

ITEM	EQUIPMENT	Q'TY	ELECTRIC (KW)		EARTH	WATER φmm	DRAIN φmm	GAS φmm	EXHAUST φmm	WEIGHT kgs	INSTALLATION Required (W x L x H mm)
			1 φ 220V	3 φ 380V							
.25	Stirrer	1									
	(1) Model A	1	0.11							3.5	220 x 230 x 110
	(2) Model B	1	0.1							2.8	115 x 150 x 170
.26	Glassware	1									
	3.4 EQUIPMENT FOR DEPARTMENT OF SPECIAL ZOO TECHNOLOGY										
3.4.1	Equipment for Special Zootechnics Laboratory										
.1	Luxmeter	1								0.16	23 x 62 x 128
.2	Lensatic Compass	1									
.3	Portable Wind System	1								0.6	5 1/4 x 165
.4	Hygrometer	1									
.5	Mouth Gag	2									
.6	Lift	1									
.7	Nose Twitch	1									
	(1) Model A	2									
	(2) Model B	2									
.8	Nose Catcher	3									
.9	Non-kick Clamp	3									
.10	Cattle Catcher	3									800L
.11	Udder Operating Instrument Set	1									
.12	Treat Operating Instrument Set	1									
.13	Stable Gauge	1									
.14	Pelvismeter	1									
	(1) Model A	1									
	(2) Model B	1									
.15	Animal Guage	2									
.16	Weighting Tape	3									
.17	Bull Holder	1									
	(1) Model A	3									
	(2) Model B	3									
.18	Dissecting Instrument Set	1									

ITEM	EQUIPMENT	Q'TY	ELECTRIC (KW)			EARTH	WATER φmm	DRAIN φmm	GAS φmm	EXHAUST φmm	WEIGHT kgs	INSTALLATION Required (W x L x H mm)
			1 φ 220V	3 φ 380V								
.19	Tooth Cutter	3									140L	
.20	Hog Holder	3										
.21	Weighting Tape	1										
	(1) Model A	2										
	(2) Model B	2										
.22	Eggshell Thickness Tester	1										
.23	Egg Meter	1										
.24	Egg Quality Examining Stand	1								5.5	330 x 300 x 200	
.25	Egg Quality Scale	1										
.26	Eggshell Intensity Meter	1	0.1							8	265 x 205 x 260	
.27	Egg-shape Factor Meter	1								2		
.28	Egg Scale	1								1.5		
.29	Egg Tester	1	0.04							0.5		
.30	Chicken Incubator	1	1.0							15	500 x 400 x 470	
.31	Spring Balance	1										
	(1) Model A	1										
	(2) Model B	1										
	(3) Model C	1										
	(4) Model D	1										
.32	Balance											
	(1) Model A	1										
	(2) Model B	1										
.33	Rumenotomy Set	1								4	370 x 310 x 40	
.34	Operating Set	1									330 x 260 x 55	
.35	Dissecting Instrument Set	1									360 x 230 x 88	
.36	Pig Saver	3										
.37	Stomach Tube	2									14 φ x 2,000	
.38	Hand-held Temperature and Humidity Meter	1										
.39	pH Meter	1	0.01							3.1	235 x 240 x 120	
.40	Hand Tally Counter	1										
.41	Pre-amplifier	1								0.9	145 x 165 x 70	

Item	EQUIPMENT	Q'TY	ELECTRIC (KW)		EARTH	WATER φmm	DRAIN φmm	GAS φmm	EXHAUST φmm	WEIGHT kgs	INSTALLATION Required (W x L x H mm)
			1 φ 220V	3 φ 380V							
.42	Incubator	1	0.3							52	745 x 665 x 890
.43	Platform Scale	1	0.1							22	400 x 550 x 760
.44	Fume Hood	1	0.4	●	20	50	20	250		360	1,500 x 750 x 2,500
.45	Glassware	1									
3.4.2	Equipment for Animal Product Quality Control										
	Laboratory										
.1	Milk Fat Separator	1	0.5							50	550 x 550 x 480
.2	Milk Acid Testing Set	1									
	(1) Model A	1									
	(2) Model B	1									
.3	Lactometer	1									
	(1) Model A	1									240L
	(2) Model B	1									300L
.4	Electric Postmortem Saw	1	0.3							4	500L x 50W
.5	Electric Slaughtering Machine	1	0.2							20	380 x 180 x 290
.6	Meat Mincer-grinder	1	1.5							60	273 x 774 x 456
.7	Spring Balance	1									
	(1) Model A	1									
	(2) Model B	1									
	(3) Model C	1									
	(4) Model D	1									
.8	Balance	1									
	(1) Model A	1	0.1							4.3	194 x 334 x 81
	(2) Model B	1									
	(3) Model C	1									
	(4) Model D	1									
.9	Grain Moisture Meter	1	0.8								
.10	Rumenotory Set	1									1.07 189 x 100 x 55

Item	EQUIPMENT	Q'TY	ELECTRIC (KW)		EARTH	WATER φmm	DRAIN φmm	GAS φmm	EXHAUST φmm	WEIGHT kgs	INSTALLATION Required (W x L x H mm)
			1 φ 220V	3 φ 380V							
.11	Calorimeter	1	0.8			20	50			40	6,360 x 530 x 700
.12	Micro Kjeldahl Distillation Apparatus	1						20		14.5	300 x 300 x 600
.13	Kjeldahl Nitrogen Digesting Apparatus	1	0.6							6.5	430 x 190 x 320
.14	Gelber's Centrifuge Milk Fat Separator	1	1.5							20	600 x 600 x 500
.15	Maximum and Minimum Thermometer	1									
.16	Pocket Thermometer	1								0.176	148 x 62 x 23
.17	Thickness Tester	1	0.01							1.1	250 x 120 x 55
.18	Melting Point Thermometer	1									18 φ x 180 (Test Tube)
.19	Muffle Furnace	1	3.0							61	740 x 810 x 510
.20	Heating Mantle	1	1.2							10	
.21	Hot Plate	1	1.8							4	300 x 345 x 90
.22	Stirrer	1	0.1							8.7	115 x 150 x 170
.23	Centrifugal Fat Separator	1	0.5							50	600 x 500
.24	Micro Kjeldahl Digesting Rack	3	0.6							6.5	430 x 190 x 320
.25	Melting Point Apparatus	1	0.2							4	190 x 185 x 400
.26	Oven	1	1.5							777	745 x 665 x 890
.27	Fume Hood	1		0.79		20	50	20	300	289	1,800 x 150 x 2,300
.28	Glassware	1									
3.4.3	Equipment for Apiculture Laboratory										
.1	Protective Clothing	2									
.2	Hat and Veil	2									
.3	Gloves and Gauntlets	2									
.4	Boots	2									
.5	Smoker	2									
.6	Bee Blower	2	0.06								
.7	Uncapping Honey Combs, Knife and Fork Set	2									
.8	Honey Refractometer	2									

Item	EQUIPMENT	Q'TY	ELECTRIC (KW)		EARTH	WATER φ mm	DRAIN φ mm	GAS φ mm	EXHAUST φ mm	WEIGHT kgs	INSTALLATION Required (W x L x H mm)
			1 φ 220V	3 φ 380V							
	3.5 EQUIPMENT FOR DEPARTMENT OF ANATOMY & PHYSIOLOGY										
3.5.1	Equipment for Anatomy Laboratory										
.1	Postmortem Meat Inspection Tool Set	1									
.2	Bone Trimmer	1								0.07	
.3	Laparotomy Set	1								4	380 x 320 x 60
.4	Tubing Pump	1	0.1							4	200 x 100 x 100
.5	Vacuum Pump	1	0.1							8.5	160 x 276 x 233
.6	Stopwatch	1									
.7	Magnetic Stirrer	1	0.05							1.5	190 x 200 x 120
.8	Glassware	1									
3.5.2	Equipment for Physiology Laboratory										
.1	Blood Sedimentation Apparatus	1								3.2	600 x 150 x 700
.2	Blood Cell Calculator	1									
.3	Colony Counting Apparatus										
	(1) Model A	1	0.03							2.0	360 x 300 x 290
	(2) Model B	1									
.4	Spring Balance	1									
	(1) Model A	1									
	(2) Model B	1									
	(3) Model C	1									
	(4) Model D	1									
.5	Balance	1									
	(1) Model A	1	0.2							5	194 x 334 x 811
	(2) Model B	1									
.6	Dissecting Instrument Set	1									
.7	Salinity Refractometer	1									
.8	Microscope	1	0.02							9.5	400 x 380 x 400

Item	EQUIPMENT	Q'TY	ELECTRIC (KW)		EARTH	WATER φmm	DRAIN φmm	GAS φmm	EXHAUST φmm	WEIGHT kgs	INSTALLATION Required (W x L x H mm)
			1 φ 220V	3 φ 380V							
.9	Blood Pressure and Pulse Rate Monitor	1								0.5	170 x 90 x 25
.10	Hemoglobinometer										
	(1) Model A	1	0.02							5	200 x 280 x 150
	(2) Model B	1									
.11	Reticulo Counter	1								2	118 x 195 x 75
.12	Hemacytometer	1									
	(1) Model A	1									
	(2) Model B	1									
.13	Stopwatch	1									
.14	Multi Timer	1									200 x 140 x 200
.15	Alcohol Meter	1									
.16	pH Meter	1	0.01							3.1	235 x 240 x 120
.17	Hand Tally Counter	1									
.18	Stethoscope	1									
.19	Dissecting Set	1									
.20	Kymograph	1	0.01							10	460 x 200 x 500
.21	Living Organism Stimulator	10									200 x 150 x 70
.22	Slide	1									
	(1) Model A	1									
	(2) Model B	1									
	(3) Model C	1									
.23	Freezer	1	0.4							46	660 x 640 x 885
.24	Magnetic Stirrer	1	0.05							1.5	190 x 200 x 120
.25	pH/mV Meter	1	0.01							3.1	235 x 240 x 120
.26	Glassware	1									
3.5.3	Equipment for Histology Laboratory										
.1	Microscope										
	(1) Model A	1	0.05							8	300 x 350 x 400
	(2) Model B	1								7	

Item	EQUIPMENT	Q'TY	ELECTRIC (KW)		EARTH	WATER φmm	DRAIN φmm	GAS φmm	EXHAUST φmm	WEIGHT kgs	INSTALLATION Required (W x L x H mm)
			1 φ 220V	3 φ 380V							
.2	Slide Warmer	1	0.4							0.5	250 x 120 x 75
.3	Slide	1									
	(1) Model A	1									
	(2) Model B	1									
	(3) Model C	1									
	(4) Model D	1									
.4	Glassware	1									
	3.6 COMMON EQUIPMENT										
3.6.1	Personal Computer Set										
.1	Central Processing Unit	2	0.15							8.3	404 x 384 x 102
.2	Key Board	2									
.3	Display	2	0.04							15	355 x 394 x 370
.4	Printer										
	(1) Model A	1	0.06							11.5	449 x 365 x 171
	(2) Model B	1									
.5	Uninterrupted Power Supply	2	1.0							99	400 x 580 x 400
.6	Floppy Diskette	50									
3.6.2	Slide Projector	1	0.25							10	330 x 325 x 366
3.6.3	Overhead Projector	1	0.27							12	270 x 385 x 556
3.6.4	Automatic Voltage Regulator	1	2.0							21	260 x 400 x 280

ITEM	EQUIPMENT	Q'TY	ELECTRIC (KW)		EARTH	WATER φ:mm	DRAIN φ:mm	GAS φ:mm	EXHAUST φ:mm	WEIGHT kgs	INSTALLATION Required (W x L x H mm)
			1 φ 220V	3 φ 380V							
	4. EQUIPMENT FOR FACULTY OF FOOD SCIENCE AND TECHNOLOGY										
	4.1 EQUIPMENT FOR DEPARTMENT OF FOOD SCIENCE										
4.1.1	Equipment for Food Chemistry Laboratory										
.1	Magnetic Stirrer	1	0.55							6	340 x 350 x 250
.2	Micro Kjeldahl Distillation Apparatus	1					20				300 x 300 x 600
.3	Multimeter	1									
.4	Balance	1									
.5	Automatic Voltage Regulator	1	0.5							10	190 x 310 x 194
.6	Labo Glass Dryer	1	2.6		●					105	700 x 655 x 1,400
.7	pH Meter	1	0.01							0.29	75 x 170 x 30
.8	Fume Hood	1		0.27	●	20	50	20	200	295	1,200 x 750 x 2,300
.9	Glassware	1									
4.1.2	Equipment for Food Analysis Laboratory										
.1	Magnetic Stirrer										
(1)	Model A	1	0.05							1.5	190 x 200 x 120
(2)	Model B	1	0.5							4.4	170 x 220 x 160
.2	Sieve Shaker	1	0.2							55	1,040 x 430 x 1,050
.3	Micro Kjeldahl Distillation Apparatus	1					20			10	300 x 300 x 600
.4	Multimeter	1									
.5	Balance										
(1)	Model A	1									
(2)	Model B	1	0.01							11.6	213 x 282 x 401
.6	Automatic Voltage Regulator	1	0.5							10	190 x 306 x 194
.7	Labo Glass Dryer	1	2.6		●					105	700 x 655 x 1,400
.8	Grain Moisture Meter										
(1)	Model A	1	0.6							4	100 x 200 x 285
(2)	Model B	1	0.6							1	120 x 175 x 186

ITEM	EQUIPMENT	Q'TY	ELECTRIC (KW)		EARTH	WATER φmm	DRAIN φmm	GAS φmm	EXHAUST φmm	WEIGHT kgs	INSTALLATION Required (W x L x H mm)
			1 φ 220V	3 φ 380V							
.9	pH Meter	1	0.01							0.29	75 x 170 x 30
.10	Rigidity Tester	1								5.2	290 x 180 x 330
.11	Alcohol Tester	1									
.12	Fume Hood	1		0.27	●	12	50	12	200	295	1,200 x 750 x 2,300
.13	Glassware	1									
4.1.3	Equipment for Inoculation & Culture Laboratory										
.1	Magnetic Stirrer	1	0.05							1.5	190 x 200 x 120
.2	pH/mV Meter	1	0.02							3.1	235 x 220 x 110
.3	Microscope	1	0.05							9.5	350 x 400 x 450
.4	Automatic Voltage Regulator	1	0.5							10	190 x 306 x 194
.5	pH Meter	1	0.01							0.29	750 x 170 x 30
.6	Aseptic Box	1	0.03							16	600 x 500 x 500
.7	Clean Bench	1	0.7	●				20	200 x 250	350	2,200 x 840 x 1,950
.8	Glassware	1									
4.1.4	Equipment for Food Fermentation Laboratory										
.1	Multimeter	1									163 x 78 x 30
.2	Microscope	1	0.05							9.5	400 x 380 x 400
.3	Automatic Voltage Regulator	1	2.0							21	260 x 400 x 280
.4	pH Meter	1	0.01							0.29	750 x 170 x 30
.5	Glassware	1									
4.1.5	Equipment for Measuring Instrument Room										
.1	Magnetic Stirrer	1	0.05							1.5	190 x 200 x 120
.2	Spectrophotometer	1	0.3							17	354 x 450 x 223
.3	Balance										
	(1) Model A	1								3.1	440 x 150 x 160
	(2) Model B	1	0.02							11.6	213 x 401 x 282
.4	Thermohygrometer										
	(1) Model A	1								0.24	77 x 190 x 41
	(2) Model B	1									
.5	Refractometer										
	(1) Model A	1								0.275	30 x 40 x 170

ITEM	EQUIPMENT	Q'TY	ELECTRIC (KW)		EARTH	WATER φmm	DRAIN φmm	GAS φmm	EXHAUST φmm	WEIGHT kgs	INSTALLATION Required (W x L x H mm)
			1 φ 220V	3 φ 380V							
	(2) Model B	1								0.25	30 x 40 x 150
.6	Polarimeter	1	0.1							19	570 x 200 x 240
.7	Microscope	1	0.05							14	400 x 390 x 450
.8	Automatic Voltage Regulator	1	2.0							21	260 x 400 x 280
.9	Jelly Strength Tester	1	0.5							12	
.10	Melting Point Apparatus	1	0.2							4	190 x 185 x 400
4.1.6	Equipment for Food Preservation & Storage Laboratory										
.1	Microscope	1	0.05							6.2	180 x 223 x 391
.2	Grain Moisture Meter										
	(1) Model A	1	0.02							4	100 x 200 x 285
	(2) Model B	1								1	120 x 175 x 185
.3	Humidity Meter	1	0.02							0.2	152 x 216 x 55
.4	Glassware	1									
4.1.7	Equipment for Food Processing Laboratory										
.1	Hot Air Oven	1	2.0							90	645 x 610 x 1,380
.2	Refrigerator	1	0.9							300	1,800 x 600 x 1,790
.3	Freezer	1	0.8							285	1,870 x 770 x 945
.4	Micro Kjeldahl Distillation	1						20			300 x 300 x 600
.5	pH/mV Meter	1									235 x 220 x 110
.6	Balance	1									440 x 150 x 160
.7	Microscope	1	0.05							9.5	400 x 380 x 400
.8	Automatic Voltage Regulator	1	2.0							21	260 x 400 x 280
.9	Auto Food Slicer	1	0.2							35	410 x 590 x 555
.10	Milk Fat Separator	1	0.5							50	600 φ x 500H
.11	Meat Mincer-grinder	1	0.3							31	205 x 521 x 331
4.1.8	Equipment for Pilot Plant - 1										
.1	Tomato Pulper Finisher	1		1.5						120	1,300 x 550 x 1,200
.2	Vacuum Mixing Evaporator	1		2.0						250	2,000 x 650 x 1,230
.3	Semi Automatic Home Seamer	1	0.4							110	460 x 340 x 1,400

ITEM	EQUIPMENT	Q'TY	ELECTRIC (KW)		EARTH	WATER φmm	DRAIN φmm	GAS φmm	EXHAUST φmm	WEIGHT kgs	INSTALLATION Required (W x L x H mm)
			1 φ 220V	3 φ 380V							
.4	Foot-pedal Package Sealer	1	1.1							22	380 x 340 x 900
.5	Glassware	1									
4.1.9	Equipment for Pilot Plant-2										
.1	Testing Husker	1	0.3						Fan 300 φ	40	750 x 350 x 720
.2	Testing Winnower	1	0.1							56	880 x 360 x 830
.3	Oil Press	1	0.2							150	700 x 550 x 1,200
.4	Auto Food Slicer	1	0.2							35	
.5	Multipurpose Food Processor	1	0.4		20	50				95	720 x 910 x 960
.6	Food Cutter	1	0.4							60	640 x 530 x 530
.7	Meat Chopper	1	0.3							45	550 x 210 x 310
.8	Smoke Cabinet	1							120	500	900 x 900 x 1,800
	4.2 EQUIPMENT FOR DEPARTMENT OF										
	FOOD ENGINEERING										
4.2.1	Equipment for Food Engineering Laboratory										
.1	Thermopygrometer	1								0.24	77 x 190 x 41
	(1) Model A										
	(2) Model B	1								4.7	345 x 143 x 380
.2	Rheometer	1	0.3							10	220 x 267 x 360
.3	Glassware	1									
4.2.2	Equipment for Engineering Drawing Room										
.1	Drafting Stand	2								22.5	700 x 691 x 850
.2	Drafter	2								13	1,200 x 900 x 30
.3	Drafting Chair	2								12.2	455 ~ 635 (Seat height), 553 x 553 x 730
.4	Drafting Lamp	2	0.032								
.5	Drawing Instrument Set	2									
.6	Wagon	4								22.5	430 x 620 x 730
.7	Drawing Board	32								2	450 x 600

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			1 φ 220V	3 φ 380V							
.8	Stand	32									
.9	T-Ruler	32								750L	
	4.3 COMMON EQUIPMENT										
4.3.1	Automatic Voltage Regulator	1	2.0							21	260 x 400 x 280
4.3.2	Personal Computer Set										
.1	Central Processing Unit	2	0.15							8.3	102 x 404 x 384
.2	Keyboard	2									
.3	Display	2	0.04							15	355 x 394 x 370
.4	Printer										
	(1) Model A	1	0.06							12	606 x 127 x 350
	(2) Model B	1	0.66							16.8	416 x 403 x 297
.5	Uninterrupted Power Supply	2	1.0							99	400 x 580 x 400
.6	Floppy Diskette	100									
4.3.3	Photocopy Machine	1	1.5							60.5	660 x 617 x 538

4-2. Existing Equipment List
(to be shifted new buildings)

LIST OF EXISTING EQUIPMENT TO BE INSTALLED AT NEW LABORATORIES

Serial No.	Name of Equipment (New Labo No.)	Quantity	Dimensions (mm)			Utility		
			Width	Depth	Height	Electricity	Water	Gas
2.1	(Department of Plant Physiology)							
2.1.1	Refrigerator (2.1.2)	1 unit	600	600	880	380W	X	X
2.1.2	Labonco (2.1.2)	1 unit	1,150	800	550	60W	X	X
2.1.3	Electronic Balance (2.1.2)	1 unit	210	450	350	20W	X	X
2.1.4	Analysis Balance (2.1.2)	1 unit	210	450	410	20W	X	X
2.1.5	Micromaster Microscope (2.1.2)	1 unit	150	250	350	20W	X	X
2.1.6	Stereomaster Microscope (2.1.2)	1 unit	180	250	400	20W	X	X
2.1.7	Spectrophotometer (2.1.1)	1 unit	420	330	210	140W	X	X
2.1.8	Refractometer (2.1.1)	1 unit	150	280	320	40W	X	X
2.1.9	Vari Hi-Speed Centrifuge (2.1.1)	1 unit	300	300	200	300W	X	X
2.1.10	Magnetic Stirrer (2.1.1)	1 unit	150	150	150	18W	X	X
2.1.11	Water Bath (2.1.1)	1 unit	280	500	310	300W	X	X
2.1.12	Autostill (2.1.1)	1 unit	450	260	700	3,600W	X	X
2.1.13	Autoclave (2.1.2)	1 unit	600	600	1,450	2,000W	X	X
2.1.14	Low Temperature Incubator (2.1.3)	1 unit	800	670	1,850	1,000W	X	X
2.1.15	Hot Plate Oven (2.1.1)	1 unit	210	210	290	750W	X	X
2.1.16	Laboratory Glassware Dryer (2.1.2)	1 unit	320	110	700	700W	X	X
2.1.17	Laboratory Oven (2.1.2)	1 unit	670	750	1,000	1,900W	X	X
2.1.18	Stirring Hot Plate (2.1.2)	1 unit	200	260	130	750W	X	X
2.1.19	Shaker (2.1.1)	1 unit	300	300	400	150W	X	X
2.1.20	Area Meter (2.1.4)	1 unit	1,200	580	1,000	50W	X	X
2.1.21	Micro Computer (2.1.4)	1 unit	500	700	480	60W	X	X
2.1.22	Laminar (2.1.2)	1 unit	950	700	900	300W	X	X
	Sub Total	22 units				12,578W		
2.2	(Department of Genetics & Plant Breeding)							
2.2.1	Camera, Canon (2.2.2)	1 unit				X	X	X
2.2.2	Projector, Hinderman (2.2.5, 2.2.7)	2 units	300	400	200	330W	X	X
2.2.3	pH Meter (2.2.2)	1 unit	200	300	200	X	X	X
2.2.4	Salinity Meter (2.2.2)	1 unit	200	300	200	X	X	X
2.2.5	Storage Cabinet, 4-50 (2.2.6)	1 unit	2,000	3,000	3,000	34 2,000W	X	X
2.2.6	Refrigerator, 10-150 (2.2.5)	1 unit	1,000	1,000	1,900	34 820W	X	X
2.2.7	Microscope (2.2.3)	6 units	250	300	500	X	X	X
	Sub Total	13 units				3,480W		

Serial No.	Name of Equipment (New Labo No.)	Quantity	Dimensions (mm)			Utility		
			Width	Depth	Height	Electricity	Water	Gas
2.3	(Department of Soil Science)							
2.3.1	Horizontal Shaker (2.3.6)	2 units	420	520	190	190W	X	X
2.3.2	Rotary Shaker (2.3.6)	1 unit	320	670	640	700W	X	X
2.3.3	Furnace (2.3.6)	1 unit	590	560	740	3,000W	X	X
2.3.4	Spectrophotometer (2.3.6)	1 unit	310	340	210	350W	X	X
2.3.5	Dry Freezer (2.3.6)	1 unit	820	650	900	1,200W	X	X
2.3.6	Fridge Refrigerator (2.3.6)	1 unit	510	490	1,113	130W	X	X
2.3.7	Cooler (2.3.6)	1 unit	580	550	810	?	X	X
2.3.8	Atomic Absorption Spectrophotometer(2.3.6)	1 unit	510	890	510	?	X	●
2.3.9	Exhaust System (2.3.6)	1 unit	700	1,000	2,500	550W	X	X
2.3.10	Water Bath (2.3.6)	2 units	420	970	230	2,400W	●	X
2.3.11	pF System (2.3.6)	2 units	300	440	270	X	X	X
2.3.12	Gas Bottle (2.3.6)	2 units	3504		900	X	X	●
2.3.13	Deionized System (2.3.6)	1 unit	350	500	600	X	X	X
2.3.14	Deionized Column (2.3.6)	2 units	3004		1,050	X	X	X
2.3.15	Shelves (2.3.6)	7 units	350	1,050	650	X	X	X
2.3.16	Shelf (2.3.6)	1 unit	2,200	650	2,200	X	X	X
2.3.17	Cupboard (bis) (2.3.6)	5 units	430	850	1,250	X	X	X
2.3.18	Cupboard (small) (2.3.6)	2 units	350	1,890	550	X	X	X
2.3.19	Atomic Absorption Spectrophotometer(2.3.6)	1 unit	2,900	790	2,000	X	X	●
2.3.20	Autovolt (2.3.6)	1 unit	440	250	370	1,000VA	X	X
2.3.21	Balance Olland (2.3.6)	1 unit	500	300	640	X	X	X
2.3.22	Balance Mettler RJ100 (2.3.6)	1 unit	210	380	250	X	X	X
2.3.23	Balance Ovalazor (2.3.6)	1 unit	300	350	300	X	X	X
2.3.24	Balance Saetre RJ363	1 unit	200	370	130	X	X	X
2.3.25	Autovolt for Balance	1 unit	450	230	250	X	X	X
2.3.26	Air Compressor GM-510	1 unit	1,070	320	640	X	X	X
2.3.27	Acetylene Gas Bottle	1 unit	4104		1,180	X	X	●
2.3.28	Air Conditioner	1 unit	660		450	X	X	X
2.3.29	Autovolt for Air Conditioner	1 unit	390	200	230	X	X	X
2.3.30	pH/mV Meter VTW322	1 unit	410	320	300	X	X	X
2.3.31	Colorimeter ETR.101	1 unit	320	250	180	X	X	X
2.3.32	Vacuum ATOM 101	1 unit	200	380	310	X	X	X
2.3.33	Desiccater	2 units	390	390	450	X	X	X
2.3.34	Desiccater	2 units	320	320	370	X	X	X

Serial No.	Name of Equipment (New Labo No.)	Quantity	Dimensions (mm)			Utility		
			Width	Depth	Height	Electricity	Water	Gas
2.3.35	Water Bath	3 units	1,000	420	240	X	•	X
2.3.36	Water Bath	1 unit	450	400	220	X	•	X
2.3.37	Incubator, ERNET	1 unit	760	870	860	2,000W	X	X
2.3.38	Incubator, ERNET	1 unit	640	770	630	1,400W	X	X
2.3.39	Incubator, WERAUS	1 unit	710	450	530	810W	X	X
2.3.40	Centrifuge, IEC-5	1 unit	580	590	400	900W	X	X
2.3.41	Refrigerator, CAPATES 1615	1 unit	480	590	1,110	130W	X	X
2.3.42	Shaker, GERNARDT	1 unit	660	450	300	150W	X	X
2.3.43	Fume Hood, VINITEX	1 unit	1,060	840	2,150	34 1,000W	X	X
2.3.44	Fume Hood (2.3.6)	1 unit	1,300	840	3,400	34 1,000W	•	•
2.3.45	Water Distillation Apparatus (2.3.6)	1 unit	1,080	490	1,000	X	•	X
2.3.46	Micro-Kjeldahl Distillation Apparatus	1 unit	950	520	910	2,750W	•	X
2.3.47	Micro-Kjeldahl Distillation Apparatus	1 unit	580	450	900	X	•	X
2.3.48	Grinder RETSCH BY	1 unit	570	710	1,130	X	X	X
2.3.49	Grinder RETSCH NV	1 unit	570	710	1,790	X	X	X
2.3.50	Computer SUN MOON STAR	1 unit	480	480-200	540	X	X	X
2.3.51	Printer EPSON LX-80	1 unit	380	320	80	X	X	X
2.3.52	Conductivity Meter (TOS)	1 unit	320	210	100	X	X	X
2.3.53	Shaker HS500	1 unit	500	320	290	190W	X	X
2.3.54	Cupboard (wood)	2 units	1,030	420	1,620	X	X	X
2.3.55	Cupboard	1 unit	1,810	450	1,100	X	X	X
2.3.56	Ricoh Photocopy (2.3.7)	1 unit	1,000	600	500	1,200W	X	X
2.3.57	Sharp Photocopy (2.3.7)	1 unit	800	600	400	1,350W	X	X
2.3.58	National Airconditioner (2.3.7)	1 unit	600	600	400	1,460W	X	X
2.3.59	Document and Equipment Cabinet (2.3.7) (Big Size)	2 units	2,000	600	1,800	X	X	X
2.3.60	Yanmar Diesel Generator (2.3.7)	1 unit	400	600	500	X	X	X
2.3.61	Document and Equipment Cabinet (2.3.7) (Small Size)	2 units	1,000	400	1,600	X	X	X
2.3.62	Glass Drawing Table (2.3.7)	2 units	1,400	2,000	800	X	X	X
2.3.63	Map Storing Case (2.3.7)	1 unit	2,000	500	1,000	X	X	X
2.3.64	Monolith Case for Exhibition (2.3.7)	4 units	800	300	1,000	X	X	X
2.3.65	Wooden Drawing Table (Small Size) (2.3.7)	2 units	2,000	1,000	800	X	X	X
2.3.66	Wooden Drawing Table (Big Size) (2.3.7)	1 unit	2,800	1,600	800	X	X	X
	Sub-Total	94 units				24,450W		

Serial No.	Name of Equipment (New Labo No.)	Quantity	Dimensions (mm)			Utility		
			Width	Depth	Height	Electricity	Water	Gas
2.4	(Department of Plant Protection)							
2.4.1	Incubator (2.4.1)	1 unit	1,100	650	850	275W	X	X
2.4.2	Laboratory Oven (2.4.1)	1 unit	480	350	530	1,000W	X	X
2.4.3	Incubator (2.4.2)	3 units	450	450	550	165W	X	X
2.4.4	Water Bath (2.4.2)	2 units	300	300	300	800W	X	X
2.4.5	Incubator (2.4.3)	1 unit	1,050	520	900	275W	X	X
2.4.6	Oven (2.4.3)	1 unit	550	500	600	2,100W	X	X
2.4.7	Incubator (2.4.3)	2 units	700	550	750	220W	X	X
2.4.8	Refrigerator (2.4.3)	1 unit	600	600	1,600	250W	X	X
2.4.9	Centrifuge (2.4.4)	1 unit	450	600	520	0.88VA	X	X
2.4.10	Low Temperature Incubator (2.4.5)	1 unit	720	550	1,200	220W	X	X
2.4.11	Refrigerator (2.4.5)	1 unit	550	700	1,300	140W	X	X
2.4.12	Freezer (2.4.5)	1 unit	600	550	800	140W	X	X
	Sub Total	16 units				7,735W		
3.1	(Department of Animal Pathology)							
	None							
3.2	(Department of Infections and Parasitic Disease)							
3.2.1	Portable Autoclave (3.2.2)	1 unit	3004		500	1,500W	X	X
3.2.2	Refrigerator (3.2.2)	1 unit	800	500	1,500	1,000W	X	X
3.2.3	Centrifuge (3.2.1)	1 unit	3004		500	1,000W	X	X
	Sub Total	3 units				3,500W		
3.3	(Department of General Zootechnology)							
3.3.1	Analytical Balance	1 unit	300	300	500	150W	X	X
3.3.2	Nitrogen Distillation Apparatus	1 unit	500	500	600	2,500W	X	X
	Sub-Total	2 units				2,650W		
3.4	(Department of Special Zootechnology)							
	None							
3.5	(Department of Anatomy and Physiology)							
	None							
3.6	(Common Use)							
3.6.1	Computer	2 units			550	250W	X	X
3.6.2	Kodak Slide Projector	1 unit				1,500W	X	X
	Sub Total	3 units				2,000W		
4.1	(Department of Food Science)							

Serial No.	Name of Equipment (New Labo No.)	Quantity	Dimensions (mm)			Utility		
			Width	Depth	Height	Electricity	Water	Gas
4.1.1	Water Bath (3.1.1, 3.1.4, & 3.1.8)	3 units	400	600	400	500W	●	X
4.1.2	Nitrogen Distillation Apparatus (3.1.1)	1 unit	400	400	600	500W	●	X
4.1.3	Melting Point Apparatus (3.1.1)	1 unit	200	400	400	X	X	X
4.1.4	Balance (3.1.8 & 3.2.1)	2 units	200	400	400	X	X	X
4.1.5	Analytical Balance (3.1.1 & 3.1.3)	2 units	200	400	400	X	X	X
4.1.6	Microscope (3.1.4)	1 unit	200	200	400	X	X	X
4.1.7	Oven (3.1.1)	1 unit	400	300	300	X	X	X
4.1.8	Rotary Vacuum Evaporator (3.1.1)	1 unit	500	300	600	500W	●	X
4.1.9	Automatic Acid-Base Analyze (3.1.2)	1 unit	400	500	150	X	X	X
4.1.10	Moisture Content Meter (3.1.1)	1 unit	150	100	200	X	X	X
4.1.11	Conductivity Meter (3.1.5)	1 unit	200	100	100	X	X	X
4.1.12	Homogenizer (3.1.8)	1 unit	400	600	800	34 5,000W	●	X
4.1.13	Extruder (3.1.8)	1 unit	600	600	600	34 7,000W	X	X
4.1.14	Sealer (3.1.8)	1 unit	600	500	800	X	X	X
4.1.15	Grinder (3.1.8)	1 unit	1,800	800	800	34 1,500W	X	X
4.1.16	Washing Machine (3.1.8)	1 unit	800	400	1,000	X	●	X
4.1.17	Vacuum Pump (3.1.2)	1 unit	400	400	600	X	X	X
4.1.18	Centrifuge (3.1.1, 3.1.2, 3.1.4, 3.1.5 & 3.1.7)	5 units	400	400	600	X	X	X
4.1.19	Air Compressor (3.1.5)	1 unit	600	1,500	1,000	34 7,000W	X	X
4.1.20	Colloid Mill (3.1.8)	1 unit	300	500	500	X	●	X
4.1.21	Soybean Mill (3.1.8)	1 unit	1,000	600	1,000	34 1,500W	●	X
4.1.22	Filter (3.1.8)	1 unit	800	600	1,000	X	X	X
4.1.23	Freezer Dryer (3.1.3)	1 unit	600	400	800	1,000W	X	X
4.1.24	Meat Grinder (3.1.7)	1 unit	400	600	300	34 1,500W	●	X
4.1.25	Kettler (3.1.8)	1 unit	400	500	600	X	X	X
4.1.26	Sterilizer 50lit (3.1.3)	1 unit	400	400	600	X	X	X
4.1.27	Sterilizer 100 lit (3.1.8)	1 unit	500	600	1,000	X	X	X
4.1.28	Sterilizer 300 lit (3.1.8)	1 unit	800	1,500	2,000	X	X	X
4.1.29	Incubator (3.1.1)	1 unit	800	600	1,800	500W	X	X
4.1.30	Freezer (Goldstar) (3.1.6)	1 unit	1,000	800	800	500W	X	X
4.1.31	Refrigerator (3.1.6)	1 unit	300	800	1,600	300W	X	X
	Sub Total	39 units				28,300W		
4.2	(Department of Food Engineering)							
4.2.1	Centrifuge (3.2.1)	1 unit	400	400	600	X	X	X

Serial No.	Name of Equipment (New Labo No.)	Quantity	Dimensions (mm)			Utility		
			Width	Depth	Height	Electricity	Water	Gas
4.2.2	Air Compressor (3.2.1)	1 unit	600	400	500	500H	X	X
4.2.3	Vacuum Dryer (3.2.1)	1 unit	600	600	600	1,500H	X	X
	Sub Total	3 units				2,000H	X	X
	Total	195 units				86,693W		

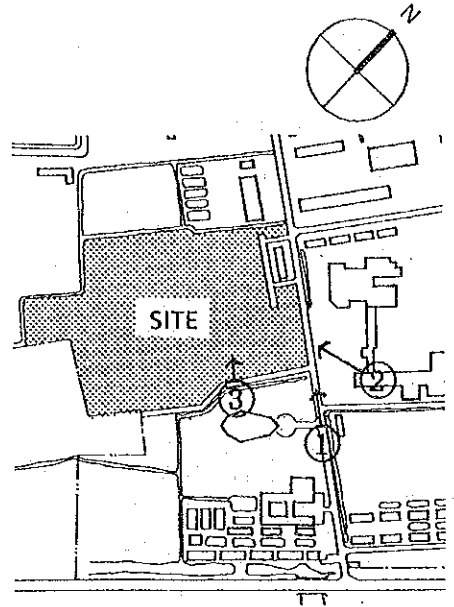
5. Conditions of the Project Site

5-1. Photos Around the Proposed Site

5-2. Site Survey Map and Boring Data

5-3. Result of Water Analysis

SURROUNDINGS OF THE PROPOSED SITE



VIEW - ①

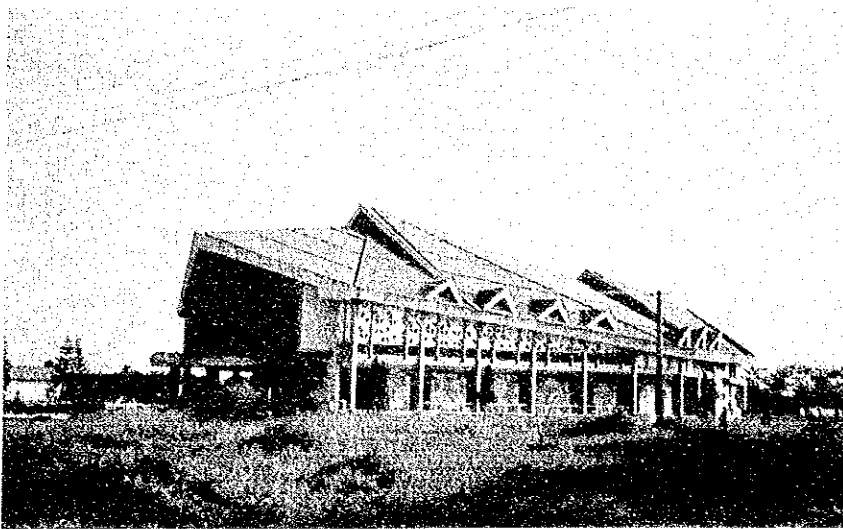


VIEW - ②

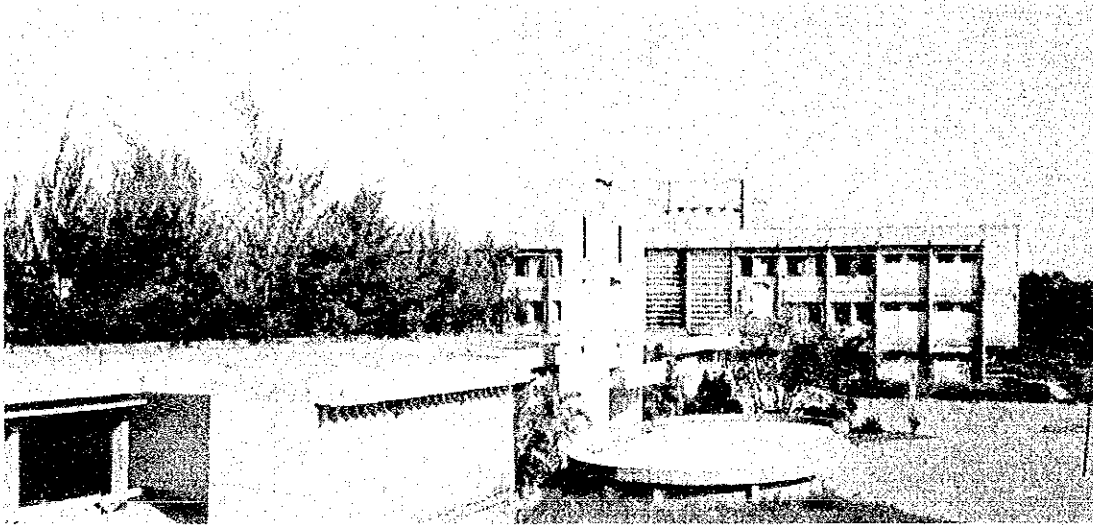


VIEW - ③

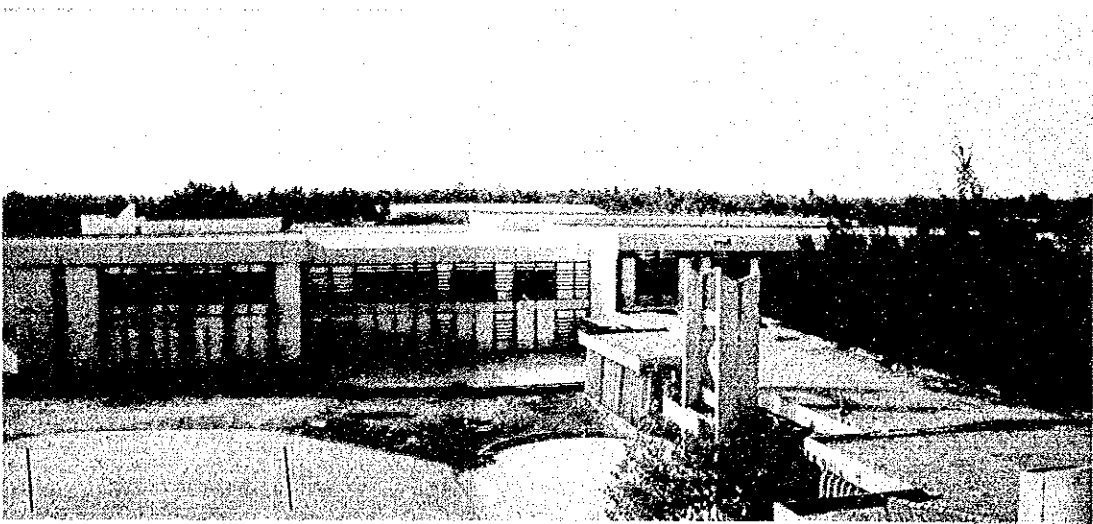
MAJOR BUILDINGS AROUND THE SITE



AUDITORIUM



CLASSROOM BUILDING



CENTRAL LIBRARY

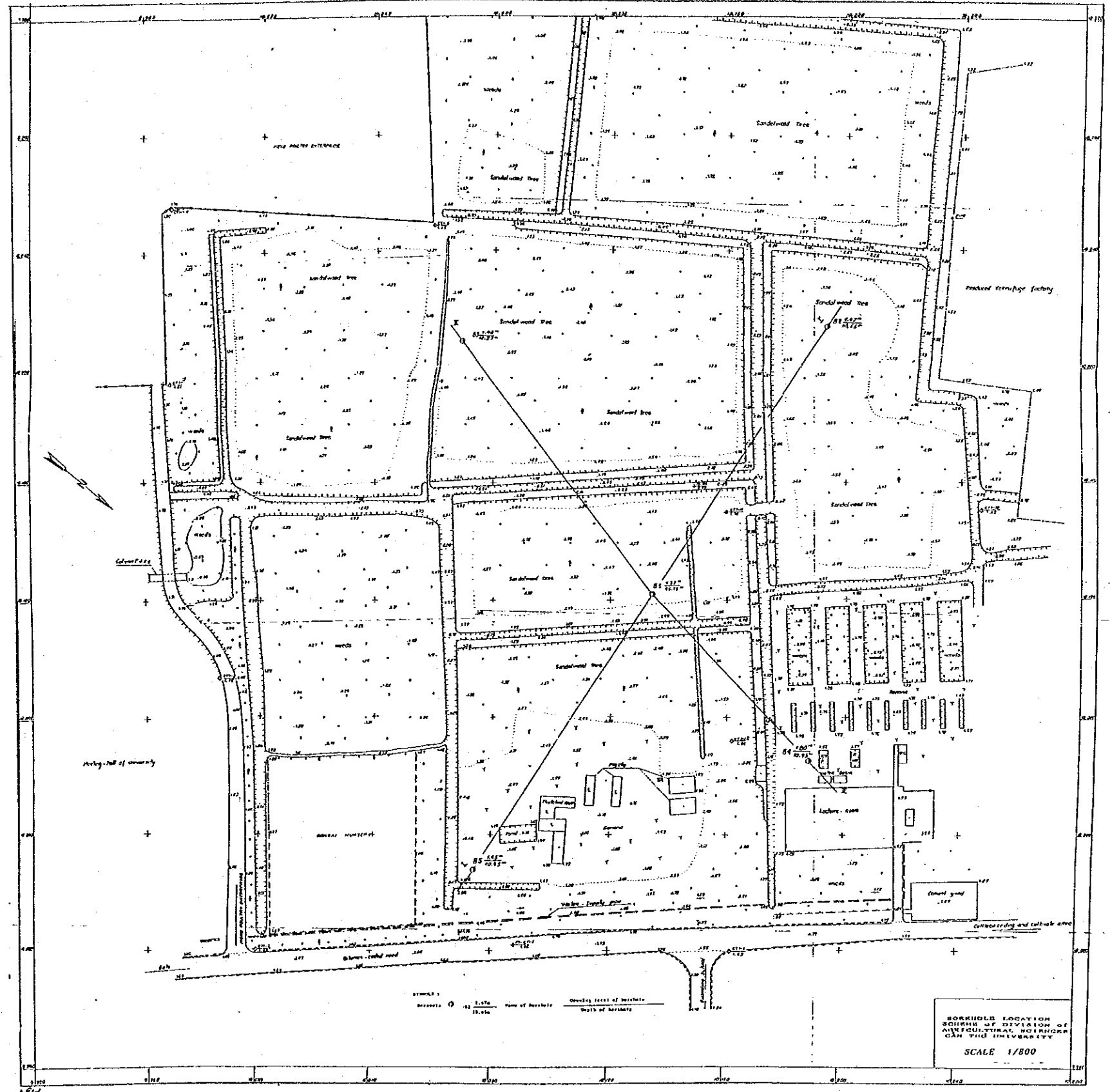


Fig. 3

ELEVATION		DEPTH		SOIL		STANDARD PENETRATION TESTS										SOIL SAMPLES			
SCALE	TIION	m	m	SYMBOL	VISUAL CLASSIFICATION	COLOR	DESCRIPTION	DEPTH	NO. OF BLOWS AT EACH 30 CM	15	30	45	N VALUE			NO.	DEPTH		
										cm	cm	cm	10	20	30	40	50	cm	m
1			2.00		SOFT	BROWN GRAY	BROWN GRAY SANDY CLAY	0.00	1/				0.05					B1-1	0.00
2	0.63		2.00			BROWN GRAY		0.25	1/	1/2	1/2	1/2	1.20					B1-2	0.25
3								0.50	1/				0.13					B1-3	0.50
4								0.75	1/				0.12					B1-4	0.75
5								1.00	1/				0.12					B1-5	1.00
6								1.25	1/				0.12					B1-6	1.25
7								1.50	1/				0.10					B1-7	1.50
8								1.75	1/				0.10					B1-8	1.75
9			15.51					2.00	1/				0.10					B1-9	2.00
10								2.25	1/				0.10					B1-10	2.25
11								2.50	1/				0.10					B1-11	2.50
12	0.63		12.00					2.75	1/				0.10					B1-12	2.75
13								3.00	1/				0.10					B1-13	3.00
14								3.25	1/				0.10					B1-14	3.25
15								3.50	1/				0.10					B1-15	3.50
16								3.75	1/				0.10					B1-16	3.75
17	0.63		17.51		VERY SOFT	GREEN GRAY TO BLACK GRAY CLAYEY SILT.	GREEN GRAY TO BLACK GRAY CLAYEY SILT. FROM 12" IN DEPTH IS SAND CLAYEY SILT.	4.00	1/				0.10					B1-17	4.00
18								4.25	1/				0.10					B1-18	4.25
19								4.50	1/				0.10					B1-19	4.50
20								4.75	1/				0.10					B1-20	4.75
21								5.00	1/				0.10					B1-21	5.00
22								5.25	1/				0.10					B1-22	5.25
23			11.50					5.50	1/				0.10					B1-23	5.50
24								5.75	1/				0.10					B1-24	5.75
25								6.00	1/				0.10					B1-25	6.00
26								6.25	1/				0.10					B1-26	6.25
27								6.50	1/				0.10					B1-27	6.50
28								6.75	1/				0.10					B1-28	6.75
29								7.00	1/				0.10					B1-29	7.00
30	0.63		10.00		SOFT	GREEN GRAY		7.25	1/				0.10					B1-30	7.25
31								7.50	1/				0.10					B1-31	7.50
32	0.63		31.91		MEDIUM	GREEN GRAY TO WHITE GRAY	SAND CLAYEY SILT.	7.75	1/				0.10					B1-32	7.75
33								8.00	1/				0.10					US-1	8.00
34								8.25	1/				0.10					B1-34	8.25
35	0.63		34.50					8.50	1/				0.10					B1-35	8.50
36								8.75	1/				0.10					B1-36	8.75
37								9.00	1/				0.10					B1-37	9.00
38								9.25	1/				0.10					B1-38	9.25
39								9.50	1/				0.10					B1-39	9.50
40	0.63		30.15		VERY STIFF	BROWN	YELLOW CLAYEY SILT. HARD FROM 37.50	9.75	1/				0.10					B1-40	9.75
41								10.00	1/				0.10					US-2	10.00

REMARKS: * Sample was taken by UNDISTURBED SAMPLER with DIAMETER 110 MM AND 450 MM IN LONG. * Soil samples were taken by SPT SAMPLER

SYMBOLS OF SAMPLER: (circle) FULLER SAMPLER, (square) DENISON-TYPE SAMPLER, (triangle) FOIL SAMPLER, (diamond) OTHER SAMPLER

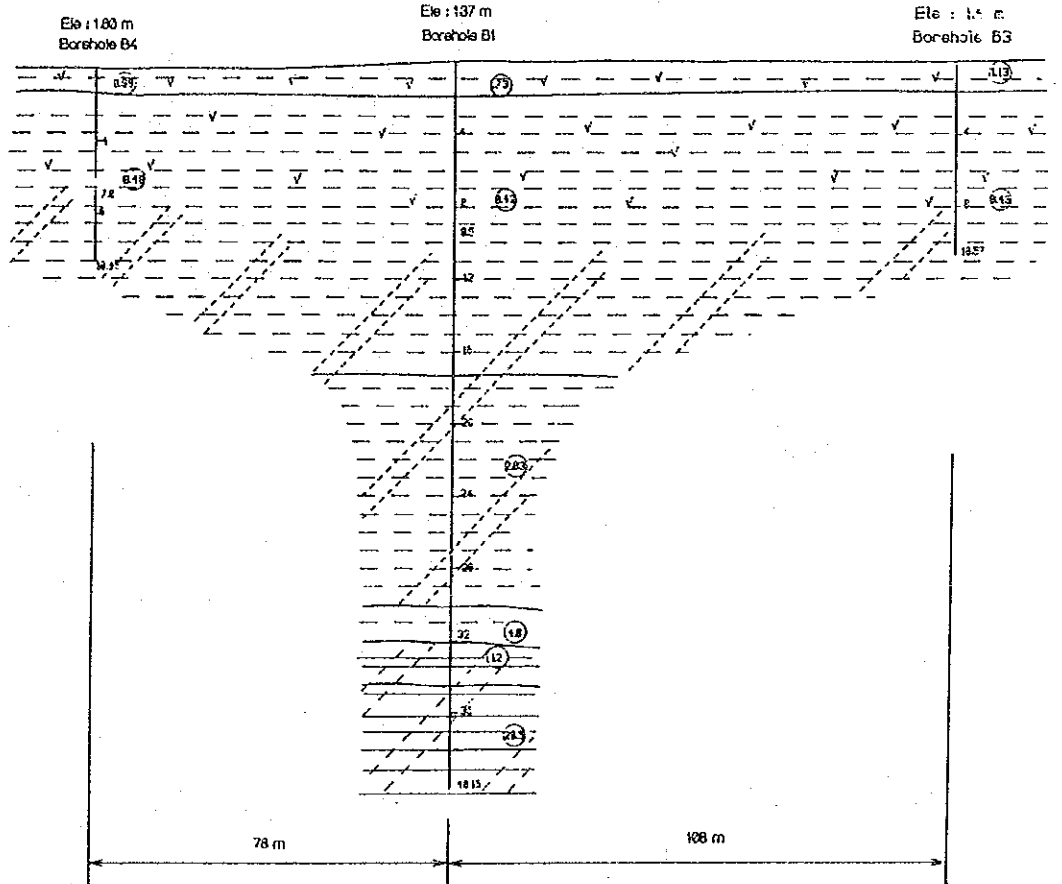
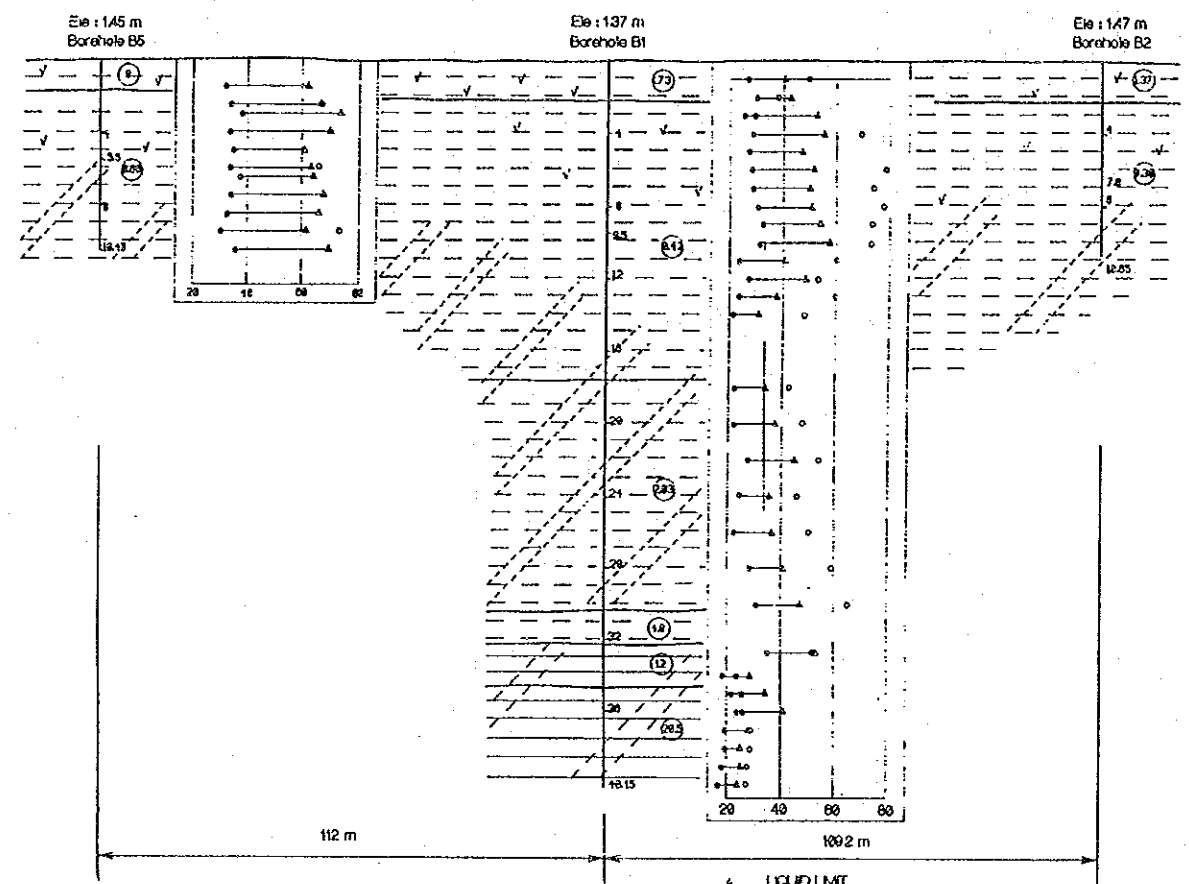
B1

GEOLOGICAL_SOIL PROFILE AT DIVISION AGRICULTURAL SCIENCES

CAN THO UNIVERSITY
SCALE : Horizontal 1:800
Vertical 1:200

I-I

I-I



SYMBOLS

- CLAY
- SILT
- ORGANIC MIXEDNESS
- FINE GRAINED SAND MIXEDNESS
- MIXED MEDIUM, COARSE GRAINED SAND
- FIXED BORDER OF LAYERS
- STANDARD PENETRATION TEST VALUE OF SOIL IN SUBBOREHOLE.

- ▲ LIQUID LIMIT
- PLASTIC LIMIT
- WATER CONTENT

RESULTS OF WATER ANALYSIS

Ministry of Education and Training
 Polytechnic University of Ho Chi Minh City
 Training and Research Center for water supply
 and Environmental Technology (CEFINEA)

Sample from : CAN THO UNIVERSITY No sample : _____
 Sampling point : _____ Collected by : _____
 Date Collected : 31/07/1993 Date of Analysis : 02/08/1993

PARAMETERS	UNITS	RESULTS	IONS	UNITS & RESULTS		Other parameters
				mg/l	req/l	
1. Temperature	°C		ANION:			Field Remarks
2. Odor and taste	—		1. OH ⁻			
3. Color	Unit Pt-Co color	20	2. CO ₃ ⁻²			
4. Turbidity	F.T.U	9	3. HCO ₃ ⁻			
5. pH	—	6,13	4. Cl ⁻	17		
6. Suspended Matter	mg/l		5. F ⁻			
	105°C		6. SO ₄ ⁻²	34		
	600°C		7. NO ₂ ⁻			
7. TDS	mg/l		8. NO ₃ ⁻			
8. Total Residue	mg/l		9. PO ₄ ⁻³			
	105°C		Total anion:			
	600°C	48				
9. Total Hardness	mg CaCO ₃ /l	35	CATION:			
10. Total Alkalinity	mg/l	8	1. Ca ⁺²	19,2		
11. Acidity	mg/l		2. Mg ⁺²	4,9		
12. CO ₂	mg/l		3. Fe ⁺²			
13. H ₂ S	mg/l		4. Fe total	0,17		
14. Dissolved Oxygen	mg O ₂ /l		5. Al ⁺³			
15. BOD ₅	mg O ₂ /l		6. Mn ⁺²			
16. COD	mg O ₂ /l		7. NH ₄ ⁺			
17. Total bacteria	MPN/100 ml		8. Na ⁺ & K ⁺			
18. Coliform	MPN/100 ml		Total cation:			
19. E coli	MPN/100 ml					

Remarks and conclusions:
 The physico-chemical parameters of this water sample mostly met WATER QUALITY STANDARDS except color parameter.

Analysed: Nguyen Thi Thanh Hoa
 Director of CEFINEA
 Ho Chi Minh City, 3/8/1993
 Head of laboratory
NUM
 Tran Thi Hong Nhat



JICA