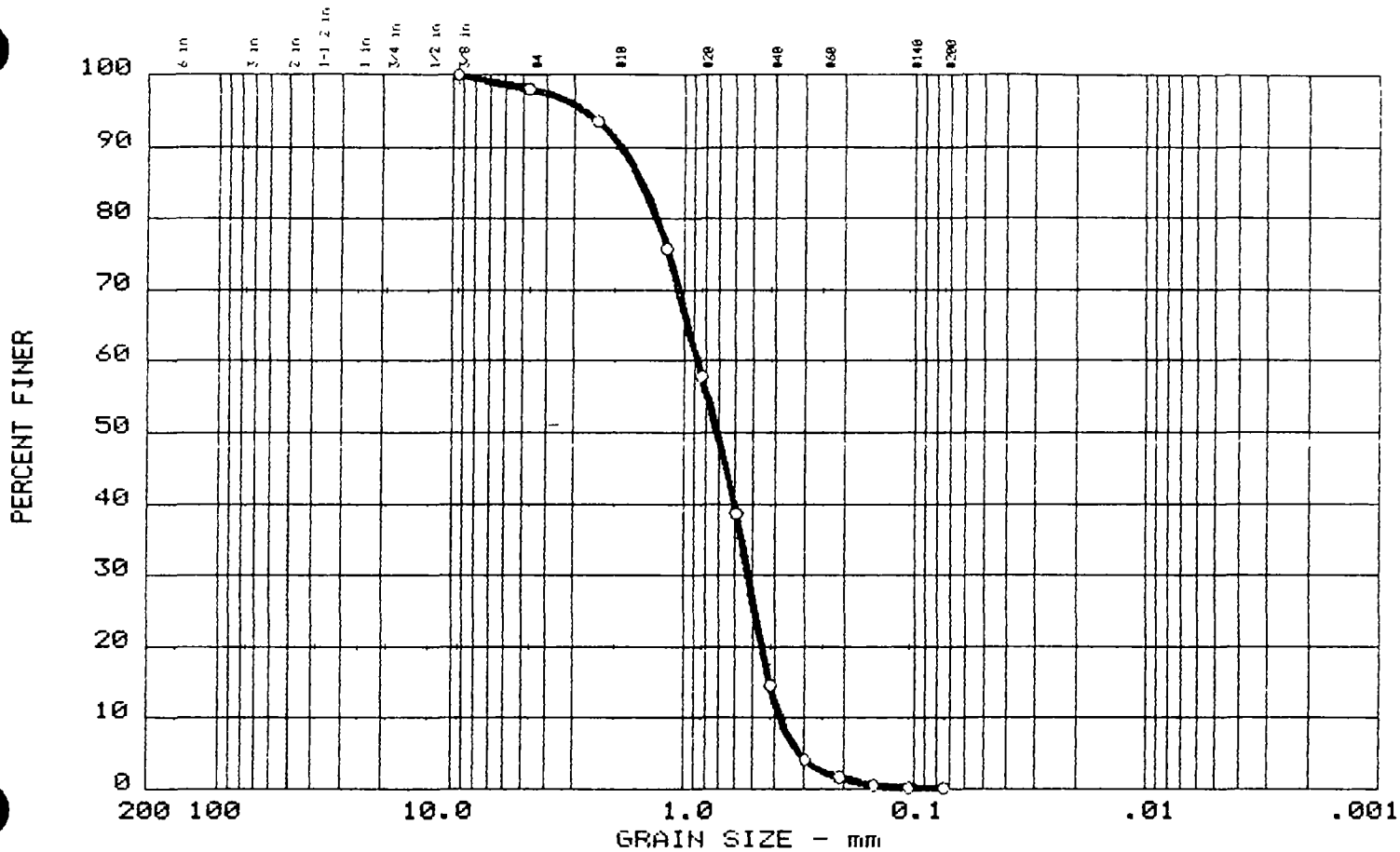
Dish No. V-38 | Total Weight of Sample 256.4 Grams

Tyler Sieve No.	U.S. Std. Sieve No.	Opening in Inches	Opening in mm.	Weight Retained	Percent Retained	Percent Finer
1-1/2"		1.5	38.1			
3/4"		0.75	19.05			
3/8"		0.375	9.525	0		100
# 4	# 4	0.185	4.699	.5		99.8
# 8	# 8	0.093	2.362	9.2		96.4
#14	#16	0.046	1.168	64.4		74.9
#20	#20	0.0328	0.833	124.6		51.4
#28	#30	0.0232	0.589	191.3		25.3
#35	#40	0.0164	0.417	239.3		6.6
#48	#50	0.0116	0.295	250.7		2.1
#65	#70	0.0082	0.208	254.5		.7
#100	#100	0.0058	0.147	255.4		.3
#150	#140	0.0041	0.104	255.7		.2
#200	#200	0.0029	0.074	255.9		.1
Pan				256.2		

Remarks: _____

LMX Form 129
JUL 62

GRAIN SIZE DISTRIBUTION TEST REPORT



% +3"	% GRAVEL	% SAND	% FINES
0.0	2.0	97.9	0.1

	LL	PL	NWC	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				1.53	0.87	0.72	0.524	0.4232	0.3806	0.82	2.3

MATERIAL DESCRIPTION	USCS	Sam #	Depth
○ M-F SAND SP	SP	1	

Project: LAKE HARTWELL STUDY
○ Boring No.: BS-3 CENTER

Date: 9-22-99

Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT
CORPS OF ENGINEERS - VICKSBURG DISTRICT

Plate No. _____

SCREEN ANALYSIS

Soils Laboratory, U. S. Army Engineer District, Vicksburg

Date _____

Damsite L. HARTWELL Sty. | Station Ch. center below gaging sta.

Location BS-3 Centre | Depth

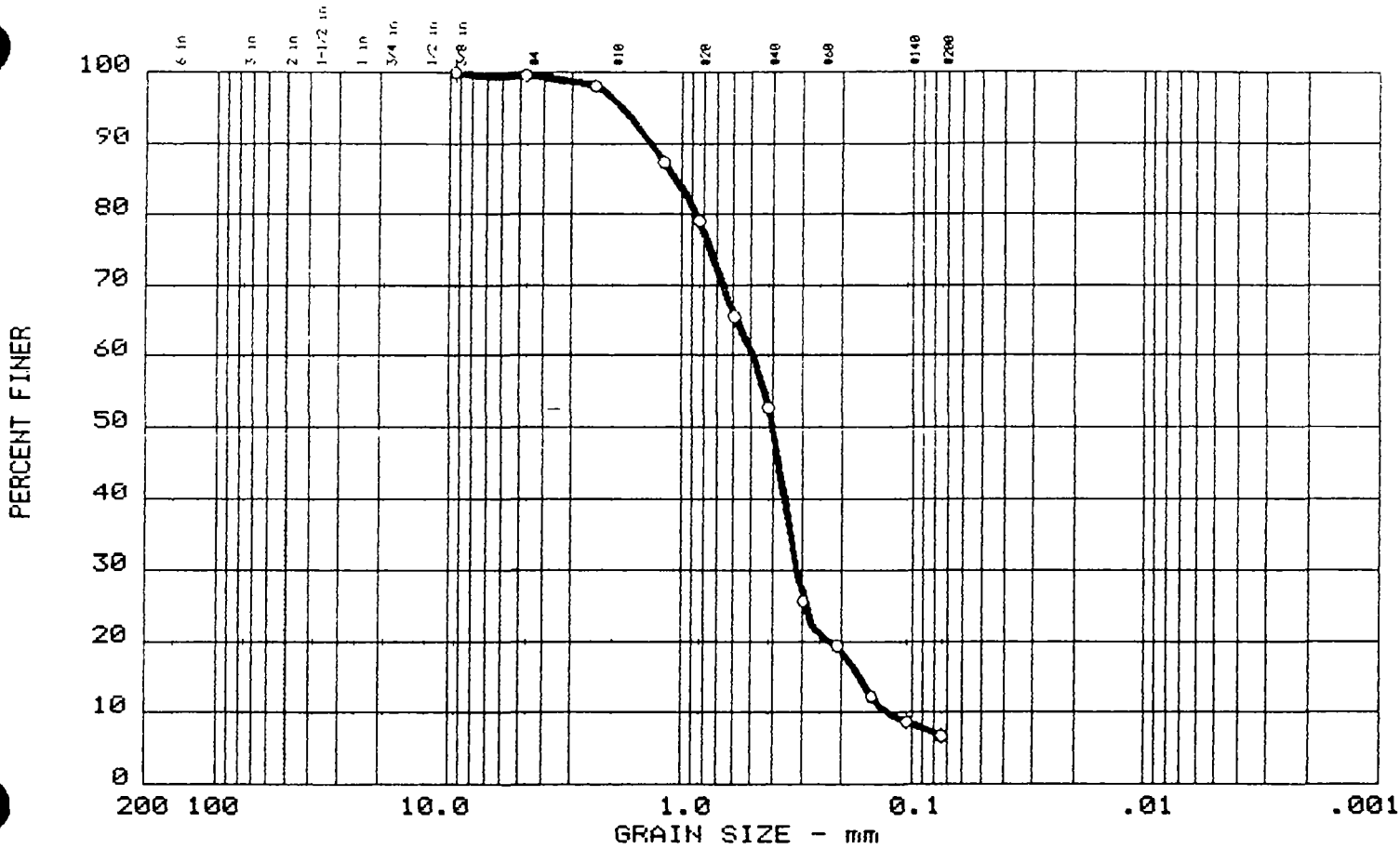
Dish No. V-16 | Total Weight of Sample Grams

Tyler Sieve No.	U.S. Std. Sieve No.	Opening in Inches	Opening in mm.	Weight Retained	Percent Retained	Percent Finer
1-1/2"		1.5	38.1			
3/4"		0.75	19.05			
3/8"		0.375	9.525	0		100
# 4	# 4	0.185	4.699	4.0		98.0
# 8	# 8	0.093	2.362	13.0		93.6
#14	#16	0.046	1.168	49.3		75.7
#20	#20	0.0328	0.833	85.5		57.9
#28	#30	0.0232	0.589	124.6		38.7
#35	#40	0.0164	0.417	173.5		14.6
#48	#50	0.0116	0.295	194.8		4.1
#65	#70	0.0082	0.208	199.7		1.7
#100	#100	0.0058	0.147	202.3		.5
#150	#140	0.0041	0.104	202.7		.2
#200	#200	0.0029	0.074	202.8		.1
Pan				203.1		

Remarks: _____

LMK Form 129
JUL 62

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% FINES
○	0.0	0.5	92.8	6.7

	LL	PL	NWC	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				1.05	0.49	0.40	0.318	0.1687	0.1265	1.63	3.9

MATERIAL DESCRIPTION	USCS	Sam #	Depth
○ SP-SM	SP-SM	1	

Project: LAKE HARTWELL STUDY

○ Boring No.: BS 3A

Date: 9-22-99

Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

CORPS OF ENGINEERS - VICKSBURG DISTRICT

Plate No. _____

SCREEN ANALYSIS

Soils Laboratory, U. S. Army Engineer District, Vicksburg

Date _____

Damsite L. Hartwell Stdy.	Station Lf. BK. Below USGS geog. Sta.
Location BS 3A	Depth
Dish No. ~~[illegible]~~ V-14	Total Weight of Sample 109.8 Grams

Tyler Sieve No.	U.S. Std. Sieve No.	Opening in Inches	Opening in mm.	Weight Retained	Percent Retained	Percent Finer
1-1/2"		1.5	38.1			
3/4"		0.75	19.05			
3/8"		0.375	9.525	0		100
# 4	# 4	0.185	4.699	.5		99.5
# 8	# 8	0.093	2.362	2.1		98.1
#14	#16	0.046	1.168	13.9		87.3
#20	#20	0.0328	0.833	23.0		79.1
#28	#30	0.0232	0.589	37.9		65.5
#35	#40	0.0164	0.417	51.9		52.7
#48	#50	0.0116	0.295	81.7		25.6
#65	#70	0.0082	0.208	88.5		19.4
#100	#100	0.0058	0.147	96.4		12.2
#150	#140	0.0041	0.104	100.2		8.7
#200	#200	0.0029	0.074	102.4		6.7
Pan				103.0		

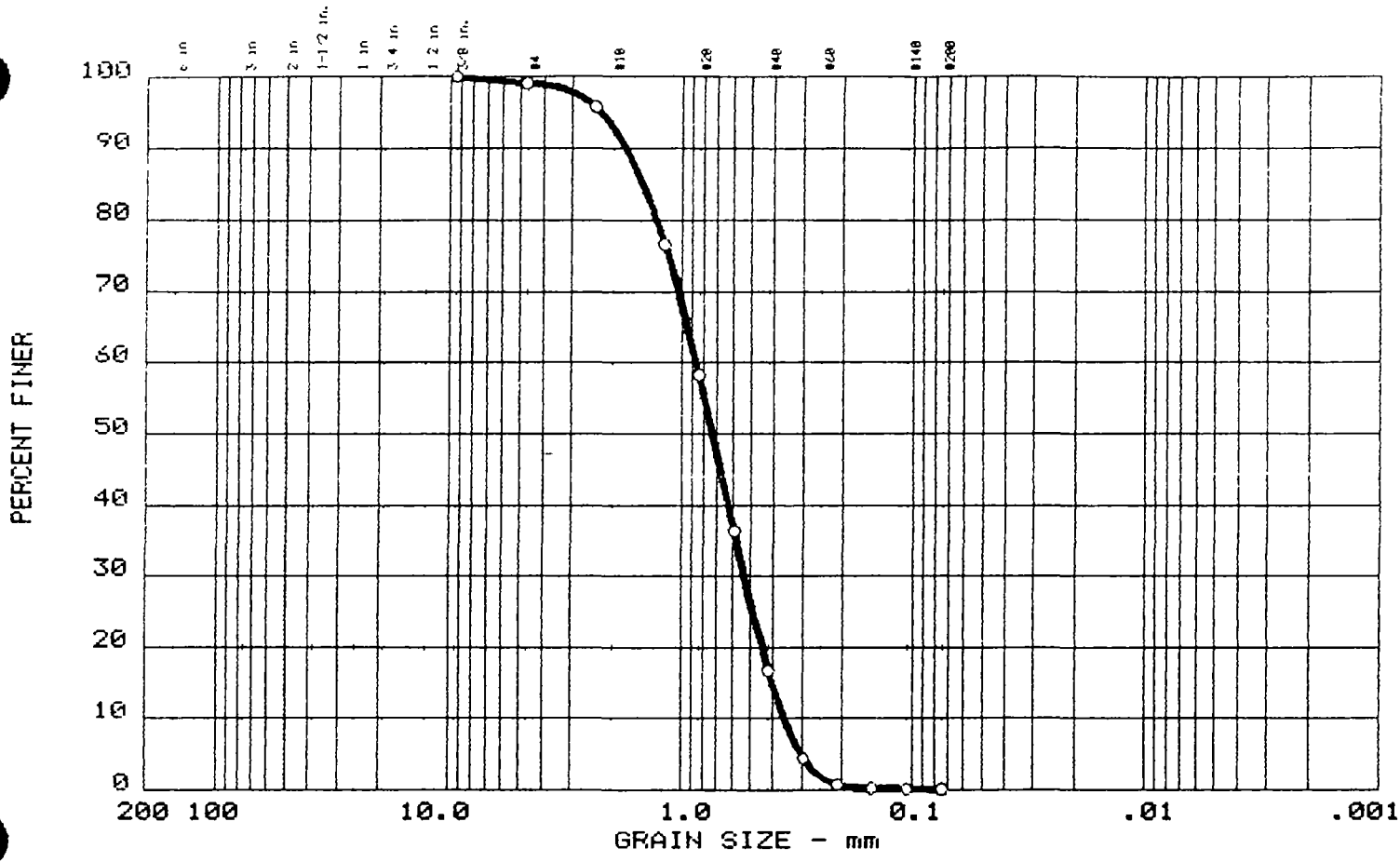
Remarks:

D/w = 109.8 SP-SM

after WASH dry wt. = 103.0

LMK Form 129
JUL 62

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% FINES
○	0.0	0.9	99.0	0.1

	LL	PL	NWC	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				1.48	0.86	0.73	0.533	0.4041	0.3585	0.92	2.4

MATERIAL DESCRIPTION	USCS	Sam #	Depth
○ M-F SAND SP	SP	1	

Project: LAKE HARTWELL STUDY
○ Boring No.: BS 3B

Date: 09-21-99

Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT
CORPS OF ENGINEERS - VICKSBURG DISTRICT

Plate No. _____

SCREEN ANALYSIS

Soils Laboratory, U. S. Army Engineer District, Vicksburg

Date _____

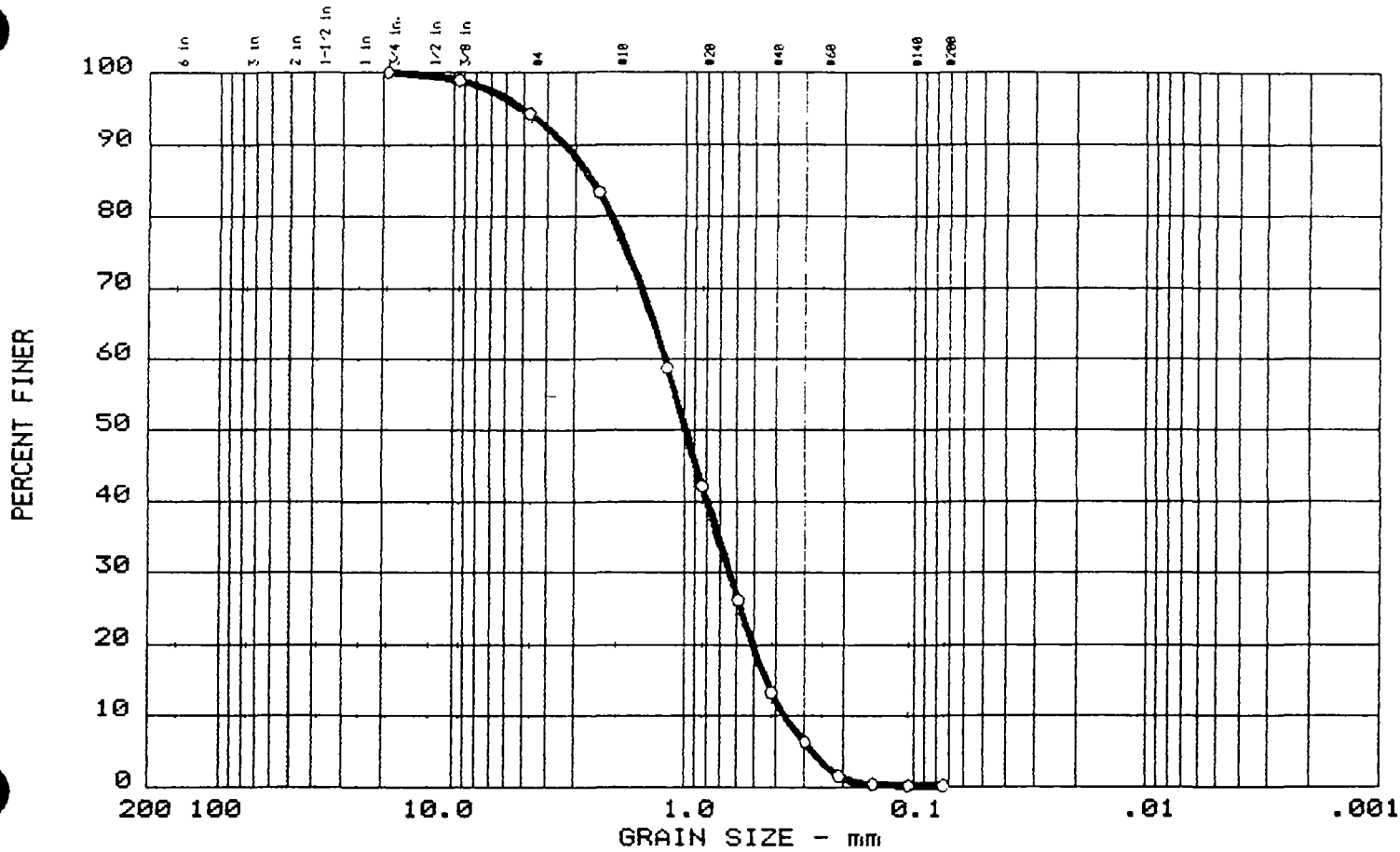
Damsite L. HARTWELL Sty.	Station Rt BK -
Location BS 3B	Depth
Dish No. V-19	Total Weight of Sample Grams

Tyler Sieve No.	U.S. Std. Sieve No.	Opening in Inches	Opening in mm.	Weight Retained	Percent Retained	Percent Finer
1-1/2"		1.5	38.1			
3/4"		0.75	19.05			
3/8"		0.375	9.525	0		100
# 4	# 4	0.185	4.699	1.6		99.1
# 8	# 8	0.093	2.362	7.5		95.7
#14	#16	0.046	1.168	41.1		76.6
#20	#20	0.0328	0.833	73.1		58.4
#28	#30	0.0232	0.589	111.9		36.3
#35	#40	0.0164	0.417	146.2		16.7
#48	#50	0.0116	0.295	167.8		4.4
#65	#70	0.0082	0.208	174.3		.7
#100	#100	0.0058	0.147	175.1		.3
#150	#140	0.0041	0.104	175.3		.2
#200	#200	0.0029	0.074	175.4		.1
Pan				175.6		

Remarks: MF SP

LMK Form 129
JUL 62

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% FINES
O	0.0	5.6	94.2	0.2

	LL	PL	NWC	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
O				2.54	1.22	0.99	0.644	0.4436	0.3648	0.94	3.3

MATERIAL DESCRIPTION	USCS	Sam #	Depth
O C-M SAND SP	SP	1	

Project: LAKE HARTWELL STUDY
O Boring No.: BS-4

Date: 09-21-99

GRAIN SIZE DISTRIBUTION TEST REPORT
CORPS OF ENGINEERS - VICKSBURG DISTRICT

Remarks:

Plate No. _____

SCREEN ANALYSIS

Soils Laboratory, U. S. Army Engineer District, Vicksburg

Date _____

Damsite L. Hartwell Stilling | Station U/S of Easley water Supply

Location BS-4 Center | Depth

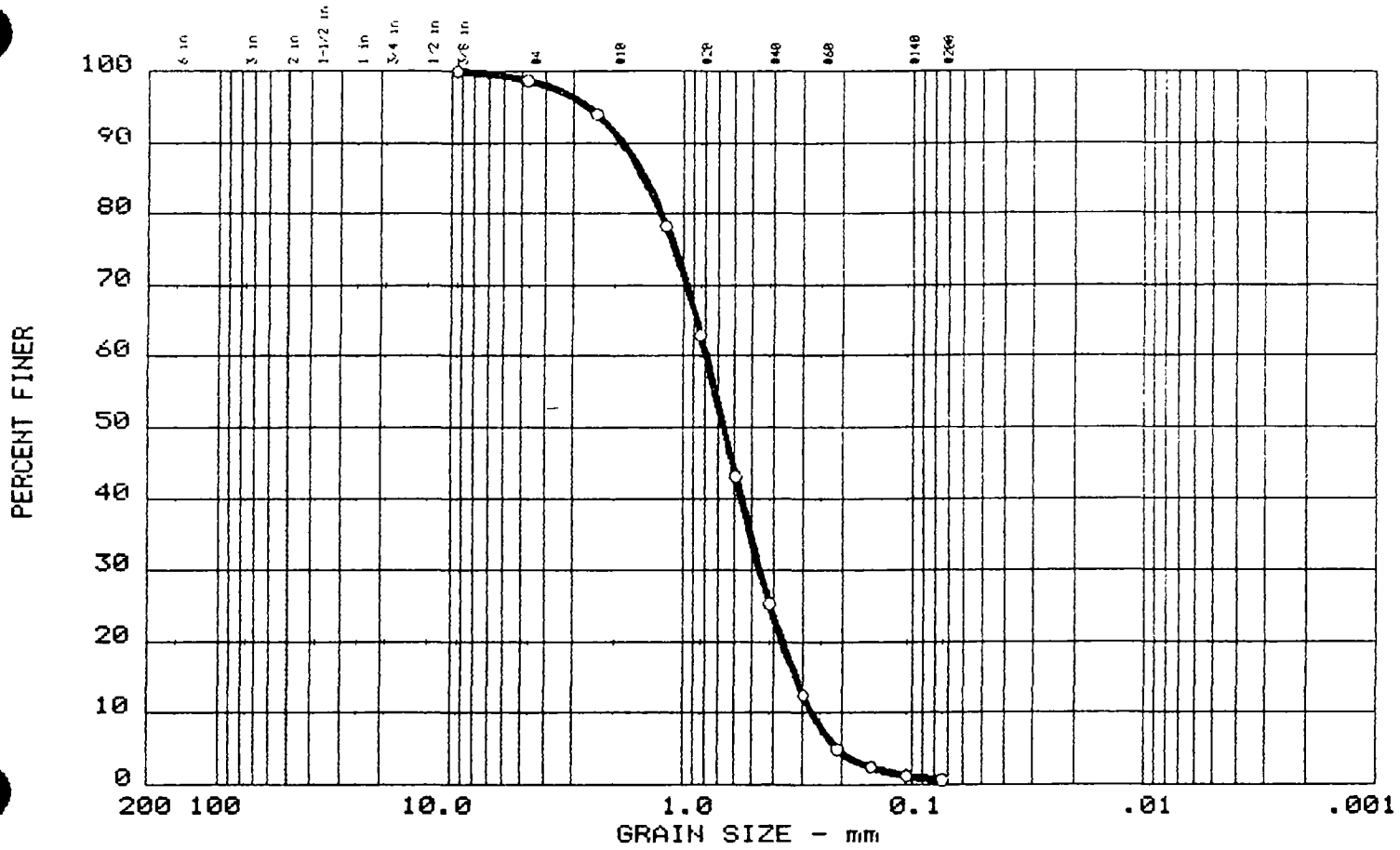
Dish No. V-10 | Total Weight of Sample Gram

Tyler Sieve No.	U.S. Std. Sieve No.	Opening in Inches	Opening in mm.	Weight Retained	Percent Retained	Percent Finer
1-1/2"		1.5	38.1			
3/4"		0.75	19.05	0		100
3/8"		0.375	9.525	2.1		98.9
# 4	# 4	0.185	4.699	11.1		94.4
# 8	# 8	0.093	2.362	32.8		83.4
#14	#16	0.046	1.168	81.3		58.8
#20	#20	0.0328	0.833	114.3		42.1
#28	#30	0.0232	0.589	145.9		26.1
#35	#40	0.0164	0.417	171.2		13.3
#48	#50	0.0116	0.295	184.9		6.4
#65	#70	0.0082	0.208	194.4		1.6
#100	#100	0.0058	0.147	196.6		.5
#150	#140	0.0041	0.104	197.0		.3
#200	#200	0.0029	0.074	197.1		.2
Pan				197.5		

Remarks: Bottle Broken when Received -

LMK Form 129
JUL 62

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% FINES
○	0.0	1.2	98.1	0.7

	LL	PL	NWC	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				1.48	0.79	0.67	0.463	0.3203	0.2716	0.99	2.9

MATERIAL DESCRIPTION	USCS	Sam #	Depth
○ M-F SAND SP	SP	1	

Project: LAKE HARTWELL STUDY
○ Boring No.: BS-4A

Date: 9-22-99

Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT
CORPS OF ENGINEERS - VICKSBURG DISTRICT

Plate No. ____

SCREEN ANALYSIS

Soils Laboratory, U. S. Army Engineer District, Vicksburg

Date _____

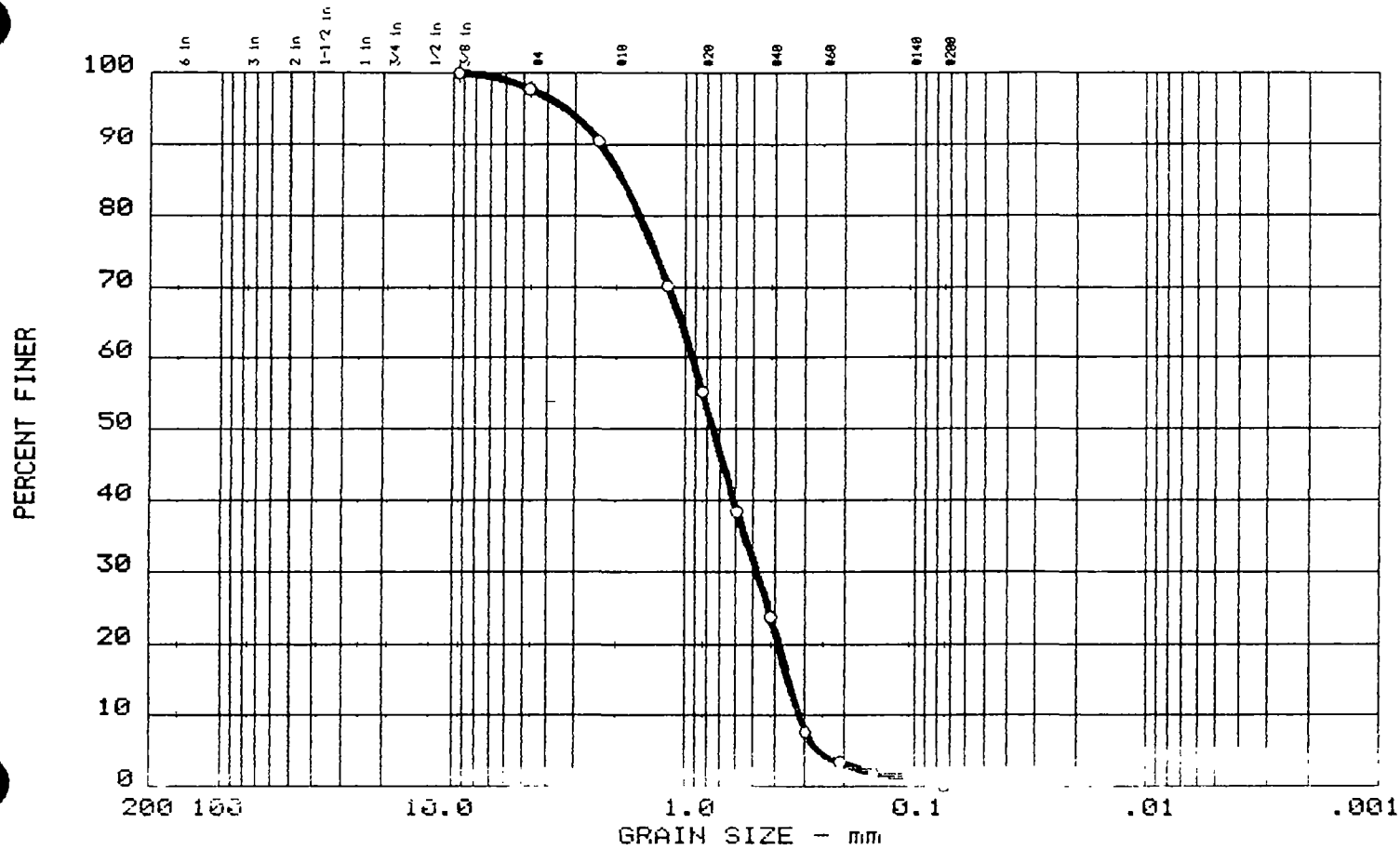
Damsite	L. HARTWELL Sty.	Station	
Location	B5-4A	Depth	
Dish No.	V-15	Total Weight of Sample	Grams

Tyler Sieve No.	U.S. Std. Sieve No.	Opening in Inches	Opening in mm.	Weight Retained	Percent Retained	Percent Finer
1-1/2"		1.5	38.1			
3/4"		0.75	19.05			
3/8"		0.375	9.525	0		100
# 4	# 4	0.185	4.699	2.1		98.2
# 8	# 8	0.093	2.362	10.1		94.0
#14	#16	0.046	1.168	36.7		78.2
#20	#20	0.0328	0.833	62.4		62.9
#28	#30	0.0232	0.589	95.8		43.1
#35	#40	0.0164	0.417	125.7		25.3
#48	#50	0.0116	0.295	147.3		12.5
#65	#70	0.0082	0.208	160.1		4.9
#100	#100	0.0058	0.147	164.1		2.5
#150	#140	0.0041	0.104	166.2		1.2
#200	#200	0.0029	0.074	167.2		.7
Pan				168.3		

Remarks: M-F SP

LMK Form 129
JUL 62

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% FINES
○	0.0	2.2	97.7	0.1

	LL	PL	NWC	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				1.86	0.93	0.75	0.481	0.3524	0.3170	0.78	2.9

MATERIAL DESCRIPTION	USCS	Sam #	Depth
○ M-F SAND SP W/ TR/G	SP	1	

Project: LAKE HARTWELL STUDY
○ Boring No.: BS4B

Date: 09-21-99

Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT
CORPS OF ENGINEERS - VICKSBURG DISTRICT

Plate No. ____

SCREEN ANALYSIS

Soils Laboratory, U. S. Army Engineer District, Vicksburg

Date _____

Damsite L. Hartwell Study | Station Rt. BK. u/s Easley

Location BS4B - | Depth

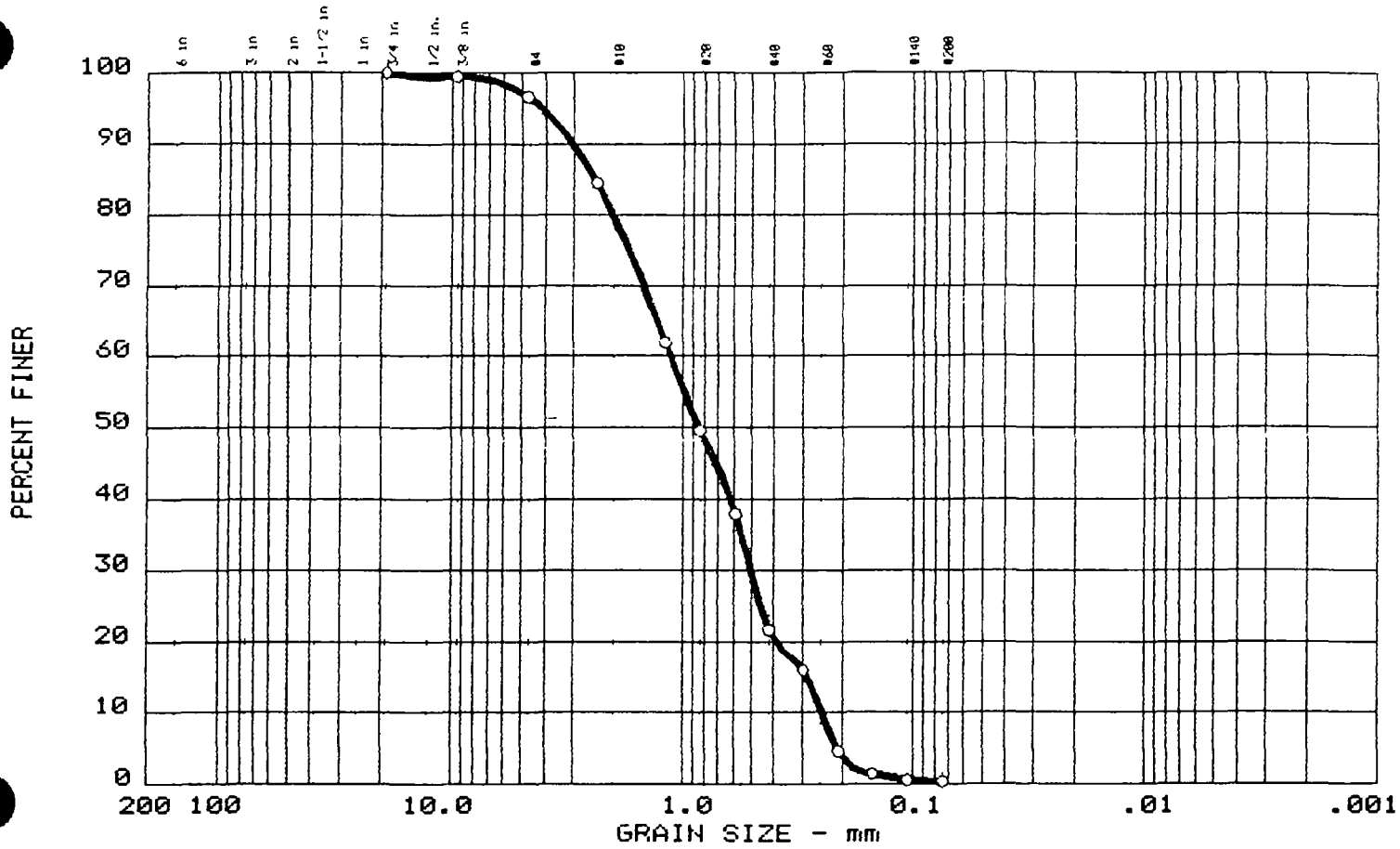
Dish No. V-11 | Total Weight of Sample Grams

Tyler Sieve No.	U.S. Std. Sieve No.	Opening in Inches	Opening in mm.	Weight Retained	Percent Retained	Percent Finer
1-1/2"		1.5	38.1			
3/4"		0.75	19.05			
3/8"		0.375	9.525	0		100
# 4	# 4	0.185	4.699	3.7		97.8
# 8	# 8	0.093	2.362	15.9		90.5
#14	#16	0.046	1.168	49.7		70.2
#20	#20	0.0328	0.833	74.6		55.2
#28	#30	0.0232	0.589	108.6		38.4
#35	#40	0.0164	0.417	126.9		23.8
#48	#50	0.0116	0.295	153.8		7.6
#65	#70	0.0082	0.208	160.8		3.4
#100	#100	0.0058	0.147	163.6		1.7
#150	#140	0.0041	0.104	164.3		1.3
#200	#200	0.0029	0.074	166.3		.1
Pan				166.5		

Remarks: Bottle Broken when received

LMK Form 129
JUL 62

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% FINES
○	0.0	3.4	96.2	0.3

	LL	PL	NWC	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				2.43	1.13	0.85	0.505	0.2841	0.2469	0.91	4.6

MATERIAL DESCRIPTION	USCS	Sam #	Depth
○ F-M SAND SP W/TR-G	SP	1	

Project: LAKE HARTWELL STUDY
○ Boring No.: BS-5

Date: 09-22-99

GRAIN SIZE DISTRIBUTION TEST REPORT
CORPS OF ENGINEERS - VICKSBURG DISTRICT

Remarks:

Plate No. ____

SCREEN ANALYSIS

Soils Laboratory, U. S. Army Engineer District, Vicksburg

Date _____

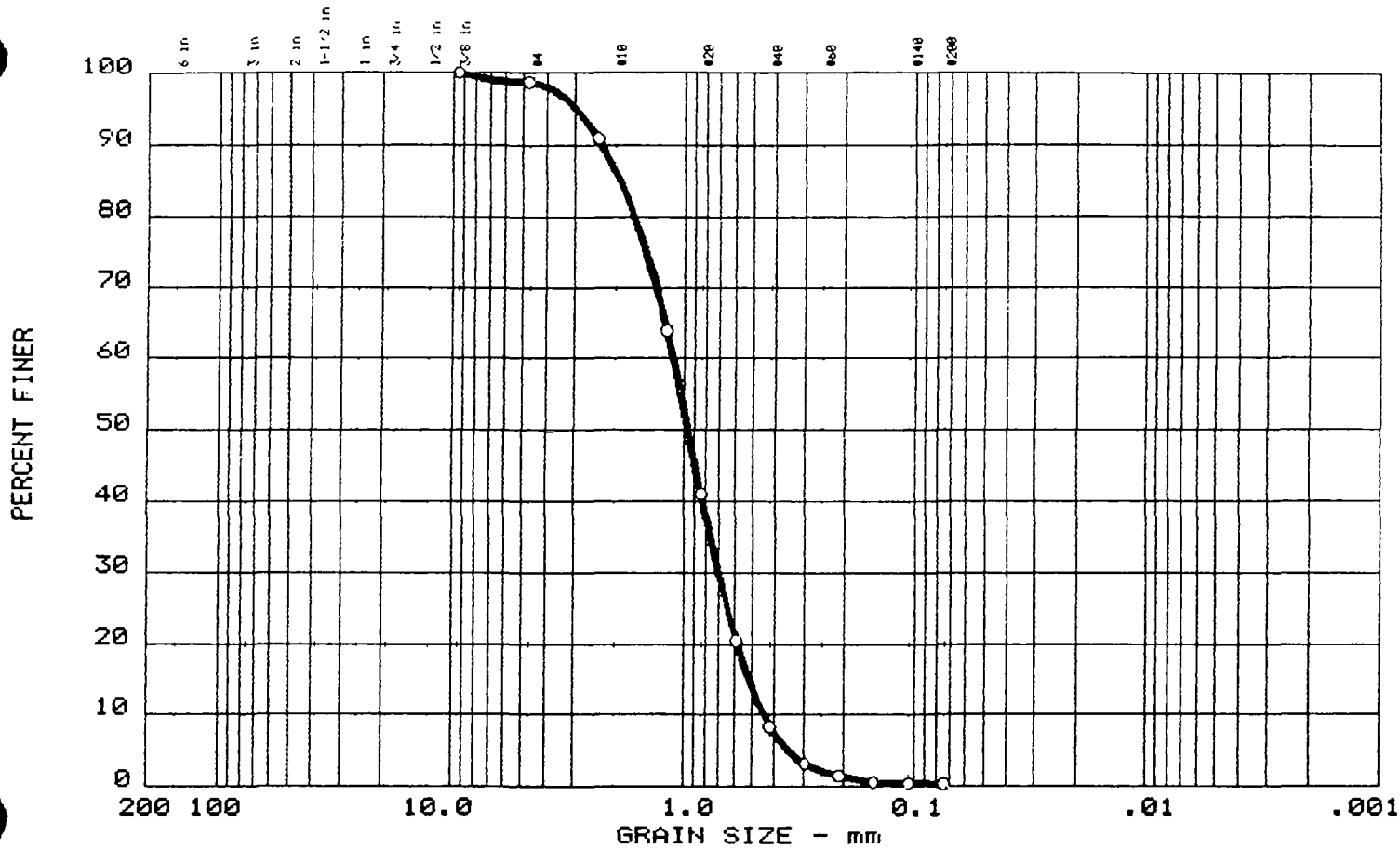
Damsite	L. Harwell Stg.	Station	
Location	BS-5 Center	Depth	
Dish No.	V-40	Total Weight of Sample	Grams

Tyler Sieve No.	U.S. Std. Sieve No.	Opening in Inches	Opening in mm.	Weight Retained	Percent Retained	Percent Finer
1-1/2"		1.5	38.1			
3/4"		0.75	19.05	0		100
3/8"		0.375	9.525	1.3		99.5
# 4	# 4	0.185	4.699	8.7		96.6
# 8	# 8	0.093	2.362	39.2		84.5
#14	#16	0.046	1.168	96.4		61.9
#20	#20	0.0328	0.833	127.6		49.5
#28	#30	0.0232	0.589	157.0		37.9
#35	#40	0.0164	0.417	198.2		21.6
#48	#50	0.0116	0.295	212.5		16.0
#65	#70	0.0082	0.208	241.3		4.6
#100	#100	0.0058	0.147	249.2		1.5
#150	#140	0.0041	0.104	251.5		.6
#200	#200	0.0029	0.074	252.1		.3
Pan				252.9		

Remarks: _____

LMK Form 129
JUL 62

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% FINES
○	0.0	1.4	98.4	0.3

	LL	PL	NWC	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				1.91	1.12	0.96	0.703	0.5194	0.4467	0.99	2.5

MATERIAL DESCRIPTION	USCS	Sam #	Depth
○ F-M SAND SP W/TR-G	SP	1	

Project: LAKE HARTWELL STUDY
○ Boring No.: BS-5A

Date: 9-22-99

Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT
CORPS OF ENGINEERS - VICKSBURG DISTRICT

Plate No. ____

SCREEN ANALYSIS

Soils Laboratory, U. S. Army Engineer District, Vicksburg

Date _____

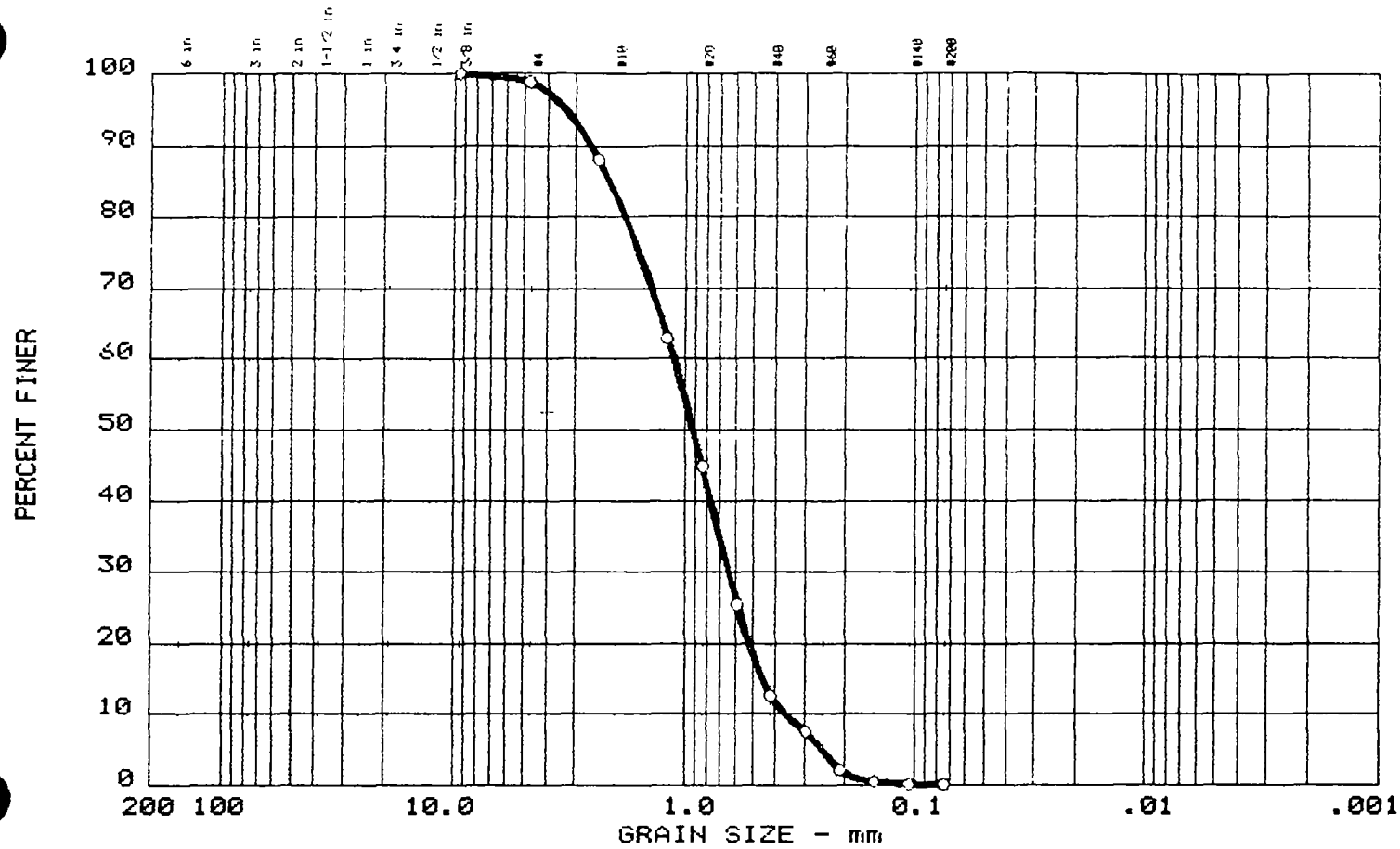
Damsite L. HARTWELL Sty.	Station
Location BS-5A	Depth
Dish No. V-26	Total Weight of Sample Grams

Tyler Sieve No.	U.S. Std. Sieve No.	Opening in Inches	Opening in mm.	Weight Retained	Percent Retained	Percent Finer
1-1/2"		1.5	38.1			
3/4"		0.75	19.05			
3/8"		0.375	9.525	0		100
# 4	# 4	0.185	4.699	2.8		98.6
# 8	# 8	0.093	2.362	18.8		90.9
#14	#16	0.046	1.168	74.6		63.9
#20	#20	0.0328	0.833	122.1		41.0
#28	#30	0.0232	0.589	164.5		20.5
#35	#40	0.0164	0.417	189.5		8.4
#48	#50	0.0116	0.295	200.4		3.1
#65	#70	0.0082	0.208	203.8		1.5
#100	#100	0.0058	0.147	205.7		.5
#150	#140	0.0041	0.104	206.0		.4
#200	#200	0.0029	0.074	206.2		.3
Pan				206.8		

Remarks:

LMK Form 129
JUL 62

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% FINES
○	0.0	1.2	98.7	0.1

	LL	PL	NWC	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				2.13	1.12	0.92	0.643	0.4592	0.3606	1.03	3.1

MATERIAL DESCRIPTION	USCS	Sam #	Depth
○ F-M SAND SP W/TR-G	SP	1	

Project: LAKE HARTWELL STUDY
○ Boring No.: BS-5-B

Date: 09-21-99

Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT
CORPS OF ENGINEERS - VICKSBURG DISTRICT

Plate No. ____

SCREEN ANALYSIS

Soils Laboratory, U. S. Army Engineer District, Vicksburg

Date _____

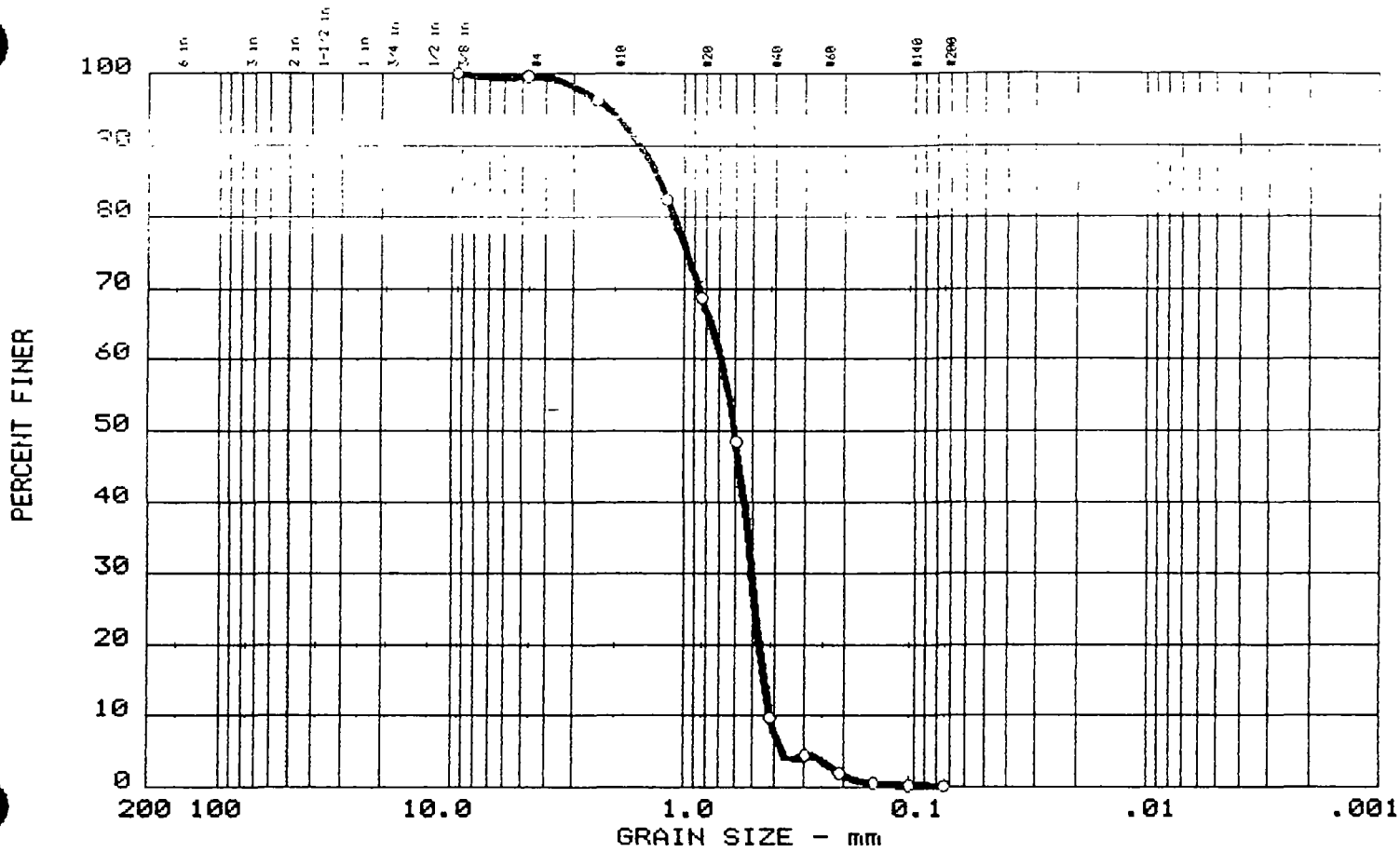
Damsite L. Hartwell Study	Station
Location BS-5-B	Depth
Dish No. V-31	Total Weight of Sample 257.2 Grams

Tyler Sieve No.	U.S. Std. Sieve No.	Opening in Inches	Opening in mm.	Weight Retained	Percent Retained	Percent Finer
1-1/2"		1.5	38.1			
3/4"		0.75	19.05			
3/8"		0.375	9.525	0		100
# 4	# 4	0.185	4.699	3.0		98.8
# 8	# 8	0.093	2.362	30.7		88.1
#14	#16	0.046	1.168	95.3		62.9
#20	#20	0.0328	0.833	141.6		44.9
#28	#30	0.0232	0.589	191.9		25.4
#35	#40	0.0164	0.417	224.9		12.5
#48	#50	0.0116	0.295	237.7		7.5
#65	#70	0.0082	0.208	254.6		2.1
#100	#100	0.0058	0.147	255.6		.6
#150	#140	0.0041	0.104	256.6		.2
#200	#200	0.0029	0.074	256.8		.1
Pan				257.1		

Remarks: _____

LMK Form 129
JUL 62

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% FINES
○	0.0	0.4	99.5	0.1

	LL	PL	NWC	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				1.28	0.69	0.60	0.506	0.4457	0.4207	0.89	1.6

MATERIAL DESCRIPTION	USCS	Sam #	Depth
○ F-M SAND SP W/TR-G	SP	1	

Project: LAKE HARTWELL STUDY

○ Boring No.: BS-6

Date: 09-22-99

Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

CORPS OF ENGINEERS - VICKSBURG DISTRICT

Plate No. ____

SCREEN ANALYSIS

Soils Laboratory, U. S. Army Engineer District, Vicksburg

Date _____

Damsite L. HARTWELL Sty. | Station

Location BS-6 Center | Depth

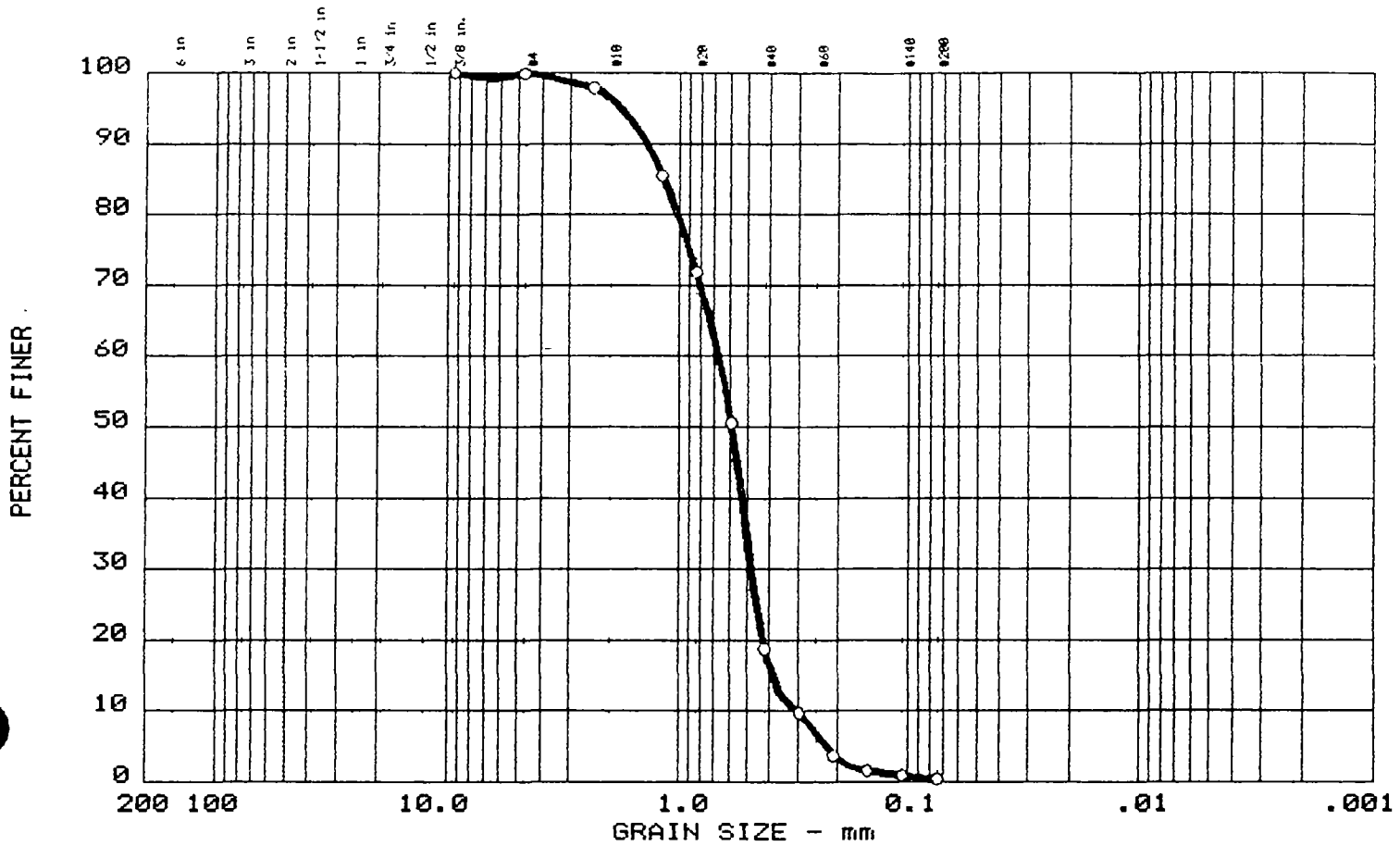
Dish No. V-41 | Total Weight of Sample 270.4 Grams

Tyler Sieve No.	U.S. Std. Sieve No.	Opening in Inches	Opening in mm.	Weight Retained	Percent Retained	Percent Finer
1-1/2"		1.5	38.1			
3/4"		0.75	19.05			
3/8"		0.375	9.525	0		100
# 4	# 4	0.185	4.699	1.0		99.6
# 8	# 8	0.093	2.362	9.8		96.4
#14	#16	0.046	1.168	47.3		82.5
#20	#20	0.0328	0.833	84.7		68.7
#28	#30	0.0232	0.589	139.2		48.5
#35	#40	0.0164	0.417	243.9		9.8
#48	#50	0.0116	0.295	258.2		4.5
#65	#70	0.0082	0.208	264.9		2.0
#100	#100	0.0058	0.147	268.6		.6
#150	#140	0.0041	0.104	269.5		.3
#200	#200	0.0029	0.074	269.9		.1
Pan				270.3		

Remarks: Ø

LMK Form 129
JUL 62

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% FINES
O	0.0	0.1	99.5	0.4

	LL	PL	NWC	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
O				1.17	0.67	0.59	0.480	0.3904	0.2996	1.15	2.2

MATERIAL DESCRIPTION	USCS	Sam #	Depth
O F-M SAND SP	SP	1	

Project: LAKE HARTWELL STUDY
O Boring No.: BS-6A

Date: 05-22-99

Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT
CORPS OF ENGINEERS - VICKSBURG DISTRICT

Plate No. ____

SCREEN ANALYSIS

Soils Laboratory, U. S. Army Engineer District, Vicksburg

Date _____

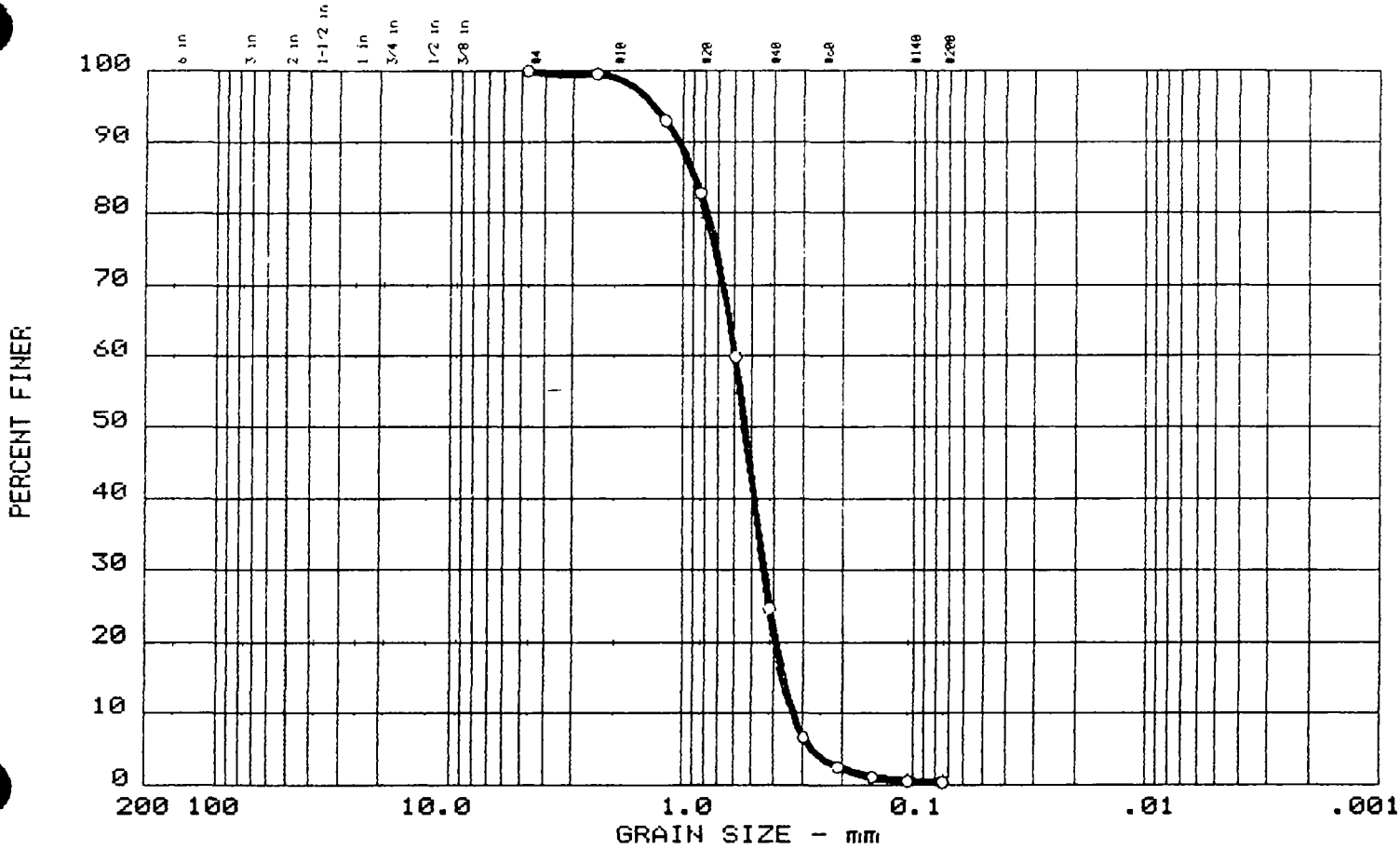
Damsite	L. HARTWELL Sty.	Station	
Location	BS-6A	Depth	
Dish No.	V-50	Total Weight of Sample	Grams

Tyler Sieve No.	U.S. Std. Sieve No.	Opening in Inches	Opening in mm.	Weight Retained	Percent Retained	Percent Finer
1-1/2"		1.5	38.1			
3/4"		0.75	19.05			
3/8"		0.375	9.525	0		100
# 4	# 4	0.185	4.699	.2		99.9
# 8	# 8	0.093	2.362	4.1		97.9
#14	#16	0.046	1.168	28.4		85.4
#20	#20	0.0328	0.833	54.9		71.8
#28	#30	0.0232	0.589	96.3		50.5
#35	#40	0.0164	0.417	158.3		18.7
#48	#50	0.0116	0.295	175.9		9.8
#65	#70	0.0082	0.208	187.4		3.7
#100	#100	0.0058	0.147	191.6		1.6
#150	#140	0.0041	0.104	192.9		.9
#200	#200	0.0029	0.074	193.5		.4
Pan				194.7		

Remarks: _____

LMK Form 129
JUL 62

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% FINES
○	0.0	0.0	99.6	0.4

	LL	PL	NWC	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				0.89	0.59	0.54	0.445	0.3669	0.3304	1.02	1.8

MATERIAL DESCRIPTION	USCS	Sam #	Depth
○ F-M SAND SP	SP	1	

Project: LAKE HARTWELL STUDY
○ Boring No.: BS-6B

Date: 09-22-99

Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT
CORPS OF ENGINEERS - VICKSBURG DISTRICT

Plate No. _____

SCREEN ANALYSIS

Soils Laboratory, U. S. Army Engineer District, Vicksburg

Date _____

Damsite L. Hartwell Sty. | Station

Location BS-6B | Depth

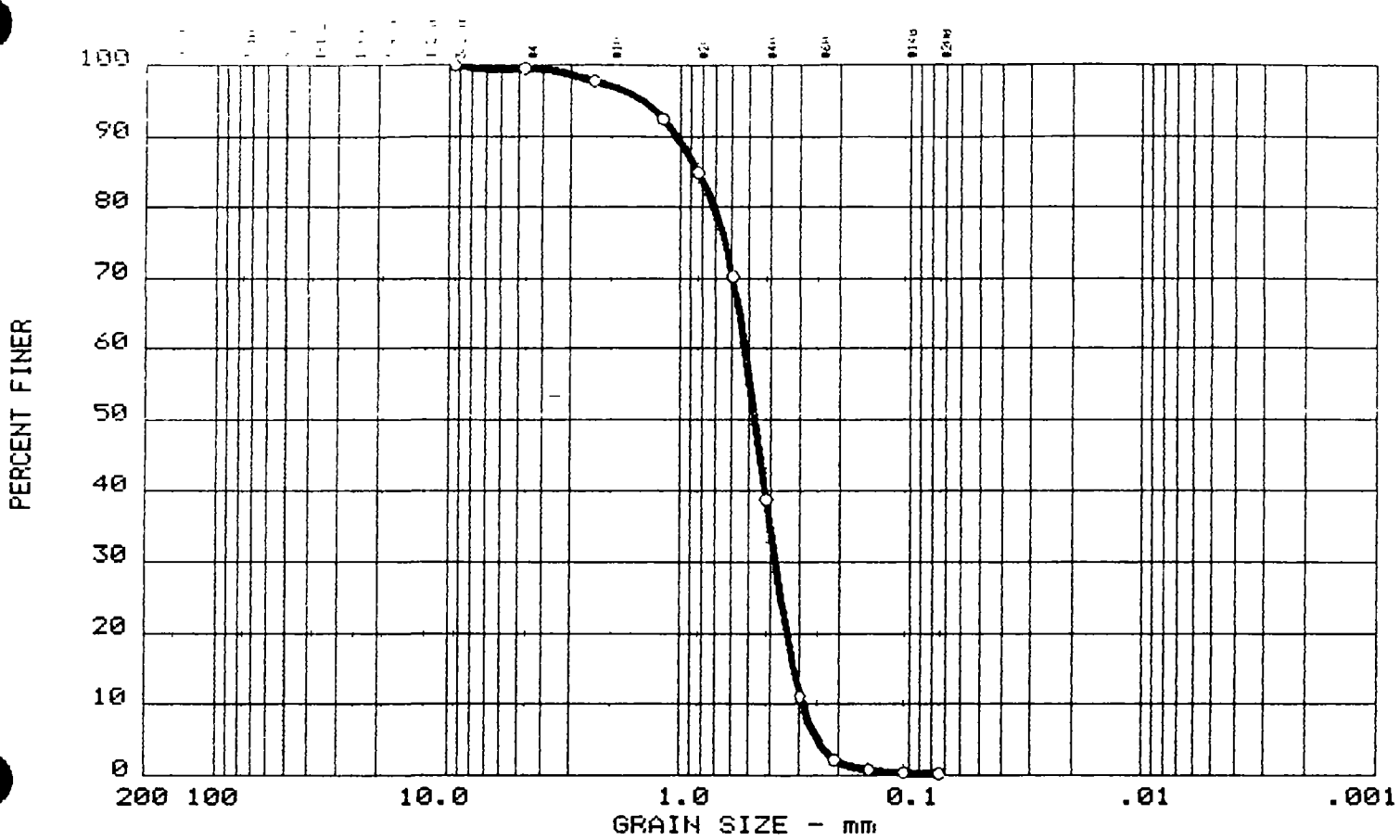
Dish No. V-42 | Total Weight of Sample 236.7 Grams

Tyler Sieve No.	U.S. Std. Sieve No.	Opening in Inches	Opening in mm.	Weight Retained	Percent Retained	Percent Finer
1-1/2"		1.5	38.1			
3/4"		0.75	19.05			
3/8"		0.375	9.525			
# 4	# 4	0.185	4.699	0		100
# 8	# 8	0.093	2.362	1.2		99.5
#14	#16	0.046	1.168	16.5		93.0
#20	#20	0.0328	0.833	40.9		82.7
#28	#30	0.0232	0.589	94.8		60.0
#35	#40	0.0164	0.417	178.5		24.6
#48	#50	0.0116	0.295	221.1		6.7
#65	#70	0.0082	0.208	230.8		2.5
#100	#100	0.0058	0.147	234.1		1.1
#150	#140	0.0041	0.104	235.4		.6
#200	#200	0.0029	0.074	235.9		.4
Pan				236.8		

Remarks: _____

LMK Form 129
JUL 62

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% FINES
○	0.0	0.4	99.4	0.2

	LL	PL	NWC	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				0.84	0.52	0.47	0.383	0.3173	0.2904	0.97	1.8

MATERIAL DESCRIPTION	USCS	Sam #	Depth
○ F-M SAND SP	SP	1	

Project: LAKE HARTWELL STUDY
○ Boring No.: BS 8

Date: 09-22-99

Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT
CORPS OF ENGINEERS - VICKSBURG DISTRICT

Plate No. ____

SCREEN ANALYSIS

Soils Laboratory, U. S. Army Engineer District, Vicksburg

Date _____

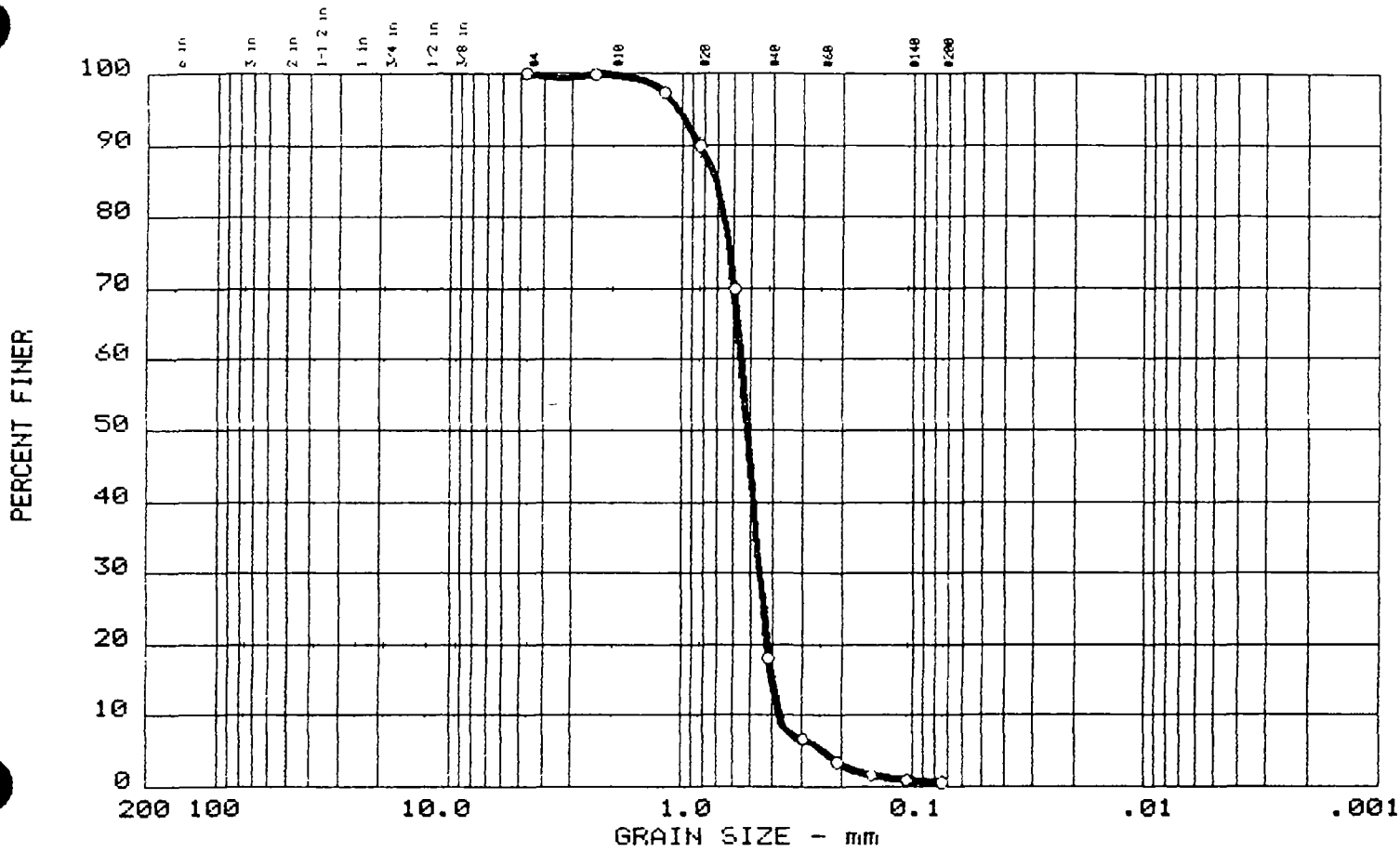
Damsite L. HARTWELL Sty.	Station
Location BS 8 Center	Depth
Dish No. V-46	Total Weight of Sample 231.3 Grams

Tyler Sieve No.	U.S. Std. Sieve No.	Opening in Inches	Opening in mm.	Weight Retained	Percent Retained	Percent Finer
1-1/2"		1.5	38.1			
3/4"		0.75	19.05			
3/8"		0.375	9.525	0		100
# 4	# 4	0.185	4.699	1.0		
# 8	# 8	0.093	2.362	5.0		97.8
#14	#16	0.046	1.168	17.4		92.5
#20	#20	0.0328	0.833	34.7		85.0
#28	#30	0.0232	0.589	68.7		70.3
#35	#40	0.0164	0.417	141.4		38.7
#48	#50	0.0116	0.295	205.6		11.1
#65	#70	0.0082	0.208	226.1		2.2
#100	#100	0.0058	0.147	229.3		.8
#150	#140	0.0041	0.104	230.3		.4
#200	#200	0.0029	0.074	230.7		.2
Pan				231.2		

Remarks: _____

LMK Form 129
JUL 62

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% FINES
O	0.0	0.0	99.4	0.[illegible]

	LL	PL	NWC	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
O				0.71	0.55	0.52	0.459	0.4069	0.3771	1.02	1.5

MATERIAL DESCRIPTION	USCS	Sam #	Depth
O F-M SAND SP	SP	1	

Project: LAKE HARTWELL STUDY
O Boring No.: BS-8A

Date: 09-22-99

Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT
CORPS OF ENGINEERS - VICKSBURG DISTRICT

Plate No. ____

SCREEN ANALYSIS

Soils Laboratory, U. S. Army Engineer District, Vicksburg

Date _____

Damsite L. Hartwell Sty. | Station

Location BS-8A | Depth

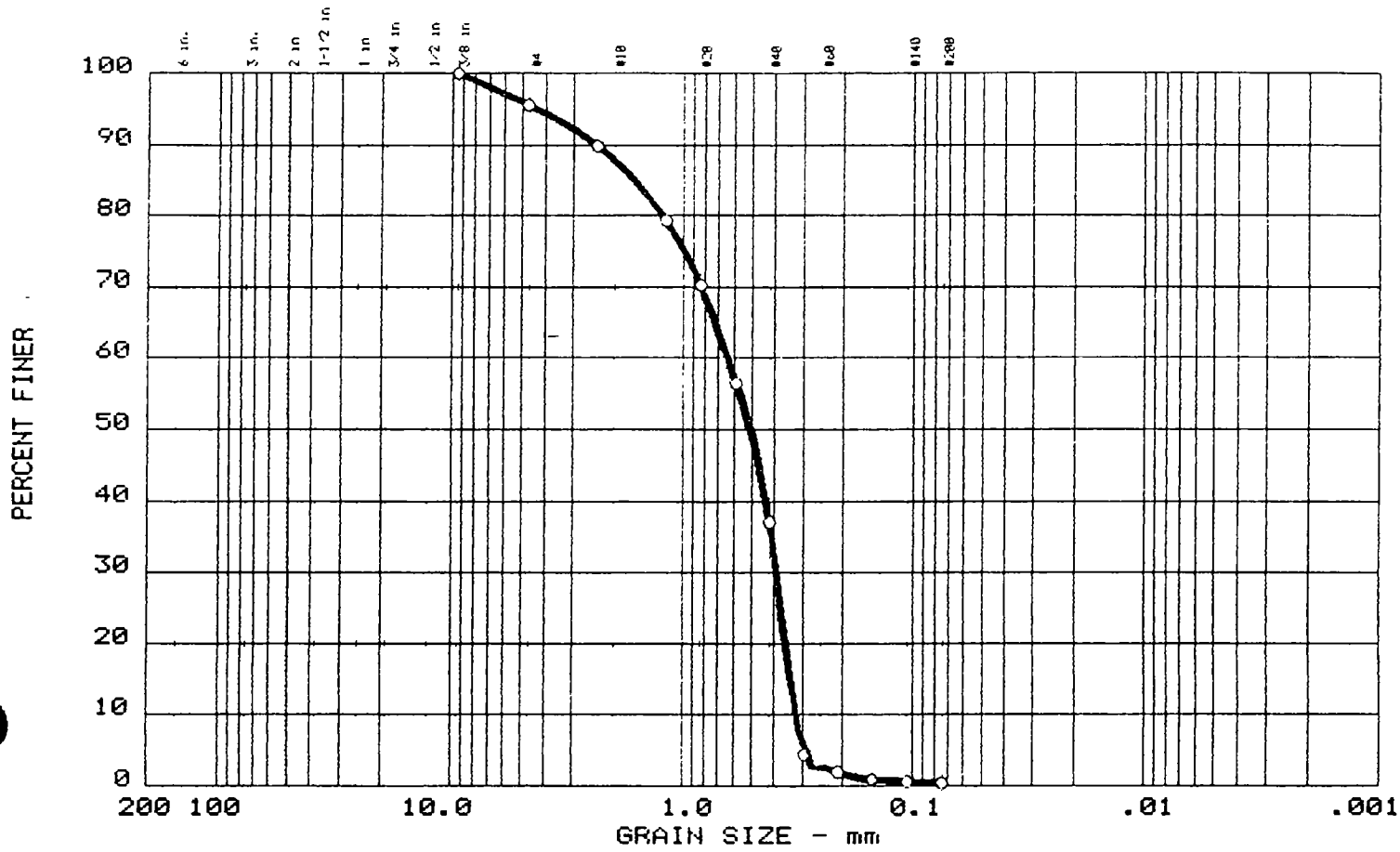
Dish No. U-43 | Total Weight of Sample Grams

Tyler Sieve No.	U.S. Std. Sieve No.	Opening in Inches	Opening in mm.	Weight Retained	Percent Retained	Percent Finer
1-1/2"		1.5	38.1			
3/4"		0.75	19.05			
3/8"		0.375	9.525			
# 4	# 4	0.185	4.699	0		100
# 8	# 8	0.093	2.362	.4		99.8
#14	#16	0.046	1.168	6.5		97.4
#20	#20	0.0328	0.833	25.2		89.9
#28	#30	0.0232	0.589	75.0		69.9
#35	#40	0.0164	0.417	204.5		18.1
#48	#50	0.0116	0.295	232.7		6.7
#65	#70	0.0082	0.208	240.8		3.4
#100	#100	0.0058	0.147	245.2		1.6
#150	#140	0.0041	0.104	247.0		.9
#200	#200	0.0029	0.074	247.8		.6
Pan				249.3		

Remarks:

LMK Form 129
JUL 62

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% FINES
○	0.0	4.4	95.3	0.4

	LL	PL	NWC	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				1.62	0.64	0.51	0.392	0.3412	0.3236	0.74	2.0

MATERIAL DESCRIPTION	USCS	Sam #	Depth
○ F-M SAND SP W/TR-G	SP	1	

Project: LAKE HARTWELL STUDY
○ Boring No.: BS-8B

Date: 09-22-99

GRAIN SIZE DISTRIBUTION TEST REPORT
CORPS OF ENGINEERS - VICKSBURG DISTRICT

Remarks:

Plate No. ____

SCREEN ANALYSIS

Soils Laboratory, U. S. Army Engineer District, Vicksburg

Date _____

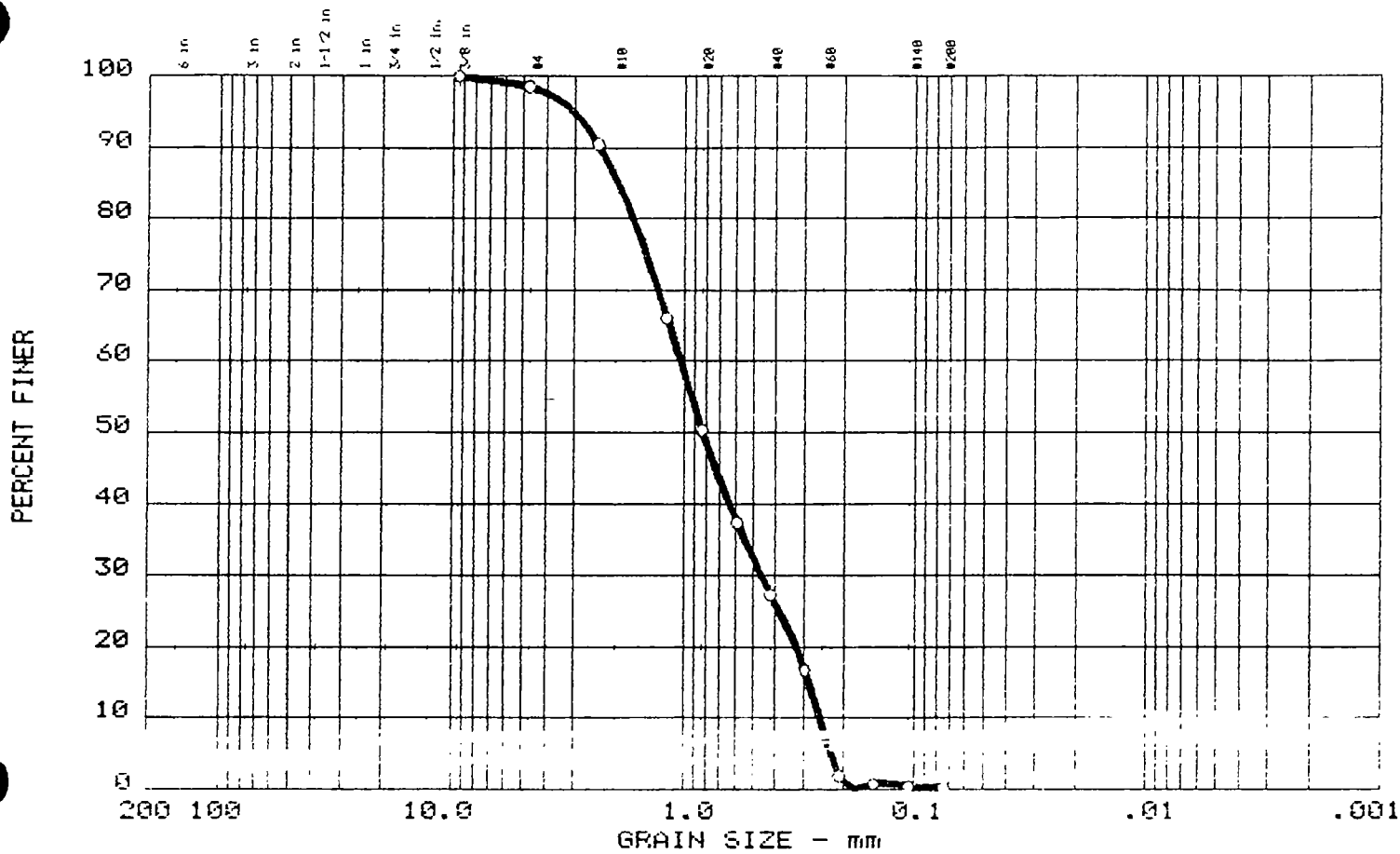
Damsite L. Hartwell Sty.	Station
Location BS-8B	Depth
Dish No. 1-49	Total Weight of Sample Grams

Tyler Sieve No.	U.S. Std. Sieve No.	Opening in Inches	Opening in mm.	Weight Retained	Percent Retained	Percent Finer
1-1/2"		1.5	38.1			
3/4"		0.75	19.05			
3/8"		0.375	9.525	0		100
# 4	# 4	0.185	4.699	9.5		95.6
# 8	# 8	0.093	2.362	22.1		89.9
#14	#16	0.046	1.168	45.2		79.3
#20	#20	0.0328	0.833	65.0		70.2
#28	#30	0.0232	0.589	94.9		56.5
#35	#40	0.0164	0.417	137.5		37.0
#48	#50	0.0116	0.295	208.8		4.4
#65	#70	0.0082	0.208	214.1		1.9
#100	#100	0.0058	0.147	216.3		1.9
#150	#140	0.0041	0.104	216.9		1.6
#200	#200	0.0029	0.074	217.5		1.4
Pan				218.3		

Remarks: _____

LMK Form 129
JUL 62

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% FINES
○	0.0	1.4	98.4	0.2

	LL	PL	NWC	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				1.95	1.04	0.83	0.463	0.2854	0.2573	0.80	4.1

MATERIAL DESCRIPTION	USCS	Sam #	Depth
○ F-M SAND SP W/TR-G	SP	1	

Project: LAKE HARTWELL STUDY
○ Boring No.: BS-9

Date: 09-22-99

Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT
CORPS OF ENGINEERS - VICKSBURG DISTRICT

Plate No. _____

SCREEN ANALYSIS

Soils Laboratory, U. S. Army Engineer District, Vicksburg

Date _____

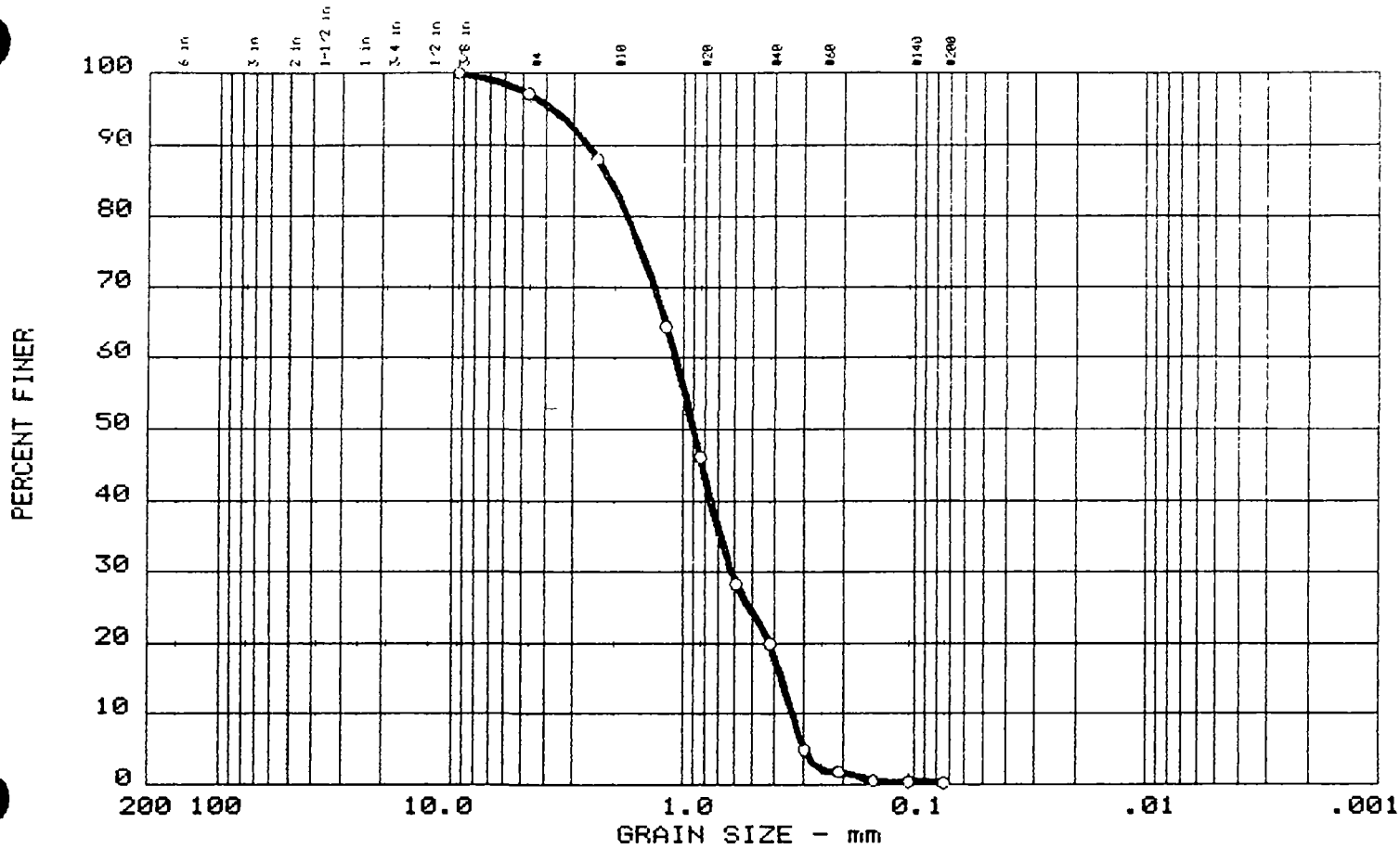
Damsite	L. Hartwell Stg.	Station	
Location	BS-9 Centre	Depth	
Dish No.	V-48	Total Weight of Sample	Grams

Tyler Sieve No.	U.S. Std. Sieve No.	Opening in Inches	Opening in mm.	Weight Retained	Percent Retained	Percent Finer
1-1/2"		1.5	38.1			
3/4"		0.75	19.05			
3/8"		0.375	9.525	0		100
# 4	# 4	0.185	4.699	3.1		98.6
# 8	# 8	0.093	2.362	20.9		90.5
#14	#16	0.046	1.168	74.8		66.0
#20	#20	0.0328	0.833	109.1		50.3
#28	#30	0.0232	0.589	137.6		37.4
#35	#40	0.0164	0.417	159.8		27.3
#48	#50	0.0116	0.295	183.0		16.7
#65	#70	0.0082	0.208	215.5		1.9
#100	#100	0.0058	0.147	218.0		1.8
#150	#140	0.0041	0.104	218.8		1.4
#200	#200	0.0029	0.074	219.2		1.2
Pan				219.7		

Remarks: _____

LMK Form 129
JUL 62

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% FINES
○	0.0	2.9	96.8	0.3

	LL	PL	NWC	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				2.09	1.08	0.90	0.618	0.3741	0.3373	1.04	3.2

MATERIAL DESCRIPTION	USCS	Sam #	Depth
○ F-M SAND SP W/TR-G	SP	1	

Project: LAKE HARTWELL STUDY
○ Boring No.: BS-9A

Date: 09-22-99

Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT
CORPS OF ENGINEERS - VICKSBURG DISTRICT

Plate No. _____

SCREEN ANALYSIS

Soils Laboratory, U. S. Army Engineer District, Vicksburg

Date _____

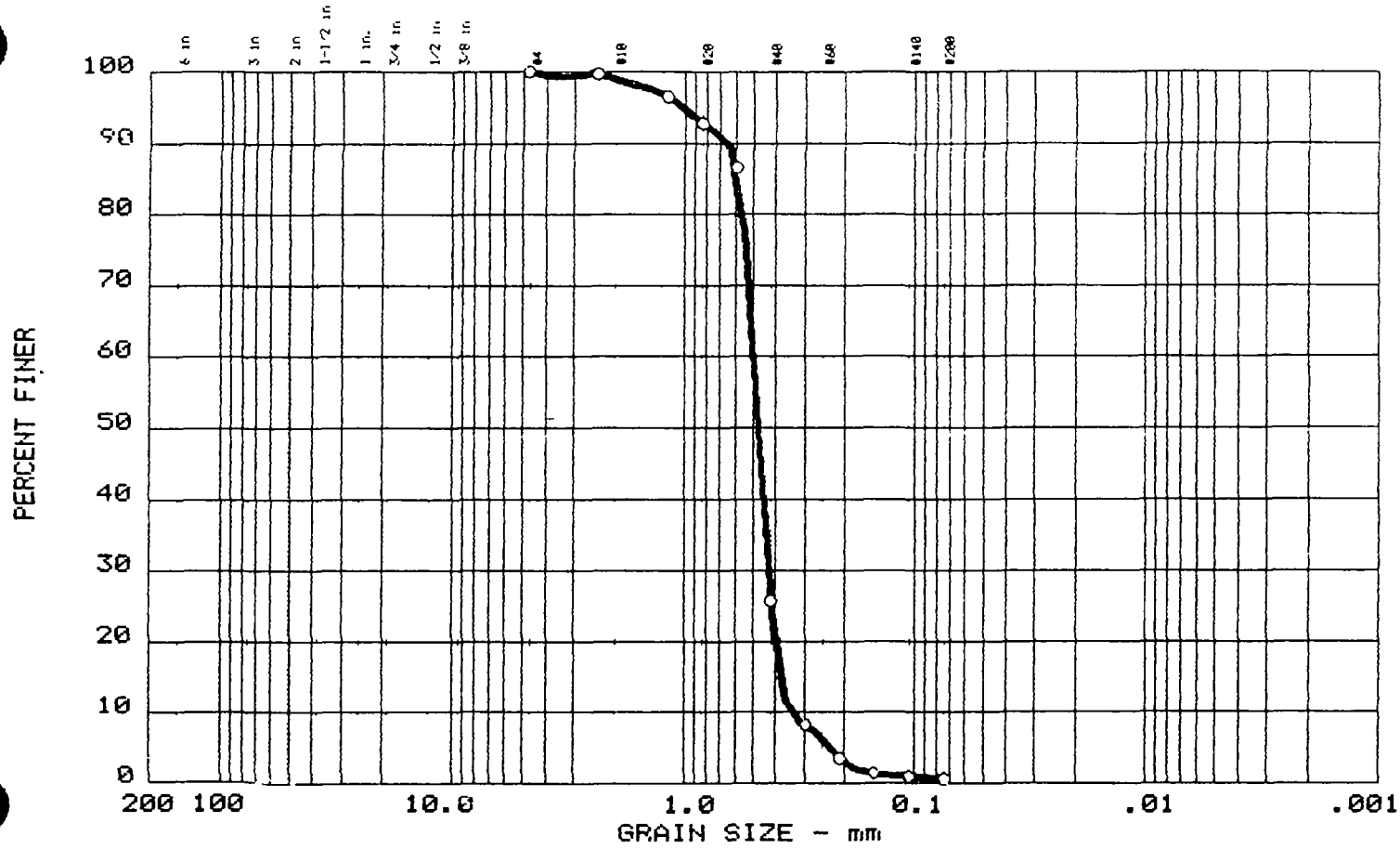
Damsite U. Hardwell Sty	Station
Location BS - 9A	Depth
Dish No. U-44	Total Weight of Sample Grams

Tyler Sieve No.	U.S. Std. Sieve No.	Opening in Inches	Opening in mm.	Weight Retained	Percent Retained	Percent Finer
1-1/2"		1.5	38.1			
3/4"		0.75	19.05			
3/8"		0.375	9.525	0		100
# 4	# 4	0.185	4.699	8.4		97.1
# 8	# 8	0.093	2.362	34.6		88.0
#14	#16	0.046	1.168	102.6		64.5
#20	#20	0.0328	0.833	155.5		46.1
#28	#30	0.0232	0.589	207.1		28.3
#35	#40	0.0164	0.417	231.2		19.9
#48	#50	0.0116	0.295	274.6		4.9
#65	#70	0.0082	0.208	283.5		1.8
#100	#100	0.0058	0.147	287.0		.6
#150	#140	0.0041	0.104	287.6		.4
#200	#200	0.0029	0.074	287.9		.3
Pan				288.7		

Remarks: _____

LMK Form 129
JUL 62

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% FINES
○	0.0	0.0	99.4	0.6

	LL	PL	NWC	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				0.58	0.50	0.48	0.431	0.3815	0.3439	1.08	1.5

MATERIAL DESCRIPTION	USCS	Sam #	Depth
○ F-M SAND SP	SP	1	

Project: LAKE HARTWELL STUDY
○ Boring No.: BS-9B

Date: 09-22-99

Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT
CORPS OF ENGINEERS - VICKSBURG DISTRICT

Plate No. ____

SCREEN ANALYSIS

Soils Laboratory, U. S. Army Engineer District, Vicksburg

Date _____

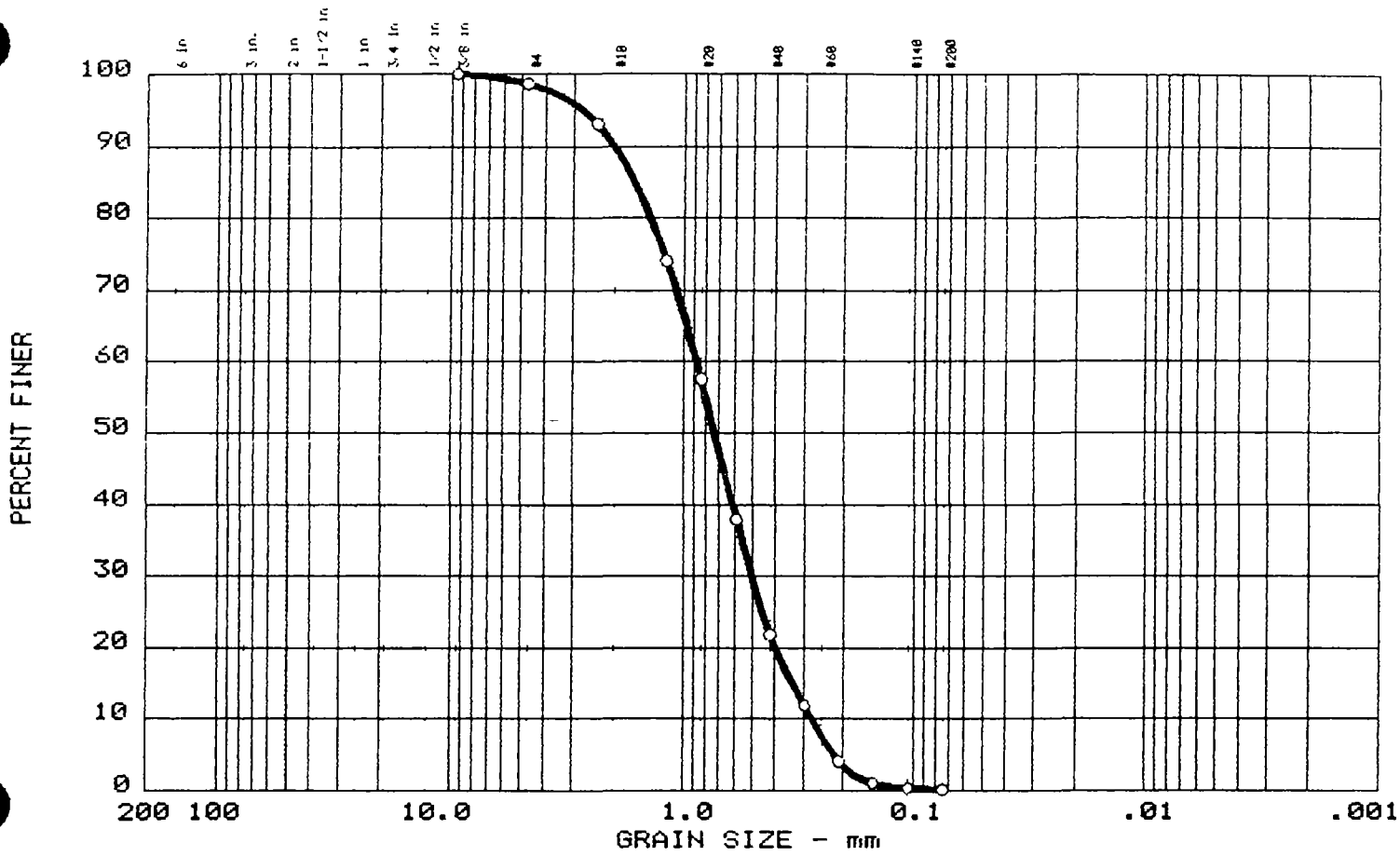
Damsite	L. Hartwell Sty.	Station	
Location	BS 9B	Depth	
Dish No.	U-45	Total Weight of Sample	Grams

Tyler Sieve No.	U.S. Std. Sieve No.	Opening in Inches	Opening in mm.	Weight Retained	Percent Retained	Percent Finer
1-1/2"		1.5	38.1			
3/4"		0.75	19.05			
3/8"		0.375	9.525			
# 4	# 4	0.185	4.699	0		100
# 8	# 8	0.093	2.362	.7		99.7
#14	#16	0.046	1.168	7.8		96.5
#20	#20	0.0328	0.833	16.1		92.8
#28	#30	0.0232	0.589	29.8		86.6
#35	#40	0.0164	0.417	165.6		25.7
#48	#50	0.0116	0.295	204.6		8.3
#65	#70	0.0082	0.208	215.2		3.5
#100	#100	0.0058	0.147	219.9		1.4
#150	#140	0.0041	0.104	220.9		.9
#200	#200	0.0029	0.074	221.6		.6
Pan				223.0		

Remarks: _____

LMK Form 129
JUL 62

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% FINES
○	0.0	1.4	98.4	0.2

	LL	PL	NWC	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				1.63	0.88	0.73	0.505	0.3365	0.2757	1.05	3.2

MATERIAL DESCRIPTION	USCS	Sam #	Depth
○ M-F SAND SP	SP	1	

Project: LAKE HARTWELL STUDY

○ Boring No.: BS-10

Date: 9-22-99

Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

CORPS OF ENGINEERS - VICKSBURG DISTRICT

Plate No. _____

SCREEN ANALYSIS

Soils Laboratory, U. S. Army Engineer District, Vicksburg

Date _____

Damsite L. Hartwell Sty. | Station At transect T15 - T15

Location BS-10 Center | Depth

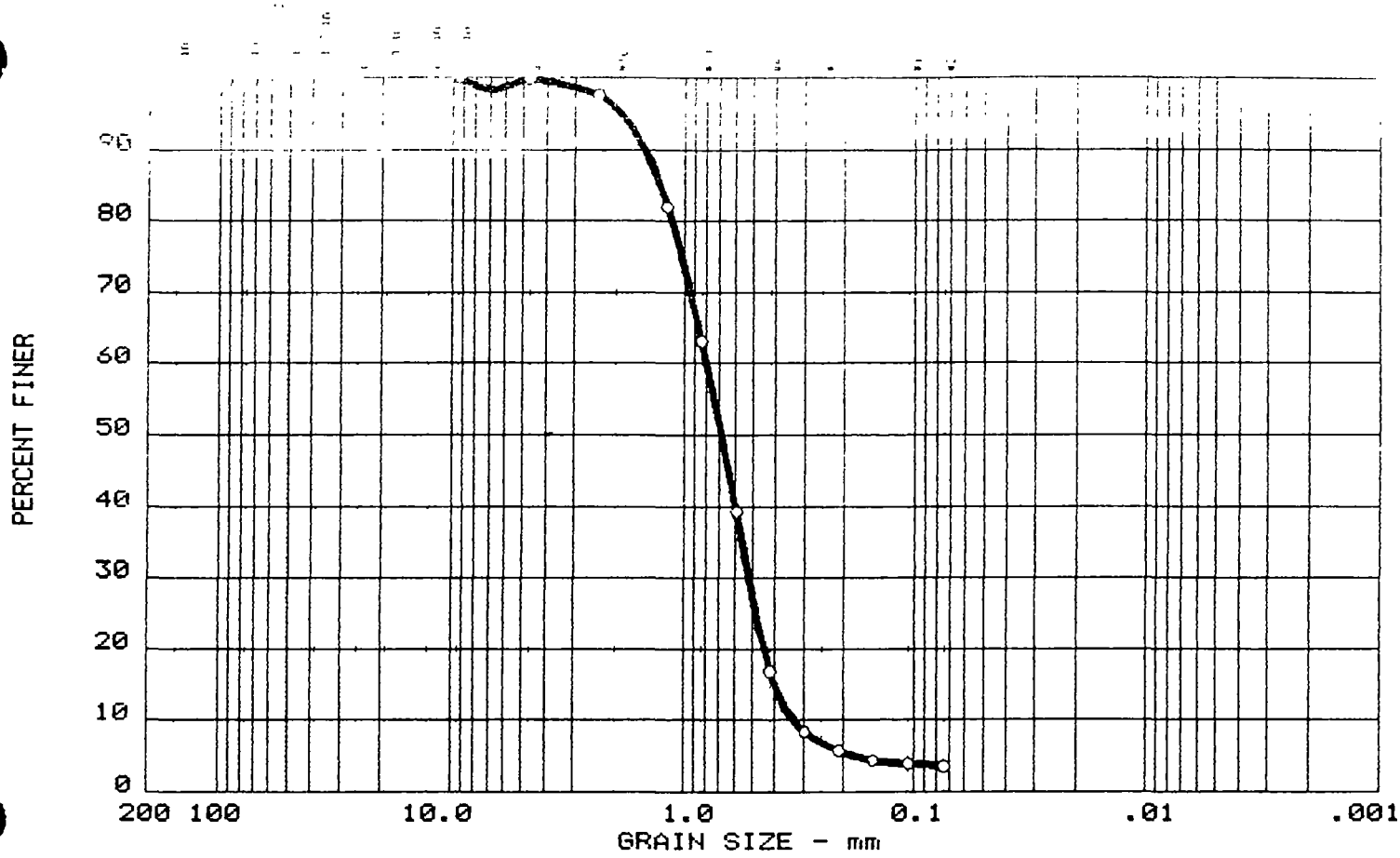
Dish No. V-17 | Total Weight of Sample Grams

Tyler Sieve No.	U.S. Std. Sieve No.	Opening in Inches	Opening in mm.	Weight Retained	Percent Retained	Percent Finer
1-1/2"		1.5	38.1			
3/4"		0.75	19.05			
3/8"		0.375	9.525	0		100
# 4	# 4	0.185	4.699	2.6		98.6
# 8	# 8	0.093	2.362	12.9		93.1
#14	#16	0.046	1.168	48.3		74.1
#20	#20	0.0328	0.833	79.1		57.6
#28	#30	0.0232	0.589	115.8		37.9
#35	#40	0.0164	0.417	145.9		21.8
#48	#50	0.0116	0.295	164.4		11.8
#65	#70	0.0082	0.208	178.9		4.1
#100	#100	0.0058	0.147	184.6		1.0
#150	#140	0.0041	0.104	185.9		.3
#200	#200	0.0029	0.074	186.2		.2
Pan				186.5		

Remarks: _____

LMK Form 129
JUL 62

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% FINES
○	0.0	0.2	96.2	3.6

	LL	PL	NWC	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				1.28	0.80	0.69	0.519	0.4023	0.3308	1.02	2.4

MATERIAL DESCRIPTION	USCS	Sam #	Depth
○ F-M SAND SP	SP	1	

Project: LAKE HARTWELL STUDY
○ Boring No.: BS-10A

Date: 09-21-99

Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT
CORPS OF ENGINEERS - VICKSBURG DISTRICT

Plate No. ____

SCREEN ANALYSIS

Soils Laboratory, U. S. Army Engineer District, Vicksburg

Date _____

Damsite L. Hartwell Sty. | Station

Location BS-10A Center | Depth

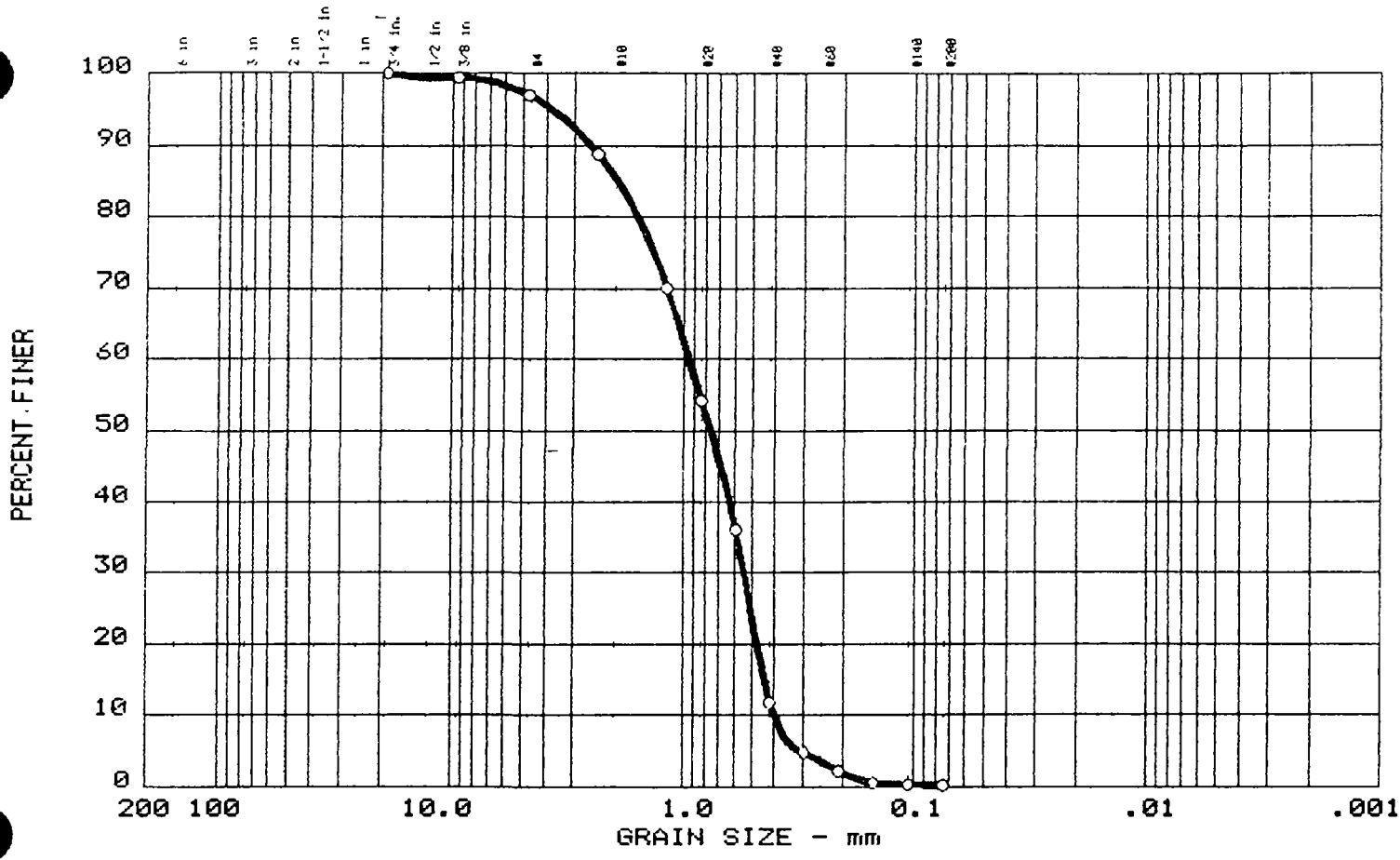
Dish No. V-18 | Total Weight of Sample Grams

Tyler Sieve No.	U.S. Std. Sieve No.	Opening in Inches	Opening in mm.	Weight Retained	Percent Retained	Percent Finer
1-1/2"		1.5	38.1			
3/4"		0.75	19.05			
3/8"		0.375	9.525	0		100
# 4	# 4	0.185	4.699	.4		99.8
# 8	# 8	0.093	2.362	5.2		97.6
#14	#16	0.046	1.168	39.5		82.0
#20	#20	0.0328	0.833	80.5		63.2
#28	#30	0.0232	0.589	133.0		39.2
#35	#40	0.0164	0.417	182.0		16.9
#48	#50	0.0116	0.295	200.5		8.4
#65	#70	0.0082	0.208	206.2		5.8
#100	#100	0.0058	0.147	209.2		4.4
#150	#140	0.0041	0.104	210.2		4.0
#200	#200	0.0029	0.074	211.0		3.6
Pan				218.9		

Remarks: _____

LMK Form 129
JUL 62

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% FINES
○	0.0	3.0	96.7	0.2

	LL	PL	NWC	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				1.95	0.95	0.76	0.543	0.4441	0.4032	0.77	2.4

MATERIAL DESCRIPTION	USCS	Sam #	Depth
○ F-M SAND SP W/TR-G	SP	1	

Project: LAKE HARTWELL STUDY
○ Boring No.: BS-10-B

Date: 09-22-99

Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT
CORPS OF ENGINEERS - VICKSBURG DISTRICT

Plate No. ____

SCREEN ANALYSIS

Soils Laboratory, U. S. Army Engineer District, Vicksburg

Date _____

Damsite Lake HARTWELL Sty | Station

Location BS-10-B | Depth

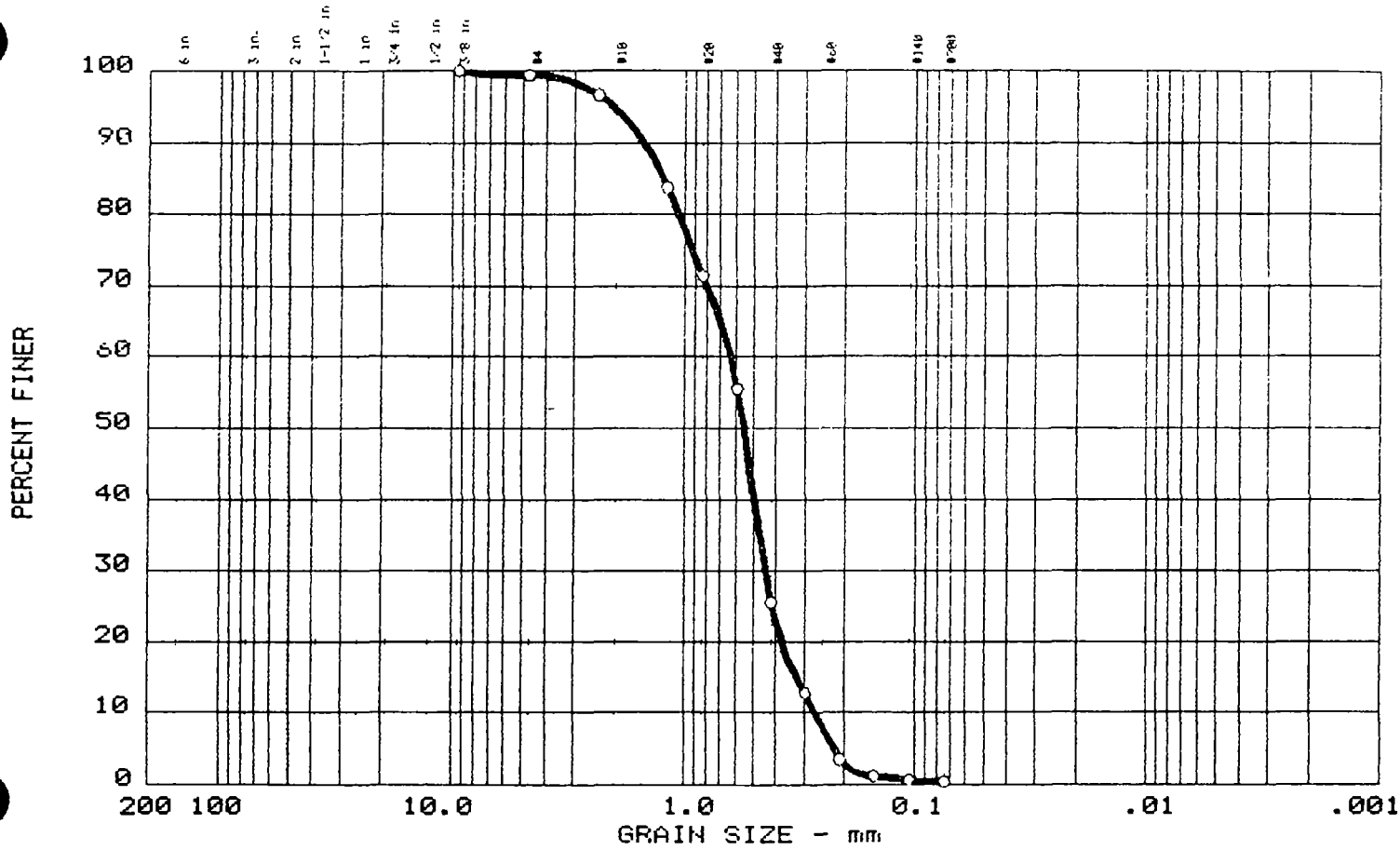
Dish No. V 39 | Total Weight of Sample 260.0 Grams

Tyler Sieve No.	U.S. Std. Sieve No.	Opening in Inches	Opening in mm.	Weight Retained	Percent Retained	Percent Finer
1-1/2"		1.5	38.1			
3/4"		0.75	19.05	0		100
3/8"		0.375	9.525	1.6		99.4
# 4	# 4	0.185	4.699	7.9		97.0
# 8	# 8	0.093	2.362	29.2		88.8
#14	#16	0.046	1.168	77.9		70.0
#20	#20	0.0328	0.833	118.7		54.3
#28	#30	0.0232	0.589	166.4		36.0
#35	#40	0.0164	0.417	229.3		11.8
#48	#50	0.0116	0.295	247.5		4.8
#65	#70	0.0082	0.208	254.2		2.2
#100	#100	0.0058	0.147	258.4		.6
#150	#140	0.0041	0.104	259.1		.3
#200	#200	0.0029	0.074	259.4		.2
Pan				260.0		

Remarks: _____

LMK Form 129
JUL 62

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% FINES
○	0.0	0.6	99.0	0.4

	LL	PL	NWC	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				1.24	0.63	0.55	0.445	0.3255	0.2676	1.17	2.4

MATERIAL DESCRIPTION	USCS	Sam #	Depth
○ F-M SAND SP	SP	1	

Project: LAKE HARTWELL STUDY
○ Boring No.: BS-10-A

Date: 09-22-99

Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT
CORPS OF ENGINEERS - VICKSBURG DISTRICT

Plate No. _____

SCREEN ANALYSIS

Soils Laboratory, U. S. Army Engineer District, Vicksburg

Date _____

Damsite L. HARTWELL STY | Station

Location BS-10-A | Depth

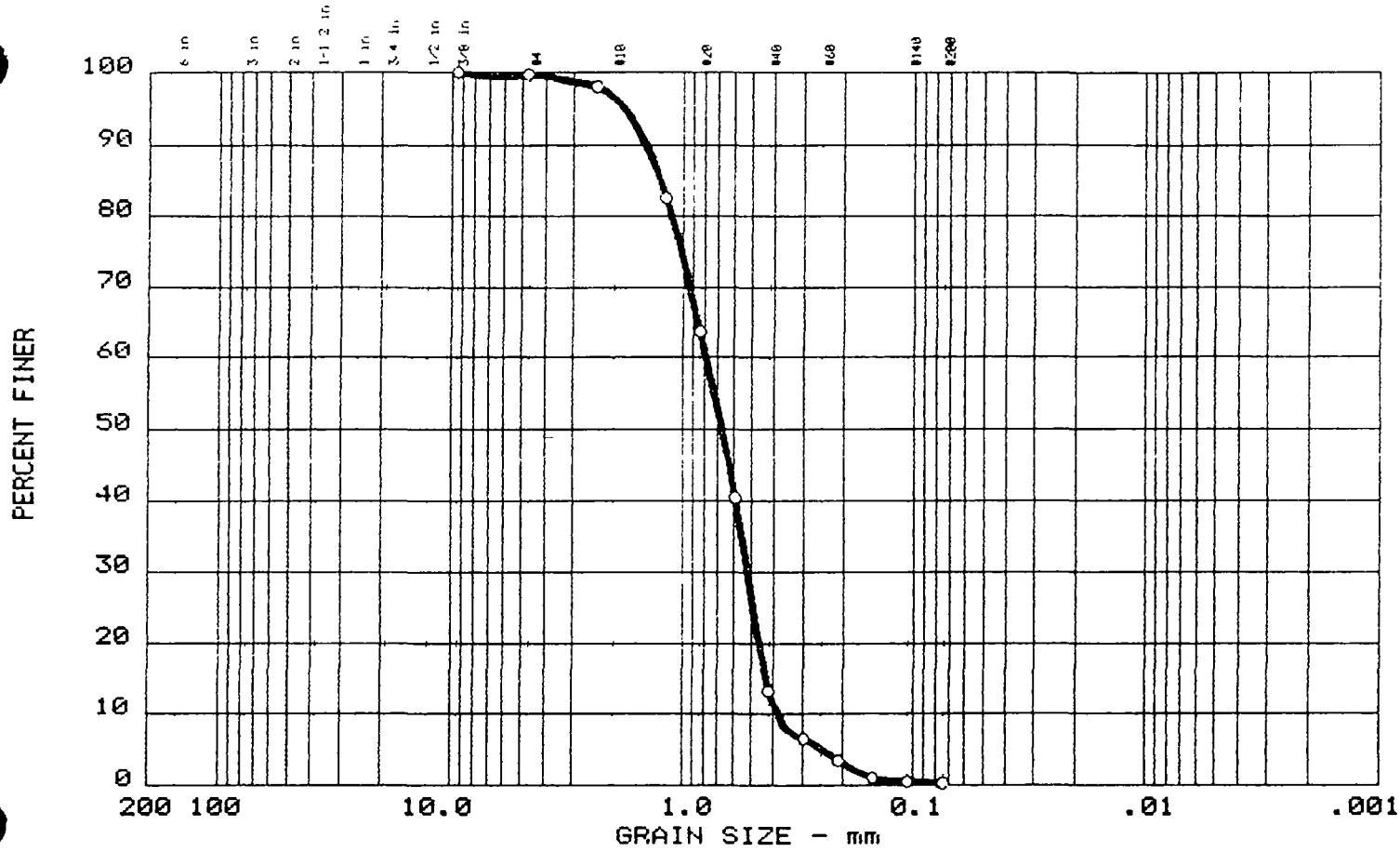
Dish No. V-35 | Total Weight of Sample 192.5 Grams

Tyler Sieve No.	U.S. Std. Sieve No.	Opening in Inches	Opening in mm.	Weight Retained	Percent Retained	Percent Finer
1-1/2"		1.5	38.1			
3/4"		0.75	19.05			
3/8"		0.375	9.525	0		100
# 4	# 4	0.185	4.699	1.1		99.4
# 8	# 8	0.093	2.362	6.4		96.7
#14	#16	0.046	1.168	31.3		83.7
#20	#20	0.0328	0.833	54.9		71.5
#28	#30	0.0232	0.589	85.4		55.6
#35	#40	0.0164	0.417	143.3		25.5
#48	#50	0.0116	0.295	167.9		12.7
#65	#70	0.0082	0.208	185.7		3.5
#100	#100	0.0058	0.147	190.0		1.2
#150	#140	0.0041	0.104	191.1		.7
#200	#200	0.0029	0.074	191.6		.4
Pan				192.4		

Remarks: _____

LMK Form 129
JUL 62

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% FINES
○	0.0	0.3	99.4	0.3

	LL	PL	NWC	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				1.26	0.79	0.67	0.523	0.4330	0.3886	0.90	2.0

MATERIAL DESCRIPTION	USCS	Sam #	Depth
○ F-M SAND SP	SP	1	

Project: LAKE HARTWELL STUDY
○ Boring No.: BS-10A-A

Date: 09-22-99

Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT
CORPS OF ENGINEERS - VICKSBURG DISTRICT

Plate No. ____

SCREEN ANALYSIS

Soils Laboratory, U. S. Army Engineer District, Vicksburg

Date _____

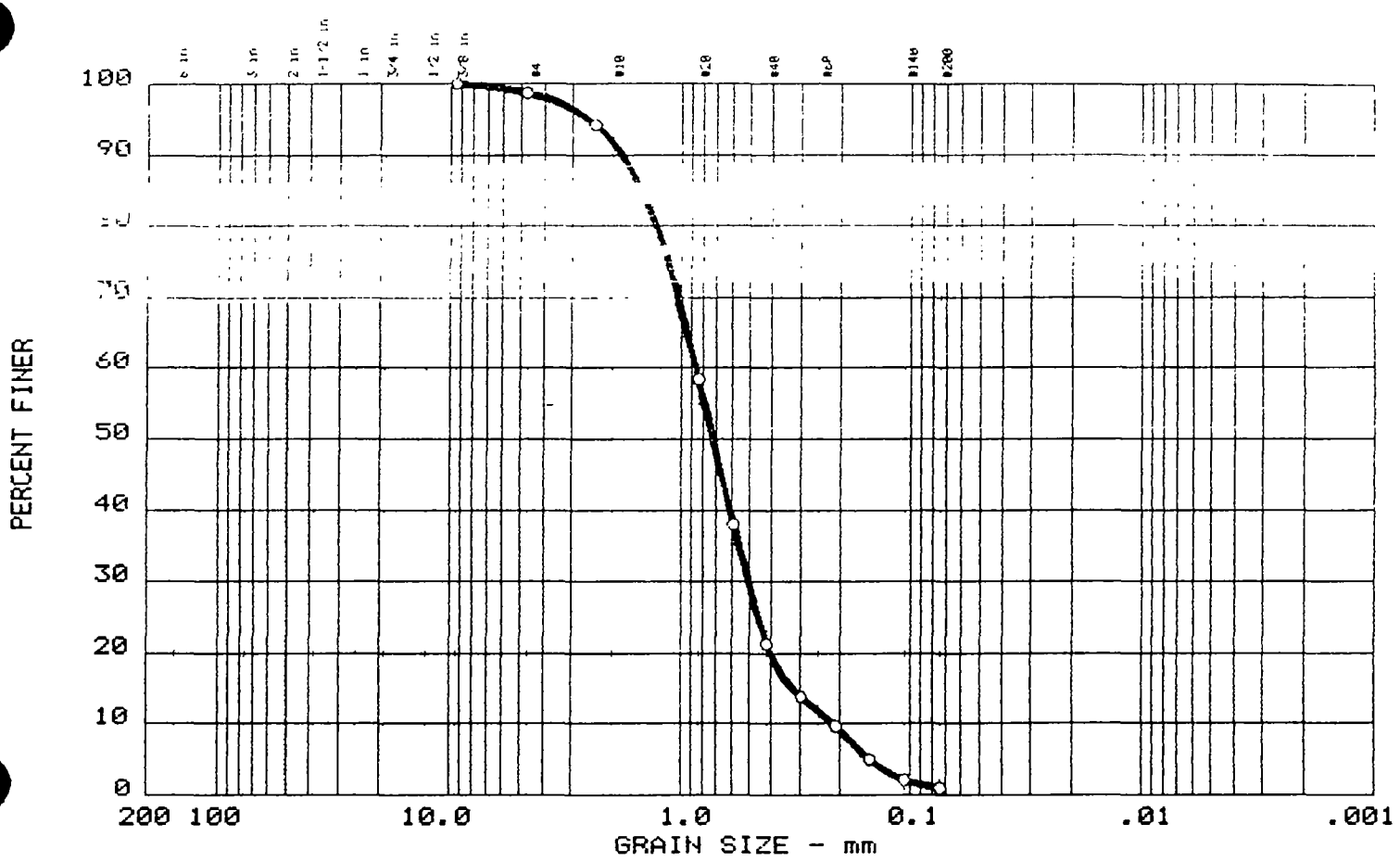
Damsite Cache Hopewell Sty.	Station
Location BS-10A-A	Depth
Dish No. V-37	Total Weight of Sample Grams

Tyler Sieve No.	U.S. Std. Sieve No.	Opening in Inches	Opening in mm.	Weight Retained	Percent Retained	Percent Finer
1-1/2"		1.5	38.1			
3/4"		0.75	19.05			
3/8"		0.375	9.525	0		100
# 4	# 4	0.185	4.699	.8		99.7
# 8	# 8	0.093	2.362	4.8		98.0
#14	#16	0.046	1.168	41.3		82.5
#20	#20	0.0328	0.833	85.6		63.8
#28	#30	0.0232	0.589	140.8		40.4
#35	#40	0.0164	0.417	205.0		13.2
#48	#50	0.0116	0.295	220.8		6.6
#65	#70	0.0082	0.208	228.0		3.5
#100	#100	0.0058	0.147	233.8		1.1
#150	#140	0.0041	0.104	235.0		.6
#200	#200	0.0029	0.074	235.6		.3
Pan				236.3		

Remarks: _____

LMK Form 129
JUL 62

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% FINES
○	0.0	1.3	97.7	1.0

	LL	PL	NWC	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				1.50	0.86	0.72	0.510	0.3217	0.2150	1.40	4.0

MATERIAL DESCRIPTION	USCS	Sam #	Depth
○ F-M SAND SP W/TR-G	SP	1	

Project: LAKE HARTWELL STUDY

○ Boring No.: BS-10-AB

Date: 09-22-99

Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

CORPS OF ENGINEERS - VICKSBURG DISTRICT

Plate No. ____

SCREEN ANALYSIS

Soils Laboratory, U. S. Army Engineer District, Vicksburg

Date _____

Damsite L. HARTWELL Sty | Station

Location BS-10-AB | Depth

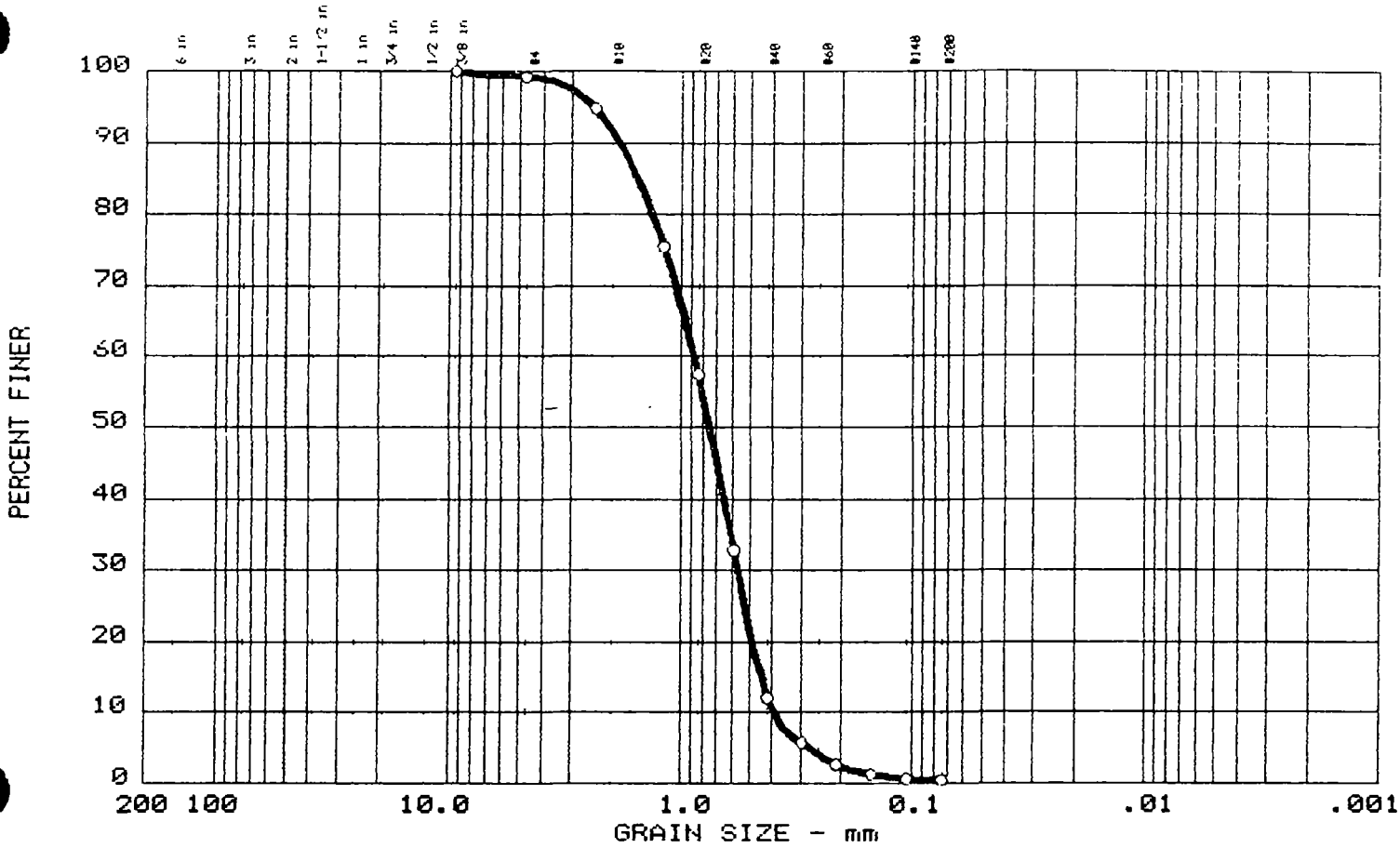
Dish No. V-32 | Total Weight of Sample 199.4 Grams

Tyler Sieve No.	U.S. Std. Sieve No.	Opening in Inches	Opening in mm.	Weight Retained	Percent Retained	Percent Finer
1-1/2"		1.5	38.1			
3/4"		0.75	19.05			
3/8"		0.375	9.525	0		100
# 4	# 4	0.185	4.699	2.6		98.7
# 8	# 8	0.093	2.362	11.4		94.3
#14	#16	0.046	1.168	46.8		76.5
#20	#20	0.0328	0.833	82.8		58.5
#28	#30	0.0232	0.589	123.6		38.0
#35	#40	0.0164	0.417	157.0		21.2
#48	#50	0.0116	0.295	171.8		13.8
#65	#70	0.0082	0.208	180.0		9.7
#100	#100	0.0058	0.147	189.5		4.9
#150	#140	0.0041	0.104	195.1		2.1
#200	#200	0.0029	0.074	197.3		1.0
Pan				199.3		

Remarks: _____

LMK Form 129
JUL 62

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% FINES
○	0.0	0.7	98.8	0.4

	LL	PL	NWC	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				1.55	0.87	0.75	0.568	0.4482	0.3949	0.93	2.2

MATERIAL DESCRIPTION	USCS	Sam #	Depth
○ F-M SAND SP	SP	1	

Project: LAKE HARTWELL STUDY
○ Boring No.: BS-11

Date: 09-22-99

Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT
CORPS OF ENGINEERS - VICKSBURG DISTRICT

Plate No. ____

SCREEN ANALYSIS

Soils Laboratory, U. S. Army Engineer District, Vicksburg

Date _____

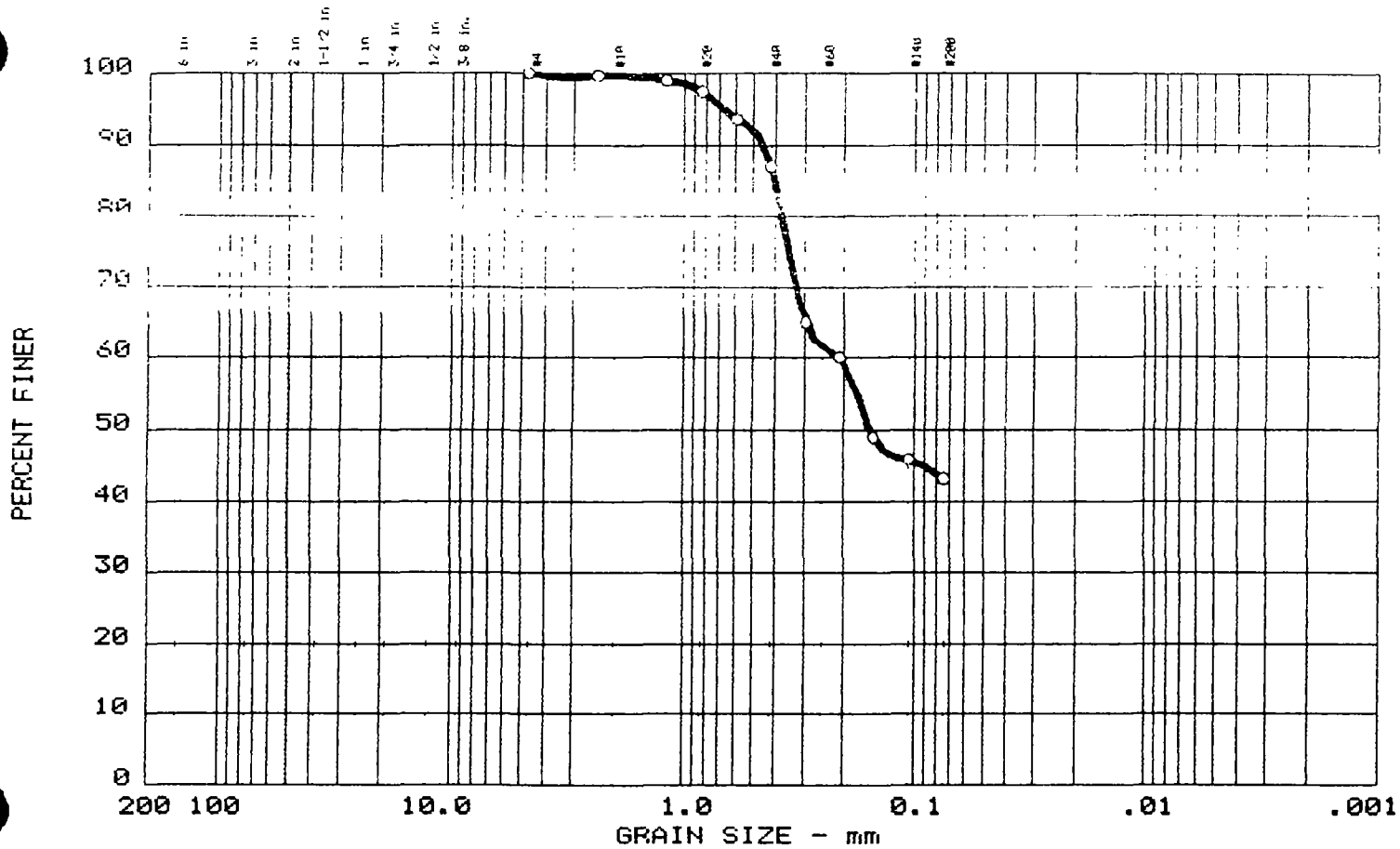
Damsite C. HARTWELL Stg	Station
Location BS-11 Center	Depth
Dish No. V 33	Total Weight of Sample Grams

Tyler Sieve No.	U.S. Std. Sieve No.	Opening in Inches	Opening in mm.	Weight Retained	Percent Retained	Percent Finer
1-1/2"		1.5	38.1			
3/4"		0.75	19.05			
3/8"		0.375	9.525	0		100
# 4	# 4	0.185	4.699	1.8		99.3
# 8	# 8	0.093	2.362	12.6		94.8
#14	#16	0.046	1.168	59.4		75.5
#20	#20	0.0328	0.833	102.8		57.5
#28	#30	0.0232	0.589	162.8		32.8
#35	#40	0.0164	0.417	212.9		12.1
#48	#50	0.0116	0.295	228.2		5.7
#65	#70	0.0082	0.208	235.7		2.6
#100	#100	0.0058	0.147	238.9		1.3
#150	#140	0.0041	0.104	240.5		.7
#200	#200	0.0029	0.074	241.1		.4
Pan				242.1		

Remarks: _____

LMK Form 129
JUL 62

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% FINES
○	0.0	0.0	56.8	43.2

	LL	PL	NWC	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				0.40	0.21	0.15					

MATERIAL DESCRIPTION	USCS	Sam #	Depth
○ SILT SAND SM	SM	1	

Project: LAKE HARTWELL STUDY
○ Boring No.: BS-11-A

Date: 09-22-99

Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT
CORPS OF ENGINEERS - VICKSBURG DISTRICT

Plate No. ____

SCREEN ANALYSIS

Soils Laboratory, U. S. Army Engineer District, Vicksburg

Date _____

Damsite L. HARTWELL Sty	Station
Location BS-11 A	Depth
Dish No. V-36	Total Weight of Sample 132.5 Grams

Tyler Sieve No.	U.S. Std. Sieve No.	Opening in Inches	Opening in mm.	Weight Retained	Percent Retained	Percent Finer
1-1/2"		1.5	38.1			
3/4"		0.75	19.05			
3/8"		0.375	9.525			
# 4	# 4	0.185	4.699	0		100
# 8	# 8	0.093	2.362	.4		99.7
#14	#16	0.046	1.168	1.3		99.0
#20	#20	0.0328	0.833	3.3		97.5
#28	#30	0.0232	0.589	8.4		93.7
#35	#40	0.0164	0.417	17.2		87.0
#48	#50	0.0116	0.295	46.3		65.4
#65	#70	0.0082	0.208	52.8		60.2
#100	#100	0.0058	0.147	67.6		49.0
#150	#140	0.0041	0.104	71.8		45.8
#200	#200	0.0029	0.074	75.3		43.2
Pan				76.5		

Remarks: SILT & SAND

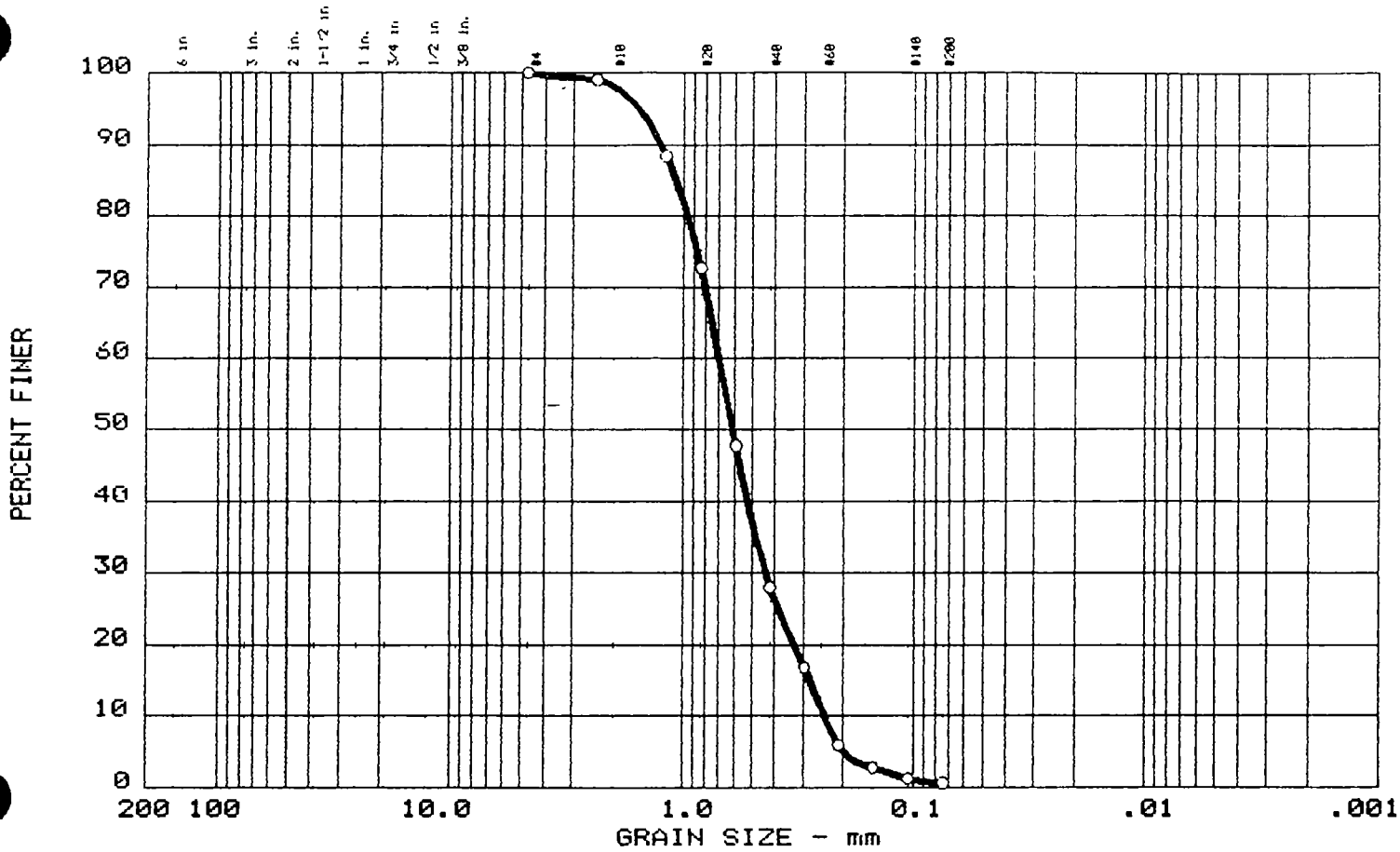
D/W - 132.5 (SM)

after wash - D/W = 76.5

IN OVEN!

LMK Form 129
JUL 62

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% FINES
○	0.0	0.0	99.4	0.6

	LL	PL	NWC	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				1.08	0.70	0.61	0.440	0.2805	0.2415	1.15	2.9

MATERIAL DESCRIPTION	USCS	Sam #	Depth
○ F-M SAND SP	SP	1	

Project: LAKE HARTWELL STUDY
○ Boring No.: BS-11B

Date: 09-22-99

Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT
CORPS OF ENGINEERS - VICKSBURG DISTRICT

Plate No. _____

SCREEN ANALYSIS

Soils Laboratory, U. S. Army Engineer District, Vicksburg

Date _____

Damsite L-Hartwell Sty. | Station

Location BS-11B | Depth

Dish No. V-44 | Total Weight of Sample Grams

Tyler Sieve No.	U.S. Std. Sieve No.	Opening in Inches	Opening in mm.	Weight Retained	Percent Retained	Percent Finer
1-1/2"		1.5	38.1			
3/4"		0.75	19.05			
3/8"		0.375	9.525			
# 4	# 4	0.185	4.699	0		100
# 8	# 8	0.093	2.362	2.3		99.0
#14	#16	0.046	1.168	26.8		88.4
#20	#20	0.0328	0.833	63.3		72.6
#28	#30	0.0232	0.589	120.8		47.8
#35	#40	0.0164	0.417	166.7		27.9
#48	#50	0.0116	0.295	192.5		16.8
#65	#70	0.0082	0.208	217.5		6.0
#100	#100	0.0058	0.147	224.8		2.8
#150	#140	0.0041	0.104	228.4		1.3
#200	#200	0.0029	0.074	229.8		.6
Pan				231.5		

Remarks: _____

LMK Form 129
JUL 62

SCREEN ANALYSIS

Soils Laboratory, U. S. Army Engineer District, Vicksburg

Date _____

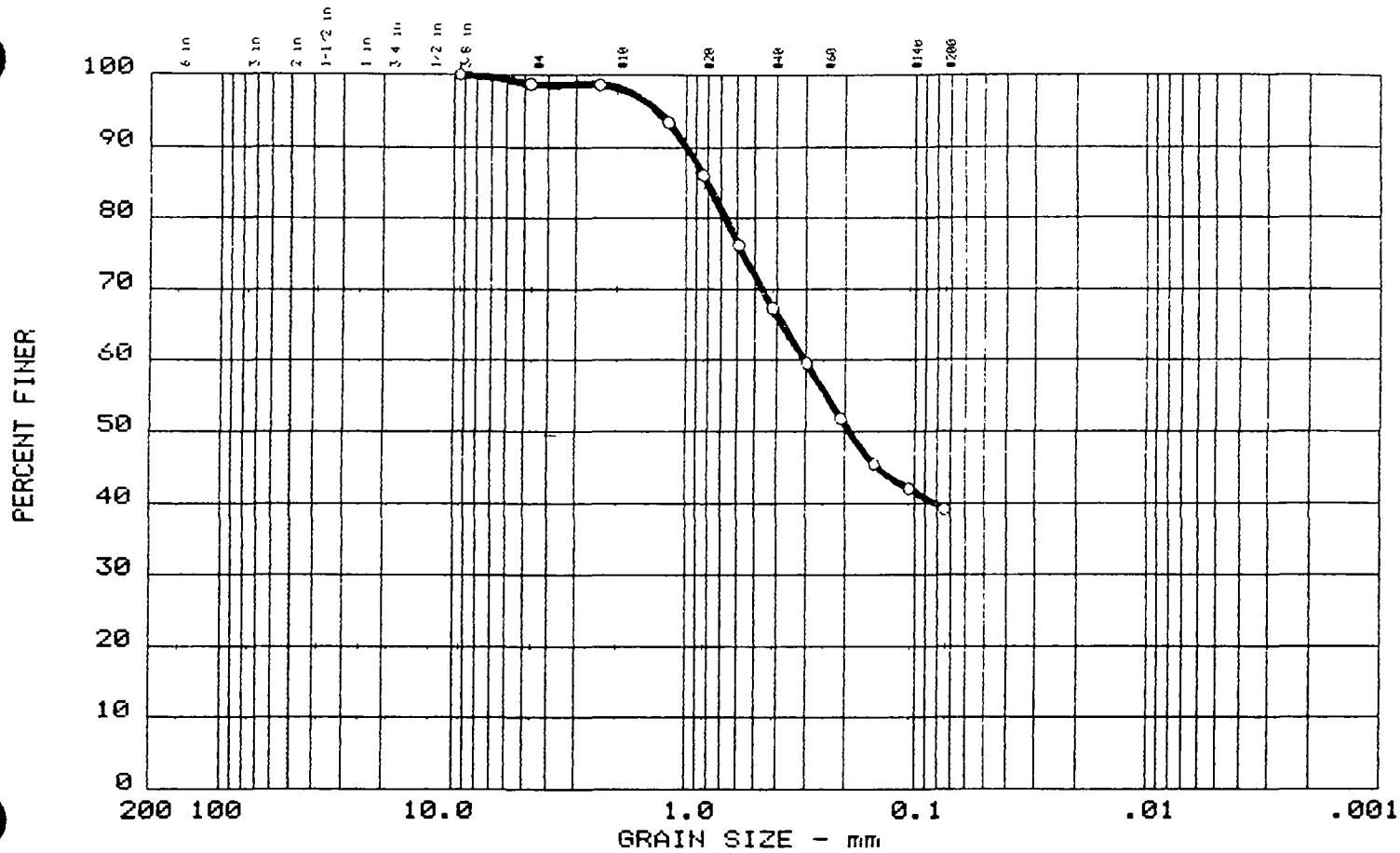
Damsite L. HARTWELL Sty. (Center)	Station
Location BS-12 -Middle	Depth
Dish No. V-22	Total Weight of Sample Grams

Tyler Sieve No.	U.S. Std. Sieve No.	Opening in Inches	Opening in mm.	Weight Retained	Percent Retained	Percent Finer
1-1/2"		1.5	38.1			
3/4"		0.75	19.05			
3/8"		0.375	9.525			
# 4	# 4	0.185	4.699			
# 8	# 8	0.093	2.362			
#14	#16	0.046	1.168		No	
#20	#20	0.0328	0.833		Test	
#28	#30	0.0232	0.589			
#35	#40	0.0164	0.417			
#48	#50	0.0116	0.295			
#65	#70	0.0082	0.208			
#100	#100	0.0058	0.147			
#150	#140	0.0041	0.104			
#200	#200	0.0029	0.074			
Pan						

Remarks: wood, leaves, vegatation, - no sign of sand -

LMK Form 129
JUL 62

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% FINES
○	0.0	1.2	59.6	39.2

	LL	PL	NWC	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				0.80	0.30	0.19					

MATERIAL DESCRIPTION	USCS	Sam #	Depth
○ SILTY SAND SM	SM	1	

Project: LAKE HARTWELL STUDY
○ Boring No.: BS-12-A

Date: 09-21-99

Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT
CORPS OF ENGINEERS - VICKSBURG DISTRICT

Plate No. _____

SCREEN ANALYSIS

Soils Laboratory, U. S. Army Engineer District, Vicksburg

Date _____

Damsite L. HARTWELL Sty	Station Rt. BK. - Between P + T 12
Location BS-12-A	Depth
Dish No. V-28	Total Weight of Sample 145.01 Grams

Tyler Sieve No.	U.S. Std. Sieve No.	Opening in Inches	Opening in mm.	Weight Retained	Percent Retained	Percent Finer
1-1/2"		1.5	38.1			
3/4"		0.75	19.05			
3/8"		0.375	9.525	0		100
# 4	# 4	0.185	4.699	1.8		98.8
# 8	# 8	0.093	2.362	2.0		98.6
#14	#16	0.046	1.168	9.5		93.4
#20	#20	0.0328	0.833	20.3		86.0
#28	#30	0.0232	0.589	34.5		76.2
#35	#40	0.0164	0.417	47.4		67.3
#48	#50	0.0116	0.295	58.6		59.6
#65	#70	0.0082	0.208	69.9		51.8
#100	#100	0.0058	0.147	79.2		45.4
#150	#140	0.0041	0.104	84.1		42.0
#200	#200	0.0029	0.074	88.2		39.2
Pan				88.8		

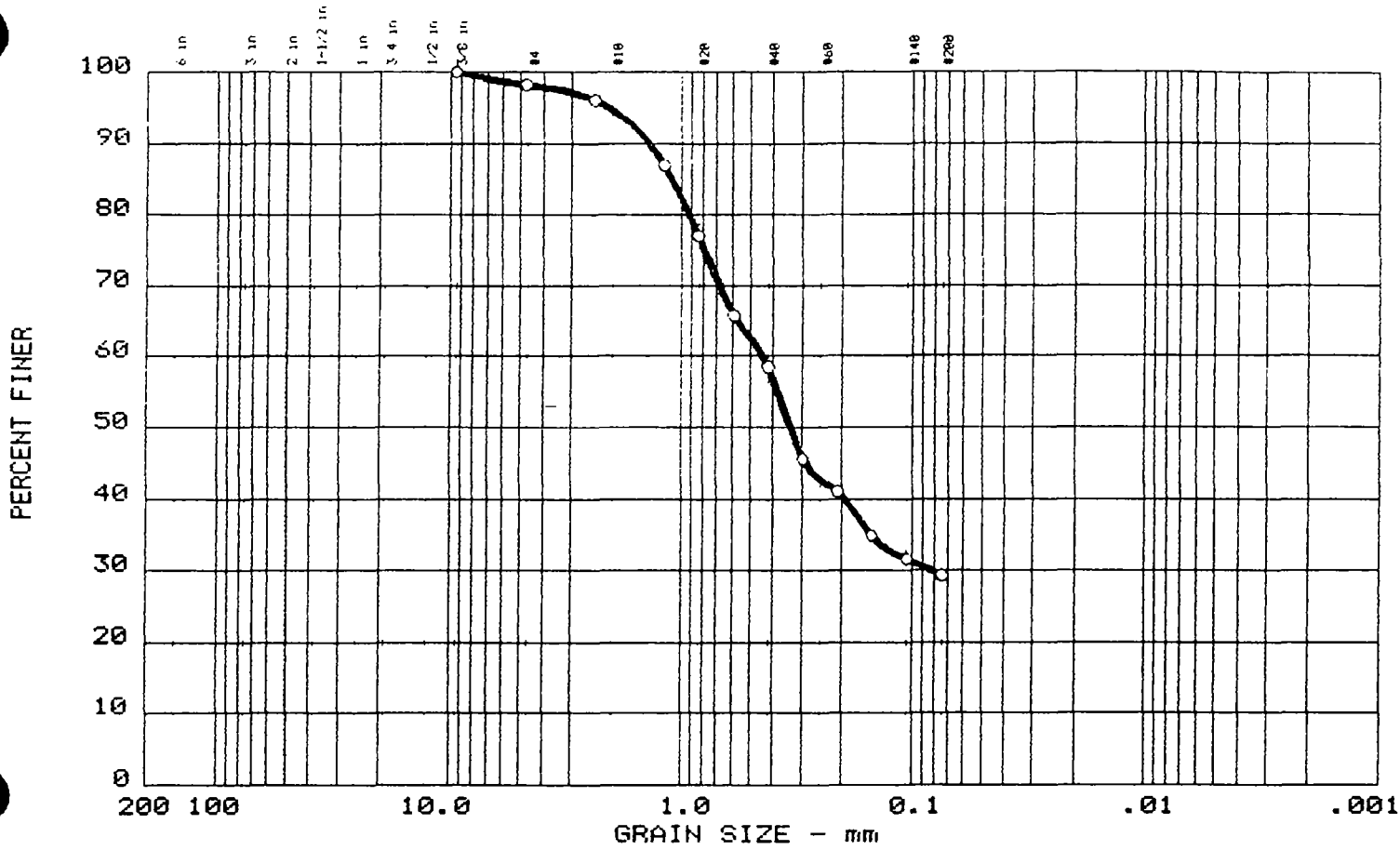
Remarks: silt / s

D/W = 145.01

washed weight: = 88.8

LMK Form 129
JUL 62

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% FINES
○	0.0	1.8	68.9	29.3

	LL	PL	NWC	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				1.10	0.44	0.34	0.082				

MATERIAL DESCRIPTION	USCS	Sam #	Depth
○ SILTY SAND SM	SM	1	

Project: LAKE HARTWELL STUDY
○ Boring No.: BS-12-B

Date: 09-21-99

Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT
CORPS OF ENGINEERS - VICKSBURG DISTRICT

Plate No. ____

SCREEN ANALYSIS

Soils Laboratory, U. S. Army Engineer District, Vicksburg

Date _____

Damsite	L. HARTWELL Stg.	Station	
Location	BS-12-B	Depth	
Dish No.	V-20	Total Weight of Sample	Grams

Tyler Sieve No.	U.S. Std. Sieve No.	Opening in Inches	Opening in mm.	Weight Retained	Percent Retained	Percent Finer
1-1/2"		1.5	38.1			
3/4"		0.75	19.05			
3/8"		0.375	9.525	0		100
# 4	# 4	0.185	4.699	3.0		98.2
# 8	# 8	0.093	2.362	6.5		96.1
#14	#16	0.046	1.168	21.7		86.9
#20	#20	0.0328	0.833	38.3		77.0
#28	#30	0.0232	0.589	56.8		65.8
#35	#40	0.0164	0.417	68.9		58.5
#48	#50	0.0116	0.295	90.3		45.7
#65	#70	0.0082	0.208	97.9		41.1
#100	#100	0.0058	0.147	108.2		34.9
#150	#140	0.0041	0.104	113.7		31.6
#200	#200	0.0029	0.074	117.5		29.3
Pan				118.4		

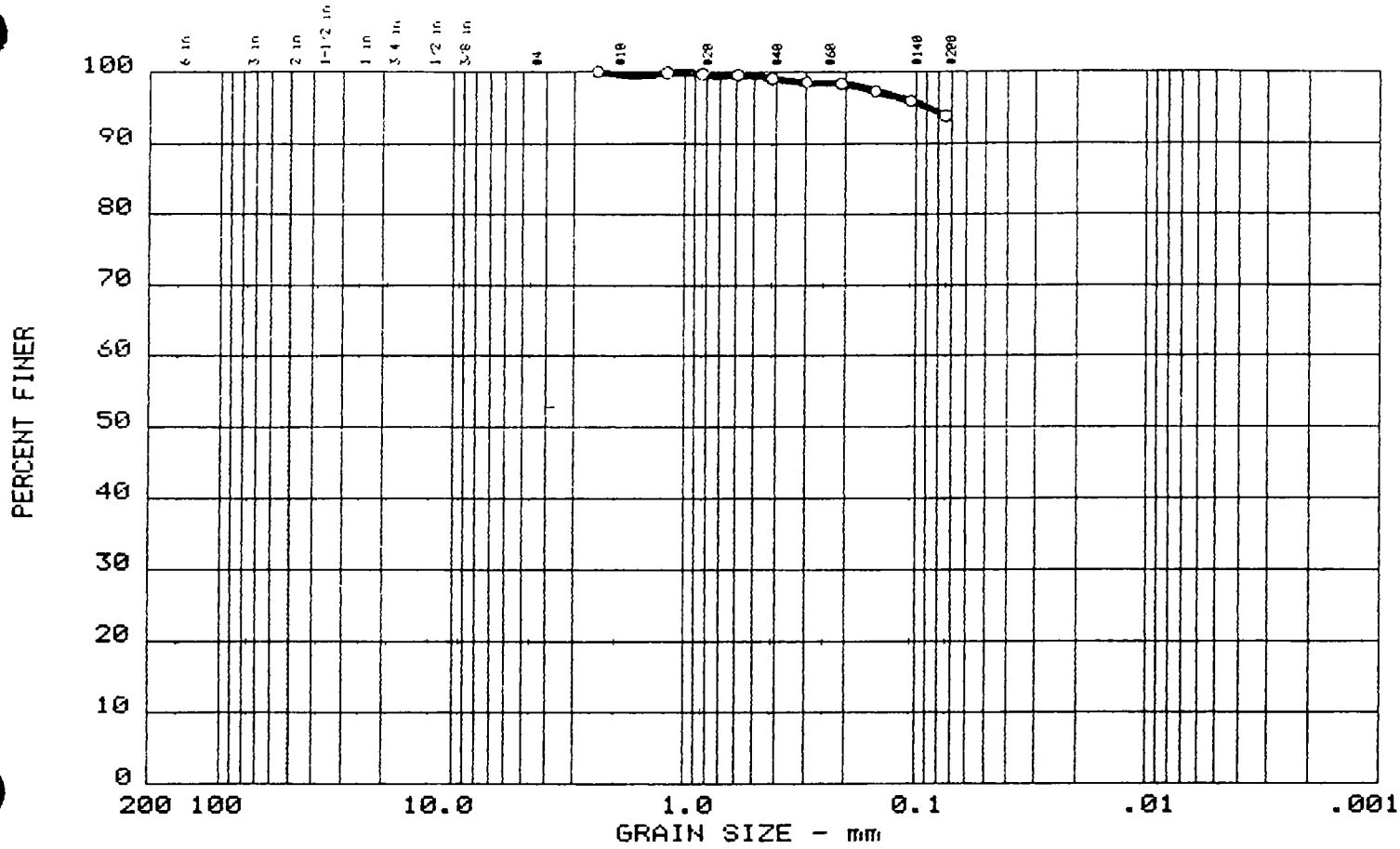
Remarks:

DW = 166.2 SM

after washing DW - 118.4

LMK Form 129
JUL 62

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% FINES
○	0.0	0.0	6.2	93.8

	LL	PL	NWC	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○											

MATERIAL DESCRIPTION	USCS	Sam #	Depth
○ SILT ML	ML	1	

Project: LAKE HARTWELL STUDY

○ Boring No.: BS-13

Date: 9-22-99

Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

CORPS OF ENGINEERS - VICKSBURG DISTRICT

Plate No. ____

SCREEN ANALYSIS

Soils Laboratory, U. S. Army Engineer District, Vicksburg

Date _____

Damsite L. HARTWELL Sty.	Station
Location BS-13 Center	Depth
Dish No. V-23	Total Weight of Sample 66.46 Grams

Tyler Sieve No.	U.S. Std. Sieve No.	Opening in Inches	Opening in mm.	Weight Retained	Percent Retained	Percent Finer
1-1/2"		1.5	38.1			
3/4"		0.75	19.05			
3/8"		0.375	9.525			
# 4	# 4	0.185	4.699			
# 8	# 8	0.093	2.362	0		100
#14	#16	0.046	1.168	.1		99.8
#20	#20	0.0328	0.833	.2		99.7
#28	#30	0.0232	0.589	.3		99.5
#35	#40	0.0164	0.417	.6		99.1
#48	#50	0.0116	0.295	1.0		98.5
#65	#70	0.0082	0.208	1.1		98.3
#100	#100	0.0058	0.147	1.8		97.3
#150	#140	0.0041	0.104	2.7		95.9
#200	#200	0.0029	0.074	4.1		93.8
Pan				4.4		

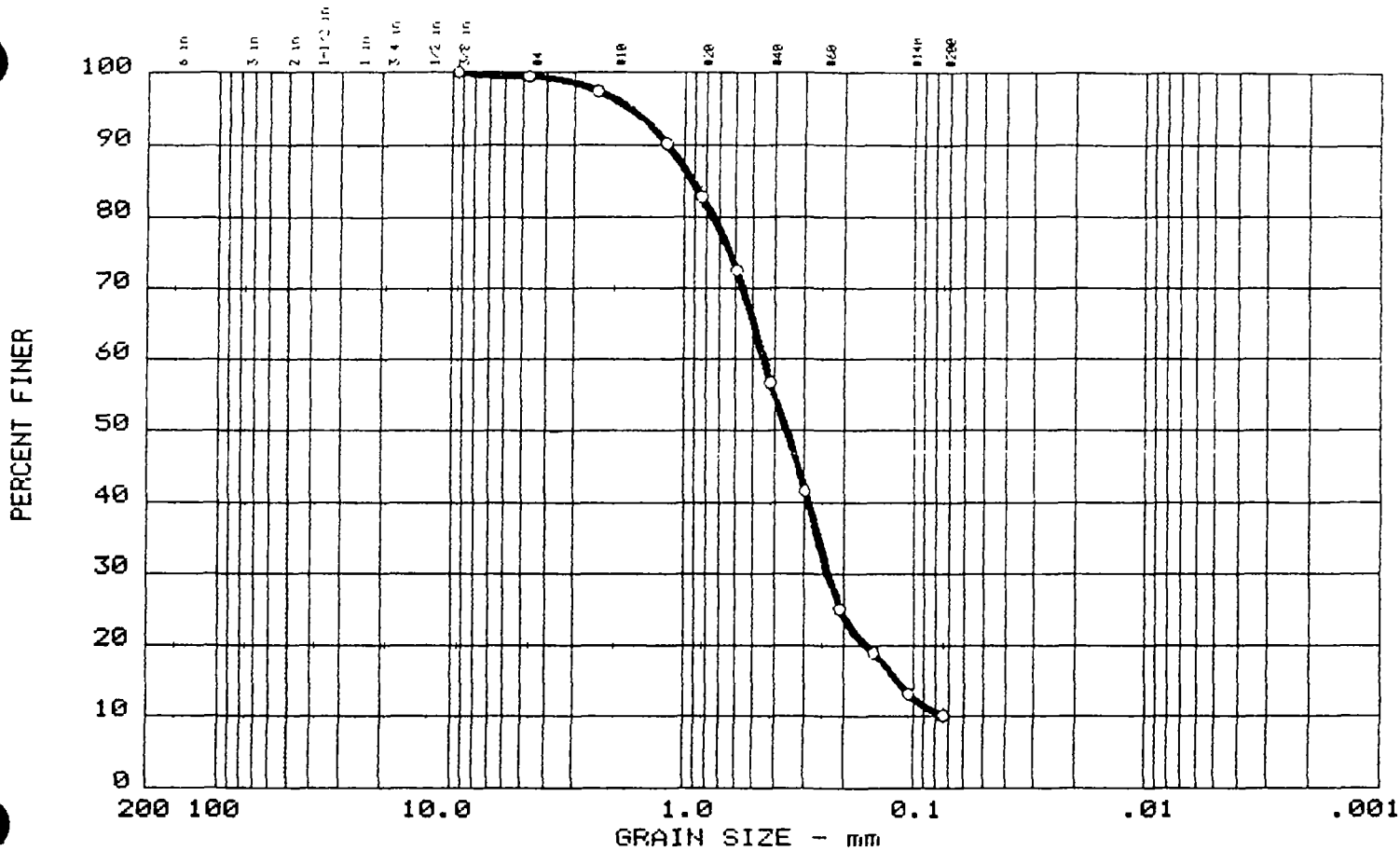
Remarks: Mud + Lint -

D/W - 66.46

D/W After WASH - 41.0

LMK Form 129
JUL 62

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% FINES
○	0.0	0.6	89.2	10.2

	LL	PL	NWC	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				0.92	0.45	0.36	0.236	0.1171			

MATERIAL DESCRIPTION	USCS	Sam #	Depth
○ SP-SM	SP-SM	1	

Project: LAKE HARTWELL STUDY
○ Boring No.: BS-13-A

Date: 9-22-99

Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT
CORPS OF ENGINEERS - VICKSBURG DISTRICT

Plate No. ____

SCREEN ANALYSIS

Soils Laboratory, U. S. Army Engineer District, Vicksburg

Date _____

Damsite G. HARTWELL Sty.	Station Rt. BK @ N (TARGET)
Location BS-13-A	Depth
Dish No. V-25	Total Weight of Sample Grams

Tyler Sieve No.	U.S. Std. Sieve No.	Opening in Inches	Opening in mm.	Weight Retained	Percent Retained	Percent Finer
1-1/2"		1.5	38.1			
3/4"		0.75	19.05			
3/8"		0.375	9.525	0		100
# 4	# 4	0.185	4.699	.6		99.4
# 8	# 8	0.093	2.362	2.5		97.4
#14	#16	0.046	1.168	9.4		90.2
#20	#20	0.0328	0.833	16.5		82.8
#28	#30	0.0232	0.589	26.4		72.5
#35	#40	0.0164	0.417	41.5		56.8
#48	#50	0.0116	0.295	56.1		41.6
#65	#70	0.0082	0.208	71.9		25.1
#100	#100	0.0058	0.147	77.8		19.0
#150	#140	0.0041	0.104	83.3		13.2
#200	#200	0.0029	0.074	86.2		10.2
Pan				87.2		

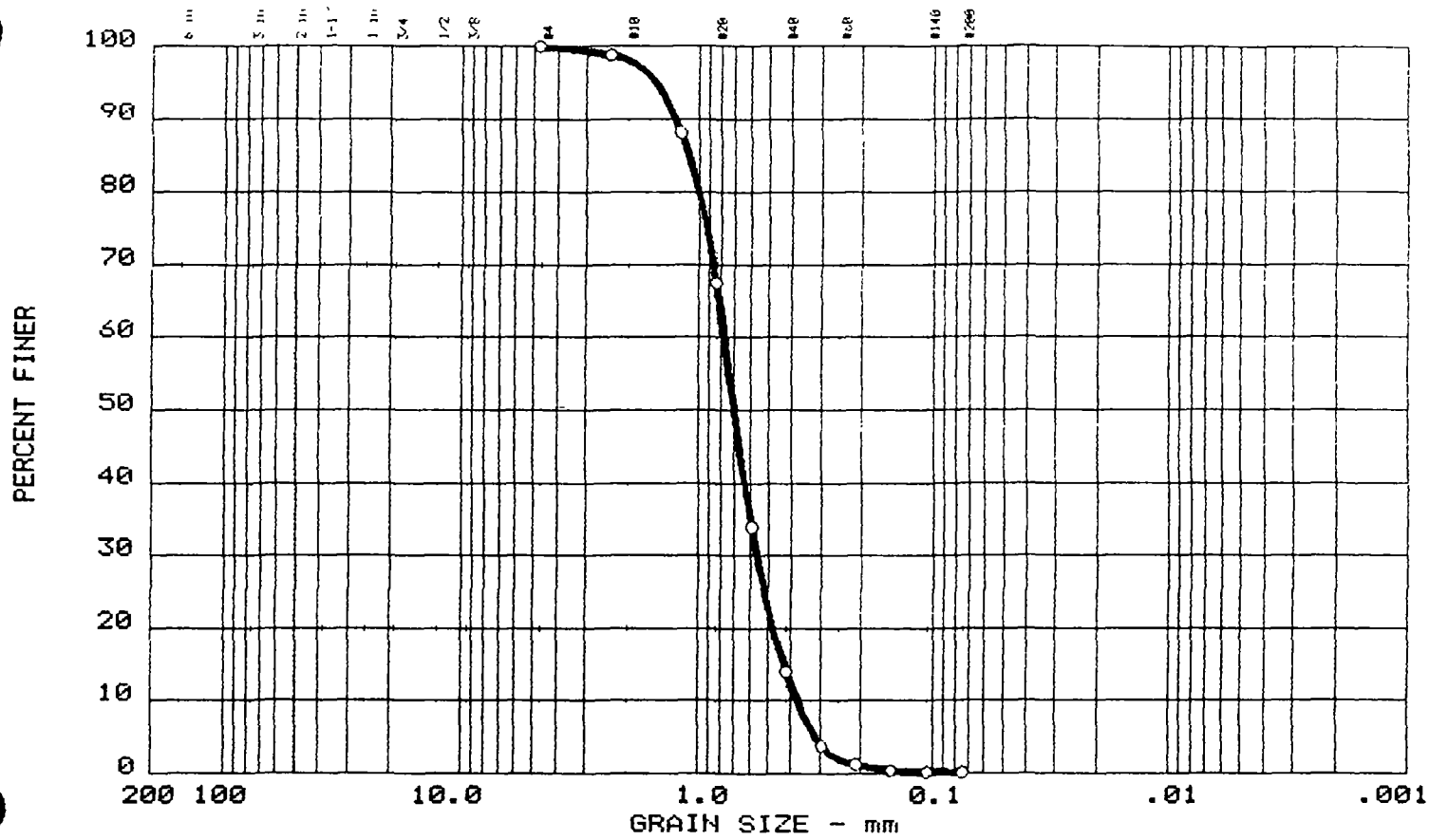
Remarks: Silt

D/W = 96.0

Wash wt = 86.5

LMK Form 129
JUL 62

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% FINES
○	0.0	0.0	99.8	0.2

	LL	PL	NWC	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				1.10	0.77	0.70	0.562	0.4295	0.3771	1.08	2.1

MATERIAL DESCRIPTION	USCS	Sam #	Depth
○ M-F SAND SP	SP	1	

Project: LAKE HARTWELL STUDY
○ Boring No.: BS-13-B

Date: 9-22-99

Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT
CORPS OF ENGINEERS - VICKSBURG DISTRICT

Plate No. ____

SCREEN ANALYSIS

Soils Laboratory, U. S. Army Engineer District, Vicksburg

Date _____

Damsite L. Hartwell Sty.	Station Lf. BK. At Transect N
Location B5-13-B	Depth
Dish No. ~~[illegible]~~ V-13	Total Weight of Sample 199.5 Grams

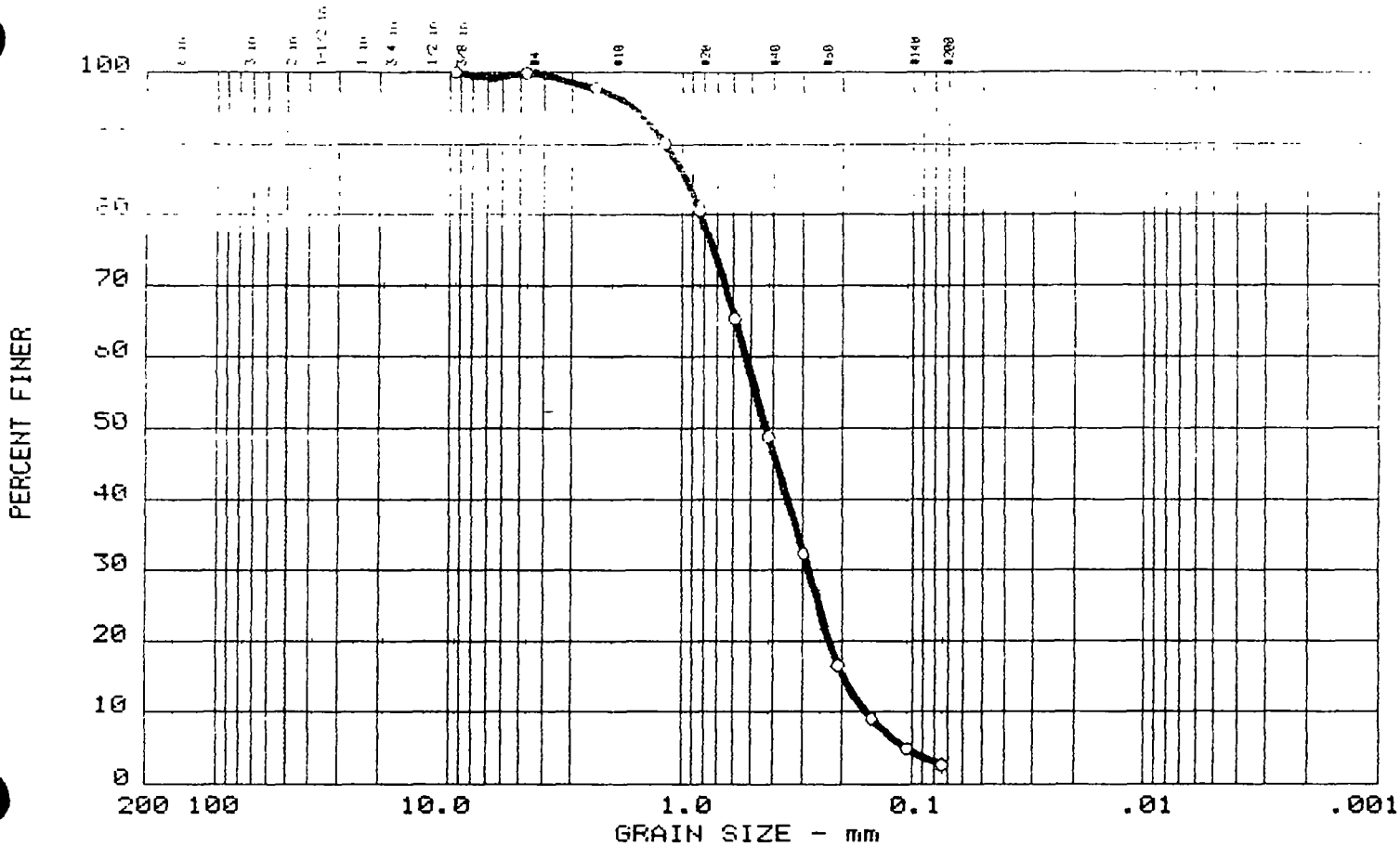
Tyler Sieve No.	U.S. Std. Sieve No.	Opening in Inches	Opening in mm.	Weight Retained	Percent Retained	Percent Finer
1-1/2"		1.5	38.1			
3/4"		0.75	19.05			
3/8"		0.375	9.525			
# 4	# 4	0.185	4.699	0		100
# 8	# 8	0.093	2.362	2.4		98.8
#14	#16	0.046	1.168	23.6		88.2
#20	#20	0.0328	0.833	64.7		67.5
#28	#30	0.0232	0.589	131.8		33.9
#35	#40	0.0164	0.417	171.3		14.0
#48	#50	0.0116	0.295	191.8		3.8
#65	#70	0.0082	0.208	196.8		1.3
#100	#100	0.0058	0.147	198.4		.5
#150	#140	0.0041	0.104	198.8		.3
#200	#200	0.0029	0.074	199.0		.2
Pan				199.3		

Remarks:

M-F-SP

LMK Form 129
JUL 62

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% FINES
○	0.0	0.1	97.2	2.7

	LL	PL	NWC	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				0.96	0.53	0.43	0.283	0.2000	0.1570	0.97	3.4

MATERIAL DESCRIPTION	USCS	Sam #	Depth
○ F-M SAND SP	SP	1	

Project: LAKE HARTWELL STUDY
○ Boring No.: BS-14-A

Date: 9-22-99

GRAIN SIZE DISTRIBUTION TEST REPORT
CORPS OF ENGINEERS - VICKSBURG DISTRICT

Remarks:

Plate No. ____

SCREEN ANALYSIS

Soils Laboratory, U. S. Army Engineer District, Vicksburg

Date _____

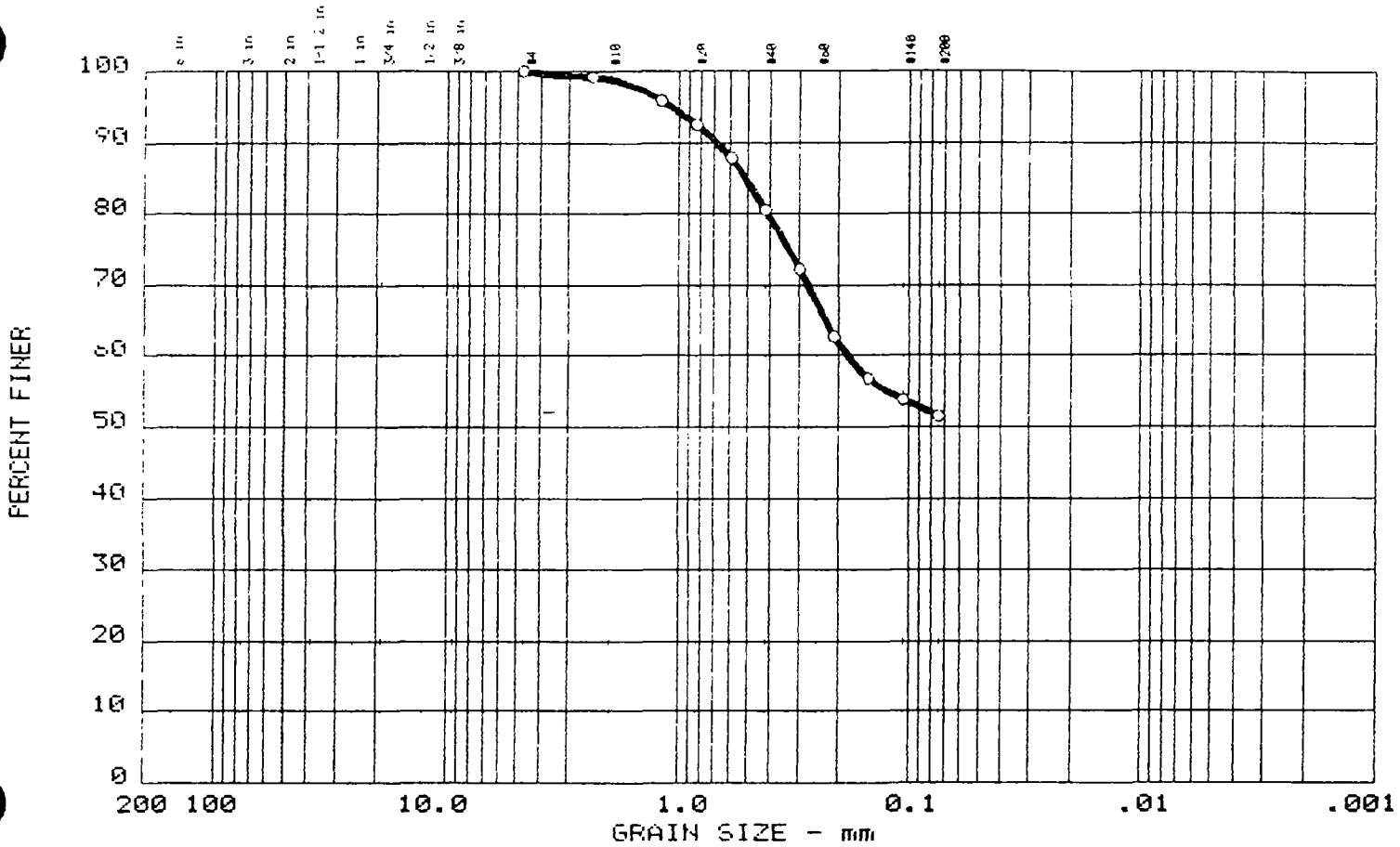
Damsite	L. HARTWELL Sty.	Station	
Location	BS-14-A	Depth	
Dish No.	V-21	Total Weight of Sample	Grams

Tyler Sieve No.	U.S. Std. Sieve No.	Opening in Inches	Opening in mm.	Weight Retained	Percent Retained	Percent Finer
1-1/2"		1.5	38.1			
3/4"		0.75	19.05			
3/8"		0.375	9.525	0		100
# 4	# 4	0.185	4.699	.1		99.9
# 8	# 8	0.093	2.362	3.5		97.8
#14	#16	0.046	1.168	16.0		90.1
#20	#20	0.0328	0.833	31.6		80.5
#28	#30	0.0232	0.589	56.3		65.3
#35	#40	0.0164	0.417	83.1		48.8
#48	#50	0.0116	0.295	109.9		32.3
#65	#70	0.0082	0.208	135.5		16.6
#100	#100	0.0058	0.147	147.7		9.1
#150	#140	0.0041	0.104	154.4		4.9
#200	#200	0.0029	0.074	158.0		2.7
Pan				162.4		

Remarks: _____

LMK Form 129
JUL 62

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% FINES
○	0.0	0.0	48.4	51.6

	LL	PL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				0.51	0.18						

MATERIAL DESCRIPTION	USCS	Sam #	Depth
○ SILT ML	ML	1	

Project: LAKE HARTWELL STUDY
○ Boring No.: BS-14-B

Date: 9-22-99

Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT
CORPS OF ENGINEERS - VICKSBURG DISTRICT

Plate No. _____

SCREEN ANALYSIS

Soils Laboratory, U. S. Army Engineer District, Vicksburg

Date _____

Damsite L. Hartwell Sty. | Station Lf. BK @ Transect M

Location BS-14-B | Depth

Dish No. V-24 | Total Weight of Sample Gram

Tyler Sieve No.	U.S. Std. Sieve No.	Opening in Inches	Opening in mm.	Weight Retained	Percent Retained	Percent Finer
1-1/2"		1.5	38.1			
3/4"		0.75	19.05			
3/8"		0.375	9.525			
# 4	# 4	0.185	4.699	0		100
# 8	# 8	0.093	2.362	1.1		99.2
#14	#16	0.046	1.168	5.7		96.0
#20	#20	0.0328	0.833	10.6		92.5
#28	#30	0.0232	0.589	17.2		87.8
#35	#40	0.0164	0.417	27.5		80.6
#48	#50	0.0116	0.295	39.4		72.1
#65	#70	0.0082	0.208	52.7		62.7
#100	#100	0.0058	0.147	61.6		56.9
#150	#140	0.0041	0.104	65.2		53.9
#200	#200	0.0029	0.074	68.5		51.6
Pan				69.3		

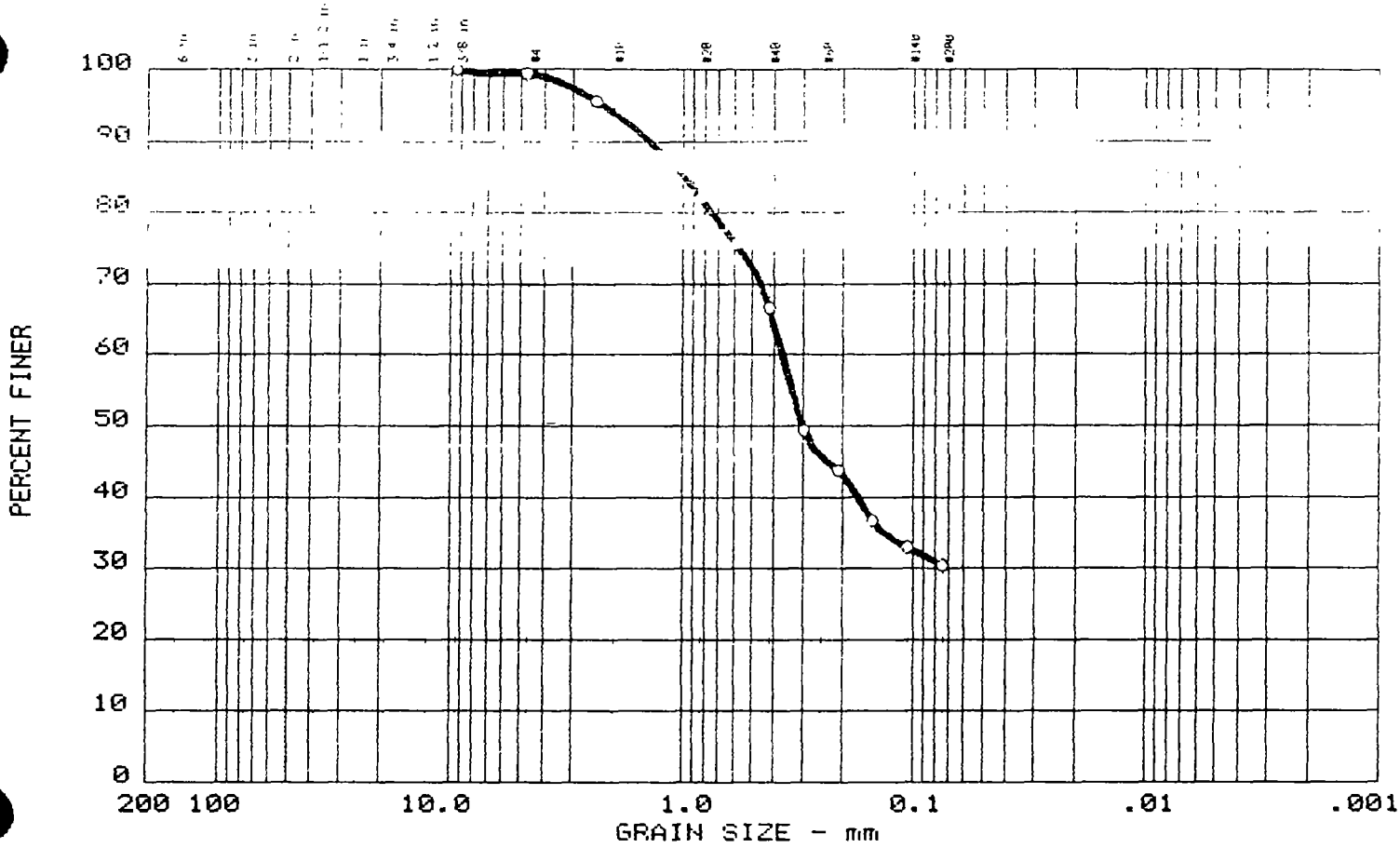
Remarks: (Silt)

D/W = 141.4

D/W after wash = 69.3

LMK Form 129
JUL 62

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% FINES
○	0.0	0.7	68.9	30.4

	LL	PL	NWC	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				0.99	0.37	0.30					

MATERIAL DESCRIPTION	USCS	Sam #	Depth
○ SILTY SAND SM	SM	1	

Project: LAKE HARTWELL STUDY
○ Boring No.: BS-14

Date: 09-21-99

Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT
CORPS OF ENGINEERS - VICKSBURG DISTRICT

Plate No. ___

SCREEN ANALYSIS

Soils Laboratory, U. S. Army Engineer District, Vicksburg

Date _____

Damsite L. Hartwell Sty.	Station
Location BS-14 (-middle)	Depth
Dish No. V-27	Total Weight of Sample Grams

Tyler Sieve No.	U.S. Std. Sieve No.	Opening in Inches	Opening in mm.	Weight Retained	Percent Retained	Percent Finer
1-1/2"		1.5	38.1			
3/4"		0.75	19.05			
3/8"		0.375	9.525	0		100
# 4	# 4	0.185	4.699	.9		99.3
# 8	# 8	0.093	2.362	6.0		95.5
#14	#16	0.046	1.168	16.4		87.8
#20	#20	0.0328	0.833	24.2		82.0
#28	#30	0.0232	0.589	33.0		75.5
#35	#40	0.0164	0.417	44.9		66.7
#48	#50	0.0116	0.295	68.3		49.3
#65	#70	0.0082	0.208	75.7		43.8
#100	#100	0.0058	0.147	85.4		36.6
#150	#140	0.0041	0.104	90.4		32.9
#200	#200	0.0029	0.074	93.8		30.4
Pan				96.1		

Remarks:

D/W = 134.8

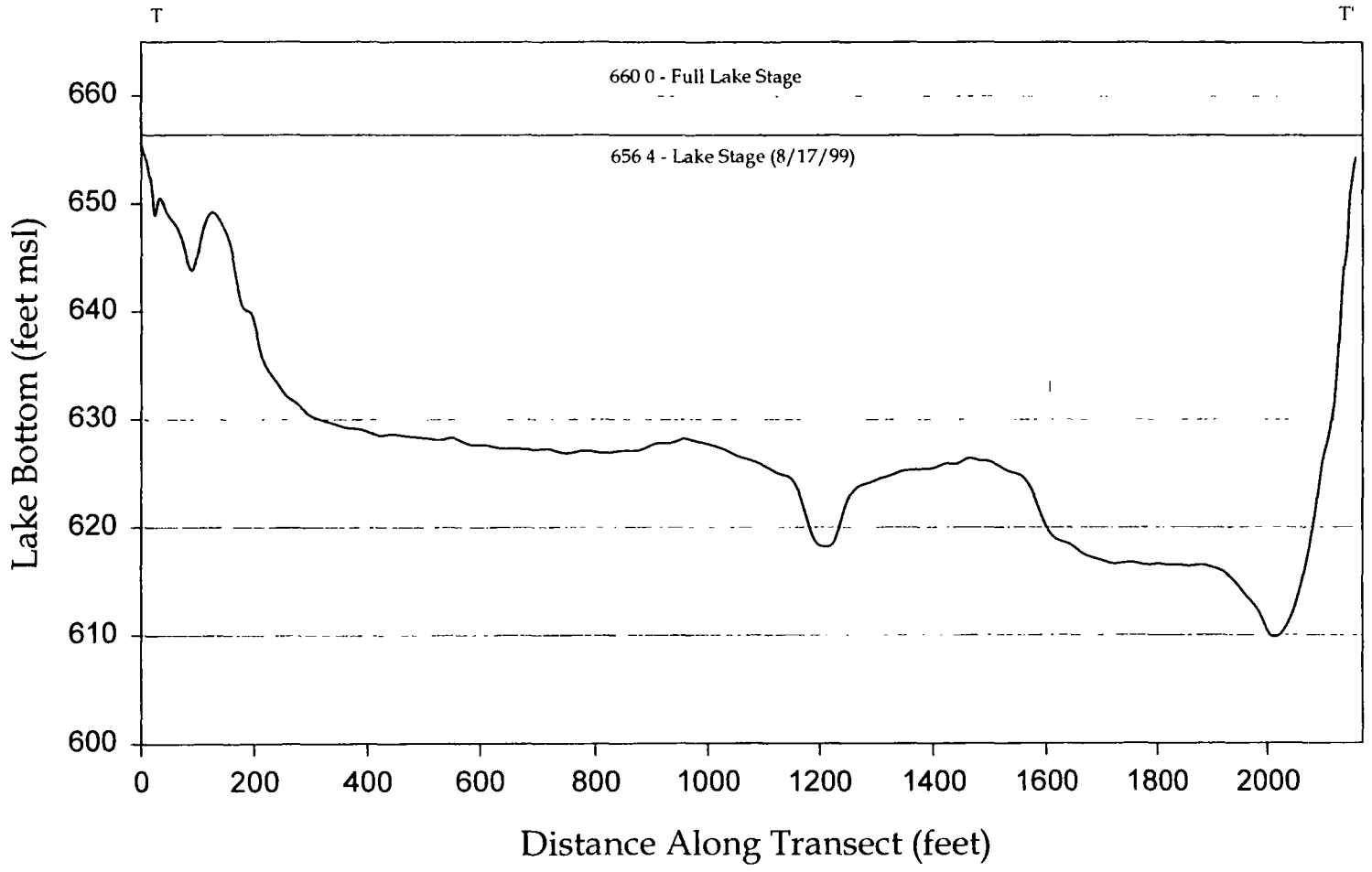
D washed-D/W = 94.1

SM

LMK Form 129
JUL 62

Appendix C
Transect Profiles

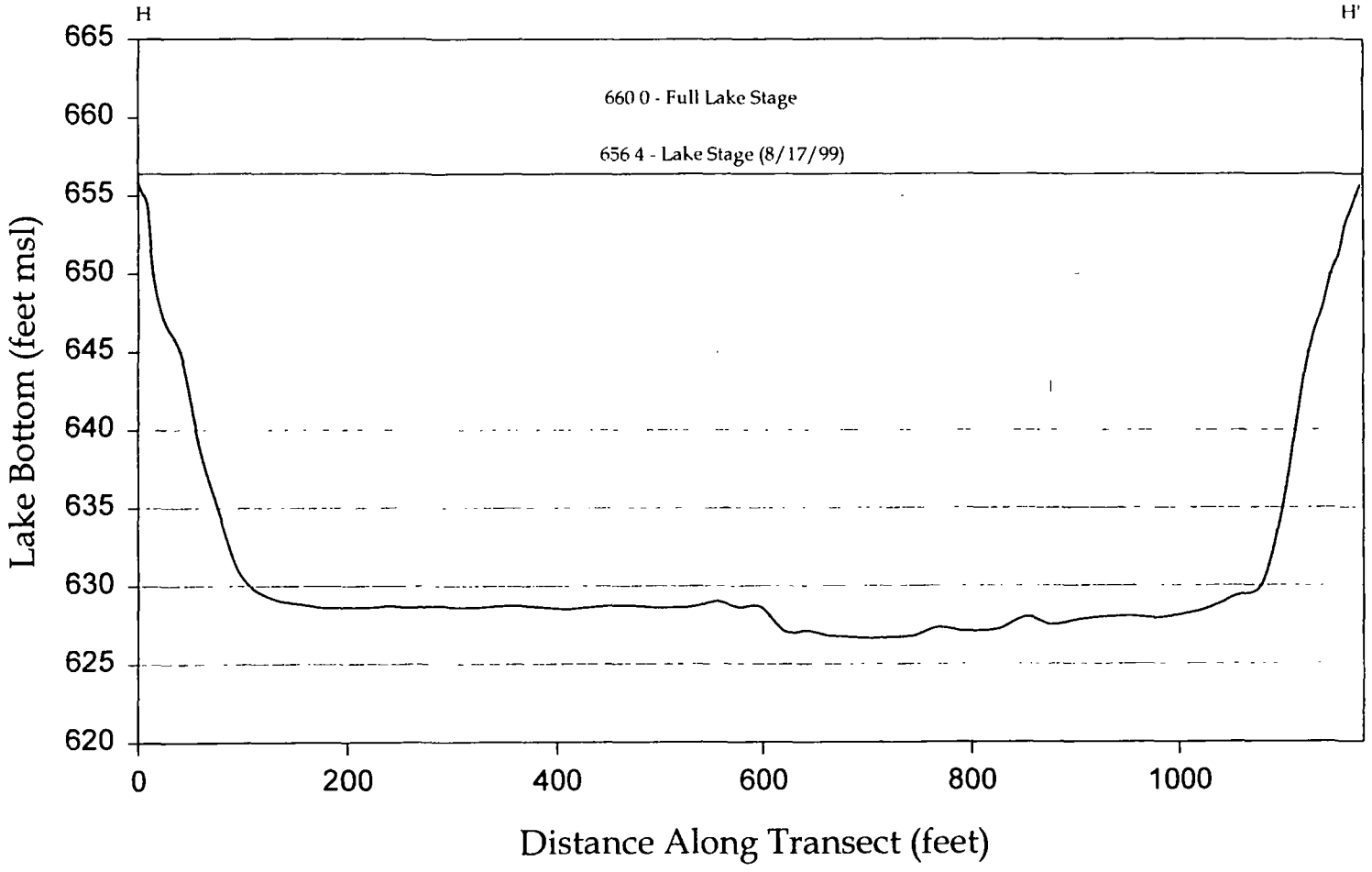
Lake Transect T6
12 Mile Creek



Transect	Northing	Easting
T6	3841115 19	330222 19
T6'	3840625 44	330642 56

G \DATA\HYDRO\70923\SIGMA\PROFILE JNB

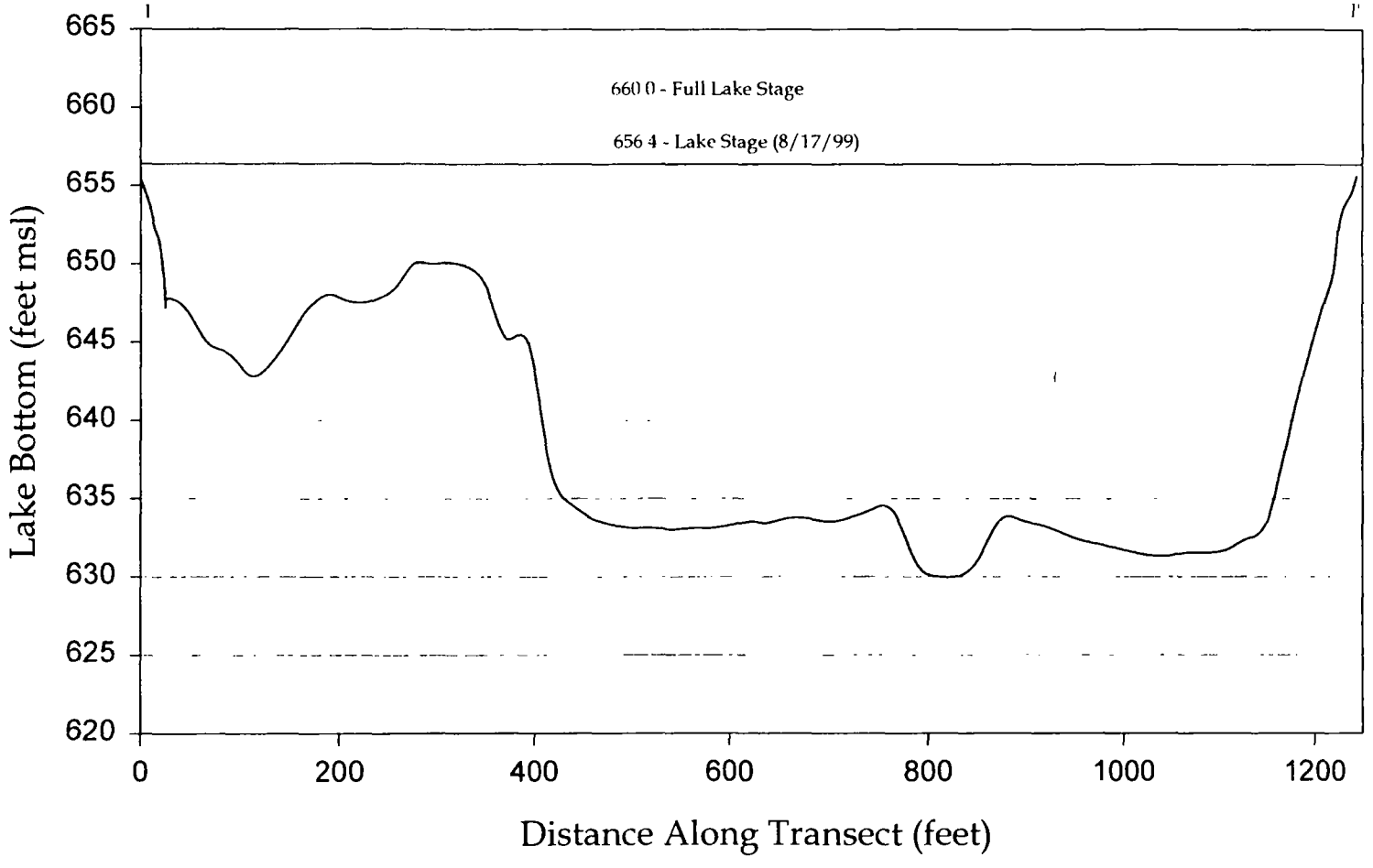
Lake Transect H
12 Mile Creek



Transect	Northing	Easting
H	3841650 90	331000 62
H'	3841487 73	331320 19

G \DATA\HYDRO\70923\SIGMA\PROFILE JNB

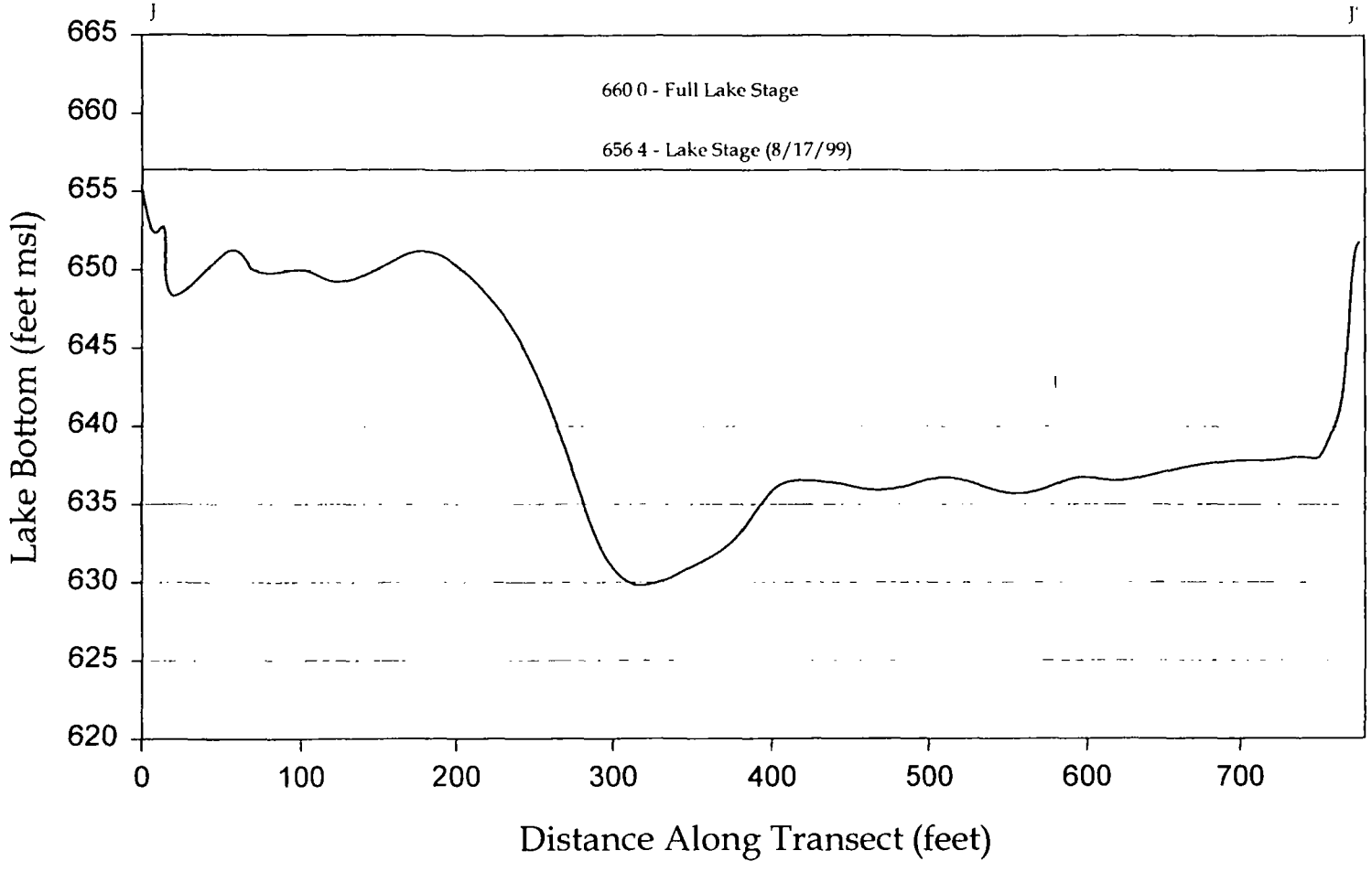
Lake Transect I
12 Mile Creek



Transect	Northing	Easting
I	3842079 83	331499 44
I'	3841912 35	331839 76

G \DATA\HYDRO\70923\SIGMA\PROFILE JNB

Lake Transect J
12 Mile Creek

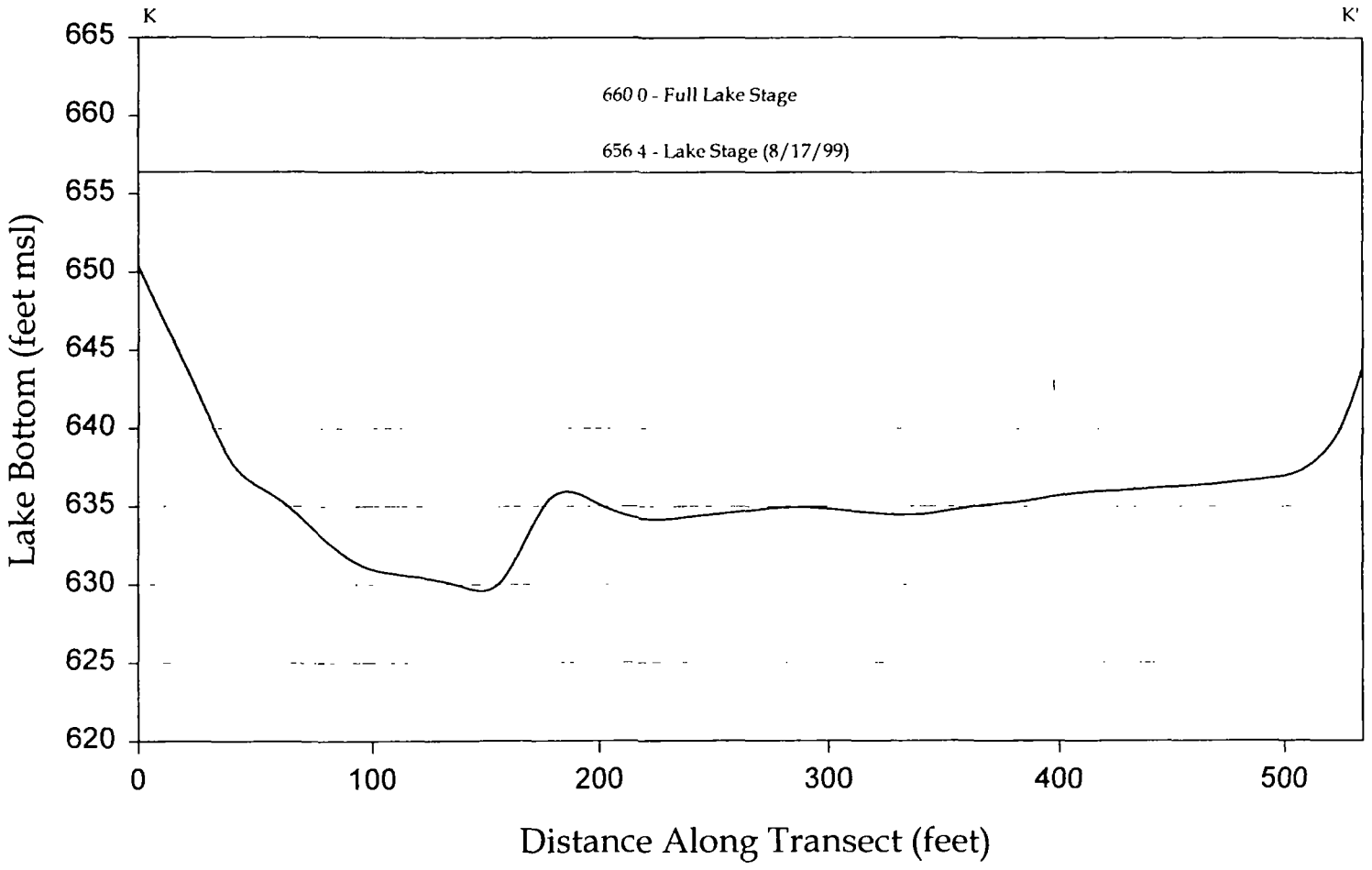


Transect	Northing	Easting
J	3842629 42	331990 44
J'	3842513 04	332196 60

RMT

G \DATA\HYDRO\70923\SIGMA\PROFILE JNB

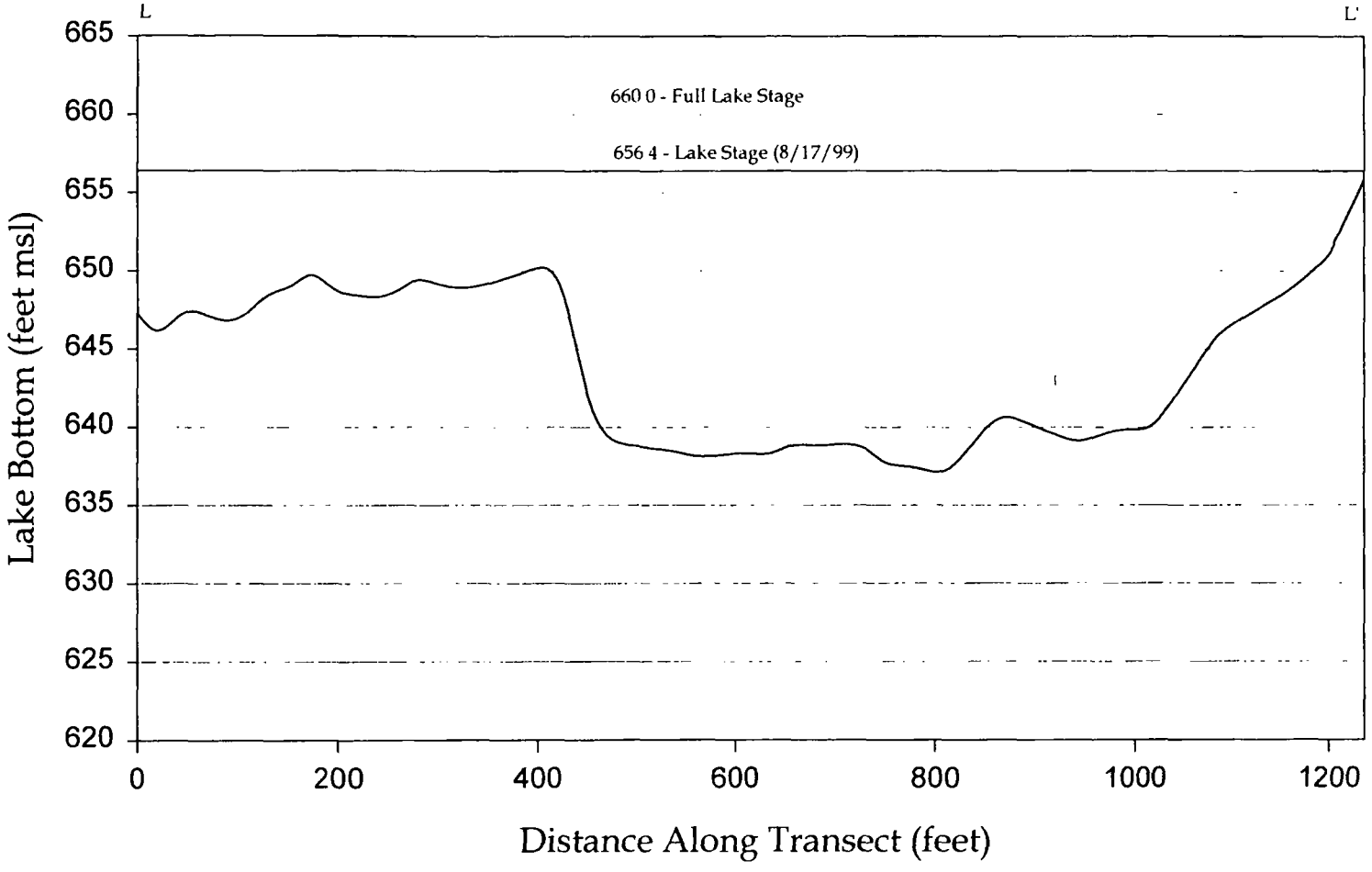
Lake Transect K
12 Mile Creek



Transect	Northing	Easting
K	3842643 27	332306 48
K'	3842491 90	332367 44

G \DATA\HYDRO\70923\SIGMA\PROFILE JNB

Lake Transect L
12 Mile Creek

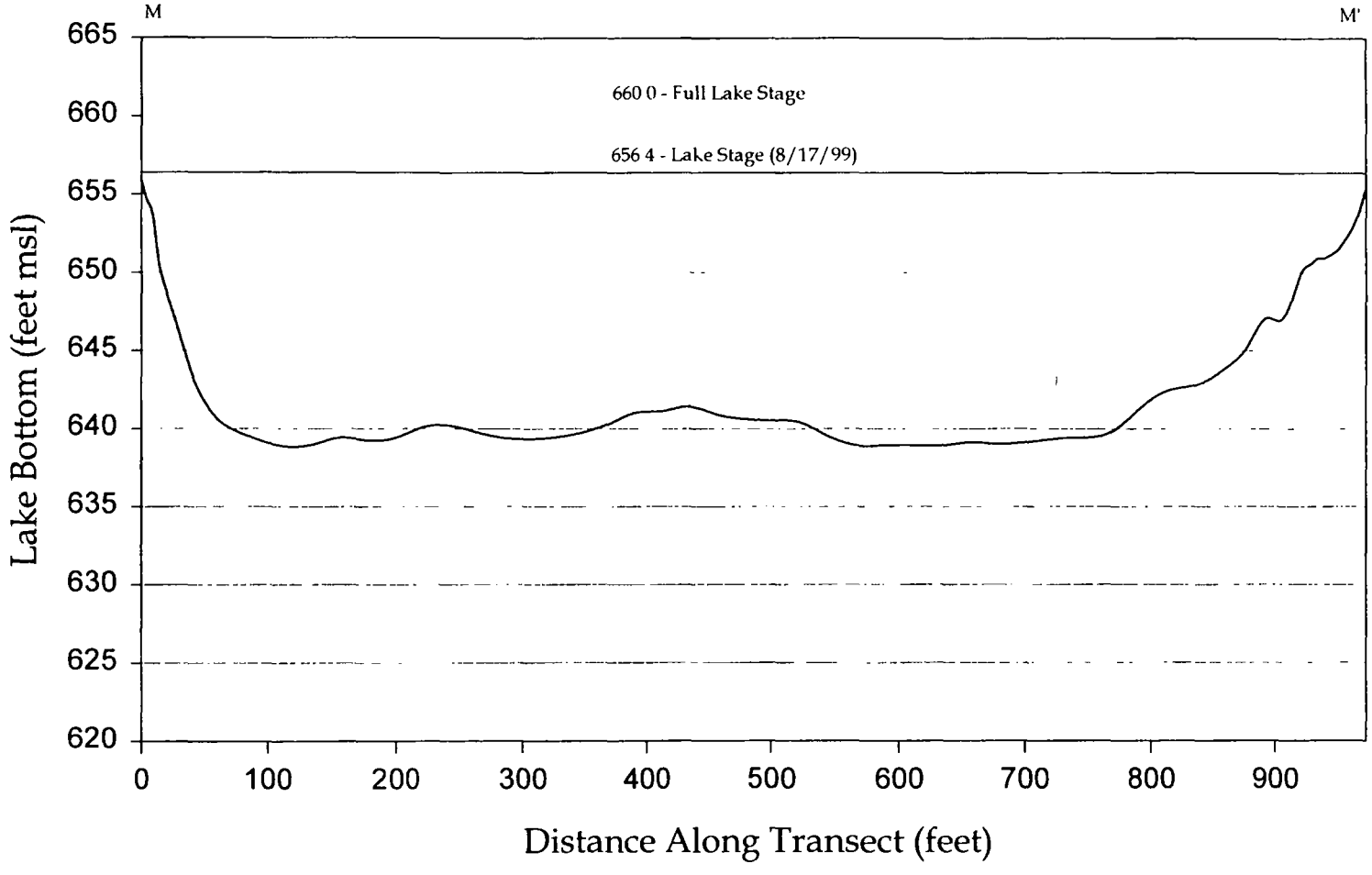


Transect	Northing	Easting
L	3843137 19	332494 60
L'	3843090 22	332868 64

RMT

G \DATA\HYDRO\70923\SIGMA\PROFILE JNB

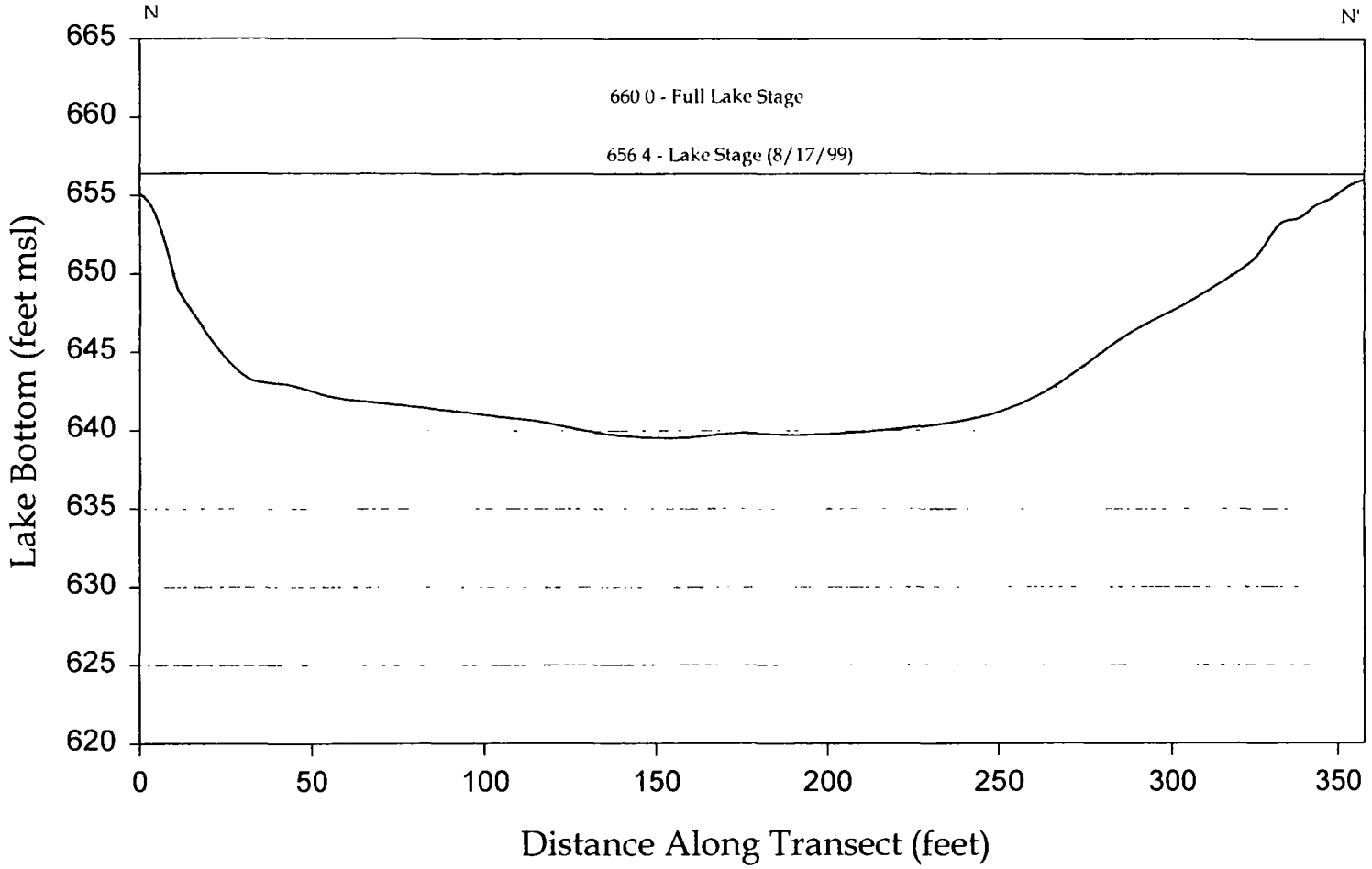
Lake Transect M
12 Mile Creek



Transect	Northing	Easting
M	3843389.88	332766 06
M'	3843271 74	333038 70

G \DATA\HYDRO\70923\SIGMA\PROFILE JNB

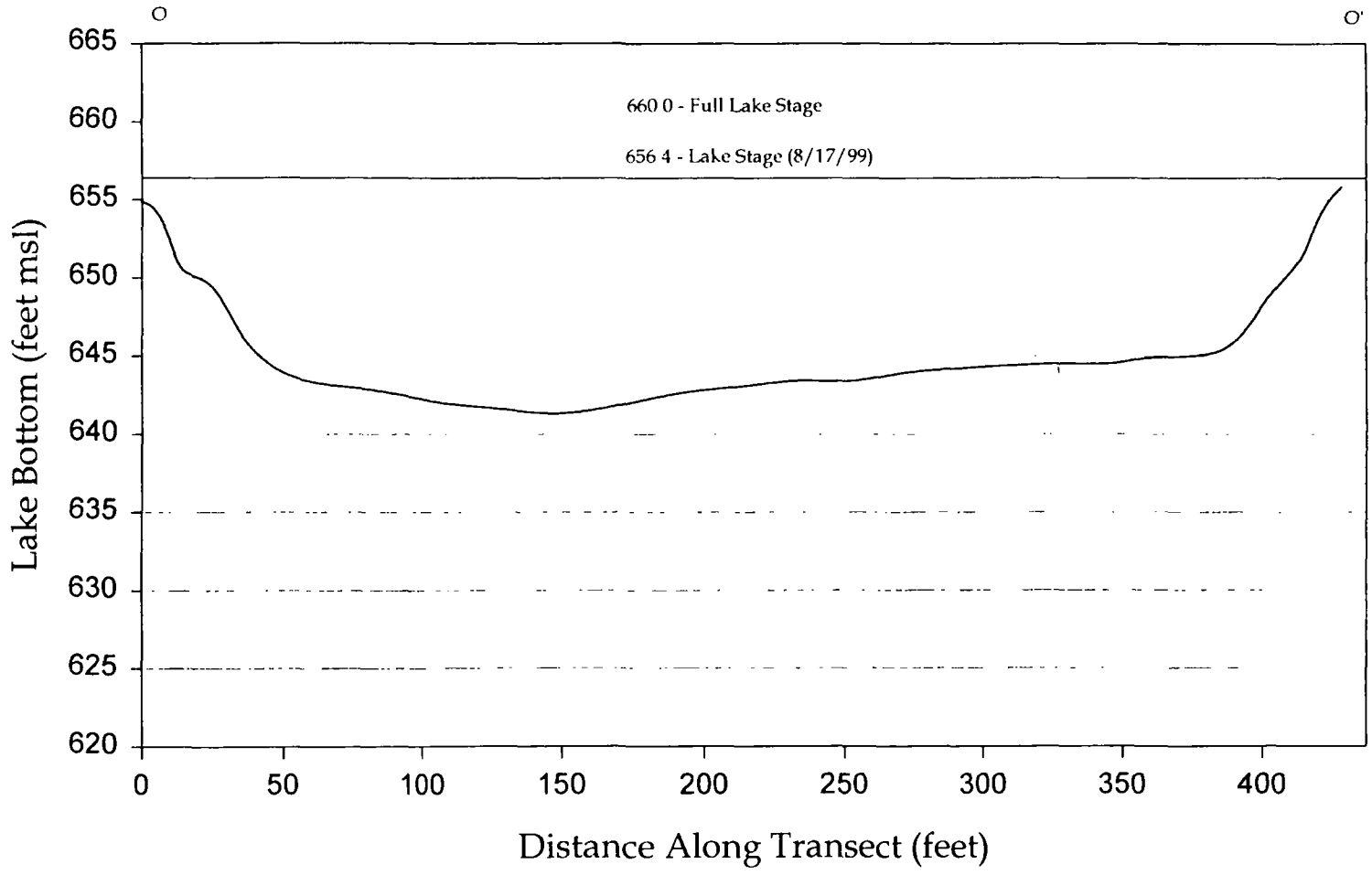
Lake Transect N
12 Mile Creek



Transect	Northing	Easting
N	3843895 04	333292 21
N'	3843806 99	333356 72

G \DATA\HYDRO\70923\SIGMA\PROFILE JNB

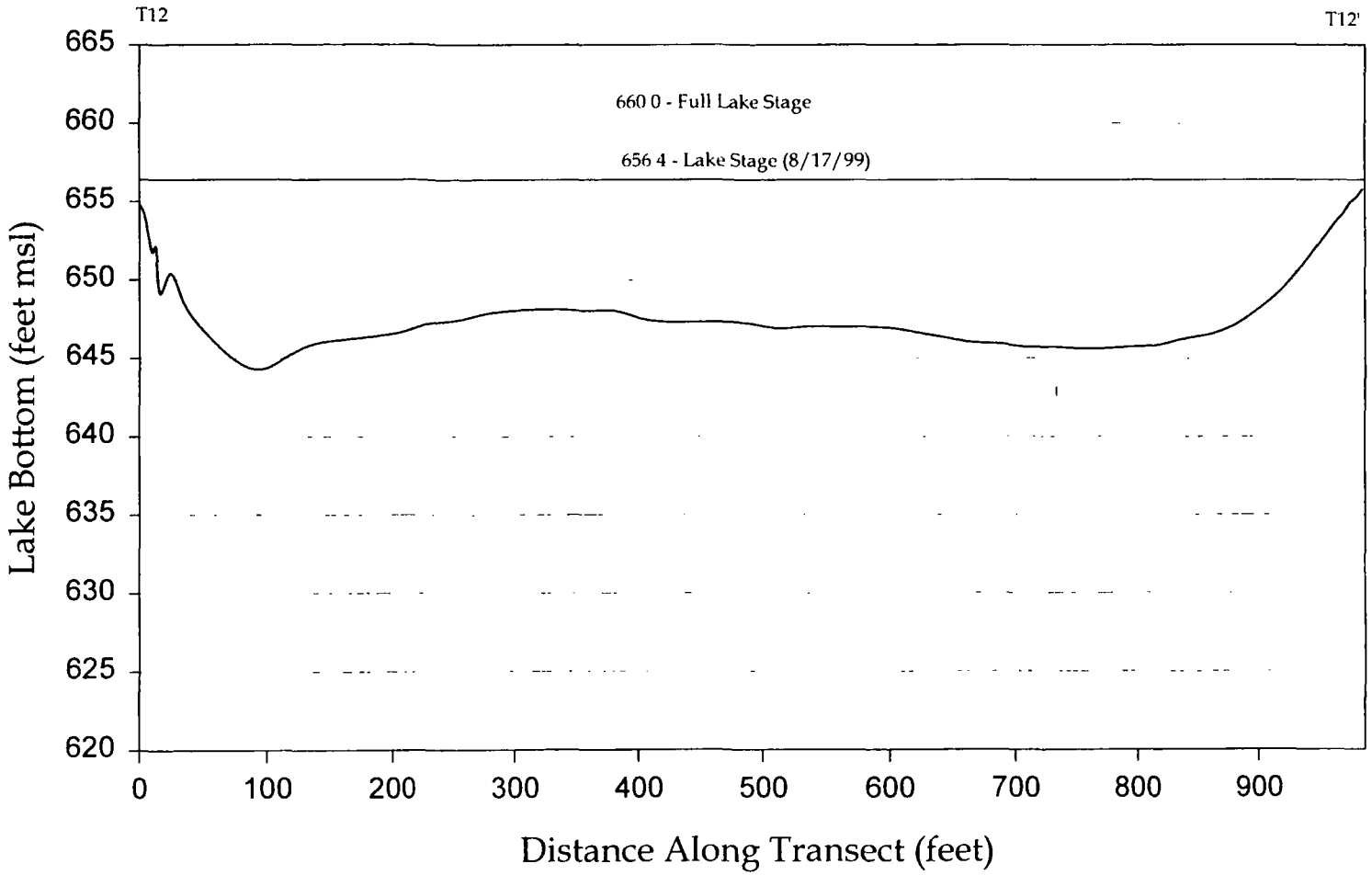
Lake Transect O
12 Mile Creek



Transect	Northing	Easting
O	334075 04	3844349 08
O'	334084 80	3844218 55

G \DATA\HYDRO\70923\SIGMA\PROFILE JNB

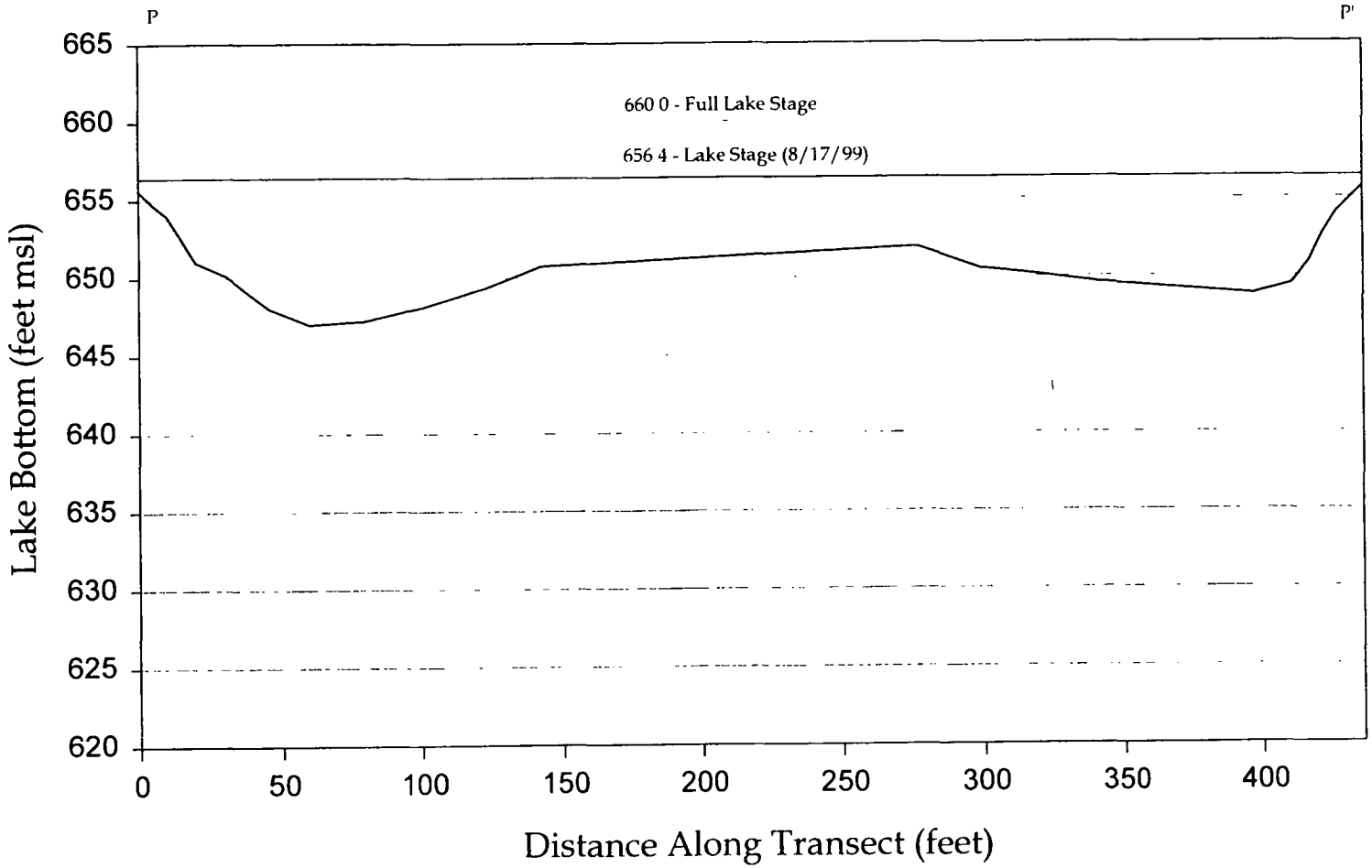
Lake Transect T12
12 Mile Creek



Transect	Northing	Easting
T12	3844445.24	334151 54
T12'	3844660 50	334361 65

G \DATA\HYDRO\70923\SIGMA\PROFILE JNB

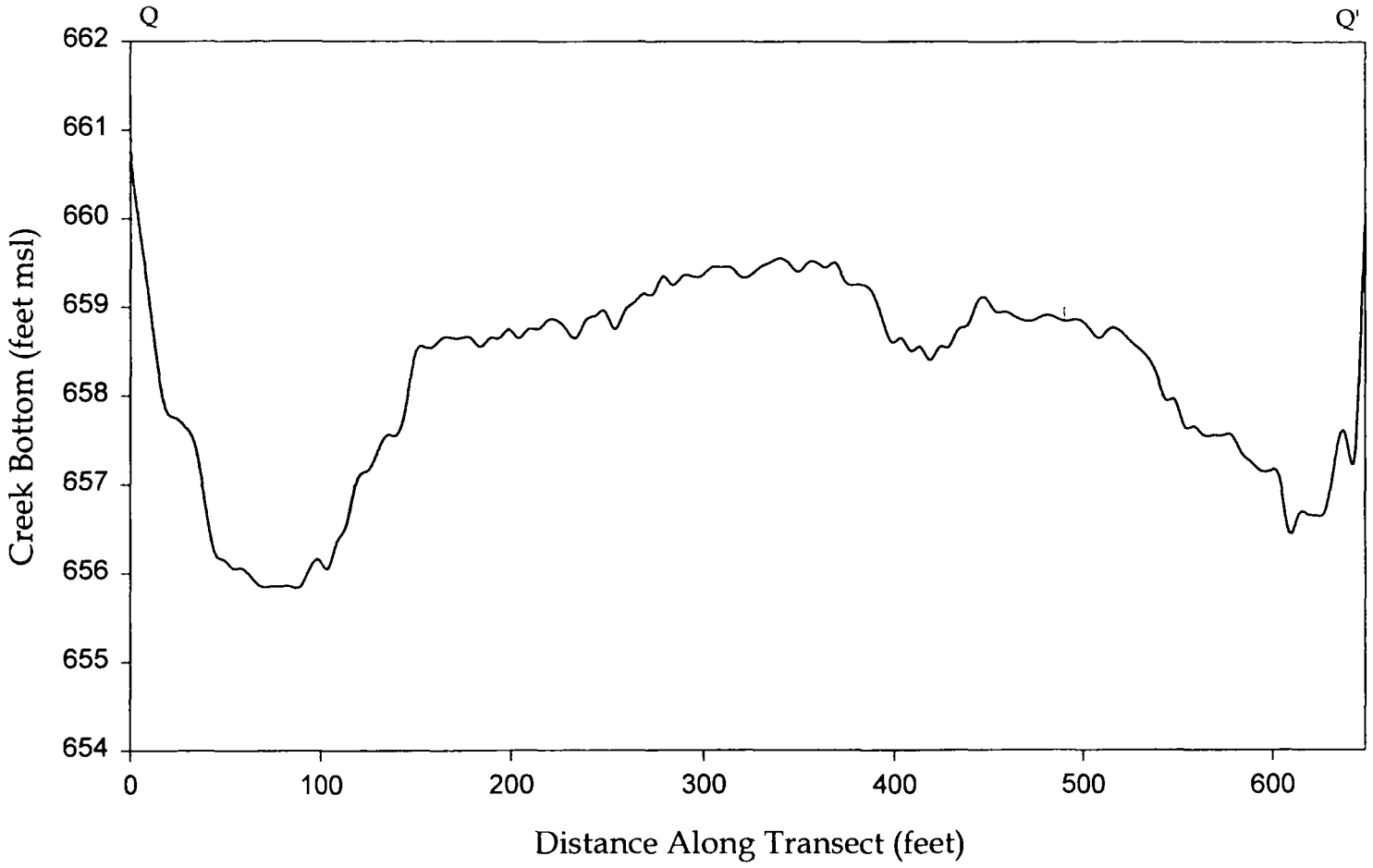
Lake Transect P
12 Mile Creek



Transect	Northing	Easting
P	3844840 83	333835 09
P'	3844930 56	333933 66

G \DATA\HYDRO\70923\SIGMA\PROFILE JNB

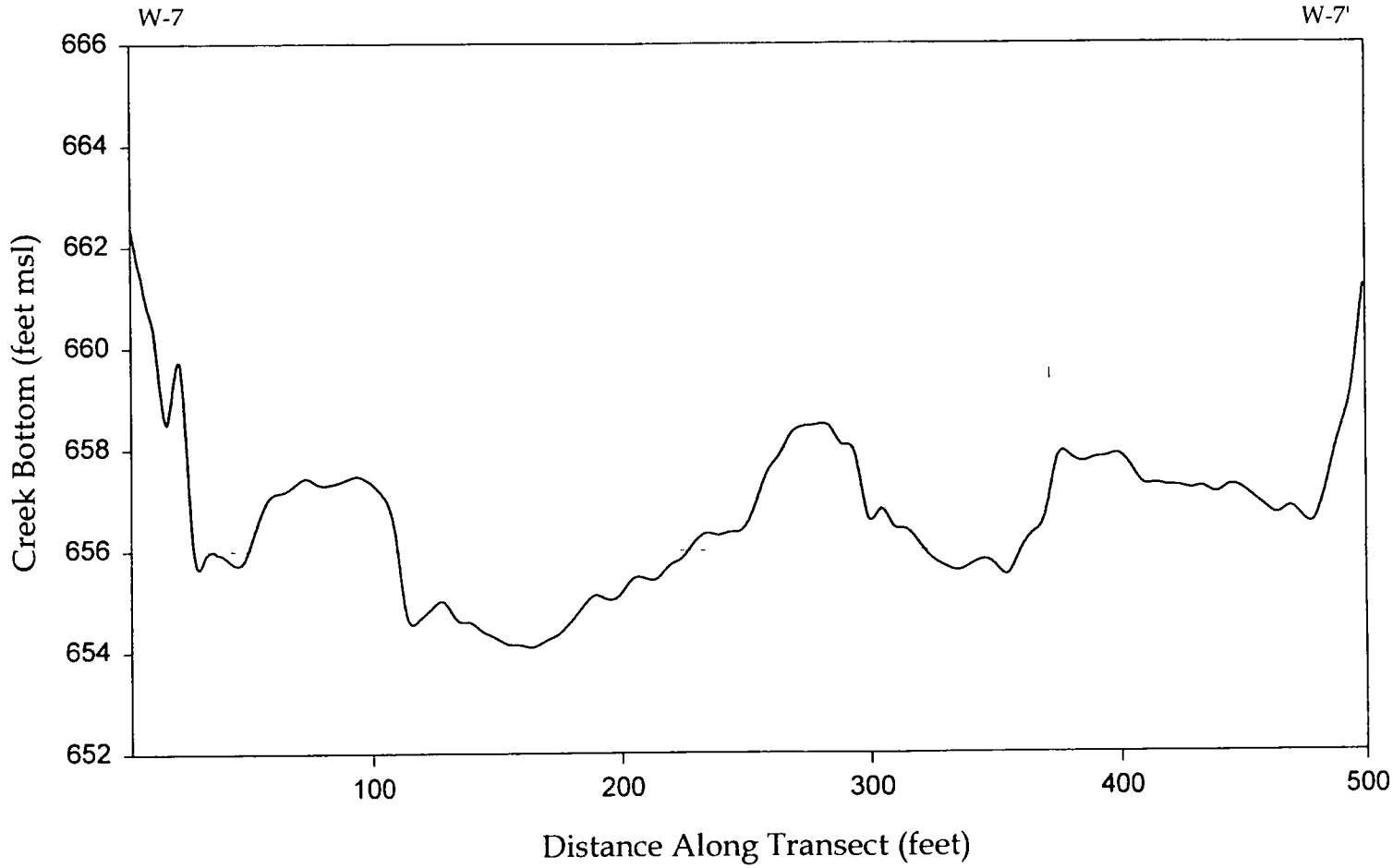
Gorge Transect Q
12 Mile Creek



Transect	Northing	Easting
Q	1060681 94	1455178 39
Q'	1061268 59	1455412 34

G \DATA\HYDRO\70923\SIGMA\GORGE JNB

Gorge Transect W-7
12 Mile Creek

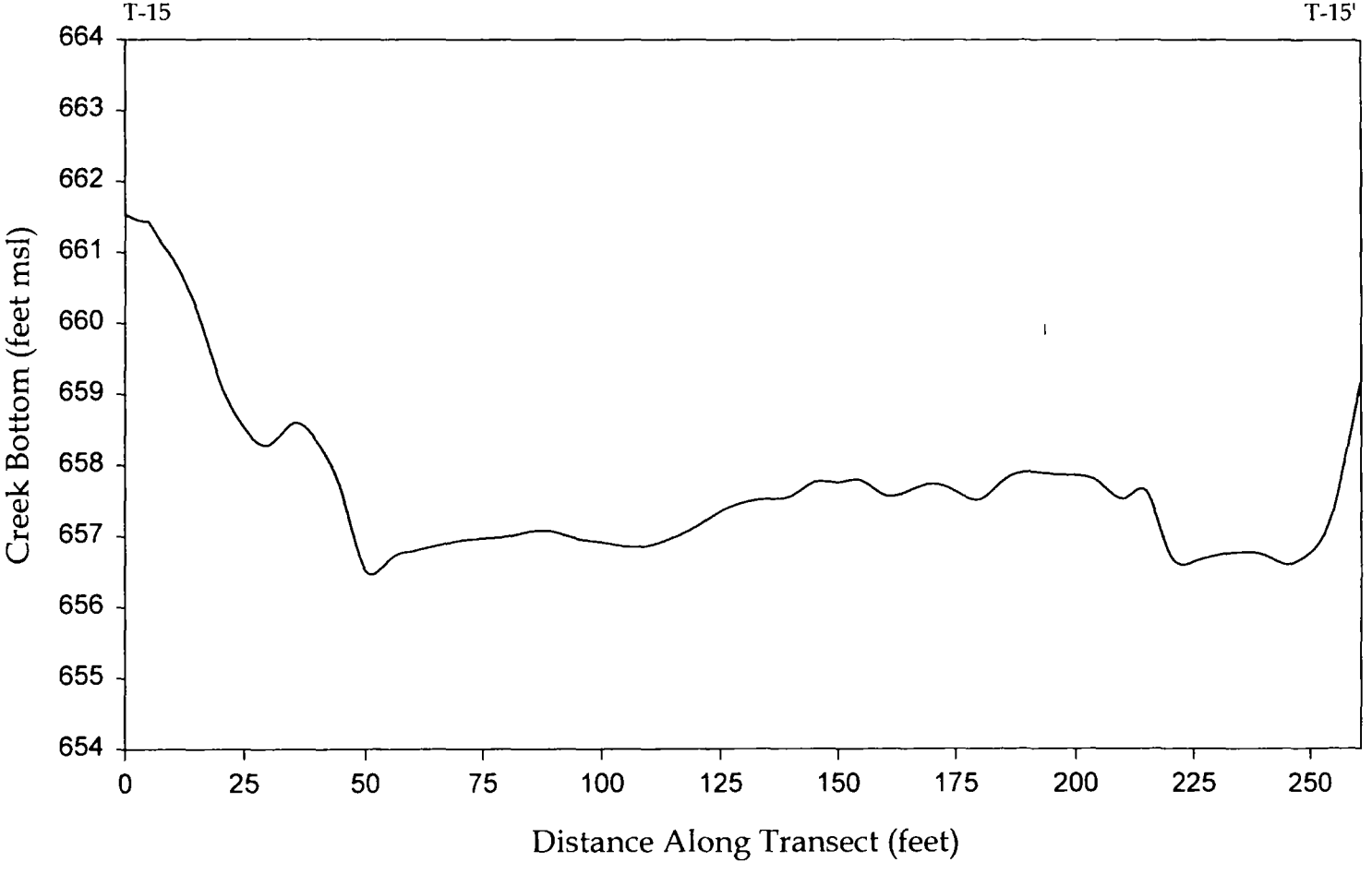


Transect	Northing	Easting
W-7	1061814 63	1457303 66
W-7'	1062229 77	1457032 24

RMT

G \DATA\HYDRO\70923\SIGMA\GORGE JNB

Gorge Transect T-15
12 Mile Creek

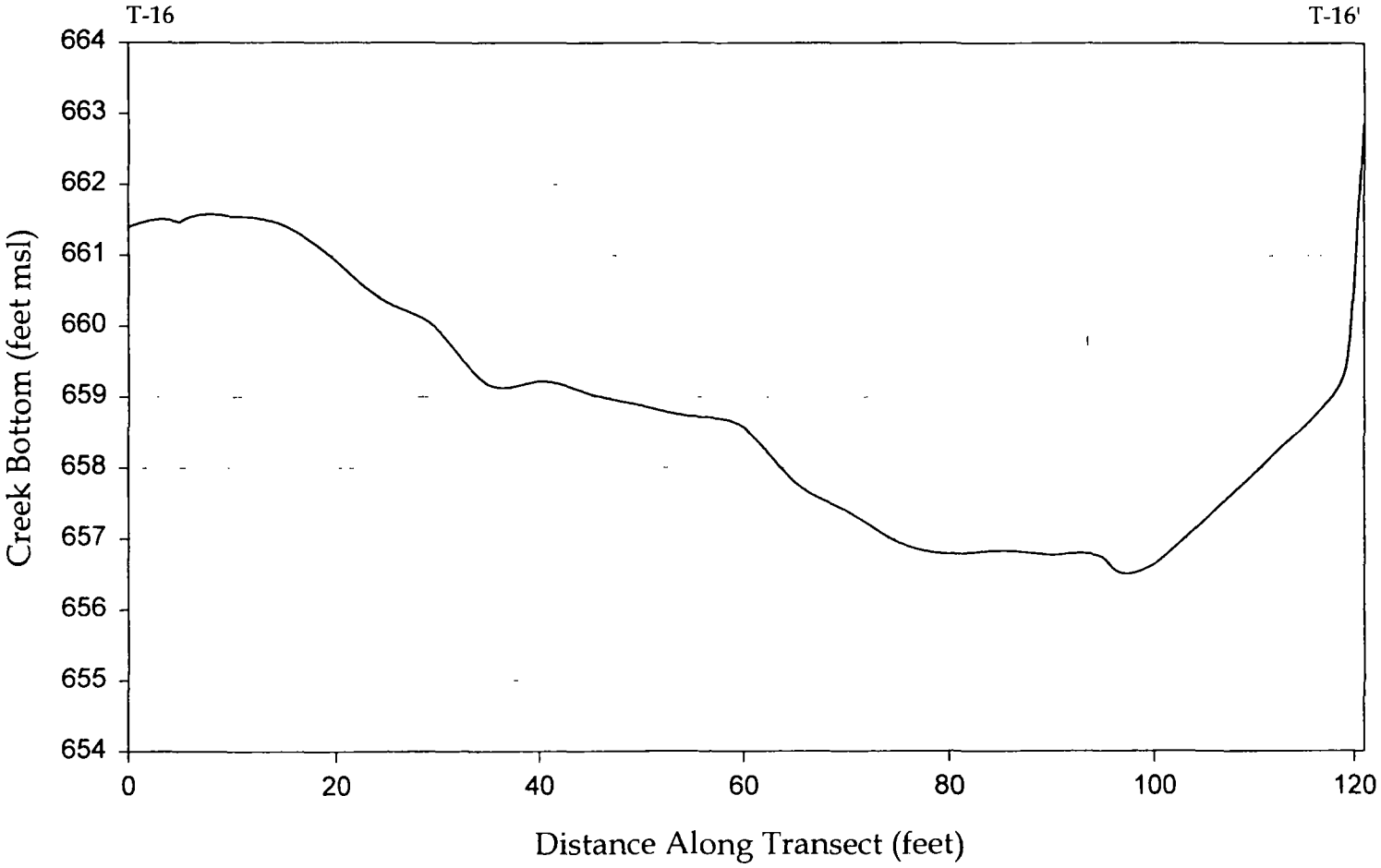


Transect	Northing	Easting
T-15	1063481 74	1458759 94
T-15'	1063279.96	1458921 66

RMT®

G \DATA\HYDRO\70923\SIGMA\GORGE JNB

Gorge Transect T-16
12 Mile Creek

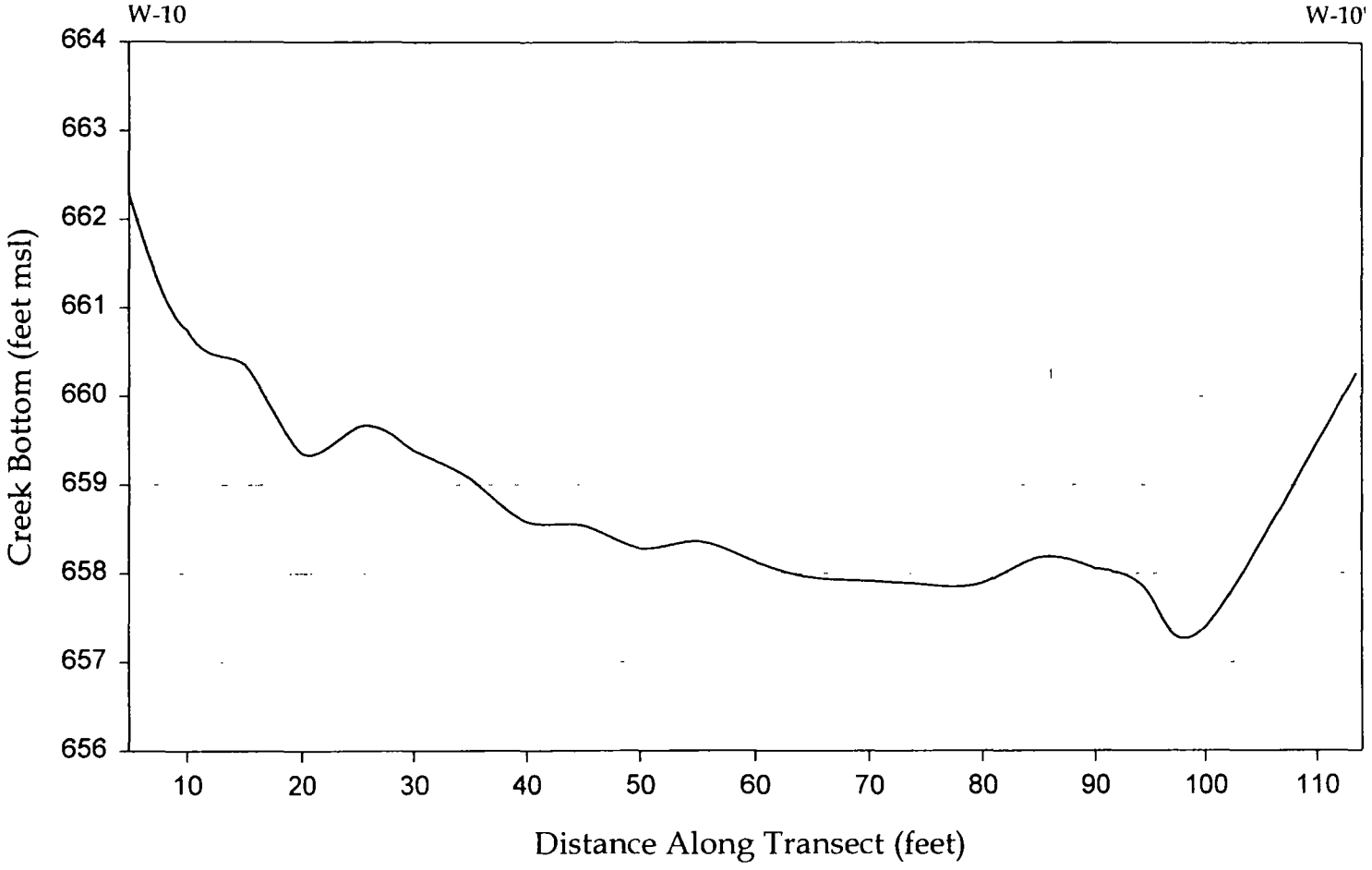


Transect	Northing	Easting
T-16	1064474 58	1460577 15
T-16'	1064362 12	1460621 43

RMT®

G \DATA\HYDRO\70923\SIGMA\GORGE JNB

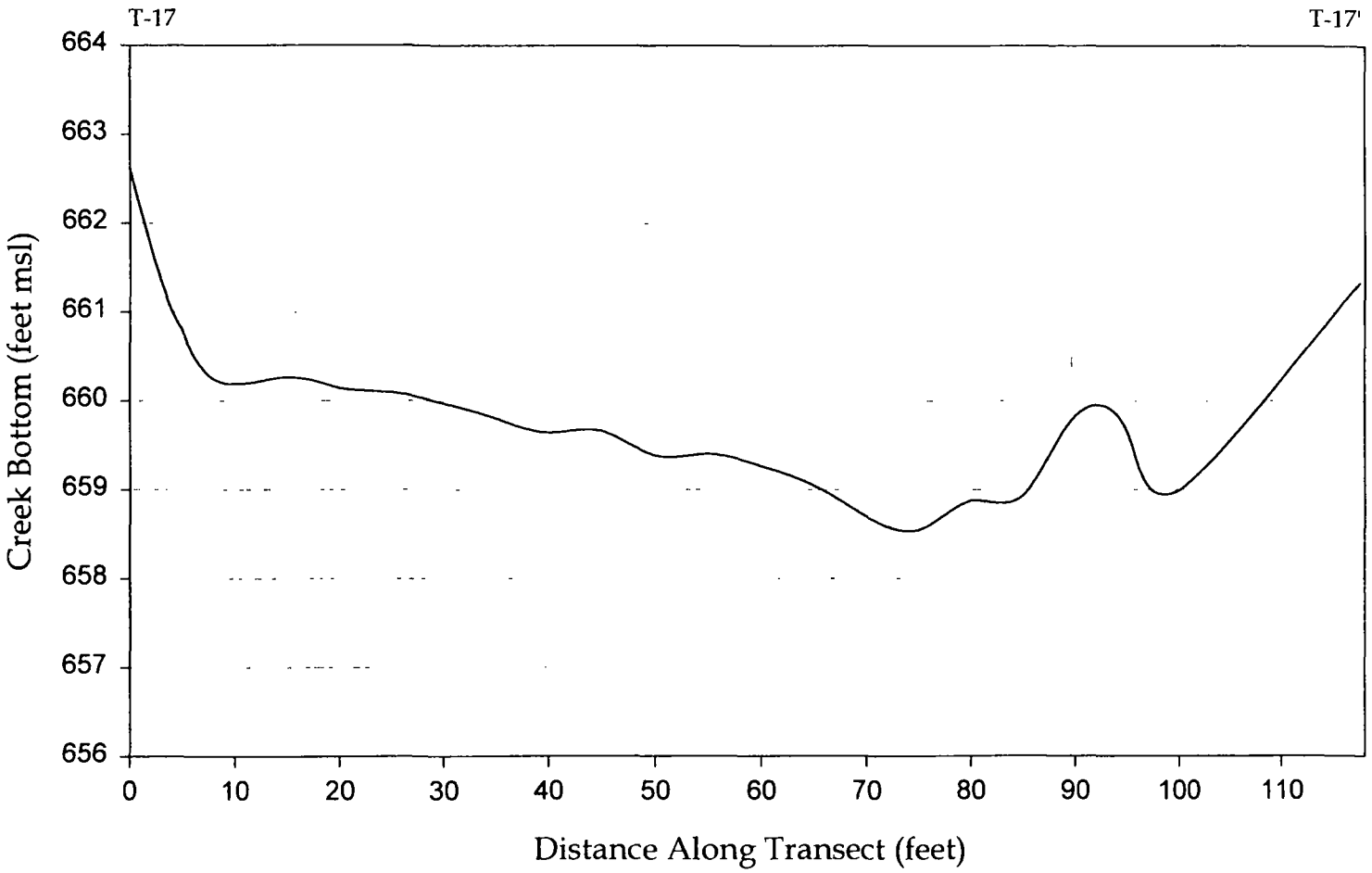
Gorge Transect W-10
12 Mile Creek



Transect	Northing	Easting
W-10	1066331 29	1461973 09
W-10'	1066223 16	1461998 91

G \DATA\HYDRO\70923\SIGMA\GORGE JNB

Gorge Transect T-17
12 Mile Creek

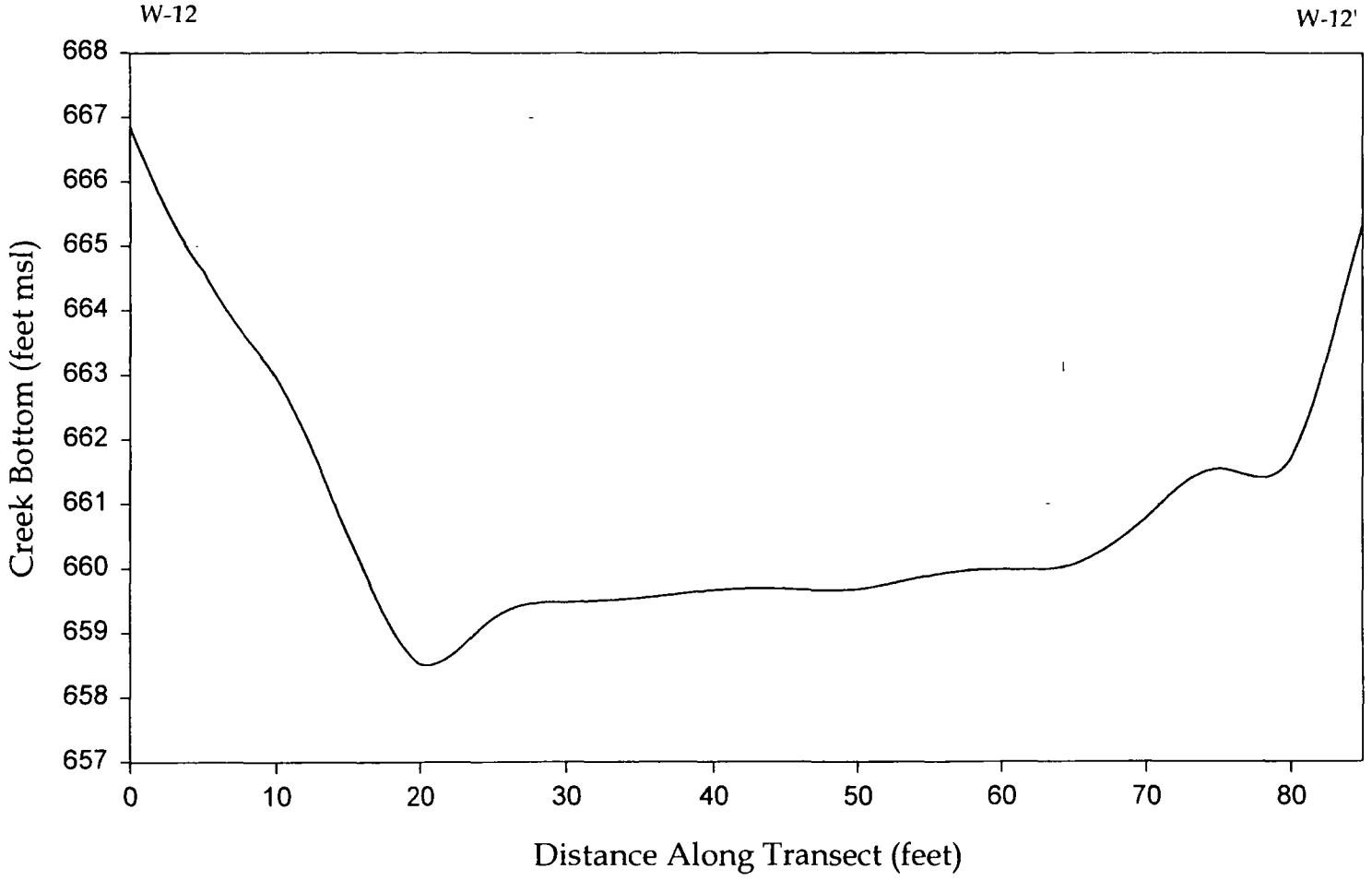


Transect	Northing	Easting
T-17	1066996 14	1462070 38
T-17'	1067083 89	1462148 57

RMT

G \DATA\HYDRO\70923\SIGMA\GORGE JNB

Gorge Transect W-12
12 Mile Creek

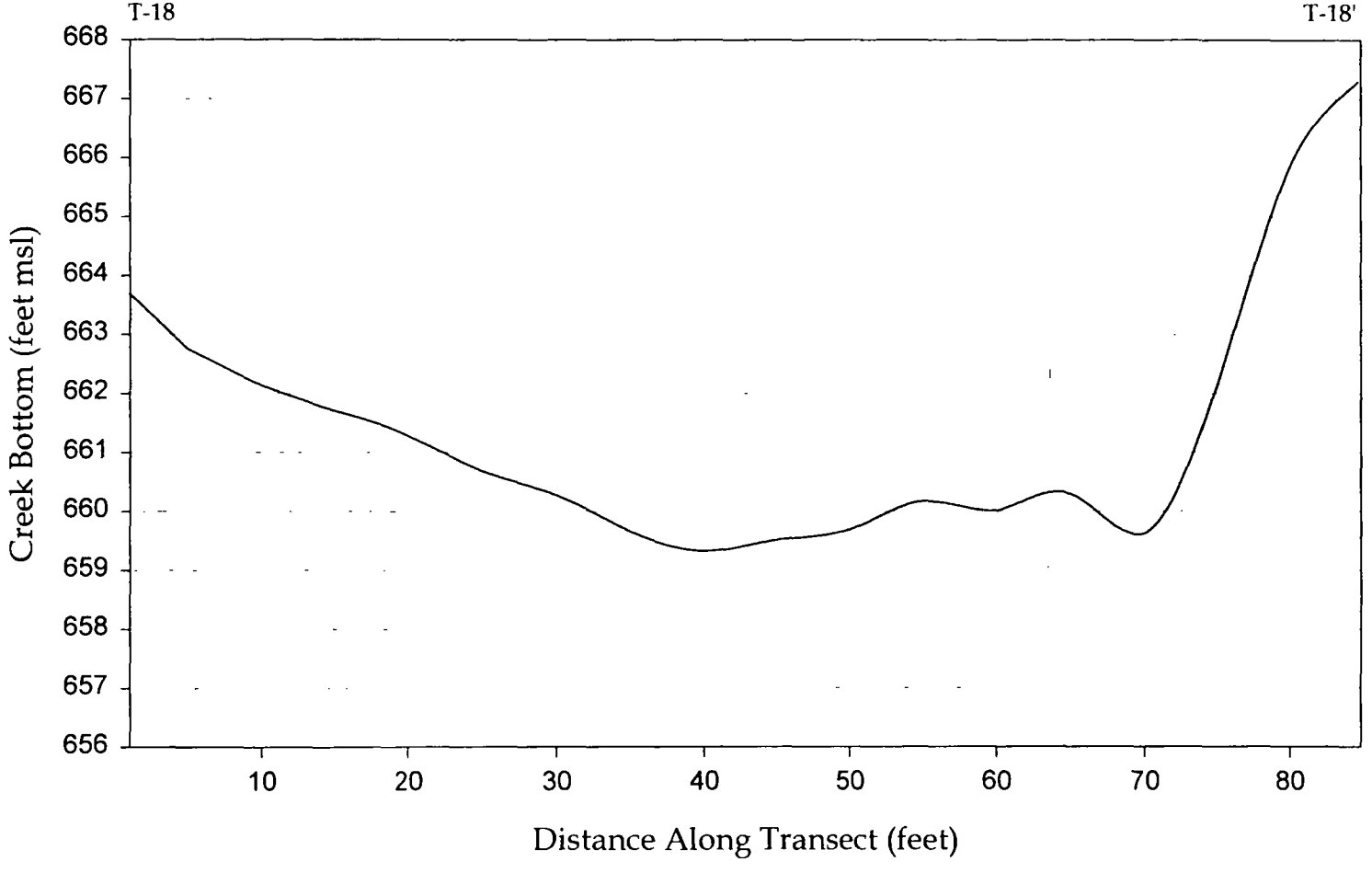


Transect	Northing	Easting
W-12	1068373 91	1461280 54
W-12'	1068406.89	1461361 29

RMT

G \DATA\HYDRO\70923\SIGMA\GORGE JNB

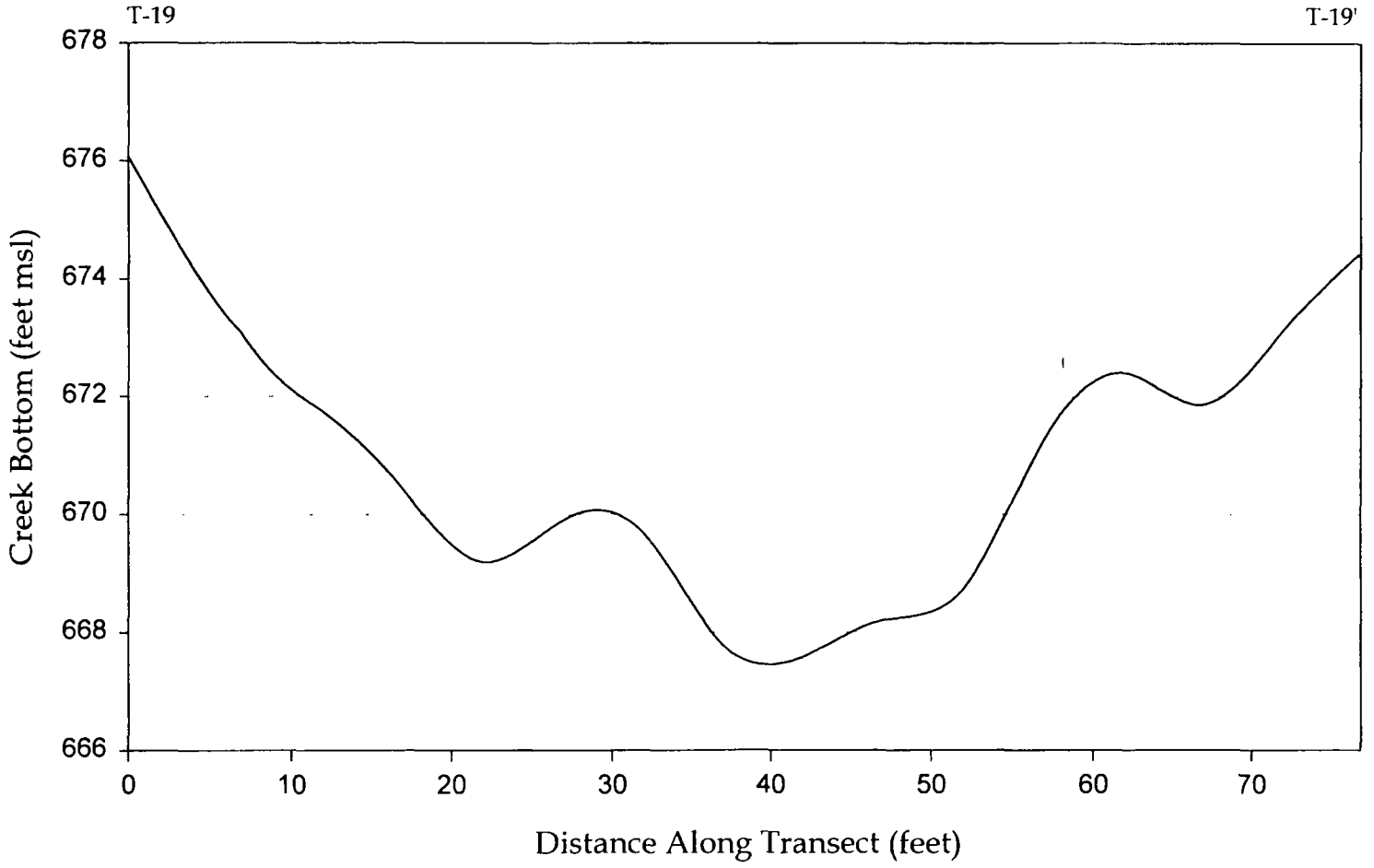
Gorge Transect T-18
12 Mile Creek



Transect	Northing	Easting
T-18	1070166 91	1461895 71
T-18'	1070182 83	1461978 71

G \DATA\HYDRO\70923\SIGMA\GORGE JNB

Gorge Transect T-19
12 Mile Creek

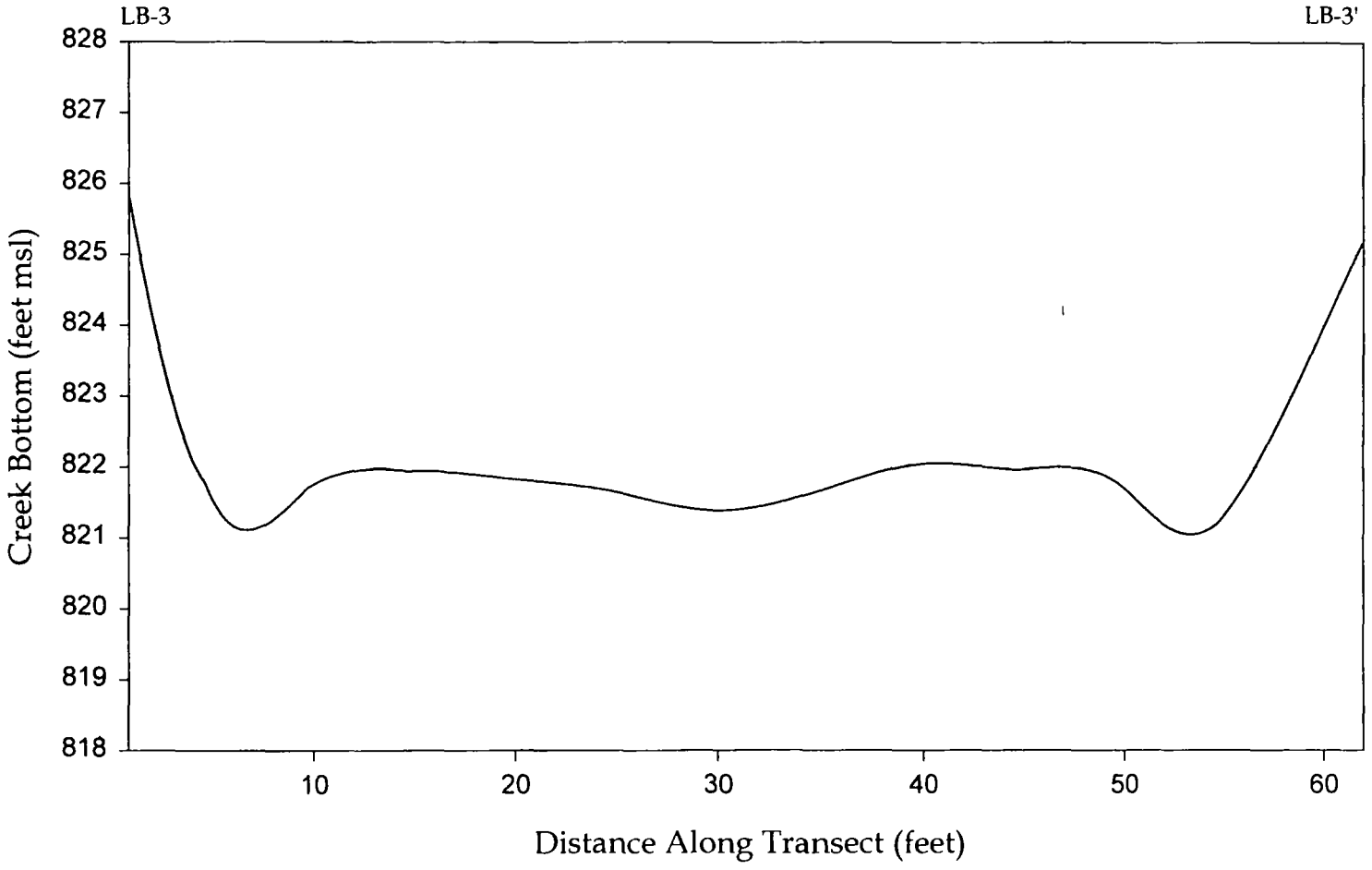


Transect	Northing	Easting
T-19	1070896 04	1461270 21
T-19'	1070885 79	1461347 67

RMT

G \DATA\HYDRO\70923\SIGMA\GORGE JNB

Gorge Transect LB-3
12 Mile Creek

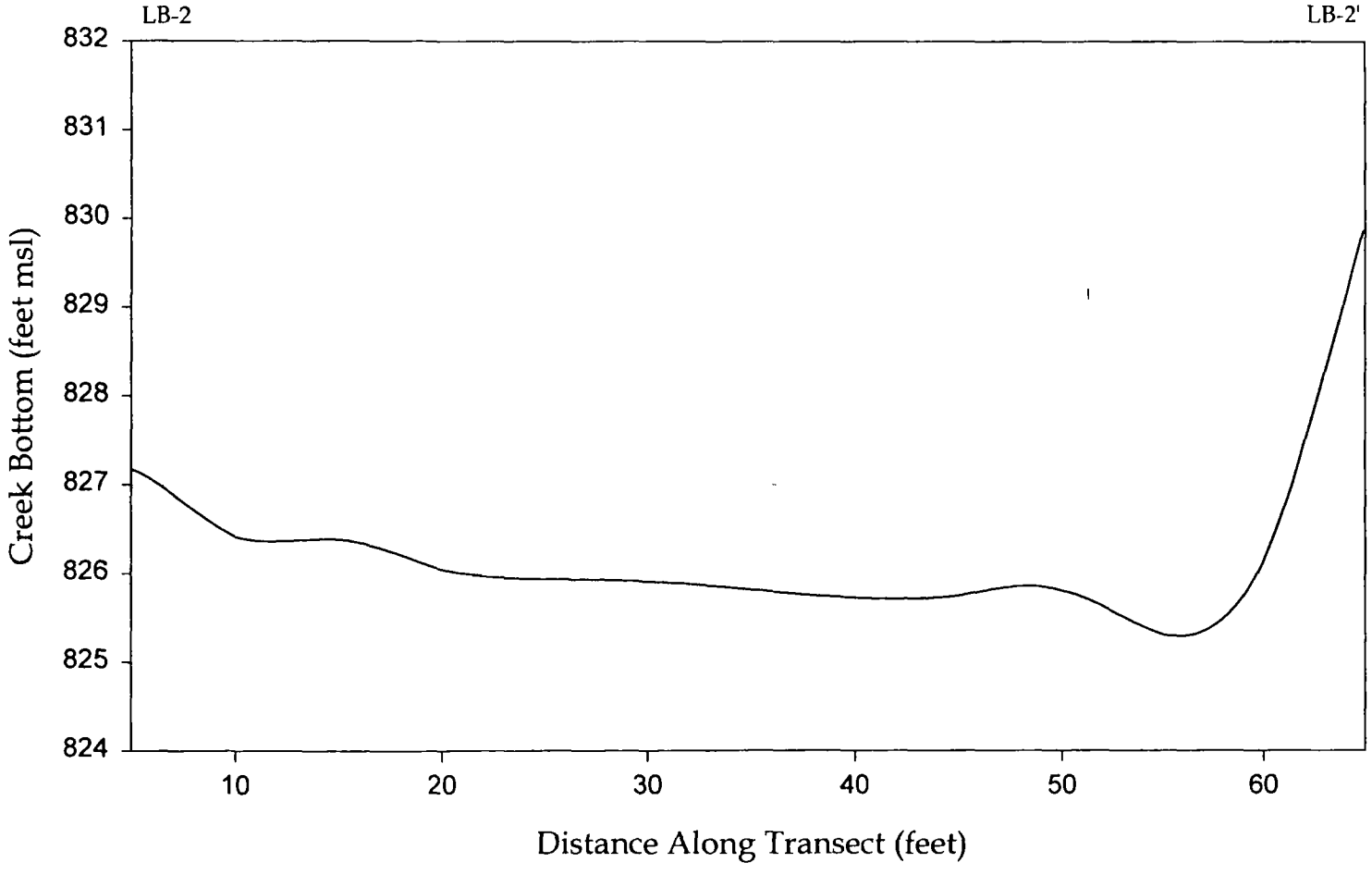


Transect	Northing	Easting
LB-3	1083910 44	1474994 23
LB-3'	1083907 07	1475056 32

RMT

G \DATA\HYDRO\70923\SIGMA\GORGE JNB

Gorge Transect LB-2
12 Mile Creek



Transect	Northing	Easting
LB-2	1084390 90	1474929 14
LB-2'	1083930.54	1474932 59

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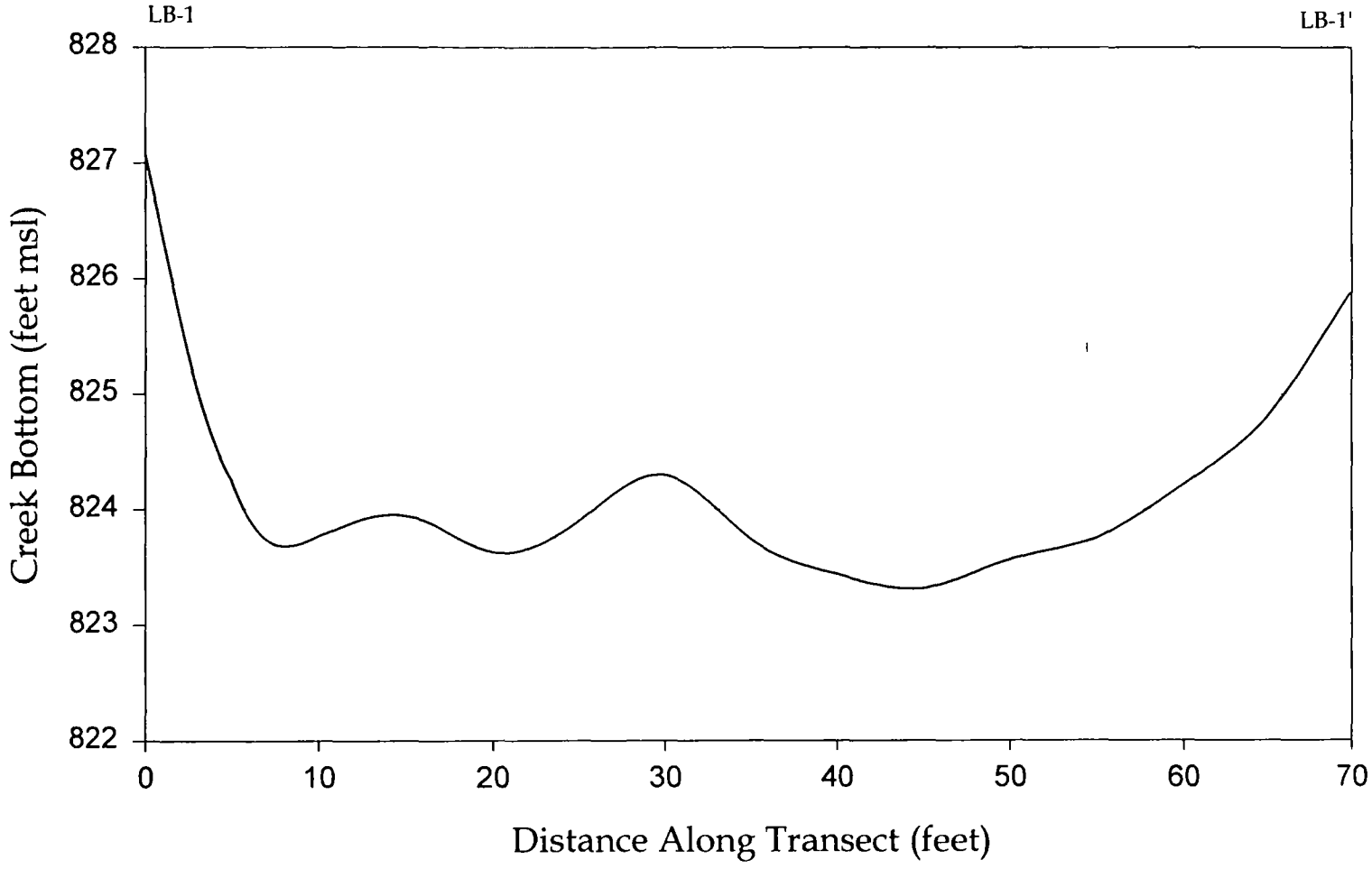
Gorge Transect LB-1
12 Mile Creek



Transect	Northing	Easting
LB-1	1085416.89	1474550 01
LB-1'	1085435.42	1474616 78

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Appendix D
Transect Profile Data Sheets

Transect	Distance	UncElev	Elevation
LB-1	0	3 06	827 07
LB-1	5	5 87	824 26
LB-1	10	6 36	823 77
LB-1	15	6 19	823 94
LB-1	20	6 5	823 63
LB-1	25	6 23	823 9
LB-1	30	5 83	824 3
LB-1	35	6 39	823 74
LB-1	40	6 69	823 44
LB-1	45	6 82	823 31
LB-1	50	6 57	823 56
LB-1	55	6 38	823 75
LB-1	60	5 92	824 21
LB-1	65	5 33	824 8
LB-1	69 9	4.26	825 87
LB-2	0	4 36	827 5
LB-2	5	4 69	827 17
LB-2	10	5 45	826 41
LB-2	15	5 48	826 38
LB-2	20	5 82	826 04
LB-2	25	5 93	825 93
LB-2	30	5 96	825 9
LB-2	35	6 05	825 81
LB-2	40	6 14	825 72
LB-2	45	6 12	825 74
LB-2	50	6 06	825 8
LB-2	55	6 56	825 3
LB-2	60	5 73	826 13
LB-2	64 92	2	829 86
LB-3	0	5 75	827 45
LB-3	4 67	11 43	821 77
LB-3	9 67	11 5	821 7
LB-3	14 67	11 27	821 93
LB-3	19 67	11 37	821 83
LB-3	24 67	11 54	821 66
LB-3	29 67	11 82	821 38
LB-3	34 67	11 57	821 63
LB-3	39 67	11 17	822 03

Transect	Distance	UncElev	Elevation
LB-3	44 67	11 25	821 95
LB-3	49 67	11 43	821 77
LB-3	54 67	12 01	821 19
LB-3	61 97	8 03	825 17
Q	0	0	660 75
Q	4	0 7	660 05
Q	9	1 45	659 3
Q	14	2 3	658 45
Q	19	2 9	657.85
Q	24	3	657 75
Q	29	3 1	657 65
Q	34	3 3	657 45
Q	39	3 9	656 85
Q	44	4 5	656 25
Q	49	4 6	656 15
Q	54	4 7	656 05
Q	59	4 7	656 05
Q	64	4 8	655 95
Q	69	4 9	655 85
Q	74	4 9	655 85
Q	79	4 9	655 85
Q	84	4.9	655 85
Q	89	4 9	655 85
Q	94	4 7	656 05
Q	99	4 6	656 15
Q	104	4 7	656 05
Q	109	4 4	656 35
Q	114	4 2	656 55
Q	119	3 7	657 05
Q	124	3 6	657 15
Q	129	3 4	657 35
Q	134	3 2	657 55
Q	139	3 2	657 55
Q	144	2 9	657 85
Q	149	2 3	658 45
Q	154	2 2	658 55
Q	159	2 2	658 55
Q	164	2 1	658 65

Transect	Distance	UncElev	Elevation
Q	169	2 1	658 65
Q	174	2 1	658 65
Q	179	2 1	658 65
Q	184	2 2	658 55
Q	189	2 1	658 65
Q	194	2 1	658 65
Q	199	2	658 75
Q	204	2 1	658 65
Q	209	2	658 75
Q	214	2	658 75
Q	219	1 9	658 85
Q	224	1 9	658 85
Q	229	2	658 75
Q	234	2 1	658 65
Q	239	1 9	658 85
Q	244	1 85	658 9
Q	249	1 8	658 95
Q	254	2	658 75
Q	259	1 8	658 95
Q	264	1 7	659 05
Q	269	1 6	659 15
Q	274	1 6	659 15
Q	279	1 4	659 35
Q	284	1 5	659 25
Q	289	1 4	659 35
Q	294	1 4	659 35
Q	299	1 4	659 35
Q	304	1 3	659 45
Q	309	1 3	659 45
Q	314	1 3	659 45
Q	319	1 4	659 35
Q	324	1 4	659 35
Q	329	1 3	659 45
Q	334	1 25	659 5
Q	339	1 2	659 55
Q	344	1 25	659 5
Q	349	1 35	659 4
Q	354	1 25	659 5

Transect	Distance	UncElev	Elevation
Q	359	1 25	659 5
Q	364	1 3	659 45
Q	369	1 25	659 5
Q	374	1 45	659 3
Q	379	1 5	659 25
Q	384	1 5	659 25
Q	389	1 6	659 15
Q	394	1 9	658 85
Q	399	2 15	658 6
Q	404	2 1	658 65
Q	409	2 25	658 5
Q	414	2 2	658 55
Q	419	2 35	658 4
Q	424	2 2	658 55
Q	429	2 2	658 55
Q	434	2	658 75
Q	439	1 95	658 8
Q	444	1 7	659 05
Q	449	1 65	659 1
Q	454	1 8	658 95
Q	459	1 8	658 95
Q	464	1 85	658 9
Q	469	1 9	658 85
Q	474	1 9	658 85
Q	479	1 85	658 9
Q	484	1 85	658 9
Q	489	1.9	658 85
Q	494	1 9	658 85
Q	499	1 9	658 85
Q	504	2	658 75
Q	509	2 1	658 65
Q	514	2	658 75
Q	519	2	658 75
Q	524	2 1	658 65
Q	529	2 2	658 55
Q	534	2 3	658 45
Q	539	2 5	658 25
Q	544	2 8	657 95

Transect	Distance	UncElev	Elevation
Q	549	2 8	657 95
Q	554	3 1	657 65
Q	559	3 1	657 65
Q	564	3 2	657 55
Q	569	3 2	657 55
Q	574	3 2	657 55
Q	579	3 2	657 55
Q	584	3 4	657 35
Q	589	3 5	657 25
Q	594	3 6	657 15
Q	599	3 6	657 15
Q	604	3 7	657 05
Q	609	4 3	656 45
Q	614	4 1	656 65
Q	619	4 1	656 65
Q	624	4 11	656 64
Q	629	4	656 75
Q	634	3 4	657 35
Q	639	3 2	657 55
Q	644	3 4	657 35
Q	649	0	659 94
T-0	0	0 82	827 38
T-0	5	5 33	822 87
T-0	10	5 08	823 12
T-0	15	4 62	823 58
T-0	20	4 59	823 61
T-0	25	4 49	823 71
T-0	30	4 53	823 67
T-0	35	4 56	823 64
T-0	40	4 77	823 43
T-0	45	4 64	823 56
T-0	50	4 1	824 1
T-0	55	3 86	824 34
T-0	60	3 85	824 35
T-15	0	4 23	661 53
T-15	5	4 33	661 43
T-15	10	4 84	660 92
T-15	15	5 56	660 2

Transect	Distance	UncElev	Elevation
T-15	20	6 58	659 18
T-15	25	7 23	658 53
T-15	30	7 48	658 28
T-15	35	7 17	658 59
T-15	40	7 41	658 35
T-15	45	8 11	657 65
T-15	50	9 24	656 52
T-15	55	9 1	656 66
T-15	60	8 98	656.78
T-15	65	8 9	656 86
T-15	70	8 83	656 93
T-15	75	8 8	656 96
T-15	80	8 77	656 99
T-15	85	8 7	657 06
T-15	90	8 7	657 06
T-15	95	8 8	656 96
T-15	100	8 85	656 91
T-15	105	8 91	656 85
T-15	110	8 9	656 86
T-15	115	8 79	656 97
T-15	120	8 63	657 13
T-15	125	8 42	657 34
T-15	130	8 29	657 47
T-15	135	8 24	657 52
T-15	140	8 2	657 56
T-15	145	8	657 76
T-15	150	8 01	657 75
T-15	155	7 98	657 78
T-15	160	8 19	657.57
T-15	165	8 13	657 63
T-15	170	8 03	657 73
T-15	175	8 13	657 63
T-15	180	8 25	657 51
T-15	185	7 98	657 78
T-15	190	7 86	657 9
T-15	195	7 89	657 87
T-15	200	7 91	657 85
T-15	205	8	657 76

Transect	Distance	UncElev	Elevation
T-15	210	8 24	657 52
T-15	215	8 14	657 62
T-15	220	9 03	656 73
T-15	225	9 13	656 63
T-15	230	9 04	656 72
T-15	235	9	656 76
T-15	240	9 03	656 73
T-15	245	9 17	656 59
T-15	250	9	656 76
T-15	255	- 8 4	657 36
T-15	261 2	6 54	659 22
T-16	0	4 62	661 4
T-16	5	4 56	661 46
T-16	10	4 48	661 54
T-16	15	4 6	661 42
T-16	20	5 1	660 92
T-16	25	5 69	660 33
T-16	30	6 07	659 95
T-16	35	6 85	659 17
T-16	40	6 8	659 22
T-16	45	6 98	659 04
T-16	50	7 14	658 88
T-16	55	7 3	658 72
T-16	60	7 45	658 57
T-16	65	8 22	657 8
T-16	70	8 63	657 39
T-16	75	9 07	656 95
T-16	80	9 24	656 78
T-16	85	9 2	656 82
T-16	90	9 26	656 76
T-16	95	9 3	656 72
T-16	100	9 39	656 63
T-16	115 2	7 41	658 61
T-16	119 7	6 02	660
T-16	121 7	1 61	664 41
T-17	0	3 021	662 62
T-17	5	4 84	660 801
T-17	10	5 45	660 191

Transect	Distance	UncElev	Elevation
T-17	15	5 38	660 261
T-17	20	5 5	660 141
T-17	25	5 55	660 091
T-17	30	5 67	659 971
T-17	35	5 84	659 801
T-17	40	6	659 641
T-17	45	5 98	659 661
T-17	50	6 26	659 381
T-17	55	6 24	659 401
T-17	60	6 38	659 261
T-17	65	6 6	659 041
T-17	70	6 95	658 691
T-17	75	7 1	658 541
T-17	80	6 77	658 871
T-17	85	6 71	658 931
T-17	90	5 81	659 831
T-17	95	5 99	659 651
T-17	100	6 65	658 991
T-17	117 5	4 31	661 331
T-18	0	4 4	663 92
T-18	5	5 57	662 75
T-18	10	6 19	662 13
T-18	15	6 62	661 7
T-18	20	7 04	661 28
T-18	25	7 64	660 68
T-18	30	8 05	660 27
T-18	35	8 67	659 65
T-18	40	9	659 32
T-18	45	8 81	659 51
T-18	50	8 64	659 68
T-18	55	8 15	660 17
T-18	60	8 32	660
T-18	65	8 03	660 29
T-18	70	8 7	659 62
T-18	75	6 19	662 13
T-18	80	2 47	665 85
T-18	84 6	1 03	667 29
T-19	0	2 53	676 07

Transect	Distance	UncElev	Elevation
T-19	6 95	5 5	673 1
T-19	11 95	6 84	671 76
T-19	16 95	8 18	670 42
T-19	21 95	9 41	669 19
T-19	26 95	8 7	669 9
T-19	31 95	8 91	669 69
T-19	36 95	10 82	667 78
T-19	41 95	11 03	667 57
T-19	46 95	10 41	668 19
T-19	51 95	- 9 89	668 71
T-19	56 95	7 34	671 26
T-19	61 95	6 2	672 4
T-19	66 95	6 74	671 86
T-19	71 95	5 5	673 1
T-19	76 95	4 17	674 43
W-10	0	4 65	661 79
W-10	5	4 14	662 3
W-10	10	5 69	660 75
W-10	15	6 08	660 36
W-10	20	7 09	659 35
W-10	25	6 78	659 66
W-10	30	7 05	659 39
W-10	35	7 37	659 07
W-10	40	7 86	658 58
W-10	45	7 9	658 54
W-10	50	8 16	658 28
W-10	55	8 08	658 36
W-10	60	8 31	658 13
W-10	65	8 49	657 95
W-10	70	8 53	657 91
W-10	75	8 57	657 87
W-10	80	8 55	657 89
W-10	85	8 26	658 18
W-10	90	8 39	658 05
W-10	95	8 69	657 75
W-10	100	9 05	657 39
W-10	113 5	6 18	660 26
W-12	0	2 96	666 86

Transect	Distance	UncElev	Elevation
W-12	5	5 2	664 62
W-12	10	6 85	662 97
W-12	15	9 3	660 52
W-12	20	11 3	658 52
W-12	25	10 61	659 21
W-12	30	10 35	659 47
W-12	35	10 28	659 54
W-12	40	10 16	659 66
W-12	45	10 14	659 68
W-12	50	10 15	659 67
W-12	55	9 94	659 88
W-12	60	9 84	659 98
W-12	65	9 76	660 06
W-12	70	9 05	660 77
W-12	75	8 28	661 54
W-12	80	8 13	661 69
W-12	85	4 5	665 32
W-7	0	1 96	663 93
W-7	9 2	4 5	661 39
W-7	14 2	5 58	660 31
W-7	19 2	7 4	658 49
W-7	24 2	6 2	659 69
W-7	29 2	9 76	656 13
W-7	34 2	10	655 89
W-7	39 2	9 96	655 93
W-7	44 2	10 1	655 79
W-7	49 2	10 13	655 76
W-7	54 2	9 48	656 41
W-7	59 2	8 86	657 03
W-7	64 2	8 74	657 15
W-7	69 2	8 6	657 29
W-7	74 2	8 46	657 43
W-7	79 2	8 58	657 31
W-7	84 2	8 58	657 31
W-7	89 2	8 5	657 39
W-7	94 2	8 42	657 47
W-7	99 2	8 54	657 35
W-7	104 2	8 79	657 1

Transect	Distance	UncElev	Elevation
W-7	109 2	9 46	656 43
W-7	114 2	11 12	654 77
W-7	119 2	11 26	654 63
W-7	124 2	11 04	654 85
W-7	129 2	10 9	654 99
W-7	134 2	11 26	654 63
W-7	139 2	11 3	654 59
W-7	144 2	11 48	654 41
W-7	149 2	11 6	654 29
W-7	154 2	11 74	654 15
W-7	159 2	11 76	654 13
W-7	164 2	11 8	654 09
W-7	169 2	11 68	654 21
W-7	174 2	11 56	654 33
W-7	179 2	11 32	654 57
W-7	184 2	11 02	654 87
W-7	189 2	10 78	655 11
W-7	194 2	10 86	655 03
W-7	199 2	10 78	655 11
W-7	204 2	10 47	655 42
W-7	209 2	10 44	655 45
W-7	214 2	10 46	655 43
W-7	219 2	10 2	655 69
W-7	224 2	10 06	655 83
W-7	229 2	9 76	656 13
W-7	234 2	9 56	656 33
W-7	239 2	9 6	656 29
W-7	244 2	9 54	656 35
W-7	249 2	9 49	656 4
W-7	254 2	9 02	656 87
W-7	259 2	8 35	657 54
W-7	264 2	8 02	657 87
W-7	269 2	7 58	658 31
W-7	274 2	7 45	658 44
W-7	279 2	7 42	658 47
W-7	284 2	7 45	658 44
W-7	289 2	7 82	658 07
W-7	294 2	8	657 89

Transect	Distance	UncElev	Elevation
W-7	299 2	9 26	656 63
W-7	304 2	9 09	656 8
W-7	309 2	9 44	656 45
W-7	314 2	9 49	656 4
W-7	319 2	9 76	656 13
W-7	324 2	10 06	655 83
W-7	329 2	10 22	655 67
W-7	334 2	10 31	655 58
W-7	339 2	10 21	655 68
W-7	344 2	10 1	655 79
W-7	349 2	10 19	655 7
W-7	354 2	10 39	655 5
W-7	359 2	9 93	655 96
W-7	364 2	9 57	656 32
W-7	369 2	9 21	656 68
W-7	374 2	8 09	657 8
W-7	379 2	8 03	657 86
W-7	384 2	8 16	657 73
W-7	389 2	8 09	657 8
W-7	394 2	8 06	657 83
W-7	399 2	8 01	657 88
W-7	404 2	8 25	657 64
W-7	409 2	8 59	657 3
W-7	414 2	8 6	657 29
W-7	419 2	8 64	657 25
W-7	424 2	8 65	657 24
W-7	429 2	8 7	657 19
W-7	434 2	8 67	657 22
W-7	439 2	8 78	657 11
W-7	444 2	8 64	657 25
W-7	449 2	8 68	657 21
W-7	454 2	8 86	657 03
W-7	459 2	9 06	656 83
W-7	464 2	9 2	656 69
W-7	469 2	9 07	656 82
W-7	474 2	9 26	656 63
W-7	479 2	9 34	656 55
W-7	484 2	8 63	657 26

Transect	Distance	UncElev	Elevation
W-7	489 2	7 66	658 23
W-7	494 2	6 74	659 15
W-7	499 2	4 69	661 2

Transect	TransSide	Northing	Easting	Elevation
T-19	A	1070896 04	1461270 21	676 06
T-19'	B	1070885 79	1461347 67	674 43
T-18	A	1070166 91	1461895 71	663 92
T-18'	B	1070182 83	1461978 71	667 3
W-12	A	1068373 91	1461280 54	666 86
W-12'	B	1068406 89	1461361 29	665 33
W-10	A	1066331 29	1461973 09	661 79
W-10'	B	1066223 16	1461998 91	660 33
T-16	A	1064474 58	1460577 15	661 4
T-16'	B	1064362 12	1460621 43	664 34
T-15	A	1063481 74	1458759 94	661 53
T-15'	B	1063279 96	1458921 66	659 06
W-7	A	1061814 63	1457303 66	661 2
W-7'	B	1062229 77	1457032 24	664 13
Q'	B	1061268 59	1455412 34	659 94
Q	A	1060681 94	1455178 39	660 75
T-17	A	1066996 14	1462070 38	662 62
T-17'	B	1067083 89	1462148 57	661 39
LB-2	A	1084390 9	1474929 14	823 91
LB-2'	B	1083930.54	1474932 59	829 86
LB-3	A	1083910 44	1474994 23	827 45
LB-3'	B	1083907 07	1475056 32	825 19
T-0	A	1084862 15	1474764 48	827 38
LB-1'	B	1085435 42	1474616 78	825 79
LB-1	A	1085416 89	1474550 01	827 07

transect	x	y	Elevation
H	331000 616948	3841650 90139	655 86
H	331001 974632	3841650 20926	655 07
H	331003 332316	3841649 51713	653 99
H	331004 69	3841648 825	649 908333333
H	331008 948	3841648 611	646 508333333
H	331012 982	3841647 482	644 608333333
H	331017 321	3841645 226	639 108333333
H	331021 946	3841642 662	635 108333333
H	331027 091	3841639 708	631 208333333
H	331032 459	3841636 565	629 608333333
H	331037 915	3841633 383	629 008333333
H	331043 459	3841629 992	628 808333333
H	331048 848	3841626 601	628 608333333
H	331054 451	3841623 254	628 608333333
H	331059 955	3841619 955	628 608333333
H	331065 588	3841616 405	628 708333333
H	331070 372	3841613 494	628 608333333
H	331077 736	3841608 902	628 708333333
H	331081 635	3841606 535	628 608333333
H	331086 988	3841603 186	628 608333333
H	331092 731	3841599 59	628 708333333
H	331098 214	3841596 328	628 708333333
H	331103 816	3841593 252	628 608333333
H	331109 319	3841589 889	628 508333333
H	331114 823	3841586 728	628 608333333
H	331120 385	3841583 654	628 708333333
H	331125 948	3841580 67	628 708333333
H	331131 501	3841577 268	628 608333333
H	331137 047	3841574 315	628 608333333
H	331142 744	3841571 14	628 708333333
H	331148 36	3841567 604	629 008333333
H	331153 896	3841564 462	628 608333333
H	331159 512	3841561 313	628 608333333
H	331165 264	3841558 086	627 108333333
H	331170 574	3841554 68	627 108333333
H	331176 146	3841551 567	626 808333333
H	331181 855	3841548 351	626 708333333
H	331187 303	3841545 297	626 608333333
H	331192 79	3841541 914	626 708333333
H	331198 39	3841538 896	626 808333333
H	331204 042	3841535 978	627 308333333
H	331210 214	3841532 805	627 108333333
H	331215 585	3841530 041	627 108333333
H	331221 342	3841527 594	627 308333333

transect	x	y	Elevation
H	331227 847	3841524 687	628 008333333
H	331233 648	3841521 854	627 508333333
H	331239 559	3841519 272	627 708333333
H	331245 336	3841516 79	627 908333333
H	331251 287	3841514 26	628 008333333
H	331257 354	3841511 311	628 008333333
H	331262 93	3841508 964	627 908333333
H	331268 929	3841506 445	628 108333333
H	331275 176	3841503 77	628 408333333
H	331280 768	3841501 327	628 908333333
H	331286 483	3841499 122	629 408333333
H	331292 402	3841496 922	630 308333333
H	331298 287	3841494 509	635 808333333
H	331302 503	3841492 962	641 808333333
H	331306 211	3841491 986	646 108333333
H	331309 044	3841491 565	647 708333333
H	331311 406	3841491 104	649 608333333
H	331313 399	3841491 189	650 608333333
H	331314 756684	3841490 49687	651 54
H	331316 114368	3841489 80474	653 05
H	331317 472052	3841489 11261	653 91
H	331318 829737	3841488 42048	654 78
H	331320 187421	3841487 72835	655 65
I	331499 443228	3842079 82967	655 45
I	331500 812782	3842079 16133	654 54
I	331502 182337	3842078 49300	653 54
I	331503 551891	3842077 82467	652 12
I	331504 921446	3842077 15633	650 96
I	331506 291	3842076 488	647 508333333
I	331506 347	3842076 493	647 608333333
I	331508 531	3842075 747	647 708333333
I	331512 532	3842073 707	646 908333333
I	331517 667	3842070 787	644 908333333
I	331522 776	3842067 78	644 308333333
I	331527 719	3842064 934	643 108333333
I	331532 516	3842062 169	643 108333333
I	331540 392	3842058 296	645 608333333
I	331544 226	3842056 4	647 008333333
I	331549 905	3842053 316	648 008333333
I	331554 736	3842050 7	647 708333333
I	331559.579	3842048 392	647 508333333
I	331564 449	3842046 116	647 808333333
I	331569 464	3842043 696	648 608333333
I	331574 461	3842041 309	650 008333333

transect	x	y	Elevation
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I	331584 525	3842036 894	650 108333333
I	331589 743	3842034 205	649 808333333
I	331595 283	3842032 034	648 508333333
I	331601 21	3842029 852	645 208333333
I	331607 552	3842027 384	644 908333333
I	331613 334	3842024 348	637 308333333
I	331619 143	3842021 895	634 708333333
I	331625 291	3842019 203	633 708333333
I	331631 016	3842016 382	633 308333333
I	331636 672	3842013 578	633 108333333
I	331642 538	3842010 928	633 108333333
I	331648 258	3842008 259	633 008333333
I	331654.186	3842005 25	633 108333333
I	331659.262	3842002 649	633 108333333
I	331665 148	3841999 891	633 308333333
I	331670 994	3841997 124	633 508333333
I	331674 579	3841994 979	633 408333333
I	331680 162	3841992 243	633 708333333
I	331686 071	3841989 381	633 708333333
I	331692 077	3841986 429	633 508333333
I	331697 869	3841983 531	633 808333333
I	331703 724	3841980 528	634 308333333
I	331709 478	3841977 465	634 108333333
I	331715 382	3841974 363	630 908333333
I	331720 833	3841971 433	630 008333333
I	331726 553	3841968 437	630 008333333
I	331732 31	3841965 377	631 108333333
I	331738 193	3841962 277	633 608333333
I	331743 748	3841959 349	633 608333333
I	331749 515	3841956 298	633 308333333
I	331755 291	3841953 269	632 808333333
I	331761 119	3841950 354	632 308333333
I	331766 986	3841947 425	632 008333333
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I	331778 692	3841941 556	631 408333333
I	331784 938	3841938 494	631 308333333
I	331790 22	3841935 863	631 508333333
I	331796 186	3841932 98	631 508333333
I	331802 336	3841930 156	631 708333333
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I	331814 22	3841924 873	633.608333333
I	331820 083	3841921 951	638 908333333
I	331825 222	3841919 464	643 508333333

transect	x	y	Elevation
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I	331832 909	3841915 694	649 508333333
I	331834 278554	3841915 02567	651 97
I	331835 648109	3841914 35733	653 45
I	331837 017663	3841913 689	654 1
I	331838 387218	3841913 02067	654 67
I	331839 756772	3841912 35233	655 64
J	331990 443172	3842629 42333	655 3
J	331991 775879	3842628 68424	652 9
J	331993 108586	3842627 94516	652 4
J	331994 441293	3842627 20608	652.2
J	331995 774	3842626 467	648 308333333
J	332003 392	3842619 787	651 108333333
J	332006 909	3842616 295	650 108333333
J	332011 015	3842613 213	649 808333333
J	332015 778	3842610 321	649 908333333
J	332020 915	3842607 522	649 208333333
J	332027 711	3842604 05	650 008333333
J	332033.238	3842601 301	651 008333333
J	332038 957	3842598 564	651 008333333
J	332044 791	3842595 907	649 508333333
J	332050 502	3842593 238	647 108333333
J	332056 332	3842590 497	643 408333333
J	332062 226	3842587 67	637 808333333
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J	332079 857	3842579 23	630 308333333
J	332085 679	3842576 287	631 408333333
J	332091 516	3842573 404	633 008333333
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J	332103 106	3842567 501	636 508333333
J	332108 961	3842564 396	636 308333333
J	332114 838	3842561 38	635 908333333
J	332120 656	3842558 34	636 208333333
J	332126 475	3842555 289	636 708333333
J	332132 391	3842552 275	636 308333333
J	332138 06	3842549 006	635 708333333
J	332143 815	3842545 708	636 008333333
J	332149 527	3842542 312	636 708333333
J	332155 129	3842538 789	636 508333333
J	332160 698	3842535.203	636 808333333
J	332166 348	3842531 768	637 308333333
J	332171 561	3842528 697	637 608333333
J	332177 236	3842525 566	637 808333333

transect	x	y	Elevation
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J	332184 298	3842520 39	637 908333333
J	332186 986	3842518 016	638 008333333
J	332189 364	3842516 342	638 008333333
J	332191 623	3842515 333	639 508333333
J	332193 931	3842514 522	642 708333333
J	332195 530248	3842513 63510	650 1
J	332196 596414	3842513 04384	651 8
K	332306 476	3842643 27	650 408333333
K	332307 74	3842640 298	647 008333333
K	332309 887	3842636 443	642 408333333
K	332311 642	3842631 836	637 608333333
K	332313 577	3842626 897	635 608333333
K	332315 705	3842621 635	633 208333333
K	332317 795	3842615 981	631 108333333
K	332319 945	3842610 262	630 508333333
K	332322 358	3842604 12	629 908333333
K	332324 459	3842598 657	630 308333333
K	332326 666	3842592 846	635 408333333
K	332328 885	3842586 927	635 208333333
K	332330 9	3842581 142	634 208333333
K	332332 893	3842575 172	634 308333333
K	332334 908	3842569 211	634 608333333
K	332336 951	3842563 275	634 908333333
K	332339 011	3842557 332	634 808333333
K	332341 207	3842551 25	634 508333333
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K	332347 996	3842533 821	635 308333333
K	332350 474	3842527 75	635 808333333
K	332352 803	3842521 823	636 008333333
K	332355 071	3842516 034	636 208333333
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K	332359 939	3842504 197	636 708333333
K	332362 457	3842498 926	637.308333333
K	332365 338	3842494 763	639 708333333
K	332367 443	3842491 897	643 908333333
L	332494 603	3843137 193	647 308333333
L	332499 639	3843136 262	646 208333333
L	332504 227	3843135 981	646 508333333
L	332509 267	3843135 457	647 308333333
L	332514 76	3843134 74	647 208333333
L	332520 926	3843134 02	646 808333333
L	332527 495	3843133 219	647 208333333

transect	x	y	Elevation
L	332533.855	3843132 372	648 408333333
L	332540 661	3843131 508	649 008333333
L	332547 012	3843130 857	649 708333333
L	332553 993	3843130 277	648 808333333
L	332560 367	3843129 73	648 408333333
L	332566 968	3843129 17	648 308333333
L	332573 649	3843128 697	648 808333333
L	332579 623	3843128 17	649 408333333
L	332586 337	3843127 618	649 108333333
L	332592 914	3843127 262	648 908333333
L	332599 564	3843126 964	649 108333333
L	332606 117	3843126 673	649 508333333
L	332613 122	3843126 414	650 008333333
L	332619 432	3843126 15	650 108333333
L	332624 987	3843125 909	647 808333333
L	332631 279	3843125 549	642 308333333
L	332637 954	3843125 172	639 408333333
L	332644 947	3843124 596	638 808333333
L	332651 62	3843124 01	638 608333333
L	332658 705	3843123 464	638 408333333
L	332665 988	3843122 748	638 108333333
L	332673 269	3843122 169	638 208333333
L	332680 284	3843121 38	638 308333333
L	332687 612	3843120 483	638 308333333
L	332694 474	3843119 585	638 808333333
L	332702 558	3843118 422	638 808333333
L	332709 526	3843117 408	638 908333333
L	332716 623	3843116 382	638 608333333
L	332722 612	3843115 576	637 708333333
L	332730 794	3843114 583	637 408333333
L	332737 567	3843113 659	637 108333333
L	332743 693	3843112 789	637 708333333
L	332752 351	3843111 567	639 808333333
L	332759 311	3843110 63	640 608333333
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L	332773 796	3843108 621	639 508333333
L	332780 988	3843107 812	639 108333333
L	332787 946	3843106 894	639 508333333
L	332795 1	3843105 961	639 808333333
L	332802 613	3843104 838	640 008333333
L	332809 444	3843103 915	641 608333333
L	332816 796	3843102 797	643 808333333
L	332823 612	3843101 305	645 808333333
L	332830 859	3843099 588	646 908333333

transect	x	y	Elevation
L	332837 843	3843097 854	647 808333333
L	332844 457	3843095 965	648 608333333
L	332851 187	3843093 905	649 708333333
L	332858 057	3843091 522	651 108333333
L	332859 569516	3843091 33587	651 91
L	332861 082031	3843091 14973	652 47
L	332862 594547	3843090 96360	653 15
L	332864 107063	3843090 77747	653 79
L	332865 619579	3843090 59133	654 42
L	332867 132094	3843090 40520	655 07
L	332868 64461	3843090 21907	655 79
M	332766 061051	3843389 88326	655 94
M	332767 463701	3843389 28751	654 52
M	332768 866350	3843388 69175	653 47
M	332770 269	3843388 096	650 308333333
M	332772 949	3843385 588	647 108333333
M	332777 232	3843383 863	643 108333333
M	332782 625	3843382 19	640 608333333
M	332787 988	3843380 68	639 708333333
M	332793 885	3843379 109	639 108333333
M	332799 826	3843377 419	638 808333333
M	332805 662	3843375 682	639 008333333
M	332811 602	3843374 057	639 408333333
M	332817 491	3843371 971	639 208333333
M	332823 499	3843369 787	639 408333333
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M	332835 019	3843365 196	640 208333333
M	332841 059	3843362 756	639 808333333
M	332847 096	3843359 913	639 408333333
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M	332884 38	3843346 859	641 108333333
M	332890 528	3843344 411	641 408333333
M	332896 559	3843341 551	640 908333333
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M	332908 841	3843336 05	640 508333333
M	332914 751	3843333 471	640 408333333
M	332920 983	3843330 627	639 508333333
M	332927 335	3843327 849	638 908333333
M	332933 205	3843325 159	638 908333333
M	332939 525	3843322 2	638 908333333

transect	x	y	Elevation
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M	332952 009	3843316 208	639 108333333
M	332958 121	3843313 335	639 008333333
M	332964 174	3843310 173	639 108333333
M	332969 992	3843307 315	639 308333333
M	332976 171	3843304 385	639 408333333
M	332982 445	3843301 257	639 708333333
M	332988 639	3843297 805	641 208333333
M	332994 79	3843294 263	642 408333333
M	333001 227	3843290 699	642 808333333
M	333006 78	3843287 596	643 808333333
M	333011 598	3843284 702	645 108333333
M	333015 594	3843282 35	647 008333333
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M	333025 702	3843276 948	650 508333333
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M	333033 088299	3843274 12449	651 72
M	333034 490949	3843273 52874	652 27
M	333035 893598	3843272 93298	652 94
M	333037 296248	3843272 33723	653 93
M	333038 698897	3843271 74147	655 35
N	333292 208810	3843895 04198	655 12
N	333293 104405	3843893 80899	653 6
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N	333305 614	3843879 909	641 808333333
N	333307 936	3843876 718	641 508333333
N	333310 39	3843873 428	641 208333333
N	333313 075	3843870	640 808333333
N	333313 545	3843866 289	640 508333333
N	333316 883	3843862 42	639 808333333
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N	333324 484	3843853 547	639 808333333
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transect	x	y	Elevation
N	333332 108	3843844 716	639 908333333
N	333335 849	3843840 17	640 308333333
N	333339 34	3843835 51	641 108333333
N	333342 503	3843830 718	643 108333333
N	333345 336	3843825 918	646 008333333
N	333347 558	3843821 72	647 808333333
N	333349 122	3843818 369	649 308333333
N	333350 447	3843815 619	650 708333333
N	333351 342595	3843814 38601	651 9
N	333352 23819	3843813 15302	653 3
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N	333354 029379	3843810 68705	654.37
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N	333355 820569	3843808 22107	655 62
N	333356 716164	3843806 98808	656 05
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P	333836 220696	3844841 85467	654 75
P	333837 353131	3844842 87445	654 01
P	333838 485565	3844843 89422	652 54
P	333839 618	3844844 914	651 008333333
P	333841 598	3844847 689	650 108333333
P	333844 414	3844851 363	648 008333333
P	333847 571	3844854 196	647 008333333
P	333851 951	3844858 165	647 208333333
P	333856 869	3844862 503	648 108333333
P	333861 899	3844866 76	649 308333333
P	333866 616	3844870 692	650 708333333
P	333896 927	3844898 189	651 908333333
P	333902 124	3844902 62	650 508333333
P	333906 858	3844906 565	650 108333333
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P	333925 808	3844920 904	648 808333333
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P	333929 132	3844926 481	650 908333333
P	333930 264435	3844927 50078	652 68
P	333931 396869	3844928 52055	654 04
P	333932 529304	3844929 54033	654 87
P	333933 661738	3844930 56010	655 75
T12	334151 540909	3844443 96544	654 8
T12	334152 599454	3844445 06172	653 9
T12	334153 658	3844446.158	651 75
T12	334153 658	3844447 435	652 008333333
T12	334155 863	3844446 551	649 108333333
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transect	x	y	Elevation
T12	334161 505	3844447 416	648 608333333
T12	334164 715	3844450 873	646 908333333
T12	334168 437	3844455 046	645 408333333
T12	334172 106	3844459 493	644 408333333
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T12	334180 077	3844469 02	645 508333333
T12	334184 324	3844473 845	646 008333333
T12	334188 656	3844478 763	646 208333333
T12	334192 95	3844483 845	646 408333333
T12	334197 367	3844488 708	646 708333333
T12	334201 856	3844493 539	647 208333333
T12	334206 349	3844498 375	647 408333333
T12	334210 833	3844503 166	647 808333333
T12	334215 364	3844507 899	648 008333333
T12	334219 863	3844512 607	648 108333333
T12	334224 35	3844517 331	648 108333333
T12	334228 725	3844522 126	648 008333333
T12	334233 196	3844526 875	648 008333333
T12	334237 641	3844531 686	647 508333333
T12	334241 975	3844536 571	647 308333333
T12	334246 272	3844541 539	647 308333333
T12	334250 618	3844546 582	647 308333333
T12	334255 156	3844551 182	647 208333333
T12	334259 959	3844556 087	646 908333333
T12	334264 63	3844560 683	647 008333333
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T12	334288 182	3844584 991	646 308333333
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T12	334296 879	3844595 031	645 908333333
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T12	334305 318	3844604 669	645 708333333
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T12	334314 445	3844614 446	645 608333333
T12	334318 991	3844619 021	645 708333333
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T12	334328 34	3844628 186	646 208333333
T12	334333 079	3844632 788	646 508333333
T12	334337 717	3844637 139	647.108333333
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T12	334347 309	3844646 078	649 708333333
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transect	x	y	Elevation
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T12	334353 182091	3844651 73356	652 3
T12	334354 240637	3844652 82984	652 84
T12	334355 299183	3844653 92612	653 38
T12	334356 357728	3844655 02240	653 86
T12	334357 416274	3844656 11868	654 31
T12	334358 47482	3844657 21496	654 94
T12	334359 533366	3844658 31124	655 25
T12	334360 591911	3844659 40752	655 77
T6	330217 195850	3841120 94228	655 6
T6	330218 195480	3841119 79202	654 59
T6	330219 195110	3841118 64177	653 88
T6	330220 194740	3841117 49151	652 52
T6	330221 194370	3841116 34126	651 61
T6	330222 194	3841115 191	648 908333333
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T6	330227 233	3841106 078	648 208333333
T6	330230 13	3841102 443	646 408333333
T6	330233 368	3841098 645	643 808333333
T6	330236 599	3841094 572	647 208333333
T6	330239.875	3841090 435	649 208333333
T6	330243 291	3841086 262	648 108333333
T6	330246 785	3841082 048	645.708333333
T6	330250 285	3841077 769	640 708333333
T6	330253 733	3841073 356	639 708333333
T6	330257 1	3841068 956	635 708333333
T6	330261 412	3841063 605	633 608333333
T6	330265 085	3841059 351	632 208333333
T6	330268 756	3841055 092	631 508333333
T6	330272 331	3841050 745	630 608333333
T6	330275 952	3841046 472	630 108333333
T6	330279 644	3841042 175	629 808333333
T6	330283 254	3841037 815	629 508333333
T6	330286 815	3841033 481	629 208333333
T6	330290 358	3841029 114	629 108333333
T6	330293 904	3841024 697	628 808333333
T6	330297 478	3841020 354	628 508333333
T6	330301 055	3841015 987	628 608333333
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T6	330308 213	3841007 343	628 408333333
T6	330311 855	3841002 99	628 308333333
T6	330315 598	3840998 605	628 208333333
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transect	x	y	Elevation
T6	330323 235	3840989 846	628 308333333
T6	330326 898	3840985 425	627 908333333
T6	330330 607	3840981 115	627 608333333
T6	330334 417	3840976 802	627 608333333
T6	330338 161	3840972 515	627 408333333
T6	330341 804	3840968 108	627 308333333
T6	330345 485	3840963 661	627 308333333
T6	330349 256	3840959 181	627 208333333
T6	330352 961	3840954 656	627 208333333
T6	330356 535	3840950 236	627 208333333
T6	330360 271	3840945 901	626 908333333
T6	330364 079	3840941 531	626 908333333
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T6	330390 854	3840910 498	627 508333333
T6	330394 691	3840906 193	627 808333333
T6	330398 461	3840901 811	627 808333333
T6	330403 452	3840896 5	628 208333333
T6	330406 56	3840893 375	628 108333333
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T6	330415 737	3840883 809	627 508333333
T6	330419 855	3840879 552	627 108333333
T6	330423 982	3840875 27	626 608333333
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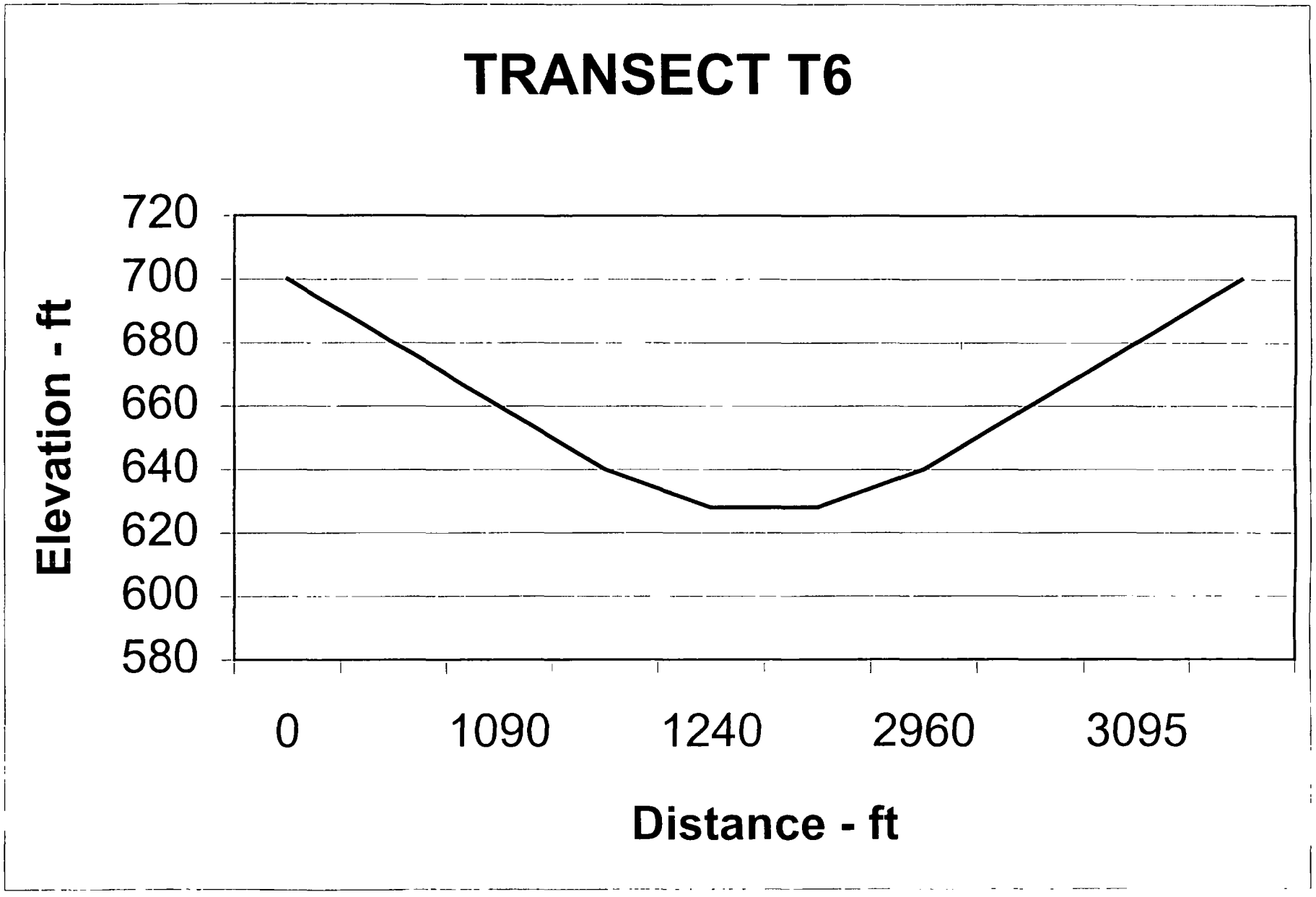
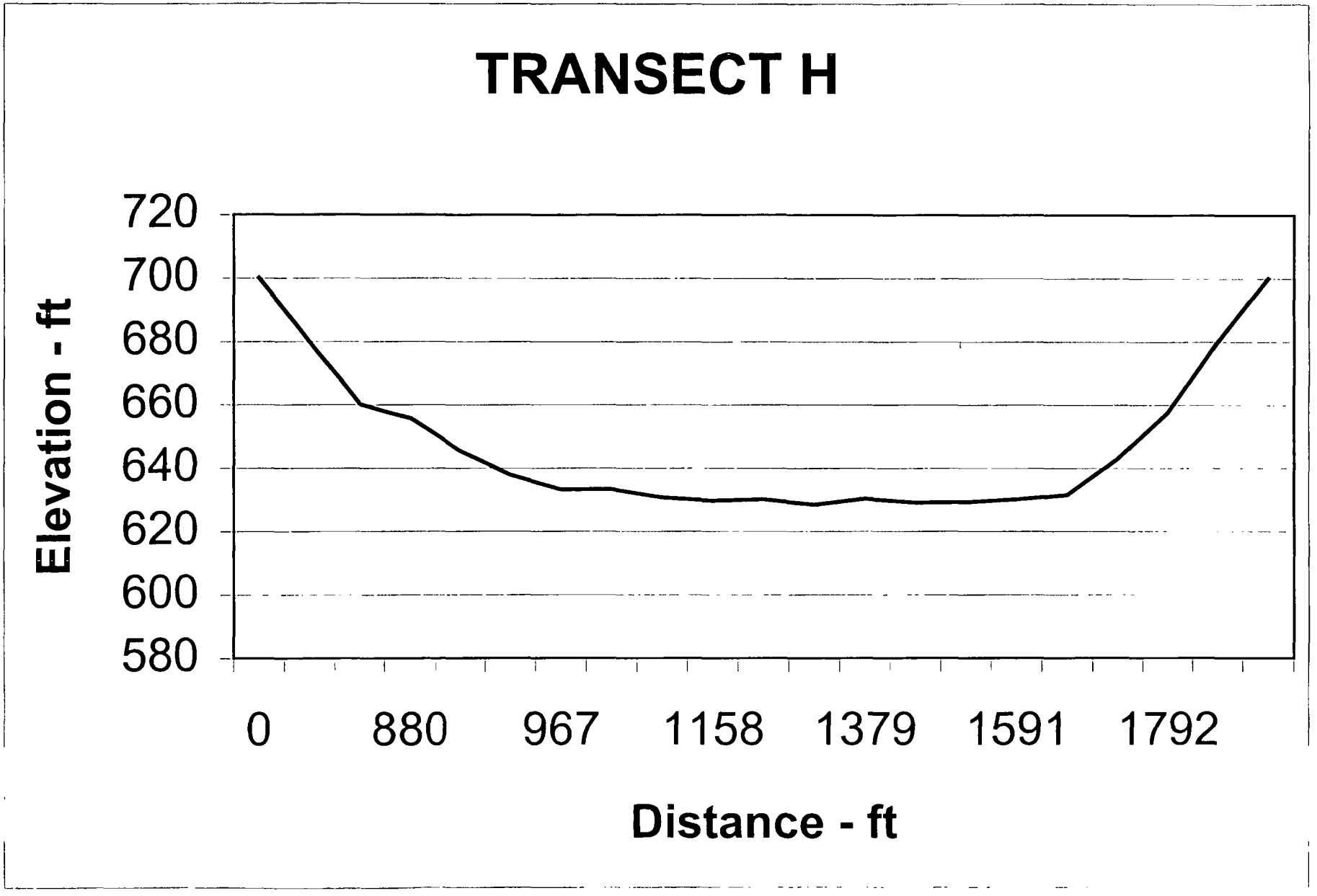
T6	330432 22	3840866 638	625 908333333
T6	330436 254	3840862 287	625 408333333
T6	330440 23	3840858 05	624 908333333
T6	330444 358	3840853 776	624 508333333
T6	330448 531	3840849 492	622 408333333
T6	330452 572	3840845 136	619 008333333
T6	330456 425	3840840 74	618 208333333
T6	330460 229	3840836 294	618 808333333
T6	330464 068	3840831 851	622 008333333
T6	330468 033	3840827 468	623 708333333
T6	330472 019	3840823 011	624 108333333
T6	330475 915	3840818 514	624 508333333
T6	330479 776	3840814 008	624 808333333
T6	330483 62	3840809 491	625 208333333
T6	330487 502	3840804 985	625 308333333
T6	330491 408	3840800 489	625 408333333

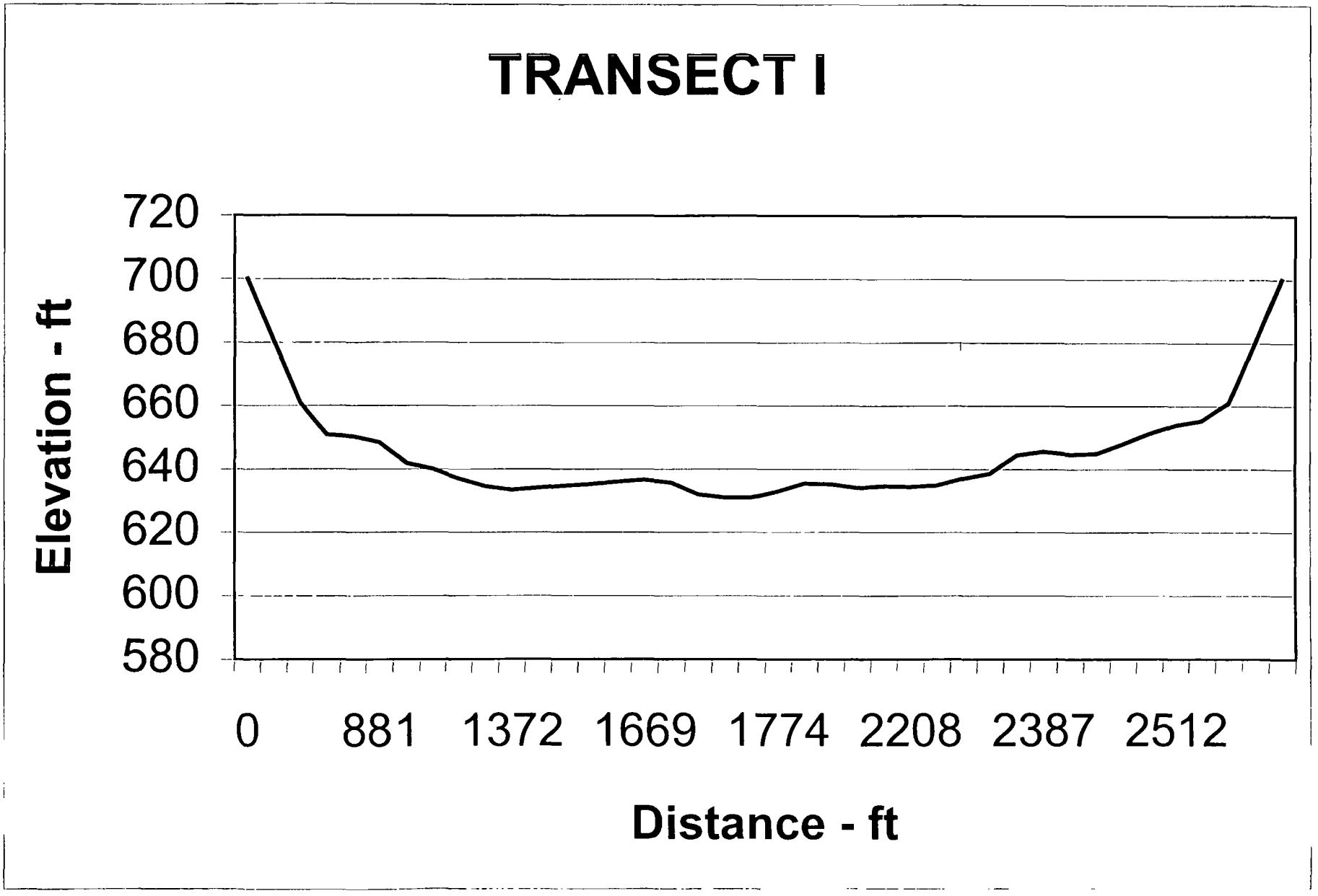
transect	x	y	Elevation
T6	330495 4	3840796 033	625 508333333
T6	330499 443	3840791 598	625 908333333
T6	330503 498	3840787 182	625 908333333
T6	330507 538	3840782 82	626 408333333
T6	330511 59	3840778 573	626 208333333
T6	330515 622	3840774 294	626 108333333
T6	330519 461	3840769 877	625 608333333
T6	330523 326	3840765 454	625 108333333
T6	330527 136	3840760 871	624 708333333
T6	330530 91	3840756 22	623 108333333
T6	330534 758	3840751 57	620 408333333
T6	330538 668	3840746 909	618 908333333
T6	330543 6	3840741 09	618 408333333
T6	330547 49	3840736 447	617 708333333
T6	330550 351	3840733 005	617 308333333
T6	330555 042	3840727 329	616 908333333
T6	330558 831	3840722 81	616 608333333
T6	330562 648	3840718 148	616 708333333
T6	330566 52	3840713 616	616 708333333
T6	330570 423	3840709 009	616 508333333
T6	330574 258	3840704 366	616 608333333
T6	330578 08	3840699 692	616 508333333
T6	330581 954	3840695 096	616 508333333
T6	330585 794	3840690 449	616 408333333
T6	330590 057	3840685 202	616 508333333
T6	330593 544	3840681 041	616 308333333
T6	330597 746	3840676 268	615 908333333
T6	330601 858	3840671 318	615 008333333
T6	330606 051	3840666 321	613 608333333
T6	330610 641	3840660 619	612 008333333
T6	330614 191	3840656 27	610 008333333
T6	330618 426	3840651 41	610 208333333
T6	330622 757	3840646 116	612 608333333
T6	330626 331	3840641 619	616 408333333
T6	330629 738	3840637 507	621 108333333
T6	330632 217	3840634 459	625 808333333
T6	330634 716	3840631 31	628 608333333
T6	330637 363	3840628 675	633 608333333
T6	330639 371	3840627 166	640 108333333
T6	330641 088	3840626 174	644 208333333
T6	330642 556	3840625 442	646 108333333
T6	330643 55563	3840624 29174	650 35
T6	330644 55526	3840623 14149	652 78
T6	330645 55489	3840621 99123	654 27

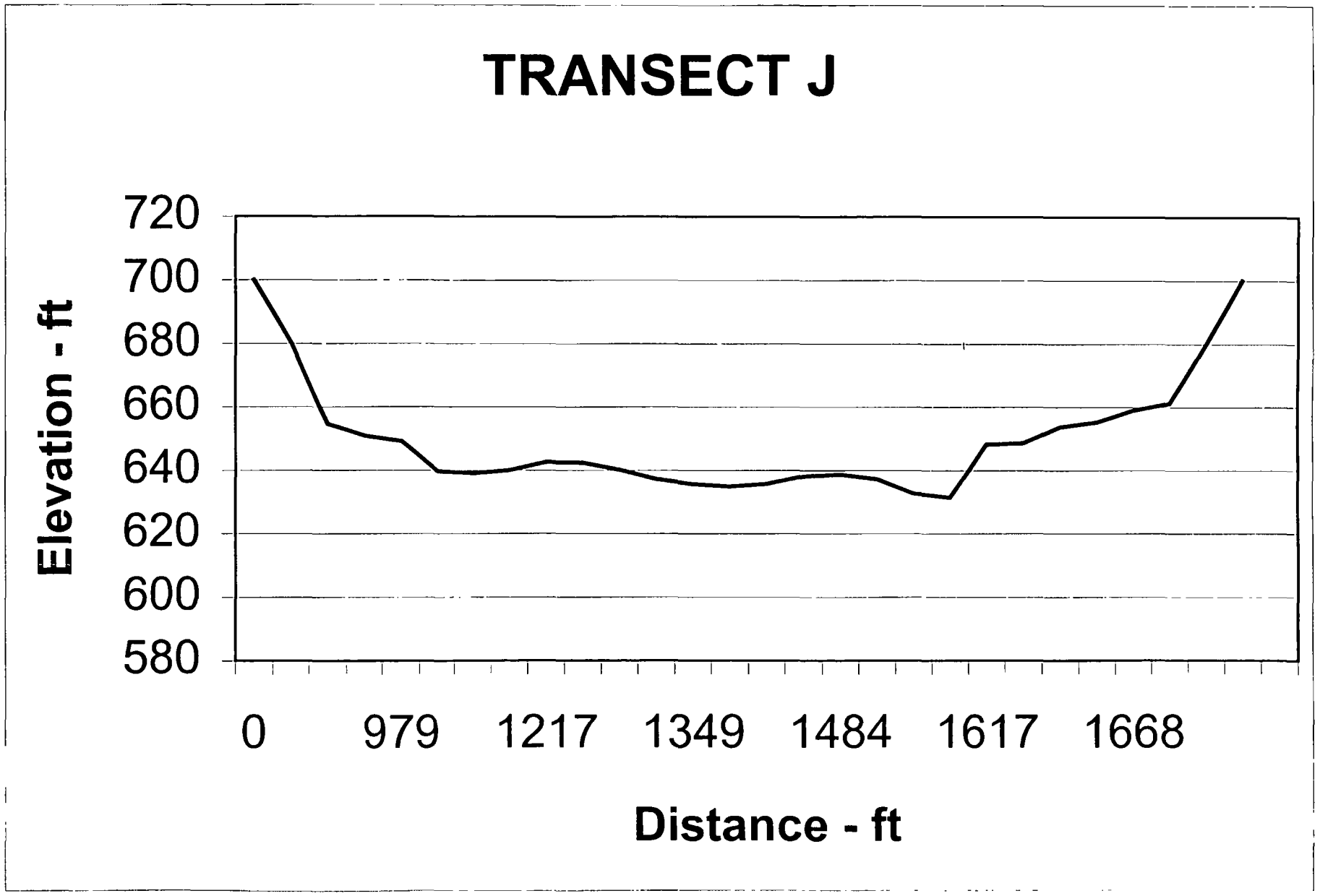
transect	x	y	Elevation
O	334075 039	3844349 08070253	654 86
O	334075 039	3844347 5567769	654 24
O	334075 039	3844346 03285126	652 37
O	334075 039	3844342 985	651 108333333
O	334078 194	3844341 525	649 408333333
O	334080 73	3844338 335	646 308333333
O	334083 029	3844333 789	643 908333333
O	334083 074	3844328 407	643 108333333
O	334083 174	3844322 995	642 708333333
O	334083 586	3844316 579	642 008333333
O	334084 211	3844310 05	641 608333333
O	334084 303	3844303 874	641 308333333
O	334084 182	3844297 523	641 808333333
O	334084 189	3844290 984	642 608333333
O	334084 34	3844284 865	643 008333333
O	334084 572	3844278 263	643 408333333
O	334084 326	3844272 3	643 408333333
O	334084 204	3844266 473	643 908333333
O	334083 71	3844260 29	644 208333333
O	334083 142	3844254 069	644 408333333
O	334082 666	3844248 252	644 508333333
O	334082 38	3844243 759	644 508333333
O	334082 346	3844240 303	644 808333333
O	334082 41	3844237 513	644 908333333
O	334082 398	3844234 478	645 008333333
O	334082 527	3844231 801	645 308333333
O	334083 07	3844229 61	646 208333333
O	334083 839	3844227 784	647 608333333
O	334084 796	3844226 171	649 008333333
O	334084 796	3844223 12314874	651 1
O	334084 796	3844221 5992231	653 1
O	334084 796	3844220 07529747	654 84
O	334084 796	3844218 55137184	655 83

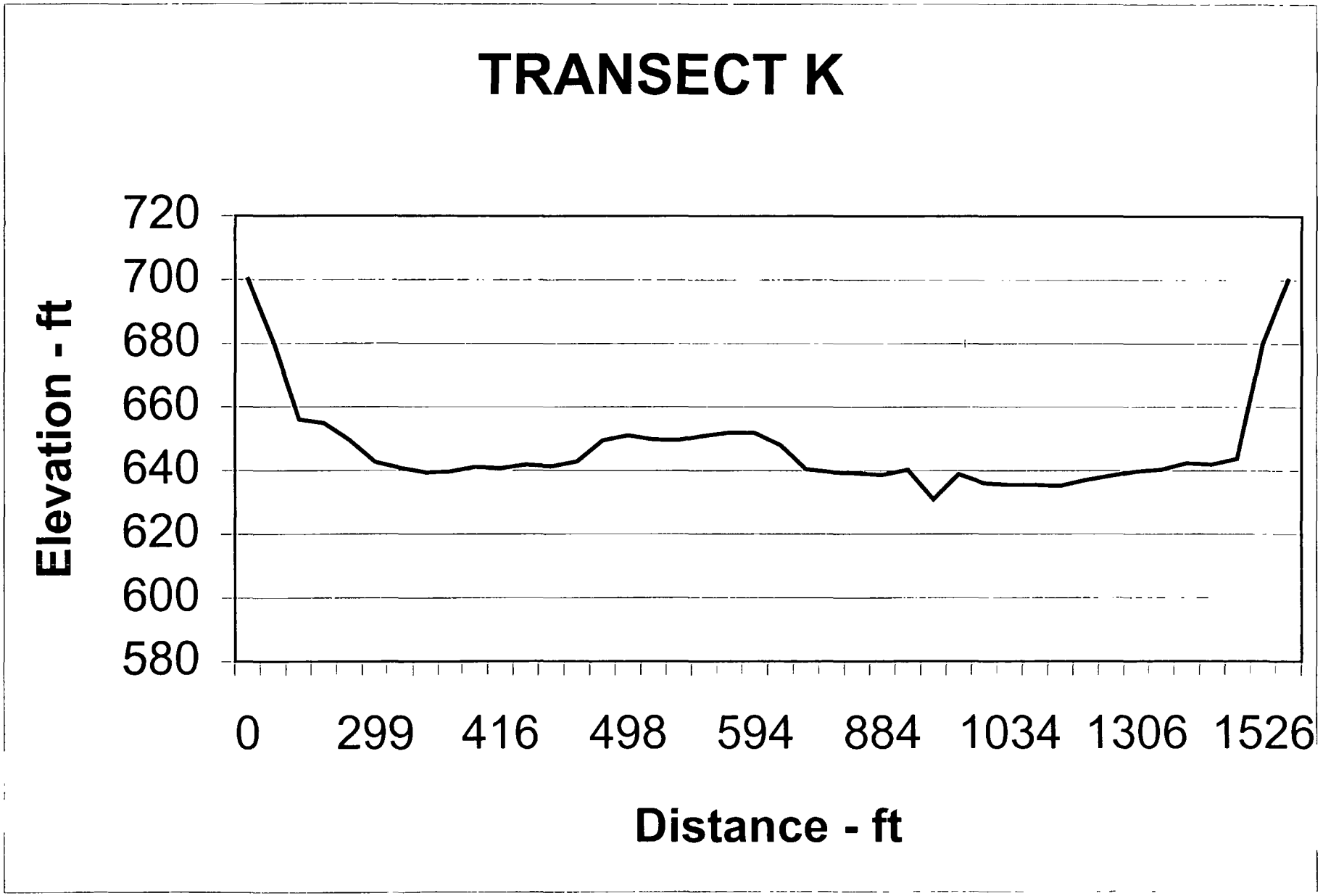
Appendix E
Transect Profiles from 1993 HEC-6 Model

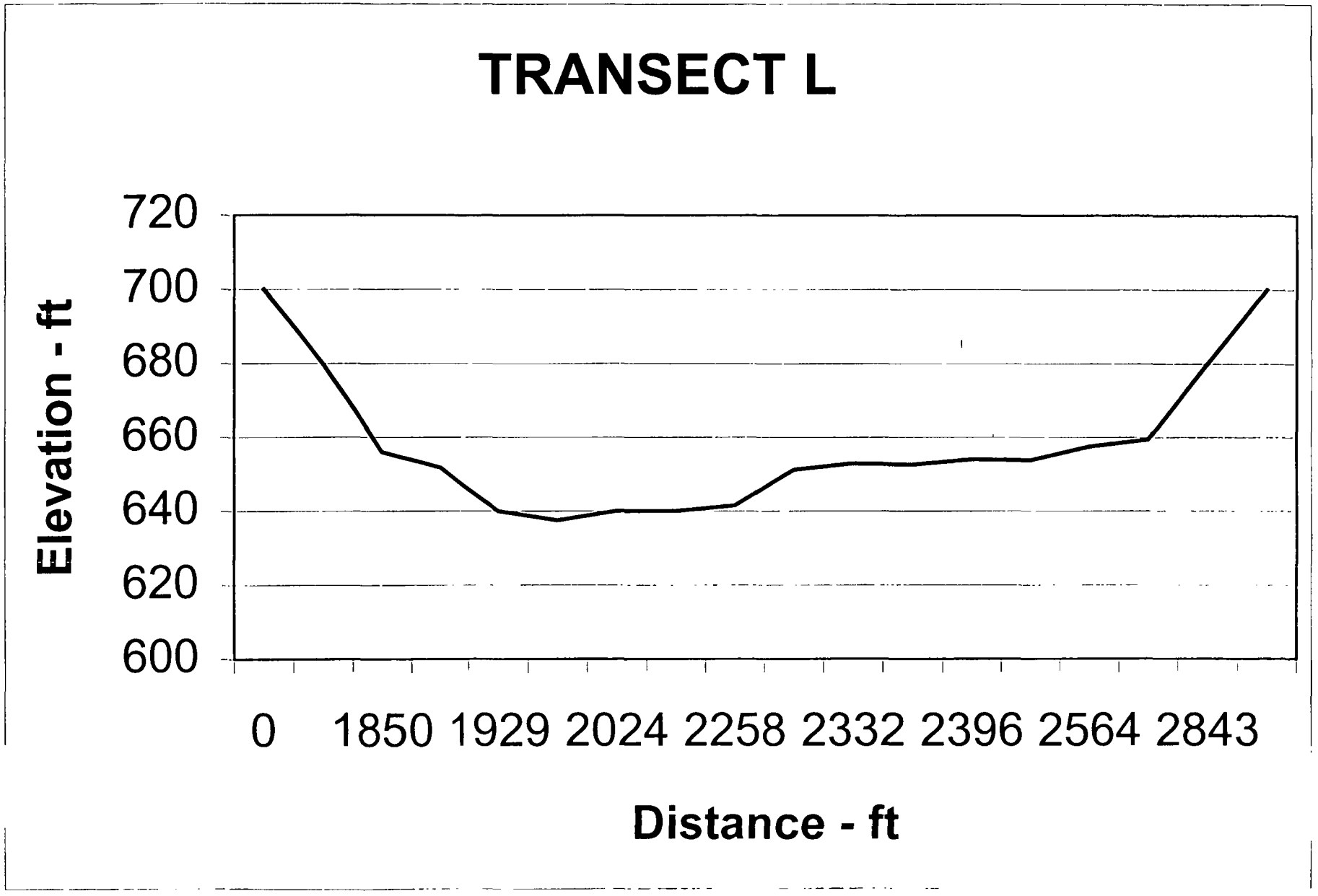

TRANSECT T6
Elevation - ft
720
700
680
660
640
620
600
580
0
1090
1240
2960
3095
Distance - ft

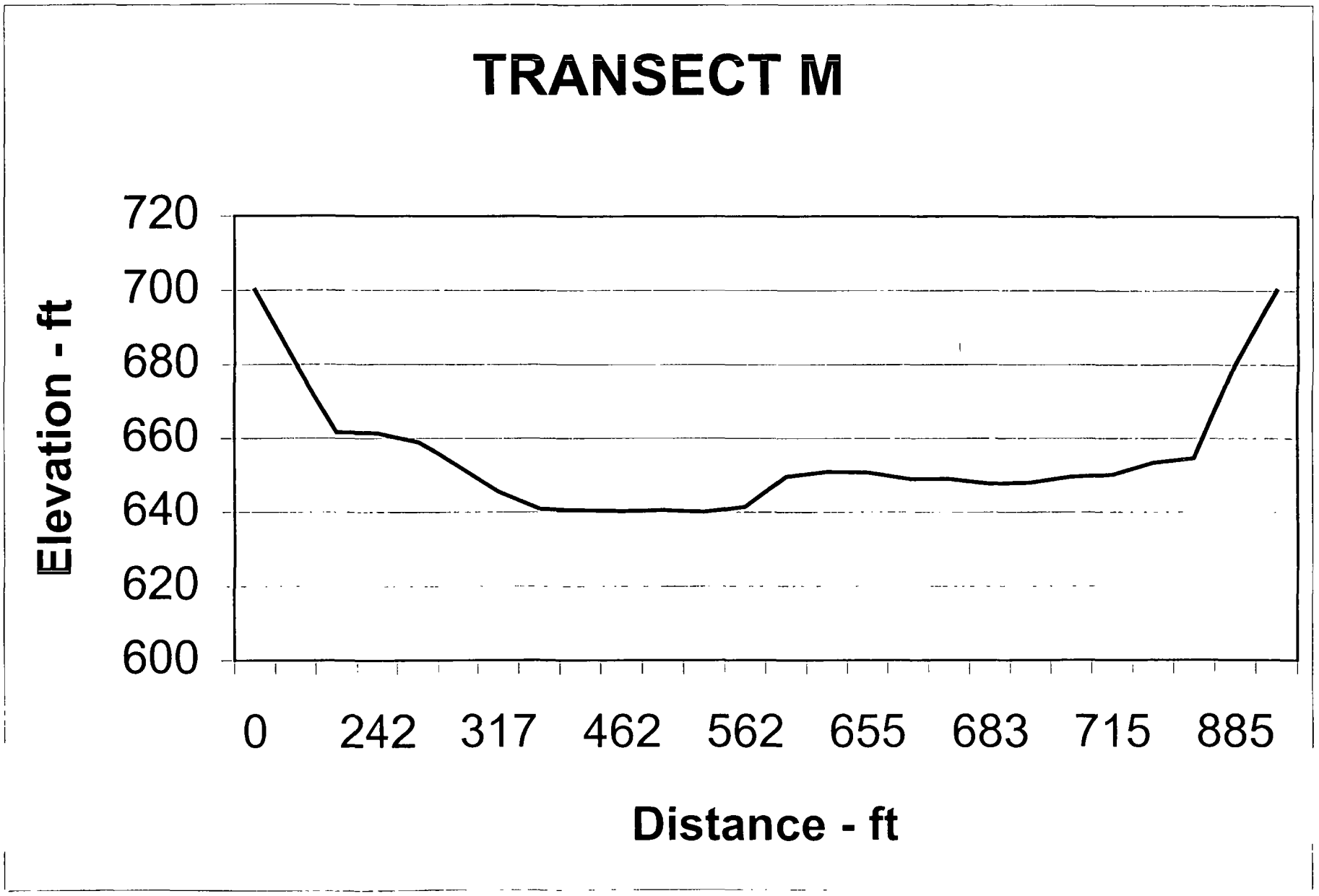

TRANSECT H
720
700
680
660
640
620
600
580
Elevation - ft
0
880
967
1158
1379
1591
1792
Distance - ft

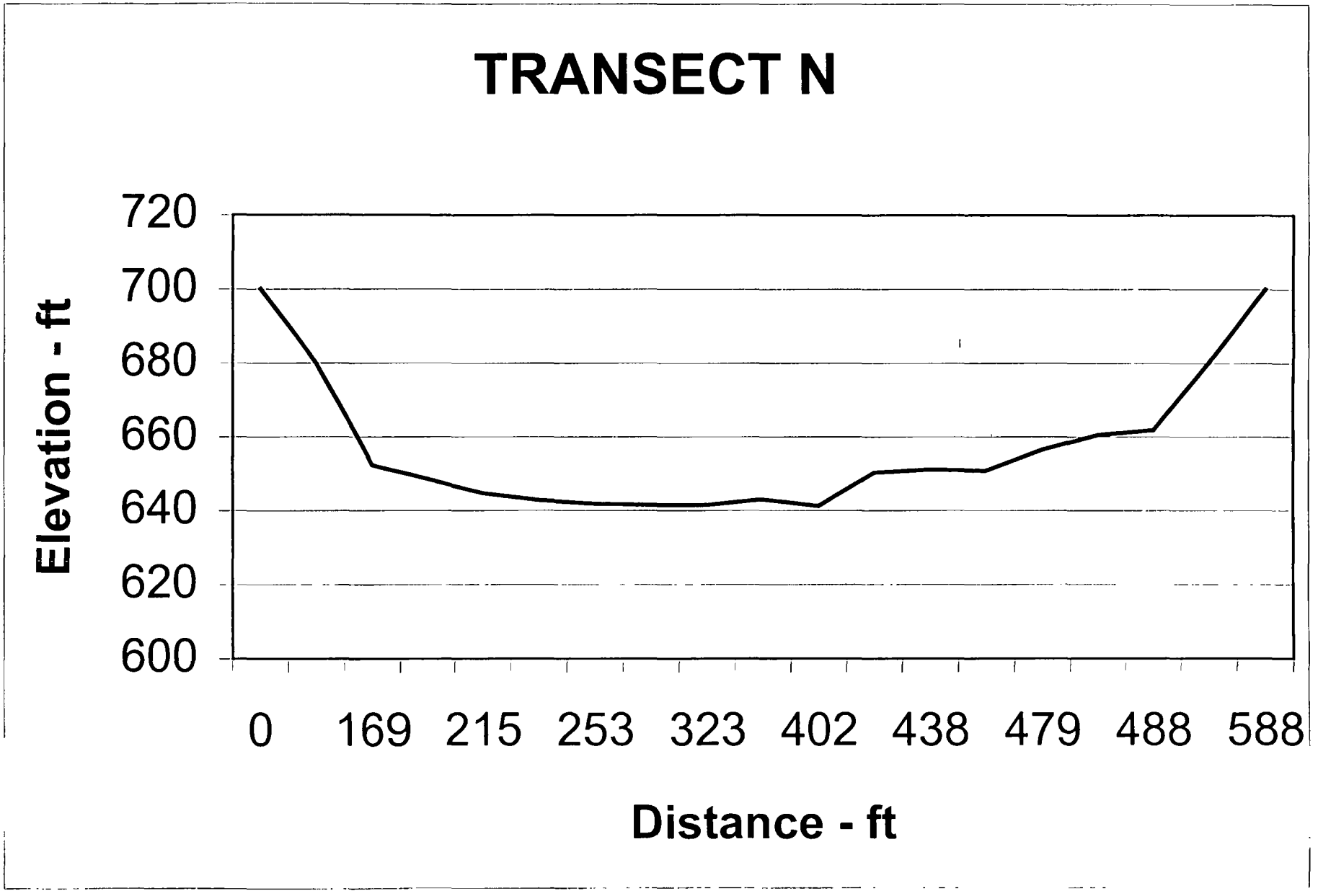

TRANSECT I
720
700
680
660
640
620
600
580
Elevation - ft
0
881
1372
1669
1774
2208
2387
2512
Distance - ft

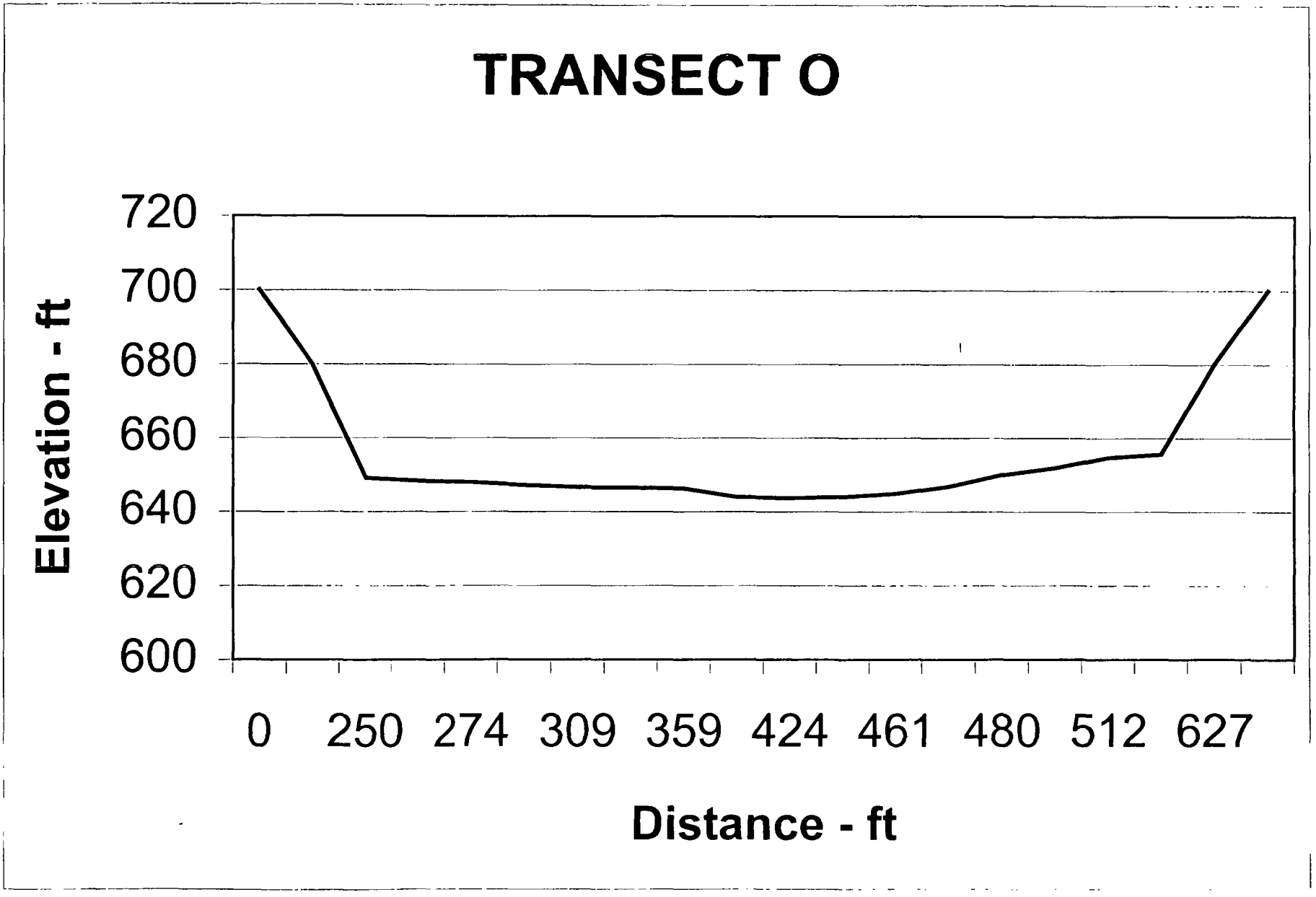

TRANSECT J
720
700
680
660
640
620
600
580
Elevation - ft
0
979
1217
1349
1484
1617
1668
Distance - ft

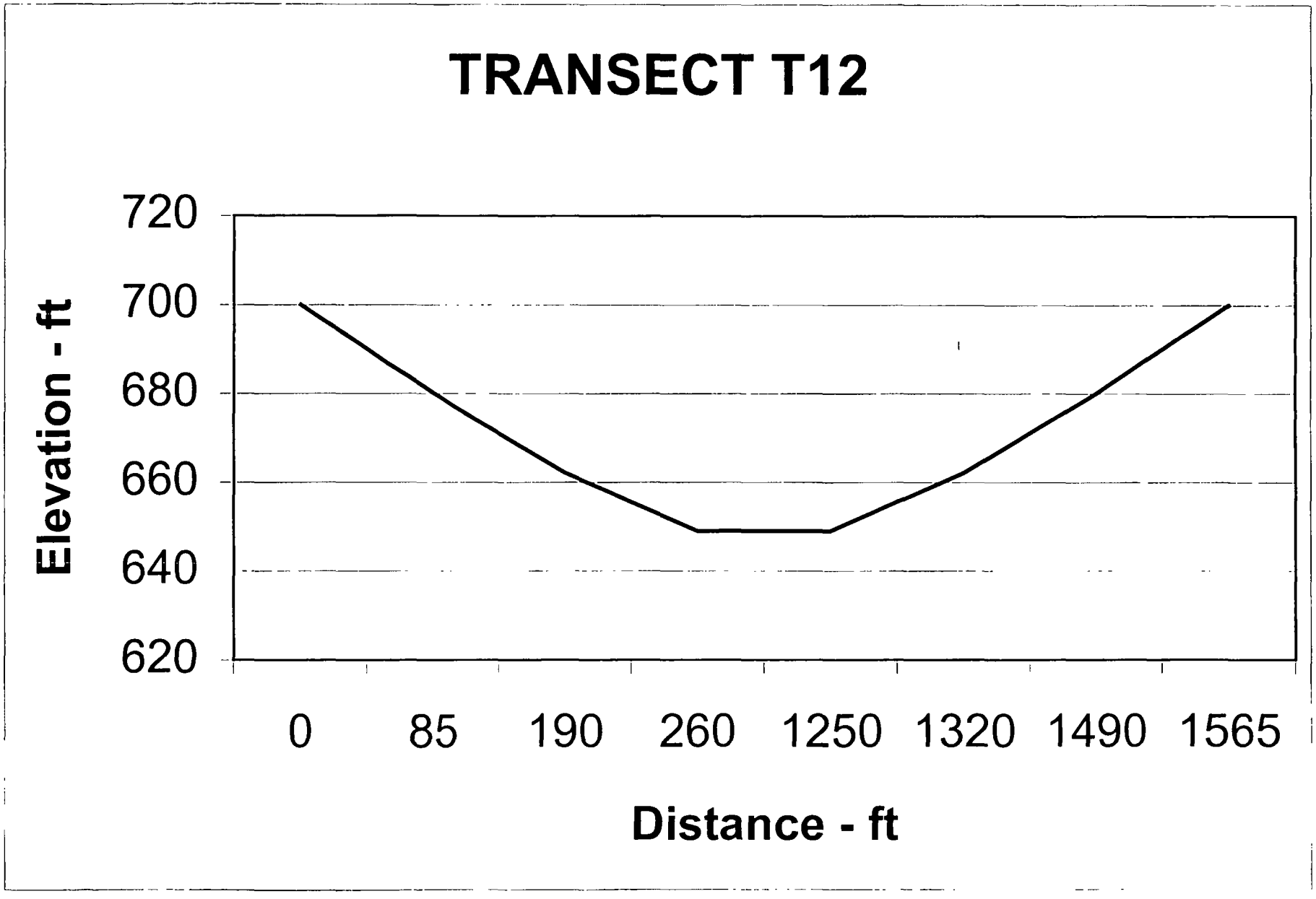

TRANSECT K
Elevation - ft
720
700
680
660
640
620
600
580
0
299
416
498
594
884
1034
1306
1526
Distance - ft

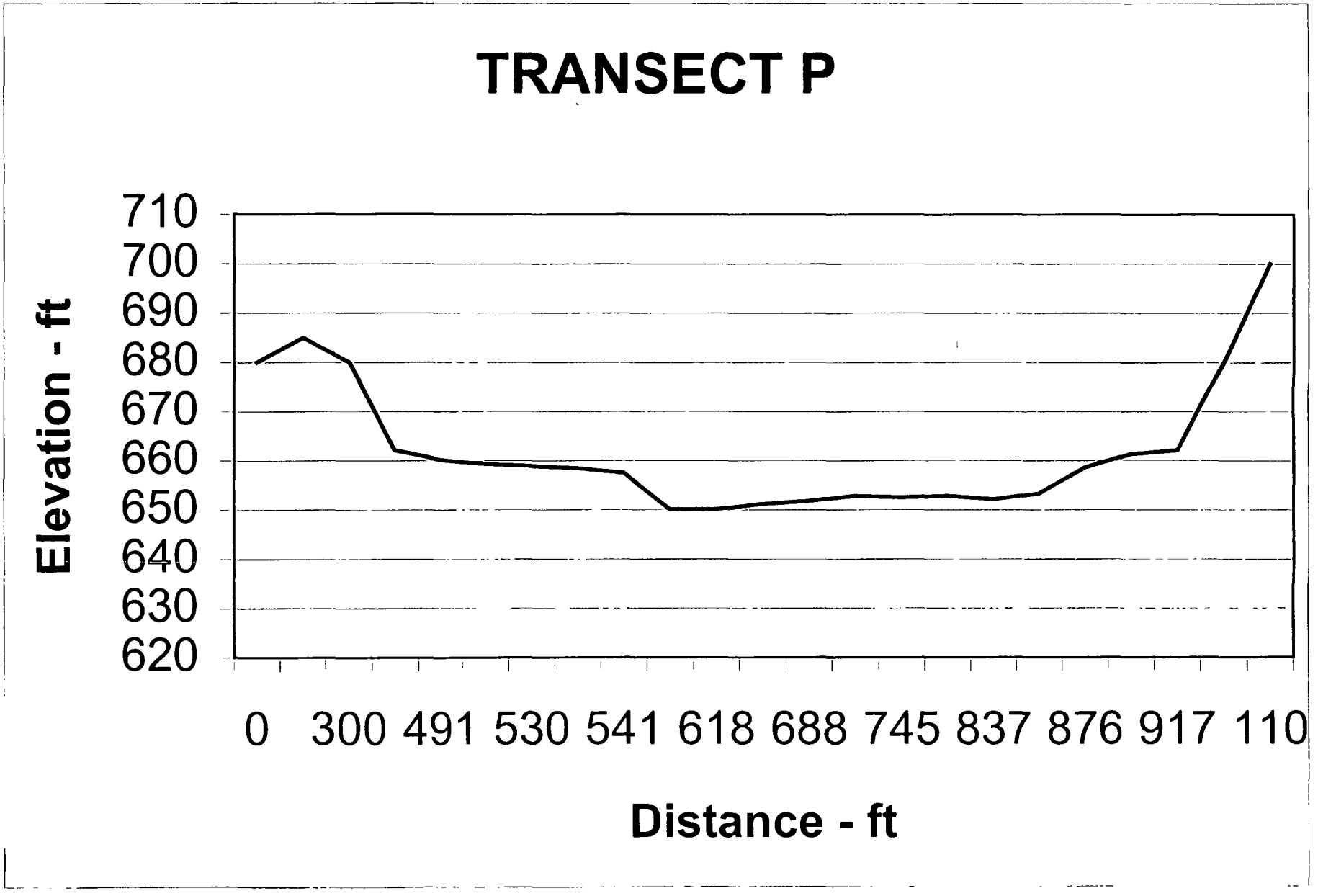

TRANSECT L
720
700
680
660
640
620
600
Elevation - ft
0
1850
1929
2024
2258
2332
2396
2564
2843
Distance - ft

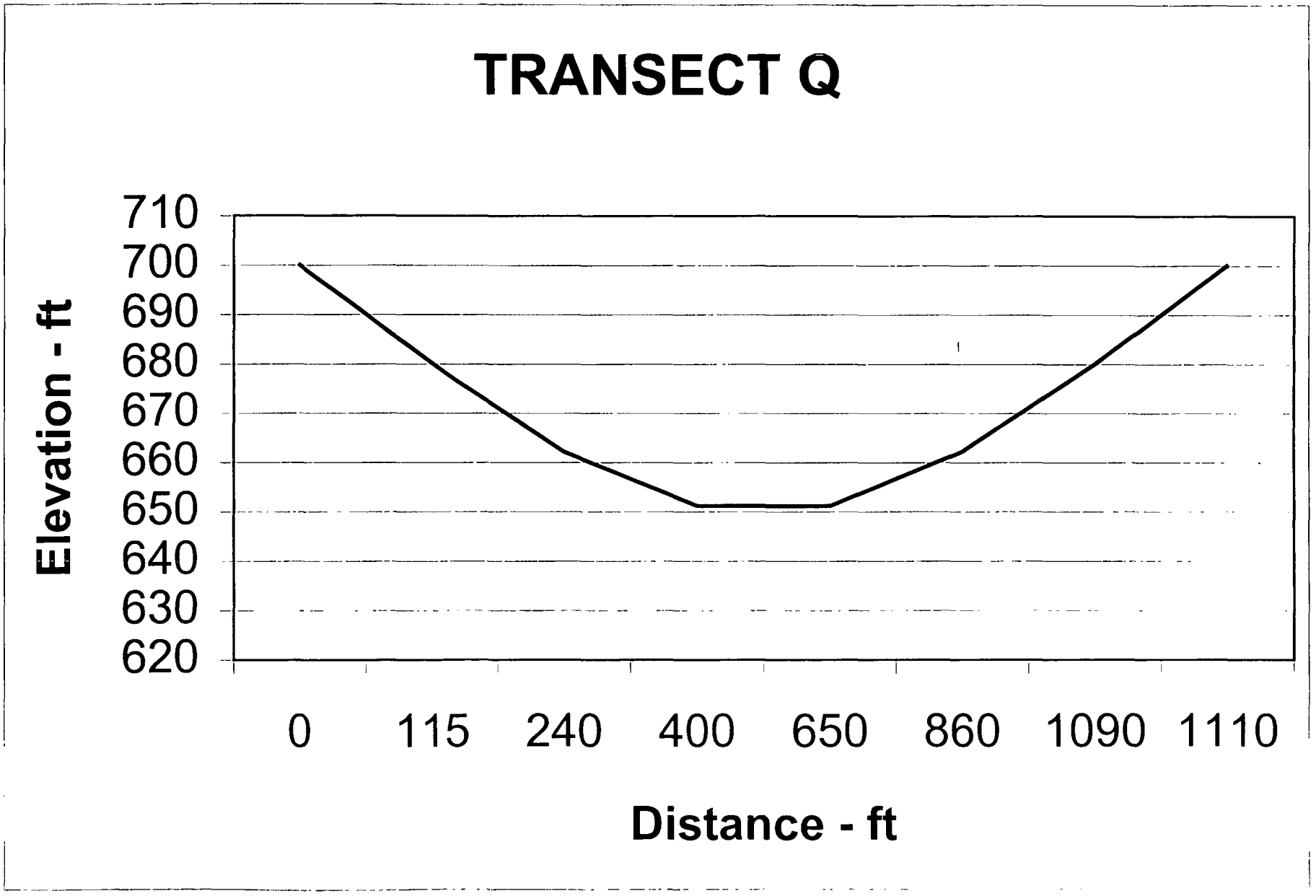

TRANSECT M
Elevation - ft
720
700
680
660
640
620
600
0
242
317
462
562
655
683
715
885
Distance - ft

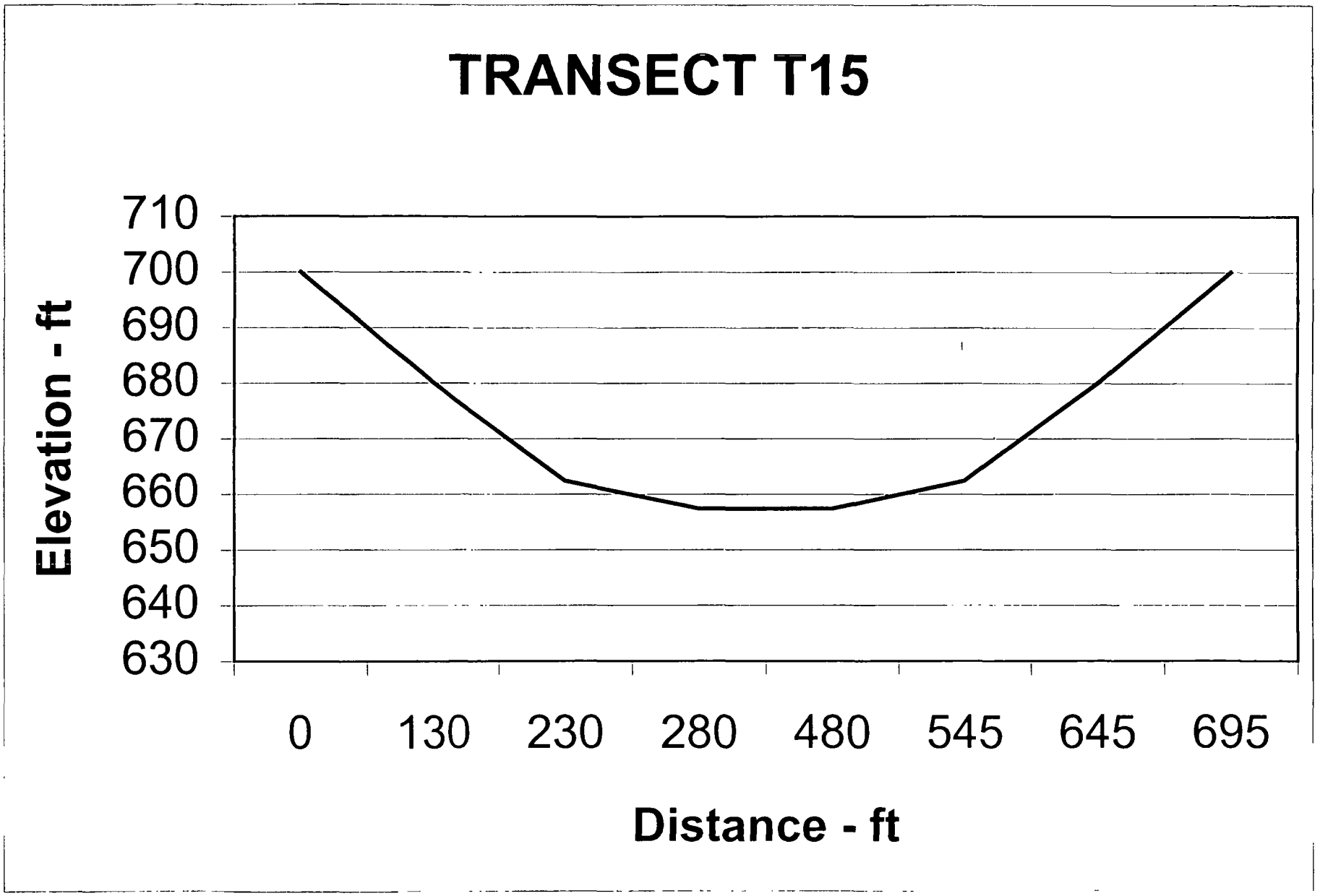

TRANSECT N
720
700
680
660
640
620
600
Elevation - ft
0
169
215
253
323
402
438
479
488
588
Distance - ft

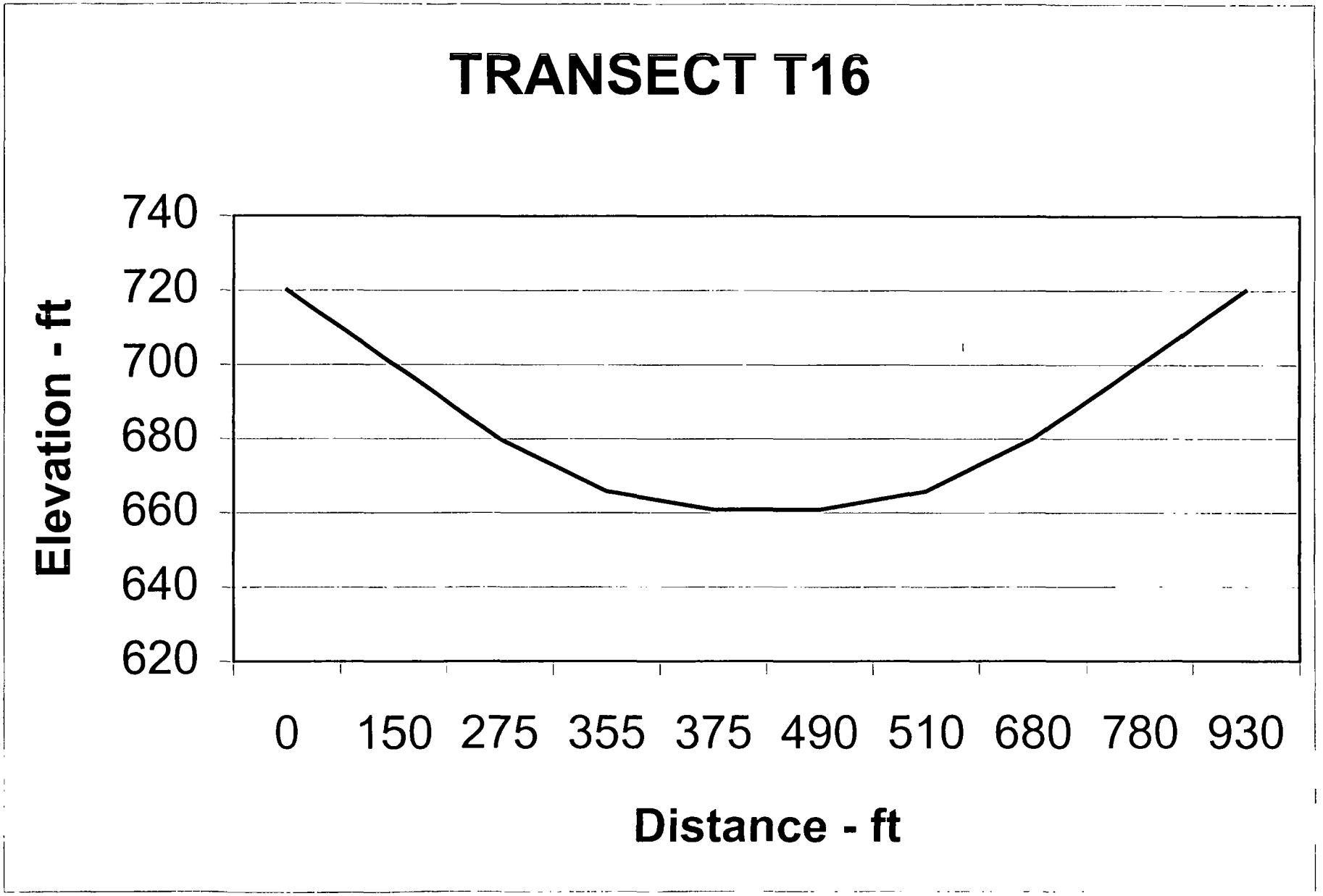

TRANSECT O
720
700
680
660
640
620
600
Elevation - ft
0
250
274
309
359
424
461
480
512
627
Distance - ft

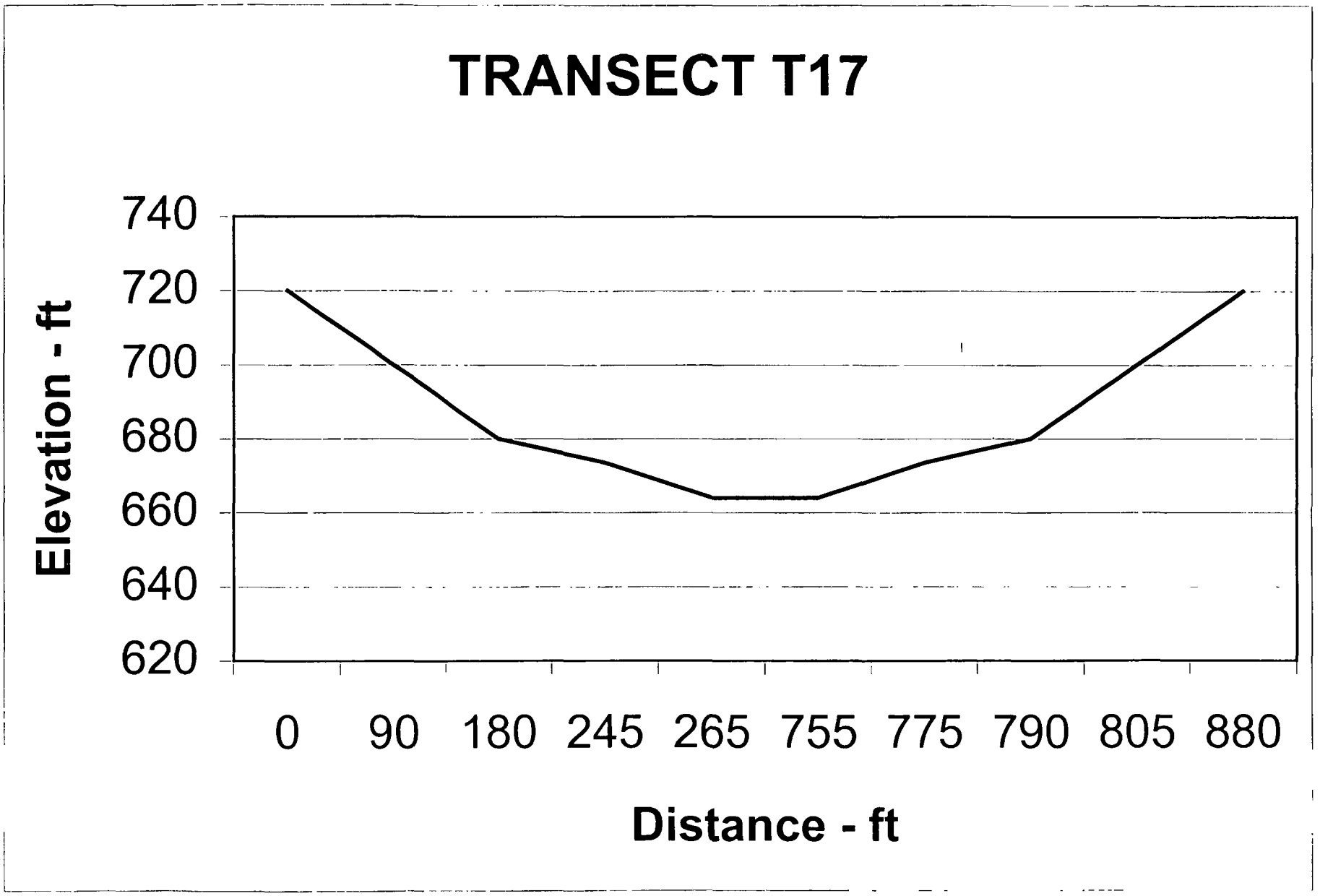

TRANSECT T12
720
700
680
660
640
620
Elevation - ft
0
85
190
260
1250
1320
1490
1565
Distance - ft

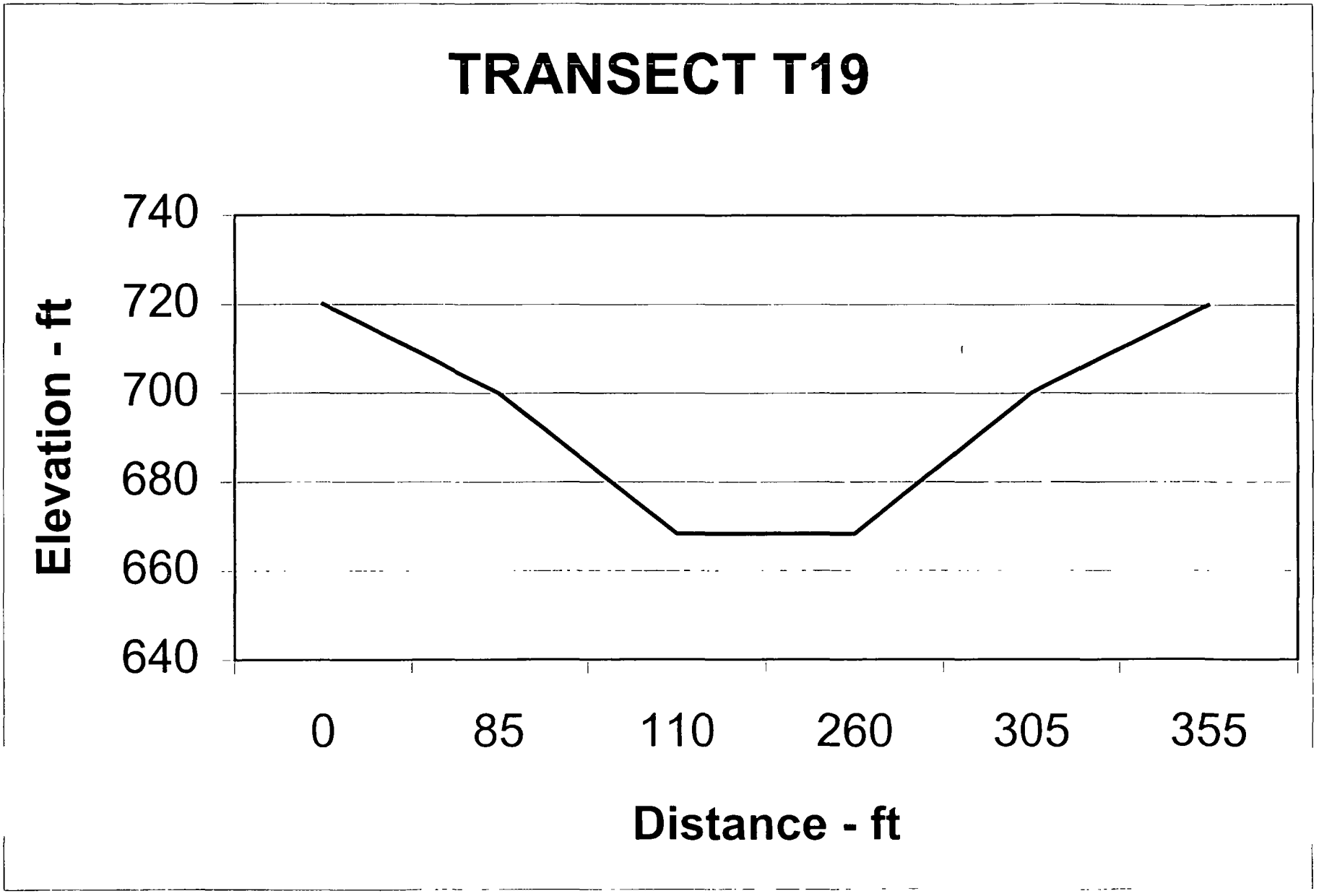

TRANSECT P
Elevation - ft
710
700
690
680
670
660
650
640
630
620
0
300
491
530
541
618
688
745
837
876
917
110
Distance - ft


TRANSECT Q
Elevation - ft
710
700
690
680
670
660
650
640
630
620
0
115
240
400
650
860
1090
1110
Distance - ft


TRANSECT T15
Elevation - ft
710
700
690
680
670
660
650
640
630
0
130
230
280
480
545
645
695
Distance - ft


TRANSECT T16
Elevation - ft
740
720
700
680
660
640
620
0
150
275
355
375
490
510
680
780
930
Distance - ft


TRANSECT T17
Elevation - ft
740
720
700
680
660
640
620
0
90
180
245
265
755
775
790
805
880
Distance - ft


TRANSECT T19
Elevation - ft
740
720
700
680
660
640
0
85
110
260
305
355
Distance - ft